

Gloucester City Council
**Gloucester City Infrastructure
Delivery Plan**
Report

Issue | September 2019

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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1 Introduction

- 1.1.1 An integrated infrastructure planning approach with the aim of bringing partners together and aligning place-based investment streams is a key underpinning objective of sustainable growth.
- 1.1.2 Essential to place shaping is the ability for partners to work collaboratively to provide an effective approach to the planning, prioritisation and delivery of infrastructure through co-ordinated investment programming and decision making. Effective and co-ordinated investment in the right infrastructure, of the right quality, in the right location and at the right time is essential to ensure a sustainable economic, social and environmental future. It is central to driving forward efficiencies in terms of delivery and supports social wellbeing, improves quality of life, increases the attractiveness of the area for investment, secures productivity, raises competitiveness and enables economic growth.
- 1.1.3 Identifying opportunities and linking plans and funding routes enables all infrastructure providers to maximise the delivery of multiple benefits and the efficiency of resources. A strategic framework would be an integral part of and underpin, plans and ambitions for the area, including local economic growth programmes, Gloucester's State of the City draft ambitions and Gloucestershire 2050 plans, and more widely the Government's 25 Year Environment Plan.
- 1.1.4 In this context Arup has been commissioned by Gloucester City Council (GCC) to prepare an Infrastructure Delivery Plan (IDP) in support of the Pre-Submission (Regulation 19) Gloucester City Plan. The Plan, together with the Joint Core Strategy (JCS) for Gloucester, Cheltenham and Tewkesbury will provide the development framework to guide the City's future growth between 2011 and 2031.
- 1.1.5 This document considers the infrastructure needs associated with housing and employment growth outlined within the plan period and presents a proposed strategy for the delivery of infrastructure which is essential to meet the needs of the future population.

1.2 Background

- 1.2.1 This IDP has been prepared within the context of the wider JCS IDP (August 2014)¹ and subsequent Strategic Allocation Infrastructure Delivery Position Statements² that were prepared as part of the Examination process. The findings of this wider infrastructure planning work are important when considering the growth strategy for Gloucester, especially where need generated by the strategic allocations (e.g. the need for a new primary school) could help fulfil need generated from smaller sites within the City.
- 1.2.2 Although the focus of this IDP is on the infrastructure needs generated by growth within Gloucester City, the wider needs generated by the Strategic Allocations is

¹ <http://www.gct-jcs.org/Documents/EvidenceBase/JCS-IDP-Nov2014-Final.pdf>

² Exam 168, 168A-E - <http://www.gct-jcs.org/PublicConsultation/Examination-Documents-166-199.aspx>

considered within the overall strategy for infrastructure provision, especially where strategic sites are located on the periphery of Gloucester City.

- 1.2.3 It should be noted that the infrastructure planning is an iterative process that should take into account of new information as it becomes available and consider the changing need as planned developments move from allocations to commitments and built development. As such the IDP should be updated on a regular basis.

1.3 The IDP Process

- 1.3.1 This IDP has been prepared following a number of key stages, as shown in **Figure 1**. These stages include desk-based research, consultation with infrastructure providers and strategy planning in order to produce a position which is up to date at the time of writing.

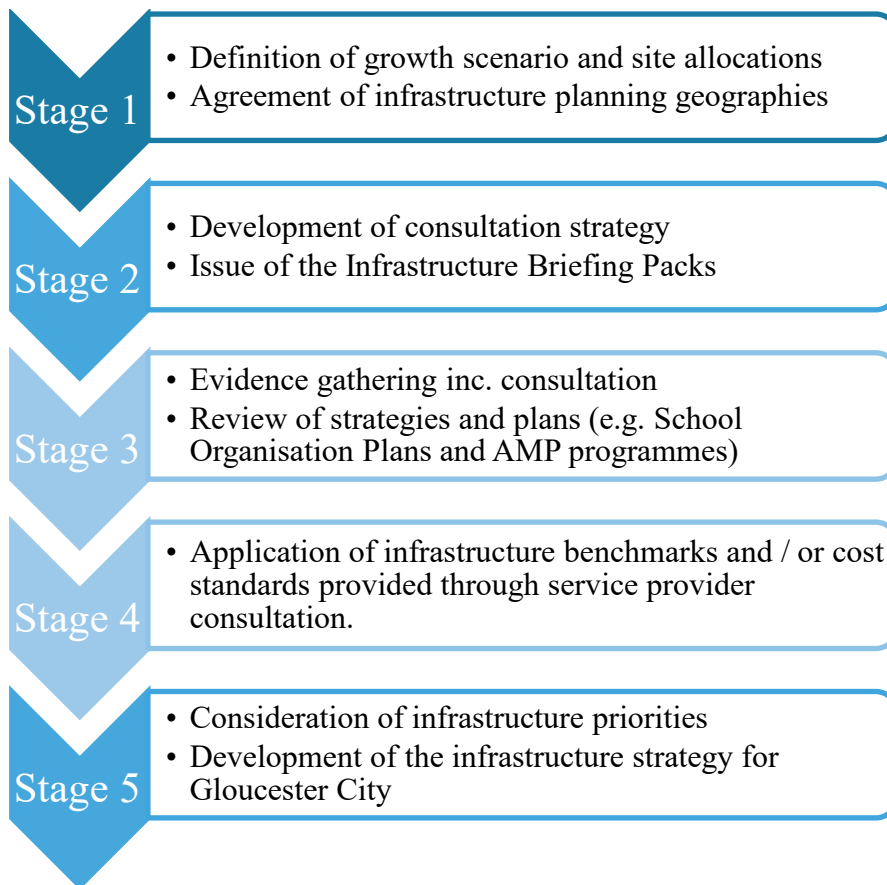


Figure 1 IDP Process / Stages

1.4 Role and Purpose

- 1.4.1 Alongside its relationship with the JCS, the IDP also has a wider corporate role with synergies to other Council plans and strategies and a key role in identifying infrastructure gaps and needs with key external partners such as Gloucestershire's Local Enterprise Partnership (LEP), known as the "GFirst LEP".
- 1.4.2 The corporate role of the IDP involves identifying and informing other strategies and decisions relating to capital investment, providing a framework for making choices and determining investment priorities to meet the Council's strategic objectives in a climate of finite resources.
- 1.4.3 The IDP therefore provides an important technical evidence base which seeks to understand:
- The current level of infrastructure provision in Gloucester and whether it is fit for purpose;
 - Any planned/committed infrastructure projects set out in previous plans or strategies;
 - Whether current and committed infrastructure will sufficiently support planned growth across Gloucester City;
 - The costs associated with infrastructure need generated by planned growth (whether this be through direct provision or paid contribution); and
 - A strategy for infrastructure provision where this is needed to meet the needs of planned growth.

1.5 Consultation

- 1.5.1 To complement the comprehensive desk-based research and benchmark calculations undertaken, a stakeholder briefing pack was issued to key service providers in January 2017 with a further round of consultation undertaken in May and June 2019. The briefing packs presented information in relation to proposed site allocations and planned development scenarios, whilst the second round of consultation confirmed the preferred allocations within Gloucester. The service providers that were consulted include:
- **Transport** – including Gloucestershire County Council, Network Rail and Highways England
 - **Flood Risk Management** – Gloucestershire County Council, Gloucester City Council, Environment Agency and the Lower Severn Internal Drainage Board (IDB)
 - **Education** – Gloucestershire County Council
 - **Water Supply / Waste Water** – Seven Trent and the Environment Agency
 - **Outdoor Sport and Recreation** – Active Gloucestershire, Sport England and Gloucester City Council
 - **Green Infrastructure** – Natural England and Gloucester City Council

- **Healthcare** – Gloucestershire Clinical Commissioning Group
- **Energy** – National Grid, Wales and West Utilities, and Western Power Distribution

1.5.2 The consultation sought confirmation that the planned growth and associated infrastructure requirements can be accommodated within the plan period and the process by which any new infrastructure could be delivered.

1.5.3 Consultees were also requested to provide information on committed or future projects that would be required in order to facilitate planned growth.

1.6 Report Structure

1.6.1 This report provides a sector by sector summary of the infrastructure required to support development proposed in the draft City Plan. Each sector summary provides an overview of:

- the organisation(s) responsible for planning and service delivery;
- an assessment of infrastructure needs and costs; and
- key infrastructure projects.

The remainder of this report is structured as follows:

1.6.2 **Chapter 2** sets the national and local policy context for the IDP including information of the growth scenario which has been tested through the IDP process.

1.6.3 **Chapters 3-8** provide a sector by sector assessment of the infrastructure required to support planned development, current projects, responsibilities for delivery, and sector specific funding routes.

1.6.4 **Chapter 9** explores a strategy for infrastructure provision in Gloucester and provides conclusions.

1.6.5 This report should be read in conjunction with the three associated appendices:

Appendix A: IDP Infrastructure Baseline (Arup, September 2019)

- Further details of the existing services and infrastructure available within Gloucester

Appendix B: IDP Site Calculator (Arup, September 2019)

- The distribution of growth applied to benchmarked standards from infrastructure and service providers

Appendix C: IDP Infrastructure Projects List (Arup, September 2019)

- A list of projects considered essential or desirable to support the growth set out in the Gloucester City Plan.

2 Context for the IDP

This section provides a brief overview of the planning policy, guidance and strategies applicable to the IDP and consideration of infrastructure need.

2.1 National Policy and Guidance

National Planning Policy Framework (February 2019)

- 2.1.1 The Revised National Planning Policy Framework (2019) (NPPF) states that plans must be prepared with the objective of contributing to the achievement of sustainable development (paragraph 7), with infrastructure planning forming an important component of this.
- 2.1.2 The three dimensions of sustainable development give rise to the need for the planning system to perform the following roles (paragraph 7 - paraphrased):
- an economic role – contributing to building a strong, responsive and competitive economy, which includes coordinating development requirements and ensuring the provision of infrastructure.
 - a social role – by creating a high quality, built environment, with accessible local services that reflect the community’s needs and support its health, social and cultural well-being.
 - an environmental role – helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, mitigate and adapt to climate change including moving to a low carbon economy.
- 2.1.3 In relation to planning for infrastructure, paragraph 20 of the NPPF states that “strategic policies should set out an overall strategy for the pattern, scale and quality of development, and make sufficient provision for...infrastructure for transport, telecommunications, security, waste management, water supply, wastewater, flood risk and coastal change management, and the provision of minerals and energy (including heat).”
- 2.1.4 Of particular reference to the Gloucester City Plan, as a non-strategic planning document, is paragraph 28 of the NPPF. This states that: “Non-strategic policies should be used by local planning authorities and communities to set out more detailed policies for specific areas, neighbourhoods or types of development. This can include... the provision of infrastructure and community facilities at a local level.”
- 2.1.5 In terms of funding, the NPPF requires that Plans set out the contributions expected from development. “This should include setting out the levels and types of affordable housing provision required, along with other infrastructure (such as that needed for education, health, transport, flood and water management, green and digital infrastructure).”
- 2.1.6 To ensure that development contributes to the delivery of infrastructure, a Community Infrastructure Levy has been examined and adopted by Gloucester City Council. The Council, as charging authority, will receive money to fund infrastructure from every square metre of qualifying new development. A Review of the Community Infrastructure Levy was launched by the Government in late

2015 and its findings were published in March 2018 in “The Incidence, Value and Delivery of Planning Obligations and Community Infrastructure Levy in England in 2016-17.” The review identified that Councils rely heavily on s.106 agreements to fund infrastructure, with 85% of planning obligation monies agreed through this process.

- 2.1.7 Importantly, this recommends that restrictions on pooling of monies secured through s.106 agreements are scaled back given that CIL “was rarely adequate to mitigate site-specific issues”.

Planning Practice Guidance (March 2019)

- 2.1.8 To take account of the revised NPPF, published initially in July 2018, the Ministry of Housing, Communities & Local Government has updated its suite of planning guidance. This includes guidance on Plan-making and specifically on how this can address strategic infrastructure needs. It states that plans should identify what infrastructure is required, how it can be funded and brought forward.
- 2.1.9 Working alongside infrastructure providers and service delivery organisations, authorities should:
- assess the quality and capacity of infrastructure, and its ability to meet forecast demands. Where deficiencies are identified, policies should set out how those deficiencies will be addressed; and
 - take account of the need for strategic infrastructure, including nationally significant infrastructure, within their areas.
- 2.1.10 In terms of funding, it states that plans should set out the contributions expected from development. “This should include setting out the levels and types of affordable housing provision required, along with other infrastructure (such as that needed for education, health, transport, flood and water management, green and digital infrastructure).”
- 2.1.11 Regarding the Community Infrastructure Levy, the guidance outlines the principles of CIL pooling as a “useful mechanism for funding strategic infrastructure projects that have cross-boundary benefits”.
- 2.1.12 Moving forward, the government recommends that when preparing a plan, strategic policy-making authorities use available evidence of infrastructure requirements to prepare an Infrastructure Funding Statement. This should set out the anticipated funding from developer contributions, and the choices local authorities have made about how these contributions will be used. At examination this can be used to demonstrate the delivery of infrastructure throughout the plan-period.
- 2.1.13 It is understood that the Infrastructure Funding Statement will be a ‘capture all’ document, combining the CIL Monitoring Report and Regulation 123 List and forecasting CIL income for the next five years. It was outlined within the MHCLG Response to Technical Consultation³ that the requirement to produce Infrastructure Funding Statements would come into force on 31st December 2020.

³ Government response to reforming developer contributions:

A summary of responses to the technical consultation on draft regulations and the Government’s view on the way forward (MHCLG, June 2019)

2.2 Local Policy & Guidance

Joint Core Strategy

- 2.2.1 The JCS is a partnership between Gloucester City Council, Cheltenham Borough Council and Tewkesbury Borough Council, supported by Gloucestershire County Council. The partnership was formed to produce a co-ordinated strategic development plan for the area up to 2031. The JCS forms an important part of the local policy framework for Gloucester City with the Gloucester City Plan (GCP) delivering the JCS at the local level.
- 2.2.2 The JCS was adopted by the three local authorities in December 2017. The Plan has a suite of sustainable development and infrastructure policies and includes seven Strategic Allocations to accommodate both housing and employment.
- 2.2.3 Infrastructure delivery planning undertaken by Arup in partnership with the JCS Authorities has considered the requirements emerging from the overall growth proposed and from the Strategic Allocations. Position Statements have been produced to set out infrastructure requirements for each of the strategic allocations as well as a full IDP and subsequent refreshes to demonstrate that how infrastructure can support the growth set out in the Joint Core Strategy.
- 2.2.4 The JCS Authorities are undertaking a review of the adopted Plan following adoption and published an Issues and Options consultation under regulation 18 of the Town and Country Planning (Local Planning) (England) Regulations 2012, running from November 2018 to January 2019. The JCS Review will need to take account of the revised NPPF and seek to guide additional growth within the area as well as identifying potential alternatives to those Strategic Allocations that may not come forward as quickly as anticipated.
- 2.2.5 Whilst the Strategic Allocations are not directly relevant or considered within this IDP, the infrastructure demands generated by these sites could indirectly effect Gloucester City. In this context, the Strategic Allocations are considered when the IDP explores the strategy for delivery of infrastructure, drawing synergies where possible to ensure that collectively the infrastructure demands of new development are met.

Gloucester City Plan – 2011 to 2031 (Pre-submission Version)

- 2.2.6 The Gloucester City Plan, together with the JCS aims to deliver the City's regeneration by providing a development framework to guide Gloucester's growth to 2031.

The document sets out:

- A draft vision and key principles for development in Gloucester;
- Draft planning policies to inform planning proposals and assess planning applications; and
- Proposed site allocations for different types of development.

- 2.2.7 Following the publication of and consultation on the Gloucester City Plan in January 2017, document has been reworked to form the Pre-submission Gloucester City Plan. This version of the Plan will be submitted to the Planning Inspectorate under Regulation 19 of the Local Plan Regulations to enable

representations to come forward that can be considered at the Examination in Public (EiP).

- 2.2.8 It is anticipated that the City Plan will be submitted to the Planning Inspectorate in Winter 2019.

Housing Growth Strategy

- 2.2.9 Gloucester's identified housing need, assessed through the JCS, totals 14,360 dwellings until 2031. Taking account of the contribution the Strategic Allocations in the wider JCS area and the number of homes that have been completed or committed, this equates to an additional 1,926 dwellings across the plan period within the City's administrative area.
- 2.2.10 In calculating the associated population growth, the IDP utilises a household size figure of 2.25 which reflects the projection at the plan midpoint (2021) derived from the Bramley Econometric Affordability Forecast⁴ utilised by the JCS authorities.
- 2.2.11 Table 1 provides a summary of the development scenario to meet this housing growth and outlines the associated population growth forecast.

Table 1 Housing Development Scenario

	No. Dwellings	Population
Completions (at April 2018)	3,993	8,984
Committed Sites	2,339	5263
Allocated Sites	1,002	2255
Windfall Allowance	607	1366
TOTAL	7,941	17,867
TOTAL (excl. completions)	1,609	3,620

- 2.2.12 This IDP focusses on the likely infrastructure demand generated by the committed and allocated sites only with the completions having already agreed infrastructure requirements. The report therefore focusses on delivering a total of 1,609 dwellings across the remainder of the plan period.
- 2.2.13 Of this 1,609, the 1,002 dwellings to be provided through site allocations are split across 23 sites (see The Gloucester City IDP Site Calculator, August 2019 Appendix B). These form the focus for this IDP and are summarised in Table 2 below.

⁴ Source: MAIDeN District Profiles (2013), based on 2011 census data.

