



# Black Country Local Authorities Economic Development Needs Assessment Update – November 2024

Produced for



## Contents

1. Introduction.....	1
2. Rationale for the update .....	1
3. Future industrial requirements (land and jobs) based on past completions .....	2
4. Jobs to be accommodated in future employment land.....	4
5. Land allocated for office uses .....	5
6. Supply of sites for employment use.....	7
7. Summary.....	8
Appendix A: Approach.....	10
Appendix B: Jobs accommodated within future developable land by BCLA .....	17

### Key Contact:

WECD  
2 Snow Hill  
Birmingham B4 6GA  
T: +44(0) 121 231 3425  
E: [contact@w-ecd.com](mailto:contact@w-ecd.com)

Warwick Economics & Development Ltd. is registered in England and Wales no. 7531279

Information contained herein should not, in whole or part, be published, reproduced or referred to without prior approval by the Black Country Councils or Warwick Economics and Development (WECD). Any such reproduction should be credited to Warwick Economics and Development (WECD).

## 1. Introduction

This document provides updated estimates of employment land demand (i.e., industrial land needs) in the four Black Country Local Authority areas for the periods April 2020 to 31 March 2041 and April 2020 to 31 March 2042, updating the previous 2023 Black Country Employment Land Needs Assessment (EDNA) calculations.<sup>1</sup>

In October 2022 the four Councils agreed not to proceed with the Black Country Plan and for the individual local authorities to prepare their own individual Local Plans. As a result, this report (similarly to the 2023 EDNA) aims to inform the preparation of those Local Plans and the continuous close collaboration and joint working of the four Councils across the Black Country Functional Economic Market Area (FEMA).<sup>2</sup>

## 2. Rationale for the update

The update is needed to provide forecasts for planning periods over two planning periods, 2020-2041 and 2020-2042. Moreover, there have been some significant changes in the underlying Oxford Economics (OE) forecasts (produced in January 2024) compared to the previous set of forecasts (which were used to inform the EDNA 2023 calculation). These new forecasts, for example, forecast a reduction in the working age population between 2020-2042. This reduction is not supported by population forecasts produced by ONS that in fact show that the working age populations are projected to increase in all four Black Country Local Authorities (BCLAs). [Appendix A](#) provides more information about these issues.

These changes in turn lead to some significant changes in the forecasted amounts of employment land. For example, using OE employment forecasts would lead to negative employment land requirements for the period 2020-2042, as shown in Table 1, or 171 hectares (HAs) in total across the Black Country when employment land requirements are calculated on the basis of GVA.

**Table 1: Future industrial land requirements (logistics and manufacturing) for 2020-2042 based on OE forecasts**

	Land (hectares/HA) based on OE employment forecasts	Land (hectares/HA) based on OE GVA forecasts
Dudley	-82	6
Sandwell	-27	1
Walsall	-28	72
Wolverhampton	9	94
Total of above – all BCLAs	-128	171

However, these forecasted amounts of future employment land are not supported by evidence related to **historical long-term (15 years) trends in completions and developments in the Black Country** – including on the assumption of the lower average completion rates achieved in the past delivered in the future.

<sup>1</sup> <https://www.dudley.gov.uk/media/scfdohle/black-country-employment-land-needs-assessment-edna-2023.pdf>

<sup>2</sup> The government aims to respond to a recent consultation and publish NPPF 2024 revisions before the end of the year. This may have implications for a new review and update of EDNA if there is a reference to specific needs arising from the implementation of [Invest 2035: the UK's modern industrial strategy](#) at local or sub-regional levels (in particular around employment and growth projections and needs of sectors related to the modern economy).

Table 2 provides estimates for future employment land requirements for **the planning period 2020-2042** based on past completions while Table 3 also provides information for future employment land requirements to 2041 (**to assist with the planning requirements of those authorities planning to 2041**).

**Table 2: Future industrial land requirements (both logistics and manufacturing) between 2020-2042 based on past completions (HAs)**

	Low scenario	Mid scenario	High scenario
Dudley MBC	38.1	64.7	91.2
Sandwell MBC	150.3	209.6	269
Walsall Council	110.1	144.8	179.6
Wolverhampton CC	89.3	138.6	187.9
<i>All BCLAs (total excl. land provided in South Staffordshire to meet Wolverhampton generated demand – circa 0.67 per annum)</i>	387.8	557.7	727.7

Source: BCLA completions timeseries 2000/2001-2023/24 and calculations by WECD (past completions calculations are based on the past development levels with the annual average projected forward).

**Table 3: Future industrial land requirements (both logistics and manufacturing) between 2020-2041 based on past completions (HAs)**

	Low scenario	Mid scenario	High scenario
Dudley MBC	36.4	61.7	87.1
Sandwell MBC	143.4	200.1	256.7
Walsall Council	105.1	138.2	171.4
Wolverhampton CC	85.2	132.3	179.3
<i>All BCLAs (total excl. land provided in South Staffordshire to meet Black Country generated demand – approximately 0.67 per annum)</i>	370.1	532.3	694.5

It could be the case that the future will not look like the past which would call into question using the past completion amounts of land as the basis for assessing future employment land requirements. However, **this approach is based on amounts of land that have been developed over a prolonged period of time and represents the best empirical evidence available to sense check future employment land requirements based on OE forecasts.** On this basis, and the lack of any evidence indicating a downturn in the local economy<sup>3</sup>, it can be concluded that existing baseline forecasts as provided by OE are not reliable to inform future planning provision for industrial land by the BCLAs.

### 3. Future industrial requirements (land and jobs) based on past completions

Table 4 presents industrial requirements based on past completions per annum. Information on past completions analysed at individual BCLA level indicates that the mid-scenario estimates also reflect the way forward to 2041/2042 for all BCLAs with the exception of Dudley MBC. Review of market intelligence data in the last five years (i.e. employment land enquiries) indicates that for Dudley MBC it

<sup>3</sup>See: <https://www.theeiu.org/upload/reports/2024/08%20Aug%202024/BC%20EOT%20-%20Health%20and%20Economy%20Dashboard%20-%20August%202024%20final.pdf>

is the high scenario that better reflects demand trends for the future. The last column in the table represents the confirmed industrial requirements per annum.

