

<p>Environmental Sustainability and Infrastructure In accordance with the community plan "Our District, Our Future" this shared vision aims to understand and adapt to environmental challenges as they arise and ensure that all infrastructure and other developments protect and enhance the environment and biodiversity. The provision of green infrastructure and biodiversity and habitat creation is fundamental to Eco Bicester and already an important component of the town</p>	<p>Baseline <i>What is already happening to assist with delivering this bit of the vision?</i></p>	<p>Measure of success and delivery</p>	<p>Suggested Action Ideas and comments</p>	
<p>Open Space and Green Infrastructure: Ecology Biodiversity</p>	<p>59. Maximise ecological and biodiversity gains from open space compatible with its recreational role</p>	<p>Thames Valley Environmental Records Centre (TVERC) – GIS biodiversity constraints layers on Arkmap GIS Project 'Open Spaces Review 2011' – see Sharon Whiting Oxfordshire Wildlife and Landscape Study Ray Conservation Target Area (RSPB/BBOWT) Oxfordshire Nature Conservation Forum Gavray Drive Meadows Local Wildlife Site (TVERC/BBOWT) Kingsmere Ecological Management Plan 2009-2019 NW Bicester and Graven Hill major development sites Stratton Audley Quarry Bure Park, Bicester Fields, Kings End Conservation Area historical data Surveys carried out by Green Gym at various sites TVERC carried out surveys and gave management advice in 2008 for several sites that CDC owns/manages. Will be repeated in 2013/14 to measure success</p>	<p>Periodic surveys of species and habitats established Provision of quality open spaces creating ecological and biodiversity gain</p>	<p>Include in LDF Core Strategy Policy/SPD Incorporate in Corporate BAP</p>
<p>Green space</p>	<p>60. Ensure the 40% green space at North West Bicester integrates with existing green space within the town</p>	<p>NW Bicester exemplar planning application includes 40% open space Masterplanning to continue in 2012</p>	<p>NW Bicester exemplar LEMP approved Green space provision on NW Bicester Masterplan achieves 40% and integrates with existing town green space Link with Bure Park. See potential open space and rights of way links using GIS layers</p>	<p>P3Eco/A2D BTC/CDC BioRegional (JB/LT) Bicester Masterplan provides the opportunity to link existing green infrastructure</p>
	<p>61. Seek a network of open spaces incorporating <i>river corridors</i> and <i>linking</i> not only to existing space within the town but also</p>	<p>Open Spaces with Wild flora areas: a) Bure Park - approx 32000m2 b) Bicester Fields - 58000m2 c) Kings End Conservation area - 7000m2 GIS mapping shows current open spaces, linkages and links to wider countryside</p>	<p>Comprehensive network of Green spaces in the town connected and linked as part of a network of green corridors and routes. Measure progress against Strategic GI Plan for Bicester</p>	<p>Strategic Green Infrastructure Plan for Bicester incorporating footpaths and cycle paths, sports and recreational space, play, ecological enhancement, SUDS and flood alleviation Developers Local authorities (JB) CDC Urban and Rural Services (Kevin Lamer)</p>

	the wider <i>countryside</i>	Existing open spaces are not well linked eg Bure Park Pingle Fields and Langford Village/Garth Park Access to green space is low for Bicester and Accessible Natural Greenspace standards are low The Rights of Way Improvement Plan is general but may be helpful in securing a better network Potential Country Park associated with eth new Park & Ride Bicester Masterplan by WYG	Aspirational GI and Biodiversity plan is on track to be delivered	Woodland Project Officer, David Rees, OCC Plan for improved access to green space and nature for Bicester, possibly using ANGst Investigate possible project at M40 service station which has under used and accessible natural space – Victoria Fletcher See comment on Bicester Masterplan above
Green infrastructure	62. Provide multi functional green infrastructure	GIS mapping shows current green infrastructure and uses Potential new community woodland / Jubilee wood NW Bicester masterplanning Schools are encouraged to develop within their grounds through entering the Carol Steward Best School Award, which promotes biodiversity	Area of multifunctional green space Multi functional green space provided	Strategic GI plan for Bicester Can spaces be revenue generating?
