CD9/FR3

Bath and North East Somerset Council

Flood Risk:

The Sequential and Exception Tests Update

March 2013

1. Introduction

1.1. Following the Inspector's preliminary conclusions (ID28), the Council is proposing some changes to the submitted Core Strategy to reflect the latest evidence. This paper updates the Sequential/Exception Test report for the Draft Core Strategy Publication Version (Nov 2010) and sets out how the sequential test was applied to inform changes to the Core Strategy.

2. Policy Context

2.1. National Planning Policy Framework (NPPF CD2/31) and Technical Guidance to the NPPF (CD2/32) set the national planning policy context for consideration of flood risk. It states that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere.

2.2. B&NES Strategic Flood Risk Assessments (CD4/FR6-14) underpinning the submitted Core Strategy refine information on the probability of flooding, including other sources of flooding and the impacts of climate change, and provide the basis for applying the Sequential Test.

2.3. Following the Flood Risk Management Strategy (Dec 2010 CD4/FR2), Black & Veatch Ltd (B&V) was appointed to prepare Hydraulic Modelling for the River Avon and investigate flood mitigation measures to make development safe (including providing safe access and egress)whilst ensuring there is no adverse impact on third parties. The EA are satisfied in principle with the hydraulic modelling analysis and subsequent B&V technical note and will continue to work with the Council on taking this work forward. (CD4/FR38).

2.4. The B&V Bath Flood Risk Management Project: Technical Note (Feb 2013 CD4/FR37) sets out the findings of B&V's work, proposals for mitigating flood risk, and summarises the further work required to implement the solution**.**

3. The Core Strategy Approach

3.1. The spatial vision for the district includes that the district will continue to be distinctive and become a more competitive area within the West of England and will be made up of competitive, healthy and attractive urban, town and village centres within a rich and varied rural setting.

3.2. In accordance with the NPPF, the Core Strategy supports sustainable economic development to deliver growth and encourage the effective use of land by reusing previously developed land and directing new development to the most sustainable locations.

Housing needs and supply

3.3. The Council has reviewed its housing requirement and housing land supply through two studies, and as a result of this work a number of changes are proposed to the Plan:

- The **Strategic Housing Market Assessment** (SHMA): Its objective is to assess demographics, market trends and other statistics, and to identity the housing requirement in a given area.

- The **Strategic Housing Land Availability Assessment** (SHLAA): This assesses the potential of sites to be suitable, deliverable and developable during the plan period. The assessments were carried out applying the sequential risk based approach and to reflect the outcomes of the Sustainability Appraisals weighing the flood risk with wider sustainability objectives. (Sustainability Appraisal Annex L)

3.4. The Core Strategy makes provision for 12,700 homes. Of the 12,721 homes identified in the SHLAA, 5,088 homes are already built or are sites with Planning Permissions. A windfall sites allowance of 1,586 homes will be subject to the sequential test through the Development Management process*. **This leaves 6,047 homes to be sequentially tested*** for development as summarised below.

Table 1 SHLAA Housing development sites

	Built / with planning permissions (homes)	**Subject to the sequential test (homes)**	**Windfall - Subject to the sequential test through the DM process (homes)**	**Total (homes)**
Bath	2,935	3,318	752	7,005
Keynsham	416	1,510	164	2090
Somer Valley	1,436	699	260	2,395
Rural	301	320	410	1,031
Whitchurch		200		
	5,088	**6,047**	**1,586**	**12,721**

4. The Sequential Test for Bath

4.1. Table 2 summarises the housing development sites with flood risk zones, taking into account the effects of climate change. See Appendix A for FZ maps and Appendix B for SHLAA sites.

Table 2 Bath SHLAA sites

Subject to the sequential test		**FZ1**	**FZ1 (FZ2 can be avoided**	**FZ2 with climate change (ha)**	**FZ 2/FZ 3a with climate change (ha)**
Urban area	2,598 homes	1,536 home (11 sites)	442 homes (8 sites)	63 homes (4 site)	392 homes (9 sites)
		165 homes Abb.6, Wes.2 and King.13			
Greenfield	720 homes	720 homes			
	3,318 homes	2,863 homes		455 homes	

4.2. Only small parts of SHLAA sites-Wes.2 (Bath Press), Abb.6 (Hilton Hotel/Cattle Market/Corn Market) and King.13 (Argos) are within FZ2/3a. There is enough flexibility to apply the sequential approach, directing residential development to FZ1 within these sites. Therefore they are included in the FZ1 figure.

4.3. Some areas fall partly in FZ1, 2 and 3a. For the purpose of this test, a general proportional assumption is applied. See the Table 3 below.

4.4. The majority of the SHLAA site King 6 (Green Park Station) is within FZ1. FZ 2 and 3a are 0.45 ha of 2.4 ha, therefore the majority of homes can be directed to FZ1. Applying the average density in the city centre on a precautionary approach 250 homes within FZ1, 50 homes in FZ2/3a for this test. Therefore 2,863 homes pass the sequential test but 455 homes cannot be accommodated in FZ1.

Table 3 Bath SHLAA sites falls partly in FZ2 and 3a with the proportionate indicative capacities

		Homes	**Area (ha)**	**FZ1(ha)** *(Proportional housing figure)*	**FZ2 with climate change (ha)** *(Proportional housing figure)*	**FZ3a with climate change (ha) Exception Test** *(Proportional housing figure)*
Abb.1/ 1b	**Avon Street Car Park/Coach Park**	150	1.53	0	0.06	1.47 *(150 homes)*
Abb.3-5	**Manvers Street, Royal Mail /Police Station Car Park**	100	1.25	0.31 *(50 homes)*	0.05	0.89 *(50 homes)*
King.6	**Green Park Station**	300	2.37	1.92 *(250 homes)*	0.09	0.36 *(50 homes)*
King.7	**Alexander House, Norfolk Place**	19	0.08	0.054 *(13 homes)*	0.026 *(6 homes)*	0
King.10	**Hinton Garage, Albion Place**	55	0.45	0.2 *(27 homes)*	0.04	0.21 *(28 homes)*
King.11	**Onega Centre**	36	0.3	0.24 *(12 homes)*	0.032 *(12 homes)*	0.028 *(12 homes)*
King.12	**Comfortable Place**	60	0.62	0.19 *(20 homes)*	0.07	0.36 *(40 homes)*
King.15	**Westmark, Windsor Bridge Road**	120	0.73	0.21 *(40 homes)*	0.255 *(40 homes)*	*0.265 (40 homes)*
Lam.4	**The former 'Harvester' restaurant, Gloucester Road**	46	0.74	0.48 *(30 homes)*	0.01	0.25 *(16 homes)*
	15 St George Place	11	0.06	0.007	0.023 *(5 homes)*	0.03 *(6 homes)*
	Sub-total	**897 homes**	**8.13 ha**	**3.611ha *(442 homes)***	**0.656 ha *(63 homes)***	**3.863 ha *(392 homes)***
						455 homes

4.5. The overall aim of the sequential test is to steer new development to Flood Zone 1. Only where there is no reasonably available site in FZ1, reasonably available sites in FZ2 can be considered.

4.6. The Core Strategy seeks to maximize the use of available and deliverable land in the urban area and there are currently no further reasonably available sites within the urban areas identified. The SHLAA and SA have also assessed potentially available greenfield sites

within Flood Zone 1. Consideration of these locations and sites taking into account wider sustainability issues is presented in the SA report Annex L.

4.7. Annex L sets out a summary of the reasonability available alternative sites (Stage 3). As recognized through the matrices in the SA, greenfield land is preferable in terms of flood risk. In the wider sustainability context, the SA shows that the residential capacity of greenfield sites in FZ 1 is significantly constrained by a highly sensitive environment. In particular the impacts on the World Heritage Site the its setting of Bath, the AONB and Conservation Areas. Various studies and assessments including the Habitat Impact Assessment Screening, Landscape Impact and Green Belt Review were prepared to identify the areas with less impact or with potential mitigations.

4.8. The B&NES Sustainable Community Strategy identifies the key role that a thriving and resilient economy will play in achieving sustainable growth in B&NES. Bath is a key centre within the West of England and the development of sites in the river corridor is integral to the Council's economic strategy and the growth aspirations of the LEP Enterprise Area associated with significant infrastructure investments.

4.9. The Economic Strategy identifies the key barriers to growth as the lack of available employment land and modern business space, the perception that Bath is not seen as 'regional' office location and the record of slow and under delivery of new office space to date. Following the Economic Strategy, the Council has prepared the Economic Regeneration Delivery Plan. The purpose of this ERDP is to identify sites within the city which could help support Bath's sustainable economic growth and deliver the type of smart growth that will help the City to thrive. Most of the SHLAA mixed use sites with capacity of 455 dwellings are located within the Central and Enterprise Areas. These include;

- **SHLAA Abb 3-5 Manvers Street:** Situated adjacent to the Bath Spa railway station and bus station, the site is ideally located to create a new business quarter on the edge of the city centre focussed on the development of new "grade A" office space with ancillary retail, restaurant and bar facilities and residential development adjoining the river. To realize the site's development potential will require the relocation of the existing Police Station and Post Office Sorting Office.

- **SHLAA Abb1 and 1b Avon Street Car Park and Coach Parking** – Provides the opportunity to connect the city centre to the river through local traffic management and the creation of high quality urban squares. Convenient access to the railway station and bus station provides the opportunity to create a high quality commercial quarter focussed on an "innovation hub", bringing together business and the city's universities as the principal element of a mixed use scheme containing restaurants, bars, cafes and residential accommodation.

- **SHLAA King 10 to 15** - part of the Bath Western Riverside regeneration area and further planning guidance is provided in the BWR Supplementary Planning Document.

4.10. Consideration of development viability and the Council's financial responsibility are fundamental elements of regeneration in the Central and Enterprise Areas.

4.11. Within the Central and Enterprise Areas flood risk is a key constraint. Therefore the Council is proactively investigating and seeking to implement flood risk mitigation

schemes using the Revolving Infrastructure Fund (RIF) to unlock the development sites. Progress has been made to secure the RIF and the inclusion in the Capital Programme was provisionally approved by the Council in February 2013. Details will be discussed and agreed by the Cabinet in April 2013. However, RIF needs to be repaid within the agreed period and is expected to be paid by the project, either through s.106, development agreements or CIL. Therefore it is important that the flexibility is built in to achieve better mix of uses in terms of viability. Currently residential development will bring a better returns and it is crucial that the Core Strategy allows the ability for future development to include residential development in these key sites.

4.12. The Council is also aware that there is a risk associated with the RIF repayment as result of financial failure or other potential defaults. It is therefore important that the Council takes a proactive role in facilitating residential and commercial development, as income from Business Rate Retention, New Homes Bonus and CIL will become increasingly important elements of the Council's finances in the future.

4.13. Also a number of key development sites have current business uses already operating on them. In order to locate appropriate types of businesses in appropriate places, it is necessary to relocate some existing businesses. This involves consideration of both revenue and capital implications such as compensation payments to relocate some businesses if necessary.

4.14. The Viability Assessment prepared by BNP Paribas as evidence for the introduction of the Community Infrastructure Levy (CIL) demonstrates the vulnerability of office development viability. The assessment was done at a high level and is not site specific but presents overall views of development viability in the district. This report tests the ability of a range of development types including office and residential to yield contributions to infrastructure requirements through a CIL. It concludes that although there is adequate demand for office space, this has not generated rents that would be high enough to support new development, particularly in Bath where build costs are significantly higher. This means that the inclusion of more viable uses such as residential development as part of mixed use development is essential to viability.

4.15. The Council has prepared the Public Realm and Movement Strategy (July 2010). The ultimate objective of the Strategy is to stimulate a rediscovery of a vibrant public life within the city centre and to enhance the enormous potential of Bath as a place, not just for the benefit of visitors and businesses, but for the enjoyment, health and wellbeing of the community as a whole. The housing numbers in the key regeneration sites are still indicative but the inclusion of housing provision would provide flexibility to achieve better urban design and a better social mix.

4.16. The Core Strategy recognises that residential development can play an important role in ensuring the vitality of the city centre as the NPPF requires. (para 23) Development in the city centre also presents opportunities for walking, cycling and public transport to access existing key facilities, services and jobs.

4.17. Therefore major development sites will need to be coordinated to deliver to the best development to meet the Council's aspirations. The analysis of the property market, market research and surveys all confirm the need to create an office quarter or quarters in central locations in Bath to meet the demand for office space arising from the growth targets. Public funding is competitive and residential development plays a key element to achieve flexibly in terms of development viability.

4.18. Through the SA process, potential urban extension locations were assessed. As a result, three potential locations, with a total capacity of 720 homes in Bath have been identified, along with 1,150 homes on greenfield sites elsewhere in the district. Areas beyond the new greenfield land now identified for development would cause substantial environmental harm and would not have the same benefits of supporting regeneration in the centre of Bath. They are not considered as reasonable alternatives. Therefore there is no reasonably available alternative site to accommodate this level and nature of development of 455 homes with associated economic and social benefits.

4.19. Significant negative impacts of having larger greenfield extensions or more greenfield sites outweigh those from locating housing development in the area with higher risk of flooding particularly taking into account the benefit of regeneration and the mitigation measures which will be implemented.

4.20. Phasing: As explained above housing provision is essential to the successful regeneration in the Central and Enterprise Areas, the flood risk mitigation schemes is expected to be in place prior to or together with the development takes place. The SHLAA projects that housing in the higher flood risk zones in the regeneration area will be delivered mostly in the latter part of the Plan period. The SHLAA also projects that housing in urban extensions start to be delivered the earlier part of the Plan period to ensure sufficient land is available to meet housing need throughout the Plan period.

Flood Zone 2

4.21. Of 455 homes, 63 homes could be accommodated within FZ2 as shown in Table 3. Following the Sequential Test and consistent with wider sustainability objective, it is not possible for the development of about 392 homes to be located in FZ 1 nor 2. Areas beyond the new greenfield land now identified for development would cause substantial environmental harm and would not have the same benefits of supporting regeneration in the centre of Bath. They are not considered reasonable alternatives. Therefore there is no reasonably available alternative site to accommodate this level and nature of development of 392 homes along with the associated economic and social benefits. Therefore the Exception Test needs to be applied as set out in para 102 of the NPPF.

The Exception Test for Bath

4.22. The Core Strategy identifies broad locations for development and the principles of some residential use in Flood Zone 3a in the Central and Enterprise Areas need to be established through applying the exception test. However those sites to be located in Flood Zone 3a will be subject to a site-specific sequential/exception test through the Placemaking or/and Development Management process.

4.23. **Exception Test 1:** It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a Strategic Flood Risk Assessment where one has been prepared.

4.24. The sustainability benefits to the community listed below outweigh flood risk as informed by the B&NES Strategic Flood Risk Assessments level 1 and 2.

- Development within this area will provide major regeneration opportunities in Bath, a key centre within the West of England. The Bath 'City of Ideas' Enterprise Area will

provide the majority of new office and commercial space for the district, contributing to economic prosperity. These sites are essential to the Council's economic strategy and the growth aspirations of the LEP Enterprise Area. As explained in the paragraphs 4.10-4.15, the residential development plays a key part to achieving flexibility in terms of development viability. The Revolving Infrastructure Fund will be used to implement the flood defenses/mitigation measures including compensatory conveyance schemes. The flood mitigation costs are generally part of individual development costs. The Council is proactively using RIF to remove major constraints to unlock key sites, but all funding should be repaid. In the current climate, residential use is essential improve development viability and the inclusion of residential uses support repayment of RIF funding.

- Some measures would benefit existing properties
- These sites are well located in and close to the city centre and are accessible to a variety of services by sustainable transport modes, walking, cycling and public transport.
- Sites King 10 to 15 are part of the Bath Western Riverside regeneration area and further planning guidance is provided in the BWR Supplementary Planning Document.
- Development within this area will provide more housing including a proportion of affordable housing and will address the issues of in-commuting.
- Development within this area will enable redevelopment of areas of derelict or underperforming land within the city in order to protect and enhance the World Heritage Site, its setting, landscape value including AONB and the Green Belt from unnecessary incursion.
- Development within this area will help to achieve the objectives of the Public Realm and Movement Strategy (July 2010) including to stimulate a rediscovery of a vibrant public life within the city centre and to enhance the enormous potential of Bath as a place, not just for the benefit of visitors and businesses, but for the enjoyment, health and wellbeing of the community as a whole.
- Development within this area will help to maintain Bath as a tourist destination as set out in the Public Realm Strategy.
- Development within this area will provide the opportunity to protect and enhance the multi-functional role of the river corridor. e.g. wildlife habitat, public access and recreation and sustainable cycle routes.

4.25. **Exception Test 2)** A site-specific flood risk assessment must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, reducing flood risk overall.

4.26. The council has already undertaken SFRA level 1 and 2 and has been investigating flood risk management measures. The Flood Risk Management Strategy has recommended on-site defences combined with upstream compensatory storage subject to Hydraulic Modelling. The Hydraulic Modelling has now been completed and confirms that the impact of raising the development sites (including all sites subject to the Exception Test in the regeneration sites) is a loss of conveyance, rather than a loss of flood storage. It recommends, where necessary, to raise all the development sites and the access/egress routes (or raise defence walls).

4.27. To provide flood storage that would actually reduce peak flows in Bath would require a volume in excess of 10 million cubic metres and would need to be on land that currently does not flood. No suitable sites of this size are available upstream and therefore

upstream storage is no longer being considered as part of any flood mitigation measures for these development sites in the Central and Enterprise Areas. Development sites considered through the B&V study are included in Appendix C.

4.28. There may be other development sites that come forward in the future which may result in a noticeable effect from loss of flood storage if they were raised above flood level. In previous studies, Batheaston Meadows upstream of Bath has been identified as the most suitable location to provide strategic flood storage mitigation. The B&V study states that whilst this land is not required as part of this phase of works it would seem sensible to safeguard this land to allow it to be used in the future if required.

4.29. The move from the consideration of upstream flood storage to reduce flood risks towards a solution using compensatory flow conveyance (described below) is in part due to a number of local, national and international directives and strategies. These include the B&NES Public Realm Strategy, draft Green Infrastructure Strategy as well as the EU Water Framework Directive. These promote greater use of the river corridor for amenity and biodiversity purposes and encourage greater connection between the river and its floodplain.

4.30. The Lower Bristol Road will form the main access to several of the proposed developments, which will be raised above the floodplain. NPPF requires that safe access to and from the development is maintained in all floods up to the future 1 in 100 year event. The B&V modelling has confirmed that the existing flood defences protecting Lower Bristol Road would be over topped during a 1 in 50 year event and the existing surface water drainage network has limited capacity. Therefore the Lower Bristol Road is at risk of flooding from both the Avon and surface water. If not addressed, there would be no safe access to /egress from the development sites when the River Avon is in flood.

4.31. B&V Bath Flood Risk Management Project: Technical Note (Feb 2013) provides the details of schemes and is agreed in principle with the Environment Agency. In summary;

- All key development sites (including housing and employment mixed use sites) to be raised to make new development safe and provide conveyance mitigation measures to compensate for lost conveyance capacity.
- Lower Bristol Road: Improve defence walls and provide conveyance mitigation measures to provide safe access/egress. Provide surface water management scheme.

4.32. On-site defences and conveyance mitigation schemes provide good scope to demonstrate that development will be safe for its lifetime without increasing flood risk elsewhere. The improvements to the Lower Bristol Road will also ensure safe access and egress to the new development sites. This will also benefit existing properties as well as reducing traffic disruption.

4.33. The B&V Technical Note also summarises the further work required to implement the schemes. The scheme can be delivered in a number of phases as development sites come forward. The Council proposes to submit a planning application for the first phase scheme during 2013 with a view to completing the works in 2014/15. This work, which will enable the key employment sites in the Enterprise Area to come forward, will be funded by part of the £13m infrastructure funding awarded to B&NES by the LEP. However, the phasing of the flood defence works will need to be discussed and agreed with the EA to ensure the development sites that come forward are safe.

4.34. The Core Strategy Policies B1 and CP 5 reflect these recommendations and require the implementation of the mitigation measures along the River Avon. Onsite defenses combined with the conveyance mitigation scheme will ensure that new development will be safe without increasing risk elsewhere.

4.35. The Core Strategy makes provision for 12,700 homes. This is based on the SHMA projection with the LEP job numbers (based on the low-trend migration scenario) and includes the Local Plan backlog. However, the SHMA projected a significant need for affordable housing. The Core Strategy CP9 sets out the level of affordable housing to be delivered as part of future housing development. In order to meet affordable housing needs, the overall housing number is increased, resulting in extra market housing of around of 3,600 to 4,000 homes. This will provide some flexibility in case there is some delay in implementing the mitigation measures.