**Table 4: Industrial requirements per annum based on past completions (HAs) – excluding South Staffordshire**

	Low scenario	Mid scenario	High scenario	Confirmed industrial requirement per annum – excluding South Staffordshire (HAs)
Dudley MBC	1.73	2.94	4.15	4.15
Sandwell MBC	6.82	9.53	12.23	9.53
Walsall Council	5.00	6.58	8.16	6.58
Wolverhampton CC	4.05	6.30	8.54	6.30
All BCLAs	17.6	25.4	33.1	26.56

Source: BCLA completions timeseries 2000/2001-2023/24 and calculations by WECD (as noted earlier past completions calculations are based on the past development levels with the annual average projected forward).

### Total industrial requirements to 2041 and 2042

Table 5 presents the resulting employment demand estimates within this context. Estimates also include for each BCLA an equal allocation of the demand for employment land generated in the Black Country and previously accommodated (completed) within South Staffordshire. **This is equivalent to an additional 3.69 HAs per BCLA over the period 2020-2042** (0.1675 HAs per BCLA per annum).

**Table 5: Estimates of industrial land requirements based on past completions (HAs), for each authority, (per annum and total) including South Staffordshire contribution, to 2041 and 2042**

	Future employment land demand per annum including demand previously accommodated in/by neighbouring authorities	Future employment land demand 2020-2041	Future employment land demand 2020-2042
Dudley MBC	4.31	90.5	94.9
Sandwell MBC	9.69	203.5	213.3
Walsall Council	6.75	141.8	148.5
Wolverhampton CC	6.47	135.9	142.3
<b>All BCLAs</b>	<b>27.22 HAs (per annum)</b>	<b>571.6 HAs (21 years forward planning)</b>	<b>598.9 HAs (22 years forward planning)</b>

### Future employment land demand including potential loss to non-employment uses

The 2021 Regulation 18 Black Country Plan included a number of development allocations that involved the redevelopment of existing employment uses to non-employment uses. These development allocations are considered by the BCLAs to remain valid. Allowing for levels of vacancy in these areas and sites, it is estimated that **63 HAs of additional land over and above the demand requirements will be required to 'make good' the operational employment land lost through redevelopment**. This approach assumes that all of the housing allocations will be completed over the

Plan period. In reality, for a variety of reasons, this is unlikely to be the case (and in fact the Regulation 18 Plan assumed that some 15% of housing supply on allocations involving the redevelopment of employment land would not be built out). However, it is considered prudent to adopt a 'worst case' scenario for the purposes of this assessment, and the 'replacement allowance' also provides a degree of flexibility in providing for future needs over and above **the most realistic scenario outlined above (i.e., past completions)**.

The scale of proposed losses due to these development allocations varies across the four local authority areas and is most significant in Dudley and Sandwell (26 HAs in each area), followed by Wolverhampton (11 HAs). There are no such sites accounted for in Walsall at this stage and this issue will be subject to ongoing monitoring and update. Future employment land requirements listed in Table have been adjusted to reflect these losses and the resulting land requirements are presented in Table 6.

**Table 6: Future Employment Land Requirements accounting for potential loss of employment land to non-employment uses in 2020-2041 and 2020-2042**

Past completions forecasts + accounting for potential losses to other uses		
	2020-2041	2020-2042
	Land (HAs) – total and per annum	Land (HAs) – total and per annum
Dudley MBC	90.5+26=116.5 (5.5)	94.9+26=120.9 (5.5)
Sandwell MBC	203.5+ 26=229.5 (10.9)	213.3+ 26=239.3 (10.9)
Walsall Council	141.8+0=141.8 (6.7)	148.5+0=148.5 (6.75)
Wolverhampton CC	135.9+11=146.9 (6.99)	142.3+11=153.3 (6.97)
<b>All BCLAs</b>	<b>634.7 (30.2)</b> <b>(21 years planning including land potentially lost to other uses)</b>	<b>661.9 (30.1)</b> <b>(22 years planning including land potentially lost to other uses)</b>

#### 4. Jobs to be accommodated in future employment land

Tables 7 and 8 present the number of jobs that can be potentially accommodated within developable land for manufacturing and logistics on the following basis:

- Jobs to be accommodated in future employment land have been calculated on the basis of forecasts that exclude land that will be potentially lost to other uses.
- It is assumed that 32% of the industrial land will be for manufacturing-related uses and 68% for logistics.<sup>4</sup>
- Based on past trends, it has been assumed that buildings provide 40% site coverage.

Job estimates for each authority based on this approach (40% assumption of developable land for both manufacturing and logistic uses) can be found in [Appendix B](#).

<sup>4</sup> Based on inquiries as described in EDNA2017 and the split between potential land requirements as derived from the OE GVA based forecasts (see Table 1 where 171 HAs is split in 55 HAs Manufacturing and 117 HAs Logistics).

**Table 7: Jobs accommodated within employable land in 2020-41 (based on actual developed land ratio of 40% and excluding land allocated for potentially other uses)**

Industrial land use	Employment land demand (HA) to 2041	Developable HA	Developable sqm	Jobs that can be accommodated
Manufacturing	183.1	62.3 <sup>5</sup>	622,764	17,299 <sup>6</sup>
Logistics	388.5	147.6 <sup>7</sup>	1,476,429	19,174 <sup>8</sup>
<b>Total</b>	<b>571.6</b>	<b>209.9</b>	<b>2,099,194</b>	<b>36,473</b>

**Table 8: Jobs accommodated within land for employment purposes in 2020-42 (based on actual developed land ratio of 40% and excluding land allocated for potentially other uses)**

Industrial land use	Employment land demand (HA) to 2042	Developable HA	Developable sqm	Jobs that can be accommodated
Manufacturing	191.9	65.2 <sup>9</sup>	652,394	18,122 <sup>10</sup>
Logistics	407.0	154.7 <sup>11</sup>	1,546,674	20,087 <sup>12</sup>
<b>Total</b>	<b>598.9</b>	<b>219.9</b>	<b>2,199,068</b>	<b>38,209</b>

## 5. Land allocated for office uses

Whilst the focus EDNA is on industrial employment land uses, for information, the potential requirements in terms of office floorspace (m<sup>2</sup>) are presented in Table 9. These estimates, whilst based on FTE employment within office type uses, are based on the relation of office type uses' employment to GVA.

