

Green Belt Review

Housing Availability & Deliverability in East Keynsham A1-A3

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Final Copy

Produced for:

Bath & North East Somerset Council

Prepared by:

The River Regeneration Trust

c/o Geoff Dunford

Chairman

T 07976 913786

The River Regeneration Trust



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The River Regeneration Trust

Our vision is to open up the river corridor and re-connect it with the local community. We wish to promote and encourage leisure and sustainable development, creating homes, employment and lifestyle opportunities, whilst maintaining the heritage of the river.

We want to bring about investment from the public and private sectors, to liaise with landowners and stake holders to ensure their projects and aspirations reflect those of the local authority and the Core Strategy, meeting the demands of Bath as a World Heritage Site.

To assist in dealing with flood issues making the river corridor a safer place to live and invest. Protecting biodiversity by maintaining a healthy ecosystem. Our vision is simple:

The River Regeneration Trust - Reconnecting Communities with the River Avon.

Executive Summary

The information contained in this report has been gathered from evidence submitted for East Keynsham A1-A3 during the Core Strategy Representations, Strategic Housing Market Assessment, Strategic Housing Land Availability Assessment and the Schedule of Changes for the Core Strategy. As such there is no new evidence that would require further consultation as the content herein has been available to whomever using due process. The location being promoted for housing in this report is limited to the A1-A3 plot in the Arup report, which is on the Broadmead Peninsula in Keynsham and incorporates parts of Broadmead and Avon Valley Farm.

The housing numbers for A1-A3 have been calculated using CityCAD and cross-referenced with Arup's net housing quantum of 834. We propose 712 units (35 dph) including 175 Studio and 1-bed apartments, 135 2-bed apartments, 249 Semi-detached or Detached Houses, 30 Retirement Homes, 25 Live Work Units and 98 Residential Houseboats to *Passive* design. Tenure types will be split between Private, Affordable (min. 30%), Allocated for First Time Buyers/Essential Workers, Build to Rent (Modcell) and Manufacture to Build to Rent/Buy (Avon Valley Houseboats & Pre-fabricated Houses).

Availability and Deliverability of the housing numbers have been cross referenced with the Arup East Keynsham Development Concept Options report and the Strategic Housing Land Availability Assessment. These suggest that developable land in A1-A3 is available for housing with a moderate score of being achievable. We have taken into account flood risk, flood hazard rating, environmental areas, access and egress, land use and agricultural land classification to ensure no significant barriers exist to development. The key constraint is access and egress to the site using the four existing over and under railway bridges. These will be sufficient (with traffic management) to accommodate housing numbers up to 2017, but further numbers will require a new HGV-compliant access by 2017 and a two-way over-bridge by 2020. We are confident these are both feasible and deliverable.

We will use the proven Modcell system for 20-30 units in phase one (2015/16 - 2017/18), primarily as affordable homes for essential workers and first time buyers. The Broadmead & Avon Valley Partnership circular economic process (in patent) will be used in phases two and three (2019/20 - 2025/26) once the product range is approved by BRE and the factory fully operational. A proportion of these innovative homes will be allocated for factory workers, first time buyers and essential workers as Build to Rent, Manufacture to Build to Rent/Buy or Private purchase. However the majority of apartments, houses and retirement homes will be built using traditional methods of construction and by established contractors and property managers e.g. Curo or similar company.

The Programme of Delivery will be completed over three phases from 2015 to 2026, with a lead-in time of two years for planning, visualisation, marketing, investors and contractual agreements.

