

# Background Paper D(i): Providing New Infrastructure

## 1 Introduction

- 1.1 As part of its evidence base, the City Council is required to demonstrate how the Core Strategy policies and Spatial Strategy will be delivered. The Core Strategy incorporates policies on infrastructure needed to support new development. This background paper sets out how infrastructure provision has been considered, including who is responsible for its delivery, and how it is likely to be delivered. To avoid duplication, cross-reference is made to other background papers where relevant.

## 2 Policy context

- 2.1 National, regional and local policies provide guidance for evaluating infrastructure requirements.

### **National Planning Guidance**

- 2.2 PPS1 – Delivering Sustainable Development (2005) states that planning authorities should ensure that infrastructure and services are provided to support new and existing economic development and housing.
- 2.3 New PPS12 – Creating Strong Safe and Prosperous Communities Through Local Spatial Planning (2008) specifies that:

*“The core strategy should be supported by evidence of what physical and social infrastructure is needed to enable the amount of development proposed for the area, taking account of its type and distribution. This evidence should cover who will provide the infrastructure and when it will be provided. The core strategy should draw on and in parallel influence any strategies and investment plans of the local authority and other organisations.”*

- 2.4 PPS12 goes on to emphasise the need for the infrastructure planning process to identify, as far as possible:
- infrastructure needs and costs
  - phasing of development
  - funding sources
  - responsibilities for delivery.
- 2.5 PPS12 generally requires the Core Strategy to demonstrate a reasonable prospect of providing the infrastructure required to support the spatial strategy. Infrastructure planning for the Core Strategy should also include the specific infrastructure requirements of any strategic sites that are allocated in it.

## Regional Planning Guidance

- 2.6 Draft South East Plan (SEP) was submitted to the Government in March 2006. This was followed by an Examination in Public, and subsequent Panel Report published in August 2007. The Secretary of State published her Proposed Changes to the South East Plan for consultation on 17<sup>th</sup> July 2008.<sup>1</sup>
- 2.7 Policy CC5 of the draft SEP is renumbered CC7 in the Proposed Changes. The revised policy in effect sets a cascade approach to considering appropriate infrastructure for new development, considering in order:
- the capacity of existing infrastructure to support new development;
  - phasing new development to align with demand management measures, or better management of existing infrastructure, to release new additional capacity;
  - the provision of new infrastructure (in which case a programme of delivery should be agreed before development begins).
- 2.8 The policy also expects development delivery partners to aim to align their investment programmes, to ensure the necessary infrastructure is either in place to support new development, or can be delivered in a timely manner. Local development documents should identify additional infrastructure required to support their proposals. Combined partnership working between public and private bodies, supported by central Government funding, will resource the investment necessary across the region. The Regional Assembly published an updated Implementation Plan in October 2006, which will be monitored and reviewed.

## 3 Pattern of growth in Oxford

### Residential population growth

- 3.1 Residential development represents the greatest element of future growth in Oxford. **Background Paper E: Maintaining a Balanced Housing Supply** sets out the method for, and outcomes of, assessing future household growth in Oxford, as well as identifying suitable housing sites. **Table 1** below summarises the pattern of housing growth that may be expected from April 2007 until March 2026. This is broken down by Neighbourhood Area<sup>2</sup>, and is based on sites identified in the Strategic Housing Land Availability Assessment. It also assumes that the rate of windfall housing development across the City is just sufficient to deliver the South East Plan target of 8,000 dwellings from 2006 to 2026. (It should be noted however that this lower rate of windfall delivery may under-represent the actual number coming forward in reality.) These figures can be used to

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<sup>1</sup> The Secretary of State's Proposed Changes to the Draft Regional Spatial Strategy for the South East (GOSE, July 2008)

<sup>2</sup> A Neighbourhood Area is defined in Oxford as one or more groups of wards, which form a local sustainable community

broadly estimate overall population increase from 2007 to 2026, arising from predicted growth in households in each Neighbourhood Area.<sup>3</sup>

**Table 1** Predicted pattern of residential development in Oxford

Strategic Location / Neighbourhood Area	Projected dwelling growth 2007-16 <sup>1</sup>	Projected dwelling growth 2007-26 <sup>1</sup>	Projected Household Size 2016 <sup>2</sup>	Indicative Population Increase 2007-16	Indicative Population Increase 2007-26
Land at Barton	300	800	2.63	789	2,104
SDA <sup>3</sup>	0	4,000	2.67 <sup>4</sup>	0	10,680
Barton & Sandhills	225	306	2.63	591	805
Blackbird Leys	35	110	2.67	94	294
City centre (inc. West End)	598	727	4.47	2,673	3,250
East Oxford	749	1,135	2.6	1,947	2,951
Headington	535	727	2.49	1,332	1,810
Hinksey Park	68	117	2.24	151	262
Jericho and Osney	254	336	1.96	497	658
Littlemore	299	395	2.23	667	880
Lye Valley	166	259	2.7	449	699
Marston	126	197	2.25	283	444
Quarry & Risinghurst	157	262	2.29	359	600
Rose Hill	480	626	2.31	1109	1446
St Margarets	324	385	2.66	862	1025
Summertown	198	289	2.38	470	688
Wolvercote	447	508	2.11	944	1072
<b>Total</b> (does not include SDA)	<b>4,960<sup>5</sup></b>	<b>7,179<sup>5</sup></b>	-	<b>13,218</b>	<b>18,987</b>

<sup>1</sup>Figures sourced from 'Lower Growth' Transport Model Scenario

<sup>2</sup>Data taken from Oxford City Council Balance of Dwellings Study (Appendix 2 Table A2.3)

<sup>3</sup>South Oxford Strategic Development Area (planned urban extension to Oxford in South Oxfordshire)

<sup>4</sup>SDA projected household size assumed same as Blackbird Leys

<sup>5</sup>Note these figure do not include 821 dwellings completed during 2006-07 financial year)

3.2 **Table 1** suggests considerable disparity between different areas of the City, with the greatest population growth likely to occur in the City centre and eastern suburbs. It should be noted that these figures are highly indicative, not least as average household sizes in 2016 are calculated on the basis of current trends in

<sup>3</sup> It should be noted that the figures in **Table 1** have been arrived at independently of either Office of National Statistics population and household projections, and Oxfordshire County Council projections, as neither of these alternative datasets include a spatial distribution by neighbourhood area specifically based on identified housing land.

population increase (i.e. assumes no policy intervention), but then applied to a distribution of housing growth that takes into account the Core Strategy itself (including balance of dwellings policy, and the potential supply from deliverable housing sites).

