Calculating Cost Per Job | Best Practice Note

2015 (3rd Edition)
Purpose

This updated note provides guidance on the methodology and underlying principles of cost per job calculations. Homes and Community Agency (HCA) staff should use this note to calculate and assess cost per job figures for the purposes of ex-ante project and programme appraisals, and completing internal committee papers. Cost per job is most relevant where one of the project objectives is about creation of floorspace and/or employment generation and/or where the cost of creating jobs can be separated from the cost of creating other outputs in a cost allocation exercise. Refer to Annex 1 for definitions of relevant intervention types.

This note assumes that the job calculation for the project will have generally already been made. This calculation should be used in conjunction with HCA best practice guidance and standard techniques as outlined in the Agency’s Project Management Manual and the Additionality Guide\(^1\). This note also complements HCA guidance on Employment Densities\(^2\).

The recommended best practice and key principles are outlined below. Where the rationale for a project is to create jobs (including projects which create floorspace for office, industrial, retail, hotel or other commercial use) the cost per job calculation outlined below must be included in the appraisal. Employment impacts may sometimes alternatively or additionally be taken into account in a cost benefit approach as the flow of income or Gross Value Added (GVA) benefits generated by the intervention involved where this overcomes an identified ‘supply side’ failure.

We append to this note some evidence on the likely employment impacts associated with housing provision. These aspects are considered separately as an estimation of job impacts is based on different sets of evidence and is relevant to the assessment of economic impacts rather than as benchmarks to be used in value for money appraisal.

The assessment of cost per job is likely to be of relevance to projects at the local level and will need to be set alongside other measures. At the national level, employment impacts will only be additional if there are clear supply-side impacts. Moreover, the focus on cost benefit analysis means that the Department for Communities and Local Government’s (DCLG’s) preferred approach is to assess changes in land value as the key means of analysing the potential benefits of a development in appraising value for money.

Best Practice Issues

The HCA helps create successful communities by making more homes and business premises available to the residents and businesses who need them. Cost per job is an important indicator of the cost-effectiveness of HCA investments and should clearly demonstrate the number of new additional jobs to be created and/or safeguarded in relation to the level of proposed public sector investment. Forecasts must be project specific, and should be based upon a transparent and as far as possible robust methodology which focuses on net job creation – i.e. which takes account of any associated offsetting job losses which are likely to occur elsewhere in the economy (see Annex 1)

\(^1\) Additionality Guide (2014)
\(^2\) HCA – Advice Note on Employment Densities (2010)
Cost per job calculations should be used as part of ex-ante (forecast based) and/or ex-post (evidence on actual outcomes based) evaluations. Though an important indicator, cost per job should be considered in relation to wider project objectives associated, for example, with:

- the extent to which the project targets disadvantaged areas, is likely to meet the needs of groups facing particular employment challenges – such as young people - or is linked to wider regeneration strategies;

- the degree of decontamination and site servicing and the strength of the local property market; and

- the degree of sector targeting – the extent to which the project is supporting a broader strategy to attract specific target sectors to a locality / region.

To the extent that a project – or a particular project option – contributes substantially to other policy objectives, a higher cost per job figure may be considered acceptable.

The squeeze in real incomes over the years following the 2008 global financial crisis has brought the issue of living standards to the fore. It may therefore be appropriate to consider within the appraisal or evaluation the quality of the jobs provided, probably assessed in terms of the (likely) GVA per head produced or the average wage/salary of the employees concerned. Where an appraisal involves a comparison of options producing different types of job, these metrics could be used to ‘weight’ the anticipated employment impacts involved.

**Key Principles**

The cost per job is a cost effectiveness measure and should be calculated as one of the tests of whether the project should be approved as part of the wider appraisal. A range of cost per job estimates can also be calculated by dividing a range of cost projections (which include and are around the mean expected value of the project) to the public sector by a range of forecasts (which include and are around the mean) of net additional employment, based on the possible variation of costs and outputs as shown in the risk analysis.

Advice on the cost figure to use, apportionment of costs and employment, the allowances that might need to be made for timing, and the assessment of value for money are discussed further below

**Calculating Costs**

*Costs to be included*

The key cost figure to be used in the calculation is the total gross public sector cost required to achieve the employment aspects of the project consistent with the project reaching practical completion. The project costs will vary depending on the type of project but do need to be consistent with all current financial appraisal requirements within the relevant organisation. For example, inclusion of the following costs should be considered:

- land/site purchases and/or land value if in existing ownership;\(^3\)

\(^3\) This includes the 'Opportunity Cost' of Land, as reflected in its open market value with its current planning status.
• infrastructure provision
• remediation costs;
• construction/Refurbishment costs;
• professional fees/insurance;
• disposal costs;
• the capitalised value of any ongoing liabilities for amenity sites which are expected to remain in public ownership;
• management/administration time (if applicable); and
• risk.

In calculating costs other potential aspects which may need to be taken into account include:

• cash payments in the form of contracts, participating expenditure grants, premises at low rents and other in-kind contributions;

• the amount of any loan offered assuming it is all drawn down but is never repaid;

• the maximum amount payable under any guarantee;

• receipts from asset sales by the public sector; and

• the whole amount of funding of all types (assuming no abatement, clawback or overage).

Voluntary costs and in-kind contributions e.g. gifts, contributions in kind, unpaid voluntary labour etc., are not free of charge in an economic sense and account should also be made of these in the calculation. Sunk costs clearly form part of the total costs to be taken into account in the eventual ex-post value for money assessment but are not relevant to choice between options or the decision on whether the preferred option should be taken forward.

Costs should also be calculated on a net basis, where relevant, after taking account of receipts from asset sales and other sources. Gross costs, including the full up-front costs of any equity or other potentially recoverable investments should, however, always also be reported, particularly as there will often be some

4 The ODPM Guidance on Assessing the Impacts of Spatial Interventions suggests input based valuations may be used based on the costs that would arise if the work done voluntarily were to be sourced from the paid labour market.
5 As outlined in the ODPM Assessing the Impact of Spatial Interventions
6 Abatement: reductions in our payments (or recovery of money already paid) in response to cost savings.
7 Clawback: money due to HCA as a result of conditions which the Agency imposes on recipients of its assets on disposal to ensure that it benefits from a share of any increase in capital value resulting from a subsequent change of use or redevelopment.
8 Sunk Costs: costs of goods and services that have already been incurred and are irrevocably committed. This does not include any costs associated with assets already in ownership but which have alternative uses.
9 Please note that the Net Exchequer Cost, netting off receipts to the Exchequer as a result of altering levels of economic activity and affecting levels of tax receipt, should be used.
uncertainty at the appraisal stage in the level of such receipts that will be forthcoming. The cost per job benchmark has been identified on the basis of gross costs so, in order to ensure consistency, gross costs should be used in the cost per job comparisons. However, where a project is likely to generate significant receipts, this should be considered as part of the value for money assessment.