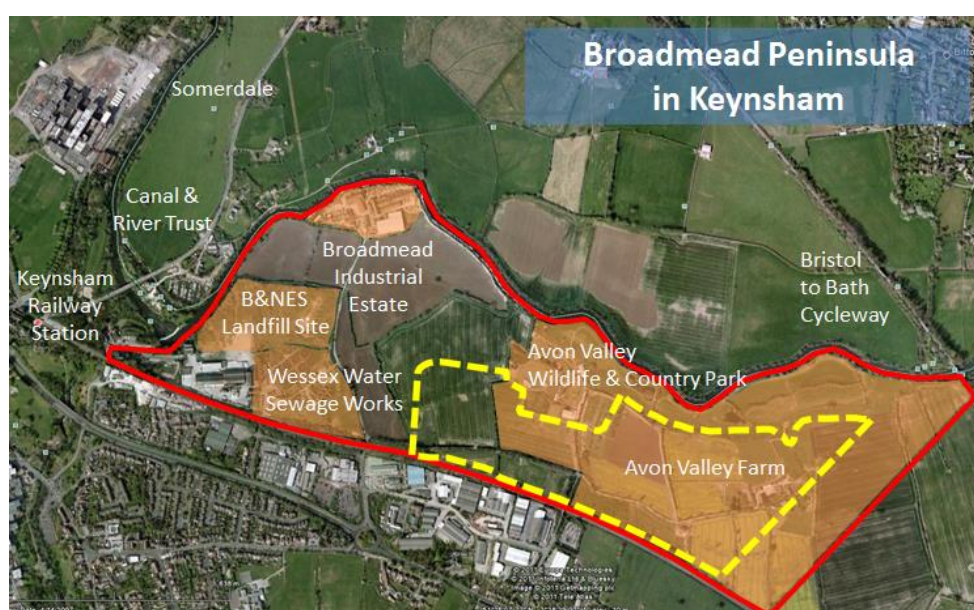
KEYNSHAM	Total	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26
Proposed Green Belt Development		5 Year Housing Supply Period from B/14												
East of Keynsham A1-A3 (TRRT)	712			45	55	65	37	35	52	85	95	95	85	63
East of Keynsham A1-A3 Mkt	456			29	35	42	24	22	33	54	61	61	54	40
East of Keynsham A1-A3 Aff	256			16	20	23	13	13	19	31	34	34	31	23
Total Cumulative Delivery				45	100	165	202	237	289	374	469	564	649	712
Project Phases				Phase 1			Phase 2			Phase 3				

The River Regeneration Trust has established a not for profit Limited Company to deliver housing as part of the Broadmead Peninsula Regeneration and Land Improvement Scheme. A more detailed and comprehensive report in addition to this one is in preparation for B&NES Council (November 2013). TRRT will act as the Tier 1 Contractor on behalf of B&NES, Key Stakeholders and Major Landowners.

East Keynsham Plot A1-A3

Description & Location

The information contained in this report has been gathered from evidence submitted for East Keynsham in plots A1, A2 and A3 as defined in Option 1 of Arup's East Keynsham Development Concept Options report (hereinafter A1-A3) during the Core Strategy Representations, Strategic Housing Market Assessment, Strategic Housing Land Availability Assessment and the Schedule of Changes for the Core Strategy. As such there is no new evidence that would require further consultation as the content herein has been available to whomever using due process. The location of the Arup A1-A3 plot (yellow dashed line below) is on the Broadmead Peninsula in Keynsham, which incorporates Broadmead and Avon Valley Farm. Broadmead Peninsula (red solid line below) is in north east Keynsham, east of Somerdale and situated between Bath and Bristol. It is close to river, railway and highway routes. It is bounded by River Avon to the north and railway to the south.



Housing Need

Housing need for Bath and North East Somerset has been defined by B&NES Council using the District border of B&NES as their Housing Market Area. This need will be reviewed in 2016 as part of the proposed Strategic Housing Market Assessment for the West of England, when the B&NES HMA will be deemed to be either a component part of the West of England HMA or as an neighbouring HMA. There is currently no data available to determine the extent of unmet need within the B&NES HMA or Bristol HMA, which both have a weighting on the housing need within B&NES. Until at such time that this unmet need has been ascertained, the housing need within B&NES is as recorded in their Core Strategy subject to a planned review. Need and unmet need of housing can be defined by tenure type. The following tenure types are being incorporated into the programme of housing delivery in East Keynsham A1-A3:

- Private
- Affordable (minimum 30%)
- Residential Houseboats (high number allocated for First Time Buyers and Essential Workers)
- Build to Rent (Modcell design)
- Manufacture to Build to Rent/Buy (Avon Valley Houseboats & Pre-fabricated Houses)

