

Keith Green Energy & Infrastructure Framework

June 2023

APPENDIX





APPENDIX

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EXISTING UTILITIES
FLOOD RISK DATA
TRANSPORT & INFRASTRUCTURE
EXAMPLE SCENARIOS
LANDSCAPE SENSITIVITY STUDY

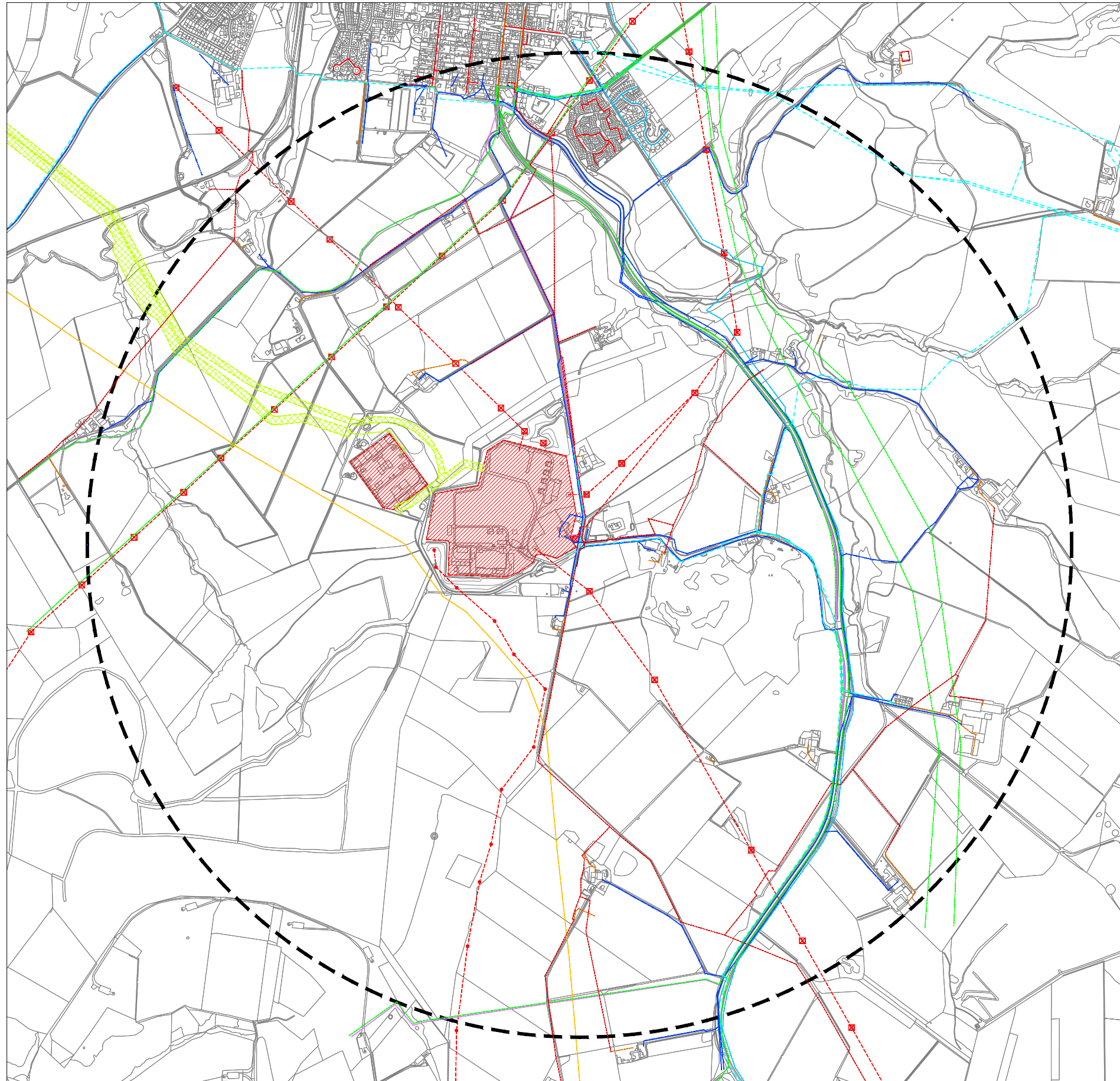
EXISTING UTILITIES

by G3 Consulting Engineers

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Existing Utilities - Blackhillock



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LEGEND

- Overhead electricity cables & pylons (Scottish & Southern Electricity Network)
- Low voltage cables (Scottish & Southern Electricity Network)
- High voltage cables (Scottish & Southern Electricity Network)
- Fibre optic cables (Scottish & Southern Electricity Network)
- Low pressure gas main (Scottish Gas Network)
- Medium pressure gas main (Scottish Gas Network)
- High pressure gas main (Scottish Gas Network)
- Medium voltage substation (Transmission Capital)
- Water supply pipeline (Scottish Water)
- Electricity sub-station

NOTE:
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rev	description	by	check	date

DOCUMENT:
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Signed: _____

Client:
COLLECTIVE ARCHITECTURE

Project:
SITE B - BLACKHILLOCK MASTERPLAN

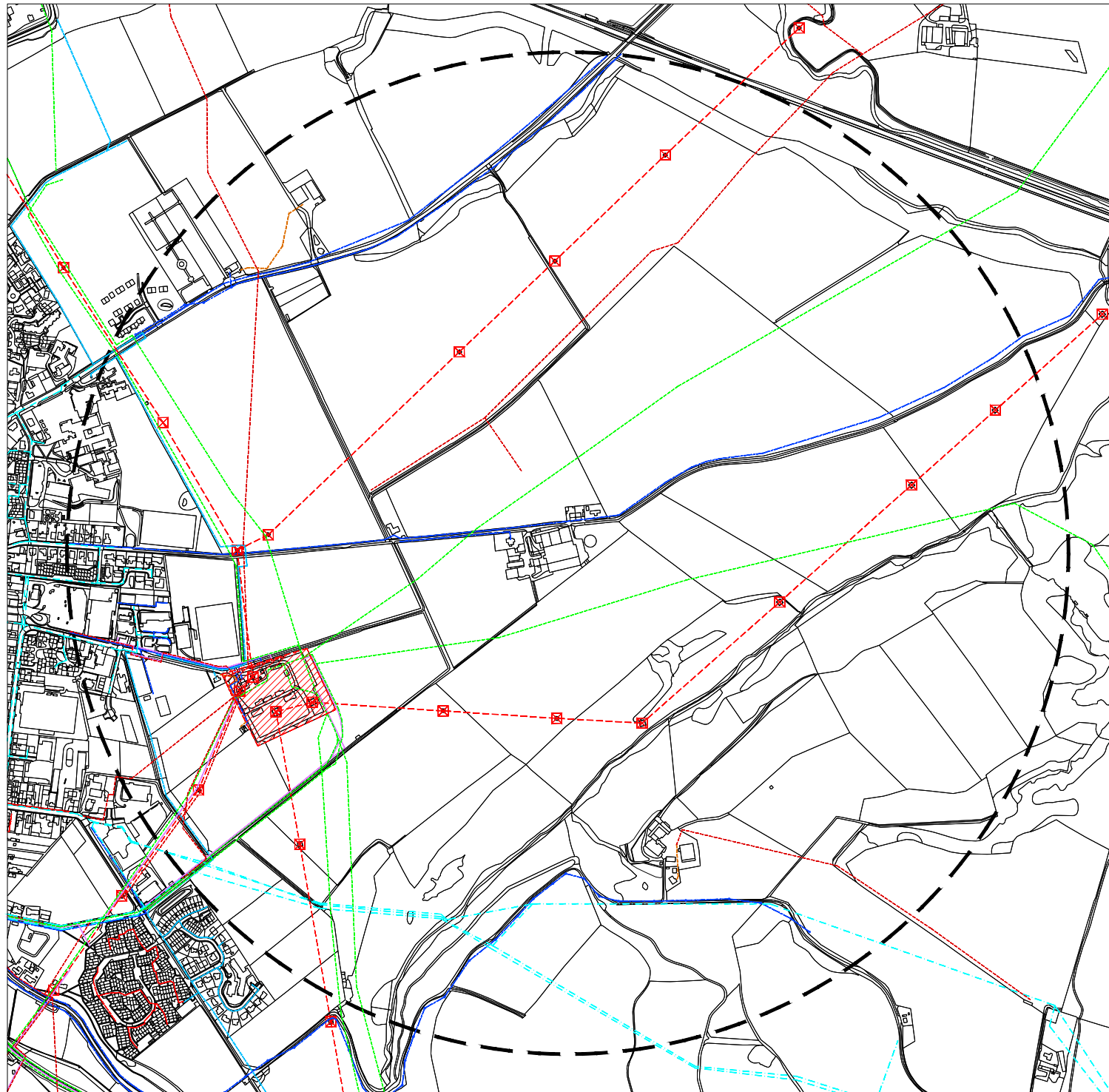
Site:
EXISTING UTILITIES LAYOUT

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drawn	checked	date
EP	RJM	21/06/23

Scale: 1:500 sheet size A0
Drawing Number: **J5469-EX-1001** Revision: _____

Existing Utilities - Keith NE



LEGEND

- - - - - Overhead electricity cables & pylons (Scottish & Southern Electricity Network)
- - - - - Low voltage cables (Scottish & Southern Electricity Network)
- - - - - High voltage cables (Scottish & Southern Electricity Network)
- - - - - Extra High voltage cables (Scottish & Southern Electricity Network)
- - - - - Fibre optic cables (Scottish & Southern Electricity Network)
- - - - - Low pressure gas main (Scottish Gas Network)
- - - - - Medium pressure gas main (Scottish Gas Network)
- - - - - High pressure gas main (Scottish Gas Network)
- - - - - Beatrice offshore windfarm infrastructure (Transmission Capital)
- - - - - Telecom Cables (BT Openreach)
- - - - - Water supply pipework (Scottish Water)
- - - - - Electricity Sub-station

NOTE:
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client
COLLECTIVE ARCHITECTURE

project
SITE A - KEITH MASTERPLAN

title
EXISTING UTILITIES LAYOUT

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drawn	checked	date
P	RKM	24/04/23
scales	1:5000	sheet size A1
Drawing Number	J5469-EX-1000	
	Revision	

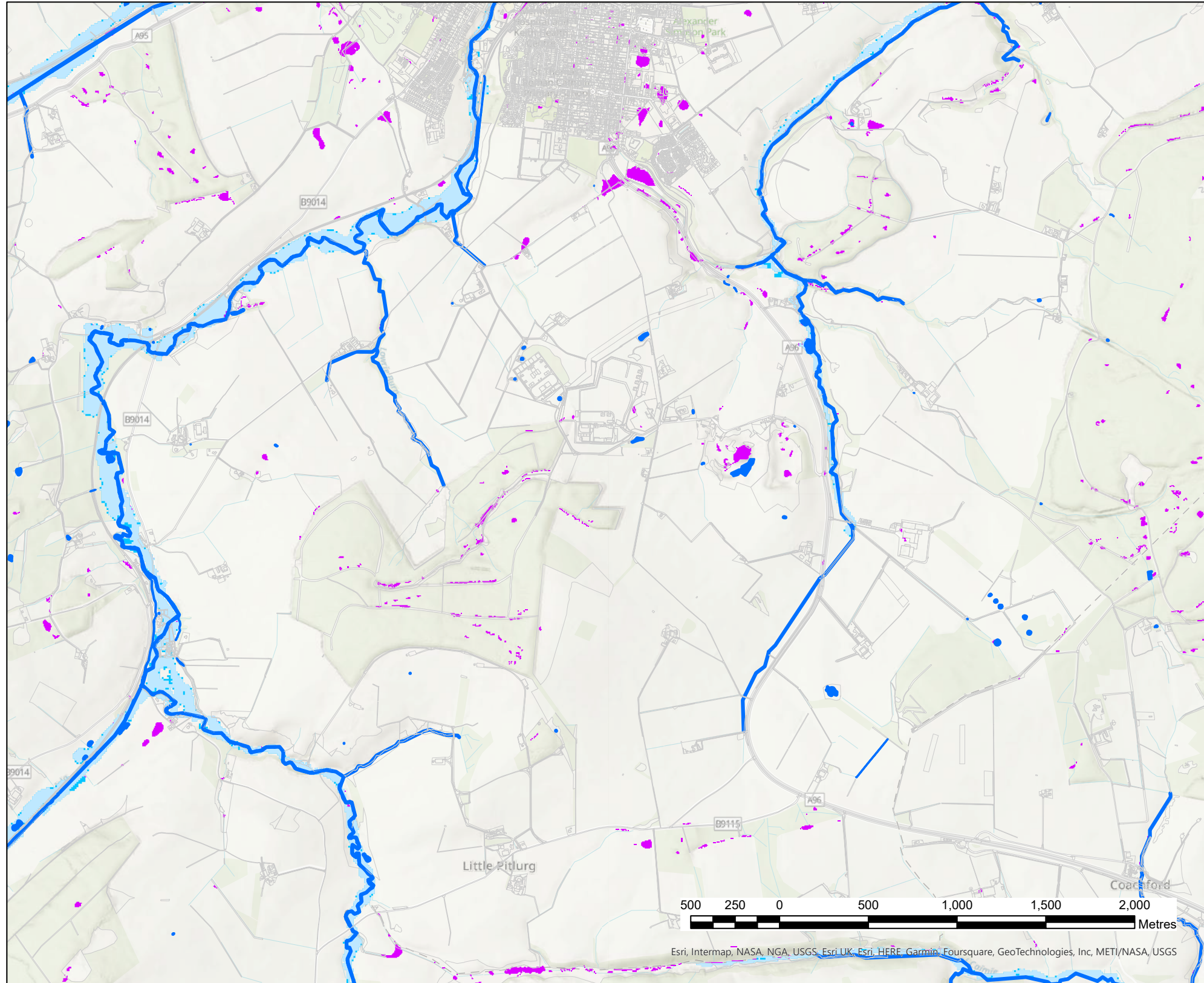
FLOOD RISK DATA

by AECOM

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ARCHITECTURE

Flood Risk Data - Blackhillock

Revision: 1.2 Drawn: JW Checked: DH Approved: DH Date: 2023-05-29



AECOM

PROJECT
 Blackhillock Development Framework
 Flood Risk Overview
 Moray Council Just Transition

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 Moray Council

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 Edinburgh EH3 5DA
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LEGEND

- OS MasterMap Reference
- OS Water (River, Loch or Reservoir)
- 1 in 200 Fluvial Data Set
- 1 in 200 + CC Fluvial Data Set
- 1 in 200 Surface Water Data Set

