



Bristol City Council

Knowle West Regeneration Framework Baseline Briefing (FINAL)

3264

KNOWLE WEST REGENERATION
FRAMEWORK

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01 Introduction

01.1 Purpose of this document

The purpose of this document is to provide a summary of relevant baseline analyses carried out across a number of topic areas for the preparation of the Knowle West Regeneration Framework (KWRF) and the Outline Planning Application for Filwood Broadway Corridor.

A wide range of information has been reviewed during this initial phase of the project using desktop analysis, site walkovers, meetings with individuals and workshops with officers and stakeholders.

This report summarises key baseline outputs and marks the transition from project stage 1 to project stage 2. Our baseline findings prompted initial thoughts on issues and propositions which we present in this report at the end of each section. The following key issues have been identified for the Knowle West neighbourhood:

- Environmental constraints relating to ecology, land quality, utilities and flood risk ;
- Accessibility, connectivity and legibility;
- Provision, hierarchy and location of shopping and service centres;
- Housing choice and density;
- Population increases;
- Open space accessibility to afford better play and rest experiences;
- Quality and choice of housing;
- Employment opportunities;
- Education and skills; and the
- Most appropriate planning and delivery vehicle to achieve the overarching objectives of the KWRF.

The summaries that follow are based on comprehensive baseline reports, submitted as separate papers. Their greater detail is expected to inform and guide the masterplan process towards specific site options during Stage 3 and 4 of this project.

01.2 Structure of this document

- 01 Introduction
- 02 Site Conditions and Environment
- 03 Planning Context
- 04 Socio-Economics

- 05 Site History & Built Heritage
- 06 Movement
- 07 Land Use
- 08 Townscape
- 09 Density
- 10 Housing Typologies
- 11 Ownership & Tenure
- 12 Property Market
- 13 Next Steps

01.3 Limitations

Out of 14 Stage 1 tasks, we can report significant programme delays and scope changes for the following 4 work streams:

- Commencement of Community Involvement Activity
- Community Buildings Audit
- Public Art Strategy, and
- Filwood Broadway Corridor requirements

It has been agreed with the Client team that all interviews with representatives of community facilities should be carried out after a BCC on-line community buildings survey is completed. We expect to set up a number of in-depth interviews in June, prior to the preferred options stage (4).

The 'Public Art Strategy' task will be carried out by BCC, with support from Urban Initiatives at key stages, and is likely to run parallel to the preferred option stage 4.

Further, an early meeting with BCC Development Control Officers highlighted that a decision, as to whether an EIA would be required to accompany any application would be premature at this stage, prior to the definition of further detail such as quantum, siting, access and other key defining features.

01.4 Study area & administrative boundaries

The Regeneration Framework Area is located in South Bristol and covers around 325 hectares (ha). The boundary of the study area is shown by a red outline in the Figure 1 .

Numerous data sets were collected on ward and Super Output Area level (SOA). The outlines of respective ward and SOAs, as well as their names are shown opposite.

Filwood ward covers the vast majority of the study area (88%). However, the south-western corner of the Knowle ward and the southern corner of Windmill Hill ward are also situated within the study area.

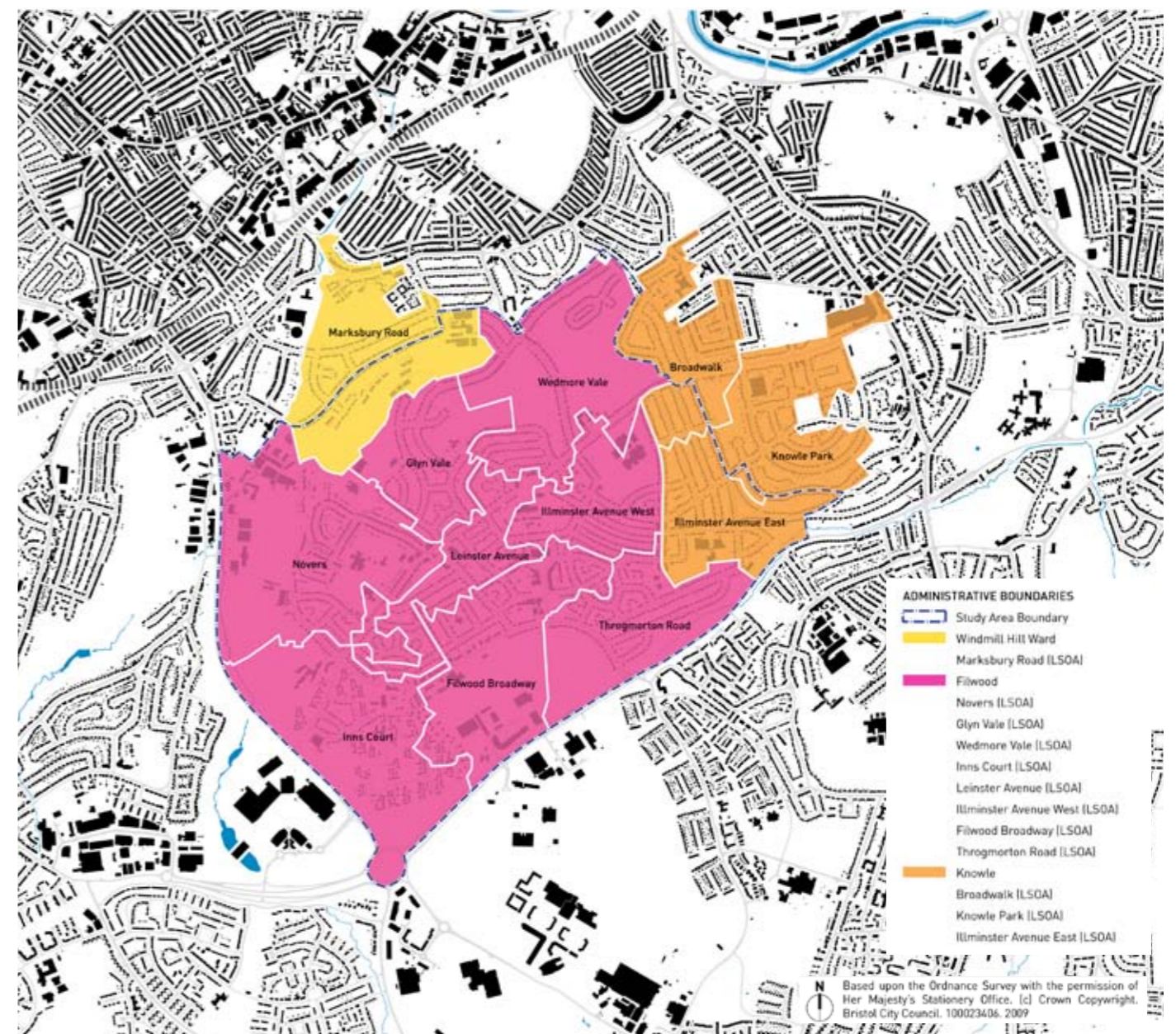
Filwood, Knowle and Windmill Hill wards form part of the Neighbourhood Partnership Area NP 11.

Filwood ward's SOAs are Wedmore Vale, Glyn Vale, Novers, Inns Court, Filwood Broadway, Leinster Avenue, Throgmorton Road.

Knowle ward has three SOAs within the study area. They are Ilminster Avenue East, the southern corner of Broadwalk and small part of Knowle Park.

The southeastern edge of Marksbury Road is one SOAs within Windmill Hill ward and forms part of the study area.

Figure 1: Study Area & Administrative Boundaries



02 Physical Site Conditions & Environment: Topography

02.1 Topography and Slope Gradient

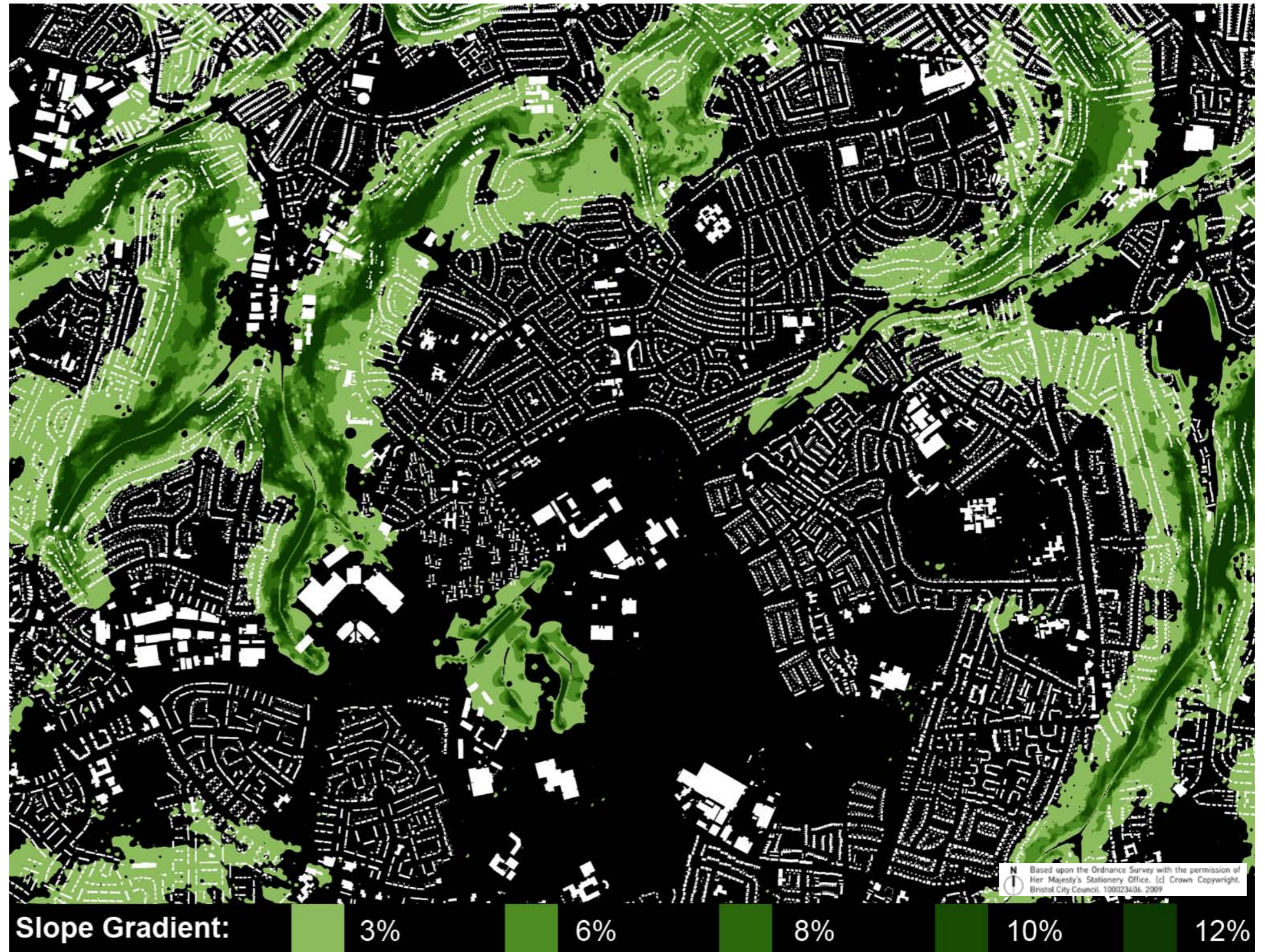
The study area is characterised by its topographic setting. Large parts of Knowle West are situated on a plateau south of Bristol City Centre. Relatively steep slopes to the north and the west make up the edges towards the River Avon and Pigeon House stream and form a natural barrier for movement between Knowle West and Lower Knowle, Wind Mill Hill, Bedminster, Headly Park and the City centre.

Figure 2 shows in green the parts of the site which are particularly steep. The dark green areas have gradient above 10% which indicated that the cost of developing these lands for housing or employment is relatively costly.

However, and as occurring in many other parts of Bristol, building terraces that follow the topography is possible and can create interesting and varied streetscapes and views across the city.

The land marked in light green is flatter and as shown in the plan at numerous locations, already built up (Novers, Glyn Vale, Torpoint Kingswear site). They represent however the fringes of the currently built up area.

Figure 2: Topography and slope gradient



02 Physical Site Conditions & Environment: Daylight Exposure

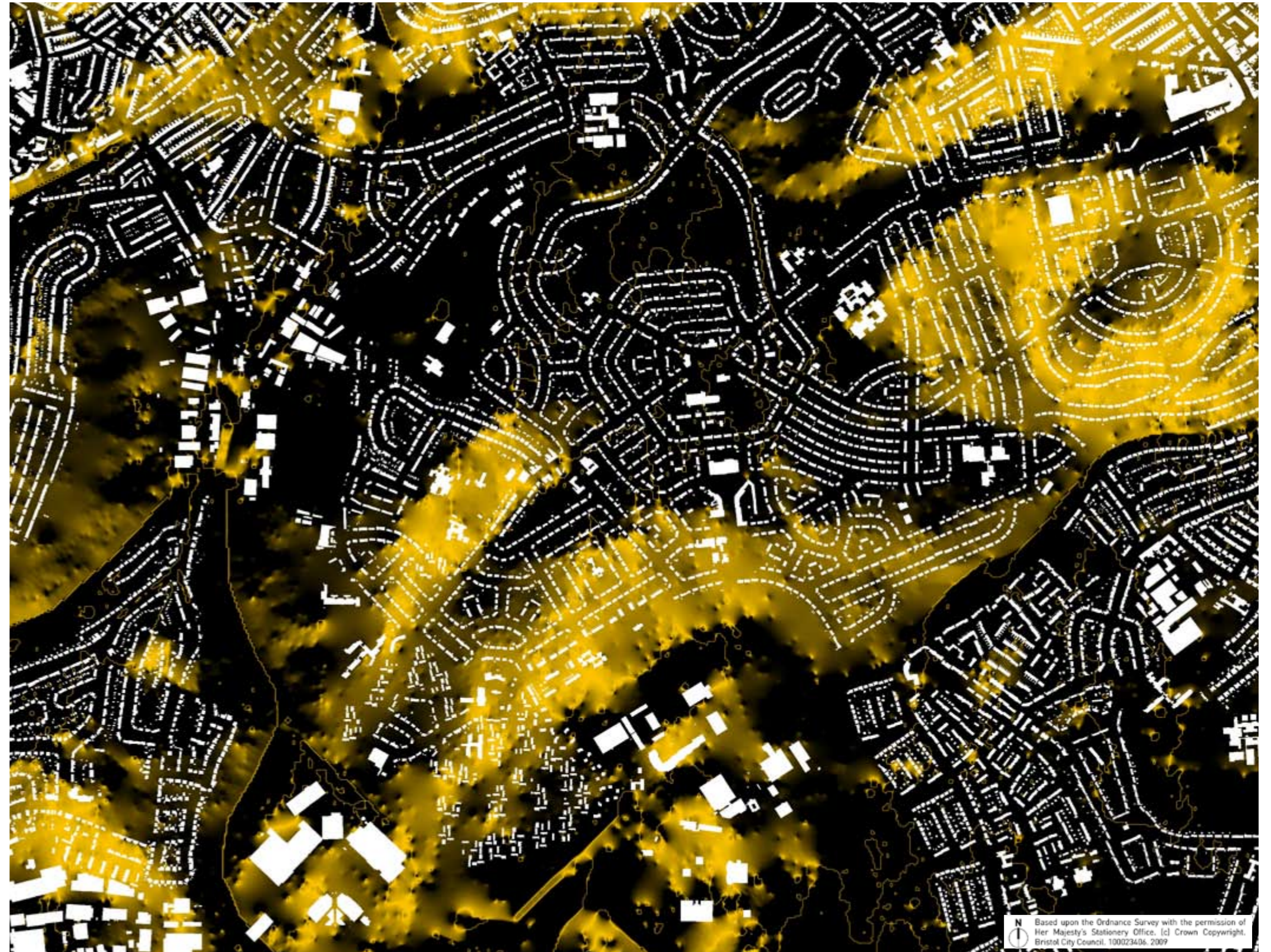
02.2 Daylight Exposure

Figure 3 provides a computer generated assessment of the study area in terms of day light exposure. In crude terms the parts showing an amber colouring have excellent daylight conditions and therefore offer very good conditions for passive solar gain.

