

Executive Summary

Project Context

EDAW AECOM, in collaboration with Drivers Jonas, Faber Maunsell, and Gardiner & Theobald were commissioned in November 2008 by the Greater Norwich Development Partnership (GNDP) to review the infrastructure requirements associated with the delivery of new homes and associated employment development by 2031. In addition to identifying and costing the capital infrastructure required to support the proposed growth, the study also incorporates a review of local authorities' ability to raise developer contributions to cover the cost of delivering the infrastructure requirements and a review of the potential delivery options.

The study is an important part of the evidence base for the Joint Core Strategy for Broadland, Norwich and South Norfolk (the spatial planning strategy that sets out the long term objectives for development in the districts). The study will also be used to inform the development of the Greater Norwich Integrated Development Plan (IDP) this is the GNDPs investment plan and will be updated using this study and the emerging JCS. It sets out the key packages and projects that the Greater Norwich Development Partnership has identified as necessary for the sustainable delivery of housing and job growth targets for Greater Norwich.

Housing Growth

The Joint Core Strategy covers the period 2008 to 2026 and the Greater Norwich Infrastructure Needs & Funding Study (2009) covers the period from 2008-2031. Therefore there are differences in the number of homes and associated infrastructure required to support the growth across the two time periods.

- The Joint Core Strategy covers the period 2008-2026 and the total housing growth for this period is 37,000 across the three districts of Broadland, Norwich and South Norfolk.
- The Study was commissioned to cover the period 2008 to 2031 which extends the housing growth by an additional five years, makes allowance for windfall completions and extrapolates the total housing required to from 37,000 to 57,000.

The purpose of extending the timeline as part of the study was to ensure that any major infrastructure requirements, such as secondary schools, would be captured in the study so they can be planned for well in advance of requirements.

For the purposes of the study the infrastructure requirements were calculated for the phases ending 2016, 2021, 2026 and 2031.

Population Growth

To identify the infrastructure requirements it has been necessary to assess the potential population impacts. This included an assessment of the population that would be generated by (or supported within) new developments and the impact on demographic changes at the district level.

- Where growth is concentrated within a particular location, such as within the strategic growth locations, it is often sufficient to estimate **population generated by the new developments alone**.
- Where growth is more dispersed, or where infrastructure serves a sub-regional area it may be necessary to review the demand for infrastructure in the context of the **net population change**

occurring at the district or GNDP level. This approach considers the demographic changes that are occurring within the existing population in addition to the population change generated by the new development and assesses how these changes will affect the net demand for infrastructure.

Report Content and Structure

The report identifies the following infrastructure requirements:

- Social Infrastructure:
 - Education
 - Healthcare
 - Emergency Services
 - Community Facilities
 - Open Space and Green Infrastructure
 - Waste
- Transport
- Utilities

The report also provides details of any identified funding sources and recommendations on the delivery and management arrangements necessary to deliver this growth including:

- A review of the infrastructure delivery and funding arrangements
- An assessment of the potential **developer tariffs** which may contribute to the cost of providing the identified infrastructure, based on an assessment of local market conditions.
- A summary of infrastructure costs and funding

Infrastructure Requirements & Costs

In addition to phasing, the early identification of the costs of providing the required physical and social infrastructure is an essential element of preparing and planning for growth, not least as this will form an evidence base when bidding for government funding.

We have undertaken a cost assessment using an evidenced benchmarking exercise to determine the current costs associated with the delivery of each piece of infrastructure. The costs relate directly to the infrastructure required to deliver the growth trajectories, and are calculated using the assumptions set out in a Cost Report.

The report sets out the phasing and cost of providing social infrastructure facilities required to meet the demand arising from housing growth, having taken into consideration existing capacity and natural population changes. Opportunities for co-location with other facilities (such as community facilities and sports facilities) that have use and phasing synergies have also been included but there is scope for this to be investigated in more detail based on actual future plans etc.