NOTES
 1: OS MaserMap Reference is approximately georeferenced

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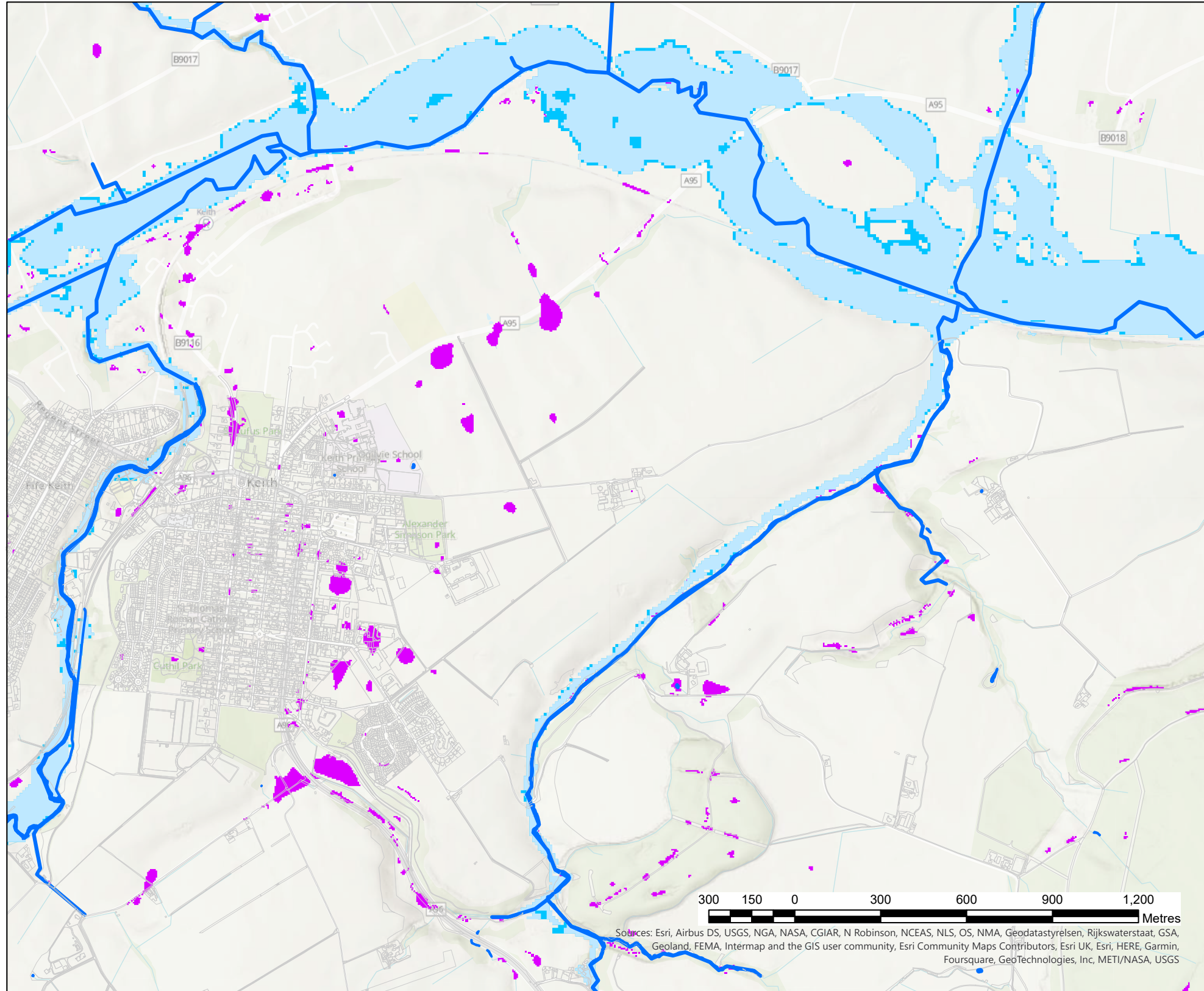
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ISSUE PURPOSE
 INFORMATION

Flood Risk Data - Keith NE

Revision: 1.2 Drawn: JW Checked: DH Approved: DH Date: 2023-05-29



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Esri Community Maps Contributors, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS

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 Keith East Study Area
 Flood Risk Overview
 Moray Council Just Transition

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LEGEND

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- OS Water (River, Loch or Reservoir)
- 1 in 200 Fluvial Data Set
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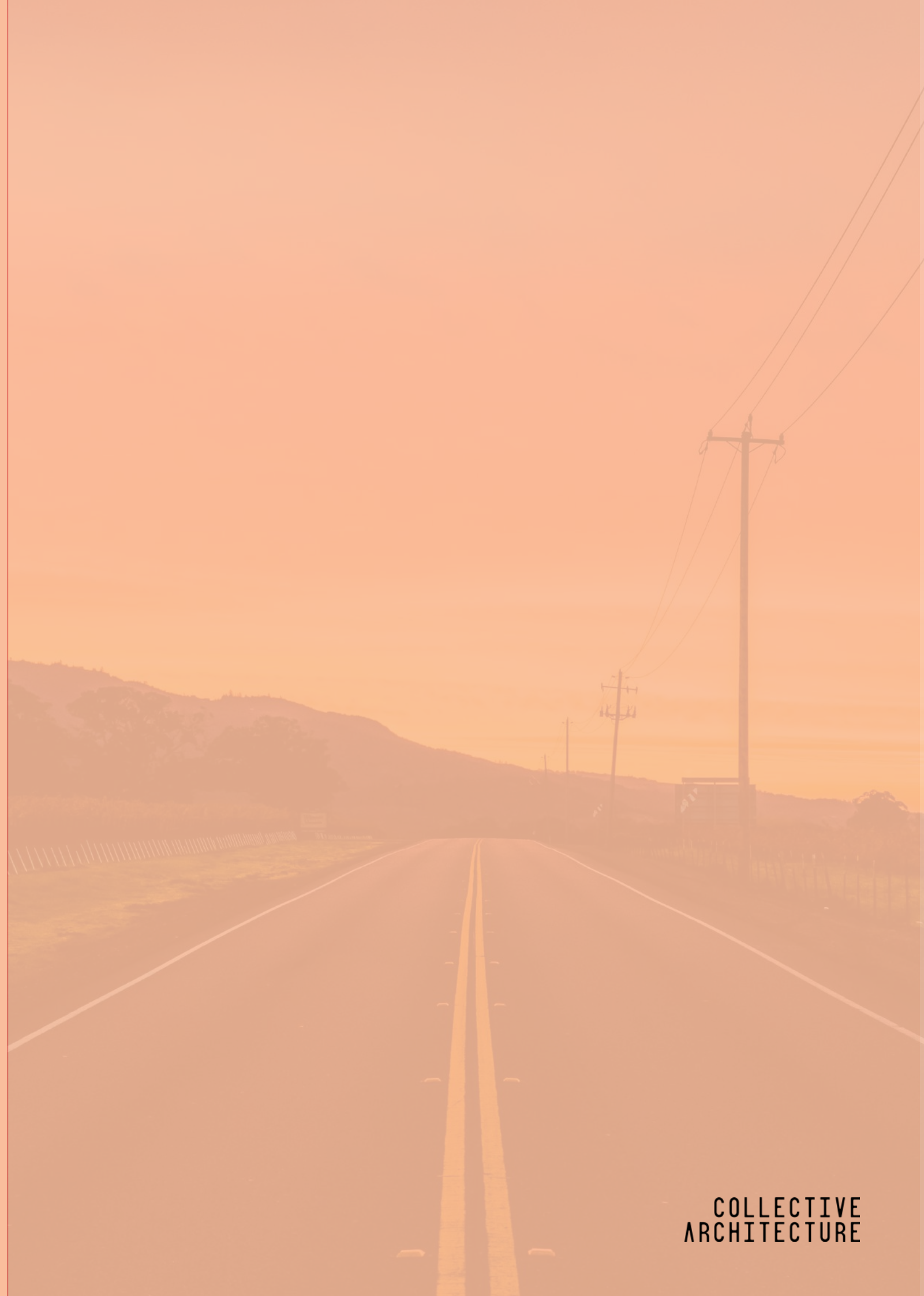
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ISSUE PURPOSE
 INFORMATION

TRANSPORT & INFRASTRUCTURE

by MEINHARDT

COLLECTIVE
ARCHITECTURE



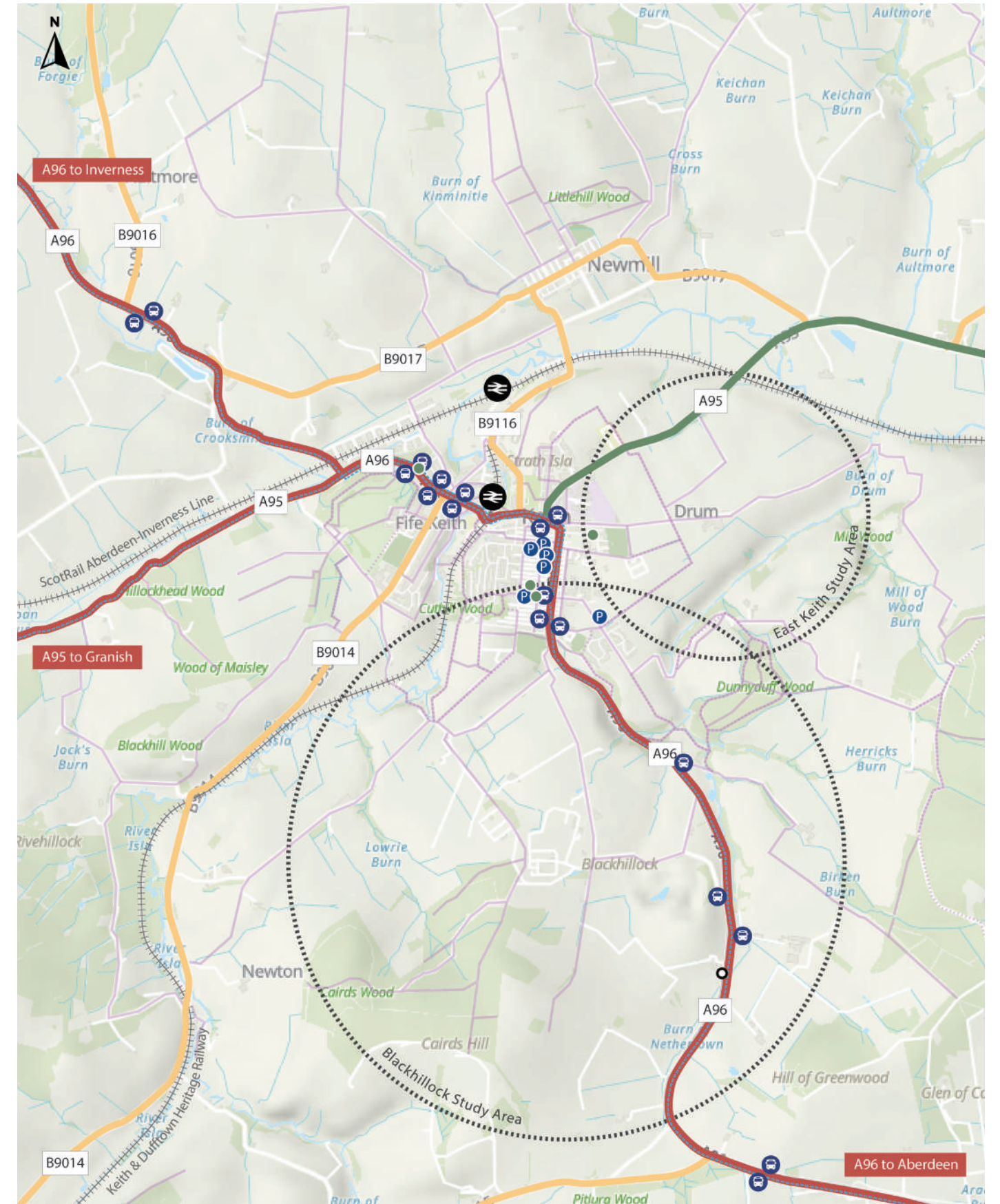
Transport & Infrastructure

Key elements of the existing transport context include the A96 and A95 trunk routes, the ScotRail Aberdeen-Inverness Rail Line, EV charging points, and bus routes and stops along the A96.



- 1 A96, south of Keith (Source: Google Streetview)
- 2 Keith Railway Station (Source: Wikimedia Commons)
- 3 EV Charge Point, Keith (Source: Google Streetview)
- 4 Bus stop, A96, south of Keith (Source: Google Streetview)

- Trunk Roads
- A Roads
- B Roads
- EV Charging Points
- Railway Line
- Railway Stations
- Public Access Routes
- Bus Stops
- Bus Routes
- Parking Locations
- Traffic Scotland Road Monitoring Weather Station



Transport Network Overview

Active Travel Infrastructure

Active Travel infrastructure outside Keith, including within Blackhillock and East Keith, is limited due to the rural context and low population density.

National Cycle Network (NCN) routes are sparse across the North-East region, including within Moray, and there are no NCN routes proximate to Keith or the study areas. Cycling mode share in Moray is just 0.8%, as at September 2021, again likely impacted by the rural context and limited infrastructure.

The opposing figure shows the network of public access routes, based on Moray Council mapping of core paths across Keith and its surrounds. The categorisation of routes is based on the following from Moray Council:
 Core paths: statutory paths designated under the Land Reform (Scotland) Act 2003, providing the framework for public access across Moray. Typically in reasonably good condition, requiring only minor physical improvements to make them function more successfully as accessible paths.
 Promoted paths: routes which are currently signposted, waymarked and / or are featured on centrally located map boards within settlements, and they may also be featured on publicity materials (e.g. websites, leaflets).
 Existing paths: routes including a variety of minor roads, tracks and earth paths, identified from previous public consultation as paths which people used.

There is a network of existing paths throughout the Blackhillock Study Area, in addition to core and promoted paths in the north, northeastern and northwestern extent of the study area proximate to Keith. These routes connect Keith with outlying areas and green spaces, including Lairds Wood within the study area. Within the East Keith Study Area, there are a number of core, promoted and existing paths, mostly concentrated in the western half of the study area closer to the town. There are also a number of core, promoted and existing paths around Dunnyduff Wood, and connecting back into Keith, falling within the overlap between the two study areas. The routes within the study areas are a mix of on-road and traffic-free paths.

- Core Paths (Public roads / roadside paths)
- Core Paths (Off road)
- Promoted Paths
- Existing Paths



Public Access Routes (Source: adapted from Moray Council)

Public Transport (Bus)

The locality's public transport network incorporates rail and bus. Services are somewhat limited due to the more rural context, however, Keith benefits from its location on the transport corridor between the major cities of Inverness and Aberdeen.

The location of bus stops along the A96 is shown on the opposing figure, along with the two main bus routes servicing Keith:

- Route 10, operated by Stagecoach Bluebird, runs Monday to Sunday between Inverness and Aberdeen along the A96. There is roughly one service every hour between 06:30 and 00:30 Monday through Saturday and between 11:30 and 00:30 on Sundays.
- Route 365, operated by Moray Council and running between Aberlour / Dufftown and Keith on Tuesdays, Thursdays and Fridays. The frequency of this route across each operational day is unknown.

Bus stops along the A96 vary in standard. Many outside of Keith appear to be lay-by only with no signage, lighting, timetable information or pedestrian infrastructure, e.g. at Whitehillock Farm, Cairdshill Quarry, Tarnash and Buckie Road End. Backmuir Cottages is the exception along the A96 outside of Keith, with the bus stop of fairly high standard incorporating shelter, perch seating, signage and a timetable, although there is no street lighting. Within Keith, bus stops at Broad Lane, Regent Street, Regent Square (westbound) and Regent Court incorporate signage and timetable information only, while Banff Road and Regent Square (eastbound) provide shelter, signage, timetable information and seating. Reidhaven Square, Keith's main bus stop, is of high standard equipped with shelter, seating, lighting, bins, shade and timetables.