The ability of a building to maximise day and sunlight exposure passively, thus reducing energy bills and carbon footprint, is connected to its orientation and location.

Daylight exposure and orientation are important consideration in determining the quality of internal living environments.

Figure 3: Daylight Exposure



02 Physical Site Conditions & Environment: Ground Conditions

02.1 Land quality - Geotechnical study

The results of the desk study indicate that contamination will be a consideration in planning for developments within the existing industrial areas, in the area alongside Pigeonhouse Stream, and in the vicinity of the former petrol station on Filwood Broadway. Elsewhere contamination is not expected to be a major consideration, but localised issues will occur at specific locations such as electricity substations.

The desk study has identified that the majority of the site has not been used for any significantly contaminative, uses with the exception of the areas of the existing industrial estates by the western and southern boundaries of the site.

The western industrial part of the site has had a large number of potentially contaminative uses on it and historical maps indicate that there is also a refuse tip adjacent to the western boundary of the site, but no further information is given about it in the Envirocheck Report (see main topic area report).

The southern industrial part of the site was occupied by part of the airport and hangar and later by engineering works and depots. It is likely that significant amounts of made ground will be present in these areas and that contamination will be present. There are also three other historical landfills immediately adjacent to the west and southern boundaries of the site.

For the majority of the site at the top of the hill which is largely a residential area, there is likely to be isolated areas of made ground and contamination present associated with fuel stations, electric substations, Filwood Broadway area or other areas where commercial uses have occurred.

There is no risk of contamination within the western part of the site impacting on the residential parts of the site at the top of the hill, as it is considerably elevated above the western area of the site and migration of contamination will be at a much greater depth.

Site specific ground investigations will be required within development areas, especially where residential gardens will be located, to determine whether contamination is present and to assess the risk it poses to development so that mitigation measures can be implemented.

No information has been found on the refuse tip apparently present, next to the western boundary of the site by Pigeonhouse Stream. It is advisable that if this area is to be considered further that the Pollution Control Department at Bristol City Council is commissioned to undertake a search of their records.

In areas where made ground is present or in areas adjacent to historical landfill sites or refuse tips there is the possibility that ground gas/landfill gas could occur. It is not currently known what is actually contained in the landfills or refuse tip and the potential for gas generation may be high. However

the landfills/refuse tips are historical and gas generation may well have ceased. Gas monitoring must be undertaken on a site specific basis to confirm the gas regime. No radon gas protection measures are needed for the majority of the site but basic protection measures are likely to be required in the south eastern part of the site. It is recommended that more detailed radon gas assessment is undertaken, as the current radon information is very general. More specific BR211 Radon gas reports should be obtained from the British Geological Survey to give specific guidance on the radon protection measures required.

Geotechnical Assessment

Although no ground investigation information is available an initial assessment has been made from the desk study, geology and local knowledge of geotechnical conditions. Most geotechnical issues can be overcome by engineering design and their effect on planning will be principally through the economics of the development.

Additional foundation costs (probably entailing piling or raft foundations) will be incurred over areas of compressible ground or deep Made Ground. Compressible ground is expected to be limited to the valleys of the Malago and Pigeonhouse Stream, and much of this area will also be affected by Made Ground. Deep Made Ground is also expected to be present in the area of old quarries along Novers Lane, south west of Inn's Court Avenue.

Geotechnical costs may also be high for developments on the steep slopes in the north and west, which would need a detailed investigation of the stability of the slope, possibly followed by slope stabilisation works. Groundwater may also be problematic on the slopes, with additional drainage needed at potential spring lines.

It is considered highly unlikely that the site would be affected by coal mining. The nearest seam to be mined is the Bedminster Great seam which lies more than 900m below the site. It is unlikely to have been worked beneath the site, and any workings will be too deep to affect the ground surface.

Conventional foundations will be feasible over most of the existing residential areas. Some additional costs may be necessary for foundations in the Lower Lias Clay areas in the central and southern parts where affected by trees.

Cavities (solution features) have been reported in areas of limestone. These are unlikely to be a significant issue, and can be dealt with by engineering methods as and when they are encountered during development.

Pyritic conditions may exist within the Lower Lias Clay. Chemical testing will be required on a site specific basis to determine the appropriate concrete classification.

Given the underlying geology and likely clay consistency of the soils beneath the site, soakaway drainage is unlikely to be suitable for the area.

Ground investigations

Given the large size of the site area, only a very general assessment has been undertaken to help identify potential geotechnical and contamination issues, which could pose a constraint for planning purposes. Further, more detailed assessment will be needed once development areas have been identified and a site specific walkover survey of these areas will be required at this stage, prior to any investigation.

Ground investigation may be required within development areas to:

- confirm the ground conditions for design of foundations and infrastructure;
- determine whether made ground/contamination is present on the site;
- assess the contamination risk;
- install gas monitoring wells and undertake gas monitoring to establish gas regime.

The ground investigation should provide general coverage of each development area and specifically target the locations of buildings and areas of potentially contaminative uses.

Other issues

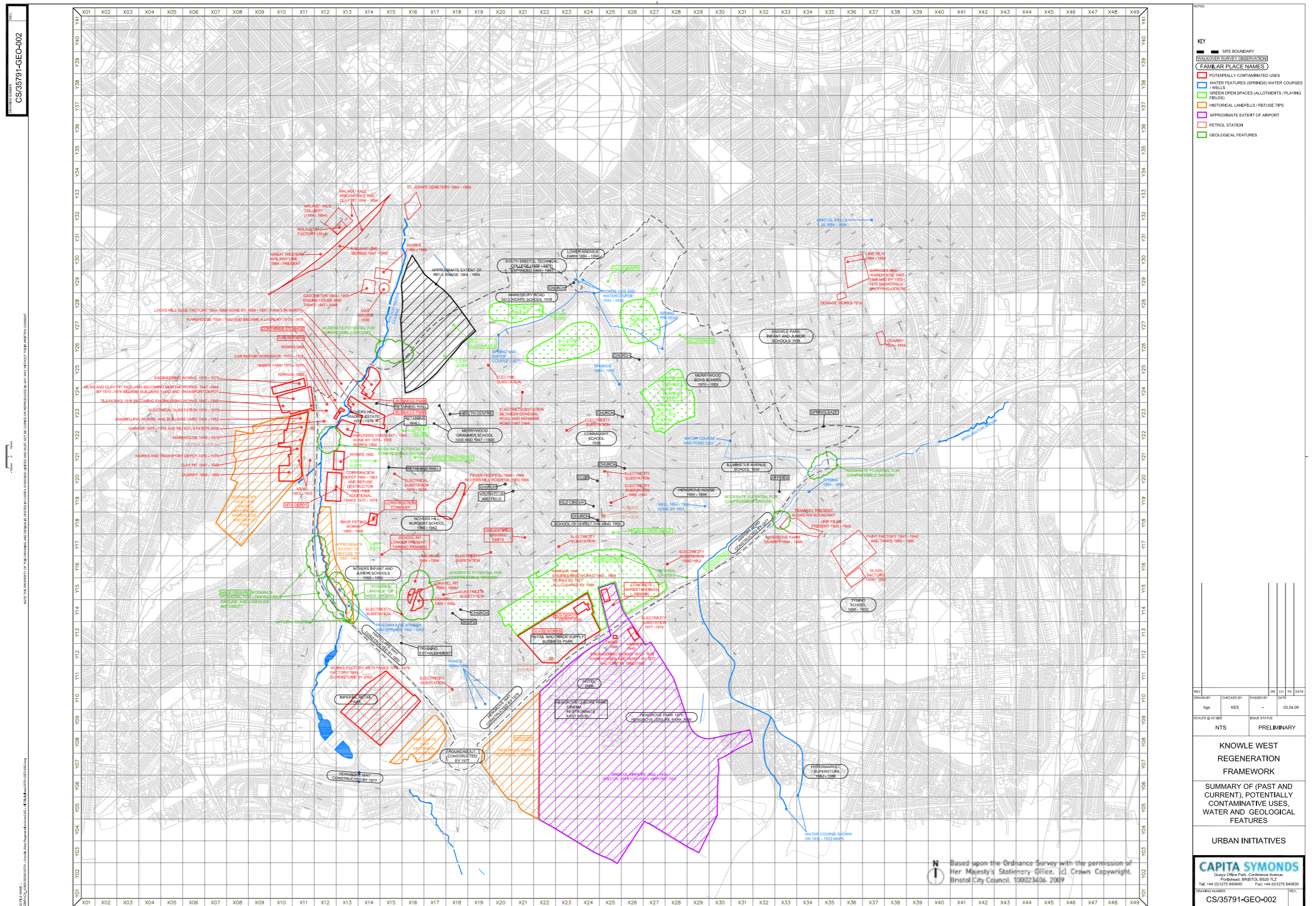
The site lies within a high risk area where unexploded bombs may be present. Contractors carrying out any sort of ground investigation works or construction works should take precautions to mitigate against the risk. This may include undertaking bomb risk assessments, or using geophysical surveying techniques prior to or during the works.

The plan opposite provides an overview of past and current potentially contaminative uses, water and geological features.

More detail is set out in the Geotechnical Baseline Paper.

02 Physical Site Conditions & Environment: Ground Conditions

Figure 4: Summary of potential ground conditions constraints



02 Physical Site Conditions & Environment: Flood Risk

02.2 Flood risk

The flood hazards of the regeneration site, with respect to six standard sources as identified in PPS25, are considered below. They are flooding from:

Rivers – there are only two notable open watercourses within the KWRF area that pose a flood risk. These are the Malago near the north-west corner of the area, by Novers Hill Trading Estate and fire station, and at the south east corner at Brislington Brook. However, the vast majority of the KWRF area has surface water runoff flows in pipes which finally discharge into these watercourses. The risk to these watercourses could be increased from greater runoff coming from the KWRF, due to increased impermeable areas or changes in climate, or a combination of the two.

The sea – KWRF is at an elevation and distance from the Bristol Channel which means that flood risk from this source is nil. There are no impacts on the KWRF area from tide-locking of watercourses which drain it. Tide-locking is where river waters accumulate when unable to discharge into the sea at times of high tide.

The land - this is a risk to and within the regeneration area, but has been substantially transferred to a risk of flooding from sewers since Knowle West was developed. The more pervious geological outcrops tend to coincide with open spaces, except at Filwood, which lies over clays. Greenfield areas, especially those overlaying clays on the higher parts of the regeneration area, are potentially a flood risk to lower parts.

Groundwater – due to the elevated position of Knowle West, this source of flooding from this source is limited in extent and occurrence. There are very few natural depressions that would lead to groundwater ponding. However, where the limestone outcrops on the northern escarpment near clay interfaces, the springs pose a risk to downhill properties and lands. Alluvial soils along the Malago may be subject to flooding from raised groundwater levels, but no records to support this have been found.

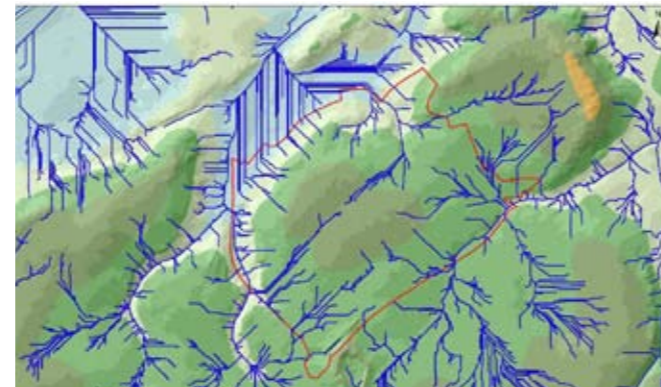
Sewers – throughout the built-up areas of Knowle West this source of flooding is potentially the most widespread risk. The sewer network has been extensively developed under most of the estate roads to replace the old ditches and minor brooks. There is a need to survey the sewers and their flow capacities so that future development run-off or changes in climate are accommodated.

Reservoirs, canals and other artificial sources – there are no reservoirs, canals or artificial tanks that would give rise to flood risk in Knowle West.

The natural catchments are now substantially built over, but by using a 'roller ball' technique on a Digital Terrain Model (DTM) they can be reconstructed. The DTM used was an IfSAR grid that has been filtered to remove buildings, leaving a

quasi-natural ground surface. The flow paths generated are shown in Figure 5 which coincides well with drains, ditches and channels depicted on early 1900s Ordnance Survey maps.

Figure 5: Flow paths generated on DTM



A feature of the drainage paths throughout KWRF area is that they now tend to avoid open green spaces. The Figure below shows the generalised drainage paths that are now confined to pipes. There is little opportunity for surface waters to infiltrate into the few areas of more permeable strata, and virtually all of KWRF surface water is discharged into watercourses without infiltration. This is one of the least sustainable approaches to deal with surface water.

Figure 6: Drainage routes and existing green spaces



The majority of KWRF area is not coloured blue (see EA flood risk plan opposite) and is therefore designated as Flood Zone 1. This indicates that the risk of flooding from rivers and the sea has a 'low probability' of less than 0.1% in any year. The EA Flood Map shows parts of the regeneration area coloured blue. These indicate that the risk of flooding from rivers and the sea has a 'medium probability' of between 1% and 0.1% in any year. These risk areas are highlighted in red on the Flood risk plan shown opposite. One is in the east part of Knowle West at Brislington Brook, in an area of open space. The other is on the Barnack and Novers Hill Trading Estates on the Malago in the western part of KWRF.

As the majority of the KWRF area is in Flood Zone 1, with less than 0.1% probability of flooding from rivers or the sea, there is little historical information on flooding. However, the following points are worth noting that relate to reduction in the likelihood of flooding in KWRF area:

- There are several relief pipes in the sewer network that convey surface water flows away from potential areas of inundation. They were constructed to take sewer overflows within additional pipes along Wedmore Vale, Hartcliffe Road and Somerdale Avenue. Wedmore Vale relief was constructed in 2003-4 in response to increased development on the lower slopes of Knowle's northern escarpment.
- Relief pipes and storm overflows on Somerdale Avenue take surface waters from Knowle, outside the KWRF area, and combine them with Lower Knowle drainage to then discharge into a remnant tributary of Brislington Brook. The probability of Knowle West drains being forced into a subsidiary role may be greater with time, unless Knowle flows are restricted or mitigated outside the regeneration area.