Table 2 Housing Allocations

Ref	Size/Area (ha)	Gloucester City Site Allocations	Dwellings (2011-2031)	Estimated Population
Abbeyle Ward				
SA01	2.28	Land at the Wheatridge	10	23
Barnwood Ward				
SA02	1.95	Barnwood Manor, Barnwood Road	26	59
SA19	0.85	Jordan's Brook House	20	45
Barton & Tredworth				
SA14	0.18	Former Colwell Youth & Community Centre	20	45
Elmbridge				
SA20	0.36	Land off Myers Road	10	23
Kingsholm & Wotton				
SA03	0.35	67-69 London Road	30	68
SA04	0.3	Former Wessex House, off Great Weston Road	0 ⁵	0
SA05	4.3	Great Western Road Sidings	200	450
Matson & Robinswood				
SA16	0.86	Land East of Sneedhams Road	30	68
Podsmead				
SA15	0.8	Land off New Dawn Way	30	68
Westgate				
SA17	0.13	Land off Eastgate Street	15	34
Westgate (City Centre)				
SA08	4.5	Kings Quarter	156	351
SA09	4.8	Greater Blackfriars - former Quayside	50	113
SA10	0.46	Greater Blackfriars - former Fleece & Longsmith Street carpark	25	56
SA11	0.32	Land adjacent to Eastgate Shopping Centre	30	68
Westgate (North)				
SA12	6.44	Land at St Oswalds	300	675
Westgate (South)				
SA13	1.2	Land at Rea Lane	30	68

Employment Growth Strategy

- 2.2.14 The Gloucester City Plan identifies a need to provide development opportunities to encourage and attract growth sectors, which will help restructure the economy away from the traditional manufacturing base and build on the City's knowledge-based economy.
- 2.2.15 In order to achieve this objective, the City Plan identifies the sites in Table 3 for a mix of uses, including employment.

⁵ Site allocated for emergency residential accommodation.

Table 3 Employment and mixed-use development allocations by site

Ref	Ward	Size/Area (ha)	Gloucester City Site Allocations
SA04	Kingsholm & Wotton	Mixed-use inc. 20 dwellings	Former Wessex House, off Great Weston Road
SA07	Quedgeley Fieldcourt	2	Lynton Fields
SA08	Westgate (City Centre)	Mixed-use inc. commercial	King's Quarter
SA18	Barton & Tredworth	4.22	Southern Railway Triangle
SA22	Westgate (South)	0.8	Land at West Quay, the Docks
SA23	Westgate (South)	0.7	Secunda Way Industrial Estate

Sports & Recreation

- 2.2.16 In addition to the above site allocations the City Plan includes the Blackbridge Sports and Community Hub as a site allocation. Blackbridge is identified in the adopted Gloucester Playing Pitch Strategy and Artificial Grass Pitch Strategy as being a significant opportunity for the creation of a sports hub to the southern half the City.

Table 4 Open space and recreation allocations by site

Ref	Ward	Size/Area (ha)	Gloucester City Site Allocations
SA06	Podsmead	9.6	Blackbridge Sports Hub
SA21	Matson & Robinswood	0.42	White City Community Facility

Other Plans & Strategies

- 2.2.17 In addition to the Gloucester City Plan, there are several further strategy and planning documents that help to provide an appreciation of priority matters for the area and have informed the IDP. Some of these are discussed in further detail under the relevant infrastructure sections and/or within the infrastructure strategy for the City:

- **Gloucestershire County Council: Looking to the Future (2019-2022)** which has been updated for 2019 sets out a broad vision for the County to ‘*make the most of all that Gloucestershire has to offer, help improve the quality of life for every community, support businesses to be successful and make sure the county is a place where people want to live, work and visit.*’ It supersedes Gloucestershire County Council’s Strategy (2015-2018).
- **Gloucestershire Local Enterprise Partnership (LEP) Strategic Economic Plan 2.0 (2018)** which sets a plan for economic growth within the County.
- **Gloucestershire LEP Growth Deal Submissions (various)** which contain a programme of eleven projects which build on the Economic Plan.
- **Gloucester City Vision 2012-2022** which sets out the strategic vision for Gloucester up to 2022 and outlines a clear focus on improving the local economy.

- **Gloucester City Council Plan (2017-2020)** Which sets out the vision for the council and its residents, including the Council's core values and its priorities for regeneration, place making, creating a sense of community and delivering value for money.
- **Gloucester City Council Regeneration and Economic Development Strategy (2016-2021)** which identifies a number of regeneration objectives and priority projects for the City.
- **Gloucestershire Local Transport Plan (2015-2031)** which sets out the transport strategy for Gloucestershire. A review of the LTP is underway, with formal consultation to be undertaken at the end of 2019.
- **Gloucestershire Local Flood Risk Management Strategy (2014)** which sets out the approach for management of flood risk related to groundwater, surface runoff and ordinary watercourse flooding.
- **Gloucestershire Schools Places Strategy (2018-2023)** which provides analysis of the current primary and secondary school provision and sets out a strategy for providing sufficient additional places to meet growth demands.
- **Gloucester City Council Playing Pitch Strategy (2015-2025) and Interim Review Report (2017)** which provides a strategic framework for the maintenance and improvement of existing sports facilities for the period between 2015 and 2025. Planning gain from housing growth to address shortfalls in current provision is a key recommendation within the strategy.
- **Gloucester City Council Open Spaces Strategy (2014-2019)** which sets out how Gloucester City Council plans to protect, manage and enhance its open spaces for the period between 2014-2019.
- **Built Sports Facility Strategy (2019)** sets out built sports infrastructure within Gloucester, analyses the adequacy of facilities, identifies gaps in provision.
- **Severn River Basin District Flood Risk Management Plan (2015-2021)** outlines the risk of flooding from rivers, the sea, surface water, groundwater and reservoirs. The Plan set out how risk management authorities, such as the Environment Agency and lead local flood authorities, will work together and with communities to manage flood and coastal risk.
- **Community and Neighbourhood Plans** give local communities the right to prepare their own statutory neighbourhood planning documents. There are no active neighbourhood development forums within Gloucester and no neighbourhood development plans are being progressed. The Down Hatherley, Norton and Twigworth Neighbourhood Plan was adopted in May 2019 and the pre-submission version of the Churchdown and Innsworth Neighbourhood Plan was published in May 2018 and will be consulted on for the second and final time in the summer of 2019. Both Neighbourhood Plan areas are within Tewkesbury but adjacent to Gloucester City.

3 Transport & Public Realm

3.1 Infrastructure Baseline

Strategic Road Network

- 3.1.1 Highways England is responsible for operating, maintaining and improving the Strategic Road Network (SRN). Within Gloucester the SRN Comprises:
- The M5 Motorway which runs along Gloucester's south west border between Stroud and Tewkesbury. Junctions of relevance include Junction 11a and Junction 12.
 - The A40 which runs along the northern boundary of Gloucester.

County Highways

- 3.1.2 Gloucestershire County Council is responsible for transport planning and strategy and the delivery of highways schemes in Gloucester.
- 3.1.3 The main highway network surrounding Gloucester and providing access to the town and key development sites includes the A38, A40, A417 and A430.
- 3.1.4 The County benefits from a relatively well connected and efficient highway network as well as high travel to work self-containment, illustrating the importance of Gloucester City maintaining good internal and external connectivity with neighbouring areas.
- 3.1.5 Despite this, congestion is identified as a key challenge on the main corridors into Gloucester. The Gloucestershire Local Transport Plan (2015-2031) Policy Document 4 identifies the following network pinch points with Gloucester:
- | | | |
|--|---------|--------------------|
| • A38 | • A430 | • Barnwood Road |
| • A40 | • A432 | • Hucclecote Road. |
| • A417 | • B4063 | |
| • A4173 (inc. St. Barnabas Roundabout) | • B4073 | |
| | • B4215 | |

- 3.1.6 Congestion, particularly at these pinch points is expected to worsen as future housing and employment comes forward.
- 3.1.7 In addition, the County also has a culture of high car dependency and usage which, combined with the planned growth will place increasing pressure on the transport networks.

Rail

- 3.1.8 Network Rail are responsible for the maintenance and enhancement of rail infrastructure within Gloucester. They are also landlord of most of stations on the network, although all stations in Gloucestershire are leased to train operators.
- 3.1.9 Operation of rail services sits with a number of rail operators, including:

- First Great Western (services between Bristol and Worcester with stops at Gloucester)
- Cross Country Franchise (national intercity services and regional services with stops at Gloucester)
- Arriva Trains Wales (services between Cheltenham Spa and Cardiff with a stop at Gloucester)

- 3.1.10 Gloucester railway station is located in the north of the City on the A430, Black Dog Way. The station offers regular services to destinations such as Cardiff Central, Nottingham, London Paddington and Brighton, as well as local services to destinations such as Cheltenham Spa and Great Malvern.
- 3.1.11 The station currently handles 1.48m passengers per annum (2017/18⁶) which is an increase on figures in previous years (e.g. 1.25 in 2012/13).
- 3.1.12 The main travel to work areas from Gloucester station include Bristol, Cardiff and Birmingham.
- 3.1.13 Although well located in terms of proximity to the city centre, bus station and other community facilities (e.g. Gloucestershire Royal Hospital), Gloucester railway station is currently situated off the Bristol to Birmingham mainline which means that services currently incur an additional 10 to 12 minutes to journey times to serve Gloucester. The main north-south intercity services do not stop at Gloucester.
- 3.1.14 £3.75m has been awarded by the GFirst LEP for the regeneration of the railway station, by 2020. This remodelling will include a redesign of the station buildings and the connecting underpass. Works, funded through a bridging loan from Gloucester City Council, began in February 2019. A further 200 car parking spaces were delivered as part of works undertaken by GWR in 2018.

Bus

- 3.1.15 Gloucestershire County Council is responsible for administering bus route subsidies working with the bus network operators.
- 3.1.16 The bus network within Gloucester is largely operated by Stagecoach, although there are other operators for certain routes / services. These include subsidised services and community transport schemes designed to serve non-peak demand, rural areas and vulnerable users.
- 3.1.17 Figure 2⁷ provides a summary of the current routes and identifies which are commercial and which require subsidy of some description.
- 3.1.18 The figure illustrates that Gloucester is a hub for bus services and demonstrates that the majority services are commercially or externally funded. The majority of services within Gloucester are commercially funded and operated by private providers, as highlighted in purple. There are a number of County Council-funded routes, highlighted in red which connect into the city from rural areas

⁶ Office of Rail and Road (2018) “Estimates of Station Usage”

⁷ Policy Document 1 – Bus (Gloucestershire County Council, 2017) Available: <https://www.gloucestershire.gov.uk/media/2219/8-pd-1-bus-nov-2017.pdf>

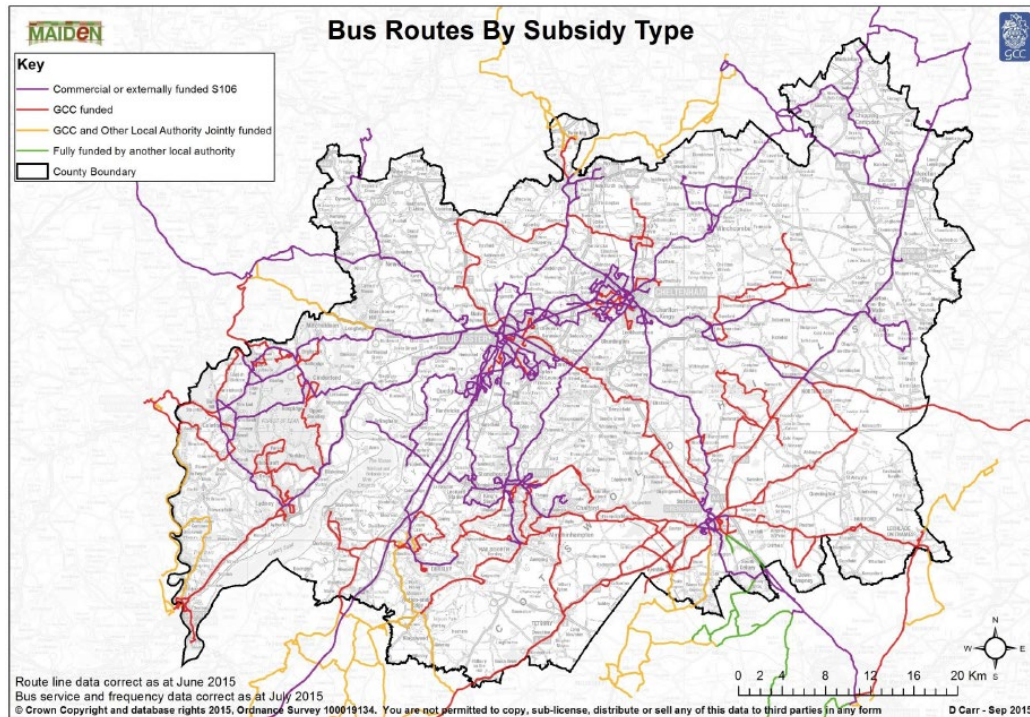


Figure 2 Extent of commercial and subsidised services

- 3.1.19 The £7.5m redevelopment of Gloucester Bus Station concluded in Autumn 2018 with the new facilities opening in September 2018. The station, known as the Gloucester Transport Hub, has 12 bus bays and provides access to local Stagecoach services as well as intercity travel through National Express.

Cycling, walking and public realm

- 3.1.20 Gloucestershire County Council is responsible for forward planning of walking and cycling projects through the Local Transport Planning (LTP) process. The County Council also have related responsibilities for the maintenance and improvement of the PRoW network.
- 3.1.21 Gloucester's cycle network is shown in Figure 3⁸.

⁸ Policy Document 2 – Cycle (Gloucestershire County Council, 2017) Available: <https://www.gloucestershire.gov.uk/media/2223/9-pd-2-cycle-nov-2017.pdf>

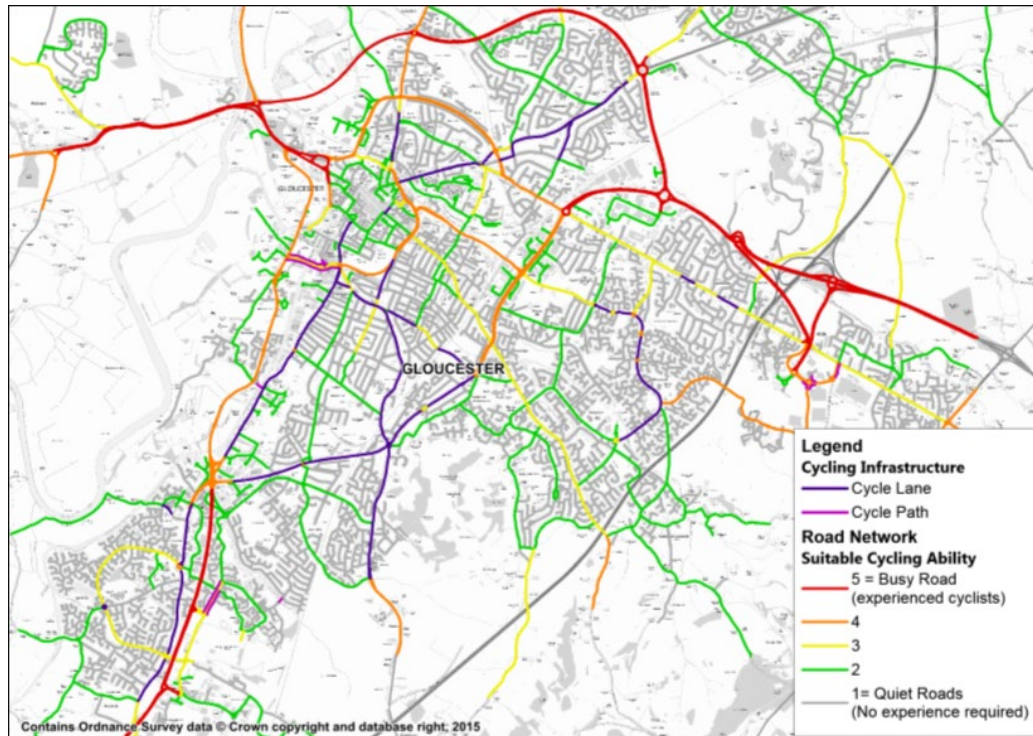


Figure 3 Gloucester's cycle network

- 3.1.22 There are seven dedicated cycle paths within Gloucester including routes along some of the principal corridors into the city, such as Stroud Road, Bristol Road and Cheltenham Road/ London Road.

3.2 Assessment of Infrastructure Need

- 3.2.1 This section of the IDP sets out the key transport and highways infrastructure projects likely to influence the growth set out within the Gloucester City Plan and the consultation responses from transport infrastructure stakeholders.

Strategic Road Network

- 3.2.2 The current Highways England Strategic Business Plan (2015-2020) and Road Investment Strategy (RIS) (2015-2020) doesn't contain any schemes within Gloucester that will be under construction during Road Period 1 (2015-2020). However, there are several cross-boundary schemes which have been identified through consultation with Highways England which are considered important to growth in Gloucester. The following schemes will have a level of interdependency with Gloucester City allocations:

- M5 Junction 9 to M5 Junction 11a (Tewkesbury to Gloucester) – there is a long-term aspiration to upgrade these sections of the M5 to a smart motorway, increasing capacity during peak times and controlling vehicle flows. Funding has yet to be secured and the project is pre-feasibility.
- M5 Junction 11 (north of Gloucester) – work is anticipated to start in 2020/21 for the signalisation of the southbound off-slip road and the addition of an extra lane to the northbound off-slip road. This project is in the feasibility stage and is part-funded by the Local Growth Fund.

- M5 Junction 12 (Gloucester south) – upgrades to junction to include two-lane wide off- and on-slip roads. Anticipated to be funded by planning obligations from nearby development (within Stroud District).

3.2.3 The A417 ‘Missing Link’ at Air Balloon Roundabout was identified within the Road Investment Strategy 2015-2020 as a project for delivery in the next RIS period. This project is expected to be delivered by Development Consent Order and is currently in the pre-application stage. This project is within Cotswold and Tewkesbury Districts but will improve the nearby strategic road network.

3.2.4 Each scheme above is being led by Highways England in consultation with Gloucestershire County Council as the local highway authority.

County Highways

3.2.5 The Local Transport Plan identifies the following priorities for attracting future investment in for highways schemes either within Gloucester or within the immediate vicinity. These schemes will in many cases help to unlock / enable development sites identified within the Gloucester City Plan.

3.2.6 The LTP identifies the following capital highway project delivery priorities within Gloucester for the periods 2015-2021 and 2021-2031.

Short term priorities (2015-2021)

- **Elmbridge transport scheme:** Local Growth Fund funded. Completed in 2017
- **A430 Llanthony Rd and St. Ann Way improvement:** GFirst LEP funded. To be complete by 2021
- **A40 Over roundabout improvement (phase 2):** GFirst LEP and s.106 funded. Construction underway in 2019, to be completed in 2021.
- **St. Barnabas Roundabout enhancement:** GFirst LEP funded. Not yet started.
- **Local improvement for Southgate Street to St. Ann’s Way:** Heritage Lottery and GCC Highways funded. Not yet started.