(Source: Google Streetview)



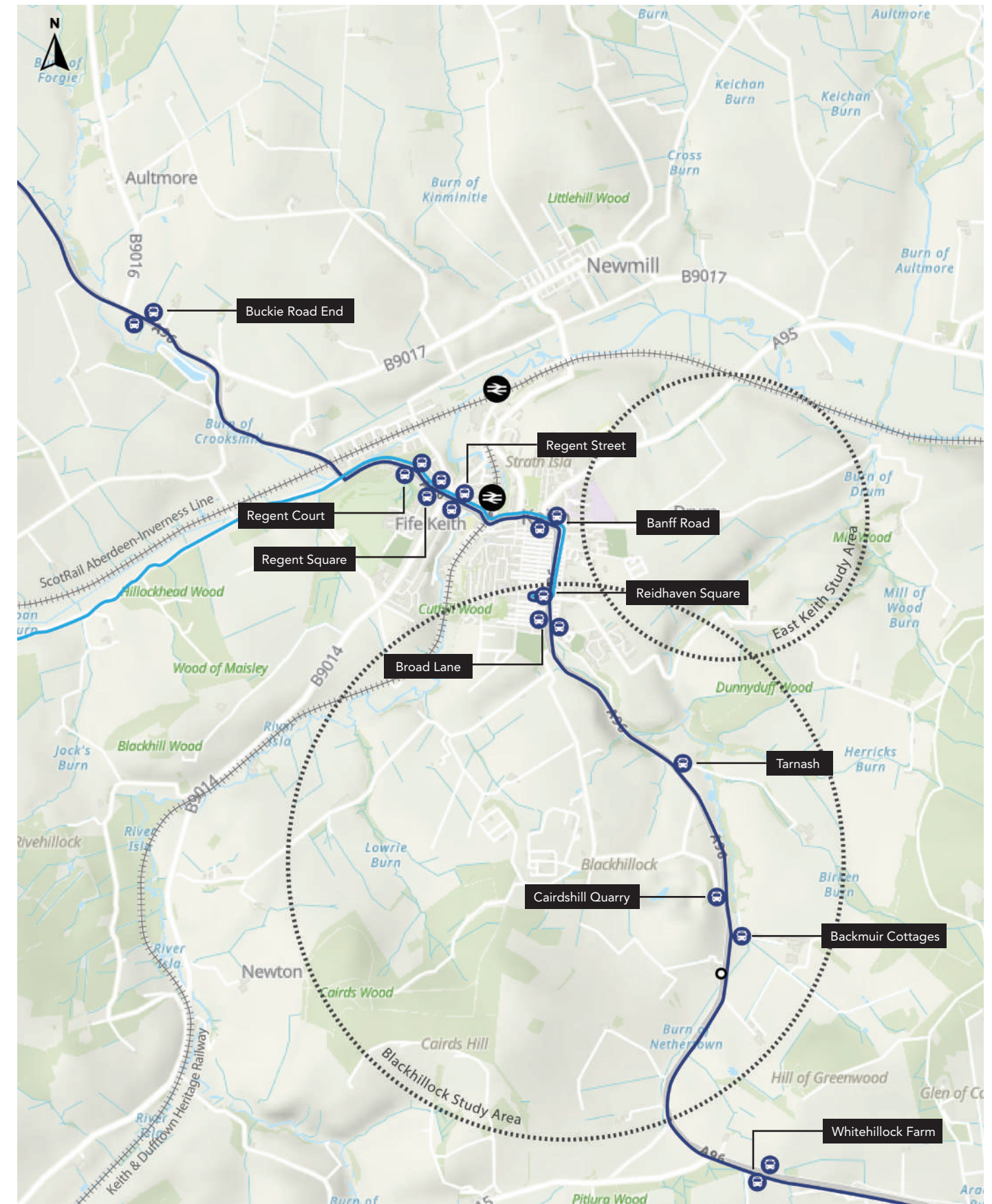
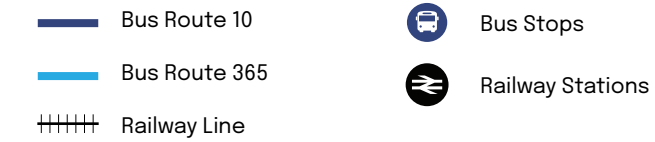
Backmuir Cottages



Tarnash



Reidhaven Square



Public Transport (Source: adapted from Stagecoach, BusTimes)

Public Transport (Rail)

Keith Railway Station to the north of the town is located on the Inverness to Aberdeen Rail Line, with 11 ScotRail services per day between 5:00 and 21:30. A small extent of the line runs through the north of the East Keith Study Areas.

From Keith, it is approximately:

- 1 hour 7 minutes east to Aberdeen, stopping at Huntly, Inverurie, Kintore, Dyce and Aberdeen.
- 1 hour 4 minutes west to Inverness, stopping at Elgin, Forres, Nairn, Inverness Airport and Inverness.

Keith Station is manned part-time and equipped with CCTV, ticket machine(s), departure screens, step-free platform access, 10 cycle storage spaces (lockers and stands), and 88 car parking spaces. The majority of the Inverness-Aberdeen line is single track, with passing loops at several stations along the route. Keith is also understood to have freight capacity.






Keith has a second railway station, Keith Town, serviced by the Keith and Dufftown Heritage Railway, an 18-kilometre route operating heritage trains between March and September, and on special event days. The Route is safeguarded from development under the LDP. The line does not connect with the main line, but is safeguarded for future connection. Part of the line runs through the northwest of the Blackhillock Study Area.

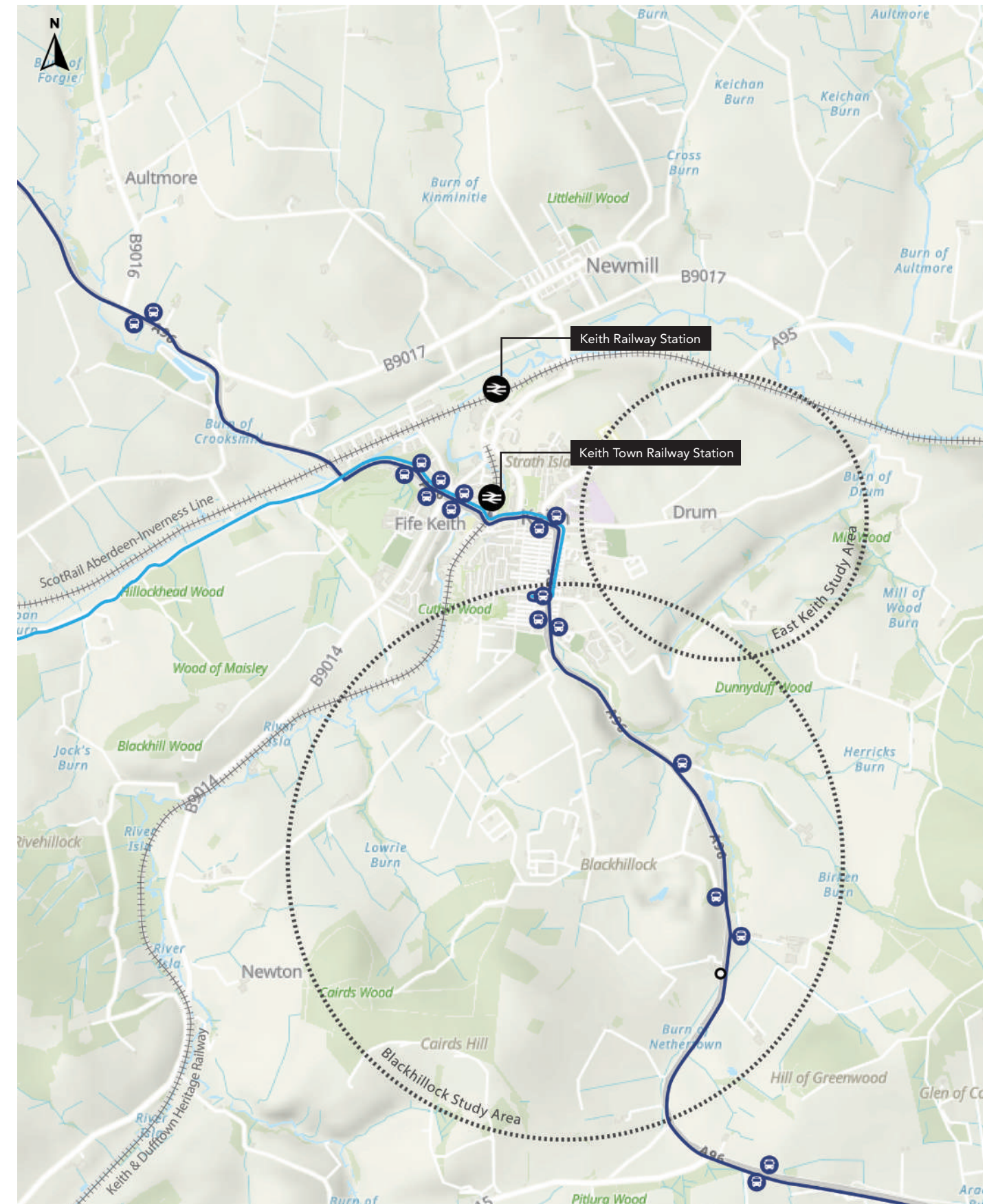


Keith Railway Station (Source: Wikimedia Commons)



Keith Town Railway Station (Source: Nigel Thompson)

-  Bus Route 10
-  Bus Route 365
-  Railway Line
-  Bus Stops
-  Railway Stations



Public Transport (Source: adapted from Stagecoach, BusTimes)

Travel to Work Study

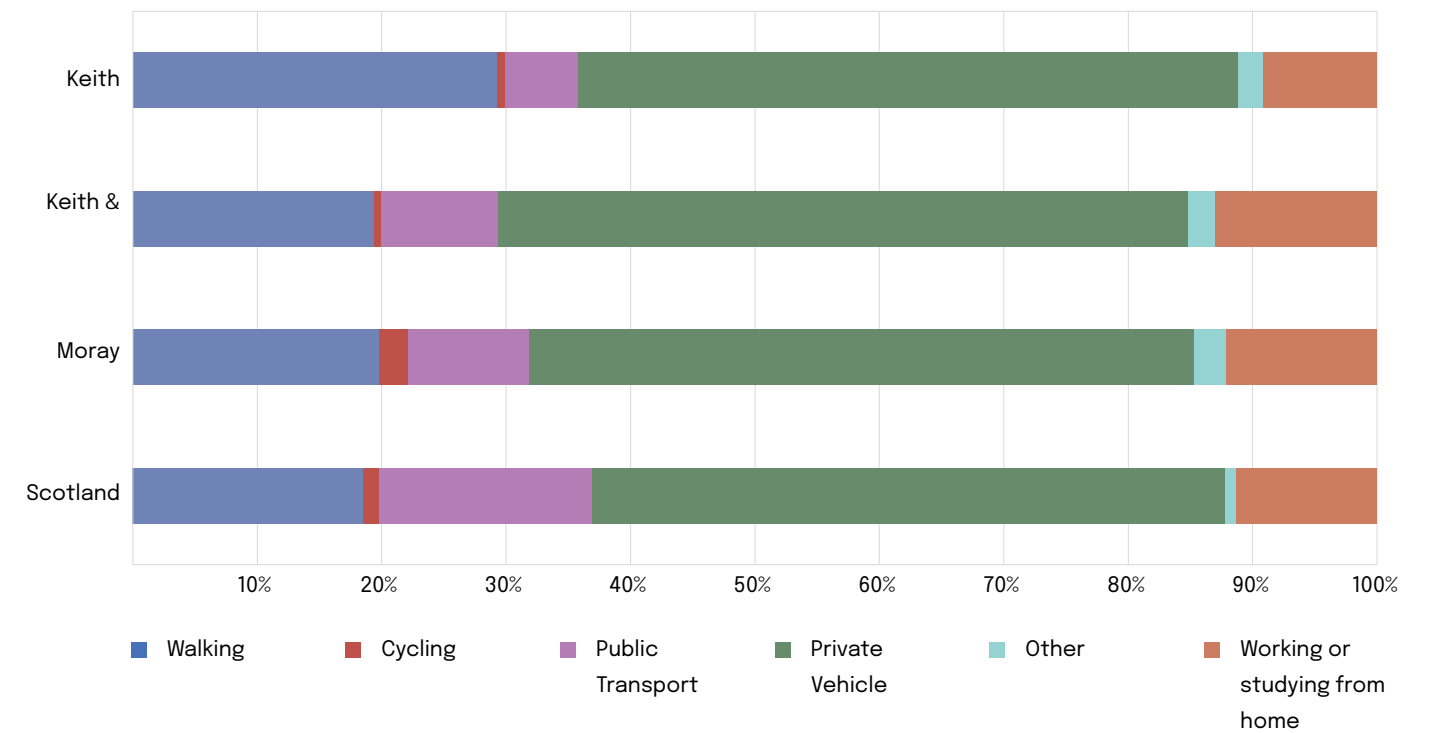
Census data from 2022 is not yet available, so the following consideration of travel to work and study data is based on 2011 Census findings for Scotland. Census data may be outdated as a consequence of its age, changes to transport availability, and recent changes to travel patterns and the incidence of working from home, including from the COVID-19 pandemic. More recently, public consultation for the A96 Corridor Review found respondents were reporting they were more likely to drive and less likely to use public transportation post-pandemic due to the cost of travel, reduction in services, and risk of catching COVID-19.

The figure on the opposing page illustrates the breakdown for the modes of travel to work or study for Scotland, Moray, Keith & Surrounds, and Keith. The national average for people predominantly working or studying from home in 2011 was 11.29%. Within Moray and Keith & Surrounds, this was slightly higher than the national average at 12.10% and 12.98% respectively. Within Keith, it was slightly lower at 9.10%.

For each of the geographical areas, private vehicle was the predominant mode of travel to work and study in 2011, with Moray (53.43%), Keith & Surrounds (55.39%) and Keith (53.05%) all slightly higher than the national average (50.85%).

Compared to the national average (18.48%), rates of walking as the main mode of transport for work and study were higher in Moray (19.82%) and Keith & Surrounds (19.38%), and significantly higher within Keith (29.31%). For cycling, Moray (2.30%) recorded a higher proportion than the national average (1.30%), while Keith & Surrounds (0.54%) and Keith (0.65%) recorded a lower proportion.

Public transport use within Moray (9.73%), Keith & Surrounds (9.50%) and Keith (5.81%) was much lower than the national average of 17.16%, likely reflective of the higher walking and private vehicle rates.