Climate change

The effects of climate change have been considered in this baseline using estimates of existing runoff, specifically resulting in:

- Run-off volumes in the 3 catchments are expected to increase by 30% over the next 100 years to nearly 94,000m³.
- Greenfield run-off rates are likely to increase by 30% over the next 100 years to around 18.4 l/s/ha
- The results of run-off estimates indicate that without modification of the KWRF impermeable areas, increases in discharge will occur due to climate change.

Detailed constraints

Within guidance available for this baseline, the KWRF area needs certain constraints on the proposals and designs for re-development, either large or small scale to reduce flood risk and improve water management. These constraints are:

- Bristol City Council highways should not contain surface water storage voids under the carriageway. This is for carriageway maintenance and utility service siting reasons.
- There is an ancient pipe running from a spring near St Barnabas church to St Mary's Redcliffe, as shown in Figure 7. This is known as St Mary's Pipe and every year since 1190AD the clergy walk the route to maintain the right to supply water to their parish.
- Flood relief pipes at Wedmore Vale, Airport Road Interceptor (Hengrove Way), Hartcliffe Road / Bideford Crescent, Somerdale Avenue need to be retained at their current capacities]
- Surface water pipe nodes at Hartcliffe Way / Wills Way, Hartcliffe Way / Novers Lane, Novers Hill / Novers Park Close, Lynton Road / Torpoint Road, Hengrove Way / Creswick Road (issues of Brislington Brook), Glyn Vale / Wedmore Vale, are main collection points to drain KWRF and the need to increase capacities should be avoided.
- Combined Sewer Overflows at Novers Hill / Lynton Road, St John's Lane / Littleton Road, and Somerdale Avenue should avoid capacity increases.
- The existing cumulative area of open spaces, gardens and playing fields for each catchment should not be reduced over more permeable strata if other means of reducing run-off cannot be incorporated into building and development designs.

Flood Risk management measures

This baseline has assessed the area extents of various land surface types according to their permeability to water. Future designs can be appraised against these baseline quantities to determine the effects of any new proposals.

The Airport Road / Malago Interceptor was constructed between 1971 and 1974 to alleviate flooding in the Brislington Brook catchment. High surface water flows are now conducted along this interceptor to the Malago catchment, ultimately discharging through twin pipes into the New Cut of the River Avon, near the junction of St John's Road and Coronation Road in Bedminster.

Relief pipes within the KWRF area have been constructed at various times since the estate was built, the latest being at Wedmore Vale in 2003-4 when additional housing was provided.

Aspirations for reducing flood risk and improving water quality include:

- Reduce the area of impermeable surfaces in public spaces and zones by introduction of more permeable paving or reintroduction of green spaces
- Increase cleansed infiltration into limestone strata
- Encourage householders to reduce areas of impermeable

02 Physical Site Conditions & Environment: Flood Risk

paving on their land, and to comply with recent legislation to limit these surfaces in front gardens.

- All flood risk mitigation measures should follow sustainability guidelines, at least including those published by CIRIA in reports:
 - C635 Designing for exceedance in urban drainage, 2006;
 - C697 The SuDS Manual, 2007;
 - C698 Site handbook for the construction of SuDS

Off site impacts

The KWRP area will be designed to ensure that proposed development and the measures to protect the site from flooding will not increase flood risk elsewhere. This will be achieved by:

Limiting surface water flow rates in piped sewer networks, by constraining pipe sizes or installing hydrobrakes

Storing surface water run-off, and retard its flow nearer to its source by the use of rainwater harvesting, highway verge swales and intermittent shallow ponds in public open spaces (where slope angles and geology permit)

Contractors working in KWRP area should to be bound contractually to preventing and remedying the effects of any contamination caused during groundworks and construction.

Residual Risks

The residual risk of flooding over the regeneration area when all sustainable mitigation measures have been installed should be where flooding exceeds the 1% probability. In these circumstances, flows should be designed to follow routes where they cause minimal damage and risk to property and life. Flood-related risks that will remain after implementation of the measures to protect the Framework site from up to 1% probability flooding and their mitigation measures are:

Overland exceedance flows are likely to follow DTM flow paths (Figure 5)

- These risks can be managed over the lifetime of the development through the use of flood resilient materials in lower floors of buildings and structures that lie along these flow paths
- Exceedance flows that go down roads can have velocities retarded by highway features like speed humps across whole carriageway and block paving
- Exceedance flows that may affect properties on and at the base of the northern escarpment can be redirected by landscape features onto larger areas of open ground.
- Flooding at the Trading Estate (the old Lock Mills site) by the Malago is likely to remain in spite of flood alleviate measures taken over KWRP area due to other sources of flood flows into Pidgeonhouse Stream and Malago being

unattenuated or increased.

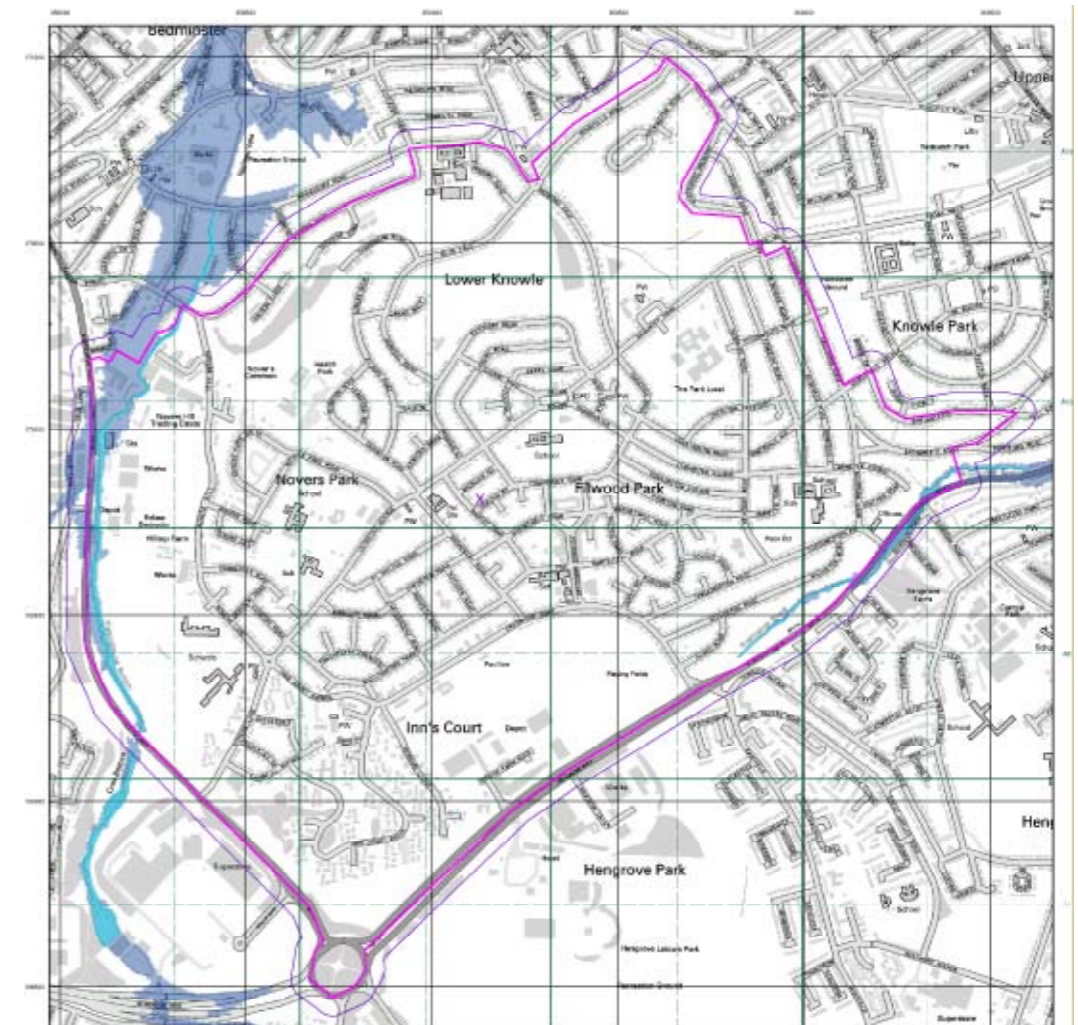
- There is no specific requirement for flood warning and evacuation procedures over most of the KWRP area where it is in Flood Zone 1. However, above ground flow routes should be identified where sewers or other conveyance systems may become blocked or overloaded. This identification, combined with a degree of mitigation, could take the form of different highway surfaces, like block paving, along such routes.
- Flood warnings and evacuation or response procedures should be developed for the trading estates and fire station at the Malago.

More detail is set out in the Flood Risk Baseline Paper.

Figure 7: Flood relief routes and flood risk hot-spots



Figure 8: Environment Agency Flood Map



02 Physical Site Conditions & Environment: Ecology

02.3 Ecology - Summary

The Ecology and Nature Conservation outlines the baseline situation, potential ecological impacts, mitigation and enhancement measures of the Knowle West regeneration project.

The Northern Slopes proposed Local Nature Reserve (LNR); Glyn Vale Site of Nature Conservation Interest (SNCI); Wedmore Vale SNCI; Novers Common SNCI; Airport Road SNCI; and Pigeonhouse Stream and adjacent meadows SNCI are within the 'Site' of the regeneration project. All SNCIs are 'Citywide Sites of Nature Conservation Interest,' areas of 'Open Space' and part of the 'Wildlife Network.'

In total, 13 protected species have been recorded within a 1km radius of the Site: serotine bat, noctule bat, common pipistrelle bat, otter, badger, slow-worm, common toad, common frog, smooth newt, barn owl, kingfisher, quail and bluebell. 20 Biodiversity Action Plan (BAP) species have also been recorded within 1km of the Site. Badgers and slow-worms have been recorded within the Site itself.

Stands of the invasive species, Giant hogweed and Japanese knotweed, have been recorded in Pigeonhouse Stream and adjacent meadow SNCI and Airport Road SNCI.

The Phase 1 Habitat survey identified the potential for the Site to support breeding birds, reptiles, bats (roosting and foraging / commuting) and badgers.

The Phase 1 Habitat survey identified the following habitats within the Site in order of abundance: hard-standing, residential and commercial buildings, improved and semi-improved grassland, broad-leaved woodland, scrub, scattered broad-leaved and coniferous trees, amenity grassland, tall ruderal, species-poor hedgerows, ditches, introduced shrubs, bare ground and ephemeral, arable (including allotments), ponds and rubbish and debris habitats. Scrub, woodland and hedgerows are BAP habitats.

The Site is considered to be of low ecological value because the habitats are generally species-poor (albeit that the survey was undertaken at a sub-optimal time) and that there is a high level of disturbance and littering throughout the habitats present within the Site.

It is recommended that the following surveys are conducted at the Site: breeding bird survey; presence / absence reptile; badger survey; bat activity survey; tree and building bat inspections and potentially a summer roost emergence survey.

Enhancements measures on the Site could include: provision of bird / bat / invertebrate boxes; provision of log piles for invertebrates and reptiles and reptile hibernacula; native tree / shrub / hedgerow planting; creating wildlife ponds; seeding a wildflower meadow; marginal planting and bank planting; litter collections; removal of scrub and limiting horse grazing;

improving the management of the grassland swards; and eradicating invasive species.

Conclusions

Following the extended Phase 1 Habitat Survey and findings of the desk study the Site is considered to be of low ecological value because habitats are generally species-poor (albeit that the survey was undertaken at a sub-optimal time) and that there is a high level of disturbance and littering throughout the habitats present within the Site.

The Site does, however, have very good connectivity and linkage to more diverse areas beyond the Site including Hengrove Park SNCI, Malago Valley SNCI and Crox Bottom SNCI. These could provide excellent opportunities for enhancement in the future.

Reference should be made to policy NE12 which states:

"In determining planning applications, account will be taken of the retention and protection of existing natural features and habitats, and, where appropriate, the benefits of new landscape treatment which...Compensates for any unavoidable loss of existing features or habitats;...Incorporates the greatest possible proportion of appropriate native vegetation (unless special circumstances dictate otherwise);...Includes habitat features attractive to local wildlife species"

Recommendations

It is important that detrimental impacts to all species and their habitats are kept to a minimum and that legislation and planning policy is upheld with regard to protected and notable species as well as considering effective management and eradication of invasive and injurious species.

Species-specific Recommendations

The extended Phase 1 Habitat Survey identified the potential for breeding birds, reptiles, commuting / foraging bats, roosting bats and badgers to be supported within the Site.

It is recommended that certain species-specific additional ecological surveys be carried out at the optimum time of year to fully assess the ecological status of the survey area. Mitigation measures are to be implemented to avoid / negate, reduce or compensate the adverse effects of the proposed development on any protected species identified.

For protected species, it is recommended that the survey methodology and recommendations for mitigation are carried out in accordance with best practise and also discussed and agreed with Natural England to assist with any ensuing licence applications or mitigation requirements.

Reference must be made to policy NE8 which states:

"Development which would cause unacceptable harm to a species protected under national legislation, or its habitat, will not be permitted unless the adverse effect is capable of being

overcome by measures to be carried out prior to or during development, as identified in a thorough site survey."

Breeding birds

A number of protected and notable bird species have been recorded within the study area and Site in the last decade, including barn owl, sparrowhawk, buzzard, kingfisher, house sparrow, skylark, spotted flycatcher, willow warbler and tawny owl.

The Phase 1 Habitat Survey also identified a high potential for a range of bird species (including ground nesting birds) to be supported within a mosaic of habitat types including trees, woodland, species-poor hedgerows, rough grassland and scrub on the Site. Two green woodpeckers and other common garden bird species were recorded within the Site during the survey.

A further breeding bird survey is recommended for the Site in order to provide information regarding species present and inform enhancement opportunities and mitigation measures appropriately.

The survey, which follows BTO Breeding Bird Survey (BBS) methodology, constitutes three surveys, with each survey covering all areas to be targeted, which may, for this Site, need to be achieved in multiple visits. The first survey sets a transect route; the first survey is carried out between April and mid-May and the third survey is carried out from mid-May to late June. The second and third surveys must be at least four weeks apart, as it is important to distribute surveys across the breeding season to gain a full understanding of resident and migratory species using the site.

It is recommended that vegetation removal including lopping, trimming or felling of trees and removal of hedgerows and scrub is conducted outside of the bird breeding season. The bird breeding season generally occurs between the end of February and the end of August inclusive (dependent on seasonal conditions).

If it is not possible to remove vegetation / fell trees outside of the bird breeding season, it is recommended that all vegetation / tree felling required to be removed is checked by an ecologist for active nests no more than two days prior to vegetation clearance. If active nests are identified, no works may be undertaken in the vicinity of the nest until the birds have fledged the nest.

Note that the above recommendations are provided as a generic mitigation method to avoid prosecution under the WCA. Further mitigation including timing constraints must be advised following the BBS and checks by an ecologist as part of the vegetation clearance works with particular regard to WCA Schedule 1 species, if required.

Reptiles

Slow-worms have been recorded in the study area and Site in the last decade, including in Nover's Common SNCI.

The Phase 1 Habitat Survey identified habitat suitable for reptiles, including rank grassland and areas of tall ruderal vegetation.

It is recommended that surveys are required for reptiles and that these surveys are targeted within the identified suitable habitat and carried out during the optimal season, between April and September (inclusive). These surveys are required so that, where the presence of a population of reptiles is confirmed, suitable mitigation may be implemented in the appropriate season prior to development of the affected habitat. Surveys to estimate population sizes of reptiles potentially impacted by the proposed development will be required to determine appropriate mitigation requirements.