New wetland areas	63. Seek <i>opportunities</i> for new wetland areas and creation of local priority habitats	GIS mapping shows wetland habitats NW Bicester exemplar river corridor	GI strategy in place, adopted and on track to be delivered Measure area of wetland habitat created Measure area of priority habitats created	Strategic GI Plan for Bicester
Burial ground	64. Use of the new burial ground as a quiet and sensitive green space	Urgent need for new burial ground space Site search for new burial ground is underway	No of visitors to burial ground New burial ground site identified and used as a quiet open space.	Site for new burial ground has yet to be identified and it is not clear what type of facility could be provided. Suggest – DO NOT REVIEW
	65. The <u>character</u> of the countryside shall be <u>protected</u> and where new development has been identified as necessary it should be designed to be assimilated within the landscape without altering the character of the surrounding countryside.	Landscape character assessment Developers Masterplanning NWB LDF evidence base CDC landscape architects	Design of new development assimilated into countryside	Consider use of urban fringe sites for sustainable uses (biomass and landscape features – tree planting).
Biodiversity: Habitats	66. To protect existing habitats	Baseline of existing habitats, designated sites and key species Biodiversity and Planning in Oxfordshire (document) Oxfordshire Nature Conservation Forum http://www.oncf.org.uk/biodiversity/cta.html Biodiversity Working Group Statutory sites already protected but other areas not identified for habitat protection TVERC GIS constraints layers Oxfordshire Nature Conservation Forum	Identify and map <ul style="list-style-type: none"> • Key sites • key habitat • key indicator species All new developments achieve net gain in biodiversity Demonstrate that the town is achieving significant long term gain in biodiversity – definitely not decline Demonstrate a greater awareness,	Look for ways to support and progress the River Ray catchment improvements which are of national significance. Seek funding for further clean up work. Publicise the value of the catchment area and the value of it linking with Otmoor RSPB reserve. Encourage mass participation in national bird / butterfly etc watching days – wildlife engagement strategy Commission Bicester specific habitat mapping from TVERC

		<p>http://www.oncf.org.uk/biodiversity/cta.html GIS mapping layers Landscape Maintenance Contract maintain wildflower meadows in Bicester Fields, Bure Park and Kings End Conservation Area which are left to grow and flower during Jan – July. Each year, as part of the local in Bloom campaign, Cherwell landscape services seek new ways of encouraging butterflies and other insects. They work with volunteers to create suitable insect habitats for bee's, ladybirds and other insects. Butterfly surveys are regularly carried out in Bure Park and Bicester Fields and plants such a blackthorn are managed to encourage butterflies which are in decline to settle and lay eggs, such as the Brown hairstreak butterfly. We work closely with other butterfly conservation teams to do as much as we can to create habitats suitable for butterflies.</p>	appreciation and involvement in nature and wildlife	
Biodiversity	67. To enhance biodiversity in the town and habitat creation	<p>GIS mapping records Bicester Green Gym River Ray programme Schools wildlife programme with BBOWT New water course area behind the bus station area 2011 new wildflower meadow created in Pingle Fields In 2012 the new planting scheme on Pingle Drive Roundabout will include plenty of insect-friendly plants.</p>	<p>Biodiversity Action Plan has been developed and is being delivered for the town Environmental Stewardship ratings for land around Bicester improves against targets</p>	<p>Adjust the specification in landscape maintenance contracts to maximise biodiversity value. Engage county or district ecologist to review current specifications and suggest amendments. Increase Environmental Stewardship ratings for land around Bicester http://www.naturalengland.org.uk/ourwork/farming/funding/es/default.aspx Consider instigating a Bicester Ranger, perhaps in partnership with other biodiversity stakeholders Run a programme of talks and walks by local enthusiasts and national interest groups Run a bee recovery project or other specific species projects that engage the community Run a wildlife gardening programme for Bicester residents Enhance habitats along river corridors</p>