In relation to Education, Utilities and Open Space we have identified that there is more than one approach to delivering the infrastructure. In some cases this is because further work is required to test that the least expensive option is deliverable and able to meet the requirements of service providers. This report sets out where appropriate the best case and worst case scenarios but assumes the worst case

scenario (most expensive option) as the default scenario so that infrastructure planning is sufficiently robust enough to cope with that eventuality. Despite this we would expect the best case (least expensive option) scenario to be achievable in most cases.

Education

The total cost of provision is almost £226m. Requirements include:

- 30 new pre-schools,
- 14 new primary schools, and
- 4 new secondary schools

This represents the maximum required provision and is consistent with the Norfolk County Council Children's Services' response to the favoured option for Broadland and South Norfolk, which assumes that the child yield is applied to the total development (i.e. it is not discounted for one bed accommodation or flats) and takes a pessimistic view of opportunities to increase student numbers through reconfiguration of existing facilities. The recommendations for Norwich are based on EDAW's analysis which consider existing capacity and demographic changes within Norwich and assume that additional facilities will be required to meet the residual demand.

Opportunities to co-locate pre-schools and primary schools and community facilities have been explored where phasing and location opportunities are present. Similarly, opportunities to co-locate sports facilities with secondary schools have also been investigated. In both cases there is scope for this to be investigated in more detail based on actual future plans etc.

Healthcare

The total cost of providing the necessary healthcare facilities is almost £64 million, which has been discounted to allow for:

- The non-healthcare costs associated with co-located facilities and
- Healthcare demand that is not directly associated with housing growth.

Where possible, dentists and GPs surgeries have been co-located with each other as Primary Care Centres. Following discussions with the Norfolk Constabulary, opportunities for co-locating healthcare facilities with Safer Neighbourhood Teams have also been identified.

Of the total costs, over half (£34 million) are associated with the provision of hospital beds, which will not necessarily be provided within the districts themselves.

Emergency Services

The total cost of providing the necessary emergency services facilities is £14.5 million, which has been discounted to allow for:

- The non-emergency services costs associated with co-located facilities and
- Demand that is not directly associated with housing growth.

Where possible the Safer Neighbourhood Teams have been co-located with Primary Care Centres and Community Facilities to minimise the cost of providing these facilities. This is based on discussions with the Norfolk Constabulary.

The costs associated with smaller and expanded facilities are higher per officer than the larger and co-located facilities, and where possible a smaller number of larger SNT facilities have been proposed.

Community Facilities

Community facilities and associated community facilities will cost in the order of £38.5 million across all areas and facility types.

In Broadland, The Rackheath / Sprowston Growth Triangle will generate significant demand for community and leisure facilities, including two sports centres, a swimming pool, four standard size community spaces and two standard libraries. There will also be demand for community space to serve the wider district.

By 2031 there will be a need for a swimming pool and at least eight indoor sports courts in Norwich. As this demand increases over the growth period, it may be prudent to develop a sport centre earlier in anticipation of this future demand whilst creating capacity to existing demand.

Growth within Norwich will require significant new community space coming forward throughout the growth period, and two additional standard size libraries during the latter phases. There may be capital and revenue cost savings by combining some of these facilities.

In South Norfolk Growth within any one of the specific growth locations is insufficient to generate demand for a new, standard size library or community space in isolation. Collectively, however, they generate the need for an additional library and 3 additional community spaces. The greatest demand arises in Long Stratton and Wymondham. As such, these locations may provide suitable locations for strategic facilities, although both locations have existing facilities already (a new library has however recently been built at Wymondham). In addition, there is significant demand for additional library and community spaces elsewhere in South Norfolk required throughout the growth period that could offer opportunities to locate strategic facilities.

The study has not taken into account privately run community facilities so there is scope to review actual requirements when development proposals come forward.

