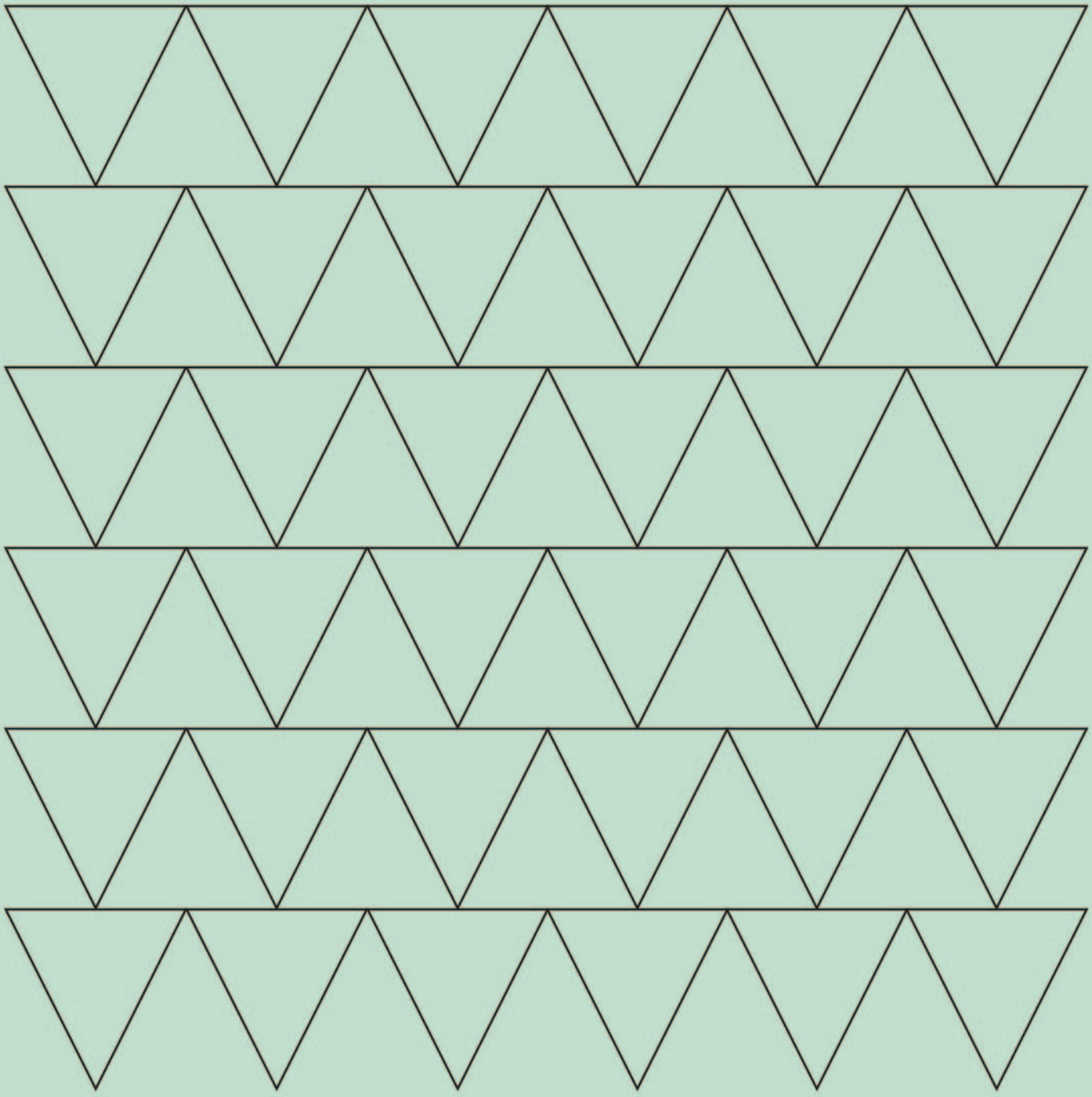

Keith Green Energy & Infrastructure Framework

November 2023

A Just Transition strategy for Moray

netzeronation.scot

Prepared by: Collective Architecture

Collective Architecture
4th Floor, Albert Chambers
13 Bath Street, Glasgow G2 1HY

info@collectivearchitecture.co.uk
www.collectivearchitecture.co.uk

Client: Moray Council

Council Offices High St,
Elgin IV30 1BX

Project Team:
Architect: Collective Architecture
Project Manager: Currie & Brown
Environmental Consultant: LUC
Planning Consultant: JLL
Hydrology Consultant: AECOM
Civil Engineer: G3 Engineering
Transport Consultant: Meinhardt

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CONTENTS

"The brief is to develop a strategic framework for Blackhillock and Keith North East (NE) in order to clearly guide development proposals for grid infrastructure and energy systems/storage associated with renewable energy to the most appropriate locations in and around Keith. This will help to speed up the planning process, delivery of associated facilities and jobs and the overall transition to Net Zero.'

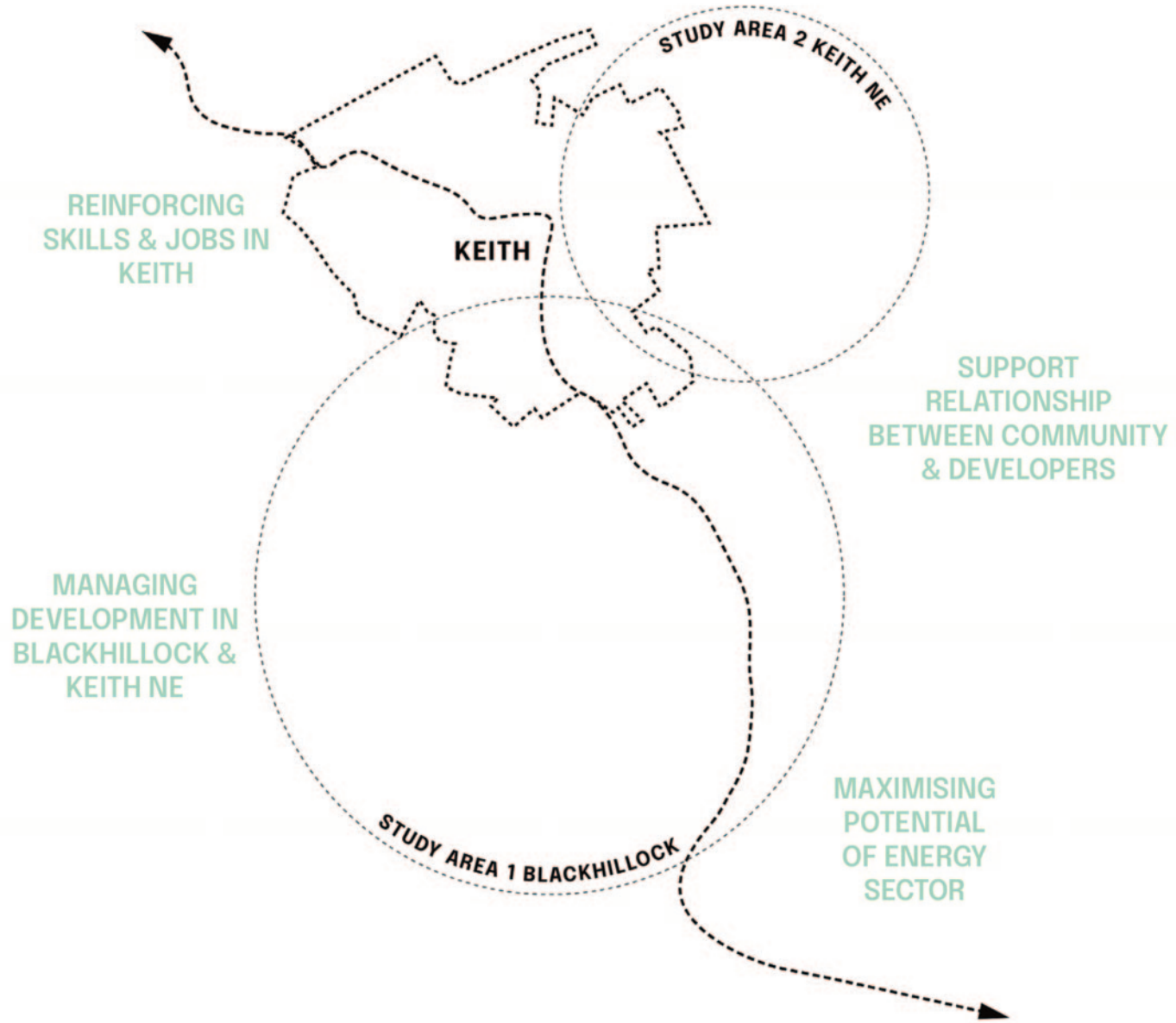

Figure 1 Diagram Presenting Keith and the study areas

Introduction

This draft strategy seeks to develop a strategic framework with a focus on energy & infrastructure for Keith NE and Blackhillock and sets out the following:

01 **A strategy for future development in Keith NE and Blackhillock.**

02 **A landscape sensitivity assessment of the Blackhillock and Keith NE area.**

03 **Identifies potential development sites, including any requirements for the expansion of the existing Substation and opportunities identified in the Moray Hydrogen Strategy.**

04 **Identifies infrastructure improvements required to accommodate a variety of uses on opportunity sites.**

05 **Consultation and engagement with public/private sector organisations, including SSEN and Keith and Strathisla Community Council, on how the area surrounding Blackhillock should develop.**

06 **Recommendations for landscape mitigation required to integrate future development opportunities.**

Strategic Framework For Blackhillock & Keith NE

A framework to guide holistic and considered development in the area based on the National Planning Framework (NPF4) and other national development policies including the Energy Strategy, and future and existing development demands in order with the aim to safeguard the landscape and setting of the town.

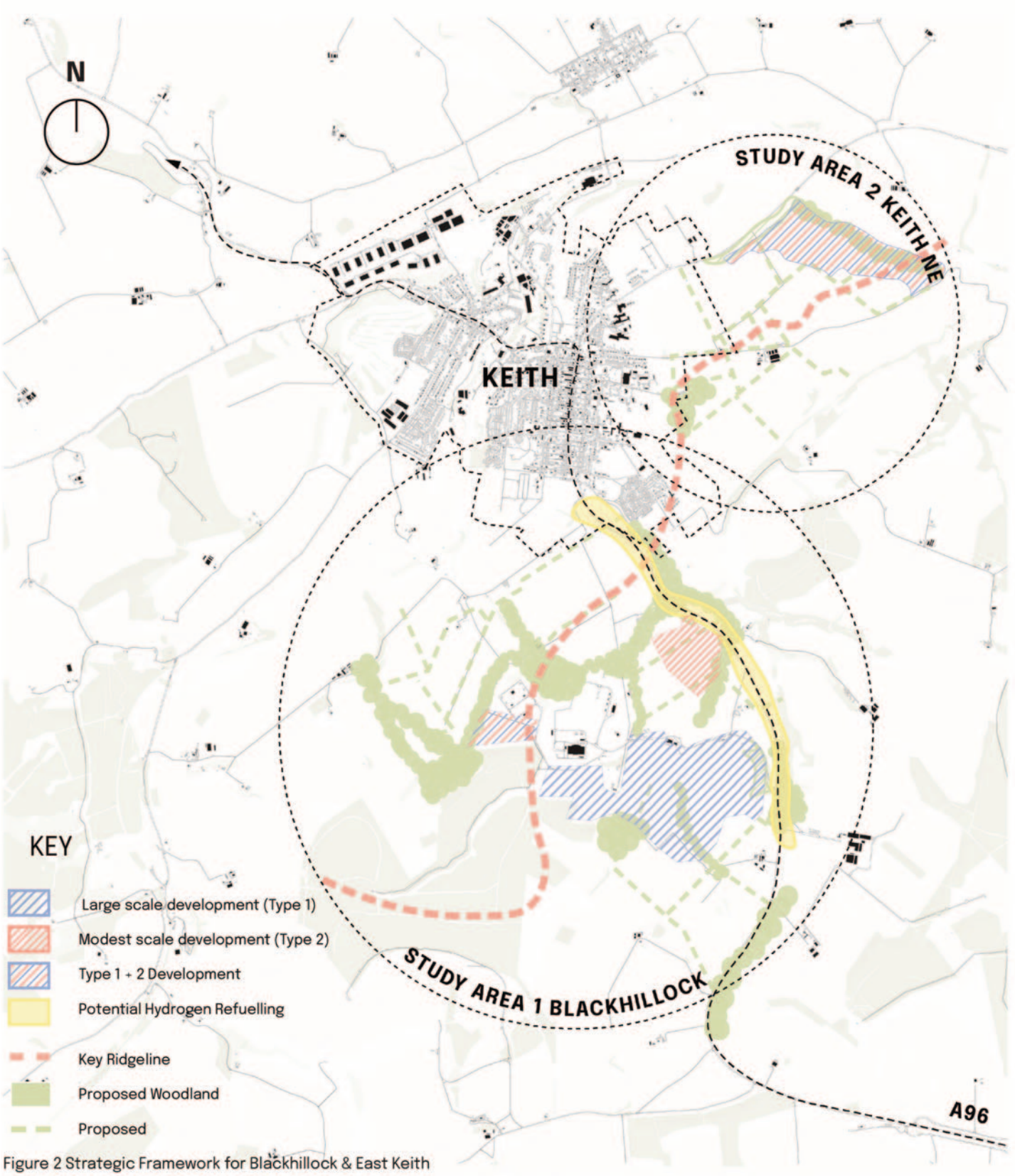

Figure 2 Strategic Framework for Blackhillock & East Keith

01 NATIONAL AND MORAY CONTEXT

This chapter sets out the national and local policy context and Moray's role in the transition to Net Zero

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National Planning Framework 4 (NPF4)

National Planning Framework 4 (NPF4) was adopted in February 2023 and sets out Scottish Government spatial principles, regional priorities, national developments and national planning policy. The six overarching spatial principles of the Plan are described opposite.

NPF4 sets out the National Spatial Strategy for Scotland up to 2045 and National Planning Policy to inform its delivery. NPF4 forms part of the Statutory Development Plan along with the Moray Local Development Plan 2020 (LDP) and associated planning guidance. The Strategy sets out the spatial priorities for the five regions of Scotland as identified by NPF4. In terms of Moray, the National Spatial Strategy aims to deliver:

- **Sustainable Places** - Protect environmental assets and stimulate investment in natural and engineered solutions to climate change and nature restoration, whilst decarbonising transport and building resilient connections.

- **Liveable Places** - Maintain and help to grow the population by taking a positive approach to rural development that strengthens networks of communities.

- **Productive Places** - Support local economic development by making sustainable use of the areas' world-class environmental assets to innovate and lead greener growth.

  This needs to be balanced with protecting the natural and built environment from inappropriate development.

Just transition

We will empower people to shape their places and ensure the transition to net zero is fair and inclusive

Local living

We will support local liveability and improve community health and wellbeing by ensuring people can easily access services, greenspace, learning, work and leisure locally.

Conserving and recycling assets

We will make productive use of existing buildings, places, infrastructure and services, locking in carbon, minimising waste, and building a circular economy.

Rebalanced development

We will target development to create opportunities for communities and investment in areas of past decline, and manage development sustainably in areas of high demand.

Compact urban growth

We will limit urban expansion so we can optimise the use of land to provide services and resources, including carbon storage, flood risk management, blue and green infrastructure and biodiversity.

Rural revitalisation

We will encourage sustainable development in rural areas, recognising the need to grow and support urban and rural communities together..

Six overarching principles of NPF4

Scottish Government Draft Energy Strategy and Just Transition Plan

The Scottish Government's Just Transition Plan aims to ensure that the economic advantages of a green economy are widely shared amongst regions, industries, communities, and consumers.

The public consultation on the Scottish Government's Draft Energy Strategy and Just Transition Plan ran from January – May 2023. The strategy sets out key ambitions for Scotland's energy future proposing a vision for a just energy transition that benefits communities and workers across Scotland, provides high-quality jobs and economic benefit, delivers affordability, and protects the environment and energy security. Figure 3 sets out the vision for a net zero future will be delivered.

The Scottish Government's draft Energy Strategy sets out the following action to deliver their vision for net zero:

- **Significantly scale up renewable energy production.**
- **Maximise community benefit from energy projects.**
- **Continue to invest in the net zero energy economy and provide certainty through clear market signals to attract increased private investment.**
- **Ensure the energy transition supports Scotland's ambitions for restoring nature and reversing biodiversity loss, including through avoidance of negative impacts**

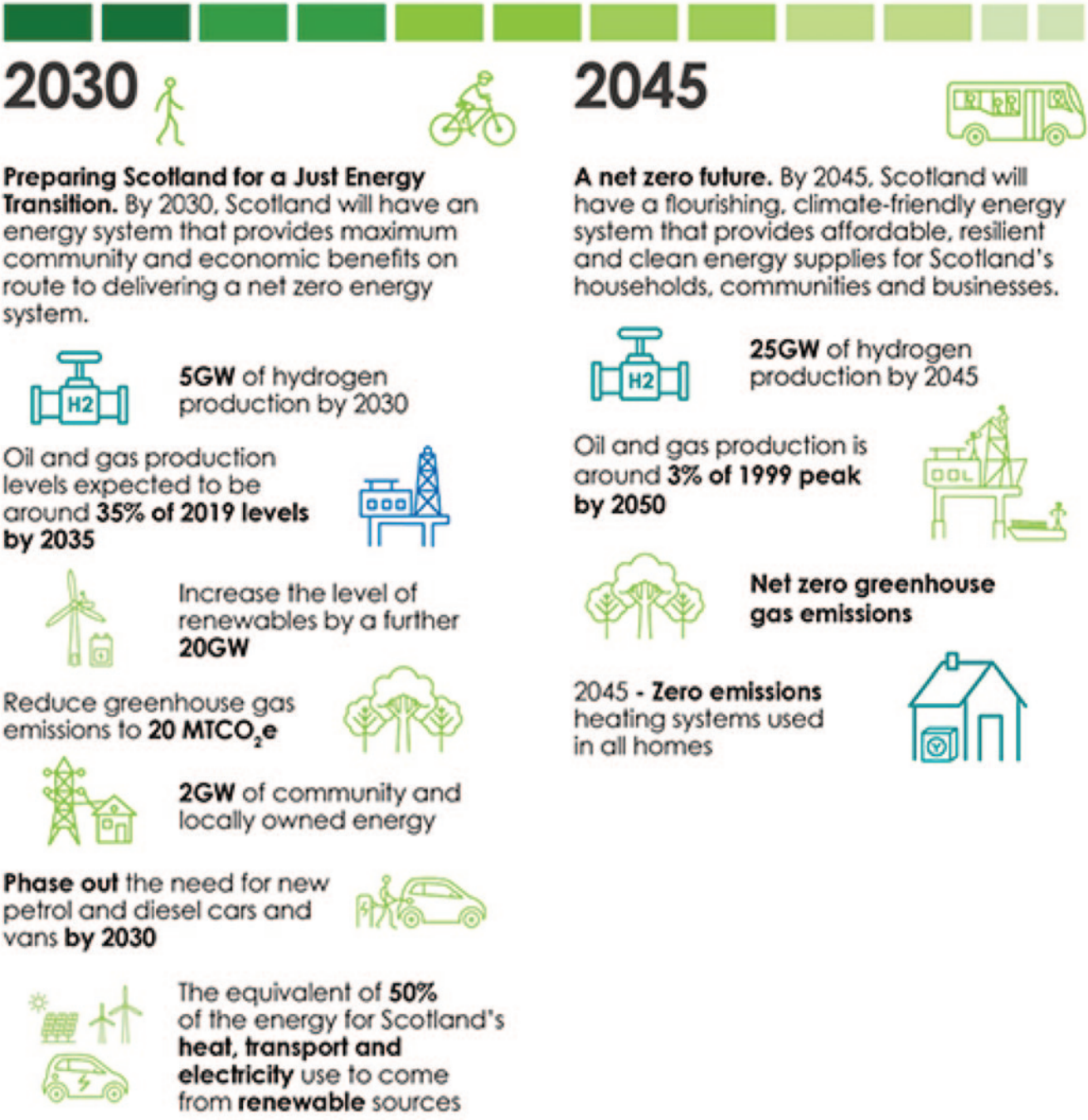

Figure 3 - Scotland's Journey to Net Zero – Delivering the Vision
Source – Pg 21, Draft Energy Strategy and Just Transition Plan (2023)

NPF4 and the Keith Green Energy and Infrastructure Framework

The Keith Energy and Infrastructure Framework seeks to ensure that the principles of NPF4 are delivered in a balanced and appropriate way for Keith and the surrounding area.

Along with the 6 spatial principles outlined in NPF4, the plan has also identified 18 national development which will help deliver the spatial strategy. These are listed on the page 15.

Strategic Renewable Electricity Generation and Transmission Infrastructure

Keith and Blackhillock currently operate as strategic locations for energy infrastructure, providing a nationally significant role in energy transmission. With another substation proposed in the Keith locality by SSEN and the co-location opportunities for secondary energy associated technologies such as battery storage systems coming forward,

This study seeks to inform the management of future change in the area, implementing the spatial objectives of NPF 4 to provide an integrated strategy to bring together cross-cutting priorities and achieve sustainable development.

Once adopted the strategy will therefore be used as a decision making tool in the planning process to support Moray Council in the delivery of their climate change and biodiversity obligations under NPF4.

National Developments:

1. Energy Innovation Development on the Islands
2. Pumped Hydro Storage (Scotland Wide)
3. **Strategic Renewable Electricity Generation & Transmission Infrastructure (Scotland Wide)**
4. Circular Economy Materials Management Facilities (Scotland Wide)
5. Urban Sustainable, Blue and Green Surface Water Management Solutions (Edinburgh & Glasgow)
6. Urban Mass/Rapid Transit Networks (Aberdeen, Edinburgh and Glasgow)
7. Central Scotland Green Network
8. National Walking, Cycling and Wheeling Network (Scotland Wide)
9. Edinburgh Waterfront
10. Dundee Waterfront
11. Stranraer Gateway
12. Digital Fibre Network
13. Clyde Mission
14. Aberdeen Harbour
15. Industrial Green Transition Zones
16. Hunterston Strategic Asset
17. Chapelcross Power Station Redevelopment
18. High Speed Rail

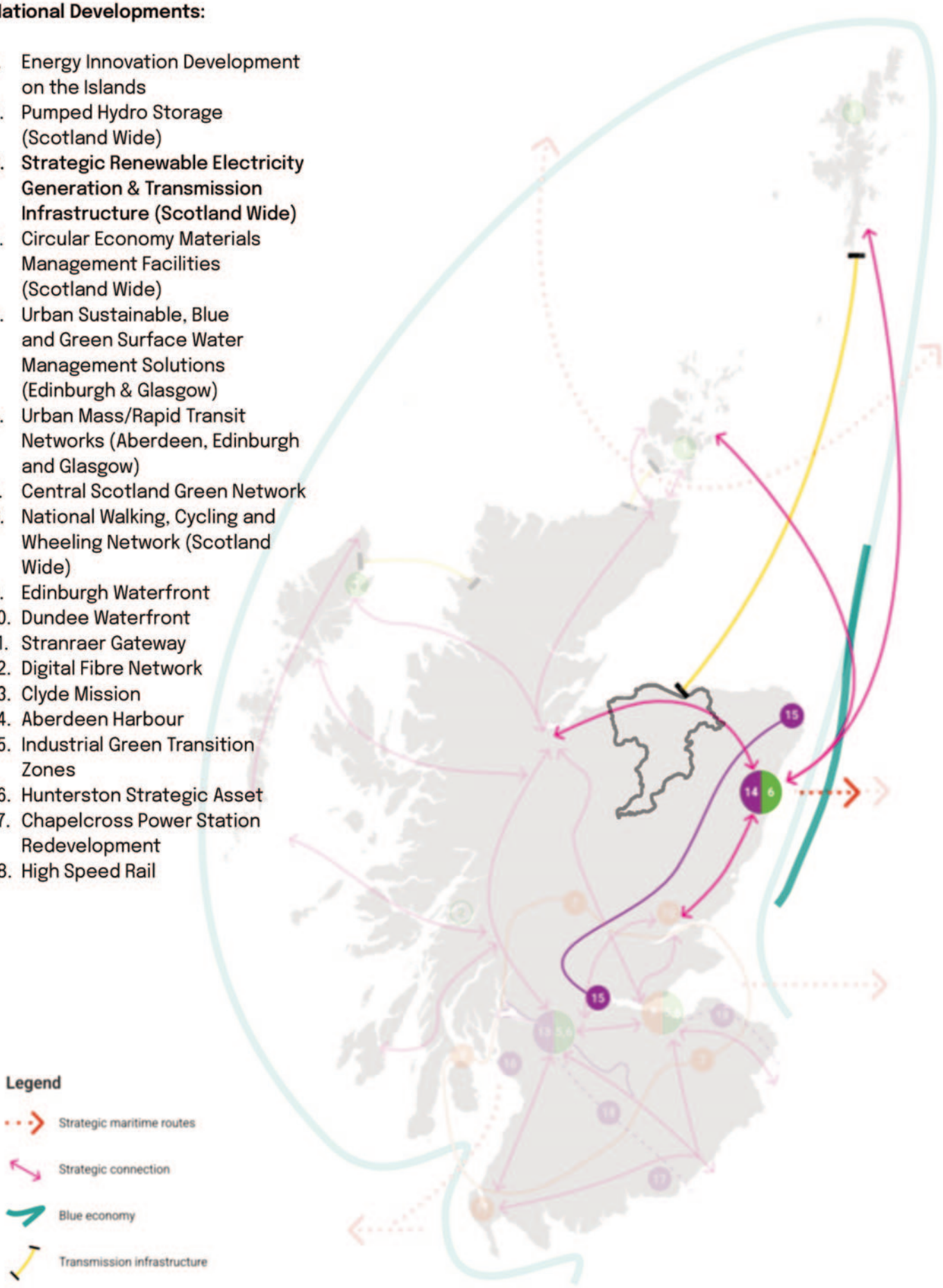

Figure 4 Extract from NPF4 outlining National Developments and their relevance to North East Scotland

NPF4's key policies in regard to climate change are set out below. Community Wealth Building is an important aspect of any development proposal and therefore is also cited. These policies are not exhaustive and any renewable energy proposal must be balanced against policies which protect the natural and built environment of Moray to guide development to the most suitable locations.

1 - Tackling the Climate and Nature Crises seeks to encourage, promote, and facilitate development that addresses the global climate emergency and nature crisis. Key policy outcomes include promoting zero carbon and nature positive places.

2 - Climate Mitigation and Adaptation seeks to encourage, promote, and facilitate development that minimises emissions and adapts to the current and future impacts of climate change. Development proposals must be sited and designed to minimise lifecycle greenhouse gas emissions and adapt to risks from climate change. Any retrofit measures to existing developments that reduce emissions or support adaptation to climate change will be supported. Key policy outcomes are to minimise emissions from development and to make Scotland more resilient to climate change impacts.

