

# Regional Technical Statement

(1<sup>st</sup> Review)

## Appendix B (South Wales)



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Llywodraeth Cymru  
Welsh Government

South Wales  
Regional  
Aggregates  
Working Party

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Prepared, on behalf of the Welsh Government and the South Wales Regional Aggregate Working Party

by: **Cuesta Consulting Limited.**

(01460) 929 905 / mobile 07952 170 180

[alan.thompson@cuesta-consulting.com](mailto:alan.thompson@cuesta-consulting.com)



## Appendix B: South Wales Region - Detailed Analysis & Recommendations

### *Introduction*

- B1. This appendix is intended to complement, and should be read in conjunction with, the main document of the First Review of the RTS. It provides additional detail, specific to the South Wales RAWP Region, relating to the analysis of demand and the consideration of existing supply patterns. This information then feeds back into the determination of new apportionments and allocations (where required) for future aggregate provision, as presented in Chapter 5 of the main text. The final part of the Appendix incorporates that information into specific recommendations and guidance for each individual Mineral Planning Authority within South Wales.

### *Sub-Regional Analysis of Demand in South Wales*

- B2. As explained in Chapter 3 of the main document, the starting point for assessing the future demand for aggregates over the period covered by the revised RTS (i.e. 2011-2036) has been taken to be the average of actual or estimated sales figures for the preceding 10 years 'baseline' period (2001 - 2010), within each MPA. The historical sales represent the demand that has been placed upon those authorities in terms of aggregates required within those areas and elsewhere, including exports to England, particularly from the sites within Powys and South East Wales.
- B3. They also represents the residual demand for land-based primary aggregates over that period, since the overall demand was partly satisfied by supplies from secondary, recycled and marine aggregate sources, as well as by imports from primary aggregate sources in England (though these are generally very limited).
- B4. The figures for South Wales are shown in Table B1, below. The origin of the data is explained fully in Chapter 3 of the main text.
- B5. The figures for land-based sand & gravel production in South Wales are greatly distorted by the reliance of South East Wales, in particular, on marine-dredged aggregates from the Bristol Channel and the Severn Estuary. South West Wales is less dependent on marine aggregates and has a small number of active land-based sites, primarily within the Pembrokeshire Coast National Park and Ceredigion. Carmarthenshire has one small operation, as does Neath Port Talbot (dedicated to supplying the adjoining steelworks), but neither has significant output. Powys is too far removed from the coast to be influenced to any significant degree by marine aggregates, but still has only one small land-based sand & gravel site currently in operation. It is reliant instead on crushed rock material, despite the apparent resources of natural sand & gravel within the upper reaches of the Severn, Wye and Usk valleys.
- B6. The figures for crushed rock production within South Wales are dominated by the output from Powys, where a number of sandstone and igneous rock quarries supply HSA<sup>1</sup> material to England - particularly to adjoining parts of the West Midlands. In the rest of South Wales the picture is affected by the much smaller size of many of the individual unitary authorities, particularly in the south-east, where the totals for each MPA are less than for Powys, even though overall production within SE Wales is double the total for Powys. Historical crushed rock sales in South Wales have been concentrated within the Carmarthenshire, Bridgend, Vale of Glamorgan, Rhondda Cynon Taf and Cardiff MPAs (which is where most of the larger Carboniferous Limestone quarries in South Wales are located), and in the adjoining

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<sup>1</sup> The term 'HSA' refers to 'High Specification Aggregate', which is suitable for use as skid-resistant road surfacing aggregate as defined in the original 'Travers Morgan' report on these materials (Thompson, Greig & Shaw, 1993). See paragraph 4.11 of the main RTS document for further details.

MPAs of Caerphilly and Neath Port Talbot, where additional HSA sandstone quarries are located.

**Table B1: Summary of average sales figures for land-based primary aggregates in South Wales, 2001 - 2010**

Mineral Planning Authority	Land-won Sand & Gravel Aggregates (mtpa)	Crushed Rock Aggregates (mtpa)
Powys	0.03 <i>incl. Neath Port Talbot</i>	2.51
Brecon Beacons National Park	0	0.55
Ceredigion	0.14	0.20
Pembrokeshire	0	0.55
Pembrokeshire Coast National Park	0.16	0.29
Carmarthenshire	0	1.07
Swansea	0	0
Neath Port Talbot	<i>With Powys</i>	0.59
Bridgend	0	0.75
Merthyr Tydfil	0	0.27
Vale of Glamorgan	0	1.09
Rhondda Cynon Taf	0	0.69
Cardiff	0	0.86
Caerphilly	0	0.76
Blaenau Gwent	0	0.17
Torfaen	0	0
Newport	0	0
Monmouthshire	0	0.12
<b>Sub-totals, South Wales</b>	<b>0.33</b>	<b>10.47</b>

SOURCE: Collated by the South Wales RAWP secretary from confidential MPA data, for publication in annual RAWP reports, but refined in some cases from other public domain information (e.g. planning applications, Inspectors' reports and LDP documents) to provide a more detailed or updated breakdown.

- B7. Significantly, there has been no crushed rock production, during the baseline period, within Swansea, Torfaen and Newport, and very little in either Blaenau Gwent or Monmouthshire. In the case of Torfaen and Newport this is a reflection of the very limited outcrop of suitable resources, although Carboniferous Limestone was formerly extracted from Penhow Quarry in Newport. In the case of Swansea, the resources are plentiful but are either within the Gower AONB or constrained by existing urban development. Further observations on the relationships between production, resources, markets and environmental capacity are given in paragraphs B35 *et seq.*, below.
- B8. By default, the use of historical sales data as a basis for estimating future demand provides a built-in allowance for the supply of secondary, recycled and marine aggregates, assuming that these various factors will continue as before (with different levels of contribution in each MPA). It also assumes that the factors influencing the overall scale of construction activity will remain broadly unchanged. In practice, adjustments may need to be made in order to reflect changes in any of these factors which are considered likely to occur in future years, within each MPA.
- B9. The need for any such adjustments to be made is assessed below, both for South Wales as a whole and, where appropriate, for individual sub-regions or MPAs. The issues are considered under the headings of:
- **supply factors** (relating to the continued availability of alternative materials),
  - **import/export factors** and

- **demand factors** (relating to influences on overall construction activity).

B10. In each case, the observations relate to the anticipated changes compared to the average conditions over the 2001-2010 baseline period, and they relate only to the reasonably foreseeable future (no more than 10 years), since longer-term predictions are likely to be unreliable. It is important that these observations are kept under review and adjusted each time the RTS is revised.

### Anticipated Changes in Supply Factors

#### **Secondary Aggregates**

- B11. Secondary aggregates comprise the by-products of various industrial processes, including metallurgical slags and power station arisings, but also the by-products from certain types of non-aggregate mineral extraction, such as colliery spoil and slate waste, and from the recycling of glass, ceramics, asphalt planings and rail ballast<sup>2</sup>.
- B12. Aggregate production from metallurgical slags is an important source of secondary aggregate within South Wales. Port Talbot continues to be the main source of blast furnace (iron) and steel slag production, whilst the processing of older stockpiles of blast furnace slag also continues at the former Llanwern steel works (which ceased new production in 2001). Aggregate production from these sites, within Neath Port Talbot and Newport unitary authorities, respectively, contributes to the overall demand for construction aggregates both within these authorities and within neighbouring parts of industrial South Wales. However, in view of the continuing nature of these activities, there is currently no foreseen implication for the future requirements for aggregates provision from other sources.
- B13. Coal-fired power station arisings, comprising pulverised fuel ash (p.f.a) and furnace bottom ash (f.b.a) are currently produced only at the Aberthaw Power Station, in South Wales. It is understood that the utilisation of pfa is likely to increase, but that the quantities are small and the use is only for relatively low-grade end uses.
- B14. Small amounts of aggregate minerals (sandstone and occasionally sand) arise adventitiously from the reworking of former colliery spoil tips or from the working of opencast coal. In South Wales, significant quantities of colliery spoil still exist in tips that have not been removed or landscaped under the Derelict Land Reclamation Scheme (and successors). The overall potential for producing aggregate from this material is small, however, for a combination of local (social and planning), fiscal and regulatory reasons, but could be locally significant, where the quality of the material is suitable for the end-uses required. Planning permission for the reworking of former tips exists at Tower Colliery (RCT), but is not being actively exploited at present. Reworking of the spoil from the former opencast workings at Tir Pentwys (straddling the border between Torfaen and Blaenau Gwent) has also been considered and is currently the subject of Preferred Area allocations in both authorities.
- B15. Sandstone arisings from new opencast workings have been important as 'windfall' resources at a number of sites within the South Wales coalfield, but these are classed as primary aggregates and are therefore not considered further here.
- B16. Slate waste is produced in very small quantities in South Wales, from the northern part of the Pembrokeshire Coast National Park and in southernmost Ceredigion. However, the extent to which this resource has been utilised as aggregate is understood to be minimal, and the prospects for future utilisation are equally limited. Mention was made in the original RTS of the possibility of importing secondary aggregates from the much greater quantities of higher quality slate waste in North Wales, though this was also seen as a 'remote' prospect and no progress has since been made.

<sup>2</sup> it might appear more logical to group these substances under CD&EW. However, the coverage of CD&EW is already well defined in terms of survey returns, so those items are included here as secondary aggregates.

- B17. The various sources of secondary aggregate noted above, together with recycled aggregates, as discussed below, are currently exempt from the Aggregates Levy, in a deliberate attempt to minimise the use of primary aggregates. In August 2013, HMRC announced that a European Commission investigation into certain exemptions and reliefs contained within the aggregates levy was being undertaken to determine whether or not these amounted to 'State Aid' (Revenue & Customs Brief 24/13). Of particular relevance to Wales, these materials include slate, shale, colliery spoil and (perhaps) aggregates made from metallurgical slag. On 18th December 2013, the Government published draft legislation on the suspension of these exemptions (Finance Bill 2014). Final details of the EC investigation are currently awaited but the implication is that they could have significant implications for the balance between primary and alternative aggregates, if the exemptions are found to be unlawful. These implications have not yet had chance to be factored into the following analysis. However, the Government is strongly of the view that the exemptions in question do not give rise to State aid, and is providing information to the Commission to support that view as part of the formal investigation process. The Bill incorporates provisions for secondary legislation to restore any suspended exemptions, if appropriate, following the outcome of the EC investigation.

### **Recycled Aggregates**

- B18. Aggregates produced from construction, demolition and excavation wastes (CDEW), but excluding asphalt planings, recycled rail ballast and recycled glass, form an important contribution to the overall consumption of construction aggregates. The 2008 RTSs noted a total output for the whole of Wales of 3.97mt, based on 2005 survey data, and suggested a roughly 3 to 1 split between South Wales and North Wales, based on earlier surveys and population ratios. They also noted that, despite the lack of quantitative detail, it is inevitable that the greatest volumes of CD&EW arisings and usage are in the urban areas. The RTS documents emphasised, however, that all statistics for this sector need to be used with a high degree of caution, because of the low rate of response to the surveys.
- B19. The situation, in terms of available data, has not improved since the original RTSs were published. No new survey data is available, so any observations on recent or future trends can only be regarded as broad approximations. If anything, the efficiency of recycling is likely to have increased, and the introduction of WRAP's (2005) 'Quality Protocol' for the production of aggregates from inert waste may have increased the proportion and usage of higher value products derived from the various recycled sources. Such improvements, however, represent only small increments on the progress which had previously been made - primarily as a consequence of the price advantages resulting from the landfill tax and, to a lesser extent, the aggregates levy. The industry view is that there is little opportunity for significant further increase in the proportion of construction aggregate likely to be derived from this sector. The future availability of recycled aggregates is likely to be inextricably linked to the overall rates of construction activity and economic growth, so the safest assumption is that it will rise and fall in a very similar way to overall demand, and will thus have a neutral impact on the demand for primary aggregates, compared to the baseline period (2001 to 2010).

### **Marine-dredged Aggregates**

- B20. In South Wales, the availability of marine-dredged sand & gravel is of major importance, with supplies being sourced from both Welsh and English waters within the Severn Estuary and the Bristol Channel. Over the 2001 to 2010 baseline period marine aggregate landings within South Wales accounted for an average of almost 79% of total sand & gravel production. In south East Wales (i.e. excluding landings in Pembrokeshire and Carmarthenshire) marine-dredged material accounted for an even greater proportion (averaging more than 96%), reflecting the almost complete lack of land-based sand & gravel extraction in this area, despite the existence of potential land-based resources. Discussions with the Crown Estate in 2013 suggest that similar levels of production are likely to continue in future years, in line with the current Interim Marine Aggregates Dredging Policy (IMADP) and the Welsh Assembly's 2002 Position Statement on sand & gravel supply for South East Wales. Current uncertainties include the pending review of IMADP; the renewal or replacement of existing licences, including a major new licence

application in the deeper waters of the Outer Bristol Channel; the emergence of marine spatial planning; and the inclusion of mineral safeguarding within the Marine Policy Statement. It is also possible that applications for land-based extraction within some of the areas now being safeguarded may come forward in future years.

- B21. For the time being, it seems reasonable to suppose that marine-dredged aggregates will continue to supply a similar (fairly high) proportion of overall demand as they have done over the last decade, so the demand for land-won aggregates in any of the MPAs in South Wales is not likely to be affected.

**Anticipated Changes in Import/Export Factors**

- B22. Wales has always been a net exporter of land-won aggregates. Data on both exports and imports is recorded in the 4-yearly Aggregate Minerals (AM) Surveys, and data for exports in the last three surveys is summarised in Table B2, below.

**Table B2: Summary of key export statistics for South Wales from recent AM surveys**

<i>Note: all figures exclude sales for non-aggregate use</i>	<b>AM2001 (mt)</b>	<b>AM2005 (mt)</b>	<b>AM2009 (mt)</b>
<b>South Wales</b>			
Land won Sand & Gravel Sales	0.115	0.304	0.144
S&G Exports*	0.001	0.011	0
<b>Exports as % of S&amp;G total</b>	<b>1%</b>	<b>4%</b>	<b>0%</b>
Limestone Sales	6.536	6.137	4.554
Limestone Exports*	0.262	0.154	0.052
<b>Exports as % of Limestone total</b>	<b>4%</b>	<b>3%</b>	<b>1%</b>
Igneous Sales	0.838	1.238	1.025
Igneous Exports*	0.572	0.430	0.694
<b>Exports as % of Igneous total</b>	<b>68%</b>	<b>35%</b>	<b>68%</b>
Sandstone Sales	2.648	3.498	2.605
Sandstone Exports*	1.457	1.941	1.258
<b>Exports as % of Sandstone total</b>	<b>55%</b>	<b>55%</b>	<b>48%</b>
Total Crushed Rock Sales**	10.310	10.873	8.185
Total CR Exports*	2.302	2.527	2.003
<b>CR Exports as % of CR total</b>	<b>22%</b>	<b>23%</b>	<b>24%</b>

\* 'exports' includes movement between South Wales and North Wales, as well as to other regions (mostly in England).

- B23. In South Wales, the main export in terms of overall tonnage is of sandstone, the vast majority of which is High Specification Aggregate (HSA) - skid-resistant road surfacing material with a Polished Stone Value (PSV) of 58 or above, and generally much higher (Thompson, Greig & Shaw 1993; Thompson *et al.*, 2005).

- B24. In 2002, the total output of HSA sandstone from South Wales was 1.280mt<sup>3</sup>. This amounts to some 88% of the previous year's (AM 2001) figure of 1.457 for all sandstone exports from South Wales (the difference representing the change from 2001 to 2002 and the inclusion of some non-HSA sandstone in the latter figure). Of the total HSA sandstone output from South Wales in 2002, some 69% is known to have been exported to England, with the remaining 31% being utilised in Wales, (including domestic consumption within South Wales and exports to North Wales). Of the total HSA sandstone exported, most was supplied from five quarries and two opencast sites in the Pennant Measures of the South Wales coalfield (from which 58% of HSA output was exported to England in 2002); whilst the remainder was sourced from three HSA sandstone quarries in Powys (from which a much higher proportion - 88% - was exported to England).

<sup>3</sup> Source for this and subsequent data on High Specification Aggregates: unpublished information collated by the author as part of the Capita Symonds' analysis of High Specification Aggregates production in 2002 (Thompson *et al.*, 2005).

- B25. Reference to Table B2 shows that, although there was a reduction in sandstone exports between 2005 and 2009, the difference is much less marked than is the case for limestone exports from North Wales (see Appendix A), especially in percentage terms. This reflects the fact that the market for skid-resistant road aggregate has held up better, during the current recession, than has been the case for more general-purpose limestone aggregate (presumably because of the safety imperative of continuing to maintain skid resistance on major roads).
- B26. In terms of being able to predict future sales, however, there is considerable uncertainty: there could be a higher than average upsurge in demand as road maintenance requirements catch up with the lack of all but essential spending during the current recession (and particularly with the cumulative resurfacing requirements triggered by recent harsh winters); or there could simply be a continuation of recent levels of demand, as any improved availability of central and local authority funding is diverted to other, more neglected, areas of public finance. This applies just as much to exports of high specification igneous rock (which account for much smaller, though still significant volumes) as it does to the HSA sandstones. There is therefore no evidence that the demand for exports of aggregate from South Wales will be any greater over the next 10 to 15 years than it was over the baseline period of 2001 - 2010.
- B27. Imports of land-based aggregates are very minor, by comparison with exports. In South Wales in 2009, land-based imports amounted to 0.064mt of sand & gravel and 0.172mt of crushed rock. Almost all of the latter are known, from the AM2009 survey, to have been of limestone aggregate from South West England, and are likely to have been primarily from the Forest of Dean into neighbouring parts of Monmouthshire and Newport, as has traditionally been the case.
- B28. Imports and exports of marine-dredged sand and gravel between England and Wales are only relevant to the RTS apportionment exercise if they affect the continuity of supply of these materials to Wales and thus give rise to increased demand on land-based resources. This is potentially an issue in South East Wales which, as noted earlier, is heavily dependent upon marine aggregates. At present (2013), Wales is a net importer of marine sand & gravel, dredged from the English side of the median line in the Bristol Channel and the Severn Estuary. This is likely to change in the next few years, however, subject to the approval of new licence applications within Welsh waters. In practice, although this will change the balance between imports and exports, the new licences should ensure that there is no disruption of the continuity of supply.

#### Anticipated Changes in Economic Demand Factors

- B29. Before considering future changes it is worth considering the relationships between aggregate sales and economic factors over the baseline period (2001 to 2010). Since economic growth/recession figures are available only for the country as a whole, this analysis is presented in the main text rather than in this Regional appendix (see paragraphs 3.34 onwards), with only a brief summary being given here.
- B30. The analysis used annual GDP change figures, for the UK as a whole, as a broad indicator of economic activity, and compared these to the annual series of aggregate sales data from individual RAWP reports. The GDP figures clearly show the onset of the recession in 2008 and 2009, and the modest level of growth in 2010, compared with the earlier parts of the baseline period, broadly tying-in with the available sales data. Since 2010, GDP growth has fallen back again, but the average growth (from out-turn and forecast) from 2011 to 2018, is 1.88% per annum. This compares with an average of 1.78% per annum for the 2001 to 2010 baseline period and suggests that demand figures up to 2018 are, if anything, likely to be slightly higher than those for the baseline period. Consideration also needs to be given, however, to the possibility of a return to more substantial growth in the period beyond 2018. Whilst there is currently no evidence to quantify or even suggest such growth, it would be prudent to allow for it, in order to avoid the risk of under-provision.

- B31. Other potential sources of information that have been considered regarding the likely future demand for construction aggregates include population growth forecasts and Local Authority housing forecasts, though neither of these provide any clear indications of changes in demand within the short to medium-term future.
- B32. Aside from predictions of economic growth and associated general construction activity, a further important element in the demand for aggregates is that relating to major infrastructure projects. Consultations with the South Wales RAWP Technical Secretary and RAWP members suggests that such projects may include the following:
- M4 (toll) Newport Relief Road
  - Circuit of Wales (International Motor Sport Complex), Blaenau Gwent
  - A465 Heads of the Valleys road dualling (Sections 2, 3, 5 and 6)
  - Cardiff Eastern Bay Link Road
  - Swansea Bay tidal lagoon
  - Severnside Airport, Newport
  - Severn Barrage (subject to further evidence on economic feasibility)
  - Various large-scale on-shore wind farm proposals
- B33. Whilst these and other infrastructure projects might well go ahead, there is no clarity, at present, on the timescales involved or on the associated demand for construction aggregates. Equally, there is no readily available information on the quantities of aggregates used in major projects that were undertaken during the baseline period (2001 to 2011). There is therefore no basis for any meaningful comparison between the recent past and the short- to medium-term future.

#### Summary of Sub-Regional Demand Assessment

- B34. Subject to the outcome of HMRC's decision regarding the possible suspension of certain exemptions from the Aggregates Levy, and to the outcome of the formal EC investigation into those exemptions (see para. B17, above), little justification has otherwise been found for modifying the assumption that future demand *upon* MPAs in South Wales should be based simply on the average sales figures for the baseline period (2001 to 2010), as detailed in Table B1, above, subject to any fine-tuning of the balance between individual MPAs to take account of proximity and environmental capacity issues, as discussed in the following section. Whilst there is some evidence that short term rates of economic growth are likely to be slightly higher than those seen during most of the baseline period, implying a slightly increased level of demand in future years, there is also a need to allow for the possibility of further increased growth during later years within the period covered by the revised RTS. That possibility is at least hinted at by future projections of population growth, but is also in keeping with the more general long-term economic cycle of peaks and troughs. If the Aggregate Levy Exemptions are suspended, or if the Levy itself is eventually abolished, this would have significant implications in terms of the future demand for primary aggregates. Whilst it would not be justified to rely to such factors in terms of clear predictions, it would be prudent not to ignore them for the purposes of ensuring an adequate level of future provision of construction aggregates.

#### ***Sub-Regional Analysis of Supply Patterns in South Wales***

- B35. For convenience, the following analysis is presented in relation to three broad, sub-regional areas: Mid Wales, South West Wales and South East Wales. Maps corresponding to each of these areas are presented in Figures B1 to B16. For each area, the maps deal with individual mineral types (or in some cases two mineral types where these are clearly separated and where they are at least partially interchangeable in terms of aggregate end-uses - e.g. limestone and slate or sandstone and igneous rock).

- B36. In each case there are two maps. The first one deals with 'proximity' issues (i.e. the relationships between resources, quarry locations, major roads and the distribution of both population density and urban areas). The second one then deals with environmental capacity issues (using the output from the IMAECA analysis).
- B37. As noted in the main document, it must be emphasised that these maps show the extent of potential resources and not reserves or permitted reserves. **Resources** are geological materials, including rocks and naturally occurring sand & gravel, which have the potential to be used for a particular purpose (in this case as construction aggregates). **Reserves** are those parts of a resource which known to be suitable for this purpose (usually as a result of detailed ground investigations and laboratory testing) and **permitted reserves** are those reserves which have valid planning permission for the winning and working of the materials in question.
- B38. All of the maps are presented at the same scale (slightly larger than the scale used for North Wales in Appendix A). All of the quarry locations shown on the maps are detailed in Tables B3 to B5 later in this Appendix.
- B39. As noted in the main document, not all of the roads shown on the 'proximity' maps are necessarily used for the transportation of aggregates, and that additional local roads will also be utilised close to individual quarries, distribution depots or customer locations. Equally, some of the exported material is transported by rail, though the quantities involved are not large. Together, the areas of high population density and the main urban areas provide a good indication of where construction activity is most likely to be concentrated, but the locations of major transport routes have an additional important influence on export distribution.

