

Response ID ANON-NHWG-KKRY-N

Submitted to New Towns Draft Programme Consultation
Submitted on 2026-05-19 12:48:23

Introduction

1 Which best describes your response?

on behalf of an organisation

2 Which area are you responding about?

national interest

none

If you are responding about a wider region, please select which region you are responding about from the drop-down list:

3 What is your connection to the proposed location/region?

other

If you selected other, please expand here:

UK national geological survey organisation - specific knowledge related to geological feasibility

4 If you are responding on behalf of an organisation, please select the type of organisation you are responding from below

government department or agency

If you selected other, please expand here:

5 If you are responding on behalf of an organisation, what is the name of your organisation?

Please enter your answer here:

British Geological Survey

6 If you are responding on behalf of an organisation, what size is your organisation?

large (250+ employees)

Section 3.1 - Assessment of locations

7 Thinking about the 13 locations listed, which location(s) do you believe have positive features that could help achieve the objectives of the New Towns Draft Programme?

none

What do you think the positive features of the location(s) you've selected are? Please enter your answer here:

The British Geological Survey (BGS) is the UK's national geological survey and provides impartial geoscience evidence, data and expert advice to support government, regulators, industry and communities. BGS is not a statutory consultee for planning decisions; however, we welcome direct engagement—particularly at the early, pre-application stage—to help ensure that critical geological and subsurface considerations (such as ground conditions, groundwater, geohazards and legacy features) are identified and appropriately addressed from the outset, reducing the risk that material factors are overlooked.

Q7. What do you believe are the positive features of the locations?

A key positive across the seven locations is the level of subsurface understanding available, which provides a strong evidence base for planning and delivery. This enables ground conditions to be identified early and used to shape layout, sequencing and infrastructure decisions, particularly in relation to foundation performance, drainage behaviour and long term ground stability.

Several consistent, cross cutting opportunities are evident. All seven locations demonstrate potential for closed loop ground source heating and cooling systems, with around 70% showing more targeted potential for open loop ground source heating and cooling systems where groundwater and aquifer conditions are favourable, such as Chalk at Thamesmead or sandstone units at Brabazon and Manchester. Ground source heating and cooling systems offer a low carbon energy solution for heating and cooling buildings which can be used in conjunction with district heat networks or as a standalone system at the building-scale.

Around 85% of locations include floodplain deposits and shallow groundwater, which, while influencing drainage performance, provide clear opportunities for blue green infrastructure, nature based flood management and integrated water storage. Over half of the locations include significant redevelopment of existing urban areas or brownfield land regeneration, where existing ground data can support earlier understanding of subsurface variability and more targeted design, to help reduce development costs and risk.

Overall, the key positive is not simply the geology, but the ability to understand and apply it — enabling more efficient layout, improved foundation performance, integrated water management and resilient, low carbon infrastructure across all seven locations.

Building on this, each site presents specific opportunities:

Tempsford

River terrace gravels and varied superficial deposits support targeted drainage strategies, while higher ground provides more predictable settings for the bearing capacity of the ground for construction and ground conditions for early foundation design. Sand and gravel deposits also present opportunities for mineral resource use.

Crews Hill & Chase Park

Contrasts between gravel terraces and less permeable ground allow development to be structured spatially, with valleys providing natural corridors for blue green infrastructure and surface water management, while more competent ground conditions offer potential for more predictable building foundation performance.

Leeds South Bank

A strong regeneration context, combined with extensive existing ground data, supports early understanding of subsurface conditions and enables phased redevelopment, with floodplain areas integrated into drainage infrastructure rather than built development.

Manchester Victoria North

Existing brownfield conditions and prior land use data support a data led approach to development, helping to manage variability in ground conditions and enabling targeted solutions for foundations, drainage and energy systems.

Thamesmead

Floodplain and alluvial conditions provide significant opportunities for large scale blue green infrastructure and integrated water management, while the underlying Chalk aquifer offers potential for geothermal energy and utilisation of groundwater resources.

Brabazon & West Innovation Arc

Sandstone geology provides favourable conditions for infiltration, foundation support and geothermal systems, with clear variation in ground conditions supporting phased delivery and efficient infrastructure placement.

Milton Keynes (expansion)

Variation between floodplain, terrace and bedrock dominated areas provides a strong basis for strategic expansion, allowing development to be located on ground with more predictable foundation behaviour while integrating drainage, geothermal and infrastructure systems.

8 Which of the 13 location(s) listed might face barriers which could hold back delivery of the New Towns Draft Programme objectives?

none

What do you believe are the barriers to delivery in the location(s) you have selected? Please enter your comments here:

Q8. Do you think any of the locations face barriers which could hold back delivery?