It is anticipated that Build to Rent will utilise Modcell system build using a flying factory on-site in phase one, with the homes operationally managed by Curo or similar company. The Manufacture to Build to Rent/Buy will be used in phases two-three for an allocated proportion of residential houseboats and pre-fabricated houses as an option for local factory workers, as well as purchase by first time buyers and essential workers. Broadmead & Avon Valley Partnership will use the proven Modcell system to help define their circular economic process (in patent) which will become one of the major employers for processing, manufacturing and servicing residential houseboats and houses on the Broadmead Peninsula. This arrangement will be aligned with the B&NES Environment Park and Avon Valley Waterside Park. The circular economic process will apply for research and development funds through the Technology Strategy Board Small Business Research Initiative and EU Innovation Grants.

Housing Numbers

The housing numbers for A1-A3 have been ascertained from the Arup East Keynsham Development Concept Options report and aligned with the proposals under consideration within the Broadmead Peninsula Scoping Study being undertaken by TRRT. The outline plan used CityCAD software to calculate housing numbers to be developed over three phases, taking account of other land use requirements such as flood compensation, drought resilience (marina), water ecology park, riparian nature corridors, recreational use, early learning aquatic centre and live-work environs. As such the CityCAD designs are an early impression on the types and location of housing and associated ecosystem services. However these initial impressions are limited by the functionality of the software. The exact location and graduation of housing down to the river bank will be further detailed during the Core Strategy final hearings, the Placemaking Plan and the planning process using AutoCAD and ArchiCAD. The housing number split by type is listed below, totalling 712 units with a proposed lower density development of up to 35 dwellings per hectare (dph) to reflect the needs of the area, to mitigate visual impact and optimise the extent of ecosystem services.



Studio and 1-bed apartments	175 units
2-bed apartments	135 units
Semi-detached or Detached Houses	249 units
Retirement Homes	30 Units
Live Work Units	25 units
Residential Houseboats (<i>Passive design</i>)	98 Units
Total Residential (35 dph)	712 Units

Housing Availability

The Arup East Keynsham Development Concept Options report included as evidence in the Schedule of Changes consultation assessed the gross developable area and net housing quantum within plot A1-A3 (shown in the table below). This clearly shows that our proposed housing numbers of 614 units and 98 residential houseboats is well within their calculated numbers, which also takes into account an 80% efficiency factor and a lesser 35 dwellings per hectare ratio. This was further verified in the Strategic Housing Land Availability Assessment which identifies that developable land is available for housing in Plot A1-A3 in East Keynsham; albeit any impact on the urban and landscape character would need to be lessened during development. Our approach and mitigation strategy will be clearly defined in the Broadmead Peninsula Scoping Study, taking into account the essential recommendations of the Arup East Keynsham Development Concept Options report, Environ Sustainability Assessment and the Strategic Housing Land Availability Assessment.

	GROSS DEVELOPABLE AREA (HA)	DENSITY (DWELLINGS/HA)	TOTAL HOUSING QUANTUM	SITE EFFICIENCY FACTOR	NET HOUSING QUANTUM
A1	9.8	35	343	80%	274
A2	6.8	35	238	80%	190
A3	13.2	35	462	80%	370
PLOT A	29.8	35	1043	80%	834