Green Infrastructure & Open Space

The total cost of providing the necessary green infrastructure and open space is just in excess of £288m. This includes provision of:

- Parks & Gardens
- Natural and semi natural greenspace (including green corridors)
- Informal/amenity open space
- Provision for children and young people (all play areas within other typologies)
- Outdoor Sport (all pitches, green and courts including those within other typologies)
- Allotments & community gardens

It is assumed, for the purposes of this study, that the open space will be delivered alongside development coming forward. Furthermore, there may be cost saving efficiencies in delivering green infrastructure and open space whilst delivering other infrastructure interventions, such as transport improvements. Opportunities for collaborative working in this way should be encouraged.

Waste

The total cost of providing the necessary increase in waste infrastructure is £770,000.

There is demand arising within the GNDP for the equivalent of two additional Household Waste Recycling Centres by 2026. Drawing on the findings above, and in discussion with waste managers at Norfolk County Council the preferred locations for these facilities would be to locate a new facility as part of

development in the Rackheath / Sprowston Growth Triangle, and to utilise opportunities to expand the existing facility at Wymondham.

Utilities

AECOM (formerly Faber Maunsell) have compiled the utilities assessment, investigating the electricity, gas, and water infrastructure requirements. Once loadings were established, AECOM worked with the utility providers EDF Energy (electricity) and National Grid (gas), as well as consultants working on Norfolk's Water Cycle Study, Scott Wilson, to establish infrastructure requirements. Due to a lack of detail regarding the locations of many of these proposed new dwellings, only those dwellings with specified locations, including smaller settlements, have been considered in detail as part of this study.

Electricity

The total cost for electricity infrastructure is almost £50m.

EDF Energy summarise the requirements as follows:

- major reinforcement works would be required in the Greater Norwich area to accommodate the growth proposals;
- a new Grid Substation will be required to the east of Norwich at an existing EDF Energy site on Green Lane;
- three new Primary Substations will be required across the area, while two existing Substations will require the replacement of the transformers and switchgear;
- significant lengths of 132kV and 33kV underground cables will be required to feed these new developments, the laying of which will have the usual impacts on traffic and local residents

Gas

National Grid were unable to provide an estimate of infrastructure cost related to growth due to insufficient detail in the proposals, although they did highlight where reinforcement measures are probably required.

Water

This assessment of water infrastructure has been informed the Stage 2a Water Cycle Study (WCS), prepared by Scott Wilson in September 2008. Stage 2b of the WCS, will further develop the understanding of infrastructure requirements and delivery options associated with growth is currently being worked on. As such, the information included within this report is based on the best knowledge available at this time, but will need to be updated once the Stage 2b WCS has been completed.

Drawing on the Stage 2a WSC, it is predicted that the potable water infrastructure requirements maximum cost scenario would total £358,800,000. This would include:

- water mains and pumping stations from Heigham WTW to the development sites; and
- pumping stations and pipe work needed to maximise the existing boreholes; and
- pumping stations and pipe work needed for River Wensum reuse; or
- pumping stations and pipe work needed to link to the GOGDS; or
- civils, structural, excavation and land costs relating to water resource storage.

Stage2a of the WCS presents a range of options for delivering waste water infrastructure, and will be investigated further during Stage2b of the study. For the purposes of this study the worst case scenario of £99,530,000 has been incorporated into the cost projections.

Transport

The total cost of the proposed transport infrastructure is just over £389m

The Norwich Growth Area – Infrastructure Need and Funding Study (EDAW, 2007) sets out an assessment of the existing transport infrastructure and provides an evaluation of transport infrastructure demand based on two growth scenarios. Although the preferred proposed growth option subsequently determined differs from the growth scenarios reviewed in 2007, the evaluation is still partly applicable. As such, it has been agreed with the GNDP that no further analysis of transport infrastructure would be undertaken as part of this project and information on interventions included in this section have been identified through Norfolk County Councils ongoing transport work, including the refresh of the Norwich Area Transport Strategy (NATS). This work has identified a number of projects that will be required to support and facilitate the proposed growth, including:

- The Northern Distributer Road
- Highways / junction improvements
- Bus Rapid Transit
- Cycle Networks

Economic Development Activities

The GNDP Integrated Development Plan sets out a range of interventions that are necessary to support the sustained economic growth of the GNDP area. These projects and the associated capital costs (where identified) are considered as part of the overall infrastructure requirements necessary to support the proposed housing growth. These activities cost a total of £36.2 million.

