

LANGHAM NEIGHBOURHOOD PLAN 2022-2041



Support Document SDL 3

Climate Change – Energy Efficiency and Water Management

April 2022

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Climate Change and the UK

1. Here are some key facts and figures:

- Globally, atmospheric CO₂ exceeded 400 parts per million in 2016 and is rising. This is the highest in human history.
- Since the Industrial Age, human activities have caused a 1°C increase in global temperature and the trajectory suggests it will increase a further 0.5°C by 2050.
- There seem to be ever more extreme weather events across the world. In the UK there is an increase in winter floods and more heatwaves with associated deaths. These are linked to climate change.
- The extent of Arctic sea ice has reduced, causing rising sea levels and increasing flood risk.



2. The UK Met Office predicts that if nothing is done about this, Britain could experience summers as much as 5°C hotter by 2070. Winters could be up to 4.2C warmer, and sea levels could rise by up to 1.15 metres by 2100, leaving the UK coastline unrecognisable.

3. In August 2021, the Intergovernmental Panel on Climate Change provided definitive facts on global Climate Change:

- It is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred.

- Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in carbon dioxide (CO₂) occur in the coming decades.
 - Global warming of 2°C will be significantly worse than 1.5°C, with up to 10 million additional people affected by sea level rise.
 - Limiting human-induced global warming to a specific level requires limiting cumulative CO₂ emissions, reaching at least net zero CO₂.
4. In response to this, the UK Government has set a legally binding target for the UK to reach net zero CO₂ by 2050.
5. How this will be achieved is detailed in 'Net Zero Strategy: Build Back Greener', presented to Parliament in October 2021 pursuant to Section 14 of the Climate Change Act 2008 (CCA).
6. The UK legislation on climate change is the 2008 Climate Change Act. The latest update, the 'Net Zero Strategy: Build Back Greener' policy document of October 2021 requires Net Zero CO₂ by 2050.
7. The 2021 update of the National Planning Policy Framework (NPPF21) identifies both "Climate change mitigation: Action to reduce the impact of human activity on the climate system, primarily through reducing greenhouse gas emissions" and "Climate change adaptation: Adjustments made to natural or human systems in response to the actual or anticipated impacts of climate change". Both have a place in local planning.
8. NPPF21 Para 153 says (Local) 'Plans should take a proactive approach to mitigating and adapting to climate change...in line with the objectives and provisions of the Climate Change Act 2008.' The Net Zero Strategy represents the updates to the CCA required by Section 14 of that Act.

9. This means there is an onus on all communities who produce a Neighbourhood Plan, to give serious consideration to what contribution they can, and want to, make towards mitigating this crisis.

Local Responsibility



10. There is a hierarchy of energy options that developers (and individuals) might pursue:
 1. reduce the need for energy;
 2. use energy more efficiently;
 3. use renewable energy;
 4. use low carbon sources;
 5. use conventional energy.

11. NPPF21 Para 154b says: 'New development should be planned for in ways that can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards'.

12. NPPF21 makes clear that planning plays an important role in Climate Change mitigation. Paras 155 to 158 robustly support the need to deliver renewable and low carbon energy and associated infrastructure.

10. Climate change mitigation is critical to keeping global warming under 2°C.

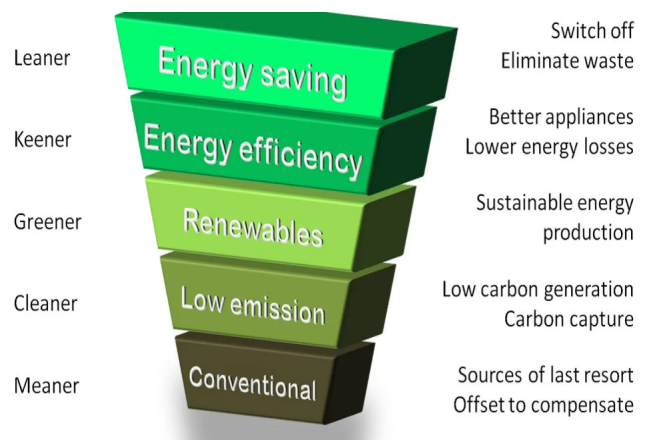
11. The Net Zero Strategy, via the Future Homes Standard, will ban the use of fossil fuels for heating from 2025.