**Sensitivity Analysis and the Treatment of Risk**

In carrying out appraisals there is always likely to be some differences between what is expected and what eventually happens. There will be uncertainty about the costs of the project and the jobs which are likely to result. An allowance for risk and variation will normally be as a contingency provision in project costs. Within the economic appraisal, additional allowance should be made for any other perceived risks, uncertainty and optimism bias. This should be reflected in the cost per job calculations by estimating a range of expected net job impacts and using a range of cost projections to calculate a range of cost per job estimates. Sensitivity analysis should be used to assess by how much a project’s costs can increase or the jobs created can fall short of projections before the proposal falls outside the acceptable range.

HCA staff should refer to **The Green Book** (section on adjusting for optimism bias and risks) for further information on adjusting for bias and risks.\(^\text{10}\).

**Discounting**

To reflect social preferences for costs to occur later rather than sooner the costs should be discounted. The standard **social time preference rate of 3.5 percent** should be applied to the cost figures which should be expressed in real (i.e.inflation adjusted) terms in this calculation. (For further information refer to the section on discounting in The Green Book).

As stated, both gross and expected net costs should be considered, although gross costs should be used as the basis for comparison with benchmarks. Taking into account the need to discount costs there are four different ways of expressing the cost of a project which HCA staff should consider:

- undiscounted gross cost;
- \(\text{PV}\)\(^\text{11}\) of gross cost;
- undiscounted net cost; and
- \(\text{PV}\) of net cost.

**Apportionment of Costs and Employment**

There will be occasions where a project contains a number of discrete elements each with its own distinctive outputs. In such cases, the costs, jobs and cost per job estimates should be separated out for each output. For example, a project comprising a business park and a country park should be appraised for the jobs associated with the former and for the amenity value associated with the latter. It is more meaningful to

\(^\text{10}\) Appraisal and Evaluation in Central Government ("The Green Book"), HM Treasury (2003) as subsequently updated

\(^\text{11}\) Present Value (PV) is the discounted value of a stream of future costs.
confine the estimate of cost per job to the component of the project that generates the jobs as a primary output.

**Allowing for Timing**

Some projects will generate jobs earlier than others. This may be highly relevant where, say, a local regeneration strategy calls for the immediate provision of jobs. To bring the projects onto a comparable footing and to enable cross-reference to strategic requirements, it will be necessary to present the profile of job creation over the same period for all project options – as determined by the time-span of the relevant local strategy and/or by the estimated project life-span. The timing of jobs should always be presented in the detailed appraisal.

**Calculation of Cost per Job**

There are a number of different ways to calculate the cost per job figures. The focus should be on dividing the gross public sector cost by the net additional jobs created. This calculation should be carried out for each of the options being considered. Please refer to Annex 3 for a worked example of the calculation. However, it is imperative that the following calculations are also considered:

- PV of gross cost per net additional job
- Undiscounted gross cost per net additional job
- PV of net cost per net additional job
- Undiscounted net cost per net additional job.

**Value for Money**

The judgement on whether a project should go ahead needs to be based on a range of criteria which are assessed as part of the project appraisal. The cost per job is only one of these criteria and should be considered within the context of the other factors. For example, affordability, the strategic fit of the project in relation to the local strategy and the wider benefits being delivered can be just as important as the cost per job.

The value for money judgement cannot be based only on the current project being considered. The appraiser needs to benchmark against other projects that are in some way comparable. The appraiser should justify the comparison that is being used and comment on whether the project represents good value for money.

Benchmark figures are intended to help appraisal staff develop projects and to help them assess if they represent good value for money. Benchmarks should be used carefully, selecting the appropriate figure for the type of end use and location. Where the appraisal indicates a cost per job that falls at the higher end of the benchmark range or beyond it, the case for the project should be closely re-examined against other

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12 As noted, receipts should not be included in comparing estimated cost per net additional job with the benchmark cost at the appraisal stage.
options and additional justification provided if the cost per job cannot be brought more tightly within the range.

In principle, other regeneration benefits should therefore be netted off in cost per job calculations. Where this is methodologically challenging a judgement should be made on how far it is reasonable to identify cost per job on the basis of total project costs.

As indicated, a project may justify a significantly higher cost per job if its objectives involve securing the jobs for a key target social group or it delivers other significant benefits as well as the creation of jobs, e.g. the decontamination of a site, a high quality design of a building or the provision of additional services. Strategic jobs such as technology or growth sector jobs or jobs for targeted people in a targeted community also have particular potential benefits for which it may be worth paying a premium.

It needs to be noted that a project may have a significantly lower cost per job if the public sector proportion of the funding is levering in significant private sector funding and thus contributing only part of the costs which are enabling the job and other outputs to be delivered.

**Evaluation Evidence**

Benchmark evidence from a review of selected land and property activity relevant to the HCA is presented in the table below, showing the range of gross cost per net job figures expressed in terms of total gross public sector expenditure against total net additional job outputs (Refer to Annex 2 for further details on the approach to the assessment of evaluation evidence and gross cost per gross job benchmarks). Net additional jobs are based upon a sub-regional level of analysis.

