London Borough of Havering Local Development Framework

Planning Obligations Supplementary Planning Document

Technical Report 1
Assessment of Infrastructure Costs

Consultation Draft

March 2012

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1 Approach to the Assessment

In principle the calculation of a "full" (ie. undiscounted) standard charge involves establishing:

(a) the total amount of planned new development in the area over the plan period

(b) the total cost of providing the additional infrastructure required to support this new development,

and dividing (b) by units of (a) (ie. dwellings, m^2 of floorspace) to obtain average costs per development unit. This technical report sets out our approach to dealing with the numerous issues which arise in practice in attempting to put this broad principle into practice.

The following sections discuss:

- How much development is expected in Havering between 2010 and 2020;
- Which types of infrastructure requirement are appropriate to be covered by developer contributions as part of a standard charge;
- How the cost of additional infrastructure in Havering should be apportioned between additional and existing development;
- What account should be taken of existing shortfalls and spare capacity in infrastructure facilities;
- What would be appropriate assumptions on provision standards and costs of infrastructure in Havering; and
- What provision should be made for land to accommodate infrastructure facilities.

The first version of this report was prepared in 2009, when the London Riverside portion of Havering was under the planning control of the London Thames Gateway Development (LTGDC). London Riverside was at that time subject to a separate standard charge regime as part of the LTGDC's Community Benefits Strategy. The original assessment to support a S106 SPD was therefore aimed at deriving an appropriate level of Full Standard Charge for the remainder of the Borough, excluding London Riverside.

In April 2011, planning powers over London Riverside were handed back to the relevant local planning authorities, including Havering. In this report, therefore, the original assessment has been extended to cover the whole Borough, including Havering Riverside. For some types of

infrastructure (ie. transport and green infrastructure) this has required bringing together separate estimates for the two parts of the Borough, using or adjusting data from the LTGDC studies. It should be noted, however, that the residential sites in the Havering Riverside part of the Borough are contiguous with the existing built-up area in the rest of the Borough. They will benefit from infrastructure provision elsewhere in the Borough, and the infrastructure provided to serve the London Riverside sites, especially transport facilities, will also benefit the rest of the Borough. It would therefore not be meaningful to make separate estimates of infrastructure costs per dwelling between Havering Riverside and the rest of the Borough for the purposes of setting a standard charge.

2 Scale of Development Expected in Havering Between 2010 and 2020

Housing

In order to assess the costs to be ascribed to new dwellings in Havering the quantity of future dwellings to be completed within an appropriate time horizon needs to be established.

The housing target for Havering in the London Plan (July 2011) is for 9,700 net additional dwellings to be completed over the ten year period between April 2011 and March 2021. There are two major elements to this target. The first comprises dwellings planned to be built on large sites within the Havering Riverside part of the Borough. The latter has the potential to deliver over 4,000 dwellings in total, most of them by 2021. The second comprises dwellings projected to be built within the remainder of the Borough, mainly on small or medium sized sites (apart from two larger former hospital sites).

The total number of dwellings in Havering in April 2010 is estimated at about 98,400, comprising 93,800 existing in 2001, according to the 2001 census, and a further 4,261 net additional dwellings completed between April 2001 and April 2010. Assuming the completion of a further 522 dwellings in 2010/2011, as projected in the Annual Monitoring Report 2009-2010, the total dwellings in Havering in March 2011 is estimated to be around 98,600. **Table 2.1** shows the percentage of forecast new dwellings over the period 2010-20 as a percentage of the estimated forecast total number of dwellings in 2020. The additional dwellings represent 9% of the forecast 2020 stock.

Table 2.1 Additional Dwellings in Havering 2001 to 2020

Year	Dwellings
April 2001	93,800
increase April 2001 to March 2011	*4,800*
March 2011	98,600
increase April 2011 to March 2021	*9,700*
March 2021	108,300
2011-21 as % of 2021 total	9%

Non-residential Development

Non-residential developments also generate a requirement for additional infrastructure provision and should if possible be covered by a standard charge. The main types of such development to be captured are

employment uses, including industrial, commercial and retail development.

In order to assess the costs to be ascribed to such developments in Havering we need to establish figures for the quantity expected to be completed over the period to 2020. The most suitable measure of development quantity for assessing the scale of any standard charge to be made on a proposed non-residential development is square metres of floorspace in particular uses. This provides a more direct measure of the likely level of impact of the development on infrastructure requirements than the most practical alternative, hectares of land, as the impact of the latter can vary greatly according to the intensity with which the land is developed.

An Employment Land Review, undertaken by URS for Havering Council as part of the evidence base for the evolving LDF, was completed in 2006. It contains projections of employment and floorspace for employment uses for the whole Borough over the period 2005 to 2018, based mainly on projection of recent trends. Separate projections are given for offices, factories and warehouses.

Office Floorspace

Havering Employment Land Review took the 225,000m^2 of office floorspace in the Borough in 2004 according to Valuation Office Agency (VOA) statistics as the starting point for its projections. The Review projected an annual average floorspace demand of 0.7% over the period 2003-2018, equivalent to a requirement for 1.6 ha additional land for offices over the same period. (It should be noted that the Review was undertaken before the approval of Crossrail, which, when implemented, is likely to have a positive effect on the demand for office floorspace in the Borough which is not taken into account in the projections below.)

According to VOA statistics, the total 2007 office floorspace in Havering was 184,000m^2, a decrease from 188,000m^2 in 2005. These figures, however, cannot be compared with the 2004 figures used by URS as there was a revaluation in 2005 which changed the basis for the statistics. It would seem reasonable to assume that the average floorspace demand over the period 2003-2018, 0.7% per annum, can be applied to a 2007 base over the period to 2020. This would imply an increase in office floorspace between 2010 and 2020 of around 13,600m^2.

Industrial and Warehouse Floorspace

The Employment Land Review forecasts a substantial decrease in employment in general industrial activities in the Borough between 2005 and 2018, permitting the release of employment land for other uses. There is, therefore, likely to be very little new industrial (B2) development to take into account in a standard charge. Similarly, while the review projects some increase in warehousing (B8) activity, because of the

current high level of vacancies additional land demand for B8 uses up to 2018 is expected to be minimal. In the cases of both B2 and B8, the only location for new provision mentioned in the Core Strategy is Beam Park. In conclusion we consider it would not be worthwhile to propose a standard charge for industrial or warehouse developments in the remainder of Havering.

Retail Floorspace Quantities

The Havering Retail and Leisure Study (2006) projects future retail floorspace requirements for the Borough, as set out in Table 6 of the Core Strategy. This presents a range of requirements by centre, for both comparison and convenience floorspace to 2018. (It should be noted that the Study was undertaken before the approval of Crossrail, which, when implemented, is likely to have a positive effect on the demand for retail floorspace in the Borough which is not taken into account in the projections.) The means of the ranges for the whole Borough over the period is 24,400m^2 gross for comparison goods and 7,250m^2 for convenience goods. Assuming demand will continue to increase at the same projected rate before and after 2018, we adopt these figures to represent potential additional retail floorspace from 2008 to 2020. Assuming a constant rate of increase, this gives increases of 20,300m^2 6,000m^2 respectively over the period 2010 to 2020.

Population

Requirements for infrastructure tend to be more directly related to population (and age structure) than to dwelling numbers so it is important to appreciate the changes in population implied by the scale of additional planned housing. The most up-to-date population projections for Havering are those contained in the GLA's 2009 Round Demographic Projections. The most relevant of these for current purposes are the GLA's Post London Plan (PLP) Low projections. These projections are used for short and medium term purposes such as projecting school rolls. There is also a PLP High set of projections, which assume a higher level of international migration, but these are not appropriate for present purposes.

Although the GLA projections are not based on the additional dwelling numbers currently proposed for Havering, they nevertheless provide the best available data for deriving an appropriate value for average household size within the Borough. This is required in order to convert population-based provision standards to dwelling-based standards. We assume one household per dwelling on average.

Table 2.2 sets out the population and household projections for the whole of Havering for the years 2006, 2011, 2016 and 2021, under the GLA's 2009 Round Post London Plan (PLP) Low Projections.

Table 2.2 Population and Household Forecasts for Havering, 2006 to 2021

Year	Population in Private Households	Households	Average Household Size
2006	226501	94523	2.40
2011	229805	97128	2.37
2015	***238127***	***102,068***	***2.33***
2016	240207	103303	2.33
2021	250559	109478	2.29
Source: 2009 Round set of Demographic Projections, PLP Low (GLA, 2010).			

As the average household size is projected to decrease progressively over the period, it is advisable to adopt an assumption midway between the start and end of the plan period 2010 to 2020, ie. 2015. **Table 2.2** shows an interpolated value for 2015 of 2.33, assuming a pro rata change in both population and household between the values for 2011 and 2016.

Because of the projected decrease in household size, the rate of population increase in the Borough will not be proportionate to the increase in dwellings. As shown in **Table 2.1**, there were approximately 98,600 dwellings in 2010, which can be expected to increase to around 108,300 by 2020 through the addition of 9,700 net additional dwellings. Assuming the average household sizes for 2010 and 2020 of 2.37 and 2.30 respectively, derived pro rata from those in Table 2.2, the population in these households will increase from 233,700 in 2010 to 249,100 in 2020, an increase of 15,400 persons. This represents a percentage increase in population over the period 2010 to 2020 of 7%, compared with 9% in the case of dwellings.