Mitigating Climate Change

1. Energy Efficiency

Energy Efficient Homes

1. The building and operation of a typical fossil fuel heated home contributes about a third of the UK greenhouse gas emissions. It is the sector which has improved least since 1990.



2. Energy saving is the responsibility of individual households and much can be done at no or low cost.

3. Energy and water efficiency and ventilation are matters that are covered by Building Regulations.



- Effective planning can help deliver higher rates of energy efficiency. For example, by calling for all developments to meet a minimum BREEAM rating of 'very good'.
(BREEAM stands for Building Research Establishment Environmental Assessment)



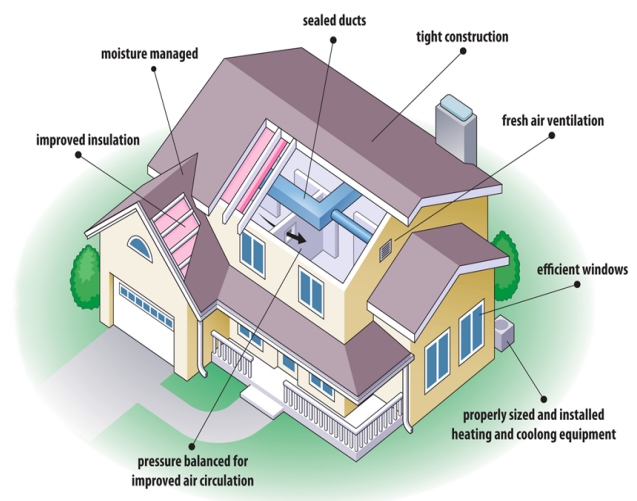
- Encouraging the use of bicycles and making walking a more natural option means ensuring that footpaths, road crossings and rest places are all available and fit for purpose. Cycle paths should ideally be separated from vehicles but it is recognised how difficult this would be within the confines of the village of Langham.



- The government will be introducing the Future Homes Standard (FHS) in 2025 which will set the specification for zero carbon homes. It will ban the use of fossil fuels for heating. There will be an interim update of Part L and Part F of the Building Regulations in mid 2022, which is likely to require improved insulation and solar panels on all new houses. This legislation will be an immediate requirement for this NP.
- Embodied emissions (the CO₂ emissions from making and shipping of materials and the construction of buildings) **represent about half of a building's lifetime greenhouse gas emissions.** Selecting building materials and building processes with the lowest embodied emissions will be expected of all developers.
- It is also possible to mitigate climate change by locating development where it minimises the need to travel, promoting alternative means of travel such as cycling and walking.

Existing Building Stock

- Locally it is possible to make small changes that add up to a bigger contribution.
- Buildings contribute about 33% of the greenhouse gas emissions - that is the construction and the running.