4.36. Taking account of the above, it is considered that the development proposed in Bath could be carried out in accordance with the Exception Test.

5. The Sequential Test for Keynsham

5.1. The table below summarises the housing development sites in Keynsham. Of 2,090 home, 416 homes are already built or with planning permissions. A windfall site allowance of 164 homes will be subject to the sequential test through the Development Management process. This leaves 1,510 homes to be sequentially tested for development as summarised below.

Table 4 Keynsham SHLAA development sites

	Built / with planning permissions	**Subject to the sequential test**	**Windfall**	**Total**
Keynsham	416 homes	1,510 homes	164 homes	2,090 homes

5.2. The table 5 below summarises the housing development sites with its flood risk zones.

Table 5 Keynsham SHLAA housing development sites with its flood risk zones

Subject to the sequential test		**FZ1**	**FZ1 (FZ2 can be avoided**	**FZ2** with climate change	**FZ 2/FZ 3a** with climate change
Urban area	1,060 homes	410 home (4 sites)	390 homes (Somerdale)	120 homes (Somerdale)	140 homes (Somerdale)
Greenfield	450 homes	450 homes			
	1,510 homes	1,250 homes			

Table 6 Keysham SHLAA site falls partly in FZ2 and 3a with the proportionate indicative capacities

		Target capacity	Total Area (ha)	FZ1	Current FZ2	Current FZ 3a	FZ2 with climate change	FZ3a with climate change
K1	Somerdale	650 homes	25.3 ha	15.18 ha (390 homes)	10.12 ha	0	4.87 ha (120 homes)	5.25 ha (140 homes)

5.3. The only potential housing site affected by flood risk is Somerdale, a site of 25ha, of which 10ha falls within flood zone 2. The SHLAA indicates an estimated housing potential of this site as being about 650 dwellings as part of a mixed use development. At the present time, there is reasonably available land within flood zone 2 for the use of land within Flood Zone 3a to be minimised. In the "with climate change" scenario, however, the use of some land within Flood Zone 3a may be necessary to accommodate the proposed level of development. For the purpose of this test, a general proportional assumption is applied. It assumes 390 homes in FZ1, 120 homes in FZ2 and 140 in FZ3a taking into account climate change.

5.4. Therefore 1,250 homes pass the sequential test but 260 homes cannot be accommodated in FZ1 as shown in Table 5

5.5. As explained in the Bath section, there are currently no further reasonably available sites within the urban area. The Sustainability Appraisal Report Annex L sets out a summary of the reasonability available alternative sites within Flood Zone 1. (Stage 3 assessment). Consideration of these locations and sites taking into account wider sustainability issues is presented in the SA report Annex L.

5.6. As recognized through the Appraisal Matrices in the SA (particularly objective 18: Reduce vulnerability to, and manage for risk taking into account climate change), greenfield land is preferable in terms of flood risk. In the wider sustainability context, the SA shows that the residential capacity of greenfield sites in FZ 1 on the edge of Keynsham is constrained by a highly sensitive environment and poor linkages to existing services and communities. Greenfield land around Bath as well as Bristol were considered. Various studies and assessments including the Habitat Impact Assessment Screening, Landscape Impact and Green Belt Review were prepared to identify the areas with less impact or with potential mitigations. As result, two potential locations, with the total capacity of 450 homes in Keynsham have been identified, along with 1,420 homes on greenfield sites elsewhere in the district.

5.7. Located between Bath and Bristol, Keynsham is ideally situated to play a significant role in supporting sustainable economic growth across the District. The Economic Strategy for B&NES highlights the need to bring forward new employment space in the town centre, in particular the redevelopment of the Town Hall site, and at Cadbury Somerdale, increasing the number and diversity of jobs available locally. The proposed changes to the Core Strategy maintain the objective of increasing self-containment. It is expected to provide 1,000 jobs. The Economic Strategy highlights the need to bring forward new employment space in the town centre increasing the number and diversity of jobs available locally. The Somerdale development is essential to the Council's Economic Strategy and the growth aspirations. Residential development is integral to the mixed use regeneration and helps to make development viable. As explaining in the Bath Chapter, the Viability Assessment prepared by BNP Paribas demonstrates the vulnerability of office development viability.

5.8. The Somerdale site is well located and presents opportunities for walking, cycling and public transport to access existing key facilities, services and jobs. The factory ceased production and closed in January 2011. The inclusion of housing provision facilitates better urban design, social mix and economic viability, supporting economic development.

5.9. Through the SA process, potential urban extension locations were assessed. (SA Annex L) Areas beyond the proposed greenfield land for development would cause substantial environmental harm and would not have the same benefits of supporting regeneration in Keynsham. They are not considered to be reasonable alternatives. Therefore there is no reasonably available alternative site to accommodate this level and nature of development of 260 homes with associated economic and social benefits. Negative impacts of having larger greenfield extensions or more greenfield sites outweigh locating housing development in Somerdale particularly taking into account the benefit of regeneration providing more employment opportunities and mitigation measures to be put in place.

Flood Zone 2

5.10. Of 260 home, 120 homes could be accommodated within FZ2 as shown in Table 6. Following the Sequential Test, it is not possible, consistent with wider sustainability objective, for the development of about 140 homes to be located in FZ 1 nor 2 taking into account climate change. Therefore the Exception Test needs to be applied as set out in para 102 of the NPPF.

The Exception Test for Keynsham

5.11. The Core Strategy Policy KE2 sets out Town Centre / Somerdale Strategic Policy, but the Somerdale proposal will be subject to a further sequential/exception test through the Development Management process.

5.12. **Exception Test 1:** It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a Strategic Flood Risk Assessment where one has been prepared.

- The SFRA level 1 assessment was prepared in April 2008 and a more detailed level 2 assessment was prepared for Keynsham in July 2009. They provide the basis for the Exception Test.
- Keynsham town centre has historically been the hub of activity within Keynsham and will continue to be the focus of the majority of future development and regeneration. The Economic Strategy sees that the Somerdale development is essential to achieving this, providing a range of employment opportunities. The inclusion of housing will improve development viability and ensure the necessary infrastructure is put in place.
- Development will provide more housing including a proportion of affordable housing.
- Development is well linked by sustainable transport modes.
- As part of mixed used development, a new primary school, leisure facilities and local centre will be provided. The infrastructure requirements are listed in the Infrastructure Delivery Programme.
- Provide opportunities to improve green infrastructure.

5.13. **Exception Test 2)** A site-specific flood risk assessment must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, reducing flood risk overall.

5.14. The council has already undertaken SFRA level 1 and 2 and has been investigating district-wide flood risk management measures. Master planning for the Somerdale site has been prepared by the developer and was subject to public consultation in February. They propose to raise the land and create a wetland to provide additional flood storage capacity to compensate for the increase in ground levels required for protection at the north of the site. The developer has been engaging with the EA. It is understood that the developer is in the final stages of preparing their plans for submitting a planning application which is expected in Spring 2013. The site specific flood risk assessment together with Hydraulic Modelling and the drainage strategy need to be submitted and assessed. The application has to demonstrate that the sequential and exception tests can be met.

5.15. As explained in the Bath chapter, the extra provision of market housing of around of 3,600 to 4,000 homes will provide some flexibility in case there is some delay or capacity change due to flood risk.

5.16. Taking account of the above, it is considered that the development proposed in Keynsham could be carried out in accordance with the Exception Test.

6. Somer Valley

6.1. The table below summarises the housing development sites in the Somer Valley. Of 2,395 homes, 1,436 homes are already built or with planning permissions. A windfall sites allowance of 260 homes will be subject to the sequential test through the Development Management process. This leaves 699 homes to be sequentially tested for development as summarised below.

Table 7 Somer Valley housing development sites

	Built / with planning permissions	**Subject to the sequential test**	**Windfall**	**Total**
Somer Valley	1,436 homes	699 homes	260 homes	2,395 homes

The table 8 below summarises the housing development sites with its flood risk zones.
Table 8 Somer Valley SHLAA site falls partly in FZ2 and 3 with the proportionate indicative capacities

Subject to the sequential test		**FZ1**	**FZ1 (FZ2 can be avoided**	**FZ2** with climate change	**FZ 2/FZ 3a** with climate change
Urban area	399 homes	209 home (5 sites)	167 homes (MSN.9, RAD.4)	10 homes (RAD.4)	13 homes (RAD.4)
Greenfield	300 homes	300 homes			
	699 homes	676 homes			

6.2. The SHLAA site-MSN9 falls in FZ 1, 2 and 3a and is affected by an increased risk of flooding. however, the development is part of a mixed use allocation and there is enough flexibility to apply the sequential approach directing residential development to FZ1. The edge of the SHLAA site-Rad 12 site touches FZ2 and 3 (0.05 ha of 0.59 ha) but these area can be avoided. Therefore it is included in the FZ1 figure.

		Homes	Total Area (ha)	FZ1	FZ2	FZ3a	FZ2 with climate change	FZ3a with climate change
Midsomer Norton								
MSN 16	St Peters Factory	115	0.25	0.25	0	0	0	0
MSN 9	Former WBB Factory	150	5.64	4.64	0.38	0.62	0	1
Radstock								
RAD 20	Radstock County Infants	14	0.33	0.33	0	0	0	0
RAD 2	Rymans Engineering	50	0.85	0.85	0	0	0	0
RAD 4	Old Bakery	40	0.65	0.24 (17 homes)	0.29	0	0.17 (10homes)	0.12 (13 homes)
RAD 12	Combe end	30	0.59	0.54	0.03	0.02	0.02	0.03
	Sub-total	399						
Greenfield Sites to be identified								
		300						
		699	**8.31**	**6.85**	**0.7**	**0.64**	**0.19**	**1.15**

6.3. The only potential housing site affected by flood risk is the SHLAA site Rad 4 (Old Bakery), a site of 0.65ha, of which 0.29ha falls within flood zone 2. The SHLAA indicates an estimated housing potential of this site as being about 40 dwellings as part of a mixed use development. At the present time, there is reasonably available land within flood zone 2 for the use of land within Flood Zone 3a to be minimised. In the "with climate change" scenario, the use of some land within Flood Zone 3a may be necessary to accommodate the proposed level of development. The building is now vacant and, even though there is no proposal for the site yet, it is likely to be re-developed.

6.4. The town, together with Midsomer Norton provides important services such as shopping, employment, cultural and health facilities to local residents and the surrounding communities. Recent incremental housing development and a decline in the manufacturing sector has led to an imbalance between jobs and homes in the Somer Valley. The Old Bakery is located in the centre of Radstock and redevelopment contribute to revitalising the town centre, creating more jobs. Bringing the vacant building back in a use also helps to enhance the Conservation Area. Inclusion of housing could contribute to better urban design, a better social mix and economic viability.

6.5. The SHLAA assumes that the building will be converted for a mix of commercial uses and that the site frontage to Waterloo Road and open space in FZ 1 is appropriate for residential development use. There is some flexibility to apply the sequential approach within the site. Any development proposal for this site will need to include a site specific flood risk assessment and demonstrate that the sequential and exception tests can be met.

6.6. Taking account of the above, it is considered that the development proposed in the Somer Valley could be carried out in accordance with the Exception Test.

7. Other areas

7.1. The SHLAA sites in the rural area are all in FZ1. Additional housing allowance will be subject to the sequential test through the Development Management process.

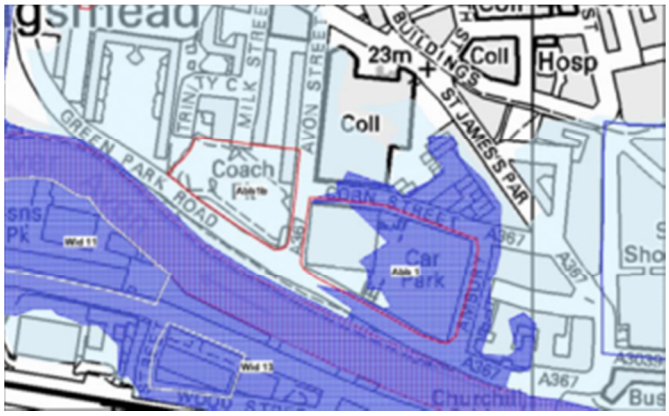
7.2. The area proposed in Whitchurch is all in FZ1. It passes the sequential test and will be subject to the sequential test through the Development Management process.

Appendix A SHLAA sites Flood Risk maps

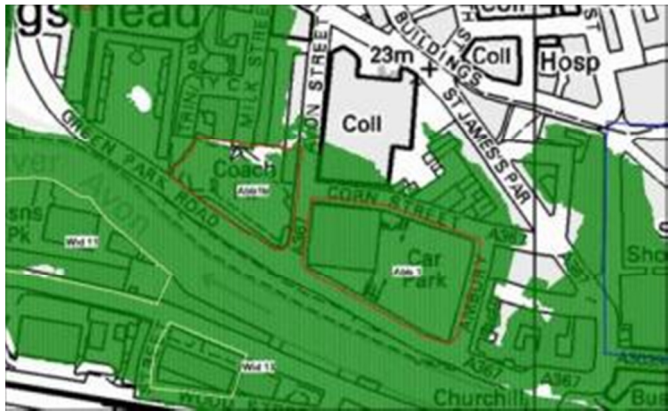
Key		SHLAA Sites	
Current FZs Zone 2 (1%-0.1% AEP)		Zone 3a (>1%AEP)	
Zone 3b (>5% AEP)		Projected FZ3 with climate change	

SHLAA Ref	Site	Total Area	FZ1	FZ2	FZ3a	FZ2 with Climate Change	FZ3awith Climate Change	Capacity (homes)	Phase
Abb1	Avon Street Car Park	0.9ha		0.32ha	0.58ha	0 ha	0.9 ha	150	2
Abb 1b	Coach Park	0.5ha		0.5ha		0.06 ha	0.44 ha		
Both sites are within FZ2 and 3a and is affected by climate change. Exception Test is required.									