Housing Deliverability

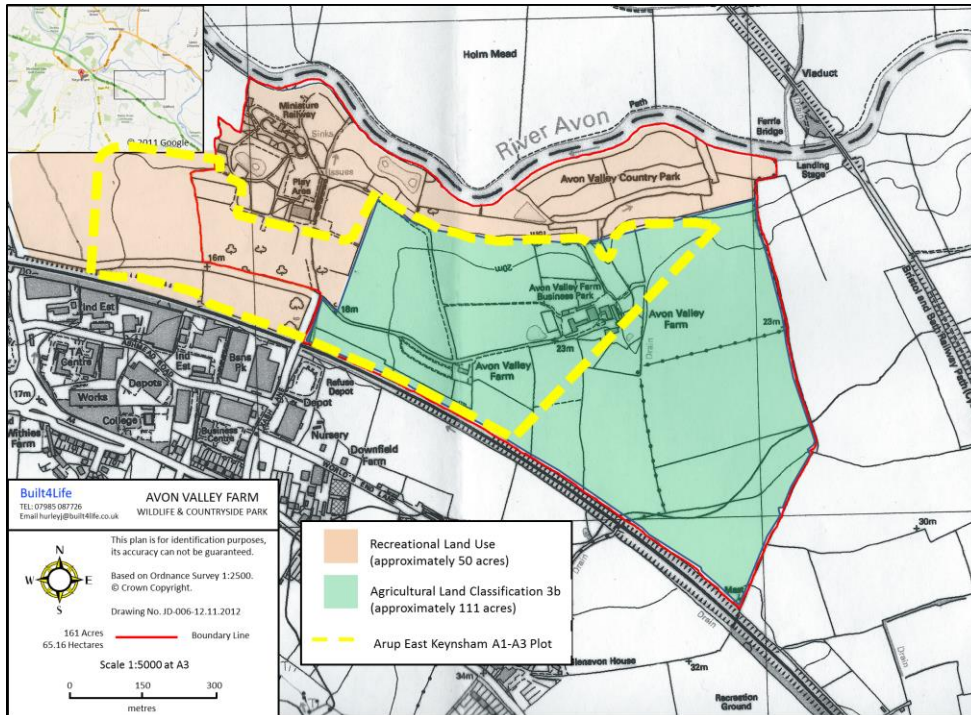
We have used the housing numbers proposed by Arup and sustainably calculated using CityCAD to establish the numbers and phasing of housing delivery in East Keynsham A1-A3. We have presented these figures in the format used by B&NES for their housing delivery strategy across B&NES from 2013-2029. This will ease usability of our figures in line with the B&NES Officers' spreadsheet.

Deliverability of housing numbers is also restricted in the first five years by current access, which is limited to two under and two over bridges of the railway line. The numbers and deliverability in phase one has taken this into account, but from year six we expect to have resolved substantial and HGV access to the site which will increase capacity and delivery. There is a joint-plan to deliver this strategic access with one or more access points, either as an upgrade to an existing bridge, construction of a new over bridge or a new access point from existing highways.

The above proposal is supported by the Strategic Housing Land Availability Assessment which suggests that the location A1-A3 scores a moderate level of suitability and partly deliverable, constrained only by the current access situation which will be overcome with a new HGV-compliant access by 2017 and a two-way over-bridge by 2020. The national gas line also runs along the eastern boundary of the A1-A3 plot, which acts as a natural green barrier and prevents merging with Saltford; this is an ideal location for removing land from Green Belt without risking encroachment.

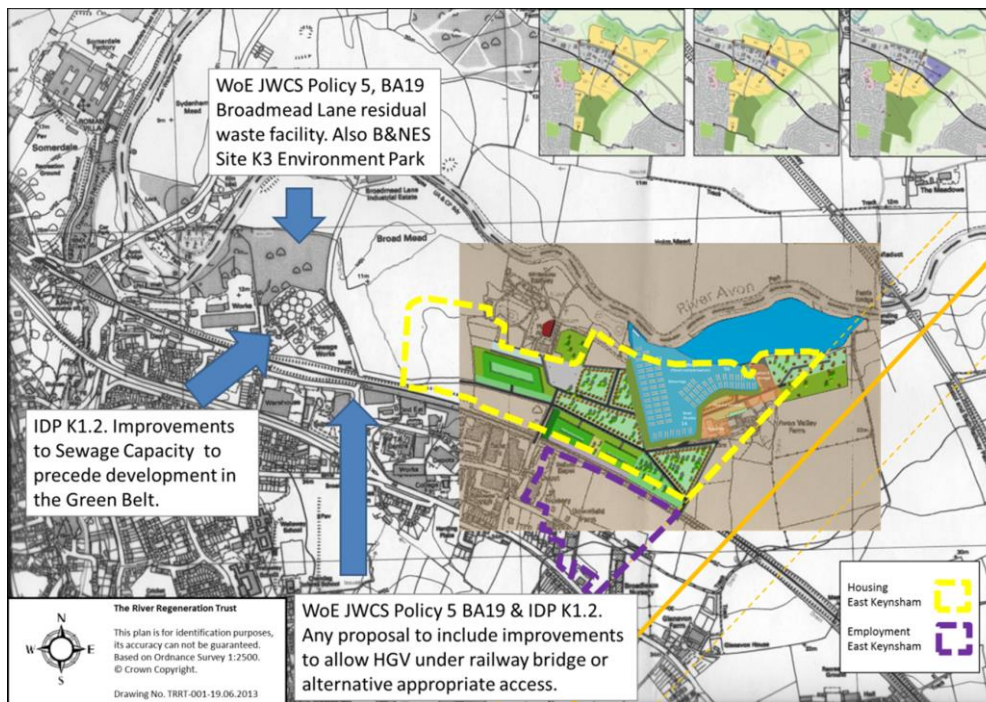
Land Use & Agricultural Land Classification