The presence / likely absence survey involves placing squares of roofing felt (tiles) approximately 50 cm x 50 cm in size at regular intervals of approximately 20 metres, throughout areas of the site that have previously been identified as having the potential to support reptiles. This follows best practice survey methodology (Froglife Advice Sheet 10).

Reptile survey methodology states that in order to determine presence / likely absence, all tiles should be surveyed for seven days, and then in those areas where reptiles are identified, surveys are to continue for a total of twenty days, in suitable temperature and weather conditions, in order to assess population sizes. During this time, each tile is lifted and the species, sex, maturity and number of reptiles seen are recorded, along with the time, date, weather conditions and tile number. Observations of any reptiles seen out in the open and snake sloughs, are also recorded.

No machinery is to be tracked across, and no materials are to be stored within, any areas identified by an ecologist as having potential to support reptiles.

Bats

Foraging / commuting bats

Serotine, noctule and common pipistrelle bats have been recorded within the study area and Site within the last decade.

The Phase 1 Habitat Survey identified a high potential for supporting foraging / commuting bats along the hedgerows, treelines and woodland within the Site.

It is recommended that a bat activity survey be carried out across the Site to establish what species of bats are commuting or foraging in the area. It is considered that a bat activity survey will assist in determining the wider use of the Site and adjacent connective features, including those areas defined as Wildlife Network Sites.

02 Physical Site Conditions & Environment : Ecology - key constraints plans

Figure 9: Bristol Wildlife Network Sites, 2009

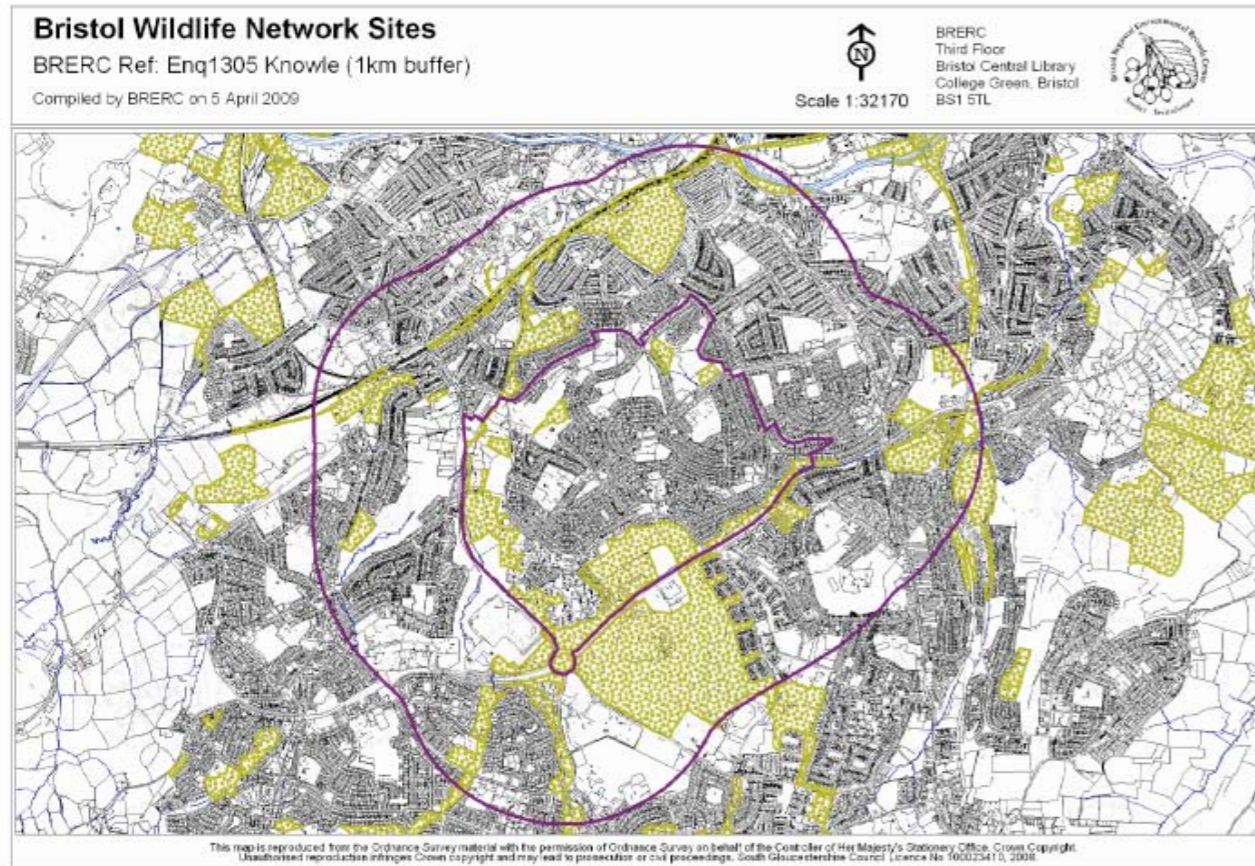


Figure 11: UK Priority Habitat, 2009

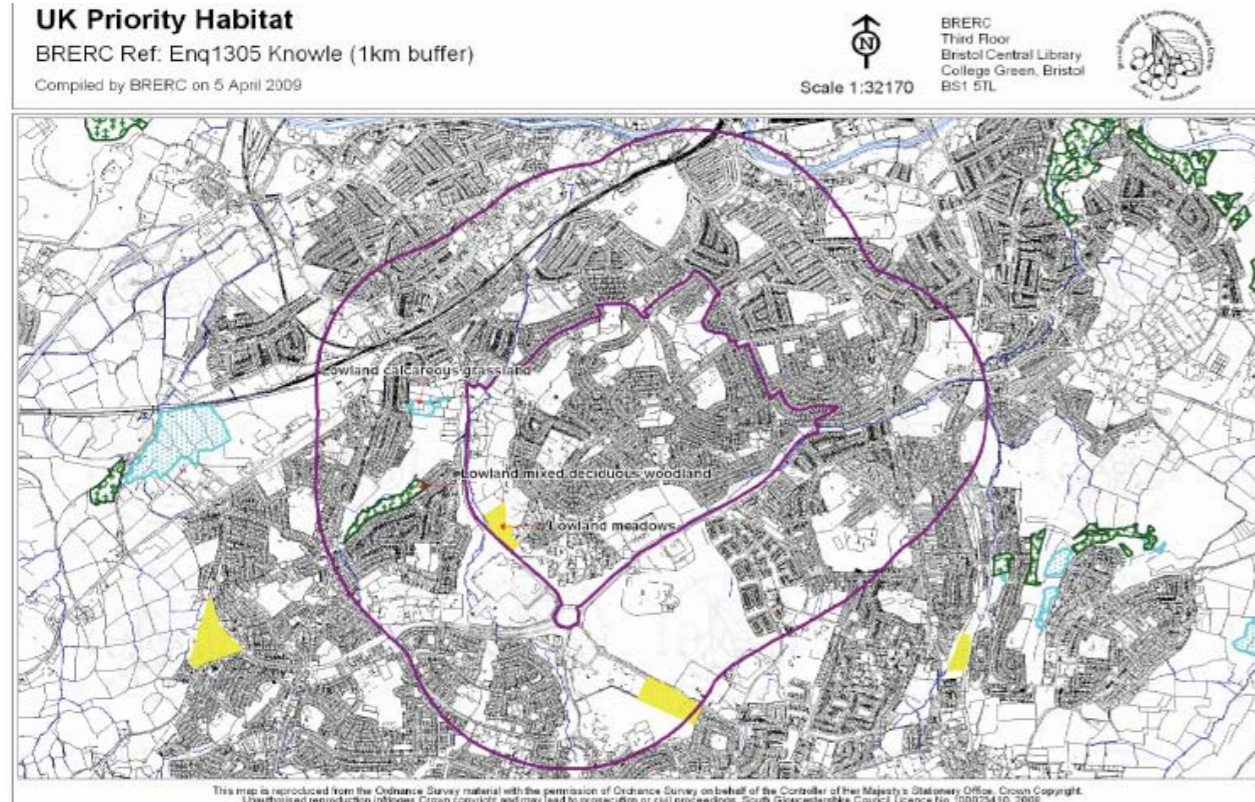


Figure 10: Sites of Nature Conservation Interests, 2009

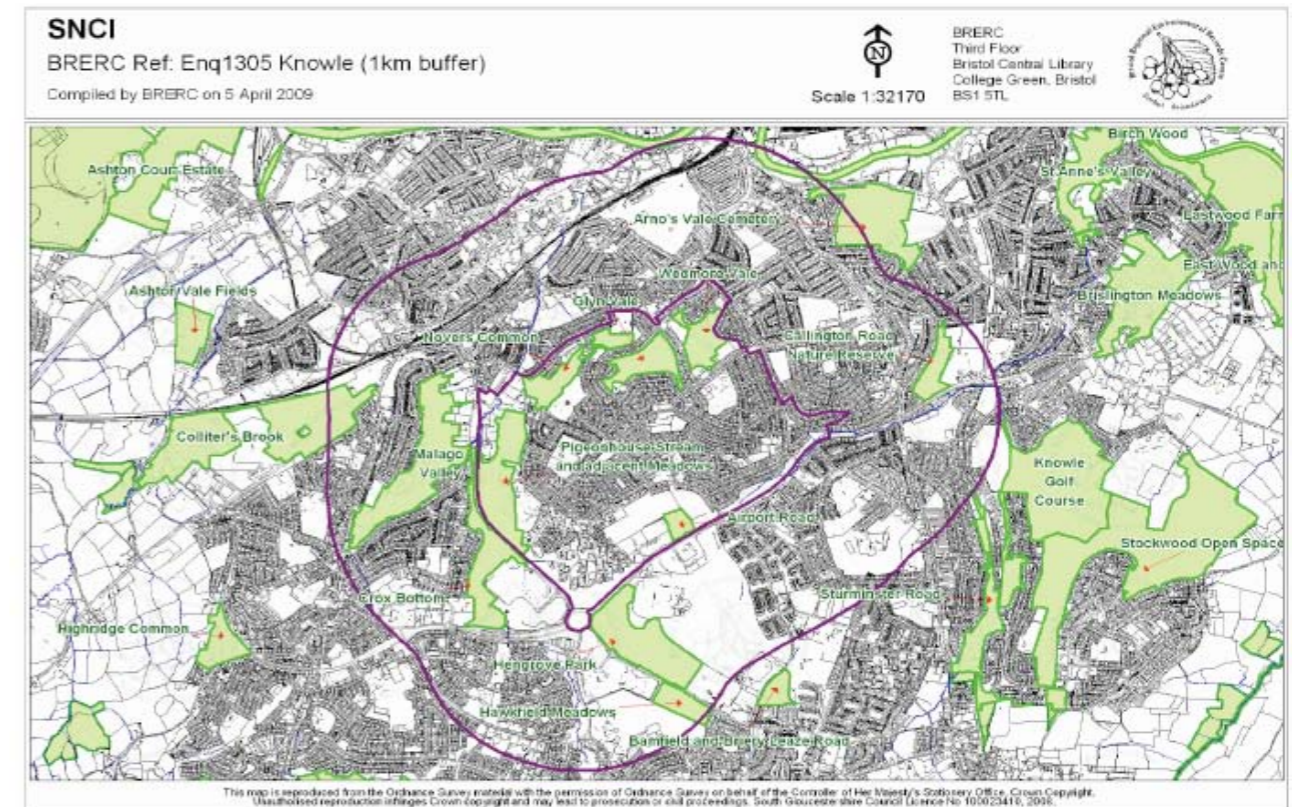
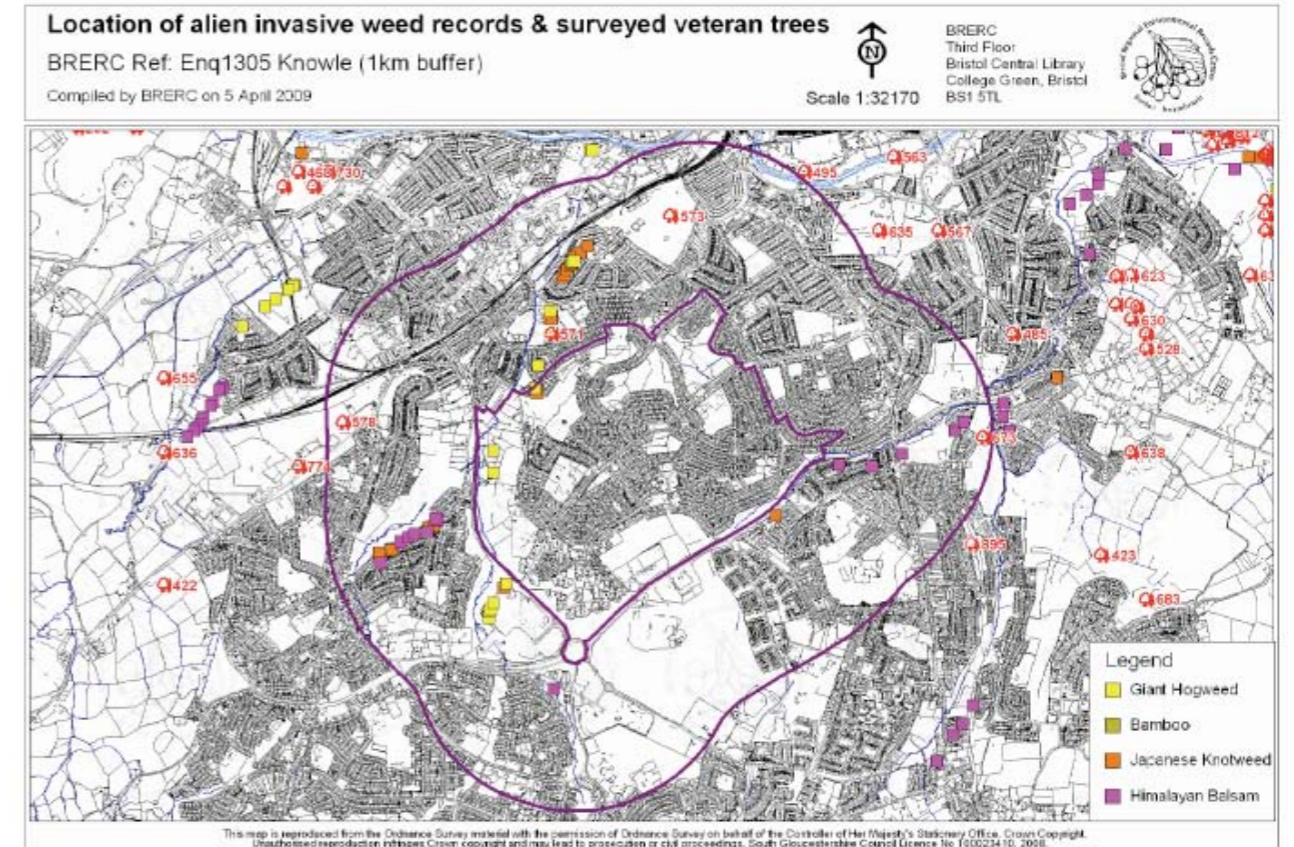


Figure 12: Location of alien invasive weed records and surveyed veteran trees, 2009



02 Physical Site Conditions & Environment: Ecology

In order to complete this bat activity survey in line with best practise guidelines, a series of survey visits will be required. These visits would need to take place between March and September, with optimum times for these surveys being between June and August. The bat activity survey is undertaken by walking a transect which covers suitable habitat on and around the Site, along which 'listening station' stops are made to target specific, suitable locations.