Biodiversity – building design	68. Include features in buildings such as green walls and roofs, bat tubes and swift boxes to support priority species	<p>Bat and swift GIS information exists No records available for green walls and roofs 2011 CDC draft guidelines now exist for the provision of artificial nest sites in new build and refurbishment of existing buildings. NW Bicester includes green roofs, bat and bird boxes Cherwell Swift Project is working with Sanctuary to include provision for swifts as part of refurbishment</p>	<p>Number of each of these across the town, mapped on GIS Demonstrable awareness of the benefits of building integrated features Target number of green roofs, swift boxes etc Comprehensive inclusion of building integrated features across the town – both new build and retrofit</p>	<p>Proposed 2012 CDC guidelines for green walls and roofs Agree targets numbers of swift boxes, bat boxes, green roofs etc Town centre redevelopment and Kingsmere to include provision for swifts, bird and bat boxes</p>
Habitats – shelter belts	69. Seek shelter belts to enhance the range of habitats and provide for microclimates	<p>Hedgerow information exists for Bicester but would have to track it down (SM)</p>	<p>Comprehensive grid of connected hedgerows and shelter belts across the town</p>	<p>Run a programme of talks and walks by local enthusiasts and national interest groups Focus on improved hedgerow management and filling the gaps to provide better linkages</p>

<p>Water Use: Sustainable Water management</p>	<p>70. To develop a sustainable water management approach to <u>new development</u></p>	<p>Current best practice for designed water consumption in new build is: Residential – 80l/p/d Non-residential – BREEAM For new industrial or agricultural uses, water supply is discussed at the planning application stage on a case by case basis. Kingsmere will achieve 105l/p/d at code 3 Bryan House will achieve a mixture of 105l/p/d for Code 4 homes and 80l/p/d for Code 5 homes NW Bicester will achieve 80l/p/d on a house by house basis and will be water neutral at Masterplan scale.</p>	<p>Code and BREEAM levels for all new build All new developments to achieve best practice in water efficiency.</p>	<p>Set best practice water efficiency standards in planning policy</p>
<p>Water Use: Sustainable Water management</p>	<p>71. Seek water neutrality and more efficient water usage across town</p>	<p>National domestic water use was 145 l/p/d in 2008/09 This review has not managed to establish baseline data for:</p> <ul style="list-style-type: none"> • How many homes and businesses in Bicester have water meters? • Average domestic water consumption in Bicester? • Total water consumption in Bicester? • Are there any major industrial or agricultural water users in Bicester? <p>Currently there is no water strategy or monitoring of water use across Bicester or the district.</p>	<p>Total water consumption across Bicester – both residential and other Degree of water neutrality of the town Bicester has identified and is delivering a sustainable water cycle. Residential water consumption is reduced by x% Targeted savings in non-residential water consumption also achieved</p>	<p>Establish baseline for water consumption in Bicester with Thames Water Obtain breakdown of main water users in Bicester Research best practice for mass water retrofit eg. Save Water Swindon led by Thames Water and Redhill water saving programme: http://www.utilityweek.co.uk/news/news_story.asp?id=163505, http://www.thameswater.co.uk/cps/rde/xchg/corp/hs.xsl/14676.htm Water efficiency campaign using Waterwise educational resources, Thames resources and learning from Save Water Swindon Feasibility Study for Water Neutrality in Bicester Mass installation of water meters Mass water efficiency retrofit for homes and businesses</p>
<p>Grey water recycling and rainwater harvesting</p>	<p>72. Promote grey water recycling and rainwater harvesting</p>	<p>Baseline in Bicester could be identified by looking back at planning consents with the inclusion of grey water recycling Demonstration building collects rainwater and also recycles greywater for toilet flushing NW Bicester Exemplar harvests rainwater for toilet flushing and irrigation Number of rainwater butts in Bicester currently unknown</p>	<p>Volume of water reused and recycled Bicester has identified and is delivering a sustainable water cycle.</p>	<p>Promote grey water recycling and rainwater harvesting as part of water efficiency campaign above</p>