#### Mid Wales

- B40. Maps showing the distribution of quarries, resources and other factors for Mid Wales are presented in Figures B1 to B4. This area comprises the northern part of the South Wales RAWP region, including the main part of Powys (north of the Brecon Beacons National Park), and Ceredigion. The northernmost part of Powys is excluded from these maps, though it can be seen on Figures A1 to A6 in Appendix A, and is largely irrelevant in terms of significant aggregate resources and production.
- B41. For this area, the two pairs of maps deal with HSA sandstone & igneous rock, and with land-won sand & gravel, respectively. Limestone resources are largely absent within mid Wales, though a small outcrop of Silurian limestones are worked alongside HSA sandstones at Strinds Quarry, close to the English border. Slate resources occur within the southernmost part of the Snowdonia National Park, and were formerly worked at the Aberllefenni Mine in Gwynedd, close to the Ceredigion border. They also occur in the north-eastern part of Pembrokeshire but those resources are considered separately in the South West Wales section, below.
- B42. Figures B1 and B2 deal with resources of **HSA sandstone and igneous rocks**. The term 'igneous rock' is used here, and in the maps, as shorthand for 'igneous and metamorphic rock', which in practice covers an extremely wide range of rock types, but all with similar suitability for use as general purpose hard rock aggregates. In some cases, (shown on the maps as 'HSA Dolerite'), the rocks are suitable for use as High Specification Aggregate (as defined in Chapter 4 of the main document).
- B43. In Powys, HSA is produced from three sandstone units (Dolyhir, Gore and Cribarth) and from two igneous quarries (Builth, in the centre of the County, and Criggion, close to the English border near Welshpool). All five of these units export aggregates to England and all of them exploit very localised geological outcrops which provide material that is capable of meeting HSA specifications. To varying degrees, similar material is likely to exist in adjoining parts of the same formations, but only within a few kilometres of the existing quarries. Other active sites within Powys cater only for local needs although one of these (Tan-y-Foel) has the potential, at least, for producing HSA sandstone. Overall, the scope

for significantly modifying the existing supply pattern of sandstone and igneous rock within central Powys, whilst still maintaining the overall level of output required, is therefore extremely limited. There would be potential benefits to be gained, in terms of proximity, by limiting future planning permissions to resource outcrops closest to the English border, although those areas (around Criggion, Gore and Dolyhir quarries) are seen to have low environmental capacity (in part, if not entirely, because of the existing quarries).

- B44. Three active sandstone quarries are located within Ceredigion and, although two of these (Alltgoch and Ystrad Meurig) have previously been recognised as HSA producers, all of them are believed to supply only to local markets.
- B45. Figures B3 and B4 deal with **land-based sand & gravel** production within Mid Wales. Powys has only a single active gravel pit, with very limited output. Other potential resources exist within areas of generally high to moderate environmental capacity, within central Powys, but these are mostly within the upper reaches of river valleys and are unlikely to offer much in the way of commercially viable opportunities - not least because of the widely dispersed population and hence limited local demand. Three active gravel pits are located within Ceredigion. Historical sales from this area, although higher than in almost all other parts of South Wales, are still very modest (see Table B1, above), reflecting the limited extent of ongoing development in this predominantly rural County. Here again there are additional potential resources available within areas of generally high environmental capacity, but nothing that would specifically enhance the sustainability of the existing supply pattern. For the future, there is a case for combining future apportionments in this area with those in Pembrokeshire and Carmarthenshire, in order to encourage a joint approach to reducing the contributions currently made by the Pembrokeshire National Park. This is considered further in the following section on South West Wales.

#### South West Wales

- B46. Figures B5 to B10 present three pairs of maps relating to South West Wales - i.e. most of the former Dyfed and West Glamorgan counties (Ceredigion, Pembrokeshire, Carmarthenshire, Swansea and Neath Port Talbot). The northernmost part of Ceredigion is excluded from these maps, though it can be seen on Figures B1 to B4, as described above. For this area, the three pairs of maps deal, respectively, with Carboniferous Limestone & slate resources, sandstone & igneous rock resources, and land-won sand & gravel.
- B47. **Carboniferous Limestone** resources, as shown on Figures B5 and B6, are present in the Pembrokeshire Coast National Park, Pembrokeshire, Swansea, Carmarthenshire and the Brecon Beacons National Park. The resources within Swansea are located on the Gower Peninsula and are almost entirely within the Gower AONB. Active limestone quarries exist only in Pembrokeshire and Carmarthenshire and appear to be reasonably well-placed (given the distribution of unconstrained resources) in terms of their proximity to the main centres of demand (i.e. the main urban areas). A number of inactive quarries are also present along the narrow limestone outcrop in Carmarthenshire, close to three currently active sites, suggesting that there may not be sufficient demand in that area, at present, to sustain more operational sites. Potentially (subject to more site-specific assessment), these and other locations within this area might provide opportunities for increasing future supply, if there were a significant increase in future demand, but they would offer no additional benefits in terms of proximity to markets and only limited (if any) benefits in terms of environmental capacity. They would therefore do very little to alter the overall sustainability of the existing supply pattern.
- B48. Figures B5 and B6 also illustrate the location of **slate** resources and quarries within SW Wales. The resources are almost entirely restricted to the Pembrokeshire Coast National Park and adjoining parts of Pembrokeshire, extending very slightly into the western edge of Carmarthenshire. All three of the slate quarries which remain active in this area, and just one active slate waste tip, are located just outside the National Park boundary but none of these are known to produce aggregates in any significant quantity. Options may exist for developing secondary aggregates from these sites but the commercial viability of doing so

would be far less than in North Wales, not least because of the lack of proximity to significant markets.

- B49. Figures B7 and B8 show the resources of both igneous rock and sandstone within SW Wales. **Igneous rocks** of various types (dolerite, quartz diorite and rhyolite) are currently exploited at only three sites in this area. Two of these (Bolton Hill in Pembrokeshire and Garn Wen in Carmarthenshire) are capable of producing HSA material, whilst the third (Rhyndaston, in the Pembrokeshire Coast National Park) produces roadstone with a slightly lower Polished Stone Value. None of them export to England and their output is likely to be used primarily within the SW Wales sub-Region. Bolton Hill is well-located with respect to the local market areas of South Pembrokeshire and Garn Wen is able to reach markets further north and west, including Carmarthen. Rhyndaston is less well-located in this respect and falls within the National Park, although the continuation of the same geological resource beyond the Park boundary here falls largely within an area of relatively high environmental capacity. This also applies to the continuation of the resources near Bolton Hill. Potential improvements to the overall sustainability of the supply pattern could therefore be generated by developing future resources close to these quarries but outside the National Park, and in areas of high environmental capacity, if and when new permissions are required.
- B50. **HSA sandstones** within SW Wales primarily comprise those of the westernmost part of the South Wales Coalfield (i.e. Pennant Sandstones). These are primarily exploited at three sites within the Neath Port Talbot area, two of which (Gilfach and Cwm Nant Lleici) are known to export to England, as well as supplying local markets. The third active unit here (Bwlch Ffos) is an opencast coal site, from which Pennant Sandstone is periodically generated as a 'windfall' by-product. Bwlch Fos has been known to export HSA to England, though perhaps not on a regular basis. Carboniferous sandstones are also quarried on a smaller scale at two sites in south east Carmarthenshire. A range of older (Silurian) sandstones occur, sporadically, in parts of northern Carmarthenshire and Ceredigion. These are worked at a small number of sites throughout the area, some of which are capable of producing HSA material, but in all cases the output from these sites is thought to serve only local markets within the sub-Region.
- B51. In terms of proximity and environmental capacity, the local sandstone quarries appear to be in sensible locations in relation to the dispersed markets which they serve. The Pennant Sandstone quarries are in the easternmost part of the sub-Region, as befits their important role in supplying material to England (as well as to South Wales) and the windfall site at Bwlch Ffos, whilst also meeting that requirement, is located primarily because of its suitability for opencast coal extraction.
- B52. The current (December 2010) landbank of crushed rock reserves within Neath Port Talbot is lower than in most unitary authorities within South Wales (see Table 3.7 in the main document), suggesting a need for new allocations to be found, if the existing pattern of supply is to be maintained. In practice, the issue has been resolved by the recent granting of a new permission to extend Gilfach Quarry, providing 8.4 million tonnes of additional permitted reserves. Part of the output from Gilfach (and potentially up to 30% in future years) is exported by train via the railhead at Neath Abbey. Nevertheless, for future reference, there might be merit in deliberately seeking to change the existing supply pattern by reducing future output from Neath Port Talbot and increasing that from other MPAs further east within the Pennant Sandstone outcrop (e.g. Rhondda Cynon Taf, Caerphilly, Torfaen or Blaenau Gwent), in order to reduce the road transportation distances of HSA material that is exported to England. It must be remembered, however, that proximity is only one aspect of sustainability which must be balanced against many other factors. For example, a high proportion of the resource outcrop within Neath Port Talbot coincides with areas of high environmental capacity whereas such areas are more limited further east. This is examined further at para. B67 in the section on South East Wales, below, and in Chapter 5 of the main document.
- B53. **Land-based sand & gravel** resources in South West Wales are illustrated in Figures B9 and B10. Other than the sites in Ceredigion, already referred to in the section on Mid-

Wales, there are only three other active sand & gravel pits within this area. Two of these (Pantgwyn and Trefigin) are located within important outcrops of glaciofluvial sediments within the Pembrokeshire Coast National Park, to the south west of Cardigan, and both have recently gained new reserves, following appeal, in recognition of the scarcity of permitted reserves elsewhere in this area. The third (Llwynjack) is a very small site which exploits river gravels near Llandoverly in Carmarthenshire. A fourth site which previously extracted sand from the dunes at Margam is now inactive. Other potential resources exist and, although many of those within river valleys, especially, fall within areas of low environmental capacity, others appear to be better placed in this respect. These include resource blocks close to Swansea, identified in the Symonds Group study, and extensive glaciofluvial deposits within the Teifi valley, around Llanybydder in Carmarthenshire. The fact that none of these are being exploited at present suggests that there is insufficient demand and/or commercial interest, not least because of the ready availability of marine dredged sand from the Bristol Channel. This almost certainly diminishes the commercial prospects for working resources in Swansea, Neath Port Talbot, and much if not all of Carmarthenshire.

- B54. In the interests of seeking a reduction of future quarrying within the Pembrokeshire Coast National Park, that MPA has already begun to work with Pembrokeshire County Council in developing a joint approach to future minerals provision and it would therefore be sensible to combine their future apportionments and allocations. Moreover, given the limited extent of resources within Pembrokeshire, outside the National Park, and in the interests of achieving the most sustainable balance of future supplies across all parts of west Wales, there would be merit in combining these requirements with those for Ceredigion and Carmarthenshire. These suggestions are therefore carried forward into the assessment of future apportionments in Chapter 5 of the main document.

#### South East Wales

- B55. Figures B11 to B16 present three pairs of maps relating to the various Unitary Authorities of South East Wales, together with the whole of the Brecon Beacons National Park in southern Powys, and overlapping with Carmarthenshire, Swansea and Neath Port Talbot from the SW Wales maps. For this area, the three sets of maps deal, respectively, with Carboniferous Limestone, HSA sandstone, and land-won sand & gravel. There are no slate or igneous rock resources in the area.
- B56. Figures B11 and B12 show the **Carboniferous Limestone** resources which, other than the outcrops in Carmarthenshire and the Gower Peninsula (already described under SW Wales), occur in three distinct areas: the **North Crop** (to the north of the South Wales coalfield); the **south crop** (to the south of the coalfield); and **Monmouthshire** (to the east). Each of these areas is considered separately, below.

#### **North Crop**

- B57. In this area, the limestones occur largely within the Brecon Beacons National Park and are currently (or have until recently been) worked at three main sites: Penderyn (within the National Park, in the northern part of Rhondda Cynon Taf); Vaynor (north of Merthyr Tydfil, on the boundary of the National Park) and Trefil (in Blaenau Gwent, outside the National Park). All of these sites are well-placed, in terms of proximity, to serve the densely populated valleys of the South Wales coalfield, with most of those areas being within 20 to 30km of one or more of the quarries. However, all of the quarries are located within areas of low environmental capacity and all but one of them (Trefil) are located either wholly or partly within the National Park, placing major constraints on any future expansion.
- B58. Trefil is also now constrained by a new geological SSSI designated on land previously allocated as a Preferred Area for future mineral development, adjacent to the quarry, but this represents the only location within the North Crop limestone resources where an existing permission could be extended without encroaching into the National Park.

- B59. At Vaynor, which is currently inactive, the adjoining resources outside the National Park are partially sterilised by other development and could not be developed as an extension of the existing quarry.
- B60. A fourth limestone quarry (Blaen Onneu), located within the National Park to the north-east of Trefil, is a stalled ROMP review, where permission has been suspended and where a new development consent would therefore be required before any quarrying could recommence. For this reason, the reserves at this site are excluded from the landbank calculations, though they are included within the separate tally of reserves at suspended and dormant sites in South Wales.
- B61. The existing crushed rock landbank within Blaenau Gwent (see Table 3.7 in the main document) was 17.9 years at the end of 2010 - insufficient to satisfy the total provision required to maintain the existing supply pattern for the 25 year period covered by the RTS. This contrasts with the situation in the Brecon Beacons National Park and Merthyr Tydfil, where the existing landbank (combined in Table 3.7 for reasons of confidentiality) is more than 114 years. Further allocations will therefore be required in Blaenau Gwent unless a different pattern of supply would offer greater sustainability. These will need to be more specific, in terms of tonnage, than the existing preferred area.

### **South Crop**

- B62. The second, and most important area of Carboniferous Limestone resource in SE Wales is that within the 'south crop', extending from Bridgend in the west, through the Vale of Glamorgan and Cardiff to Caerphilly in the east. No less than 12 active limestone quarries are located in this area, although two of these (Aberthaw and Pant) are largely or wholly dedicated to cement production, rather than aggregates, and another (Cornelly) supplies both industrial limestone, to the Steelworks at Port Talbot, as well as aggregates. Most of these units are located close to the M4 motorway and, together, they are able to supply the major local markets of Cardiff, Newport, Bridgend, Port Talbot as well as the southern part of the coalfield valleys. One additional quarry (Machen) is also able to supply by rail although this has primarily been for the supply of rail ballast, which no longer takes place, and the unit is currently inactive.
- B63. The concentration of quarries in this area is a direct reflection of the availability of both resources and communication links but is not perfectly matched with the overall pattern of demand within SE Wales, as indicated by population density and urban development. In particular, the areas of Newport, Torfaen, Blaenau Gwent and Caerphilly have higher population densities than those of the Vale of Glamorgan, Bridgend and RCT, but it is in the latter areas where most of the Carboniferous Limestone outcrops and quarries are located. Although most of the urban areas mentioned above are reasonably close to one or more of the active quarries, the areas within much of Newport and Torfaen are significantly further away.
- B64. Improving this situation, in terms of proximity, would require the reactivation of Machen quarry (in Caerphilly) to supply those areas, and/or new allocations to be identified in the eastern part of the outcrop, within Newport and/or Torfaen. However, although Newport and Torfaen do have Carboniferous Limestone resources, the outcrop in those areas is very thin and much of it is sterilised by existing built development. Most of the available resources there are also within areas where the environmental capacity is low, but that applies equally to most (though not all) of the south crop resources. The main areas with higher capacity within the south crop appear to be those in the southernmost part of Caerphilly, in the east, and around Cowbridge in the Vale of Glamorgan, further west. Of these options, increasing the output from Caerphilly, and eventually seeking new allocations there would help to reduce the transport impacts associated with supplying limestone aggregate to the Torfaen and Newport areas. Although the existing landbank of crushed rock reserves within Caerphilly is more than adequate to maintain the existing supply pattern for 25 years (see Table 3.7 in the main document), this covers two active HSA sandstone quarries as well as the two inactive limestone units (Machen and Cwmleyshon). Reactivating the larger of those units (Machen) would achieve the

suggested increase in output from Caerphilly, but that is entirely in the hands of the mineral operator. Depending on the likelihood or otherwise of Machen being reactivated in the near future, it *might* therefore become necessary to identify a further allocation for Carboniferous Limestone production within the southern part of Caerphilly, despite the size of the existing landbank. It is beyond the scope of the RTS to investigate the prospects for individual quarries so this will need to be a matter for the Mineral Planning Authority itself. These suggestions are all carried through to the analysis in Chapter 5 of the main document.

### Monmouthshire

- B65. The third area of Carboniferous Limestone resources in SE Wales is the extensive outcrop within southern Monmouthshire, the eastern part of which falls within the Wye Valley Area of Outstanding Natural Beauty. There are currently no active quarries in the whole of this area (Livox having closed in 2013) but there is one inactive quarry at Ifton which has significant unworked permitted reserves. Beyond that site, virtually the whole of the unworked resources fall within areas of low environmental capacity. Pressure for future quarry development here might be offset by the potential availability of supplies from Machen quarry in Caerphilly, to the west (though that unit is currently inactive), and from other quarries within the neighbouring Forest of Dean, in England. Imports from the Forest of Dean already take place but, in recognition of the proximity principle, it may be preferable for the site at Ifton to be reactivated. That, however, is entirely in the hands of the quarry operator.
- B66. Figures B13 and B14 show the distribution of **Pennant Sandstone** resources and quarries within South East Wales, in relation to the variations in population density, urban development, transport routes and environmental capacity. The resources in the western part of these maps have already been discussed under the section on SW Wales, above. In the remaining areas, Pennant Sandstone is quarried (primarily for HSA use) at two locations in Caerphilly (Hafod Fach and Bryn), one in Merthyr Tydfil (Gelligaer) and one in Rhondda Cynon Taf (Craig-yr-Hesg). All of these quarries are well-placed, within the overall resource outcrop, to supply both local markets within SE Wales and to export HSA to England. In the case of Hafod Fach, part of the output is exported by rail. The sales, both for local consumption and exports, include end-uses other than skid resistant road surfacing, though this is usually because it is often convenient and economical to use the same aggregate in some of the lower layers of road construction as that which is required for use in the surface course.
- B67. Pennant Sandstone resources are widespread within SE Wales and, as shown on Figure B14, these include areas of relatively high environmental capacity - particularly within Rhondda Cynon Taf, Caerphilly, and parts of Blaenau Gwent. Whilst these areas of higher or moderate capacity are less extensive than those within Neath Port Talbot (see para. B52, above), they may, nevertheless offer prospects for future resource development, as indeed may those of lower apparent capacity - particularly in the case of extensions to existing quarries. In terms of proximity to export markets, however, these areas offer greater benefits than those further west, particularly where there is access to rail transportation. This may be an important factor when considering the pattern of future allocations, subject to being balanced against other aspects of sustainability, though this is not required at present (see Chapter 5 of the main document).
- B68. Figures B15 and B16 illustrate the distribution of potential **sand & gravel resources**. There is currently no land-based sand & gravel extraction in the whole of SE Wales, and this has generally been the case for decades. This is due in part to the ready availability of marine dredged sand from both the Severn Estuary and the Bristol Channel, but also reflects the environmental sensitivity of many of the inland areas which might contain potentially suitable resources. The situation is compounded by the lack of detailed knowledge of those resources (not least because there has been virtually no history of extraction). Reconnaissance-level surveys were commissioned by the Welsh Assembly for the most promising areas, identified in terms of Quaternary geology and geomorphology (Thompson *et al.*, 2000), and were investigated further in a comparative environmental assessment of both marine and land-based resources (Thompson *et al.*, 2002). The first of

these studies identified a series of potential resource blocks, which are shown by the deep red shading on Figures B15 and B16. Most of these were identified within the Usk valley, both within and outside the Brecon Beacons National Park, but also in several other areas further west. However, almost all of the resource blocks fall within areas which have since been assessed as being of low environmental capacity. Thus, while ever the current policy of supporting marine aggregates dredging from sustainable sources remains in force, it seems unlikely that any land-based sand & gravel resources in this area will need to be developed.

### **Current Sources of Supply in South Wales**

B69. Tables B3 to B5, below, list the currently active, inactive and dormant or suspended aggregate quarries in South Wales (updated to August 2013). The lists exclude quarries devoted to the manufacture of cement, building stone, silica sand, shale or other non-aggregate products, although they include two quarries which supply both aggregates and industrial limestone.