3 Infrastructure Requirements Appropriate to be Covered by Developer Contributions as Part of a Standard Charge

A wide range of infrastructure investment is potentially required to ensure that the whole of Havering will function adequately once the planned new development comes on stream. This covers the combined needs of the population and workers in existing and planned new development, as the additional development will only function adequately if the area as a whole does. As well as the costs of accommodating additional housing and employment, the total costs of providing sufficient infrastructure to meet the needs of the future population include:

- meeting existing infrastructure shortfalls in terms of current desirable provision standards;
- maintaining current standards of infrastructure provision by ongoing renewal;
- meeting additional infrastructure needs likely to arise among the existing population, for example as a result of the changing age structure and disposable incomes;
- adjusting forms of infrastructure provision to reflect new ways of delivering services (eg. community hospitals, neighbourhood police units); and
- meeting infrastructure needs imposed on the area by users resident outside the area, for example highway capacity to accommodate visitors or through traffic.

Table 3.1 sets out a long list of potential items of infrastructure that might be justified on the basis of the above rationale. This list has been drawn from three other areas which have adopted the standard charge approach to developer contributions: West Northamptonshire Development Corporation (WNDC), London Thames Gateway Development Corporation (LTGDC), and Milton Keynes Council (MK).

Table 3.1 Long list of Infrastructure Facilities Required to Support Additional Development

Type	Facility	WNDC	LTGDC	MK
Education	Early Years School	Y	Y	Y
	Primary School	Y	Y	Y
	Secondary School	Y	Y	Y
	Post-16 School	Y	Y	Y
	Further Education	(Y)		Y
	Higher Education	(Y)		Y
Culture & Community	Libraries	Y	Y	Y
	Museums & Archives	Y		Y
	Cultural Investment	Y		Y
	Community Centre	Y	Y	Y
	Youth Centre		Y	Y
Social Care	Day Care			Y
	Older Persons Housing			Y
	Children's Homes			Y
Open Space	Local Park	Y		Y
	Children's Play Areas (inc LEAP and NEAP)	Y		Y
	District Park	Y	Y	Y
	Green Infrastructure		Y	Y
Recreation & Leisure	Sports & Leisure Centre	Y	Y	Y
	Swimming Pool			Y
	Playing Pitches		Y	Y
Crematoria & Burial Grounds	Crematoria			Y
	Burial Grounds	Y		Y
Emergency Services	Police Stations	Y	Y	
	Fire Stations	Y	Y	
	Ambulance Stations			Y
Health Services	GP Health Centre	Y	Y	Y
	Dentist	Y		
	Intermediate Care	Y		
	Acute Hospital	Y		Y
	Mental Health Facility			Y
Waste	Waste Management/Disposal Facilities	Y		Y
Transport	Road	Y	Y	Y
	Public Transport	Y	Y	Y
	Other Transport	Y	Y	Y
Utilities	Water Supply			
	Sewerage			
	Electricity			
	Gas			
	Telecommunications			
Public Realm		Y	Y	
Flood Protection		(Y)	Y	Y
Voluntary Sector		Y		Y

Type	Facility	WNDC	LTGDC	MK
Vocational Training linked to Employment		Y		
Inward Investment & Enterprise Support				Y
Note: (Y) = Not yet included in Standard Charge Source: WNDC, LTGDC, Milton Keynes Council				

In addition to the above facilities, the Study Brief for the present Study suggested consideration be given the following items as candidates for developer contributions:

- tree planting;
- air quality improvements;
- water environment management and improvement;
- energy efficiency/renewables;
- land remediation;
- affordable business space;
- biodiversity; and
- crime and disorder prevention.

It may not be appropriate for developer contributions in a standard charge to cover the total cost of all the items listed in **Table 3.1** or above for several reasons.

"Strategic" Facilities

Under current government policy set out in Circular 05/2005, '*planning obligations should not be used solely to resolve existing deficiencies in infrastructure provision or to secure contributions to the achievement of wider planning objectives that are not necessary to allow consent to be given for a particular development*' (Para B9). The requirements should be '*directly related to the proposed development*' and '*fairly and reasonably related in scale and kind to the proposed development*'. As a result there are a number of infrastructure items whose costs it would not be justifiable to ascribe solely or in some cases even partly to new development in the Borough. These include strategic level facilities which are aimed at serving a wider population than the residents or workers within the Borough, such as motorways, waste disposal and acute hospitals.

Making up Existing Infrastructure Shortfalls

As mentioned above, Circular 05/2005 specifically states that '*planning obligations should not be used solely to resolve existing deficiencies in infrastructure'* (Paragraph B9). However, this does not preclude making good existing shortfalls in provision where these need to be rectified to allow new development to go ahead in an acceptable way.

Revenue Costs

The costs associated with providing infrastructure comprise the capital costs of building and accommodating the facilities, the costs of running the facilities and the costs of maintaining them on a continuing basis. In general, it is reasonable to assume that once facilities are in place, there should be regular public funding sources available for running and maintaining them as for the rest of the existing stock of facilities. The costs relevant to the present exercise should therefore normally be restricted to the one-off capital costs.

There are, however, some revenue costs which it has become customary to include in s106 agreements, for want of any other clear sources of funding. Of these, the maintenance costs of green spaces, play spaces, start-up costs for supporting voluntary activities, and employment training costs, are widely accepted. These and other similar revenue costs are considered appropriate for inclusion in a standard charge.

Apart from these exceptions, the term 'infrastructure costs' is restricted here to the capital costs of providing infrastructure in the form of new facilities or increased capacity of existing facilities, including, where relevant, the costs of land. They do not include the costs of studies aimed at ascertaining the feasibility of development, such as Strategic Flood Risk Assessments, which have to be undertaken before development can be approved.

Privatised Utilities

The utility companies raise funds for investment through user charges and borrowing. Electricity, gas and water prices to the customer are regulated by the government regulators, Ofwat and Ofgem, and set at a level which the regulator considers appropriate to permit the levels of investment the companies indicate are necessary to meet future need. Under this regime, it would not be appropriate for standard charges to be used to pay towards investment in utility infrastructure (although developers may wish to make individual arrangements directly with the utility companies to contribute to the provision of their services).

Availability of Alternative Funding Sources

In addition to developer contributions, a wide array of funding sources exists to cover the cost of providing, operating and maintaining infrastructure. These sources include:

- the regular funding arrangements of the infrastructure providers themselves, which usually cover running and maintenance costs but may be more limited in their ability to cover capital costs of new or restructured capacity;

- special funding arrangements from Government, especially Growth Area Funding (GAF), Community Infrastructure Fund (CIF), and Building Schools for the Future, aimed at assisting in the provision of a range of new or expanded infrastructure; and

- funding using a special purpose vehicle in the form of a public private partnership under which the private sector undertakes delivery of infrastructure and services in exchange for payments tied to agreed standards of performance.

However, allocating the future costs of infrastructure to particular funding sources presents difficulties. There are, for example:

- no hard and fast rules about what types of costs can or should be covered by many of these funding sources;

- substantial uncertainties about the level of funding that may be offered by many of these funding sources in the future; and

- various 'competitive' mechanisms by which certain public funding is allocated, making it difficult to predict which particular projects may be expected to capture whatever funding might be available and the proportion of the cost that might be covered.

Nevertheless, where there is reasonable certainty that the whole cost of any type of infrastructure is likely to be covered by other funding sources, it is appropriate to exclude them from a standard charge. This is particularly likely to be the case with some high level strategic infrastructure items such as motorways, and facilities, such as crematoria, which can be privately built and operated on commercial principles, with costs met through user charges imposed. It is also appropriate to exclude infrastructure items for which comprehensive arrangements have been made under a PFI to finance, provide and operate infrastructure, particularly, as in the case of the East London Waste Authority, where several Boroughs are involved.

Site Specific Infrastructure

Items of infrastructure on and close to the site which are clearly essential to make a development function adequately are considered to be 'normal' costs of development which should fall to the developer or landowner and will not be included in a standard charge. Such costs include:

- all normal site preparation, including site investigations, remediation, demolition, ground stabilisation, import and export of waste and fill, groundworks and utilities from the site boundary;
- on-site drainage and flood prevention measures identified through Site Specific Flood Risk Assessments;
- on-site sustainable transport facilities;
- off-site connections from the development site to the highway and sustainable transport networks;
- affordable housing requirements;
- all requirements of the prevailing Building Regulations, as well as the Code for Sustainable Homes, BREEAM standards and the Building for Life Standard; and
- any other design and environmental standards, including requirements for renewable energy provision, whether on or off-site.

Other Considerations

The above considerations relate to the legitimacy of including infrastructure items in a standard charge. There are also three important practical considerations.

Availability of Adequate Estimated Requirements and Costings

For all items included there needs to be a quantity and a cost, either total or per unit, which can be robustly justified on the basis of available evidence. Where such information is not available, perhaps because planning of that type of infrastructure has not yet reached a sufficient level of detail, such items will have to be excluded from the standard charge until such time as adequate costs have been derived.

Likelihood of Funds Collected Being Directed to an Item

In principle, the proceeds from the standard charge should be used to pay towards the cost of the items of infrastructure on which its level has been based. In practice, there is likely to be a discounted rate and choices will need to be made about where to spend the more limited amounts collected. It would therefore not be helpful to include in the calculation of the charge rate minor items to which it is very unlikely that expenditure from the proceeds of the charge will be directed in practice.