3 - Biodiversity aims to protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks. Any potential adverse impacts, including cumulative impacts, of development proposals on biodiversity, nature networks and the natural environment will require to be minimised through careful planning and design, and where required adverse impacts will be fully mitigated. Key policy outcomes of Policy 3 are to enhance biodiversity and strengthen nature networks and nature-based solutions.

4 - Natural Places seeks to protect, restore, and enhance natural assets making best use of nature-based solutions. Policy 4 sets out specific guidance on development which impacts local to internationally important natural assets. The key policy outcomes are to protect and restore natural places, and to manage and grow natural assets in a sustainable way.

11 - Energy seeks to encourage, promote, and facilitate all forms of renewable energy development onshore and offshore including energy generation, storage, new and replacement transmission and distribution infrastructure and emerging low-carbon and zero emissions technologies including hydrogen and carbon capture utilisation and storage. Key policy outcomes include the expansion of renewable, low carbon and zero emissions technologies and maximising net economic benefits, including local and community socio-economic benefits.

25 - Community wealth building seeks to encourage, promote and facilitate a new strategic approach to economic development that also provides a practical model for building a wellbeing economy at local, regional and national levels. The key policy outcomes include local economic development that focuses on community and place benefits as a central and primary consideration and supports community ownership and management.

29 - Rural Development seeks to encourage rural economic activity, innovation and diversification whilst ensuring that the distinctive character of the rural area and the service function of small towns, natural assets and cultural heritage are safeguarded and enhanced. Key policy outcomes include to create vibrant, balanced, and sustainable rural communities.

Moray Local Development Plan (MLDP) 2020

The MLDP was formally adopted in July 2020. The MLDP provides a vision for the area as a place where "people want to live, work and invest in Moray because of the outstanding quality of life and environment." This is supported by a series of objectives including the below which is relevant to this framework:

- **Protect and enhance the built and natural environment.**
- **A strong framework for investment that provides sufficient land for development and supports sustainable economic growth.**
- **Encourage efficient use of land and promote low carbon and sustainable development.**
- **Improve resilience of the natural and built environment to climate change.**

MLDP Land Use Allocations for Framework Study Areas

The land use allocations for the Study Areas in this Framework (Blackhillock and Keith North East) are set out below.

Figure 5 shows the allocations and designations within the larger study area to the south of Keith. The northern edge of the site is allocated as other functional greenspace (environmental) with a smaller plot as a long-term residential site. The area in green to the south of Keith is allocated as 'Countryside Around Towns (CAT)' where only specific uses will be accepted as set out under Policy EP4 below. The red strip to the southern edge of the site is identified as an area with potential for wind farm development in Moray Council's wind farm spatial framework.

Blackhillock Study Area

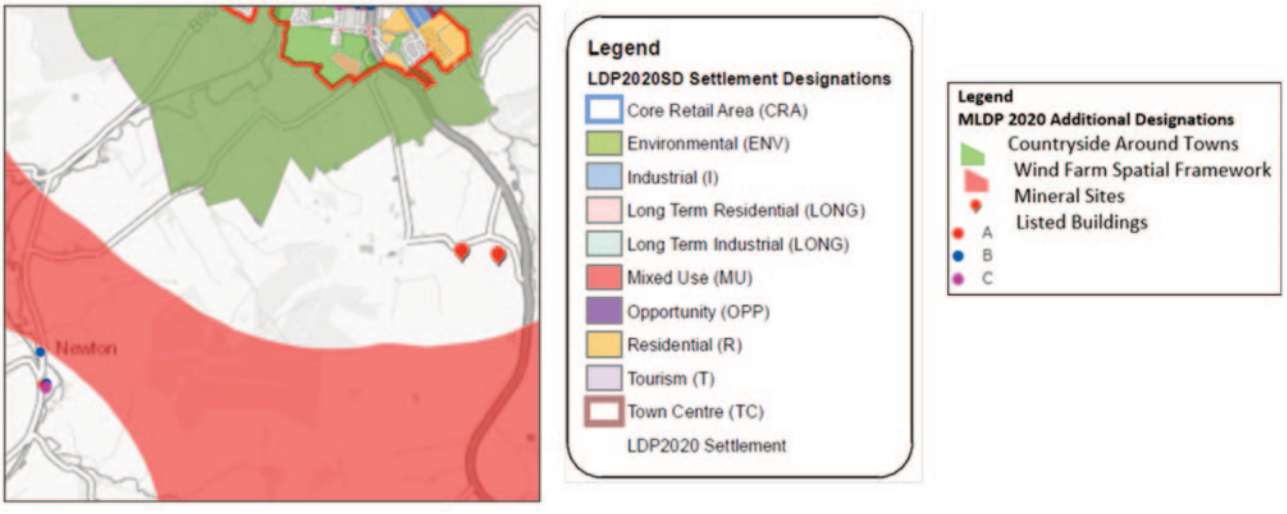

Figure 5 - Extract from MLDP (2020) Sites and Designations Map - Keith Study Area
Source - MLDP Website (2020)

Keith NE Study Area

As shown in figure 6 and 6.1 below, within the Keith NE study area, there are a number of allocations on the western edge of the site. To the west of Keith substation are sites allocated for environmental protection, industrial use, and long-term industrial use. There is also a large mixed use site to the north of the existing substation and a residential site to the southwest of the substation.

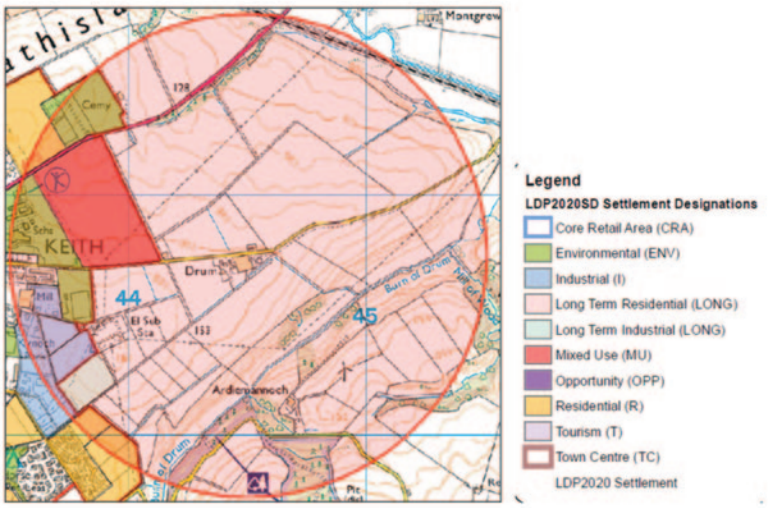

Figure 6 - Extract from MLDP (2020) Proposals Map - Keith NE Study Area Settlement Designations
Source - MLDP Website (2020)

Figure 6.1 shows that the setting of Keith is protected by a Countryside Around Towns (CAT) land use allocation. The Mill Wood SSSI is located in the eastern edge of the site.

Figure 6.1 - Extract from MLDP (2020) Proposals Map - Keith NE Study Area Additional designations
Source - MLDP Website (2020)

The key MLDP policies are outlined below. This is not an exhaustive list and other policies may be applicable depending on the type, scale and nature of the development proposal along with any other relevant planning guidance.

EP1 - Natural Heritage Designations – seeks to protect any local, national, or international natural heritage designations and protected species.

EP2 - Biodiversity – seeks to retain, protect, and enhance features of biological interest and provide for their appropriate management.

EP3 - Special Landscape Areas and Landscape Character – seeks to protect any landscape designations and to ensure new development reflects the landscape characteristics of the locale identified in the landscape character assessment.

EP4 - Countryside Around Towns – seeks to restrict development around towns including Keith unless they meet certain criteria to prevent development sprawl into the countryside.

EP5 - Open Space – seeks to protect existing allocated open space and sets out guidance for open space in new development.

EP6 - Settlement Boundaries – seeks to limit the expansion of the existing settlement boundaries.

EP7 - Forestry, Woodlands and Trees sets out Moray Council's forestry and woodland strategy including guidance on tree retention, controlling woodland removal and compensatory planting.

DP9 – **'Renewable Energy'** states that all renewable energy proposals will be considered favourably where they meet the relevant criteria. The policy criteria includes safeguarding and enhancing the built and natural environment, avoiding any unacceptable significant adverse landscape and visual impacts, etc., ensuring that proposals do not result in the loss of prime agricultural land, and consideration of the extent that the proposal contributes to renewable energy targets, its effect on greenhouse gas emissions and net economic

Moray Hydrogen Strategy

In September 2022, the Moray Hydrogen Strategy was adopted having been developed with the Highland and Islands Enterprise (HIE) to coordinate the development of a hydrogen economy in Moray. The Moray Hydrogen Strategy examines the short, medium, and long-term actions required to develop a hydrogen economy for Moray and assesses the significant opportunities to generate local community benefits in relation to social, economic, and environmental wellbeing, supporting Scotland's ambitions for a Just Transition.

Blackhillock substation is identified as a Medium -Term Production Location (2030-2040) suitable for producing and distributing hydrogen using tube trailers or a new pipeline network to nearby industrial users and the wider transport network within Moray. There is opportunity to create a Hydrogen Corridor through Moray by considering hydrogen refuelling stations along the route of the A96 (with Blackhillock offering a location approximately halfway between Aberdeen and Inverness).

The Strategy outlines that the Blackhillock area has potential to be the renewable hub of Moray, because of access to power from offshore wind.

02 Keith in Context

This chapter sets out the national and local policy context and Keith's role in the transition to Net Zero.

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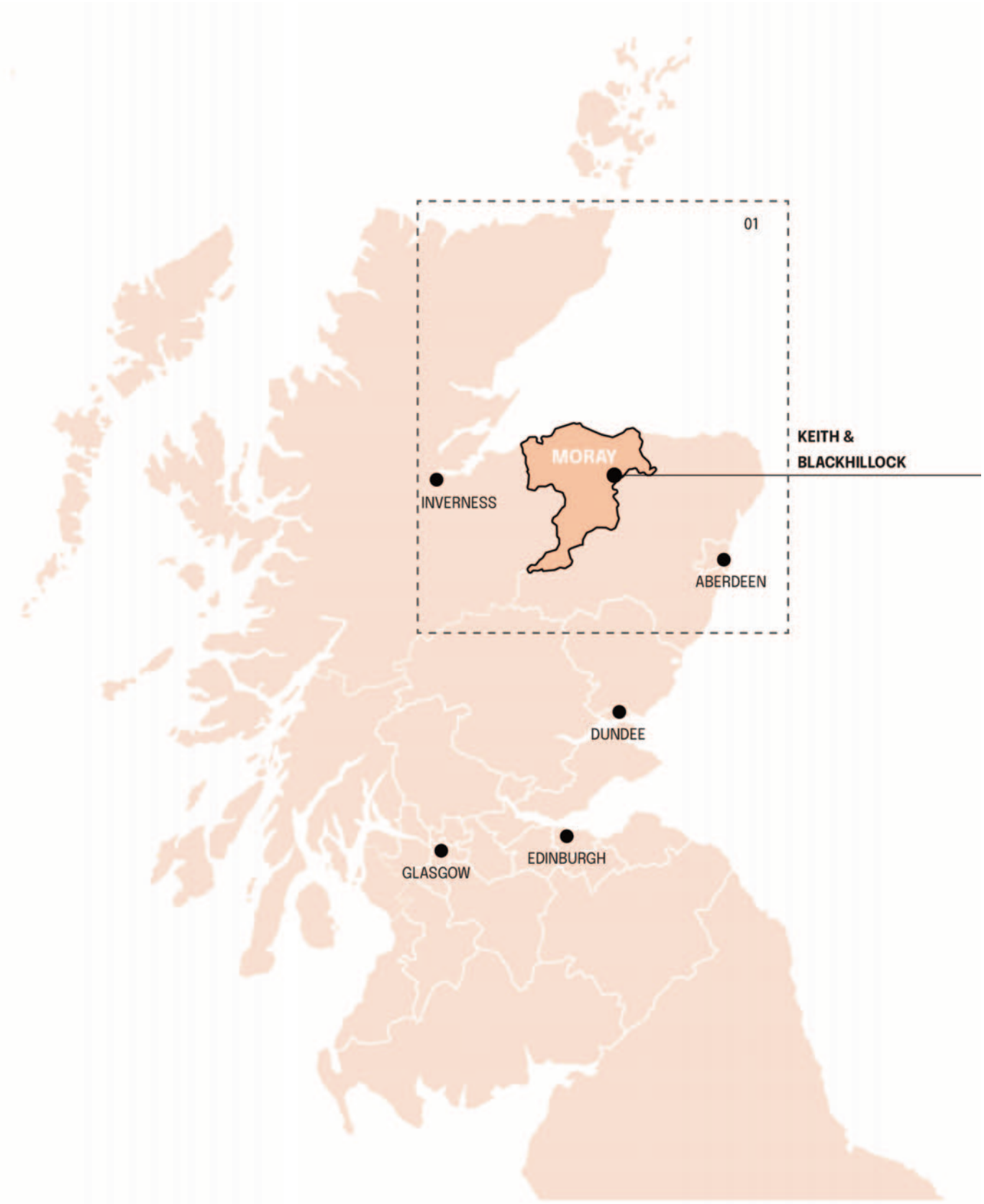

Figure 7: Map of Scotland identifying Moray Region, Keith and Blackhillock

2.1 National Level

Moray is located in the north east of Scotland between the Aberdeenshire and Highland local authority areas. The Moray area includes the coastline of the Moray Firth and stretches inland to the Cairngorms. The majority of towns in Moray are situated in the northern area of the district where most of the population resides.

Blackhillock, which lies just below the town of Keith, is home to the largest substation in the UK and covers an area of at least 24 football pitches (approximately 17 hectares). The station allows power generated by renewable sources to be processed and transferred to the national grid.

It is seen as important to the UK electricity grid since the north of Scotland generates the majority of its renewable energy through windfarms.

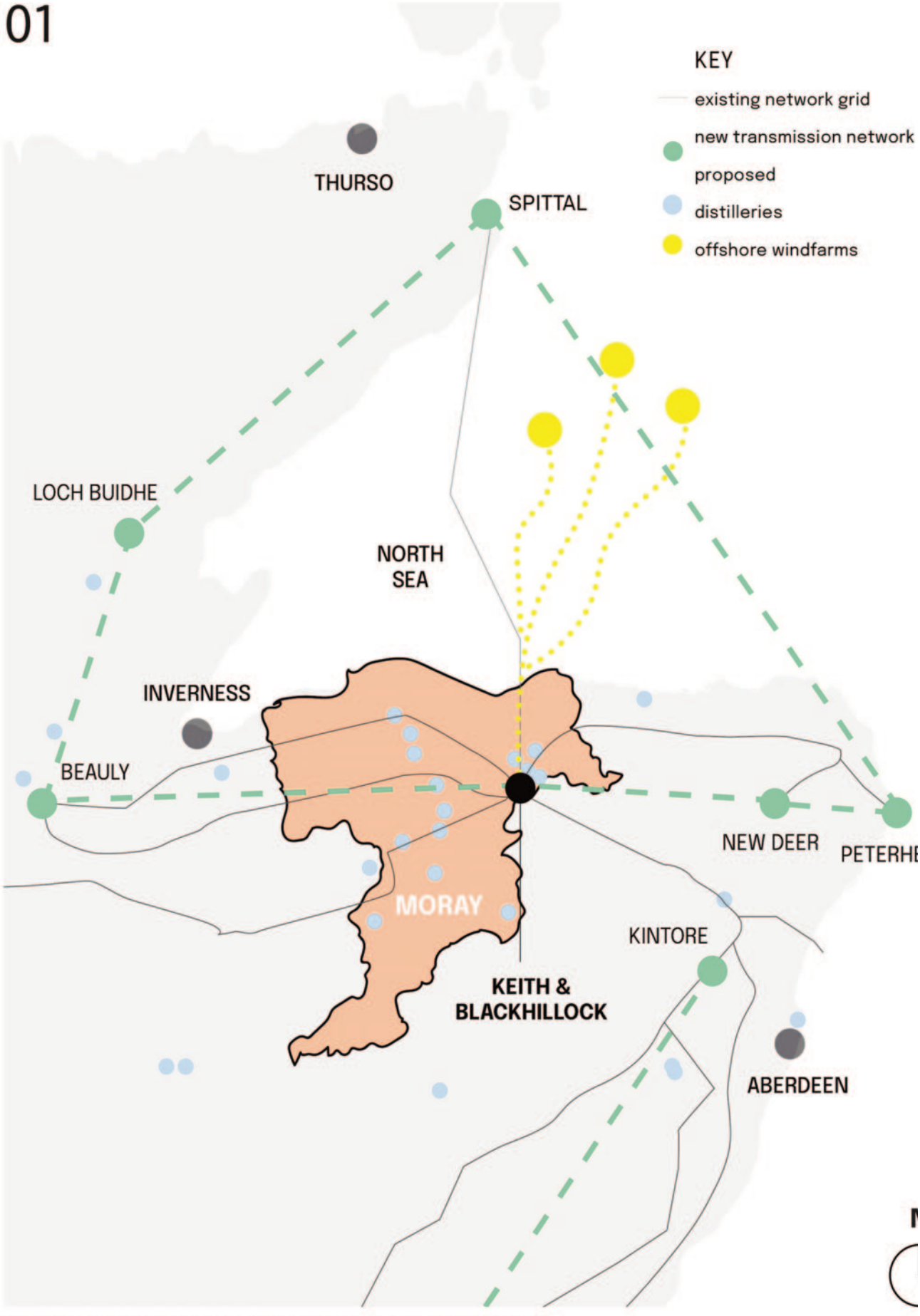

Figure 8 Regional Map - Information extracted from 'Pathway to 2030' by SSEN

2.2 Regional Level

At a regional level, Keith and Blackhillock sit within a network of energy infrastructure spanning from Spittal in the far North to Peterhead in the East. It sits between the two cities of Inverness and Aberdeen connected by the A96 and in proximity to the North Sea. The area is also home to a large number of distilleries and various industries.

Blackhillock substation was upgraded in 2019 to accommodate a new station. The Beatrice substation completed in 2022 which, alongside the Blackhillock substation processes the electricity generated by the Beatrice offshore windfarm (90km away). This electricity is then transmitted to the adjacent Blackhillock station where it is transferred to the national grid.

The Scottish Government has identified that efforts should be focused on wind energy, as this is one of the cheapest form of electricity making it the most viable option. The aim is to generate at least 50% of Scotland's energy demand through renewables.

Both of these stations are owned and operated by Scottish Southern Electricity Network (SSEN).

"In July 2022, National Grid, the Electricity System Operator (ESO) responsible for making sure that the electricity flows across the UK's system, balancing supply and demand at all times, set out how the transmission network needs to develop to accommodate the growth in renewable electricity across Great Britain. This includes delivering the UK and Scottish Government's 2030 offshore wind targets of 50GW and 11GW." - SSEN

To enable the projects identified in the 'Pathway to 2030' by SSEN, which have been recognised as vital to meeting the ambitions set out by the UK and Scottish Government with regards to energy, a new substation is required in the Keith/Blackhillock area.

2.3 Local Scale

On a local scale Keith NE and Blackhillock areas lie outwith the town of Keith. The vital A96 road which connects Aberdeen to Inverness passes directly through the town and past Blackhillock.

The map overleaf identifies the two key study areas outlined in this framework

Blackhillock - Study Area 1

Keith NE - Study Area 2

These areas, specifically around the substation are largely industrial and farmland and consist of the following industries (See map for location):

1. **Blackhillock substation**
2. **Beatrice substation**
3. **Blackhillock & Cairdshill Quarry**
4. **A number of whisky distilleries in Keith**
5. **Keith substation**
6. **Edintore Windfarm**
7. **Agricultural land**
8. **One of the sites being looked at by SSEN for a new substation**

KEY

- Train
- Train station
- Roads
- Industrial
- Woodland
- Keith
- Distillery

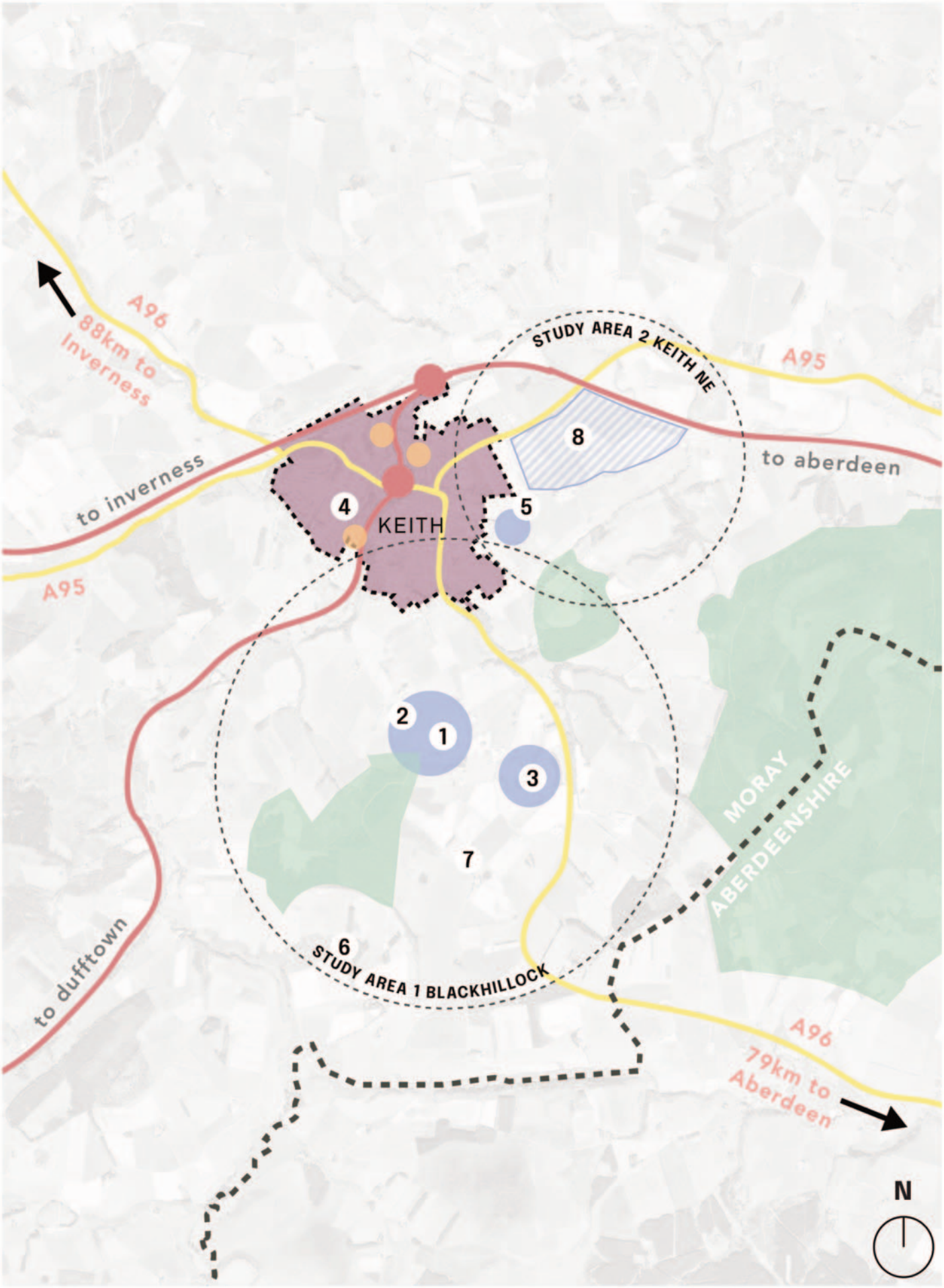

Figure 9 Map of Keith and the two study areas

03 Town of Keith

The following outlines a high level urban analysis of the town of Keith, that charts its evolution and its current form.

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Figure 10 - Keith Town

3.1 Historical Context

The town of Keith is located in the north-east of Moray and has a population of around 4700. It is divided into three distinct areas: Keith, the main commercial centre, Old Town, where the town originated and Fife Keith. Fife Keith, once a separate town created in rivalry by the Earl of Fife, was finally combined to form one village, presently divided only by the river.

The Old Town has become nearly indistinguishable from the rest of the town and was first established around the old bridge in Keith about the year 1180. The town's central area was planned around 1750 and is located on higher ground above the river.

1868

1900

KEY

(Diagram Opposite)

- Keith Town Boundary
- Keith Areas
- Conservation Areas
- River
- Study Area Boundary

1938

Figure 11 Historical Maps of Keith

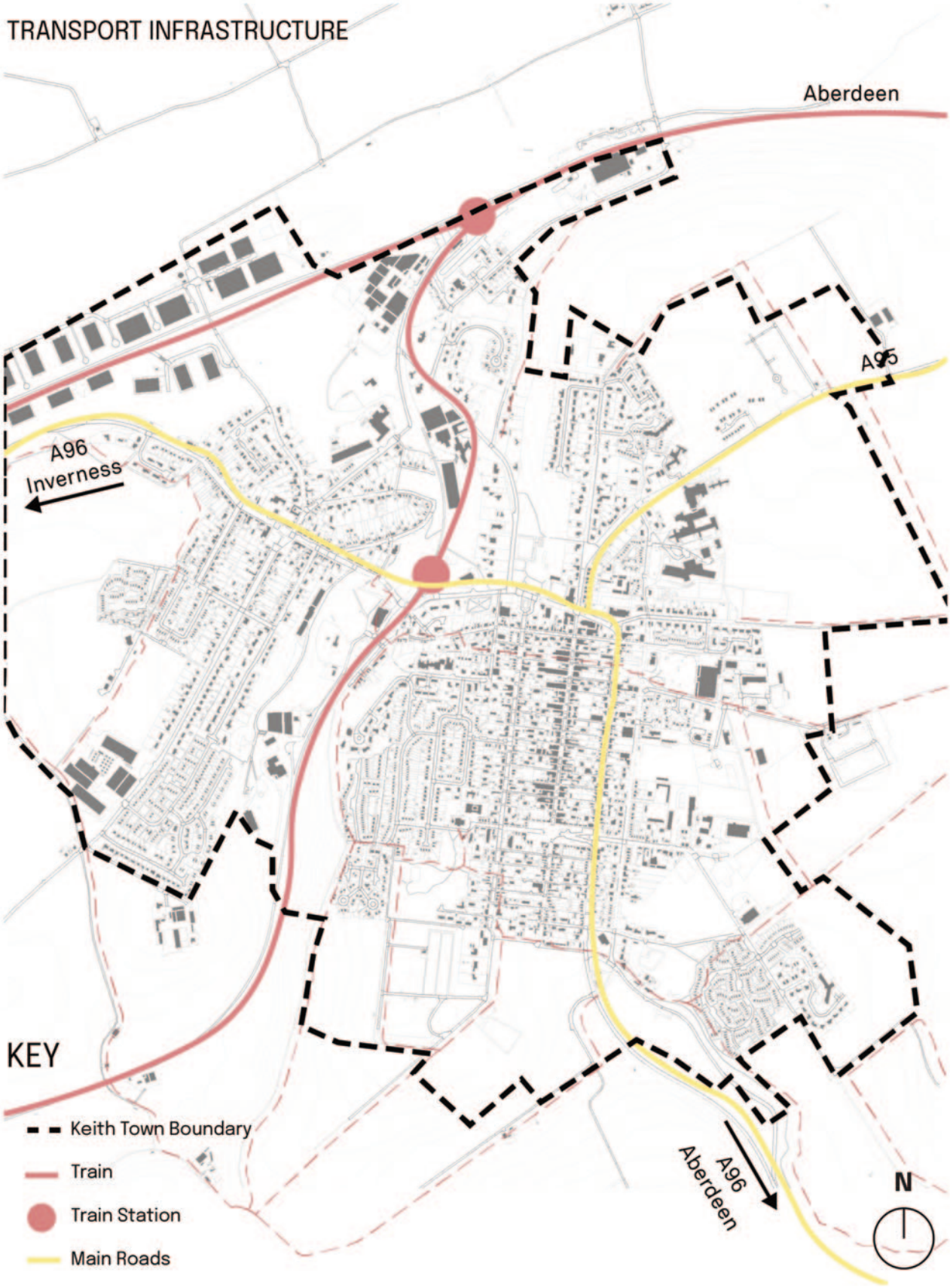

Figure 12 - Keith Transport & Infrastructure

3.2 Baseline Analysis

This section presents a series of maps outlining:

Transport Infrastructure

Community & Education

Green spaces

Industry & New Development

The map overleaf shows that the town of Keith lies at an intersection between the A95 and A96 roads which means that there is a significant level of traffic passing through the town as the A96 is the main route that connects Inverness to Aberdeen. The river Isla divides the town into Fife Keith and Keith.