**Table B3: Active Aggregate Quarries in South Wales (2013)**

Quarry Name	Operator	Commodity	Easting	Northing
<b>BLAENAU GWENT</b>				
Trefil	Gryphon Quarries Ltd	Limestone	311975	213690
<b>BRECON BEACONS NATIONAL PARK</b>				
Penderyn	Hanson Aggregates	Limestone	295500	209000
<b>BRIDGEND</b>				
Cornelly	Lafarge Tarmac	Limestone	283625	180160
Gaen's	T S Rees Ltd	Limestone	282380	180430
<b>CAERPHILLY</b>				
Bryn (HSA)	Bryn Quarry Ltd	Sandstone	312600	196400
Hafod Fach (HSA)	Lafarge Tarmac	Sandstone	322580	196500
<b>CARDIFF</b>				
Taff's Well	CEMEX UK	Limestone	312200	182200
Ton Mawr	T S Rees Ltd	Limestone	311560	182350
<b>CARMARTHENSHIRE</b>				
Blaen-y-Fan	CEMEX UK	Limestone	245640	211520
Coed Moelion	Mr Richards	Sandstone	250800	212400
Coygen	GD Harries & Sons Ltd	Limestone	228430	209210
Garn Wen	G D Harries & Sons Ltd	Igneous	216740	228680
Garnbica	Gower Plant	Limestone	251720	214610
Llwynjack	C J Lewis	Sand & Gravel	275400	233100
Pennant	Natural Welsh Stone	Sandstone	248225	206950
Torcoed	Lafarge Tarmac	Limestone	249000	213870
Ty Howel	Daniel L Williams	Sandstone	259847	244668
<b>CEREDIGION</b>				
Alltgoch / Bryn	G D Harries & Sons Ltd	Sandstone	249100	248500
Crug-yr-Eryr	R Powell	Sand & Gravel	242075	250310
Pant	Rob Cutter	Sand & Gravel	265825	256575
Penparc	Cardigan Sand & Gravel Co Ltd	Sand & Gravel	220000	248260
Tylau	W J Evans	Sandstone	258380	260590
Ystrad Meurig (HSA)	Hanson Aggregates	Sandstone	271810	269570
<b>MERTHYR TYDFIL</b>				
Gelligaer (HSA)	Hanson Aggregates	Sandstone	311550	199600

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<b>NEATH PORT TALBOT</b>				
Bwlch Ffos (HSA opencast)	Horizon Mining Ltd	Sandstone	286860	202391
Cwm Nant Lleici (HSA)	Bardon Aggregates - Southern	Sandstone	273175	207080
Gilfach (HSA)	CEMEX UK	Sandstone	275370	199880
<b>PEMBROKESHIRE COAST NATIONAL PARK</b>				
Carew	T Scourfield & Sons	Limestone	204900	204300
Pantgwyn	Cware Pantgwyn Quarry Ltd	Sand & Gravel	212400	242820
Trefigin	Cware Trefigin Quarries Ltd	Sand & Gravel	214000	243900
Rhyndaston	Mason Brothers Quarry Products Ltd	Igneous	189250	223625
<b>PEMBROKESHIRE</b>				
Bolton Hill	G D Harries & Sons Ltd	Igneous	191800	211400
Cefn	Dyffrig Davies	Slate	220500	242900
Cronllwyn	Cronllwyn Quarry	Slate Waste	198550	235195
Gellihalog	G D Harries & Sons Ltd	Limestone	215800	210700
Glogue	Mansel Davies & Son Ltd	Slate	221900	232840
Plascwrt	M Evans	Slate	211880	227400
<b>POWYS</b>				
Builth Wells (HSA)	Hanson Aggregates	Igneous	305105	252125
Caerfagu	Caerfagu Products	Sand & Gravel	304400	265350
Criggion (HSA)	Hanson Aggregates	Igneous	328900	314400
Dolyhir (HSA)	Lafarge Tarmac	Sandstone	324300	258425
Gore (HSA)	Lafarge Tarmac	Sandstone	325700	259250
Little-Wern-Willa	R Mills	Sandstone	321900	253500
Middletown	Border Hardcore & Rockery Stone Co Ltd	Igneous	329880	312850
Strinds	Lafarge Tarmac	Limestone	324200	257865
Strinds (HSA)	Lafarge Tarmac	Sandstone	324200	257865
Tan-y-Foel (HSA)	H V Bowen & Sons Ltd	Sandstone	301240	301460
Tredomen	A K Jones, Powys Plant Hire	Sandstone	311820	230400
<b>RHONDDA CYNON TAF</b>				
Craig-yr-Hesg (HSA)	Hanson Aggregates	Sandstone	307917	191726
Forest Wood	Hanson Aggregates	Limestone	301600	179650
Hendy	Lafarge Tarmac	Limestone	305340	181095
<b>VALE OF GLAMORGAN</b>				
Ewenny	Lafarge Tarmac	Limestone	290250	176805
Lithalun	Hanson Aggregates	Limestone	289560	176500
Longlands	Green Circle Aggregates Ltd	Limestone	292770	177220
Pantyffynnon Quarry	Seth Hill & Son Ltd	Limestone	304565	174000

**Table B4: Inactive Aggregate Quarries in South Wales (2013)**

Quarry Name	Operator	Commodity	Easting	Northing
<b>BRECON BEACONS NATIONAL PARK</b>				
Ammanford	Messrs Griffiths & Williams	Limestone	264910	217640
<b>BRIDGEND</b>				
Cefn Cribbwr	T S Rees Ltd	Sandstone	287400	182800
Grove	Lafarge Tarmac	Limestone	282249	179871
<b>CAERPHILLY</b>				
Cwmleyshon	Hanson Aggregates	Limestone	321000	186930
Machen	Hanson Aggregates	Limestone	322555	189000
<b>CARDIFF</b>				
Blaengwynlais	Lafarge Tarmac	Limestone	314610	184265
Cefn Garw	J R Bassett	Limestone	314000	183000
Creigiau	Lafarge Tarmac	Limestone	309000	181975
<b>CARMARTHENSHIRE</b>				
Alltygarn	Aggregate Industries Ltd	Silica Sandstone	258676	215794
Cilyrychen	Lafarge Tarmac	Limestone	225900	221500
Crwbin	Lafarge Tarmac	Limestone	247805	213360
Dinas (HSA)	Lafarge Tarmac	Sandstone	262740	235530
<b>MERTHYR TYDFIL</b>				
Vaynor	Hanson Aggregates	Limestone	303600	209900
<b>MONMOUTHSHIRE</b>				
Ifton	Hanson Aggregates	Limestone	346400	188770
<b>NEATH PORT TALBOT</b>				
Margam Sand Pit	Associated British Ports	Sand	275500	188500
<b>PEMBROKESHIRE COAST NATIONAL PARK</b>				
Bottom Meadow	E Morgan	Limestone	203750	205870
Syke	G D Harries & Sons Ltd	Sandstone	187120	210915
<b>POWYS</b>				
Cribarth (HSA)	Bardon Aggregates - Southern	Sandstone	295320	252550
Rhayader (HSA)	Lafarge Tarmac	Sandstone	297395	265875
<b>VALE OF GLAMORGAN</b>				
Garwa	Lafarge Tarmac	Limestone	297940	179840
Wenvoe	CEMEX UK	Limestone	313410	174000

**Table B5: Dormant or Suspended Aggregate Quarries in South Wales (2013)**

Quarry Name	Operator	Commodity	Easting	Northing
<b>BRECON BEACONS NATIONAL PARK</b>				
Blaen Onneu ( <i>suspended</i> )	Hanson Aggregates	Limestone	315480	216850
Llanfair	N Markham - David	Sandstone	320705	219975
<b>BRIDGEND</b>				
Stormy Down	Hobbs Holdings Ltd	Limestone	284185	180380
<b>CAERPHILLY</b>				
Caerllwyn	Mr & Mrs Thomas	Sandstone	318350	193700
Cefn Onn	Trustees of Wyndham Lewis Estate	Limestone	317400	185200
Darren Felin Farm	Unknown Operator	Sand & Gravel	318441	199348
Ochr Chwith	Hanson Aggregates	Limestone	323325	189810
<b>CARMARTHENSHIRE</b>				
Cerrig-yr-Wyn	J Mousley	Igneous	233610	216100
Glantowy	Mr A Lewis	Sand & Gravel	274745	232375
Limestone Hill	Dan Williams	Limestone	246670	212600
Llwyn-y-Fran	Hobbs Holdings Ltd	Limestone	257690	216032
Maesdulais	Hobbs Holdings Ltd	Limestone	251725	214520
Pen-y-banc	Mrs Antonia Jones-Davies	Limestone	247035	212960
Pwll-y-March	Gower Plant	Limestone	259475	216380
Ty'r Garn	Mr Gareth Morgan	Limestone	250245	214170
<b>PEMBROKESHIRE COAST NATIONAL PARK</b>				
Penberry	Messrs Jamiesons	Igneous	176940	229220
<b>PEMBROKESHIRE</b>				
Gilfach	G Davies	Slate	212765	226995
Treffgarne	G D Harries & Sons Ltd	Igneous	195875	223965
<b>POWYS</b>				
Garreg	Hanson Aggregates	Igneous	328760	311935
<b>VALE OF GLAMORGAN</b>				
Argoed Isha	Mr Rosser	Limestone	299250	179050
Beupre	Unknown Operator	Limestone	300560	173210
Cnap Twt	Duchy of Lancaster & others	Limestone	291055	175350
Ruthin	Lafarge Tarmac	Limestone	297390	179220
St Andrews	Mr T Bowles	Limestone	314350	171340

B70. Whilst any of the sites listed in these tables may be able to contribute to future supply (subject to the suspended and dormant sites obtaining new development consents through the ROMP process<sup>4</sup>), it is only the active and remaining inactive sites which contributed to the reserves figures presented in Table 3.7 of the main document. Reserves at dormant sites are noted separately in Table 3.8 of that document. The active sites and some of the currently inactive ones, together with a small number of other sites which have since closed, contributed to the historical sales over the baseline period (2001 to 2010).

B71. Full lists of active, inactive and dormant sites for individual years prior to 2013 are given in the relevant annual RAWP reports.

<sup>4</sup> ROMP is the acronym for the Review of Old Mineral Permissions, under the Environment Act 1995. Further details are given in the Glossary at the end of the main report.

### ***Apportionments, Allocations and Guidance to MPAs in South Wales***

- B72. The following pages set out the recommendations and guidance for each individual MPA in South Wales, drawing upon the figures calculated in Chapter 5 of the main document. The MPAs are dealt with in alphabetical order.
- B73. In each case, reference to the 'Plan period' relates to the end date of the Local Development Plan which has been adopted, or is in preparation (whichever is later) for that particular planning authority.
- B74. It should also be noted that the annualised apportionments given for each authority are provided only for the purpose of guiding the total apportionments required over the duration of that particular authority's LDP.
- B75. In all cases, the recommendations are based on currently available information regarding reserves, production, proximity and environmental capacity. As noted in 'Box 1' of the original RTS documents, the suggested apportionments and allocations do not take fully into account all factors that may be material to the ensuring an adequate supply of aggregates obtained from appropriately located sources. Such factors may include such things as:
- The technical capability of one type of aggregate to interchange for another;
  - The relative environmental cost of substitution of one type of aggregate by another;
  - The relative environmental effects of changing patterns of supply; and
  - Whether adequate production capacity can be maintained to meet the required level of supply.
- B76. For such reasons, and as already noted in Chapter 1 of the main document, where it is justified by new evidence, it is open for individual MPAs to depart from the apportionment and allocation figures recommended by the RTS. In doing so, however, an MPA would need to demonstrate that their intended departure would not undermine the overall strategy provided by the RTS itself (e.g. by working together with other MPAs to ensure that sub-regional and regional totals are still achieved) and this would be likely to become a key issue at Examination and/or Public Inquiry. Where the local authorities involved are unable to reach agreement, or if individual local authorities do not accept the Regional Technical Statement, the Welsh Government will consider its default powers to intervene in the planning process, as a last resort (MTAN 1, paragraph A3).

## BLAENAU GWENT

### **Apportionment for the future provision of land-won primary aggregates**

The planning authority is required to make future provision for land-won primary aggregates within its Local Development Plan on the basis of the following annualised apportionments:

- Land-won sand & gravel provision: Nil
- Crushed rock aggregates provision: **0.17 million tonnes per year** until the end of the Plan period and for 10 years thereafter.

These figures are based on the assumption that average annual demand for land-won primary aggregates within the area, over the period to 2036, will be comparable to the average annual sales over the baseline period used in the First Review of the RTS (i.e. 2001 to 2010).

They are also based on the assumption that supplies of alternative aggregates, from marine, secondary and recycled sources, will continue to be maintained in proportions comparable to those experienced during the baseline period.

The accuracy of these assumptions will continue to need to be monitored by the planning authority, using information from various data sources and new surveys (e.g. by NRW, WG etc.) and that data will be used to inform a revision of the apportionment requirements, if this is needed, as part of the next review of the RTS.

It should be emphasised that the annualised apportionments noted above are given only as a guide to the calculation of the total apportionment required over the duration of the LDP. In practice, sales will vary from year to year and there is no requirement for the authority to maintain or limit these in line with either the annualised apportionment or the historical sales averages.

The need for provision to extend beyond the Plan period is based on the requirement in MTAN1 for maintaining landbanks of 7 years for sand & gravel and 10 years for crushed rock, throughout the full duration of the LDP. Subject to this requirement being met, the overall provision at any given time may comprise both landbanks of permitted reserves and allocations for future working, where these are required (see below).

### **Comparison with existing landbanks**

The total apportionments for Blaenau Gwent, as calculated in Table 5.1 of the main document, over the 25-year horizon covered by the First Review of the RTS are zero for land-won sand & gravel and 4.25 million tonnes for crushed rock. These compare with existing landbanks of zero for sand & gravel and 3 million tonnes for crushed rock (as at 31<sup>st</sup> December 2010).

### **Allocations required to be identified in the Local Development Plan**

In order to address the resulting crushed rock shortfall, new allocations totalling at least 1.25 million tonnes will need to be identified within the LDP. The main requirement (as in the original RTS) is to supplement the existing reserves of Carboniferous Limestone, and a Preferred Area for this has already been identified within the recently adopted LDP (November 2012). The area also has substantial resources of HSA sandstone, however, the future exploitation of which would be beneficial in terms of helping to shift the overall pattern of sandstone production further east, towards the principal markets in England. Again, a preferred area for this is identified within the LDP, along with part of a former opencast site where HSA sandstone might be able to be recovered from former overburden and waste materials.

Consideration should also be given to whether any of the factors set out in paragraph B75 above give rise to any further requirements for resource allocations.

As far as possible, any allocations should be identified as Specific Sites or, failing that, as Preferred Areas. If, as a last resort, it is only possible to identify broad Areas of Search, these should be sufficient to offer the potential of much greater quantities of reserves, in order to reflect the uncertainties involved.

Alternatively, the planning authority may wish to explore collaborative working with one or more adjoining authorities which have a surplus of crushed rock reserves, as indicated in Table 5.3 of RTS 2.

This option should only be pursued, however, where the sites that make up the proposed shared landbank offer advantages, in terms of the proximity principle, environmental capacity and other sustainability criteria, compared with the option of developing new allocations within Blaenau Gwent itself. Any shared landbank agreements should be made in writing with the consent of all parties.

In practice, the options here are very limited in terms of the main requirement for Carboniferous Limestone: although surplus reserves of limestone exist within the Brecon Beacons National Park, Merthyr Tydfil, Caerphilly and Monmouthshire, in all cases these are at sites which are currently inactive and/or within or immediately adjacent to the National Park.

### **Use of alternative aggregates**

In the absence of any significant known land-based sand & gravel resources, Blaenau Gwent relies upon supplies of marine-dredged sand, imported via three wharves in Newport.

Secondary aggregates in the form of overburden material from former opencast coal workings may be available for use as general fill and, in part, as a substitute for primary High Specification Aggregate. The main source, at Tir Pentwys, straddles the border with neighbouring Torfaen and has been identified as a Preferred Area within both LDPs. The exploitation of the material within Blaenau Gwent, however, is dependent on access through Torfaen, part of which is the subject of a current planning application; a decision on which will effectively determine the future of this resource.

There is also likely to be continued recycled aggregate production within the area from construction, demolition and excavation wastes.

The residual requirements for primary land-won aggregates assume that all of these alternative materials will continue to be utilised and the authority should continue to encourage this.

### **Safeguarding of primary aggregate resources**

Relevant resources of both crushed rock aggregates and land-based sand & gravel have been safeguarded within the LDP, in accordance with detailed advice based on the use of British Geological Survey mapping, prior to the publication of the BGS safeguarding maps.

### **Safeguarding of wharves and railheads**

All existing and potential new railheads should be identified for safeguarding within the LDP, in order to provide a full range of sustainable transport options (whether or not they are currently utilised).

## BRIDGEND

### **Apportionment for the future provision of land-won primary aggregates**

The planning authority is required to make future provision for land-won primary aggregates within its Local Development Plan on the basis of the following annualised apportionments:

- Land-won sand & gravel provision: **Nil**
- Crushed rock aggregates provision: **0.75 million tonnes per year** until the end of the Plan period and for 10 years thereafter.

These figures are based on the assumption that average annual demand for land-won primary aggregates within the area, over the period to 2036, will be comparable to the average annual sales over the baseline period used in the First Review of the RTS (i.e. 2001 to 2010).

They are also based on the assumption that supplies of alternative aggregates, from marine, secondary and recycled sources, will continue to be maintained in proportions comparable to those experienced during the baseline period.

The figures exclude the provision of limestone for non-aggregate use (primarily for use in the steel industry within neighbouring Neath Port Talbot), for which separate consideration will need to be given in the LDP.

The accuracy of these assumptions will continue to need to be monitored by the planning authority, using information from various data sources and new surveys (e.g. by NRW, WG etc.) and that data will be used to inform a revision of the apportionment requirements, if this is needed, as part of the next review of the RTS.

It should be emphasised that the annualised apportionments noted above are given only as a guide to the calculation of the total apportionment required over the duration of the LDP. In practice, sales will vary from year to year and there is no requirement for the authority to maintain or limit these in line with either the annualised apportionment or the historical sales averages.

The need for provision to extend beyond the Plan period is based on the requirement in MTAN1 for maintaining landbanks of 7 years for sand & gravel and 10 years for crushed rock, throughout the full duration of the LDP. Subject to this requirement being met, the overall provision at any given time may comprise both landbanks of permitted reserves and allocations for future working, where these are required (see below).

### **Comparison with existing landbanks**

The total apportionments for Bridgend, as calculated in Table 5.1 of the main document, over the 25-year horizon covered by the First Review of the RTS are zero for land-won sand & gravel and 18.75 million tonnes for crushed rock. These compare with existing landbanks (excluding dormant sites) of zero for sand & gravel and 47 million tonnes for crushed rock (as at 31<sup>st</sup> December 2010). These figures exclude limestone reserves which are allocated for non-aggregate use.

### **Allocations required to be identified in the Local Development Plan**

In view of the surplus of existing permitted reserves, no further allocations for future working are required to be identified within the LDP. However, consideration should be given to whether any of the factors set out in paragraph B75 above give rise to any other requirements for resource allocations.

As far as possible, any allocations should be identified as Specific Sites or, failing that, as Preferred Areas. If, as a last resort, it is only possible to identify broad Areas of Search,

these should be sufficient to offer the potential of much greater quantities of reserves, in order to reflect the uncertainties involved.

#### **Treatment of Dormant sites**

One dormant limestone quarry exists within Bridgend, as detailed in Table B5, above. The planning authority should assess the likelihood of this quarry being worked within the Plan period, subject to the completion of an initial review of planning conditions and submission of an Environmental Impact Assessment. If there is a likelihood of reactivation, and if the quarry is considered by the authority to conform to the definition of 'Specific Sites', as set out in paragraph 14 of Minerals Planning Policy Wales, it may be offset against any requirements that may otherwise be identified for allocations for future working.

#### **Use of alternative aggregates**

Bridgend is currently reliant, for supplies of sand, on marine-dredged material imported via wharves in neighbouring Neath Port Talbot (and perhaps Cardiff). This is despite the existence of limited potential land-based resources within its area, as indicated on BGS resource maps and in reconnaissance-level mapping carried out for the Welsh Government by Symonds Group Ltd. in 2000.

There are no secondary aggregate sources of any significance within Bridgend, although steel/blast furnace slag is undoubtedly delivered by road and/or by sea from Neath-Port Talbot.

In addition, construction, demolition and excavation wastes are generated and recycled at a number of points within the area.

The residual requirements for primary land-won aggregates assume that all of these alternative materials will continue to be utilised and the authority should continue to encourage this.

#### **Safeguarding of primary aggregate resources**

Resources of both crushed rock aggregates and land-based sand & gravel should be safeguarded within the LDP in accordance with the British Geological Survey's safeguarding maps, or such other geological information as may be available and suitable for this purpose.

#### **Safeguarding of wharves and railheads**

All existing and potential new railheads should be identified for safeguarding within the LDP, in order to provide a full range of sustainable transport options (whether or not they are currently utilised).

## CAERPHILLY

### **Apportionment for the future provision of land-won primary aggregates**

The planning authority is required to make future provision for land-won primary aggregates within its Local Development Plan on the basis of the following annualised apportionments:

- |   |
|---|
| <ul style="list-style-type: none"> <li>○ <u>Land-won sand &amp; gravel provision:</u> Nil</li> <li>○ <u>Crushed rock aggregates provision:</u> <b>0.76 million tonnes per year</b> until the end of the Plan period and for 10 years thereafter.</li> </ul> |
|---|

These figures are based on the assumption that average annual demand for land-won primary aggregates within the area, over the period to 2036, will be comparable to the average annual sales over the baseline period used in the First Review of the RTS (i.e. 2001 to 2010).

They are also based on the assumption that supplies of alternative aggregates, from marine, secondary and recycled sources, will continue to be maintained in proportions comparable to those experienced during the baseline period.

The accuracy of these assumptions will continue to need to be monitored by the planning authority, using information from various data sources and new surveys (e.g. by NRW, WG etc.) and that data will be used to inform a revision of the apportionment requirements, if this is needed, as part of the next review of the RTS.

It should be emphasised that the annualised apportionments noted above are given only as a guide to the calculation of the total apportionment required over the duration of the LDP. In practice, sales will vary from year to year and there is no requirement for the authority to maintain or limit these in line with either the annualised apportionment or the historical sales averages.

The need for provision to extend beyond the Plan period is based on the requirement in MTAN1 for maintaining landbanks of 7 years for sand & gravel and 10 years for crushed rock, throughout the full duration of the LDP. Subject to this requirement being met, the overall provision at any given time may comprise both landbanks of permitted reserves and allocations for future working, where these are required (see below).

### **Comparison with existing landbanks**

The total apportionments for Caerphilly, as calculated in Table 5.1 of the main document, over the 25-year horizon covered by the First Review of the RTS are zero for land-won sand & gravel and **19** million tonnes for crushed rock. These compare with existing landbanks (excluding dormant sites) of zero for sand & gravel and **27.8** million tonnes for crushed rock (as at 31<sup>st</sup> December 2010).

### **Allocations required to be identified in the Local Development Plan**

In view of the surplus of existing permitted reserves, and provided that the currently inactive site at Machen is reactivated as and when this is justified by rising demand, no further allocations for future working are required to be identified within the LDP.

However, if Machen remains inactive, despite growing demand, consideration may need to be given to the allocation of additional reserves elsewhere, as discussed in paragraph B64, above.

Consideration should also be given to whether any of the other factors set out in paragraph B75 above give rise to any other requirements for resource allocations.

As far as possible, any allocations should be identified as Specific Sites or, failing that, as Preferred Areas. If, as a last resort, it is only possible to identify broad Areas of Search,

these should be sufficient to offer the potential of much greater quantities of reserves, in order to reflect the uncertainties involved.

#### **Treatment of Dormant sites**

A total of four dormant quarries exist within Caerphilly, as detailed in Table B5, above. The planning authority should assess the likelihood of each of these sites being worked within the Plan period, subject to the completion of an initial review of planning conditions and submission of an Environmental Impact Assessment. Where there is a likelihood of reactivation, and where the site(s) in question are considered by the authority to conform to the definition of 'Specific Sites', as set out in paragraph 14 of Minerals Planning Policy Wales, they may be offset against any requirements that may otherwise be identified for allocations for future working.

#### **Use of alternative aggregates**

In the absence of any current land-based sand & gravel pits within Caerphilly or adjoining areas (despite the existence of potential land-based resources, as indicated on BGS resource maps), supplies of sand from marine-dredged sources are imported via the wharves in Newport and/or Cardiff. All of Caerphilly lies within 30 to 40 km of those wharves.

Substantial quantities of colliery spoil are understood to exist above Bedwas, Machen, and Llanbradach, but these are generally remote from transport links and therefore difficult to utilise effectively. Moreover, as noted in the original RTS, previous efforts to obtain planning permission for the removal of tips in Machen have been refused.

Recycled aggregates from construction, demolition and excavation wastes are likely to be available within most of the major towns within the borough.

The residual requirements for primary land-won aggregates assume that all of these alternative materials will continue to be utilised and the authority should continue to encourage this.

#### **Safeguarding of primary aggregate resources**

Resources of both crushed rock aggregates and land-based sand & gravel should be safeguarded within the LDP in accordance with the British Geological Survey's safeguarding maps, or such other geological information as may be available and suitable for this purpose.

#### **Safeguarding of wharves and railheads**

All existing and potential new railheads should be identified for safeguarding within the LDP, in order to provide a full range of sustainable transport options (whether or not they are currently utilised).

## CARDIFF

### **Apportionment for the future provision of land-won primary aggregates**

The planning authority is required to make future provision for land-won primary aggregates within its Local Development Plan on the basis of the following annualised apportionments:

- Land-won sand & gravel provision: Nil
- Crushed rock aggregates provision: **0.86 million tonnes per year** until the end of the Plan period and for 10 years thereafter.

These figures are based on the assumption that average annual demand for land-won primary aggregates within the area, over the period to 2036, will be comparable to the average annual sales over the baseline period used in the First Review of the RTS (i.e. 2001 to 2010).

They are also based on the assumption that supplies of alternative aggregates, from marine, secondary and recycled sources, will continue to be maintained in proportions comparable to those experienced during the baseline period.

The accuracy of these assumptions will continue to need to be monitored by the planning authority, using information from various data sources and new surveys (e.g. by NRW, WG etc.) and that data will be used to inform a revision of the apportionment requirements, if this is needed, as part of the next review of the RTS.

It should be emphasised that the annualised apportionments noted above are given only as a guide to the calculation of the total apportionment required over the duration of the LDP. In practice, sales will vary from year to year and there is no requirement for the authority to maintain or limit these in line with either the annualised apportionment or the historical sales averages.

The need for provision to extend beyond the Plan period is based on the requirement in MTAN1 for maintaining landbanks of 7 years for sand & gravel and 10 years for crushed rock, throughout the full duration of the LDP. Subject to this requirement being met, the overall provision at any given time may comprise both landbanks of permitted reserves and allocations for future working, where these are required (see below).