Capacity to Identify Infrastructure Schemes Serving New Development

As funds collected will be pooled and disbursed to providers of those high priority infrastructure projects most requiring funding at the time, it must be possible to identify specific schemes serving the Borough. For example, it is unlikely that funds collected from developers in the Borough will ever need to be directed towards major capital investment waste management projects of Shanks East London.

Appendix A sets out the long list of facilities from **Table 3.1** (together with the additional facilities listed in the text below the table suggested for consideration in the Study Brief), indicates which of these items of infrastructure are proposed to be excluded from a standard charge for Havering, and gives the reasons for their exclusion, based on the discussion above.

Appendix B sets out the readily available information on evidence for a need for infrastructure to serve additional development in the Borough in relation to each of the infrastructure items listed as appropriate for inclusion in a standard charge for Havering in **Appendix A**. The second column of the Appendix sets out information on future needs or plans for Havering from a range of strategies, plans and programmes prepared by service providers. The third column summarises what can be drawn from this information on the scale of additional requirements that would be needed to serve new developments. The fourth and fifth columns state whether new requirements are specified and costed respectively in the document.

Table 3.2 sets out a list of infrastructure and facilities which would be appropriate for inclusion in a Standard Charge for Havering at present in the light of the above considerations. It also indicates which of these items should, as well as falling to the charge on residential development, also fall to the charge on non-residential development, according to the type of demand these two types of developments make on infrastructure.

Table 3.2 Provisional List of Infrastructure Items for the Havering Standard Charge

Type	Facility	Residential	Non-residential
Education	Primary and Early Years school	Y	
	Secondary (and Post-16) school	Y	
	Further education	Y	
Culture & Community	Library	Y	
	Museum & archive	Y	
	Community and youth centre	Y	
	Cultural investment (arts, theatre, heritage etc.)	Y	Y
Open space	Locally and Neighbourhood Equipped Areas of Play *	Y	
	Non- Equipped Area of Play *	Y	
	District park *	Y	
	Green infrastructure	Y	Y
	Burial ground	Y	
Recreation and leisure	Sports hall	Y	
	Swimming pool	Y	
	Ice rink	Y	
	Playing pitch *	Y	
Emergency services	Police station	Y	Y
Health services	GP surgery/health centre	Y	
	Intermediate health care provision	Y	
	Dental surgery	Y	
Social care	Social care facilities	Y	
Transport	Road	Y	Y
	Rail	Y	Y
	Public transport	Y	Y
Public realm	Public realm	Y	Y
Revenue items	Employment training	Y	Y
	Voluntary/community sectors	Y	Y
	Inward Investment & Enterprise Support	Y	Y
Notes: * Maintenance costs may be included *for these items*			

4 Assumptions on Standards and Costs of Infrastructure in Havering

Infrastructure items can be divided into three broad groups, with regard to their form of provision:

- **Infrastructure supplied in units of a relatively uniform size and capacity (eg. play facilities, schools, health centres) or which can be treated as such (eg. sports halls).** For these "unitised" types of facility, provision standards based on population or household support thresholds can be derived so that the quantity of units required to serve a given population or number of dwellings can be readily estimated and their cost calculated from unit costs.

- **Infrastructure supplied in units of highly variable size and capacity (eg. libraries, playing pitches).** For these types of facility it is sometimes possible to derive per capita demand levels for key elements (such as GPs, m^2 of library floorspace or hectares of playing fields) and to estimate costs of provision from unit costs of these elements. Alternatively, per capita costs for particular types of facility can be generated by reference to average or typical existing provision rates or examples of recently provided facilities.

- **Infrastructure that is not provided in clearly defined units for which per capita or other demand levels could be sensibly derived (eg. green infrastructure, transport facilities).** In these cases there are likely to be many alternative ways of meeting need, with widely differing cost implications. Specific studies are therefore needed to assess requirements and costs.

Table 4.1 classifies all infrastructure items in **Table 3.2** into these three groups.

Table 4.1 Classification of Forms of Infrastructure Provision

Infrastructure Item		Form of Provision		
Type	**Facility**	**(a) relatively uniform units**	**(b) highly variable units**	**(c) no units**
Education	Primary (inc. early years)	Y		
	Secondary (inc post-16)	Y		
	Further education		Y	
Culture & Community	Libraries		Y	
	Archives		Y	
	Community and youth centres		Y	
	Cultural investment (arts, theatre, heritage etc)			Y
Open space	Local Equipped AP		Y	
	Neighbourhood EAP		Y	
	District park		Y	
	Green infrastructure			Y
Recreation and leisure	Sports/leisure centre	Y		
	Swimming pool	Y		
	Playing pitches		Y	
Emergency services	Police stations			Y
	Fire stations			Y
Health services	GP health centre		Y	
	Dental surgery		Y	
	Intermediate healthcare provision			Y
	Acute hospital			Y
Social care	Social care facilities			Y
Transport	Road			Y
	Rail			Y
	Public transport			Y
Public realm				Y
Revenue items	Employment training			
	Voluntary sector			Y
	Inward Investment & Enterprise Support			Y

Appendix C sets out for these infrastructure items assumptions for assessing the quantities of infrastructure required to serve new development in the Borough, their unit costs, and the cost per dwelling. Where available, figures and their sources are entered. All current infrastructure costs given in this document relate to the period from Quarter 4, 2008-09 to Quarter 2 2011-2012. No attempt has been made to take account of cost changes in this period, during which cost inflation was limited and sometimes negative. For items in the “relatively uniform units” category the table also shows, where appropriate, the number of dwellings that are assumed to support a single unit of the facility.

Unitised Facilities

The key data on standards and unit costs for unitised infrastructure items (in categories (a) and (b) in Table 4.1) from **Appendix C** are summarised in **Table 4.2,** which shows the standards of provision in terms of dwellings per standard facility or m^2/ha per 1,000 population, and the cost of provision per unit and per dwelling. It should be noted while the unit cost approach is used to assess the per dwelling costs of meeting infrastructure needs this is not intended to imply any particular form of facility provision in practice.

Table 4.2 Infrastructure provision standards and cost assumptions

Infrastructure Item		**Standard**		**Cost**
Facility	**Unit for Costing Purposes**	**Units per 1,000 pop**	**Dwellings per unit**	**Cost per dwelling**
Primary school				£2,883
Early years				£1,098
Secondary school				£2,896
Post-16 school				£1,795
Libraries	m^2 of library space	30m^2		£237
Archives	m^2 of archive space	5m^2		£47
Community and youth centres	m^2	61m^2		£468
Equipped Area for Play (LEAP and NEAP combined)	m^2	0.25 ha		£653 (i)
Non-equipped Area for Play	m^2	0.55 ha		£433 (i)
District park	Ha	1.84 ha		£1,280 (i)
Sports/leisure centre	Four court sports hall		3,577	£841
Swimming pool	Five lane 25m pool		7,868	£443
Playing pitches	Ha	1 ha		£240
GP health centre (inc dentist)	Four GP health centre		3,090	£1,044
Notes: (i) including 10 year maintenance				

In order to convert population-based provision standards to dwelling-based standards the projected average household size in 2015, midway through the plan period, has been adopted (2.33, as given in **Table 2.2**).

Where local costs and standards are not available, we have used regional or national guidance or data for broadly comparable local authorities elsewhere in England. Sources for such non-local assumptions include:

- Department for Education;
- Museums Libraries Archives (MLA) South East;
- Sport England;
- Milton Keynes Borough Council; and
- Swindon Borough Council.

Provision standards and costs of schools require further elaboration. School standards and costs are normally derived using pupil generation rates per dwelling of pupils of the relevant age for each type of school. The Department for Education (DFE) provides guidance on school costs in the form of a multiplier per pupil, to which a location factor is applied. There are multipliers for primary, secondary and post-16 pupils. However, the method recognises that in some cases new developments require new schools and in others they may be accommodated by expanding existing schools. The DFE multiplier relates to the cost of providing for an unspecified mix of new and expanded schools (based on typical mixes in the recent past).

As education provision costs are considered purely in terms of costs per pupil, without reference to standard units of provision, there are no dwelling per facility standards for education facilities.

Non-unitised Facilities

Table 4.3 sets out the assumptions that have been used to assess the quantities and costs of those types of infrastructure for which a unitised basis is not applicable in general or particularly in Havering. For these items costs have been compiled of facilities assessed by service providers to be required to support the development proposed in the Core Strategy in Havering. Where possible the costs have been based on actual estimates for the facilities proposed or comparable facilities elsewhere. In other cases, Havering Council has made broad estimates of facilities proposed in the various Borough plans and strategies. In cases where facilities have not yet been comprehensively identified the costs are based on current annual expenditure levels projected over the plan period to 2021. The rationale for the costs of the various infrastructure items are set out in **Appendix C**.

Table 4.3 Cost Estimates for Non-unitised Infrastructure Items

Infrastructure Item	Total Cost to Meet Needs to 2021 (i)
Intermediate health care	Not available
Culture and heritage	£5.0m
Green infrastructure/biodiversity	£16.0m
Ice rink	£11.0m
Burial grounds	£1.4m
Police stations	Not available
Fire and rescue	£3.0m
Transport (excluding Crossrail)	£70.5m
Public realm	£14.4m
Employment training	£2.0m
Voluntary sector	Not available
Inward Investment & Enterprise Support	£1.3m
Notes: (i) See Appendix C for source of costs	

The treatment of transport infrastructure requires further explanation as these costs were compiled separately for the London Riverside area and for the remainder of the Borough, prior to the inclusion of Havering Riverside within the draft SPD. It should also be noted that no costs are included here for Crossrail, a major strategic transport project that will benefit the Borough, as a separate charge will be made for this under the proposed Mayoral Community Infrastructure Levy, the Draft Charging Schedule for which was published in August 2011.