Long term priorities (2021-2031)

- **A417 Missing Link:** DfT funding secured for DCO. Pre-application stage.
- **Highway improvement A38 outer ring road corridor:** Funding yet to be secured.
- **Highway improvement London Road / Denmark Road junction:** Funding yet to be secured.
- **Highway improvement Westgate Gyratory:** Funding yet to be secured.
- **Junction improvement A40 Longford roundabout:** Completed in 2018.
- **Junction improvement A40 over roundabout (phase 3) enhancement for outbound city traffic with alternative river crossing:** Funding yet to be secured.
- **Junction improvement A417 C&G roundabout:** Funding yet to be secured.
- **Junction improvement A417 Zoons Court roundabout:** Funding yet to be secured.
- **Junction improvement Priory Road providing bus advantage:** Funding yet to be secured.

- 3.2.7 A full list of projects, agreed in consultation with GCC Highways, are included within the Gloucester City IDP Project Tracker (Appendix B).
- 3.2.8 Atkins has been commissioned to undertake modelling work on behalf of the City Council, in partnership with the County Council, to assess the impact of Local Plan Allocations upon the road network.
- 3.2.9 Each scheme will need to be considered on a case-by-case basis to understand how it can help to address growth in both the JCS and the Gloucester City Plan.

Rail

- 3.2.10 As the system operator Network Rail periodically review the growth in housing and business within the railway corridor and correlate this into predicted growth in terms of rail usage. In doing this, Network Rail estimate that growth in Gloucestershire to be between 3.2 and 4.3% to 2043.
- 3.2.11 Consultation with Network Rail in April 2019 has highlighted a number of enhancements and improvements to increase capacity in and around Gloucester. These are summarised in Table 5 below.

Table 5 Rail Infrastructure Projects

Project	Aim / Need	Period	Indicative Cost
N2: Mainline platforms at Gloucester	Initial work indicates that two island platforms could be provided on the Bristol to Birmingham mainline with necessary track alignments and associated infrastructure. This would increase accessibility for Gloucester with greater potential for intercity services to stop at the mainline station.	Longer Term Potential 2019-2024	£50-100m
N3: Capacity improvements between Gloucester and Cheltenham Spa	Provision of four tracking between Barnwood Junction and Cheltenham Spa, using the available four track formation and extending this by 5 miles, providing a regulating and dynamic passing capability.	Longer Term Potential 2019-2024	£50-100m
N4: Capacity at Standish Junction	Improvements to remove timetable conflicts that occur due to the crossing moves at this junction.	Longer Term Potential 2019-2024	£35-75m
N5: Capacity between Standish Junction and Haresfield	Provision of dynamic loops from Standish Junction to the M5 motorway bridge at Haresfield with connecting crossovers. This provides a regulating point and assists with timetabling.	Longer Term Potential 2019-2024	£20-50m
N6: Capacity between Charfield and Ashchurch / Eckington	Four-tracking to provide a dynamic passing capability at Charfield and between Ashchurch and Eckington, along faster trains to overtake without	Longer Term	£75-175m

Project	Aim / Need	Period	Indicative Cost
	requiring slower trains to come to a standstill. Options would require land outside of current railway boundary.		

- 3.2.12 The majority of the projects above have been identified to improve connectivity on the network and accommodate the 2043 Indicative Train Service Specification (ITSS), regulating services and therefore improving timetabling and capacity of services.
- 3.2.13 The exception to this is project N2 which is identified as a capacity project and would enable more main line services to call at Gloucester without incurring a journey time penalty and reduce timetable conflicts across the area. The project would see four platform faces on the mainline with more local services continuing to serve the existing Gloucester station.
- 3.2.14 With projected increases in rail usage, the number of people accessing and using facilities at Gloucester station will also increase and facilities such as car parking, bike storage and station facilities may require future upgrades. Such demand may change should project N2 be implemented and take rail usage from the existing Gloucester station.
- 3.2.15 Additionally, Network Rail have highlighted aspirations to increase the frequency of services to Bristol as one of the main travel to work destinations from 1 - 2 trains per hour. This would improve connectivity between the two cities, as well as other regional stations such as Yate and Cam & Dursley.
- 3.2.16 The LTP Review with Gloucestershire CC also highlighted opportunities for freight, including the role of Gloucester New Yard in servicing new flows. Gloucester is a potential location for a light parcel rail traffic hub, where electric vehicles can deliver in the last mile, therefore provision for this type of operation should be considered as part of any future enhancements for Gloucester station. Consultation with GCC Highways has identified the closure of the crossing at Horton Road as a key infrastructure project in relation to the allocation of 200 homes at Great Western Road. The closure, to facilitate an increase in the frequency of services at Gloucester, would likely result in the need to provide a footbridge and highway mitigation measures at the junction of London Road and Great Western Road.
- 3.2.17 In terms of improvements to rail services, the County Council is seeking a half hourly service between Bristol Temple Meads and Gloucester which will improve connectivity for residents and visitors. An hourly direct service between London and Gloucester/Cheltenham is due to commence in December 2019. Similar improvements linking Gloucester to South Wales are also being sought in the longer term.

Bus

- 3.2.18 The LTP (Policy Document 1) identifies a number of short and long-term capital bus project delivery priorities as below.

Short term priorities (2015-2021)

- Gloucester Transport Hub, new bus station
- Bus advantage improvements for Metz Way corridor including off carriageway cycle lane improvements
- Bus corridor improvements Gloucester – Cheltenham via Churchdown
- Elmbridge strategic scheme
- Local park and ride facilities

Long term priorities (2021-2031)

- Bus advantage at signals at Innsworth Land and Oxstalls Lane
- Bus advantage improvements for Bruton Way
- Bus stop and bus advantage improvements for Gloucester to Lydney / Coleford / Cinderford corridors
- Bus stop and bus advantage improvements for Stroud – Gloucester corridor
- Strategic park and ride expansion at Waterwells
- Strategic park and ride scheme for West of Severn

Cycling, Walking & Public Realm

- 3.2.19 Development across the JCS and Gloucester City is highly dependent on mode shift opportunities away from private car. A review of the LTP (Policy Document 2 – Cycle) and consultation with GCC Highways has identified a number of cycle improvements including:

- Countywide Cycle Way between Gloucester and Cheltenham (adjacent to the B4063);
- Sharpness and Gloucester Canal Towpath Improvements;
- Outer ring road network linking Walls roundabout to Cole Avenue; and
- Access improvements for the A40 corridor between Cheltenham and Gloucester.

3.3 Funding

- 3.3.1 Transport schemes on the Strategic Road Network would be delivered by Highways England through the Road Investment Strategy which is approved by the Department for Transport. This approach provides certainty in terms of funding and allows for long term planning of the strategic highways.
- 3.3.2 The Joint Core Strategy Authorities are proposing that CIL receipts for the Tewkesbury, Cheltenham and Gloucester authorities are pooled to enable the funding of strategic infrastructure projects such as those highlighted within the

transport and highways sections of this IDP. This pooling would allow the collection of smaller CIL receipts to contribute to the delivery of ‘big-ticket’ items. The governance arrangements for this process are to be determined, but it is assumed that the decision-making process would include a bidding element.

- 3.3.3 In addition to CIL and Highways England funding, the main capital fund available for transport schemes in Gloucestershire is the Local Growth Fund. G-First Local Enterprise Partnership (LEP) has the devolved authority to administer this Local Growth Fund. This has already funded improvements such as the Elmbridge Transport Scheme, the A40 Over roundabout and the A430 Llanthony Road and St. Ann Way.

4 Flood Risk Management

4.1 Infrastructure Baseline

- 4.1.1 Responsibility for flood risk management in Gloucester sits with several bodies, including:
- **Environment Agency** – is responsible for managing risk from flooding from main rivers and the sea as well as a general supervisory role for all types of flooding and coastal erosion. The Environment Agency has a duty to set out the overarching approach that should be followed in FCERM, and strategic local level flood risk management plans.
 - **Gloucestershire County Council** – is the Lead Local Flood Authority (LLFA) and has produced a Local Flood Risk Management Strategy for 2016/17. GCC are responsible for the implementation of this strategy, investigating flood incidents, maintaining a register of flood defence assets, ensuring sustainable drainage on new development and ensuring effective working between bodies. This is monitored through an Annual Progress and Implementation Plan, which was published most recently for 2017/18.
 - **Internal Drainage Board (IDB)** – is responsible for managing water levels for the protection of people, property and the environment with permissive powers to undertake works to reduce flood risk.
 - **Gloucester City Council** – has duties under that Land Drainage Act for managing flood risk and seeking to prevent / mitigate flood risk and remedy flood damage.
- 4.1.2 Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk. (Paragraph 149 of the NPPF).
- 4.1.3 Development should be directed away from areas at risk of flooding. Policies should be informed by a strategic flood risk assessment and should manage flood risk from all sources. They should consider cumulative impacts in, or affecting, local areas susceptible to flooding, and take account of advice from the Environment Agency and other relevant flood risk management authorities, such as lead local flood authorities and internal drainage boards (para. 156 of the NPPF).
- 4.1.4 Site promoters, developers and local planning authorities have a responsibility to demonstrate that their proposals would not increase flooding elsewhere and, if the site is in an area at risk of flooding, demonstrate that the development is appropriately flood resilient and resistant (NPPF, para. 163).
- 4.1.5 Gloucester has been identified as a Flood Risk Area (FRA) following a preliminary flood risk assessment for river, sea and reservoir flooding carried out by the Environment Agency. Flood Risk Areas are areas where the risk of flooding is likely to be significant at a national scale for people, the economy or the environment. Flooding can affect homes, businesses, schools, road and rail infrastructure and utilities.

- 4.1.6 The flood risk and the potential need for management measures in Gloucester is clear when looking at the EA flood risk data as shown in the extract in Figure 4⁹.
- 4.1.7 Gloucester's location on the banks of the River Severn and the presence of a number of main rivers running through the city means that many areas in the west of the city are at risk of flooding. This risk of flooding has led to several flood events across Gloucestershire in recent years including severe flooding in 2007 where over 1,100 residential properties were flooded, and more recent, but less severe, flooding in 2012 and 2013.
- 4.1.8 Putting this risk into context, a recent Environment Agency briefing note with a focus on reducing flood risk from the River Severn identifies that approximately 850 homes and businesses in Gloucester are at risk from a River Severn flood.

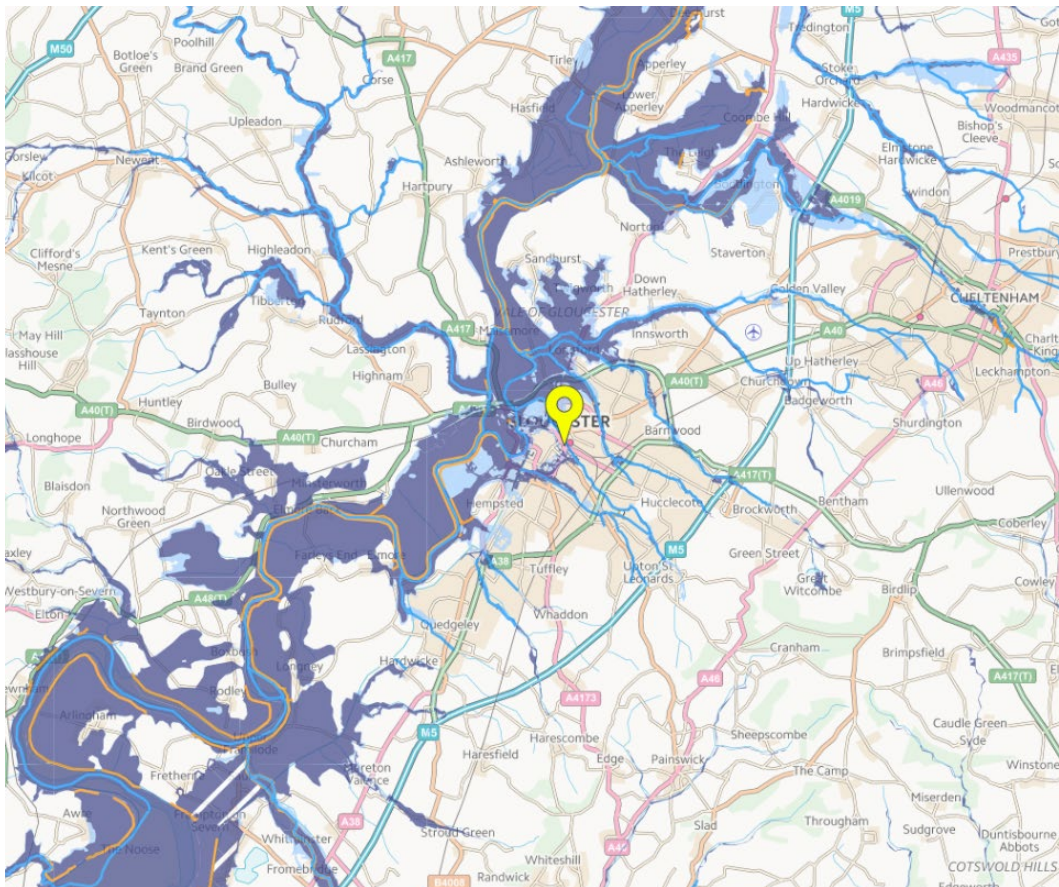


Figure 4 Environment Agency Flood Map for Gloucester

- 4.1.9 The importance of planning for flooding is therefore prominent across Gloucester and the wider County and the following plans and strategies have been reviewed to inform the infrastructure baseline:
- Gloucester City Council Level 1 Strategic Flood Risk Assessment (SFRA) (Sep 2008)
 - Gloucestershire County Council Preliminary Flood Risk Assessment (PFRA) (Nov 2011)

⁹Environment Agency Flood Map for Planning (<https://flood-map-for-planning.service.gov.uk/> accessed 2.5.2019)

- Level 2 Strategic Flood Risk Assessment (SFRA) (September 2019)
- Sustainable Drainage a Design and Adoption Guide, Gloucester City Council (July 2013)
- Gloucestershire County Council Surface Water Management Plan (October 2014)
- Gloucestershire SuDS Design & Maintenance Guide, Gloucestershire County Council (November 2015)
- Briefing Note - Reducing flood risk from the River Severn in Gloucester and the surrounding area - Initial Assessment, Environment Agency (March 2016)¹⁰
- Gloucestershire County Council Local Flood Risk Management Strategy (2014) and the Annual Progress and Implementation Plan (2017/18)

4.1.10 All these strategies and plans recognise that large parts of the urban area of Gloucester are at risk from fluvial, tidal, canal and surface water flooding and begin to consider measures required in order to mitigate and manage the risks to the current urban fabric and future development in the City.

4.1.11 The Local Flood Risk Management Strategy (2014) identifies six parishes with more than 100 residential and non-residential properties at significant (defined as a greater than 1 in 75 chance) risk of fluvial flooding. The strategy identified the 20 priority parishes and wards as being most vulnerable to flooding from all sources. Those wards identified that lie within Gloucester include:

- Barnwood
- Barton and Tredworth
- Kingsholm and Wotton
- Matson and Robinswood
- Moreland
- Westgate

4.1.12 The Longlevens ward is also identified with a priority for flood alleviation works.

4.1.13 The Annual Progress and Implementation Plan (2017/18) identifies a number of actions proposed to be undertaken across Gloucestershire, including further studies, seeking external funding and working as a statutory consultee for all major development.

4.1.14 The following progress has been made in Gloucester since publication of the initial strategy document. This is summarised in Table 7 below.

Table 6 Progress on flood management works (at 2018)

Ward	Progress	Date completed
<i>Completed Schemes</i>		
Hucclecote	Watercourse Clearance. Removal of vegetation and debris to improve flow at Trevor Road	2017
Kingsholm and Wotton	Park wetland storage, Armscroft Park	2014
Moreland	Flood gates, 162/164 Bristol Road	2014

¹⁰<https://democracy.gloucester.gov.uk/documents/s36423/River%20Severn%20Gloucester%20-%20Initial%20Assessment%20Briefing%20Note.pdf>

Ward	Progress	Date completed
Quedgeley Severn Vale	Watercourse clearance in 3 stretches in Quedgeley.	2017
Quedgeley Severn Vale	Clearance and repair of drain, 145 Bristol Road	2013
Westgate	De-silting channel, Blackditch, Milton Avenue	2013
Westgate	High level outfall into River Severn, Rea Lane	2015
<i>Current / Ongoing Schemes</i>		
Abbeylea	Renaturalise channel for River Twyver	Current
Barnwood	Barnwood park balancing pond improvement	Current
Barnwood	Property level protection for 15/20 properties	Current
Hucclecote	Property level protection	Current
Hucclecote	Appleton Way lagoon and green lane, Brookfield Road and Millbridge/Porchester Road culvert alterations	Current
Kingsholm and Wotton	Building of public open space to rear of properties	Current
Podsmead	Recreational park wetlands	Current
Quedgeley Severn Vale	Highclere Road – property level protection and flood alert system	Current
Tuffley	Retrofit SuDS, St Peter’s School	Current
Tuffley	Earth bund extension and trash screen replacement. Surface water diversion.	Current

4.1.15 This shows good progress in relation to flood protection and management within Gloucester since 2014. In addition to the above projects Gloucestershire County Council commented that they have identified areas at risk of flooding in Hucclecote and Podsmead. The committed site in Hucclecote was identified as being at medium risk of surface water flooding (at risk of a 1 in 100-year rainfall event) and not currently included in any current or future schemes.

4.2 Assessment of infrastructure need

4.2.1 This section outlines future infrastructure requirements and challenges to be addressed at application stage relating to the proposed site allocations and flood alleviation schemes. These future needs and projects have been identified through consultation with the EA and a review of both the latest Gloucester City Council Level 2 SFRA and the Local Flood Risk Management Strategy.

4.2.2 The site of the proposed Blackbridge Sports Hub (SA06) was also identified as at medium risk. The project is being led by Active Gloucestershire and it is understood that any future planning application will include sustainable flood alleviation management.