### **Comparison with existing landbanks**

The total apportionments for Cardiff, as calculated in Table 5.1 of the main document, over the 25-year horizon covered by the First Review of the RTS are zero for land-won sand & gravel and 21.5 million tonnes for crushed rock. These compare with existing landbanks of zero for sand & gravel and 41 million tonnes for crushed rock (as at 31<sup>st</sup> December 2010).

### **Allocations required to be identified in the Local Development Plan**

In view of the surplus of existing permitted reserves, no further allocations for future working are required to be identified within the LDP. However, consideration should be given to whether any of the factors set out in paragraph B75 above give rise to any other requirements for resource allocations.

As far as possible, any allocations should be identified as Specific Sites or, failing that, as Preferred Areas. If, as a last resort, it is only possible to identify broad Areas of Search, these should be sufficient to offer the potential of much greater quantities of reserves, in order to reflect the uncertainties involved.

### **Use of alternative aggregates**

Cardiff is reliant for its sand on marine-dredged aggregates from the Bristol Channel, imported via two wharves within Cardiff docks. Although potential land-based resources are indicated within its area, on BGS resource maps, most of these are sterilised by existing built development.

Some secondary aggregates are available, including steel slag from the electric arc furnace steelworks in Cardiff, but most arisings are fully utilised with relatively small stockpiles.

Construction, demolition and excavation wastes suitable for recycling as aggregate materials are likely to be extensive, amounting to a considerable proportion of the regional total.

The residual requirements for primary land-won aggregates assume that all of these alternative materials will continue to be utilised and the authority should continue to encourage this.

### **Safeguarding of primary aggregate resources**

Resources of both crushed rock aggregates and land-based sand & gravel should be safeguarded within the LDP in accordance with the British Geological Survey's safeguarding maps, or such other geological information as may be available and suitable for this purpose.

### **Safeguarding of wharves and railheads**

All existing and potential new wharves and railheads should be identified for safeguarding within the LDP, in order to provide a full range of sustainable transport options (whether or not they are currently utilised).

## CARMARTHENSHIRE

### **Apportionment for the future provision of land-won primary aggregates**

The planning authority is required to make future provision for land-won primary aggregates within its Local Development Plan on the basis of the following annualised apportionments:

- Land-won sand & gravel provision: **0.33 million tonnes per year** (jointly with Ceredigion, Pembrokeshire and the Pembrokeshire Coast National Park) until the end of the Plan period and for 7 years thereafter.
- Crushed rock aggregates provision: **1.07 million tonnes per year** until the end of the Plan period and for 10 years thereafter.

These figures are based on the assumption that average annual demand for land-won primary aggregates within the area, over the period to 2036, will be comparable to the average annual sales over the baseline period used in the First Review of the RTS (i.e. 2001 to 2010).

They are also based on the assumption that supplies of alternative aggregates, from marine, secondary and recycled sources, will continue to be maintained in proportions comparable to those experienced during the baseline period.

The accuracy of these assumptions will continue to need to be monitored by the planning authority, using information from various data sources and new surveys (e.g. by NRW, WG etc.) and that data will be used to inform a revision of the apportionment requirements, if this is needed, as part of the next review of the RTS.

It should be emphasised that the annualised apportionments noted above are given only as a guide to the calculation of the total apportionment required over the duration of the LDP. In practice, sales will vary from year to year and there is no requirement for the authority to maintain or limit these in line with either the annualised apportionment or the historical sales averages.

The need for provision to extend beyond the Plan period is based on the requirement in MTAN1 for maintaining landbanks of 7 years for sand & gravel and 10 years for crushed rock, throughout the full duration of the LDP. Subject to this requirement being met, the overall provision at any given time may comprise both landbanks of permitted reserves and allocations for future working, where these are required (see below).

### **Comparison with existing landbanks**

The total apportionments for Carmarthenshire, as calculated in Table 5.1 of the main document, over the 25-year horizon covered by the First Review of the RTS are 7.26 million tonnes for land-won sand & gravel (shared with Ceredigion, Pembrokeshire and the Pembrokeshire Coast National Park) and 26.75 million tonnes for crushed rock (for Carmarthenshire alone). These figures compare with existing landbanks (excluding dormant sites) of 4.32 million tonnes for sand & gravel (between the four authorities) and 47 million tonnes for crushed rock (as at 31<sup>st</sup> December 2010).

### **Allocations required to be identified in the Local Development Plan**

To address the resulting sand & gravel shortfall, new allocations totalling at least 2.94 million tonnes will need to be identified within the LDPs of one or more of the four authorities over which the apportionment is shared. Paragraph 49 of MTAN 1 notes that landbanks are not required to be maintained within National Parks or Areas of Outstanding Natural Beauty. For this reason, allocations will not be required within the National Park unless no environmentally acceptable alternatives can be found within Pembrokeshire, Ceredigion or Carmarthenshire.

In view of the surplus of existing permitted crushed rock reserves, no further allocations for crushed rock are required to be identified within the LDP. However, consideration should also be given to whether any of the factors set out in paragraph B75 above give rise to any other requirements for resource allocations.

As far as possible, any allocations should be identified as Specific Sites or, failing that, as Preferred Areas. If, as a last resort, it is only possible to identify broad Areas of Search, these should be sufficient to offer the potential of much greater quantities of reserves, in order to reflect the uncertainties involved. As noted in the main document, it may sometimes be better (in terms of deliverability) to rely on specific sites in neighbouring authorities (additional to the MPAs' own requirements), where these have been agreed through collaborative working, in preference to relying upon highly uncertain Areas of Search.

#### **Treatment of Dormant sites**

A total of eight dormant quarries exist within Carmarthenshire, as detailed in Table B5, above. The planning authority should assess the likelihood of each of these sites being worked within the Plan period, subject to the completion of an initial review of planning conditions and submission of an Environmental Impact Assessment. Where there is a likelihood of reactivation, and where the site(s) in question are considered by the authority to conform to the definition of 'Specific Sites', as set out in paragraph 14 of Minerals Planning Policy Wales, they may be offset against any requirements that may otherwise be identified for allocations for future working.

#### **Use of alternative aggregates**

Carmarthenshire is currently reliant upon supplies of sand from marine-dredged sources in the outer Bristol Channel, imported via Burry Port. This is despite the existence of potential land-based resources within its area, as indicated on BGS resource maps.

There are no known sources of secondary aggregates within the County.

Recycled aggregates are likely to be minimal over most of the County, and widely dispersed, although greater concentrations are likely to arise in the south east of the county, coincident with the redevelopment of former industrial areas.

The residual requirements for primary land-won aggregates assume that all of these alternative materials will continue to be utilised and the authority should continue to encourage this.

#### **Safeguarding of primary aggregate resources**

Resources of both crushed rock aggregates and land-based sand & gravel should be safeguarded within the LDP in accordance with the British Geological Survey's safeguarding maps, or such other geological information as may be available and suitable for this purpose.

#### **Safeguarding of wharves and railheads**

All existing and potential new wharves and railheads should be identified for safeguarding within the LDP, in order to provide a full range of sustainable transport options (whether or not they are currently utilised).

## CEREDIGION

### **Apportionment for the future provision of land-won primary aggregates**

The planning authority is required to make future provision for land-won primary aggregates within its Local Development Plan on the basis of the following annualised apportionments:

- Land-won sand & gravel provision: **0.33 million tonnes per year** (jointly with Carmarthenshire, Pembrokeshire and the Pembrokeshire Coast National Park) until the end of the Plan period and for 7 years thereafter.
- Crushed rock aggregates provision: **0.2 million tonnes per year** until the end of the Plan period and for 10 years thereafter.

These figures are based on the assumption that average annual demand for land-won primary aggregates within the area, over the period to 2036, will be comparable to the average annual sales over the baseline period used in the First Review of the RTS (i.e. 2001 to 2010).

They are also based on the assumption that supplies of alternative aggregates, from marine, secondary and recycled sources, will continue to be maintained in proportions comparable to those experienced during the baseline period.

The accuracy of these assumptions will continue to need to be monitored by the planning authority, using information from various data sources and new surveys (e.g. by NRW, WG etc.) and that data will be used to inform a revision of the apportionment requirements, if this is needed, as part of the next review of the RTS.

It should be emphasised that the annualised apportionments noted above are given only as a guide to the calculation of the total apportionment required over the duration of the LDP. In practice, sales will vary from year to year and there is no requirement for the authority to maintain or limit these in line with either the annualised apportionment or the historical sales averages.

The need for provision to extend beyond the Plan period is based on the requirement in MTAN1 for maintaining landbanks of 7 years for sand & gravel and 10 years for crushed rock, throughout the full duration of the LDP. Subject to this requirement being met, the overall provision at any given time may comprise both landbanks of permitted reserves and allocations for future working, where these are required (see below).

### **Comparison with existing landbanks**

The total apportionments for Ceredigion, as calculated in Table 5.1 of the main document, over the 25-year horizon covered by the First Review of the RTS are 7.26 million tonnes for land-won sand & gravel (shared with Carmarthenshire, Pembrokeshire and the Pembrokeshire Coast National Park) and 5 million tonnes for crushed rock (for Ceredigion alone). These figures compare with existing landbanks of 4.32 million tonnes for sand & gravel<sup>5</sup> (between the four authorities) and 13 million tonnes for crushed rock (as at 31<sup>st</sup> December 2010).

### **Allocations required to be identified in the Local Development Plan**

To address the resulting sand & gravel shortfall, new allocations totalling at least 2.94 million tonnes will need to be identified within the LDPs of one or more of the four authorities over which the apportionment is shared. Paragraph 49 of MTAN 1 notes that landbanks are not required to be maintained within National Parks or Areas of Outstanding Natural Beauty. For this reason, allocations will not be required within the

<sup>5</sup> The Land-based sand & gravel reserves for Ceredigion include the new permission at Crug yr Eyr, even though this was granted after December 2010.

National Park unless no environmentally acceptable alternatives can be found within Pembrokeshire, Ceredigion or Carmarthenshire.

In view of the surplus of existing permitted crushed rock reserves, no further allocations for crushed rock are required to be identified within the LDP. However, consideration should also be given to whether any of the factors set out in paragraph B75 above give rise to any other requirements for resource allocations.

As far as possible, any allocations should be identified as Specific Sites or, failing that, as Preferred Areas. If, as a last resort, it is only possible to identify broad Areas of Search, these should be sufficient to offer the potential of much greater quantities of reserves, in order to reflect the uncertainties involved. As noted in the main document, it may sometimes be better (in terms of deliverability) to rely on specific sites in neighbouring authorities (additional to the MPAs' own requirements), where these have been agreed through collaborative working, in preference to relying upon highly uncertain Areas of Search.

#### **Use of alternative aggregates**

As noted in the original RTS, Ceredigion is beyond the notional haulage limit for marine-dredged aggregate from the Bristol Channel. Although there had been some indications that southern Cardigan Bay could provide marine sand and gravel in future years, there has been no further development of this, not least because of the high costs of infrastructure associated with setting this up as a new source of supply.

There are no sources of secondary aggregate within the area and recycled aggregate sources are both minimal and widely dispersed.

#### **Safeguarding of primary aggregate resources**

Resources of both crushed rock aggregates and land-based sand & gravel should be safeguarded within the LDP in accordance with the British Geological Survey's safeguarding maps, or such other geological information as may be available and suitable for this purpose.

#### **Safeguarding of wharves and railheads**

Ceredigion has no operational wharves but has a number of small working harbours. These, together with all existing railheads should be identified for safeguarding within the LDP, in order to provide a full range of sustainable transport options (whether or not they are currently utilised).

## MERTHYR TYDFIL /BRECON BEACONS NATIONAL PARK

### **Apportionment for the future provision of land-won primary aggregates**

Jointly, the two planning authorities are required to make future provision for land-won primary aggregates within their Local Development Plans on the basis of the following annualised apportionments:

- Land-won sand & gravel provision: **Nil**
- Crushed rock aggregates provision: **0.82 million tonnes per year** until the end of the Plan period and for 10 years thereafter.

These figures are based on the assumption that average annual demand for land-won primary aggregates within the area, over the period to 2036, will be comparable to the average annual sales over the baseline period used in the First Review of the RTS (i.e. 2001 to 2010).

They are also based on the assumption that supplies of alternative aggregates, from marine, secondary and recycled sources, will continue to be maintained in proportions comparable to those experienced during the baseline period.

The figures exclude the provision of limestone for non-aggregate use, for which separate consideration may need to be given in the LDPs.

The accuracy of these assumptions will continue to need to be monitored by the planning authority, using information from various data sources and new surveys (e.g. by NRW, WG etc.) and that data will be used to inform a revision of the apportionment requirements, if this is needed, as part of the next review of the RTS.

It should be emphasised that the annualised apportionments noted above are given only as a guide to the calculation of the total apportionment required over the duration of the LDP. In practice, sales will vary from year to year and there is no requirement for the authority to maintain or limit these in line with either the annualised apportionment or the historical sales averages.

The need for provision to extend beyond the Plan period is based on the requirement in MTAN1 for maintaining landbanks of 7 years for sand & gravel and 10 years for crushed rock, throughout the full duration of each LDP. Subject to this requirement being met, the overall provision at any given time may comprise both landbanks of permitted reserves and allocations for future working, where these are required (see below).

### **Comparison with existing landbanks**

The total apportionments for Merthyr Tydfil and the Brecon Beacons National Park (combined), as calculated in Table 5.1 of the main document, over the 25-year horizon covered by the First Review of the RTS are zero for land-won sand & gravel and 20.5 million tonnes for crushed rock. These compare with existing landbanks (excluding dormant sites and one suspended site) of zero for sand & gravel and 94 million tonnes for crushed rock (as at 31<sup>st</sup> December 2010). These figures exclude any limestone reserves which are allocated for non-aggregate use.

### **Allocations required to be identified in the Local Development Plans**

In view of the surplus of existing permitted crushed rock reserves, no further allocations for crushed rock are required to be identified within either of the LDPs. However, consideration should be given to whether any of the factors set out in paragraph B75 above give rise to any other requirements for resource allocations within Merthyr Tydfil.

As far as possible, any allocations should be identified as Specific Sites or, failing that, as Preferred Areas. If, as a last resort, it is only possible to identify broad Areas of Search,

these should be sufficient to offer the potential of much greater quantities of reserves, in order to reflect the uncertainties involved.

Paragraph 49 of MTAN 1 notes that landbanks are not required to be maintained within National Parks or Areas of Outstanding Natural Beauty. For this reason, no allocations should be identified within the National Park, unless there are no environmentally acceptable alternatives and efforts should be made to gradually transfer production which currently takes place within the National Park to neighbouring authorities. Given that this production relates only to limestone and that it serves markets which, if not within the National Park, are largely (if not exclusively) to the south and west, it is logical that neighbouring limestone quarries and resources in those areas should be the main focus of any substitution which can be achieved.

### **Treatment of Dormant and Suspended sites**

One dormant sandstone quarry exists within Merthyr Tydfil and one in the Brecon Beacons National Park, as detailed in Table B5, above. In addition, the National Park includes one other limestone quarry where planning permission has been suspended, pending the completion of an initial ROMP review. The planning authority should assess the likelihood of each of these sites being worked within the Plan period, subject to the completion of an initial review of planning conditions and submission of an Environmental Impact Assessment. Where there is a likelihood of reactivation, and where the site(s) in question are considered by the authority to conform to the definition of 'Specific Sites', as set out in paragraph 14 of Minerals Planning Policy Wales, they may be offset against any requirements that may otherwise be identified for allocations for future working.

### **Use of alternative aggregates**

Some imports of sand from marine-dredged sources, imported primarily via wharves in Cardiff to the south, are likely to be utilised in the absence of any current land-based sand & gravel extraction. This is despite the existence of potential land-based resources within both Merthyr and the National Park, as indicated on BGS resource maps and in reconnaissance-level mapping carried out for the Welsh Government by Symonds Group Ltd. in 2000.

As noted within the original RTS, no significant amounts of secondary aggregate are present within Merthyr Tydfil, but volumes of construction, demolition and excavation wastes are likely to be widely available in the main valley areas.

The residual requirements for primary land-won aggregates assume that these alternative materials will continue to be utilised and the authority should continue to encourage this.

Within the National Park, there are very few ongoing mineral workings of any kind and therefore only limited, if any, sources of secondary aggregate. Similarly, there are likely to be only limited quantities of recycled material from local construction and demolition projects. Nevertheless, the National Park Authority should continue to promote the use of these materials where they are available.

### **Safeguarding of primary aggregate resources**

Resources of both crushed rock aggregates and land-based sand & gravel should be safeguarded within the LDPs of both authorities, in accordance with the British Geological Survey's safeguarding maps, or such other geological information as may be available and suitable for this purpose.

### **Safeguarding of wharves and railheads**

All existing and potential new railheads should be identified for safeguarding within both LDPs, in order to provide a full range of sustainable transport options (whether or not they are currently utilised).

**MONMOUTHSHIRE****Apportionment for the future provision of land-won primary aggregates**

The planning authority is required to make future provision for land-won primary aggregates within its Local Development Plan on the basis of the following annualised apportionments:

- Land-won sand & gravel provision: Nil
- Crushed rock aggregates provision: **0.12 million tonnes per year** until the end of the Plan period and for 10 years thereafter.

These figures are based on the assumption that average annual demand for land-won primary aggregates within the area, over the period to 2036, will be comparable to the average annual sales over the baseline period used in the First Review of the RTS (i.e. 2001 to 2010).

They are also based on the assumption that supplies of alternative aggregates, from marine, secondary and recycled sources, will continue to be maintained in proportions comparable to those experienced during the baseline period.

The accuracy of these assumptions will continue to need to be monitored by the planning authority, using information from various data sources and new surveys (e.g. by NRW, WG etc.) and that data will be used to inform a revision of the apportionment requirements, if this is needed, as part of the next review of the RTS.

It should be emphasised that the annualised apportionments noted above are given only as a guide to the calculation of the total apportionment required over the duration of the LDP. In practice, sales will vary from year to year and there is no requirement for the authority to maintain or limit these in line with either the annualised apportionment or the historical sales averages.

The need for provision to extend beyond the Plan period is based on the requirement in MTAN1 for maintaining landbanks of 7 years for sand & gravel and 10 years for crushed rock, throughout the full duration of the LDP. Subject to this requirement being met, the overall provision at any given time may comprise both landbanks of permitted reserves and allocations for future working, where these are required (see below).

**Comparison with existing landbanks**

The total apportionments for Monmouthshire, as calculated in Table 5.1 of the main document, over the 25-year horizon covered by the First Review of the RTS are zero for land-won sand & gravel and 3 million tonnes for crushed rock. These compare with existing landbanks (excluding dormant sites) of zero for sand & gravel and 11 million tonnes for crushed rock (as at 31<sup>st</sup> December 2010).

**Allocations required to be identified in the Local Development Plan**

In view of the surplus of existing permitted crushed rock reserves, no further allocations for crushed rock are required to be identified within the LDP. However, consideration should be given to whether any of the factors set out in paragraph B75 above give rise to any other requirements for resource allocations.

As far as possible, any allocations should be identified as Specific Sites or, failing that, as Preferred Areas. If, as a last resort, it is only possible to identify broad Areas of Search, these should be sufficient to offer the potential of much greater quantities of reserves, in order to reflect the uncertainties involved.

### **Use of alternative aggregates**

Marine sand from the Severn Estuary is landed at two wharves in Chepstow, and also at three other wharves in neighbouring Newport. The whole of the county lies within a maximum radius 30 miles from one or more of these wharves and is reliant upon this material. This is despite the existence of extensive potential land-based resources, particularly within the Usk Valley, as indicated on BGS resource maps and in reconnaissance-level mapping carried out for the Welsh Government by Symonds Group Ltd. in 2000.

As noted in the original RTS, there are no significant sources of secondary aggregates in the area.

Recycled aggregates are likely to be available to a limited extent within some of the small rural towns but are these are widely dispersed within the predominantly rural area and are not thought likely to contribute significantly to the overall pattern of supply.

The residual requirements for primary land-won aggregates in Monmouthshire assume that all of these alternative materials will continue to be utilised and the authority should continue to encourage this.

Limestone and land won sand and gravel is also imported by road from England. These imports are less desirable in terms of the proximity principle, but are beyond the control of the local planning authority.

### **Safeguarding of primary aggregate resources**

Relevant resources of both crushed rock aggregates and land-based sand & gravel have been safeguarded within the LDP, in accordance with detailed advice based on the use of British Geological Survey mapping, prior to the publication of the BGS safeguarding maps.

### **Safeguarding of wharves and railheads**

All existing and potential new wharves and railheads should be identified for safeguarding within the LDP, in order to provide a full range of sustainable transport options (whether or not they are currently utilised).

**NEATH PORT TALBOT****Apportionment for the future provision of land-won primary aggregates**

The planning authority is required to make future provision for land-won primary aggregates within its Local Development Plan on the basis of the following annualised apportionments:

- Land-won sand & gravel provision: Nil
- Crushed rock aggregates provision: **0.59 million tonnes per year** until the end of the Plan period and for 10 years thereafter.

These figures are based on the assumption that average annual demand for land-won primary aggregates within the area, over the period to 2036, will be comparable to the average annual sales over the baseline period used in the First Review of the RTS (i.e. 2001 to 2010).

They are also based on the assumption that supplies of alternative aggregates, from marine, secondary and recycled sources, will continue to be maintained in proportions comparable to those experienced during the baseline period.

The accuracy of these assumptions will continue to need to be monitored by the planning authority, using information from various data sources and new surveys (e.g. by NRW, WG etc.) and that data will be used to inform a revision of the apportionment requirements, if this is needed, as part of the next review of the RTS.

It should be emphasised that the annualised apportionments noted above are given only as a guide to the calculation of the total apportionment required over the duration of the LDP. In practice, sales will vary from year to year and there is no requirement for the authority to maintain or limit these in line with either the annualised apportionment or the historical sales averages.

The need for provision to extend beyond the Plan period is based on the requirement in MTAN1 for maintaining landbanks of 7 years for sand & gravel and 10 years for crushed rock, throughout the full duration of the LDP. Subject to this requirement being met, the overall provision at any given time may comprise both landbanks of permitted reserves and allocations for future working, where these are required (see below).

**Comparison with existing landbanks**

The total apportionments for Neath Port Talbot, as calculated in Table 5.1 of the main document, over the 25-year horizon covered by the First Review of the RTS are zero for land-won sand & gravel and 14.75 million tonnes for crushed rock. These compare with existing landbanks of zero for sand & gravel and 9 million tonnes for crushed rock (as at 31<sup>st</sup> December 2010). These figures exclude any limestone reserves which are allocated for non-aggregate use.

**Allocations required to be identified in the Local Development Plan**

A new permission for the extension of Gilfach Quarry has been granted since December 2010 and this has more than covered the crushed rock shortfall of 5.75 million tonnes indicated in Table 5.3 of the main document. No further allocations are therefore specifically required by the RTS. However, consideration should also be given to whether any of the factors set out in paragraph B75 above give rise to any other requirements for resource allocations.

As far as possible, any allocations should be identified as Specific Sites or, failing that, as Preferred Areas. If, as a last resort, it is only possible to identify broad Areas of Search, these should be sufficient to offer the potential of much greater quantities of reserves, in order to reflect the uncertainties involved.

### **Use of alternative aggregates**

Neath Port Talbot is reliant, for its supplies of sand, on marine-dredged sources, imported via the three operational wharves at Briton Ferry and Giant's Wharf. This is despite the existence of limited potential land-based resources within its area, as indicated on BGS resource maps and in reconnaissance-level mapping carried out for the Welsh Government by Symonds Group Ltd. in 2000.