The transport costs for the Borough excluding Havering Riverside were estimated by a combination of projecting past trends in expenditure and compiling groups of costed projects. The average per annum cost of Local Implementation Plan (LIP) transport projects outside Havering Riverside, spent or allocated for the five years 2005/2006 to 2009/2010, was £2.55m. It is reasonable to assume that investment on this scale will continue to be required to manage future movement requirements in the Borough, implying a potential £25.5m cost for these types of projects over the period 2011 to 2021. Havering BC estimate that there will be a requirement for a further £0.5 per annum to cover pedestrian and cycling projects in this area, adding a further £5.0m to the total. Finally, Havering BC estimate the cost of several major projects not covered in the LIP projections (including improved station access at Harold Wood and SUSTRANS Connect 2 projects) at around £5.0m. The total cost of all these elements over the period 2011 to 2021 is £35.5m.

The Core Strategy identifies a number of key transport infrastructure investments required to support the development of the London Riverside area: a new station at Beam Park, the Rainham Station Interchange, Rainham Creek crossing, and a further phase of the East London Transit, extending it from Dagenham Dock to Rainham. Costs for these four items were derived by LTGDC in developing and reviewing their Community Benefits Strategy for London Riverside, and total £32.0m. Finally, a range of pedestrian and cycling schemes are estimated to cost some

£3.0m, giving a total for the Havering Riverside area of the Borough of £35.0m.

Total transport costs for the Borough over the period 2011 to 2021 are therefore estimated at £70.5m.

5 Apportionment of Cost of Additional Infrastructure between Additional and Existing Development

The costs to be covered by new development should be the additional costs that will arise over and above those that would have been incurred without the new development. These may include contributions to costs of new facilities, costs of retention of facilities that might otherwise have been disposed of, and costs of including greater capacity in improved or refurbished facilities than would otherwise have been required.

The quantity of infrastructure required to support future development may be greater or lesser depending on the current level of provision in relation to the population of existing development. Where there is existing or forecast spare capacity, all or some of this may be available to offset some of the requirements of new development, depending on its location. Where there are existing or forecast deficiencies these may need to be rectified to allow new development to go ahead in an acceptable way.

Where the requirement for additional infrastructure required to support new development can be ascribed wholly or almost so to that development it is a straightforward matter to share the total cost between units of the new development (ie. dwellings, or square metres of floorspace). Outside Havering Riverside, however, planned new development in Havering will be relatively limited in scale compared with the existing development. In these areas, the projected reduction in average household size, and hence total population, in the existing stock may be expected to release a certain amount of spare capacity in existing infrastructure, which may be available to serve the population of new housing developments. However, occupants of new development within the existing built-up area will nevertheless add to existing demands on infrastructure in the Borough despite a modest population increase, for a number of reasons:

(a) The larger developments will still generate a requirement for very local facilities such as children's play spaces, which need to be close to the new housing.

(b) Existing capacity in facilities with larger catchments, such as health centres, may not be suitably located to be accessible to the new development.

(c) The new development may individually or cumulatively give rise to a requirement for new facilities in an area which was previously below the threshold needed to support its own facility.

(d) New developments may require the retention and renewal of facilities that might otherwise have been cut back or rationalised

in such a way as to lead to savings or resources from asset disposals by service providers.

(e) Where existing infrastructure is to be restructured to reflect new ways of delivering services (as with health and police provision) new developments may require the provision of more or larger facilities than might otherwise have been the case.

We adopt the following approaches to the estimation of appropriate costs on which to base levels of contributions, depending on the situation:

(i) For those infrastructure items (eg. children's play space and schools) for which new developments will generate a calculable need for additional (or expanded) provision with no reliance on existing spare capacity (including where there may be existing shortfalls in provision), the new development should contribute according to the full per dwelling quantity standards and unit costs of provision.

(ii) For those infrastructure items, normally serving a wide area, where capacity is likely to be released by reductions in household size, the full per dwelling costs should be reduced accordingly to allow for this. .

(iii) Where new developments are going to share in the benefits of provision for the whole Borough it is reasonable to calculate a per dwelling cost for all dwellings (both existing and new) and attribute this cost to the new dwellings. The latter in aggregate would then effectively contribute 9% of the total cost ie. the percentage of new (2010-20) to total dwellings in 2020 (see **Table 2.1**). This should apply in cases where general improvements to infrastructure are to be made through restructuring or re-provisioning.

Per Dwelling Costs for Unitised Infrastructure

Table 5.1 sets out the costs per dwelling resulting from application of principles (i) and (ii) in relation to unitised infrastructure items. Column A shows the per dwelling cost that would be appropriate if each new dwelling had to be fully supported by infrastructure, ie. if every one of the net additional 9,700 dwellings needs to be provided with its full complement of facilities. Column B shows the dwelling cost that would be appropriate if it was going to be necessary to provide facilities only for the net additional population arising from the new dwellings, ie. 15,400 persons. This would be equivalent to 6,600 dwellings, rather than 9,700 dwellings, at 2.33 persons per dwelling, so the costs are only 68% of those in the first column.

Table 5.1 Cost per dwelling estimates for unitised infrastructure items

Item	Cost per Dwelling		
	A	B	C
	Per new dwelling gross	Per new dwelling based on net population	Selected per dwelling cost
Primary school	£2,883	£1,960	£2,883
Early years	£1098	£747	£1098
Secondary school	£2,896	£1,969	£2,896
Post-16	£1,795	£1,221	£1,795
Library	£237	£161	£161
Archive	£47	£32	£32
Community and youth centre	£468	£318	£318
LEAP/NEAP	£653	£444	£653
Non-EAP	£433	£294	£433
District park	£1280	£870	£1178 (i)
Sports hall	£841	£572	£841
Swimming pool	£443	£301	£443
Playing pitches	£240	£163	£240
Health centre	£1,044	£710	£1044 (i)
Note: (i) See discussion in text			

Column C in **Table 5.1** selects the most appropriate of the figures from the previous two columns according to rationale set out above:

Column A applies where there is no spare capacity, either existing or likely to arise in future out of falling population in the existing stock. New development therefore needs to be fully supported. This is the case with:

- schools, for which Havering's pupil forecasts show a significant increase within the existing stock over the plan period and less than 8% surplus places in 2008;

- LEAPs and NEAPs, for which provision is required close to new development and there are significant deficiencies in the Borough; and

- Sports halls, swimming pool and playing pitches, for which there is a significant shortfall in current provision.

Column B applies where existing facilities serve all or much of the Borough and therefore should in principle release spare capacity to serve new development as household sizes decrease in the existing stock. This is the case with: libraries, archives and community centres.

The treatment of primary schools, district parks and health centres requires further explanation.

Primary Schools

Havering Education Service's forecasts are based on an assumed average of 0.21 pupils per new dwelling. At this rate, the additional 9,700 dwellings expected to be built in Havering between 2010 and 2020 would generate 2,040primary school pupils, the equivalent of five 420 place schools.

Havering Education Service have informed us that there are some 18,400 primary pupils in 2010 and that this is expected to increase to 21,293 in 2019/20, before account is taken of pupils to be generated by new housing. In 2010, there are around 19,922 permanent places, indicating a total of 7.6% of places in primary schools remaining unfilled. Although there is no formal level of acceptable surplus places, the Audit Commission use the figure of 10% for planning purposes. This level of unfilled places provides a degree of flexibility to allow for population movements, variations in pupil numbers and parental choice.

As there is therefore no long term spare capacity, the primary school needs of additional housing development will need to be met by additional school construction and extensions.

District Parks

The Havering Green Spaces, Sport and Recreation Study (2005) set a standard for the provision of parks and gardens of 1.84 ha per 1000 population. If the 9,700 new dwellings had needed to be self-supporting they would have required 41.6 ha of district park provision. However the decreasing population in the existing stock will release some capacity from existing parks. On this basis, the net additional population of 15,400 in new dwellings should require only 28.3 ha more than needed to serve the existing population at the above standard. However, the Study points out that the existing population is underserved by 10 ha in the Borough as a whole. The new dwellings would therefore need to contribute 38.3 ha towards their gross requirement of 41.6 ha, ie. 92% of the gross requirement.

Health Facilities

Primary healthcare comprises GPs (along with other localised health services such as dentists and opticians) while acute services are provided in large hospitals offering general care and specialisms. However, the form of provision of health services is undergoing transformation. As far as possible single GP practices are being brought together in multi-GP health centres that offer a range of care facilities. At an intermediate level forms of delivery are aimed at providing care in the home and/or community as far as practicable, rather than at the upper level in large hospitals. In Havering, the PCT is pursuing this approach through developing a replacement local "hospital/polyclinic" on the St George's Hospital site, which will provide a range of health services.

We are informed by Havering PCT that this intermediate level provision will release capacity in the acute hospitals serving Havering, including the recently opened Queens Hospital in Romford, to the extent that these will be able to accommodate planned growth without further expansion. However, the content of intermediate facilities has not yet been decided (in terms of polyclinic, community hospital, GPs, etc.) and no costs are available for them or for the total cost of the programme of restructuring of GPs surgeries into health centres.