4.2.3

The following sites have been identified through consultation with the Environment Agency and within the Level 2 SFRA (September 2019) as at risk of fluvial flooding. The degree of flood risk varies, with some sites being only marginally affected along their boundaries, and other sites being more significantly affected. Each of these sites were brought forward for a Level 2 Assessment.

Site Allocation	Issue	Environment Agency Response to IDP Consultation and JBA Consulting Level 2 Strategic Flood Risk Assessment (Draft)
SA2 Barnwood Manor	Located in Flood Zones 1, 2 and 3 – affected by Wotton Brook.	<p>EA: The provision of an appropriate easement either side of main-river is not mentioned in the constraints.</p> <p>JBA: At the planning application stage, a site-specific Flood Risk Assessment will be required.</p> <p>Early consultation with the LLFA and the EA is required.</p> <p>Resilience measures will be required if buildings are situated in the flood risk area through the centre of the site’s boundary. Raising Finished Floor Levels above the design event may remove the need for resilience measures.</p> <p>Onsite attenuation schemes would need to be tested against the Wotton Brook through the centre of the site to ensure flows are not exacerbated downstream within the catchment.</p> <p>New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.</p> <p>Assessment for runoff should include allowance for climate change effects.</p> <p>Safe access and egress will need to be demonstrated.</p> <p>New development must seek opportunities to reduce overall level of flood risk at the site, for example by:</p> <ul style="list-style-type: none"> • Reducing volume and rate of runoff • Relocating development to zones with lower flood risk • Creating space for flooding.
SA07 Lynton Fields – Land East of Waterwells	Circa 1% of site area located in Flood Zones 2 and 3. Affected by Dimore Brook.	<p>JBA: At the planning application stage, a site-specific Flood Risk Assessment will be required</p> <p>The location of the southern site boundary could be reconsidered to ensure the site is not at risk, and detailed modelling may not be required.</p> <p>Detailed modelling may need to be undertaken to determine the flood extents from climate change as only 2D generalised modelling techniques were available for this site.</p> <p>Early consultation with the LLFA and the EA is required.</p> <p>Resilience measures will be required if buildings are situated in the flood risk area through the centre of the site’s boundary. Raising Finished Floor Levels above the design event may remove the need for resilience measures.</p> <p>Onsite attenuation schemes would need to be tested against the Dimore Brook along the southern edge of the site to ensure flows are not exacerbated downstream within the catchment.</p> <p>New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.</p>

		<p>Assessment for runoff should include allowance for climate change effects.</p> <p>Safe access and egress will need to be demonstrated.</p> <p>New development must seek opportunities to reduce overall level of flood risk at the site, for example by:</p> <ul style="list-style-type: none"> • Reducing volume and rate of runoff • Relocating development to zones with lower flood risk • Creating space for flooding.
SA08 Kings Quarter	Located in Flood Zones 1, 2 and 3 – affected by the River Twyver.	<p>EA: The culverted watercourse is not included within the constraints. An opportunity to open-up this section of culvert should be taken.</p> <p>JBA: At the planning application stage, a site-specific Flood Risk Assessment will be required. Other sources of flooding should also be considered.</p> <p>Early consultation with the LLFA and the EA is required.</p> <p>Resilience measures will be required if buildings are situated in the flood risk area through the centre of the site’s boundary. Raising Finished Floor Levels above the design event may remove the need for resilience measures.</p> <p>New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.</p> <p>Assessment for runoff should include allowance for climate change effects.</p> <p>Safe access and egress will need to be demonstrated.</p> <p>New development must seek opportunities to reduce overall level of flood risk at the site, for example by:</p> <ul style="list-style-type: none"> • Reducing volume and rate of runoff • Relocating development to zones with lower flood risk • Creating space for flooding.
SA09 Former Quayside House – Greater Blackfriars	Located in Flood Zones 1, 2 and 3 – affected by the River Severn.	<p>JBA: At the planning application stage, a site-specific Flood Risk Assessment will be required. Other sources of flooding should also be considered.</p> <p>Early consultation with the LLFA and the EA is required.</p> <p>Resilience measures will be required if buildings are situated in the flood risk area through the centre of the site’s boundary. Raising Finished Floor Levels above the design event may remove the need for resilience measures.</p> <p>New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.</p> <p>Assessment for runoff should include allowance for climate change effects.</p> <p>Safe access and egress will need to be demonstrated.</p> <p>New development must seek opportunities to reduce overall level of flood risk at the site, for example by:</p> <ul style="list-style-type: none"> • Reducing volume and rate of runoff • Relocating development to zones with lower flood risk • Creating space for flooding.
SA13 Land at St Oswalds	Located in Flood Zones 2 and 3 – affected by the	<p>EA: The site is within 8 metres of the main river.</p>

	River Severn and the River Twyver.	<p>JBA: At the planning application stage, a site-specific Flood Risk Assessment will be required. Other sources of flooding should also be considered.</p> <p>Early consultation with the LLFA and the EA is required.</p> <p>Resilience measures will be required if buildings are situated in the flood risk area through the centre of the site's boundary. Raising Finished Floor Levels above the design event may remove the need for resilience measures.</p> <p>New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.</p> <p>Assessment for runoff should include allowance for climate change effects.</p> <p>Safe access and egress will need to be demonstrated.</p> <p>New development must seek opportunities to reduce overall level of flood risk at the site, for example by:</p> <ul style="list-style-type: none"> • Reducing volume and rate of runoff • Relocating development to zones with lower flood risk • Creating space for flooding.
SA18 Land off Eastgate Street	Located in Flood Zones 1, 2 and 3 – affected by the River Twyver.	<p>JBA: At the planning application stage, a site-specific Flood Risk Assessment will be required. Other sources of flooding should also be considered.</p> <p>Early consultation with the LLFA and the EA is required.</p> <p>Resilience measures will be required if buildings are situated in the flood risk area through the centre of the site's boundary. Raising Finished Floor Levels above the design event may remove the need for resilience measures.</p> <p>New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.</p> <p>Assessment for runoff should include allowance for climate change effects.</p> <p>Safe access and egress will need to be demonstrated.</p> <p>New development must seek opportunities to reduce overall level of flood risk at the site, for example by:</p> <ul style="list-style-type: none"> • Reducing volume and rate of runoff • Relocating development to zones with lower flood risk <p>Creating space for flooding.</p>
SA24 Part of West Quay, the Docks	Located in Flood Zones 2 and 3 - affected by the River Severn.	<p>JBA: At the planning application stage, a site-specific Flood Risk Assessment will be required. Other sources of flooding should also be considered.</p> <p>Early consultation with the LLFA and the EA is required.</p> <p>Resilience measures will be required if buildings are situated in the flood risk area through the centre of the site's boundary. Raising Finished Floor Levels above the design event may remove the need for resilience measures.</p> <p>New or re-development should adopt exemplar source control SuDS techniques to reduce the risk of frequent low impact flooding due to post-development runoff.</p> <p>Assessment for runoff should include allowance for climate change effects.</p> <p>Safe access and egress will need to be demonstrated.</p>

		<p>New development must seek opportunities to reduce overall level of flood risk at the site, for example by:</p> <ul style="list-style-type: none"> • Reducing volume and rate of runoff • Relocating development to zones with lower flood risk <p>Creating space for flooding.</p>
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4.2.4 Any future applications on these sites should be supported by a site-specific flood risk assessment. This should identify the risk of flooding per site and whether there is a site-specific need for flood management infrastructure.

4.2.5 Infrastructure need as assessed within the IDP emerges from two main sources. Firstly, the Local Flood Risk Management Strategy, Annual Progress and Implementation Plan (2017/18) identifies a prioritised flood alleviation list and secondly, consultation has identified a number of site-specific requirements for the proposed allocations within Gloucester.

4.2.6 Prioritised schemes within Gloucester are summarised in Table 7 with estimated cost.

Table 7 2017/18 Prioritised flood alleviation schemes – Gloucester

Rank*	Parish/Ward	Location / works	Estimated cost
1	Podsmead Ward	Construction of a cut-off channel at poplar close (Recreation Ground)	£13,455
1	Podsmead Ward	Improvements to culvert inlet headwall at Poplar Close (Recreation Ground)	£19,562
3	Podsmead Ward	Improvements to surface runoff at the athletics track	£100,386
3	Podsmead Ward	Improvements to drainage infrastructure at the recreation ground	£97,200
21	Hucclecote CP	Replace Millbridge Rd culvert and enlarge downstream channel	£247,050
25	Hucclecote CP	Alter highway at Green Lane culvert to allow flood water to re-enter the watercourse	£12,398
29	Hucclecote CP	Remove culverted section of Wooton Brook at Cousley Close	£29,325
29	Hucclecote CP	Replace the Green Lane culvert with a larger culvert	£36,936
33	Podsmead Ward	Install new trash screen to the open channel	£6,831
37	Podsmead Ward	Improvements to surface water drainage system and storage pond	£12,903
37	Podsmead Ward	Improvements to overland flow path at Milton Avenue	£15,028
53	Tuffley Ward	Retro-fit SuDS at Langate House	£15,000
53	Tuffley Ward	Drainage improvements at Robinswood Hill	£15,000

Rank*	Parish/Ward	Location / works	Estimated cost
62	Tuffley Ward	Reinstate ditch to rear of properties	£20,000
89	Barton & Tredworth Ward	Property level protection at 63 Jersey Road	£5,000
98	Hucclecote CP	Increase upstream flood storage near Hathorn Road	£562,500
99	Hucclecote CP	Property level protection at 57/59 Churchdown Lane	£10,000
100	Kingsholm & Wotton Ward	Installation of earth bund, flood barriers and pump (Castlevilla)	£15,000
103	Podsmead Ward	Property level protection on Shelly Av, Tennyson Av and Shakespeare Av	£736,230
135	Podsmead Ward	Walled compound and improved base slab for sub station	£11,529
149	Hucclecote CP	Walled compound and improved base slab for sub station	£18,630

*Rank information is for the whole of Gloucestershire and hence numbers are not consecutive.

4.2.7

In addition to the above schemes the Environment Agency has identified potential projects providing flood risk management infrastructure.

- **Gloucester strategic approach:** Inclusion of environmental infrastructure (water quality, water resources, flood risk management, waste management) in a strategic approach to place-making. Actual measures to be progressed are to be agreed with partners (including Gloucester City Council and Gloucestershire County Council).
- **Alney Island Improvements** - Scheme to improve the existing standard of protection of the Alney Island defences, subject to an approved business case and all required funding, permissions and approvals being secured. (2021-2031).
- **Cypress Gardens CM Scheme** - Refurbishment of existing assets from upstream of Clomoney Way to downstream Of Cypress Gardens. (2021-2031).
- **Gloucester Screens Rationalisation** - Rationalisation of screens to ensure assets are effective and economic to maintain into the future by preventing culvert blockages at high risk locations within the river system. Subject to an approved business case and all required funding, permissions and approvals being secured. (2021-2031).
- **Sud Brook/Twyver Project** – Package of inter-linked projects being carried out in partnership with several organisations. The aim is to deliver multi-benefits by tackling both flood risk and Water Framework Directive issues by reducing sediment, attenuating the flow and providing other measures to reduce flood risk and improve water quality. The interlinked projects include natural flood management measures; re-naturalising the watercourses (the first of these being upstream of Heron Way), assessing and dealing with any impact of run-off from the M5; and modelling and appraisal to assess options to further reduce flood risk in the catchment.

- **‘Love Your River Gloucester’** – Further ‘Urban Greening’ / river restoration of other rivers/water bodies within Gloucester. Currently at feasibility stage and funding options are being assessed. (2021-2031).
 - **SUDs retrofitting in Gloucester City Centre** – Environment Agency and GCC Highways-led ESIF to retrofit SUDs through the city centre. At feasibility stage. (2021-2031).
- Dimore Brook SUDs retrofitting** – Stroud District Council-led project to retrofit SUDs infrastructure at Dimore Brook. At feasibility stage with an application for funding/grant from the Enover fund (this was previously the Cory Landfill fund) to be made. (2021-2031).

4.2.8 The following existing assets were identified as requiring ongoing maintenance over the course of the plan period:

- Rea earth flood embankment and Rea cut-off bank;
- Hempsted (Sud Meadow) earth flood embankment and flood wall;
- Daniels Brook Flood Relief Channel;
- Alney Island Flood Alleviation Scheme; and
- Saintbridge I and II Reservoirs (for reservoir safety).

4.2.9 In addition to the projects identified above, the Environment Agency is currently working with partners in the Gloucestershire Local Nature Partnership (LNP) to develop an Integrated Environment Mapping Tool which will draw together evidence on environmental constraints and opportunities.

4.2.10 This would form a comprehensive evidence base which can be used as part of future decision making for sustainable economic growth and infrastructure. Initially the tool will focus on the Gloucester area and it is programmed for delivery Autumn 2019.

4.3 Funding

4.3.1 There are a range of funding routes that could be pursued to deliver flood risk management infrastructure:

4.3.2 **Developer flood risk management and financial contributions (S106/CIL)** - Typically, where new development takes place, the onus falls upon the developer to demonstrate that flood risk to the site is appropriately managed and that flood risk is not increased elsewhere (NPPF paragraph 163). This can involve the delivery of on-site flood risk management measures and/or contributions to off-site flood risk management infrastructure through S106 Planning Obligations or a Community Infrastructure Levy.

4.3.3 **Flood and Coastal Erosion Risk Management Grant-in-Aid** - Defra provides most of the funding for risk management activities in the form of Grant-in-Aid administered by the Environment Agency (EA) for 2016/17 this figure was approximately £701.3m). The EA spends this funding directly on Flood and Coastal Erosion Risk Management but also passes funds as grants to Local Authorities or Internal Drainage Boards.

- 4.3.4 **Lead Local Flood Authority Grant** – this grant supplements the Local Government Financial Settlement which provides the majority of funding to Lead Local Flood Authorities to carry out their duties under the Flood and Water Management Act 2010. The grant is a commitment to protect the level of funding in real terms and the funding totals £1,974 (2016-17), £45,667 (2017-18), £49,115 (2018-19) and £52,189 (2019-20) for Gloucestershire.
- 4.3.5 **Local Action through an Environment Agency Local Levy** - Section 17 of the Flood and Water Management Act 2010 enables the Environment Agency to issue a levy in respect of flood and coastal erosion risk management functions carried out by the Environment Agency. Income is raised by way of a levy agreed with local authorities and is used to support locally important flood risk management projects.
- 4.3.6 **Private Beneficiary Investment** - This comprises voluntary contributions from private beneficiaries and could include local businesses, landlords, etc. This method is becoming increasingly common, although can be time consuming to agree and underpin with legal agreements.

5 Education

This section of the IDP considers the likely demand from planned growth in relation to the various stages of education provision in the City.

5.1 Infrastructure Baseline

Early Years Education

- 5.1.1 Early Years education places are provided through partnership working between the responsible Local Authority (LA) and providers in the maintained, private, voluntary and independent sectors. Gloucestershire County Council's Children's Centres operate some local services through on-site pre-school nurseries, although childcare provision across the county is predominantly delivered through day nurseries and pre-school playgroups that offer full and sessional day care. Other local options include child-minders, nursery classes within independent schools and privately-operated nursery schools.
- 5.1.2 The latest Childcare Sufficiency Assessment (CSA)¹¹ was prepared by Gloucestershire County Council Childcare Team and published in March 2018. The assessment sets out details of the level of provision at that time within the County for Early Years provision and, more specifically, details of the supply and demand of facilities. Children's centres in Gloucester and commentary from the 2018 sufficiency assessment is summarised below.
- 5.1.3 The CSA states that as of 1st September 2017, there are 219 children's care providers in Gloucester with 4,197 places. This includes pre-schools, playgroups, day nurseries, childminders and breakfast, after-school and holiday clubs.
- 5.1.4 Across Gloucester city, 87% of providers are rated good or outstanding by Ofsted, however this varies across the city, with lower quality of provision in areas such as Bartongate, The Beacon, The Compass, The Link and The Oaks (averaging around 75%).
- 5.1.5 The total number of places available at children centres, nurseries, schools and pre-schools across the city for 0-5-year olds is 3,555. A gap analysis of individual nursery and centre reach areas in the city in the CSA identifies that take up of places is variable across age bands. For example, take up for 2-year old places is particularly high in Kingsholm-Elmbridge at 178%. Take up across the board of 2, 3 and 4-year-old places is highest in Bartongate, Kingsholm-Kingsholm, Quedgeley, The Beacon, The Link and The Oak.
- 5.1.6 The IDP Infrastructure Baseline (Appendix A) provides a summary of children's centres reach areas as per the 2018 Childcare Sufficiency Assessment. This highlights take-up of eligible places exceeds capacity at two centres, Bartongate and Quedgeley, with a further four centres given a red RAG rating as being close to or at capacity.

¹¹ <https://www.gloucestershire.gov.uk/media/2566/csa-report-march-2018.docx>

Primary and Secondary Education

- 5.1.7 Under the Education Act 1996 Gloucestershire County Council, as Local Authority responsible for education, has a statutory requirement to ensure that there are sufficient school places for children and young people who live in the county.
- 5.1.8 The DfE provides funding direct to academies and free schools under the Education Act 2011, independent of the County Council. Where a need for a new school is identified, the Council is required to invite proposals to establish a free school, with the decision over whether to go ahead ultimately taken by the Secretary of State for Education.
- 5.1.9 Local Authorities are required under the Education Act 1996 to secure educational provision made for pupils age 16 to 18 and over 19 years, and those with special educational needs.
- 5.1.10 Across Gloucester County Council administrative area, there are 204 council-maintained schools and 93 academies/free schools.¹²
- 5.1.11 The Gloucester Education Planning Area includes sites identified for strategic development in the JCS such as Churchdown, Innsworth, Twigworth and Brockworth. As such, while these are outside of the Gloucester City administrative area, there is a close interrelationship between development on or near the boundaries of Gloucester city and education provision in the city.

Primary Schools

- 5.1.12 There are 54 open primary schools in Gloucester¹³. The School Places Strategy published by Gloucester County Council in 2018¹⁴ provides a summary of provision of primary and secondary school places across the county and within each school planning area (or district), as well as identifying a strategy for growth of school places up to 2023. A full list of primary schools within Gloucester is available within Appendix A.
- 5.1.13 The School Places Strategy sets out current and predicted demand for different sub-areas within the Gloucester school planning district. In general, birth rates in all areas are either static or slowing marginally, however in areas of housing development there is evidence of some increases in birth rates.
- 5.1.14 In Churchdown and Innsworth, there is pressure on primary places due to demand from housing development and relocation of military personnel to Innsworth in 2010. This is being closely monitored, however two schools will permanently increase their capacity by 60 in 2019.
- 5.1.15 In the Longlevens area, a new school has been provided by the developer of the new housing development at Longford and will offer some capacity to the wider area. Local schools are popular with those from neighbouring areas too adding

¹² Schools Places Strategy 2018 Available:
<https://www.gloucestershire.gov.uk/media/2083735/gloucestershire-school-places-strategy-2018-2023-draft-final.pdf>

¹³ Meeting Demand for Primary and Secondary School Places in the Gloucester District (Gloucestershire Council, 2018). Available:
www.gloucestershire.gov.uk/media/2083833/gloucester-city-places-review-2018-final.pdf

¹⁴ Gloucestershire County Council (2018) Available:
<https://www.gloucestershire.gov.uk/media/2083735/gloucestershire-school-places-strategy-2018-2023-draft-final.pdf>

further pressure and therefore any extra demand may need to be absorbed by schools in those neighbouring areas.

- 5.1.16 A new 2FE free school has been opened at Quedgeley.
- 5.1.17 Temporary expansions in Barton/Tredworth at Finlay School are becoming permanent in 2019 to make it a 2FE school. This will allow flexibility to take pupils from neighbouring areas such as Hucclecote and Abbey/Matson/Upton where there is less or no availability.
- 5.1.18 Two schools in the Tuffley area increased capacity permanently by 15 places in 2018.

Secondary Schools

- 5.1.19 According to the EDUBASE database Gloucester currently has 12 state-funded secondary schools. Three of these schools operate a selection policy (i.e. grammar school) based upon ability determined via exam at year 6 (11yrs).
- 5.1.20 A full list of secondary schools within Gloucester is available within Appendix A. Alongside provision in Gloucester, some children and young people that reside within the Gloucester area do choose to commute to schools within surrounding districts.
- 5.1.21 Consultation with Gloucestershire County Council has identified that forecasts for secondary school places in the Gloucester Education Planning Area show a 5% surplus at the current time, however this would reduce in future years and any additional places required would therefore need to be funded through S106 or CIL where possible, supported by Department for Education funding. The County Council would seek the expansion of several secondary school facilities to address demographic (birth rate) increase, migration and yield from proposed new developments.

Further Education

- 5.1.22 The Education and Skills Funding Agency (ESFA), an executive agency of the Department for Education, is responsible for the funding of 16-19 provision in academies, general further education colleges, sixth-form colleges and independent provision. Funding allocations administered by the ESFA are designed to support the Government's aims for raising the age of participation in education or training.
- 5.1.23 Local authorities have board duties to encourage and assist young people in education and training. The government's approach is to give local authorities freedom and flexibility to decide how to fulfil their statutory duties to secure sufficient suitable education and training provision for all young people in their area who are over compulsory school age but under 19 or aged 19 to 25¹⁵
- 5.1.24 Within Gloucester, the following secondary schools provide post-16, sixth form education:
 - Beaufort Community School
 - Chosen Hill School

¹⁵https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/561546/Participation-of-young-people-in-education-employment-or-training.pdf

- Churchdown School
- The Crypt School
- Gloucester Academy
- High School for Girls
- Millbrook Academy
- Ribston Hall High School
- St Peter's Catholic High School and Sixth Form Centre
- Sir Thomas Rich's School

5.1.25 Gloucester is also served by several Further Education (FE) colleges that offer a range of academic and vocational courses. These establishments tend to serve a wider catchment area. The Gloucestershire College has a campus located in Cheltenham and Gloucester as well as sites nearby within Forest of Dean District. Further education colleges outside Gloucester which may attract resident students include; South Gloucestershire & Stroud (SGS) College which has a campus in Stroud (and a campus in Filton, near Bristol) and Cirencester College, which lies on the outskirts of Cirencester.

5.2 Assessment of Infrastructure Need

Early Years Education

5.2.1 Through consultation with Gloucestershire County Council, it has been identified that the School Places Strategy published in August 2018 provides for two pupil yields; one for larger strategic developments of over 350 dwellings, and one for smaller housing developments. As none of the proposed allocations within Gloucester are this large, only the smaller housing development benchmark applies.

Based on a demand of 23 pupils per 100 dwellings, the IDP estimates a need for 501 new early years places¹⁶.

At an estimated cost of £14,541 per place this equates to an approximate cost of £6.8m.

Funding

5.2.2 Gloucestershire County Council have commented that the proposed allocation sites do not in themselves pose a significant concern however, the cumulative impact would need to be addressed through S106 or CIL. There is a presumption in the Department for Education (DfE) that additional housing secures S106 or CIL contributions to address required expansion where possible until such a time as the additional children become funded by basic needs funding.

5.2.3 Funding for early years education is channelled through Gloucestershire County Council via the Early Years Single Funding Formula (EYSFF) to a mix of local authority, private, voluntary, independent nurseries and accredited childminders.

¹⁶ Based on 1,094 allocated dwellings and 832 windfalls.

Primary and Secondary Education

5.2.4 The following assessment of need is based upon locally derived Gloucestershire County Council standards for primary and secondary places and associated costs.

5.2.5 When exploring in more detail the generated demand on a site by site basis, consideration will need to be given to local factors such as cross-border catchments and accessibility to surrounding educational facilities.

5.2.6 As set out for Early Years Education, the School Places Strategy provides for two pupil yields; one for larger strategic developments of over 350 dwellings, and one for smaller housing developments. As none of the proposed allocations within Gloucester exceed 350 units, only the smaller housing development benchmark applies.

Primary Schools

Smaller housing development:

Based on a demand of 37 primary places per 100 dwellings, the IDP estimates a need for 713 new primary school places.¹⁷

At an estimated cost of £14,541 per place this equates to an approximate cost of £9.69m

5.2.7 Consultation with Gloucestershire County Council has identified that a School Places Strategy 2018-2023¹⁸ has been published, which provided an analysis of current primary and secondary school provision in the county. It states that a strategic review of demand for primary and secondary school places in Gloucester has shown that it remains a hotspot for demand. It states that the preferred size for new primary schools is within the range of 2FE to 4FE (240 to 840 places) and to be ‘all through’ primary schools rather than separate junior/infant schools. Funding will be required to support new school places arising for new housing development in Gloucester.

5.2.8 The following specific primary school projects were identified through consultation and the strategy for the Gloucester school planning area:

- Gloucestershire County Council is in discussions with developer’s agents in Twigworth and Innsworth, which are large strategic developments requiring a new school and expansion of existing schools of up to 3.5FE to meet demand for places.
- A new 2FE primary to be provided within 3.5 years of commencement of housing has been secured at Innsworth in the s106.
- Developer contributions have been secured through s106 for the Winnycroft Site Allocation totalling £1.2m for Robinswood School. Gloucestershire County Council will seek further contributions from a second smaller site.

¹⁷ Based on 1,094 allocated dwellings and 832 windfalls.

¹⁸ <https://www.gloucestershire.gov.uk/media/2083735/gloucestershire-school-places-strategy-2018-2023-draft-final.pdf>

- Norton Primary School will be expanded once land is secured from a s106 from a development local to the school.
- Gloucestershire County Council owns a site at The Wheatridge to be retained for potential future need as a primary school.
- A contribution has been secured through s106 for housing development of 200 houses at Tuffley for expansion of Tuffley Primary School.
- Approximately 60 more places at Calton Primary School in Linden have been secured through planning obligations from four housing developments.
- A s106 agreement secured for a North Brockworth 2FE primary school
- Having opened a new two-form-entry free school in Quedgeley, a second school at Hunts Grove, currently on a temporary host site, will move to new premises and expand to two-form-entry in line with the new housing development.

5.2.9 In general, provision of primary school places will need to be locally focussed to ensure that its key users – children, parents and employees, can achieve reasonable accessible choice to education without the need to heavily rely upon motorised travel.

Secondary Schools

5.2.10 As set out previously, the School Places Strategy published in August 2018 provides for two pupil yields; one for larger strategic developments of over 350 dwellings, and one for smaller housing developments. As none of the proposed allocations within Gloucester exceed 350 dwellings, the strategic development yield does not apply.

Smaller housing development:

*Based on a demand of 19 secondary school places per 100 dwellings, the IDP estimates a need for **366 new secondary (including sixth form) places.***

*At an estimated cost of £18,779 per place this equates to an **approximate cost of £6.87m***

5.2.11 The Gloucester City IDP Calculator August 2019 (Appendix B) provides a breakdown of the demand by site. This identifies that greatest demand is likely to be generated as a result of housing development in Westgate Ward. The closest secondary school is the Kings School (independent), with the High school for Girls Gloucester located north of the ward in Kingsholm and Wotton, however as noted above the local schools have a limited availability of places to service existing demand.

5.2.12 Gloucestershire County Council tend to prefer new standalone provision to accommodate up to a 2-form entry / 420 places or have the potential to expand to this size to allow for efficiencies and economies of scale. Given the size of planned growth within Gloucester Gloucestershire County Council have confirmed there would not be a requirement for standalone provision.

- 5.2.13 Whilst there is not a requirement for additional standalone provision, demand for places in the Gloucester Education Planning Area is expected to rise gradually up to 2023. By 2020, the County Council anticipates an overall shortfall of Year 7 places. If all the proposed housing development is delivered to the expected timescales, then over the next three to four years, an extra 6 forms of entry will be needed on a permanent basis across the planning area. It is expected that these additional places would be secured on a case-by-case basis through planning obligations such as s.106 and CIL or through Department for Education funding.
- 5.2.14 Consultation with Gloucestershire County Council identified that a secondary school at Hunts Grove will move to new premises and expand to 2FE in line with the adjacent housing development and will meet demand pressures to the south of Gloucester.
- 5.2.15 For North Brockworth Strategic Allocation financial contributions will be made for mainstream secondary school places and for 6th form places and improvements to Brockworth Millbrook Academy (£2,376,000 and £367,200 respectively).
- 5.2.16 The Innsworth Strategic Allocation from the JCS would result in demand for secondary school places, however GCC advise that there is insufficient capacity within the two secondary schools in the three-mile catchment. Churchdown School and Chosen Hill School are both forecast to be beyond capacity by 2021/22.
- 5.2.17 No on-site provision is planned as part of the South Churchdown Strategic Allocation, as with primary education the developer is proposing off site contributions again the LEA considered the provision of educational facilities will be required but taken as part of the cluster of allocations.
- 5.2.18 The Implementation Plan within the Schools Places Strategy sets out that over the next three to five years there will be a land search for a new secondary school in the north of Gloucester to respond to growth from the Churchdown and Innsworth Strategic Allocations and those smaller allocations in northern and eastern wards such as Elmbridge, Longlevens and Hucclecote set out in the City Plan.
- 5.2.19 For the consented parcel of Winnycroft, the agreed schedule of S106 contributions for the planning application lists the developer as proposing to contribute £1,123,416 to secondary education, specifically to Gloucester Academy. Further contributions may be secured for the remaining land within the allocation, which is subject to a live planning application.
- 5.2.20 Within the southern and western wards, the Beaufort School is identified as having potential for a 1FE expansion to respond to growth set out in the City Plan. There is no capacity to expand Severn Vale further.
- 5.2.21 Given the scale of development proposed, whereby all sites are below the ‘larger strategic scale’ outlined in the School Places Strategy, the overall strategy within Gloucester is to monitor local housing growth and use CIL contributions to expand and/or improve existing schools and provide additional education infrastructure.
- 5.2.22 Secondary education generally offers greater flexibility in terms of provision and accessibility with the choice of school dictated less by local accessibility. Children access secondary schools by a variety of different transport modes including

private car, bus, train, cycling and walking. Nevertheless, there remains a keenness to reduce the need to travel by private car.

Further Education

- 5.2.23 The requirement for Further Education Places is set out below on the basis of the pupil yields and costs set out in the School Places Strategy published in August 2018.

*Based on a demand of 5.5 places per 100 dwellings, the IDP estimates a need for **106 further education places.***

*At an estimated cost of £18,779 per place this equates to an **approximate cost of £1.99m.***

- 5.2.24 The Gloucester IDP Site Calculator in Appendix A provides a breakdown of the demand by site.
- 5.2.25 The Schools Places Strategy sets out that Gloucestershire County Council is committed to working in partnership with all providers of Further Education to review and develop education provision in the county. Collaborative projects between schools, academies, college and work-based learning providers will continue to underpin this approach in Gloucestershire.

5.3 Funding

- 5.3.1 In 2018, the national funding formula for schools, high needs and central school services was created. This formula is used to calculate school revenue funding through the Dedicated Schools Grant. The Schools Revenue Funding 2019-20 Operational Guide¹⁹ outlines that the schools funding formula has been updated to take account of a 1% pupil increase in each school in 2019 to 2020 and that the minimum pupil funding levels have increased to £3,500 for primary schools and £4,800 for secondary schools. The funding formula is adjusted at a local authority level based on a variety of factors including deprivation and prior attainment.
- 5.3.2 Full details of the mainstream schools' budget for Gloucestershire are available within the Primary and Secondary School Budget Note 2019/20²⁰. The Dedicated Schools Grant for 2019-2020 for Gloucestershire is £451.1m.
- 5.3.3 From 2017-2018 local authorities will receive a separate grant covering their statutory intervention functions and services such as monitoring and commissioning of school improvement support. This will allow local authorities to play a transitional role, as the school-led system of school improvement continues to mature and capacity in the system increases.

¹⁹ Operational Guide to Schools Revenue Funding (Dept. for Education) Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/767607/Operational_guide_2019_to_2020.pdf

²⁰ Primary and Secondary School Budget Notes 2019/20 (Gloucestershire County Council) Available: <https://www.gloucestershire.gov.uk/media/2086760/mainstream-school-budget-notes-2019-20-updated-may-2019.pdf>

- 5.3.4 This grant will be £50 million per full year, allocated to local authorities on the basis of the number of maintained schools, an area cost adjustment and top-up to ensure each local authority receives a minimum allocation of £50,000.
- 5.3.5 In response to consultation, Gloucestershire County Council set out that new housing development planned for the Tewkesbury planning area that sits close to the Gloucester city boundary at Churchdown, Innsworth, Twigworth and Brockworth will all be required to provide new schools as part of the S106 agreements. It is expected that these will address demand from new housing development on both Strategic Allocations from the JCS, but further funding will be required to deliver new school places to address increased demand from City Plan allocations.
- 5.3.6 The Government has put in place a series of funding mechanisms to support Further Education capital and infrastructure spending, which are administered by the Education and Skills Funding Agency (EFA). These include the National Funding Formula and the 16 to 19 Participation Budget.
- 5.3.7 These funding sources provides for each student as they enrol onto study courses and provides focussed funding for targeted groups (e.g. vulnerable people) and key facilities (e.g. library provision).
- 5.3.8 The above funding mechanisms will provide a key role in delivering new school places associated with increased demands, supplemented by CIL monies and s.106 agreements where necessary.

6 Communities & Culture

6.1 Libraries

Infrastructure Baseline

- 6.1.1 Gloucestershire County Council is responsible for the delivery of library services across Gloucester. Under the Public Libraries and Museums Act 1964 there is a statutory requirement to provide a comprehensive and efficient library service for all.
- 6.1.2 Under increasing budgetary pressures and a move towards digital services, Gloucestershire County Council has reformed the way in which library services are provided. The County Council have retained a network of library buildings and in some cases, these have been transferred to community management, although there are no such models in Gloucester at present.
- 6.1.3 There is currently a total of six County Council libraries in Gloucester, as detailed in IDP Infrastructure Baseline (Appendix A). This includes the Music and Performing Arts Centre which is open 54 hours per week. The other libraries are open either five or six days throughout the week.
- 6.1.4 There are a further two libraries outside of the administrative boundary, to the north of Gloucester in proximity to the JCS Strategic Allocations, Brockworth community library and Churchdown library.
- 6.1.5 A ‘virtual Library’ website is also in operation across Gloucestershire and is available to anyone with internet access. The County Council also operates a ‘Housebound Library Service’, which enables people to pre-arrange a visit by a librarian.

Assessment of Infrastructure Need

- 6.1.6 The assessment of need utilises Arts Council guidance²¹ which provides standards for the level of library provision.

Based on a provision of 30m² of library space per 1000 people, the IDP estimates a need for 130m² of additional library space.

*Cost of provision is estimated at £3,500/m² at 2009/10 prices. Rebasing this for 2016 results in a cost of £3,800/m² or a total cost of approximately **£494,019** for the Gloucester area.*

- 6.1.7 A detailed assessment of library space to support new development based on the above standard is set out in the IDP Site Calculator (Appendix B).

²¹ Arts Council, The Community Infrastructure Levy: advice note for culture, arts and planning professionals (April 2012)

Strategy / Funding

- 6.1.8 It is considered that libraries will increasingly act as the local access point for a range of public and digital services and therefore the additional demand for these services generated by new development justifies developer contributions towards the maintenance and enhancement of these facilities, where viable.
- 6.1.9 In the context of the strategy for library services, it is anticipated that the additional demand 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.
- 6.1.10 It is broadly considered that developer contributions should be sought to support and strengthen the existing provision, focussing in the main areas of growth in the north of the city and around Strategic Allocations such as that at Churchdown.
- 6.1.11 Whilst CIL receipts collected by Gloucester City Council are proposed to be collected to be spent on strategic infrastructure projects to support the growth set out in the JCS, there is a proposal for the local level of CIL (15% top-slice) to be pooled by a local governance body set up by City Council. This top-sliced element of CIL could contribute towards the delivery of community projects such as new libraries, community centres/facilities and sports and recreation facilities.

6.2 Community Centres

Infrastructure Baseline

- 6.2.1 The provision and maintenance of community and cultural facilities, such as community and village halls, will rely upon a mix of public (including use of Parish precept); voluntary and community sector investment. Gloucester City Council will have leading role in coordinating these groups and securing contributions through the planning system.
- 6.2.2 There is an established network of community centres within Gloucester and a review of information from Gloucestershire Rural Community Council village hall database, the Gloucester City Council Community Audit (2013) has identified 19 centres within proximity of the proposed allocations.
- 6.2.3 A full list of these can be found via the Gloucestershire Rural Community Council²² and is included within the IDP Infrastructure Baseline (Appendix A).
- 6.2.4 It should be noted that this does not include all potential rooms that may be used for community and social purposes. For instance, scout huts, church halls, sports pavilions provide further examples of facilities that provide space for community groups.

Assessment of Infrastructure Need

- 6.2.5 An assessment of need has been carried out using a neighbourhood accessibility standard from the publication ‘Shaping Neighbourhoods – A Guide for Health, Sustainability and Vitality’ (Spon 2003, Figure 4.9).

²² available: <http://www.grcc.org.uk/village-hall-finder/village-hall-finder>

*Based on a provision of a community centre per 4,000 population, the IDP estimates a need for **an additional 699m² of community centre space** with a projected population increase of 4,334.*

*Cost of provision is estimates at £1,500/m² with Sport England advising that 645m² would allow for a range of uses. This results in an approximate cost of **£1.05m** for the Gloucester area.*

- 6.2.6 In response to consultation in May 2019, Gloucester City Council Communities and Neighbourhoods identified that the Council would work with local community groups on a case-by-case basis when considering new developments to identify needs.
- 6.2.7 It was noted that traditional community centres were becoming less common and there is a greater need for flexible spaces and groups often utilise assets such as sports clubs, coffee shops and meeting rooms and spaces in businesses and Council buildings.

Strategy / Funding

- 6.2.8 To maintain and improve community centres, communities often rely on funding from local and national charitable trusts, the Lottery and local fundraising efforts, as well as use of the parish precept in some cases.
- 6.2.9 Gloucester City Council should continue to work with partner organisations to identify sources of funding to maintain, enhance and where required, provide new community facilities to support development. Funding sources could include developer contributions through S106/CIL, subject to the prioritisation of planning obligations/CIL infrastructure schedules.
- 6.2.10 Gloucester City Council takes an Asset-Based Community Development approach to working with communities, and as such, the demand for traditional community centres is changing to communities utilising assets such as sports clubs, coffee shops and community rooms in businesses.
- 6.2.11 The local level of CIL (15% top-slice), proposed to be pooled by a local governance body set up by City Council, could contribute towards the delivery of community projects such as new libraries, community centres/facilities and sports and recreation facilities.
- 6.2.12 Despite the overall growth equating to demand for an additional facility, the proposed number of dwellings would not result in a need that would support the provision of a new community centre in a single location which could serve the dispersed increase in need.
- 6.2.13 In each case where development comes forward it will be necessary to consider whether the demand generated by new development is best accommodated through enhancements to existing facilities or provision of new community centres.
- 6.2.14 Proposals for new facilities should be considered in partnership with community groups that may be willing to take on long term management of buildings. Where large new developments are proposed, the appointment of community development or youth support officers should be considered for an interim period,

to help establish community groups that could later take on this role independently.

6.3 Youth Support Services

Infrastructure Baseline

- 6.3.1 Youth Support Teams in Gloucestershire provide a range of services targeted at vulnerable young people aged 11–19 (up to 25 for young people with special needs). Gloucestershire County Council is the commissioning authority for Youth Support Services and has a statutory responsibility to provide support for young people at risk.
- 6.3.2 There are two youth support teams in Gloucester, based at the Gloucester Youth Support Centre, London Road and the Vibe Youth Support Centre, Druid's Lane, Stanway Road.
- 6.3.3 Additional help and support is available through charitable organisations such as Young Gloucestershire, which offers practical ways for young people to develop the skills to move into a job, education or training.

Assessment of Infrastructure Need

- 6.3.4 Gloucestershire County Council recognise that population growth would result in increased demand for youth support services.

Based on an estimate that providing services amounts to £21,000/annum per 1,000 dwellings, the IDP estimates a service cost per annum of £91,000.

Based on a 15-year period, this would lead to a service cost of approximately £1.37m.

- 6.3.5 An aspect of Youth Support Services where new development is of importance relates to the opportunity to provide training, apprenticeships and employment during the construction of new schemes. 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.

Strategy / Funding

- 6.3.6 The Youth Support Team is run by Prospects, a charitable trust, in partnership with the Gloucestershire County Council. This is a public/private partnership which is funded in part by the Council.
- 6.3.7 There are no known plans to change the provision of youth facilities.
- 6.3.8 Should there be a desire to expand or enhance existing youth support services, money could be sourced from the European Social Fund, which currently supports Young Gloucestershire. The Fund aims to promote employment and social inclusion and invest in education and skills. This Fund includes £3bn for members states between 2014 and 2020 for the Youth Employment Initiative.

7 Green Infrastructure, Sport & Recreation

7.1 Infrastructure Baseline

- 7.1.1 This section provides a summary of the available evidence base, and key existing sports, recreation and green infrastructure within Gloucester.
- 7.1.2 Responsibility for development of parks and open spaces in the district lies with Gloucester City Council. Delivery of sports and recreation facilities is a responsibility split between GCC, the Aspire Sports and Cultural Trust and other independent operators or community organisations.
- 7.1.3 Natural England promote the provision of natural and semi-natural open space alongside new development through the Accessible Natural Greenspace Standards (ANGSt). These areas are commonly transferred for management by third sector groups, such as Gloucestershire Wildlife Trust / Wildfowl and Wetlands Trust.

Indoor sport facilities

- 7.1.4 **Swimming Pools** – The Indoor & Built Sports Facility Strategy (August 2019²³) (IBSFS) sets out that there is a total of 12 pools of varying size on nine sites in Gloucester.
- 7.1.5 Two sites, GL1 and Beaufort Sports Centre are open to the public as ‘pay and play’ facilities. GL1, which was built in 2002, Gloucester provides a complex of four swimming pools: an 8-lane 25m competition pool; a 4 lane 25m pool; a shallow pool for learning; and a children’s fun pool.
- 7.1.6 There are a few further swimming pools which are located within schools or private clubs, such as the Riverside Sports and Leisure Club in northwest Gloucester, where access is more limited, or membership is required. Generally, stock is continued average in quality or good. Ribston Hall, Riverside Sport and Leisure and Beaufort Sports Centre are, however, below average.
- 7.1.7 With respect to facilities in Gloucester, it is understood that the shared use pools at Beaufort School and Sir Thomas Rich’s School would require substantial investment to bring them up to standard for continued long term use.
- 7.1.8 **Sports Halls** – The IBSFS sets out that there are 36 sports halls within Gloucester, with a total of 84 badminton courts.
- 7.1.9 The IDP Infrastructure Baseline (Appendix A) sets out the publicly accessible sports centres for the Gloucester sub-areas, together with some of the private facilities. The large sports centres such as GL1 typically serve large, cross-border catchment areas and this will need to be considered in future facility planning. GL1 includes squash courts, a gym, indoor bowling and an indoor assault course.
- 7.1.10 Gloucestershire University has delivered new indoor facilities at its Oxstalls Campus including a 12-court badminton hall and a function hall. A community use agreement has been put in place between the City Council and the University enabling public use.

²³ Knight, Kavanagh & Page (August 2019) Gloucester City Council Indoor & Built Facilities Draft Strategy

7.1.11 Community centres in villages often fulfil the role of providing additional space for fitness and leisure activities, and in some instances provide sufficient space for badminton courts and indoor bowls etc. Schools also contribute to the overall level of sports provision in an area, although the level of community access to these varies. As indicated in Appendix A, schools in the Quedgeley area of south Gloucester play an important role in providing sports facilities for the local community.

7.1.12 The IBSFS highlights that many of the built facilities within Gloucester are close to capacity with many different sports being played across the city including netball, football, futsal, badminton and basketball. Consultation suggests that there is no room for expansion within the facilities which they currently use.

7.1.13 ***Other indoor and built facilities*** – The IBSFS outlines that there are the following facilities within Gloucester:

- 19 health and fitness facilities
- 11 squash courts
- one athletics track
- one climbing centre
- three gymnastics clubs
- one indoor bowls facility
- one ski centre
- one indoor tennis facility

7.1.14 The facilities listed above are from a range of providers with varying levels of accessibility for community use. Full details are included within 4.2 of the IBSFS (also Appendix A of this IDP). These vary in terms of quality, but the following issues have been highlighted:

- The majority of the health and fitness facilities are considered to be average in terms of quality. There are pressures on local authority-owned facilities due to development of private facilities.
- There is a relatively high demand for squash in the area with each facility running its own internal leagues. The current number of squash courts has capacity to accommodate increased demand.
- The ancillary facilities at Blackbridge Athletics Club need refurbishment.
- The Climbing Centre does not have security of tenure and the current landlord has put the building up for sale.
- Demand exceeds supply in a number of gymnastics clubs.
- Consultation did not highlight any additional demand for indoor bowls.

Playing pitches & other outdoor sports

7.1.15 The Playing Pitch Strategy 2015-2025 identifies pitches/sites for outdoor sports, the current status/capacity, management arrangements and recommended actions for the specific sites are outlined. In summary the strategy identifies an aim to protect and enhance the facilities at the majority of the sites and highlights the estimated timescales and costs for recommended actions.

- 7.1.16 An update to the Playing Pitch Strategy was presented to the City Council's Cabinet in February 2019²⁴. This outlines the following updates to the infrastructure baseline within Gloucester.
- 7.1.17 Gloucestershire University has invested in new facilities including two new full-size 3G surfaces ('World Rugby' compliant) with secured community use. These pitches are performing well and are at near capacity. This state-of-the-art campus, known as Oxstalls Sports Park was delivered in 2018, and includes a 14-badminton court facility, pull-out stadium seating, 2 no. full-sized 3G surfaces, with 10 indoor and outdoor tennis courts.
- 7.1.18 New playing field provision has been delivered, including a full-sized sand-based surface at King's School with secured community use, and grass pitches and other facilities through planning permissions off Winnycroft Lane in Matson and Robinswood.
- 7.1.19 Improvements to existing playing fields and ancillary facilities, as well as those that are new, are coordinated through the PPS Delivery Group which has representation from relevant City Council officers, National Governing Bodies (NGBs), Sport England, Gloucestershire Playing Fields Association (GPFA) and Aspire Sports and Cultural Trust.
- 7.1.20 In the spring of 2019, the City Council, working in partnership with the GPFA, launched a Pitch Improvement Grant. This initiative provides bidding opportunities for local sports clubs playing on public open spaces, with the aim of adding value through NGB match funding and/or community resources.

Recreational open space & accessible natural greenspace

- 7.1.21 The Gloucester City 2019-2024 draft Open Space Strategy (Sept 2019) estimates that there is a total of 551 hectares of open space in Gloucester, equating to 4.27 hectares per 1000 population. This exceeds the Fields in Trust Standard of providing 2.4 hectares of open space per 1000 population and indicates that the overall provision of green space in the city is generally good.
- 7.1.22 However, it is noted that distribution of open space is a key issue with deficiencies in the type of provision and their locations. Approximately 200ha of the open space land area is located in just two green spaces, at Robinswood Hill and Alney Island Nature Reserve and whilst these spaces are freely accessible to the public, their natural habitat precludes uses such as formal sport for example. The Wards of Barton and Tredworth, Moreland, Kingsholm and Wotton, Hucclecote, Tuffley and Quedgeley Severn Vale fall below the standard.
- 7.1.23 The IDP Infrastructure Baseline (Appendix A) sets out the quantity of open spaces in Gloucester in terms of parks and gardens, natural and semi-natural green space, amenity green space, formal sport, play space, allotments, cemeteries and civic spaces as calculated through the Open Space Strategy 2019-2024.
- 7.1.24 In summary, there are the following green infrastructure assets within Gloucester:
- 14 parks and gardens
 - 107 amenity green spaces

²⁴ Gloucester City Council (Feb 2019) Available: <https://democracy.gloucester.gov.uk/documents/s47468/Gloucester%20Playing%20Pitch%20Strategy%20Delivery.pdf>

- 47 natural and semi-natural green spaces
- 55 formal play facilities
- 3 cemeteries / burial grounds
- 5 civic spaces

7.2 Assessment of Infrastructure Need

- 7.2.1 The assessment of need in relation to green infrastructure, sport and recreation has been undertaken based on the Fields in Trust (2015)²⁵ calculations and utilising Sport England’s Active Places web resource²⁶.

Indoor Sports Facilities

Planned growth would lead to a demand for an additional 0.13 swimming pools and 0.18 sports halls at a cost of £568,890 and £529,013 respectively.

- 7.2.2 As indicated by the figures above, which result in a small requirement for built sports facilities, the IBSFS outlines the main approach is to enhance existing facilities in Gloucester. Projects to support this approach include the construction of a new clubhouse with improved ancillary provision at Blackbridge Athletics Track, maintaining facilities at GL1 and Oxstalls Sports Park and generally supporting development of recreational sport opportunities across the City.

- 7.2.3 The proposed sports and community hub at Blackbridge (SA06) is being taken forward in a partnership between Active Gloucestershire, Gloucestershire County Council, Gloucester City Homes and the City Council. It is anticipated a planning application for a full-sized 3G artificial surface, grass pitches, a community, health and wellbeing building, along with other facilities aimed at encouraging informal physical activity will be submitted in summer 2019. Blackbridge and the surrounding areas have high levels of deprivation and higher than average detrimental health factors. A multi-use hub centre could benefit people who are typically less active and would align with the Sports England Strategy for an active nation.

Playing Pitches and other Outdoor Sport

Planned growth would lead to a demand for an additional 5.2ha of playing pitches at a cost of £507,020.

In additional growth would lead to demand for an additional 1.73ha of space for outdoor sports and 1.08ha for play space at a cost of £1.67m and £536,271 respectively.

- 7.2.4 The IDP Site Calculator (Appendix B) provides full details of site by site requirements for playing pitches for residential allocations. This quantitative analysis should be used to inform s.106 discussions when sites come forward.

²⁵ <http://www.fieldsintrust.org/guidance>

²⁶ <https://www.activeplacespower.com/> (Accessed June 2019)

7.2.5

A more qualitative approach has been taken in the 2019-2024 Draft Open Space Strategy (Sept 2019). This outlines the following open space implications for the proposed site allocations within the City Plan.

Table 8 – Future demand for open space on site allocation

Location	Indicative housing capacity	Ward	Open space implications
Land at Great Western Rd sidings (to include improvements to Great Western Rd Rest Garden (E) open space)	200 units	Kingsholm and Wotton	<ul style="list-style-type: none"> • A LEAP play area or equivalent facility for children and young people to be provided on site. • Off-site contribution for formal sport (and allotments) to be provided via CIL.
Land at St Oswald’s Retail Park	300 units	Westgate	<ul style="list-style-type: none"> • A LEAP play area or equivalent facilities for children and young people should be provided on site. • Connectivity to Westgate Park, including improved cycle access. • Off-site contribution for formal sport (and allotments) to be provided via CIL.
Land at King’s Quarter	156 units	Westgate	<ul style="list-style-type: none"> • Off-site contribution for formal play and sport to be provided via CIL.
Land at The Wheatridge <i>(allocated as a school site, but with a fall-back use as residential if no school use required)</i>	-	Abbeydale	<ul style="list-style-type: none"> • A LEAP play area or equivalent facility for children and young people to be provided on site. • Off-site contribution for formal sport to be provided via CIL.
Other small allocation sites, less than 50 units per site	Total up to 350 units	Various	<ul style="list-style-type: none"> • Sites over 35 units would normally be expected provide some on-site open space. • Off-site contributions to upgrade existing nearby open spaces, including allotments, formal sport and play, to be made via CIL.

- 7.2.6 Where smaller developments would not have sufficient space to provide on-site open space, off-site financial contributions will be sought to improve existing nearby open spaces through the s.106 or CIL processes.
- 7.2.7 Consultation with Gloucester City Council and Active Gloucestershire has identified that there is still a need for a further two no. 3G surfaces within the City. It is anticipated that one would be provided at Waterwells Sports Centre, whilst a Rugby Football Union world rugby-compliant surface to be sought. Feasibility is underway, and this would be connected to a local rugby club. The Football Association has identified Gloucester as a hot-spot for women's football and rugby.
- 7.2.8 In addition to this, opportunities to replace existing lower quality grass surfaces within the City.

Recreational Open Space and Accessible Natural Greenspace

Planned growth would lead to demand for an additional 2.38ha of informal open space and 7.8ha of natural open space at an estimated cost of £40,518 and £1.87m respectively.

- 7.2.9 A site by site analysis applying the Fields in Trust (FiT) standards is included within the Site Calculator in Appendix B.
- 7.2.10 Natural England commented that it is important that Green infrastructure provision be provided in line with the Joint Core Strategy's policies on infrastructure, in particular INF4 Green infrastructure, and note that the delivery of local and strategic green infrastructure to help alleviate recognised recreational pressures on the Cotswold Beechwoods Special Area of Conservation (SAC) should be a particular consideration.
- 7.2.11 Table 8 within this section sets out a qualitative analysis of site allocations requirements in terms of open space.

7.3 Funding

- 7.3.1 To date any onsite improvements to City Council playing fields and/or ancillary facilities have been paid for through S106 funding and/or funds made available from National Governing Bodies (NGBs). The delivery of new sports facilities and enhancement and expansion of existing facilities often relies on funding from the local authority, NGBs, Sport England, local and national charitable trusts, the Lottery and local fundraising efforts.
- 7.3.2 Whenever possible, on-site green infrastructure should be provided by developer to meet the demands of the new population and built into the scheme to maximise environmental and social benefits. In terms of built facilities, there will likely be a reliance by new residents on existing facilities within Gloucester and as such, contributions may be necessary to make improvements to nearby sports pitches or built facilities.
- 7.3.3 Gloucester City Council should continue to work with Aspire, and the PPS Delivery Group to identify sources of funding to maintain, enhance and deliver sport and recreation infrastructure.

7.3.4 Whilst CIL receipts collected by Gloucester City Council are proposed to be collected to be spent on strategic infrastructure projects to support the growth set out in the Joint Core Strategy, there is a proposal for the local level of CIL (15% top-slice) to be pooled by a local governance body set up by City Council. This top-sliced element of CIL could contribute towards the delivery of community projects such as new sports and recreation facilities.

