

Appendix 9: Methodology Note (Policy-On Employment Forecast)

Introduction

- 1.1 This Note provides a summary of the methodology applied in developing a policy-on employment forecast to inform the 2022 South Tyneside Employment Land Review (ELR).
- 1.2 It should be noted that the methodology detailed within this Note draws heavily upon the assumptions that underpin the comprehensive body of evidence commissioned by South Tyneside Council to inform the development of the IAMP proposals. Lichfields has not sought to verify or challenge these assumptions. As such, any queries relating to the analysis taken from the IAMP Strategic Business Case or the various IAMP Topic Papers should be directed to the authors of the source documents referenced within this Note.
- 1.3 In general, high level terms, the methodology applied by Lichfields in deriving a policy-on forecast seeks to understand the indirect and induced employment to be supported in South Tyneside by the IAMP proposals. These jobs have then been added to the baseline employment growth forecast by Experian. To estimate the indirect and induced impacts, it is first necessary to quantify the level of net direct employment to be supported at the IAMP site.
- 1.4 It is important to acknowledge, however, that the direct employment impacts *on* the IAMP site have not been included within the employment figures used to model the need for employment land under the policy-on scenario. This is because the assessment of the need for the IAMP, and the potential land take associated with the direct employment to be supported on the site, is beyond the scope of this ELR. A separate IAMP Area Action Plan, adopted in November 2017, considers this in greater detail and is supported by a comprehensive body of evidence.
- 1.5 Similarly, the employment figures used to model the need for employment land do not include an allowance for jobs in non-employment sectors. This is because the purpose of the ELR is to assess the demand for and supply of employment space only.

IAMP: Gross Direct Employment

- 1.6 It is understood that the IAMP is expected to accommodate 7,842 FTE (Full-Time Equivalent) jobs once completed and fully occupied¹. This relates to the IAMP site in its entirety, which includes land within the local authorities of South Tyneside and Sunderland. For the purposes of constructing a policy-on scenario for the South Tyneside ELR, it is necessary to isolate those direct jobs to be accommodated on land/floorspace within South Tyneside only.
- 1.7 In accordance with the 2018 ELR, it has been assumed that 40% of the total floorspace to be delivered at the IAMP will be located within the administrative boundaries of South Tyneside. On this basis, it is considered reasonable to assume that 40% of the 7,842 gross direct FTE jobs to be accommodated at the IAMP would be located within South Tyneside. **The gross direct impact of the IAMP within South Tyneside is therefore estimated to be in the order of 3,137 FTE jobs².**

¹ Based upon analysis submitted to the AAP Inspector

² $7842 * 40\% = 3,137$

IAMP: Net Direct Employment

- 1.8 In translating gross employment impacts into net figures, the IAMP Displacement Topic Paper applies adjustments to take account of: leakage; and displacement. These are considered in turn in the following paragraphs.

Leakage

- 1.9 Leakage refers to the proportion of employment at the IAMP that could be expected to be taken up by individuals who reside beyond the area of impact (defined within the Displacement Topic Paper as the NELEP area). A 5% allowance is applied within the Displacement Topic Paper.
- 1.10 It is wholly appropriate to take leakage into account in assessing the net additional economic impact of the IAMP proposals. For the purposes of the ELR, however, it is not considered necessary or appropriate to include any such allowance. The Labour Demand (Policy-On) Scenario is intended to understand the number of jobs to be created within South Tyneside – and to translate this into a future requirement for employment space within the Borough – rather than the extent to which these jobs will be taken up by local residents. At a simplistic level, a manufacturing business seeking to expand or locate within South Tyneside will require the same quantum of employment space within the Borough irrespective of how many members of staff choose to live in Gateshead, Sunderland, County Durham etc.
- 1.11 Taking the above into account, no adjustment for leakage has been applied by Lichfields. This is not, however, considered to be inconsistent with the approach adopted within the Displacement Topic Paper.

