

# Land South of The A4240, Parc Mawr, Penllergaer, Swansea

## Planning Application Transport Review (2018/2697/OUT)

December 2019

N01- 195071-AW-Planning Application Transport Review

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### Introduction

1. A hybrid planning application (2018/2697/OUT) was submitted to Swansea Council in December 2018. The outline application includes 850 residential dwellings, a primary school, a local centre including community facilities, a spine road with links to Gorseinon Road, A483 and A484, and associated works. The full application (Phase 1a) includes 186 dwellings and associated works with access off Brynrhos Crescent, and includes the demolition of 31 Gorseinon Road and demolition of identified Parc Mawr Farm buildings.
2. The site (Site C) is allocated in the adopted Swansea Local Development Plan 2010-2025 (LDP) for a comprehensive, residential led, mixed use development of circa 644 homes during the Plan period, incorporating a primary school, leisure and recreation facilities, public realm, public open space and appropriate community and commercial uses. The transportation development requirements set out in Policy SD C of the LDP are:
  - Delivery of an internal spine street and associated junctions to run broadly north to south through the site from the A4240 Gorseinon Road to connect to both the A483 and A484;
  - Appropriate off-site infrastructure improvement at existing A48/Pontarddulais Road/Gorseinon Road roundabout, which must be delivered in association with proposed new gateway access at A4240 Gorseinon Road;
  - Off-site highway infrastructure improvements as necessary, having regard to requirements arising from the necessary Transport Assessment and as set out in the Transport Measures Priority Schedule;
  - On and off-site measures to provide good quality, attractive, legible, safe and accessible pedestrian and cycle linkages, both to and within the new development area, including linkages identified in the Transport Measures Priority Schedule: AT13 - Phoenix Way employment areas to the west of the development area and east to west green corridor link, and AT14 - Link to the south via underpass to SD H; and
  - Incorporate existing PROW within the development by appropriate diversion and enhancement to form legible and safe routes. Specifically, as follows: – retain and surface existing green lane to provide foot/ cycle connection to the PROW to the west, and provide bridle access and bridle gates to PROW ref LC/28/2.

3. The LDP states:

*This proposal is **predicated** on the delivery of a new spine street to serve the site that will also provide a through link from the A4240 Gorseinon Road to the A484 Llanelli Link Road to the south. This new infrastructure has potential to **provide a strategic function and alleviate congestion in the area**, as well as deliver an attractive route designed to encourage walking and cycling.*

4. It appears that Swansea Council recognise that there are capacity issues on the existing highway network that require significant infrastructure improvements. This had led to the allocation of strategic housing sites within the LDP of sufficient quantum and strategically located to enable the required infrastructure to be provided by developers.

5. To help and guide the allocation of strategic development in Swansea a Strategic Transport and Development Study (STDS), supported by the production of the Swansea Strategic Transport Model (SSTM), was undertaken in 2014/2015 with an update undertaken in 2017/2018. The SSTM is a working tool that can be used to inform planning applications and developer discussions in respect of understanding a development's impact and infrastructure (in this case the bypass) on the highway network and possible mitigation measures.

6. Para 2.12.3 of the Adopted Local Plan says:

*The Council recognises that any development growth will likely result in greater levels of traffic, and that increased congestion is likely to occur if appropriate mitigating transport measures and infrastructure are not delivered. The Strategic Transport Assessment was commissioned by the Council to consider the impact of Plan proposals and help guide and inform the process of delivering land allocations by means of modelling and quantifying the transport impact of these proposals. This Assessment has been important in providing a thorough assessment in the likely impact of the Plan's strategy for growth and proposing some of the mitigating measures that may be required.*

7. Vectos has been commissioned by Penllergaer Community Council (PCC) to undertake a review of the Transport Assessment (TA) submitted to support the hybrid planning application against the following supplied documents:

- Arup's Addendum Study: 21st January 2018;
- Statement for Swansea LDP Examination Including Common Ground, as agreed between Swansea Council and Bellway Homes - Hearing Session 6: 14 February 2018;
- Planning Inspectorate's Report on the Examination into the Swansea LDP (p18-24);
- Bellway Planning Application (access, spine road and phasing)
- Jacob's Response to Planning Application: 14<sup>th</sup> February 2019; and
- Penllergaer Community Council's response to the Statement for Swansea LDP Examination Including Common Ground, as agreed between Swansea Council and Bellway Homes: 18<sup>th</sup> February 2012(sic).