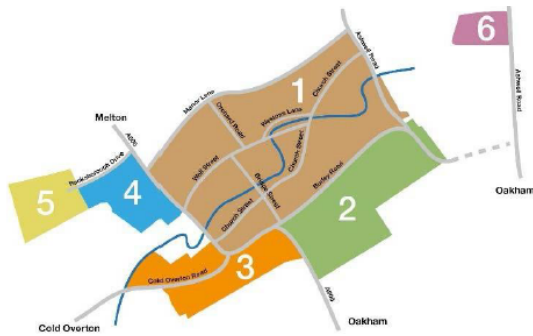


Figure SDL3.1: Main housing areas of Langham

11. The housing in areas 2, 3, 4, 6 and part of 1 in Langham (above) has largely been built since 1945. It is, in varying degrees, much less well insulated than houses being built now.
12. This large tranche of housing stock is ripe for energy efficiency gains by existing owners, not only to mitigate climate change but also to reduce steadily increasing energy bills.
13. Insulating the existing housing stock has been a challenge for several different governments, with no scheme so far being successful. New proposals will go before parliament in 2022.
14. Installing or increasing loft insulation, installing or improving double glazing and installing wall insulation are probably the top three improvements to mitigate climate change.
15. The installation of PV solar panels makes a significant contribution to the reduction of CO₂ emissions, as well as reducing the amount of expensive energy needed from the grid. Most such installations need no planning permission as they are considered 'permitted development.'

Historic Buildings

16. Langham has a number of historic buildings and they are not designed for energy efficiency. The cost of doing work on any historic building – whether a church, a manor house or a small cottage – is often prohibitive.
17. It is hoped that the government and Rutland County Council will find ways to support such costs in order to encourage uptake.
18. Ways to improve energy efficiency without affecting the character of the building include loft insulation, primary or secondary glazing, more efficient heating and LED lighting.

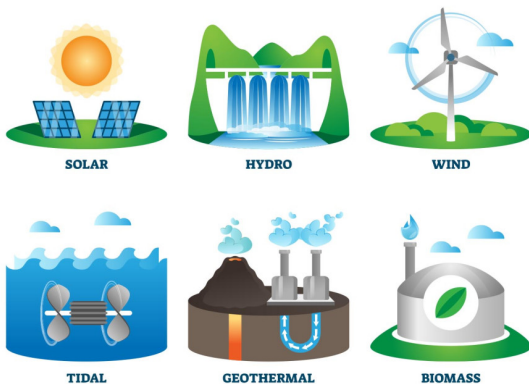
Motor Vehicles and Traffic

19. Transport was the largest emitting sector in the UK in 2019, responsible for over a quarter of greenhouse gas emissions as well as about one third of the UK of toxic gas emissions (NO_x).
20. The government has legislated that no new petrol and diesel cars may be sold after 2030. Already electric vehicle (EV) sales represent about 1 in 6 of all new car sales, and have overtaken diesel sales.
21. With 1 in 10 cars on the road forecast to be EV by 2025, rising to 1 in 3 by 2030, the Government will legislate in 2022 for all new homes to be fitted with a 7kW EV charger.



Energy Generation

22. It is clear that renewable energy is a cornerstone of the government plans to combat climate change.
23. Whilst we welcome this change, it is essential that all such developments are appropriate to their environment, especially in a rural setting.
24. Considerations such as the cost to the environment, biodiversity, the landscape and how invasive the structure is to the residents are all important considerations.



Small Renewable Energy Installations

25. A small anaerobic digester located on a farm can be acceptable as long as the raw materials are produced there, the waste materials are used there and the electricity produced is used to power the farm. The size must not be invasive to the community views and the odour must be controlled.
26. Similarly, a rooftop solar array on a commercial or industrial building or farm, or a single small wind turbine up to 15kW at such premises, that has been optimally positioned and whose output is for the exclusive use of the landowner can be acceptable.

Large Renewable Energy Installations

27. Large wind turbines should not be considered in Langham according to the 'Rutland Landscape Sensitivity and Capacity Study – Wind Turbines', on which planning for wind turbines in Rutland is based.
28. Solar Farms, designed as energy generators for the grid rather than for home or business use, will be considered provided they do not exceed 15MW, & are acceptable in terms of:
- impact on residential amenity;
 - landscape and visual effects;
 - the natural environment;
 - the historic and cultural environment;
 - noise and odour;
 - emissions to ground, watercourses & air;
 - vehicular access and traffic;
 - grid connection and energy storage ;
 - form and siting ;
 - mitigation ;
 - the decommissioning of the development and reinstatement of land at the end of its operational life;
 - the installers comply with the Solar Trade Association's best practice guidelines .(see Table 3.1)



29. Large anaerobic digesters are not suitable for Langham as the raw materials and the waste products would need to be transported long distances on large vehicles. This would negate any benefit that this form of energy generation can bring to the pursuit of net carbon zero.

