



Portland’s crushed limestone contribution

Paragraphs 3.19-3.24 of Policy MS-3 of the Bournemouth, Dorset and Poole Mineral Sites Plan Pre-submission Draft makes reference to the crushed rock (limestone) landbank in Dorset. We feel that since Portland would potentially have to be relied on to double its crushed rock output if Swanworth were to close, it is important that we explore the impacts of such a decision.

The question of Portland supplying all of the deficit caused if Swanworth Quarry were to close is highly contentious. We are sure that Swanworth has been allocated in the plan partly because it is understood that the figure for Portland reserves is largely hypothetical, but leaving the supposed landbank figures aside for a moment (refer to comments on Landbank at the rear of this document), there are many reasons why Portland would not suitably replace the benefits that Swanworth brings, including contribution to Poole, Bournemouth and Purbeck’s requirement for crushed limestone.

The Mineral Strategy specifically stipulates that allocated sites give a ‘steady’ supply close to the market, the relative proximity of Swanworth to the main market in East Dorset (Poole, Bournemouth particularly) compared to Portland is crucial in this regard¹. Journey time from Swanworth is at least half that from Portland. This simple geographical point has wide-ranging consequences which have created the exceptional need for a supply from Swanworth that has existed for nearly a century.

The location of Swanworth and Portland relative to the largest market has major environmental consequences. Over the last 18 months Swanworth has contributed stone products to the destination areas identified in Table 1 below:

Table 1 – Swanworth recent sales destinations

Swanworth stone sales destinations Feb 17 - Jul 18	Total Tonnage	Total %		
Destination Not Given	1424.92	0.76%		
Poole/Bournemouth	113712.05	60.64%		
Purbeck (Geo)*	25894.57	13.81%	Purbeck District***	%
Purbeck (Adm)**	22241.83	11.86%	48136.40	25.67%
South East	14851.14	7.92%		
South West	7965.77	4.25%		
Other (North)	1443.98	0.77%		
*(Geographic) This includes everywhere that is traditionally considered ‘Purbeck’ and that is east of a vertical line drawn between Kimmeridge and Wareham and south of Holton Heath and signifies areas that are significantly more accessible to Swanworth quarry than Portland. **(Administrative) This includes everywhere within Purbeck District that is west of the line described above or north of Holton Heath (e.g. Wool, Winfrith, Lulworth, Upton, Lytchett, Bloxworth etc). Signifies areas that are in Purbeck district which have a less relevant proximity to Swanworth compared to Portland (albeit most are still closer to Swanworth). ***This is the combined totals of Purbeck (geo) and Purbeck (adm).				

¹ It is important to note that Purbeck’s demand for crushed rock is not insignificant (up to 48,000 tonnes per annum). In any scenario, including or excluding Swanworth, Purbeck has a need for crushed limestone which will have impacts on the AONB and road network.



Using these figures as a basis we can see that Swanworth is a minimum of 20 miles closer than Portland to 80-90% of the destinations it currently supplies. Without Swanworth supplying the South east of the county, the increased journey time, cost, emissions and traffic impacts in the West of the county would be increased. Increased emissions as result of these extended journeys is neither desirable nor sustainable according to Dorset's Mineral Strategy and National Air Quality policy. National and local commitments as part of the Climate Change Act mean that a reduction in emissions is the ultimate aim. Relying on a Dorset crushed stone landbank that doesn't include Swanworth would potentially more than double emissions for crushed limestone delivered to East and South East Dorset.

As an example. our own fleet of lorries use ~315,000 litres of fuel per annum and generate 815 tonnes of CO₂, 32 kg of PM (PM_{2.5} and PM₁₀ combined) and 1.7 tonnes of NO_x per annum travelling to and from the main market of Poole and Bournemouth as well as Purbeck². Our calculations suggest that achieving the same supply entirely from Portland operators would require an increase of fuel usage to ~692,250 litres, emissions of 1790 tonnes CO₂, 69 KG PM and 3.7 tonnes NO_x per annum³. Transporting more aggregate from the Mendips by road would obviously cause a more acutely detrimental effect with further increases in fuel usage and emissions.

The comparative distances to various sales destinations from Swanworth and Portland are provided in Table 2 below.

Economically, Swanworth's geographical and geological position is crucial; because the haulage aspect of crushed rock is the most significant cost it means the majority of the products do not travel long distance easily out of economic necessity. As Swanworth is at least 20 miles closer to the main market, it has demonstrated over many decades that it is most ideally situated to contribute to East Dorset's requirement as a result. The combined supplies of Swanworth and the Portland quarries positively impact on overall crushed limestone costs in Dorset and the combination ensures a competitive market that is relatively balanced between the two locations. When Purbeck district's crushed limestone requirement is considered this point is more acutely relevant with regards to travel distances and the resultant economies as Swanworth is located within the Purbeck District area.

The status quo allows for a crushed limestone provision from a balanced geographical spread, equally including Portland and Swanworth Quarry, but also (less preferably according to DCC's mineral strategy) relying on crushed limestone imported from outside the county. Paragraph 3.25 suggests that Swanworth 'is considered to offer a more sustainable source of construction aggregate for the Poole and Bournemouth markets' but does not discuss its contribution to Purbeck's requirement and the effects on that requirement should Swanworth close. It is established that transport from Swanworth is more sustainable economically and environmentally, but it is also preferable for Purbeck in other ways. Maintaining employment, maintaining an inert waste acceptance facility and generally supporting economic activity in Purbeck makes it a sustainable part of the Plan. The preference for land-won Dorset crushed limestone close to the market means that strategically a combination of Portland and Swanworth is preferred in the Plan.

