

Greater Norwich Development Partnership

Topic Paper: Green Infrastructure and Recreational Open Space

Joint Core Strategy for Broadland, Norwich and South Norfolk
June 2011

Jobs, homes, prosperity for local people



Contents

1	Purpose of this paper	3
2	Recreational Open Space	3
2.1	Availability of open space	3
2.2	Quantitative Assumptions	4
2.3	Funding Overview and Cost Assumptions	4
2.4	Alternative Delivery Mechanisms	6
2.5	Summary	7
3	Strategic Green Infrastructure	8
3.1	Assumptions	8
3.2	Funding Overview and Costs	9
3.3	Summary	9

Appendices

A.	Strategic Green Infrastructure Identified	10
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1. Purpose of this paper

Green Infrastructure and recreational open space will form an important component of future development in Greater Norwich. New residential and commercial development brings with it an additional demand for green space and recreational facilities and therefore it is essential that adequate provision is made for its delivery.

The Greater Norwich Infrastructure Needs and Funding Study (2009) assessed the full infrastructure requirements associated with the delivery of new homes and employment development. The study will support the Community Infrastructure Levy charging schedule for the Greater Norwich area. There were however some limitations in the study, certain assumptions were made particularly around the open space provision, resulting in an overestimation of certain costs. This paper provides an updated evaluation of costs for green infrastructure and open space requirements over the period of the Joint Core Strategy (2008-2026).

2. Recreational Open Space

2.1 Availability of Open Space

The three districts have a slightly different approach towards open space provision, particularly in relation to children's play space. Each district has carried out an assessment of open space, sports and recreation facilities (which is PPG 17 compliant). The recommendations for provision standards set out in these assessments are included in the table below.

Table 1 - Average level of recreational open space available within the three districts per 1000 population

Ha/1000 Population	Broadland Broadland PPG17 Open Spaces Indoor Sports & Community Recreation Assessment	Norwich Norwich Open Space Needs Assessment	South Norfolk South Norfolk PPG17 Open Spaces, Indoor Sports and Community Recreation Assessment
Parks and Gardens	1.13	0.62	0.98
Natural and semi natural green space (included as part of the Strategic GI Projects)	3.74	2.46	5.08
Informal / amenity open space	0.22	1	0.71
Allotments and community gardens	0.16	0.44	0.11
Provision for children and young people (stand alone)	0.17	0.16	0.84
Outdoor sports facilities and recreation grounds	0.97	1.01	1.03
TOTAL	6.39	5.69	8.75

The Greater Norwich Infrastructure Needs and Funding Study estimated the cost of providing open space within Greater Norwich, based on the requirements set out in the table above. This study showed that open space costs in South Norfolk were disproportionately higher than Norwich and Broadland. This disparity is predominantly as a result of the greater level of currently available open space within South Norfolk, which the PPG17 Assessment suggested be replicated in future development. This level of availability is considered to be atypical and based upon a variety of factors, including:

- the provision of sub-regional facilities within the district (e.g. Whitlingham Country Park)
- the large number of rural parishes/settlements, many of which contain local open spaces that serve a relatively small population; and;
- historical events which are unlikely to be repeated e.g. designation of common land.

It is not considered the levels of current availability within South Norfolk represent a reasonable estimation of future provision, as the larger growth locations are likely to demand a different type of provision to cater for more intensive use, whilst dispersed, small-scale growth in rural areas is likely to trigger the need for enhancement of existing provision rather than additional open space.

2.2 Quantitative Assumptions

In order to maintain consistency within assumptions and ensure that those assumptions are based on a realistically achievable standard of open space, a single set of open space assumptions has been used to estimate probable infrastructure costs. The current availability of open space in Broadland represents an appropriate mid-range and therefore the calculations within this assessment have been based on an assumption that new open space will come forward at comparable levels to these existing quantitative levels. Levels of play and outdoor sports facilities in Norwich City Council's PPG17 are marginally lower than Broadland, however this would only reduce the overall cost by a proportionally small amount.

Broadland's average open space levels have been compared to the demographic projections of the increase in GNDP population in order to estimate and cost the total open space requirement across the GNDP area over the next 15 years.

For the purposes of this assessment it has been assumed that natural and semi natural open space will be provided through strategic green infrastructure projects rather than as part of a process of bespoke delivery related to construction levels.