Across the seven locations, a number of ground related factors may influence delivery. However, these arise from identifiable geological conditions and are therefore likely to be predictable and manageable when addressed early.

The most consistent factors relate to floodplain deposits and groundwater. Drainage capacity is likely to be reduced and groundwater levels elevated, affecting both flood susceptibility and the performance of drainage systems at around 85% of sites. This does not prevent development, but it directly influences layout, drainage design and phasing, with these areas better incorporated into water management systems and blue green infrastructure.

More widely, approximately 85% of sites include soft or variable ground, such as alluvium, peat or artificial deposits, which may compress under load and affect foundation performance, including settlement and differential movement. Around 70% of sites include soils or bedrock that limit infiltration and reduce drainage efficiency, while clay rich areas may undergo shrink-swell movement as moisture conditions change, influencing long term ground performance and structural stability. These factors mean that both foundation design and drainage systems must be tailored to site conditions rather than relying on standardised approaches.

Other geohazards occur across the portfolio and may affect local ground and infrastructure performance. These include corrosive ground conditions, which can affect buried infrastructure durability; dissolution in carbonate rocks, which may create locally variable rockhead and voids affecting foundations; running sands affecting excavation stability; and legacy mining introducing potential voids and ground variability. The presence and severity of these hazards varies between sites, but they are typically localised and well understood, allowing them to be managed through targeted investigation and appropriate design.

Climate change is expected to intensify many of these processes. Increased rainfall and groundwater pressures are likely to elevate flood risk and influence both drainage performance and soil behaviour, particularly in low lying and river corridor sites such as Thamesmead.

Overall, these factors are unlikely to represent fundamental barriers to delivery. The key risk is not the presence of complex ground conditions, but whether they are recognised early and incorporated into planning, layout, drainage and foundation design.

Applying this to each location:

Tempsford

Floodplain deposits and groundwater are likely to influence drainage performance and increase settlement potential in valley areas, affecting foundation design and phasing.

Crews Hill & Chase Park

Less permeable ground and alluvial deposits may limit infiltration and drainage performance, requiring site specific drainage solutions and careful control of ground moisture conditions.

Leeds South Bank

Alluvium, artificial ground and historic land use may lead to variable foundation conditions and groundwater interactions, requiring early and targeted investigation to support redevelopment.

Manchester Victoria North

Clay rich till, artificial ground and mining legacy may affect ground stability and foundation predictability, requiring tailored ground investigation and design.

Thamesmead

Thick alluvial and peaty deposits, combined with high groundwater, are likely to affect drainage systems, foundation performance and long term settlement behaviour.

Brabazon & West Innovation Arc

Variable superficial deposits and historic land use may introduce local variability affecting foundations and surface water management, requiring targeted characterisation.

Milton Keynes (expansion)

Floodplain groundwater and less permeable soils may limit infiltration, while shrink-swell behaviour in clay rich units may influence long term ground and foundation performance.

9 Do you think the SEA report has identified the main environmental issues relevant to the 13 locations?

Not sure

none

If you selected no, please expand here and select which location(s) you are referring to from the list above:

Q9. Do you have any comments about whether the SEA report has identified the main environmental issues?

We note that at this stage only a programme level SEA has been completed and more detailed assessments are planned in due course. However, we would highlight the following:

- Assessment of flood risk should include all sources of flooding, groundwater flooding risk does not appear to have been included. There are national scale datasets that provide an indication of groundwater flooding susceptibility, such as the BGS groundwater flooding susceptibility map
- Under the theme of land use, geology, and soils, consideration should also be given to:
 - o The impact of developments exacerbating land stability risks on site and in the surrounding area, e.g. the impact of loading and excavation.
 - o The loss of soil / geological function due to development e.g. sterilisation of mineral resources, impedance of groundwater flow, loss of subsurface space for future high-priority uses (e.g. transport tunnels; water resources), loss of high-quality green infrastructure on urban fringes e.g. semi-natural woodland/parks.
- Under the theme of climate change (adaptation and mitigation), consideration should be given to:
 - o The impact of climate change on ground risks such as subsidence. Projected changes in rainfall patterns and extremes in temperature are expected to increase susceptibility to a range of ground hazards. The cost of mitigating subsidence from shrink-swell clays, landslides and coastal erosion alone is estimated at more than £1 billion and is expected to increase significantly over the next 30 years due to climate change.
 - o The use of geothermal energy as part of the solution for district heating and cooling networks.
 - o The role of soil carbon storage, and provision of high-quality soil systems across urban and semi-natural green infrastructure. Recent BGS research suggests that urban soils have higher levels of organic carbon compared with agricultural land due to reduced disturbance. Where possible, high-value urban soils in semi-natural green spaces on urban fringes should be preserved and the development of high-functioning urban soils/green spaces should be incorporated into the new town design and considered in the soil resource management plan.