Newer Forms of Energy Generation

36 Biochar – the burning of biomass at very high temperature in the absence of oxygen – produces a form of charcoal. The advantages of this process as far as carbon is concerned is that it is locked away (sequesters) as charcoal and, added to soil,

improves soil quality. The drawbacks of this process are that high temperatures are required, it is a dangerous process, and the process releases CO₂ and methane.

37. Hydro-power is another source of renewable energy which needs running water with a good rate of flow to be considered anywhere.

Table SDL3.1: Solar Trade Association Best Practice Guidelines.

1. To focus on non-agricultural land or land which is of lower agricultural quality.
2. To be sensitive to nationally and locally protected landscapes and nature conservation areas, and to welcome opportunities to enhance the ecological value of the land.
3. To minimise visual impact where possible and maintain appropriate screening throughout the lifetime of the project managed through a Land Management and/or Ecology plan.
4. To engage with the community in advance of submitting a planning application, including seeking the support of the local community and listening to their views and suggestions.
5. To encourage land diversification by proposing continued agricultural use or incorporating biodiversity measures within projects.
6. To do as much buying & employing locally as possible.
7. To act considerately during construction and demonstrate 'solar stewardship' of the land for the lifetime of the project.
8. To offer investment opportunities to communities in their local solar farms where there is local appetite and where it is commercially viable.
9. To commit to using the solar farm as an educational opportunity, where appropriate.
10. At the end of the project life to return the land to its former use.

2. Flooding & Water Management

Flooding

1. Flooding has always been a problem to Langham and still is today.
2. Climate change is likely to increase the risk of flooding so the careful management of this risk is ever more important.



Figure SDL3.3a: Past Flooding in Well Street.

3. RCC has produced Flood Risk Regulations (published 2011, reviewed 2017). (see Table SDL 3.2)
4. The regulations outline the roles and responsibilities of the various authorities, consistent with the Flood and Water Management Act 2010.



Figure SDL3.3b: Flood, Junction of Lowther Close and Burley Road, 2021.

Table SDL3.2: RCC Flood Risk Regulations 2017.

These regulations:

- a. give responsibility to the Environment Agency (EA) to prepare Directive deliverables:
 - i. preliminary assessment report;
 - ii. flood risk maps and hazard maps ;
 - iii. flood risk management plans.
- b. give responsibility to Lead Local Flood Authorities (LLFA), which in Langham's case is Rutland County Council, to do the same for 'local flood risk', which includes:
 - i. surface runoff,;
 - ii. groundwater;
 - iii. ordinary watercourses.
- c. give responsibility to the Environment Agency for collating and publishing:
 - i. the preliminary assessment reports;
 - ii. flood risk maps;
 - iii. hazard maps;
 - iv. flood risk management plans.

5. The Land Drainage Act 1991 places duties on owners of watercourses to keep watercourses in a condition that allows the water to flow freely and not be impeded. The Land Drainage Act also provides Rutland County Council with powers to regulate ordinary watercourses to ensure that flows can be maintained to provide adequate land drainage and not increase flood risk, this includes;
 - a. issuing consents on alterations to ordinary watercourses such as construction of culverts for site access;
 - b. obligations of enforcement on other parties to reinstate, repair or carry out maintenance on watercourses to maintain the flow of water;
 - c. permissive powers to carry out works on ordinary watercourses.

Reducing Flood Risk

6. Development should be located in the lowest areas of flood risk in line with areas defined by the Environment Agency.
7. Where this is not possible the sequential approach to development will be applied. Where the requirements of the sequential test are met, the exception test will be applied, where necessary.
8. A Flood Risk Assessment (FRA) will be required for all development in Flood Zones 2 and 3 and for sites greater than 1 hectare in Flood Zone 1, and where a development site is located in an area known to have experienced flood problems from any flood source, including critical drainage.