### Pattern of economic growth

- 3.3 As well as residential development, the Core Strategy plans for some new commercial development. This would be in addition to existing employment allocations in the adopted Oxford Local Plan that have not yet been fully implemented. **Table 2** below provides a summary of estimates showing distribution of employment generating development (including retail) that Oxford is expected to accommodate 2006-2026.

**Table 2 Predictive pattern of employment growth (full-time equivalent) in Oxford**

Location for employment growth	Main use class	Indicative increase in jobs 2007-16 <sup>1</sup>	Indicative increase in jobs 2007-26 <sup>1</sup>
Northern Gateway (Wolvercote)	B1	1,250	3,150
West End (City centre)	B1	800	800
Oxford Business Park (Lye Valley)	B1	1,450	1,450
Oxford Science Park (Littlemore)	B1	1,150	1,150
Land adj. Oxford Retail Park (Blackbird Leys)	B1	50	50
County/Horspath Trading Estates (Lye Valley)	B1,B2,B8	85	235
Harrow Road/Nuffield Industrial Estates (Blackbird Leys)	B1,B2,B8	85	235
Osney Mead Industrial Estate	B1,B2,B8	40	40
Jordan Hill Business Park (Wolvercote)	B1,B2,B8	40	40
Cowley District centre (Rose Hill)	A1	120	370
Summertown District centre (Summertown)	A1	35	35
Blackbird Leys District centre (Blackbird Leys)	A1	55	55
City centre (inc. West End)	A1	2,190	2,690
<b>Total</b>	<b>A1 retail</b>	<b>2,400</b>	<b>3,150</b>
<b>Total</b>	<b>B classes</b>	<b>4,950</b>	<b>7,150</b>

Source: 'Lower growth' Transport Model Scenario

<sup>1</sup>These figures include existing commitments not yet implemented

## 4 Assessing City-wide Infrastructure Requirements

### Infrastructure definition

4.1 The term 'infrastructure' can be loosely defined as the basic facilities, services, and installations needed for the functioning of the community. Section 3.4 of the Core Strategy identifies three main categories of infrastructure: strategic, services and transformational. Strategic infrastructure include the following (reflecting the Secretary of State's Proposed Changes to the South East Plan):

- Road and rail networks;
- Affordable housing;
- Acute care and general hospitals, emergency services;
- Waste processing and disposal;
- Water supply and waste water treatment;
- Gas and electricity transmission;
- Flood defences.

Service infrastructure include the following (also reflecting the SEP Proposed Changes):

- Further and higher, secondary, primary and nursery education;
- Health centres (Primary Care Trusts);
- Supported accommodation;
- Social and community facilities;
- Indoor and outdoor sports facilities;
- Green infrastructure (open spaces, parks, play spaces, nature reserves/parks, allotments, etc.)
- Libraries.

Transformational infrastructure relates to Oxford's vision to become a World-class City rather than being a requirement specific to population change, and is therefore not covered in this paper.

4.2 Section 3.4 of the Proposed Submission Core Strategy recognises that in order to apply a future Community Infrastructure Levy, the City Council would need to identify what infrastructure is needed and how much it would cost, in order to calculate an appropriate contribution from development. This would require a detailed assessment, the results of which would feed into a review of the Planning Obligations SPD, and provide a detailed framework for collecting developer contributions. To comply with PPS12, this paper sets out only a broad preliminary indication of infrastructure needs arising from the spatial strategy, and demonstrates the overall deliverability of key infrastructure in the context of consultation with lead implementation bodies.

### **Consultation with delivery partners**

- 4.3 The relevant providers of the physical and community infrastructure for the district have been consulted at each stage of the DPD consultation process. In the case of the Core Strategy, these stages have been:
- Issues and Options consultation (June 2006)
  - Preferred Options consultation (March 2007)
  - Further Preferred Options consultation (March 2008)
- 4.4 In addition to formal consultation, City Council officers have held a series of meetings with specific stakeholders throughout the preparation of the Core Strategy, to address issues relating to both policy and infrastructure implications.
- 4.5 A summary schedule of issues raised by delivery partners relating to infrastructure, and the Council's response to it, can be found in **Appendix 1** to this background paper.
- 4.6 Given the requirement set out in PPS12 for the infrastructure planning process to assess infrastructure needs and costs, the following section gives an indicative assessment of infrastructure that the City Council expects will be needed to support the spatial strategy overall. It summarises elements of the LDF evidence base, including stakeholder consultation, and is intended only to give only a broad idea of requirements. Further detail on delivery of infrastructure over the Core Strategy period is given in other topic-specific background papers, and in **Appendix 4 of the Core Strategy (Implementation)**.

### **Transport**

- 4.7 Oxford's existing and planned future transport infrastructure is set out in **Background Paper D(ii) – Transport and Accessibility**. This also includes details on delivery and timing of these improvements.
- 4.8 Background Paper D(ii) also includes a preliminary Evaluation of Transport Impacts, which empirically assesses the impact of new development on the transport networks. The paper identifies a broad city-wide mitigation strategy, reflecting Core Strategy Policies CS15 and CS16.
- 4.9 As the lead delivery agent of transport infrastructure, Oxfordshire County Council have identified the need to improve capacity at identified points on the road and rail network, to allow in particular for more journeys into Oxford by bus and train, in order to maintain the efficient operation of Oxford's constrained transport network as the local population and economy grow. These measures are backed up by demand management measures, such as variable speed limits on the A34, and real time road information to improve traffic flows. Policy CS16 in the Core Strategy supports and complements measures proposed by the County Council, by focusing on travel demand

management, and setting out priorities for improving sustainable travel accessibility and infrastructure to key destinations in the City.

