

# Black Country Authorities

## Employment Land Needs Assessment 2020 to 2041



Updated Estimates

August 2023

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## 1. Introduction

- 1.1. This report provides updated estimates of employment land demand (i.e., industrial land needs) in the four Black Country Local Authority areas to 31 March 2041.
  - 1.2. The four Black Country Local authorities (BCLAs) are: Dudley Metropolitan Borough Council (Dudley MBC), Sandwell Metropolitan Borough Council (Sandwell MBC), Walsall Council and Wolverhampton City Council (WCC). Industrial in this report relates to both, manufacturing or light industry type and warehousing type uses.
  - 1.3. The report updates employment land demand and supply estimates produced in a 2022 revision of the 2017 and the 2021 Employment Demand Needs Assessments (EDNA). The 2022 revision reviewed and established the Black Country Functional Economic Area (FEMA) and relied on new economic forecasts produced post-pandemic to produce an objective assessment of net additional employment land needs assessment to 31 March 2040. That report had been commissioned to inform the Black Country Plan, a joint Local Plan by the four BCLAs. However, in October 2022 the four Councils agreed not to proceed with the Black Country Plan and for each local authority to prepare their own individual Local Plan. As a result, that report was only used inform the preparation of those Local Plans.
  - 1.4. This second revision of the 2017 and 2021 EDNA reports provides new employment forecasts and land estimates to inform updates of individual Local Plans, drawing on forecasts up to 2041 but also new data related to past completions and developments across the four local authorities as well as new estimates of the supply of land.
  - 1.5. The report is structured as follows:
    - [Section 2](#) future employment space requirements in quantitative terms, drawing on employment and GVA growth forecasts and past developments. Calculations of jobs that could be potentially accommodated within future employment land are also presented.
    - [Section 3](#) presents the supply of land in the Black Country, based on information provided by the BCLAs in May 2023.
    - [Section 4](#) draws conclusions and makes recommendation on how any shortfall of land could be addressed through the Duty to Cooperate.
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## 2. Future Industrial Employment Land Requirements

- 2.1. Future industrial land needs' assessment has been calculated using following methods:
- Past completions.
  - Regional GVA provided by Oxford Economics (to the Black Country Consortium) have been translated into industrial needs for the period 2020-2041 – referred to as the **Oxford Economics (OE) Forecasts Model 2020 (Baseline)**.
  - Regional GVA figures (produced by ONS) over the period 1998/99 – 2020 have been used as the basis for forecasting employment land needs up to 2041 – referred to as the **Time Series Model (Baseline)**. See [Appendix A](#) for more detail around the different types of analyses tested and the approach adopted.
- 2.2. Forecasts based on the above methods are referred to as 'baseline' forecasts as no local policy-driven growth plans or targets for future development have been considered in their construction.

### A. Future Employment Land on Past Completions

- 2.3. Table 2.1 presents industrial requirements based on past completions (to 2020) as supplied by the Black Country authorities. As shown in Table 2.1, taking uncertainty into account (i.e. the variance around this average) leads to a requirement over to 2041 of between 346 HA and 641 HA (with a central estimate of 494 HA i.e. an annual requirement of 24 HA across the Black Country authorities).

**Table 2.1: Industrial Land Requirements based on past completions (HA) - 2020-2041**

	Low scenario	Mid scenario	High scenario
Dudley MBC	26	47	68
Sandwell MBC	132	185	238
Walsall Council	104	136	169
Wolverhampton CC	69	111	152
Black Country (total incl. South Staffordshire)	346	494	641
<i>Black Country (per annum)</i>	<i>16</i>	<i>24</i>	<i>31</i>

Note: The total for the Black Country includes an additional requirement that originated in the Black Country that was developed in South Staffordshire. Excluding South Staffordshire, the total BC numbers are: Low: 331 HA; Mid: 479 HA and High: 626 HA

### B. Future Employment Land on forecasted GVA

- 2.4. Using the two different baseline approaches leads to the requirements for industrial land within the Black Country as presented in Table 2.2: 515 HA under the OE forecasts and 1,178 HA under the time-series forecasts, equivalent to employment land demand of 24.5 HA and

56.1 HA per annum. The GVA based demand refers to new requirements. It could be the case some of the new demand can be accommodated on existing land by way of intensification.

