

Buckinghamshire Strategic Infrastructure Plan – Spatial Principles (Part 1)

Version No: V6

Issue Date: 14th July 2017

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1 Executive summary

1.1.1 Opportunity for Buckinghamshire

Buckinghamshire, abbreviated Bucks, is a county in South East England which borders Greater London to the south east, Berkshire to the south, Oxfordshire to the west, Northamptonshire to the north, Bedfordshire to the north east and Hertfordshire to the east. Bucks has the highest GDP per capita outside Inner London, the highest quality of life, the highest life expectancy and the best education results in the country. One of the oldest Counties in England, Bucks has four Districts including Aylesbury Vale, Wycombe, Chiltern and South Bucks. Almost half of the County falls within London's metropolitan green belt and includes land within the Chilterns Area of Outstanding Natural Beauty.

Buckinghamshire is home to a number of high value industrial sectors as well as a highly skilled workforce. Residents in Buckinghamshire benefit from and value its distinctive rural character with outstanding villages and countryside within the Chilterns Area of Outstanding Green Belt situated within close proximity to the cities of Oxford, Cambridge, Reading, London and Milton Keynes. A key challenge for Buckinghamshire is to make the most of the opportunities for housing and economic growth (supporting the delivery of the County's emerging Local Plans and the Government's Industrial Strategy) while conserving the environment and creating attractive new communities. The efficient planning and delivery of infrastructure will be central to achieving this goal.

1.1.2 Purpose of the report

The purpose of this report is to agree a set of spatial principles that the County Council can use to;

- Influence the nature and location of strategic infrastructure
- Plan and deliver the services that the County Council is responsible for
- Help coordinate the provision of utilities and other services (including, electricity, gas, water and telecommunications).
- Protect the County's existing assets
- Coordinate its response to the emerging Local Plans and other development proposals

It is intended that the principles should be used to respond to growth and infrastructure proposals within current planning time horizons (including current local plan timescales). The growth proposals referred to in this report are taken from the emerging local plans, local plan background information, work carried out by the Bucks Thames Valley Local Enterprise Partnership and national infrastructure policies. **The County Council is not the planning authority for the County (with the major exception of waste and minerals planning). This report and the spatial planning principles are not part of the statutory planning process and this report does not include any new proposals for growth.**

1.1.3 Context – the importance of having agreed spatial principles

The location and nature of the development and infrastructure planned for the County will determine how and where the County Council will have to deliver its own services as well as those services that it has a responsibility for planning and coordinating. It will also have a direct impact



on the cost and efficiency of delivering these services (both in terms of initial investment as well as longer term revenue costs).

The County Council does not currently have a formal position setting out the principles that should be used to influence where future development takes place. It has an input into local plans and other policy documents but responds on a case-by-case basis, as is usual with planning applications and other infrastructure proposals. As a result, County level influence on planning is currently weak. County level infrastructure planning takes place with little co-ordination across services or agencies and has limited County wide strategic context or strategic infrastructure budget. In turn existing budgets are not used most efficiently and, in many circumstances, the expectations placed on the County Council as a service provider are beyond what it can afford.

In addition to significant growth pressures, Buckinghamshire is currently the subject of an unprecedented and unique set of national infrastructure proposals. These include the road and rail routes in the Oxford to Cambridge Corridor, HS2, the proposed third runway and rail links to Heathrow as well as the development of Crossrail and M4 Smart Motorway upgrade to the south. The County Council is working hard to effectively mitigate the impact of these nationally significant infrastructure projects and trying to maximise their potential benefits. Having clear spatial principles relating to growth and infrastructure will help to deliver these objectives.

1.1.4 Methodology and approach

The approach to developing the Spatial Principles uses the County Council's Strategic Plan as a starting point – as the document which sets out the County Council's vision for Bucks along with aims, objectives and its strategic outcomes. The aims and objectives of the Plan can be used to prioritise infrastructure and measure success (Part 2 of the BSIP work that will be reported to Cabinet later this year).

Taking this as a starting point the report considers the requirements and impact of a number of other factors. These are;

- Delivering council services and considering how spatial principles can be used to increase the efficiency of delivery;
- Implications for delivering other utilities and infrastructure;
- The scale and nature of the growth already proposed within existing and emerging plans;
- The policies and objectives of the County Council's delivery partners – in particular Central Government, the BTVLEP and Strategic Alliance.

These factors have led to the development of three simple Spatial Principles which in turn are expressed as more detailed Spatial Implications for the County set out in paragraphs 3.2 to 3.3.

1.1.5 Using the County Council's Strategic Plan to feed into the Spatial Principles

Whilst the Buckinghamshire County Council Strategic Plan does not set out where development should or should not take place, the success in delivering its aims and objectives will be dependent, in part, upon the scale and location of growth.

A key element of the Corporate Plan is the need to balance elements that impact on the quality and value of the County as it is today with future growth - in particular the balance between;

- The needs of the County's existing residents with new occupiers and residents
- The need to protect and enhance existing urban and rural environments with that to create attractive new communities
- The need to develop significant numbers of new homes and jobs and the need to use Buckinghamshire's limited land and other resources most efficiently – maximizing the economic benefit for the County and Country that the growth will deliver.



1.1.6 Efficient delivery of the County Council's Services

Currently service planning takes place in the context of the County not yet having adopted up-to-date local plans. Whilst all services have had an input into the emerging local plans the main input that the County Council has to growth proposals is in response to individual sites and planning applications. Responding to individual applications is resource hungry. This approach also means that it is difficult to consider the cumulative impact of different developments or to consider services delivery issues relating to a known development programme.

The report considers the opportunities for improving service delivery on a service by service basis and draws out some key themes. These fall into three categories;

- I. All service areas would benefit from early strategic engagement with growth and infrastructure planning, with the infrastructure and services considered collectively. This would provide the opportunity to consider the interrelationships and dependencies between different services (education and transport being the clearest example). It would also enable joint use of infrastructure to be planned (for example using transport routes for utilities, telecommunications and forms of environmental mitigation);
- II. Service delivery issues should influence the pattern of development within the County. This will enable the County Council to ensure that the capacity of existing as well as planned infrastructure is used effectively;
- III. Service delivery issues should influence the form and detailed planning of development areas. Most services with a requirement for capital investment have thresholds which justify the investment. For example circa 700 new homes generate the requirement for a new primary school. A series of unrelated development proposals, none of which individually reach this threshold, would exacerbate the cumulative impact of development on services and infrastructure and makes service planning and delivery more difficult.