- 4.10 Policy CS15 in the Core Strategy sets out spatially specific infrastructure improvements to support new strategic development, and sets out the requirement for transport assessments and travel plans to support new development. Particular measures referred to include:
- City centre bus priority, cycle/pedestrian and public realm improvements in line with the adopted West End AAP;
  - Bus, cycle and pedestrian access bridge from land at Barton across the A40 (subject to detailed feasibility and viability work);
  - Integrating development at the Northern Gateway with wider movement networks;
  - High-quality bus, pedestrian and cycle links between the South Oxford SDA and key City centre locations (subject to detailed feasibility work in partnership with South Oxfordshire District Council).

### Housing

- 4.11 The need for affordable housing in Oxford is documented in **Background Paper F: Maintaining a Balanced Housing Supply**. Table 1 of this background paper states that a total of 29,497 affordable units would be required over the period 2006-16 to meet the existing backlog of need, plus newly formed need from a growing population (together representing 45.9% of overall housing demand). Clearly, therefore, it will be impossible to meet demand in full. Nevertheless, the significant increase in affordable housing stock sought through the policies of the Core Strategy will go some way to mitigating the additional need likely to arise as a result of population growth in Oxford and its sub-region.

### Supported accommodation (including Extra Care Housing)

- 4.12 Oxfordshire County Council are the lead agent for coordinating (and in many cases delivering) the supply of supported accommodation for the elderly, and for those with learning disabilities. Regarding the latter group, the predicted need for new specialist housing is relatively modest at around 4 or 5 units per year. Delivery of such units may be through new build opportunities, i.e. Housing Corporation bids by Registered Social Landlords.
- 4.13 The County Council have recently produced a framework for 'extra care housing' (ECH) for the elderly (essentially independent residential units with ancillary supporting care facilities). ECH is likely to progressively replace conventional residential care homes in the future. In Oxford, demographic and service modelling commissioned by the County Council<sup>4</sup> has predicted a demand for some 1,183 ECH units by 2025. However this figure includes an existing backlog of 971 units (the need in 2008), and assumes significant

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<sup>4</sup> A Framework for an Oxfordshire Extra Care Housing Strategy. Concept Management Solutions, January 2008

diversion from conventional residential care placements in the future. Some 25-37% of this represents need for social rented units. Future delivery of ECH will be led by the County Council in partnership with the private sector (particularly developers specialising in housing for older people) as the other key delivery agent. The City Council may need to support delivery of ECH through the Site Allocations DPD.

### **Education**

- 4.14 Oxford is world renowned as a centre for higher education, and the Core Strategy aims to support the future strengthening of this sector. Given the prominence and success of the two Universities located in Oxford, it can be assumed that opportunities for physically accessing higher education are more than met with respect to Oxford's native population. A range of courses are also offered by the Oxford-based Oxford and Cherwell Valley College for further education, which proposes significant investment and improvement of their campuses in the City centre and at Blackbird Leys.
- 4.15 However there is a need to consider new provision of Early Years, Primary and Secondary schools provision. Oxford is currently served by 30 state primary schools and 5 secondary schools. The projected level of housing provision in Oxford in the Core Strategy period to 2026 is significant and as such investigations have been carried out in association with the County Council (as local education authority) to assess the associated pupil generation and the potential impact on existing and planned facilities. The most significant (in terms of total units) individual housing sites included in the Core Strategy are the West End with 830 dwellings, Barton with at least 800 dwellings and the South Oxford Strategic Development Area of at least 4,000 dwellings.
- 4.16 In terms of the West End, a discrete project has been commissioned for the West End Steering Group to investigate how the potential pupils generated from development in the area could be accommodated. That study has been investigating two sets of options for accommodating the estimated 212 primary school pupils that would be generated not just from development in the West End, but also on other housing sites and projected windfalls within the group of primary school catchments in the wider area. The first set of options includes the enlargement or relocation of existing schools in the area (West Oxford, St Ebbes and New Hinksey Primary Schools). The second set of options is to find a site within the West End for a new primary school. (It is worth noting that to site a new school in the West End, would significantly reduce the amount of land available for housing and thus also reduce the need for a new school.) Currently the County Council's consultants have considered that there are options in both sets that would meet the objectives and are feasible. Work will continue on refining and deciding between the options.

- 4.17 Regarding land at Barton, where at least 800 dwellings are likely, the County Council indicate that this site itself would generate enough new pupils to trigger a need for either a new primary school or an expansion to existing schools. The Barton area is currently served by the Bayards Hill Primary School; this school has been identified by the County Council as one of the first two projects under the Primary Capital Programme. This will see a whole new school built on the site at an estimated cost of £6.4 million. The new school will be built to existing and projected future capacity, excluding the site at Barton. The design will allow the school to be extended in the future, however any expansion would not provide the full capacity that would be required to accommodate the pupil generation from 800 houses as that would make the school bigger than acceptable in operational terms. Development at the Barton site (on the scale proposed in the Core Strategy) would therefore likely require either an expansion of both the Bayards Hill School and another existing school (possibly New Marston School if the bridge over the A40 were provided); or an additional school built within the site itself.
- 4.18 The South Oxford Strategic Development Area will be of such a scale as to likely require around three new primary schools and a new secondary school.<sup>5</sup> As such it can be taken that additional education facilities required to meet demand caused by this development will be provided on site (a possible alternative being off-site provision funded by the development). In addition it should be noted that that on 31 August 2008 Peers School (close to the proposed SDA) will be closed and replaced by an Academy on the same site. It is proposed that the Academy will move into new buildings from September 2010.
- 4.19 Excluding the West End, Barton and the Strategic Development Area, there is something in the order of 3,041 dwellings expected to come forward from identified sites<sup>6</sup> throughout the city during the period of the Core Strategy. The County Council have calculated that this will result in the generation of some 924 primary school pupils and some 508 secondary school pupils, which roughly equates to two and a half primary schools and half a secondary school. Of course these numbers of pupils are generated from development of hundreds of sites spread throughout the City and developed throughout the period 2006-2026, and do not take account of windfall supply of housing (expected to be somewhere between 2,500 and 3,800 units City-wide). This means that the task of accommodating the new pupils is far more complex than on the large stand-alone type sites discussed above.