It is recommended that linear features, such as tree lines, hedgerows and water courses, and woodland areas are retained intact or that their fragmentation is minimised in order to maintain functional commuting and foraging corridors.

It is recommended that lighting during the construction phase and in the proposed lighting scheme for the regeneration project is minimised and, where possible, directed at the ground and away from any hedgerows / trees or waterbodies. It is also recommended that lights have back-guards to prevent light-spill and incorporate low-level and low-illumination lighting.

The findings from this activity survey will then be used to inform where to target surveys for roosting bats.

Roosting bats

No bat roosts have been recorded in the study area in the last decade. It was not possible to identify all properties and trees with the potential for bats during the scope of this survey. Nevertheless, owing to the area covered within the survey, the quantity of trees present (some of which have been identified as having potential to support roosting bats) and the amount of buildings (such as private residences) which could not be fully accessed, it is recommended that further inspections of buildings and trees be undertaken to adequately assess their potential to support roosting bats. In order to effectively target survey effort, it is recommended that these inspections be undertaken once masterplan proposals are provided, so that only those buildings and trees affected are inspected. These inspections involve checking targeted trees and buildings for suitability for roosting bats (i.e., features that can be used such as cracks and crevices in trees or gaps in roof tiles or fascias in buildings). Evidence for use by bats (such as staining, claw marks, droppings) will also be sought. Where possible, internal inspections of the roof voids of buildings can also be carried out. Following these inspections, an activity survey and potentially a summer roost emergence survey may be required in order to confirm if bats are present, identify species and inform mitigation requirements. An activity survey is ideally undertaken between March and September, the optimal period being between June and August. An emergence survey will need to be undertaken between May and September ideally spread across the optimal season, the start of May to the end of August.

It is recommended that trees with roosting bat potential or where bats are known to roost are retained where practicable. If bats are roosting in trees, which unavoidably have to be

removed, then these trees are to be felled in spring or autumn when bats are active and do not have dependant young. A licence will be required from Natural England for disturbing bats for development purposes. It is recommended that bat boxes on suitable mature trees / bat houses are provided as compensation for roost loss, however, the extent of mitigation required depends on the scale of loss, species identified and population sizes. It is required that a replacement roost is provided prior to the removal of the existing roost.

Badgers

Badger signs have been recorded in the study area and the Site in the last decade, including badger hairs along Pigeonhouse stream, badger setts in dense scrub in Wedmore Vale SNCI and badger setts in Hengrove Park, just off the southeast corner of the Site. The Phase 1 Habitat Survey identified areas of habitat suitable to support badgers and it is therefore recommended that a further badger survey be carried out at these areas. A badger survey constitutes a walkover of all suitable areas searching for signs of badgers including setts, latrines, snuffle holes, prints etc. If a badger sett is identified and it is not possible to alter the scheme to avoid disturbing or destroying the sett, then it will be necessary to obtain a licence from Natural England. In order to inform either of the licence applications, it will be necessary to undertake further surveys of the sett to assess its present state and occupation. If it is necessary to close the sett, and if the sett is identified as being a breeding sett, it will be necessary to create an artificial sett within 50 m of the old sett, to replace the sett that will be lost. Bait marking surveys will also be required prior to construction of the artificial sett in order to identify badger territories. It will take approximately 4 weeks to obtain the licence and works will only be possible under licence between July and November inclusive unless the sett has been closed. Works are constrained within the immediate vicinity of an active badger sett. No works are to be carried out within 10 m of a badger sett. As a guide, hand tools (e.g. strimmers and chain-saws) may be used outside of a 10 m radius around a badger sett. Light machinery may be used outside of a 20 m radius around a badger sett. Heavy machinery (e.g. larger plant, diggers, etc) may be used outside of a 30 m radius around a badger sett. Where works are required to take place within these zones or machinery that exceeds the limit for that zone is needed, and no alternative can be found, the appropriate licence advice should be sought from an ecologist. Additionally, it is recommended that a further walkover survey is conducted, in the vicinity of any identified setts immediately prior to the commencement of Site works, in order to check for the presence of any new setts that may have since been excavated within the Site.

Great crested newts, water voles and otters

No further surveys for GCNs, water voles and otters are recommended at this time, as none of the waterbodies within the Site were identified as having potential to support them.

Vascular plants

It is not considered necessary to carry out further surveys for vascular plants within the Site due to the lack of suitable semi-improved and unimproved grassland and the young age and limited structure of the woodland present.

Invertebrates

It is not considered necessary to carry out further surveys for invertebrates within the Site due to the lack of diverse woodland and grassland habitats present within the Site.

Trees

Reference should be made to policy NE3 which states:

"Development involving the loss of or damage to trees or woodlands which are of landscape, amenity or nature conservation value will not be permitted, unless unacceptable harmful effects of the development can be overcome and replacement or additional tree planting of appropriate scale and species, which is sufficient to compensate for the loss, can be achieved within the same site or on an equivalent site nearby." The trees to be removed are to be cleared outside of the bird breeding season once planning permission has been received from the Local Authority. Trees are to be replaced on a like for like basis on completion of works. The community based group, "TreeBristol," may wish to be involved with any replanting schemes. There is potential for works to affect trees within the Site. It is recommended that a tree survey be carried out in accordance with British Standard (BS) 5837:2005 in order to determine the characteristics of the tree resource within the Site and to inform avoidance and mitigating measures where appropriate. It is further recommended that works are undertaken outside of tree Root Protection Areas (RPAs) where practicable, or, where this is not possible that a Method Statement for working within the RPAs of retained trees is prepared prior to invasive ground works on site in the vicinity of these trees.

Giant hogweed and Japanese knotweed

There are three stands of giant hogweed and two stands of Japanese knotweed in Pigeonhouse stream and adjacent meadow SNCI, see Appendix F and H (Pigeonhouse Stream and adjacent meadow SNCI Assessment). There is also one stand of Japanese knotweed in Airport Road SNCI, see Appendix H. in the full Ecology paper. During the survey no stands of giant hogweed or Japanese knotweed were found, although the survey was conducted in a sub-optimal time of year.

If giant hogweed or Japanese knotweed is found during works, an Ecologist will need to be informed and an appropriate mitigation strategy devised.

Injurious weeds

No injurious weeds were identified during the survey; however, owing to the sub-optimal timing of the survey, any injurious species present may not have been visible on the day, but still

present within the Site. If injurious species are found during works, an Ecologist will need to be informed and an appropriate weed control strategy devised including controlling, environmental considerations and health and safety issues.

Enhancements

Ecological enhancements should, wherever possible, be incorporated into the regeneration project to contribute to the objectives of local (LBAP and Bristol Local Plan) and national planning legislation (PPS9, UKBAP and NERC). Policy NE12 of the Bristol Local Plan it states that: "...account will be taken of the benefits of creating new or enhancing existing open spaces, particularly in the urban fringe, outer housing estates and inner city areas lacking publicly accessible open space of high amenity, landscape or recreational value, or nature conservation interest. PPS9 states that: "Plan policies and planning decisions should aim to maintain, and enhance, restore or add to biodiversity and geological conservation interests." It is important to involve the community on the ecology of the Site throughout the entire regeneration project, but particularly during enhancement works. Children and adults can get involved with all aspects of this work and will give them ownership of their local wildlife. Hands-on conservation work also provides excellent educational and amenity benefits to the local community. Ecological education of the local community is extremely important, particularly with emphasis on fly-tipping, dumping of domestic waste and burning of trees and vegetation which is prevalent within the Site. Enhancements within the Site could include:

- Provision of bird / bat / invertebrate boxes
- Provision of reptile hibernacula
- Provision of log piles for invertebrates and reptiles
- Native tree / shrub / hedgerow planting
- Creating wildlife ponds
- Seeding a wildflower meadow
- Marginal aquatic planting and bank planting along the ditches and brooks
- Litter collections
- Removal of scrub encroachment on the SNCIs
- Limitation of horse grazing on the SNCIs
- Improved management of the grassland swards to increase the quantity of floral species
- Removal of the Japanese knotweed and Giant hogweed on the Site

The good connectivity of the existing habitats on the Site, where possible, should be strengthened.

More detail is set out in the Ecology Paper.

02 Physical Site Conditions & Environment: Utilities

02.4 Utilities

Existing infrastructure network information has been obtained from the public utility companies. It is apparent that all properties in the locality have access to the major public utility networks, namely: electricity; gas; water supply; sewers; and telecommunications. Surface water drains serve the majority of the area. Where surface water drains are not present, collected surface water run-off is carried away via the foul sewer network.

Underground services are present in the majority of streets within the study area, as shown on the Public Utilities drawings (Drg Nos CS/35791-CIV-001 to 005, Public Utilities PAPER).

Electricity

Western Power Distribution holds the responsibility for supply of electricity throughout the study area. Informal consultation with the company has established that there is adequate capacity in their network to satisfy current demand. The great majority of the properties in the area currently use gas for heating and although a significant switch to electric systems could stretch demand it is thought unlikely that it would occur in the immediate future.

Throughout the study area high voltage 11kV underground cables supply the local substations, as indicated on the Public Utilities drawings (Drg Nos CS/35791-CIV-001 to 005), where transformers convert the electricity to low voltage for distribution to the properties via underground cables. Underground electrical cables are generally routed beneath the footways.

Two high voltage 33kV underground cable routes pass through the western and north-western extremities of the study area. As they remain close to the boundary it is unlikely that they would be affected by any development proposals.

Gas

Wales and West Utilities is the licensed gas transporter for the region including the study area. The entire gas supply network within the study area is low pressure. There are no reported capacity problems within the area despite spikes in demand due to mass concurrent triggering of combination boilers at peak times.

The gas mains are generally routed beneath the footways, as indicated on the Public Utilities drawings (Drg Nos CS/35791-CIV-001 to 005).

Water

Water supply mains within the study area are the responsibility of Bristol Water.

A large diameter water main (400 mm diameter) enters the study area in the central reserve of Hengrove Way to the north-east of the roundabout at the junction with Hartcliffe

Way. Its route follows the central reserve for 330 metres as asbestos cement (AC) then crosses the northern carriageway as ductile iron (DI) towards Gerrard Close. After passing along Gerrard Close as AC the pipe changes direction to follow the carriageway of Creswicke Road as DI in a north-easterly direction to the junction with Broadbury Road. The north-westerly orientation of the route is subsequently shifted across to Bantry Road via a short length of Hartcliffe Road remaining as DI. After a bend at the junction with Leinster Avenue the 400 mm diameter DI main continues for a further 70 metres. From this location it feeds a 200mm diameter DI pipe. The remainder of the water mains within the study area have a diameter of 200mm/ 8 inches or smaller.

On the supplied mapping, cast iron (CI) pipes are shown ranging from 2" to 8" sizes. Certain 3" and 4" cast iron pipes are shown as having been lined with 63mm and 90mm medium density polyethylene (MDPE) pipes respectively.

There are a limited number of AC pipes within the study area as well as the sections of 400 mm diameter described above, at the following locations:

- Wedmore Vale – under carriageway between Wingfield Road and Daventry Road (150 mm diameter);
- Torpoint Road network (100mm and 150 mm diameter);
- North verge of Airport Road (100mm diameter);
- Barnack Trading Estate network, from connection to 7 inch cast iron main in the east verge of Novers Hill (100mm diameter); and
- Barnstaple Road, under southern footway, east of Bantry Road junction (3 inch diameter).

Other pipe materials and sizes include MDPE (63mm, 90mm, 125mm and 180mm), spun iron (SI) (3", 4" and 5") and ductile iron (4"). There are other pipes of various sizes whose material is not specified. Routes of the smaller size mains are generally beneath the footways, as indicated on the Public Utilities drawings (Drg Nos CS/35791-CIV-001 to 005).

Sewers

Wessex Water is the statutory undertaker for the foul and surface water sewer networks in the study area, as shown on the Public Utilities drawings (Drg Nos CS/35791-CIV-001 to 005). Main sewers generally run beneath the roadways.

It should be noted that on 25 April 1978 all sewers 150mm diameter and larger became publicly maintainable. Any sewers affected by proposals will need to be surveyed to confirm their size. Those smaller than 150mm diameter are not the responsibility of Wessex Water.

Foul Sewers

The public sewer record drawings obtained from Wessex Water show extensive coverage of foul sewer service for the

properties within the study area. Discharge pipes for the foul sewer networks that serve the study area do not exceed 300mm diameter. One larger bore (450mm), interceptor foul sewer passes through the area beneath the Inns Court vicinity inside a 1950mm surface water sewer.

As the study area is on higher ground than the surrounding areas the sewers flow under gravity towards the boundary. The networks to the south-east of the study area discharge to sewers which run along the valley of the Brislington Brook in an easterly direction. A network in the area of Knowle Park adjacent to the east side of the study area discharges to the same sewer run through the south-eastern extremity of the study area, carried on a bridge to cross the Brislington Brook.

On the south-west side of the study area the networks discharge to a foul sewer that runs along the valley of the Pigeonhouse Stream. At Crox Bottom there is a connection to the 750mm foul sewer which is carried inside the Malago Interceptor storm water tunnel, beyond the periphery of the study area, which then heads off in a north-westerly direction.

A minor foul sewer network in the north-west part of the study area discharges to the Lynton Road sewer in Malago Vale. Central, northern and north-eastern foul sewer networks converge on Wedmore Vale at its junction with Glyn Vale on the boundary of the regeneration framework study area.

All foul sewage from the study area is ultimately carried to the sewage treatment works at Avonmouth.

Surface water sewers

Surface water catchments are described in the Flood Risk Baseline chapter. Generally, the surface water networks are separate from the foul sewers but have similar catchment areas. One exception is the network in the north-west part of the study area where surface water is collected in a mixture of foul and storm drains. Inspection of the public sewer record drawings shows that this catchment discharges to the Lynton Road foul sewer in Malago Vale.

The networks to the south-east of the study area discharge to the Brislington Brook. Discharge locations and pipe sizes are as follows:

- Creswicke Road – 450mm
- Connection from Alard Road – 225mm
- Connection from Willinton Road – 225mm
- Salcombe Road – 225mm
- Ilminster Avenue – 450mm
- Connections from Broadfield Road – 375mm and 525mm with outfall to tributary of Brislington Brook.

Networks which serve the southern part of the Inns Court estate discharge via 525mm and 675mm pipes which converge at the Hengrove Way roundabout. The pipe which carries the outfall from the confluence appears to join the highway drainage network to connect to the lake to the south-west of

the former Wills factory site, which in turn outfalls into the Pigeonhouse Stream.

A minor network which serves a northern part of the Inns Court estate discharges via a 375mm pipe into the outfall pipe for the surface water network which covers the west part of the study area. This 900mm pipe in turn discharges into the Pigeonhouse Stream at Crox Bottom.

Central, northern and north-eastern surface water sewer networks converge on Wedmore Vale near its junction with Glyn Vale on the boundary of the regeneration framework study area. A 675mm pipe runs beneath the Wedmore Vale road carriageway, picking up a 675mm drain at Glyn Vale. A 600mm relief pipe collects a watercourse behind the properties on the east of Wedmore Vale approximately 350m south-east of Glyn Vale. Where this drain crosses Wingfield road it intercepts a 225mm pipe. This run increases in size to 900mm and subsequently returns to rejoin the Wedmore Vale surface water sewer approximately 130m north of the Glyn Vale junction.