- 2.5. Tables 2.3 and 2.4 provide estimates of future demand for manufacturing and logistics uses under each forecasting method.

**Table 2.2: All Industrial Land Requirements based on economic modelling, 2020-41**

	OE forecasts	time series forecasts
	GVA (£m)	GVA (£m)
Dudley MBC	291	670
Sandwell MBC	467	1,007
Walsall Council	269	670
Wolverhampton CC	264	607
Black Country	1,292	2,955
	Land (HA)	Land (HA)
Dudley MBC	116	267
Sandwell MBC	186	401
Walsall Council	107	267
Wolverhampton CC	105	242
Black Country future land demand (all)	<b>515</b>	<b>1,178</b>
<i>Black Country future land demand per annum</i>	25	56

**Table 2.3: GVA and land requirements for manufacturing uses, 2020-41**

	OE forecasts	time series forecasts
	GVA (£m)	GVA (£m)
Dudley MBC	93	214
Sandwell MBC	149	322
Walsall Council	86	214
Wolverhampton CC	84	194
Black Country	413	946
	Land (HA)	Land (HA)
Dudley MBC	37	85
Sandwell MBC	60	128
Walsall Council	34	85
Wolverhampton CC	34	77
Black Country future land for manufacturing	<b>165</b>	<b>377</b>
<i>Black Country demand for manufacturing per annum</i>	8	18

Table 2.4: GVA and Land Requirements for logistics (warehousing/distribution), 2020-41

	OE forecasts	time series forecasts
	GVA (£m)	GVA (£m)
Dudley MBC	198	456
Sandwell MBC	318	685
Walsall Council	183	456
Wolverhampton CC	180	413
Black Country	879	2,009
	Land (HA)	Land (HA)
Dudley MBC	79	182
Sandwell MBC	126	273
Walsall Council	73	182
Wolverhampton CC	71	165
Black Country future land for logistics	<b>350</b>	<b>801</b>
<i>Black Country demand for logistics per annum</i>	<i>17</i>	<i>38</i>

- 2.6. Looking at both modelling approaches, the probability of the time-series based forecasted demand happening (i.e., 1,178 HA to 2041, 56 HA per annum) is low. Completion trends in the past (table 2.1) also support this conclusion. **Both the OE estimates and the mid scenario of past completions indicate that demand for 24 HA - 25 HA per annum to 2041 is more likely (i.e., between 494 HA and 515 HA in total across the four BCLAs).**
- 2.7. Tables 2.5 - 2.7 present information on the number of jobs that can be potentially accommodated within the developable land for manufacturing and logistics based on: OE forecasts for 2020-41 (515 HA); mid completions' rate (494 HA); and time series forecasts (1,178 HA).

Table 2.5: Jobs accommodated within employable land – OE forecasts, 2020-41

Industrial land use	Employment land demand (HA) to 2041	Developable HA	Developable sqm	Jobs that can be accommodated
Manufacturing	165	91.16 <sup>1</sup>	911,00	25,319 <sup>2</sup>
Logistics	350	232.75 <sup>3</sup>	2,327,500	30,227 <sup>4</sup>

<sup>1</sup> Based on 65% developable area, minus 15% GIA to NIA, HCA Employment Density Guide 3<sup>rd</sup> Edition, 11/2015.

<sup>2</sup> 1 job per 36 sq. m of floorspace (B2 Use) (HCA Employment Density Guide 3<sup>rd</sup> Edition, 11/2015).

<sup>3</sup> Based on 70% developable area, minus 5% GIA to NIA, HCA Employment Density Guide 3<sup>rd</sup> Edition, 11/2015.

<sup>4</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.