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<sup>5</sup> Information provided by Thames Water and Magdalen College (indicative schedule of infrastructure requirements for South Oxford SDA)

<sup>6</sup> Figure derived from Oxford Strategic Housing Land Availability Assessment (Oxford City Council, September 2008)

- 4.20 The adopted Planning Obligations SPD sets out the level of developer contributions that are sought from housing developments to accommodate the new pupils generated. The background papers to the SPD state:

*“Contributions secured towards education infrastructure will be spent upon expanding and improving the quality of accommodation and facilities to meet the needs arising from the new development. The expansions may add new classrooms to existing schools or by replacing temporary accommodation with new permanent accommodation to meet the new housing growth.”*

- 4.21 Clearly at some point any school will be incapable of being expanded further, whether for operational reasons, or simply because there is no more land on the existing site. The background papers to the SPD go on to say: *“Where a development or the cumulative impact of a number of developments can not be satisfactorily met by expanding existing facilities, contributions may be necessary towards the full funding of a new school including the land and initial equipping”*. This will continue to be the policy of the City Council as lead authority in collecting developer contributions, and the County Council as lead authority in spending developer contributions made towards education.
- 4.22 In terms of secondary provision, currently of five secondary schools, Cheney School (Headington) and Cherwell School (Summertown) are the closest to capacity. Overall, sufficient capacity exists (or can be provided) for secondary school places in the areas of greatest housing growth (i.e. the eastern areas of Oxford), although issues of school transport and spatial proximity may need addressing.
- 4.23 The future provision of early years education (i.e. nursery places) has been less easy to assess, due in part to the more mixed nature of private and public provision. However the County Council has indicated that where a new school is being built (for example Baynards Hill, Barton and Wood Farm, Headington), provision for early years education would automatically form part of the brief. The County Council are looking to co-locate a Children’s Centre (incorporating expanded and improved childcare provision) at a redeveloped Baynard’s Hill school. New funding has been made available by the Department of Children, Schools and Families (DCSF) to secure significant investment in early years provision. For Oxfordshire this totals £7.8 million split over the 3 years 2008-2011.<sup>7</sup> Private nursery provision is also likely to come forward from large new developments.

#### **Health**

- 4.24 Oxford is fortunate in being a centre of excellence in clinical provision as well as medical research. The City is home to seven NHS hospital sites, respectively

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<sup>7</sup> Oxfordshire Early Years Capital Plan 2008-2011, Draft for consultation (June 2008)

managed by three hospital trusts, which provide a wide range of acute and specialist clinical and therapeutic care services. As these all serve a population that extends much further than Oxford, and does not therefore relate to district boundaries, it is not appropriate to quantify additional need arising from Oxford specifically. This has been confirmed by discussion with the hospital trusts.

- 4.25 Additional or improved provision is however likely to be needed in respect of primary healthcare. The City Council (along with other districts) is currently assisting Oxfordshire PCT in assessing their needs arising from future housing growth to be determined by the Regional Spatial Strategy and Local Development Frameworks. Current evidence suggests that existing GP practices and health centres have some additional capacity<sup>8</sup>, however growth arising particularly from strategic residential sites will require additional provision. An accurate assessment of new provision will result from continued joint working between the local authorities and PCT. A preliminary indication of future need can however be derived from an infrastructure assessment by SEERA supporting the South East Plan (SQW Report, September 2006<sup>9</sup>), which suggests that 6,592 new patients will trigger the need for one new GP practice with 4 GPs. However Oxfordshire PCT favours development of centres that co-locate a wider range of health care services with other community and social services. Recently completed projects suggest that these may accommodate seven or more GPs.
- 4.26 The PCT are the lead sponsor for primary care facilities in Oxfordshire. Major projects to improve primary care accommodation are likely to be delivered by the Oxford LIFT Company over the next 20 years.<sup>10</sup> The PCT's emerging corporate estates plan includes capital sponsorship and site option for a new health centre in the City centre (Jericho quarter), due to be operational in 2010, as well as developing a Strategic Outline Case for a further health centre within the West End regeneration quarter. These could complement recently completed health centres at Greater Leys and East Oxford. The sites for future new or expanded health centres will be looked at in light of further work on demographic trends, and strategic primary healthcare need, in Oxford and Oxfordshire, and may be considered in the Site Allocations DPD. The PCT have indicated that they will work with the relevant Development Plan allocations when planning their infrastructure for future housing and population growth.
- 4.27 Oxford's ambulance service is provided by Oxfordshire Ambulance Trust. The Trusts' base stations have specific locational needs governed mainly by the strategic and local road networks, rather than having a direct link to patterns of spatial growth. The Trust is proposing a new base in the Oxford area to improve the service; this may be provided as part of the Northern Gateway development.

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<sup>8</sup> Preliminary spatial analysis of GP practice capacity (provided by Oxfordshire PCT)

<sup>9</sup> Technical Report on Infrastructure Requirements in the South East 2006-2026 (SQW, September 2006)

<sup>10</sup> Oxford LIFT Ltd – Local Improvement Finance Trust initiative to replace out-of-date healthcare buildings with purpose-built centres over a 25 year period.

### **Social and community facilities**

- 4.28 Strategic Leisure Ltd undertook a Community Centres Assessment for Oxford in 2005.<sup>11</sup> It concludes that Oxford is generally well provided for in terms of the overall number of publicly and privately owned community centres (there are 23 public and 29 private facilities across the City). However distribution of these is not even, hence there are some areas that do not have their own public provision (namely Holywell and North wards, and to a lesser extent Northfield Brook, Headington, Wolvercote, St Mary's and Carfax). Additional pressure arising from new housing will be mitigated by improvements to existing provision, or (where justified) new provision funded in part or whole by new development, for example in the West End through the streamlined contributions framework.
- 4.29 The County Council has additionally identified a need for 3 specialist day resource centres for older people in Oxford. There is an existing short-term deficit in such a facility in the north of the City (Jericho area).
- 4.30 With the exception of day resource centres, delivery of enhanced and new public community facilities will be led by the City Council, supported by Core Strategy Policies CS19 (Infrastructure and Developer Contributions) and CS22 (Cultural and Community Development). The overall enhancement of all types of community infrastructure will be delivered through ongoing partnership working between the City Council and various voluntary and private organisations.