1.1.7 Spatial Principles

The conclusion of the Local Partnership's report is that there are some clear principles which will provide a clear framework for growth. This will help to ensure that the efficient planning and delivery of the Council's services can effectively mitigate or respond to the national infrastructure proposals affecting Bucks and will help to deliver the growth and economic potential for the County (supporting central governments ambitions for the wider area).

The Council should support and promote:

- Concentrated rather than dispersed development;
- Development that is well related to transport corridors and transport hubs;
- Growth patterns that respect the County's environmental and other planning constraints (including Green Belt, and AONBs).



2 Introduction and Background

2.1 Purpose of the report

Buckinghamshire County Council has commissioned Local Partnerships (LP) to prepare a Strategic Infrastructure Plan for the County. It will be used to provide a framework to shape and influence the delivery of critical strategic infrastructure, including physical, social and green infrastructure over the next 25 years.

The Plan will not be a statutory planning document. It will need to reflect the area's emerging Local Plans, LEPs' economic strategy, mitigate and lever benefits from national infrastructure projects. It should guide delivery of the County's aspirations and influence rather than duplicate the plans of partner organisations.

The County Council is responsible for strategic services and infrastructure needed to support existing and growing communities. A key requirement for the plan will be its use as a tool to support the delivery of the services and infrastructure that the County is responsible for providing and planning, including those relating to;

- Schools
- Strategic road and rail infrastructure
- Social and community infrastructure
- Health
- Environment, open space and countryside management
- Supported housing

The Council also has a role in ensuring that utilities, broadband and other services are provided to meet the needs of the whole of the County.

The Importance of digital and utility infrastructure

Using infrastructure to create a more attractive and productive Buckinghamshire is a key objective of the Strategic infrastructure Plan. This does not just require infrastructure to fill a basic capacity gap but also requires a quality and level of infrastructure that provides;

- Flexibility to meet changing and future needs (including those required to support new industry, transport and communications),
- Resilience to meet changes to the environment and economy,
- Robustness to stand up to potential shocks.

These features are particularly important with regard to the provision of new utilities required to support growth and in particular Digital communications (including high speed broadband as well as mobile communications) as well as electricity supply.

It is intended that the plan will be influential in relationship to the various strategic infrastructure funding and delivery strategies at the sub-regional and national level – making the most of the opportunities provided and providing a justification for new infrastructure which benefits the agreed strategy, providing the appropriate links between strategic infrastructure and local spatial planning priorities. The plan will also consider different and more efficient models of funding infrastructure than the current arrangements (to be reported to Cabinet later in the year).

Developing a set of spatial principles is particularly relevant bearing in mind the pressures that the County is facing. The County Council is having to respond to housing and economic growth pressures (from within the County and external to it) as well as proposals for significant pieces of national infrastructure. This report sets out a forward thinking strategy to enable the Council to



influence the planning and delivery of strategic infrastructure projects, guide and influence growth proposals including;

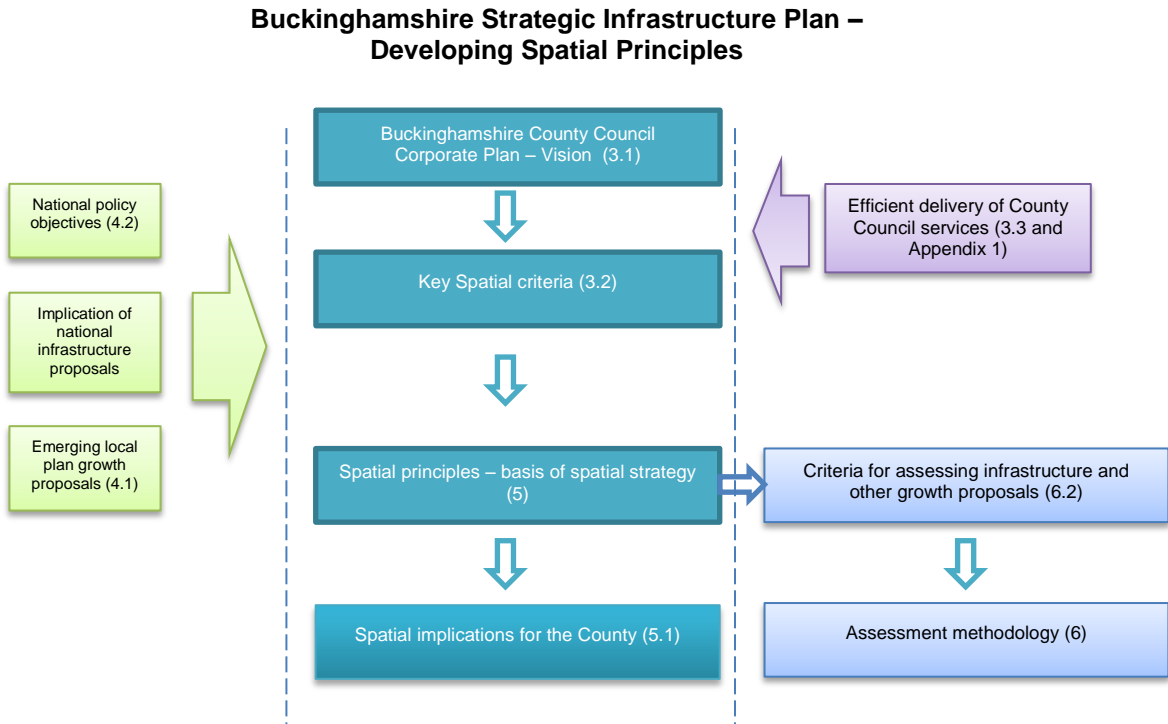
- Emerging local plans;
- Options for future growth (within Buckinghamshire and in surrounding authorities (including Greater London));
- Routes, location, form and mitigation required to deliver National Infrastructure (Oxford to Cambridge Expressway and rail line, HS2, Heathrow 3rd runway and rail links);
- The planning and delivery of other strategic infrastructure (serving the economic and housing growth and to optimise the benefit of national connections);
- The delivery approach to the services that are the responsibility of the County Council;
- Investment decisions of the Government and the private sector.

2.2 Scope and Methodology

The basis for this work is a set of criteria drawn from the County's Strategic Plan and Vision. These criteria are being used to develop a set of Spatial principles that;

- Will inform the County Council's position on items covered by the bullet points in 2.1 above , and
- Can be used to prioritise investment decisions relating to infrastructure and services

The diagram below sets out the broad approach used to develop the spatial principles with the central block representing the subject of this report. The numbers refer to subsequent report sections.