<b>Total</b>	<b>515</b>	<b>324</b>	<b>3,239,125</b>	<b>55,546<sup>5</sup></b>
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Table 2.6: Jobs accommodated within employable land – Mid completions rate, 2020-41

Industrial land use	Employment land demand (HA) to 2041	Developable HA	Developable sqm	Jobs that can be accommodated
Manufacturing	158	87	874,452	24,290
Logistics	336	223	2,232,592	28,995
<b>Total</b>	<b>494</b>	<b>311</b>	<b>3,107,044</b>	<b>53,285</b>

Note: Including demand generated in South Staffordshire

Table 2.7: Jobs accommodated within employable land – Time series forecasts, 2020-41

Industrial land use	Employment land demand (HA) to 2041	Developable HA	Developable sqm	Jobs that can be accommodated
Manufacturing	377	208	2,082,925	57,859
Logistics	801	533	5,326,650	69,177
<b>Total</b>	<b>1,178</b>	<b>741</b>	<b>7,409,575</b>	<b>127,036</b>

- 2.8. Similar information for each BCLA is provided in [Appendix B](#).
- 2.9. 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 still valid. Allowing for levels of vacancy in these areas and sites, it is estimated that 63 HA of additional land over and above the demand requirements set out in Tables 2.5-2.7 will be required. The scale of losses due to other development allocations varies across the four local authority areas and is most significant in Dudley and Sandwell (26 HA in each area), followed by Wolverhampton (11 HA). There are no such sites in Walsall. Consideration of these issues would increase the overall demand requirement to 2041 as follows: 578 HA (OE forecasts); 557 HA (Mid-scenario past completions); and 1,241 HA (Time-series forecasts).

<sup>5</sup> There were 455,000 employees in the Black Country in 2021, BRES, ONS, Nomis, 2022.

### 3. Supply of Sites for Employment Use

- 3.1. This section presents a revised overview of the supply of employment land in the Black Country. The information has been provided by the four BCLAs and is summarised in Table 3.1. The total 'baseline supply' including new completions in 2020-2022, new urban sites and land in the green belt is estimated at 303/304 HA.

**Table 3.1: Supply of sites for Employment Use (HA), BCLAs, 2020-2041**

	Dudley MBC	Sandwell MBC	Walsall Council	Wolver- hampton CC	Total HA
<b>Baseline supply</b>					
Current Local Plan allocations carried forward into the Black Country Plan (BCP)	12.9	5.3	108.1	31.4	157.7
Non Local Plan Sites with planning permission allocated in BCP	0.0	0.0	0.0	4.9	4.9
Other large sites with planning permission not allocated in BCP	0.5	0.0	0.0	1.0	1.5
Current small sites	1.1	0.7	0.0	0.1	1.8
<b>New urban sites</b>					
New urban	4.64	26.38	0	16.56	47.6
<b>Land in the Green Belt</b>					
Land in Green Belt	0	0	47.29	0	47.3
<b>Supply (HA) 2020-2041</b>	19	32	155	54	261
<b>Net completions 2020-22 (HA)</b>	6.01	9.69	16.73	9.95	42.83
<b>Total baseline supply to 2041 (HA)</b>	25	42	172	64	303
<b>Estimates of additional potential supply of land</b>					
Projected large windfall sites					70.3
Projected small sites					7.6
<b>Total supply incl. estimates of windfall large and small sites (HA) and excl. completions 2020-22 (HA)</b>					381



## 4. Conclusions

- 4.1. Table 4.1 summarises the gap between estimated demand (based on both, OE forecasts and mid-rate of completions) and supply for each BCLA for the planning period 2020-2041.