### **Sports centres and swimming pools**

- 4.31 The Indoor facilities report carried out by Strategic Leisure<sup>12</sup> said that there was a demand for 34 indoor sports courts, and a supply of 50 publicly accessible ones. Therefore, it seems that there is enough spare capacity currently to meet expected increased demand. However, it is still important that contributions are taken to mitigate against demand created from new developments, as improvements will be needed to courts and their location must also be considered.
- 4.32 Sports England also use an assumption of need per person of 0.01045 m<sup>2</sup> of swimming pool. As a swimming pool is assumed to be of size 214 m<sup>2</sup>, this implies a population increase of 20,478 would trigger the need for a new such facility. However, there is currently good provision of publicly accessible swimming facilities in Oxford. The Indoor Facilities Report found that there was 3,000m<sup>2</sup> of publicly accessible facilities in 2006 (since this time, a new pool has been built at Barton). The demand in 2006 was calculated at 992m<sup>2</sup>. Therefore, the increased population expected during the Core Strategy period is unlikely to result in the need for a new swimming pool.

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<sup>11</sup> Community Centres Assessment (Strategic Leisure Ltd., November 2005)

<sup>12</sup> Indoor Facilities Strategy (Strategic Leisure Ltd., January 2006)

### **Green infrastructure (including open spaces and parks)**

- 4.33 The term 'green infrastructure' is broadly defined in the Government's Proposed Changes to the Draft South East Plan (Box CC3). This suggests that green infrastructure covers a range of formal (for sports and recreation) and informal public green space, as well as specific facilities for informal community recreation. These are broadly reflected as follows in the Core Strategy:
- Policy CS13: Flooding – requires all development to incorporate sustainable drainage measures (such as wetlands);
  - Policy CS14: Biodiversity – requires protection or enhancement of features of ecological value, including provision of biodiversity-supporting features in new development;
  - Policy CS19: Infrastructure and developer contributions – requires that new development is supported by appropriate infrastructure at a timely stage;
  - Policy CS22: Cultural and community development – requires that community facilities are provided for which support new development;
  - Policy CS23: Green spaces, leisure and sport – sets out how the overall City Council standard for green space provision will be applied; improvements (including improved access) to, or provision of, public open space to support new development to be sought, where appropriate.
- 4.34 Scott Wilson consultancy undertook a Green Space Study for Oxford City Council in 2005 (updated in late 2006)<sup>13</sup>. The study found that there is 5.75ha of unrestricted access open space per 1000 population across Oxford. However, there is a wide variation across the City. The Study concluded that the current Citywide standard should be maintained and efforts should be made to address any deficits or poor quality areas that exist in some areas. Recommendations for each part of the City are contained in the Study. The recommendations are based on assessments of the amount, quality and type of open space.
- 4.35 Policy CS23 says that improvements to, or the provision of, public open space will be sought. Opportunities will be sought for opening up access to new public spaces, for providing suitable new open spaces on or near to development sites, and for providing public access to private facilities. The Core Strategy is required to be flexible, and is therefore not the place to provide detailed guidance on this. The nature of green space provision will need to be assessed on a case-by-case basis, using the recommendations of the Green Space Study as a guideline, and in liaison with leisure and parks officers.

### **Libraries**

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<sup>13</sup> Oxford City Green Space Study (August 2005; updated December 2006)

- 4.36 Oxfordshire County Council is responsible for providing public library services. Oxford currently provides a Central lending and reference library, which serves the whole county, and six neighbourhood libraries spread around the City. The County Council has an adopted standard of 23m<sup>2</sup> of public floorspace for each 1,000 population. Applying this standard to the assumed population increase nominally implies a required increase in library public floorspace of 342m<sup>2</sup> by 2016, and a further 219m<sup>2</sup> by 2026.
- 4.37 The County Council have indicated that they plan to focus on improving and expanding existing library services, using both developer contributions and, in some cases, their own capital. Such improvements include expansion of Cowley library, and significant improvements to Headington Library. There is also an aspiration to refurbish Summertown library, and to secure public access to the Oxford Academy (formerly Peers School) library. Improved access to library services for Barton and Rose Hill is also planned, and is likely to be in the form of unconventional library services, such as community centre/public hall venues providing 'Library Links' and 'Library Access Points' (which usually require no additional physical infrastructure).
- 4.38 Policy CS19 in the Core Strategy, and subsequent LDD documents, will ensure that the necessary improvements are made to the City's library services as development comes forward.

**Emergency services (see also Health above)**

- 4.39 Emergency services can be defined as Fire and Rescue Services (provided by Oxfordshire County Council), and Thames Valley Police. It also includes emergency flood response duties (which are spread across the two Local Authorities and the Environment Agency). Ambulance services are referred to above in relation to health infrastructure.
- 4.40 Neither Oxfordshire County Council nor Thames Valley Police have identified any specific physical infrastructure needs associated with the level of growth identified in the Spatial Strategy, over and above existing proposals such as potential relocation of emergency services at Northern Gateway. Although Thames Valley Police have made representations on a future need for planning contributions to support their operations, their request generally relates to ongoing funding issues rather than spatial development-related infrastructure, and is therefore more appropriately considered as part of a review of the Planning Obligations SPD. Oxfordshire County Council (Fire and Rescue Services) have informally indicated that existing and intended future provisions of the Fire & Rescue Service are sufficient to cope with proposed development, and no additional resources are specifically warranted.