**Table 1: Cost per job benchmarks – evaluation evidence**

<table>
<thead>
<tr>
<th></th>
<th>Gross cost per net additional job</th>
<th>Indicative description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>£28,700</td>
<td>Projects with a key focus on job creation (such as the development of employment space), high private sector investment, low remediation costs or targeted at a small local area with low deadweight and displacement</td>
</tr>
<tr>
<td>Mid-point</td>
<td>£39,850</td>
<td>Projects with wider objectives (such as cross-cutting regeneration or where the end use is for a specialist purpose), low private sector investment, high remediation costs or targeted at a wide spatial area with high deadweight and displacement</td>
</tr>
<tr>
<td>High</td>
<td>£51,000</td>
<td></td>
</tr>
</tbody>
</table>

*Source: AMION analysis*
The review identified a cost per net additional job created or safeguarded range of £28,700 to £51,000 for regeneration and property development projects with a mid-point in this range of £39,850.\textsuperscript{13}

The benchmark range is based on historic evidence. The figures here should reflect the actual outcomes associated with projects and will therefore take account of possible cost overruns and any shortfall in the delivery of expected outputs. The specific benchmark should therefore be comparable with the appraisal figure taking account of risk and optimism bias as relevant.

It should also be stressed that benchmarks should not be used as the basis for a simple ‘pass or fail’ exercise; rather they should help to inform the overall appraisal of a scheme's value for money.

Two key caveats should be noted:

- the evaluations have generally made no attempt to distinguish between additionality of development and additionality of employment outcomes - in most cases there is an implicit assumption that additionality of development is 100 percent; and\textsuperscript{14}

- the benchmarks are not based on any detailed analysis of how long the impacts of projects on job created last into the future; in recent evaluations the assessment of persistence generally adopts national benchmarks.

These issues are examined in more detail in Annex 1.

It should also be noted that:

- the availability of good recent evaluation evidence for this latest version of the guide – particularly for England and the types of project undertaken by the HCA – is more limited than in the past because of organisational and other changes, most notably the demise of the Regional Development Agencies; and

- the approach to evaluation within the UK is undergoing change with a shift in emphasis to the use of more rigorous statistically based (quasi-experimental type) methods focusing on the comparison of ‘treated’ and ‘untreated’ areas and groups which attempt to move closer to the random control trials used in medicine. This shift – which has been driven by NAO criticisms of past evaluation practice – is likely to result in both the emergence of higher cost per job figures in future evaluations and pressures to adopt more cautious additionality assumptions at appraisal stage.

The benchmark range does not take account of housing schemes as there is limited evaluation evidence available. The particular issues involved in estimating the employment impacts of housing projects are considered separately in Annex 3.

\textsuperscript{13} The range is based on the middle 20 percent of the sample (i.e. from the 40\textsuperscript{th} to the 60\textsuperscript{th} percentile). The evaluations cover a range of intervention types from industrial uses through to public realm and visitor attractions. Predictably, higher cost per job calculations are associated with cross-cutting regeneration activities, although the nature and form of the programmes does not permit a systematic analysis of cost per job by intervention type.

\textsuperscript{14} To the extent that this is untrue in practice, the cost per net additional job will be higher than suggested by the evaluation studies.
Construction Employment

Construction employment is excluded from the calculation of cost per job as the construction jobs generated by projects are inherently transitory and are unlikely to be a key element in the rationale for the project - construction employment essentially reflects the costs and inputs of the project and is generally not considered to be an indicator of an intervention's value for money.

The table below enables an estimation of the number of construction jobs based on the total programme/project construction capital cost using the direct jobs co-efficients by category of activity. The coefficients express the number of workers required over one year to deliver £1m of construction investment.\textsuperscript{15}

Table 3: Labour coefficients (workers per £1m output per year at 2011 prices)

\begin{tabular}{|c|c|c|c|c|c|c|}
\hline
Productivity & New housing & Infrastructure\textsuperscript{16} & Public non housing\textsuperscript{17} & Private Industrial\textsuperscript{18} & Private Commercial \textsuperscript{19} & Housing Repair & Maint. & Non Hsg Repair & Maint. \\
\hline
Direct Jobs & 19.9 & 13.9 & 10.7 & 10.0 & 16.6 & 30.8 & 29.7 \\
\hline
\end{tabular}

\textit{Note: Construction Skills labour coefficients updated.}

External Communication and Implementation

This guidance has been written with the HCA in mind, but it is accepted that other public bodies and consultants may refer to the content, with appropriate references being used.

References

\begin{itemize}
\item HM Treasury - Green Book (2003) as updated subsequently
\item Additionality Guide (2014)
\item Cambridge Economic Associates - Research to Improve the Assessment of Additionality (2009)
\item OffPAT / HCA - Advice Note on Employment Densities (2010)
\item DCLG - Valuing the Benefits of Regeneration (2010)
\end{itemize}

\textsuperscript{15} As this focuses on output as opposed to spend, the resulting labour requirements of using spend will be an approximation.
\textsuperscript{16} Including Roads, Water, Sewerage, Electricity, Communication, Gas & Air, Railways, Harbours
\textsuperscript{17} Including Schools and Universities, Health
\textsuperscript{18} Including Manufacturing, Oil, Steel and Coal
\textsuperscript{19} Including Offices & Entertainment, Garages & Shops
Annex 1: Analytical Framework

Scope of Interventions and Activities

The cost per job benchmark is relevant to the following interventions/activities:\(^{20}\):

- capital expenditure on site reclamation, servicing or other works to bring sites forward for industrial and/or commercial development; and
- equity or other recoverable investments for similar purposes

Net Additionality of Jobs Created

This section sets out the steps involved in estimating the net additionality of jobs created. How far evaluations conform to the approach below has been a consideration in including them in the sample of studies which are included as the basis for the benchmarks.

The cost per job benchmark is based on evidence from recent evaluations that reflect up to date guidance on the assessment of the net additionality of jobs created. However, the basic model set out in the latest HCA Additionality Guide\(^ {21}\) (box below) remains valid.

\[
AI = [GI \times (1-L) \times (1-S) \times (1-Dp) \times (1+M)] - [GI^* \times (1^*-L^*) \times (1-S^*) \times (1-Dp^*) \times (1+M^*)]
\]

Where:

AI = Net additional impact
L = Leakage
S = Substitution
GI = Gross impact
Dp = Displacement
M = Multiplier

* denotes reference case and hence deadweight

The key stages in the assessment of net additional jobs created are as follows:

Assessment of the additionality of the development / attribution to public sector intervention: The proportion of the development that would not have happened without public sector intervention (separate from additionality of employment outcomes considered below) forms the starting point for the reference case. In the case of projects involving both public and private funding, impacts should be attributed to the public sector on the basis of the public sector share of total expenditure on the project (excluding follow-on private sector investment).