**Table 9: Future floorspace requirements for office uses (2020 – 2042)**

	Based on new OE forecasts	
	FTEs	Floorspace sq.m.
Dudley	-2,504	-30,048
Sandwell	1,172	14,064
Walsall	-50	-600
Wolverhampton	2,612	31,344
<b>All BCLAs</b>	<b>1,230</b>	<b>14,760</b>

Feedback from the BCLA officers in relation to office floorspace trends in their respective localities is summarised below.

<sup>5</sup> Based on 40% developable area as proposed by the four BCLAs minus 15% GIA to NIA (informed by HCA Employment Density Guide 3<sup>rd</sup> Edition, 11/2015).

<sup>6</sup> 1 job per 36 sq. m of floorspace (B2 Use) (HCA Employment Density Guide 3<sup>rd</sup> Edition, 11/2015).

<sup>7</sup> Based on 40% developable area, minus 5% GIA to NIA (informed by HCA Employment Density Guide 3<sup>rd</sup> Edition, 11/2015).

<sup>8</sup> 1 job per 77 sq. m of floorspace (B8 Use – Regional Distribution Centre), HCA Employment Density Guide 3<sup>rd</sup> Edition, 11/2015.

<sup>9</sup> Based on 40% developable area minus 15% GIA to NIA (informed by HCA Employment Density Guide 3<sup>rd</sup> Edition, 11/2015).

<sup>10</sup> 1 job per 36 sq. m of floorspace (B2 Use) (HCA Employment Density Guide 3<sup>rd</sup> Edition, 11/2015).

<sup>11</sup> Based on 40% developable area, minus 5% GIA to NIA (informed by HCA Employment Density Guide 3<sup>rd</sup> Edition, 11/2015).

<sup>12</sup> 1 job per 77 sq. m of floorspace (B8 Use – Regional Distribution Centre), HCA Employment Density Guide 3<sup>rd</sup> Edition, 11/2015.

- **Dudley:** There have been no significant office completions in Dudley since 2014. Furthermore, all office completions involve either small scale change of uses, e.g., from public house to office, or ancillary office extensions on existing employment units. In addition, there have been a significant number of offices converted for alternative uses – mostly residential and leisure.
- **Sandwell:** Over the last ten years there has been 14,225 sq.m of new office space built. This floorspace was due to two developments: the new West Bromwich Building Society HQ (6,500sq.m), at Providence Place, West Bromwich and the new West Midlands Ambulance Service offices (7,725sqm) at Shidas Lane, Oldbury. In general, there have been minor office extensions to industrial premises and there is no further information to indicate further additional demand.
- **Walsall:** Monitoring records for office completions over the last 10 years indicate that apart from Gigaport (approximately 3,700 sq.m floorspace in two phases completed in 2015-16 and 2018-19), Walsall has had no significant office completions since 2014. The only schemes have been small extensions ancillary to other uses such as factories and schools. There have been a number of losses of offices to residential and the like.
- **Wolverhampton:** The main developments have been around i9 (Interchange, City Centre) – 6,338 sq.m of which 3,901 B1 offices (completed in 2023) and i10 (Interchange, City Centre) – 5,100 sq.m of which 3,600sq m offices (completed in 2015).

Future demand for floorspace will depend on various factors including, as noted earlier, the implementation of the new modern industrial strategy at local and subregional level and requirements of modern economy (e.g. data centres and laboratories). At this stage, however, there is no evidence to suggest a significant increase in demand for office space across the Black Country. Furthermore, the broad local feedback listed above implies that although the **total** future office floorspace demand based on the OE forecasts (i.e., 14,760 sq.m over the planning period and approximately 670 sq.m per annum across all four BCLAs) could be accepted within the bounds of credulity, the distribution of this between the BCLAs is not possible to ascertain at this stage. Nevertheless, it could be assumed that, as a result of the developments taken place in the West of Wolverhampton<sup>13</sup>, the majority of the projected office demand (75%) will be in Wolverhampton, with the remaining 25% equally distributed among the other three BCLAs (as shown in Table 10).

**Table 10: Hypothetical distribution of future floorspace requirements for office uses (2020 – 2042) among the four BCLAs**

	Hypothetical distribution of total future demand for offices sq.m among BCLAs
Dudley	1,230
Sandwell	1,230
Walsall	1,230
Wolverhampton	11,070
All BCLAs	14,760

<sup>13</sup> <https://midlandsinvestmentportfolio.org/investment/city-centre-west-wolverhampton/>



## 6. Supply of sites for employment use

Table 11 presents a revised overview of the supply of employment land across the four BCLAs (as in September 2024). This information has been provided by the four BCLAs and reflects the latest net additional completions for 2020-24, current supply (including new urban sites and land in Green Belt) and estimates of additional potential supply of land over the planning period 2020-2041/2.