**Table 4.1: Employment land demand and supply (HA) by BCLA, 2020-2041**

	Employment land Demand (HA)		Employment land supply (HA)	Balance Supply vs Demand HA (in brackets balance incl. loss of employment land – see para 2.9)	
	Based on OE forecasts	Mid-rate of completions		Based on OE forecasts	Mid-rate of completions
Dudley MBC	116	47	25	-91 (-117)	-22 (-48)
Sandwell MBC	186	185	42	-144 (-170)	-143 (-169)
Walsall Council	107	136	172	65	36
Wolverhampton CC	105	111	64	-41 (-52)	-47 (-58)
Total future needs (based on baseline supply)	<b>515</b>	<b>494</b>	<b>303</b>	<b>-212 (-275)</b>	<b>-191 (-254)</b>
Total future needs (incl. additional supply as per Table 3.1)			<b>381</b>	<b>-134 (-197)</b>	<b>-113 (-176)</b>

- 4.2. In meeting the shortfall, the local authorities should also continue to progress engagement with each other and with neighbouring Local Plans through the Duty to Cooperate. The 2021 EDNA Report set out potential contributions from neighbouring Local Plans to meet the needs arising in the Black Country FEMA area and this analysis is updated below in Table 4.2.

**Table 4.2: (Potential) Duty to Cooperate contributions**

Local Plan	Status	Potential contribution
Shropshire	Plan at Examination	30 HA.
South Staffordshire	Regulation 18 Preferred Options	2022 EDNA indicates a surplus of 36.6 HA available to meet needs in neighbouring areas. The work also endorses previous research by Stattec consultants which recommends that 67 HA of land at West Midlands Interchange should be attributed towards meeting Black Country needs. Total South Staffordshire contribution 103.6 HA.

- 4.3. Table 4.2 indicates potential additional supply of 133.6 HA from the Shropshire and South Staffordshire Local Plans. This would reduce the overall Black Country FEMA shortfall to 0.4 HA under the scenario based on OE forecasts and when excluding any loss of employment land to other employment uses or, a gap of 63 HA when these losses are considered. Within this context, the BCLAs should continue engaging with other neighbouring Local Plan areas identified as having a strong or moderate economic relationship with the Black Country FEMA and other areas with which there is an evidenced functional relationship.
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## Appendix A: Approach

### 1. 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.

This produces an estimate of 1,594 m<sup>2</sup> per £m of GVA. Therefore, industrial GVA £m \* 1,594 = industrial floorspace<sup>6</sup>.

### 2. Forecasting based on time-series

The alternative baseline has been produced by way of using the regional GVA figures (produced by ONS) over the period 1998 – 2020 and forecasting up to 2041 using a Bayesian State Space univariate time series model.

Several different model types were initially utilised with these being various versions of time series models. In this case they are univariate time series models (they use information in the time series itself to estimate models which then form the basis of forecasts). In different ways, lags of the time series are used to discover information within the time series:

$$t_{t+1} \sim f(t_t, t_{t-1}, \dots, t_{t-n})$$

The Bayesian state space model includes error correction via use of the Kalman filter to estimate states of the time series (states of the systems are hyperparameters which then feed into the forecasts).

Exponential smoothing basically uses a smoothed average of the time series for forecasting.

Neural networks (models that can estimate non-linear relationships) can also be used for time series forecasting and in this case an ensemble of neural net models have been used (i.e., 20 models (in this case) are developed and their average is used for the forecasts).

ARIMA is auto-regressive integrated moving average modelling. This essentially uses lags of the time series to estimate future levels.

Using a portion of the actual GVA data that are available for training the models and excluding the last 5 years of the data so that forecasts from the models can be compared to these actual amounts (i.e., models are built on the training dataset and their accuracy compared using a test dataset (the last 5 years of data available)) shows the BSTS model to be the most accurate.

Model	Accuracy (Mean Absolute Percentage Error)
BSTS	1.55%
ARIMA	2.37%
Ensem. Neural Nets.	3.06%
Exp. smoothing	7.55%

This would suggest that the BSTS model could be closest to future levels of GVA.

<sup>6</sup>An adjustment is then made to account for improvements in productivity.

### 3. Office uses

Whilst the focus of this report is on industrial employment land uses, for information the potential requirements in terms of floorspace (m<sup>2</sup>) are presented below for both the baselines.