Displacement

- 1.12 Displacement refers to the proportion of outputs accounted for by reduced outputs elsewhere in the area of impact. The IAMP Employment Land Topic Paper provides a detailed assessment of the total displacement impacts of the development proposals, based upon two alternative scenarios:
- Central Case Scenario: assumes displacement of 15%; and
 - Worst Case Scenario: assumes displacement of 30%.
- 1.13 Table 3 of the Topic Paper provides a breakdown of displacement impacts (for the IAMP development as a whole) by local authority area. The analysis indicates 25% of the total displacement effects associated with the development of the wider IAMP site (which is expected to create 7,842 FTE jobs) will be observed within South Tyneside.
- 1.14 It is therefore estimated that 588 FTE jobs could be displaced within South Tyneside as a result of the IAMP development³. This has been calculated by applying the assumptions underpinning the worst case scenario, as set out within the IAMP Employment Land Topic Paper (to minimise the risk of over-estimating the impact of the IAMP on the demand for general employment space in the Borough). **It is therefore anticipated that the net direct employment effect of the IAMP within South Tyneside could be in the order of 2,549 FTE jobs⁴.**

³ $(7842 * 30%) * 25\% = 588$

⁴ $3,137 - 588 = 2,549$

IAMP: Multiplier Impacts

- 1.15 The multiplier impacts refer to the additional ‘spin-off’ jobs generated across the wider economy by a development. Multiplier impacts can be quantified through the application of:
- A ‘Type I’ multiplier, capturing the indirect effects of development (i.e. the impact of increased demand within the supply chain; or
 - A ‘Type II’ multiplier, capturing the indirect and induced effects of development (i.e. the impact of increased demand within the supply chain, as well as the impact of increased wage spending by direct and indirect employees).
- 1.16 The purpose of the Labour Demand (Policy-On) Scenario is to understand the impact of the IAMP on the demand for general employment space in South Tyneside. As such, it is important to isolate the growth in those sectors likely to influence the need for office and industrial space associated with the IAMP proposal. Lichfields has taken a view that the most appropriate way to do so is to focus exclusively on the indirect (supply chain) impacts of the development proposals. The approach is underpinned by the following assumptions:
- That changes in indirect (supply chain) employment levels will likely be the key determinant of future demand for employment space in South Tyneside. Indirect jobs are likely to be focussed in businesses including (but not limited to) part manufacturers and logistics/distribution businesses, as well as various business services; and
 - That changes in induced employment level will have little bearing on the demand for employment space in South Tyneside. Induced employment effects will primarily be observed in service (retail, leisure etc) sectors, linked to increased wage spending by direct and indirect employees.
- 1.17 Taking the above into account, Lichfields has applied a Type I employment multiplier to estimate the office and industrial jobs to be created within the local economy. The IAMP Displacement Topic Paper⁵ suggests that, at the NELEP geography, the IAMP could be expected to give rise to a Type I employment multiplier effect of 2.0.
- 1.18 During discussions with the consultancy practice responsible for the economic analysis contained within the IAMP Displacement Topic Paper, it was suggested that in the order of 70% of the multiplier effects are likely to be observed at the local authority level. This has been sensitivity tested by Lichfields and is considered to be reasonable⁶.
- 1.19 The multiplier effect of 2.0 identified within the IAMP Displacement Topic Paper is understood to comprise of two component parts:
- The direct impact: equivalent to 1.0; and
 - The indirect (multiplier) impact: equivalent to 1.0.
- 1.20 Clearly, the direct impacts remain fixed regardless of the geography at which the proposals are being considered. In converting a multiplier figure from the LEP level to the local authority level, therefore, it is only necessary to apply the appropriate discount factor to that part of the multiplier that is used to calculate the indirect impacts.

⁵ Page 17 of *Impact Study – International Advanced Manufacturing Park, Topic Paper: Displacement*

⁶ HCA *Additionality Guide Fourth Edition (2014)* includes indicative local and regional multipliers for office, industrial, recreation and retailing activities. This suggests that impacts (across all four sectors combined) at the local authority level might be expected, on average, to equate to c.65% of the regional figure. See also page 11 of the *International Advanced Manufacturing Paper Impact Paper Update 2016: Displacement*

1.21 Having regard to the above, a multiplier of 1.7 has been derived in order to estimate the total indirect employment impacts of the IAMP at the South Tyneside local authority level. This multiplier figure comprises of:

- The direct impact: equivalent to 1.0; and
- The indirect and induced (multiplier) impact: equivalent to 0.7.