Currently the town has 3 schools: Keith Grammar School, Keith Primary school and St Thomas Primary school. The town is well connected with a number of bus routes and one main train station with direct lines to Inverness and Aberdeen. A heritage train station exists in the old part of the town with a direct route to Dufftown.

The edge of Keith is defined by new housing developments to the east with the Keith substation located just outside the town.

The following pages present the other baseline maps of Keith.

Figure 13 - Keith Green Spaces

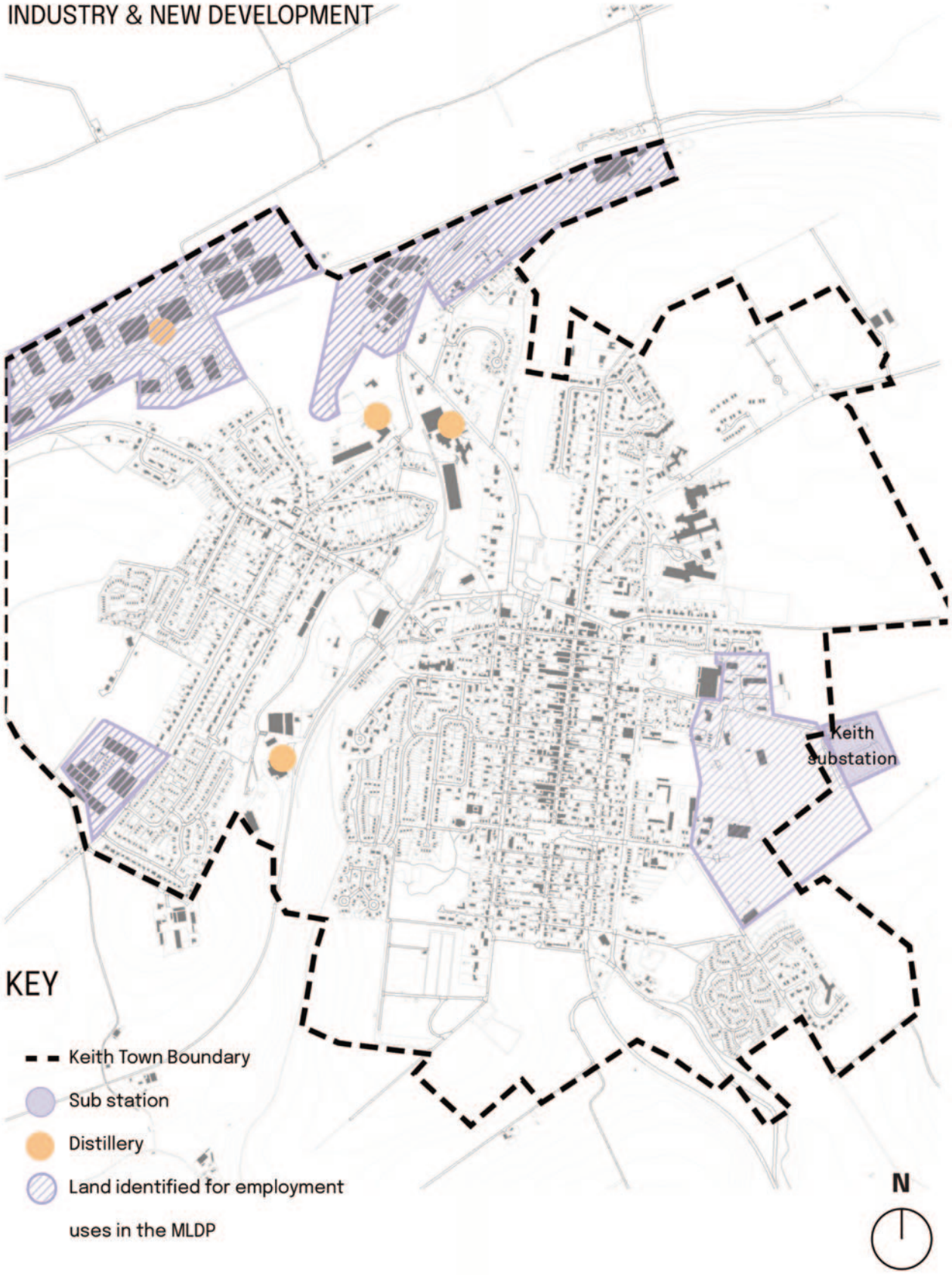

Figure 14 - Keith Industry

04 Study Area 1 - Blackhillock Site & Context

The following section explores the study area of Blackhillock to the south of the town of Keith, highlighting the constraints and opportunities. It begins by providing an executive summary of the comprehensive landscape sensitivity assessment which is included in more detail in Appendix (i)

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4.1 Landscape Sensitivity Study

The following section is an executive summary of the landscape sensitivity study (LSS) carried out by Land Use Consultants (LUC) as part of the wider study on behalf of Moray Council. The full report can be found in Appendix (i).

The LSS focuses on the area immediately surrounding the existing Blackhillock Substation, within a radius of 2km. It is considered that this area captures potential development pressure and landscape sensitivities within the masterplan area and its immediate surroundings.

Development Scenarios:

NatureScot's Landscape Sensitivity Assessment Guidance (2022) recommends that sensitivity studies consider the likely levels of sensitivity to specified types of development or land use (para 21). The use of high-level scenarios for development types recognises that different types of built development have different physical and visual characteristics, different infrastructural requirements and different landscape and visual impacts.

The following scenarios have been used to reflect the different scales of development that may be proposed in the study areas:

Type 1 - Electricity sub-stations / converter stations, representing large-scale industrial-style development, in the form of large buildings, outdoor electrical infrastructure and associated road infrastructure. Development will potentially occupy a large footprint than Type 2; and

Type 2 - Battery Energy Storage Systems / solar farms, representing industrial style development of more modest scale, in the form of 'shipping container' size buildings and / or solar arrays and associated road infrastructure. Development will potentially occupy a smaller footprint than Type 1 (unless it relates to a larger scale solar farm).

Landscape Sensitivity Criteria

The landscape sensitivity assessments are based on an assessment of Local Landscape Character Areas (LLCAs) using carefully defined criteria. LLCAs are shown on Figure 15. The criteria are summarised below:

- Physical character (including topography and scale);
- Natural character;
- Historic landscape character;
- Form, density, identity and setting of existing settlement/development;
- Views and visual character including skylines;
- Access and recreation; and
- Perceptual and experiential qualities.

Making an overall judgement on levels of landscape sensitivity

An overall sensitivity judgement for each LLCA was derived based on the individual criteria ranks. This is not a linear process as it recognises that some attributes or elements of particular landscape parcels may be more important in defining cha acter than others and may be given more 'weight' in reaching an overall judgement. Professional judgement is therefore used rather than a system of numerical scoring. Sensitivity ratings are given on a scale of low, low moderate, moderate, moderate-high, and high.

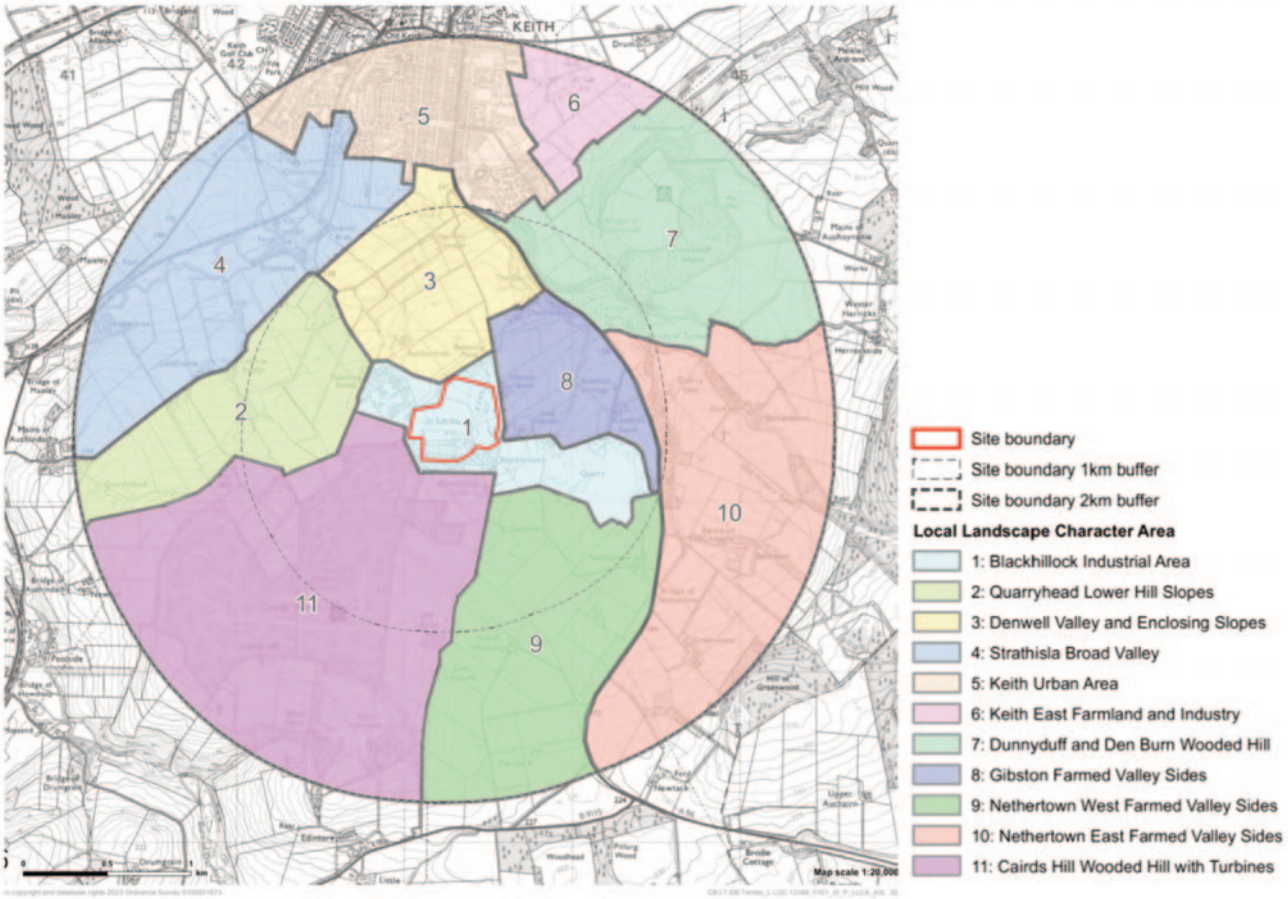


Figure 15 - Blackhillock Landscape Character Areas

Blackhillock Substation - Conclusions & Recommendations

The overall findings of the sensitivity assessment for Blackhillock are summarised in Table 1, see below, and on Figures 16 and 17.

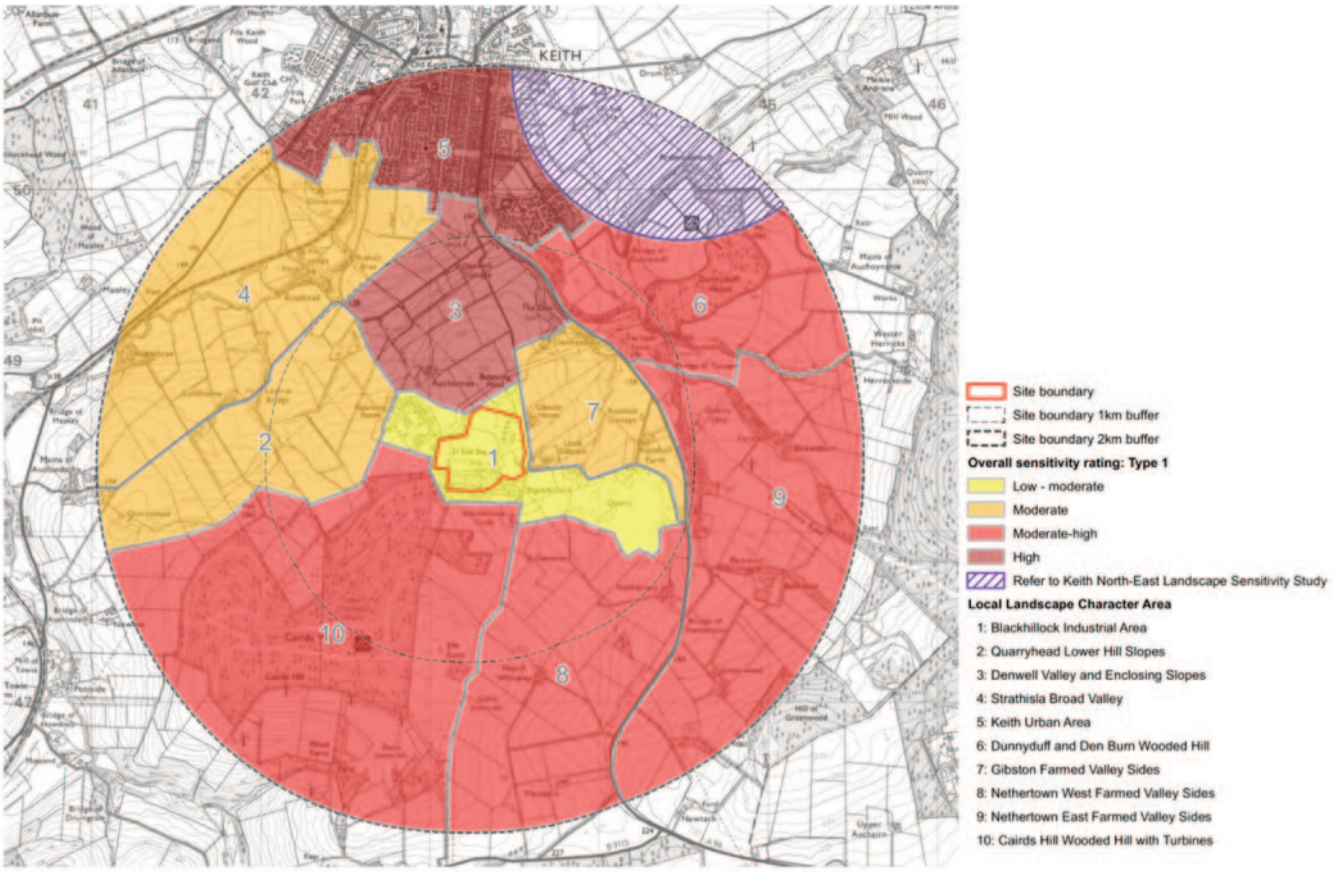
Figure 16 illustrates sensitivity to Type 1 development (i.e. large scale industrial development such as sub-stations or converter stations). Areas of higher sensitivity (orange/red/dark red) are unlikely to be suitable for Type 1 development. There may be some limited scope for Type 1 development in areas of lower sensitivity (yellow), subject to appropriate siting and landscape mitigation.

Figure 17 illustrates sensitivity to Type 2 development (i.e. industrial development of a more modest scale such as battery energy storage systems of solar farms). Areas of higher sensitivity are unlikely to be suitable for Type 2 development. There may be some scope for Type 2 development in areas of lower sensitivity (yellow) and also in parts of areas of moderate sensitivity (orange) subject to appropriate siting and landscape mitigation.

The landscape sensitivity assessment has identified that the following areas are of high or moderate-high sensitivity to Type 1 (column 1) and Type 2 (column 2) development.

LLCA NO.	LLCA Name	Overall Sensitivity Rating: Type 1	Overall Sensitivity Rating: Type 2
1	Blackhillock Industrial Area	Low - Moderate	Low - Moderate
2	Quarryhead Lower Hill Slopes	Moderate	Low - Moderate
3	Denwell Valley & Enclosing Slopes	High	Moderate - High
4	Strathisla Broad Valley	Moderate	Moderate
5	Keith Urban Areas	High	High
6	Dunnyduff and Den Burn Wooded Hill	Moderate - High	Moderate - High
7	Gibston Farmed Valley Sides	Moderate	Low - Moderate
8	Netherton West Farmed Valley Sides	Moderate - High	Moderate
9	Nethertown East Famed Valley Sides	Moderate - High	Moderate
10	Cairds Hill Wooded Hill with Turbines	Moderate - High	Moderate

Table 1: Overall landscape sensitivity score for the local landscape character areas (Blackhillock)



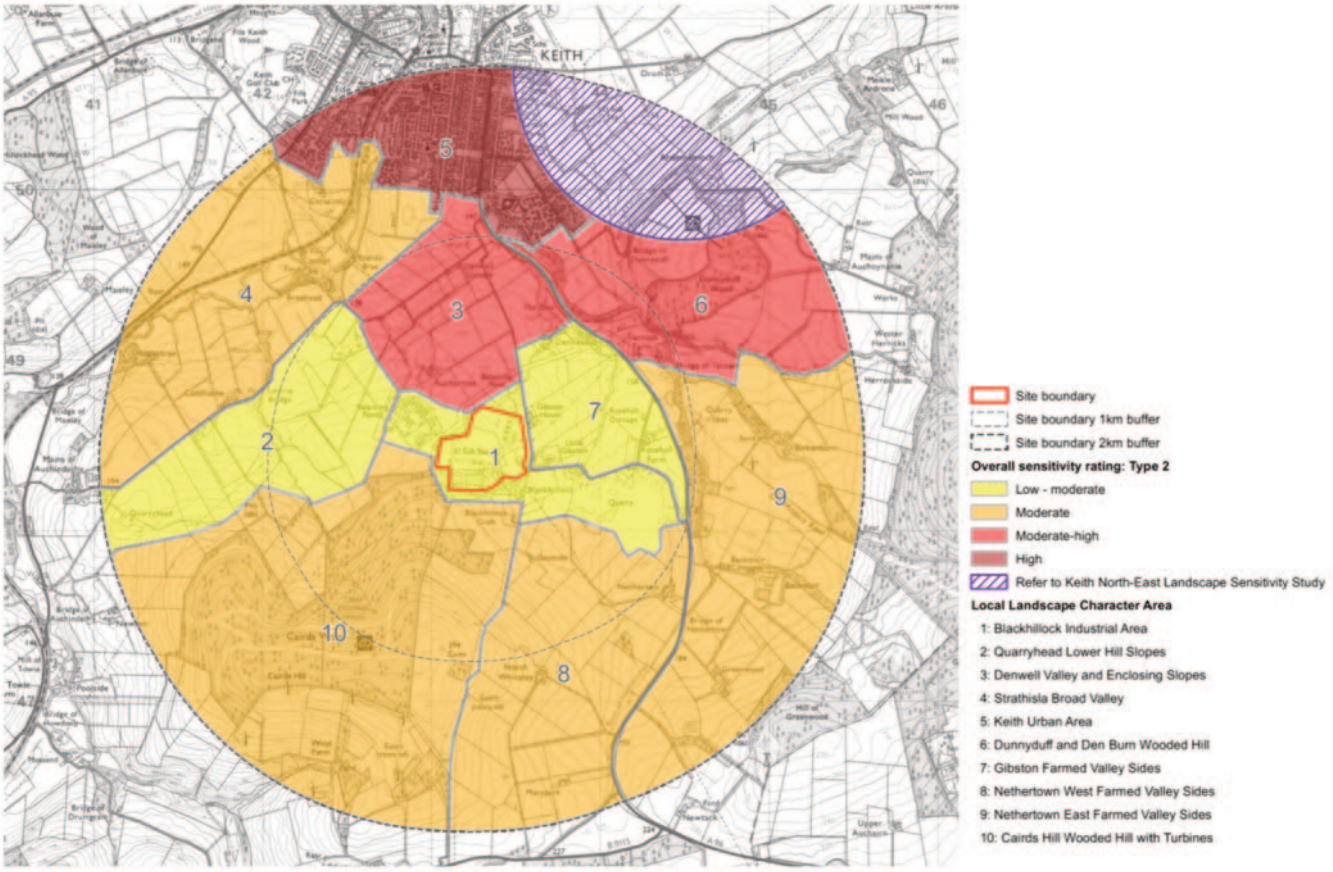


Figure 16 (Above) - Landscape Sensitivity Study for Type 1 Development
Figure 17 (Below) - Landscape Sensitivity Study for Type 2 Development

The following types of landscape/visual mitigation and landscape enhancement have been identified as potentially appropriate:

- Reprofiling of platforms where possible to provide a more naturalistic landform across Cairds Hill (LLCA 1).

- Mixed woodland planting along A96 to screen views towards Blackhillock substation, the quarries and potential development sites (LLCAs 3, 7, 8).

- Enhanced planting around Blackhillock Substation and Beatrice HVDC Converter station to screen in views from the west, north and east (LLCA 1).

- Rationalisation/ potential undergrounding of overhead lines in the vicinity of the substation, to help reduce the prominence of larger scale vertical electricity infrastructure in the area (LLCAs 1, 3, 7, 8).

- Consider colour palette of buildings in substation sites, using colours which help structures recede into views (LLCA 1). Recessive colours which are likely to be suitable for the Moray landscape include greys, greens and browns.

- Native hedgerow planting along field boundaries to enhance landscape character and strengthen the habitat network / enhance biodiversity (LLCAs 2,3,7, 8).

- Native riparian woodland along tributary burns to enhance landscape character, strengthen habitat networks / enhance biodiversity and filter views towards the Beatrice Converter Station, Blackhillock Substation or quarries (LLCAs 2,3,7,8).

- Expansion and diversification of woodland on Cairds Hill to soften the linear forestry edge, strengthen the habitat network / enhance biodiversity and filter / screen views towards existing development and potential development site from the north-west (LLCA 10).

4.2 Constraints & Opportunities

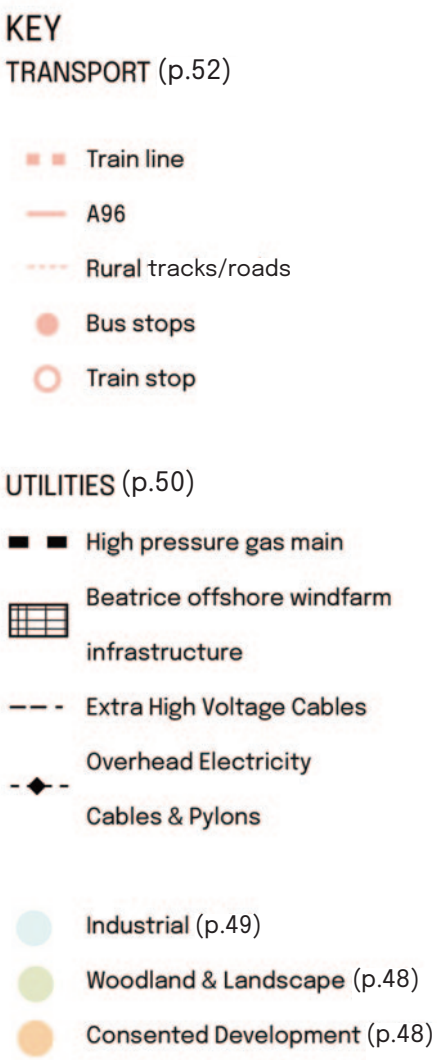
The town of Keith lies to the north of the site, just 2.5km from the Blackhillock substation. A number of residential properties are dotted around the area, most of which are adjacent to agricultural buildings.

The vast majority of the area is used for agriculture with the central area, around Blackhillock substation mainly focused around energy use and the quarry sites to the east of the sub station.

The road infrastructure mainly consists of rural roads, with the A96, that connects Inverness and Aberdeen, bypassing the site leading straight into Keith. Cairds Wood to the south west of the substation lies at the top of a hill and the smaller Dunnyduff Wood lies to the north east of the site.

Importantly, in terms of underground utilities, a main gas line intersects the site as shown in the diagram opposite, which will restrict certain developments happening in this area.

The diagram opposite provides an overview of the key existing constraints which exist in the area, which is extensive for such a small area. More information on these infrastructure constraints are provided over the next few pages.