**Table 11: Supply of sites for employment use in the Black Country (HAs), 2020-2042**

	Dudley	Sandwell	Walsall	Wolverhampton	Total HAs
<b>Net additional completions 2020-24 (HAs)<sup>14</sup></b>	17.07	11.78	27.70	22.57	79.12
<b>Baseline supply</b>					
Current Local Plan allocations carried forward into the Black Country Plan (BCP)	6.92	5.29	93.50	26.63	132.34
Non-current Local Plan Sites with planning permission allocated in BCP	0.0	0.0	0.0	3.59	3.59
Other large sites (over 0.4ha) with planning permission not allocated in BCP	0.0	0.0	0.0	2.67	2.67
Current small sites (less than 0.4ha)	1.22	0.66	0.0	0.68	2.56
<b>New urban sites</b>					
New urban	3.97	26.85	0	9.26	40.08
<b>Land in the Green Belt</b>					
Land in Green Belt	0	0	47.29	0	47.29
<b>Total current supply excluding completions</b>	12.11	32.80	140.79	42.83	228.53
<i>Total current supply including completions</i>	29.18	44.58	168.49	65.40	307.65
<b>Estimates of additional potential supply of land over the planning period (2020-42)<sup>15</sup></b>					
Projected large windfall sites to the end of the planning period					66.60
Projected small sites to the end of the planning period					7.20
<b>Total current and potential supply excl. completions (2020-24)</b>					302.33
<i>Total current and potential supply including completions in 2020-24</i>					381.45

<sup>14</sup> Refers to employment land completions involving net additional employment land through the building out of land not previously in employment use.

<sup>15</sup> Additional potential supply of land in 2020-2041 would equal 69.7 HAs.

## 7. Summary

Tables 12 and 13 summarise the gap between estimated demand (including accounting for replacement of employment land losses to non-employment uses) and supply for each BCLA for the planning periods 2020-2041 and 2020-2042 (respectively).

**Table 12: Employment land demand and supply (HAs) by BCLA, 2020-2041**

	Column A	Column B	Column C	All supply (current and potential) excl. completions 20224 vs demand
	Employment land demand including replacement of employment land losses to non-employment uses (Table 6)	Employment land supply excluding completions 2020-24	Current supply vs demand (Column B-Column A)	
Dudley	<b>116.5</b>	12.11	-104.39	
Sandwell	<b>229.5</b>	32.80	-196.70	
Walsall	<b>141.8</b>	140.79	-1.01	
Wolverhampton	<b>146.9</b>	42.83	-104.07	
<b>Total</b>	<b>634.7</b>	<b>228.53</b>	<b>-406.17</b>	
Future supply (large windfall sites and small sites)		<b>69.70</b>		
All supply current and future excl. completions in 2020-2024		<b>298.23</b>		<b>-336.47</b>
Completions in 2020-2024		<b>79.12</b>		
Total current and potential supply including completions in 2020-24		<b>377.35</b>		<b>-257.35</b>

Table 13: Employment land demand and supply (HAs) by BCLA, 2020-2042

	Column A Employment land demand including replacement of employment land losses to non-employment uses (Table 6)	Column B Employment land supply excluding completions 2020-24	Column C Current supply vs demand (Column B-Column A)	All supply (current and potential) excl. completions 20224 vs demand
Dudley	120.9	12.11	-108.79	
Sandwell	239.3	32.80	-206.50	
Walsall	148.5	140.79	-7.71	
Wolverhampton	153.3	42.83	-110.47	
<b>Total</b>	<b>661.9</b>	<b>228.53</b>	<b>-433.37</b>	
Future supply (large windfall sites and small sites)		<b>73.80</b>		
All supply current and future excl. completions in 2020-2024		<b>302.33</b>		<b>-359.57</b>
Completions in 2020-2024		<b>79.12</b>		
Total current and potential supply including completions in 2020-24		<b>381.45</b>		<b>-280.45</b>

In meeting the shortfall, the four local authorities will continue to progress engagement with each other and with neighbouring Local Plans identified as having a strong or moderate economic relationship with the Black Country functional economic market area (FEMA) and other areas with which there is an evidenced functional relationship.

It should be noted that the 2021 EDNA Report set out potential contributions from neighbouring Local Plans to meet the needs arising in the Black Country FEMA area. The 2024 Employment Land Supply Technical Paper confirms this to be 142.2 HAs from the Shropshire and South Staffordshire Local Plans. These contributions reduce the shortfall to 115.15 to 2041 and 138.25 to 2042.

## Appendix A: Approach

### Translation of GVA into Employment Land

With new data becoming available regarding regional GVA and industrial floorspace by local authority (the NDR Business Floorspace tables produced by ONS), the relationship between GVA and floorspace has been re-estimated.

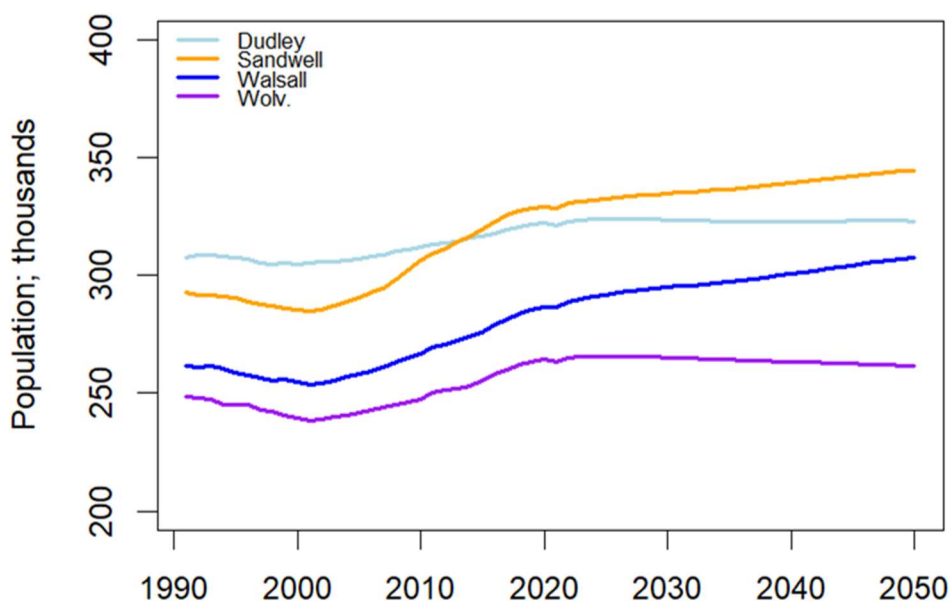
The relationship was estimated by way of regressing industrial floorspace in the Black Country against GVA in Black Country and a time trend over the period 1998 – 2021, with the regression being through the origin.