In gross terms, the additional 9,700 dwellings in Havering will generate a requirement for 13 GPs. However, the expected net increase in population of 15,400 should require no more than an additional nine GPs (on the assumption that these GPs can be added to the existing distribution of facilities in such a way as to ensure that all dwellings are served adequately). However, in the absence of total costs to divide among all the future dwellings in the Borough, we assume that each new dwelling should cover its total cost in terms of health centres on the basis of no spare capacity arising from decreasing household size in the existing housing stock. Any excess beyond the needs of the new development that this might imply could be treated as counting towards the as yet unknown costs of intermediate provision. The coverage of health costs in the standard charge should be replaced as soon as proper costed plans become available in due course.

Per Dwelling Costs of Non-unitised Infrastructure

Table 5.2 derives per dwelling costs for non-unitised facilities from the Borough costs in **Table 4.3**. The third column shows the percentage of the total costs which are assumed to be ascribed to residential as opposed to non-residential uses. Two items, ice rink and burial grounds, are clearly required to serve residential uses only. For the others there is no definitive way of ascribing the relative levels of demand that different types of developments place on them. The ascription of costs within a standard charge has necessarily to be formulaic. For most items, apart from transport, which is dealt with separately below, there is no particular reason to assume a greater part of the costs should be borne by either housing or non-residential uses. We therefore adopt a 50:50 split for these items.

Table 5.2 Cost per Dwelling Estimates for Non-unitised Infrastructure Items

Infrastructure Item	Total Cost to Meet Needs to 2020 (i)	Assumed % for Residential	Cost per Total Dwelling in 2020 (108,300 dw)
Intermediate health care	Not available		
Culture and heritage	£5.0m	50%	£23
Green infrastructure/biodiversity	£16.0m	50%	£74
Ice rink	£11.0m	100%	£102
Burial grounds	£1.4m	100%	£13

Infrastructure Item	Total Cost to Meet Needs to 2020 (i)	Assumed % for Residential	Cost per Total Dwelling in 2020 (108,300 dw)
Police stations	Not available		
Transport	£70.5m	67%	£2,435 (ii)
Public realm	£14.3m	50%	£66
Employment training	£2.0m	50%	£9
Voluntary sector	Not available		
Inward Investment & Enterprise Support	£1.3m	50%	£6
Notes: (i) See Appendix C for source of costs (ii) Cost related to number of new dwellings, as explained in text			

As transport represents a major component of the total infrastructure cost for the Borough, the way in which its costs are split between different types of development is particularly critical to the level of the resulting standard charges.

Clearly the transport investments proposed to support the core strategy will serve existing as well as new development. However, it is also the case that additional development will only be acceptable if the transport system functions adequately and that therefore the new development should in principle cover a substantial proportion of the cost of ensuring this is the case. We assume that new development should meet 50% of the costs of additional transport provision in the Borough.

As with the other items discussed above, there is no indisputable logic to follow in ascribing costs to residential and non-residential uses. The need for movement arises from the characteristics of developments at both ends of any journey, with both residents of housing and employers at workplaces needing transport provision to allow workers to get to work. The fact that workers commute into and out of the Borough complicates the matter still further. We have nevertheless attempted to make a broad allocation of costs by reference to the differing trip generation characteristics of different types of development.

We have applied typical morning peak trip generation rates for this area of 0.25 trips per dwelling, 0.4 per office employee, and 6.0 per m^2 of convenience retail floorspace and 3.0 per m^2 of comparison retail floorspace to the total quantities of additional development of these types planned between 2010 and 2020. The resulting total trips are split 67:33 between residential and non-residential.

Costs to be Ascribed to Non-residential Uses

It should be borne in mind that for a number of items, the total cost of infrastructure has been apportioned between dwellings and non-residential development, leaving 50% of the cost to be ascribed to the latter. These items, which are restricted to those which can be clearly

justified for inclusion in terms of the direct relationship between facilities and the development required by Circular 05/2005, comprise:

- culture and heritage;
- green infrastructure;
- fire and rescue;
- transport (road, public and other);
- public realm; and
- employment training.

However, it would be particularly difficult to derive and justify a standard charge for non-residential floorspace based on the costs of these items, especially given the relatively modest increment of new commercial development projected for Havering by 2020 (16,000m^2 of office and 31,650m^2 of retail floorspace, compared with a total of 677,000m^2 in these uses in 2008, according to VOA statistics). As is the case with residential development, new infrastructure will benefit all development and it would not be justifiable to ascribe all remaining costs to new commercial development. Furthermore, there is no definitive way of ascribing additional infrastructure costs between different types of commercial development.

6 Land Required to Accommodate Infrastructure Facilities

The infrastructure items to be covered by the standard charge vary in whether and to what extent they require provision of land to accommodate them. For some items, including public realm, cultural investment and training, it is not expected that there would be any land requirement. The same may be the case with green infrastructure and waste management. Some facilities, while sometimes requiring sites of their own, are likely to be provided to a large extent within existing sites as extensions to existing buildings, as in the case of libraries and archives, police stations and fire stations. Others, such as sports halls and swimming pools may often be provided in publicly accessible locations within school sites, either existing or new. In the case of transport facilities it is assumed that land costs have been included in the capital costs from which the per unit costs have been derived.

The derivation of land requirements for the remaining items for which facility area standards can be established, is set out in **Table 6.1**. In the case of schools, as requirements are likely to be met partly by new schools and partly by expansion of existing schools on their present sites, the area requirement per dwelling has been reduced by 50%. A reduction to 92% is applied to the land requirement for district parks to take account of the adjustment discussed in **Section 5**. A further reduction is applied to all facilities to allow for a proportion of required site area to be provided free by developers in larger developments. The assumed reduction is 50% in the case of schools and play space and 10% for all other facilities assumed to require sites. As developers will not be able to claim offsets for land in relation to necessary facilities provided on site, these reductions should ensure that the land element of the standard charge will not exceed the actual cost of provision.

Table 6.1 Cost per Dwelling of Land to Accommodate Infrastructure Items

Facility	Unit	Unit Area (ha)	Source of Area Assumption	Ha per 1,000 dw (i)
Primary School	420 pupil school	2.2	DfES Bulletin 99	0.28
Secondary School inc. Post-16	1,200 pupil school	10.0	DfES Bulletin 98	0.29
Community centre	m^2		61m^2 per 1,000 person (see Appendix C) and net to gross assumed 0.25	0.05
LEAP	ha		1.25 m^2 per person (see Appendix C)	0.15
NEAP	ha		1.25 m^2 per person (see Appendix C)	0.15
District park	ha		(see Appendix C)	3.5
Playing pitches	ha		7.4 m^2 per person (see Appendix C)	1.56
Sports hall	m^2		900m^2 four court building (Milton Keynes example) and net to gross assumed 0.25	0.09
GP health centre	4GP + 1 dentist	0.34	168.75m^2 floorspace per GP/dentist (ii), and net to gross assumed 0.25	0.10
Total				**6.2**
			Land cost per ha	**£600k**
			Total land cost per 1,000 dwellings	**£3,720k**
			Total land cost per dwelling	**£3,720**

Note: (i) See text for derivation
(ii) Technical Report on Infrastructure Requirements in the South East 2006-2026" SQW for SEERA (Sept 2006) – advice from Department of Health

The total land requirement per 1,000 dwellings comes to 6.2 ha. Assuming an average acquisition cost of £600,000 per hectare, this gives a land cost per dwelling of £3,720. This represents a broad estimate of the costs of acquiring land for particular infrastructure where it would be unreasonable for that provision to be made at nil cost by a particular landowner or developer.

7 Conclusions

Table 7.1 sets out the results from the discussion above in terms of the components of a standard charge for application per dwelling across the whole Borough.

Table 7.1 Build-up of Standard Charge for Per Dwelling

Infrastructure Item	Cost per Dwelling
Primary school	£2,883
Early years	£1,098
Secondary school	£2,896
Post-16 school	£1,795
Libraries	£161
Archives	£32
Community facilities	£318
Culture/heritage	£23
Equipped Area for Play	£653
Non-equipped Area for Play	£433
District park	£1,178
Sports hall	£841
Swimming pool	£443
Ice rink	£102
Playing pitches	£240
Burial ground	£13
GP health centre (inc. dentist)	£1,044
Transport	£2,435
Green infrastructure	£74
Public realm	£47
Employment training/job brokerage	£9
Inward Investment & Enterprise Support	£6
Land for facilities	£3,720
Social care	no estimates available
Intermediate health care	no estimates available
Police station	no estimates available
Further/Higher Education	no estimates available
Voluntary sector	no estimates available
Total	**£20,444**

The provisional total cost of relevant infrastructure stands at £20,444 per dwelling. However, a number of potential elements are not included in the cost build-up as suitable costed plans are not available for them at present. As detailed infrastructure proposals and programmes emerge, it may prove justifiable to add some of these items to the list at future reviews of the full standard charge. They include further education, social care, police, intermediate health, and voluntary sector support.