Implementation

The successful delivery of infrastructure is dependent upon a well managed and regularly updated infrastructure delivery framework which should include:

1. Accurate housing and employment growth trajectories;
2. A full record of required and prioritised infrastructure;
3. A cost plan;
4. A funding plan, including all public and private sector funding sources;
5. A robust approach to maximising developers contributions;
6. Organisational Arrangements amongst various service providers, public sector agencies and the private sector.

The infrastructure delivery framework GNDP has developed as the Integrated Development Programme (IDP). The IDP is an evolution of GNDPs programme of development and will form the main delivery framework for the JCS. It sets out the key packages and projects that the GNDP has identified as necessary for the sustainable delivery of housing and employment growth targets for Greater Norwich. The study will form a key part of the evidence base and inform the update of the IDP.

Categorisation

We have categorised or prioritised the different elements of infrastructure relative to its importance in delivering growth. The three categories we have identified are critical, essential and necessary.

- **Critical infrastructure** is infrastructure that this study has identified which must happen to enable physical growth.
- **Essential infrastructure** is infrastructure that is required if growth is to be achieved in a timely and sustainable manner.

- **Desirable infrastructure** is infrastructure that is required for sustainable growth but is unlikely to prevent development in the short to medium term.

Table 1 below provides a summary of the total cost and the categorisation of the different infrastructure themes. It also provides an overview of the project funding that is discussed in the following section.

Table 0-1: Infrastructure Costs and Funding, by Infrastructure Type and Prioritisation

	Critical	Essential	Desirable	Total Costs	Associated Funding	Associated Funding Gap
Education	£0	£224,405,000	£1,620,000	£226,025,000	£0	£226,025,000
Healthcare	£0	£63,813,333	£0	£63,813,333	£0	£63,813,333
Emergency Services	£0	£14,467,500	£0	£14,467,500	£0	£14,467,500
Community Facilities	£0	£5,120,000	£33,410,000	£38,530,000	£0	£38,530,000
Open Space	£0	£288,245,472	£0	£288,245,472	£0	£288,245,472
Waste	£0	£770,000	£0	£770,000	£0	£770,000
Utilities	£507,269,000	£0	£0	£507,269,000	£493,750,000	£13,519,000
Transport	£263,500,000	£113,100,000	£12,500,000	£389,100,000	£100,700,000	£288,400,000
Economic Development	£0	£0	£36,290,000	£36,290,000	£11,620,000	£24,670,000
Additional Funding (Growth Point Funding)					£14,220,526	-£14,220,526
Total	£770,769,000	£709,921,305	£83,820,000	£1,564,510,305	£620,290,526	£944,219,779

The tables are an initial high-level overview of the infrastructure required. All figures are indicative and are likely to vary in the light of future economic, market and policy changes. They will be subject to periodic review.

Source: EDAW AECOM/ Gardiner & Theobald

Funding

The report makes a broad assessment of the level of mainstream public funding, utilities AMP funding (a summary of which is provided in the table above), and private sector developer contributions that are either currently committed or are a reasonable future assumption. These assessments are based on discussions with the service and utilities providers during the study period, market analysis and land value capture projections and from our experience of work in the other growth areas. It should be noted that detailed further investigation of public funding sources will be required as part of the ongoing infrastructure planning process. Once the JCS has been adopted and infrastructure providers understand what is required and when a clearer funding picture will emerge the infrastructure delivery framework can be updated.

In reality, whilst the funding sources identified in the report will make a significant contribution towards the funding gap other funding sources and mechanisms will be need to explored and used to provide the cocktail of funding needed to fill the funding gap. The report identifies some of those that should be given consideration including:

- Prudential Borrowing
- Development Agreements
- Local Asset Based Vehicles
- Regional Infrastructure Funds
- Tax Increment Financing
- Business Rate Supplement

Assessing the Opportunities for introducing a tariff based charge

The Government believes that the infrastructure needed to support development should be at least partly funded by owners of land who benefit when planning permission is granted for development.

The key to a successful tariff model is that it is affordable and viable in the marketplace so as not to prevent development being brought forward. We have therefore undertaken a detailed analysis on the local property market and in the report we set out a few of the most salient points that will affect the setting of tariff policy and the potential income that can be derived from developer contributions. In setting the level of tariff, consideration needs to be given to the different market conditions within the region and we have identified a number of discernible sub-markets within Greater Norwich with different cost and value characteristics.

We have identified the cost of infrastructure for each of the growth locations and identified the cost of infrastructure by dwelling. This provides an understanding of the level of required developer contributions per dwelling required to bridge the funding gap.

Given the market context both geographically and over time we have carried out an assessment of the level of tariff that could be achieved based on current and strong market conditions across each of the residential market areas. In setting the charging schedule, consideration will need to be given to applying a variable rate of tariff, particularly for schemes that come forward in the short term, which would otherwise be unviable.

We undertook appraisals for each of the districts, with two sets of appraisals being carried out for South Norfolk for each of the housing market areas identified in this district. The appraisals were based on current sales values and values being achieved during the last peak in the housing market. Given the different nature of residential development within Norwich city in comparison with South Norfolk and Broadland i.e. higher density and predominantly flatted schemes, we applied different density and unit mix assumptions for Norwich City.

To provide an indication of the potential maximum tariff levels that could be applied to residential developments we have used a single hectare development model to assess viability.

Potential Tariff Requirements

- Within Norwich a tariff of £19,469 per dwelling would be needed if contributions from residential schemes are to bridge the funding gap identified. Although this could be achievable for an average sized scheme with housing grant, due to the individual nature of development sites within Norwich flexibility is needed to take into account site specific viability issues.
- Within Broadland the residential tariff required to fund the infrastructure needed for the Sprowston growth area is £28,603 significantly higher than for the rest of Broadland at £6,844. Whilst the tariff rate required for the rest of Broadland is achievable, the rate needed for the growth area is challenging and is likely to only be viable for agricultural sites with no alternative use value and where housing grant is available. This will still require landowners to agree to sell their land at significantly lower values in comparison to values that have been achieved previously.
- The residential tariff requirements for the South Norfolk strategic growth locations range from £10,992 in Cringleford to £61,071 in Wymondham. The detailed requirements by growth location are provide in Table 16-5. Given the range of funding gaps within these areas, the Norwich Housing Market area of South Norfolk and mid South Norfolk area residential schemes will generally only be able to achieve the tariff rate required to cover the funding gap in strong market conditions, on agricultural sites with no alternative use value, and where housing grant is available. However this will require landowners to agree to sell their land at significantly lower values in comparison to those that have been achieved previously.

- Within the rest of South Norfolk a tariff of £20,076 is required and this level of tariff may only be viable for agricultural sites with no alternative use value. In weak market conditions housing grant is likely to still be needed. However this will require landowners to agree to sell their land at significantly lower values in comparison to those that have been achieved previously.

Tariff Policy Options

Given the varying market and policy characteristics and different infrastructure requirements between each of the districts, a variable tariff policy is recommended across Greater Norwich. There are a number of options for this:

1. A district wide tariff rate for Norwich, South Norfolk and Broadland.
2. A tariff rate for each of the growth areas with a separate tariff for the rest of each district.
3. A tariff for each of the housing market areas.

There are a number of issues that need to be considered when establishing the tariff policy, particularly the potential impact on development activity and compliance with current national planning policy.