Current FZs



FZ3awith Climate Change



SHLAA Ref	Site	Total Area	FZ1	FZ2	FZ3a	FZ2 with Climate Change	FZ3awith Climate Change	Capacity (homes)	Phase
ABB 3, 4 and 5	Manvers Street, Royal Mail site	1.25ha	0.31ha	0.44ha	0.5ha	0.05 ha	0.89 ha	100	2
75% of the site is within FZ2 and 3a and is affected by climate change. Exception Test is required.									

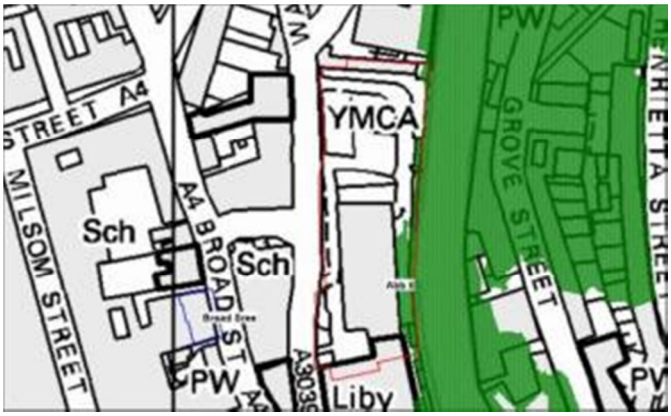
Current FZs

FZ3awith Climate Change

SHLAA Ref	Site	Total Area	FZ1	FZ2	FZ3a	FZ2 with Climate Change	FZ3awith Climate Change	Capacity (homes)	Phase
ABB 6	Hilton Hotel/Podium/Cattle Market	0.96ha	0.83ha	0.11ha	0.02a	0.064 ha	0.066ha	50	2
Small area falls within FZ2 on the east boundary of the site. This area is expected to increase flood risk taking into account climate change. The sequential approach should be taken within the site.									

Current FZs

FZ3awith Climate Change



SHLAA Ref	Site	Total Area	FZ1	FZ2	FZ3a	FZ2 with Climate Change	FZ3awith Climate Change	Capacity (homes)	Phase
King 6 (+part of Wed 23a)	Green Park Station	2.4ha	1.92ha	0.2ha	0.28ha	0.09 ha	0.36 ha	300	2
Partly within FZ2 and affected by climate change. The sequential approach should be taken within the site.									

Current FZs

FZ3awith Climate Change

SHLAA Ref	Site	Total Area	FZ1	FZ2	FZ3a	FZ2 with Climate Change	FZ3awith Climate Change	Capacity (homes)	Phase
King 7	Alexander House	0.08ha	0.054ha	0.026ha		0.026 ha		19	2
Part of the site is within FZ2. The sequential approach should be taken within the site.									

Current FZs

FZ3awith Climate Change

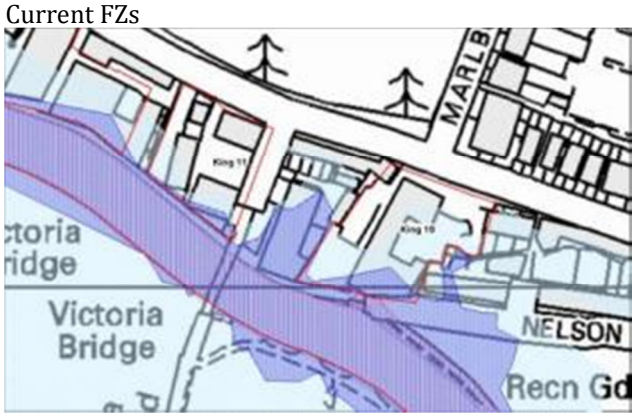
SHLAA Ref	Site	Total Area	FZ1	FZ2	FZ3a	FZ2 with Climate Change	FZ3awith Climate Change	Capacity (homes)	Phase
King 10	Hinton Garage, Albion Place	0.45ha	0.2ha	0.18ha	0.07ha	0.04 ha	0.21 ha	55	3/4
Part of the site is within FZ2 and 3a and is affected by climate change. Exception Test is required.									

Current FZs

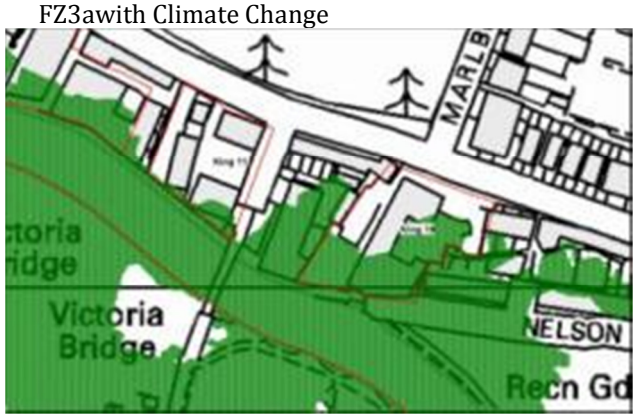
FZ3awith Climate Change

SHLAA Ref	Site	Total Area	FZ1	FZ2	FZ3a	FZ2 with Climate Change	FZ3awith Climate Change	Capacity (homes)	Phase
King 11	Hinton Garage, Albion Place	0.3ha	0.24ha	0.04ha	0.02ha	0.032 ha	0.028ha	36	3
Part of the site is within FZ2. The southern boundary is within 3a and affected by climate change. Exception Test is required. The sequential approach should be taken within the site.									

Current FZs



FZ3awith Climate Change



SHLAA Ref	Site	Total Area	FZ1	FZ2	FZ3a	FZ2 with Climate Change	FZ3awith Climate Change	Capacity (homes)	Phase
King 12	Comfortable Place	0.62ha	0.19ha	0.28ha	0.15ha	0.07	0.36ha	60	3
Part of the site is within FZ2. The southern boundary is within 3a and affected by climate change. Exception Test is required. The sequential approach should be taken within the site.									

Current FZs

FZ3awith Climate Change

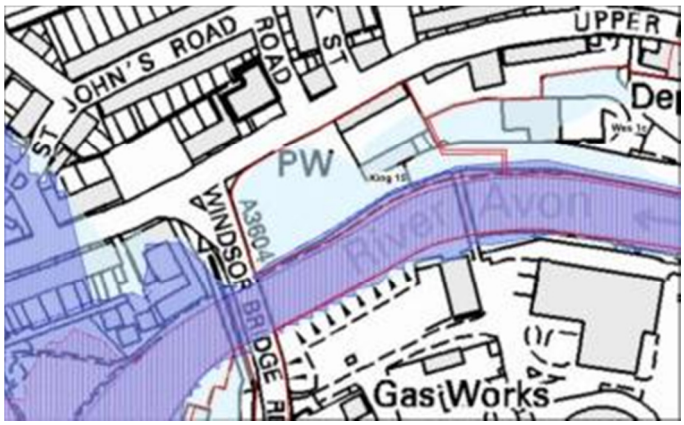
SHLAA Ref	Site	Total Area	FZ1	FZ2	FZ3a	FZ2 with Climate Change	FZ3awith Climate Change	Capacity (homes)	Phase
King 13	Argos river Frontage	0.13ha	0.13ha					15	2

Current FZs

FZ3awith Climate Change

SHLAA Ref	Site	Total Area	FZ1	FZ2	FZ3a	FZ2 with Climate Change	FZ3awith Climate Change	Capacity (homes)	Phase
King 15	Westmark	0.73ha	0.21ha	0.45ha	0.07ha	0.255 ha	0.265ha	120	2
Part of the site is within FZ2 and affected by climate change. Exception Test is required. The sequential approach should be taken within the site.									

Current FZs



FZ3awith Climate Change

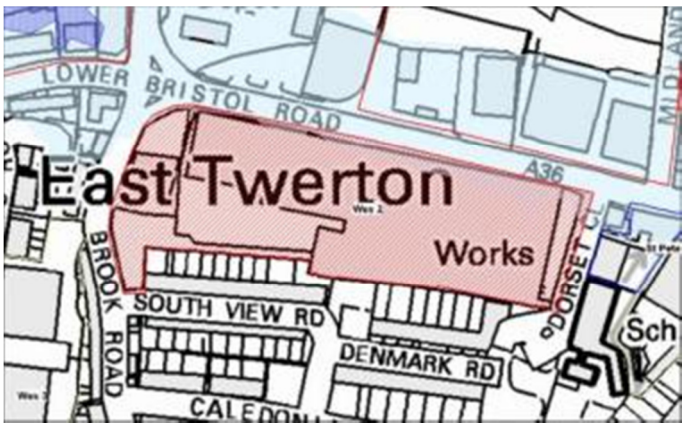
SHLAA Ref	Site	Total Area	FZ1	FZ2	FZ3a	FZ2 with Climate Change	FZ3awith Climate Change	Capacity (homes)	Phase
Lam 4	The Harvester Gloucester Road	0.74ha	0.48ha	0.02ha	0.24ha	0	0.26 ha	46	1
Flood Risk: part of the site falls within FZ3a. Exception Test is required.									

Current FZs

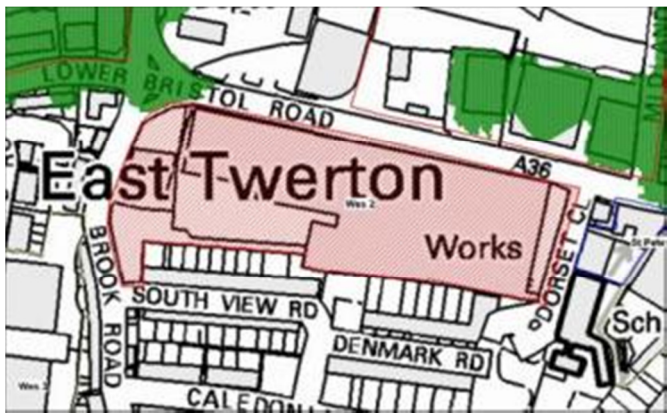
FZ3awith Climate Change

SHLAA Ref	Site	Total Area	FZ1	FZ2	FZ3a	FZ2 with Climate Change	FZ3awith Climate Change	Capacity (homes)	Phase
Wes 2	Bath Press	2.15ha	2.02ha	0.13ha				100	1
The northern boundary of the site is within FZ2. The sequential approach should be taken within the site.									

Current FZs



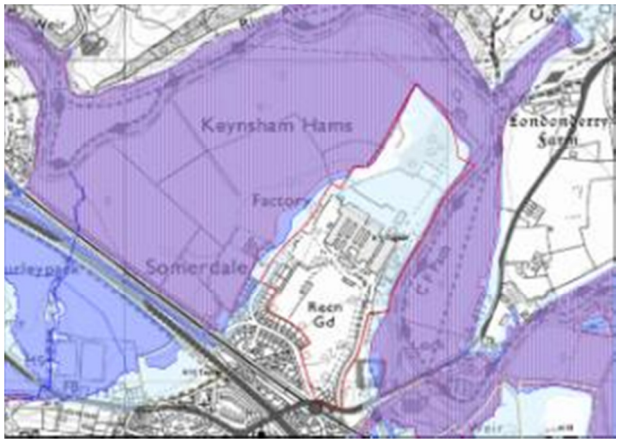
FZ3awith Climate Change



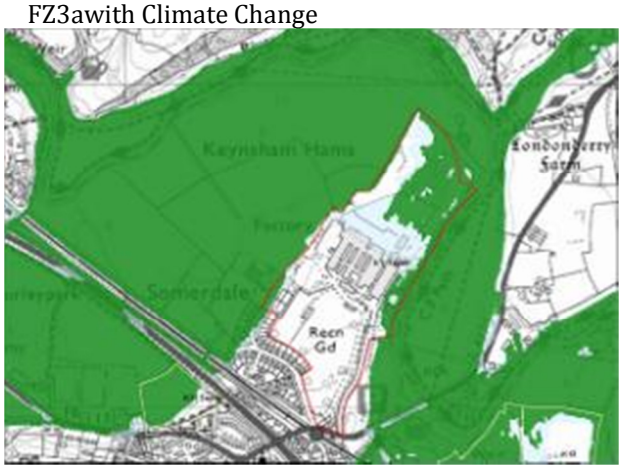
Keynsham

		Total Area (ha)	FZ1	Current FZ2	Current FZ 3a	FZ2 with climate change	FZ3a with climate change	Target capacity
K1	Somerdale	25.3 ha	15.18 ha	10.12 ha	0	4.87 ha	5.25 ha	650 homes

Current FZs



FZ3awith Climate Change



Somer Valley

		Total Area (ha)	FZ1	FZ2	FZ3a	FZ2 with climate change	FZ3a with climate change	Total capacity
RAD 4	Old Bakery	0.65	0.24 (17 homes)	0.29	0	0.17 (10homes)	0.12 (13 homes)	40