## **Utilities**

- 4.41 The principle providers of water and energy utilities infrastructure in Oxford are Thames Water, National Grid (the statutory undertakers), and Scottish and Southern Energy and Southern Gas Networks (the principle distributors for electricity and gas respectively). All utility companies are required to take account of housing and economic growth in planning for major infrastructure, however the scope and scale of improvements will also be influenced by more regional-scale factors such as predicting and influencing patterns of demand, and making more efficient use of existing infrastructure through repair and maintenance. Other than regionally driven major projects, most local improvements are undertaken in response to particular development proposals, with delivery and funding arrangements agreed between the developer and the utility company.
- 4.42 No specific infrastructure constraints on the proposed Spatial Strategy have been identified through consultation with either Thames Water or National Grid (as respective statutory undertakers for water supply and treatment, and electricity and gas supply). Thames Water has specifically supported the proposed level of housing growth in Oxford and the South Oxford SDA as wholly appropriate. National Grid have stated that the distribution of new housing growth around Oxford will not have a significant effect on National Grid's infrastructure, and that extra growth is unlikely to create any capacity issues for them, given the scale of both gas and electricity transmission networks. They state that the existing network should be able to cope with the additional demand.

## **Waste**

- 4.43 Oxfordshire County Council is responsible for general waste (refuse) strategic planning. A County-wide Minerals and Waste LDF will set out infrastructure needs arising from waste planning, including site allocations for waste recycling and processing facilities. This will take full account of other relevant LDFs, and be compliant with the final South East Plan Spatial Strategy (which is likely to include significant growth in central Oxfordshire). The Oxford Core Strategy supports the adopted joint local framework for strategic waste planning (essentially the reduction, reuse, recycling and recovery of waste, in that order, ahead of disposal), and acknowledges the lead role of the County Council in delivering this strategy.

## **Flood defences**

- 4.44 The provision of flood defences, where required, is development specific. The Core Strategy (Policy CS13) will ensure that any new development, of any size, will be required to demonstrate a neutral or beneficial impact on flood risk, which may where necessary require flood mitigation measures to be identified in a Flood Risk Assessment and designed into proposals. The Environment Agency have confirmed that as long as new development is not dependent on

flood mitigation infrastructure intended to protect existing development, the Agency's programme of works should not have implications for Oxford's Local Development Framework.

- 4.45 The Spatial Strategy also fully recognises the importance of minimising the risk of flooding to new development through appropriate location. Further detailed justification on the issue of flooding is given in **Background Paper C(ii): Responding to Flood Risk**, including the outcomes of the Strategic Flood Risk Assessment.

## 5 Infrastructure to support Strategic Sites

- 5.1 Infrastructure required to support location-specific strategic development will be delivered in a timely manner, to comply with Policy CS.19. Area Action Plans, and a revised Planning Obligations SPD, will set out in detail the appropriate mechanisms for ensuring timely provision of infrastructure, whether on-site (in partnership with the relevant delivery partner) or as a financial contribution.
- 5.2 The section below broadly sets out requirements for new infrastructure that are expected to arise from development at the strategic sites. A full assessment of infrastructure costs and delivery will be required at the Area Action Plan stages.

### Barton

- 5.3 Barton is a strategic site (covering 35.6 hectares) allocated in the Core Strategy for primarily residential development. The Strategic Housing Land Availability Assessment (SHLAA) estimated potential for some 800 dwellings, which assumes 23.5 hectares of developable land. However, it is considered that there could be potential for up to 1,200 dwellings, dependent on the precise form, mix and location of development on the site.
- 5.4 Detailed infrastructure planning for the Barton site will be subject to an Area Action Plan. The constraints and opportunities of the site are considered in **Background Paper B: Spatial Strategy**. An initial assessment has given rise to some preliminary costings for essential infrastructure to support delivery of some 800-1,200 dwellings, shown in **Table 3**.
- 5.5 In addition, key strategic accessibility improvements are seen as highly desirable on grounds of creating a sustainable and integrated urban extension, and in fact may be found as essential subject to a detailed strategic transport assessment to be taken forward through the AAP process. These are detailed in **Table 4**.

**Table 3: Essential infrastructure initial assessment – Barton**

Infrastructure	Indicative cost: 800 dwellings	Indicative cost: 1,200 dwellings
Primary and secondary education	£4.7 million <sup>1</sup>	£7 million <sup>1</sup>
Social and community facilities	£0.67 million <sup>2</sup>	£1.05 million <sup>2</sup>
Pump-priming of new or extended bus services (if required)	<i>Currently unknown (pending further details in AAP)</i>	<i>Currently unknown (pending further details in AAP)</i>
Green space enhancement	<i>Currently unknown (pending further details in AAP)</i>	<i>Currently unknown (pending further details in AAP)</i>

<sup>1</sup>Costing estimates based on Planning Obligations SPD

<sup>2</sup>Cost estimates based on Technical Report on Infrastructure Requirements in the South East 2006-2026 (SQW, September 2006)

**Table 4: Strategic access infrastructure – Barton**

Infrastructure	Indicative cost
Bus, pedestrian and cycle-only access bridge across the A40 (western link)	£3-5 million <sup>1</sup>
New 'left-in, left-out' access/egress onto A40 Northern Bypass	<i>Currently unknown</i>
New pedestrian and cycle bridge across A40 (eastern link) or improvements to existing A40 pedestrian underpass	<i>Currently unknown</i>
Improvements to Green Road roundabout (if required subject to detailed assessment)	<i>Currently unknown</i>

<sup>1</sup>Cost estimate provided by Oxfordshire County Council

- 5.6 It should be stressed that the figures in **Tables 3** and **4** are highly indicative, and a more comprehensive infrastructure assessment and delivery plan will need to be developed as part of the Area Action Plan process. The City Council is already working with English Partnerships to assess the feasibility and viability of delivering the accessibility improvements outlined in **Table 4**, taking into account the need to provide essential infrastructure and affordable housing on the site.

#### **Northern Gateway**

- 5.7 The adjacent sites that form the Northern Gateway are allocated for mixed-use, employment-led development (covering some 16 hectares). Initial site assessment suggests that the site could accommodate some 85,000 m<sup>2</sup> of employment generating uses. The Core Strategy specifies that only development relating to Oxford's existing knowledge-based economy, or otherwise essential for Oxford, should be located here.