Gross Employment Outcomes: The employment that was accommodated by floorspace developed as a result of the funded intervention. The robustness of the approach to estimating the gross employment outcomes of development activity will depend on the information available to the appraiser or evaluator:

\(^{20}\) Housing is considered separately in Annex 3.
\(^{21}\) HCA Additionality Guide (2014)
• Employment known: At the ex-post evaluation stage the total number of employees accommodated by developments can be identified from monitoring data, surveys or from secondary data assembled by ONS and potentially available to researchers via its Virtual Micro-data Laboratory (VML). Gross jobs accommodated are then estimated by applying the values for ‘attribution to public sector’, adjusted where relevant for crowding out (see below), to the total number of employees accommodated.

• Floorspace known, employment unknown: In most cases, the quantity of floorspace created (or projected) through developments may be known but the number of employees accommodated by developments may not be known. In the latter case an employment density benchmark should be applied using the latest HCA employment densities guide22.

Additionality of Employment Outcomes: The key aspect of additionality is how far the jobs accommodated by development are additional to those that would have existed in the spatial area of concern in the absence of the development. At the ex-post evaluation stage the traditional approach was to undertake surveys of firms occupying funded developments to establish the percentage of employment that is additional to the locality. More recently, the preferred approach has shifted towards a datalinking method in which the scale and location of occupiers’ previous employment is tracked via the VML. The extent to which occupants (and associated employment and GVA) of funded developments are truly additional to the locality clearly depends largely on what they would have done in the absence of the floorspace. Survey work still has a potential role in exploring this issue – although, in common with other self-reporting approaches, this is now generally viewed as a comparatively weak evaluation design.

Crowding Out / In: In general, public sector intervention will be responding to market failures in property markets – for example, developers may face abnormal costs in developing sites or have low confidence in areas with latent demand, so it is typically assumed that levels of crowding out are likely to be low. However, there is clearly a risk that recurrent public investments or larger publicly supported projects may lower the return on investment and reduce or delay possible private investment in other sites. If crowding out / in is considered, account should be taken of the percentage of gross floorspace (in terms of the development in question) – and therefore the resulting employment - that did not come forward on other developments (or was encouraged) as a result of investment in the project, with any assumptions used appropriately justified.

Reflecting the advice of the HCA additionality guidance, three further elements of additionality should be considered in moving from gross additional impacts to net additional impacts:

Leakage: The extent to which the economic benefits of intervention leak outside of the region or area of concern. In the case of employment interventions leakage depends on where the employees live which is typically assessed in evaluations from survey work and in appraisals using Census derived travel-to-work data.

Displacement: Where development allows a business to increase its sales and market share, at the expense of the sales of other firms based in the area of concern. In the context of a new development it may also include whether the occupiers would have otherwise found suitable accommodation elsewhere in the area. Typically evaluations have established displacement through survey evidence and appraisals have

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22 HCA – Advice Note on Employment Densities (2010)
utilised assumptions based upon this evidence. However, this is an area in which alternative methods are being developed in academic evaluation studies of spatially based interventions.

**Multipliers**: The cost per net additional job benchmark takes into account two types of multiplier effect: supply chain linkage effects; and income multiplier or induced effects. There is a limit to which surveys undertaken for evaluations can provide the evidence required to make a full appraisal of the multiplier effects. Evaluations have tended to combine survey evidence with secondary evidence to assess the scale of multiplier effects.

In the case of any public realm projects the existing evaluation evidence on which appraisals can draw is fairly weak and assumptions within appraisals are often necessarily somewhat speculative which clearly needs to be reflected in the associated sensitivity analysis. A common approach is to make an assessment of the combined employment effects of changes in the levels of footfall in relevant locations and the quantities of office floorspace resulting from increased private investment into the area. An estimate of additionality (i.e. the extent to which any increase in the level of footfall or increased floorspace was/is likely to be due to public realm investment) is only likely to be possible with recourse to qualitative and other contextual information, including consultations with local stakeholders.

Visitor attractions will have a further impact on jobs and GVA where visitors have been/will be attracted to the region / locality and spent/will spend their incomes in the economy. Typically, evaluators will only be able to assess the impacts of these projects with any confidence where the attractions involved have undertaken a visitor survey.

**Build Time and Persistence**

It is important to give consideration to the timescale over which impacts are likely to build up and the timescale over which they are likely to persist (persistence). Estimates of on-going actual jobs created may just represent the impacts achieved at the time of the survey or the evaluation but in some cases evaluations have taken account of the eventual build-up of impacts. The impacts of property interventions will typically take time to build up in the sense that it may take a number of years for new premises to be built out and to reach full occupation. The RDA national evaluation\(^{23}\) adopted a range of assumptions for build time by intervention type, assuming that benefits accrued linearly over the period (Table A1 below).

Persistence effects should in principle be applied to the number of jobs created.\(^{24}\) However, the evidence to support assumptions at appraisal stage is very weak and collecting data on persistence from beneficiary surveys in evaluation studies may not be feasible, particularly as respondents may not be able to gauge what the benefit of the intervention is likely to be long-term. This is an area where datalinking based approaches are likely to be the future way forward in evaluation studies.

Consideration of persistence presents some difficult methodological issues. For example, an assessment of the persistence of impacts related to sites and premises ideally requires consideration of:

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\(^{23}\) Impact of RDA Spending, PriceWaterhouseCoopers for Department for Business, Innovation and Skills, March 2009

• the growth and survival of the original beneficiaries which have associated additional impacts which would need to be explored through a datalinking approach using VML datasets on company performance or perhaps panel surveys; and

• there may be possible impacts associated with the initial occupants which may have subsequently moved on to other floorspace within the area concerned (which again would need to be explored through datalinking or follow up/tracking surveys).

The guidance to the former Regional Development Agencies on assumptions regarding build time and persistence in relation to the intervention types of interest are set out in Table A1, below.