Appendix A

List of Infrastructure Items

Type	Facility	Reason Outside Standard Charge
Education	Early Years	SC
	Primary school (inc early years)	SC
	Secondary school (inc post-16)	SC
	Further Education	No costed plans available
	Higher Education	No costed plans available
Culture & Community	Library	SC
	Museum & Archive	SC
	Cultural Investment	SC
	Community Centre	SC
Social Care	Day Care	No costed plans available
	Older Persons Housing	No costed plans available
	Children's Home	No costed plans available
Open Space	Local Park	SC
	Children's Play Areas (inc LEAP and NEAP)	SC
	District Park	SC
	Green Infrastructure	SC
Recreation & Leisure	Sports & Leisure Centre	SC
	Swimming Pool	SC
	Playing Pitch	SC
Crematoria & Burial Grounds	Crematorium	Normally profitable commercially
	Burial Ground	SC
Emergency Services	Police Station	No costed plans available
	Fire Station	No requirement identified
	Ambulance Station	Funding secured
Health Services	GP Health Centre	SC
	Dentist	SC
	Intermediate Care	No costed plans available
	Acute Hospital	No requirement identified
	Mental Health Facility	Funding secured
Waste	Waste Disposal Facilities	Comprehensive PFI for funding investment programme
Transport	Motorway/trunk road	Strategic funding
	Road	SC
	Public Transport	SC
	Other Transport	SC
Utilities	Water Supply	Privatised utility
	Sewerage	Privatised utility
	Electricity	Privatised utility
	Gas	Privatised utility
	Telecommunications	Privatised utility
Public Realm		SC
Flood Protection		Site specific
Voluntary Sector		No costed plans available
Employment training/job brokerage		SC

Type	Facility	Reason Outside Standard Charge
Inward Investment & Enterprise Support		SC
Environmental improvements	Sustainable waste management/recycling	Site specific
	Air quality improvements	Building standards
	Water environment management and improvement	Site-specific
	Energy efficiency/renewables	Policy requirement
	Biodiversity	Included with green infrastructure costs
Land remediation		Site specific
Affordable business space		No costed plans available
Crime and Disorder prevention		Site specific

Appendix B

Evidence of Need for Additional Infrastructure Facilities

Facility	Evidence of Need for Additional Infrastructure Facilities	Additional requirement for funding relating to new development	Requirements specified	Requirements costed
Schools	*School Organisation Plan (SOP) 2003-2008, updated in 2005* The latest SOP is now out of date and its projections of pupil numbers and school requirements superseded by those below. *Latest data from HBC (2009)* HBC have provided current pupil number projections which indicate that when the demands to be generated by additional development are excluded, the numbers of primary and secondary school pupils (including post-16) in the borough are expected to remain more or less constant between 2008 and 2020. There were some 18,300 primary pupils in 2008 and this is expected to increase to 18,700 in 2019/20, before account is taken of pupils to be generated by new housing. In 2008, there was a surplus of places in primary schools of 12% of the total, implying around 20,800 permanent places. Measures are in place to close and reorganise Havering's primary schools in such a way as to reduce their surplus to 10% by 2015.	Yes	No, but can be based on a per dwelling standard	No, but can be based on a unit cost
Libraries	*Havering Library Strategy 2010-12 (2010)* Programme of building refurbishments under way, with seven buildings completed. Further work comprises refurbishment of Romford Central library (£3.6m), rebuilding Harold Hill Library and re-providing Rainham Library.	Yes, contribution to overall Borough requirement	Yes	Partly
Archives	*Havering Heritage and History Strategy 2010-12 (2010)* Many Havering archives are held at Essex Record Office in Chelmsford. and establishing an archive in the borough is a long-term goal. Action Plan includes an action to seek to identify funding for a facility to house the borough's archives.	Yes, contribution to overall Borough requirement	No	No
Community centres	*Harold Hill Ambitions Programme, 2008* Programme includes proposals to provide new and upgrade existing community facilities.	Yes, contribution to overall Borough requirement	Partially	No, but can be based on a unit cost
Social care	*Supporting People Commissioning and Procurement Framework for Havering 2007* Although the borough has a limited amount of supported accommodation, the	Very limited	No	No

Facility	Evidence of Need for Additional Infrastructure Facilities	Additional requirement for funding relating to new development	Requirements specified	Requirements costed
	primary thrust to provide new services to groups hitherto without provision will be by commissioning floating support.			
Cultural investment (arts, theatre, heritage etc)	*Havering Cultural Strategy 2007-2011* No specific capital investment proposed. *Hornchurch Town Centre Urban Strategy, 2006* Includes a number of initiatives to improve and provide cultural facilities *Havering Heritage and History Strategy 2010-12 (2010)* Does not include a capital programme.	Yes, contribution to overall Borough requirement	No	No
Play space	*Havering LDF Core Strategy 2008* In line with PPG17 the Council has completed an Open Space and Sports Needs Assessment. This shows that there are significant areas which are deficient in access to dedicated children's play areas.	Yes, localised need	No, but can be based on a per dwelling standard	No, but can be based on a unit cost
District park	*Havering LDF Core Strategy 2008* Open Space and Sports Needs Assessment shows that Havering has a relatively good quantity of public parks but that there are local pockets of deficiency across the borough. *Havering Parks and Open Spaces Strategy 2007-2012* Indicates a shortfall of 10 ha in the borough and proposes a standard for District Park of 1.84 ha per 1000 population. Includes in Action Plan: finalise a series of local standards for quantity, accessibility and quality of open spaces in order to inform the Local Development Framework and a future SPD (Provision of Open Spaces)	Yes	Yes	No, but can be based on a unit cost
Green infrastructure	*Havering LDF Core Strategy 2008* Havering's countryside will offer an array of recreation and leisure opportunities through the continuing development of Thames Chase and London Riverside Conservation Park, and the extension of Havering Country Park and Dagnam Park. The London Riverside Conservation Park is planned to be London's premier environmental attraction.	Yes, contribution to overall Borough requirement	Broadly	No

Facility	Evidence of Need for Additional Infrastructure Facilities	Additional requirement for funding relating to new development	Requirements specified	Requirements costed
Sports hall	*Havering LDF Core Strategy 2008* Havering's Open Space and Sports Needs Assessment identifies that in terms of sports facilities up to 2016 there will be a need for three additional sports halls. *Havering Sports and Physical Activity Strategy 2010-12* Investigate the feasibility of new or improved sports and leisure facilities in Romford, Rainham and Hornchurch.	Yes, contribution to overall Borough requirement	Yes	No, but can be based on a unit cost
Swimming pool	*Havering LDF Core Strategy 2008* Havering's Open Space and Sports Needs Assessment identifies a need for a swimming pool in Romford up to 2016. *Havering Sports and Physical Activity Strategy 2010-12* Investigate the feasibility of new or improved sports and leisure facilities in Romford, Rainham and Hornchurch.	Yes, contribution to overall Borough requirement	Yes	No, but can be based on a unit cost
Ice Rink	*Havering Sports and Physical Activity Strategy 2007-09* Consideration should be given to re-providing Romford Ice Rink, possibly in conjunction with other Leisure facilities.	Yes, contribution to overall Borough requirement	No	No
Playing pitches	*Havering LDF Core Strategy 2008* Havering's Open Space and Sports Needs Assessment identifies a need for up to twenty junior football pitches and two additional artificial turf pitches.	Yes, contribution to overall Borough requirement	Yes	No, but can be based on a unit cost
Burial grounds	*Havering LDF Development Control Policies DPD, 2008, and Site Specific Allocations DPD, 2008* DC DPD states that from 2006, burial space needs in Havering are forecast to increase by more than four acres (1.6ha) every five years. Land at Romford Cemetery cannot be used due to waterlogging but the SSA DPD allocates land for burial space in Havering BC's ownership adjacent to Upminster Cemetery.	Yes, contribution to overall Borough requirement	Yes	No, but can be based on a unit cost

Facility	Evidence of Need for Additional Infrastructure Facilities	Additional requirement for funding relating to new development	Requirements specified	Requirements costed
Police station	*Metropolitan Police Authority: Havering Asset Management Plan 2007* Proposes the following· New office accommodation – through creating a better use of space in Romford Police Station to accommodate police back office functions · New Custody Centre – to accommodate all custody cells and related facilities in the borough · New Patrol Base – to accommodate all of the operational officers and facilities in the borough · New Safer Neighbourhoods bases – to provide permanent bases for each Safer Neighbourhoods team currently in temporary accommodation, easily accessible to their wards · New front counters - to be available in a wide mix of police accommodation in the borough Envisages a review of the future of four police stations – Harold Hill, Rainham, Upminster and Collier Row with the re-provision of all the facilities currently housed there in more specialised and more appropriate facilities.	Yes, contribution to overall Borough requirement	Broadly	No
Fire and rescue station	*London Fire Brigade: London Safety Plan 2010-13 (2010)* New fire station opened at Harold Hill in Jan 2010. No further requirements for Havering in LFB's Asset Management Plan.	No,		
Ambulance station	*London Ambulance Service NHS Trust Strategic Plan 2006-7 to 2012-13* No information on plans for Havering	Likely to be very limited	No	No
GP health centre /Polyclinic	*Havering PCT Estates Strategy 2007* The PCT is bringing about a major restructuring of the primary and intermediate health facility arrangements in Havering aimed at replacing unsatisfactory surgeries and creating an efficient arrangement to serve the whole population in line with current national objectives. (The changes are being undertaken through a Local Improvement Finance Trust Company [LIFTCo - a public-private partnership company], which was set up for Barking and Havering in 2001 and has already provided three major health centres and has a phased programme to build more.)	Yes, contribution to overall Borough requirement	Partially	No