2.3 Next steps

This report is the first stage of the work Local Partnerships is carrying out for Buckinghamshire County Council. The next steps which are currently underway are to consider;

- Where and how the County Council can effectively influence growth and manage the provision of strategic infrastructure and services;
- A more detailed approach to prioritising infrastructure and infrastructure funding (based on the criteria and spatial principles set out in this report);
- An analysis of costs and availability of funding;
- Future approaches to infrastructure delivery including -
 - Options and different delivery solutions
 - Model for assessing benefits including impact on GVA





3 Vision for Buckinghamshire

3.1 Buckinghamshire County Council Strategic Plan 2017-20

The vision for Buckinghamshire is contained in the County Council's Corporate Plan 2017-20. The Plan sets the context within which the County Council is operating, the County's aims, objectives and values for the next three years. This is explained within the context of a growing economy, the impact of major infrastructure proposals, and growth pressures from surrounding authorities. The Plan identifies three specific aims, all relevant in assessing spatial proposals and the infrastructure required to deliver these proposals. These are;

- *Safeguarding Our Vulnerable Communities*
- *Creating Opportunities & Building Self Reliance*
- *Ensuring Buckinghamshire is Thriving & Attractive*

The third of these three aims is considered as an important driver both of itself and in delivering the other two aims. Critical to the success of the third aim is the assessment of spatial proposals, both in the context of protecting the elements of the County that residents value and in ensuring that growth and change delivers thriving and attractive communities that realise benefits for the whole of the County;

“Ensuring Buckinghamshire is Thriving and Attractive

*Buckinghamshire is growing rapidly and its economy is one of the strongest in the country. As it grows our challenge is to **shape quality places**, ensuring they are **prosperous, thriving and attractive**. We will continue to **plan and deliver early interventions** with our partners to drive forward and **secure good jobs, good road, rail and other essential infrastructure** which will meet the current and future needs of our residents. Proactively protect and **mitigate the impact of development on the county's unique natural environment**. (LP Highlighting)”*

Eight objectives are identified to deliver this aim. These are to work with partners to:

- “1. Repair our highways (roads, footpaths, street lights, bridges and drainage) as effectively and speedily as possible*
- 2. To work with the England Economic Heartland / Local Enterprise Partnership's and other partners to maximise investment in the County, to deliver, manage and maintain local services and strategic infrastructure including digital highways, in line with changing demands*
- 3. Enable the right conditions and incentives to attract new and growing businesses to Buckinghamshire, driving economic growth*
- 4. Enable the right conditions to attract people to live, learn and work in Buckinghamshire*
- 5. To improve the connectivity and reliability of Buckinghamshire's transport network to stimulate economic growth and promote more sustainable travel*
- 6. Protect and enhance our high quality environment and major towns including protecting the Green Belt, AONB, Rights of Way and Green Spaces*
- 7. Mitigate the impact of strategic national infrastructure projects i.e. HS2, Heathrow expansion*
- 8. Promote and encourage sustainable approaches to the use of natural resources and waste. Improving our natural environment, water management, biochemistry, recycling and animal welfare.”*

Buckinghamshire County Council Strategic Plan 2017-20.

3.2 Criteria derived from Strategic Plan to assess spatial proposals / prioritise strategic infrastructure

One of the key drivers of the County Council's vision is the emphasis on quality rather than quantity - with the key objective being the delivery of attractive and prosperous places.

Using the County Council's Strategic Plan as the basis, this report draws out 5 criteria that can be used to help develop spatial principles for Bucks and to help prioritise the critical strategic infrastructure required to enable growth.

In any such exercise it is necessary to summarise the key elements of the Plan, the criteria for success and balance key issues, in particular the balance between;

- The needs of the County's existing residents with new occupiers and residents;
- The need to protect and enhance existing urban and rural environments with that to create attractive new communities;
- The need to develop significant numbers of new homes and jobs and the need to use Buckinghamshire's limited land and other resources most efficiently – maximizing the economic benefit for the County and Country that the growth will deliver the five criteria, explained in more detail below.

The five criteria for success we would propose to BCC are;

1. Creating attractive new communities
2. Improving the quality of life for existing and new residents
3. Protecting and respecting the environment and key strategic constraints - including AONBs, Green Belt, flooding, air quality, open space
4. Delivering housing growth which meets Buckinghamshire's needs and supports the expansion of the local economy - concentrating on higher value businesses and jobs
5. The efficient coordinated delivery of growth and infrastructure and services along with the efficient use of capacity created

The following section explains in more detail what each criteria means in the development of a strategy.

3.2.1 Creating attractive new communities

This will cover development proposals that extend existing settlements as well as those that are of a scale that can be considered as new settlements. There are two broad elements to assessing whether a proposal contributes to this criteria;

- The quality of the physical environment
- Whether the mix of uses and necessary range of services and infrastructure can be provided to deliver an attractive, strong and stable community

Whilst the ability of any development to meet these criteria will be dependent upon the detailed plans and proposals (as well as the capacity of existing infrastructure and services), the ability to create attractive new communities will be dependent upon some key principles. In particular the proposal's ability to fund the infrastructure and services required for its residents and businesses.

Note - It is not the role of the County Council to develop detailed planning policies, however, the development of the Aylesbury Garden Town does provide the opportunity to work with partners to develop in more detail the definition of what an attractive new community would mean for Buckinghamshire – particularly in relationship to infrastructure and service delivery. This definition could be used as a delivery model for use across the County.





Spatial Consideration

There are three broad options for creating new communities:

- Concentrating development in larger communities or urban extensions (which could include a number of smaller extensions in an area which cumulatively deliver a scale of development);
- Dispersing development across the County and across the existing villages and towns;
- A mixed approach.

Through the delivery of small sites and windfall sites through the planning system there will always be the need to manage a mixed approach. However, the criteria that are likely to lead to the creation of attractive new communities depend upon the ability to deliver at scale leading to a mixed approach and leaning heavily to concentrated development.

3.2.2 Improving the **quality of life** for existing and new residents.

Whether Buckinghamshire delivers the economic potential identified by the County Council, central government and other partners will be dependent upon it remaining an attractive location for existing and new residents, businesses and investors. The objective of achieving an improved quality of life, whilst not entirely dependent upon spatial principles is affected by them. Central to these are those that will affect access to new homes and jobs. This has a physical element but, just as importantly, relates to education, skills and training:

- Choice of homes and jobs
- Necessary infrastructure and services
- Protection and improvement of existing living and working environment
- Providing training and education to support existing employees

Clearly the actions of partners such as the Bucks Thames Valley Local Enterprise Partnership (BTVLEP) will be important in relationship to this and other principles.