Review of tariff policy

Given the level of tariff that is required in comparison to historic s.106 contributions, and the potential impact this could have on land values, an adjustment in the market will be required, from both landowners and developers. The public sector will also need to support this process, for example through the provision of additional funding to pump prime infrastructure investment.

Given the time it will take to deliver the infrastructure needed to support future residential and commercial development any tariff policy will need to be reviewed on a regular basis in order to adjust to changing circumstances such as general market conditions, availability of other funding sources, changes in infrastructure requirements and costs. Any review may consider:

- the impact of the policy on development and the market
- the level of contributions secured in comparison to what was achieved prior to the policy being in place
- whether the policy needs to be changed

The infrastructure costs are likely to change over time and the tariff levels will need to be adjusted to reflect this. Going forward GNDP should seek legal advice on the approach taken to setting the tariff rate and the options as to how it could be applied, valuation advice on how to accommodate fluctuations in land values and prices & consult with developers, landowners and the general public on the proposed tariff policy. Recent developments in relation to Community Infrastructure Levy (CIL) may have an impact on the assumptions set out in this report in relation to developer contributions.

Community Infrastructure Levy (CIL)

On July 30th DCLG issued more detailed guidance on the introduction of the CIL regulations, which are due to come into force in April 2010. Our report was written prior to this guidance being issued and therefore the methodology was developed to include the consideration on S106, Tariffs and CIL. The guidance raises a number of issues which will need to be borne in mind when considering establishing a developer contribution policy. In particular it suggests that under a new CIL regime tariffs would not be appropriate and instead CIL should be applied. A consultation exercise is currently underway, which is due to finish on October 23rd. DCLG intend to publish revised regulations in early 2010 taking into account the feedback obtained during the consultation process, at which time it should become clearer how CIL will work in practice. The difference in applying a CIL approach instead of a tariff approach will affect the way that infrastructure costs are apportioned across the whole of the NPA instead of different growth locations and the level of a medium-tariff as opposed to an optimum tariff. However, until the

regulations come into force it is difficult to pre-judge what the Government's final decision will be on these points. The important point with regards to this study is that the evidence, methodology and approach will be capable of being used to underpin a S106, a tariff or a CIL-type policy.

Summary Funding Position

As set out in detail in chapter 17 the level of potential tariff is based on the following key variables:

- the strength of the property market
- the land value
- the availability of housing grant

Using the range of tariffs identified earlier in the report we have made an assessment of the total amount of funding that tariffs could generate across the whole of growth area based on the following two scenarios:

Scenario 1 – High Land Values with housing grant

Scenario 2 – Low Land Values with housing grant

(The definition of High and Low Land values can be found on page 220)

In both scenarios we have assumed that the current weak market will last until 2014 and return to a strong market for the remainder of the growth period.

As described below, the potential developer contributions for residential and employment land ranges from £392.0 million to £834.9 million, reducing the total funding gap between £552.2 and £109.3 million respectively.

Scenario 1: High Market Value for Residential and Employment Land

The table below shows the funding position based on the level of tariff that could be achieved assuming the high land values identified in Chapter 16 (closer to their 2007 peak values) and full housing grant. The table shows that in this scenario the growth area would face a funding gap of £552.2 million over the growth period with a significant funding shortfall in the earlier years of development.

Table 0-2: Accounting for Land Value Capture: Scenario 1, High Land Value

Cost / Income Analysis						
	2008/09- 2010/11	2011/12- 2015/16	2016/17- 2020/21	2021/22- 2025/26	2026/27- 2030/31	Total
Funding GAP: Before LVC	£45,865,956	£279,944,746	£135,904,931	£176,310,111	£306,194,036	£944,219,779
LVC: Residential: High Market Value	£1,682,000	£44,362,000	£115,544,000	£104,873,000	£120,319,000	£386,780,000
LVC: Employment Land: High Market Value	£0	£326,155	£1,630,777	£1,630,777	£1,630,777	£5,218,485
Total Funding GAP after LVC: High Market Value	£44,183,956	£235,256,590	£18,730,154	£69,806,334	£184,244,260	£552,221,294

The tables are an initial high-level overview of the infrastructure required. All figures are indicative and are likely to vary in

the light of future economic, market and policy changes. They will be subject to periodic review.