We are pleased that the SEA recognises the need to preserve and enhance geological SSSIs and Locally Important Geological Sites. We would also highlight the opportunity to enhance the regional geodiversity within the aspirations for place-making. The geodiversity of an area, particularly the landforms, rocks and natural processes, determine the character of our environment, and influence a range of aspects of the design and development of our built environment – including movement, nature, built form, identity, public space and resources. Understanding a region's geodiversity, therefore supports the delivery of beautiful places that work with the landscape. Combining planning for green-infrastructure with recognition and protection of geoheritage, which may include both natural and anthropogenic sites, may also provide multiple-benefits for biodiversity, health and sense of place. Geodiversity surveys and audits, can provide assessment of local and regional geodiversity and geoheritage sites to inform plan making and planning decisions, help to direct investment in green infrastructure, and encourage community engagement.

Building stone is an important characteristic of urban and rural built environments in England, with locally accessible stone and other building materials (such as brick clay) associated with regional styles and types of buildings in both urban and rural contexts. Ensuring access to building stone for conservation of heritage assets is already recognised within the current NPPF (paragraph 214), but delivery of beautiful new towns will require access to additional stone resources for new developments.

The British Geological Survey provides information and advice in relation to building stone resources including Mineral Planning Factsheets and the UK Minerals Yearbook to support land-use and mineral planning. Increased demand for mineral resources may provide wider benefits including opportunities for skilled employment and improved environmental sustainability by reducing reliance on imported stone.

However, minerals can only be worked where they occur, therefore transport of resources is required. As a result of the need to transport of minerals from areas of supply to other areas of demand (for example crushed rock aggregates by rail from the South West to London) it is important that the alignment policy test does not only apply to neighbouring authorities.

10 Is there any additional environmental information about these locations that the SEA should take into account?

Yes

If you answered yes, please tell us what additional information the SEA should consider:

Please see response under Q9.

11 Do you have any suggestions for practical mitigation measures to address any effects identified in the SEA report?

Not sure

If you answered yes, please set out the practical mitigation measures that should be considered:

12 Do you have any other feedback on the SEA report, including the issues and effects identified therein?

Enter your answer here:

Section 3.3 - Proposed New Towns Locations

13 Do you think the 7 locations proposed by the government are the ones most likely to meet the programme's objectives?

Not sure

If you answered no, please set out why you think the proposed locations do not meet the programme objectives here:

Section 4.1 - Government offer

14 Do you agree with the overall government offer for proposed new town locations?

Not sure

If you answered no, is there any additional support you think should be offered? Please enter your answer here:

15 Do you think there are any additional interventions that government should consider to ensure design and placemaking quality in new towns?

Yes

If you answered yes, please set out the additional interventions government should consider:

We note the intention for the new towns is to deliver ambitious density and environmental sustainability. Whilst these objectives are not mutually exclusive we would wish to highlight the importance of considering the impact of the proposed changes on availability and effective use of the subsurface (underground) space to ensure that development is sustainable.

For example, densification of habitation comes with additional requirements for subsurface space, e.g. for transportation and utility infrastructure, the development of deep basements and foundations associated with taller buildings, and the installation of net zero technologies such as urban heat networks and ground source heat pumps. Subsurface planning is therefore necessary to reduce risk in subsurface construction, avoid space utilisation conflicts, and maintain and enhance space for green infrastructure. High density developments are typically associated with a significant increase in hard standing and grey cover, and the use of infiltration sustainable drainage systems (SuDS) will be critical to manage surface water and avoid localised surface water flooding.

Examples of critical intersections for subsurface planning include:

- subsurface space utilisation conflicts, particularly between building foundations and basements and buried transportation and utility infrastructure
- expansion of urban heat networks and ground source heating systems whilst protecting groundwater resources, existing infrastructure and managing heat balances
- opportunities for exploiting mine water heat whilst mitigating ground instability in former mining areas
- use of Sustainable Drainage Systems (SuDS) to manage surface water flooding risks and encourage urban greening whilst preventing the mobilisation of pollutants in the ground and preventing land instability
- sterilisation of subsurface resources (e.g. aggregate and mineral resources) due to surface development

As the subsurface becomes more utilised, we regard consideration of the available three-dimensional underground space and geology essential for delivering sustainable, resilient new towns.

We would, therefore, welcome the inclusion of subsurface planning guidelines as part of the new town design and placemaking principles, particularly for high-density developments and urban extensions to enable planners to consider subsurface contexts and understand the relationship of subsurface planning to other planning considerations.