- 5.8 As the Northern Gateway development would be employment-led, the bulk of infrastructure costs associated with the development are likely to be access related. Further details of the site in relation to transport and access can be found in **Background Paper D(ii): Transport and Access**, and a number of supporting documents produced in relation to the site. An initial overall assessment suggests the following 'hard measures' may be necessary to enable development (this list may not be exhaustive):
- Significant mitigation measures to complement proposals to improve major junctions in the area, as part of the Access to Oxford programme (costings subject to further work).
  - Improved public transport access, in partnership with City and County Councils (cost estimate unavailable at time of writing).

### **West End**

- 5.9 The West End AAP has now been found sound by the Planning Inspectorate and was duly adopted in June 2008. The **Background Papers to the West End Area Action Plan** set out information relevant to infrastructure for this area, including on infrastructure supporting movement and transport, biodiversity and green infrastructure, sustainable energy production and public realm improvements. The detailed costings for a range of infrastructure improvements, and identification of funding for them, is currently being developed for the Strategic Business Case for the West End. The emerging Streamlined Contributions (West End) SPD will set out a framework for collecting developer contributions, to be pooled towards the infrastructure to be delivered in the area by the West End Partnership.

### **South Oxford Strategic Development Area**

- 5.10 An assessment of infrastructure requirements will be undertaken jointly with South Oxfordshire District Council, as part of the proposed Area Action Plan. However submissions by one of the prospective developers have included an initial assessment of community and commercial infrastructure likely to be needed to support a new community of 4,000 dwellings:
- One neighbourhood centre;
  - Two local centres;
  - Two medical centres with pharmacies;
  - Two community centres;
  - Two pub/cafe/restaurant type facilities;
  - Two post offices;
  - Three primary schools;
  - One secondary school;
  - Local provision of sports pitches and pavilion, in conjunction with education provision;
  - 24 hectares approx. of informal open space.

## 6 Infrastructure Deliverability

- 6.1 Discussion throughout the evidence gathering stages of the Core Strategy have provided assurance of the reasonable prospect that vital strategic infrastructure will be delivered. Core Strategy Appendix 4 – Monitoring and Implementing the Core Strategy broadly sets out the means of delivering development and associated infrastructure. There are, nevertheless, specific areas of concern raised by some delivery partners with respect to delivering some aspects of the Spatial Strategy. The City Council will continue to work closely with partners to resolve such issues, for example through mitigation of the impacts of development to be delivered by Area Action Plans.
- 6.2 **Appendix 1** sets out the main areas of risk raised by key delivery partners at various stages of consultation, and outlines how these have been, or will be, addressed.

## Appendix 1

Key Infrastructure Provider/ Delivery Partner	Summary of representations	How the City Council has addressed the risk
<i>Transport Network</i>		
Highways Agency	<p>The main concerns of the Highways Agency were surrounding the effect of proposed development on the Strategic Road Network around Oxford. The HA suggested modelling all the housing options and ensuring that the impact on the SRN be taken account of in the final decision for which housing option was taken forward.</p> <p>The HA has particular concern regarding strategic economic development at the Northern Gateway, as this could have a detrimental impact on the SRN. Also some concern regarding Barton site and impact on M40.</p> <p>With regard to the SDA, appropriate mitigation measures would need to be put in place in order to mitigate potential transport impacts that the SDA may generate.</p> <p>In general, it is essential to produce an Evaluation of Transport Impacts which presents in a cohesive package the results of transport modelling for Access to Oxford, work done to support Northern Gateway allocation, and any further work required to link these. This should be available for consultation prior to submission of the Core Strategy.</p>	<p>The Core Strategy's Spatial Strategy has been tested for its impact on transport networks, including the SRN, using the newly built Access to Oxford sub-regional transport model. A framework mitigation strategy to deal with these impacts, including new infrastructure where appropriate, is appended to <b>Background Paper D(ii) – Transport and Accessibility</b>. This includes specific mitigation for Northern Gateway arising from the Northern Gateway Scoping Transport Assessment.</p> <p>Only outline mitigation measures are referred to in respect of the SDA, as this is an allocation in the RSS, outside of Oxford's boundary, to be taken forward jointly with South Oxfordshire District Council and other partners.</p>

Key Infrastructure Provider/ Delivery Partner	Summary of representations	How the City Council has addressed the risk
Oxfordshire County Council	The City Council should note that Access to Oxford Strategy funding cannot be guaranteed. Funding dependent on upon future government funding decisions and the production of a successful business case.	An Evaluation of Transport Impacts has been carried out (see above). A Mitigation Strategy has been included in the evidence base as part of this work.
Network Rail	Should be noted that developments not in close proximity to stations may have to contribute to rail infrastructure if it is considered they have a direct or cumulative impact on the operation of the railways. Planning applications should be accompanied by Transport Assessments that consider this issue.	Network Rail liaises with the County Council Rail Development Officer on a regular basis. A list of rail related schemes to support development in the Oxford area is provided in <b>Appendix 3 of Background Paper D(ii) – Transport and Accessibility.</b>
<i>Water Supply and Waste Water Treatment</i>		
Thames Water	<p>Thames Water bases its funding request to OFWAT on information contained within the SEP as this gives us the clearest indication as to expected levels of growth for Oxford area. Investment programmes are based on development plan allocations and the RSS.</p> <p>It should be noted that developer contributions cannot be used to fund water supply and sewerage upgrades. It is vital that developers liaise with Thames Water to ensure funding will be available or can be sought from OFWAT as part of 5 year</p>	<p>Thames Water have been consulted formally and informally throughout the preparation of the Core Strategy. No significant barriers to providing appropriate supporting infrastructure have been identified.</p> <p>The infrastructure delivery lag has been noted, however greenfield development at Barton and the SDA is</p>