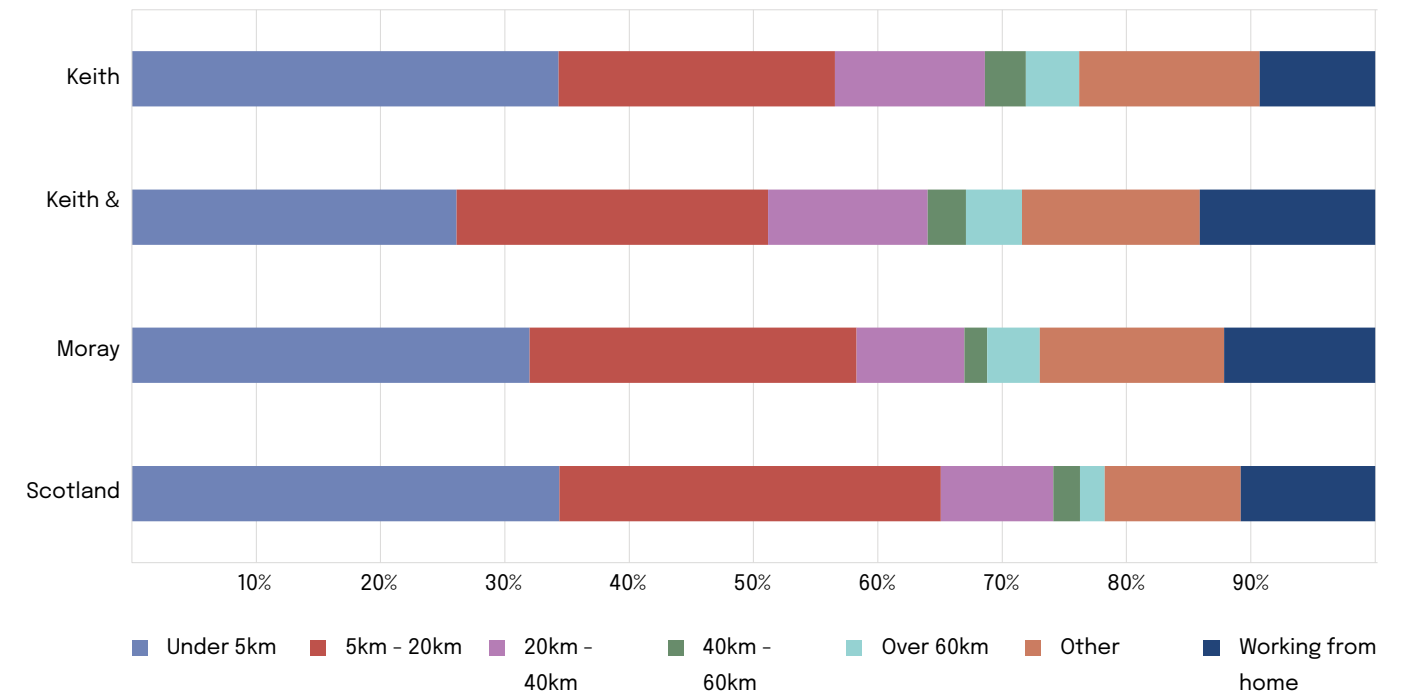
Distance to Work

The figure on the opposing page illustrates the breakdown of distance travelled to work for Scotland, Moray, Keith & Surrounds, and Keith.

The proportion of people travelling under 5 kilometres within Keith (34.31%) in 2011 was comparable to the national average (34.40%). Moray (32.00%) and particularly Keith & Surrounds (26.12%) recorded lower proportions, likely due to the inclusion of rural areas within these geographies. Scotland had the highest proportion of people travelling between 5km-20km (30.67%) compared to Moray (26.28%), Keith & Surrounds (25.06%) and Keith (22.23%).

The rate of people travelling 20km-40km, 40km-60km and over 60km is higher within Keith & Surrounds (total of 20.41%) and Keith (total of 19.66%) compared to the national average (total of 13.17%). This is likely indicative of Keith's distance from: Elgin (approx. 25km), Aberdeen (approx. 65km) and Inverness (approx. 75km).

Moray (14.85%), Keith & Surrounds (14.32%) and Keith (14.52%) have a slightly higher proportion of people responding 'Other' compared to the national average (10.81%). This figure encompasses no fixed place of work or work off-shore (e.g. off-shore energy and gas sites) or overseas.



Trunk Roads

The A96 connects Keith with Aberdeen to the east, and Inverness to the west. For the majority of its length, it is a single carriageway route. The general speed limit is 60mph, however for HGVs it is 40mph restricting all vehicle speeds and leading to platooning. The A96 routes through a number of settlements, including Keith (where the speed limit reduces to 30mph), generating road safety, congestion and amenity impacts. There is a road monitoring weather station within the Blackhillock Study Area on the A96 (location shown on opposing page). The weather station provides Traffic Scotland real-time information, including temperature of the road, air temperature, wind speed and wind direction. HITRANS identifies the A96 as one of the three most unreliable trunk routes in the HITRANS region in terms of travel times. Due to the road being single carriageway and the rural nature of the region, diversions resulting from accidents or other incidents can significantly impact on journey times. For example, an accident on the A96 between Keith and Huntly (to the southeast) can result in a recommended 65-kilometre diversion via Banff, which occurred an average of 1.5 times each year between 2016 and 2021. Moray Council has identified the A96 as “vital to the economic development of Moray” and have been lobbying for improvements, in partnership with HITRANS.

The A95 trunk route connects Keith with Granish to the west. It is a single carriageway road with a speed limit of 60mph, except where it traverses through local settlements and reduces to 30mph.

The following table sets out estimated average annual daily traffic (AADT) flows for 2019 (pre-pandemic) for the A96 and the A95. Traffic flows in the region peak between July to September, likely due to increased recreational and tourist traffic. The section of the A96 around Keith records the lowest AADT flows of the entire A96 corridor. A96 counts were sourced from Traffic Counter 74321 and A95 counts were sourced from Traffic Counter 20866, both shown on the opposing figure.

AADT Flows, 2019	Bicycles	Motorcycles	Cars & taxis	Buses & coaches	LGVs	HGVs	Total
A96, Northbound	0 (0.00%)	26 (0.65%)	2,947 (73.86%)	24 (0.60%)	645 (16.17%)	348 (8.72%)	3,990
A96, Southbound	0 (0.00%)	26 (0.66%)	2,914 (73.81%)	24 (0.61%)	639 (16.19%)	345 (8.74%)	3,948
A95, Eastbound	1 (0.11%)	1 (0.11%)	632 (66.81%)	9 (0.95%)	255 (26.96%)	48 (5.07%)	946
A95, Westbound	0 (0.00%)	0 (0.00%)	599 (64.83%)	11 (1.19%)	250 (27.06%)	64 (6.93%)	924

(Source: Department for Transport, 2019)

- Trunk Roads
- EV Charging Points
- P Parking Locations
- 🚌 Bus Stops
- Traffic Scotland Road Monitoring Weather Station



Trunk Roads

Road Conditions within Blackhillock and East Keith Study Areas

The following imagery illustrates the condition and characteristics of the roads within the study areas, highlighting the potential need for improvements and upgrades to deliver the Energy Framework particularly on rural roads, e.g. road widening, improved access, road safety improvements.

A96



1a - single carriageway, safety barriers



1b - rest area, digital ITS signage



1c - overhead transmission lines



1d - Blackhillock access from A96



1e - sheltered bus stop (bus route 10)



1f - general location of fatal accidents

A95 / Banff Road (East of Keith)



2a - single carriageway into Keith



2b - existing access point

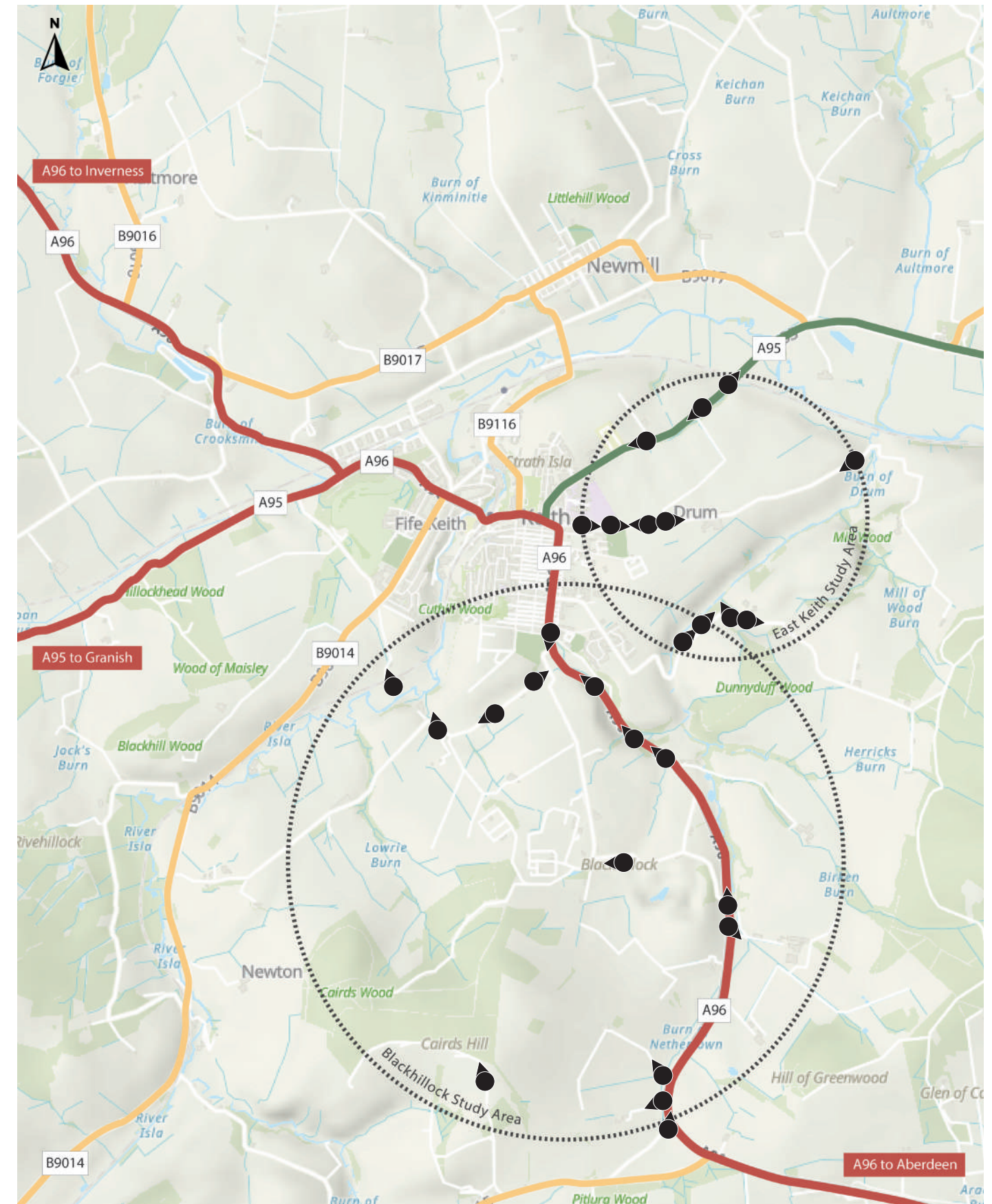


2c - bridge over railway line

Source: Google Streetview 2022, 2023

— Trunk Roads
— A Roads
— B Roads

1a Image Locations



Road Network

Blackhillock Study Area



3a - access to Derwell Road from A96



3b - Derwell Road junction



3c - example passing place



3d - public access walking route



3e - railway overbridge*



3f - view to Blackhillock Substation*



3g - single lane route



3h - single carriageway access off A96



3i- single carriageway & works off A96

Source: Google Streetview 2021-2023 (*2014)

East Keith Study Area



4a - Drum Road no through route



4b - Drum Road change to single lane



4c - condition of road



4d - junction with rural routes



4e - road topography*



4f - single lane route



4g - lack of pedestrian infrastructure



4h - informal parking



4i - public access walking route

Source: Google Streetview 2022, 2023 (*2014)

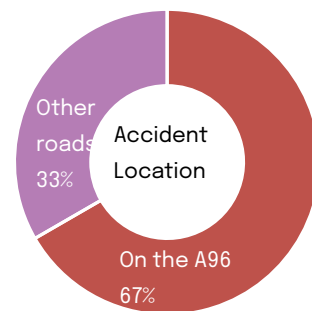
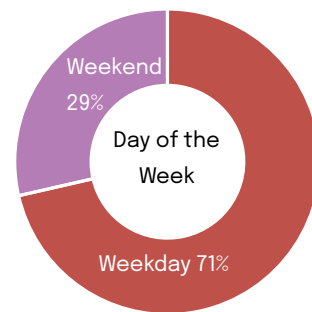
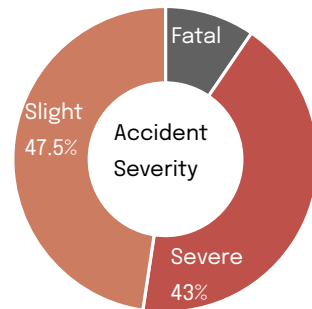
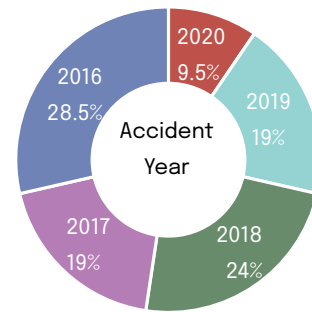
Road Safety

The figure on the opposing page identifies twenty-one (21) crashes that occurred proximate to the study areas over the five year period from 2016 to 2020: two (2) in 2020, four (4) in 2019, five (5) in 2018, four (4) in 2017, and six (6) in 2016. Of these two (2) were fatal, nine (9) were severe, and ten (10) were slight. Fifteen (15) incidents occurred on a weekday and six (6) over weekends. Fourteen (14) incidents occurred on the A96. Four (4) of the twenty-one incidents involved a pedestrian (injured or killed), four (4) involved a motorcyclist (injured), five (5) involved a child casualty (injured or killed), one (1) involved a cyclist (injured), five (5) involved a goods vehicle, and fourteen (14) involved a car.

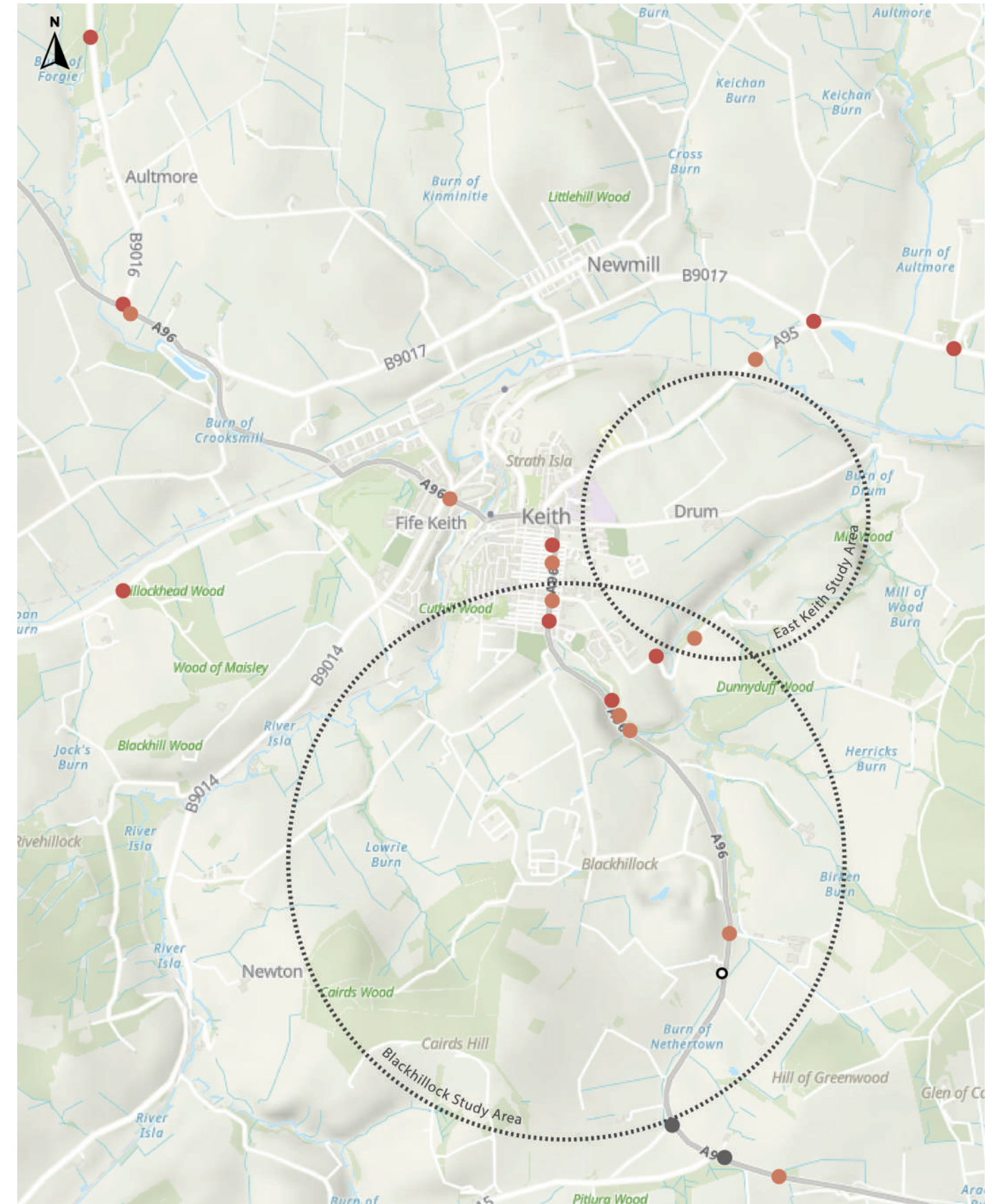
The two fatal incidents occurred in the same general location just south of the Blackhillock Study Area on the A96. One of the incidents, which took place in 2018, occurred between a minibus carrying a group of international tourists and another vehicle. Five people were killed and another five seriously injured. The other fatal incident occurred in 2020 when a car struck and killed a pedestrian during the early morning hours.