Raw water main

Wessex Water public mains record drawings show a raw water main which collects spring water rising to the east of St Barnabas Church behind the properties on the north side of Daventry Road. It is labelled as St Mary's Pipeline on the map. Notes on the map state that the St Mary's conduit was originally lead but is now a Victorian 3" cast iron pipe with a general depth of 900mm and that it was restored to live condition in 1985. Further information about the pipeline is presented in the flood risk baseline chapter.

Telecommunications

Plant information for telecommunications has been obtained from Openreach for British Telecommunications plc and reproduced on the Public Utilities drawings (Drg Nos CS/35791-CIV-001 to 005). The mapping indicates that the cables are predominantly underground and located within the footway. Overhead cables generally enable the final connections to properties at a limited number of discrete locations in the study area.

The study area is served from 4 separate exchanges. The main area is covered from the Bedminster exchange which currently serves about 18,000 residential customers and 1,100 non residential customers. A small section of Inns Court and the commercial area off Hartcliffe Way are served from the Whichurch exchange which serves around 11,000 residential and 1,000 non residential customers. A small section in the south west of the study area is served by the Bishopsworth exchange which serves around 13,000 residential and 300 non residential customers. Finally the Bristol South Exchange serves a small area adjacent to Airport Road. This exchange serves around 19,000 residential and 1,000 non residential customers.

02 Physical Site Conditions & Environment: Utilities

All of the above exchanges are capable of supporting ADSL and SDSL as well as Local Loop unbundling.

The area also forms part of the Bristol Wireless project. More details can be found on their web-site at: <http://www.bristol-wireless.net/>. However in summary:

Bristol Wireless is a co-operative set up to develop a free-to-access broadband intranet using radio, with the emphasis on supplying ICT (Information and Communication Technologies) that are relevant, permanent and affordable to communities that find themselves on the wrong side of the digital divide.

It sets out first and foremost to provide a local, high speed wireless computer network to serve the immediate community and allow them access to a high speed internet connection for information and entertainment. Bristol Wireless seeks to create a digital environment built by local people for local people.

Bristol Wireless will introduce completely profit-free broadband internet access that can deliver distance learning, non-commercial internet radio, television and video communications via local, community-owned co-operatives, businesses or groups.

The Figure opposite illustrates the current coverage map, allowing suitably equipped houses (details of the necessary equipment are provided by Bristol Wireless) to link into the fixed Bristol Wireless network. Being in a mainly yellow zone fixed coverage should be good, although street level access will be poor. However, Bristol Wireless advise that street level access should be available at the Park Centre in Knowle West.

Bristol City Council - BNET

Mapping has been obtained from the BNET Network Client Services department of BCC showing the relevant trunking lines and manholes. The routes are shown on the Public Utilities drawings (Drg Nos CS/35791-CIV-001 to 005).

Cable Company Apparatus

Cable and Wireless have reported that they are not responsible for any apparatus within the study area.

Virgin Media has been approached but has not responded.

Further investigation will be required to confirm whether or not other cable companies have apparatus within the study area.

Identification of relevant Project Activities (construction and completion)

During construction, temporary diversions of utilities may be required to ensure that supplies to existing properties are not disrupted while permanent network alterations are established.

Any realignment of roads or kerb-lines may necessitate diversion or protection of services. Replacement of access

chambers and covers may be required to accommodate any change in traffic loading conditions.

Activity No.	Detail
1	Construction of additional residential properties.
2	Realignment of road carriageways.

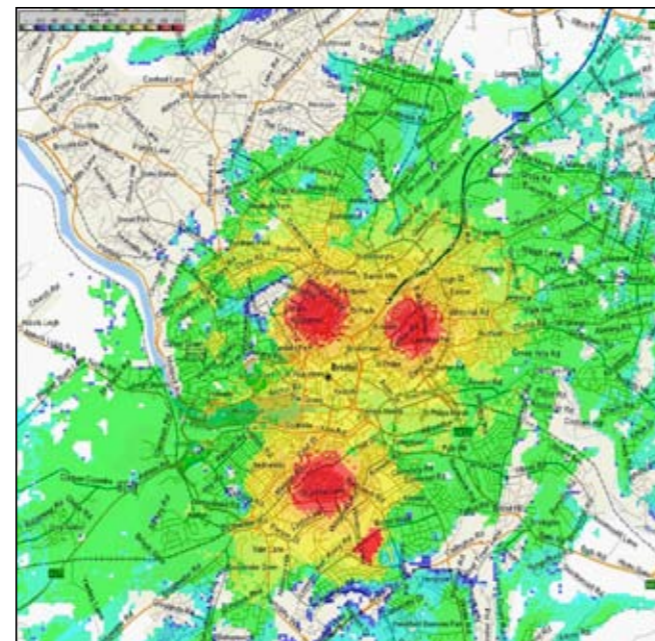
Key Issues

The scoping study identified that project activities 1 and 2 have the potential to affect the routing of public utilities networks.

Project activity 1 will involve provision of additional services commensurate with the scale of each development.

When specific proposals have been developed, further consultation will be required with all public utility companies that have apparatus within the identified sites.

Figure 13: Coverage map fixed Bristol Wireless network



Electricity

If proposals introduce significant percentages of electricity powered heating systems this may increase demand to levels where upgrades may be required to the electricity infrastructure but otherwise there should be adequate capacity in the existing network to accommodate small scale development. The great majority of the properties in the area currently use gas for heating and it is thought unlikely that any significant switch to electric systems would occur in the immediate future.

WPD reported that a type of 4kW water heater favoured by certain housing associations may cause ill-effects on the

power infrastructure due to harmonic disturbance related to the motors they use, if a significant number are served by the same sub-station.

Dependent on the scale of potential developments it may become necessary to install additional substations or relocate existing ones, subject to negotiation when plans develop. Modern transformers are significantly smaller than the older types and so it is relatively easy to relocate them to suit configurations of potential developments.

Further consultation will be required to identify provision appropriate for specific level of intervention. Practical vehicular access to the substations will be required for ease of installation, operational procedures and maintenance activities. If specific development proposals affect the routes of the existing underground services, further consultation will be required concerning diversion and protection works, to comply with the New Roads and Street Works Act.

Gas

Dependent on the scale of potential developments, a capacity check will be required to ascertain network implications. For this purpose, numbers of houses are required for residential developments and loads for commercial/ industrial developments. For major new developments economic testing would be undertaken by WWU to establish the feasibility of specific reinforcement of their infrastructure.

Tree planting would not be permissible in the proximity of gas mains.

If specific development proposals may affect the underground services, further consultation with WWU will be required concerning diversion and/ or protection works, to ensure compliance with the New Roads and Street Works Act.

Water

When specific proposals have been developed the appropriate information and documentation as outlined in the Bristol Water Developers' Charter will be submitted to Bristol Water.

Dependent on the scale of potential developments, network modelling and studies may be required by Bristol Water.

Tree planting would not be permissible in the proximity of Bristol Water mains.

If specific development proposals may affect the underground services, further consultation will be required with Bristol Water, to ensure compliance with the New Roads and Street Works Act. Contractors would need to be made aware of the presence of asbestos cement pipes to ensure that appropriate precautions may be taken.

Sewers

All foul sewage from the area is treated at the Avonmouth STW. Avonmouth STW takes sewage from much of the Bristol and South Gloucestershire districts. It could be inferred that

wherever any proposals to satisfy the requirements of the S Gloucs and Bristol councils' strategic development figures were to be located, the increased demand on the STW would be comparable.

When specific proposals have taken shape it will be possible to model affected networks to assess upgrade requirements. For foul sewers, these would be based on the 4000 litres/day flow rate per property as stipulated in the document Sewers for Adoption.

Surface water sewers would be designed in accordance with an agreed drainage strategy. As a matter of principle, no increase in discharge rate from a development site would be permissible. If development increases the impermeable area, attenuation facilities would need to be installed to maintain the discharge at greenfield runoff rate. If potential space is not readily available for attenuation in ponds, underground options may be considered such as Carlow precast concrete attenuation tanks.

If specific development proposals may affect the underground services, further consultation will be required with Wessex Water, to ensure compliance with the New Roads and Street Works Act.

Telecommunications

It is unlikely that telecommunications would constitute any significant constraint on developments proposals.

If specific development proposals may affect the services, further consultation will be required with British Telecommunications, to ensure compliance with the New Roads and Street Works Act.

Further investigation will be required to confirm whether or not other cable companies have apparatus within the study area.

More detail is set out in the Utility Paper.

Typical residential building with footpath used for parking



Pedestrian path in Filwood park



New housing along Wedmore Vale



Filwood Broadway seen from Filwood Social centre



Filwood Broadway: refurbished flats above shops



Inns Court: Back access to the Community Centre



Inns Court: Shopping parade



Filwood park: View toward rear of Creswicke road houses



03 Planning context

03.1 Introduction

This section presents the planning context of the Knowle West Regeneration Framework (KWRF). It sets out a review of relevant national, regional and local planning documents and establishes the implications of the relevant policy for Knowle West. In addition significant recent and planned developments within South Bristol are reviewed to understand how the changes occurring relate to South Bristol as a whole.

03.2 Scope of the Assessment

The first part of this chapter presents an overview of the existing and emerging policy at a national, regional and local level, and sets out the implications for the KWRF. This is followed by a review of approved and pipeline schemes.

03.3 National Policy

Planning policy at a national level, provided in Planning Policy Guidance and Planning Policy Statements (PPGs and PPSs), has been reviewed as part of this report. Particular consideration has been given to:

- PPS 1: Sustainable Development
- PPS 3: Housing
- PPS 9: Biodiversity and Geological Conservation
- PPG 13: Transport
- PPG 15 : Historic Environments
- PPG 16: Archaeology
- PPG 17: Planning for Open Space, Sport and Recreation

03.4 Regional Policy

The existing statutory regional planning framework for the South West is set out in RPG 10: Regional Planning Guidance for the South West (2001). This document provides guidance for development in the region up to 2016. Bristol is the largest urban area within the region, and is a focus for regional services. However, RPG 10 recognises there are substantial areas of deprivation within the urban area. In light of this it identifies the need for “economic and social restructuring of parts of Bristol and ... [improvements to] transport and economic links between the economically successful and less successful parts of the sub-region” (Policy SS 3). The document promotes “investment in programmes for economic, physical and social regeneration, with an emphasis on encouraging development in the more disadvantaged areas, including south Bristol” (Policy SS 8).

The Draft Regional Spatial Strategy for the South West 2006-2026 (RSS) will supersede the RPG when the final

document is published in June 2009. This document emphasises Bristol’s important national and regional roles. The RSS promotes positive planning for the city in order to fulfil its strong economic potential. It states that a “key strategic development issue for Bristol is to provide for growth while improving the attractiveness of the urban area as a place where people want to live, work, visit and invest.”

The revitalisation of South Bristol is identified as a major strategic objective by the RSS, as it is one of the most significant concentrations of multiple deprivation in the region. Policy HMA 1 states that in order to help realise the potential of Bristol as a major driver of the regional economy plans should include “a focused programme of regeneration initiatives at South Bristol to broaden the housing stock, improve the quality and diversity of retail, employment and service provision and improve accessibility.” The KWRF will have an important role in fulfilling part of the objectives of this policy.

The RSS also recognises regeneration of South Bristol may be complimented by the development of urban extensions to the southwest and southeast of Bristol. These will be sustainable communities that will be fully integrated into the existing urban area. This highlights the need for the KWRF to consider the role of the area among these wider initiatives being brought forward in South Bristol, and Bristol as a whole, to ensure that it includes a strategy to ensure the area fully contributes to and benefits from these wider initiatives.

The Secretary of State’s recent proposed changes to the RSS state that 33,500 new homes should be provided, over the plan period within Bristol’s urban area. The Knowle West Regeneration Framework has the potential to contribute positively to the housing targets for the city as a whole. In addition the document states Bristol should accommodate at least 92,000 new jobs between 2006-26. Increasing employment opportunities within the urban area has the potential to have a significantly positive impact on the future communities of Knowle West, and it will be important that the KWRF ensures that they are accessible to the Regeneration Area.

Currently the RSS recognises that South Bristol is poorly connected with other parts of Bristol, and in particular the employment areas in the North Fringe and suffers from high levels of congestion on the highway network. As a solution to this The Greater Bristol Transport Study (June 2006) concluded that accessibility would be enhanced by improving orbital movement around South Bristol, reducing delays, better connecting the area to the rest of the SSCT [Strategically Significant City] and supporting regeneration.” The KWRF will need to incorporate strategic changes to transport and the highway networks to improve movement and access from South Bristol to the wider Bristol area.

03.5 Local Policy

The current statutory planning document for Bristol is the saved policies from the 1997 Local Plan. The Plan’s vision for South Bristol is to provide a “brighter future” through building on the major public, private and community initiatives that are bringing improvements.

In compliance with the planning and Compulsory Purchase Act 2004 Bristol City Council is currently producing the Bristol Development Framework (BDF). The timetable for the production of the BDF is under review as a consequence of the recent changes to the RSS.

The Core Strategy is currently at the Preferred Options Stage. The recently published Preferred Options Review Paper (February 2009) sets out the emerging Spatial Policies. It identifies regeneration of South Bristol as a priority. Emerging Policy BCS 01 of this document establishes a vision for the future of South Bristol, which is in line with the strategic objectives of Policy HMA1 of the RSS. It recommends:

- Development, including major land use change or reshaping, focused on the area around the Hartcliffe roundabout, and broadly covered by Knowle West, Hengrove Park, Inns Court, Imperial Park, and the Hartcliffe Campus.
- The provision of 50,000sq m of new office space and a minimum of 10,000 new dwellings.
- The consideration of the provision of a new or enhanced centre, to provide shops, services, employment and community facilities.
- Developments are supported by a range of improvements to key public services and infrastructure, including the provision of a community hospital, a skills academy, health plex and leisure facilities, safe pedestrian and cycle routes and improvements to the quality of open space.
- Improvements to transport infrastructure, including public transport to enhance links between existing communities in South Bristol, and between South Bristol, the City Centre and the north of the city.

The KWRF represents an important opportunity in delivering part of this policy, through redeveloping Knowle West and contributing to the housing target. In addition, it is clear that the recommendations for the wider area have the potential to have a highly positive impact on Knowle West. The future development of Knowle West should compliment the wider regeneration initiatives and maximise access to the opportunities they will create in South Bristol.

The KWRF will need to encompass a high quality urban environment as expressed by Policy BCS07 of the emerging core strategy. It seeks to raise design standards, and using it to contribute towards increasing densities and improving

access to jobs. Policy BSC09 targets sustainable design and construction in reducing waste, referring to the use of the SW Sustainability Checklist for Developments, whilst BSC10, 11 and,12 seek also focus on environmental issues such as energy, climate change, emissions and waste. Collectively addressing these is fundamental to the KWRF and should lead better homes, quality places and a more sustainable neighbourhoods.

The KWRF should also integrate improvements to transport and access, as outlined in emerging Policy BCS13. The following include initiatives of particular relevance to Knowle West include:

- Rapid Transit Routes (Hengrove to the North Fringe);
- South Bristol Link; and
- Further development of a network of routes to support walking and cycling.