There are considerable secondary aggregate resources within Neath Port Talbot, primarily associated with the reprocessing of steel and blast furnace slag from the Port Talbot steelworks. Most of the slag is fully utilised, partially as construction aggregate and partly as a sustainable alternative to cement. Some of the secondary aggregate is transported by sea to Newport for processing and distribution. One of the largest construction and demolition waste recycling facilities in the region is based at Neath.

In addition, and in common with other MPAs within the South Wales coalfield, the overburden and 'waste' associated with opencast coal extraction includes some high PSV sandstone, but these are acknowledged as temporary 'windfalls' rather than permanent supply sources (and in any case are included in the figures for primary, rather than secondary aggregates). Future proposals for opencast coal extraction should, nevertheless, be encouraged to utilise such material in order to offset the need for additional allocations of sandstone (subject to there being satisfactory proposals relating to the restoration of these large-scale sites and to the stockpiling and distribution of the stone).

The residual requirements for primary land-won aggregates assume that all of these alternative materials will continue to be utilised and the authority should continue to encourage this.

### **Safeguarding of primary aggregate resources**

Resources of both crushed rock aggregates and land-based sand & gravel should be safeguarded within the LDP in accordance with the British Geological Survey's safeguarding maps, or such other geological information as may be available and suitable for this purpose.

### **Safeguarding of wharves and railheads**

All existing and potential new wharves and railheads should be identified for safeguarding within the LDP, in order to provide a full range of sustainable transport options (whether or not they are currently utilised).

**NEWPORT****Apportionment for the future provision of land-won primary aggregates**

By virtue of its lack of suitable crushed rock resources, and the lack of historical demand for land-won sand & gravel production, the planning authority is not required to make any future provision for land-won primary aggregates within its Local Development Plan.

This is based on the assumption that supplies of alternative aggregates, from marine, secondary and recycled sources, will continue to be maintained in proportions comparable to those experienced during the baseline period (2001 - 2010).

The accuracy of these assumptions will continue to need to be monitored by the planning authority, using information from various data sources and new surveys (e.g. by NRW, WG etc.) and that data will be used to inform a revision of the apportionment requirements, if this is needed, as part of the next review of the RTS.

**Allocations required to be identified in the Local Development Plan**

In view of the lack of apportionment required for Newport, there is no specific requirement for allocations for future working to be identified within the Local Development Plan. This contrasts with the recommendations given in the original RTS which, purely on the basis of the 'per capita' approach, required Newport to assess the potential to make a resource allocation in the LDP of 8 to 8.5 million tonnes.

However, consideration should be given to whether any of the factors set out in paragraph B75 above give rise to any other requirements for resource allocations.

As far as possible, any allocations should be identified as Specific Sites or, failing that, as Preferred Areas. If, as a last resort, it is only possible to identify broad Areas of Search, these should be sufficient to offer the potential of much greater quantities of reserves, in order to reflect the uncertainties involved.

**Use of alternative aggregates**

Newport is supplied with sand from marine-dredged sources within the Severn Estuary and the Bristol Channel, via up to three separate wharves within the city. This is despite the existence of limited potential land-based resources within its area, as indicated on BGS resource maps (most but not all of which are sterilised by existing built development).

The original RTS recommended that the feasibility of sea borne rock imports, via these wharves, should be explored. Discussions with the wharf operators in 2009 suggested that the scope for landing additional tonnages of crushed rock aggregate here is extremely limited (Cuesta Consulting Ltd., 2009). The operations are geared up for the landing and processing of marine-dredged sand. Whilst it would be theoretically possible to land crushed rock, there is insufficient space for both operations to co-exist. In the absence of any current land-based sand & gravel operations in South East Wales, the marine sand is vital to the local construction industry and is therefore unlikely to be displaced by crushed rock imports.

In terms of secondary aggregates, the former Llanwern steelworks previously supplied aggregates derived from blast furnace slag on an ongoing basis, but this ceased when the blast furnace closed in July 2001. The same site does, however, continue to produce Basic Oxygen Steel (BOS) slag from the stockpiles of this material which have accumulated over many previous decades of steel production. In 2009 the operator advised that widely varying estimates had been made regarding the tonnage of 'reserves' represented by the remaining stockpiles at Llanwern, ranging up to 'millions of tonnes'. More conservatively, he estimated that production would be able to be maintained at current rates for 'at least 10 years', that is to at least 2019. (Cuesta Consulting Ltd., 2009).

The rail sidings at 'Monmouthshire Bank' in Newport were also previously utilised to process spent rail ballast for use as aggregate. However, in March 2009, aggregate

production at this site ceased and Network Rail redistributed the remaining stocks to other sites, elsewhere. This site therefore no longer represents a source of supply for Newport.

Recycled aggregates, produced from construction, demolition and excavation wastes, are likely to continue to provide an important contribution to the overall supply pattern for construction aggregates within this predominately urban area.

The residual requirements for primary land-won aggregates assume that these various alternative materials will continue to be utilised and the authority should continue to encourage this.

#### **Safeguarding of primary aggregate resources**

Relevant resources of both crushed rock aggregates and land-based sand & gravel should be safeguarded within the LDP, in accordance with detailed advice based on the use of British Geological Survey mapping, prior to the publication of the BGS safeguarding maps.

#### **Safeguarding of wharves and railheads**

All existing and potential new wharves and railheads should be identified for safeguarding within the LDP, in order to provide a full range of sustainable transport options (whether or not they are currently utilised).

**PEMBROKESHIRE / PEMBROKESHIRE COAST NATIONAL PARK****Apportionment for the future provision of land-won primary aggregates**

The two planning authorities are already working jointly with regard to minerals planning, with a view to gradually reducing extraction within the National Park. Each authority has an adopted LDP, but they are both committed to working collaboratively with other authorities in south west Wales. In conjunction with Carmarthenshire and Ceredigion they are required to make future provision for land-won primary aggregates within their respective Development Plans on the basis of the following annualised apportionments:

- Land-won sand & gravel provision: **0.33 million tonnes per year** (jointly with Carmarthenshire and Ceredigion) until the end of the Plan period and for 7 years thereafter.
- Crushed rock aggregates provision: **1.09 million tonnes per year** until the end of the Plan period and for 10 years thereafter.

These figures are based on the assumption that average annual demand for land-won primary aggregates within the area, over the period to 2036, will be comparable to the average annual sales over the baseline period used in the First Review of the RTS (i.e. 2001 to 2010).

They are also based on the assumption that supplies of alternative aggregates, from marine, secondary and recycled sources, will continue to be maintained in proportions comparable to those experienced during the baseline period.

The accuracy of these assumptions will continue to need to be monitored by the planning authority, using information from various data sources and new surveys (e.g. by NRW, WG etc.) and that data will be used to inform a revision of the apportionment requirements, if this is needed, as part of the next review of the RTS.

It should be emphasised that the annualised apportionments noted above are given only as a guide to the calculation of the total apportionment required over the duration of the LDP. In practice, sales will vary from year to year and there is no requirement for the authorities to maintain or limit these in line with either the annualised apportionment or the historical sales averages.

The need for provision to extend beyond the Plan period is based on the requirement in MTAN1 for maintaining landbanks of 7 years for sand & gravel and 10 years for crushed rock, throughout the full duration of the LDP. Subject to this requirement being met, the overall provision at any given time may comprise both landbanks of permitted reserves and allocations for future working, where these are required (see below).

**Comparison with existing landbanks**

The total apportionments for Pembrokeshire and the National Park, as calculated in Table 5.1 of the main document, over the 25-year horizon covered by the First Review of the RTS are 7.26 million tonnes for land-won sand & gravel (shared with Carmarthenshire and Ceredigion) and 21 million tonnes for crushed rock (for Pembrokeshire and the National Park only). These figures compare with existing landbanks (excluding dormant sites) of 4.32 million tonnes for sand & gravel (between the four authorities) and 35 million tonnes for crushed rock (as at 31<sup>st</sup> December 2010).

**Allocations required to be identified in the Local Development Plan**

Unless new permissions have been granted since December 2010 to address the resulting sand & gravel shortfall, new allocations totalling at least 2.94 million tonnes will need to be identified within the LDPs of one or more of the four authorities over which the apportionment is shared.

Paragraph 49 of MTAN 1 notes that landbanks are not required to be maintained within National Parks or Areas of Outstanding Natural Beauty. For this reason, allocations will not be required within the National Park unless no environmentally acceptable alternatives can be found within Pembrokeshire, Ceredigion or Carmarthenshire, or from the increased use of alternative aggregates, particularly from marine sources.

In view of the surplus of existing permitted crushed rock reserves, no further allocations for crushed rock are required to be identified within either of the two LDPs. However, consideration should be given to whether any of the factors set out in paragraph B75 above give rise to any other requirements for resource allocations.

As far as possible, any land-based allocations should be identified as Specific Sites or, failing that, as Preferred Areas. If, as a last resort, it is only possible to identify broad Areas of Search, these should be sufficient to offer the potential of much greater quantities of reserves, in order to reflect the uncertainties involved. As noted in the main document, it may sometimes be better (in terms of deliverability) to rely on specific sites in neighbouring authorities (additional to the MPAs' own requirements), where these have been agreed through collaborative working, in preference to relying upon highly uncertain Areas of Search.

#### **Treatment of Dormant sites**

A total of three dormant limestone quarries (two in Pembrokeshire and one in the National Park) exist within this area, as detailed in Table B5, above. The planning authorities should assess the likelihood of each of these sites being worked within the Plan period, subject to the completion of an initial review of planning conditions and submission of an Environmental Impact Assessment. Where there is a likelihood of reactivation, and where the site(s) in question are considered by the authority to conform to the definition of 'Specific Sites', as set out in paragraph 14 of Minerals Planning Policy Wales, they may be offset against any requirements that may otherwise be identified for allocations for future working.

#### **Use of alternative aggregates**

The whole of this area lies within a 30 mile radius of Pembroke Docks, where marine aggregates are landed from dredging in the outer Bristol Channel. The northern part of the area is in closer proximity to land-based sand & gravel sites within the National Park, located to the south-west of Cardigan. The possibility might need to be considered that, as the current permitted reserves at those sites are depleted, marine aggregates may need to provide a greater contribution in future years. For the time being, however, Pembrokeshire should retain a focus on maintaining adequate supplies from terrestrial sources, and all land-based options would need to be thoroughly tested by the Local Plan process before any consideration is given to such a shift in local policy. It should also be recognised that marine sand and gravel cannot always substitute for terrestrial materials in specific end uses.

Slate waste is produced in very small quantities in the northern part of the National Park although the extent to which this has hitherto been utilised as aggregate is understood to be minimal, and the prospects for future utilisation would seem to be equally limited.

Recycled aggregate production from construction, demolition and excavation wastes is likely to be concentrated within the various towns of southern and central Pembrokeshire, outside the National Park.

The residual requirements for primary land-won aggregates assume that all of these alternative materials will continue to be utilised and the authority should continue to encourage this.

#### **Safeguarding of primary aggregate resources**

Resources of both crushed rock aggregates and land-based sand & gravel should be safeguarded within the LDP in accordance with the British Geological Survey's

safeguarding maps, or such other geological information as may be available and suitable for this purpose.

**Safeguarding of wharves and railheads**

All existing and potential new wharves and railheads should be identified for safeguarding within the LDP, in order to provide a full range of sustainable transport options (whether or not they are currently utilised).

## POWYS

### **Apportionment for the future provision of land-won primary aggregates**

The planning authority is required to make future provision for land-won primary aggregates within its Local Development Plan on the basis of the following annualised apportionments:

- |   |
|---|
| <ul style="list-style-type: none"> <li>○ <u>Land-won sand &amp; gravel provision:</u> Nil</li> <li>○ <u>Crushed rock aggregates provision:</u> <b>2.51 million tonnes per year</b> until the end of the Plan period and for 10 years thereafter.</li> </ul> |
|---|

These figures are based on the assumption that average annual demand for land-won primary aggregates within the area, over the period to 2036, will be comparable to the average annual sales over the baseline period used in the First Review of the RTS (i.e. 2001 to 2010).

They are also based on the assumption that supplies of alternative aggregates, from marine, secondary and recycled sources, will continue to be maintained in proportions comparable to those experienced during the baseline period.

The accuracy of these assumptions will continue to need to be monitored by the planning authority, using information from various data sources and new surveys (e.g. by NRW, WG etc.) and that data will be used to inform a revision of the apportionment requirements, if this is needed, as part of the next review of the RTS.

It should be emphasised that the annualised apportionments noted above are given only as a guide to the calculation of the total apportionment required over the duration of the LDP. In practice, sales will vary from year to year and there is no requirement for the authority to maintain or limit these in line with either the annualised apportionment or the historical sales averages.

The need for provision to extend beyond the Plan period is based on the requirement in MTAN1 for maintaining landbanks of 7 years for sand & gravel and 10 years for crushed rock, throughout the full duration of the LDP. Subject to this requirement being met, the overall provision at any given time may comprise both landbanks of permitted reserves and allocations for future working, where these are required (see below).

### **Comparison with existing landbanks**

The total apportionments for Powys, as calculated in Table 5.1 of the main document, over the 25-year horizon covered by the First Review of the RTS are zero for land-won sand & gravel and 62.75 million tonnes for crushed rock. These compare with existing landbanks (excluding dormant sites) of 0.03 million tonnes for sand & gravel (jointly with Neath Port Talbot) and 119 million tonnes for crushed rock (as at 31<sup>st</sup> December 2010).

### **Allocations required to be identified in the Local Development Plan**

In view of the large surplus of existing permitted crushed rock reserves, no further allocations for crushed rock are required to be identified within the LDP. However, consideration should also be given to whether any of the factors set out in paragraph B75 above give rise to any other requirements for resource allocations.

As far as possible, any allocations should be identified as Specific Sites or, failing that, as Preferred Areas. If, as a last resort, it is only possible to identify broad Areas of Search, these should be sufficient to offer the potential of much greater quantities of reserves, in order to reflect the uncertainties involved.

### **Treatment of Dormant sites**

One dormant igneous rock quarry exists within Powys, as detailed in Table B5, above. The planning authority should assess the likelihood of this site being worked within the Plan period, subject to the completion of an initial review of planning conditions and submission of an Environmental Impact Assessment. If there is a likelihood of reactivation, and if the site is considered by the authority to conform to the definition of 'Specific Sites', as set out in paragraph 14 of Minerals Planning Policy Wales, it may be offset against any requirements that may otherwise be identified for allocations for future working.

### **Use of alternative aggregates**

Powys is not thought to be a significant user of marine-dredged aggregates, in view of its considerable distance from relevant ports and wharves.

Sources of secondary aggregate within the County are thought to be scarce or absent and, in view of the remote and rural nature of much of the County, there is likely to be only a limited degree of recycled aggregate production from construction, demolition and excavation wastes.

Nevertheless, the residual requirements for primary land-won aggregates assume that alternative materials will continue to be utilised to at least the same extent as in the past, and the authority should continue to encourage this.

### **Safeguarding of primary aggregate resources**

Resources of both crushed rock aggregates and land-based sand & gravel should be safeguarded within the LDP in accordance with the British Geological Survey's safeguarding maps, or such other geological information as may be available and suitable for this purpose.

### **Safeguarding of wharves and railheads**

All existing and potential new railheads should be identified for safeguarding within the LDP, in order to provide a full range of sustainable transport options (whether or not they are currently utilised).

## RHONDDA CYNON TAF

### **Apportionment for the future provision of land-won primary aggregates**

The planning authority is required to make future provision for land-won primary aggregates within its Local Development Plan on the basis of the following annualised apportionments:

- Land-won sand & gravel provision: **Nil**
- Crushed rock aggregates provision: **0.69 million tonnes per year** until the end of the Plan period and for 10 years thereafter.

These figures are based on the assumption that average annual demand for land-won primary aggregates within the area, over the period to 2036, will be comparable to the average annual sales over the baseline period used in the First Review of the RTS (i.e. 2001 to 2010).

They are also based on the assumption that supplies of alternative aggregates, from marine, secondary and recycled sources, will continue to be maintained in proportions comparable to those experienced during the baseline period.

The figures exclude the provision of limestone for non-aggregate use, for which separate consideration may need to be given in the LDP.

The accuracy of these assumptions will continue to need to be monitored by the planning authority, using information from various data sources and new surveys (e.g. by NRW, WG etc.) and that data will be used to inform a revision of the apportionment requirements, if this is needed, as part of the next review of the RTS.

It should be emphasised that the annualised apportionments noted above are given only as a guide to the calculation of the total apportionment required over the duration of the LDP. In practice, sales will vary from year to year and there is no requirement for the authority to maintain or limit these in line with either the annualised apportionment or the historical sales averages.

The need for provision to extend beyond the Plan period is based on the requirement in MTAN1 for maintaining landbanks of 7 years for sand & gravel and 10 years for crushed rock, throughout the full duration of the LDP. Subject to this requirement being met, the overall provision at any given time may comprise both landbanks of permitted reserves and allocations for future working, where these are required (see below).

### **Comparison with existing landbanks**

The total apportionments for Rhondda Cynon Taf, as calculated in Table 5.1 of the main document, over the 25-year horizon covered by the First Review of the RTS are zero for land-won sand & gravel and 17.25 million tonnes for crushed rock. These compare with existing landbanks of zero for sand & gravel and 13 million tonnes for crushed rock (as at 31<sup>st</sup> December 2010). These figures exclude any limestone reserves which are allocated for non-aggregate use.

### **Allocations required to be identified in the Local Development Plan**

A new permission for the extension of Forest Wood has been granted since December 2010 and a Preferred Area has also been identified in the LDP. The crushed rock shortfall of 5.75 million tonnes indicated in Table 5.3 of the main document is therefore already covered and no further allocations are specifically required by the RTS.

Consideration should also be given to whether any of the factors set out in paragraph B75 above give rise to any further requirements for resource allocations.

As far as possible, any allocations should be identified as Specific Sites or, failing that, as Preferred Areas. If, as a last resort, it is only possible to identify broad Areas of Search,

these should be sufficient to offer the potential of much greater quantities of reserves, in order to reflect the uncertainties involved.

Alternatively, the planning authority may wish to explore collaborative working with one or more adjoining authorities which have a surplus of crushed rock reserves, as indicated in Table 5.3 of RTS 2. This option should only be pursued, however, where the sites that make up the proposed shared landbank offer advantages, in terms of the proximity principle, environmental capacity and other sustainability criteria, compared with the option of developing new allocations within Rhondda Cynon Taf itself. Any shared landbank agreements should be made in writing with the consent of all parties.

At present, surplus crushed rock reserves (other than those within the Brecon Beacons National Park) exist within the neighbouring authorities of Cardiff, Bridgend, Merthyr Tydfil and Caerphilly.

### **Use of alternative aggregates**

As with all other parts of south-east Wales, Rhondda Cynon Taf relies, for its supplies of sand, on marine-dredged materials from the Bristol Channel. Although limited potential land-based resources within its area are indicated on BGS resource maps, most of these are sterilised by existing built development.

Considerable quantities of colliery spoil exist at Tower Colliery, Hirwaun, which closed (for a second time, following an earlier workers buy-out), in 2008. This material could potentially be used for low quality fill if there were large contracts nearby, but it would not meet normal aggregate specifications.

No significant amounts of other secondary aggregates are present within RCT but reasonable volumes of construction, demolition and excavation wastes are likely to be widely available for the production of recycled aggregates throughout most of the urbanised parts of the MPA.

In addition, and in common with other MPAs within the South Wales coalfield, the overburden and 'waste' associated with opencast coal extraction includes some high PSV sandstone, but these are acknowledged as temporary 'windfalls' rather than permanent supply sources (and in any case are included in the figures for primary, rather than secondary aggregates). Future proposals for opencast coal extraction should, nevertheless, be encouraged to utilise such material in order to offset the need for additional allocations of sandstone (subject to there being satisfactory proposals relating to the restoration of these large-scale sites and to the stockpiling and distribution of the stone).

The residual requirements for primary land-won aggregates assume that all of these alternative materials will continue to be utilised and the authority should continue to encourage this.

### **Safeguarding of primary aggregate resources**

Resources of both crushed rock aggregates and land-based sand & gravel should be safeguarded within the LDP in accordance with the British Geological Survey's safeguarding maps, or such other geological information as may be available and suitable for this purpose.

### **Safeguarding of wharves and railheads**

All existing and potential new railheads should be identified for safeguarding within the LDP, in order to provide a full range of sustainable transport options (whether or not they are currently utilised). In particular, as noted in the original RTS, opportunities for co-using rail facilities, (primarily established for opencast coal), for aggregates should be considered as they arise.

## SWANSEA

### **Apportionment for the future provision of land-won primary aggregates**

By virtue of the lack of recent historical demand for HSA sandstone or land-won sand & gravel production within this area; the lack of suitable limestone resources that are not constrained by existing development or by the Gower Area of Outstanding Natural Beauty; and the availability of crushed rock supplies from nearby quarries in adjoining MPAs, the planning authority is not required to make any future provision for land-won primary aggregates within its Local Development Plan.

This is based on the assumption that supplies of alternative aggregates, from marine, secondary and recycled sources, and imports from adjoining MPAs, will continue to be maintained in proportions comparable to those experienced during the baseline period (2001 - 2010).

The accuracy of these assumptions will continue to need to be monitored by the planning authority, using information from various data sources and new surveys (e.g. by NRW, WG etc.) and that data will be used to inform a revision of the apportionment requirements, if this is needed, as part of the next review of the RTS.

### **Allocations required to be identified in the Local Development Plan**

In view of the lack of apportionment required for Swansea, there is no specific requirement for allocations for future working to be identified within the Local Development Plan. However, consideration should be given to whether any of the factors set out in paragraph B75 above give rise to any other requirements for resource allocations.

As far as possible, any allocations should be identified as Specific Sites or, failing that, as Preferred Areas. If, as a last resort, it is only possible to identify broad Areas of Search, these should be sufficient to offer the potential of much greater quantities of reserves, in order to reflect the uncertainties involved.

Paragraph 49 of MTAN 1 notes that landbanks are not required to be maintained within National Parks or Areas of Outstanding Natural Beauty. For this reason, no allocations should be identified within the Gower AONB.

### **Use of alternative aggregates**

Swansea imports all of its sand from marine-dredged sources in the Bristol Channel, via wharves in Swansea and in neighbouring Neath Port Talbot. This is despite the existence of potential land-based resources within its area, as indicated on both BGS resource maps and in reconnaissance-level mapping carried out for the Welsh Government by Symonds Group Ltd. in 2000.

Secondary aggregate is also imported (by road) from the Port Talbot steelworks, whilst recycled aggregates from construction, demolition and excavation wastes are likely to be in plentiful supply within the urban areas of Swansea itself.

The residual requirements for primary land-won aggregates, although currently zero, assume that all of these alternative materials will continue to be utilised and the authority should continue to encourage this. It should also promote and facilitate the maximum use of locally-derived recycled aggregates in order to offset the transportation of both primary and secondary aggregates from other sources.

### **Safeguarding of primary aggregate resources**

Resources of both crushed rock aggregates and land-based sand & gravel should be safeguarded within the LDP in accordance with the British Geological Survey's safeguarding maps, or such other geological information as may be available and suitable for this purpose.

**Safeguarding of wharves and railheads**

All existing and potential new wharves and railheads should be identified for safeguarding within the LDP, in order to provide a full range of sustainable transport options (whether or not they are currently utilised).