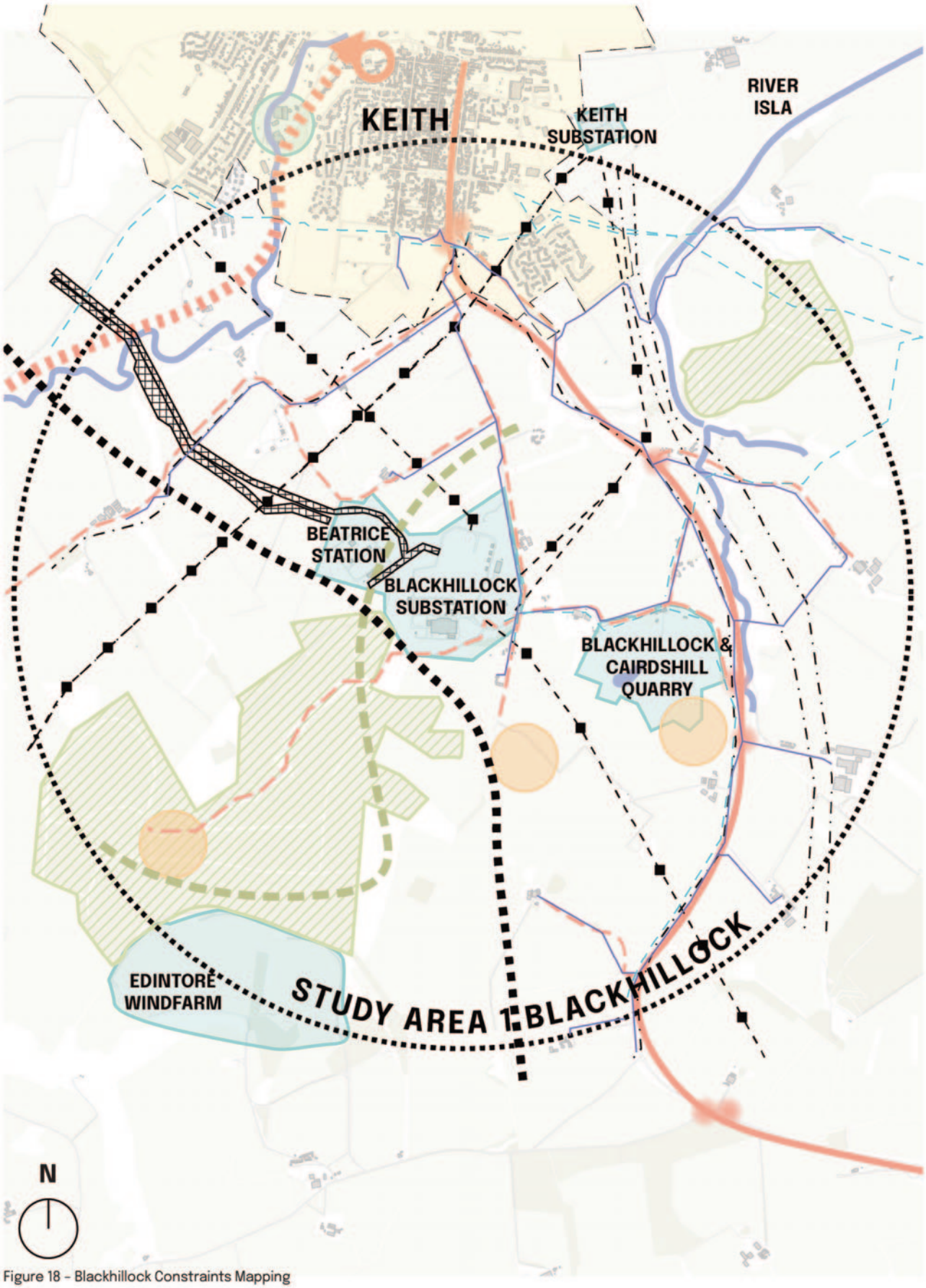
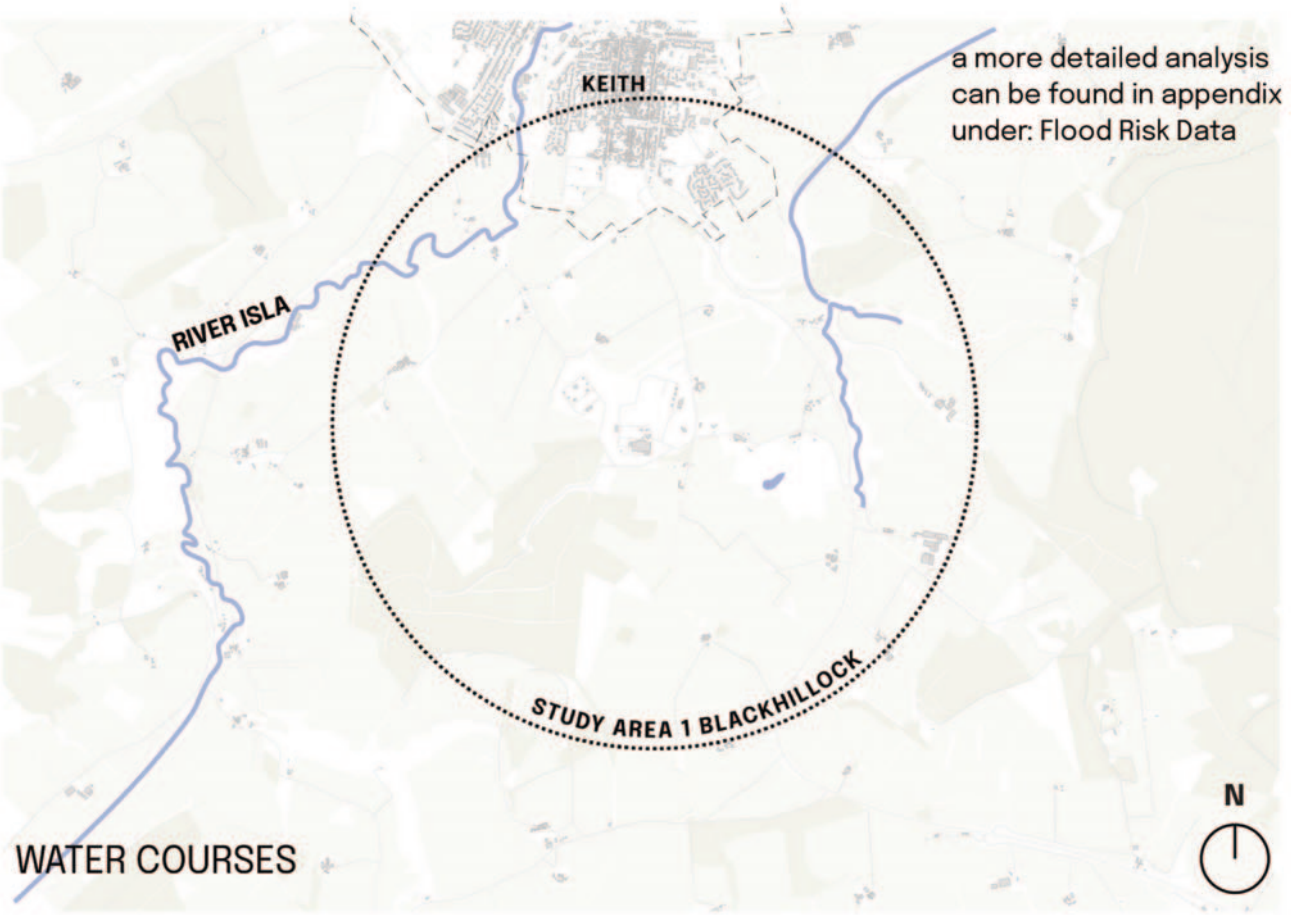


Figure 18 – Blackhillock Constraints Mapping

Figure 19 (Above) - Blackhillock Constraints - Landscape & Woodland

Figure 20 (Below) - Blackhillock Constraints - Consented Development



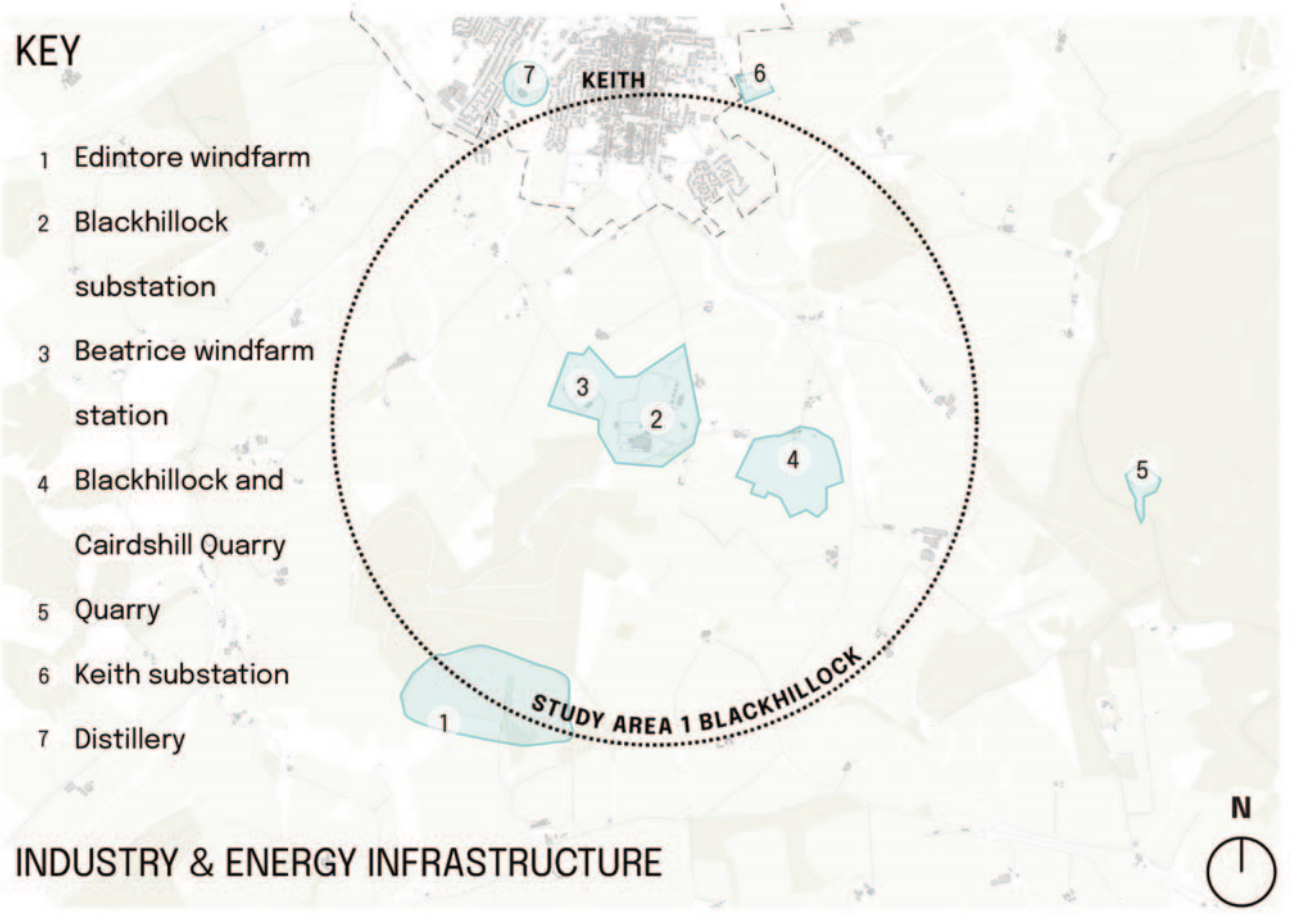


Figure 21 (Above) - Blackhillock Constraints - Water Courses
Figure 22 (Below) - Blackhillock Constraints - Industry & Energy Infrastructure

Utilities Implications

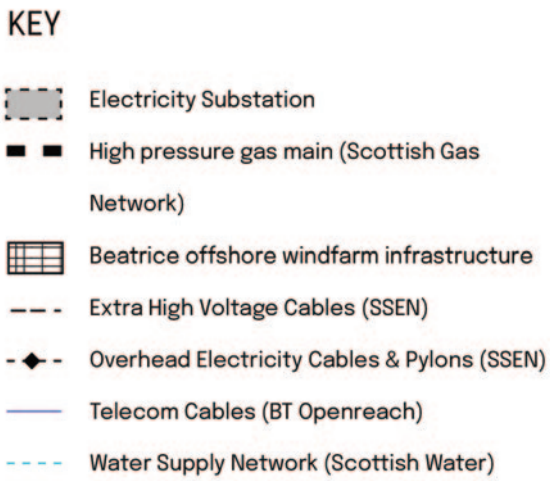
The following desktop utilities study of the Blackhillock area outlines the existing underground and overground utilities present. Most of the existing utilities indicated within the study area are a significant constraint to any prospective development as most of those identified on the record plans are part of main distribution networks that are likely serving a much larger area.

- Existing large electrical substation complex in the middle of the study area with overhead electricity cables and plyons radiating out from this heading north and south
- Offshore windfarm infrastructure corridor running from the substation complex out in a west/north-westerly direction
- Extra high voltage cables running north to south through the eastern part of the study area
- High pressure gas mains running across the western and south part of the study area
- Trunk water mains running across the eastern part of the study area
- Telecoms cables, typically along the existing road infrastructure (A96,)

Minimum clearance distances to existing utilities vary and will be dictated by each of the individual utility providers. It could typically be somewhere between 6 and 12m, dependant on the specific details of the infrastructure and the provider.

Note: This list of utilities is not extensive and further investigation for constraints (including underground cables/pipes) should be undertaken as part of any planning application.

A detailed map with additional utilities can be found in the Appendix under: Existing Utilities



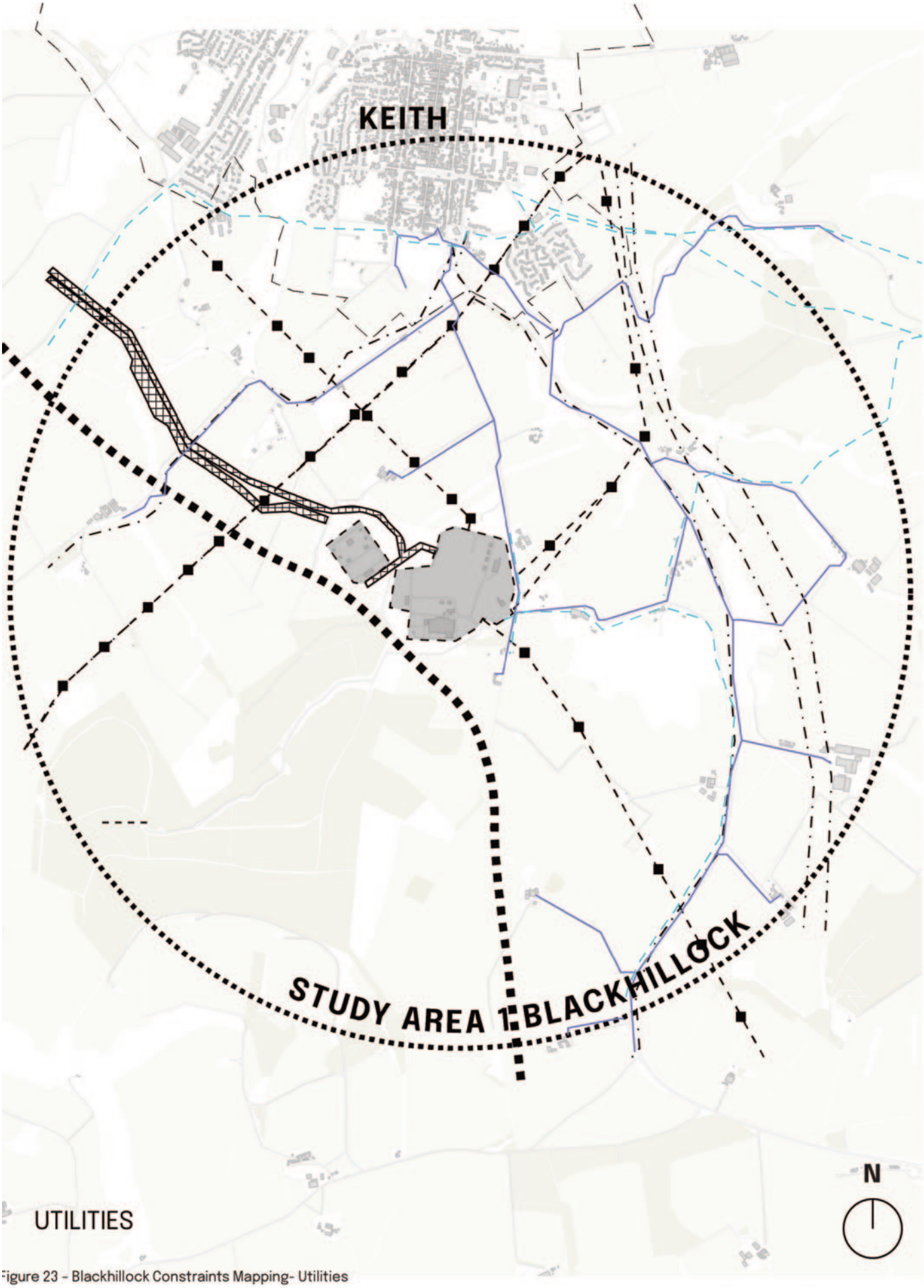


Figure 23 - Blackhillock Constraints Mapping- Utilities

Transport Implications - Blackhillock & Keith NE

- The study areas are proximate to major road, bus and rail corridors between Inverness and Aberdeen, as well as local road networks including the U33H, U43aH and U43H. Improvements to these are required to improve the quality of transport routes and will be identified through planning applications, including pre-application advice.

- There is a network of public access paths throughout both study areas which are a mix of traffic free and on-road routes. Development within the study areas will need to be cognisant of these routes and mitigate potential impacts on routes, during construction and operation.

- Bus stops along the A96 vary in quality and services are limited to the Stagecoach Bluebird Route 10, although it is noted this has reasonable services across the week and across each day.

- Development within the Blackhillock Study Area that generates high rates of employment may need to consider potential upgrades to improve quality of bus stops. There may also be a need to provide or extend service routes to within walking distances of the developments.

- Aside from along the A96, there are no bus routes running through the Blackhillock Study Area.

- The Keith and Dufftown Heritage Railway route, running through the northwest of the Blackhillock Study Area is safeguarded from development.

- In addition, where the route crosses over a rural road within the study area, there is a very low height rail bridge which would constrain vehicle movements and any potential road improvements.

- The A96 is constrained by its single carriageway design. Where the A96 routes through local settlements (including Keith), the speed limit drops to 30mph. Consequently, journey times along the A96 are particularly unreliable and platooning of vehicles is common.

- Its single carriageway design also means diversions due to incidents on the road (e.g. road accidents, poor weather, flooding, etc) are often significant and disruptive.

- Proposed development will need to demonstrate no worsening impacts on road traffic and road safety, during construction and operation.

- The condition and characteristics of rural roads within the study area (e.g. narrow single lane roads, low bridges, overhead transmission lines, existing built form, poor road conditions, no through routes, lack of pedestrian infrastructure) highlights the potential need for improvements and upgrades to deliver development associated with the Energy Framework (e.g. road widening, improved access points and junctions, road safety improvements).

- Proposed development that generates significant traffic, particularly HGVs, will need to demonstrate no worsening impact on road safety, or sufficient mitigation measures.

- As the currently alignment of the A96 routes through Keith, increased traffic on the A96 particularly HGVs, also has the potential to impact upon noise and air pollution, which would need to be addressed as part of any development proposal.

- A96 corridor improvements may include bypassing of Keith. At this stage, there is the potential to route through either of the study areas. Outcomes of the ongoing A96 Corridor Review should be monitored to understand potential bypass routes.

- Current plans for improvements to the A96 should be incorporated into the Energy Framework.
- The A96 Corridor Review is also considering the potential for the A96 to function as an 'Electric Highway', providing alternative refuelling infrastructure and facilities along the corridor. The Energy Framework has potential to integrate into Electric Highway proposals, particularly in terms of the potential hydrogen refuelling station.
- Work is ongoing to improve the Aberdeen to Inverness rail corridor, including improved freight capacity and decarbonisation of Scotland's rail network, which may be relevant to potential uses within the Energy Framework.

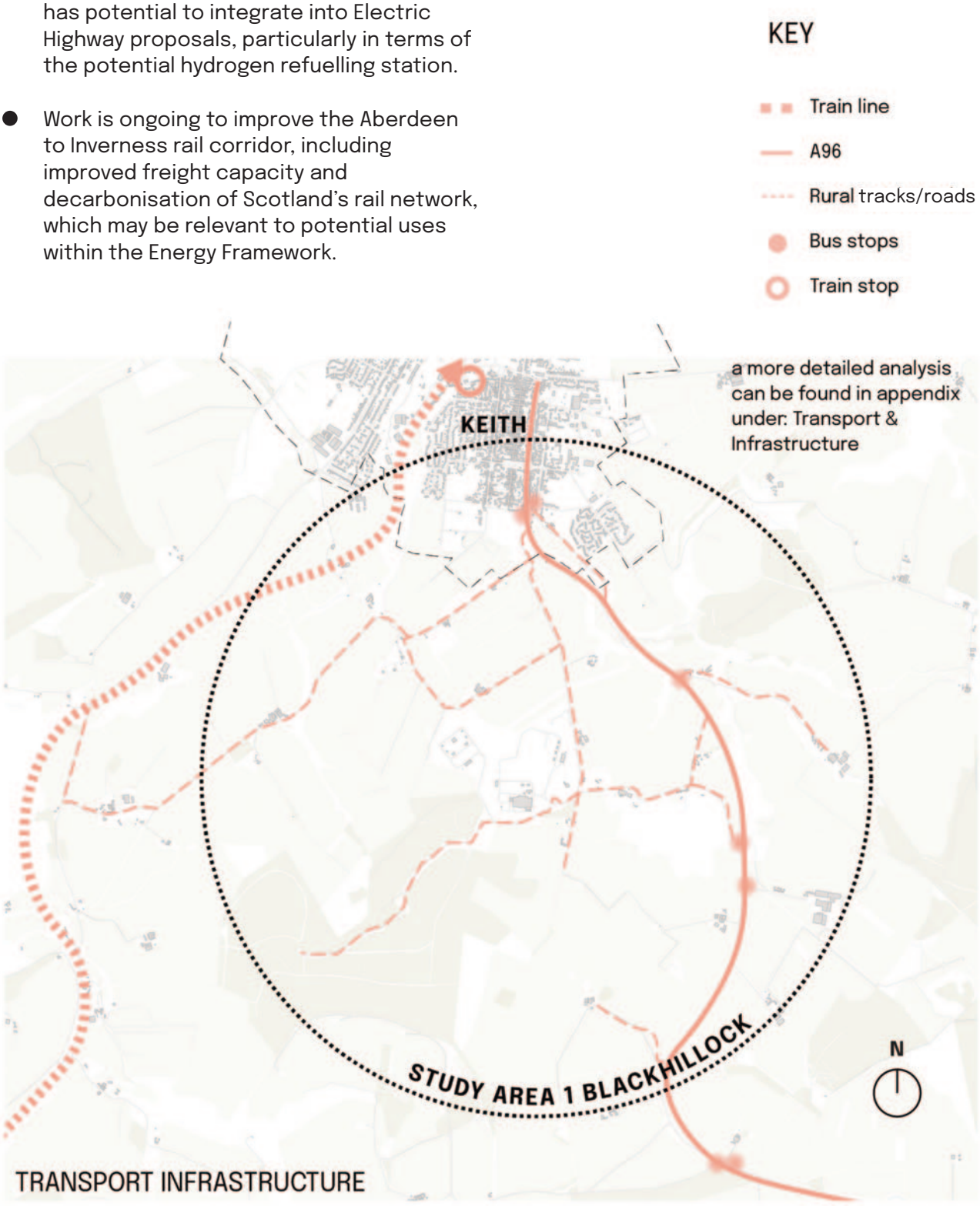


Figure 24 - Blackhillock Constraints Mapping- Transport Infrastructure

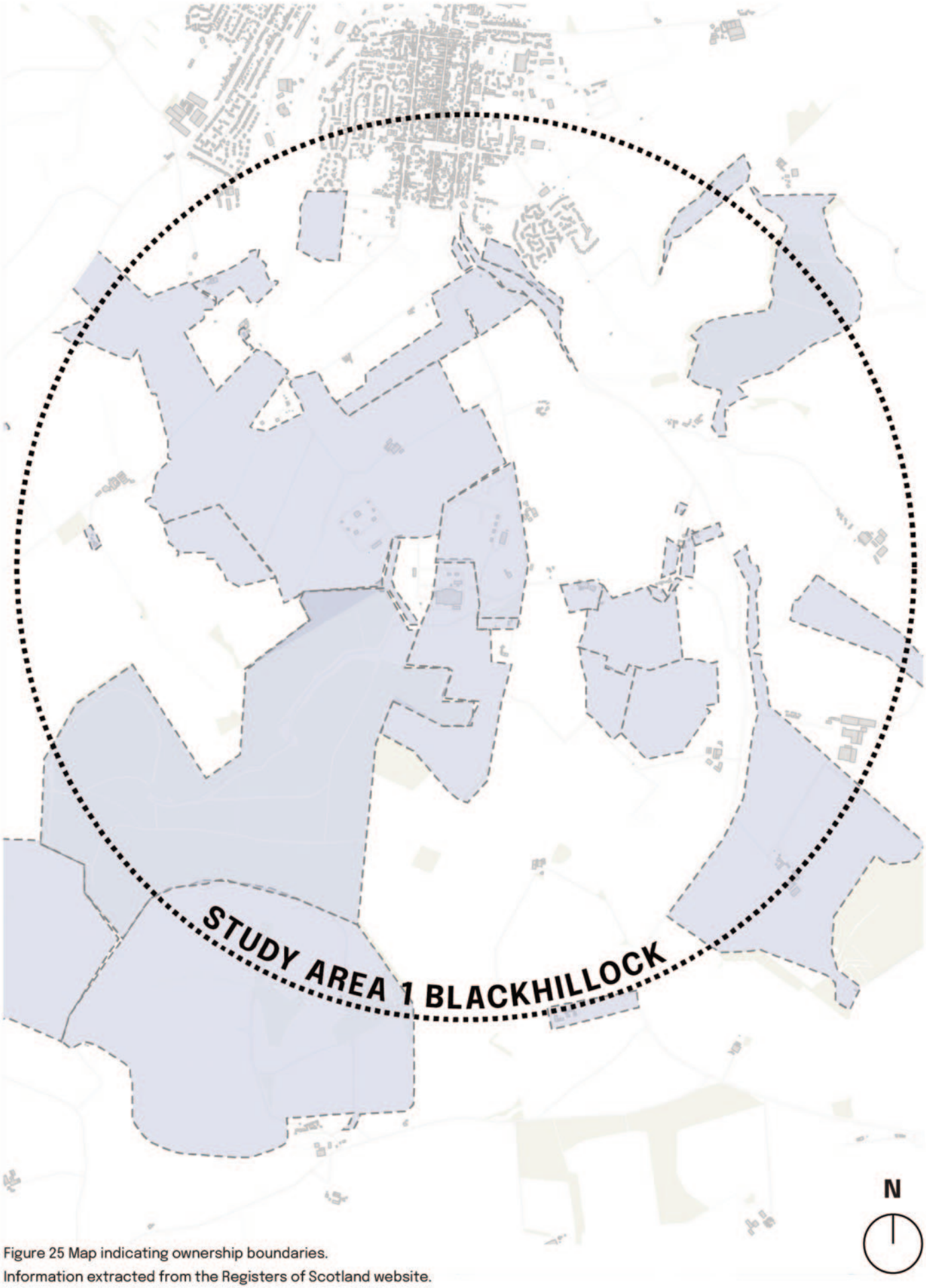


Figure 25 Map indicating ownership boundaries.
Information extracted from the Registers of Scotland website.

4.3 Ownership

A desktop analysis of the land ownership situation in Blackhillock was undertaken to identify whether there were any gaps and what sort of properties existed in the area.

There are approximately 23 different land owners in Blackhillock. Due to the amount of agricultural land present in the area, there exists a large number of gaps in registered title deeds on the Scottish land registry. These could probably be found in the sasine register or at the National Records of Scotland.

4.4 Planning Applications

The following developments are either under construction (at the time of writing this report) or are in the process of obtaining planning consent or other relevant permissions in the Blackhillock study area.

There is also potential for the windfarm to the south of the site to extend and a bypass of the A96 to be developed, however these are still in early stages.