## Identified Issues

### Spine Street

8. The papers provided identify that there is significant traffic congestion around M4 Junction 47 and along the A48 Swansea Road from the A48/A4240/ Swansea Road roundabout junction northwards through Pontlliw. It is recognised that there is a large volume of traffic routing through M4 Junction 47 which is travelling from the A48 into Swansea, and the removal of this traffic by the provision of a new road between the A4240 and the A484/A483 would benefit the operation of M4 Junction 47.
9. PCC is concerned that the design of the new road, due to its place making design, will not act as a link to provide the relief as identified above.
10. The concern raised by PCC was also raised by the Inspectors appointed by Welsh Government during the Examination Hearings for the LDP . The question asked was “ *Would the proposed spine road between the A4240 and A483/A484 acceptably mitigate capacity constraints on other roads? Would it be appropriate for this route to accommodate a substantial volume of through-traffic?*”
11. The concluding response given was that “ *Both the Site promoter and the Council agree that there is a need to **balance priorities for diverting traffic movements whilst minimising vehicle speeds and creating a liveable space.*** “The function of the spine street is therefore not solely related to providing relief from the M4 Junction 47.
12. Whilst there is no reference to the proposed road modelling assumptions within the original SSTM report, the 2018 Addendum states that the modelling has ensured that all spine roads through Strategic Development Allocations are appropriately coded to ensure through traffic on such routes is modelled with regard to the characteristics of spine streets, namely that their speeds are lower than arterial roads. This coding is affirmed within the LDP Common Ground document which states that the SSTM has assessed the capacity of the spine street as a piece of infrastructure that is integral to a new walkable neighbourhood with frontage development and a design speed of 30mph, and 20mph in places (such as past the school frontage).
13. Therefore, it can be concluded that the spine street has been modelled within the SSTM in accordance with the proposal for 644 dwellings and that the relief to the congestion on the existing road network that the spine street offers for the Local Plan allocation is as per the findings of the SSTM Addendum report i.e. sufficient redistribution of existing traffic travelling from the A48 into Swansea onto the proposed spine road.
14. In respect of the alignment of the spine street, there is some deviation from a direct north to south link. The proposed alignment and the number of side street junctions (causing lower vehicle speeds due to turning movements) may make the route less attractive as a through route.

15. Within the 2015 SSTM a road length of 1.75km was assumed and this has presumably been carried over to the 2018 SSTM. To ensure that the modelling is representative of the proposed spine street it would be beneficial to request its anticipated length given the proposed alignment.
16. The current driving distance from the A48/A4240/Swansea Road roundabout to the proposed A483/Spine Road junction via M4 Junction 47 is approximately 2.2km. This journey reduces to approximately 1.2km when the development is built out with the spine street in position. Currently vehicles routing from Pontlliw into Swansea travel through six junctions (five of which are signals within M4 Junction 47) to reach the A483. A detailed route assessment of the two journey times, taking into consideration vehicle speeds and predicted junction modelling delays would need to be undertaken to assess whether the proposed spine street would offer a route that would alleviate traffic on the existing highway network.
17. One way to think of the proposed spine street is to consider a small town/busy village high street where there is frontage access, shops, schools and pedestrians. As the development is to provide the provision for a bus service on the spine street it is anticipated that the road will be designed with a minimum width of 6.3 metres. Manual for Streets, a design guide for place-making streets within England and Wales, recommends that streets with direct frontage and 30mph speed limits are suitable to accommodate flows of approximately 10,000 vehicles per day. This equates to the traffic associated with approximately 1,300 dwellings. A judgement can be made that the development takes up circa 65% of the capacity of the spine street which seeks to deliver a balance between a local walkable street and a relief road.
18. Therefore, there is the ability for circa 3,500 vehicles on the existing network each day to be diverted through the site along the spine street. On the assumption that a rough rule of thumb that the peak hour represents 10% of the daily traffic flows then the spine street can accommodate the transfer of circa 350 vehicles at peak hours (circa 175 vehicle movements each way). It is likely that the majority of this traffic would be taken up by trips from Pontarddulais / Pontlliw, but there could be some demand from Gorseinon and Penyrheol in reality. 350 vehicles is the maximum peak hour demand that could potentially be diverted from M4 Junction 47. Any further redistribution would tip the balance away from a walkable and liveable space towards a more road prioritising traffic and could be detrimental to the delivery of a sustainable neighbourhood.
19. Investigation of the traffic flows used in the model indicate that 992 vehicles will be present on the spine street at the northern access in the AM peak hour. Applying a rough rule of thumb that the peak hour represents 10% of the daily traffic flows it can be seen that the development, with the flows used within the TA, could be at the upper end of the 10,000 vehicle threshold. Further analysis would be required to understand the number of vehicles the TA / SSTM assume to be using the spine street and whether the current design is suitable for the anticipated number of vehicles.