Facility	Evidence of Need for Additional Infrastructure Facilities	Additional requirement for funding relating to new development	Requirements specified	Requirements costed
	Romford The PCT will consider a scheme for Central Romford, potentially to replace and/or expand the existing Romford Clinic and Victoria Centre, a large GP practice, locality mental health services, acute outpatient clinics with diagnosis & treatment services. Hornchurch At the St George's Hospital site, the PCT will consider replacing existing services in poor accommodation, expanding the GP provision for the locality and incorporating the reprovision of the PCT's local hospital services located in the current, inadequate, St George's Hospital buildings. The intention is that this site would also house a range of expanded health services to cater both for population growth (Thames Gateway developments in Rainham) and to relieve pressure on the Romford District General Hospital by the transfer of some existing services. Upminster Harold Hill Primary Care Centre is operational and provides a 12 GP service and facilities for diagnosis and treatment. The PCT will consider options for the development of another GP and Primary Care Centre for the locality, utilising existing NHS premises or potentially a LIFT new build scheme. GP premises The next revision to the Estates Strategy will contain a proposed programme of improvements to GP premises. *NHS Havering: Strategic Plan 2009-2014 (April 2009)* The Plan points out that a number of primary care facilities are continuing to be upgraded through the LIFT programme and further primary care developments are planned in the Harold Wood and Rainham areas.			
Dental surgery	No information, treated by PCT as part of GP health centre			
Acute hospital	Queens Hospital Romford 900 bed hospital built under PFI and opened in 2006.	No requirement		

Facility	Evidence of Need for Additional Infrastructure Facilities	Additional requirement for funding relating to new development	Requirements specified	Requirements costed
Mental Health	*North East London NHS Mental Health Trust: Estates Strategy 2007-2016 (2008)* NELFT covers four boroughs including Havering. The Estates Strategy has a number of proposals to improve the service within or serving Havering but points out that NELMHT is able to self-finance these major capital developments with a minimal capital shortfall due to returns from land sales.	Yes, contribution to overall Borough requirement, but funding secured		
Transport	*Havering LDF Core Strategy 2008* Promotes a number of transport schemes: • Crossrail: will connect stations on the existing London Liverpool St line to central London (Harold Hill, Gidea Park and Romford, within Havering), and beyond to Heathrow and west London • East London Transit: initially a high quality bus with potential to upgrade to tram. First phase from Ilford to Dagenham Dock in operation. Possible extensions to Rainham and Romford, and the route between Romford and Rainham, are currently being assessed • Improvements to London Tilbury Southend Line: proposed new station at Beam Park and extension of platforms at Rainham Station to substantially increase peak time frequency and operational capacities • Bus access improvements in the Ferry Lane/Beam Reach employment area • Rainham Creek Crossing: essential prerequisite to enable buses to be routed through the Rainham Employment Area • Rainham Station Interchange: *Romford/Hornchurch Town Centre Urban Strategies(2006), Harold Hill Ambitions Programme (2008), Rainham Compass, (2010)* Include a number of transport/pedestrian/cycling improvements	Yes, contribution to overall Borough requirement although Crossrail to be covered by Mayoral CIL	No	No
Public realm	*Havering Regeneration Strategy 2007-10* Develop a capital programme of environmental improvements for the public realm in town centres including walking and cycling facilities *Romford/Hornchurch Town Centre Urban Strategies (2006), Harold Hill Ambitions Programme (2008), and Rainham Compass, (2010)* Include various public realm improvements such as proposals to revamp the	Yes, contribution to overall Borough requirement	No	No

Facility	Evidence of Need for Additional Infrastructure Facilities	Additional requirement for funding relating to new development	Requirements specified	Requirements costed
	underused historic wharf and public space around the Creekside park area in Rainham Village.			
Employment training	*Havering LDF Core Strategy 2008* Policy CP3 Employment refers to: "seeking contributions towards the provision of employment training and support, and local employment access schemes." Havering College of Further Education runs employment training with support from LSC, including "Pathways to Success".	Yes, contribution to overall Borough requirement	No	No
Voluntary sector support	*Havering ChangeUp Infrastructure Development Framework Plan, 2005* Support Finding Suitable Premises _ identifying suitable premises _ assistance with leases and purchases _ support with financing capital projects	Yes, contribution to overall Borough requirement	No	No

Appendix C

Infrastructure Cost Schedule

Facility	Assumptions and *Outputs*	Sources and C*alculations*	Dwellings per Facility	Gross Cost per Person	Cost per Dwelling (2.33/dw)
Extended/ New Primary School	i Pupils per school = 7 years (including reception) * 30 per form * 2 forms of entry = 420 pupils (a) ii Primary age pupils per average dwelling = 0.21 (b) iii Primary school cost per pupil, England = £12,257 (c) iv Havering cost Location Factor = 1.12 (d) v *Havering primary school cost per pupil = £13,728 (e)* vi *Full cost per dwelling = £2883 (f)*	(a) Havering Borough Council (b) Havering Borough Council, Pupil Forecasting Report (Cognisant, 2009) (c) DFE School Design Guidance Cost, Q4 2008-9 multiplier (average for new and extended primary schools) (d) DFE Location Factor, Jan 2009 (e) *Calculated from (iii) and (iv)* (f) *Calculated from (v) and (ii)*		£13,728 per pupil	£2883
Early Years School	i Pre-primary (0 to 4 years) pupils per average dwelling =0.24 (a) ii Early years age group (3 and 4 years) pupils as % of pre-primary age = 35% (a) iii Early years (3 and 4 years) pupils per average dwelling =0.08 (b) iv Early years cost per pupil assumed equal to primary age cost per pupil = *£13,728*(c) v *Full cost per dwelling = £1098 (d)*	(a) Havering Borough Council, Pupil Forecasting Report (Cognisant, 2009) (b) *Calculated (i) and (ii)* (c) From Extended/New Primary School above (d) *Calculated (iii) and (iv)*		£13,728 per pupil	£1098
Extended/ New Secondary School	i Pupils per school: aged 11 to 15 = 5 years * 30 per form * 8 forms = 1200 pupils (a) ii Secondary age pupils per average dwelling = 0.14 (b) iii Secondary school cost per pupil, England = £18,469 (c) iv Havering cost Location Factor = 1.12 (d) v *Havering secondary school cost per pupil = £20,685 (e)* vi *Full cost per dwelling = £2896 (f)*	(a) Havering Borough Council (b) Havering Borough Council, Pupil Forecasting Report (Cognisant, 2009) (c) DCSF School Design Guidance Cost, Q4 2008-9 multiplier (average for new and extended primary schools) (d) DCSF Location Factor, Jan 2009 (e) *Calculated from (iii) and (iv)* (f) *Calculated (ii) and (v)*		£20,685 per pupil	£2896
Extended/ New Post-16 School	i Post-16 pupils per average dwelling =0.08(a) ii Post-16 school cost per pupil, England = £20,030 (b) iii Havering cost Location Factor = 1.12 (c) iv *Havering post-16 school cost per pupil = £22,434(d)* v *Full cost per dwelling = £1795 (e)*	(a) Havering Borough Council, Pupil Forecasting Report (Cognisant, 2009) (b) DCSF School Design Guidance Cost, Q4 2008-9 multiplier (average for new and extended post-16 schools) (c) DCSF Location Factor, Jan 2009 (d) *Calculated from (iii) and (iv)* (e) *Calculated (i) and (iv)*		£22,434 per pupil	£1795

Facility	Assumptions and *Outputs*	Sources and C*alculations*	Dwellings per Facility	Gross Cost per Person	Cost per Dwelling (2.33/dw)
Further and Higher Education	Not currently included in Standard charge as no costed infrastructure requirements available.				
Libraries	i 30 m2 of library space per 1000 people (a) ii construction cost of £3,396 per m2 for library buildings (a) iii *Full cost per dwelling = £237 (b)* iv Adjustment for existing capacity = 68% (c)	(a) Public Libraries, Archives and New Development: a Standard Charge Approach" Museums Libraries Archives (MLA) (May 2010); Q4 2009-10 cost adjusted for locational adjustor for Havering of 1.12 from BCIS. (b) *Calculated from (i), (ii) and 2.33 pop/dw)* (c) See main text		£102 per person	Gross: £237 Adopted: £161
Archives	i. 5 m2 per 1000 people (a) ii. construction cost of £4,032 per m2 for library buildings (a) iii. *Full cost per dwelling = £47 (b)* iv. Adjustment for existing capacity = 68% (c)	(a) Public Libraries, Archives and New Development: a Standard Charge Approach" Museums Libraries Archives (MLA) (May 2010); Q4 2009-10 cost adjusted for locational adjustor for Havering of 1.12 from BCIS. (b) *Calculated from (i), (ii), and 2.33 pop/dw)* (c) See main text		£20 per person	Gross: £47 Adopted: £32
Community centres	i 61 m2 of community centre floorspace per 1000 people (a) ii Construction cost per m2= £3,294 (b) iii *Full cost per dwelling = £468 (c)* iv Adjustment for existing capacity = 68% (d)	(a) SPG on Planning Obligations for Leisure, Recreation and Sport Facilities (2004) Milton Keynes Borough Council (b) Examples from Milton Keynes Partnership Business Plan (June 2007) adjusted for locational adjustor for Havering of 1.12 from BCIS; zero building cost inflation (c) *Calculated from (i), (ii), (iii) and 2.33 pop/dw)* (d) See main text		£201 per person	Gross: £468 Adopted: £318
Cultural investment (arts, theatre, heritage etc)	i. Cost of Queens theatre extension, Fairkytes Arts Centre refurbishment, and heritage at risk = £5m (a) ii. Adjustment for non-residential = 50% (b) iii. *Total Per dwelling cost* – £23 (c)	*(a)* Havering Borough Council estimates *(b)* See main text *(c) (i) * (ii) divided by 108,300 dwellings (2020 total)*			£23
Equipped Play space	i 0.125 ha of Locally Equipped Area for Play (LEAP) per 1000 people: 0.125 ha of Neighbourhood Equipped Area for Play (NEAP) per 1000 people; total 0.25 ha per 1000 people (a) ii Construction cost: per m2 of LEAP = £37; per m2 of NEAP = £75 (average £56) (b) iii 10 year maintenance cost: per m2 of LEAP	(a) Midpoint of typical values for combined standards for Locally Equipped Area for Play (LEAP) and Neighbourhood Equipped Area for Play (NEAP) (0.2 to 0.3 ha/1000 pop) in approved or advanced SPDs listed on Sport England website. (NB Havering BC's "Havering Green Spaces, Sport and Recreation Study" [2005], gives no guidance.)		£280 per person	£653