## TORFAEN

### **Apportionment for the future provision of land-won primary aggregates**

By virtue of the lack of suitable crushed rock resources that are not constrained by geological limitations or existing development; and the lack of historical demand for land-won sand & gravel within this area, the planning authority is not required to make any future provision for land-won primary aggregates within its Local Development Plan.

This is based on the assumption that supplies of alternative aggregates, from marine, secondary and recycled sources, will continue to be maintained in proportions comparable to those experienced during the baseline period (2001 - 2010).

The accuracy of these assumptions will continue to need to be monitored by the planning authority, using information from various data sources and new surveys (e.g. by NRW, WG etc.) and that data will be used to inform a revision of the apportionment requirements, if this is needed, as part of the next review of the RTS.

### **Allocations required to be identified in the Local Development Plan**

In view of the lack of apportionment required for Torfaen, there is no specific requirement for allocations for future working to be identified within the Local Development Plan. This contrasts with the recommendations given in the original RTS which, purely on the basis of the 'per capita' approach, required Torfaen to assess the potential to make a resource allocation in the LDP of 5 to 6 million tonnes.

However, consideration should be given to whether any of the factors set out in paragraph B75 above give rise to any other requirements for resource allocations.

As far as possible, any allocations should be identified as Specific Sites or, failing that, as Preferred Areas. If, as a last resort, it is only possible to identify broad Areas of Search, these should be sufficient to offer the potential of much greater quantities of reserves, in order to reflect the uncertainties involved.

### **Use of alternative aggregates**

The whole of Torfaen is within a maximum distance of 17 miles (26km) of the marine aggregate wharves in Newport. As a consequence, the area is reliant on the supply of sand from marine-dredged sources. Limited potential land-based resources within its area are indicated on BGS resource maps, but most of these are either sterilised by existing built development and/or are unlikely to be commercially exploitable because of their limited extent.

Secondary aggregates in the form of overburden material from former opencast coal workings may be available for use as general fill and, in part, as a substitute for primary High Specification Aggregate. The main source, at Tir Pentwys, has been identified as a Preferred Area within the LDP.

Regeneration schemes in this area are likely to produce construction, demolition and excavation wastes which may be suitable for use as aggregates.

The residual requirements for primary land-won aggregates, although currently zero, assume that all of these alternative materials will continue to be utilised and the authority should continue to encourage this. It should also promote and facilitate the maximum use of locally-derived recycled aggregates in order to offset the transportation of both primary and secondary aggregates from other sources.

### **Safeguarding of primary aggregate resources**

Relevant resources of both crushed rock aggregates and land-based sand & gravel have been safeguarded within the LDP, in accordance with detailed advice based on the use of British Geological Survey mapping, prior to the publication of the BGS safeguarding maps.

**Safeguarding of wharves and railheads**

All existing and potential new railheads should be identified for safeguarding within the LDP, in order to provide a full range of sustainable transport options (whether or not they are currently utilised).

## VALE OF GLAMORGAN

### **Apportionment for the future provision of land-won primary aggregates**

The planning authority is required to make future provision for land-won primary aggregates within its Local Development Plan on the basis of the following annualised apportionments:

- |  |
|--|
| <ul style="list-style-type: none"> <li>○ <u>Land-won sand &amp; gravel provision:</u> <b>Nil</b></li> <li>○ <u>Crushed rock aggregates provision:</u> <b>1.09 million tonnes per year</b> until the end of the Plan period and for 10 years thereafter.</li> </ul> |
|--|

These figures are based on the assumption that average annual demand for land-won primary aggregates within the area, over the period to 2036, will be comparable to the average annual sales over the baseline period used in the First Review of the RTS (i.e. 2001 to 2010).

They are also based on the assumption that supplies of alternative aggregates, from marine, secondary and recycled sources, will continue to be maintained in proportions comparable to those experienced during the baseline period.

The figures exclude the provision of limestone for non-aggregate use, for which separate consideration will need to be given in the LDP.

The accuracy of these assumptions will continue to need to be monitored by the planning authority, using information from various data sources and new surveys (e.g. by NRW, WG etc.) and that data will be used to inform a revision of the apportionment requirements, if this is needed, as part of the next review of the RTS.

It should be emphasised that the annualised apportionments noted above are given only as a guide to the calculation of the total apportionment required over the duration of the LDP. In practice, sales will vary from year to year and there is no requirement for the authority to maintain or limit these in line with either the annualised apportionment or the historical sales averages.

The need for provision to extend beyond the Plan period is based on the requirement in MTAN1 for maintaining landbanks of 7 years for sand & gravel and 10 years for crushed rock, throughout the full duration of the LDP. Subject to this requirement being met, the overall provision at any given time may comprise both landbanks of permitted reserves and allocations for future working, where these are required (see below).

### **Comparison with existing landbanks**

The total apportionments for the Vale of Glamorgan, as calculated in Table 5.1 of the main document, over the 25-year horizon covered by the First Review of the RTS are zero for land-won sand & gravel and 27.25 million tonnes for crushed rock. These compare with existing landbanks (excluding dormant sites) of zero for sand & gravel and 13.7 million tonnes for crushed rock (as at 31<sup>st</sup> December 2010), all of which relates to Carboniferous Limestone. However, these figures exclude limestone reserves which are allocated for non-aggregate use.

### **Allocations required to be identified in the Local Development Plan**

Unless new permissions have been granted since December 2010 to address the resulting crushed rock shortfall, new allocations totalling at least 13.55 million tonnes will need to be identified within the LDP.

Consideration should also be given to whether any of the factors set out in paragraph B75 above give rise to any further requirements for resource allocations.

As far as possible, any allocations should be identified as Specific Sites or, failing that, as Preferred Areas. If, as a last resort, it is only possible to identify broad Areas of Search,

these should be sufficient to offer the potential of much greater quantities of reserves, in order to reflect the uncertainties involved.

Alternatively, the planning authority may wish to explore collaborative working with one or more adjoining authorities which have a surplus of crushed rock reserves, as indicated in Table 5.3 of RTS 2. This option should only be pursued, however, where the sites that make up the proposed shared landbank offer advantages, in terms of the proximity principle, environmental capacity and other sustainability criteria, compared with the option of developing new allocations within the Vale of Glamorgan itself. Any shared landbank agreements should be made in writing with the consent of all parties. In practice, the options here are currently focused on any surpluses of Carboniferous Limestone reserves within Bridgend and Cardiff, since Rhondda Cynon Taf is also facing an overall shortfall in crushed rock provision at the present time.

#### **Treatment of Dormant sites**

A total of five dormant limestone quarries exist within the Vale of Glamorgan, as detailed in Table B5, above. The planning authority should assess the likelihood of each of these sites to be worked within the Plan period, subject to the completion of an initial review of planning conditions and submission of an Environmental Impact Assessment. Where there is a likelihood of reactivation, and where the site(s) in question are considered by the authority to conform to the definition of 'Specific Sites', as set out in paragraph 14 of Minerals Planning Policy Wales, they may be offset against any requirements that may otherwise be identified for allocations for future working.

#### **Use of alternative aggregates**

The Vale of Glamorgan is reliant upon supplies of sand from marine-dredged sources, despite the existence of limited potential land-based resources within its area, as indicated on BGS resource maps and in reconnaissance-level mapping carried out for the Welsh Government in 2000. Until 2005, marine aggregates were imported via Barry Docks but are now supplied from other wharves in neighbouring Cardiff.

There are also substantial resources of secondary aggregate in the form of pulverised fuel ash (pfa) and furnace bottom ash (fba) from the Aberthaw power station, although the quantities utilised for aggregate purposes remain small.

Equally, there is likely to be a modest level of recycled aggregate production from construction, demolition and excavation wastes, primarily in the vicinity of the main urban areas and industrial sites.

The residual requirements for primary land-won aggregates assume that all of these alternative materials will continue to be utilised and the authority should continue to encourage this.

#### **Safeguarding of primary aggregate resources**

Resources of both crushed rock aggregates and land-based sand & gravel should be safeguarded within the LDP in accordance with the British Geological Survey's safeguarding maps, or such other geological information as may be available and suitable for this purpose.

#### **Safeguarding of wharves and railheads**

All existing and potential new wharves and railheads should be identified for safeguarding within the LDP, in order to provide a full range of sustainable transport options (whether or not they are currently utilised).

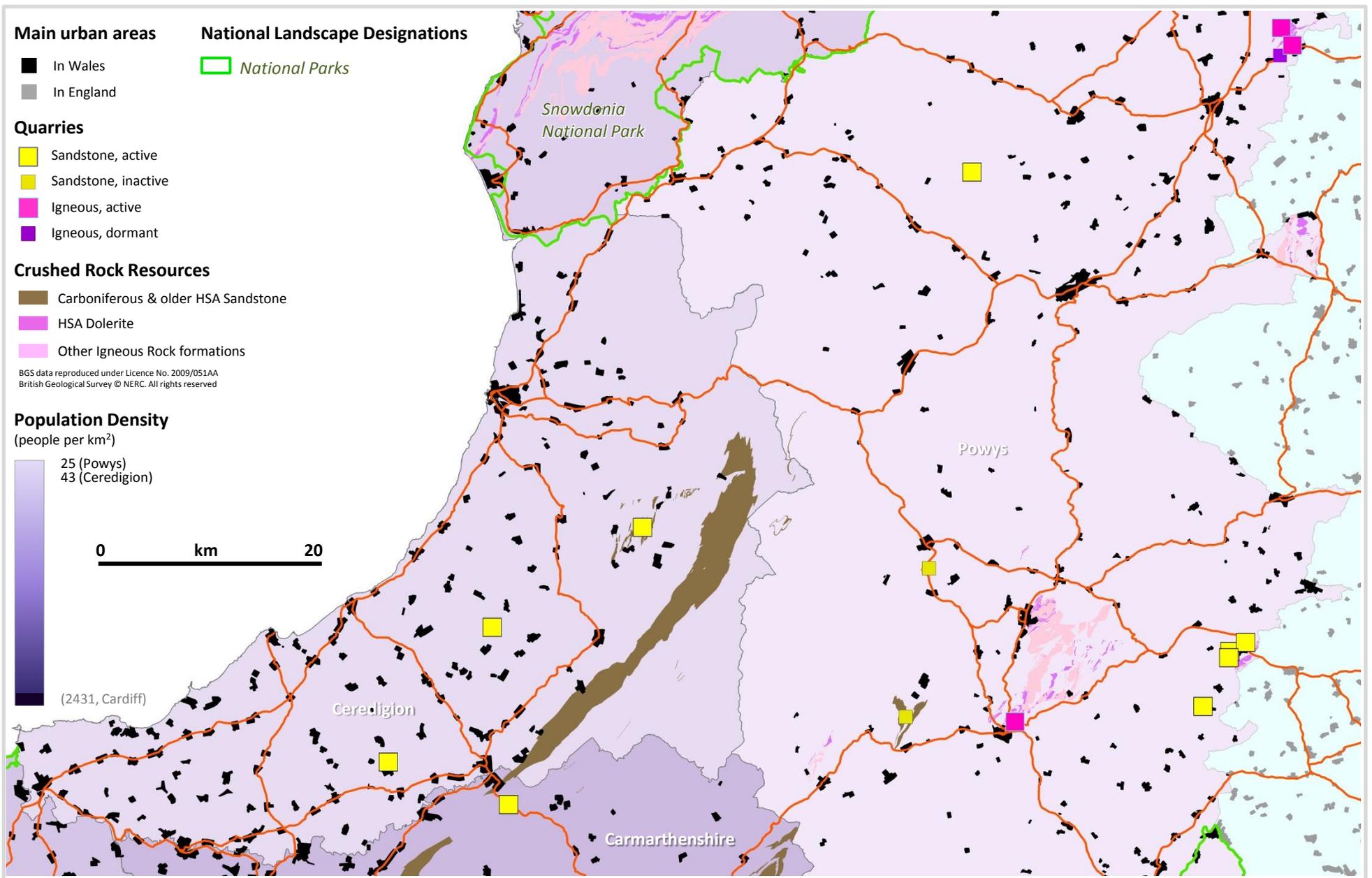


Fig B1: Mid Wales: - Sandstone & Igneous resources in relation to national landscape designations, population density, urban areas and major roads.

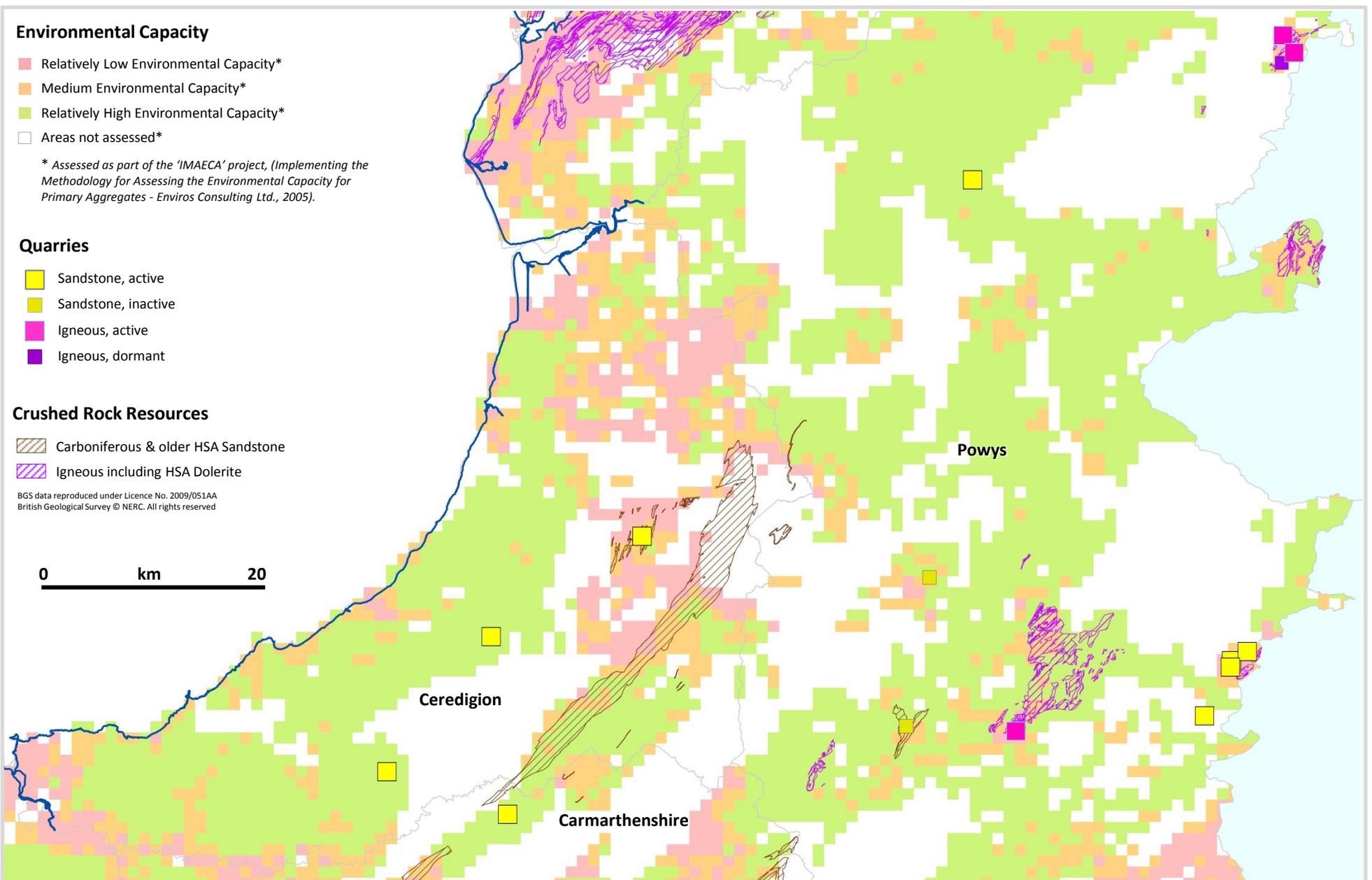


Fig B2: Mid Wales: - Sandstone & Igneous resources in relation to assessed Environmental Capacity for future quarrying.

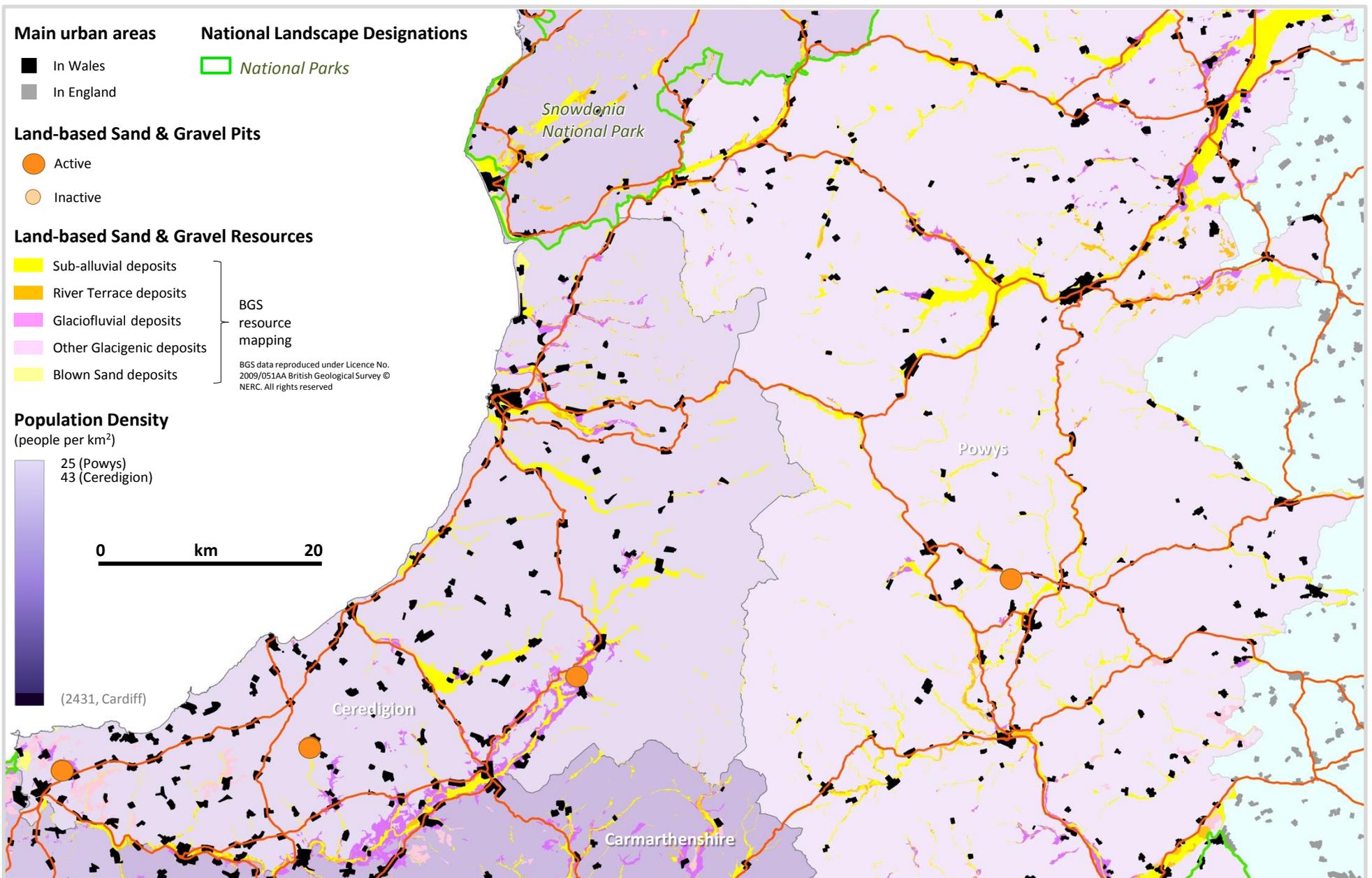


Fig B3: Mid Wales: - Sand & gravel resources in relation to national landscape designations, population density, urban areas and major roads.

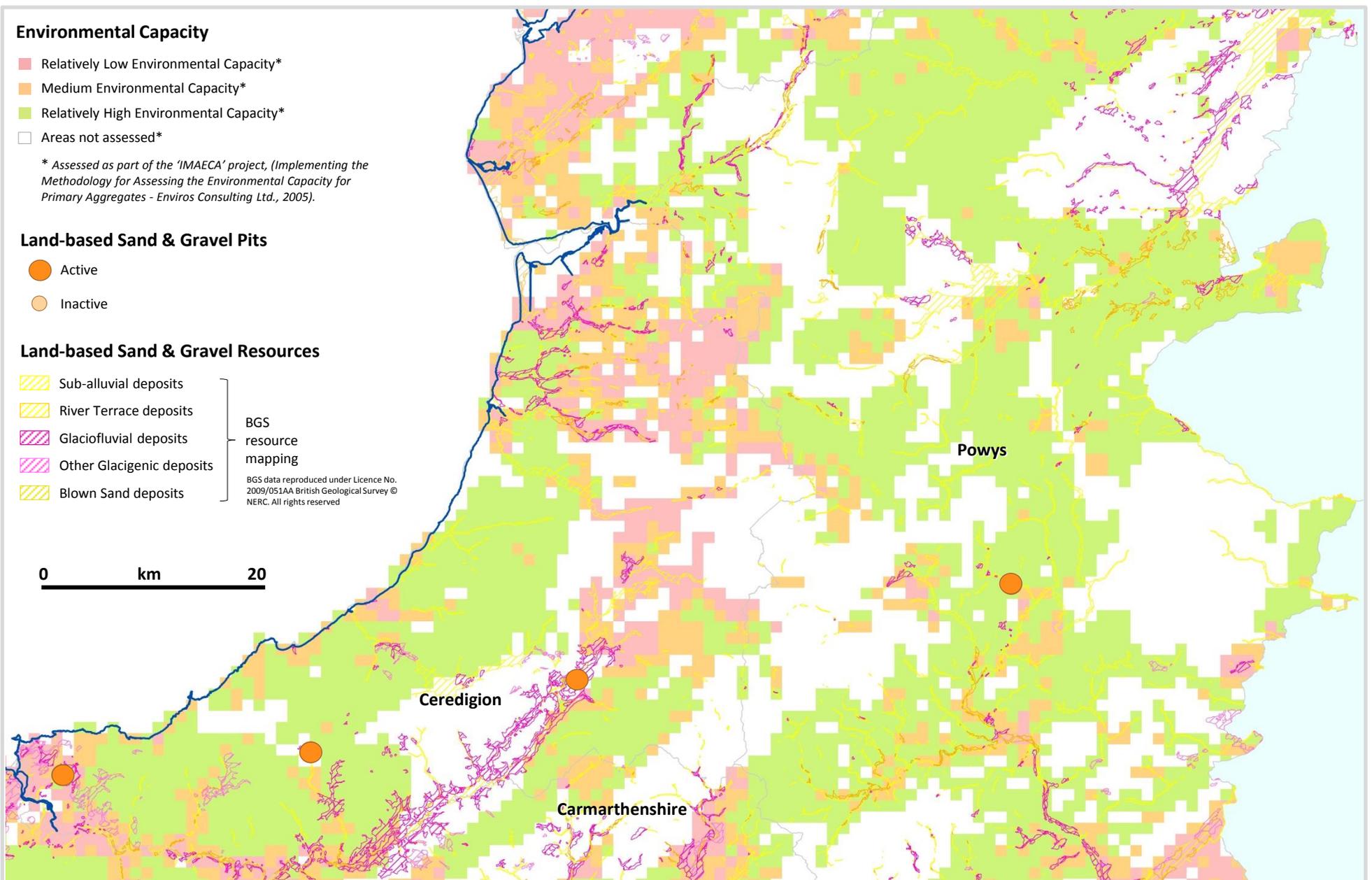


Fig B4: Mid Wales: - Sand & gravel resources in relation to assessed Environmental Capacity for future quarrying.