Spatial Considerations

The spatial considerations here relate to the broad idea of accessibility and choice for jobs, homes and services. Community planning has spatial implications in terms of ensuring the right mix of uses and services. At a more strategic level it leads to the need to link new and existing communities with the necessary transport infrastructure.

Conversely where there are clear principles that define where communities should be, this provides a steer to where the infrastructure should be provided – a key issue for determining the route of transport infrastructure such as the Oxford to Cambridge Express Way.

Again this criteria emphasises the advantage of concentrating new development and ensuring that there are close links between new growth areas and strategic infrastructure.

3.2.3 Protecting and respecting **the environment** and key strategic constraints including AONBs, Green Belt, Flooding, Air quality, Open space

Buckinghamshire's countryside as a significant environmental asset – one which is valued and protected in its own right through local, national and international policies and designations. However, respecting the countryside and environment is also central to creating attractive new communities and preserving and improving people's quality of life.

There are a number of criteria which are central to delivering this objective:

- Protecting countryside and open space as a resource that residents have access to and can enjoy (including the creation of new and well-designed new landscapes, open spaces and urban countryside edges);

- Retaining features as mitigation or protection (for example flooding, air quality habitat) as a valuable resource in their own right.

Again whilst these criteria can be delivered in many different ways, by using them to feed into spatial principles the objectives behind the criteria can be delivered more comprehensively.

Spatial Consideration

Much of the County is covered by national planning and environmental constraints. The value and attractiveness of Buckinghamshire's countryside should have a wider impact on the spatial principles of growth. Wherever development does take place it should use the land required most efficiently (both for built development and wider infrastructure) to retain and maximise benefits of development rather than harm to land designated within the green belt or Chilterns Area of Outstanding Natural Beauty.

3.2.4 **Delivering Housing growth that supports the expansion of the region's economy - enabling the creation of high value businesses and jobs**

Buckinghamshire is already at the centre of one of England's best performing south-east economy. This is clearly recognized by central government and in specific reports such as the National Infrastructure Commission's 'Oxford – Milton Keynes - Cambridge Corridor: Interim Report'. The potential of Buckinghamshire to contribute to the national economy is based on its high quality environment, existing high value businesses combined with the skills and education of its residents and workers.

Reflecting the Council's emphasis on quality rather than numbers, the spatial strategy needs to cover elements that ensure that development opportunities are tied as closely as possible to the generation of a high value economy and high quality, attractive communities.

Clearly maximizing this opportunity will depend upon the action of many partners and will be reflected in the BTVLEPs Plans and in particular its response to the Government's Industrial Strategy. However there are some important physical and spatial criteria which will affect this relationship between new homes and jobs, set out as follows -

- Balance between the number of homes and number of jobs;
- Range and quality of the new homes provided;
- Spatial relationship between new homes and employment sites;
- Providing the necessary physical, education and training infrastructure.

Spatial Consideration

This criteria raises the issue of the mix of homes and jobs at the strategic level and the physical links between homes, jobs and supporting infrastructure at the local level.

Whilst modern technology provides opportunities to reduce some physical connections, there is still a clear requirement to be close to this infrastructure.


Bucks has three existing Enterprise Zones that have been identified as areas for accelerated and high value economic growth. Linking these to new communities and infrastructure would seem to be a key starting point.

3.2.5 **The efficient coordinated delivery of growth and infrastructure and services along with the efficient use of capacity created**

This is an overarching criteria which relates to ensuring that the County Council and others can deliver their services as efficiently as possible. There are three elements to this:

1. That the County Council can continue to deliver services to existing residents as efficiently as possible;
2. That the County Council can ensure that existing and new residents benefit as much as possible from the infrastructure and services funded by new development and growth;



- 
3. That where further funding is required (for example from Central Government or via the BTVLEP) the County Council and delivery partners can demonstrate that it has maximized the use of existing resources and funding and that any 'gap' identified is justified.

In addition to having a strategic and coordinated approach to infrastructure planning there are three more detailed criteria to be considered:

- A spatial plan that relates to service delivery principles – reducing the capital and revenue cost of delivery;
- Incorporation of detailed service delivery principles into design of new development;
- Relationship to national and regional infrastructure to areas for economic and housing growth.

Using the delivery tools that the County Council currently has is the first stage in ensuring that this criteria is met. This could include the development of principles in parallel to the work around the Aylesbury Garden Town project as mentioned above.

In the longer term there are also other approaches to delivery that the County Council could consider. This could involve the County Council taking a more direct approach to the delivery of growth and infrastructure – taking a greater control over programme, investment and outputs.

These delivery options are being considered by Local Partnerships in the next stage of its work.

Spatial Considerations

These are considered in the section below.

3.3 Efficient delivery of the Council's services – spatial implications

Buckinghamshire County Council is responsible for planning, delivering and commissioning a range of strategic services and infrastructure across the County. Whilst the County Council is not the planning authority, to ensure that its services are planned and delivered efficiently the County Council needs to have a strong and early input into the spatial strategy of the County's Local Plans as well as detailed development proposals as they come forward. The County Council has commented on the emerging Local Plans at each stage of their development and worked with central government departments and promoters of national infrastructure projects, including HS2, Crossrail, Western Rail Link to Heathrow and the M4 Smart Motorway upgrade.

Local Partnerships has met and interviewed the heads of service and other members of staff responsible for delivering and planning for the County's services. Information has been provided on how the services are planned and delivered at present, along with the opportunities that growth (and other strategic infrastructure proposals) provide for delivering these services in the future.

From the information provided there are three interrelated issues linking service delivery to the spatial principles:

- Where growth is proposed in relationship to existing settlements and infrastructure
- The location and scale of development proposed and the relationship between this and the thresholds triggering the requirement for new infrastructure
- The ability of new development to pay for the new infrastructure or services

These issues are easy to illustrate when applied to education and transport, where there are clear thresholds which can be linked to the delivery of the service or infrastructure. However in all cases covered by this report, the efficient delivery of these services has a spatial implication.

These have been used to feed into the spatial principles and the strategy contained in this report.

Appendix 1 includes a table which sets out against County Council Service area:

- The corporate plan objective it delivers;

- Current position in terms of planning and service delivery;
- The opportunities for delivery provided by growth and new infrastructure;
- The detailed spatial implications for each service area if current barriers are to be overcome and opportunities for more efficient delivery taken up. (Note – the details of delivering these opportunities will be covered in the second stage of the work).

The following sections draw the conclusions from the table contained in Appendix 1.

3.3.1 Current position in terms of service planning and delivery

The current Local Plan positions, combined with the restrictions relating to CIL / S106, mean that most service planning, in relationship to growth and new development is site-based or carried out in response to individual planning applications.