The A96 Corridor Review Case for Change reports that within Keith, the Personal Injury Accident rate (fatal, severe and slight accidents) between 2015 and 2019 was 1.9 times higher than the national average and the rate of accidents involving casualties that were killed or seriously injured (KSIs) was 4.8 times higher than the national average. For the segment of the A96 between Keith and Huntly, running through the Blackhillock Study Area, the rate of accidents involving casualties that were KSIs was 1.3 times the national average. During this period, along the entirety of the A96, common contributing factors to accidents included 'failed to look properly', 'loss of control', 'failed to judge other persons path/speed' and 'careless / reckless / in a hurry'.

Stakeholder feedback from STPR2 identified the A95 and A96 as lacking safe overtaking opportunities. Both roads are predominantly single carriageway, and the mix and composition of vehicles, specifically the prevalence of HGVs (subject to reduced speed limits), tourist vehicles, and agricultural traffic, can hamper speeds, slow traffic, cause congestion, and potentially lead to risky overtaking manoeuvres.



- Fatal Incident
- Severe Incident
- Slight Incident
- Traffic Scotland Road Monitoring Weather Station



Accident Data, 2018-2020 (Source: adapted from DfT)

Access to EV Charging Points

The Scottish government has set a goal to phase out the sale of new petrol and diesel vehicles by 2032. The figure on the opposing page shows the location of EV charging locations within Keith (as at 2023) and the average distance to car charging points (as at 2016) by data zone.

There are four charging locations within Keith. Two are located within the Blackhillock Study Area and operated by ChargePlace Scotland: Keith Spinners Lane Car Park, which provides two (2) connection points, and Reidhaven Square, which provides three (3) connection points. A third location, the Tesco Superstore car park, is located within the East Keith Study Area and accommodates four (4) connection points. It is operated by Pod Point.

DfT reporting for July 2022 identifies 54 public charging devices across Moray, including 10 rapid charging devices. This equates to a rate of 56 charging devices per 100,000 residents, compared to the Scottish Rate of 69 devices per 100,000 residents and a UK rate of 42 devices per 100,000 residents. Additionally, all other local authorities in the HITRANS region have a rate in excess of 100 devices per 100,000 residents.

HITRANS report that maintenance is a significant issue, with 10% of the network across Scotland unavailable at any one time. In addition, the Chargeplace Scotland network will not be funded beyond 2025, with HITRANS noting that local authorities are encouraged to collaborate and develop strategies to attract private investment in EV infrastructure.



Reidhaven Square Car Park



Spinners Lane Car Park

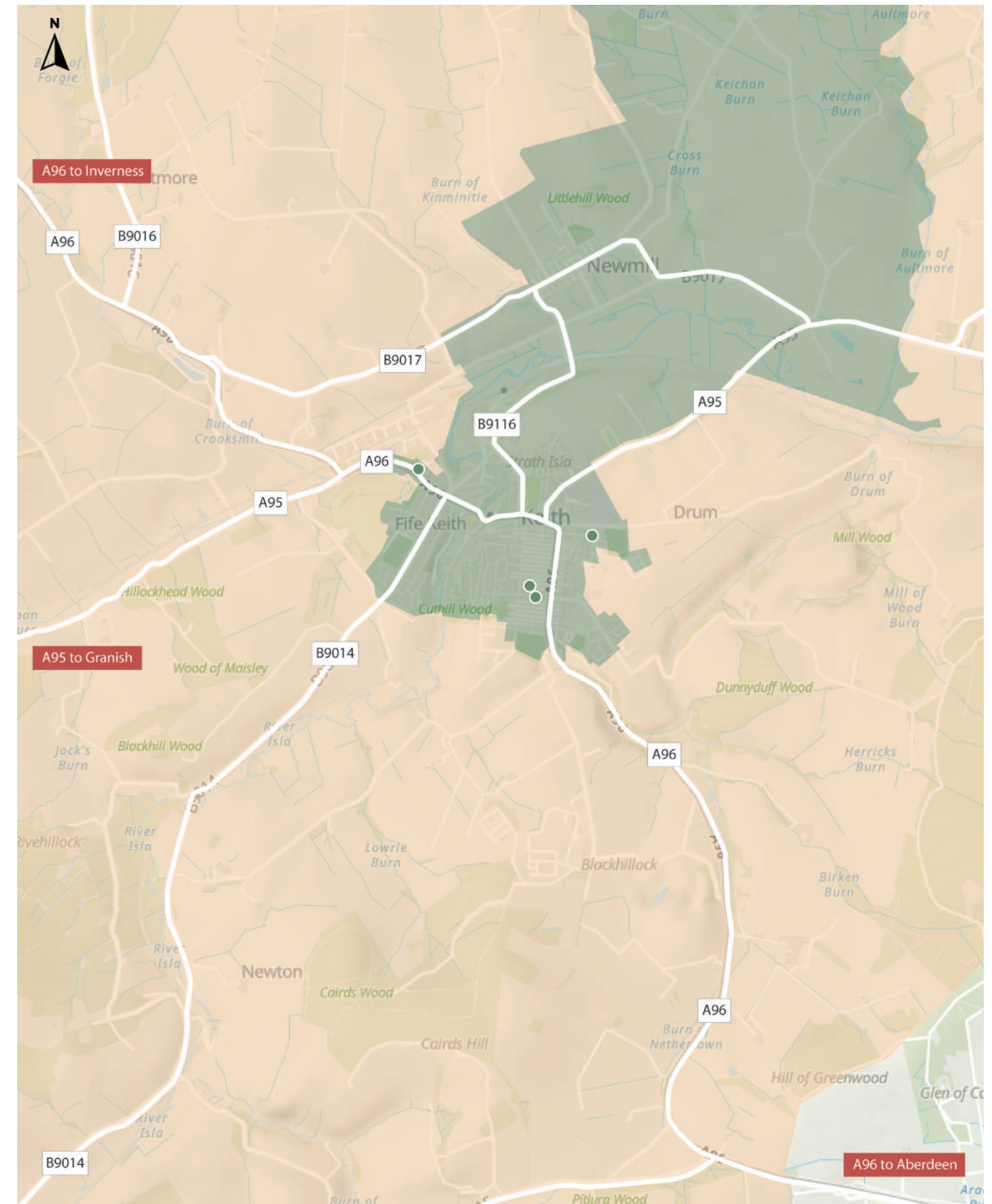


Tesco Superstore Car Park

Average Distance to Car Charging Points (2016)

- 0 - 2.5 miles
- 5.0 - 10 miles

● EV Charging Locations



Access to EV Charging Points (Source: adapted from STPR2 mapping and ZapMap)

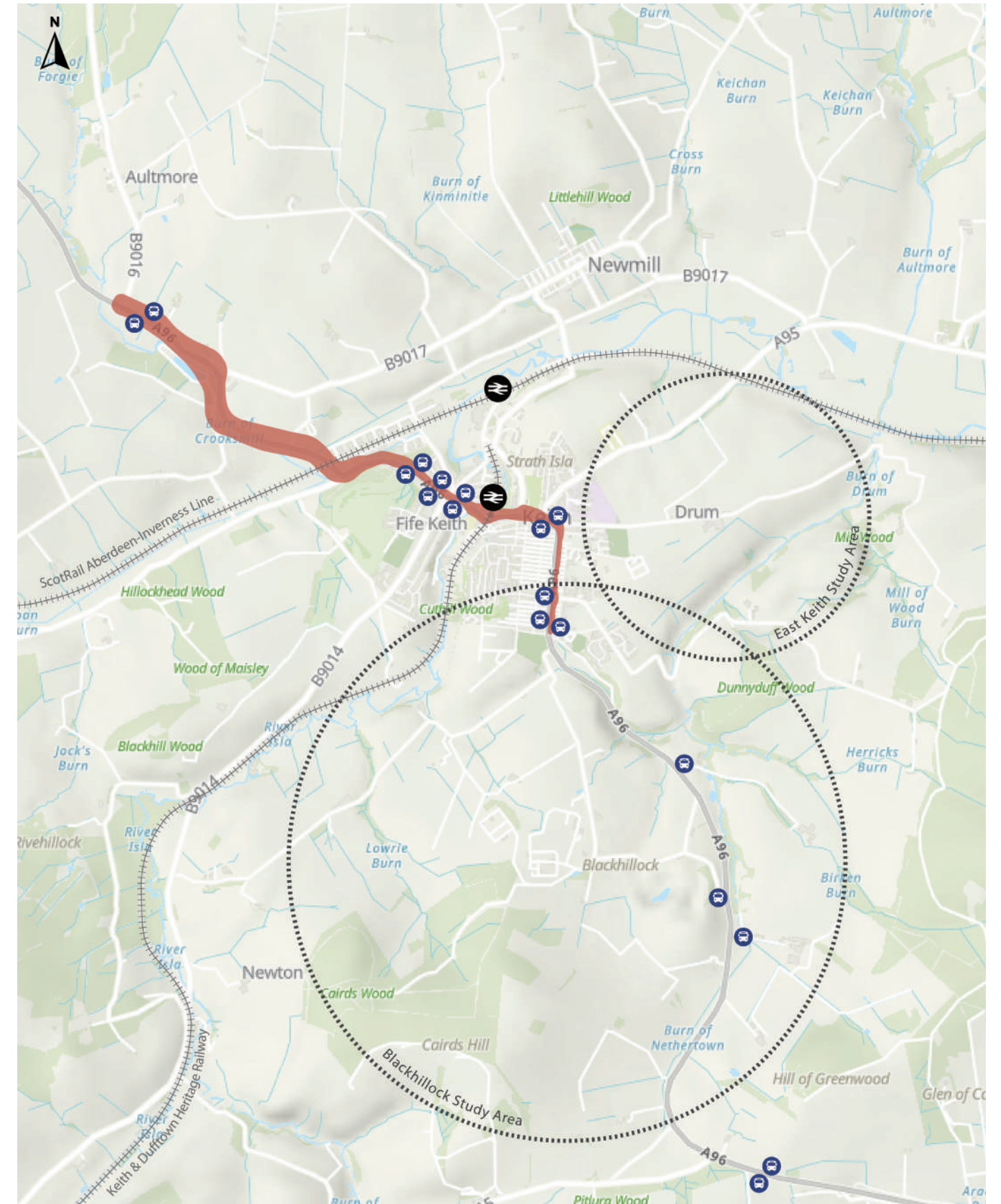
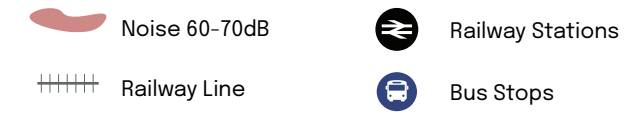
Noise & Air Pollution

Under the Environmental Noise Directive, the Scottish government has historically been required to produce strategic noise maps every five years. Most recent noise data is shown indicatively on the figure on the opposing page for road sources.

Source mapping identifies noise levels above 55 decibels (dB) from modelled noise sources, based on consolidated noise sources for the average day (L_{day}), evening ($L_{evening}$) and night (L_{night}) metric (referred to as L_{den}). 55 dB L_{den} is the EU indicator threshold for noise exposure defined in the Environmental Noise Directive (Directive 2002/49/EC).

Between the B9016 and the southern extent of Keith, along the A96 corridor, noise exposure has been modelled at between 60 to 70dB, higher than the acceptable L_{den} threshold of 55 dB.

Air quality modelling or measurements are not available for Keith or the study areas, however, the A96 Corridor Review Case for Change report notes that local air quality impacts from high traffic volumes may be seen within Keith. The report also notes the high proportion of HGVs along the A96 may also produce further pollutants, generating environmental and health impacts for the local community.



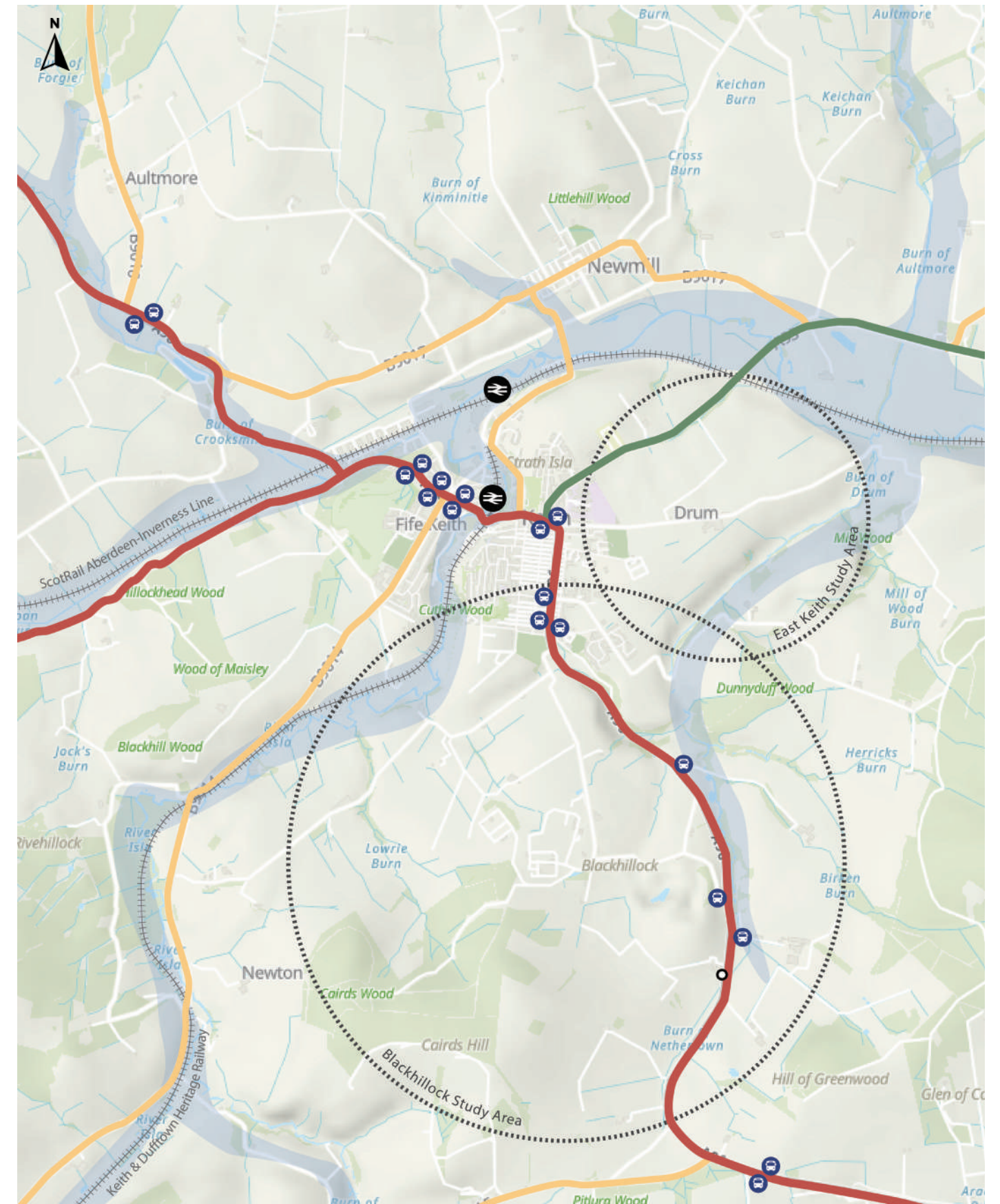
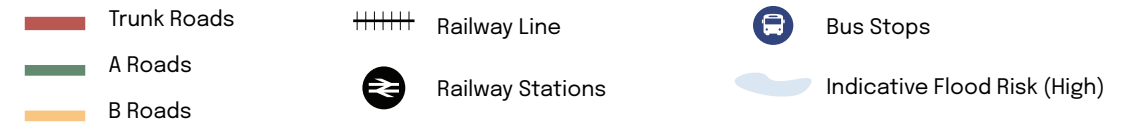
Transport Network (Source: adapted from STPR2 mapping)

Flood Risk

The opposing figure identifies indicative areas of high flood risk. The mapping is informed by Scottish Environmental Protection Agency (SEPA) flood mapping. The risk from river flooding in these areas is high, or a 1 in 10 year likelihood of flooding. Future flood mapping for these areas indicates by the 2080s, each year this area may have a 0.5% chance of flooding.