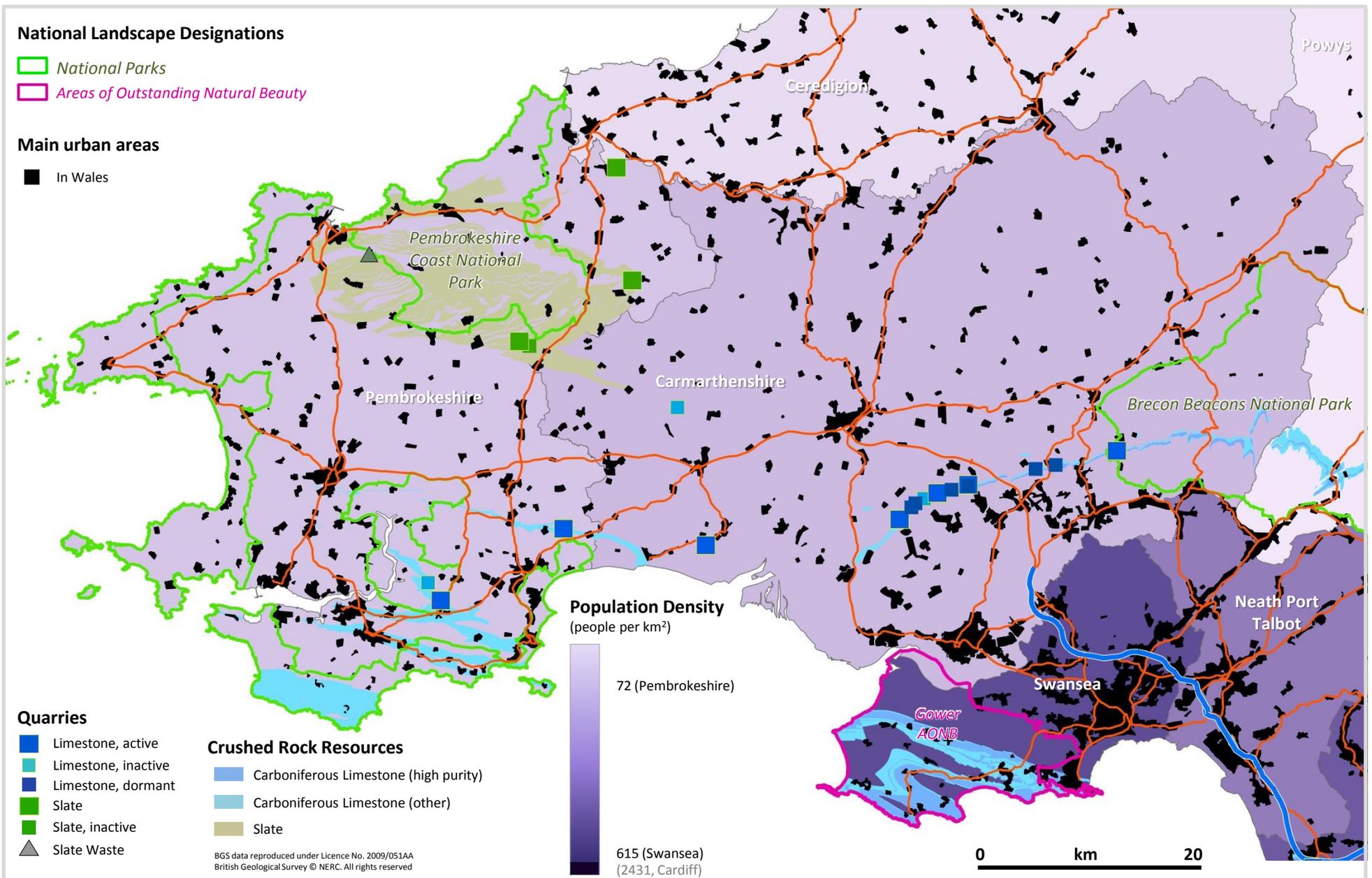


Fig B5: West Wales: - Limestone & slate resources in relation to national landscape designations, population density, urban areas and major roads.

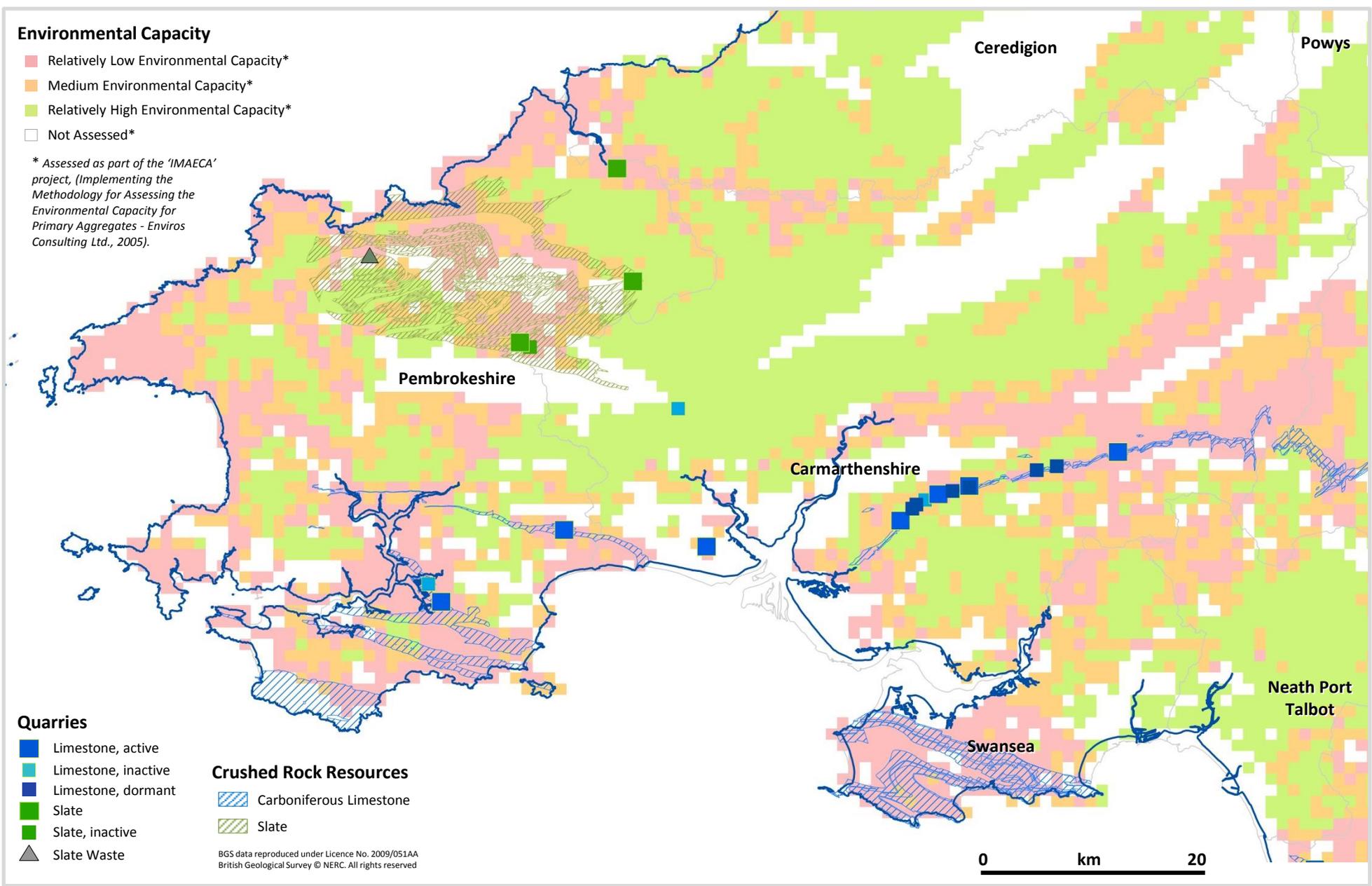


Fig B6: West Wales: - Limestone & slate resources in relation to assessed Environmental Capacity for future quarrying.

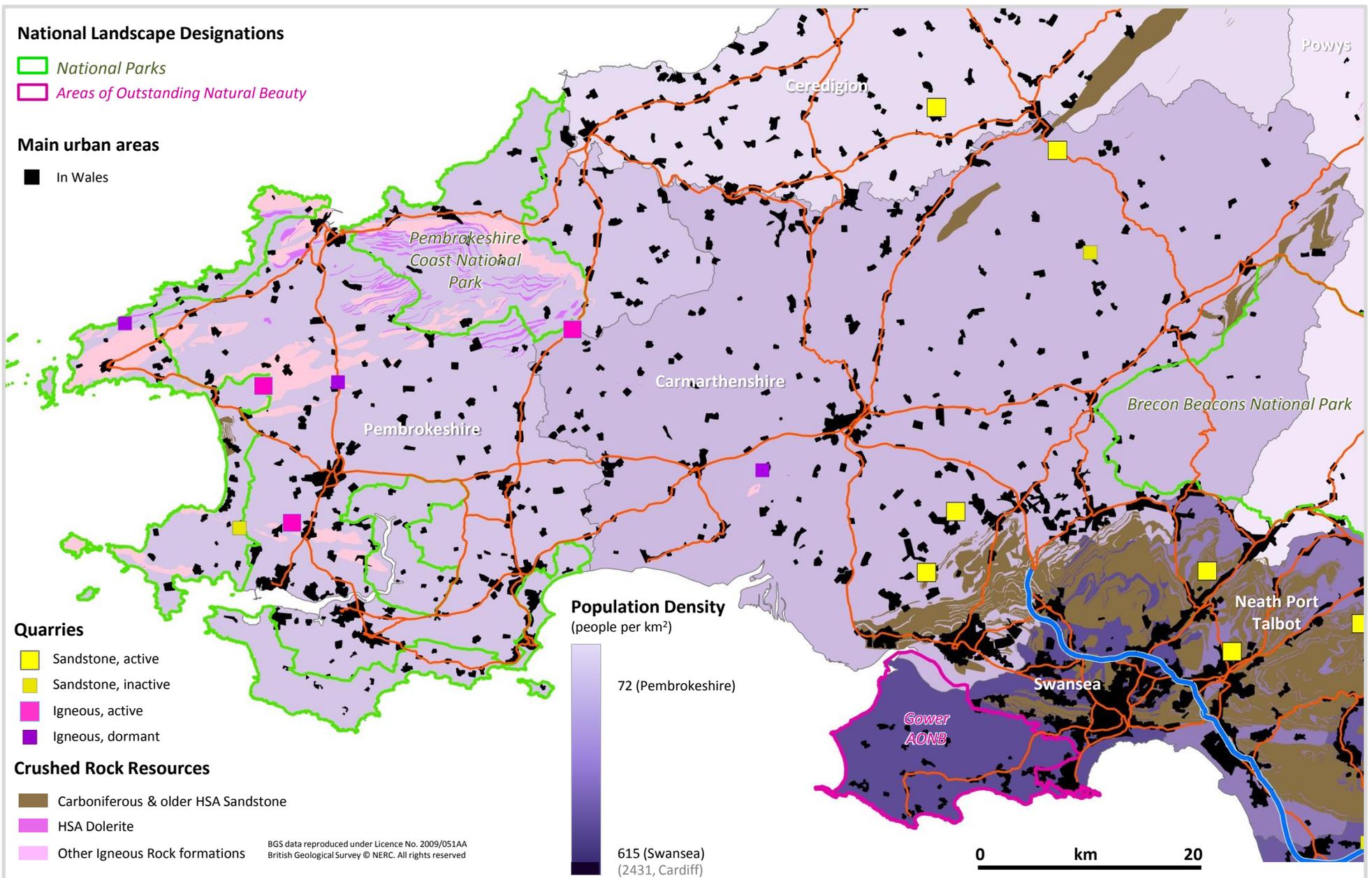
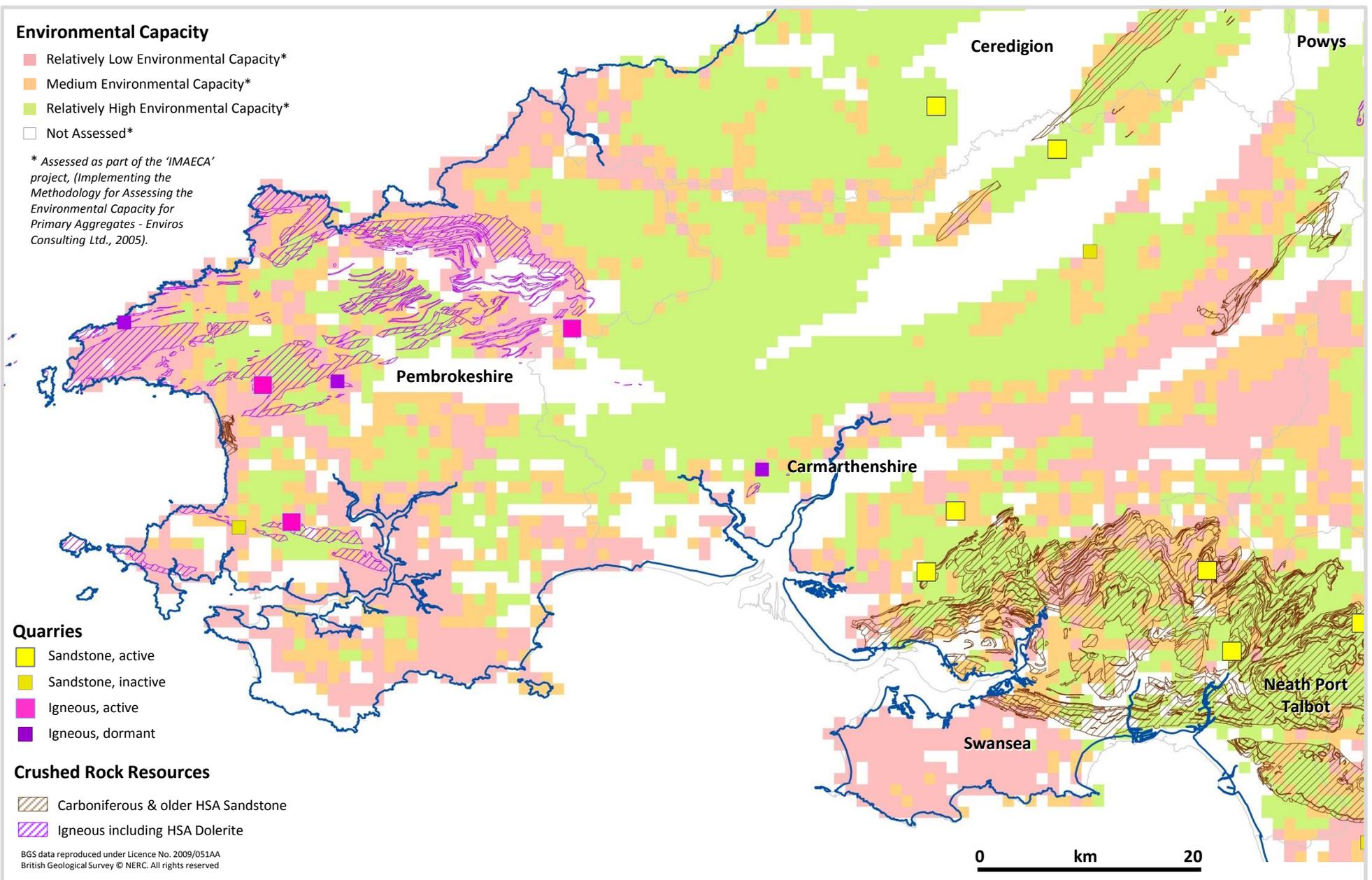


Fig B7: West Wales: - Sandstone & Igneous resources in relation to national landscape designations, population density, urban areas and major roads.



**Fig B8: West Wales: - Sandstone & Igneous resources in relation to assessed Environmental Capacity for future quarrying.**

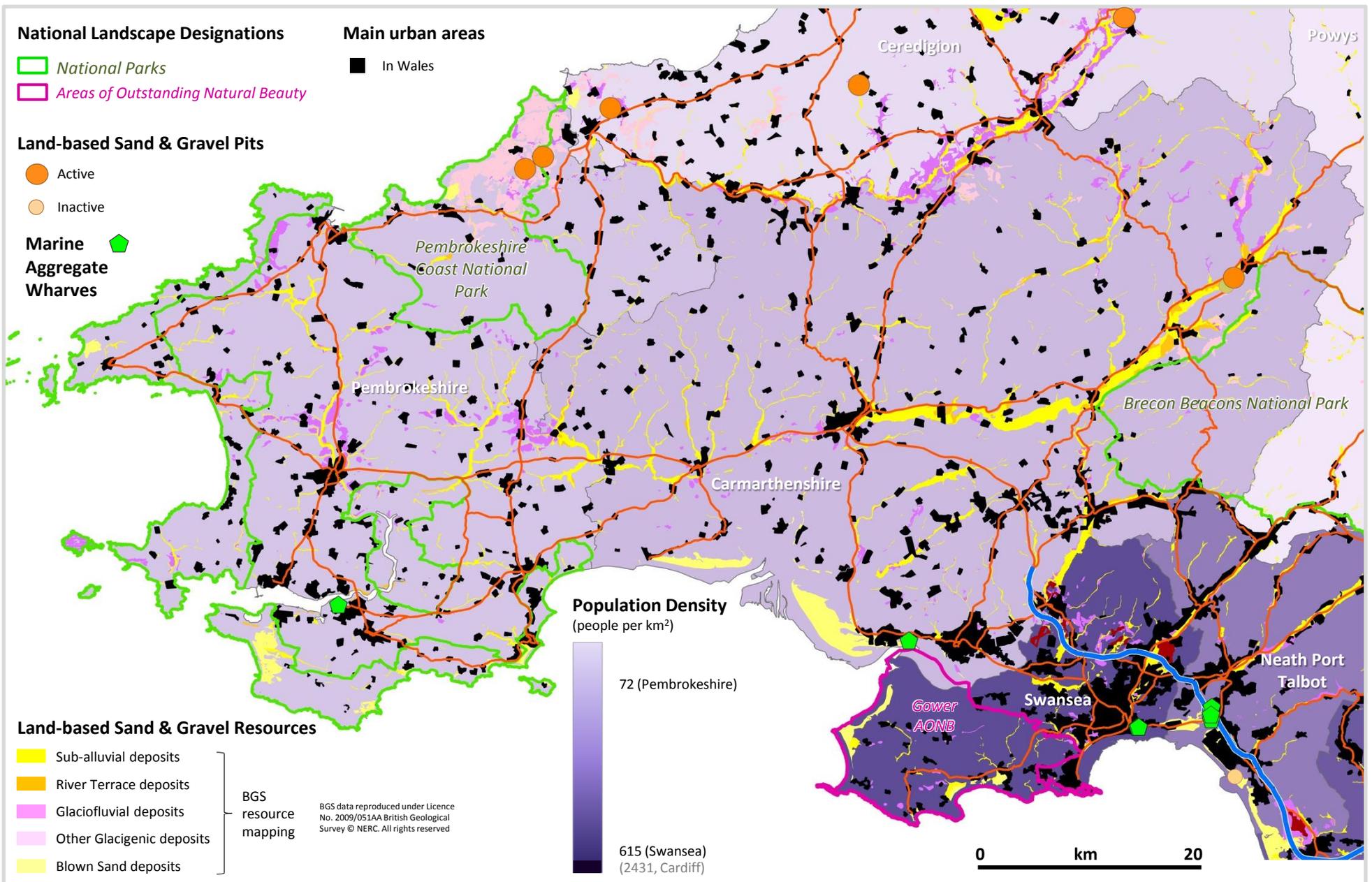


Fig B9: West Wales: - Sand & gravel resources in relation to national landscape designations, population density, urban areas and major roads.

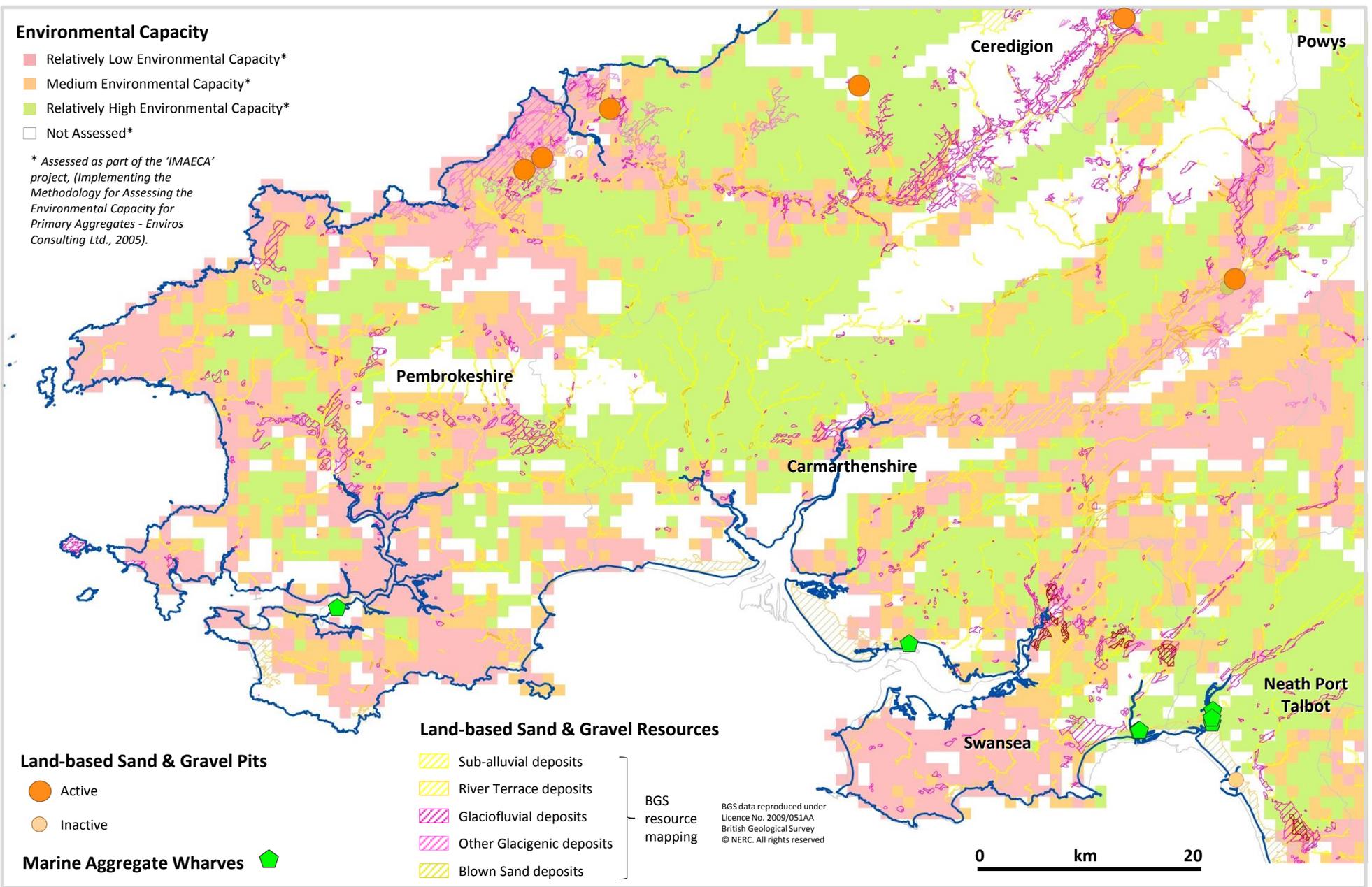


Fig B10: West Wales: - Sand & gravel resources in relation to assessed Environmental Capacity for future quarrying.