Description: Install a battery energy storage system (BESS) with associated infrastructure at Blackhillock Electricity Substation

Planning Reference: 22/00067/S36
Date Decision: 01.06.2022
Status: Permitted
Built Status: Under Construction

Description: Proposed quarry extension at Cairdshill Quarry

Planning Reference: 22/00499/APP
Date Decision: 27.10.2022
Status: Permitted - Discharging conditions

Description: Installation of synchronous compensators with electrical connection to adjacent substation and associated infrastructure on Land Adjacent To Blackhillock Electricity Substation

Planning Reference: 21/01777/APP
Date Decision: 01.03.2022
Status: Permitted
Built Status: Under Construction

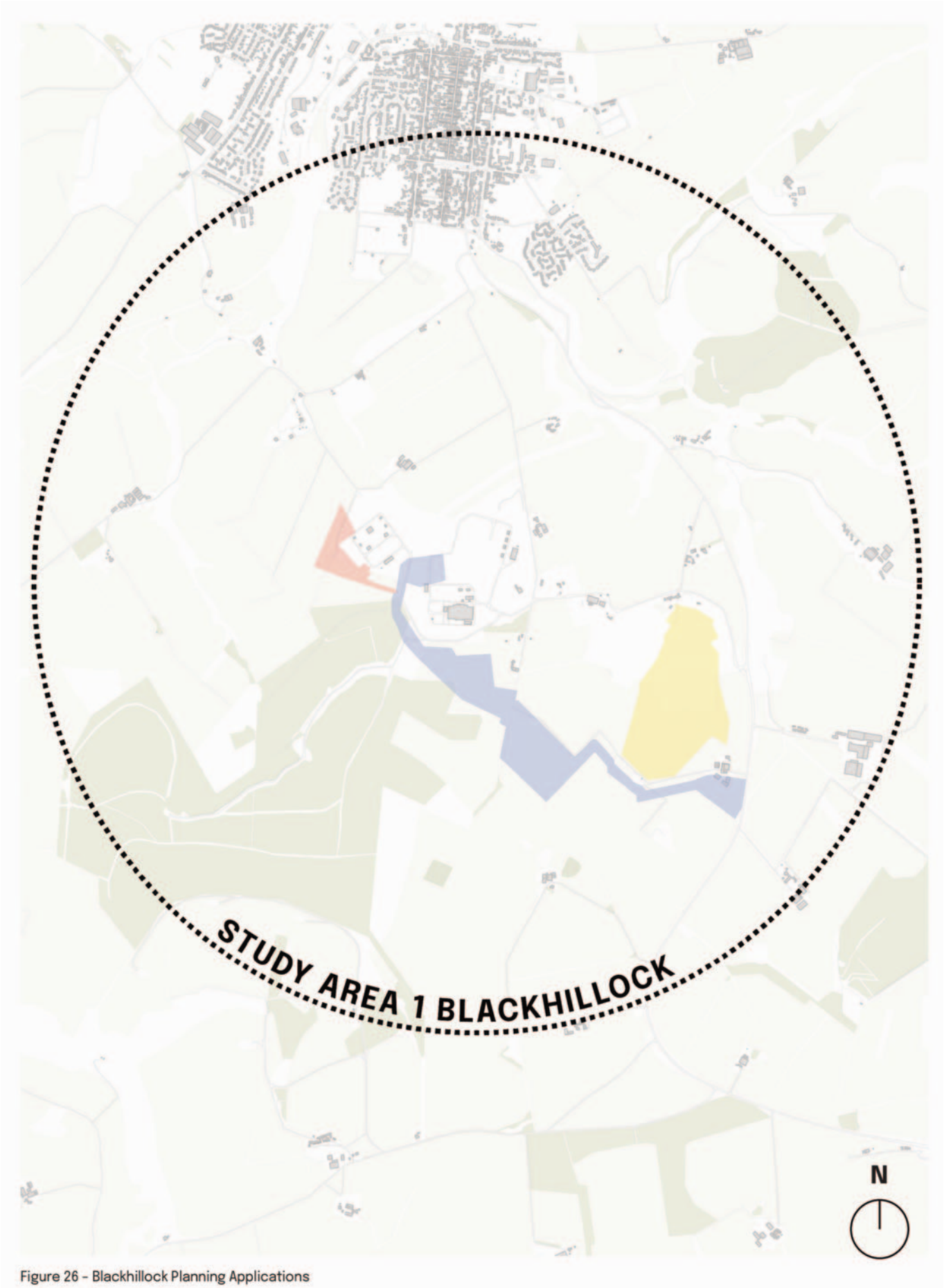


Figure 26 - Blackhillock Planning Applications

05 Study Area 2 – Keith NE Site & Context

The following section explores the study area of Keith North East, highlighting the constraints and opportunities. It begins by providing an executive summary of the comprehensive landscape sensitivity assessment which is included in more detail in Appendix (i)

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5.1 Landscape Sensitivity Study

The following section is an executive summary of the landscape sensitivity study (LSS) carried out by Land Use Consultants (LUC) as part of the wider study on behalf of the Council. The full report can be found in Appendix (i).

The LSS focuses on the area immediately surrounding the existing Blackhillock Substation, within a radius of 1km. It is considered that this area captures potential development pressure and landscape sensitivities within the masterplan area and its immediate surroundings.

Development Scenarios:

NatureScot's Landscape Sensitivity Assessment Guidance (2022) recommends that sensitivity studies consider the likely levels of sensitivity to specified types of development or land use (para 21). The use of high-level scenarios for development types recognises that different types of built development have different physical and visual characteristics, different infrastructural requirements and different landscape and visual impacts.

The following scenarios have been used to reflect the different scales of development that may be proposed in the study areas:

Type 1 - Electricity sub-stations / converter stations, representing large-scale industrial-style development, in the form of large buildings, outdoor electrical infrastructure and associated road infrastructure. Development will potentially occupy a large footprint than Type 2; and

Type 2 - Battery Energy Storage Systems / solar farms, representing industrial style development of more modest scale, in the form of 'shipping container' size buildings and / or solar arrays and associated road infrastructure. Development will potentially occupy a smaller footprint than Type 1 (unless it relates to a larger scale solar farm).

Landscape Sensitivity Criteria

The landscape sensitivity assessments are based on an assessment of Local Landscape Character Areas (LLCAs) using carefully defined criteria. LLCAs are shown on Figure 1. The criteria are summarised below:

- Physical character (including topography and scale);
- Natural character;
- Historic landscape character;
- Form, density, identity and setting of existing settlement/development;
- Views and visual character including skylines;
- Access and recreation; and
- Perceptual and experiential qualities.

Making an overall judgement on levels of landscape sensitivity

An overall sensitivity judgement for each LLCA was derived based on the individual criteria ranks. This is not a linear process as it recognises that some attributes or elements of particular landscape parcels may be more important in defining cha acter than others and may be given more 'weight' in reaching an overall judgement. Professional judgement is therefore used rather than a system of numerical scoring. Sensitivity ratings are given on a scale of low, lowmoderate, moderate, moderate-high, and high.

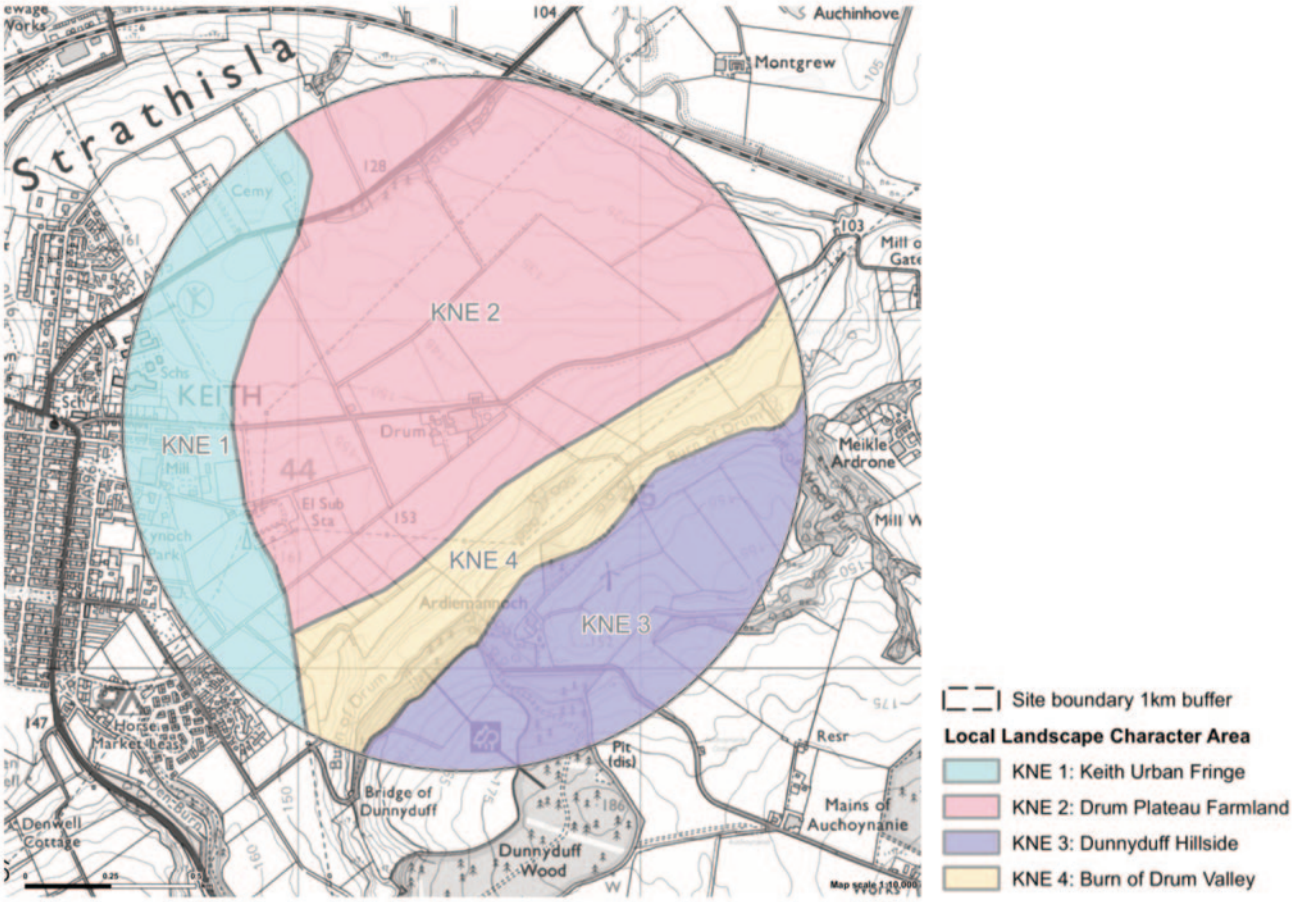


Figure 27 - Keith NE Landscape Character Areas

Keith NE - Conclusions & Recommendations

The overall findings of the sensitivity assessment for Keith NE are summarised in Table 2, see below, and on Figures 28 and 29.

Figure 28 illustrates sensitivity to Type 1 development (i.e. large scale industrial development such as sub-stations or converter stations). Areas of higher sensitivity (orange/red/dark red) are unlikely to be suitable for Type 1 development. There may be some limited scope for Type 1 development in areas of moderate sensitivity (orange), subject to appropriate siting and landscape mitigation.

Figure 29 illustrates sensitivity to Type 2 development (i.e. industrial development of a more modest scale such as battery energy storage systems of solar farms). Areas of higher sensitivity are unlikely to be suitable for Type 2 development. There may be some scope for Type 2 development in parts of areas of moderate sensitivity (orange) subject to appropriate siting and landscape mitigation.

The landscape sensitivity assessment has identified that the following areas are of high or moderate-high sensitivity to Type 1 (column 1) and Type 2 (column 2) development.

LLCA NO.	LLCA Name	Overall Sensitivity Rating: Type 1	Overall Sensitivity Rating: Type 2
1	Keith Urban Fringe	High	Moderate - High
2	Drum Plateau Farmland	Moderate - High	Moderate - High
3	Dunnyduff Hillside	High	High
4	Burn of Drum Valley	High	Moderate - High

Table 2: Overall landscape sensitivity score for the local landscape character areas(Keith NE)

The following types of landscape/visual mitigation and landscape enhancement have been identified as potentially appropriate:

- Explore opportunities to rationalise/ underground existing overhead line electricity infrastructure, on approach to the existing substation. Any steel tower pylons which are not in use should also be removed. This would help minimise the influence of larger scale vertical electricity infrastructure in views from the settlement edge (KNE LCAs 1, 2).

- Consider colour palette of buildings, using colours which help structures recede into views from the settlement edge (KNE LCAs 1, 2, 3, 4).

- New areas of woodland and hedgerows would help to break up and screen views of existing industrial development, on the eastern edge of Keith. This would help to restore a more rural fringe setting, whilst providing opportunities to screen smaller areas of new Type 2 development (KNE LCA 1, 2, 3, 4).

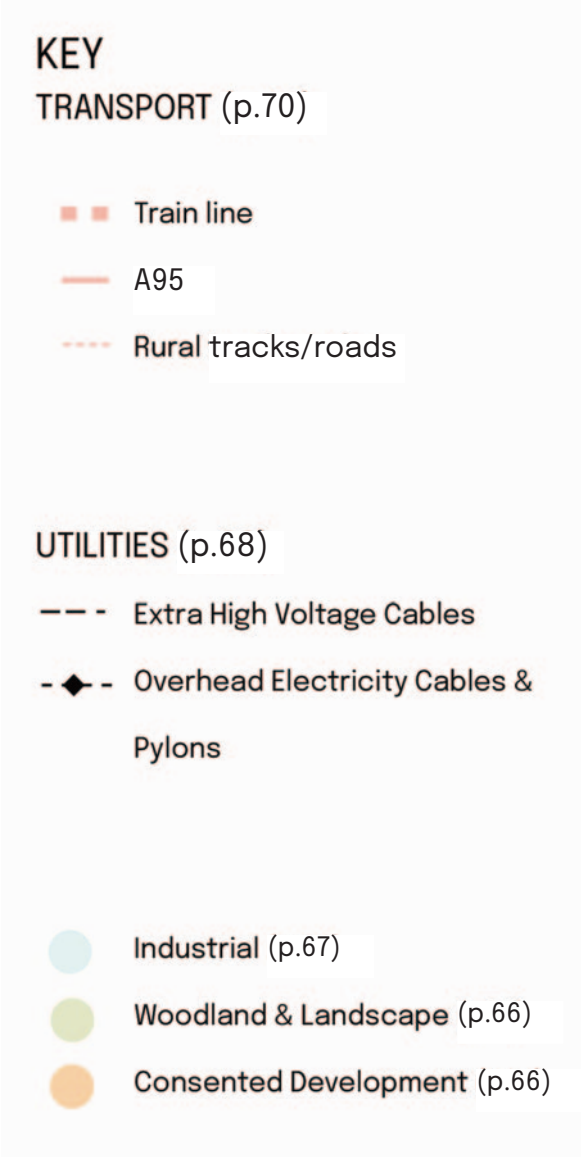
Figure 28 (Above) - Landscape Sensitivity Study for Type 1 Development
Figure 29 (Below) - Landscape Sensitivity Study for Type 2 Development

5.2 Constraints & Opportunities

The town of Keith lies to the west of the site. The vast majority of area is used for agriculture with Keith substation in the south west of the site where a number of overhead cables and pylons radiate outwards.

The road infrastructure is minimal with the A95 running across the north of the site and a narrow rural road running west to east in the centre of the site.

The diagram opposite provides an overview of the existing constraints which exist in the area, which is extensive for such a small area. More information on these infrastructure constraints are provided over the next few pages.



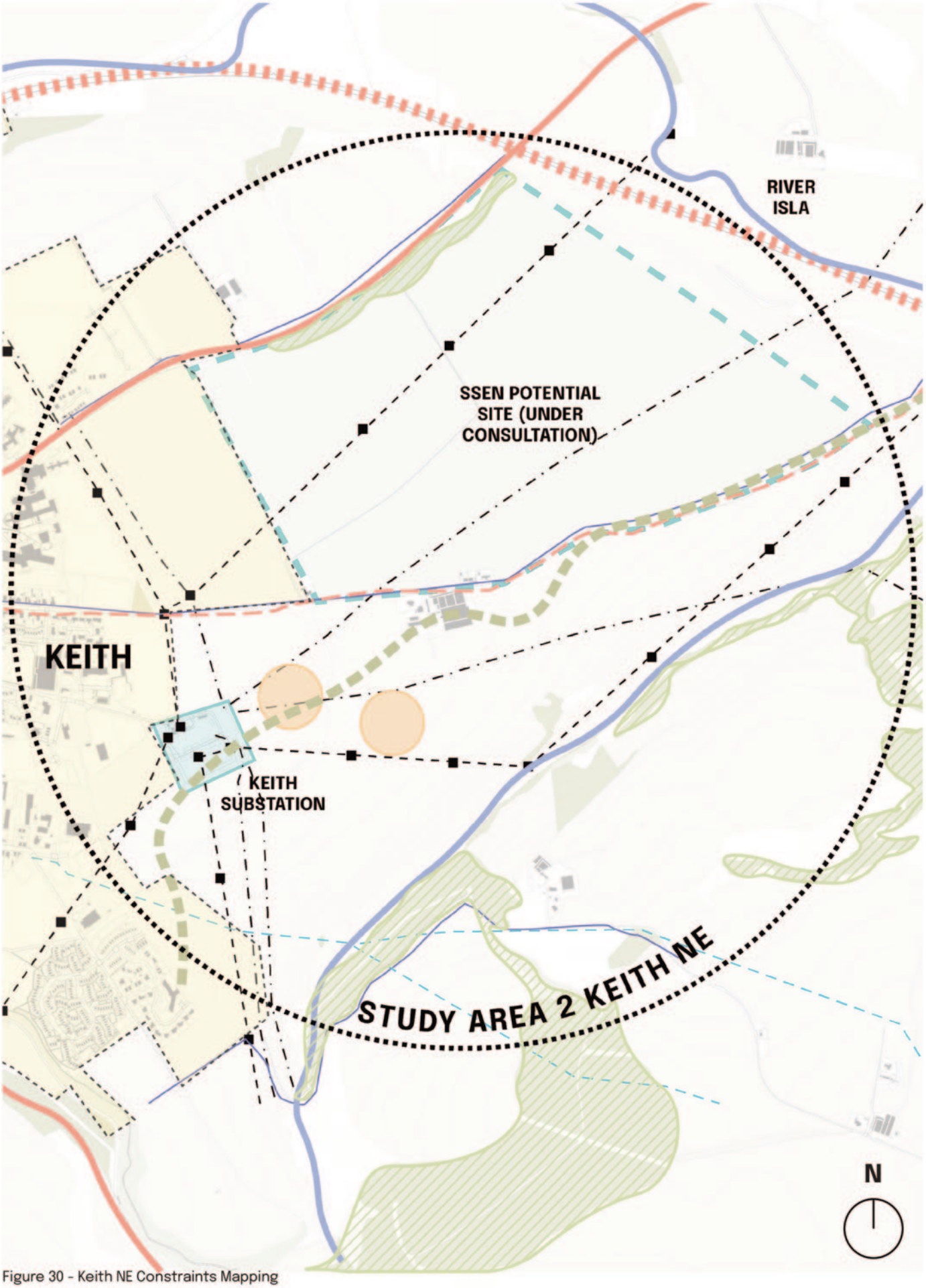


Figure 30 - Keith NE Constraints Mapping

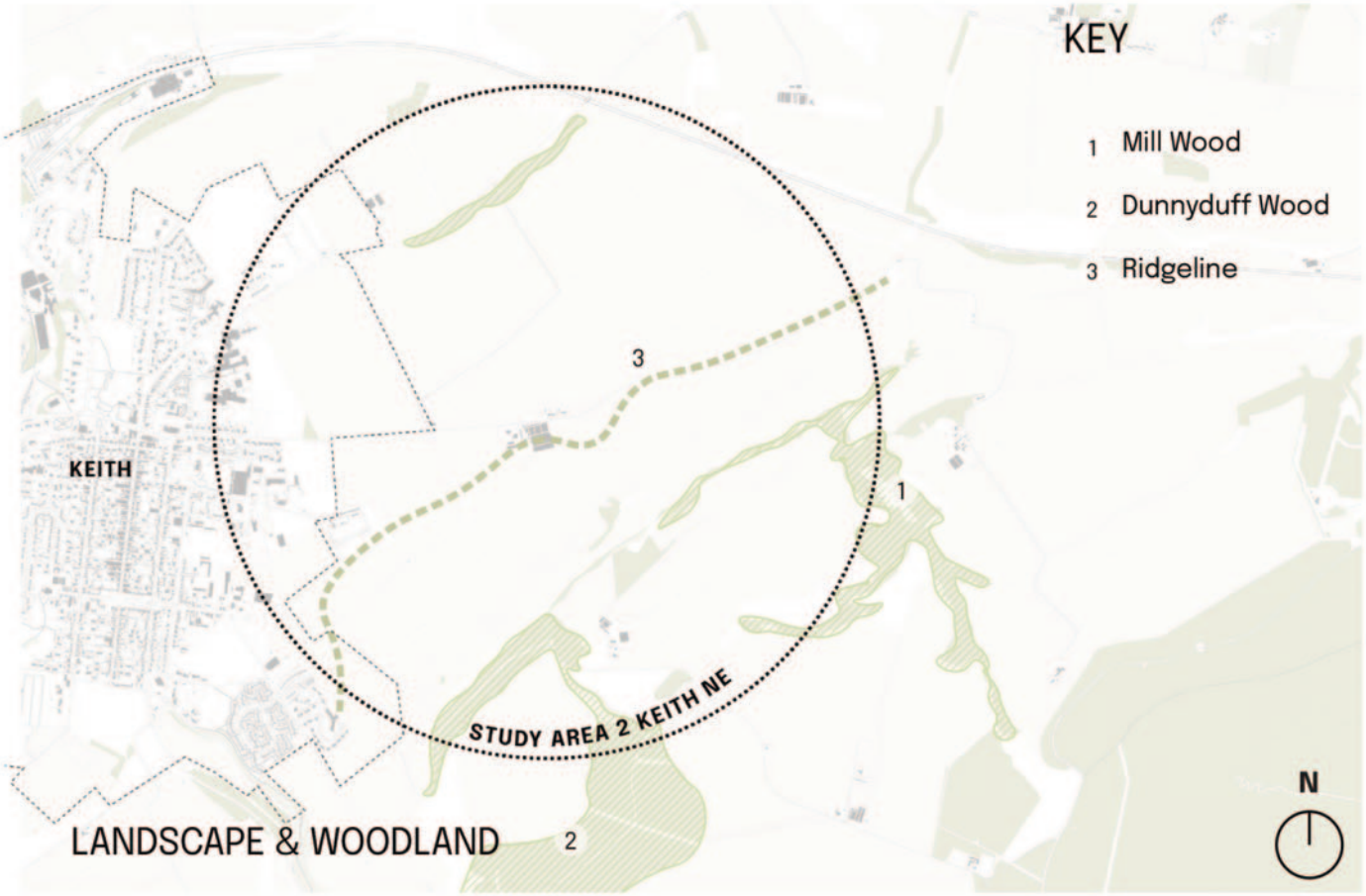
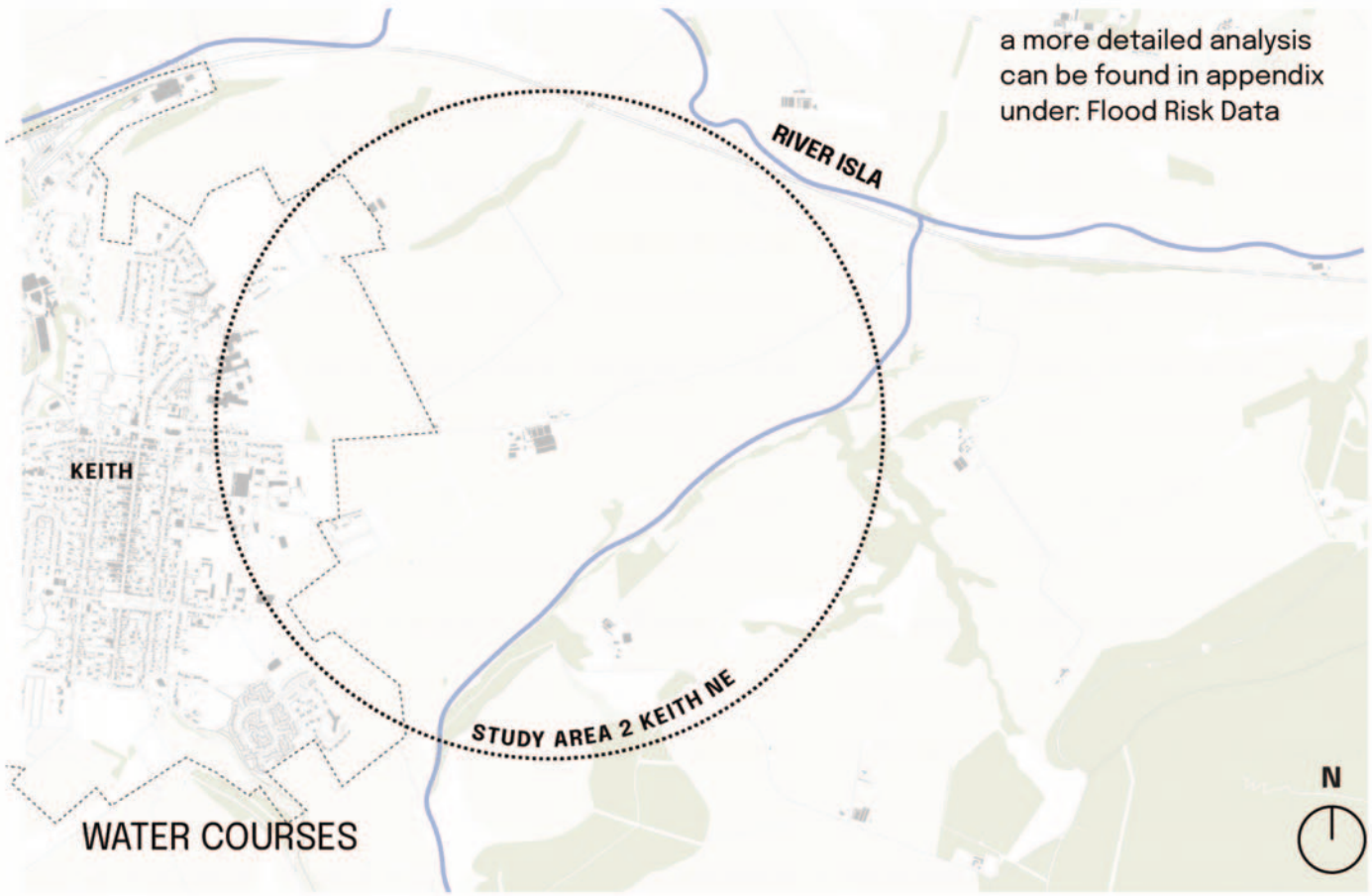


Figure 31 (Above) - Keith NE Constraints - Landscape & Woodland
Figure 32 (Below) - Keith NE Constraints - Consented Development