The mapping highlights risk areas within the study areas including the northwest of the Blackhillock Study Area, the northeast and south east extent of the East Keith Study Area, and the east of the Blackhillock Study Area, including along the A96 and the access road to Blackhillock.

Baseline reporting from 2015 to support proposed A96 dualling works indicates the source of flood risk along the 13.8-kilometres segment of the A96 incorporating Keith and the study areas is apportioned 66% to river flooding and 34% to surface water causes, with infrequent flooding recorded since 1852.



Potential Flood Risk (Source: adapted from SEPA & STPR2 mapping)

Proposed Aberdeen to Inverness Corridor Improvements

A shared policy programme and Cooperation Agreement between the Scottish Government and Scottish Green Party Parliamentary Group was signed in August 2021, agreeing various proposed investments in Scotland’s transport network. This included progressing a transport enhancement programme on the A96 corridor to improve connectivity, reduce congestion, and address safety and environmental concerns.

The proposed works include:

- full dualling of the A96 corridor by 2030.
- bypassing of Nairn, Keith, Elgin and Inverurie, accompanied by measures to remove traffic from the by-passed town centres.
- targeted road safety improvements, where needed.
- the development of an A96 ‘Electric Highway’, providing alternative refuelling infrastructure and facilities along the corridor.

Bypassing of the A96 at Keith will likely deliver a range of benefits within the town including: improved road safety, removal of heavy vehicles, improved opportunities for active travel, reduced vehicle speeds, and mitigated noise, vibration, pollution and safety concerns.

The proposed works to the A96 will be subject to an SEA and the A96 Corridor Review is underway, with public engagement taking place in 2022 and additional consultation scheduled for 2023. The Initial Appraisal: Case for Change has been completed. The Case for Change highlighted the following concerns along the A96 that improvements need to address: road safety and resilience, socio-economic and location of services, public transport accessibility, competitiveness of public transport with other modes, travel choice and behaviour, and health and environment. Identified opportunities for the A96 corridor include: sustainable economic growth, improving safety, health and environment impacts of travel, and travel choice and behaviour.

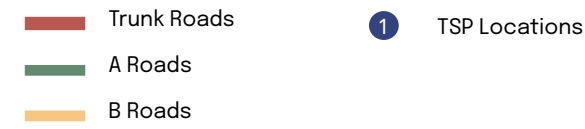
The review has now progressed to the Preliminary Options Appraisal Stage. Sixteen (16) options are being carried forward for appraisal and detailed development. These are listed in the table on the opposing page, with options potentially relevant to the study areas highlighted.

Option	Description
Active Communities	Deliver networks of high-quality active travel routes and placemaking improvements within key communities along the A96 corridor such as Kintore, Inverurie, Huntly, Fochabers, Elgin and Forres.
Active Connections	Deliver high quality active travel linkages for people walking, wheeling and cycling between settlements along the A96 corridor, which would combine to form a continuous traffic-free path all the way from Inverness to Aberdeen, either directly adjacent to, or close to, the A96.
Bus Priority Measures and Park & Ride	Implement schemes targeted at delivering faster and more reliable journey times for bus passengers, coupled with the provision of new bus Park & Ride sites where appropriate.
Introduce Rail Freight Terminals	Facilitate the introduction, the development and operation of rail freight terminals by the private sector at Inverness, Georgemas Junction, Keith and Elgin, to facilitate freight movements to / from these locations by rail.
Improved Public Transport Passenger Interchange Facilities	Improve public transport passenger facilities, including accessibility and quality enhancements at bus stations and railway stations.
Active Hubs	The creation of a strategy for the delivery of active hubs within communities across the length of the A96 corridor.
Investment and Demand Responsive Transport (DRT) and Mobility as a Service (MaaS)	Improve access to travel opportunities in locations with low bus network connectivity or where conventional fixed route services may not be suitable or viable. In these areas, flexible services, such as Demand Responsive Transport (DRT) or Community Transport (CT), may be able to provide improved public transport links.
Linespeed, Passenger and Freight Capacity Improvements on Aberdeen to Inverness Rail Line	Three distinct improvements to the railway between Aberdeen and Inverness; linespeed improvements to cut journey times, the provision of passing loops to enable a more frequent passenger service and the provision of freight facilities to enable intermodal freight to operate.
Improved Parking Provision at Railway Stations	Enhance parking facilities at railway stations between Aberdeen and Inverness with the aim of encouraging the use of existing low carbon infrastructure for medium and long distance travel along the corridor.
A96 Full Dualling (plus Targeted Trunk Road Improvements)	Full dualling of the A96 between Hardmuir to Craibstone to address road safety concerns and provide resilience and reliability improvements for a key connection between Inverness and Aberdeen.
Targeted Road Safety Improvements	Improving the safety performance of the A96 trunk road to address both real and perceived road safety concerns (with potential measures ranging from minor improvements through to partial dualling).
Elgin Bypass	Improve the safety, resilience, and reliability of the A96 within the vicinity of Elgin through the provision of a bypass of the town.
Keith Bypass	Improve the safety, resilience, and reliability of the A96 within the vicinity of Keith through the provision of a bypass of the town.
Inverurie Bypass	Improve the safety, resilience, and reliability of the A96 within the vicinity of Inverurie through the provision of a bypass of the town.
Forres Bypass	Improve the safety, resilience, and reliability of the A96 in Forres through the provision of a bypass within the vicinity of the town.
A96 Electric Corridor	Provision of alternative refuelling infrastructure and facilities along the A96 corridor, its interfacing local roads as well as, where appropriate, strategic economic and transport hubs. This option will directly facilitate the dispensation of alternative sources of fuel for various modes of sustainable transport although it is recognised that the option is likely to focus on road vehicles.

Moray LDP Transport Proposals

The Moray Local Development Plan (LDP) includes various Transport Proposals (TSPs) detailing potential road and transport improvements, primarily within settlement boundaries. The TSPs within Keith are shown on the opposing figure and detailed below:

- TSP1: A96/A96 Banff Road/Mid Street Crossroads - junction improvement required associated with development in the north east of Keith
- TSP2: A96/Drum Road - junction improvements may be required associated with development in the north east of Keith
- TSP3: A96/Union Terrace - junction improvements may be required associated with development in the north east of Keith
- TSP4: Keith Railway Station - safeguard and seek to enhance and improve facilities to encourage use of sustainable transport
- TSP5: Keith Railway Sidings - safeguard and seek to enhance and improve facilities to encourage use of sustainable transport
- TSP6: Banff Road - new junction onto A95/Banff Road to serve R4 and MU - to include extension of footway/cycleway and relocation of speed limits once the roundabout has been constructed
- TSP7: Edindiach Road - improvements to include road widening, footway provision and street lighting
- TSP8: Drum Road - additional access to serve site MU
- TSP9: Auchoynanie Road - new junction to access site R9
- TSP10: A96/Bridge Street junction improvements may be required to mitigate the impact of sites in east Keith
- TSP11: Seafield Park and Land Street - upgrades required to serve site LONG1 (road widening, footway provision)
- TSP12: A96/Den Road/Seafield Road junction improvements may be required to mitigate the impact of site in south and east of Keith
- TSP13: A96/Dunnyduff Road/Broad Lane junction improvements may be required to mitigate the site in east Keith



Moray LDP TSP Locations (Source: adapted from Moray Council)

Other Proposed Transport & Mobility Projects

Additional commitments on the Aberdeen to Inverness Corridor under the Cooperation Agreement between the Scottish Government and Scottish Green Party Parliamentary Group include:

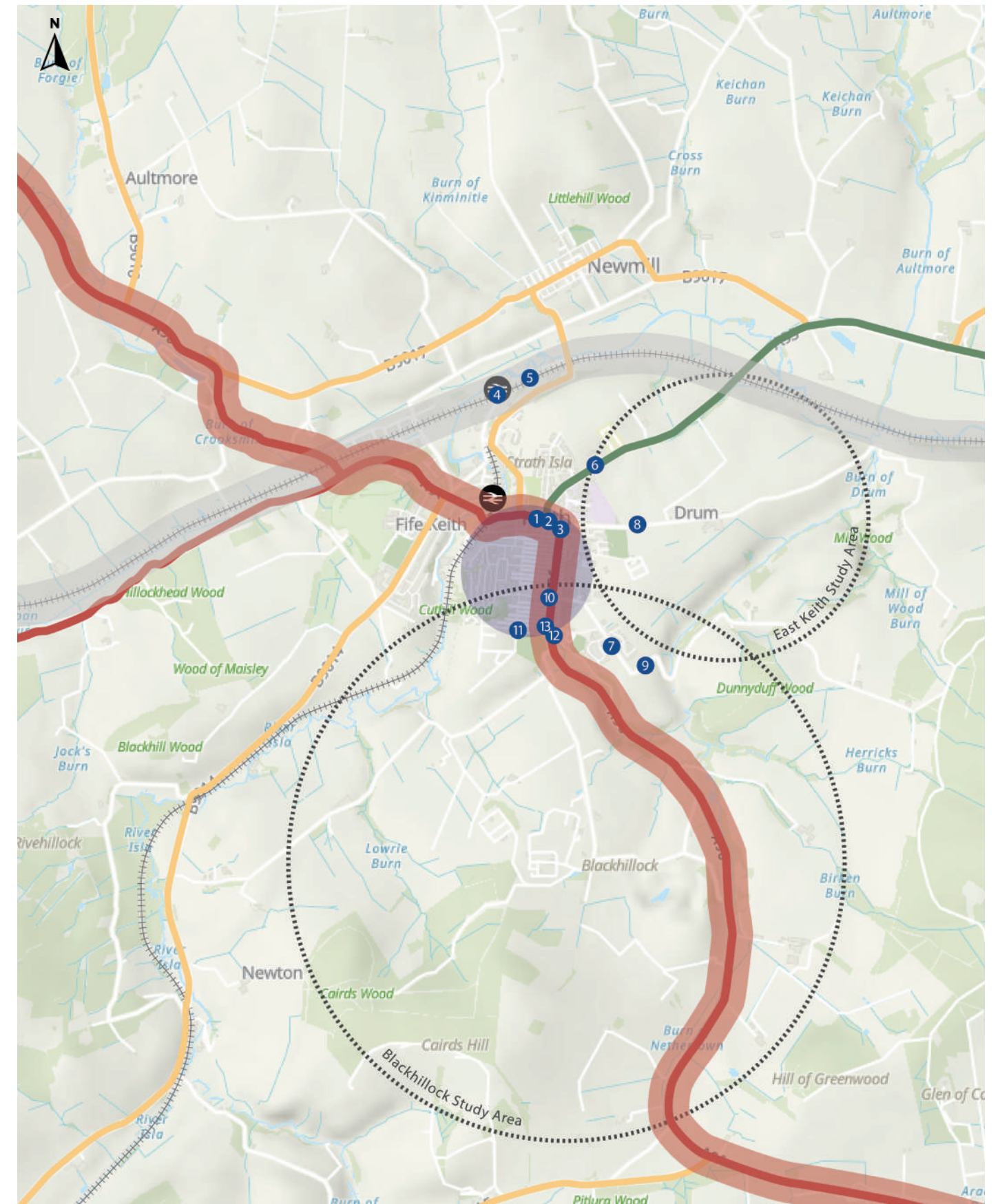
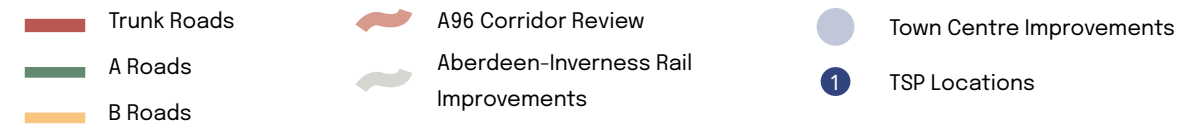
- improving resilience, reliability and efficiency of the Aberdeen to Inverness rail corridor, in addition to commitments to decarbonise the rail network and ongoing rail improvements.
- reviewing the A96 corridor with a view to implementing appropriate bus priority measures.

Transport Scotland's Aberdeen to Inverness Rail Improvements Project is currently underway. The project is being delivered in phases, with overall project completion targeted for 2030. The ultimate aim of the project is for: a two hour journey time from Aberdeen to Inverness, an hourly service, enhanced commuter services, new stations at Kintore and Dalcross, and increased opportunities for freight.

Phase 1 was completed in December 2019. Amongst other improvements, Phase 1 delivered a re-doubling of the track between Aberdeen and Inverurie (including through Keith).

Local projects include delivery of the Keith Town Centre Improvement Plan, which incorporates:

- improved paths and safer roads to encourage walking and cycling.
- enhanced attractiveness of streets through public realm works.
- signage and lighting activation strategies.
- interventions to make the town more inclusive and pedestrian friendly.
- identification of potential locations for additional EV and bike charging points, cycle parking and cycle storage.