<table>
<thead>
<tr>
<th>Intervention Type</th>
<th>Period over which benefits build</th>
<th>Persistence of benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bringing land back into use</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Public Realm</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Cross cutting regeneration</td>
<td>3</td>
<td>10</td>
</tr>
</tbody>
</table>


Spatial Level of Assessment

The cost per net additional job benchmarks are based on assessment of additionality at the sub-regional level. An appraiser or evaluator may want to assess net additional impact at a spatial level as small as a neighbourhood or a Local Enterprise Partnership area or region, encompassing several local authorities. The smaller the area of impact, the lower will be the expected level of deadweight and displacement. However, the multiplier effect will also be lower and the rate of leakage higher. Based on the analysis undertaken by Tyler et al (2009)\(^\text{25}\), we would generally expect the overall level of additionality to be higher, and the estimate of net additional jobs to be higher, the lower the spatial level of intervention.

Benchmark Evidence

Summary

This annex describes the process used to identify appropriate evaluations and concludes by identifying an average benchmark and range for cost per net additional job.

The review identified a cost per net additional job created or safeguarded range of £28,700 to £51,000 for regeneration and property development projects with a mid-point in this range of £39,850. The range is based on the middle 20 percent of the sample (i.e. from the 40th to the 60th percentile).

To develop a cost per job benchmark for capital projects, there was a comprehensive review of evaluations of place-focused programmes and projects published in the last ten years. From this list, we selected a number of studies that, in our view, provided a robust assessment of net additional jobs created or

\(^{25}\) Research to Improve the assessment of Additionality, BIS Occasional Paper 1, 2009
safeguarded and generated a cost per net additional job estimate. The selected projects all fit into one or more of the intervention types identified above.

The evaluations chosen to feed into the benchmarking exercise included national evaluations, regional evaluations of bundles of relevant projects and smaller regional and sub-regional evaluations of individual projects. In total, our estimated benchmarks are based on data from a sample of 65 projects across England.

**Method of Constructing Cost per Job Benchmark**

Data were collected from all the selected evaluations across a number of variables, including:

- gross public sector cost\(^{26}\);
- gross jobs created / safeguarded achieved at time of evaluation\(^{27}\);
- gross jobs created / safeguarded forecast but yet to be achieved at time of evaluation\(^{28}\);
- the additionality factors used to calculate net additional jobs: deadweight, leakage, displacement and multiplier\(^{29}\); and
- various contextual indicators including: type of intervention, level of public sector investment/risk, whether project focused on disadvantaged areas or priority groups and whether the development involved a specialist end use\(^{30}\).

These data were used to calculate estimates of the gross cost per net additional job created or safeguarded for each project or group of projects in the sample, up-rated to 2015 prices using the GDP deflator. As the full impacts of many of the projects had yet to be realised at the time of evaluation, we judged that it was appropriate to base our cost per job estimates on achieved and forecast jobs rather than just achieved jobs.

The reviewed evaluations differed according to the spatial level at which the net additional impact was measured. Where estimates were provided at a regional level, we adjusted the additionality factors (i.e. deadweight, leakage, displacement and multiplier) to provide estimates of net additional jobs created/safeguarded at a sub-regional level\(^{31}\). Where estimates were quoted at a sub-regional or local level, no adjustments were made.

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26 In some cases, this included just the costs incurred by the particular agency commissioning the evaluation, in other cases this included all public sector costs. In every case, however, only the gross jobs attributable to the investment made by the agency or agencies under evaluation have been counted. A number of evaluations also quoted a net cost figure, for example having netted off income received from asset sales or rent, but these net costs are not considered for the benchmarking exercise. To convert gross public sector costs into current prices, we collected data on the timing of all expenditure – where this was not available from the reviewed reports, an estimate was made.

27 Gross jobs were in some cases adjusted to ensure only attributable jobs were counted – see footnote above.

28 In some, but not all, cases forecast jobs were adjusted to account for optimism bias.

29 In all evaluations, the spatial level of assessment was defined but this varied from regional to local level.

30 It is acknowledged that every project and programme is unique in terms of its nature and context and it is difficult to categorise projects according to defined typologies. Nevertheless, a reasonable judgement was made.

31 This adjustment was based on benchmarks provided by Tyler et al (2009). Our adjustment uses the ratio of the average (mean) regional additionality factor and the average (mean) sub-regional additionality factor for the “Regeneration through physical infrastructure” theme as presented by Tyler et al and multiplies that by the regional additionality factor for each project.
An acceptable range around the average was established by estimating the 40th and 60th percentiles of the sample and taking into account recent project evidence. This calculation gives a lower bound of £28,700 and an upper bound of £51,000.

The benchmark and ranges are summarised in the table below, with indicative descriptions of the types of project that should be expected to deliver cost per job ratios towards the lower or higher end of the specified range.32

**Table A2: Cost per job benchmarks: Gross public sector cost per net additional job**

<table>
<thead>
<tr>
<th></th>
<th>Gross cost per net job</th>
<th>Indicative description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>£28,700</td>
<td>Projects with a key focus on job creation (such as the development of employment space), high private sector investment, low remediation costs or targeted at a small local area with low deadweight and displacement</td>
</tr>
<tr>
<td>Mid-point</td>
<td>£39,850</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>£51,000</td>
<td>Projects with wider objectives (such as cross-cutting regeneration or where the end use is for a specialist purpose), low private sector investment, high remediation costs or targeted at a wide spatial area with high deadweight and displacement</td>
</tr>
</tbody>
</table>

Source: AMION

**Comparative Benchmarks**

Table A3 shows how the benchmarks presented in this paper compare to the previous studies undertaken by SQW in 2003 and Ecorys in 2011, after converting their results to current prices33.

**Table A3: Comparison of Cost per Job Benchmarks**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>£16,600</td>
<td>£20,500</td>
<td>£14,200</td>
<td>£22,450</td>
<td>£15,550</td>
<td>£28,700</td>
</tr>
<tr>
<td>Mid-point</td>
<td>£27,400</td>
<td>£33,800</td>
<td>£32,050</td>
<td>£37,000</td>
<td>£35,050</td>
<td>£39,850</td>
</tr>
<tr>
<td>High</td>
<td>£42,000</td>
<td>£51,800</td>
<td>£49,900</td>
<td>£56,700</td>
<td>£54,600</td>
<td>£51,000</td>
</tr>
</tbody>
</table>

Source: AMION, SWQ and Ecorys

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32 Systematic evidence on cost per job outcomes by intervention type is not available. However, it is possible to make some reasonable assumptions on the influence of specific project activity on costs.