This produces an estimate of 1,594 m<sup>2</sup> per £m of GVA. Therefore, industrial GVA £m \* 1,594 = industrial floorspace<sup>16</sup>. It is considered however that logistics operations in the West Midlands operate at a higher density of productivity and therefore the translation of GVA into floorspace uses a figure of 1,000 m<sup>2</sup> per £m of GVA<sup>17</sup>.

### Population forecasts (OE)

As can be seen from the charts below, the OE forecasts show total population as increasing up to 2050:

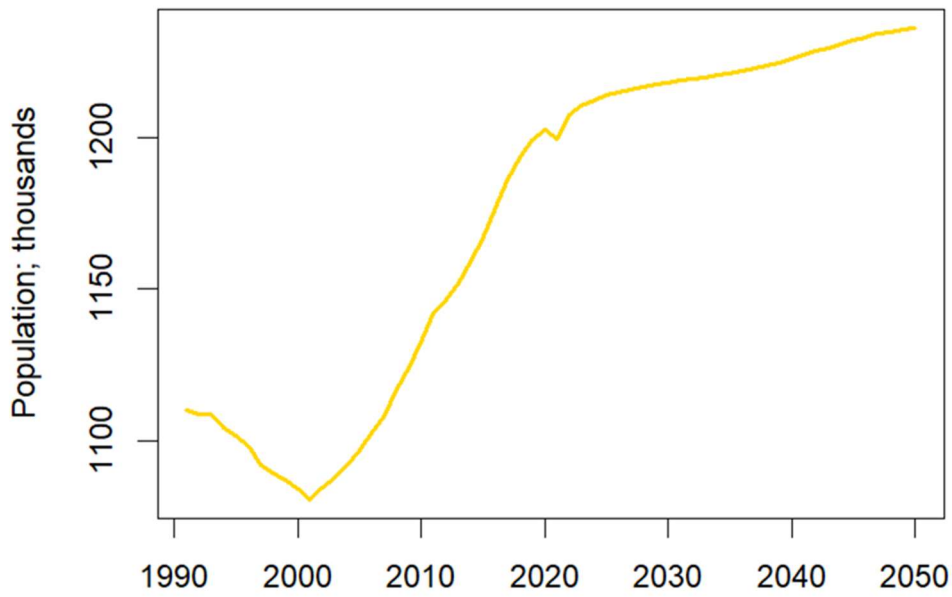
**Figure 1: Population by Black Country Local Authority to 2050**



<sup>16</sup>An adjustment is then made to account for improvements in productivity.

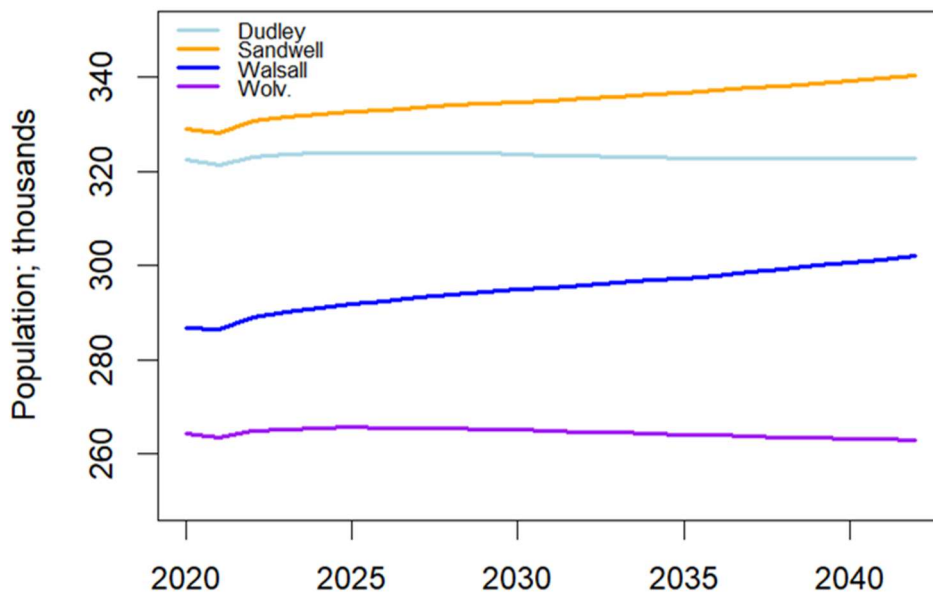
<sup>17</sup>This figure resulted from discussions with the constituent local authorities within the Black Country.

Figure 2: Population for the whole of Black Country to 2050

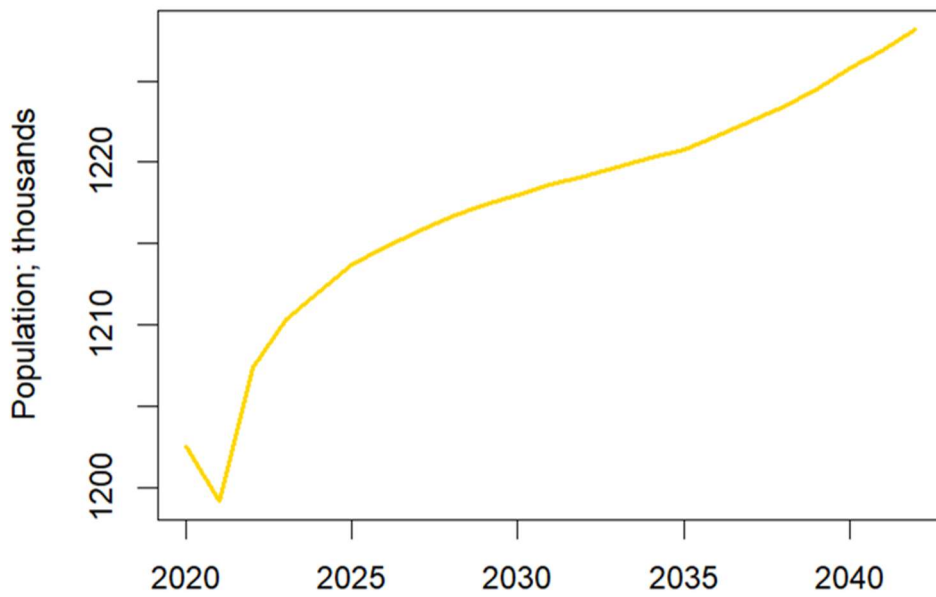


This is also predominantly true of the period 2020 – 2042:

Figure 3: Population by Black Country Local Authority 2020-2042



**Figure 4: Population for the whole of Black Country 2020-2042**



**Working age (WA) population forecasts (OE)**

However, for the working age population this is not the case. This is forecasted to drop as shown in Figures 5 and 6.