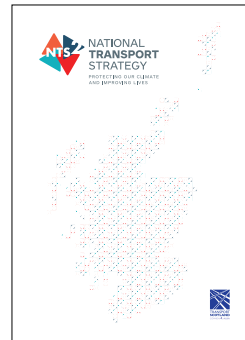


Transport & Mobility Projects

Transport & Infrastructure

The following national, regional and local policy documents have been reviewed and are considered over the following pages, and / or have been used to inform constraints and opportunities discussions earlier in the

National

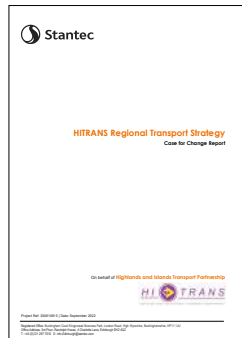


National Planning Framework (NPF4)

National Transport Strategy (NTS2)

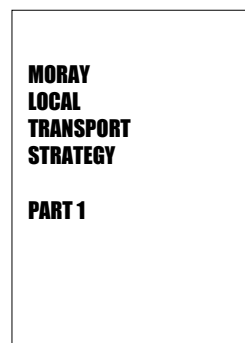
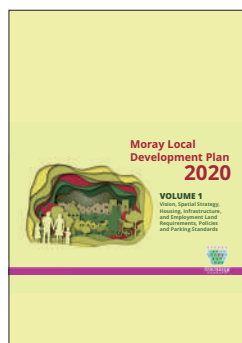
Strategic Transport Projects Review (STPR2)

Regional



HITRANS RTS Case for Change Report 2022

Local



Moray Local Development Plan 2020

Moray Local Transport Strategy

Moray Council Active Travel Strategy 2022 - 2027

Keith Town Centre Improvement Plan

National Planning Framework 4 (NPF4)

Scotland's National Planning Framework (NPF4) was introduced in 2023 and identifies spatial strategies, regional priorities and national developments intended to contribute to the delivery of sustainable, liveable and productive places.

The overarching spatial principles of NPF4 are:

- **Just Transition:** supporting a fair and inclusive transition to net zero.
- **Conserving and recycling assets:** productive use of existing buildings, places, infrastructure and services.
- **Local living:** improving community health and wellbeing.
- **Compact urban growth:** limiting urban expansion.
- **Rebalanced development:** across areas of high demand and areas of past decline.
- **Rural revitalisation:** encouraging sustainable development in rural areas.

Under the National Spatial Strategy within NPF4, the Aberdeen to Inverness is identified as a strategic connection. In terms of transport infrastructure, this encompasses the ScotRail Aberdeen-Inverness Line and the A96 trunk route, both of which run through Keith.

None of the geographically-specific national developments in NPF4 are proximate to Keith, however, the National Walking, Cycling and Wheeling Network initiative applies to the whole of Scotland. The intent of this initiative is to facilitate the shift from vehicles to walking, cycling and wheeling for everyday journeys. Development classified as 'major' would require new and / or upgraded routes suitable for a range of users for walking, cycling and wheeling that help create a national network that facilitates short and longer distance journeys and linkages to multi-modal hubs.

Implications for Blackhillock and East Keith – Transport



The following transport and mobility related NPF4 policies are relevant to the Energy Framework:

- Policy 11 (e): ...project design and mitigation [for renewable energy development] will demonstrate how the following impacts are addressed:
 - iii. public access, including impact on long distance walking and cycling routes and scenic routes.
 - vi. impacts on road traffic and on adjacent trunk roads, including during construction.
- Policy 13 (a) (i): Proposals to improve, enhance or provide active travel infrastructure, public transport infrastructure or multi-modal hubs will be supported. This includes proposals:
 - i. for electric vehicle charging infrastructure and electric vehicle forecourts, especially where fuelled by renewable energy.
- Policy 13 (b): Development proposals will be supported where it can be demonstrated that transport requirements generated have been considered in line with the sustainable travel and investment hierarchies and where appropriate they:
 - i. provide direct, easy, segregated and safe links to local facilities via walking, wheeling and cycling networks before occupation.
 - ii. will be accessible by public transport, ideally supporting the use of existing services.
 - iii. integrate transport modes.
 - iv. provide low or zero-emission vehicle and cycle charging points in safe and convenient locations, in alignment with building standards.
 - v. supply safe, secure and convenient cycle parking to meet the needs of users and which is more conveniently located than car parking.
 - vi. are designed to incorporate safety measures including safe crossings for walking and wheeling and reducing the number and speed of vehicles.
 - vii. have taken into account, at the earliest stage of design, the transport needs of diverse groups including users which protected characteristics to ensure the safety, ease and needs of all users.
 - viii. adequately mitigate any impact on local public access routes.

National Transport Strategy (NTS2)

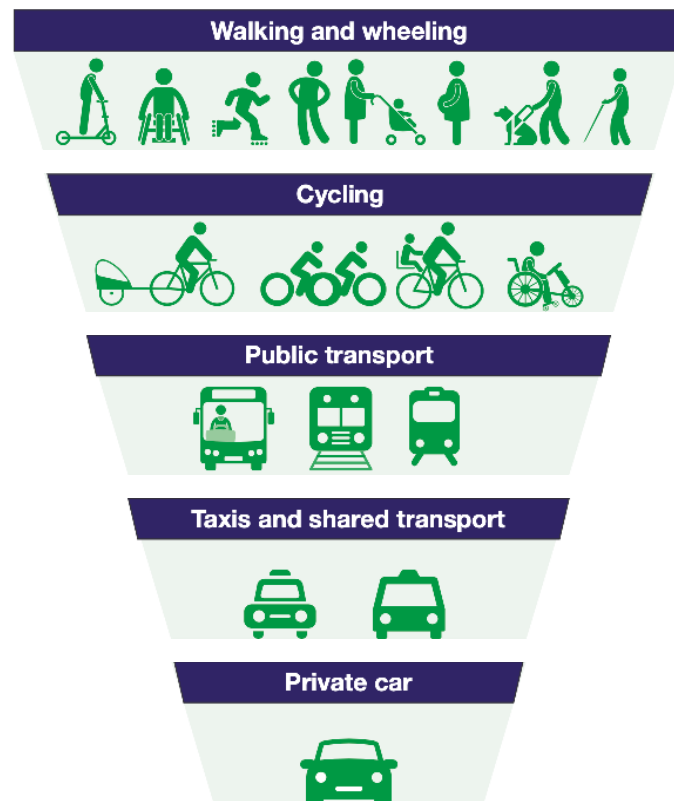
The National Transport Strategy (NTS2) sets the strategic framework for transport and mobility in Scotland over a 20 year period from 2020, with a definitive focus on behaviour change and uptake in

The Strategy’s vision for Scotland is, **“We will have a sustainable, inclusive, safe and accessible transport system, helping deliver a healthier, fairer and more prosperous Scotland for communities, businesses and visitors.”**

NTS2 is underpinned by four priorities, the most relevant to Blackhillock and East Keith are indicated in red: reduces inequalities, takes climate action, helps deliver inclusive economic growth, and improves our health and wellbeing.



NTS2 Priorities (Source: NTS2, p. 5)



Sustainable Travel Hierarchy (Source: Transport Scotland)

Implications for Blackhillock and East Keith



To align with NTS2 priorities, the Energy Framework should:

- support travel choices that minimise the long-term impacts of transport on our climate
- contribute to Scotland’s net-zero target (by 2045), noting transport is currently the largest contributor to emissions in Scotland
- support the ambition to phase out the need for new petrol and diesel cars and vans in Scotland by 2032
- provide a road network that facilitates efficient and safe movement of vehicles
- consider innovative new products, services and technologies in sustainable mobility (e.g. CAVs)
- support sustainable modes of travel, including active travel and public transport, in line with the sustainable travel hierarchy
- ensure a high level of safety for all road users

Strategic Transport Projects Review

Scotland's Strategic Transport Projects Review (STPR2) has been developed to help deliver the vision, priorities and outcomes that are set out in NTS2, and to guide infrastructure investment over a 20-year timeframe (2022-2042). It sets out 45 strategic recommendations across Scotland.

The outcomes and recommendations from STPR2 are intended to:

- enhance accessibility across Scotland for residents, visitors and businesses.
- create better connectivity with sustainable, smart and cleaner transport options.
- highlight the vital contribution that transport investment can play in enabling and sustaining Scotland's economic growth.

The STPR2 assessment covers eleven regions of Scotland. The Blackhillock and East Keith Study Areas fall within the eastern extent of Highlands & Islands regional grouping, proximate to the border with the North East Scotland region. Data from the STPR2 has been used to inform mapping and constraints analysis for transport and mobility within this framework. This includes transport-related problems and opportunities for the Highlands & Islands region, which were determined based on review of policy and strategies, data analysis and stakeholder engagement.

The problems identified for the Highlands & Islands region (noting the vastness of the region) were identified as: connectivity, transport poverty, capacity constraints, journey times, resilience, public transport frequency and integration, and dependence on private vehicles. The opportunities identified were:

- **economic growth:**
 - food production (including whisky trade within Moray)
 - tourism (employed 3,000 persons in Moray in 2016)
 - transport infrastructure (as an enabler)
- **progression towards carbon neutrality:**
 - renewable energy (including EV infrastructure, low carbon bus initiatives, renewable energy resources)
 - modal shift to more sustainable transport modes
- **digital connectivity**
 - improving broadband access and speed
 - use of technology to improve public transport provision and understand demand

Implications for Blackhillock and East Keith



To align with STPR2 national and regional objectives and recommendations, the Energy Framework should:

- support reduction in the consumption of fossil fuels and transition to low-carbon transport, e.g. through EV and hydrogen infrastructure
- capitalise on the renewables potential of the Highlands & Islands economy, including through the development of a low carbon transport system
- support active travel and public transport use, where viable
- identify any potential opportunities to improve mobility for rural residents
- minimise demand for unsustainable travel arising from development within the study areas
- where relevant, ensure any road network changes improve resilience of the network from disruption and climate change
- ensure a high level of safety for all road users

HITRANS Regional Transport Strategy

HITRANS is the transport partnership for the Highlands & Islands, incorporating Moray. The previous HITRANS Regional Transport Strategy was approved in 2008 and covered the period between 2008 and 2021. A new Regional Transport Strategy is currently under development with a 20-year view.

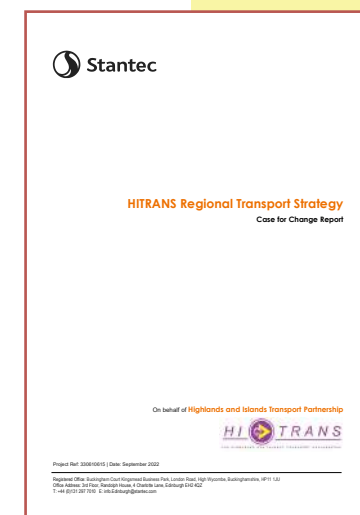
Consultation on a new Strategy is underway. In lieu of a current strategy, the HITRANS Regional Transport Strategy Case for Change Report from 2022 has been reviewed. The Case for Change report has identified the following problems within the HITRANS region:

- Journey time reliability by road is relatively poor, particularly for freight, influenced by vehicle platooning, inclement weather and limited daylight hours in winter.
- Public transport frequency is generally very low and operates over a shorter period of the day compared to elsewhere in Scotland.
- Some roads suffer from a poor safety record and the majority of the trunk and A-road networks is single carriageway or single track, compounded by difficult terrain, few overtaking opportunities and limited lighting.
- The A96 runs through settlements along the route (e.g. Keith) making walking, wheeling and cycling less safe and attractive.
- Transport resilience is poor, with road and rail subject to weather extremes. Road closures can lead to long diversions and impact on emergency services response.

Strategy objectives proposed for the HITRANS region are:

- To make a just transition to a post-carbon and more environmentally sustainable transport network
- To transform and provide safe and accessible connections between and within our city, towns and villages, to enable walking, wheeling and cycling for all
- To widen access to public and shared transport and improve connectivity within and from / to the region
- To improve the quality and integration of public and shared transport within and from / to the region
- To ensure reliable, resilient, affordable and sustainable connectivity for all from / to our island, peninsular and remote communities
- To improve the efficiency, safety and resilience of our transport networks for people and freight, and adapt to the impacts of climate change

Implications for Blackhillock and East Keith



To align with the Case for Change, the Energy Framework should:

- once options assessment is finalised, consider the impacts of A96 corridor upgrades (i.e. bypassing of Keith, dualling, road safety improvements) on development
- support a more environmentally sustainable transport network, including low and post-carbon transport
- ensure a high level of safety for all road users
- discourage single occupant car journeys (reducing the need to travel, switching modes, or combining / sharing car trips)
- review the Regional Transport Strategy upon completion and consider potential inputs into public consultation activities

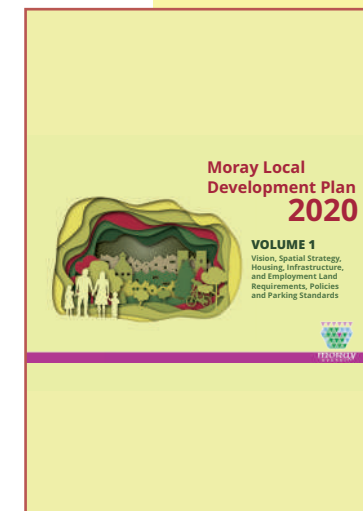
Moray Local Development Plan (LDP) 2020

The Moray Local Development Plan (LDP) will guide planning and development over a 10 year period to 2030. Moray Council's vision, as set out within the LDP, is: "People want to live, work and invest in Moray because of the outstanding quality of life and environment."

The LDP recognises that Moray's rural context generates continuing reliance on road transport, which needs to be balanced with public transport and active travel investment. Relevant transport and mobility policies include:

- PP3 (b): Development proposals will not be supported where they:
 - i. create new accesses onto trunk roads and other main/key routes... unless significant economic benefits are demonstrated or such access is required to facilitate development that supports the provisions of the development plan.
 - ii. adversely impact on active travel routes, core paths, rights of way, long distance and other access routes and cannot be adequately mitigated by an equivalent or better alternative provision in a location convenient for users.
 - vii. compromise the economic viability of bus or rail facilities.
- DP1 (ii) (a): Proposals must provide safe entry and exit from the development, including the appropriate number and type of junctions, maximise connections and routes for pedestrians and cyclists, including links to active travel and core path routes, reduce travel demands and ensure appropriate visibility for all road users at junctions and bends. Road, cycling, footpath and public transport connections and infrastructure must be provided at a level appropriate to the development and connect people to education, employment, recreation, health, community and retail facilities.
- DP1 (ii) (b): Car parking must not dominate the street scene and must be provided to the side or rear and behind the building line. Maximum (50%) parking to the front of buildings and on street may be permitted provided that the visual impact of the parked cars is mitigated by hedging or low stone boundary walls. Roadways with a single carriageway must provide sufficient off road parking to avoid access routes being blocked to larger service vehicles and prevent parking on pavements.
- DP1 (ii) (c): Provide safe access to and from the road network, address any impacts on road safety and the local road, rail and public transport network. Any impacts identified through Transport Assessments/ Statements must be identified and mitigated. This may include but would not be limited to, passing places, road widening, junction improvements, bus stop infrastructure and drainage infrastructure.
- DP1 (ii) (d): Provide covered and secure facilities for cycle parking at all flats/ apartments, retail, community, education, health and employment centres.
- DP1 (ii) (f): The road layout must be designed to allow for the efficient mechanical sweeping of all roadways and channels, paviers, turning areas and junctions. The road layout must also be designed to enable safe working practices, minimising reversing of service vehicles, with hammerheads minimised in preference to turning areas such as road stubs or hatchets, and to provide adequate space for the collection of waste and movement of waste collection vehicles.
- DP1 (ii) (h): Road signs should be minimised designed and placed at the back of footpaths to reduce street clutter, avoid obstructing pedestrian movements and safeguarding sightlines.
- DP1 (ii) (i): Within communal parking areas there will be a requirement for electric car charging points. Parking spaces for car sharing must be provided where a need is identified by the Transportation Manager.