Key Infrastructure Provider/ Delivery Partner	Summary of representations	How the City Council has addressed the risk
	<p>funding periods (current period until March 2010). There is a 3-5 year lag for provision of extra capacity once funding approved, or 7-10 years when a complete new water or sewerage works is required. Provision will be required for additional water resources if Thames Water is to maintain acceptable supplies to its customers. If there are capacity issues for development for which funding of water and sewerage infrastructure is not available, the developer must agree with Thames Water what improvements are needed and how they will be funded prior to occupation.</p> <p>Note that the Oxford Sewerage Works falls within the proposed SDA, and will require relocation. Hence Core Strategy should provide clear policy framework for delivery of the SDA.</p> <p>Overall, consider that water and sewerage infrastructure can be put in place in a timely manner to support the level of housing proposed.</p>	<p>unlikely to come forward before 2014, and will be phased, allowing time for appropriate funding to be put in place (as confirmed in Thames Water representations).</p> <p>Relocation of sewerage works south of Oxford is not identified by Thames Water as a barrier to progressing the SDA, provided a clear policy framework is in place for it. An SDA of at least 4,000 dwellings has now been endorsed by Government in its proposed changes to the South East Plan. Policy CS9 of the proposed submission Core Strategy also provides policy support for the SDA.</p>
Environment Agency	<p>Level &amp; timing of housing delivery should be determined taking into account the capacity of the environment &amp; the provision of necessary infrastructure, with objective of minimising damage to ecosystems.</p> <p>The proposed Oxford Flood Management Strategy is focused on defending existing development from flooding; new</p>	<p>Overarching policies are included in Section 2 of the Core Strategy that deal with flooding and biodiversity. These make clear that new development should have a neutral or beneficial impact on all forms of flooding. These have generally been supported by the</p>

Key Infrastructure Provider/ Delivery Partner	Summary of representations	How the City Council has addressed the risk
	<p>development should not be dependent on the Environment Agency's infrastructure programme, hence there should be no implications for Oxford's LDF.</p> <p>Surface water flooding should be considered in light of the SFRA; it may be appropriate for upgrade works to be undertaken in some areas.</p> <p>There is a strong possibility that new Sewage Treatment Work infrastructure will be required for the SDA; this information should be sought from Thames Water. The Environment Agency would need to give consent for any change in discharge to Northfield Brook that may arise as a result of upgrading the Sewage Treatment Works.</p>	<p>EA as appropriate to mitigate potential impacts of development and associated infrastructure.</p> <p>There is some risk identified in increasing capacity of the Oxford Sewerage Treatment Plant. Thames Water is to take the lead on this element of infrastructure delivery. Given the need to comply with the RSS in delivering the SDA, a more detailed assessment of options and associated risk is more appropriate as part of joint work on an AAP.</p>
<b><i>Education &amp; Social Services</i></b>		
Oxfordshire County Council	<p>New strategic housing allocation at Barton gives rise to education provision: there is a potential need for a new primary school, and also concern over the distance away from secondary school places. The need from inception for new infrastructure, services and facilities to support a new sustainable community should be highlighted.</p> <p>Should note that a number of schools in Oxford are restricted and incapable of expansion.</p>	<p>The need for services and facilities to be provided by the County Council is noted, and broadly assessed in this background paper. The exception is the SDA, as assessing infrastructure will need to take place jointly as part of a future AAP or similar document.</p> <p>Policy CS18 of the Core Strategy, and</p>

Key Infrastructure Provider/ Delivery Partner	Summary of representations	How the City Council has addressed the risk
	<p>The SDA, if confirmed, would require the provision of new/improved infrastructure – delivered in time to support the new housing. As a major service provider, the County Council would need to be fully involved in the production of a future Joint AAP.</p> <p>Should be generally more explicit recognition in the Core Strategy of the need for social services and extra care housing infrastructure, with respect to new development proposed.</p>	<p>supporting text, sets out a framework for working with the County Council to ensure additional school places are delivered in a timely manner.</p> <p>Policy CS19 provides an umbrella framework for ensuring appropriate provision is made, in a timely manner, for all development proposed in the Spatial Strategy. A more detailed evaluation of social and community needs will be undertaken in partnership with the County Council during preparation of relevant AAPs and the Site Allocations DPD.</p>
<b>Hospitals</b>		
Oxford Radcliffe Hospitals Trust	Changes in the way that healthcare is delivered mean that the Trust cannot offer a definitive view of its requirements in the future, however the ability to deliver healthcare should not be hampered by over restrictive policies relating to its existing sites or surrounding areas. Trust currently reviewing JR & Churchill sites to identify existing stock that can be redeveloped.	ORHT are the main acute care hospital trust in the area, and the City Council has worked closely with them to ensure appropriate support for new hospital development. ORHT have informally indicated that they are broadly happy with the Core Strategy in respect of their

Key Infrastructure Provider/ Delivery Partner	Summary of representations	How the City Council has addressed the risk
		sites.
Primary Care Trust	Consider SDA would be likely to have a significant impact on current and future health provision. However without knowing the likely population increase, demographics, migratory trends etc., it is difficult to assess this impact. Similarly for growth elsewhere, e.g. Blackbird Leys.	The City Council regularly meets with the PCT, who are assessing longer term healthcare needs in Oxfordshire based on population forecasts, and on LDF evidence bases on housing growth. No specific barriers or risks have been identified thus far, with respect to community healthcare provision.
<i>Emergency Services</i>		
Thames Valley Police	<p>Definition of Infrastructure used in Core Strategy is too narrow. Formal recognition is required in the Core Strategy (and subsequent development documents) that development puts increasing pressure on police (and other key agency) infrastructure. Community Safety should be expressly mentioned as a key principle, with associated infrastructure requirements.</p> <p>SDA will further stretch existing police infrastructure resources.</p> <p>Thames Valley Police are updating their methodology for calculating police infrastructure requirements from new development (June 2008).</p>	No strategic built infrastructure requirements have been identified by Thames Valley Police (excepting relocation of some emergency services to Northern Gateway). Provision of new infrastructure likely to be mainly revenue based, and may be relevant to future review of Planning Obligations / Community Infrastructure Levy policy review.