Further detail of these initiatives and the implications for the area are set out in the movement section of this report

The Council is currently producing the Core Strategy Draft Development Principles Report which will be published for the purposes of public consultation on 5th June. The emerging affordable housing requirements for South Bristol are set out in Policy DP7 as 30% of dwellings in developments of 15 units or more. It states “the precise number, tenure, size and type of affordable units will reflect identified needs, site suitability and economic viability.” In addition future housing proposals as part of the Regeneration Framework should have regard to emerging Policy DP9 which recommends development “maintain, provide or contribute to a mix of housing tenures, types and sizes to help support the creation of mixed, balanced and inclusive communities.” This should be determined by local housing need and demand, the existing housing profile in the area, local demographic context and site issues and design constraints.

The emerging minimum residential density target is 50 dwellings per hectare (Policy DP8). This represents a particular design challenge in Knowle West, which is currently characterised by low-density residential development of about 30 dwellings per hectare and will need to be addressed through the KWRF. High quality of new housing is expected with the Building for Life standards introduced into the development principles.

Green infrastructure policy issues: The KWRF Area includes a number of green spaces and several Sites of Nature Conservation Interest on the northern slopes. Emerging Policy DP13 promotes the protection of Bristol’s strategic green infrastructure network and states “opportunities for the enhancement of green infrastructure should be integrated into the design of development”. Development proposals will be expected to mitigate the loss of any green infrastructure or features of biodiversity and geological importance and incorporate the provision of an appropriate level and quality

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of open space. Given the volume of greenspace in the area, policy BCS22 of the core strategy is highly relevant in Knowle West as it seeks to maintain and enhance Green Infrastructure and refers to minimum standards and deficiencies set out in the Parks and Green Space Strategy (2008). Whilst it is not adopted by Bristol City Council, the Town and Country Planning Association's 'Biodiversity by Design' should be referred to for further guidance.

Bristol's Parks and Green Spaces Strategy (adopted February 2008) promotes the provision of a diverse range of children's play spaces, including an increase in the number of larger and better quality spaces across the city of a minimum size of 600m². It states that wheels parks should be provided within 2km of homes, and multi-use games areas should be within 1km. The provision of teenage areas should also be considered to be located near playgrounds, with seats and a range of challenging equipment. The Regeneration Framework should apply these maximum distance standards into the design and layout of the masterplan (see Appendix A) and provide appropriate levels of access for all new residents in the area.

The council's Playing Pitch Strategy for Bristol provides a strategic approach to meeting the future needs for Bristol. Overall the south planning area has an undersupply of football, hockey, and cricket pitches, however there are sufficient rugby facilities. Demand for sports pitches is anticipated to rise in the future. At a more local scale, Filwood ward has a deficit of football pitches for both juniors and seniors and Knowle, which makes up a small proportion of the Regeneration Area, has a deficit of cricket pitches. Within South Bristol the Strategy has identified a number of 'hub' sites which will provide facilities for a range of training, development and performance sport, including Hengrove School. Knowle West is located within the catchment of a number of hub sites, and the Regeneration Framework should seek to maximise access to these sites. In addition, consideration should be made on how the Framework can contribute to relieving the deficit of sports pitches within the area, taking account of predictions of future demand.

In addition the council is currently preparing Area Green Space Plans for all 14 of the Neighbourhood Partnership Areas across Bristol, the details of which will inform the KWRF.

Further detail on site specific proposals will be provided in the Proposals Map and the Site Allocations DPD. Bristol City Council is currently producing the Site Allocation Options Paper which is expected to be available for the purposes of consultation in September 2009.

After section 03.7 Conclusions, we set out a number of relevant general policies for the whole Bristol area which will need to be considered in developing the Outline Planning Application for Filwood Broadway.

03.6 Recent and Pipeline Schemes

There have been a number of significant planning schemes in South Bristol over the past five years. Perhaps the most important has been Hengrove Park, which will regenerate a 76ha site. The development will include new homes, employment sites, enhanced public transport and a large park. An outline planning application has been submitted for the first phase which will include a community hospital, a skills academy, a leisure centre, 19,000m² of office and warehousing space for Computershare, a further 6,900m² of office space for Constellation Europe and required infrastructure for the development. This represents a significant regeneration opportunity for South Bristol and will have highly positive impacts on Knowle West through relieving current community infrastructure deficits in the area and increasing access to health and education services as well as leisure, public transport and employment opportunities. The increase in the capacity of these services will inevitably increase the development potential of the Framework Area.

To the north site boundary, Bristol City Council, the Homes & Communities Agency and Knightstone Housing Association and the architects Fashion, Architecture and Taste (FAT) are drawing up proposals for the redevelopment of Torpoint Road, Kingswear Road and the College site of Marksbury Road. Currently a series of public consultation events and pre-application discussions are taking place on the proposals. The final proposals will be prepared for consultation in summer 2009, after which an outline planning application will be submitted.

This represents a significant development on a landmark site in South Bristol and aims to provide a mix of housing types and tenures. The proposals involve the demolition of the existing properties and redevelopment of the site with a residential development that includes a mix of housing types and tenures and promotes high quality urban design, as well as providing publicly accessible open space and improves accessibility. Due to its proximity to the Regeneration Area, it is important that the implications of these proposals are considered in the development of the masterplan.

Other significant applications, include:

- 07/03228/F - 2 David's Road (BS14 9JJ): Demolition of 2 David's Road. Residential redevelopment at no. 2-8 David's Road, 626-632 and 636-644 Wells Road and 95-109 Woodleigh Gardens to provide 56 no. dwellings with associated parking and landscaping.
- 07/05426/F - Broadwalk Shopping Centre Broad Walk: Part demolition of existing multi-storey car park and erection of part two, part three storey residential development (45 units) and provision of access cores, refuse, cycle parking and car parking areas.

- 06/05015/F - Former Library, Petrol Filling Station And Garage Redcatch Road: Demolition of existing buildings and erection of three storey development to provide 38 flats, associated underground parking area and 124 square metres of B1 class office space.
- 07/00508/F - Land To The Rear Of 7 - 61 Connaught Road: Construction of 57 no. affordable (shared equity ownership) 2 and 3 bedroom houses and apartments with access roads, parking, cycle and bin storage.
- 05/03988/F/S and 05/03992/LA/S Former Imperial Tobacco Office Building Hengrove Way: Alterations to existing building and construction of a new building to comprise a mixed use development totalling 334 residential apartments, 24 live/work units, 1826m² B1 floorspace, car parking and associated external works and landscaping.

The cumulative impacts of recent and proposed developments along with the Knowle West Regeneration Framework should be considered in terms of their contribution to the overall strategic vision for the area set out in regional and local policy.

03.7 Conclusion

The planning policy context clearly shows the production of a KWRF will be broadly in line with the central objectives of the RSS and the BDF. The regeneration of South Bristol is a strategic objective at both a regional and a local level. As part of this the Policy HMA 1 of the RSS recommends a focussed delivery of regeneration initiatives across the area. This is further developed in emerging Policy BCS01 of the Core Strategy, which sets out a strategy for the future of South Bristol, including the redevelopment of Knowle West. The policy objectives aim to regenerate the whole of South Bristol. It is important therefore that the regeneration of Knowle West is not be considered in isolation but in terms of its contribution to the objectives for the wider area.

The KWRF represents an important opportunity to contribute to the overall renaissance of South Bristol. Knowle West will be only one part of a number of initiatives being carried out in the wider South Bristol area. A review of major planning applications in the surrounding area over the past five years shows South Bristol is already changing, with a number of major schemes being delivered. It is important that the regeneration of Knowle West compliments these schemes and ensures the future community benefit from the opportunities they will create.

Local standards

Open Space Standards

The National Playing Fields Association (date and reference) (NPFA) standard provides guidance for minimum standards of outdoor playing space. This sets a standard of 2.4ha per 1000 population, of which 1.6ha should be available for outdoor sport and 0.8ha for children's play space.

Policy L1 of the Local Plan states that development that will result in the loss of playing fields and recreation space will not be permitted unless: it forms part of a larger scheme that involves the improvement of provision of recreation space for the local community; compensatory space of at least an equivalent community benefit is to be provided in the local community; or the space is enhanced by the proposals.

Policy L2 sets out the standards for the provision of open space. New developments of more than 10 units or over 0.1ha in size should provide 0.8ha of informal and formally maintained play space. The form of open space to be provided will be decided in consideration of the type of housing provided, existing facilities and other community benefits provided as part of the proposal.

Where children's play or amenity space is to be provided, the developer should ensure that no dwelling is more than 150 metres walking distance from a designated play area for pre-school children and no more than 400 metres for primary school children, and the play area is located safely.

Bristol's Parks and Green Spaces Strategy (adopted February 2008) provides the following distance standards:

Distance Standard	Distance 'as the crow flies' (m)	Estimated walking time (minutes)
Nearest green space	400	9
Children's play space	450	10
Formal green space	600	15
Informal green space	550	13
Natural green space	700	18

Parking Standards

The parking standards set out in the Local Plan are as follows:

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developments of one or more dwellings, or from other types of development, where such development would add to the overall impact on infrastructure.

The infrastructure, facilities and services to which development may contribute include:

- Affordable housing
- Community facilities
- Education facilities
- Library facilities
- Managed workspace accommodation
- Transport infrastructure
- Commuted payments for maintenance of facilities provided
- Sustainable transport measures
- Parks and green spaces improvements (including children's play facilities)
- Improvements to green infrastructure
- Flood risk management measures
- Waste facilities
- District heating and other sustainable energy infrastructure
- Health and social care facilities
- Public realm provision (including Legible City infrastructure)
- Public art
- Local employment and training initiatives

The Council's Economic Contributions from New Development Supplementary Planning Document (October 2005) presents a guide for developers on the nature and scope of various types of economic contributions so that the Council can maximise the benefits of development through voluntary agreements, Local Labour Agreements and other economic contributions that can positively address social exclusion. Where financial contributions are required, they will be achieved through a Section 106 agreement.

Contributions may be sought to address issues concerning employment, business and enterprise and social problems or in the form of funds for the delivery of local projects.

The Planning Obligations SPD (2005) provides guidance on the Section 106 Framework. The following sections set out the contributions developers may be expected to provide.

Affordable housing

Affordable Housing Obligations will be required from all residential developments containing 15 or more dwellings and of housing sites of one hectare or more in size. The requirement will be for on-site provision, however, in exceptional circumstances, and at the Council's discretion, sums for off-site provision may be acceptable.

Education

Education Obligations will apply to residential developments of 40 or more dwellings, if the development will increase the

population of pupils in excess of the capacity of local schools. Normally this will be provided in the form of a financial contribution for the provision of off-site facilities. Obligations may be required for both primary and secondary school facilities and in exceptional cases for nursery and special education facilities.

The standards used to assess education provision requirements are as follows:

- Nursery Education – 2.5 spaces per 100 eligible dwellings
- Primary Education (age 4 to 10) – 25 spaces per 100 eligible dwellings
- Secondary Education (age 11 to 16) - 20 spaces per 100 eligible dwellings

The cost per school place (as advised by DfES in February 2005) is as follows:

- Nursery and Primary School: £9,136
- Secondary School: £14,346

Recreational Facilities:

This Obligation will apply to residential developments on sites greater than 0.1ha or containing 10 or more dwellings. While this will usually be in the form of a financial contribution for off-site provision, however where there is a deficiency in provision identified in the Green Space Strategy on site provision may be required. Where this is the case, a maintenance payment covering a period of 15-years once adopted will be sought.

The following formula applies where on-site provision is not required:

Recreational facility type	NPFA standard/ m2	Bristol rate/ m2	Contribution/ person
Parks and gardens	4	£70.60	£282.40
Active sports space	12	£37.79	£453.48
Equipped children's play	2	£190.71	£381.42
Informal green space	3	£12.30	£36.90
Natural green space	3	£9.80	£29.40
Total			£1,183.60

The estimated number of people per dwelling is based on the ward average. For Knowle the average is 2.46 persons per dwelling.

Landscape schemes

In general, this type of obligation will be used where a Landscape Scheme is required to screen a development or to integrate it into the surrounding area, and where the Council wishes to have the Landscape Scheme transferred to its ownership once it is in an adoptable condition. The developer will be expected to pay the annual maintenance rate for the scheme for 15 years.

Travel plan initiatives:

In general, Travel Plan obligations will require occupiers of developments to undertake a staff travel survey and implement and monitor a staff travel plan. However, on occasion, direct financial contributions may be sought through obligations relating to Travel Plan Initiatives.

Highway infrastructure works

Highway Infrastructure works Obligations will be sought where it is required to improve the existing or construct new infrastructure to access the development. The developer will be expected to implement the agreed works, which will then be adopted by the Council once they are in an adoptable condition.

Economic contributions

Further detail on this Obligation is set out in Economic Contributions for New Development SPD. There is no threshold below which Economic Contributions Obligations will not be encouraged. All development will be encouraged to contribute; either financially, or in kind and this contribution can take a number of forms, as listed below:

- Use local labour (through the Council's "On-Site" initiative.)
- Financial contributions toward the "On-Site" initiative.
- Set up training and employment fund.
- Provision of childcare
- Provision of affordable flexible business space.
- Public art

This Obligation will be encouraged in residential developments of more than 10 dwellings or greater than 0.1ha in size, commercial developments of over 1000m2 or significant public buildings and community facilities. Public art should be submitted as part of the planning application and the implementation will be secured through a planning obligation.

Use Class	Description of Use	Maximum Parking Provision (Local Plan, 1997, saved policies)	Proposed Alterations to Local Plan (2003) [NOT ADOPTED]*
A1	Retail (includes cash and carry)	Small retail (below 200m2). No specified standard. Between 200m2 and 1000m2: 1 space per 100m2. 1,000m2 and above: Non-food: 1 space per 20m2 Food: 1 space per 10m2. (This standard is a minimum requirement.)	1,000m2 and above: 1 space per 14m2
A3	Restaurants, cafes, public houses Hot food takeaway	1 space per 5m2 drinking or dining area. No specific standard	1 space per 10m2 drinking or dining area
B1	Offices	Outer zone: 1 space per 50m2 gross for all offices	
C3	Houses/ flats/ maisonettes	1 bedroom: 1 space per dwelling 2 bedrooms: 1 space per dwelling and communal parking of 1 additional space for between 2 and 4 dwellings depending on locations and transport characteristics. 3 bedrooms and over: At least 2 spaces per dwelling	2 bedrooms: 1.25-1.5 spaces per dwelling 3 bedrooms and over: An average of 3 spaces per dwelling
D1	Medical/ health centre Primary and secondary schools Further education facilities	1 space per staff member 3 spaces per consulting room 1 space per staff member 1 space per staff member and 1 space per 5 students.	1 space per 5 members of staff 1 space per 2 staff and 1 space per 15 students

Development will provide, or contribute towards the provision of:

- Site specific measures to directly mitigate the impact of the development;
- Infrastructure, facilities and services required to mitigate its impacts and support growth;
- Contributions may be pooled to secure the delivery of larger scale infrastructure investment which is made necessary by the cumulative impacts of development;
- Developer contributions may be sought from residential

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Community forest initiative

Residential development over 10 dwellings and commercial development over 1000m² will be expected to contribute to the community forest initiative. Contributions would be for specific schemes relating directly to the development site.