2.3 Funding Overview and Costing Assumptions

The level of contribution sought for provision of play space for children and young people has been based on the methodology used in Broadland

Recreational Open Space SPD, rather than the figures in table 1 in order to provide a more detail breakdown of facilities.

The cost of land has not been included in the table below. On sites with five dwellings or more where play and open space facilities will be delivered off site, Broadland currently collect an average of £4,000 per house (this is varies depending on the size of the houses and location of the development).

The level of contribution sought for informal open space is based on standards set out in the Broadland PPG17 Assessment.

Standard costs for sports and play facilities set out in the table below have been taken from Sport England, the National Playing Fields Association and the Lawn Tennis Association.

Table 2 - The table below summarises the requirement for facility type, size and cost per 1000 population.

SUMMARY per 1000 population (costs include maintenance over the 15 years of the plan)				
<i>"This table is an initial high-level overview of the requirements. Figures are indicative and are likely to vary in light of future economic, market and policy changes."</i>				
Facility Type				
Facility Details				
Provision for children and young people				
4 x LAP (Local area for play)	0-6 years, activity zone a minimum of 10mx10m, low key games	400	1600	£62,613
2 x LEAP (Local equipped area for play)	4-8 years, activity alone a minimum of 400m ² , 5 types of play equipment, small games area and impact absorbing surface where necessary	800	3200	£115,733
0.4 x NEAP (Neighbourhood equipped area for play)	Older children, activity zone an minimum of 1000m ² , 8 types of play equipment, opportunities for ball games or wheeled activities and impact absorbing surface where necessary	400	3358	£64,758
1 x MUGA (Multi use games area)	36m x 18m, bituminous macadam, surround fencing and goals, floodlighting	240	240	£103,997
Sub total		2,248	8,398	£347,101
Outdoor Sport				
1.5 x Grass pitch	Grass pitch 110m x 75m: amelioration of surface with sand and fertiliser, some grading and drainage	12,375		£286,850
1 Outdoor Tennis Court	Two courts (in one block side by side, 34.75m x 31.7m), porous macadam surface, acrylic spray coat, Floodlighting	1,102		£98,684
1 Bowling Green	38.4m x 38.4m 6 rink bowling green including ditch, bank and path, to full specification, turfed	1,475		£260,177
Sub total		9,690		£645,711
Informal Open Space				

Allotments and community gardens	To include perimeter railings, gate, gravel footpaths, water supply and distribution, power supply and distribution, contractors overheads and profit	1,600		£25,600
Informal / Amenity Open Space	To include cultivated and seeded areas, provision for paths cycleway / bridleways, trees and miscellaneous furniture	2,200		£44,000
Parks and Grassland	To include general grassland (75%), paving and walkways (10%), formal gardens (5%), Shrub beds (10%), feature building, tree planting, fencing.	11,300		£565,000
Sub total		15,100		£634,600
Total		26,491		£1,627,412

Table 3 - Population projections for GNDP districts between 2008- 2026
(Source 2006 based population and household projections for Norfolk, Nov 2009)

Area	Number of People
Broadland	18,300
Norwich	20,300
South Norfolk	25,460
Total	64,060

Using the population projections set out in Table 3 the total cost for open space requirements will be £104.2 million.

2.4 Alternative Delivery Mechanisms

Large development sites will typically provide an element of recreational open space within or adjacent to the development. However, if open space facilities are not provided on site by the developer, it is possible significant cost savings can be achieved by delivering open space alongside other infrastructure, as suggested by the EDAW study, such as:

- delivering outdoor sports facilities as part of new or expanded schools; the facilities could then be available for community use out of school hours. It is expected approximately 17.35ha of new playing fields will be delivered through expanded or new schools. This equals approximately 21 football pitches, making a saving of just over £4 million; or
- enhancing existing sites with improved facilities to accommodate more intensive use/providing alternative uses; or
- Facilities provided through private clubs

This collaborative approach has been successful in the past; for example the first phase of the Dereham Road Bus Rapid Transit corridor where smaller Green Infrastructure projects were funded as part of the overall larger transport scheme or the new Costessey Centre facilities at Long Water Lane, which were provided as an alternative to additional outdoor pitches at Lodge Farm, Costessey.

2.5 Summary

This paper provides a reasonable estimation of the costs of recreational open space required to support sustainable development if growth takes place as it has been predicted in the Joint Core Strategy. These are an initial high-level overview of the requirements. Figures are indicative and are likely to vary in light of future economic, market and policy changes.

There are likely to be a number of cost saving efficiencies, some of which have been explored in this topic paper. Existing play and open space facilities have not been considered as part of this paper. Therefore it is possible fractions of the new population can use these existing facilities which are not currently at capacity.

3. Strategic Green Infrastructure

Strategic green infrastructure should be regarded as a long-term framework for sustainable development, protecting the natural and historic environment and enhancing the distinctive qualities that give the Greater Norwich area its special character.

The growth planned in Greater Norwich will place additional pressure on the existing green infrastructure networks. Therefore additional green areas will be needed to cater for this additional demand to ensure existing sites are not damaged by the added visitor pressure.

3.1 Assumptions

Officers from the districts and county council have been working on strategic green infrastructure requirements for the North East, South West and Norwich. The following elements of strategic green infrastructure have been identified:

- **Walking and Cycle Routes**

A network of walking and cycle routes have been identified (full list in appendix A) as either needing improvement or new routes created. This totals 55km of improved or new cycle and walking routes

The following standard charges per metre of new or enhanced access routes have been applied:

Creation of new cycle and walking routes: £100 / meter

Enhancement of existing cycle routes: £50 / meter

(Costs based on Mid Beds Planning Obligations Strategy SPD).

Total estimated cost: £4,000,000

- **Small Strategic Projects**

The Greater Norwich Green Infrastructure Steering Group has proposed a series of small strategic projects which have been prioritised for the next 5 years (full list in appendix A). The steering group includes representatives from Natural England, Norfolk Wildlife Trust, Environment Agency, Forestry Commission, RSPB, Local Authorities and Developers.

The estimated cost for these smaller strategic projects is £2,330,000. To carry the short term projects across 15 years of the plan this figure has been multiplied by 3.

Total estimated cost: £7,000,000

- **Larger Strategic Projects**

Larger strategic projects (which are identified in the Joint Core Strategy) have been given a total estimated cost of £1,000,000 using information from Norfolk Biodiversity Action Plan, Northamptonshire Biodiversity Partnership and previous project costs.

Total estimated cost: £1,000,000

- **Visitor Pressure mitigation measures on European and Ramsar designated sites**

Visitor surveys are planned over the summer at a number of internationally designated sites to assess visitor numbers and patterns. Following this analysis will be carried out to identify what impact housing growth in the GNDP area may have on these sites. At the moment it is unclear what level of mitigation measures will be required. It is estimated that £1,000,000 should be allocated for this work at the moment, but this figure may change in the future following the analysis work.

Total estimated cost: £1,000,000

3.2 Funding Overview and Costs

All the costs above are estimates; therefore an additional 20% has been added on to each total to ensure adequate funding is available for all future Strategic Green Infrastructure.

An additional £5,000,000 contingency has been included for Strategic Green Infrastructure projects due to the uncertainty of many of the projects.

Maintenance costs have not been included with the strategic green infrastructure projects. Maintenance and management issues are currently being investigated; one option would be to set up a community land trusts to perform this function.

Table 4 - Strategic Green Infrastructure costs 2008-2026

SUMMARY	
Project	Total Cost
Cycle Routes	£500,000
Existing walking access links to be improved (NE)	£2,160,000
New Access links needed (NE)	£1,340,000
Total cost for short term projects (5 Years) = £2,330,000 x 3 (for the 15 Year period) = £6,999,000	£7,000,000
Long Term Strategic Projects	£1,000,000
Visitor Pressure	£1,000,000
Contingency	£5,000,000
Total	£18,000,000

3.3 Summary

This paper provides a reasonable estimation of the costs of green infrastructure required to support sustainable if the growth takes place as it has been predicted in the Joint Core Strategy.

The GNDP Green Infrastructure Steering Group will continue to meet to ensure that the appropriate levels and types of green infrastructure will be delivered alongside new development.

Appendix A – Strategic Green Infrastructure Identified

LIPP Ref	Project Name	Description	Size (ha / m ²)	Approximate total cost (20%)	Assumptions	Source
	Cycle Routes					
N/A	Proposed new Cycle Route Rackheath to Wroxham - Route from Norwich to Rackheath will be developed as part of the BRT route.	2km of cycle route/improvements (3m wide) from the edge of Rackheath eco community to the edge of Wroxham	0.6	£240,000	£100 / meter	Cost based on Bedfordshire and Luton - Creation of new cycle routes £100 / meter
N/A	Proposed new Cycle Route - Link between Hethersett and Wymondham	This will be done as part of the BRT corridor				
N/A	Improved Cycle signage in South West	Awaiting meeting with the access group and cycle officer to discuss where improvements and signage is needed		£240,000		
	North East Walking Networks	Existing walking access links to be improved				
N/A		Spixworth - Croftwick - 3.2 km (2m width)	0.64	£192,000	£50 / meter	Cost based on Bedfordshire and Luton - Enhancement of existing strategic routes £50 / meter
N/A		Rackheath loop - 3.2 km (2m width)	0.64	£192,000	£50 / meter	Cost based on Bedfordshire and Luton - Enhancement of existing strategic routes £50 / meter
N/A		South Wroxham going east - 1.3 km (2m width)	0.26	£78,000	£50 / meter	Cost based on Bedfordshire and Luton - Enhancement of existing strategic routes £50 / meter
N/A		Salhouse - Woodbastwick - 4 km (2m width)	0.8	£240,000	£50 / meter	Cost based on Bedfordshire and Luton - Enhancement of existing strategic routes £50 / meter
N/A		Salhouse - Great and Little Plumstead - 3.2 km (2m width)	0.64	£192,000	£50 / meter	Cost based on Bedfordshire and Luton - Enhancement of existing strategic routes £50 / meter
N/A		Dussingdale - Great and Little Plumstead - 4 km (2m width)	0.8	£240,000	£50 / meter	Cost based on Bedfordshire and Luton - Enhancement of existing strategic routes £50 / meter
N/A		Great and Little Plumstead - Little Plumstead - 1.1 km (2m width)	0.22	£66,000	£50 / meter	Cost based on Bedfordshire and Luton - Enhancement of existing strategic routes £50 / meter

N/A		Blofield - Acle (via Burlingham) - 8 km (2m width)	1.6	£480,000	£50 / meter	Cost based on Bedfordshire and Luton - Enhancement of existing strategic routes £50 / meter
N/A		Woodbastwick - Burlingham (via Ranworth and South Walsham) - 8 km (2m width)	1.6	£480,000	£50 / meter	Cost based on Bedfordshire and Luton - Enhancement of existing strategic routes £50 / meter
	North East Walking Networks	New Access links needed				
N/A		Croftwick - New Hainford (Lamb's Holes) - 5.6 km (2m width)	1.12	£672,000	£100 / meter	Cost based on Bedfordshire and Luton - Delivery of new strategic routes £100 / meter
N/A		Great Plumstead - 1.1 km (2m width)	2.2	£132,000	£100 / meter	Cost based on Bedfordshire and Luton - Delivery of new strategic routes £100 / meter
N/A		Little Plumstead - Blofield Heath - 1.2 km (2m width)	2.4	£144,000	£100 / meter	Cost based on Bedfordshire and Luton - Delivery of new strategic routes £100 / meter
N/A		Beeston Park north east towards Wroxham - 3.2 km (2m width)	6.4	£384,000	£100 / meter	Cost based on Bedfordshire and Luton - Delivery of new strategic routes £100 / meter
	Short Term Strategic Projects (Next 5 Years)					
GI 1	South West Ecological Networks	Link the ancient woodland of the area between Norwich, Wymondham and the River Yare. It will create buffers around existing woods and establish new woodland areas, linking sites and improving long-term management.		£250,000	Based on information provided in the proforma	
GI 2	Norfolk and Norwich Hospital Health Woods	The project will create one or more community woodlands and health walks between the Norfolk and Norwich Hospital, UEA, the Southern Bypass and the new housing development at Cringleford.		£80,000	Based on information provided in the proforma	

	Regeneration of the Wooded Ridge – Norwich	This project aims to remind the community of the significance of the wooded ridge around the fringes of Norwich; to accentuate strong visual, historic and ecological landmarks, especially highlighting the north of the city and following a 10-25m contour band.				
GI 3			43	£100,000	Based on information provided in the proforma	
GI 4	Yare Valley Walk / Parkway	This project aims to develop the unifying concept of a River Parkway, a linear country park based on the Yare river corridor and the existing Yare Valley Walk between Bawburgh and Whitlingham Country Park.	0.0649	£100,000	Based on information provided in the proforma	
GI 5	Churchyards Health and Heritage Walks	This heritage-led project aims to create discovery routes linking the city centre's medieval churches. This project will establish a network of permanently marked routes.		£120,000	Based on information provided in the proforma	
GI 6	North West Norwich Forest	This project seeks to open existing Forestry Commission woodland for open public access. The freehold sites already have low level access, but these facilities could be developed with proper car parks, waymarking, access for all routes etc.		£200,000	Based on information provided in the proforma	
GI 7	Yare Valley Walk improvements – UEA to Eaton	Opportunity to continue existing boardwalk to Eaton. To improve access through out the Yare Valley Walk for pedestrians, improving existing links and creating new ones and improving sites for access and bio-diversity		£150,000	Based on information provided in the proforma	

	Mulbarton – Swardston Green Way	To develop/acquire a corridor of land to create a route for cyclists and pedestrians linking Mulbarton and Swardston to Lakenham Way. The only route currently available involves the use of the busy B1113.		£180,000	Based on information provided in the proforma	
GI 8	Yare and Wensum Valley Link	To develop a corridor of land to create a route linking Rivers Yare and Wensum to connect to the Marriott's Way. The project will focus on accessible green space and improved biodiversity opportunities. The type of connectivity is a priority in the Rights of Way Improvement Plan for Norfolk and offers a primary network opportunity within the GI Strategy		£180,000	Based on information provided in the proforma	
GI 9	Marriott's Way Route Enhancements	The proposed project will enhance the public enjoyment of Marriott's Way; increase the use of the route and understanding of its biodiversity and heritage.		£30,000	Based on information provided in the proforma	
GI 10	Tas Valley Blue Way – Phase 1	To improve the quality and accessibility of the Tas Valley including biodiversity and linking communities with green space through improved signage and infrastructure. Opportunities exist for accessible green space but are often difficult to reach or are not clearly signed from settlements and built-up areas		£200,000	Based on information provided in the proforma	
GI 11						

GI 12	Wensum River Parkwork – missing link			£30,000	Based on information provided in the proforma	
GI 13	South Norfolk Claylands	The project takes an umbrella approach, linking existing biodiversity initiatives; it also seeks to support community action for wildlife and to encourage greater awareness of the landscape history and biodiversity of the unique and ancient claylands landscape.		£210,000	Based on information provided in the proforma	
	Long Term Strategic Projects					
GI-14	Enhance public access to Yare Valley and Bawburgh Lakes			£168,000	Based on information provided in the proforma	
GI 15	Retention and re-creation of Moushold Heath and links to the surrounding countryside		107	£53,040	Soil inversion will not always be necessary depending on the pH of the soil. Cost of recent recreation of heathland and Moushold - 2542m ² soil inversion (£1,625) with link to existing heath and scrub clearance (£3,850). According to the Norfolk Biodiversity Action Plan, there is a target to extend the heathland by 10% of the current estimated 2,500ha = 250ha for the whole of Norfolk (250ha / 7authorities = 35.7ha each x 3(GNDP authorities) = 107ha. Includes 15 Years of management.	Source: Northamptonshire Biodiversity Partnership. To establish 10ha of LWS - standard heathland adjacent to existing heathland £350/ha + £450/ha/yr)

GI 16	Broads Buffer Zone			£600,000		
GI17	Wet Woodlands	Establishment of 25ha of wet woodland on unwooded sites or by conversion of plantations every 5 years for 15 years = 75ha	75	£138,600	In the Norfolk Biodiversity Action Plan for wet woodland, the regional target for creation of new wet woodlands is 150ha shared between the 6 counties in the East of England biodiversity forum (Norfolk, Suffolk, Essex, Cambridgeshire, Bedfordshire and Hartfordshire). Yearly management calculated on 15 year period	Source: Northamptonshire Biodiversity Partnership. To establish 10ha of LWS - standard wet woodland on non-wooded or plantation sites £1,500/ha + £200/ha/yr (£9,000 initial then £1,200 per year). Also Norfolk Biodiversity Action Plan for Wet Woodlands.

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