The housing is to be located on land that is currently within the Green Belt, but in a much less conspicuous location than other plots being promoted in East Keynsham and arguably elsewhere. The diagram below also shows that the A1-A3 plot (yellow dashed line) is mostly within Agricultural Land Classification 3b (green), with some classed as Recreational Use (pink).



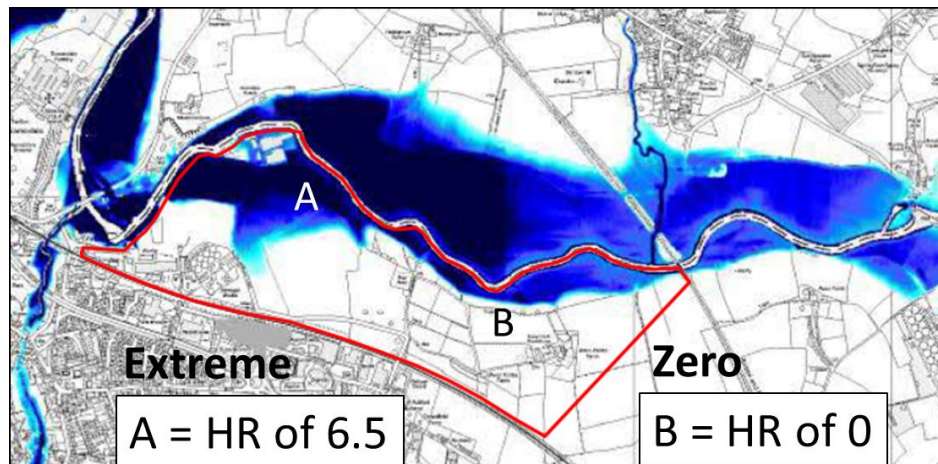
Planning & Property

The location of the housing and residential houseboats aligns with the three options proposed by Arup in their options and constraints detailed in East Keynsham Development Concept Options report, submitted as part of the Schedule of Changes to the Core Strategy. This is complemented by three key infrastructure items, also included in the Core Strategy and as evidence in the consultation process. The diagram below identifies these infrastructure items, the three options proposed by Arup and location of housing and houseboats within Arup’s A1-A3 plot (yellow dashed line).