8 Wider Infrastructure Needs

8.1 Water & Wastewater

Infrastructure Baseline

- 8.1.1 Severn Trent Water (STW) is responsible for the supply and management of water and the treatment of wastewater in the Gloucester area.
- 8.1.2 The Environment Agency has a role as regulator with respect to managing water resources under the Water Framework Directive. This includes the granting of Environmental Permits held by the water utility companies (these permits were previously known as Abstraction Licences and Discharge Consents but are now Environmental Permits under the Environmental Permitting Regulations 2010).
- 8.1.3 The EA has commented that they are keen to ensure that adequate sewerage (pipes/drainage network) and treatment capacity infrastructure is in place, or will be in place in a timely manner, to support the delivery of sustainable development.
- 8.1.4 In addition to this, the EA has highlighted that climate change poses a threat to the long-term resilience of economic activities which rely on continued water supply. Making the right investment and planning decisions will be vital to keep pace with climate change.

Water Supply

- 8.1.5 With respect to water supply, the draft Water Resource Management Plan takes account of future development and sets out the interventions Severn Trent Water propose to maintain the supply-demand balance. Gloucester is located within the “Strategic Grid” water resource zone, which extends to cover a large part of Severn Trent’s service area across the midlands to the north.
- 8.1.6 The WRMP states its strategy is to “*continue with our long-term drive to reduce the amount of water we abstract, and we will increase the flexibility and capacity of our Strategic Grid to cope with future supply uncertainties.*” A key action of the plan therefore is to Increase the deployable output of our Strategic Grid by improving the flexible operation of the system, creating new strategic links and providing new sources of water supply.
- 8.1.7 The 2020-2025 Business Plan²⁷ sets out Severn Trent’s overall commitments for the five-year period regarding water supply. By 2025 Severn Trent aim to meet the following commitments:
- Reduce leakage by 15%
 - Use a systematic approach to improve resilience to long term outages by investing in their main water transfer system.
 - Fixing small changes in pressure first time

²⁷ Severn Trent Business Plan 2020- 2025, [Online] Available at: https://www.stwater.co.uk/content/dam/stw/about_us/pr19-documents/sve_part_1_standalone.pdf

- Inspire customers to reduce their water use by encouraging behavioural change and trebling the number of meters installed.
- Explore water trading options and use a new option of direct procurement for customers to incentivise the development of innovative systems towards the supply and demand challenge.
- Improve management of risks to customer's supplies by achieving higher compliance in the industry's new risk index for drinking water quality.
- Meet customers' expectations of the taste and appearance of their water by reducing drinking water quality complaints.
- Expand their industry leading approach to catchment management by working with a further 2,000 farmers to change agricultural practices and protect raw water resources from pesticides and other chemicals.
- Provide more support to address lead pipes starting with helping schools and nurseries to locate any lead pipes on their premises.

Wastewater

8.1.8 STW has a general duty under section 94 (clauses 1a and 1b) of the Water Industry Act (1991):

- To provide, improve and extend such a system of public sewers (whether inside its area or elsewhere) and so to cleanse and maintain those sewers and any lateral drains which belong to or vest in the undertake as to ensure that the area is and continues to be effectually drained; and
- To make provision for the emptying of those sewers and such further provision (whether inside its area or elsewhere) as is necessary from time to time for effectually dealing, by means of sewage disposal works or otherwise, with the contents of those sewers.

8.1.9 In effect, STW have an obligation to provide such additional capacity as may be required to treat additional flows and loads arising from new domestic development.

8.1.10 There are 55 Waste Water Treatment Works (WwTW) within the area covered by Severn Trent in Gloucestershire. 90% of the population of Gloucestershire is served by just 8 WwTW. Gloucester City is served by Netheridge WwTW, which serves a population of 173,175. Parts of the county are covered by Thames Water and Wessex Water. Whilst Severn Trent does not provide details of specific projects within the 2020 – 2025 Business Plan it does set out their overall commitments for the five-year period regarding wastewater. By 2025 Severn Trent aim to meet the following commitments:

- 8% reduction in all types of sewer flooding
- Use information on community's vulnerability to flood risk to help prioritise improvements.
- Enhance community spaces by tackling sewer flooding in public areas and by looking into creating new green spaces through new drainage schemes to reduce flood risk.

- Create a more resilient region by taking a leadership role in collaborative schemes with other flood risk organisations on flooding issues that can't be solved in isolation.
- Build even stronger relationships with household customers to encourage behavioural change such as stopping sewer misuse, preventing blockages and reducing pollution incidents by 17%.

Assessment of infrastructure needs and cost

- 8.1.11 As part of the IDP process, both Severn Trent and the EA were consulted and asked to provide infrastructure information relating to any need generated through the planned growth in Gloucester.
- 8.1.12 Through the WRMP process, Severn Trent Water conclude that the supply and demand investment measures identified gives them high confidence that they can meet demand for water over the next 25 years.
- 8.1.13 Whilst Severn Trent Water outline that sufficient investment can be made to address the demand associated with growth, any water restraint issues could be addressed through the application of specific water-use targets for new development. This approach is supported by the EA but further work to provide evidence and develop water use standards would need to be undertaken at a strategic planning level through the Joint Core Strategy Review.
- 8.1.14 In terms of the capacity of the sewerage system and wastewater treatment plants, Severn Trent have provided a commentary for the Gloucester City Plan site allocations.
- 8.1.15 Severn Trent are in the process of producing a Drainage and Wastewater Management Plan (DWMPs) which is expected to be published in summer 2022. The aim of the DWMP is to embed a consistent, standardised and more robust approach to long term planning over a 25-year period that facilitates consideration of the wider drainage networks which interact with the drainage and wastewater systems. It will aim to provide transparency and line of sight regarding the plans to customers and stakeholders and to comply with statutory obligations, policy expectations and customer priorities.
- 8.1.16 The DWMP will be developed at three different planning levels: Company Level, Strategic Planning Areas and Local Tactical Planning Units which are based on WwTW catchments. It will consider key challenges such as climate change and new development, customer expectations and resilient systems. As part of the DWMP, detailed information regarding risks and long-term plans will be provided for the Netheridge catchment as part of the Lower Severn Strategic Planning Area. In addition to the work undertaken by Severn Trent Water, Gloucester City Council has commissioned a review of the extent of the odour cordon sanitaire around the Netheridge Sewerage Treatment Works and assess the extent to which investment is needed to make improvements. This work is currently ongoing.
- 8.1.17 In terms of the capacity of the sewerage system and wastewater treatment works (WwTW), Severn Trent have provided a commentary for the Gloucester City Plan site allocations as part of the 2017 Water Cycle consultation. For this consultation Severn Trent provided comments on the potential impact of each allocation on the sewerage infrastructure. There are 6 sites that were highlighted as having high

potential impact and 7 sites as medium impact, the high risks allocations are detailed in the Table 9 below.

- 8.1.18 Following discussions between Gloucester City Council, Severn Trent Water (STW) and the Environment Agency, it was determined that hydraulic modelling is to be undertaken by STW to understand if capacity improvements will be required to accommodate proposed development on the six allocations identified within the table below. This work is funded by STW through Developer Infrastructure Charges and takes approximately six weeks.
- 8.1.19 Given that the existing sewerage network is known to have areas with capacity issues and network constraints, in some cases improvements to the network may be required for new developments to connect. Developers should contact Severn Trent at the earliest opportunity to understand if improvements to the network are required.
- 8.1.20 To account for the planned growth in the north of Gloucester at Twigworth and Innsworth and in the South of Gloucester at Hunt’s Grove and Hardwicke, two separate strategic growth schemes have been promoted to provide additional capacity in the network.
- 8.1.21 It is recommended that for all new development sites the drainage hierarchy (Paragraph 80 of the Planning Practice Guidance) is followed, supporting the need to drain surface water to natural outfalls if possible. Severn Trent strongly support development in line with the drainage hierarchy especially in areas where surface water drainage systems are present near a proposed development. Surface water connections to foul sewers are not sustainable and all other options should be considered before a controlled discharge to the foul sewer is considered.

Table 9 Severn Trent Water Assessment of SA impact upon wastewater infrastructure²⁸

Site Ref	Site Name	Sewerage Comment	Approach to addressing issue
SA1	Land at ‘The Wheatridge’	Due to development size relative to the existing system, improvement may be needed to ensure additional flows do not increase flood risk or cause unsatisfactory Pumping Station performance. Modelling will be required to assess the scope of any capacity improvements.	<ul style="list-style-type: none"> Undertake a surface water outfall assessment to determine if there are viable alternatives to the existing sewerage connection. Any application should demonstrate discharge to public sewerage systems are avoided where possible. Provision of a phasing plan to STW to provide certainty on the order and rate of development.
SA09	Great Western Road Sidings	No reported issues immediately downstream however further downstream there is reported flooding which will be impacted by this development. Modelling will be required to assess	<ul style="list-style-type: none"> Undertake a surface water outfall assessment to determine if there are viable alternatives to the existing sewerage connection. Any application should demonstrate discharge to public sewerage systems are avoided where possible.

²⁸ Severn Trent Water Consultation Response to the IDP (26 July 2019).

		<p>the scope of any capacity improvements.</p> <p>As this is a brownfield site surface water is likely to drain into the existing combined system, there is an opportunity to reduce flood risk by following the Drainage Hierarchy for surface water and ensuring surface water is dealt with sustainably.</p>	<ul style="list-style-type: none"> • Provision of a phasing plan to STW to provide certainty on the order and rate of development.
SA13	Land east of Waterwells Business Park	<p>This site would drain to Quedgeley Main SPS which has historically had issues associated with it. A growth capacity improvement scheme has been promoted to accommodate growth from this development are surrounding developments at Hunt Grove and Hardwicke in South Gloucester.</p>	<ul style="list-style-type: none"> • Undertake a surface water outfall assessment to determine if there are viable alternatives to the existing sewerage connection. • Any application should demonstrate discharge to public sewerage systems are avoided where possible. • Provision of a phasing plan to STW to provide certainty on the order and rate of development.
SA15	Kings Quarter	<p>There is reported flooding downstream therefore modelling will be required to assess the scope of any capacity improvements.</p> <p>As this is a brownfield site surface water is likely to drain into the existing combined system, there is an opportunity to reduce flood risk by following the Drainage Hierarchy for surface water and ensuring surface water is dealt with sustainably.</p>	<ul style="list-style-type: none"> • Undertake a surface water outfall assessment to determine if there are viable alternatives to the existing sewerage connection. • Any application should demonstrate discharge to public sewerage systems are avoided where possible. • Provision of a phasing plan to STW to provide certainty on the order and rate of development.
SA16	Greater Blackfriars	<p>Due to the size of the development compared with the existing system this has been deemed high risk. Modelling will be required to assess the scope of any capacity improvements.</p> <p>As this is a brownfield site surface water is likely to drain into the existing combined system, there is an opportunity to reduce flood risk by following the Drainage Hierarchy for surface water and ensuring</p>	<ul style="list-style-type: none"> • Undertake a surface water outfall assessment to determine if there are viable alternatives to the existing sewerage connection. • Any application should demonstrate discharge to public sewerage systems are avoided where possible. • Provision of a phasing plan to STW to provide certainty on the order and rate of development.

		surface water is dealt with sustainably.	
SA20	Land at St Oswalds	Due to the size of the development compared with the existing system this has been deemed high risk. Modelling will be required to assess the scope of any capacity improvements.	<ul style="list-style-type: none"> • Undertake a surface water outfall assessment to determine if there are viable alternatives to the existing sewerage connection. • Any application should demonstrate discharge to public sewerage systems are avoided where possible. • Provision of a phasing plan to STW to provide certainty on the order and rate of development.

8.1.22 Increased flows resulting from new developments may lead to capacity constraints on the existing infrastructure, increasing the risk of sewer flooding and where present, discharges from sewer overflows. STW request that developers contact their Developer Enquiries team as early in the planning process as possible to ensure there is sufficient time to understand the impact on the network and for planning any required infrastructure improvements.

8.1.23 In response to consultation, Severn Trent set out that “*Developments within the bounds of Gloucester city would drain to our sewage treatment facility at Netheridge. In terms of headroom in our discharge permit, we currently have spare capacity to cater for approximately 2232 additional domestic properties (assuming an average occupancy rate of 2.4 per dwelling. It is likely that some extension works will be required to treat the additional loads generated and these are being investigated. With the planned development in this catchment including urban extensions adopted in the JCS and Stroud District Local Plan it is likely that the Dry Weather Flow (DWF) Permit will be exceeded before 2025, but the precise date will be linked to the pace of development within the city.*”

8.1.24 At present, there is a planned expansion to the sewage treatment facility at Netheridge in the AMP8 period (2025-2030). STW is satisfied that it would be capable of creating extra capacity at the Netheridge facility to respond to growth should this occur prior to this date.

Funding

8.1.25 The utility companies would expect new infrastructure for any development site connections to be funded by the developer. Any necessary upgrades to the existing local water supply and wastewater networks will be funded by the utility company using the Developer Infrastructure Charge. It may sometimes be the case that utility companies ask developers to lay infrastructure with additional capacity for surrounding developments, any additional cost above the individual site infrastructure costs will be funded by the utility company. Any required upgrades to wastewater treatment works will be funded by the utility company.

8.1.26 It is the responsibility of the water and sewerage company to fund ongoing operation and maintenance of the water and wastewater networks, including any strategic water resource projects. This is covered by customer bills and is regulated by OFWAT.

8.2 Healthcare

Responsibilities for delivery

- 8.2.1 The responsibility for commissioning and managing primary and secondary healthcare services and the management of healthcare estates is undertaken by the following organisations and groups:
- **NHS England** – Responsible for commissioning primary healthcare from Clinical Commissioning Groups (CCGs) in ways that support consistent, high standards of quality across the county.
 - **Gloucestershire Clinical Commissioning Group (CCG)** – The CCG is a membership organisation and currently membership includes all 81 GP practices in the county. From April 2013 the CCG became responsible for commissioning Secondary Healthcare services from the Gloucestershire Hospitals NHS Foundation Trust and other equivalent providers. This is a key element of the Government’s objective to establish a clinically-led commissioning system.
 - **Secondary Healthcare providers** – The principal secondary healthcare provider for the county is the Gloucestershire Hospitals NHS Foundation Trust, which provides countywide acute hospital services. The key service in Gloucester is the Gloucestershire Royal Hospital
 - **Gloucestershire County Council Health and Wellbeing Board** - a high-level strategic group whose purpose is to drive the new health and social care agenda and improve outcomes through monitoring, forward planning and promotion of public health.

Infrastructure Baseline

Primary Healthcare – General Practitioners (GPs)

- 8.2.2 There are 18 practices located within 5 miles of Gloucester. The IDP Infrastructure Baseline (Appendix A) shows the locations of the GP practices by ward and provides an indication of the average number of patients per available GP. The NHS website provides a summary for each of the practices and currently identifies that they are all accepting new patients.
- 8.2.3 On 1st April 2018, a merger of GP practices at Barnwood, Heathville, London and Saintbridge took place and took the name of Aspen Medical Practice²⁹. In addition, Cheltenham Road, College Yard and Highnam Surgeries merged and were renamed the Alney Practice. The College Yard site closed on 31st October 2018³⁰.

²⁹ <https://www.nhs.uk/Services/GP/Overview/DefaultView.aspx?id=36813>

³⁰ <http://www.alneypractice.nhs.uk/website/L84002/files/Patient%20communication%20regarding%20College%20Yard.pdf>

Primary Healthcare – Dentists

- 8.2.4 Under the Health and Social Care Act 2012, responsibility for commissioning and managing NHS dental contracts moved from local PCTs to NHS England (previously the NHS Commissioning Board) in April 2013.
- 8.2.5 Most dental care is provided by privately operated general dental practitioner surgeries, for whom NHS contracts are very important. Some treatment, however, is carried out directly by NHS community dental services and hospital dental departments.
- 8.2.6 There are 14 dental practices located within five miles of Gloucester. This represents a reduction of 3 practices in comparison to 2017. The IDP Infrastructure Baseline (Appendix A) dental practices by ward.

Secondary Healthcare – General and Acute care

- 8.2.7 Gloucestershire Hospitals NHS Foundation Trust is responsible for the two largest acute hospitals in the county, Cheltenham General Hospital and Gloucestershire Royal Hospital, Gloucester. These specialist hospitals provide emergency care, specialist inpatient care and outpatient appointments to our urban and rural communities within Gloucestershire and further afield. Whilst Cheltenham General is outside of the Gloucester City area, it still provides important services to support the city's population.
- 8.2.8 The Hospitals Trust is also a net 'importer' of patients for the services they deliver, suggesting that more patients come from surrounding counties into the Trust than those who leave the Gloucestershire area to providers outside the county.
- 8.2.9 Gloucestershire Care Services NHS Trust runs seven community hospitals with in-patient facilities across Gloucestershire. There are community hospitals located in Stroud and Tewkesbury (Stroud General Hospital and Tewkesbury Community Hospital). Full details are provided in Appendix A.
- 8.2.10 Table 14 below summarises the average number of beds available and percentage of occupied beds by sector for hospitals operated by Gloucestershire NHS Foundation Trust and Gloucestershire Care Services.
- 8.2.11 These figures demonstrate that there is circa 10% spare capacity in the system for General and Acute beds and that the level of bed occupation is higher than the average for England. This is particularly the case for maternity beds.

Table 14 - Availability of hospital beds in Gloucestershire³¹

Bed Type	Number available	Number available / 1,000 pop ³²	Number occupied	% Occupied
General & Acute (Hospitals Trust)	960	1.53	855	89%
Learning Disabilities	-	-	-	
Maternity	46	0.07	40	87%
Mental Illness	-		-	
Total	1006	1.57	895	89%

Assessment of infrastructure need

8.2.12 An assessment of additional demand for healthcare services has been completed based on benchmark standards.

Primary Healthcare – GPs

Based on an average GP patient list of 1,800 and space/cost of delivering GP services at 130m² per GP at a capital cost of £1,750/m²:

*Planned growth in Gloucester results in an estimated additional demand for **2.4 GPs** at an estimated cost of **£547,706**.*

8.2.13 Through consultation with Gloucester CCG, it has been highlighted that the following new infrastructure investment is committed to respond to growth set out in the JCS and the City Plan:

- A healthcare and community hub at South Churchdown Strategic Allocation, expected to be operational between 2021-2025
- A new GP surgery at Innsworth Strategic Allocation, expected to be operational between 2021-2025
- A new GP surgery at North Brockworth Strategic Allocation, expected to be operational between 2021-2025
- A consolidation of up to 5 GP practices into 1 or 2 new surgery sites in Cheltenham, expected to be operational between 2026-2031
- A new purpose-built GP surgery at Quayside, Blackfriars in Gloucester to include relocation of 2 existing practices – Gloucester Health Access Centre

³¹ Information sourced from the Care Quality Commission (Oct 2018). Available:

https://www.cqc.org.uk/sites/default/files/new_reports/AAAH7414.pdf

The number of beds available per 1,000 population based on the county population of 628,139 (mid-2017 estimate). This does not account for movement of people across county boundaries for treatment, such as use of hospitals in Swindon or Bristol.