9. All development must avoid increasing flood risk elsewhere. Runoff from the site post development must not exceed pre-development rates for all storm events up to and including the 1% Annual Exceedance Probability (AEP)* storm event with an additional allowance for climate change. The appropriate climate change allowances should be defined using relevant Environment Agency guidance.
10. Where development takes place in Flood Zones 2 and 3, opportunities should be sought to:
 - a. reduce flooding by considering the layout and form of the development and the appropriate application of sustainable drainage techniques;
 - b. relocate existing development to land in zones with a lower probability of flooding;
 - c. create space for flooding to occur by restoring functional floodplains and flood flow pathways and by identifying, allocating and safeguarding open space for storage;
 - d. design buildings to minimise the impact of a flooding event.

*1% Annual Exceedance Probability (AEP): 1 in 100 chance of flooding in any one year

Table SDL3.2: Flood Zone definitions

FLOOD ZONE	DEFINITION
ZONE 1	Land having a less than 1 in 1,000 annual probability of flooding
ZONE 2	Land having between a 1 in 100 and 1 in 1,000 annual probability of flooding.
ZONE 3	Land having a 1 in 100 or greater annual probability of flooding.

Types of flooding.

Watercourse flooding (fluvial) happens when the watercourse overtops the bank and floods nearby areas. This flooding can occur from small watercourses as well as main rivers and is usually a result of rainfall or snow melt increasing the volume of water entering a watercourse. It can also occur as a result of blockages and debris building up and preventing water from flowing downstream.



Surface water flooding (pluvial) occurs when water accumulates on the surface because the amount of rain falling on an area is too great for the drains or the ground to cope with. Also known as flash flooding this can be sudden and difficult to predict.



Flooding from sewers is caused when the pipes receive more water than they are designed to take or a blockage is restricting the amount of water they can carry. Blockages can be caused by collapsed pipes or tree roots but are often a result of what is put down the drains such as fats, unwanted concrete or litter.



Groundwater flooding occurs as a result of water rising up through the ground from underground stores such as aquifers. This type of flooding tends to occur after prolonged periods of rainfall. Low lying areas are more susceptible but natural springs can appear on the hillsides as the groundwater table rises.



Flooding from canals and reservoirs is caused by overtopping and failures such as seepage through the banks which can result in damage over time as the flowing water causes erosion. Failures can also take place around any control structures such as weirs and sluices if they become damaged.



Flooding from the sea occurs as a result of very high tides, storm surges or high waves flooding low lying areas along the coast. This is ever changing as natural process continue to change the coastline.



Water Management & Sustainable Drainage Systems (SuDS)