Source: EDAW AECOM

Scenario 2: Low Market Value for Residential and Employment Land

The table below shows the funding position based on the level of tariff that could be achieved assuming the lowest land values identified in Chapter 16 and full housing grant. The table shows that in this scenario the growth area would face a much reduced funding gap of £109.3 million.

Table 0-3: Accounting for Land Value Capture: Scenario 1, Low Land Value

Cost / Income Analysis						
	2008/09- 2010/11	2011/12- 2015/16	2016/17- 2020/21	2021/22- 2025/26	2026/27- 2030/31	Total
Funding GAP: Before LVC	£45,865,956	£279,944,746	£135,904,931	£176,310,111	£306,194,036	£944,219,779
LVC: Residential: Low Market Value	£2,436,000	£83,374,000	£251,827,000	£229,111,000	£254,798,000	£821,546,000
LVC: Employment Land: Low Market Value	£0	£834,424	£4,172,122	£4,172,122	£4,172,122	£13,350,789
Total Funding GAP after LVC: Low Market Value	£43,429,956	£195,736,321	-£120,094,191	-£56,973,011	£47,223,915	£109,322,990
<i>The tables are an initial high-level overview of the infrastructure required. All figures are indicative and are likely to vary in the light of future economic, market and policy changes. They will be subject to periodic review.</i>						

Source: EDAW AECOM

In both cases the overall costs include the maximum estimated costs scenario for Education Provision, Water Infrastructure and Open Space. Significant cost savings would be generated by approaching the 'best case' scenario for each of these infrastructure types and meeting the best case scenario in any category would close the funding gap in the Scenario 2 (low land value) and reduce the funding gap in the Scenario 1 (high land value) to £176,791,875.

An overview of the potential costs savings are provided in the table below.

Table 0-4: Best and Worst Case Cost Scenarios for Education, Open Space and Utilities

	Worst Case Costs	Best Case Costs	Potential Cost Saving
Education	£226,025,000	£101,665,000	£124,360,000
Open Space	£288,245,472	£183,038,053	£105,207,419
Utilities	£507,269,000	£410,339,000	£96,930,000
Total	£1,021,539,472	£695,042,053	£326,497,419
<i>The tables are an initial high-level overview of the infrastructure required. All figures are indicative and are likely to vary in the light of future economic, market and policy changes. They will be subject to periodic review.</i>			

Source: EDAW AECOM

The headline implications of adopting the best base infrastructure costs are provided in the table 17-5 below. These are presented for the whole of the growth period.

Table 0-5: Infrastructure Costs and Funding Overview Adopting Best Case Costs

Cost / Income Analysis	
	(Total 2008-31)
Education Costs	£101,665,000
Healthcare Costs	£63,813,333
Emergency Services Costs	£14,467,500
Community Facilities Costs	£38,530,000
Open Space Costs	£183,038,053
Waste Costs	£770,000
Utilities Costs	£410,339,000
Transport Costs	£389,100,000
Economic Development Costs	£36,290,000
Total Infrastructure Costs	£1,238,012,886
Total Public / Private Funding	£523,360,526
Funding GAP - Before LVC	£714,652,360
LVC: Residential - High Market Value	£386,780,000
LVC: Employment Land - High Market Value	£5,218,485
Total Funding GAP after LVC - High Market Value	£322,653,875
LVC: Residential - Low Market Value	£821,546,000
LVC: Employment Land - Low Market Value	£13,350,789
Total Funding GAP after LVC - Low Market Value	-£120,244,429
<i>The tables are an initial high-level overview of the infrastructure required. All figures are indicative and are likely to vary in the light of future economic, market and policy changes. They will be subject to periodic review.</i>	

Source: EDAW AECOM

The Public and Private sector funding refers to the funding linked to specific projects, identified in Section 2. This includes funding associated with the utilities providers Asset Management Plans (AMPs), the Community Infrastructure Fund (CIF), and the Regional Funding Allocation (RFA).