	Regional Forecasts	Time Series
Floorspace (sqm)		
Dudley	27,204	12,0924
Sandwell	17,004	76,176
Walsall	26,796	97,908
Wolverhampton	11,868	77,340
BC	82,872	372,348

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

<b>Dudley</b>				
<b>OE Forecasts</b>	<b>HA</b>	<b>Developable HA</b>	<b>Developable sqm</b>	<b>Jobs</b>
Manufacturing Uses	37	20	204,425	5,678
Logistics Uses	79	53	525,350	6,823
<b>Total</b>	<b>116</b>	<b>73</b>	<b>729,775</b>	<b>12,501</b>
<b>Mid Completions</b>				
Manufacturing Uses	15	8	82,827	2,301
Logistics Uses	32	21	212,857	2,764
<b>Total</b>	<b>47</b>	<b>30</b>	<b>295,685</b>	<b>5,065</b>
per annum				
<b>Time series forecasts</b>				
Manufacturing Uses	85	47	469,625	13,045
Logistics Uses	182	121	1,210,300	15,718
<b>Total</b>	<b>267</b>	<b>168</b>	<b>1,679,925</b>	<b>28,763</b>

  

<b>Sandwell</b>				
<b>OE Forecasts</b>	<b>HA</b>	<b>Developable HA</b>	<b>Developable sqm</b>	<b>Jobs</b>
Manufacturing Uses	60	33	331,500	9,208
Logistics Uses	126	84	837,900	10,882
<b>Total</b>	<b>186</b>	<b>117</b>	<b>1,169,400</b>	<b>20,090</b>
per annum				
<b>Mid Completions</b>				
Manufacturing Uses	60	33	329,718	9,159
Logistics Uses	125	83	833,395	10,823
<b>Total</b>	<b>185</b>	<b>116</b>	<b>1,163,113</b>	<b>19,982</b>
per annum				
<b>Time series forecasts</b>				
Manufacturing Uses	128	71	707,200	19,644
Logistics Uses	273	182	1,815,450	23,577
<b>Total</b>	<b>401</b>	<b>252</b>	<b>2,522,650</b>	<b>43,222</b>

<b>Walsall</b>				
<b>OE Forecasts</b>	<b>HA</b>	<b>Developable HA</b>	<b>Developable sqm</b>	<b>Jobs</b>
Manufacturing Uses	34	19	187,850	5,218
Logistics Uses	73	49	485,450	6,305
<b>Total</b>	<b>107</b>	<b>67</b>	<b>673,300</b>	<b>11,523</b>
<b>Mid Completions</b>				
Manufacturing Uses	43	24	238,763	6,632
Logistics Uses	93	62	617,021	8,013
<b>Total</b>	<b>136</b>	<b>86</b>	<b>855,783</b>	<b>14,646</b>
<b>Time series forecasts</b>				
Manufacturing Uses	85	47	469,625	13,045
Logistics Uses	182	121	1,210,300	15,718
<b>Total</b>	<b>267</b>	<b>168</b>	<b>1,679,925</b>	<b>28,763</b>

<b>Wolverhampton</b>				
<b>OE Forecasts</b>	<b>HA</b>	<b>Developable HA</b>	<b>Developable sqm</b>	<b>Jobs</b>
Manufacturing Uses	34	19	187,850	5,218
Logistics Uses	71	47	472,150	6,132
<b>Total</b>	<b>105</b>	<b>66</b>	<b>660,000</b>	<b>11,350</b>
<b>Mid Completions</b>				
Manufacturing Uses	36	20	198,584	5,516
Logistics Uses	75	50	499,130	6,482
<b>Total</b>	<b>111</b>	<b>70</b>	<b>697,714</b>	<b>11,998</b>
<b>Time series forecasts</b>				
Manufacturing Uses	77	43	425,425	11,817
Logistics Uses	165	110	1,097,250	14,250
<b>Total</b>	<b>242</b>	<b>152</b>	<b>1,522,675</b>	<b>26,067</b>