20. One aspect, given the diversion of vehicles routing into Swansea, is that of the number of HGVs that will present themselves along the Spine Road and, their suitability for this road type and their impact on highway safety. Further analysis of the work undertaken within the submitted TA and the SSTM may be able to define the number of HGVs predicted to travel through the site.
21. It may be considered that HGVs are banned, except for access, from using the spine street and remain on the main highway network, and in such circumstances the spine street would not provide an alternative route for all vehicles

### **Phase 1a**

22. The submitted planning application seeks permission for the first phase of the development (186 dwellings) to be accessed solely from Brynrhos Crescent. This represents approximately 22% of the total development. The access will remain in place when the development is fully built out (850 dwellings).
23. This access will serve the first 275 dwellings (32% of the total development) and as such all traffic generated by the development and travelling towards Swansea will have to pass through M4 Junction 47. This could establish the route of access for vehicles for phase 1 even when the scheme is fully built out i.e. people may continue to use this route even when the primary site access is opened. It would also remain in place at full build out and is an option for vehicle route for the entirety of the development.
24. The submitted TA states that this access will be designed in a manner that makes it indirect and tortuous to access the wider development area when it is fully built out. The site layout plan for Phase 1a (Appendix A of the submitted TA) shows two straight link roads proposed between the spine street and Phase 1a. These links provide direct and easy access from the wider development to Brynrhos Crescent.
25. Therefore, depending on vehicle turning movements, it may be easier / quicker for vehicles from the development travelling to the M4/A48 east to exit the development via Brynrhos Crescent and Swansea Road rather than the proposed new northern access.
26. The routing of vehicles through Brynrhos Crescent could be detrimental to the wellbeing and quiet enjoyment of people residing on Swansea Road , Brynrhos Crescent and the other roads impacted by this proposal.
27. This access has not been included in any of the SSTM assessments and therefore the impact of it on the distribution of the site's traffic and the A48/Swansea Road/A4240 roundabout junction is unknown and the mitigation currently proposed may not be suitable. It is suggested that the SSTM should be re-run using the proposed highway network.
28. The scheme layout is therefore not in line with the SSTM road network structure and could in fact result in increased traffic on small residential streets. This would impact of the attractiveness of these streets to facilitate active travel trips. The scheme is predicated on delivering a link road to remove trips from congested parts of the road

network – not to increase traffic on small residential streets which could be detrimental to congestion / amenity / air quality on Brynrhos Crescent. There is concern that this scheme could in fact transfer trips from the M4 Junction 47 onto quiet residential streets such as Brynrhos Crescent.

### **Traffic Distribution**

29. The TA submitted in support of the planning application has distributed the traffic generated by the development on a first principles basis, based on National Travel Surveys, 2011 Census data and the geographical location of destinations i.e. schools.
30. Importantly the submitted TA has redistributed existing traffic through the site based on existing turning movements at junctions. The development should be taking into consideration the findings of the SSTM as to the numbers and routes of diverting vehicles.
31. The scheme also delivers a road network that is different to that set out within the SSTM with a road connection to Brynrhos Crescent - a quiet residential cul-de-sac. There is concern that this scheme could in fact transfer trips from the M4 / A483 junction onto quiet residential streets such as Brynrhos Crescent.

### **Committed Development**

32. The TA submitted to support the planning application undertakes an assessment of the highway network in 2028 at which time all of the sites allocated within the Swansea LDP 2010-2025 are expected to have been delivered.
33. However, due to the date the planning application was registered and that the LDP was at that time under review, it only includes the strategic development sites SD B, SD D and SD G.
34. Therefore, the assessment undertaken by the developer does not include all of the development included within the Swansea LDP which consists of strategic housing and employments sites and smaller residential sites including the 115 dwellings proposed at Pontlliw which would have a direct impact on the highway network under consideration in 2028, and the number of vehicles which route along the spine street.

### **Phasing of the Development**

35. The submitted TA sets out the following timeline for the delivery of access to the site:
  - 2019 – Brynrhos Crescent;
  - 2021 – A4240 (276 dwellings);
  - 2022 – A483 (368 dwellings); and
  - 2028 – A484 (850 dwellings).
36. Due to the phasing, journeys associated with the Phase 1a (275 dwellings) would become established using quiet residential streets, and may not transfer to the higher category road network utilised with the SSTM. Additionally, with the delayed delivery of the spine

street, buses will not be able to serve Phase 1 and critical walking and cycling links will not be provided, and the opportunity for modal shift may be lost.

37. The 2015 SSTM report states that alternative assessments were undertaken to understand if some elements of the proposed routes through the Parc Mawr site were not delivered. The details of these assessments is not known but the report summarises 'that these 'lesser' schemes perform less well than providing a full north-south link road, together with a link to the A483'.
38. The strategic impact of the proposed development not delivering the accesses until the dates identified above on the existing highway network cannot be determined.
39. The Swansea Infrastructure Delivery Plan states that RM4 'Penllergaer Link Road and internal roundabout' is essential and should be delivered in two phases (£5,175,000 to release first 350 homes and £2,050,000 to release remaining 500 homes). It also states that RM5 'Existing Pontarddulais Road/Gorseinon Road/Swansea Road roundabout converted to signal control in co-ordination with new gateway access to SDA Site C' is essential and should be delivered before the occupation of the 50<sup>th</sup> dwelling. The report summarises the risks of non-delivery of the infrastructure. 'ARUP Study' p.89 highlights if there are "no infrastructure measures" then "Delays without any road infrastructure schemes result in significant increases in journey delay (at over 50%)".
40. The Swansea Infrastructure Delivery Plan states 'the Council carried out Independent Financial Viability Appraisals (IFVA) on residential led Strategic Site Allocations. The IFVA's provide theoretical assumptions on the level of infrastructure required and associated phasing and costings. These have been agreed with site promoters and, where relevant, have been used to inform the Infrastructure Delivery Plan Schedule.'
41. A 'through route' to either the A483 or A484 must be delivered prior to a significant proportion of the homes and associated development coming forward at the site not only to alleviate congestion on the existing highway network but to deliver walking, cycling and public transport routes that will provide a modal shift and a sustainable development.

## Summary and Conclusion

42. It now appears that, until such time as any further analysis is undertaken, that by both the admission of the developer and the Council, it cannot be supported that the spine road can in fact enable the delivery of a sustainable community and liveable neighbourhood. Further analysis is required to fully understand the level of transfer of traffic and the ability of the spine road to accommodate this and to ensure that it also delivers its placemaking function.
43. The submitted TA indicates that the initial 275 dwellings (32%) will be accessed via the existing residential street of Brynrhos Crescent and that the access will remain enabling vehicles associated with the remaining development to utilise the access. This would increase traffic on small residential streets which would be detrimental to congestion /

amenity / air quality. Additionally, the movement of vehicles would be different to those assessed within the SSTM and the possibility of rat-running has not been assessed and mitigation requirements may alter. Initially, all traffic associated with the initial 275 dwellings and all travelling into Swansea will be required to use M4 Junction 47.

44. The proposed quantum of development is 32% larger than the assumption used with the SSTM. Some of the proposed infrastructure (links between A4240/A483/A484) used to assess future vehicle flows within the SSTM is not being delivered until later than the modelled future year of assessment. These infrastructure links have been deemed as essential in 2025 at the latest and may be shown, through additional modelling, to be required at a much earlier date.
45. Without the delivery of a through route (until at the earliest 2028), a bus service through the site, the intended assignment of traffic from J47 of the M4 motorway and important walking and cycling links cannot be delivered and modal shift will not be delivered.
46. No analysis of the number and type of vehicles using the Spine Street has been undertaken to prove whether a 20mph or 30mph road with frontage access is suitable.
47. The submitted TA does not consider the traffic impact of all development allocated within the LDP and has chosen to only assess impact with certain strategic allocations. As the development is to provide strategic network improvements and relief it should be requested to assess with the full impact of the LDP allocations. Further assessments can then be undertaken at junctions such as M4 Junction 47 to understand individual allocations' impacts.
48. It is considered that the TA submitted to support the planning application for up to 850 dwellings is not, in its current form, able to predict the impact of the development on the highway network.
49. The outputs of the SSTM, that indicate expected traffic flows and its distribution on the highway network have not been incorporated within the assessment.
50. Therefore, it is considered that that the planning applications fails to comply with the stringent and important requirements of para 2.12.3 of the Adopted Local Plan.
51. It is important that, given the proposed changes to the quantum of the development, the new access via Brynrhos Crescent and the phasing of the delivery of the accesses that further strategic modelling is required to be undertaken using the SSTM before the more detailed TA work is undertaken to determine road type and junction improvements.