**Figure 5: Working age population by Black Country Local Authority to 2050**

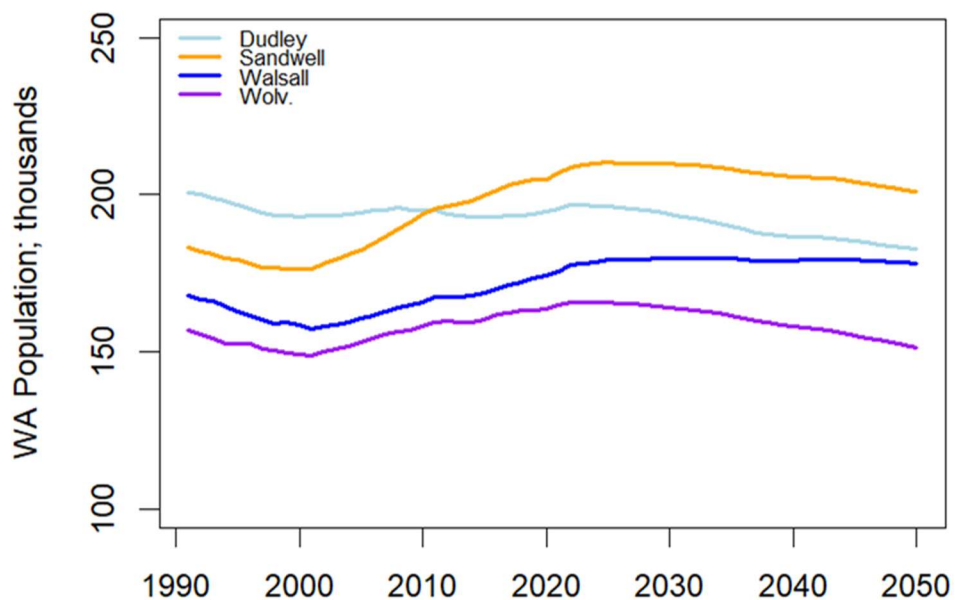
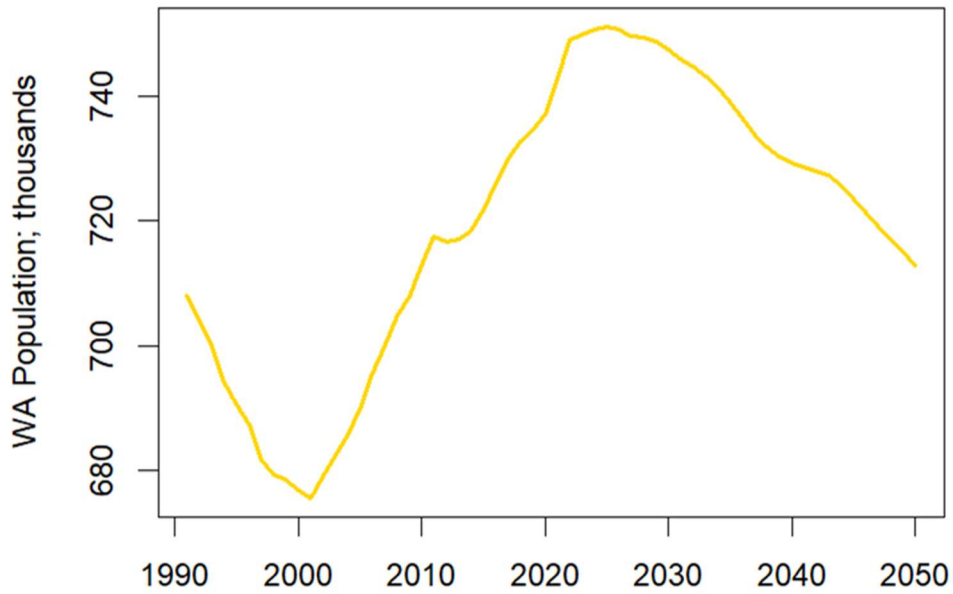
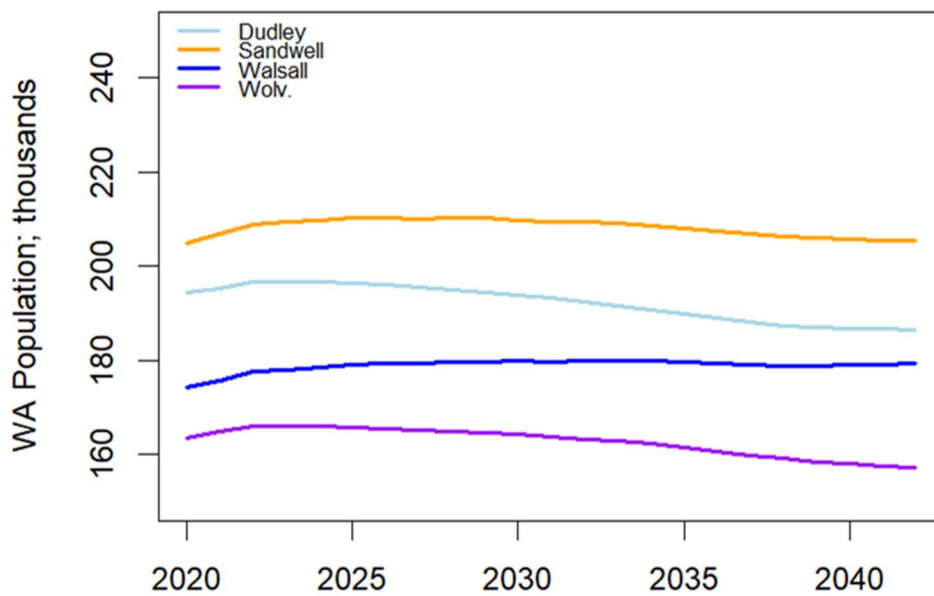