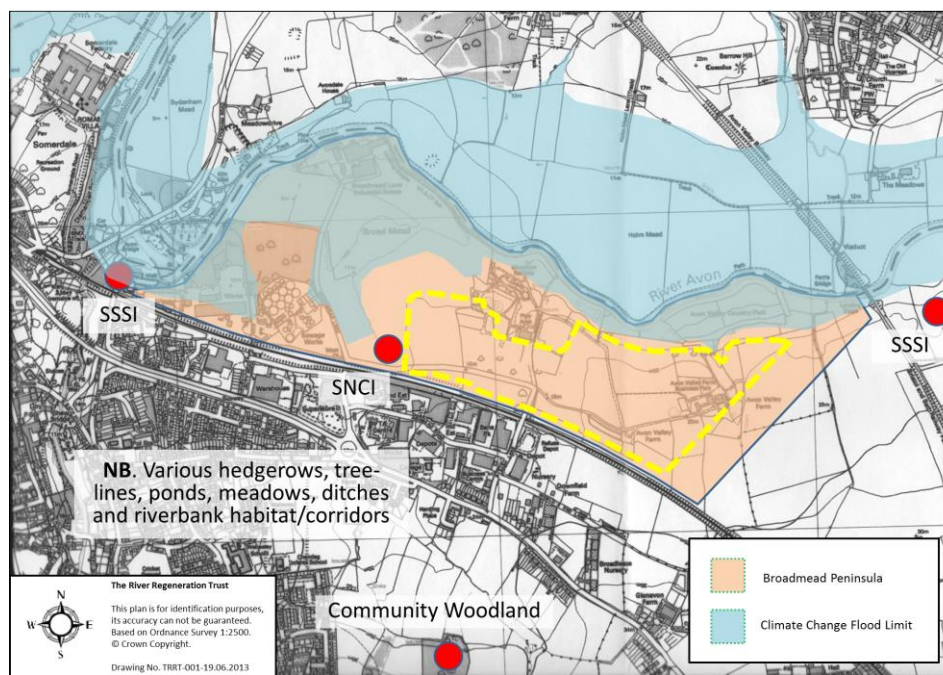
Flood Hazard Rating

The location for the residential houseboats is within an area that has a Zero flood hazard rating (determined by velocity and depth of flood water), in contrast to a former location which has an Extreme flood hazard rating of 6.5. This opinion is shared by Arup who locate the marina and residential houseboats in location B. The associated water ecology park and ecosystem services are reserved for the floodplain above B but with a significantly less flood hazard rating than in A.