33 Under the assumption that SQW's estimates are presented in 2002/03 prices and Ecorys in 2010/11 prices, HM Treasury's GDP deflator is used to convert these estimates to 2014/15 prices.
<table>
<thead>
<tr>
<th>Title</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquisition Plus (EMDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Ancoats regeneration programme</td>
<td>2008</td>
</tr>
<tr>
<td>Area evaluation: Park Royal / Wembley</td>
<td>2008</td>
</tr>
<tr>
<td>AWM Land and Property</td>
<td>2009</td>
</tr>
<tr>
<td>Barrow Call Centre (NWDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Bradford Centre Regeneration (YF)</td>
<td>2009</td>
</tr>
<tr>
<td>Business premises (EEDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Central Park (NWDA)</td>
<td>2009</td>
</tr>
<tr>
<td>CPR Regeneration: Interim Evaluation</td>
<td>2009</td>
</tr>
<tr>
<td>Economic impact review: sites and premises (SWRDA)</td>
<td>2008</td>
</tr>
<tr>
<td>EEDA Capital Projects</td>
<td>2008</td>
</tr>
<tr>
<td>EPIC (EEDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Evaluating The Economic Impact of The Sharp Project</td>
<td>2013</td>
</tr>
<tr>
<td>Evaluation of English Cities Fund</td>
<td>2014</td>
</tr>
<tr>
<td>Evaluation of major land and property investments</td>
<td>2009</td>
</tr>
<tr>
<td>Evaluation of Physical Regeneration Projects (employment schemes (SEEDA)</td>
<td>2008</td>
</tr>
<tr>
<td>Evaluation of Strategic Investment Area programme (Liverpool)</td>
<td>2009</td>
</tr>
<tr>
<td>Evaluation of the Eden Project</td>
<td>2009</td>
</tr>
<tr>
<td>Evaluation of the Liverpool School of Tropical Medicine</td>
<td>2011</td>
</tr>
<tr>
<td>Firstsite: newsite (EEDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Headingley Carnegie Evaluation</td>
<td>2011</td>
</tr>
<tr>
<td>Holbeck Urban Village (YF)</td>
<td>2009</td>
</tr>
<tr>
<td>Hull City Build</td>
<td>2009</td>
</tr>
<tr>
<td>Humber Quays Phase 1: annex a - interim evaluation</td>
<td>2008</td>
</tr>
<tr>
<td>Innovation Infrastructure (managed workspaces) (SEEDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Interim Evaluation of the East Kent Coalfields for SEEDA</td>
<td>2008</td>
</tr>
<tr>
<td>Kingsway Project, Widnes (NWDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Land reclamation (NWDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Title</td>
<td>Date</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Liverpool Commercial District (NWDA)</td>
<td>2009</td>
</tr>
<tr>
<td>London Riverside (LDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Newport Unlimited Interim Evaluation</td>
<td>2010</td>
</tr>
<tr>
<td>NML Into the Future (NWDA)</td>
<td>2009</td>
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<tr>
<td>Oxford Castle &amp; Prison (SEEDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Physical regeneration EIR (SWRDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Physical Regeneration, public realm (SEEDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Promoting the Region (ONE)</td>
<td>2009</td>
</tr>
<tr>
<td>Reclamation (EMDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Reclamation plus (EMDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Regenerating the English Coalfields, interim evaluation - NCP &amp; CRT</td>
<td>2007</td>
</tr>
<tr>
<td>Renaissance Market Towns (YF)</td>
<td>2009</td>
</tr>
<tr>
<td>Renaissance Towns &amp; Cities (YF)</td>
<td>2009</td>
</tr>
<tr>
<td>Review of Regeneration Projects in URC areas (SWRDA)</td>
<td>2011</td>
</tr>
<tr>
<td>Rural renaissance (SWRDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Sea Space: evaluation of Early Wins and Phase 2 projects</td>
<td>2008</td>
</tr>
<tr>
<td>Sheffield One Evaluation</td>
<td>2007</td>
</tr>
<tr>
<td>Site development - commercial (EMDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Site development - crime reduction initiative (EMDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Site development - industrial (EMDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Site development - mixed (EMDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Site development - public realm (EMDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Site development - tourist attractions and cultural infrastructure (EMDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Site servicing (EMDA)</td>
<td>2009</td>
</tr>
<tr>
<td>St Cross Business Park (SEEDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Strategic Investment Frameworks Evaluation (Cornwall)</td>
<td>2014</td>
</tr>
<tr>
<td>Strategic sites evaluation (Chatham Maritime) (SEEDA)</td>
<td>2009</td>
</tr>
<tr>
<td>The Regional Strategic Sites Programme (NWDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Transport infrastructure (EMDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Trinity Lighthouse (EEDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Title</td>
<td>Date</td>
</tr>
<tr>
<td>------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Visitor Interim (NWDA)</td>
<td>2009</td>
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<tr>
<td>Walsall Regeneration Company External Interim Review</td>
<td>2009</td>
</tr>
<tr>
<td>Wentworth Castle &amp; Stainborough Park</td>
<td>2009</td>
</tr>
<tr>
<td>West Lakes Renaissance (NWDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Whitemoss Business Park (NWDA)</td>
<td>2009</td>
</tr>
<tr>
<td>Woolwich / North Bexley area evaluation: final report</td>
<td>2008</td>
</tr>
<tr>
<td>World of Glass (NWDA)</td>
<td>2009</td>
</tr>
</tbody>
</table>
Annex 2: Cost per Job Worked Example

**Calculating costs:** The costs to be used in the calculation are the total public sector costs required to achieve the employment aspects of the project.

<table>
<thead>
<tr>
<th>COSTS</th>
<th>£000s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase of land</td>
<td>500</td>
</tr>
<tr>
<td>Serviced infrastructure and remediation</td>
<td>3,000</td>
</tr>
<tr>
<td>Construction costs</td>
<td>5,000</td>
</tr>
<tr>
<td>Management costs</td>
<td>50</td>
</tr>
<tr>
<td>Disposal fees</td>
<td>30</td>
</tr>
<tr>
<td>Adjustment for risk and optimism bias</td>
<td>600</td>
</tr>
<tr>
<td><strong>Total Public Sector Cost</strong></td>
<td>9,180</td>
</tr>
<tr>
<td>Receipts</td>
<td>5,500</td>
</tr>
<tr>
<td><strong>Net Public Sector Cost</strong></td>
<td>3,680</td>
</tr>
</tbody>
</table>

**Calculating cost per job:** This gives an undiscounted gross public sector cost per net additional job of £22,950 (£9,180,000/400 jobs) and an undiscounted net public sector cost per net additional job of £9,200 (£3,680,000/400 jobs).