Figure 6: Working age population for the whole of Black Country to 2050

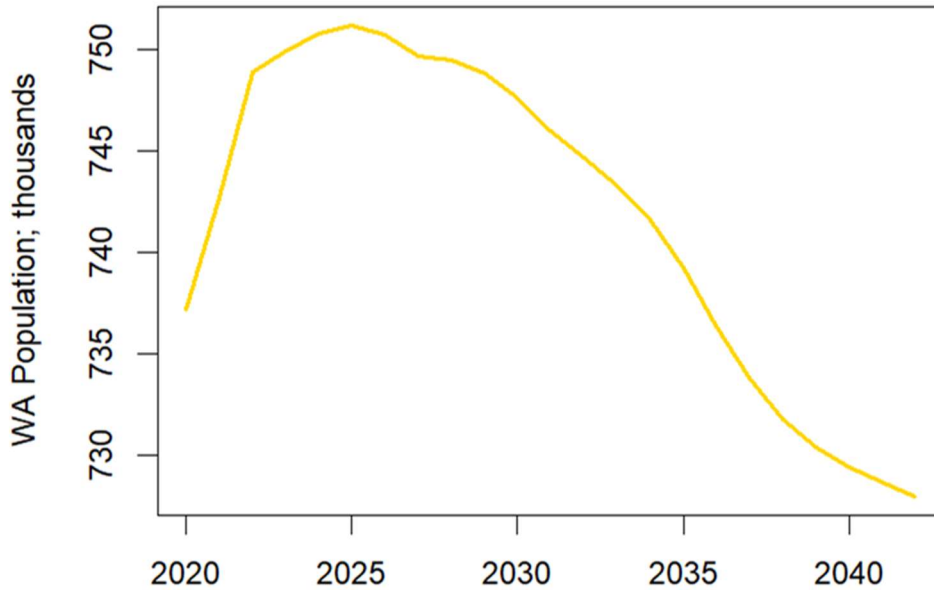


For the period 2020 – 2042, projections are shown in Figures 7 and 8.

Figure 7: Working population by Black Country Local Authority 2020-2042

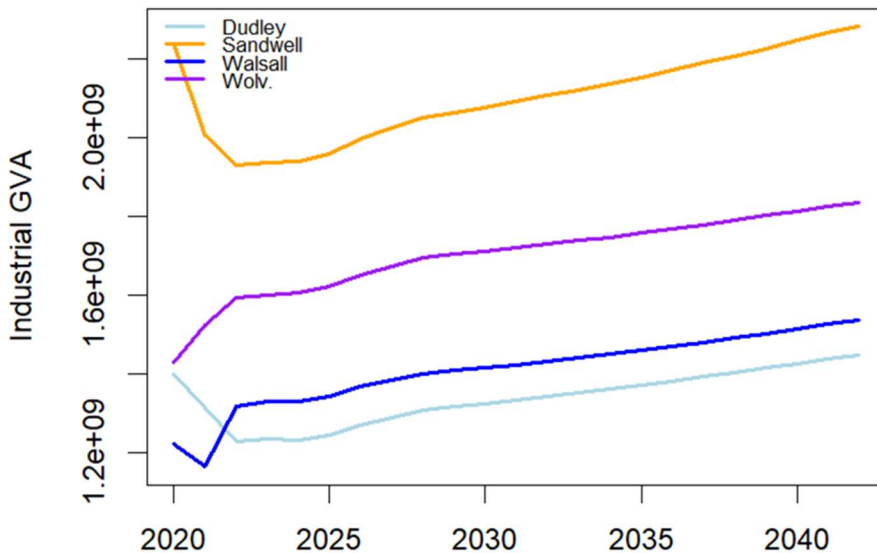


**Figure 8: Working population for the whole of Black Country 2020-2042**



It can also be seen (Figure 9) that industrial GVA shows that in the case of Dudley and Sandwell, industrial GVA fell in 2021 / 2022 whilst for Walsall and Wolverhampton GVA fell in 2020. Due to taking time to make up the GVA lost in the early 2020s, this pattern is most likely the reason that for the period 2020 – 2042, the employment land amounts required for Dudley and Sandwell are extremely low, becoming higher for 2022 – 2042 or 2027 – 2042.