1. Development proposals should demonstrate that water is available to serve the development, and adequate foul water treatment and disposal already exists or can be provided in time to serve the development. Foul and surface water flows should be separated where possible.
2. All planning applications should be accompanied by a statement of how surface water is to be managed and in particular where it is to be discharged, including allowing for climate change effects. Topographical survey information should be used to inform the layout and design of a development in consultation with the Lead Local Flood Authority.
3. Surface water connections to the public sewerage network should only be made in exceptional circumstances. Water re-use and on site-attenuation and infiltration will be required as part of any new development wherever possible.
4. Opportunities must be sought to achieve multiple benefits, for example through green infrastructure provision and biodiversity enhancements in addition to their drainage function.
5. The long-term maintenance of structures such as swales and balancing ponds must be agreed in principle prior to permission being granted.
6. Surface water management should be undertaken, wherever practicable through the utilisation of appropriate Sustainable Drainage Systems (SuDS) techniques which mimic natural drainage patterns, and where appropriate achieve net gains for nature through the creation of ponds and wetlands onsite or within close proximity.
7. Severn Trent, as the sewerage undertaker for Langham has a duty to provide capacity for new development. They promote the use of SuDS to manage water flows and the use of Drainage Hierarchy principles (para 80, Planning Practice Guidelines) to ensure that surface water is discharged to a sustainable outfall and not to the sewerage network.
8. Details of the proposed SuDS measures must be provided in a Water Management Strategy (WMS), which must also identify long-term ownership and maintenance strategy for all elements of SuDS techniques proposed within a scheme, including adequate proposals for the regular maintenance and management of such measures over the life expectancy of the development.
9. Major development proposals (schemes of 10 or more homes and site areas of 1ha or greater) should demonstrate that they can be implemented without detriment to the quality or quantity of existing water and the wider environment. Development proposals that significantly threaten groundwater resources will not be permitted.
10. Supporting documentation to accompany planning applications for major developments which explain how contaminated water arising during the construction process will be addressed. Mitigation measures will be required to minimise resultant pollution within new development. Ponds and wetlands will be encouraged where feasible, along with other SuDs measures such as infiltration trenches and filter drains.
11. Suitable access should be maintained for water resource and drainage infrastructure.

Water Management & Sequential Test

12. The NPPF states that inappropriate development in areas of flooding should be avoided by directing development away from areas of highest risk. Where development is necessary in such areas, it should be made safe without increasing flood risk elsewhere.
13. This plan applies a risk-based approach to the location of development to avoid where possible flood risk to people and property and manage any residual risk, taking account of the impacts of climate change, by:
 - i. applying the Sequential Test;
 - ii. if necessary, applying the Exception Test;
 - iii. safeguarding land from development that is required for current and future flood management;
 - iv. using opportunities offered by new development to reduce the causes and impacts of flooding;
 - v. where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to facilitate the relocation of development, including housing, to more sustainable locations.
14. The Sequential Test is a decision-making tool designed to ensure that sites at little or no risk of flooding are developed in preference to sites at higher risk, so avoiding the development of sites that are inappropriate on flood risk grounds. Where this cannot be avoided, application of the Exception Test allows for the possibility of some development in flood risk areas taking place if flood risk is clearly outweighed by other sustainability drivers.
15. The Sequential Test is applied at all stages in the planning process, both between different flood zones and within a flood zone. All opportunities to locate new developments (except Water Compatible) in reasonably available areas of little or no flood risk should be explored, prior to any decision to locate them in areas of higher risk.
16. The Exception Test is a method to demonstrate and help ensure that the flood risk to people and property will be managed satisfactorily, while allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available. For the Exception Test to be passed:
 - a. it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, and
 - b. a site-specific Flood Risk Assessment (FRA), informed by a Level 2 SFRA where one has been prepared, must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

Appendix 1: The use of Sustainable Drainage Systems (SuDS)

1. SuDS can provide opportunities to:
 - a. reduce surface water run off;
 - b. encourage natural groundwater recharge;
 - c. reduce pollution
 - d. positively influence the design and landscape value of development through the provision of green space and providing opportunities for biodiversity.
2. Surface water flood risks should be managed using sustainable drainage systems. SuDS should be designed to control surface water run off as close to where it falls as possible and mimic the natural catchment process.
3. The NPPF (paragraph 165) requires all major developments to incorporate SuDS unless it can be clearly demonstrated to be inappropriate and developments in areas of flood risk will only be permitted where SuDS are incorporated. When considering planning applications, local planning authorities should consult the LLFA (Lead Local Flood Authority) on the management of surface water in order to satisfy that the proposed minimum standards operational standards are appropriate and that there are clear arrangements for the on-going maintenance of the system over the development's lifetime .
4. Good design of SuDS is crucial as there is no 'one fits all' solution and they should be considered early in the design process of a development. SuDS should be designed to provide multiple benefits and clear arrangements must be in place for the on-going maintenance and/or adoption of the proposed drainage system for the lifetime of the development..
5. The PPG (Planning Policy Guidance) provides further guidance on the use of SuDS and guidance on the technical standards for their design, maintenance and operation can be found in the non-statutory technical standards. The Council's requirements for sustainable drainage as part of new development is available on the Council's website, Policy CS19 of the adopted Core Strategy and Policies EN5 and EN6 of the withdrawn 2021 Rutland Local Plan.