The alternative to the status quo, should Swanworth be forced to close, is that Portland's crushed limestone output would have to double in order to preserve a Dorset based supply. This would severely challenge Portland's own ecological and landscape constraints. Portland, Weymouth and the surrounding road network would be expected to allow for a 100% increase in crushed rock production and transport. The Swanworth proposals do not mean an increase of rates of production or transport

² Based on 2017-2018 calculations

³ Based on average 2017-2018 journeys



at all from current levels. We believe this meets Dorset’s crushed limestone need in a satisfactory way without increasing the impacts of production or reliance on any other area in the county.

Table 2 – Distances between recent sales destinations and limestone sources

Area	Destination	Mileage		
		Swanworth	Portland	Factor
Purbeck	Swanage	4.7	34.7	7.38
Geo	Langton	2	32.6	16.30
	Worth	0.8	32.7	40.88
	Kingston	1.4	30.6	21.86
	Corfe	3.2	28.8	9.00
	Church Knowle	4.8	30	6.25
	Creech	8.3	27.9	3.36
	Stoborough	6.8	25.5	3.75
	Wareham	8.7	25.3	2.91
	Sandford	9.7	33	3.40
	Holton Heath	10.9	32.5	2.98
Purbeck	Lulworth	14.5	20.9	1.44
Adm	Wool	12.8	19.6	1.53
	Winfrith	15.4	17.6	1.14
	Upton	14.4	34.6	2.40
	Lytchett	12.6	33.3	2.64
	Bloxworth	15.3	27.9	1.82
East Dorset	Poole	17.5	37.7	2.15
	Bournemouth	22.3	42.4	1.90
	Christchurch	29.3	47.9	1.63
	Wimborne	19.5	36.7	1.88
	Blandford	23.5	30.9	1.31
South East	Ringwood	33.5	49	1.46
	Southampton	54.5	69.8	1.28
	Portsmouth	73.2	88.6	1.21
	Chichester	86	101	1.17
	Brighton	119	134	1.13
	London	128	144	1.13
South West	Dorchester	23.5	13.8	0.59
	Weymouth	25.4	6.3	0.25
	Owermoigne	17.4	14.8	0.85
	Broadmayne	19.9	13.1	0.66

In considering traffic impacts, it is important to note that, the road network which would have to be used from Portland is already subject to congestion and accident blackspots (particularly the A35 between Bere Regis and the ‘Bakers Arms Roundabout’) which would undoubtedly suffer from such a large increase in HGV traffic if Swanworth closes. In contrast, the road network routes from Swanworth to the same point would not need to undergo an increase in HGV traffic and are already less accident prone than the stretch of A35 mentioned.



*Landbank figures

Putting aside the crucial environmental and economic considerations identified above, we would argue, that based on the facts as we understand them, it isn't true to suggest that 47 years reserve is a 'conservative estimate' or a minimum. A proper exploration of the data for permitted, un-relinquished surface quarrying land on Portland has not been accurately ascertained and in any case the information on the landbank is certainly not up-to-date.

Planning permission constraints introduced by the authority's 'ROMPS' strategy means that Portland quarries have gradually been forced to relinquish land and turn increasingly to mining. Mining automatically and necessarily sterilises millions of tonnes of aggregate because only dimension stone yielding 'freestone' beds are mined at the expense of the larger aggregate bed volumes which are forever left as the roof and floors of the mined void. This approach to Portland means that surface quarrying (best for yielding high amounts of aggregate suitable beds) is heavily discouraged and we understand that mining is now widespread on Portland. This is set out in the MSDCC Core Strategy background paper part 10 entitled 'Portland Stone'. It also attempts to explain the figure of ~47 years of crushed limestone reserve, but evidence such as specific permitted quarry tonnage/acreage figures are not included in the report. Subsequent strategy documents referring to similar reserve figures provide no further evidence and we are left to question what proportion of the ~13 million tonnes is:

1. Relinquished quarry land (due to ongoing ROMPS process)
2. Sterilised aggregate beds (due to increasing prevalence of mining on Portland)
3. Tonnage that was/is, in reality, intended for dimension stone production but was included in the aggregate landbank figures⁴

We would suggest that the above 3 points represent a massive reduction in the landbank figure that has been impossible to accurately consider without access to permitted quarry/mine tonnages or acreages. However, as an operator that has access to the full depth of Portland beds (albeit on the Isle of Purbeck), we feel appropriately qualified to at least call the Portland landbank figure into question. Swanworth Quarry is the only quarry in the plan that has access to Portland beds and concentrates on surface quarrying to produce crushed limestone.

⁴ Portland operators' main business is focused on dimension stone which commands prices that start at a factor of 10 higher than the per tonne price achievable for aggregate (indeed some beds are likely to achieve as high as 100 times the price of aggregate per tonne). Relinquishing and sterilising landbank on Portland will generally mean aggregate yielding beds are sacrificed in favour of the much more lucrative dimension stone beds. To illustrate this point, historically, one of the Portland operators has collected single size aggregate directly from Swanworth Quarry to meet some of their aggregate orders, (~1000 tonnes this year to date). In contrast Suttles have not taken stone from Portland because geographically and economically that scenario would not make sense.