³² Population Estimates for Gloucestershire: mid-2017, Release date June 2018, Available From: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/analysisofpopulationestimatestool>

at Eastgate House and Gloucester City Health (Rikenel). Expected to be operational between 2026-2031.

Primary Healthcare – Dentists

Based on an average number of dentists in the South West region at 1 per 2,000 population and space/cost of delivering dental services at 130m² per Dentist at a capital cost of £1,750/m²:

*Planned growth in Gloucester results in an estimated additional demand for **2.2 Dentists** at an estimated cost of **£492,936**.*

Secondary Healthcare – General and Acute Care

Based on an average number of general and acute beds of 1.78 per 1,000 population, and floorspace/cost standard of 50m² per bed at £2,390/m².

*Planned growth in Gloucester results in an estimated additional demand for **8 general and acute bed spaces** at an estimated cost of **£921,779**.*

Funding

- 8.2.14 Funding for the operation GP surgeries is primarily secured through NHS England's General Medical Services Contract. This is delivered through the 'global sum' which covers the costs of running a general practice including essential GP services.
- 8.2.15 The decision to create, co-locate or expand GP and dental surgeries is a decision for each individual practice as a private business. The current Gloucester City Council CIL Charging Schedule and accompanying Regulation 123 List do not make provision for primary healthcare infrastructure to be funded from CIL receipts.
- 8.2.16 The delivery of new acute and community hospital services is entirely reliant on ad-hoc funding opportunities to central government.
- 8.2.17 S.106 monies may be sought where there is a particular identified need for improvements to existing primary or secondary care services, or where the proposed development is likely to result in a high dependency on health services, such as care homes or sheltered housing.

8.3 Energy

Infrastructure Baseline

Electricity generation / Electricity Transmission

- 8.3.1 The extra high-voltage transmission grid (275kV and 400kV) in England is owned and operated by National Grid Electricity Transmission (NGET). The regional distribution network operator for Gloucester is Western Power Distribution (WPD).

Gas Distribution

- 8.3.2 The National Grid Gas (NGG) transmits gas from the production beachhead and import terminals to regional distribution companies or Distribution Operators (DO's) that operate the network of pipelines serving consumers. Wales & West Utilities (WWU) are the DO for Gloucester. There is no National Grid high pressure gas infrastructure which runs through Gloucester in proximity to the proposed site allocations.
- 8.3.3 Gloucestershire is served by two of seventeen offtake locations for the South West Local Distributor Network. The gas enters is stored within the network of pipes in the form of "line pack" and in high pressure storage vessels.

Renewable Energy

- 8.3.4 The Gloucestershire Renewable Energy Study (2010-2011) is a two-stage study looking at the potential for renewable energy in Gloucestershire in the period to 2026. It forms part of the JCS evidence base. The Stage 2 report considers that in the Gloucester areas there is little wind and biomass resource given the built-up nature of the districts, however there is potential for utilising renewable heat in the City and there were 16 locations identified as an opportunity for small-scale hydropower generation (less than 10kW).
- 8.3.5 The Renewable Energy Planning Database (June 2019)³³ outlines that there is one renewable energy project for battery storage of 20MW at Bristol Road in the south of Gloucester. This was approved in October 2016 and under construction.
- 8.3.6 The Javelin Park, Energy from Waste facility to the south of M5 Jn12 on the edge of Gloucester was completed in June 2019. The facility is anticipated to generate electricity to power 25,000 homes.

Assessment of Infrastructure need

Electricity generation / Electricity Transmission

- 8.3.7 WPD has a requirement to remedy any insufficient infrastructure under its remit as a statutory undertaker. Given the levels of growth and the disperse nature of the site allocations set out in the Gloucester City Plan, it is anticipated that there would not be any significant reinforcement of the EHV network or primary substations to respond to housing development.
- 8.3.8 Developers planning to undertake site works should use WPD's "LinesearchbeforeUdig"³⁴ service to identify underground cables and other electrical equipment. This also includes other assets including gas mains, water and communications cables.

Gas Distribution

- 8.3.9 Wales & West Utilities (WWU) require 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

³³ Available: <https://www.gov.uk/government/publications/renewable-energy-planning-database-monthly-extract>

³⁴ Available: <https://www.westernpower.co.uk/our-network/location-of-wpds-equipment>

layout and phasing, however WWU can respond to developer connection requests within a relatively short time frame.

- 8.3.10 WWU in response to the consultation on the first stage of the Local Plan Review during January 2017 do not anticipate any major obstacles in providing connections to the strategic sites identified in the Local Plan.
- 8.3.11 WWU's 2018 Long Term Development Statement³⁵ states that the South West Local Distribution Zone is predicted to increase in annual demand by 1.1% from 2017/2018 to 2026/27. This increase is mainly due to forecasting flexible gas generation and the recent spells of severe weather, such in as March 2018. WWU invest to ensure that the security of the Network's supply is maintained in line with the obligations under their Licence to Operate. The WWU investment programme details several replacement/refurbishment/upgrade projects that have been identified to ensure that the security of supply is not compromised.
- 8.3.12 The options available to relieve capacity constraints include:
- Upgrading pipeline operating pressures.
 - Constructing new pipelines or storage.
 - Constructing new supplies (offtakes from the NTS), regulators and control systems.
 - DN Entry when available and secure.
 - Offering customer interruption via the interruption capacity auctions
- 8.3.13 National Grid have commented that the proposed housing growth in the Gloucester City Plan will not have a significant effect upon its infrastructure both in respect of capacity and scale of these networks.

Funding

- 8.3.14 WPD, WWU and National Grid are responsible for building, operating, and maintaining their infrastructure. Electricity and gas companies recover the costs of operating and maintaining their systems by levying charges on utilities traded by suppliers which is then passed on onto households and businesses which use the network.
- 8.3.15 Developers are expected to pay for new electricity and gas infrastructure assets that form part of the development and statutory undertakers are expected to carry out works as part of their remit. Some local reinforcements may be required should the proposed demand exceed the capacity of the local distribution mains.

³⁵ Available: <https://www.wwutilities.co.uk/media/2845/2018-long-term-development-statement.pdf>

8.4 Waste

Infrastructure Baseline

- 8.4.1 The Gloucestershire Waste Partnership (GWP) consists of the six district and borough councils within Gloucestershire and the County Council. Responsibility for waste services within the partnership include:
- Gloucestershire County Council – preparation of the Minerals and Waste Local Development Framework (LDF) and the management of waste disposal.
 - Gloucester City Council through its partner waste contractor Amey operates a waste & recycling collection service to businesses throughout the area.
- 8.4.2 The County Council is proposing to update its Waste Local Plan, with a pre-publication draft due in early 2020. At present, the up-to-date development plan document is the Waste Core Strategy (adopted November 2012).
- 8.4.3 The table below illustrates how much waste is produced and/or managed in Gloucestershire across the four main waste streams.

Table 15 - Total waste management capacity Gloucestershire (2012)³⁶

Waste Stream	Base Year	Total (tonnes)
Municipal Solid Waste (MSW)	2009/10	294,000
Commercial & Industrial (C&I)	2008	375,000
Construction & Demolition (C&D)	2008	293,000
Hazardous Waste	2008	90,000
Metals (from all waste streams)	2008	131,000

- 8.4.4 The table below displays the current capacity by waste process method in Gloucestershire.

Table 16 - Total waste management capacity Gloucestershire (2011)

Management/Process Method	Operational Capacity in Tonnes
Recycling	110,000t
Of which composting/AD is	79,000t
Residual Waste Treatment	No operational capacity – all residual currently goes to 2 Cory operated landfills
C&D Waste recycling	-
Non-hazardous. Landfill	3,205,000m3 C&D recycling
Inert Landfill	-

³⁶ Gloucestershire Waste Core Strategy November 2012
http://www.gloucestershire.gov.uk/media/5855/adopted_wcs_211112-53886.pdf

- 8.4.5 This operational capacity is provided through a range of waste facilities in Gloucestershire. There is one non-hazardous landfill site in at Hempstead in Gloucester, with a further two serving the city at Wingmoor Farm (West) and Wingmoor Farm (East) close to Bishop's Cleeve north west of Cheltenham. A hazardous landfill site is provided at Wingmoor Farm (East). There are also nineteen inert landfill /restoration sites across the County receiving construction and demolition (C&D) waste.
- 8.4.6 Existing Household Recycling Centre (HRC) waste management sites provided by Gloucestershire County Council serving Gloucester are:
- Hempsted HRC – located 1 mile west of Gloucester Docks.
 - Wingmoor Farm – located half a mile west of Bishop's Cleeve on the road to Stoke Orchard.
- 8.4.7 In addition to these sites there are other local business that provide recycling services in Gloucester:
- Phelps Brothers, Sudmeadow Road, Hempsted, located near the Docks adjacent to the Westgate Ward.
 - The Furniture Recycling Project, Station Road, located near the Gloucestershire Royal Hospital in Westgate Ward.
 - Speedy Skips, Allstone House, Myers Rd located near the Gloucestershire Royal Hospital in the Elmbridge Ward.
- 8.4.8 Although outside of Gloucester, the 190,000 tonnes-per-year capacity Javelin Park Energy from Waste (EfW) facility was completed in June 2019. This facility is run by Urbaser Balfour Beatty and will divert over 90% of the County Council's residual waste from landfill, preventing methane production, and producing sustainable aggregates.

Assessment of Infrastructure need

- 8.4.9 The Waste Core Strategy assumes that Municipal Solid Waste (MSW) in Gloucestershire will increase to some 359,600 tonnes per annum due to a combination of population growth and growth in waste per head. In Gloucestershire, each person generated 414kg of municipal waste in 1995 and 504kg in 2009/10. This increase in waste tonnes is primarily due to, growth in household consumption, changes to waste collection systems and an increase in household numbers. Short-term fluctuations in waste tonnage can result from other factors including the wider economic circumstances and changes to service charges.
- 8.4.10 Based on projected increases in MSW and other waste streams, the Waste Core Strategy identifies an on-going need to develop new waste facilities in the county. An overarching objective of the Waste Core Strategy is to enable diversion from landfill use, in response to the national policy of tackling climate change through more sustainable waste alternatives.
- 8.4.11 To meet the projected demand for waste management, the Waste Core Strategy identifies the following locations within and surrounding Gloucester with the potential to accommodate re-modelled, alternative and / or new waste management facilities over the timeframe of the plan.

Strategic Site	Proposal / Update
Wingmoor Farm East	Landfill, recycling and quarry complex proposed for a strategic waste recovery facility. Andigestion Ltd have operated an anaerobic digestion (AD) plant since 2015.
The Park	Former aeroplane hangars converted to industrial units including waste management processes. No update.
Wingmoor Farm West	Hazardous waste landfill operated by Grundon since 2008.
Javelin Park	Former Moreton Valence Airfield now site of a 190,000 tonnes-per-year capacity EfW plant, which opened in June 2019.
Land at Moreton Valence	Waste transfer stations operated by Smiths Waste Management.

8.4.12 No additional future waste and recycling projects have been identified.

Funding

8.4.13 Waste management is funded within the capital programmes of the City Council and County Councils as waste collection and waste disposal authorities, the cost of which is recovered in part through customer revenues and council tax.

9 Infrastructure Strategy

9.1 Summary

- 9.1.1 The Gloucester City Plan sets out relatively modest levels of growth in comparison to that which is set out within the Joint Core Strategy for Gloucester, Cheltenham and Tewkesbury. It is also notable that the City Plan accounts for a large number of completions and commitments in comparison to the growth set out in the City, and a further large proportion of Gloucester's housing needs must be met through the JCS. This means that any shortfall in planning contributions from this development cannot be rectified and the City Council has limited control of securing infrastructure outside of its administrative boundaries.
- 9.1.2 Whilst there are no Strategic Road Network schemes within Gloucester, there are a number which have implications for the City Plan allocations and have a level of interdependency in terms of cumulative impact. The City has commissioned a study to assess the impact of Local Plan allocations on junctions and delivery of highways schemes identified within Appendix C will help to address increased traffic from all modes as a result of growth.
- 9.1.3 There is a lack of capacity generally within existing schools in Gloucester, with less than 1% spare capacity anticipated in secondary schools for the Year 7 2019 intake. New housing developments planned for the Tewkesbury planning area that sits close to the Gloucester city boundary at Churchdown, Innsworth, Twigworth and Brockworth will all be required to provide new schools as part of the S106 agreements, and the more modest growth set out within the City Plan will be expected to provide contributions to new or existing schools captured through CIL.
- 9.1.4 The Environment Agency, the County Council (as Lead Local Flood Authority) and other partners are delivering a range of flood risk management projects and planning for future projects that will deliver multiple environmental benefits. These will enable existing properties to be better protected from flooding and may provide betterment for proposed development sites. There are enhancements proposed as part of urban greening would which seek to restore the Sud Brook and Twyver River.
- 9.1.5 It is expected that the future approach for community, sport and recreational facilities will move away from separate provision, with a hub approach to provision multi-use community spaces. Smaller demands may be absorbed through the use of assets such as coffee shops and meeting spaces, but it is expected that contributions will be secured to improve existing facilities or community centres, sports pitches and sports halls are to be provided onsite.
- 9.1.6 In terms of water, wastewater and other utilities, there is an expectation that developers pay for any additional infrastructure and the connection to the existing utilities network. Whilst it is not anticipated there will be any significant constraints to delivery because of this, extra capacity will need to be created to address growth and the utility companies are working with the City Council to deliver these improvements. It is recommended that developers engage with Western Power Distribution, Wales & West Utilities or Severn Trent Water as early as possible to understand whether any additional infrastructure is required.

- 9.1.7 Generally, healthcare provision within the City and surrounding area is nearing capacity, with 90% hospital beds in use on average and 9 of the 18 GP surgeries in the area exceeding the recommended patient to GP ratio of 1750:1. New development may be expected to contribute to expanding and enhancing existing services where demand is greatest. A new purpose-built GP surgery is proposed at Quayside, Blackfriars to address increased demand, and new surgeries are proposed on the South Churchdown, Innsworth and North Brockworth Strategic Allocations, which will attract existing and new residents on the fringes of Gloucester.
- 9.1.8 Waste management will continue to be funded and delivered by the County and City Councils, with no additional infrastructure identified to be delivered in the short term. Javelin Park Energy from Waste Facility, located south of Junction 11 of the M5, has been delivered with 190,000 tonnes-per-year capacity for residual waste.

9.2 Strategy

- 9.2.1 It is important that the infrastructure required to support the planned growth within Gloucester City is delivered in a manner that supports the development of sustainable communities. Key principles and recommendations in planning for the delivery of infrastructure in Gloucester City are set out below.

Working with the JCS to support City Plan growth

- 9.2.2 The delivery of infrastructure on proposed Strategic Allocations sites can help to respond to increased demands associated with the growth set out in the City Plan. Gloucestershire County Council Education, Community, Sports and Recreation consultees and the Clinical Commissioning Group have all cited that planned improvements and new facilities delivered through s.106 agreements relating to the nearby South Churchdown, Innsworth and North Brockworth Strategic Allocations would help to address increased infrastructure demands related to City growth.
- 9.2.3 However, it should be noted that funding, including planning obligations, will still be required to deliver new and/or improved infrastructure to meet needs associated with growth.

Pooling CIL Contributions

- 9.2.4 The levels of growth proposed in the City Plan are not sufficient to require new 'big ticket' items of infrastructure like schools, hospitals and sports halls. Instead, money from planning obligations should be used to increase capacity at existing facilities.
- 9.2.5 The nature of development being many small sites will mean that a likely approach to pool CIL contributions through the JCS Governance structure will help to deliver infrastructure with cross-boundary benefits, such as transport measures to improve accessibility to Gloucester and address existing congestion. The local top-slice of CIL, as secured through Regulation 59A of the Community Infrastructure Levy (Amendment) Regulations 2013, can be used to deliver projects with less wide-ranging benefits such as community facilities and sports pitches.

Prioritisation of infrastructure

- 9.2.6 The infrastructure identified within this IDP and the IDP Project Schedule (Appendix C) is estimated to cost hundreds of millions of pounds. Whilst much of this relates to cross-boundary infrastructure, it is highly unlikely that all localised improvements will be delivered as part of the growth set out in the City Plan. As such, it is important to consider whether projects must happen to enable the delivery of growth within Gloucester, whether projects are required if growth is to be achieved in a timely and sustainable manner or if these projects are likely to be desirable and unlikely to prevent growth if not delivered. This will allow prioritisation of delivery and enable focused negotiations for s.106 agreements and when considering CIL expenditure.

Alternative Sources of Funding

- 9.2.7 Whilst it is likely that there will be a funding gap between infrastructure requirements and estimated receipts from planning obligations, there are several sources of extra income to deliver essential infrastructure. Projects can be delivered through private sector development; supplementary funding can be secured from central government or the GFirst LEP. Charitable funding or match-funding from bodies such as the National Lottery can help to deliver community projects.

Further Updates

- 9.2.8 This IDP should be treated as a live document and should be updated throughout the review of the City Plan to take account of additional information as sites are brought forward and as sector-specific infrastructure planning is undertaken.
- 9.2.9 Moving forward, the Council should use the IDP to inform the preparation of an Infrastructure Funding Statement in accordance with Planning Practice Guidance (Plan-making, paragraph 16³⁷). This should set out the anticipated funding from developer contributions, and the choices local authorities have made about how these contributions will be used. At examination this can be used to demonstrate the delivery of infrastructure throughout the plan-period.

³⁷ Ministry of Housing, Communities & Local Government (March 2019) Available: <https://www.gov.uk/guidance/plan-making>