The table above shows that assuming low market land values and best case scenario regarding costs that the funding gap could be closed.

Co-ordination and Management

The successful delivery of sustainable and timely employment and housing growth is dependent on strong co-ordination, management and governance. The current governance and support arrangements are based around a voluntary partnership arrangement which has evolved and strengthened over time.

Delivery of the projects within the Growth Programme will be coordinated through the Implementation Unit with strong links into all four Local Authorities.

The Greater Norwich Development Partnership is a successful decision-making, effective body with a proven track record for delivery.

Although the Implementation Unit has grown and strengthened recently and the Partnership at the Director and Member level is working well, it is generally accepted that more formal arrangements are required to engage and work with the full range of infrastructure delivery providers. This will be particularly important in trying to deliver efficiencies through innovative approaches to service delivery such as co-location or shared services.

Going forward, GNDP should use this infrastructure and funding study as a starting point for discussion with the three LSPs operating in the sub-region to identify if there are any opportunities for them to work together on the growth agenda and take a lead on specific infrastructure themes within the plan.

Recommendations/Next Steps

- GNDP should use the findings of this study and work with in particular with social infrastructure service providers to identify innovative ways to further reduce the costs of infrastructure through co-located and/or integrated facilities. This should also consider changes in service provision e.g. community-based healthcare provision, and community-based play/sport education provision so that dependence on new-built actual facilities is reduced and expansion or intensification of existing facilities is maximised.
- Particular attention should be given to Education, Potable Water & Open Space as these infrastructure themes offer the greatest potential for cost saving. Intensive work should be undertaken in the short term to develop delivery solutions that are closer to the 'best case' cost scenarios set out in this report.
- GNDP should establish a formalised way of working with infrastructure providers to review and update the information contained within this report on a regular basis making it able to respond quickly and easily to changes in growth trajectories or local or national political priorities. As part of managing the growth agenda the recommendations should be monitored and updated when new information becomes available or as external factors change.
- GNDP should take the lead role and be seen as the organisation that provides accurate and current information about development progress against the housing and employment growth trajectories allowing infrastructure providers to plan for and fund the delivery of infrastructure in a timely and responsive manner.
- In some cases local planning authority policy decisions have a significant impact on the cost of delivery of infrastructure, e.g. provision of Open Space in South Norfolk. In these cases a review of policy may be necessary make the delivery of the infrastructure possible.

Funding and implementation Strategy

- GNDP should develop a funding strategy which includes an action plan on how to maximise the broad range of funding opportunities included in this report. This will need to consider the amount and timing of funding that is required taking into account the timescales for delivering the infrastructure. The strategy should have short term objectives which include identifying a

range of actions to maximise existing grant fund sources and the potential of the HCA. The strategy should include medium to long term objectives which allow GNDP to be ready to emerging funding sources such as TIF by having the appropriate management and governance arrangements in place.

Maximising Developer Contributions

- GNDP should establish a working group with representatives from the County Council and the three districts to review and explore the issues and options relating to the introduction of a development tariff set out in this report. This should include obtaining legal advice on the options, particularly in terms of their compliance with current planning policy guidance.
- The working group should develop a draft development plan document (Supplementary Planning Document to the Joint Core Strategy) setting out the tariff policy, which will need to be consulted upon with the public, landowners and developers.
- Going forward GNDP should seek legal and additional valuation advice on the approach taken to setting the tariff rate options as to how it could be applied and how best to consult with developers, landowners and the general public on the proposed tariff policy.