The PV of gross and net cost would also be calculated if the costs and receipts were distributed over more than one financial year. This should normally be discounted at 3.5 percent.

**Benchmarks:** An appropriate benchmark range should be drawn from the evaluation evidence for similar sized sites, in a similar location and with a similar end use. The cost per job figures should be compared with the benchmarks and the project revisited if the figures are outside the range. If the figures cannot be brought more tightly within the range, additional justification will be required for the project.
Annex 3 Estimating Employment Impacts of Housing Schemes

Introduction

A review of theoretical issues and available benchmark evidence on the employment outcomes and associated cost per job of new housing developments concluded that there is limited research and evaluation evidence on the links between new housing and employment outcomes. Recent studies of relevance to the theme have tended to focus on the relationship between housing and employment numbers from the perspective of self-containment analysis, specifically the extent of out-commuting within a given spatial context.

Jobs arising from housing projects are often an additional benefit of a project whose objectives relates to housing. Employment outcomes should therefore be considered as one element in the appraisal of the project not as a benchmark for assessing its potential success.

Estimates of the impact of housing developments on job outcomes at the local level may therefore need to be inferred on the basis of some fairly crude assumptions on the extent to which residents live and work in the same area (levels of self-containment) or the impacts of new housing on local expenditure patterns. Benchmarks would need to be developed and tested on a case-by-case basis through detailed appraisal and evaluation work.

Housing Interventions

As set out in a study for DCLG, subsidised new build programmes typically seek to address issues of housing supply at a local or regional level and/or to change the residential mix of an area by offering a broader array of housing choice both in terms of tenure and type. Conceptually, the investment in new build is likely to involve the public sector seeking to offer incentives to private developers and builders, the level of which will depend largely on the scale of market failure. Inputs will be measured in terms of the scale of incentives alongside other support (e.g. master planning), with outputs primarily comprising additional numbers of dwellings built, with consideration made of tenure, type of property and standard (increasingly in environmental terms).

Key Themes and Issues

It is worth noting that there is limited evidence to suggest that new housing has a positive impact on economic growth and employment generation in a wide geographical setting, for example at the national level. In respect of the economic impacts of housing developments there is likely to be almost complete displacement at the national and even regional levels - the majority of any employment created at a local level will have been displaced from other localities as expenditure moves from one area to another. However, given that this note is concerned with local level impacts, this issue is put to one side for the purposes of the subsequent analysis.

34 DCLG (2010) Valuing the Benefits of Regeneration
Essentially, there are three key mechanisms through which new housing development can generate employment within a given spatial context:

- construction employment;
- demand for services (from new residents); and
- attracting new businesses to the area.

Key issues relating to each of these aspects are considered below.

**Construction employment**

Clearly housing developments create employment through the construction process. We have reviewed updated Construction Skills labour coefficients to identify the construction jobs supported by construction investment in different types of activity. This enables an estimation of the number of jobs based on the total programme/project construction capital cost using direct jobs coefficients by category of activity. The coefficients express the number of workers required over one year to deliver £1m of construction investment. For example, it is estimated that £1m of annual new housing spend could require 20 full-time equivalent jobs for one year. This gives a cost per job benchmark of approximately £50,000. Clearly, not all of the jobs are additional - applying an additionality factor of one-third from the HCA Additionality Guide gives a figure of approximately 7 additional construction jobs per £1m of investment, a cost per net additional job of £143,000. As noted, it is recommended that this is considered separately from cost per job benchmarks used for the purposes of assessing the value for money of a project.

**Demand for Services (from new residents)**

Within a locality the development of new housing might be expected to stimulate employment growth (assuming new residents are attracted as a result) through the additional expenditure of residents in the area. Consumption led job creation can occur as jobs are created by population growth and the need for services (e.g. retail or leisure). Service sector businesses may establish new outlets in the locality due to a need to follow population growth, which are consumers of their services. Moreover, population growth may create a need to increase the capacity of public services, resulting in further demand for employment in areas such as waste management, transport, teaching and health.

There are two main areas of complexity associated with assessing the effects of new housing development on demand for services that require consideration:

- **Additionality of households**: The extent to which new housing can lead to indirect employment impacts depends largely on how far the development encourages new residents to migrate to the area from outside. In the case of projects focusing on affordable housing, those occupying developments are likely to be mainly suppressed households already residing in the local area (i.e. younger or other individuals living with their families), or simply residents moving from rented or owned accommodation elsewhere in the target area. If the effect of new housing is simply to displace residents from other dwellings within the

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target area, then their expenditure (and resultant jobs) cannot be considered to be additional to the locality.

- **Employment from growth in private and public sector service provision**: The relationship between population growth and the provision of private and public services is complex and there is limited evidence on the impact of specific schemes. Detailed analysis would be required to show whether a new housing development places sufficient pressure on the capacity of local services to require additional workers. Past research has focused on threshold levels of housing that encourage service providers to locate facilities in a given area.\(^36\) However, this is more useful in the case of large-scale housing developments, and less so in cases where the project has provided incremental additions to the housing stock.

An indicative range for the cost per job resulting from new housing developments can be developed by focusing solely on the effects resulting from local expenditure by new residents. Where developments are anticipated to have substantial effects via the provision of additional private and public services or through attracting new investors to areas, it is suggested that these effects are handled on a bespoke, case-by-case basis, under the assumption that in the main, impacts will be very limited, as demonstrated below. The focus here is on the impact of additional expenditure on employment outcomes through local paid for services rather than public sector provision.

An indicative approach to the assessment of employment impacts through additional expenditure is set out below:

- **Additional expenditure in the local area**: Between 2011 and 2013, average weekly household expenditure across England was £505.40 or £26,280 on an annual basis\(^37\). However, this includes expenditure on items that are unlikely to benefit businesses based in the local area, including non-consumption goods (such as mortgage interest and Council Tax), housing costs (primarily mortgage payments, fuel and power – though expenditure on maintenance and repair may well benefit local firms), communication, health and transport costs. On the assumption that all expenditure on food and drink, clothing and footwear, household goods and services, recreation and culture, education and restaurants and hotels, will accrue to firms based in the local area, local firms might expect to benefit from expenditure per household of £234.30 per week or £12,180 per year.