Appendix 2: Sequential Test: What do we need to know?

1. What is a sequential test?

A sequential test is carried out to ensure development is sited on land that has the lowest risk of flooding within the Local Council area. For example, available sites in Flood Zone 1 should be considered above those sites in Flood Zone 2.

2. When is a sequential test required?

A sequential test is often required when the proposed development site is within Flood Zones 2 or 3.

3. Are there any exemptions from a sequential test?

Yes, a sequential test is not required:

- if the project is a change of use;
- if the development is located in Flood Zone 1;
- for some minor developments, e.g. a shed, extension etc.

4. What is included in a sequential test report?

Typically, a sequential test report includes:

- introduction – location details of the site and the reason for the test, e.g. it falls within Flood Zone 2 or 3;
- background – details of any previous planning applications and whether the site falls within the local authority SLAA;
- proposal – details the planning objective and general comments about the site;
- site analysis – more detailed content about the location often including a map, information about the current use, hydrological features, flood risk and flood mitigation measures;
- local policy – details of the documentation, plans and policies being utilised by the local authority where the site is situated;
- sequential test approach – details of the criteria used to assess the site;
- sequential test, site specific – this can include a review of the local authority plans in relation to the site, comparisons of sites and a review of available sites on the open market;
- conclusion – commentary on the site and explicit confirmation of whether the sequential test has been passed.

5. What does SLAA stand for?

SLAA is an abbreviation for Strategic Land Availability Assessment. This is a technical document which assesses the suitability, availability and achievability of land for housing and employment development.

6. Who can carry out a sequential test?

There is no requirement by local authorities for the person who carries out the sequential test to hold a particular qualification, however you will often find they are carried out by individuals who have significant knowledge in flood risk, such as an environmental consultant.

7. Does a sequential test require a site visit?

No, there is no requirement to visit the site, as data and information can be obtained remotely.

8. Can a development proposal fail a sequential test?

A development proposal will only fail to pass the sequential test if alternative sites are identified within the search area that are at lower risk of flooding, appropriate for the proposed development and are 'reasonably available' for development. A site is only considered to be reasonably available if it is both 'deliverable' and 'developable' as defined by the NPPF.

9. When is a site considered "reasonably available"?

The definition of 'reasonably available sites' has been extracted and interpreted from both the NPPF (Footnote 11 and 12) (2018) and "Demonstrating the Flood Risk Sequential Test for Planning Applications" document (2014) prepared by the Environment Agency, which defines reasonably available as sites that are suitable, developable & deliverable.

10. When is a development considered "deliverable"?

To be considered deliverable, sites should be available now, offer a suitable location for development now, and be achievable with a realistic prospect that housing will be delivered on the site within five years and in particular that development of the site is viable. In accordance with paragraph 47 of the NPPF (2019) sites with planning permission should be considered deliverable until permission expires. This applies, unless there is clear evidence that schemes will not be implemented within five years, for example they will not be viable, there is no longer a demand for the type of units or sites have long term phasing plans.

11. When is a site considered "developable"?

To be considered developable, sites should be in a suitable location for development and there should be a reasonable prospect that the site is available and could be viably developed at the point envisaged.

12. What happens if there are no alternative sites?

If there are no potential alternative development locations at a lower flood risk than the subject site, then the site and proposed development is considered to have passed the sequential test, but requires application of the Exception Test.

13. What is an Exception Test?

In line with paragraph 102 of the NPPF (2019), if following the application of the sequential test, it is not possible for the development to be located in Flood Zones with a lower probability of flooding, the Exception Test can be applied.