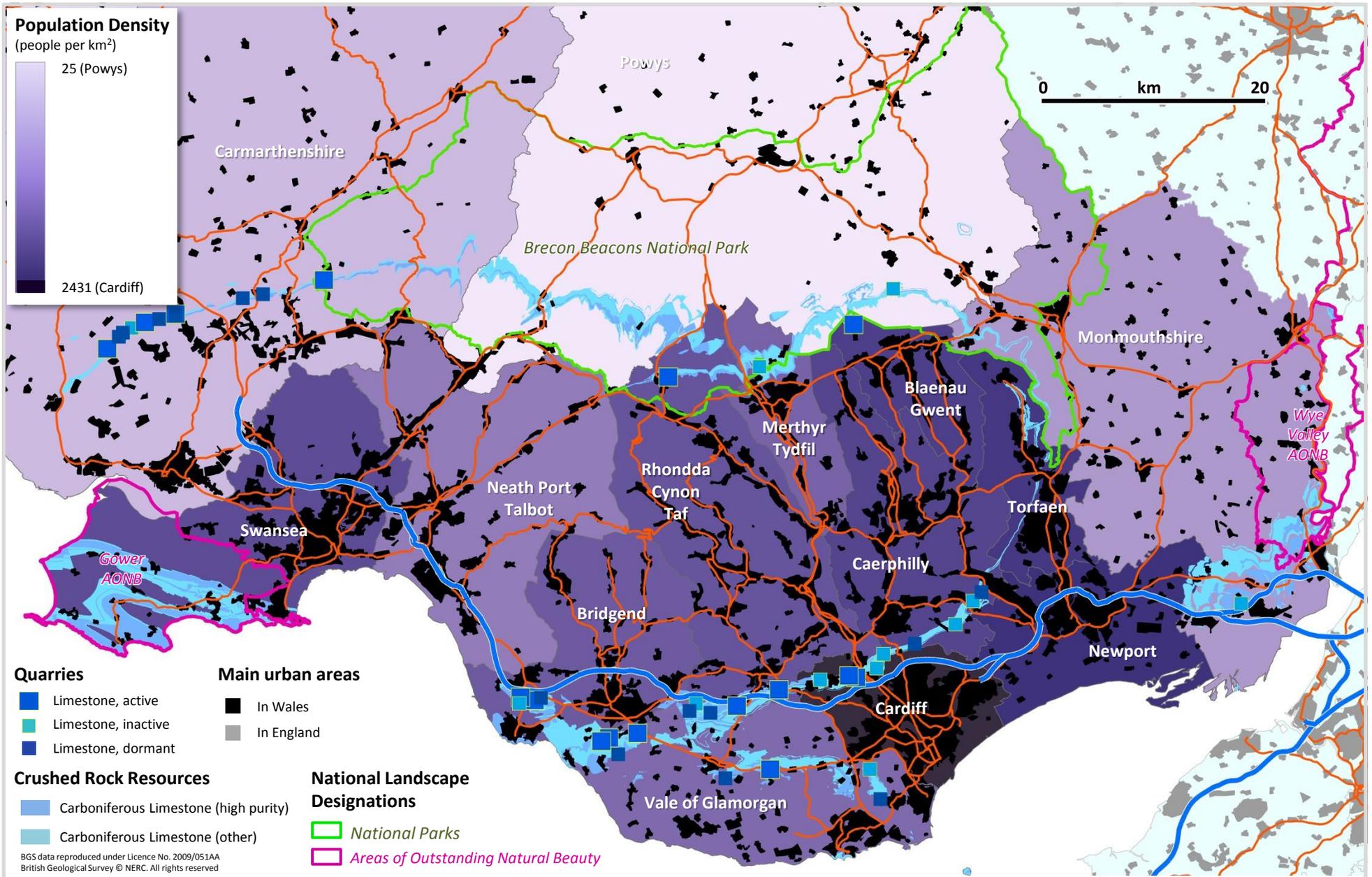


Fig B11: South Wales: - Limestone resources in relation to national landscape designations, population density, urban areas and major roads.

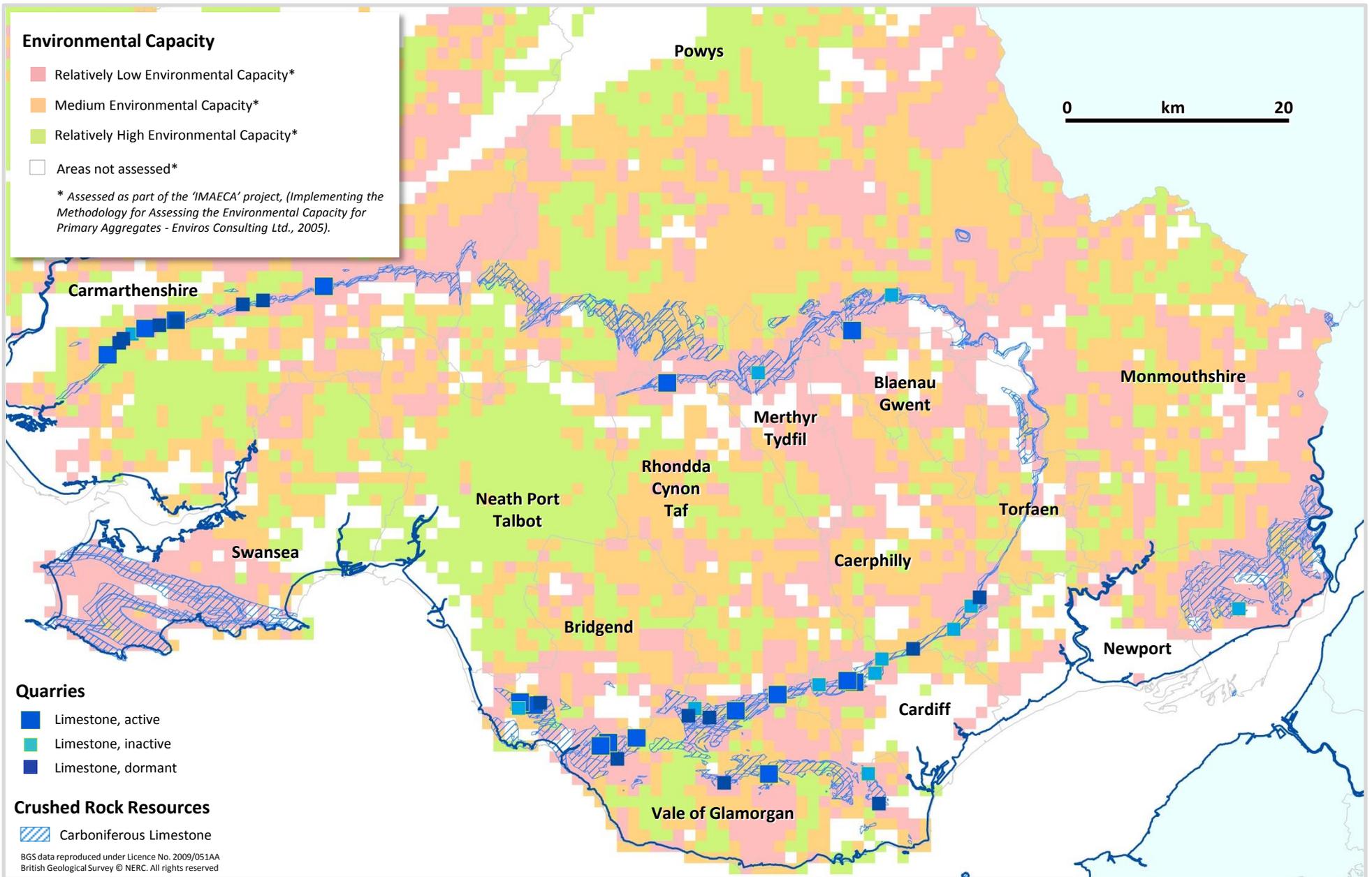
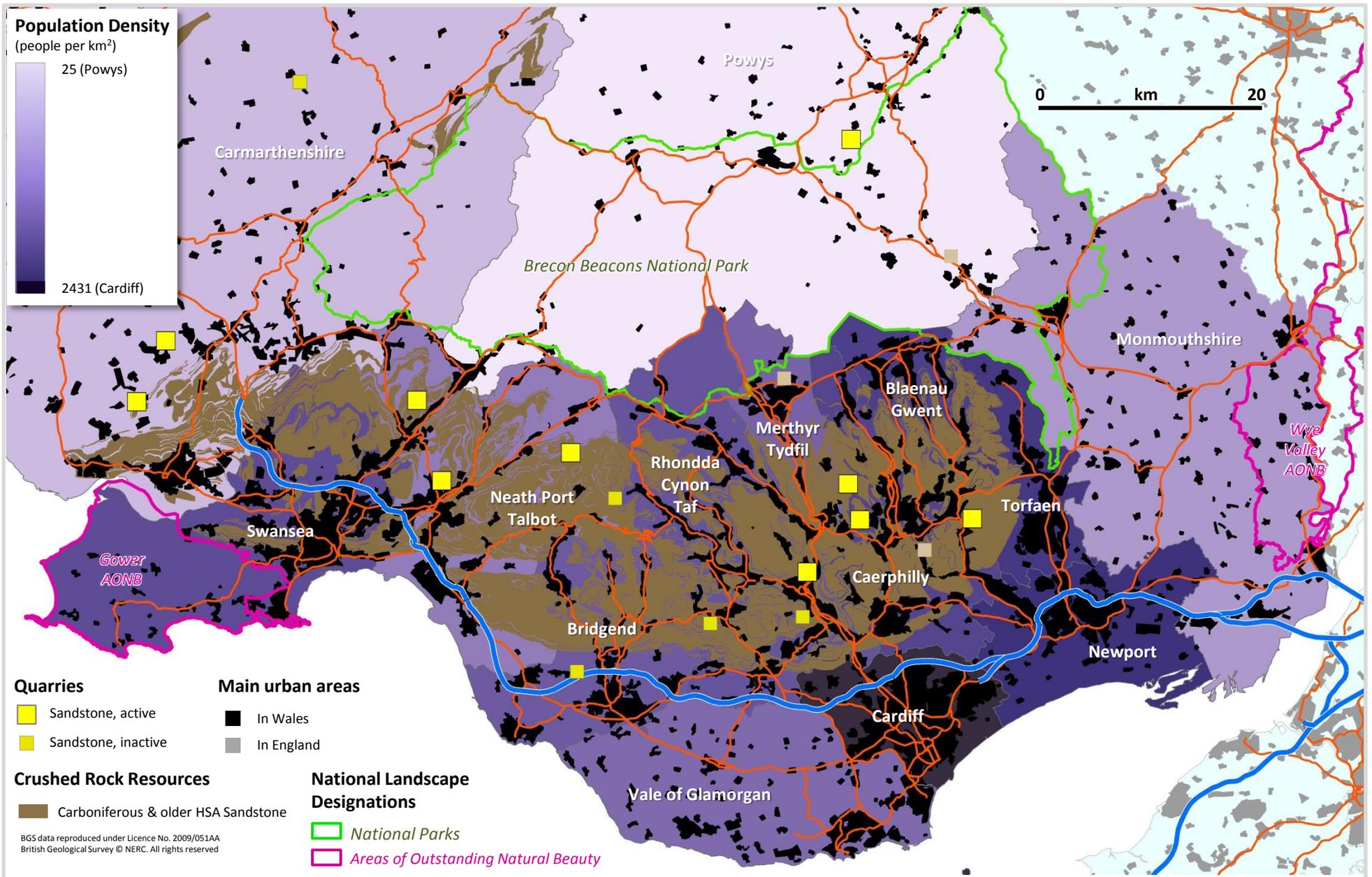
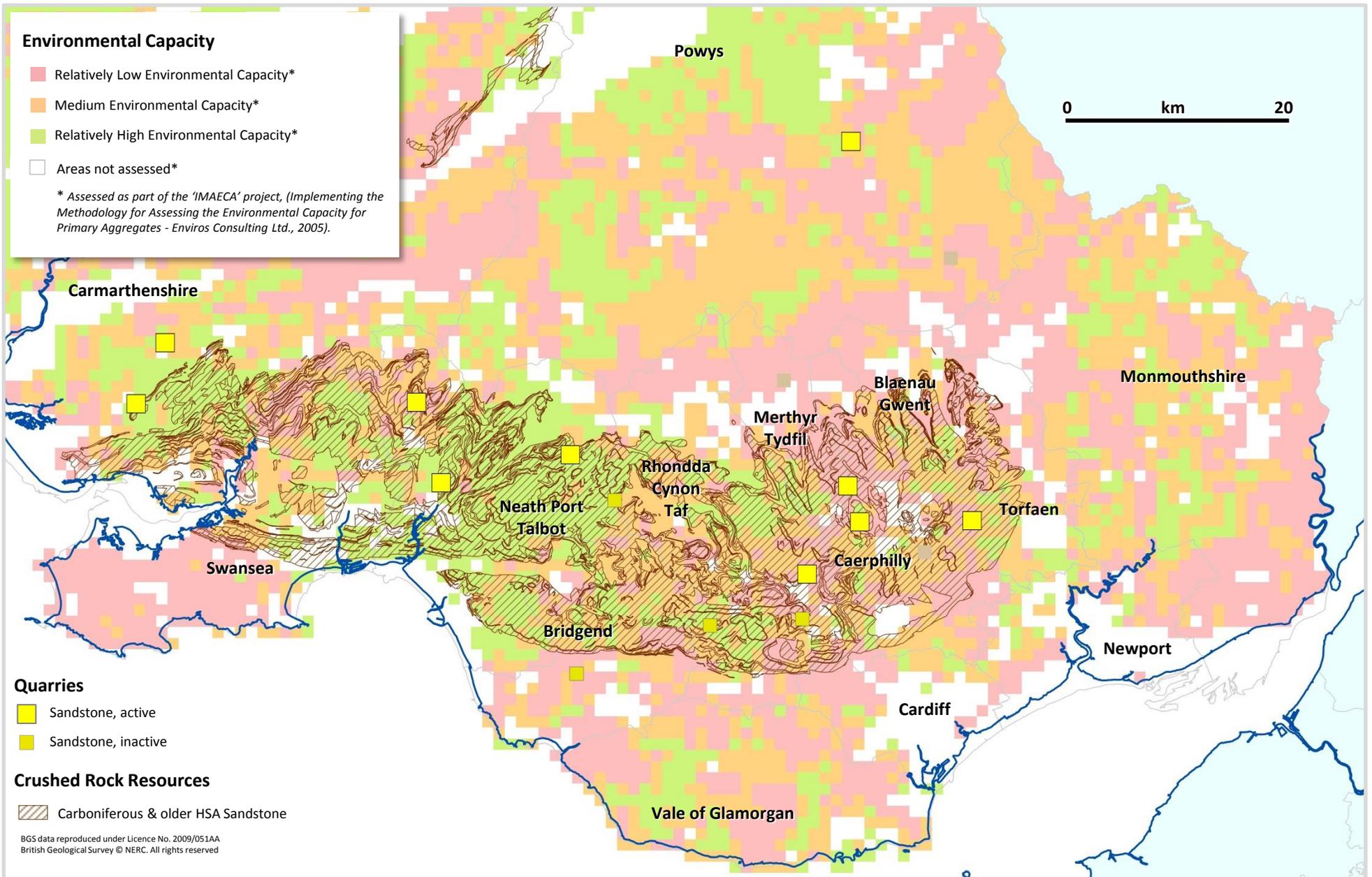


Fig B12: South Wales: - Limestone resources in relation to assessed Environmental Capacity for future quarrying.



**Fig B13: South Wales: - Sandstone resources in relation to national landscape designations, population density, urban areas and major roads.**



**Fig B14: South Wales: - Sandstone resources in relation to assessed Environmental Capacity for future quarrying.**

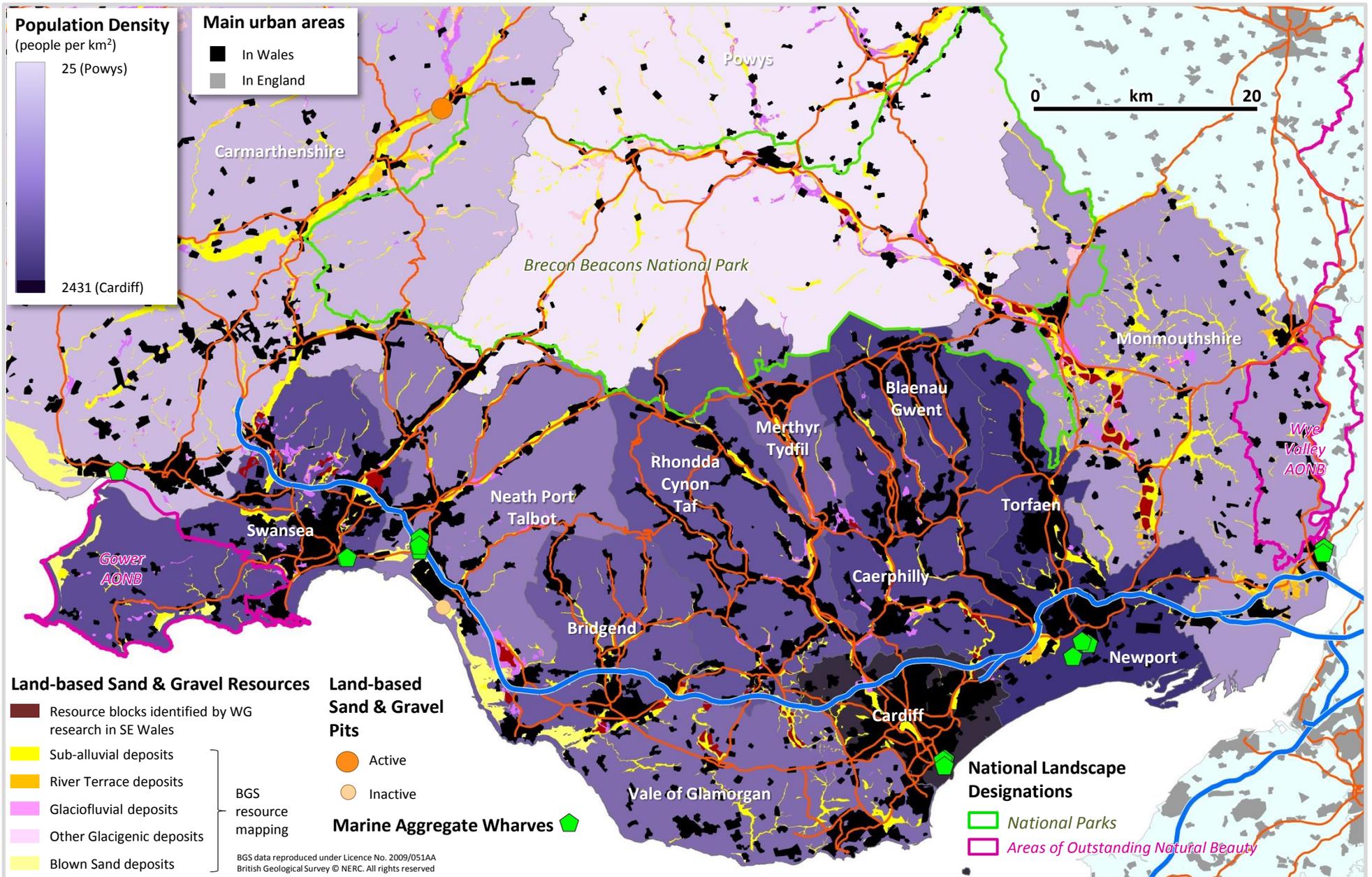


Fig B15: South Wales: - Sand & gravel resources in relation to national landscape designations, population density, urban areas and major roads.

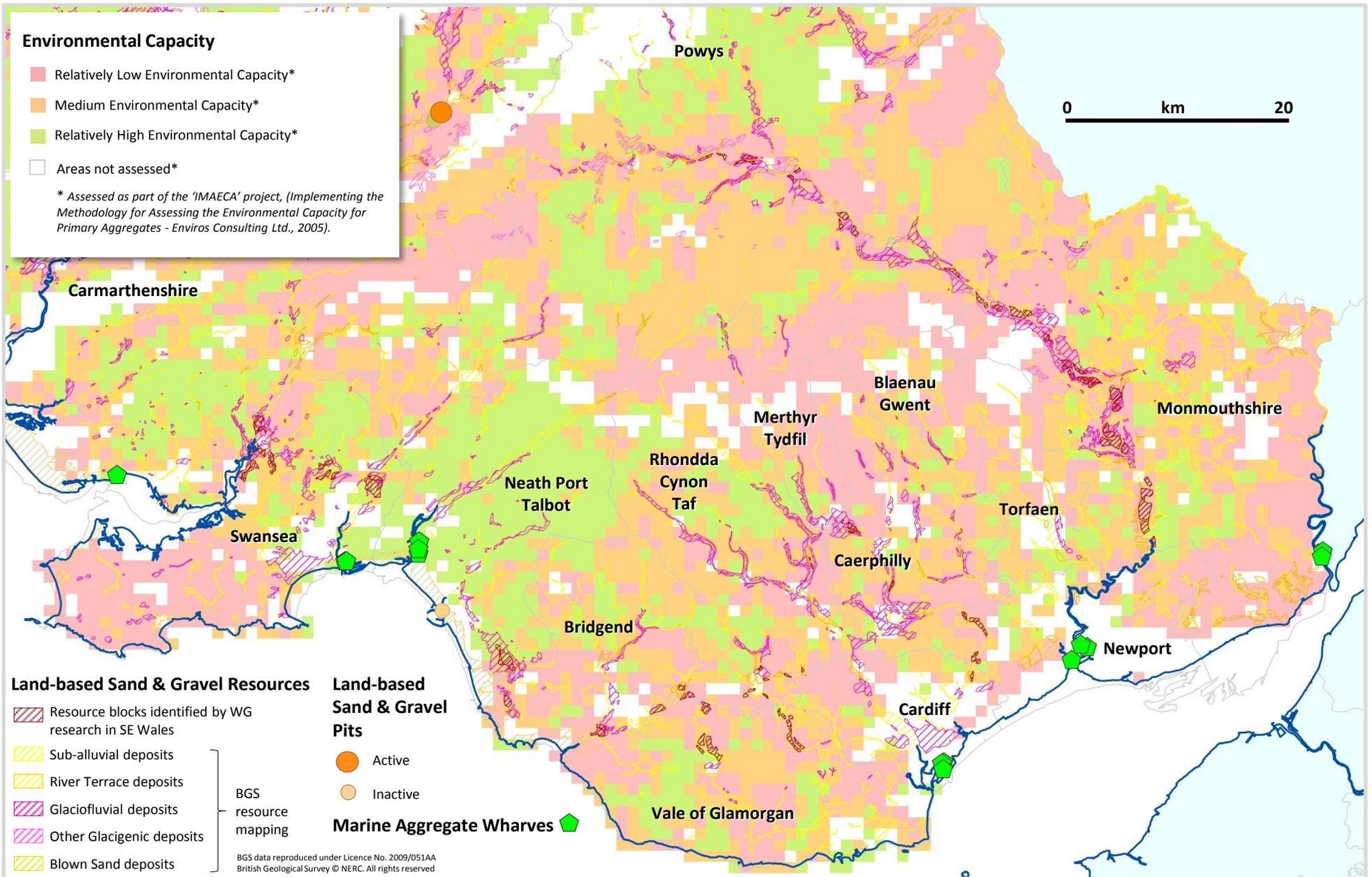


Fig B16: South Wales: - Sand & gravel resources in relation to assessed Environmental Capacity for future quarrying.