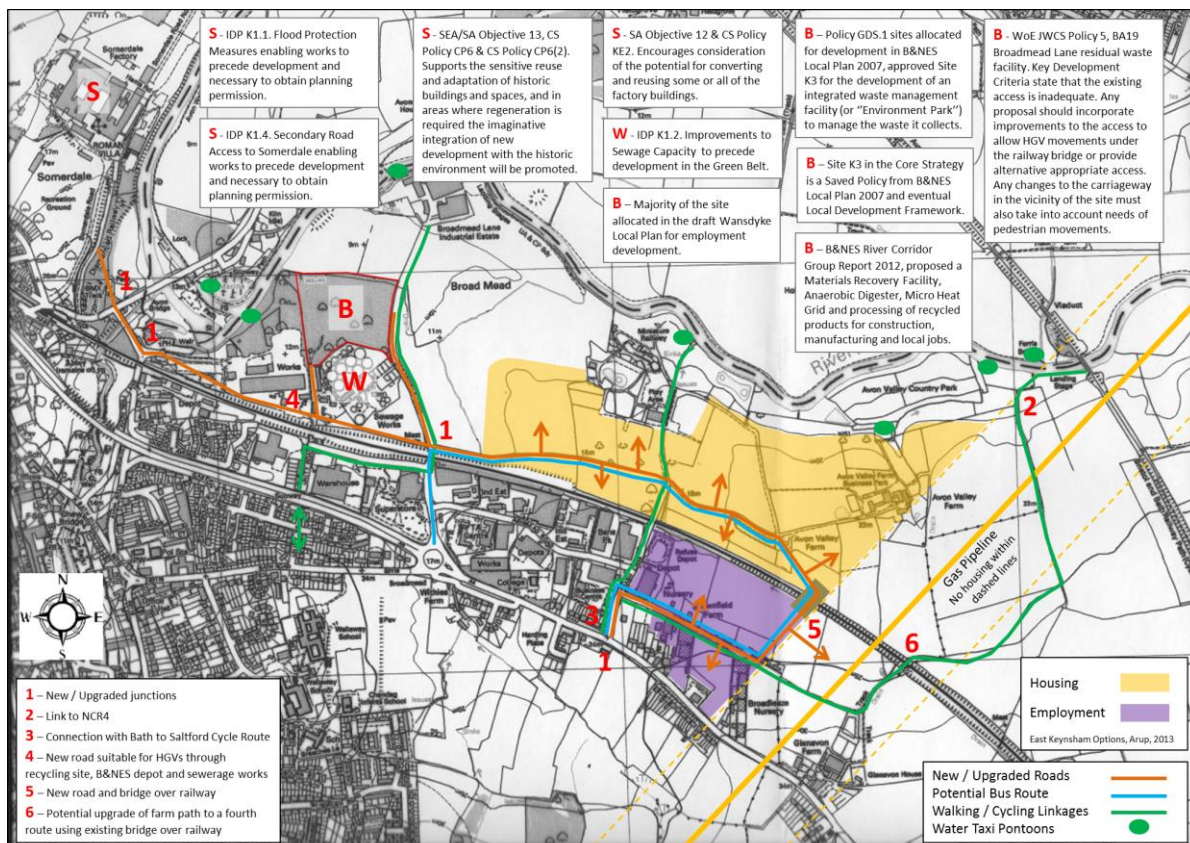
Flood Risk

The location of the houses and residential houseboats is outside of the climate change flood limit and on land classed as Grade 3b; which is not needed to be set aside for food production. This is in contrast to Grades 1, 2 and 3a which does need to be restricted from development. The diagram below also shows the location of environmentally important areas including Sites of Special Scientific Interest and Sites of Nature Conservation Interest, none of which are within the A1-A3 area for housing. This has been recently corroborated by a habitat 1 ecological survey.



Access & Egress

Access and egress to the site is currently restricted, although the existing two under bridges and two over bridges will support the proposed housing numbers from 2015-2017. Subsequent increases in housing numbers will be overcome through a new HGV-compliant access by 2017 and a two-way over-bridge by 2020. The suitability, location and viability of these access points will be explained and detailed in the Broadmead Peninsula Scoping Study; the map below shows initial ideas which were submitted as evidence during the Schedule of Changes to the Core Strategy consultation. Our studies so far indicate that a phased approach to transport infrastructure will provide sustainable access solutions to Broadmead Peninsula. The timeline for delivery will be based on providing appropriate transport capacity in a viable manner, working closely with the Local Highway Authority in progressing the scheme.



Phase 1 The delivery of land-uses and the nature of regeneration will provide complementary activities which will reduce the need to travel; for example a strong mix of affordable and market led housing supply, jobs, industrial usage and leisure activities. Funds for new infrastructure will be realised from house sales and other development. Traffic capacity can be initially met by existing infrastructure; Pixash Lane over bridge allows a link into the Peninsula for traffic and HGVs, along with under rail tunnels. Some of these rail tunnel linkages can also be promoted as pedestrian / cycle access. Currently Pixash Lane provides (primarily) access to the Avon Valley Park, largely a generator of off-peak vehicle access. Housing and employment uses will generate more peak time travel, however a small quantum of development can be delivered without major infrastructure investment or traffic management systems. There are local high-frequency bus services running along the A4 Bath Road which will also enable sustainable transport links beyond the local area.

Phase 2 Additional homes, industrial / employment space and leisure uses can be further delivered through investment in transport infrastructure. An upgraded route (suitable for two-lane HGV use)

linking with Keynsham Road to the west of the Peninsula will provide a step change in traffic capacity to the area. This road link will penetrate the wider site with tertiary roads providing access off the main primary link. This phase will also allow for a more formal approach to walking and cycling routes via the rail underpasses and allow buses to run close to the development areas. We also plan to create linkages between the development areas and National Cycle Route 3 in this phase, and create linkages to river ferry taxi pods from Saltford through to the Chew River in Keynsham.

Phase 3 As cash-flow and development increases, there will be need for a higher capacity road bridge crossing over the railway, towards the east of the Peninsula. Options at this stage indicate either an upgrade of Pixash Lane, or a new bridge integrated with the End of the World Lane. This route will link into the established road infrastructure completed in Phase 2 and will allow for bus penetration throughout the site. We understand that improvement to Pixash Lane / A4 junction will also need to be delivered simultaneously. There is the possibility of relocating Keynsham rail station to create the Keynsham Saltford Parkway, also indicated in Arup’s report and investigated some years ago showing John Douglas’ land as the most suitable area at that time. This was corroborated during our initial discussions with Atkins, who are the managing agent for Network Rail. This new rail station and associated parking will provide a better located facility with room for expansion that is aligned with the electrification works and delivery of the new rail over bridge. However the regeneration is certainly not dependent on this new infrastructure coming forwards.