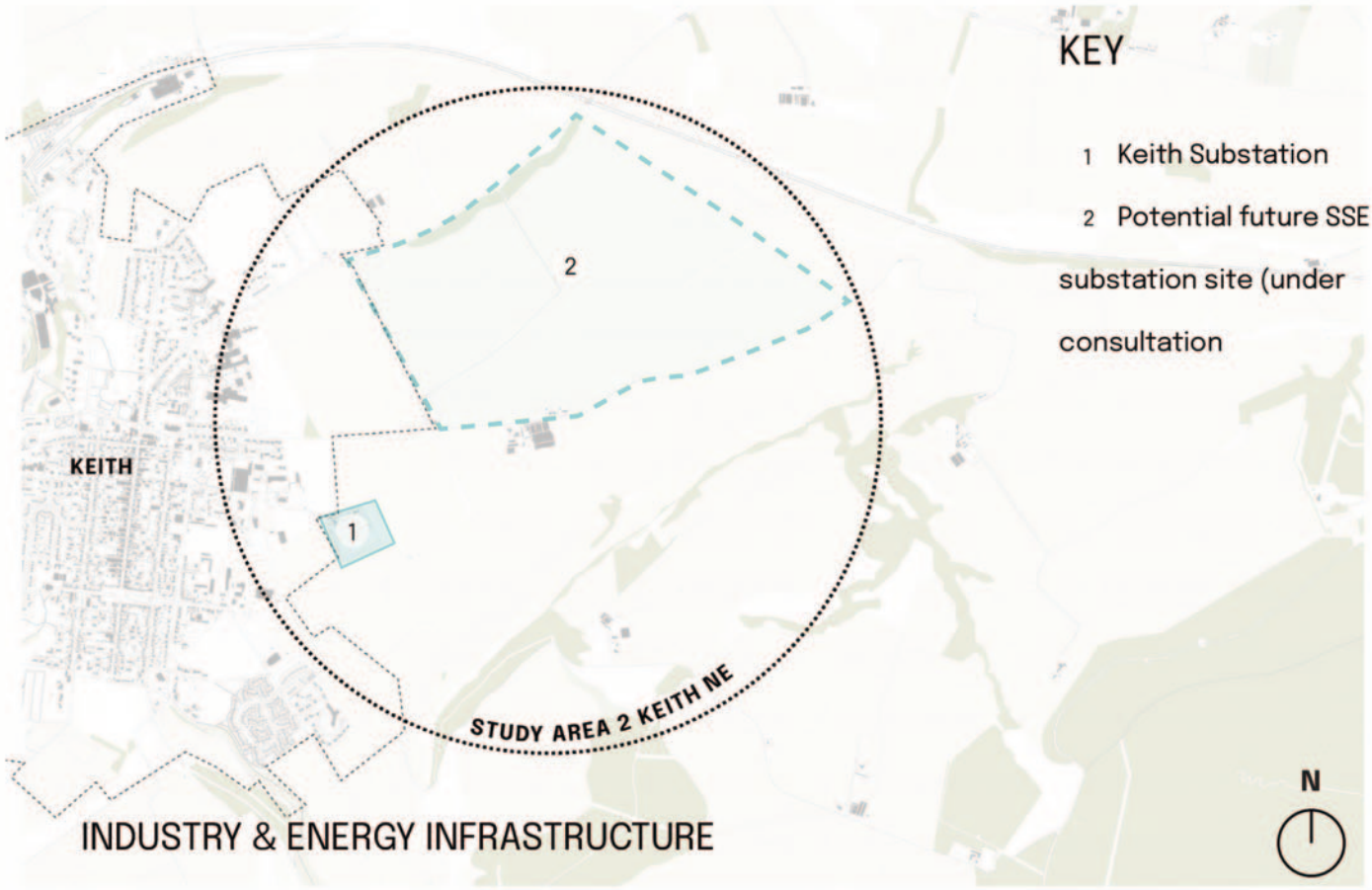


Figure 33 (Above) - Keith NE Constraints - Water Courses
Figure 34 (Below) - Keith NE Constraints - Industry & Energy Infrastructure

Utilities Implications

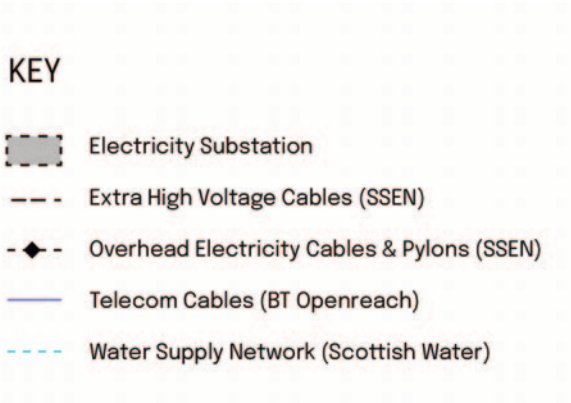
The following desktop utilities study of the Keith NE area outlines the existing underground and overground utilities present. Most of the existing utilities indicated within the study area are a significant constraint to any prospective development as most of those identified on the record plans are part of main distribution networks that are likely serving a much larger area.

- Existing electrical distribution substation complex to the south west of study area with overhead electricity cables and pylons radiating out from this heading in all directions.
- Extra high voltage cables running to the east of the study area
- Trunk water mains running across the southern part of the study area
- Telecoms cables, typically along the existing road infrastructure

Minimum clearance distances to existing utilities vary and will be dictated by each of the individual utility providers. It could typically be somewhere between 6 and 12m, dependant on the specific details of the infrastructure and the provider.

Note: This list of utilities is not extensive and further investigation for constraints (including underground cables/pipes) should be undertaken as part of any planning application.

A detailed map with additional utilities can be found in the Appendix under: Existing Utilities



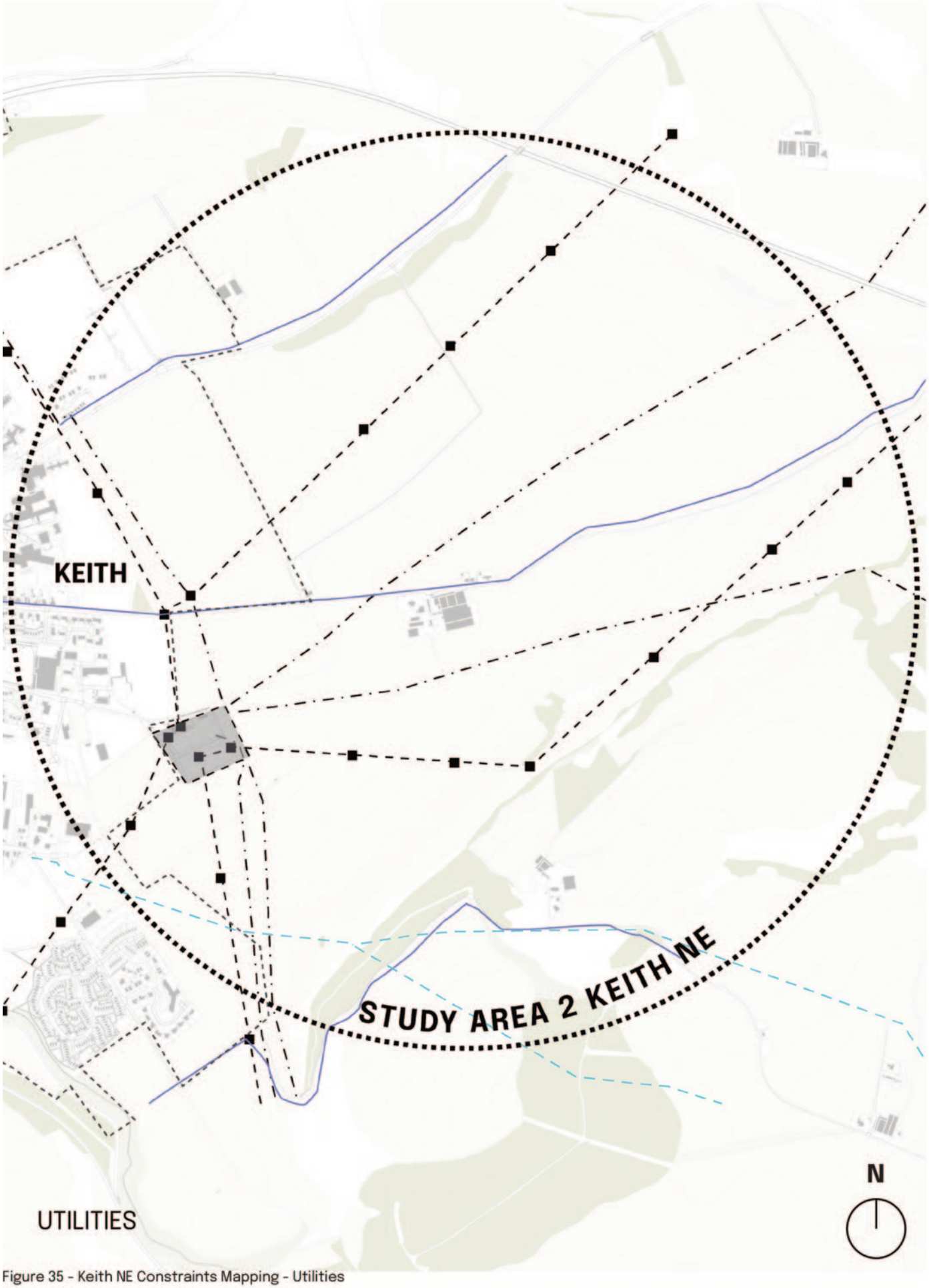


Figure 35 - Keith NE Constraints Mapping - Utilities

Transport Implications - Keith NE & Blackhillock

- The study areas are proximate to major road, bus and rail corridors between Inverness and Aberdeen, as well as local road networks including the U33H, U43aH and U43H. Improvements to these are required to improve the quality of transport routes and will be identified through planning applications, including pre-application advice.

- There is a network of public access paths throughout both study areas which are a mix of traffic free and on-road routes. Development within the study areas will need to be cognisant of these routes and mitigate potential impacts on routes, during construction and operation.

- Bus stops along the A96 vary in quality and services are limited to the Stagecoach Bluebird Route 10, although it is noted this has reasonable services across the week and across each day.

- Aside from along the A95, there are no bus routes running through the Keith NE Study Area.

- The A96 is constrained by its single carriageway design. Where the A96 routes through local settlements (including Keith), the speed limit drops to 30mph. Consequently, journey times along the A96 are particularly unreliable and platooning of vehicles is common.

- Its single carriageway design also means diversions due to incidents on the road (e.g. road accidents, poor weather, flooding, etc.) are often significant and disruptive.

- Proposed development will need to demonstrate no worsening impacts on road traffic and road safety, during construction and operation.

- The condition and characteristics of rural roads within the study area (e.g. narrow single lane roads, low bridges, overhead transmission lines, existing built form, poor road conditions, no through routes, lack of pedestrian infrastructure) highlights the potential need for improvements and upgrades to deliver development associated with the Energy Framework (e.g. road widening, improved access points and junctions, road safety improvements).

- Proposed development that generates significant traffic, particularly HGVs, will need to demonstrate no worsening impact on road safety, or sufficient mitigation measures.

- As the currently alignment of the A96 routes through Keith, increased traffic on the A96 particularly HGVs, also has the potential to impact upon noise and air pollution, which would need to be addressed as part of any development proposal.

- A96 corridor improvements may include bypassing of Keith. At this stage, there is the potential to route through either of the study areas. Outcomes of the ongoing A96 Corridor Review should be monitored to understand potential bypass routes.

- Current plans for improvements to the A96 should be incorporated into the Energy Framework.

- The A96 Corridor Review is also considering the potential for the A96 to function as an 'Electric Highway', providing alternative refuelling infrastructure and facilities along the corridor. The Energy Framework has potential to integrate into Electric Highway proposals, particularly in terms of the potential hydrogen refuelling station.

- Work is ongoing to improve the Aberdeen to Inverness rail corridor, including improved freight capacity and decarbonisation of Scotland's rail network, which may be relevant to potential uses within the Energy Framework.


KEY
Train line
A95
Rural tracks/roads
Bus stops
Train stop
a more detailed analysis can be found in appendix under: Transport & Infrastructure
KEITH
STUDY AREA 2 KEITH NE
N
TRANSPORT INFRASTRUCTURE

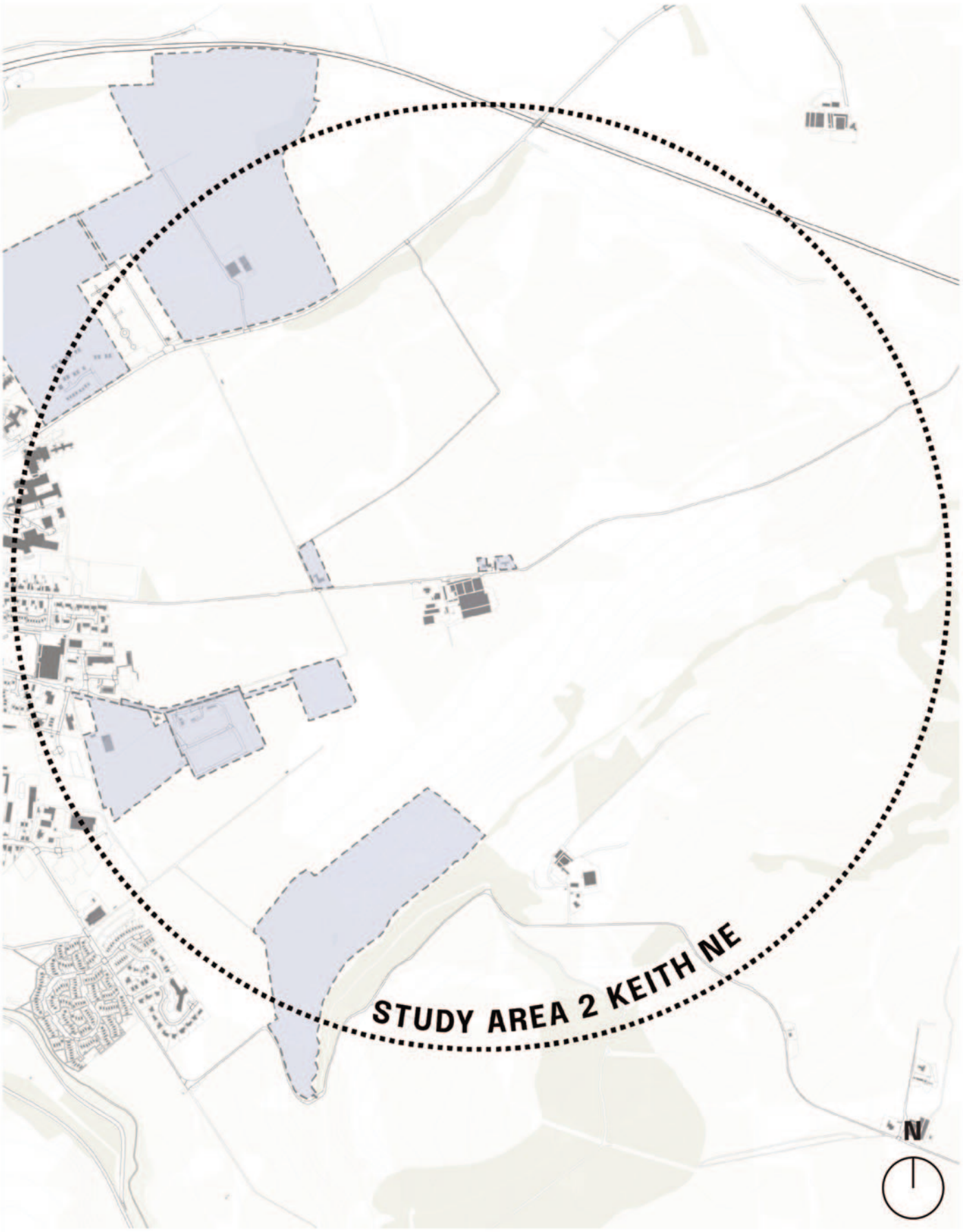


Figure 37 Map indicating ownership boundaries.
Information extracted from the Registers of Scotland website.

5.3 Ownership

A desktop analysis of the land ownership situation in the Keith NE study area was undertaken to identify whether there were any gaps and what sort of properties existed in the area.

There are approximately 9 land owners in Keith NE. Due to the amount of agricultural land present in the area, there exists a large number of gaps in registered title deeds on the Scottish land registry. These could probably be found in the sasine register or at the National Records of Scotland.

5.4 Planning Applications

The following developments are either under construction (at the time of writing this report) or are in the process of obtaining planning consent or other relevant permissions in the Keith NE study area.

The large area to the east of the study area is one of the sites being considered by SSEN to develop a new substation as part of their 'Route to 2030' network.

Description: Installation of an energy storage facility including battery enclosures power conversion units transformer substations grid connection infrastructure vehicular access and associated works.

Planning Reference: 22/00715/APP
Date Decision: 27.10.2022
Status: Permitted
Built Status: Not built

Description: Proposed battery energy storage system and associated Infrastructure.

Planning Reference: 22/01488/APP
Date Decision: 15.03.2023
Status: Permitted
Built Status: Not built

Description: Erect cooperage including office staff facilities storage yard and associated works.

Planning Reference: 23/00314/APP
Status: Awaiting Decision

Potential site being looked at by SSEN for a new substation.

Status: Under Consultation

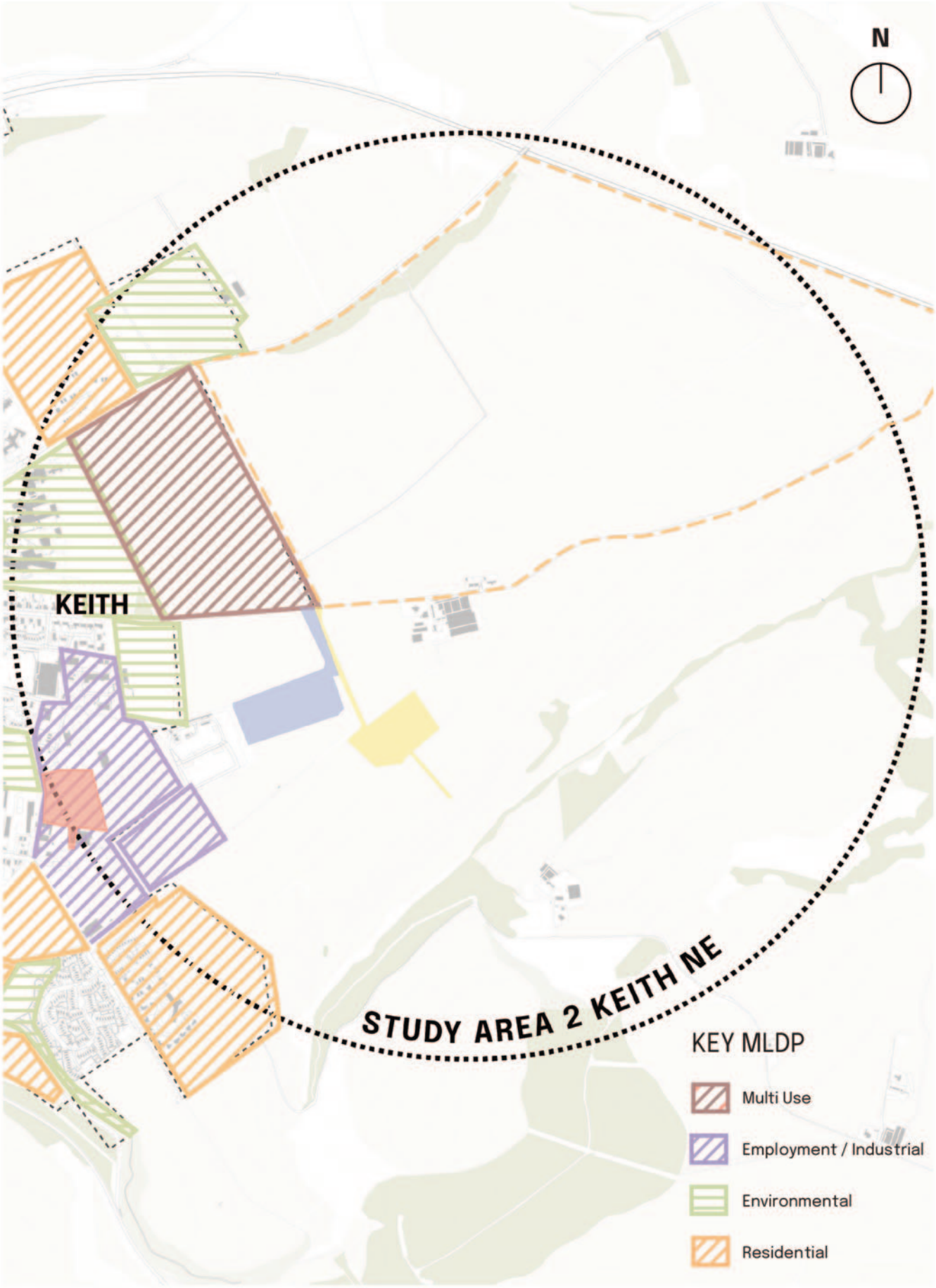


Figure 38 - Keith NE Planning Applications with Land Use Designations from MLDP

06 Keith - A Green Industry Hub?

The following section describes the existing, proposed and potential industrial and energy uses in both areas and explores the potential of the synergies between these uses to create a sustainable energy framework.

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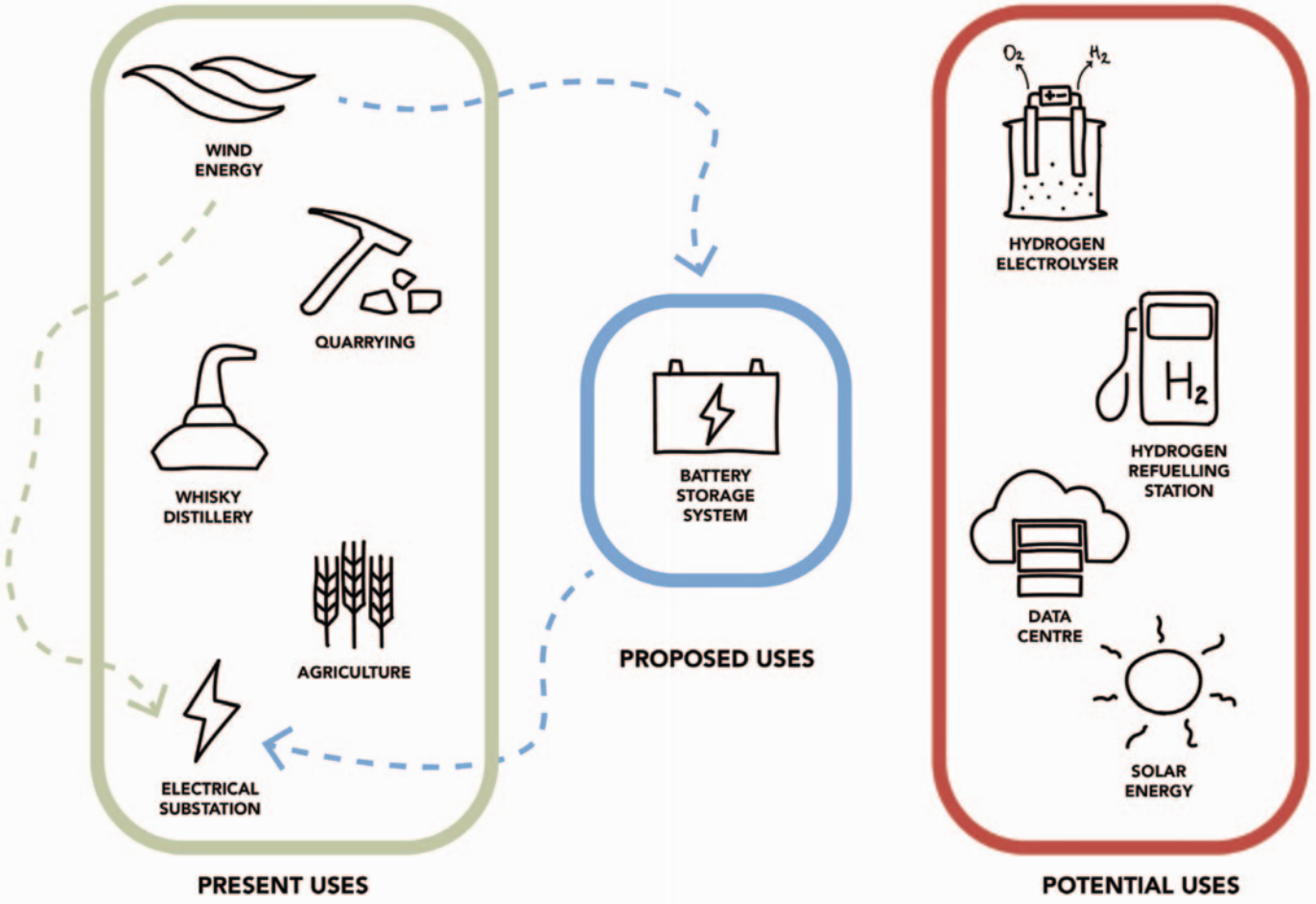


Figure 39 Present, Proposed and Potential Industrial Uses in Blackhillock

6.1 Industry In Keith

The areas of Blackhillock and Keith NE, as outlined previously, are industrial areas focusing mainly on energy, electricity distribution and agriculture.

The multiple distilleries located in and around Keith are also taken in to account in this study along with the quarrying site adjacent to Blackhillock.

Battery storage systems are required to store excess green energy produced before it is transmitted to the national grid. In fact there are currently plans for a battery storage system to be developed to the south of the Blackhillock substation and to the East of Keith substation as discussed in previous sections of this framework.

With the view of developing Keith into a hub for green energy production a number of additional uses have been identified, which in contrast to battery storage facilities could create more jobs in the area.

- Hydrogen Electrolyser and Refuelling Stations
- Data Centres
- Solar Energy

The following pages describe these uses in more detail and discuss the suitability and requirements for successful implementation. Proposals will require to comply with the Development Plan and associated guidance, which includes consideration of landscape and visual impacts and cumulative build-up.

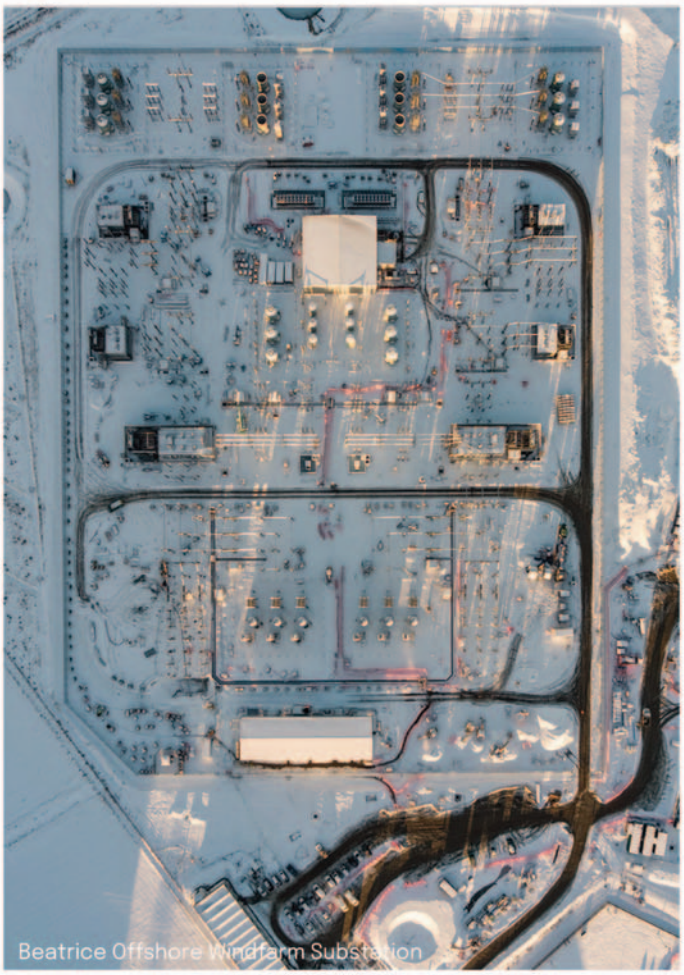
6.1 Present Uses


Edintore Windfarm, Blackhillock


Strathisla Distillery, Keith


Farmland nearby Keith


Blackhillock and Cairdshill Quarries


Beatrice Offshore Windfarm Substation

Images of Present Uses near Keith - Distilleries, Windfarms, Quarries, Substations and Agriculture

6.1.1 Battery Storage

The land around the Blackhillock and Keith sub station is currently being purchased or permission sought with the view of developing battery storage sites. Although ideally placed next to a sub station it is important to have a holistic plan to where these are located in order to provide the necessary screening and allow for additional connection corridors to the sub stations.

Battery storage systems are devices that enable energy from renewables, like solar and wind to be stored and then released when required. Storage helps balance electricity generation and demand and helps relieve some of the demand on the national electricity grid.

There is currently one application being processed for the development of a battery storage unit farm to the south of Blackhillock sub station. (Refer to Section 4.4).

KEY REQUIREMENTS:

- Screening
- Security fencing
- Land erosion control
- Permanent stormwater measure
- Integration with electrical infrastructure.

APPROXIMATE SIZE: 2-3 acres.

STRENGTHS & OPPORTUNITIES: Potential for other uses around the development. Blackhillock would be an appropriate location for this type of development given the levels of green energy produced here.

CONSTRAINTS & THREATS: Does not provide employment opportunity. Can be a blight on the landscape if not located in appropriate locations. The increasing number of planning applications for battery storage requires a planned approach to be taken to avoid further piecemeal development that can detrimentally impact on the landscape and character of Keith and its surrounding area.

Examples of battery storage systems
Sourced from WikiCommons and Rawpixel

6.1.2 Data Centres

A data centre is a physical facility which houses computer systems and associated components such as telecommunications and storage systems. This is used by organizations and company to store their critical applications and data. They are Important to meet ever increasing demand for internet access.

KEY NEEDS: Require significant infrastructure to support the centre's hardware and software. These included power subsystems, uninterruptable power supplies, ventilation, cooling systems, fire suppression, backup generators and connections to external networks.

Proximity to power distribution centre. Blackhillock deals with much higher voltage. More appropriate to be close to Keith power station.

APPROXIMATE SIZE: can vary from a very small area to around 16 acres.

STRENGTHS & OPPORTUNITIES: The heat generated by running a data centre could be fed back into the heat network - can be used to heat Keith. Ideally located next to power distribution centres.

CONSTRAINTS & THREATS: Require a significant amount of power to operate and keep cool. Expensive to operate due to cooling costs.

NOTES: Scottish Futures Trust have identified 12 possible sites in Scotland for possible data centres. This study has been developed to help "establish Scotland as an attractive location for green datacentres and to accelerate inward investment from the datacentre sector"

Data Center Equinix Am3/Am4, Amsterdam
Benthem Crouwel Architects
Photo by Jannes Linders

6.1.3 Hydrogen Electrolyser

"Our vision is for Scotland to become a leading Hydrogen Nation in the production of reliable, competitive, sustainable hydrogen and secure Scotland's future as a centre for international excellence as we establish the innovation skills and supply chain that will underpin our energy transition Scotland's unique selling points, are its natural resources, infrastructure and skilled energy workforce which enable us to become the producer of lowest cost hydrogen in Europe by 2045"
- Scottish Government, Hydrogen Policy Statement.

Green hydrogen is being considered as the primary industrial energy use and could be used to decarbonise heavy goods vehicles, trains and industrial uses.

KEY REQUIREMENTS:

- 170,000L/day of water.
- Proximity to sub station

APPROXIMATE SIZE: 10,000sqm.

STRENGTHS & OPPORTUNITIES: Proximity to large sub station make location ideal for this kind of facility and would generate employment in the area.

CONSTRAINTS & THREATS: Large area required which may need to be heavily screened and located strategically. Requires a large amount of water to function.

NOTES: Mott Macdonald together with UHI and HIE are currently conducting a Hydrogen Strategy and have identified Blackhillock as a potential site for an electrolyser and refuelling station.

Examples of Hydrogen Electrolysers

6.1.4 Hydrogen Refuelling Station

Currently in Scotland there are two publicly accessible refuelling sites in Aberdeen, Kittybrewster and Tullos, serving cars, buses and vans. There is one more larger refuelling station in Orkney for buses and a small refuelling station is planned in Glasgow.

A simple hydrogen refuelling station consists of hydrogen storage tanks, hydrogen gas compressors, a pre-cooling system, and a hydrogen dispenser, which dispenses hydrogen to pressures of 350 or 700 bars depending on the type of vehicle. A typical hydrogen car will be refuelled in three minutes and a bus in seven minutes.

KEY REQUIREMENTS:

- Proximity to road
- Proximity to hydrogen electrolyser ideal but not necessary (will reduce transportation costs.)
- Will require a larger area adjacent to the fuelling station for the storage of hydrogen.

APPROXIMATE SIZE: 20sqm

STRENGTHS & OPPORTUNITIES: Could be used to refuel vehicles used in the Blackhillock area (industry related, including farming vehicles and equipment). Can be used to power distilleries in the vicinity of Keith.

CONSTRAINTS & THREATS: A refuelling station on the A96 in close proximity to Keith may increase the level of traffic passing through the town.

Examples of hydrogen refuelling stations.
Sourced from WikiCommons

6.1.5 Solar Energy

As part of the Draft Energy and Just Transition the Scottish Government has also provided a solar vision whereby the importance of using solar energy combined with other renewables as a source to decarbonise the energy system in Scotland is recognised and will be supported.

A solar farm is a large scale ground mounted solar installation, using photovoltaic panels to harvest energy from the sun.

KEY REQUIREMENTS:

- on a commercial scale large amounts of land.
- Sunny conditions , suitable for the East coast of Scotland.
- Battery storage to store energy generated.

APPROXIMATE SIZE: around 32,000sqm for 1MW

STRENGTHS & OPPORTUNITIES: Solar farms could serve as a dual function and may be installed on roof tops as well as on land.

CONSTRAINTS & THREATS: Large area required for solar farms. Grid constraints means priority for energy being used close to production would be beneficial instead of being fed into the national grid. Potential to have significant landscape and visual impacts.

Examples of Solar Farms
Sourced from Unsplash

6.2 Development & Energy Framework

In order to build a sustainable energy framework for the area of Keith, there are potential overlaps between these uses.
The following will describe these synergies and outline how these uses can benefit each other and also the existing community of Keith.

As discussed in Chapter 5.1 there are a range of present, proposed and potential uses that could be guided to appropriate locations within the study areas.

PRESENT
Wind energy
Quarries
Whisky Distilleries
Agriculture
Electrical Substation

PROPOSED
Battery Storage

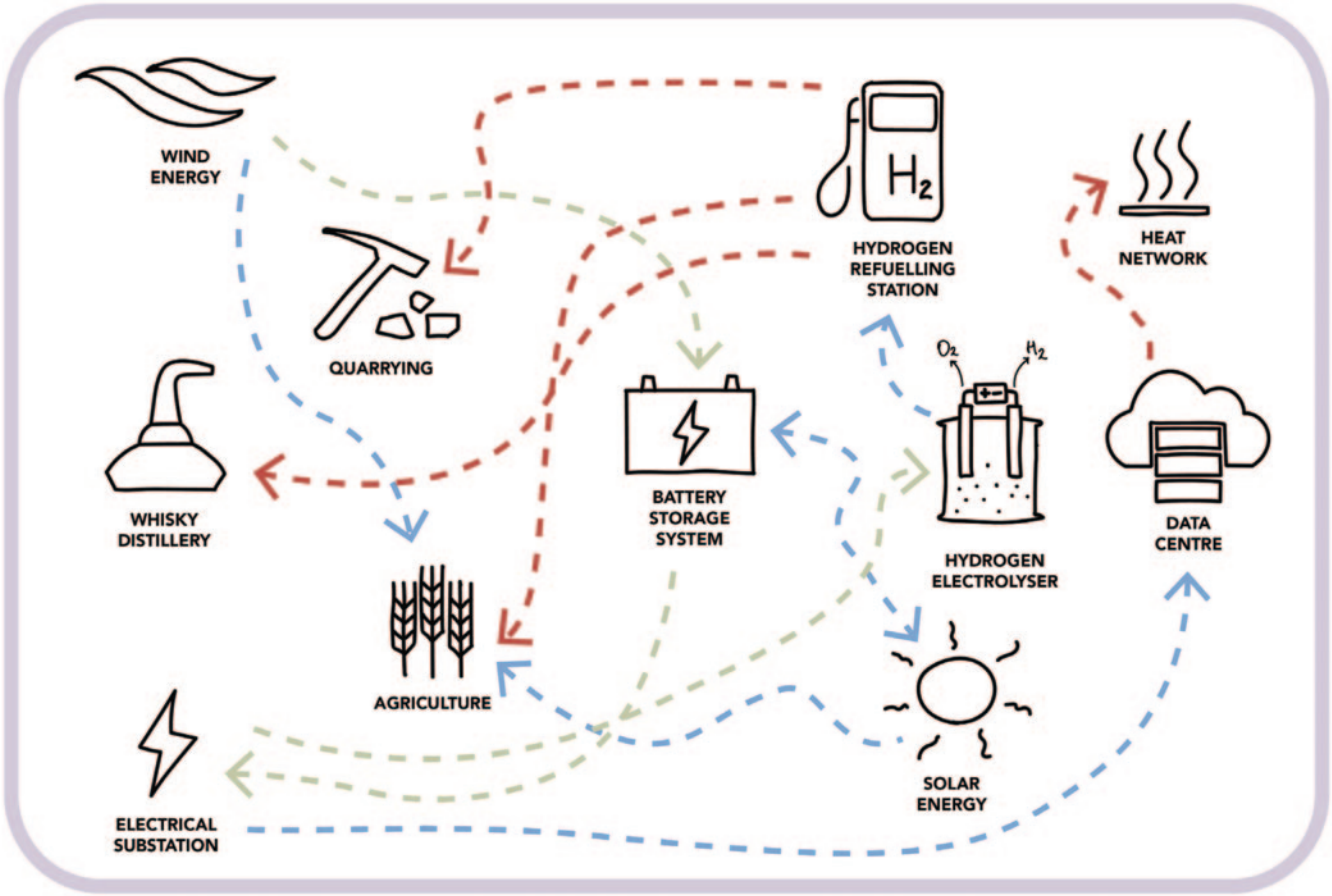
POTENTIAL
Hydrogen Electrolyser
Hydrogen Refuelling Station
Data Centre
Solar Energy

These uses have been categorised into developments considered as Type 1 (large scale industrial development) and Type 2 (industrial development at a more modest scale). Location of any development of Type 1 and Type 2 are provided in the next chapter on page 103.

TYPE 1
Wind energy
Quarries
Electrical Substation
Hydrogen Electrolyser
Hydrogen Refuelling Station
Data Centre

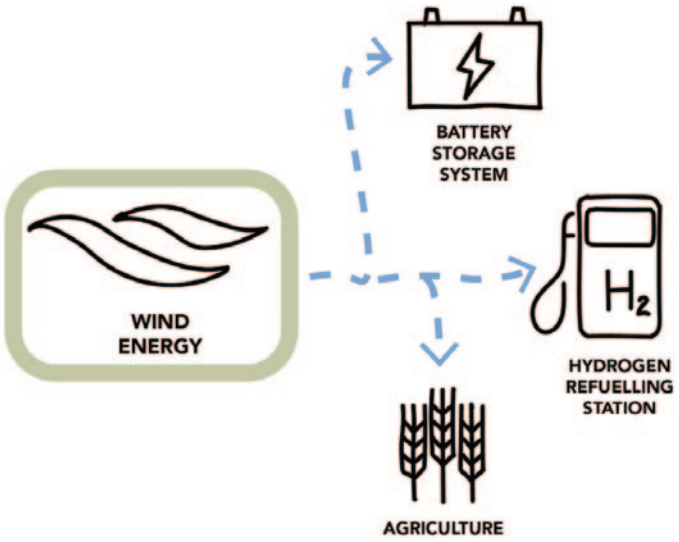
TYPE 2
Whisky Distilleries
Agriculture
Battery Storage
Data Centre
Solar Energy

The diagram below seeks to indicate how the present, proposed and potential energy and infrastructure might support and synergise each other and provide opportunities locally.



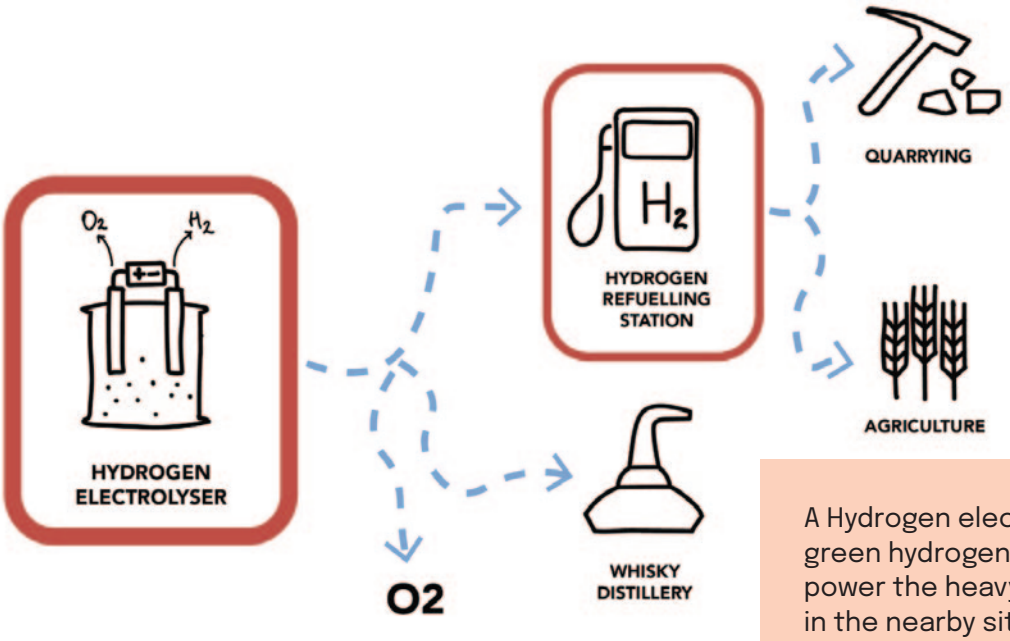
The following pages outlines a number of scenarios how these uses may support each other.

The following are a number of possible scenarios how the aforementioned uses could benefit each other and the community of Keith. These are not exhaustive and additional research will have to be done on conducted on their viability in the area.

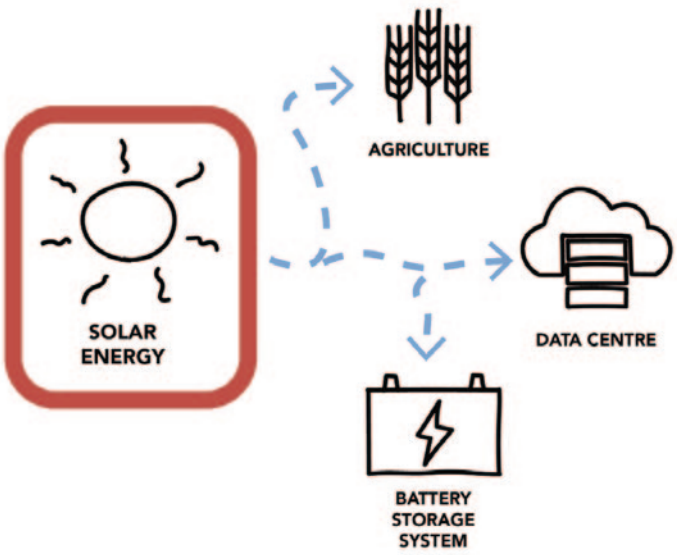


Wind Energy is a prevailant use in both study areas. The Edintore windfarm to the south of Blackhillock may have the potential to expand, whilst the Beatrice station harnesses the energy produced offshore. There are multiple ways that this energy produced locally could be harnessed by the community, reducing the need for excessive battery storage facilities.

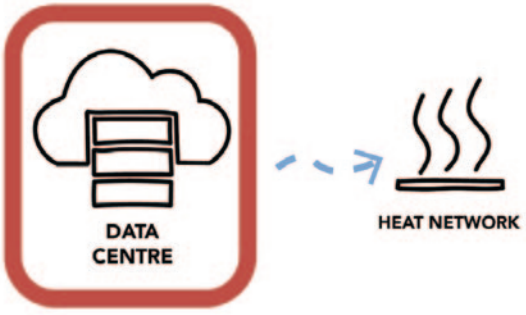
For example: feeding the energy to the nearby agriculture fields or using the energy to directly power a hydrogen refuelling station.



A Hydrogen electrolyser that produces green hydrogen has the potential to power the heavy goods vehicles used in the nearby sites, such as the quarrying sites or agricultural vehicles. There is also the potential for hydrogen to become the main power source for the distilleries in the nearby areas.



Similarly to wind, solar energy could be harnessed directly by nearby uses or used in combination with other uses. For example: raised solar panels may be used as shading for grazing animals.



There have been several studies which have shown the heat output from Data Centres could be harnessed and fed directly into the heating systems of nearby facilities.

07 A DEVELOPMENT STRATEGY FOR GREEN INFRASTRUCTURE IN THE KEITH AREA

This chapter brings together the various aspects for the Strategic development of Blackhillock and Keith NE. These are outlined in 5 key themes as follows:

- Landscape & Habitat,
- Access & Movement,
- Utilities & Information & Development,
- Use & Socio-Economic Impact and
- Boundary Conditions

COLLECTIVE
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Introduction

Given the national context to transition to net zero and produce more energy from renewable sources and the important role Keith will play, we need to manage the development of green energy and infrastructure in a planned fashion to avoid it detrimentally impacting on the landscape and character of the town and amenity of residents. There is a potential for Keith to become a green energy hub and bring in a number of benefits to the residents such as employment opportunities etc.

The following pages lay out a strategic framework in the form of 5 diagrams, for the two study areas discussed in the study, Blackhillock and Keith NE. The diagrams outline the various constraints and opportunities related to:

- **Landscape & Habitat,**
- **Access & Movement,**
- **Utilities & Information & Development,**
- **Use & Socio-Economic Impact and**
- **Boundary Conditions**

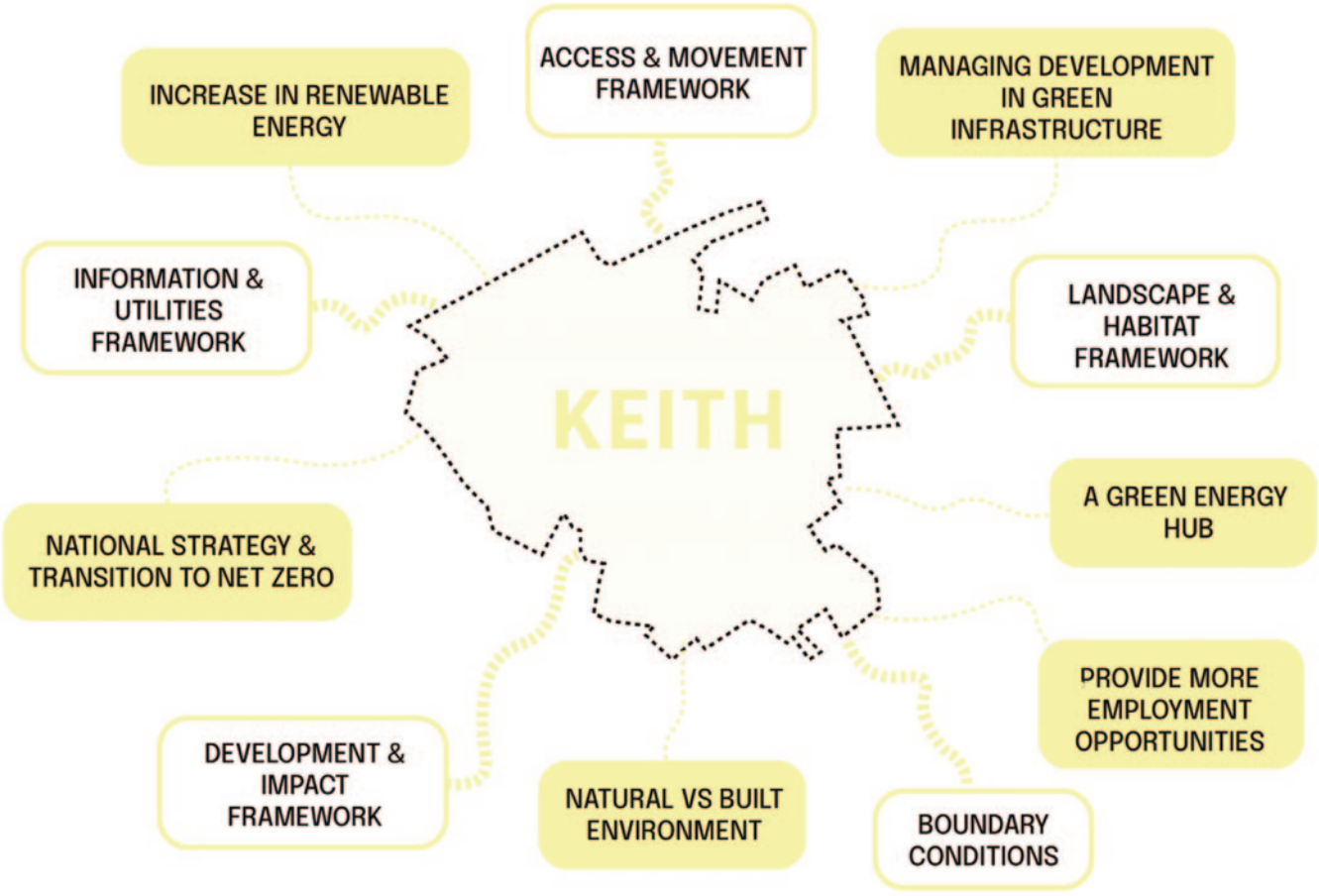


Figure 41 - Keith in the National Context and Outline Strategic Frameworks

7.1 Landscape & Habitat

- The landscape character of both study areas is primarily rolling farmland and woodland, punctuated at intervals by road and energy infrastructure.
- Any proposed development must take cognisance of the landscape character and be sensitively sited and designed to minimise its visual impact. Any proposed landscape mitigation must enhance the local biodiversity.
- Any new development at Blackhillock must be located to the south of the ridgeline identified. At Keith Northeast any new development should generally keep to the north of the ridge line or avoid new infrastructure seen on the horizon in views from the settlement.
- Any new planting & woodland must connect with existing habitat networks & using native planting local to the area. (Refer to Appendix, Landscape Sensitivity Study).
- There are 2 key water courses in the locale with no identified flood risk.

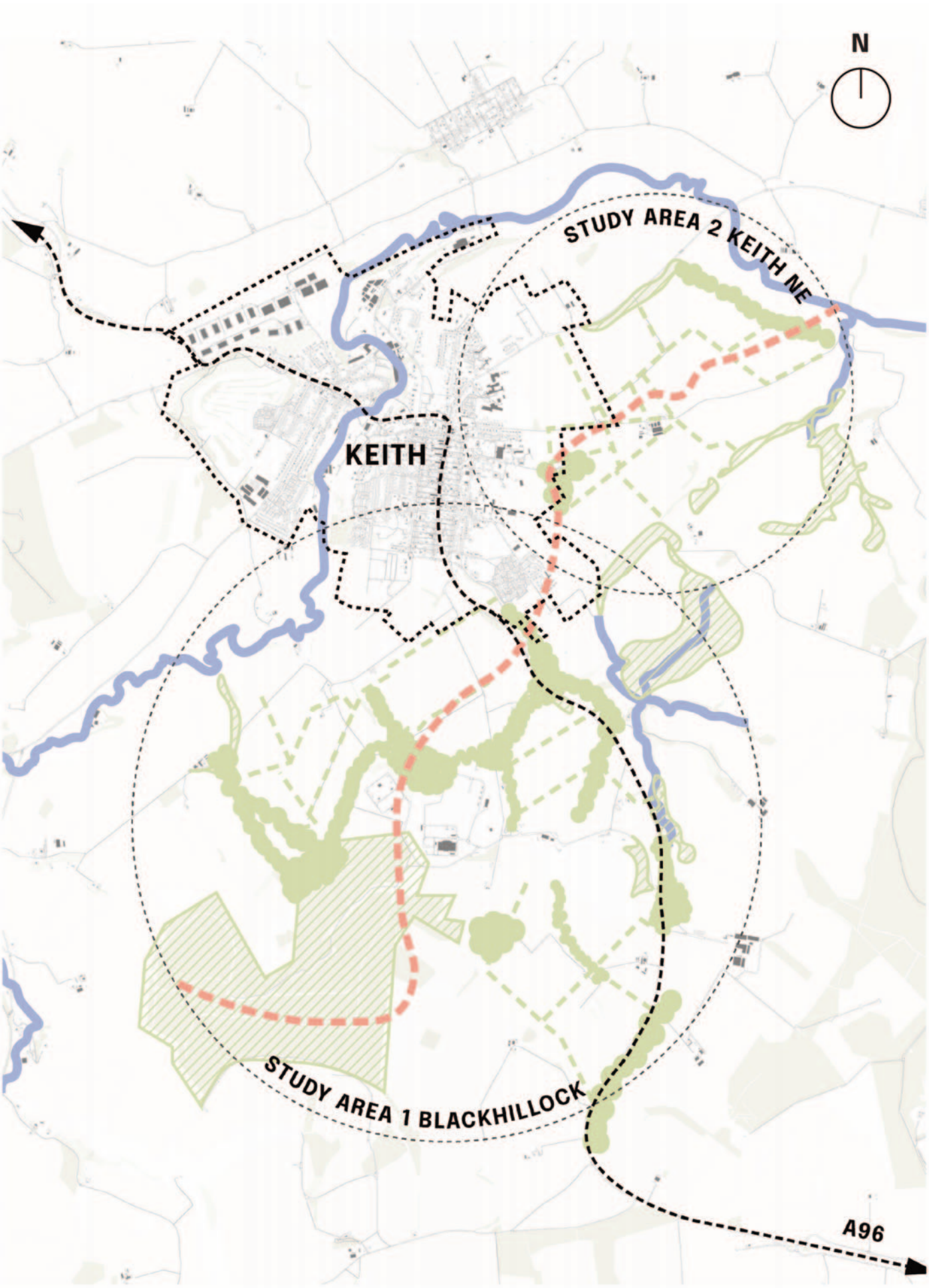


Figure 42 - Landscape & Habitat

7.2 Access & Movement

- Major regional road network in and around Keith and the study areas, providing access to development sites and opportunities.
- Train station in Keith to the north - not readily accessible on foot to the south and south east of the study area. Heritage rail route and station from town centre to Dufftown.
- Network of core paths in and around the town, serving the immediate periphery and providing access between the settlement and the surrounding countryside.
- Outside of the main road network, the nature and character of roads in the study areas are tracks and rural access points.
- There are a number of services and access points in and out of study areas from A96 and A95. Any new development would need to assess impact and upgrading of existing roads and access points. (Refer to appendix Transport & Infrastructure).
- Given the rural nature of the area it should be recognised that vehicle access whether that be cars or larger vehicles, they will have a role to play thus mitigating measures will be necessary to maximise sustainable integration with the existing transport network while managing vehicle impacts.
- A96 corridor and local road network improvements will need to be considered in any potential development. (Refer to appendix, Transport & Infrastructure).

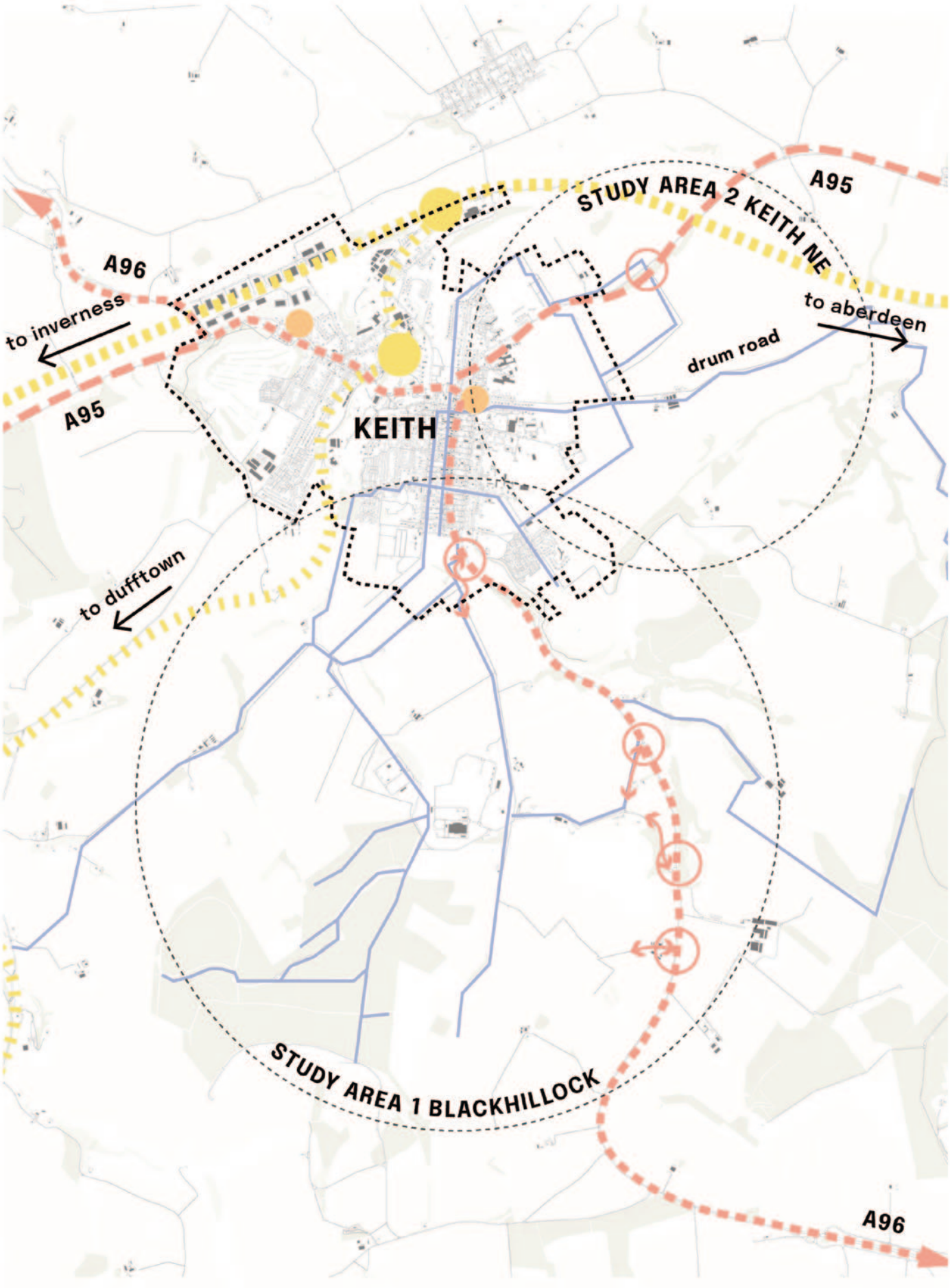
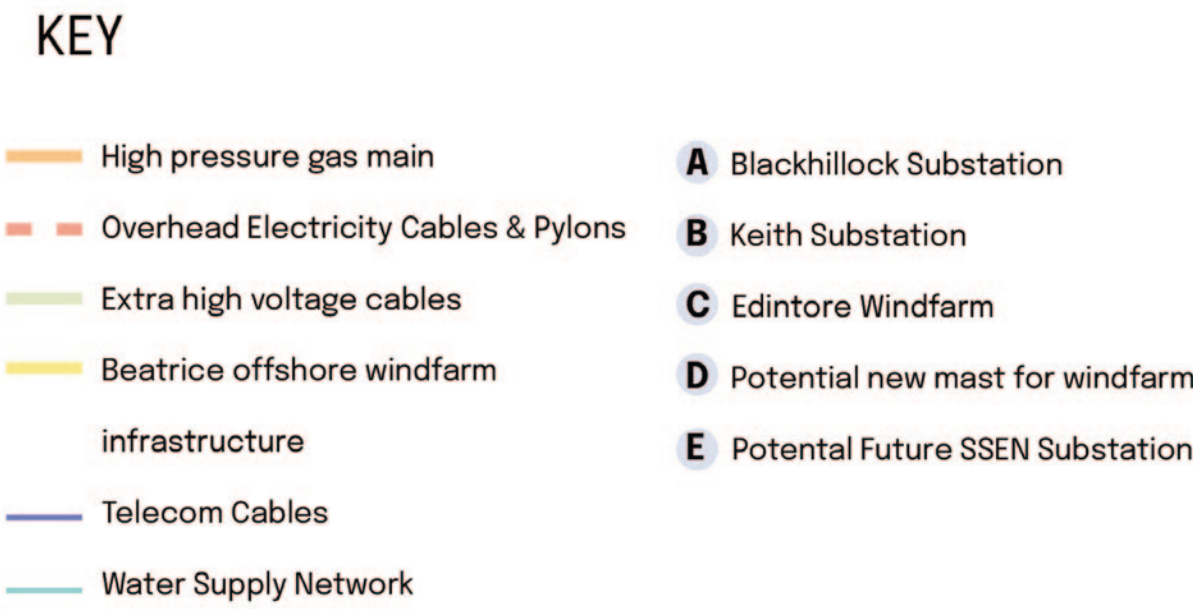


Figure 43 - Access & Movement

7.3 Information & Utilities

- The study areas have a number of significant utility and energy infrastructure that includes energy production and overground and underground utilities.
- These remain fixed in position for short and medium term. (SSEN have indicated that protected corridors have been identified - awaiting information,)
- SSEN are looking at site (E) as one of their future expansion sites for their 'Route to 2030' improvements.
- Windfarm to south of Keith (C) with recently proposed new mast and plans for future expansion which is still subject to a s36 application.
- Any new development for energy infrastructure (as identified in Chapter 6) should take consideration of the findings of the Landscape Sensitivity Studies for Blackhillock and Keith North-East (Refer to Appendix, Landscape Sensitivity Assessment).



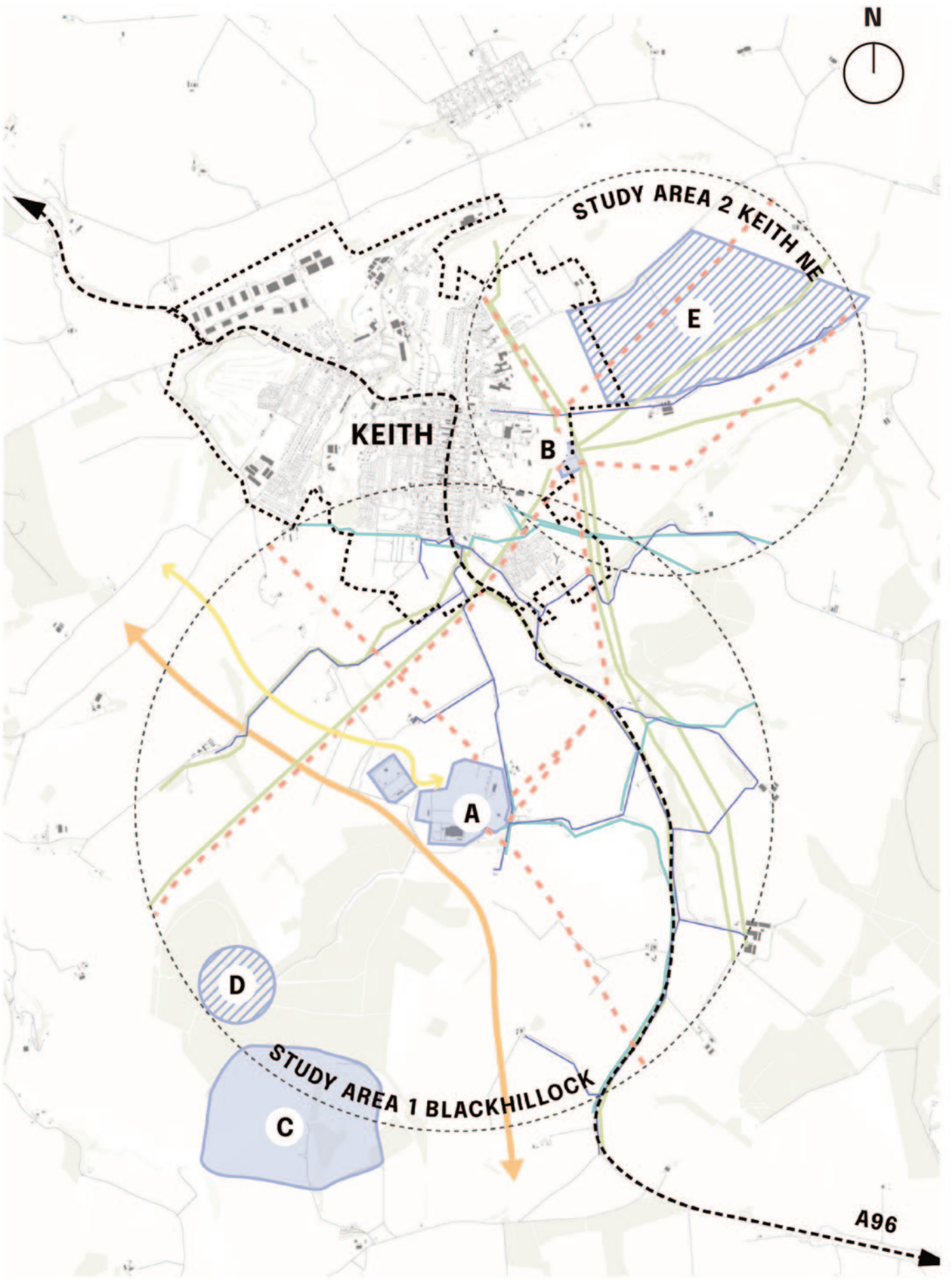


Figure 44 - Information & Utilities

7.4 Development Framework

- Land within the town's settlement boundary is to be safeguarded for employment uses as per the allocations within the LDP. Development outwith the settlement boundary (i.e. within the countryside) to be guided to the appropriate locations within this Framework to ensure that the need for renewable energy is balanced with safeguarding the landscape, natural environment and the setting of the town.

- Any new development must support Keith and its residents and the local economy, existing businesses & employment/skills development as outlined in the Community Wealth Building Strategy and Guidance by Moray Council. This guidance supports the delivery of NPF4 Policy 25 which relates to Productive Places (Community Wealth Building) policy 11 Energy which seeks to maximise net economic benefits and LDP policy DP9 Renewable Energy. Any proposed development is to identify how it supports the local economy including socio-economic benefits.

- Any new development is to be limited to the identified sites shown in the diagram opposite and within the study area as derived from the sensitivity study (Refer to Appendix, Landscape Sensitivity Assessment). Only Type 1 and Type 2 development will be considered. (Refer to 4.1 for more information)

- Any new uses & development areas must identify local opportunities for supporting the landscape and enhancing biodiversity (Refer to 7.1 Landscape & Habitat for identified opportunities and priorities.)

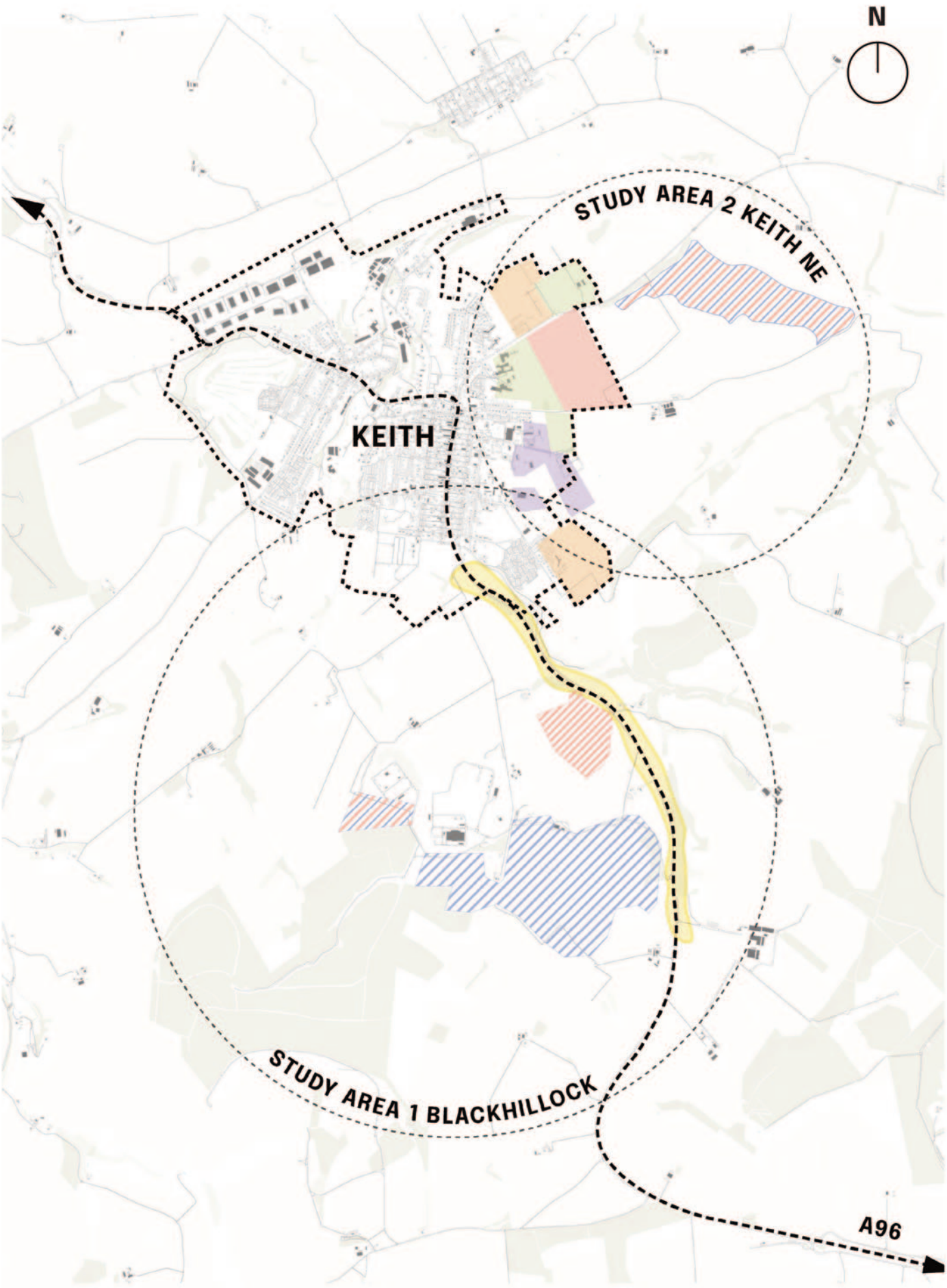


Figure 45 - Development Framework

7.5 Boundary Conditions

The intention of the areas identified in Figure 45 previously, is to guide any development to less sensitive areas.

All development proposals will require to be assessed based on site-specific analysis. A number of boundary conditions have been identified which correlate to the landscape or existing conditions present in the surrounding area.

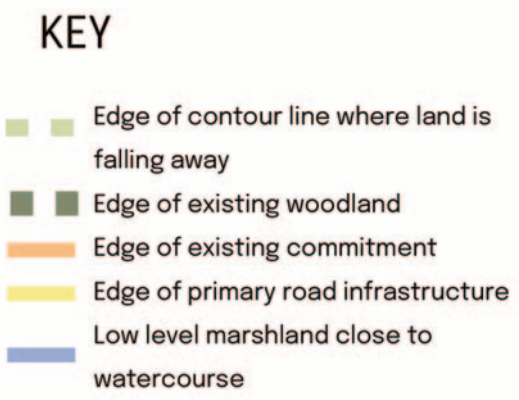
1. South of quarry- Potential development area to the south of Blackhillock Substation and Quarry where the landform provides some screening from areas to the south and east including the A96. Existing woodland and field boundary vegetation could be enhanced to screen existing and proposed development.

2. South of Beatrice HVDC – Potential development area to the south of Beatrice HVDC Converter Station / west of Blackhillock Substation. Proposed development would be associated with existing industrial development and existing woodland across Cairds Hill could be extended to screen existing and proposed development.

3. South of A96 – Potential development area on lower slopes between Blackhillock Substation and the A96 to reduce the potential for development to be seen on the skyline in views from the A96, and to provide separation with nearby residential properties. Existing woodland and field boundary vegetation could be enhanced to screen existing and proposed development.

4. Boundary to the north is defined by a watercourse/ area of lower lying marshy ground, which wouldn't be suitable for development.

5. Southern boundary following a contour. This should help keep any development tucked in behind woodland to the west and keep things on lower ground and out of any views from Keith.



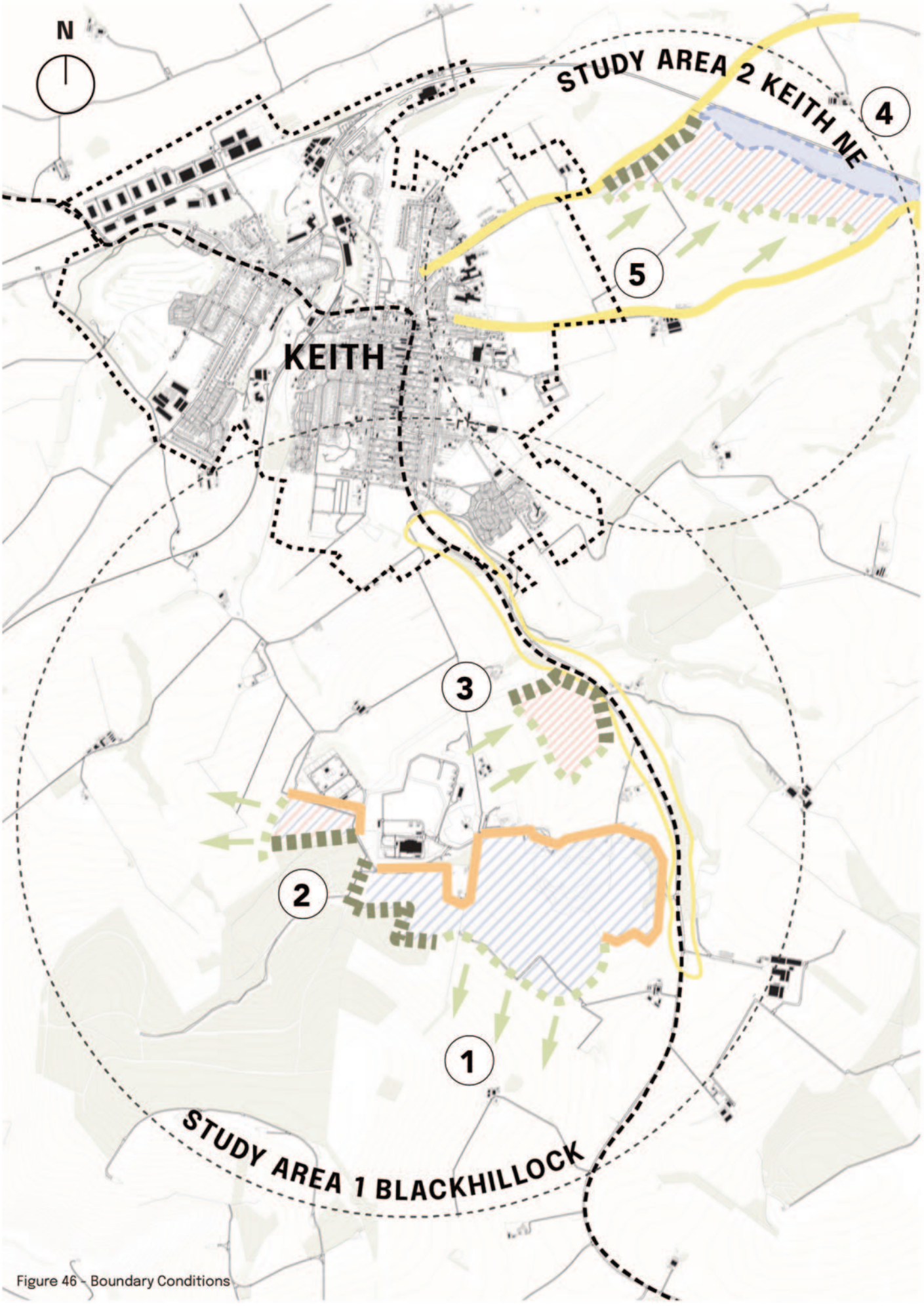


Figure 46 - Boundary Conditions

7.6 Strategy for Green Infrastructure

The diagram overleaf brings together the various key aspects for the strategic development of Blackhillock and Keith NE identified in the previous framework diagrams, mainly landscape proposals (Section 7.1) and guideline for development areas for Type 1 and Type 2 (Section 7.4)

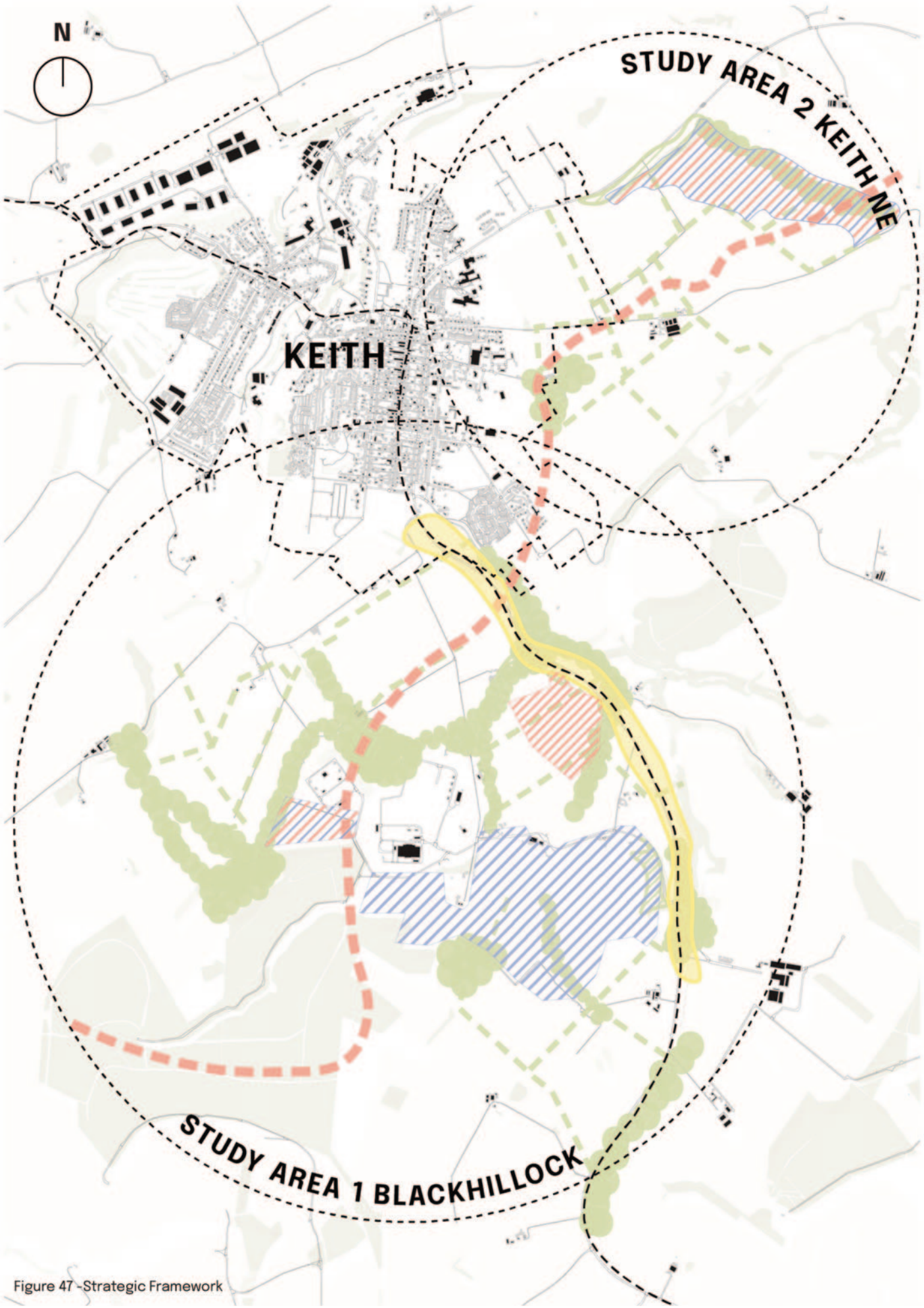


Figure 47 -Strategic Framework

08 Contacts

For any queries or further information
please contact the Moray Council on:
localdevelopmentplan@moray.gov.uk

Further information on planning applications,
including pre-application advice, can be found at:
www.moray.gov.uk/moray_standard/page_41669.html

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