<p>Flood Risk: Surface water management through sustainable urban drainage</p>	<p>Provide sustainable urban drainage to manage surface water runoff to reduce flood risk, improve water quality and biodiversity and to be resilient to climate change Provide measures to ensure that <i>run off</i> created from development does not introduce flood risk elsewhere.</p>	<p>Oxfordshire Preliminary Flood Risk Assessment - Considers areas susceptible to surface water flooding across the County PPS25 - Current PPS25 policy and best practice guidance such as Ciria. Moving to NPPF Strategic Flood Risk assessment - SFRA should look at surface water flood risk across the District and management of this risk SUDs already implemented in some existing schemes eg Langford Village Water cycle study for NWBicester includes: water supply and disposal from a water resource and quality perspective, flood risk assessment and surface water drainage strategy. Use of SUDS will also have wider water quality/biodiversity benefits.</p>	<p>No unmanaged flood risk in the town. New development should not lead to increased flood risk anywhere Flow rates in water courses are optimum.</p>	<p>Water Cycle Study for Bicester LDF is key because of the removal of the PPS's Retrofitting of SUDS could be considered in certain locations. Case study: Aylesbury Vale District Council considered this option</p>

	Take opportunities to address flood risk downstream within the town	Flood Risk Assessments required to support any major new development		
Fluvial flood risk	New development will not increase the risk of fluvial flood risk to Bicester	CDC have access to EA Flood Maps GIS layer Oxfordshire Preliminary Flood Risk Assessment - Looks at a high level of fluvial flood risk across the County. PPS25 Current policy on development and flood risk. Moving to NPPF Strategic Flood Risk assessment - Looks at fluvial flood risk at a District Level. NW Bicester will make site specific assessment of fluvial flood risk and avoid inappropriate development in these locations	No inappropriate development in flood risk areas	LDF Policy – as PPS25 is replaced with NPPF, assess the need for local policy for new development.
Water management for biodiversity	Surface water management enhances biodiversity	Currently very low flow in water courses in the town EA monitor river flow levels and can provide data Nationally significant River Ray Project Matt Jackson, BBOWT – project lead for Water Framework Directive Improved water corridor along the back of the bus station area (Town Brook)	Seasonal flow rates in water courses. Area of wetlands Optimum flow rates achieved	Gather stakeholders to discuss and establish biodiversity aspirations and optimum flow rates within Bicester Establish optimum flow rates that maximise biodiversity without increasing flood risk
Water Quality	Aim is to improve water quality	Current water quality situation – high phosphorus levels and possibly other pollutants Nationally significant River Ray Project Matt Jackson, BBOWT – project lead for Water Framework Directive and River Ray project Thames River Basin Management Plan – Cherwell catchment Water bodies are classified in terms of their WFD status. If they fall short there are field actions eg farmers practices TRBM identifies strategic level actions.	Level of phosphorus, water quality indicators meet targets. Water quality improvements to meet aspirations for River Ray catchment	Establish if there is any role for Eco Bicester programme in assisting with this issue Farmers are the group who can most influence this issue. FWAG has stopped operating but if there is a current farmers' working group, then they could be approached about this issue EA to identify potential on the ground projects to improve water quality (thus WFD status) which could be delivered through the vision through partnership working
Waste and energy: Sustainable energy management	76. To develop a sustainable energy management approach to new development	DECC sub-national energy consumption statistics covers direct emissions from electricity, gas, road transport fuels, residual fuels and total energy consumption http://www.decc.gov.uk/en/content/cms/statistics/energy_stats/regional/regional.aspx NW Bicester is the first truly zero carbon development of scale in the UK, meeting all of its energy needs for buildings in use from net zero carbon sources, saving twice as much carbon as other schemes under the "zero carbon" definition. The Eco Bicester team, in partnership with	Establish a planning policy or local plan that requires Code 4 and BREEAM Excellent. Incorporate Smart Grid principles into all new developments; Introduce smart grid thinking into existing town	Establish a planning policy or local plan that requires Code 4 and BREEAM Excellent. Submit smart grid funding bid to Low Carbon Network Fund Investigate smart grid systems for the whole town

		A2Dominion, Zeta and Carnego, have secured funding from the Technology Strategy Board for whole house smart demand management, improving the electrical efficiency of NW Bicester homes and reducing their impact on the local electrical grid. The Eco Bicester team are working with Whitehill Bordon Eco Town and SSE on a smart grid proposal to the Low Carbon Network Fund.		
Zero / low carbon energy generation	77. Seek zero or low carbon energy generation	Exemplar PV array and gas CHP; Individual PV arrays in Bicester; Roof map of Bicester showing PV potential; Bicester leisure centre will have PV array installed by end of May 2012; Cherwell Environmental Services team have secured capital for a biomass boiler for Bicester leisure centre, saving 300tCO2/year Low Carbon Hub are mapping potential for renewable in the County including wind and AD ; Low Carbon Hub are mapping the "People's Power Station" by obtaining data from registered FITs, ROCs and RHIs. Eventually will be able to see all zero and low carbon energy generation in the town. Wood pellet producer based in Bicester Two Bicester based solar PV installers	Measure and map all zero and low carbon energy generated in or around Bicester – separate heat and electricity generation; Express as kWh(e)/year, kWh(th)/year and % for each Bicester to be net zero carbon for building energy by 2030	Collate data from Low Carbon Hub, national heat mapping project and elsewhere to assess potential for renewable and low carbon energy generation across Bicester Review potential for demand reduction through energy efficiency and retrofit across all sectors and evaluate the potential for Bicester to become a zero carbon town
Sewerage Waste Biogas Energy	78. Explore sewerage and waste options providing biogas for energy production.	Case studies: Didcot AD plant feeding biogas into mains gas supply Proposed AD plant near Poundbury 20MW EFW plant at Ardley	All sewerage from Bicester is converted into biogas All suitable farm residues within a 20 mile radius of Bicester get used as a biofuel or fertiliser.	Feasibility Study for AD plant at Thames sewage treatment plant
	Capacity In terms of conveyance and treatment of foul flows from new development	NW Bicester water strategy identified sewage treatment works are at capacity and there is no spare capacity within mains therefore looking to provide on-site treatment option for NW Bicester Masterplan	Capacity adequate	
Recycling storage Design	79. Provide storage for recyclable materials including in new buildings	Cherwell minimum requirements for provision in new build available NW Bicester exemplar targets 70% recycling rate and makes provision for all bins Planning Obligations SPD OCC Waste Planning Strategy consultation draft	Increased and improved storage facilities for recyclable materials	
Waste Construction waste	80. Provide measures to reduce all waste including that from construction	CDC has baseline waste data, recycling figures, waste breakdown and capture rates; current district recycling rate is 58%; District target of 60% recycling by 2012/13 and 62% by 2013/14 Doorstep residential service collects mixed recyclables and food waste; "Love Food Hate Waste" campaign Reuse Centre feasibility study and business plan	Residual waste per household (kg/year) Residential recycling % 70% recycling rate achieved across the town by 2020; Residual waste reduced to X; Reuse centre thriving; Business waste reduced	Establish the Bicester Reuse Centre. Investigate potential for a Construction Materials Reuse Centre Introduce food waste collections for Bicester businesses Introduce new Bicester Trade waste scheme for businesses Introduce informal doorstep reuse system – if you leave an item at the edge of your property, it is widely understood that anyone passing by can help themselves. This system is very successful elsewhere, it costs nothing and encourages neighbourliness.

		<p>complete; seed funding secured. Active Freecycle group. Grassroots Bicester freecycle events. Early stages of a plan to introduce food waste collections for businesses in Bicester during 2012/13. NW Bicester exemplar targets 70% domestic recycling rate and seeks waste management plans from non residential occupants NW Bicester targets zero construction waste to landfill Reuse Centre feasibility study maps out current reuse, repair and charity shop provision</p>		<p>Run a waste reduction communication campaign with Bicester businesses. Get everyone to sign up to Love Food Hate Waste Obtain data on non-residential waste? Current requirements for construction: SWMP must be produced. No mandatory waste targets though;</p> <p>Introduce on street recycling containers Ensure good access to municipal dump</p>
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