1.22 Applying a Type I multiplier of 1.7 to the 2,549 net direct FTE jobs to be created at the IAMP (within South Tyneside) would suggest that **the development proposals could be anticipated to support the creation of a further 1,784 indirect FTE jobs in the local authority area**⁸.

Disaggregation by B Use Class

1.23 It has been assumed by Lichfields that the 1,784 indirect FTE jobs derived above will all fall within the office and industrial sectors. To model the future need for employment land in South Tyneside, however, it is necessary to disaggregate this figure in order to provide individual estimates for each of the core employment uses of: offices (E(g)(i)/(ii)); light industrial (E(g)(iii)); manufacturing (B2); and distribution (B8).

1.24 Table 3.3 of the IAMP Displacement Topic Paper indicates that on-site employment at the IAMP is expected to be disaggregated as follows:

- Office (E(g)(ii)/(ii)) jobs: 27%; and
- Industrial (E(g)(iii)/B2/B8) jobs); 73%.

1.25 In the absence of a detailed breakdown of the IAMP's anticipated supply chain, the headline supply chain impacts derived above have been disaggregated in accordance with the anticipated proportionate distribution of direct jobs. On this basis, it is estimated that the 1,784 indirect FTE jobs will comprise of:

- 482 office (E(g)(i)/(ii)) FTE jobs; and
- 1,302 industrial (E(g)(iii)/B2/B8) FTE jobs.

1.26 Clearly, further analysis is required in order to separate out industrial (E(g)(iii) and B2) and distribution (B8) employment. The evidence compiled in relation to the IAMP to date does not provide any further disaggregation in relation to employment. Table 1 of the Sunderland and South Tyneside Strategic Employment Study (2013) and Table 3.1 of the IAMP Displacement Topic Paper both, however, provide a more detailed breakdown of the distribution of employment land. The tables indicate that, under the Moderate/Central Scenario, automotive and advanced manufacturing activities might be expected to account for 83% of land, with distribution activities accounting for 17%. This is shown in Table 1:

⁷ $1.0 * 70\% = 0.7$

⁸ $(2,549 * 1.7) - 2,549 = 1,784$

Table 1 Employment Land Requirements at the IAMP by Sector (Moderate/Central Scenario)

	Land (ha)	% Share
Automotive	105.5	74%
Advanced Manufacturing/Engineering	13.4	9%
Distribution	23.5	17%
Total IAMP Requirement	142.4	100%

Source: Sunderland and South Tyneside Strategic Employment Study, PwC (2013)

- 1.27 In the absence of a more detailed breakdown of employment, the proportionate split by use class set out in Table 1 has been adopted as a proxy measure. It is recognised that there are limitations to this approach. In particular, it is unlikely that plot ratios and employment densities will remain constant across the three sectors. Nevertheless, it is an approach that is grounded in an appreciation of the broad balance between manufacturing and distribution activity anticipated at the IAMP.
- 1.28 Applying the proportionate split derived above to the 1,302 indirect FTE jobs forecast to be generated in the industrial (E(g)(iii)/B2) and distribution (B8) sectors would imply the following breakdown:
- Industrial (E(g)(iii)/B2): 1,081 FTE jobs;
 - Distribution (B8): 221 FTE jobs.
- 1.29 In summary, therefore, it is estimated that the 1,784 indirect FTE jobs to be created in South Tyneside by the IAMP will be distributed as shown below:
- Offices (E(g)(i)/(ii)): 482 FTE jobs;
 - Industrial (E(g)(iii)/B2): 1,081 FTE jobs; and
 - Distribution (B8): 221 FTE jobs.
- 1.30 Appendix 7 of the ELR (Future Requirements for Employment Space) provides further information on the development of the Labour Demand (Policy-On) scenario and the associated employment space requirements. In particular, it builds upon this note to outline:
- The process of translating the FTE job figures derived above into workforce equivalents;
 - The assumptions applied in disaggregated industrial jobs to E(g)(iii) and B2; and
 - The process of adding the resultant policy-on employment estimates to the baseline level of employment growth forecast to occur in South Tyneside over the Plan period.