The County Council has very good relationships with development management teams in the districts and negotiates contributions for many of its services. However, there is limited opportunity to influence overall special strategy, as it relates to service delivery or detailed design. Similarly, the opportunities for planning services, or mitigation, at a strategic level are often not possible.

Without a plan-led, strategic approach service planners have to be reactive to development proposals and projects which makes it very difficult to mitigate cumulative impacts or manage opportunities in areas of high demand.

This position is magnified the more dispersed the development pattern is. Where the development is dispersed the cumulative impact on existing services is hard to measure, with mitigation harder to deliver.

The outcome of this approach is that services and infrastructure are not planned or delivered in the most efficient way. At best the approach is incremental and site specific at worst the impact can have ripple effects for example reducing the capacity of strategic transport corridors to such an extent that a more strategic, transformational infrastructure investment is needed. Furthermore, the requirement to fund a single piece of infrastructure from a relatively small development may make the development unviable, or prevent it from making a full contribution to affordable housing or other community or social infrastructure. Limitations on developer contributions and pooling restrictions limit the delivery of more strategic, transformational infrastructure investment or service delivery. An alternative, County wide approach is needed.

3.3.2 The opportunities for improved delivery provided by growth and new infrastructure

At the simplest level there are key opportunities available to plan and deliver services more strategically – using service delivery models as an early input into spatial planning.

One of the starting points for this would be thresholds that relate to the provision of different services. Whilst those that relate to education are the easiest to illustrate (with circa 700 units generating the requirement for a 1FE primary school and 6000 units the requirement for a secondary school) there are relevant if more flexible thresholds that apply to most services including transport, health and social care, as well as waste infrastructure.

Using service delivery models as an input into early spatial planning (alongside a consideration of environmental and other constraints) is an opportunity that further growth will provide and will enable services to be delivered more efficiently.

The efficient delivery of services is not just dependent upon the strategic relationship of growth and infrastructure. It also depends on how delivery issues are considered within the detailed design of individual new communities. One of the difficulties with the current model is that service planners have to respond to a large number of planning applications. The opportunity exists to develop a series of development principles that will ensure that services are taken into consideration as part of development planning decision-making.



As stated above, the Aylesbury Garden Town project provides the opportunity to explore and develop these principles further within the context of place-shaping for delivering attractive and sustainable new communities.

Whilst the County Council will only have a limited ability to influence detailed issues relating to infrastructure such as HS2 and Heathrow there will be opportunities to develop detailed delivery solutions that may be beneficial to the County Council and infrastructure providers. For example the proposed Oxford to Cambridge Expressway – where the objective is to unlock the area’s housing and economic potential there is a clear case that the infrastructure should follow a route which most enables the growth aspirations of the County Council and District Councils. Here there is a clear case that the spatial principles should be one of the key starting points for determining the route.

3.3.3 Spatial implications of efficient service delivery

There are some core spatial implications that relate to the delivery of the Council’s services. These are:

- Services can be more efficiently planned and delivered where development is concentrated;
- There are different thresholds that relate to different services. These should be used as one of the key starting points for determining the scale of new communities and urban extensions;
- Environmental constraints can be used to determine the appropriate response to delivering a service;
- In the north there is the opportunity to link new development to new and existing transport infrastructure;
- In the south the strategy needs to maximise the opportunity for linking with existing services and transport infrastructure (along with the corridors that are likely to be improved). Here spatial constraints mean that there is a greater need to consider mitigation measures and, in the case of transport, the opportunities for moving more people away from a dependence upon cars.

Having considered how services are delivered at present, along with the opportunities for improving service delivery, three broad themes have been identified that should feed into the Spatial Principles.

- I. Most services can be delivered more efficiently when development is concentrated on a particular location. This could include a new community, Enterprise Zone or a number of related large sites within a small area. The scale of growth proposed in Buckinghamshire means that there are few locations where services and infrastructure has the capacity to support significant growth. Spreading growth across the County would make services and infrastructure more difficult to plan, fund and deliver. It would also make environmental mitigation more difficult.
- II. Whilst the need for services and infrastructure is triggered by growth, most services need to be accessible to both new and existing communities. Again schools are an illustration of this - even without selective secondary education, school planning is not based on local catchments. Both the new growth and services that they incorporate need to be well related to transport corridors and facilities. Whilst alternative forms of transport will have a significant role to play in how individual new settlements function efficiently the growth in Buckinghamshire will be dependent upon making the best use of existing and proposed new road and rail corridors.
- III. Whilst not a strategic infrastructure issue, there are a number of design principles relating to different services which could be used to feed into the proposals for new



communities or urban extensions. These cover all of the County's services considered in this report. The Aylesbury Garden Town initiative could be explored as an illustration of how service planning could be integrated with site planning.

Further research justifying this approach

The spatial implications for delivering services more efficiently largely relate to developing a more strategic approach.

The case for more concentrated development from a service and infrastructure provision perspective has not been quantified in financial terms. However both the Government Office for Science (2014) and the Royal Town Planning Institute (2015) have undertaken relatively recent studies that considered the implications of urban form on these aspects. The conclusions are summarised below:

- A lot of UK infrastructure is now owned by multi-national companies, which may make coordination harder in the future. It may also make it difficult to secure investment in more costly projects where these are in more remote areas as already been evident in the provision of high speed broadband;
- Services relating to health, education, culture and leisure can be provided at lower per capita costs when they are in close proximity, making them accessible to large, high-density populations;
- There is greater potential to achieve efficiencies in infrastructure provision by providing it at a sub-regional or regional scale. This lowers cost by enabling the interdependencies between infrastructure (e.g. energy and waste, transport and ICT) to be planned and co-ordinated more effectively;
- Low-density, car-oriented and dispersed developments are often disconnected from physical and social infrastructure, creating economic, social and environmental problems over time;
- Dispersed settlements typically result in higher levels of greenhouse gas emissions and resource consumption (land, energy and water) than compact settlements. This is attributable to increased car-dependency and energy consumption associated with low-density housing, coupled with the increased embodied energy during infrastructure provision. Dispersed settlements may also cover land with value for future climate adaptation, such as green spaces which mitigate against flood risk;
- Dispersed development has an impact on flood and drought risk and the expansion of sprawl results in more motor vehicle collisions, higher climate change, transport emissions and level of local pollutants, which also impose significant costs on the economy and people;
- Those in less urban areas are less likely to use public transport; and whereas bus fares have risen by 30% between 2001 and 2013, petrol prices have risen by 70%. This obviously has a disproportionate effect on low-income suburban households who are reliant on the car.