Library

Contributions will be required for developments of 40 or more dwellings. The calculation will be based on contributions of £105,000 per 1000 population.

The RSS sets out a number of renewable energy targets for the region. Policy RE5 states that large-scale developments “will be expected to provide as a minimum, sufficient on-site renewable energy to reduce CO₂ emissions from users of the buildings constructed on site by 10%.”

04 Socio-Economic Profile & Benchmarking: Summary

04.1 Background

Knowle West's history extends from the series of inter-war social housing. These were built in phases of development inspired by the principles of the Garden City movement and delivered through public housing acts¹. The first phases of development are located around Knowle Park East, and following phases of lower quality were built westwards into Knowle West. Many of the properties in Knowle West were developed for people to move into from inner-city clearances.

04.2 Population and household composition

A majority of the population are families, with higher than average levels of lone parent households² (see Figure 15). Filwood has the largest population of children and young people out of all Bristol wards (see Figure 14). This demands particular attention in terms of services, particularly as combined with a low average household income could lead to a number of resultant issues.

04.3 Index of multiple deprivation

Deprivation of different categories are found in Knowle West with income, employment, education, health and crime³ representing major challenges. The intensity of these issues varies within the site (see Figure 16). Although the area has significant opportunities it suffers a poor image and reputation⁴. Access to housing and services and the living environment rate much better, indicating the strengths from which Knowle West can build, whilst efforts must be made to improve employment, health and educational opportunities.

04.4 Economic Activity

Unemployment levels are rising with Job Seeker Allowance claimant levels at 6.8%⁵, above the average levels for Bristol and South Bristol (see Figure 17). Of those in employment, the car is the predominant mode of transport to work (see Figure 18). This severely limits access to employment for the 40% of households without a car. A situation exacerbated when seen alongside evidence of the lowest average household income in South Bristol⁶. The current situation means many feel they do not have easy access

- 1 100 Years of Council Housing in Bristol, Malpass and Walmsley, 2005
- 2 ONS Census Data 2001
- 3 Deprivation In Bristol Report 2007 Bristol City Council
- 4 Filwood Housing Investment Study 2004, Barry Wallen, Internal Summary Report
- 5 ONS Nomis April 2009
- 6 ONS Model-Based Estimates

to employment⁷. Emphasis should be placed on improving both the access to training and to employment⁸.

04.5 Education

Knowle West includes four primary schools (Connaught, Greenfield, Illminster Avenue and School of Christ the King) all of which have spare capacity⁹. Additional primary schools outside of Knowle West are attended by a significant minority of children¹⁰. The majority of secondary pupils attend Oasis Academy, Brislington Enterprise College, Bedminster Down and Bridge Learning Campus¹¹. The achievement levels of these facilities are improving but remain a significant challenge, particularly when compared to nearby faith schools¹² (see Figure 19). Limited access to further education is a major challenge, which should be addressed whilst the opportunity to increase education attainment is a clear priority for the area.

04.6 Crime and Safety

Crime is a serious challenge, but one associated with the overall deprivation and isolation of Knowle West. There are variations within the study area mostly concentrated in pockets around Newquay Road, Filwood Broadway and Melvin Square (see Figure 20). However, the reported levels are lower than those perceived by interviewed residents¹³. This needs to be overcome to improve Knowle West, as people need to feel safe for the area to thrive.

04.7 Health and Well-being

There are some major health challenges, particularly when life expectancy, premature death rates as well as teenage and child health issues are taken into consideration¹⁴. However, the local healthcare provisions mean most residents are within easy access of a GP¹⁵. Hospital access is a much greater challenge and therefore efforts must be made to ensure the residents benefit from

7 Quality of Life in Your Neighbourhood Survey 2007, Bristol City Council

8 Quality of Life in Your Neighbourhood Survey 2007, Bristol City Council

9 Department for Children, Schools and Families' Edubase database (www.edubase.gov.uk)

10 Knowle West Education table (BCC Education, 2009) w

11 Knowle West Education table (BCC Education, 2009)

12 Department for Children, Schools and Families, 2009

13 Joint Strategic Needs Assessment, NHS 2007

14 State of the Neighbourhoods Health Tables, 2008

15 Quality of Life in Your Neighbourhood survey, 2005-2007

the new hospital facility being developed as part of Hengrove Park¹⁶. Positive health influences affect the individual and community's well-being. It is therefore important that the wider community are considered in terms of quality of life. It takes account of personal, social and place indicators which all point to fairly low quality of life considering income, employment, health, safety and quality of the environment¹⁷. In other indicators it only falls slightly behind the Bristol benchmark¹⁸ (see Figure 21). Social indicators show a positive as residents felt a strong sense of belonging, combined with strong social and family ties¹⁹. Although Knowle West has an identifiable community cohesion, it has declined recently²⁰ threatening residents' well being. Action should be taken to ensure the well-being of the residents and the community, providing appealing opportunities for a better lifestyle through improved living, work, social and recreational environments.

04.8 Conclusion

The Socio-Economic review has included benchmarking and absorbed a range of material (quantitative and qualitative). It clearly highlights major challenges for the Knowle West community, particularly in terms of income, employment, education, health and crime. The socio-economic review highlights the many disparities between the study area, Bristol and South Bristol, but also within Knowle West itself. Although improvements have been witnessed and the area offers opportunities, the community still face many challenges when compared to the average socio-economic conditions in Bristol. Limited access to employment, training and education opportunities as well as community, social and leisure facilities is apparent and exacerbated by the areas relative isolation in terms of transport.

Knowle West and surrounding areas already contain a number of opportunities that must be utilised to offer an improved choice and better quality of life, with efforts focused to ensure they are accessible.

But it also highlights some of the opportunities regarding the housing stock, open space, community, young people and location.

The KWRF is important for addressing the series of major challenges, targeting a range of issues related the current conditions and also utilising the opportunities. These require consideration of the wider area, but also need to be customised to specific neighbourhoods if it is to benefit of the local community.

16 www.hengrovepark.co.uk

17 Quality of Life in Your Neighbourhood Survey 2007, Bristol City Council and Deprivation Report 2007

18 State of the Neighbourhoods, Quality of Life, 2008

19 "We wouldn't live anywhere else" (Involving Residents in Solutions, 2004)

20 Quality of Life in Your Neighbourhood Survey 2005-07

The KWRF is an important mechanism for change that sets out the priorities for Knowle West in terms of social, economic and environmental advancements. Although Knowle West suffers from physical and social barriers that limit opportunities, the area exhibits a number of positive advantages. These include a good location, relatively close to Bedminster and the city, an identifiable community, a relatively good and affordable housing stock, and generous open space quantities on offer. The KWRF needs to exploit these latent qualities, using it as a platform for integrating new employment, education, social, leisure and retail options for the area and returning a positive focus to Knowle West and regaining support and investment from those who live in and around the area.

The KWRF represents a key mechanism to set forward objectives for targeting these issues and creating appropriate opportunities for an inviting and attractive environment to live and do business,

More detail is provided in the Socio-Economic Paper.

04 Socio-Economics: Summary

Figure 14: Age Structure

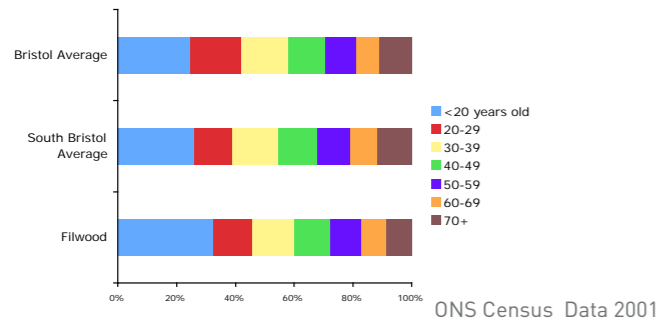


Figure 15: Household Structure

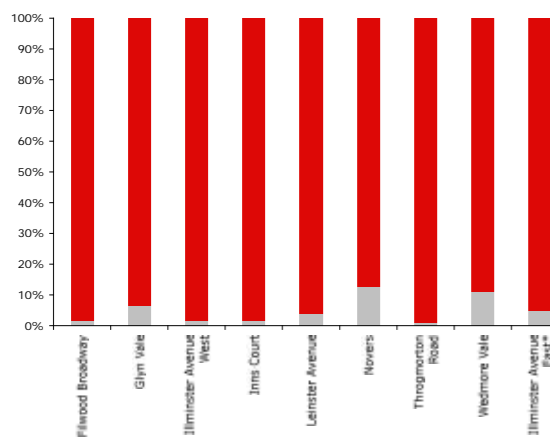
Percentage of all household

	One Person	Married Family	Cohabit-ing	Lone Par-ent
Illminster Avenue East	24	33	9	19
Filwood	26	31	9	20
South Bristol	29	34	9	12
Bristol	33	32	10	10

ONS Census Data 2001

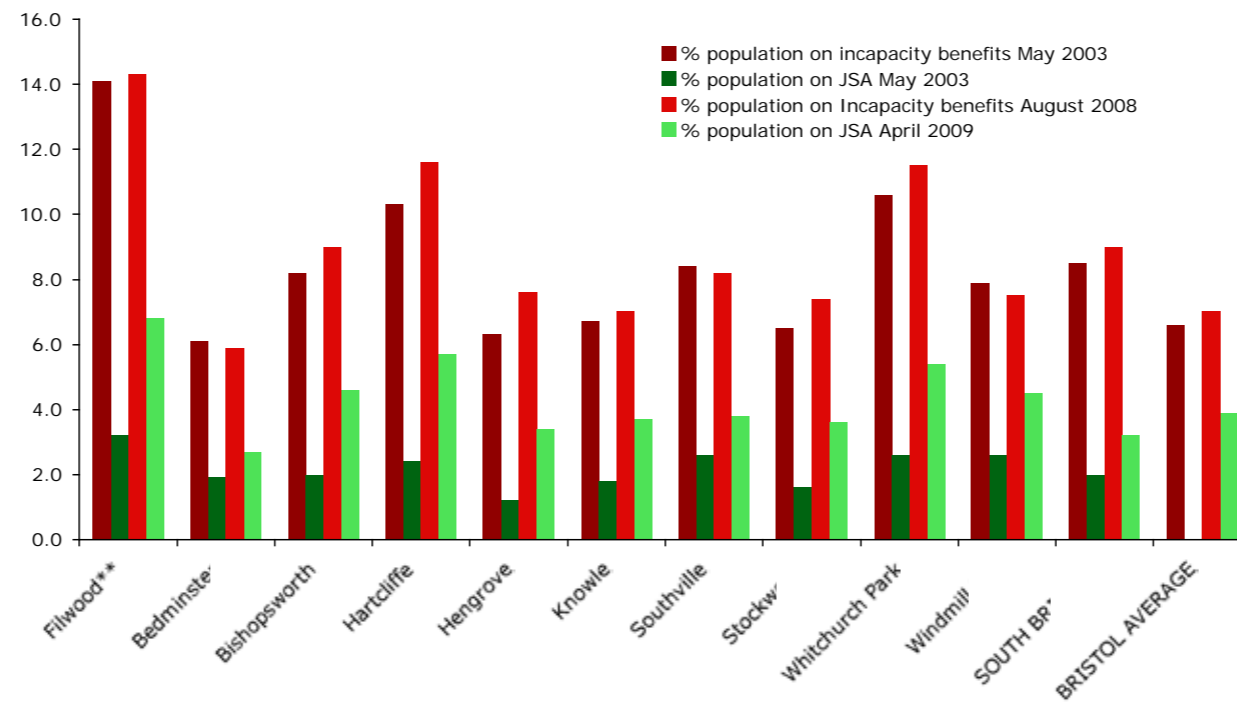
Figure 16: Ranking of Index of Multiple Deprivation [LSOAs], 2007

percentile ranking where 100% = 100th percentile (lowest ranking in country for deprivation score)



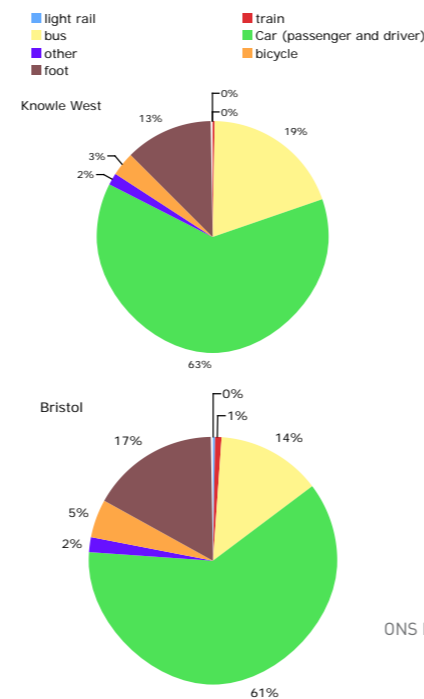
ONS Data 2007

Figure 17: Benefit Claim Rates for South Bristol



ONS Nomis 2008 and State of the Neighbourhoods 2008

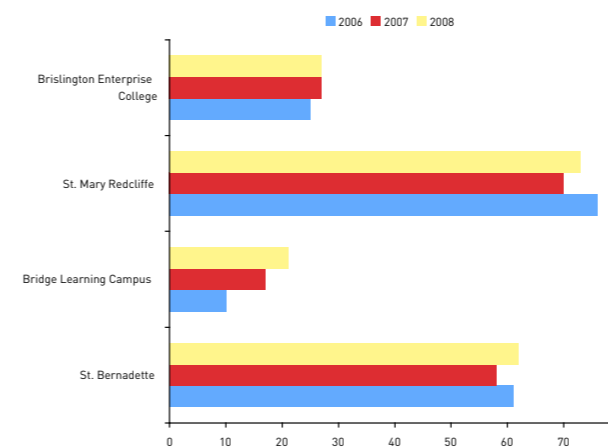
Figure 18: Mode of Travel to Work



ONS Data 2001

Figure 19: Local Secondary School Performance

percent achieving 5A*-C at GCSE



Department for Children, Schools and Families 2008

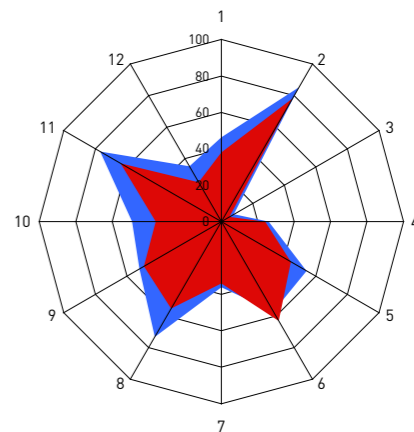
Figure 20: Filwood Beat Crime Map
All Crimes (21 April 2008- 20 April 2009)



Avon and Somerset Police

Figure 21: Quality of Life, 2007

Blue represents Bristol and Red represents Filwood



- 1 % feel safe after dark
- 2 % feel safe in day
- 3 % 2+ hours volunteer a week
- 4 % feel they can influence decisions
- 5 % that think people from different backgrounds get a long
- 6 % resident who feel they belong to their neighbourhood
- 7 % resident who take exercise 5 times a week
- 8 % households without smokers
- 9 % residents who have 5 fruit and vegetables a day
- 10 % satisfied with local environment
- 11 % satisfied with local area
- 12 % visit parks and open space 1/week+