**Figure 9: Industrial GVA forecasts by Black Country Authority**

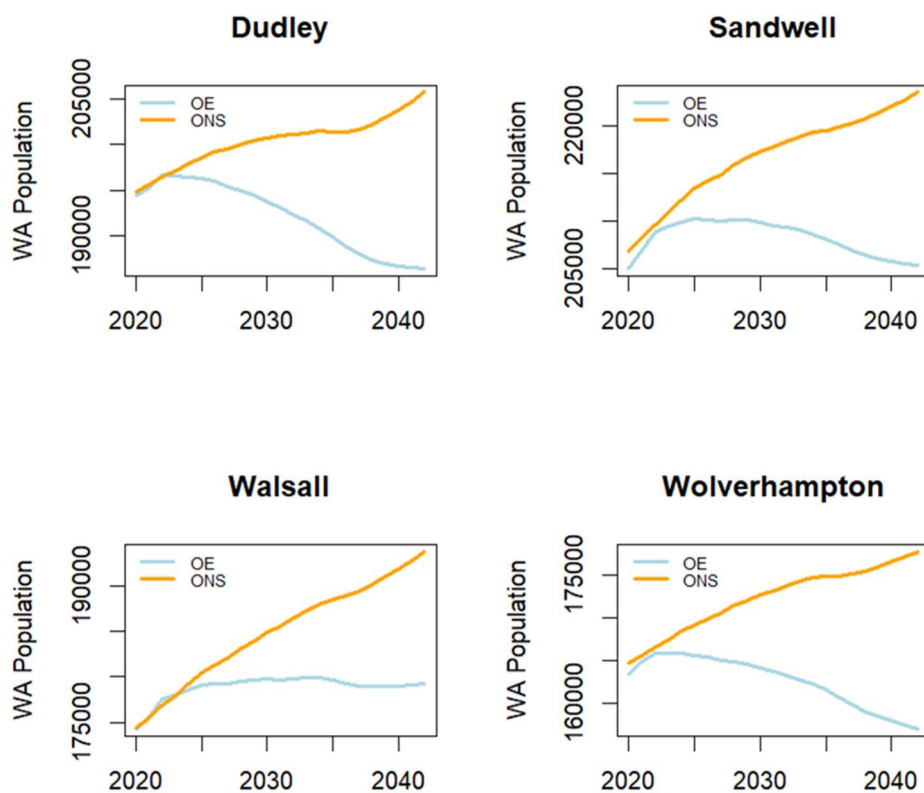


Office for National Statistics (ONS) forecasts



However, analysis of the population forecasts produced by ONS show that the working age populations are projected to increase – see Figure 10.

**Figure 10: Working age (WA) population forecasts (ONS)**



These figures have implications for employment land demand/needs assessment calculation including when GVA/per worker (working age population) is considered, i.e. productivity-based/accounted for demand for employment land.

### Probability estimates

As with any forecasts / projections (produced via any method), there is uncertainty and therefore it is useful to assess the degree of certainty that can be ascribed to them.

Another source of information as to the potential amount of industrial employment land required in the future in this instance is the 20 years' worth of industrial development (in HAs of land) that has been undertaken within the Black Country (as discussed in the main body of this report). These figures have been used as the basis for assessing the probability that the forecasted amounts of employment land noted earlier on this report will be the amounts that are required.

Based on the yearly development levels, (statistical) distributions are developed and these can be compared to the forecast amounts to assess the probability of these amounts<sup>18</sup>. As shown in Table 1, all

<sup>18</sup> Whilst there are 24 years' worth of development figures, this is a small number for assessing statistical distributions. Therefore, a simple Bayesian regression model is estimated for each authority (and the Black Country as a whole) whereby land is regressed against year (industrial land ~  $\alpha + \text{year}$ ). This method then produces a posterior distribution for the amounts of industrial employment land developed over the period. It is this (truncated above zero) distribution that allows an assessment of uncertainty.

the estimated probabilities are well below 0.5 with Dudley and Sandwell (and the Black Country as a whole) being particularly low at 0.03 (3%) or less.

The most likely amounts of land required are (not surprisingly) much closer to the amounts determined by way of using past completions projected over the period 2020 to 2041/2042.

**Table 1: presents the probability of the forecasted amount and the most likely amount of industrial employment land that will be required**

LA	Forecasted Amount (HA)	Probability	Most Likely Amount (HAs)
Dudley	5.49	0.03	77
Sandwell	0.71	<0.01	217
Walsall	71.45	0.16	148
Wolverhampton	93.75	0.27	153
<b>Black Country</b>	<b>171.40</b>	<b>0.05</b>	<b>556</b>

## Appendix B: Jobs accommodated within future developable land by BCLA

### 2020-2041

Dudley	HA	Developable HA	Developable sqm	Jobs
Manufacturing Uses	28.9	9.8	98,254.1	2,729.3
Logistics Uses	61.7	23.4	234,466.6	3,045.0
<b>Total</b>	<b>90.6</b>	<b>33.3</b>	<b>332,720.7</b>	<b>5,774.3</b>

Sandwell	HA	Developable HA	Developable sqm	Jobs
Manufacturing Uses	65.7	22.3	223,303.2	6,202.9
Logistics Uses	137.9	52.4	524,105.8	6,806.6
<b>Total</b>	<b>203.6</b>	<b>74.7</b>	<b>747,409.0</b>	<b>13,009.4</b>

Walsall	HA	Developable HA	Developable sqm	Jobs
Manufacturing Uses	45.0	15.3	153,089.0	4,252.5
Logistics Uses	96.7	36.7	367,360.6	4,770.9
<b>Total</b>	<b>141.7</b>	<b>52.0</b>	<b>520,449.5</b>	<b>9,023.4</b>

Wolverhampton	HA	Developable HA	Developable sqm	Jobs
Manufacturing Uses	44.0	15.0	149,509.3	4,153.0
Logistics Uses	91.8	34.9	348,941.3	4,531.7
<b>Total</b>	<b>135.8</b>	<b>49.8</b>	<b>498,450.7</b>	<b>8,684.7</b>

### 2020-2042

Dudley	HA	Developable HA	Developable sqm	Jobs
Manufacturing Uses	30.3	10.3	102,917.4	2,858.8
Logistics Uses	64.6	24.6	245,594.7	3,189.5
<b>Total</b>	<b>94.9</b>	<b>34.9</b>	<b>348,512.1</b>	<b>6,048.4</b>

Sandwell	HA	Developable HA	Developable sqm	Jobs
Manufacturing Uses	68.8	23.4	233,941.9	6,498.4
Logistics Uses	144.5	54.9	549,075.5	7,130.9
<b>Total</b>	<b>213.3</b>	<b>78.3</b>	<b>783,017.4</b>	<b>13,629.2</b>

Walsall	HA	Developable HA	Developable sqm	Jobs
Manufacturing Uses	47.2	16.0	160,435.5	4,456.5
Logistics Uses	101.3	38.5	384,989.7	4,999.9
<b>Total</b>	<b>148.5</b>	<b>54.5</b>	<b>545,425.2</b>	<b>9,456.4</b>

Wolverhampton	HA	Developable HA	Developable sqm	Jobs
Manufacturing Uses	46.1	15.7	156,665.5	4,351.8
Logistics Uses	96.2	36.6	365,643.2	4,748.6
<b>Total</b>	<b>142.3</b>	<b>52.2</b>	<b>522,308.8</b>	<b>9,100.4</b>