4 Emerging Local Plans and Infrastructure Objectives

4.1 Emerging Local Plans / housing and infrastructure requirement

The Housing White Paper released in February 2017 reiterates central government's expectation that local authorities will work together through the planning system to deliver significant housing growth. Some penalties for councils not achieving agreed rates of development are proposed and a national methodology for Objectively Assessed Need for housing is expected later in the year. The Draft Vale of Aylesbury Local Plan and Draft Wycombe Local Plan is expected to be published for public consultation in October and September, the Chiltern and South Bucks Draft Joint Local Plan is expected to be published for public consultation later this year.

The Government has indicated broad support for the planning and delivery of growth within Bucks and already prioritised infrastructure investment to deliver critical priorities such as East-West Rail. The National Infrastructure Delivery Plan (2016-2021) identifies three key criteria guiding the Government in deciding which projects to invest in or support.


- Projects are **nationally significant** and must enhance **quality, sustainability and capacity**;
- Projects must have the potential to **drive economic growth** or attract significant **private sector investment**;
- Projects must help **meet the government's strategic objectives**.

There is significant overlap between the County's and Government's objectives. The Spatial Principles covered by this report can be seen to support these objectives in supporting the quality of infrastructure and growth and in enabling it to be delivered most efficiently. Using the principles to demonstrate the continuing overlap in objectives will be important.

At the centre of the County's economic strategy is the need to support the successful industry sectors already located in the County and to take advantage of growth and new infrastructure to expand these sectors (including supporting their skill and training requirements).

Work carried by Bucks Advantage on behalf of the BTVLEP identified 7 strategic principles to inform infrastructure planning:

- I. Integrate with existing policy and support the Local Plan making process, to ensure the investment proposed in this plan is consistent with local land use strategies;
- II. Support the delivery of the major national strategic transport infrastructure and local highway improvements we need to accommodate growth;
- III. Strengthen economic drivers and key sectors – targeting investment to support the needs of business, particularly 'high value' businesses;
- IV. Protect the environment and the character of settlements – keeping Buckinghamshire a special place;
- V. Enable town centre regeneration and support the wider growth agenda – notably the major centres of Aylesbury and High Wycombe as well as smaller towns;

- 
- VI. Make provision for the appropriate expansion of existing settlements and strategic sites; and
 - VII. Promote SMART growth¹ - to strengthen and future proof our infrastructure.

In terms of suitable locations for growth BTVLEP identified 3 growth corridors reflecting current opportunities as well as future infrastructure proposals and development opportunities;

- I. M40 / Thames Valley Corridor
- II. Chiltern Line connected settlement corridor
- III. East West Corridor (reflecting the opportunity now included in the Oxford to Cambridge Corridor expressway and rail link).

These corridors are directly reflected in the proposed Spatial Principles of the Bucks Strategic Infrastructure Plan.

4.2 Economic Growth and National Infrastructure

Economically, Buckinghamshire is the most successful County in England. This position is reflected in the Bucks Strategic Economic Plan developed and promoted by the Buckinghamshire Thames Valley LEP (BTVLEP). The unique combination of world leading universities, research and globally competitive business clusters spotlights the Oxford to Cambridge growth corridor as the top priority for growth in the UK by the National Infrastructure Commission (NIC) and the England's Economic Heartland Strategic Alliance.

Emerging work by the NIC highlights the lack of suitable housing as a potential barrier to growth. The economic potential of Bucks is further increased with the proposal for East West Rail and the Oxford Cambridge Expressway which open up new opportunities for growth and development through improving east-west and north-south connectivity within Bucks.

The Government's recent Industrial Strategy issued in January 2017 highlighted the themes brought out in the NIC work. Key commitments of the strategy are:

- investing in science, research and innovation – a key part of Buckinghamshire and neighbouring county's economies;
- upgrading infrastructure - the Housing Infrastructure Fund will be used to fund important infrastructure to enable new housing to be developed;
- cultivating world leading sectors – a key part of the LEP's Strategic Economic Plan.

¹ Communities that use digital technologies to enhance performance and well-being in order to reduce costs and resource consumption, and to engage more effectively and actively with its citizens, creating places which are more "liveable" and resistant and, hence, able to respond quicker to new challenges such as climate change adaptation and planning for new communities, creating new ways to build stronger places and neighbourhoods.



5 Spatial conclusions

There are three simple principles that are recommended to be the basis of the County Council's Spatial Strategy:

- Concentrated rather than dispersed development
- Development that is well related to transport corridors and transport hubs
- Growth patterns that respect the County's environmental and other planning constraints

5.1 Spatial Implications

Taking the three principles a stage further the implications of these principles are:

- Development centred on existing, strategic urban areas (Aylesbury, Buckingham, High Wycombe, Princes Risborough) or in locations suitable for a new settlement (potential within the Oxford to Cambridge Corridor);
- Development linked to existing employment hubs (including Enterprise Zones);
- Development that is well related to transport corridors and transport hubs including;
 - the Oxford to Cambridge Corridor (particularly the proposed Express Way)
 - North South A4010
 - Crossrail stations
- Suitable locations for Growth should influence the route of the Expressway;
- Growth (particularly that supporting economic growth above that which meets locally generated need) will be concentrated in the north of the County;
- Growth in the South of the County needs to be based on existing settlements and be focused on locally generated need.

6 Infrastructure Prioritisation

6.1 The infrastructure required to support growth

The link between strategic infrastructure, housing and employment growth is relatively simple.

Additional infrastructure provision is usually required to enable development to take place. Additional infrastructure investment is needed to mitigate development impacts and provide the additional capacity in services and amenity required by residents and businesses. Infrastructure needs include,

- Physical infrastructure including roads and rails, public transport, utilities, broadband,
- Social Infrastructure – including school places, health and social care, cultural amenities.
- Green Infrastructure – including trees, open space, ecology, biodiversity, landscape and archaeology and environmental mitigation including mitigation of flood risk.

Additional infrastructure required to support the additional housing needs is usually negotiated on a site by site basis as sites come forward for development. Infrastructure that is relevant, reasonable and appropriate in scale to specific development is normally paid for in total or part by the developer (through developer contributions such as Section 106 Agreements, Community Infrastructure Levy payments or other planning obligations).

A more strategic approach is needed to effectively manage and mitigate cumulative impacts of a development and deliver critical transformational, strategic infrastructure priorities. The aims and ambitions of the County Council, BTVLEP and the Districts require strategic infrastructure that goes well beyond a minimum, site by site provision, both in terms of quality and quantity.