Implications for Blackhillock and East Keith



To align with the LDP, the Energy Framework should:

- comply with transport and mobility related LDP policies, as identified
- incorporate EV charging (rate of one per 10 parking spaces)
- mitigate traffic impacts during construction and operation
- provide a road network that facilitates efficient and safe movement of vehicles
- avoid or mitigate potential impacts on public access routes

It is also noted that work has commenced on a new Moray Local Development Plan targeted for adoption in 2027, with the potential for the Energy Framework to feed into consultation discussions and inputs.

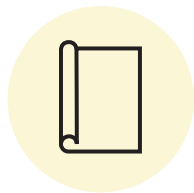
Policy Summary & Response

The Energy Framework for Blackhillock and East Keith could respond to the relevant policy objectives discussed on the preceding pages through the following measures.



Low-carbon transport

- Inclusion of transport and mobility elements that support Scotland's goal to phase out the sale of new petrol and diesel vehicles by 2032 and contribute to Scotland's net-zero target (by 2045).
- Potential integration with A96 Electric Corridor proposals should be considered.
- Provision of infrastructure for EV and ULEV vehicles (e.g. charging points).
- Support for decarbonisation of HGVs (e.g. hydrogen fuelling station).
- Support for greater use of low-carbon transport in local industry, e.g. a hydrogen refuelling station for industry, commercial and farming vehicles.



Planning & design

- Integrated land use and infrastructure planning from early stages.
- Transport Assessments will be required to support and inform planning and design for proposed development within the study areas.
- Travel Plans may also be required for proposed development, to identify objectives, set measures, and monitor travel patterns.
- Design of new or changed road infrastructure will need to be in accordance with relevant guidance.
- Parking provision, including for electric vehicles, will need to be delivered to Moray Council's guidance, though it is noted that parking rates for the likely uses are not included in the LDP and parking requirements are anticipated to be low (maintenance, inspection visits).
- Consideration is needed to assess whether access roads are suitable for transportation of large components / abnormal loads, as well as suitable for construction traffic. Throughout the study areas, most roads are single carriageway and constrained by narrow road corridors, topography, rail bridges, and existing built form.
- Cognisance of the by-passing of Keith (A96) will need to be considered, including for the implication of traffic impacts on the trunk road network along with consultation with Transport Scotland.
- Development should be cognisant of dualling of A96 and the potential active travel corridor along the extent of the A96 (subject A96 Corridor Review outcomes).
- Integration of utilities within the road network as required.



Sustainable modes

- Inclusion of transport and mobility elements that support Scotland's goal for a 20% reduction in car kilometres travelled by 2030 and contribute to Scotland's net-zero target (by 2045).
- Although the site is in a rural area there must be in-built mechanisms to cater for as many journeys as possible via existing and enhanced active travel networks as well as engagement with bus operators as to potential routing of services to maximise penetration of the area.
- Provision of infrastructure for walking and cycling as appropriate, e.g. cycle parking for a range of typologies in safe, secure and convenient locations.
- Consideration of likely demand for public transport connections between proposed land uses and urban areas (e.g. Keith).
- Minimisation of potential impacts on public access routes.
- Consider potential for ambitious parking provision (i.e. low/no car parking), supported by initiatives to support other modes.



Road safety

- Transport planning and road design that ensures safe vehicle movements (e.g. in relation to road design, new access points, HGV movements).
- Road design that mitigates potential road safety risks.
- Identification of uses that require buffers to /from the road network for safeguarding purposes (e.g. wind turbines).



Impact mitigation

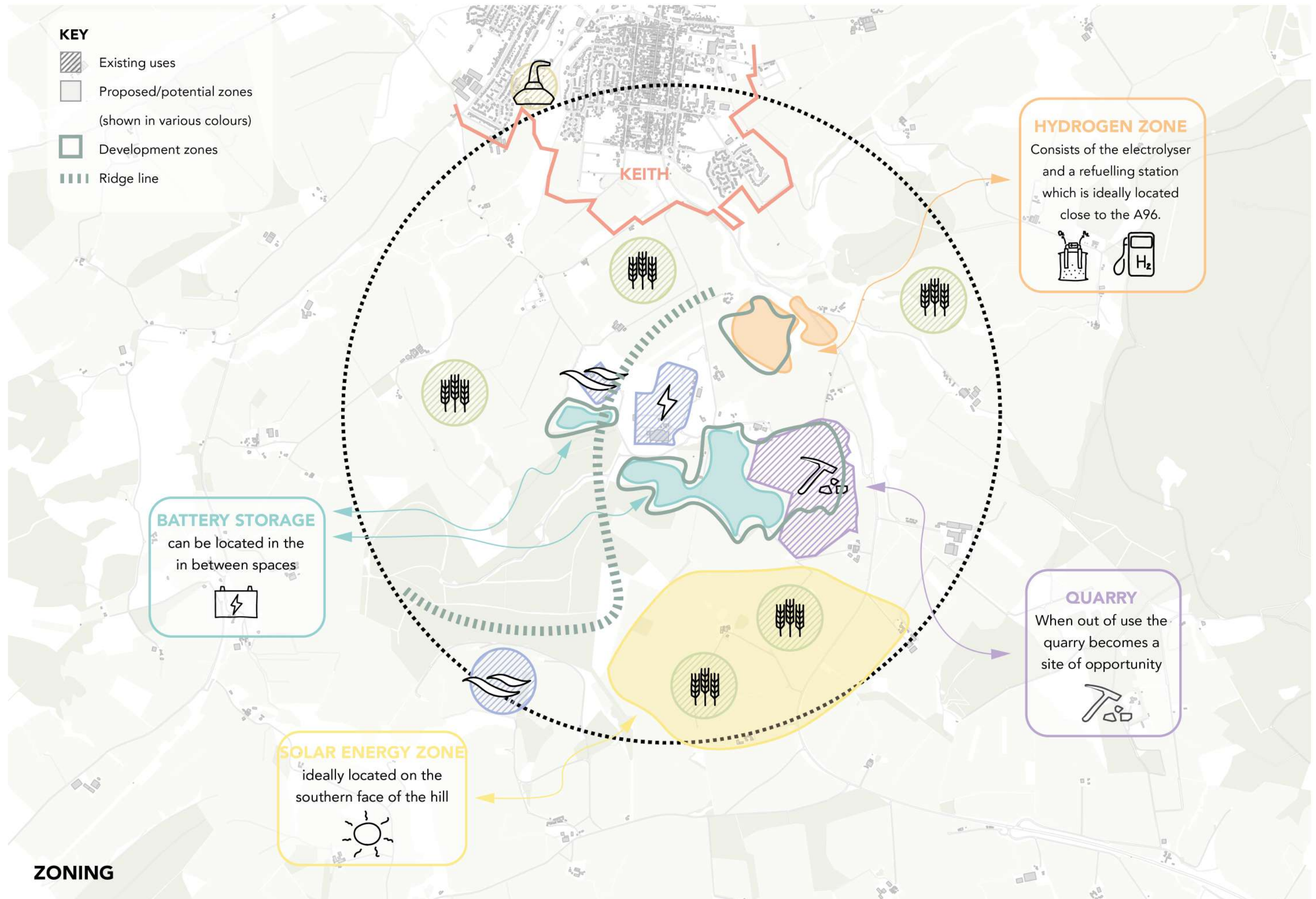
- Traffic will be generated by development (during construction and operation) thus consideration must be given to the impacts of this on the existing network (e.g. increased HGV traffic, potential air quality impacts, abnormal loads).
- Demonstration that no significant adverse impacts arise from proposed development on the road network and / or delivery of mitigation measures and capacity improvements will be required.
- Identification of uses that require buffers to / from the road network, railway lines, and/or core paths for safeguarding purposes.
- Traffic Management Plans for construction will likely be required to support development.

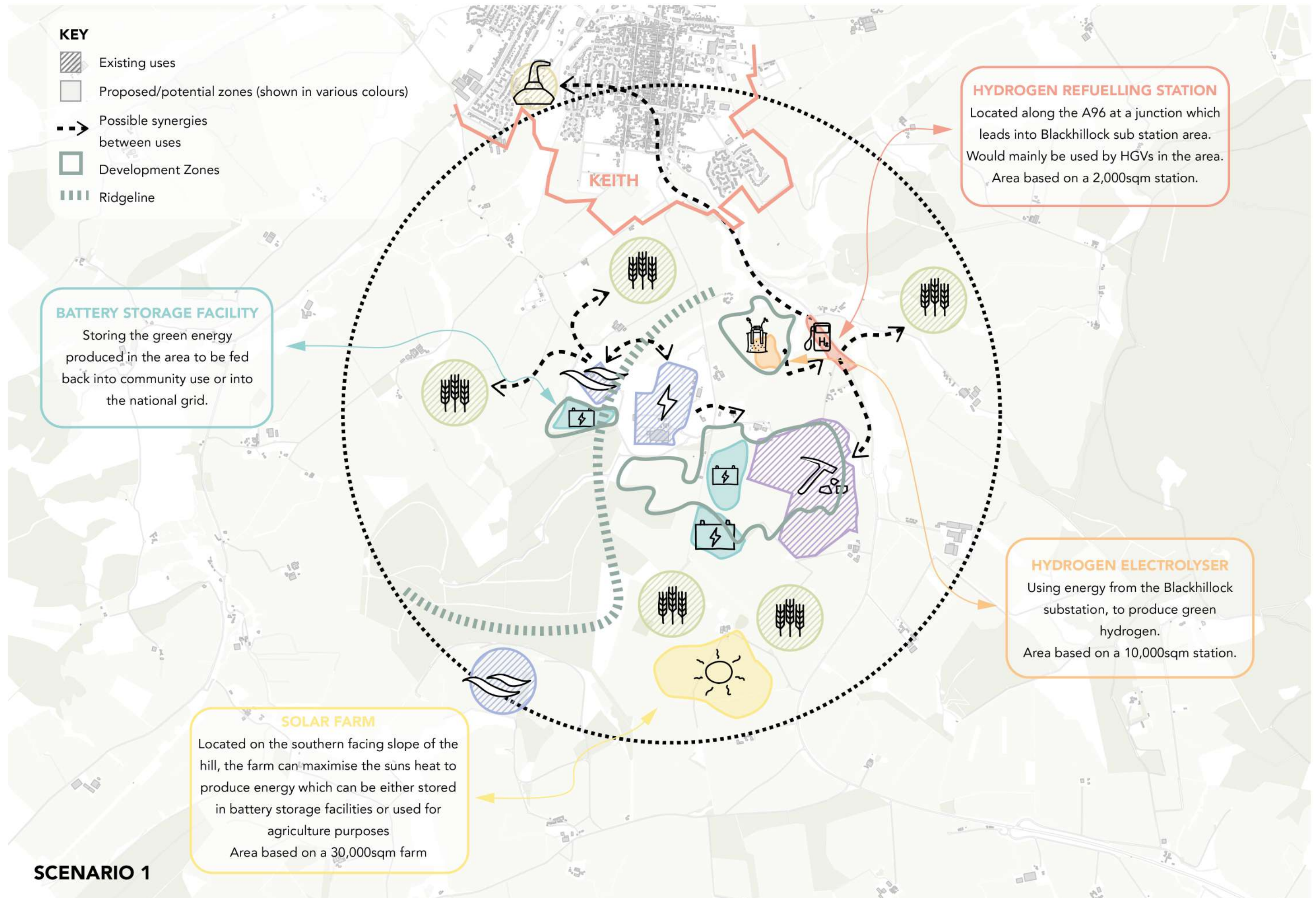
EXAMPLE SCENARIOS

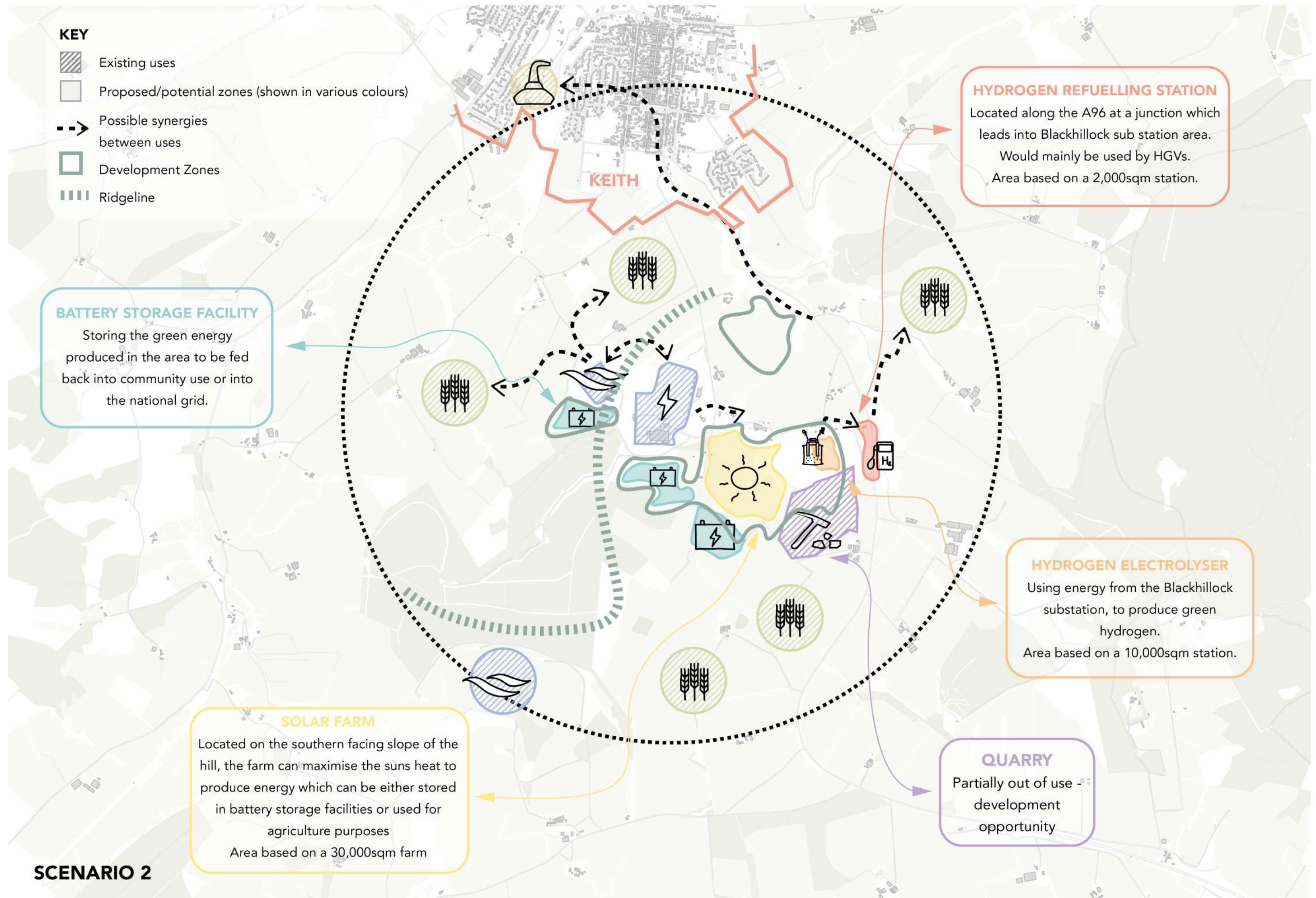
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