14. What does the exception test seek to explore?

The exception test comprises two components; demonstrating that flood risk can be managed for the lifetime of the development and consideration of the wider sustainability benefits to the community that outweigh flood risk.

15. How is an exception test passed?

For the exception test to be passed the following criteria must be met:

1. it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a strategic flood risk assessment where one has been prepared; and
2. a site-specific flood risk assessment must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

Appendix 3: Severn Trent Water, Guidelines for Water Management

Position Statement

As a water company we have an obligation to provide water supplies and sewage treatment capacity for future development. It is important for us to work collaboratively with Local Planning Authorities to provide relevant assessments of the impacts of future developments. For outline proposals we are able to provide general comments. Once detailed developments and site specific locations are confirmed by local councils, we are able to provide more specific comments and modelling of the network if required. For most developments we do not foresee any particular issues. Where we consider there may be an issue we would discuss in further detail with the Local Planning Authority. We will complete any necessary improvements to provide additional capacity once we have sufficient confidence that a development will go ahead. We do this to avoid making investments on speculative developments to minimise customer bills.

Sewage Strategy

Once detailed plans are available and we have modelled the additional capacity, in areas where sufficient capacity is not currently available and we have sufficient confidence that developments will be built, we will complete necessary improvements to provide the capacity. We will ensure that our assets have no adverse effect on the environment and that we provide appropriate levels of treatment at each of our sewage treatment works.

Surface Water and Sewer Flooding

We expect surface water to be managed in line with the Government's Water Strategy, Future Water. The strategy sets out a vision for more effective management of surface water to deal with the dual pressures of climate change and housing development. Surface water needs to be managed sustainably. For new developments we would not expect surface water to be conveyed to our foul or combined sewage system and, where practicable, we support the removal of surface water already connected to foul or combined sewer.

We believe that greater emphasis needs to be paid to consequences of extreme rainfall. In the past, even outside of the flood plain, some properties have been built in natural drainage paths. We request that developers providing sewers on new developments should safely accommodate floods which exceed the design capacity of the sewers.

To encourage developers to consider sustainable drainage, Severn Trent currently offer a 100% discount on the sewerage infrastructure charge if there is no surface water connection and a 75% discount if there is a surface water connection via a sustainable drainage system. More details can be found on our website

<https://www.stwater.co.uk/building-and-developing/regulations-and-forms/application-forms-and-guidance/infrastructure-charges/>

Water Quality

Good quality river water and groundwater is vital for provision of good quality drinking water. We work closely with the Environment Agency and local farmers to ensure that water quality of supplies are not impacted by our or others' operations. The Environment Agency's Source Protection Zone (SPZ) and Safe Guarding Zone policy should provide guidance on development. Any proposals should take into account the principles of the Water Framework Directive and River Basin Management Plan as prepared by the Environment Agency.

Water Supply

When specific detail of planned development location and sizes are available a site specific assessment of the capacity of our water supply network could be made. Any assessment will involve carrying out a network analysis exercise to investigate any potential impacts. We would not anticipate capacity problems within the urban areas of our network, any issues can be addressed through reinforcing our network. However, the ability to support significant development in the rural areas is likely to have a greater impact and require greater reinforcement to accommodate greater demands.

Water Efficiency

Part G of Building Regulations specify that new homes must consume no more than 125 litres of water per person per day. We recommend that you consider taking an approach of installing specifically designed water efficient fittings in all areas of the property rather than focus on the overall consumption of the property. This should help to achieve a lower overall consumption than the maximum volume specified in the Building Regulations.

Severn Trent Water recommends that in all cases a developer should consider:

- single flush siphon toilet cistern and those with a flush volume of 4 litres;
- showers designed to operate efficiently and with a maximum flow rate of 8 litres per minute;
- hand wash basin taps with low flow rates of 4 litres per minute or less;
- water butts for external use in properties with gardens.