Strategic infrastructure which creates value to existing and new residents is transformational and capable of attracting higher value industry and provides the increase in infrastructure capacity needed to enable new and attractive communities.

The Strategic Infrastructure Investment Plan (part 2 of the BSIP report) will cover the basic infrastructure providing capacity for growth but also,

- That which provides accessibility to a full range of social and community services (including education, health, adult social care etc).
- Support for skills and training
- High levels of physical accessibility
- Digital connectivity
- Environmental infrastructure
- Resilience to change.

The County wide, strategic approach outlined in this report is required to manage growth and development in Bucks such that shared ambitions across the County Council, BTVLEP, Districts and central government departments are met so that growth in Buckinghamshire fully maximises strategic outcomes and the productivity of investment.

This co-ordinated approach to infrastructure investment will also ensure that growth creates a real value for the County with the following benefits:

- Growth is more likely to be able to pay for the infrastructure it requires (without the need for external funding);
- Growth will be able to support long term service provision through its contribution via Council Tax and Business Rates;





- Growth will be able to attract higher value businesses;
- Growth will contribute to increased levels of productivity.

This type of infrastructure may be part funded by the development taking place in the County.

However, there are a number of other funding sources, such as:

- Strategic national and subnational infrastructure funded through Government;
- Funding through private sector investment – repaid by end customers;
- Public sector service providers.

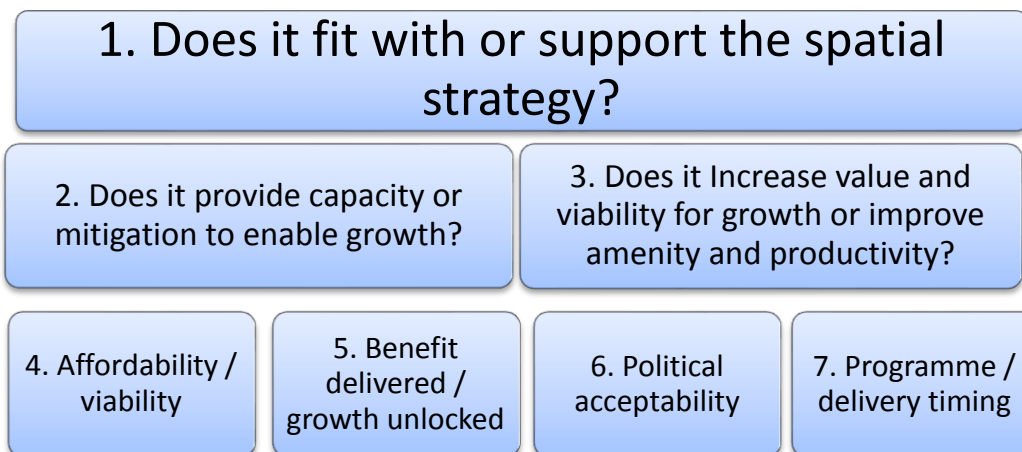
6.2 Relationship of the Spatial Principles to Infrastructure

The key role of the spatial principles, in relationship to prioritisation, is to ensure that infrastructure can be delivered efficiently.

To deliver the County's aims and objectives, strategic infrastructure needs to provide the additional capacity needed to be of a level of quality to create value and increase productivity.

The main element of the prioritisation relates to the spatial principles and objectives that have been set out in sections 5 of this report.

The following questions are proposed as criteria to test the prioritisation of strategic infrastructure investments, as set out below:



The questions covered by 4 to 7 above are the same criteria that were recommended in the Shared Intelligence report on infrastructure investment in Bucks, commissioned by BTVLEP in 2015.

6.2.1 Fit with Spatial Strategy

This will be the primary test for prioritising infrastructure. The Spatial Strategy is justified as it is driven by the Council's aims and objectives contained in its Strategic Plan along with the objective of delivering the Council's services in an efficient way. This test is therefore relatively simple - infrastructure that supports growth in line with the spatial principles passes the test. Infrastructure that does not should fail the test and not be supported as a high priority.

The key spatial principles are:

- Concentrated rather than dispersed development;
- Development that is well related to transport corridors and transport hubs;

- Growth patterns that respect the County's environmental and other planning constraints (including Green Belt, and AONBs).

Elements of strategic Infrastructure, such as the Oxford to Cambridge Expressway, will reinforce the spatial principles by reinforcing a north-south and east-west strategic transport corridor.

6.2.2 Does Infrastructure provide additional capacity to enable growth

Does the infrastructure enable growth or mitigate development impacts (this could cover environmental mitigation or compensation). The answer yes or no is scored. The quantity of development unlocked is considered within a separate criteria.

6.2.3 Does infrastructure provide capacity and contribute to value, productivity and other economic objectives?

This is an important question – does the level of priority given to the infrastructure that is required to unlock development contribute to that which affects quality, value or economic productivity. It is essential that the infrastructure package includes qualitative elements that maximise quality, value and maximise the strategic outcomes of the Council's Strategic Plan. This will also be essential to deliver the Districts, BTVLEP and Government's economic strategies.

6.2.4 Is the infrastructure viable and affordable?

This section considers the infrastructure against the following questions:

- Can the development that this infrastructure unlocks be expected to pay for the piece of infrastructure (through 106, 278 or other agreements)?
- Is there a clear funding source that would normally pay for this infrastructure?
- Can the infrastructure be paid for through a commercial proposition?

If the answer is yes to one of the above questions and the funding has been secured or is very likely to be secured the infrastructure should receive **3 points**. If the answer to one of the above questions is yes but the funding has not been secured the score should be **2 points**. If the answer is no or funding is partial or uncertain it should score **1 point**.

6.2.5 What level of benefit does it deliver

This will relate to the benefit that is delivered. For roads and utilities it will be determined by the number of homes or jobs that it unlocks. For other infrastructure the benefit will relate to the level of benefit that the project delivers in relationship to its importance for the area or economy.

6.2.6 Programme - when does the infrastructure need to be delivered?

The infrastructure delivery timescale contained in this report considers the period from 2013 to beyond 2036. Prioritisation is scored in relationship to when the piece of infrastructure needs to be delivered (and therefore when funding needs to be available to enable construction to start). A more detailed assessment of infrastructure prioritisation will follow in the part 2 report of the BSIP, expected to be presented to Cabinet later this year.