- **Employment impacts**: The industries most likely to benefit from this expenditure are the retail, restaurants and hotels, and recreation and culture industries. Collectively, these three industries saw turnover of £555.4bn across England in 2008, and employed 4.5m workers, implying turnover per worker of £97,200\(^38\). If households spend an £12,180 per year amongst local firms, the expenditure of 8 households would be required to sustain one (gross) job.

- **Displacement and multipliers**: In order to make an estimate of the cost per net additional job associated with new housing development, it is important to consider both displacement (as discussed above) and

\(^{36}\) English Partnerships (2006) Research into Estabishing the Causal Linkage Between Employment and Housing, Roger Tym

\(^{37}\) Family Spending 2014, Office for National Statistics

\(^{38}\) Annual Business Survey, Office for National Statistics
any multiplier effects that arise from the spending of local retailers and employees. HCA guidance\(^{39}\) suggests a composite multiplier value of 1.21 for retailing activity at the local level is appropriate. The extent of displacement will depend ultimately on the proportion of residents that are attracted from outside the target area, and cost per net additional job estimates are provided under scenarios of low (25 percent of housing is taken up by existing residents), medium (50 percent), and high (75 percent) displacement.

These assumptions suggest that the employment impacts associated with resident expenditure will negligible for most schemes. These results also make the assumption that there is no leakage (i.e. all employment opportunities are taken up by residents of the target area) and that no housing development would have taken place in the absence of public sector support for the scheme. Further adjustments would be needed to take these factors into account.

A number of supplementary points should be considered in the application of these benchmarks. Firstly, there is considerable variation at a regional level in average weekly household expenditure, varying from £424.60 per week in the North East to £579.60 per week in London and net additional job impacts may well be lower in regions typified by higher levels of household expenditure. Additionally, these results may include items of expenditure that do not benefit local firms, such as household expenditure on hotels (which one would expect to accrue to firms outside the local area). Likewise, if the target area cannot accommodate additional demand (for example, in areas where retail demand is primarily satisfied by out-of-town shopping centres) then the impacts associated with resident expenditure will likely be lower, and analysis should be sensitive to these types of local issues.

**Attracting New Businesses and Inward Investment**

In the longer term, if housing developments secure residents with particular sets of skills then there is also a possibility that the area becomes more attractive for business, contributing to further employment growth. An argument in previous research is that constraints on housing supply within a given area can restrict economic growth by constraining labour supply. In regeneration areas such as parts of the North, Midlands and the Thames Gateway in London, all generally areas of housing market decline and/or relatively low economic growth, the provision of new quality housing has been seen as a key to stimulating economic growth. It is considered that new additions to the housing stock and improvements in the mix and quality of housing can help to generate local employment by contributing to a strategy that encourages new businesses to locate in the area.

It is worth stressing, however, that new housing is often only one element of a regeneration strategy that aims to improve the image of the area and encourage long-term economic growth. Factors such as quality of business premises, transport links and proximity to customers are all important factors in influencing increased business activity. Taken in isolation, it is unlikely that a housing project will have anything more than a very marginal impact on business location decisions. Moreover, as previous studies have indicated understanding the relationship between housing and employment is complex and requires a multi-layered assessment – in particular the relationship can flow in two directions as employment opportunities can drive housing demand through the attraction of in-migrants and retention of the existing population.

\(^{39}\) Additionality Guide (2014)
**Self-Containment Analysis**

Previous research for EP examined the importance of containment analysis (the extent to which residents live and work in the same area) in assessing the impacts of housing growth or contraction. In principle self-containment analysis incorporates the impacts of demand for services and longer-term impacts on business attraction.

Generally, the previous research concludes that the degree of containment is positively related to the settlement population level. However, it is argued that that there has been a loosening of the relationship between employment and residential location because of the acceptance of longer commuting and increasing car ownership.

Drawing on Census data and other research studies, the study concludes that proximity to other settlements of similar or greater size appears to affect the degree of self containment because of competition effects. For example, the research shows that the cities of Gloucester and Cheltenham have lower levels of self containment given their population size possibly because they compete with Bristol and each other. Moreover, it is clear that the influence of big cities, such as London, has a particularly strong impact on containment levels – data shows that settlements near to London (e.g. Slough, Watford and Woking) have self containment levels of around 30 percent.

The DCLG research identifies the extent of self-containment as a key consideration in the proportion of new housing supply that can legitimately be taken to represent a driver of economic growth in regeneration areas. The DCLG study makes assumptions about the extent of new housing that facilitates employment growth within target regeneration areas on the basis of household composition and commuting patterns. Data on household size, working age population and the employment rate is then used to estimate the number of net additional jobs enabled within the target area.

It is worth noting that an assessment of the impacts of new housing on employment using self-containment benchmarks neglects to consider the specific mechanisms by which housing leads to new jobs in the local area, for example how far new services have moved into the area as a result, and is based on assumptions regarding the extent of out-commuting.

Self-containment analysis is applied in the assessment of housing regeneration schemes in the DCLG study on valuing the benefits of regeneration projects. Having made an assumption about the extent of new housing that facilitates employment growth on this basis, the DCLG research uses data on household size (2.28), working age population (73 percent) and the employment rate (73 percent) to estimate the number of net additional jobs enabled. The study adopts a cautious approach and assumes a ratio of 4 dwellings to 1 job generated in the target area.

**Conclusion**

Jobs arising from housing projects are often an additional benefit of a project whose core objectives relate to housing. The relationship between new dwellings and employment generation would therefore need to be

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40 Ibid.
41 DCLG (2010) Valuing the Benefits of Regeneration
developed in relation to valuing benefits and cost benefit analysis to inform benefit-cost ratio (BCR) benchmarks.

It should be stressed that the figures presented above are still based on preliminary analysis of the issues involved in analysing the relationship between housing and employment. However, the approaches highlighted, which address the impacts of housing schemes on additional expenditure in the local economy and wider effects on business investment, do provide some basis for assessing the employment outcomes of housing schemes. It is recommended that these are explored further in future research and evaluation.