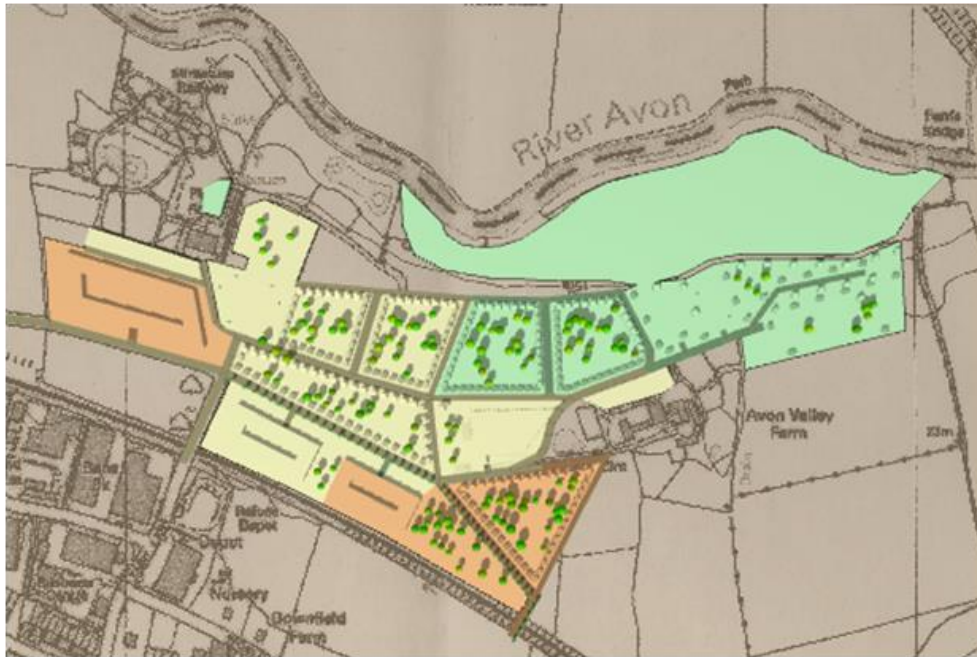
New and upgraded roads, segregated walking /cycle routes and distances to bus stops will all be planned to meet Council standards. Detailed traffic capacity modeling work will be carried out to determine the scale and type of junctions to be implemented and the quantum of development mix that can come forward through the project timeline. Our team has all the skills, expertise and resource to provide these inputs which will be central to creating this sustainable community.

Delivery Programme

The housing numbers will be delivered over three phases between 2015/16 and 2025/26. This will account for 712 units; 614 houses/apartments and 98 houseboats. The three phases are deliverable, subject to appropriate access and egress for transport and 24/7 safe access for residential moorings in the marina. The table below shows the proposed delivery programme, following a two-year lead-in time for planning, visualisation, marketing, investors and contractual agreements.

KEYNSHAM	Total	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26
Proposed Green Belt Development		5 Year Housing Supply Period from 13/14												
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Total Cumulative Delivery				45	100	165	202	237	289	374	469	564	649	712
Project Phases				Phase 1			Phase 2			Phase 3				

The three phases of development have been worked-up using CityCAD, a sustainable spatial planning software tool developed for early design decisions that accommodate the various elements of a sustainable community. The diagram below provides a 2-Dimensional appreciation of the general outline and content of each phase (phase 1 yellow, phase 2 green, phase 3 orange); albeit this will be further tested during the Broadmead Peninsula Scoping Study, final hearings of the Core Strategy, Placemaking Plan and Planning Process following the B&NES Model Approach.



Key Statistics

The following lists some of the key statistics for the overall project, which have been generated by the CityCAD software programme. These will be further interrogated and revised as needed during the planning process and detailed design.

Total Built-up Area	25.45 ha
Total Green Space	4.7 ha
Estimated Population	780
Estimated new jobs created	111
Projected Visitor Numbers per Year	200,000
Projected School Visits per Year	170
Total Parking Spaces (including undercrofts)	1,627
Residential Gross Floor Area (GFA)	64,329 sqm
Number of Dwellings	614
Number of Residential Houseboats	98
Retail GFA	5,827 sqm
Net Residential Density	35 dph
Green Space per Person	60 sqm/person