7 Appendix 1 – Efficient delivery of Council Services – Spatial implications

Service area	Link to Strategic Plan	Current position	Opportunities provided by growth and new infrastructure	Spatial implications
Education	<p>Safeguarding our vulnerable</p> <p>Creating Opportunities and Building Self Reliance</p> <p>Keeping Buckinghamshire Thriving and Attractive</p>	<ul style="list-style-type: none"> • Education Planning driven by planning applications. • Duty to cooperate has little impact on education planning • Dispersed development and education demand cannot be easily met through the development of new or expanded schools • CIL regime not very flexible • Education travel raises significant demand / capacity issues at peak times. 	<ul style="list-style-type: none"> • Opportunity for strategic planning • Link development proposals to the school thresholds (i.e. 700 units + primary school, 6000 units + secondary school..) • Link strategic transport planning to education planning. Consider demand and supply across transport corridor area. • Provide certainty to attract new residents and high value jobs. 	<ul style="list-style-type: none"> • Concentrated rather than dispersed development. • Development proposals based on school thresholds. • Development (including schools) should be well related to existing and planned transport corridors.

Service area	Link to Strategic Plan	Current position	Opportunities provided by growth and new infrastructure	Spatial implications
Environmental / Countryside services	Keeping Buckinghamshire Thriving and Attractive	<ul style="list-style-type: none"> • Service driven by planning applications. • Environmental and capacity not considered early enough – mitigation may not be possible or may not be delivered as efficiently as possible. • Catchments etc do not match admin boundaries. 	<ul style="list-style-type: none"> • Plan environmental and flood mitigation on a County Basis. • Opportunity to deal with strategic quality issues. • Opportunity to use planned strategic infrastructure for a dual purpose. • Income generation opportunities for providing strategic mitigation opportunities. 	<ul style="list-style-type: none"> • Strategic growth towards the North of the County. • Development of a scale where mitigation can be delivered. • Consolidated development to aid mitigation
Transport planning and development management	Keeping Buckinghamshire Thriving and Attractive	<ul style="list-style-type: none"> • Strategic transport planning driven by planning applications rather than early consideration in LPs. • Existing and new capacity not used most effectively • Car and road based solutions preferred. • Demand management / alternative and public transport only used in limited cases. 	<ul style="list-style-type: none"> • Need to consider delivery options which can influence programme. • Strategic growth to relate to the efficient delivery of transport infrastructure. • Opportunity to 'piggy back' on national and regional infrastructure (to reduce additional / connecting local links) • Opportunity to balance different land uses in consolidated development. 	<ul style="list-style-type: none"> • Consolidated development. • Joint planning of transport generating uses including homes, employment and education. • Growth concentrated around NS and EW transport corridors. • Hard (environmentally less friendly) solutions in the north of the county. • Management and

Service area	Link to Strategic Plan	Current position	Opportunities provided by growth and new infrastructure	Spatial implications
		<ul style="list-style-type: none"> Little control over development programme 		<p>alternative solutions in the South – based around urban extensions aligned to defined thresholds.</p>
Health	<p>Safeguarding our vulnerable</p> <p>Creating Opportunities and Building Self Reliance</p> <p>Keeping Buckinghamshire Thriving and Attractive</p>	<ul style="list-style-type: none"> Resources not available to respond to all applications. Key role is to coordinate a number of organisations involved in health. Input based on developing broad principles that can be applied to development across the county 	<p>Opportunity to work up design and development principles that can be applied to a variety of sites.</p> <p>Development of a ‘Health Impact’ approach.</p> <p>Need for flexibility in terms of buildings and space.</p>	<ul style="list-style-type: none"> Consolidated rather than dispersed development. Use of health capacity thresholds in developing extensions and new settlements (where new capacity is required).
Waste disposal and contract management	<p>Keeping Buckinghamshire Thriving and attractive</p>	<ul style="list-style-type: none"> Waste infrastructure provision does not form part of 106 or CIL. Planning is application based – therefore routes and intermediate facilities are not always 	<p>Opportunity to link settlement patterns to planning strategic infrastructure</p> <p>Significant opportunity for waste service to provide a service / partnering role to developers and infrastructure providers</p>	<ul style="list-style-type: none"> No specific implications apart from linking settlement pattern with provision of infrastructure.

Service area	Link to Strategic Plan	Current position	Opportunities provided by growth and new infrastructure	Spatial implications
		optimum and may not relate to strategic waste facilities.	(construction and other waste).	

Further explanation of the Criteria

Criteria	Spatial considerations	Delivery options
1. Creation of attractive new communities (whether in new or expanded settlements)	<ul style="list-style-type: none"> • High quality design • Range and mix of uses • Scale and mix to enable the efficient provision of infrastructure and services – thresholds relating to education and transport. 	<ul style="list-style-type: none"> • Consolidated development in new settlements and large urban extensions • Dispersed development across the county expanding towns and villages • Mixed economy approach
2. Improving the Quality of life for existing residents.	<ul style="list-style-type: none"> • Choice of homes and jobs • Necessary infrastructure and services • Protection and improvement of existing living and working environment • Providing training and education to support existing employees 	<ul style="list-style-type: none"> • Delivery of homes and jobs to meet local and external demand. • Homes and jobs to meet locally generated need. • Mixed approach based on environmental and other constraints (strategic growth towards the north / locally generated need to the south)
3. Protection and respect for	<ul style="list-style-type: none"> • Access to countryside • Key planning constraints including 	

Criteria	Spatial considerations	Delivery options
environment	<p>AONBs, Green Belt, Flooding, Air quality, Open space</p> <ul style="list-style-type: none"> • Green infrastructure 	
<p>4. Housing growth needs to be support the expansion of the local economy - concentrating on high value businesses and jobs</p>	<ul style="list-style-type: none"> • Spatial relationship between homes and employment, • Balance between number of homes and jobs • Links to the LEPs emerging Industrial Strategy (life sciences and creative industries) 	<ul style="list-style-type: none"> • Economic free market with new employment based on changing demand over the plan period. • Policy based on growth's impact on achieving a high GVA. • Options relating to efficient service delivery • Broader non spatial but parallel policies such as skills and training.
<p>5. Efficient coordinated delivery of infrastructure and services along with the capacity created</p>	<ul style="list-style-type: none"> • Broad spatial plan that relates to service delivery principles • Incorporation of detailed service delivery principles into design of new development • Relationship to national and regional infrastructure to areas for economic and housing growth • Efficient planning and Delivery approaches • Cross authority delivery and governance • Opportunities for taking greater control of output and / or programme 	<ul style="list-style-type: none"> • Consolidated development in new settlements and large urban extensions – size determined by the efficient delivery of key services. • Dispersed development across the county expanding towns and villages – using existing capacity, retrofitting infrastructure and services + accepting a higher cost for services (or hidden unmet demand) • Mixed economy approach

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