Facility	Assumptions and *Outputs*	Sources and C*alculations*	Dwellings per Facility	Gross Cost per Person	Cost per Dwelling (2.33/dw)
	= £36; per m2 of NEAP = £53 (average £44.5) (b) iv Construction cost inflation 2007 to 2009 = 15% (c) v Maintenance cost inflation 2007 to 2009 = 7.2% (c)	(b) Developer Contributions for Residential Developments (Nov 2007), Swindon Borough Council (c) Estimates from Havering Borough Council			
Non-Equipped Play space	i. 0.55 ha of Non-Equipped Area for Play per 1000 people (a) ii. Construction cost: per m2 = £26 (b) iii. 10 year maintenance cost: per m2 of Non-EAP = £3.60 (b) iv. Construction cost inflation 2007 to 2009 = 15% (c) v. Maintenance cost inflation 2007 to 2009 = 7.2% (c)	(a) Planning and Design for Outdoor Sport and Play (2008), Fields in Trust (0.8 ha per 1000 pop total standard less 0.25 ha per 1000 for Equipped Areas for Play) (b) Developer Contributions for Residential Developments (Nov 2007), Swindon Borough Council – kickabout areas (c) Estimates from Havering Borough Council		£186 per person	£433
District park	i 1.84 ha of park and gardens per 1000 pop (a) ii Construction cost per ha: £213,000 (b) iii 10 year maintenance cost per ha = £66,000 (b) iv Construction cost inflation to 2007 to 2009 = 15% (c) v Maintenance cost inflation 2007 to 2009 = 7.2% (c) *vi Total cost per ha = £300,000 (d)* v *Full cost per dwelling = £1280* (e) vii Adjustment for existing capacity and shortfall = 92% (f)	(a) Havering Green Spaces, Sport and Recreation Study (2005), Havering Borough Council (b) Developer Contributions for Residential Developments (Nov 2007), Swindon Borough Council (c) Havering Borough Council (d) *Calculated from (ii), (iii), (iv) and (v)* (e) *Calculated from (i) (vi) and 2.33 pop/dw)* (f) See main report		£550 per person	Gross: £1280 Adopted: £1178
Green infrastructure	i. Cost of Green Grid and Ingrebourne Valley Visitor Centre = £8m (a) ii. Cost of improvements to rivers and Rainham Marshes = £3m (b) iii. Per annum cost of other biodiversity and green space projects = £0.5m (a) iv. 10 year cost of biodiversity and green space projects = £5m (c) v. Adjustment for non-residential = 50% (d) *Total Per dwelling cost* – £74 (d)	*(a)* Havering Borough Council estimates *(b)* LTGDC estimates updated by HBC (c) *(ii) * 10* *(d)* See main report *(e) [(i) + (iii)] * (iv) divided by 108,300 dwellings (2020 total)*			£74

Facility	Assumptions and *Outputs*	Sources and C*alculations*	Dwellings per Facility	Gross Cost per Person	Cost per Dwelling (2.33/dw)
Sports hall	i 0.48 badminton court per 1000 people (a) ii Construction cost per 4 court sports hall = £3.007m (b)	(a) Havering Green Spaces, Sport and Recreation Study (2005), Havering Borough Council (b) Sports England Toolkit (2nd quarter 2011); cost adjusted for locational adjustor for Havering of 1.12 from BCIS.	4 court sports hall: 3577	£361 per person	£841
Swimming pool	i 15m2 water space per 1000 people (a) ii 275m2 per 5 lane 25m pool (a) iii Construction cost per 5 lane pool = £3.49m (b)	(a) Havering Green Spaces, Sport and Recreation Study (2005), Havering Borough Council (b) Sports England Toolkit (2nd quarter 2011); cost adjusted for locational adjustor for Havering of 1.12 from BCIS.	5 lane pool: 7,868	£190 per person	£443
Ice rink	i Cost of provision of combined ice-rink swimming pool in Romford = £22m (a) ii Ice-rink estimated share of cost of above = 50% (a) iii *Per dwelling cost* = £102 (b)	(a) Havering Borough Council estimate (b) *(i)* (ii) divided by 108,300 dwellings (2020 total)*			£102
Playing pitches	i 0.74 ha of outdoor playing fields per 1000 pop (a) ii Construction cost per ha of grass pitch = £100,000 (b) iii 10 year maintenance cost per ha = £36,000 (c) iv Maintenance cost inflation 2007 to 2009 = 7.2% (c)	(a) Havering Green Spaces, Sport and Recreation Study (2005), Havering Borough Council (b) Sports England Toolkit (2nd quarter 2011), average for range of pitches (c) Developer Contributions for Residential Developments (Nov 2007), Swindon Borough Council (d) RICS Quarterly Review of Building Prices		£103 per person	£240
Burial grounds	i Burial space requirement for Havering = 0.32 ha per year (a) ii Cost of cemetery provision = £378,000 per ha, excluding land costs (b) iii Construction cost inflation to 2005 to 2009 = 15% assumption iv *Per dwelling cost for 10 years* = £13 (c)	(a) Havering LDF, Site Specific Allocations DPD (July 2008) (b) The Cost & Funding Of Growth in South East England" Roger Tym & Partners for South East Counties (June 2005) (c) *Calculated from (i) to (iii), divided by 108,300 dwellings (2020 total)*			£13
Police station	No costs available at present				
Fire and rescue station	i No further requirement	(a) See Appendix B			
GP health centre and dental surgery	i 1800 patients per GP (a) *ii* Construction cost of new 4 GP health centre (including dentistry): £3.1m (b)	(a) Government target for average number of patients per GP (implicit in GP contracts) *(b)* Capex value of recent 4 GP health centre (1400m2) at South Hornchurch opened 2007	3,090	£448 per person	£1044

Facility	Assumptions and *Outputs*	Sources and C*alculations*	Dwellings per Facility	Gross Cost per Person	Cost per Dwelling (2.33/dw)
Intermediate health care provision	i. Content and cost of replacement facilities at St George's Hospital site not yet determined. (a)	(a) Havering PCT			
Transport	i. Cost of major transport improvements outside Havering Riverside (excluding Crossrail) = £5.0m (a) ii. Cost of major transport improvements in Havering Riverside = £32.0m (b) iii. Per annum cost of LIP transport projects outside Havering Riverside = £2.55m (a) iv. Per annum cost of pedestrian/ cycling projects = £0.5m (a) v. Total cost (10 yrs) of all transport projects = £70.5m (c) vi. Adjustment for capacity shortfall = 50% (d) vii. Adjustment for non-residential = 67% (d) viii. *Total Per dwelling cost* – £2435 (e)	(a) Havering Borough Council estimates (see main text) (b) LTGDC estimates (see main text) (c) [(i) + (ii)] + [(iii) + (iv)]*10 (d) See main text (e) *[(v) * (vi)* (vii)] divided by 9,700 new dwellings*			£2435
Public realm	i. Cost public realm projects in Borough, Romford, Hornchurch and Harold Hill urban strategies = £14.3m (a) ii. Adjustment for non-residential = 50% (b) iii. *Total Per dwelling cost* – £66 (c)	(a) Havering Borough Council estimates (b) See main text (c) *(i) * (ii) divided by 108,300 dwellings*			£47
Employment training/job brokerage	i. Per annum cost of employment training and job brokerage projects = £200,000 (a) ii. Total cost (10 yrs) of all training/job brokerage projects = £2.0m (b) iii. Adjustment for non-residential = 50% (c) iv. *Total Per dwelling cost* – £9 (d)	(a) Havering Borough Council estimates (b) *(i) * 12* (c) See main text (d) *(ii) * (iii) divided by 108,300 dwellings*			£9
Voluntary sector support	No costs available at present				
Inward Investment &	i. Per annum cost of support = £130,000 (a)	(a) Havering Borough Council estimates (b) *(i) * 12*			£6

Facility	Assumptions and *Outputs*	Sources and C*alculations*	Dwellings per Facility	Gross Cost per Person	Cost per Dwelling (2.33/dw)
Enterprise Support	ii. Total cost (10 yrs) of all support = £1.3m (b) iii. Adjustment for non-residential = 50% (c) iv. *Total Per dwelling cost* – £6 (d)	(c) See main text (d) *(ii) * (iii) divided by 108,300 dwellings*			