Current FZs

FZ3awith Climate Change

Appendix B SHLAA sites

Bath

		Capacity permitted	subject to planning	Target capacity	Area	FZ1	FZ2	FZ3	FZ1	FZ2 with climate change	FZ3 with climate change
Abb.1/2	Avon Street Car Park/Coach		150	150	**0.9 ha**	0 ha	**0.32 ha**	**0.58 ha**	**0 ha**	0.06 ha	**0.84 ha**
Abb.3-5	Manvers Street Royal Mail Sorting Depot/Police Statioon		100	100	1.25 ha	0.31 ha	0.44 ha	0.5 ha	0.31 ha	0.05 ha	0.89 ha
Abb.6	Hilton Hotel / Cattle Market / Corn Market		50	50	0.93 ha	0.86 ha	0.1 ha	0.03 ha	0.86 ha	0.04 ha	0.06 ha
Abb.9	Byways, Henrietta Road	12		12	0.1 ha	0.1 ha	0	0	0,1 ha		
Bwk.1	MoD Warminster Road		100	100	7 ha	7 ha			7 ha		
Cdn.3	MoD Foxhill		700	700	19 ha	19 ha			19 ha		
King.6	Green Park Station		300	300	2.4 ha	1.92 ha	0.2 ha	0.28 ha	1.92 ha	0.09 ha	0.36 ha
King.7	Alexander House, Norfolk Place		19	19	0.08 ha	0.054 ha	0.026 ha	0 ha	0.054 ha	0.026 ha	0 ha
King.10	Hinton Garage, Albion Place		55	55	0.45 ha	0.2 ha	0.18 ha	0.07 ha	0.2 ha	0.04 ha	0.21 ha
King.11	Onega Centre		36	36	0.3 ha	0.24 ha	0.04 ha	0.02 ha	0.24 ha	0.032 ha	0.028 ha
King.12	Comfortable Place		60	60	0.62 ha	0.19 ha	0.28 ha	0.15 ha	0.19 ha	0.07 ha	0.36 ha
King.13	Argos		15	15	0.13 ha	0.127 ha	0.003 ha	0 ha	0.127 ha	0.0026 ha	0.0004 ha
King.15	Westmark, Windosr Bridge		120	120	0.73 ha	0.21 ha	0.45 ha	0.07 ha	0.21 ha	0.255 ha	0.265 ha
Lam.4	The former 'Harvester' restaurant, Gloucester Road		46	46	0.74 ha	0.48 ha	0.01 ha	0.25 ha	0.48 ha	0.01 ha	0.25 ha
Lans.1	Former St. Mary's School, Burlington Street		14	14	0.16 ha	0.16 ha			0.16 ha		
Lans.2	Hope House		50	50	2.65 ha	2.65 ha			2.65 ha		
Lans.3	Somerset Place	27		27	0.55 ha						
Lans.5	MoD Ensleigh		350	350	10 ha	10 ha			10 ha		
Lyn.1	Hayesfield School Playing Field, Frome Rd	18		18	0.6 ha						
New.2	Land at Royal United Hospital (North Site)		50	50	1.48 ha	1.48 ha			1.48 ha		
New.3	Land at Royal United Hospital (South Site)		40	40	0.93 ha	0.93 ha			0.93 ha		
Odn.3	Land to the Rear of 89-123 Englishcombe Lane		40	40	1.4 ha	1.4 ha			1.4 ha		
	Twerton Park		150	150	1.73 ha	1.73 ha			1.73 ha		
Wal.1	Southbourne Gardens, Fairfield Park	10		10	0.5 ha						
Wal.4	Former Garage, Piccadilly Place	11		11	0.1 ha						
Wes.1	Bath Western Riverside, Core (GDS.1/ B1)	2,281		2,281	15.14 ha						
Wes.2	Bath Press		100	100	2.15 ha	2.02 ha	0.13 ha	0 ha	2.02 ha	0.13 ha	0 ha
West.5	Southlands	40		40							
Wid.5	Newwark House	14		14							
Wid 18	Lime Grove School	13		13							
Wid.22	43 Upper Oldfield Park	14		14							
	Weirside Court	14		14							
	88 Coronation Ave	11		11							
	Rockery Tea Gardens	11		11							
	15 St George Place		11	11							
	3/4 Longacre		15	15							
	Carolien House		27	27							
Greenfield sites											
	Land at Odd Down (Total 45 ha)		300	300	√	√			√		
	lower Slopes north of Weston (Total 75 ha)		300	300	√	√			√		
	Royal High Playing Field, Ensleigh		120	120	√	√			√		
		2476	**3318**	**5794**							

SHLAA analysis							
Dwellings	Small sites completed	Small with PPs	Large sites completed	Large sites with PPs	**Large expected sites**	windfall	Total
Bath	78	234	147	2,476	**3,318**	752	7,005

Keynsham

		Target capacity	Total Area (ha)	FZ1	Current FZ2	Current FZ 3	FZ2 with climate change	FZ3 with climate change
K2 Policy area								
K1	Somerdale	650	25.3	15.18	10.12	0	4.87	5.25
K4	Riverside	90	0.59	0.59	0	0	0	0
K5	High Street Core	35	1.14	1.14	0	0	0	0
K2	South West Keynsham (Western)	285	8.9	8.9	0	0	0	0
	Sub-total	**1060**	**35.93**	**25.81**	**10.12**	**0**	**4.87**	**5.25**
Green								
	East of Keynsham	250		√				
	South West Keynsham	200		√				
	Sub-total	**450**						
	Total	1510	71.86	51.62	20.24	0	9.74	10.5

Somer Valley

		Sites with permissions	Subject to planning	Target capacity	Total Area (ha)	FZ1	FZ2	FZ3	FZ2 with climate change	FZ3 with climate change
SV2 Area										
MSN1	**52 High Street**	22		**22**	0.32	0.32				
MSN Outer										
	Chilcompton Road	2		2						
	Elm Tree Ave	28		28						
	Cautletts Close	112		112						
MSN 10	**Former Alcan**	169		169						
MSN16	**St Peter's Park**	14		14						
MSN10i	**Hezel Terrace**	24		24						
MSN 16	**St Peters Factory**		115	115	0.25	0.25	0	0	0	0
MSN 9	**Former WBB Factory**		150	150	5.64	4.64	0.38	0.62	0	1
SV3 Radstock										
RAD 1	**Radstock Railway**	210		210	4.8	4.8				
Radstock Outer										
RAD 20	**Radstock Conty Infants**		14	**14**	0.33	0.33	0	0	0	0
RAD15	**Old Pit yard**	30		**30**						
RAD 2	**Rymans Enginnering**		50	**50**	0.85	0.85	0	0	0	0
RAD 4	**Old Bakery**		40	**40**	0.65	0.24	0.29		0.17	0.12
RAD 12	**Coombe end**		30	**30**	0.59	0.54	0.03	0.02	0.02	0.03
		611	**399**	**1010**	**13.43**	**11.97**	**0.7**	**0.64**	**0.19**	**1.15**

Paulton										
Pau 1	Polestar Barratt	41		41						
Paul 2	Polestar 1b	551		551						
Paul 3	Paulton Builders	10		10						
Paul 4	Heal Huose	10		10						
	St Peter's Park									
		612	**0**	**612**						
Speasedown st John										
Pea 1	Wellow Lane	95		95						
		95		**95**						

Rural

		Sites with permissions	Subject to planning	Target capacity	Total Area (ha)	FZ1	FZ2	FZ3 with climate change
Rural								
	Freshfold Mill Freshfold	21		21				
	Sleep Lane, Whitchurch	47		47				
	Brookside Drive	35		35				
	Wheeler & Co Timsbury		28	28				
Additional sites beyond GB RA1 HDBs			172	172				
Outside HDB			120	120				
		103	**320**	**423**		**0**	**0**	**0**

Appendix C
Development sites considered through the B&V study