There are a range of datasets that provide information about the subsurface, including ground conditions, geological hazards and resources. These include geological maps (BGS Geology), the National Geotechnical Properties Database, geochemical data sets for soils and stream sediments (G-BASE), ground stability/ shallow geohazard susceptibility maps (GeoSure), a suite of maps of engineering properties and considerations (BGS Civils), maps highlighting potential for Sustainable Drainage Systems (BGS Infiltration SuDS), as well as a Brownfield Risk Calculator that integrates a range of these datasets to better inform local authorities and developers of the potential risk and cost of redevelopment on specific brownfield sites. Furthermore, we would like to highlight the outcomes of the recent Government Office for Science 'Future of the Subsurface' Foresight Project which demonstrates the role of the subsurface for sustainable development, climate action, and future economies. Improving coordination and regulation of the subsurface through planning and investment in tools to support decision-making are key recommendations of the project.

Section 4.2 - New Towns planning policy

16 How clear do you find the proposed planning policy?

don't know

If you answered somewhat unclear or very unclear, which elements are unclear and how would you suggest changing them? :

17 Do you think establishing placemaking principles in the proposed planning policy is an effective way to implement the placemaking ambition of the programme?

Not sure

If you answered no, how do you think the placemaking principles should be implemented?:

18 Do you think the proposed planning policy provides sufficient flexibility to new town locations to meet the placemaking principles?

Not sure

If you answered no, what other measures could create a flexible approach to the placemaking principles? Please enter your answer here:

19 Is establishing a 40% target for affordable housing an effective way of delivering an ambitious number of affordable homes?

Not sure

If you answered no, what changes to the target are needed? Please enter your answer here:

20 Is the proposed planning policy on giving substantial weight in decision-making to the social and economic benefits of new towns clear?

Not sure

If you answered no, please provide your reasons here:

21 Do you agree with the government's approach to decision-making policy on the Green Belt?

Not sure

If you answered no, what further changes to plan-making or decision-making policy needed to deliver sufficient clarity? Enter your answer here:

22 Do you think the proposed planning policy is sufficient for the purposes of safeguarding land for development as new towns?

Not sure

If you answered no, how could the policy statement go further? Enter your answer here:

23 Do you think any additional planning policies are needed to support the delivery of the programme objectives?

Yes

If you answered yes, please provide details here:

We would draw your attention to the 'Ground Data for Growth Bill', which was brought to Parliament by Mike Reader MP (APPG chair for infrastructure) in March 2026. Whilst this did not pass within the parliamentary session, the value of geological data sharing is currently under consideration by DSIT, including the mandated sharing of ground data (e.g. borehole data, geotechnical data) collected as part of publicly-funded projects to be submitted to the National Geoscience Data Centre for wider sharing and re-use. Such data is estimated to be worth £1.2 billion per year to the UK economy but at present only a fraction of this data (<5-10%) is submitted to the BGS-operated National archive. As an example, quoted by Mike Reader MP 'the cost of ground investigations for High Speed 2 phase 1 is over £300 million. That is £300 million of public money spent on data that will be locked away for decades and lost, but that could be used to help better deliver the growth that we need'.

We recommend that a planning policy is put in place for the proposed New Towns programme which follows the principle of the 'Ground data for Growth' Bill and requires that contractors submit all ground data collected as part of the ground investigations for the new towns development to BGS' National Geoscience Data Centre .

Geological data offers the essential evidence needed to make informed decisions about national infrastructure, economic development, and

environmental resilience. However, obtaining high quality “ground truth” data is often difficult, intrusive, and expensive. As a result, much of the information geoscientists rely on to understand and model the composition and behaviour of the subsurface comes from data shared voluntarily by industry such as records from ground investigations, construction projects, and mining operations.

During the first phase of new town development in the UK in the 1960-70s Milton Keynes took the approach of submitting ground investigation boreholes to BGS' National Geoscience Data Centre, as a result there are approximately 125 boreholes / km² within our borehole index and openly available for use via our GeoIndex map viewer to support on-going growth, regeneration, and infrastructure maintenance – borehole records in our Geoindex are downloaded >50,000/month. By comparison, Birmingham which has not had a benefit of ground data sharing initiative, only has a borehole coverage of 41 boreholes / km² in our borehole index introducing more risk and uncertainty in early-stage characterisation of ground conditions.

Glasgow is an example of where high levels of ground data sharing has been achieved and a high-resolution 3D urban geology model and geotechnical model have been developed to support sustainable planning approaches and exploration of geothermal technologies .

Final questions

24 Do you have any views on any potential impacts of the New Towns Draft Programme on people or groups with protected characteristics?

Please provide comments here:

25 Is there anything else you would like to tell us that you think is relevant to this consultation but has not been covered in previous questions?

Enter your answer here: