

Ashton Keynes Biomethane Gas Facility

Rationale for the location of the proposed development: technical note

Date of report: October 2025

PREPARED FOR



savills

Sensitive

Contents

1.	Introduction.....	2
2.	Locational requirements	3
3.	Suitability of the wider area.....	4
3.1	The Rural Economy and Landscape of the Wiltshire/Gloucestershire Border	4
3.2	Suitability for biomethane production.....	5
4.	Site requirements.....	6
4.1	Site size	6
4.2	Process outputs	6
4.3	Strategic road network connection	7
4.4	Gas pipeline.....	7
4.5	Feedstock transport.....	7
4.6	Other environmental constraints.....	8
5.	Summary and conclusion	10
	MAP 1: Brownfield land and employment allocations	12
	MAP 2: Other development allocations and potential sites	13
	MAP 3: Environmental constraints	14
	MAP 4: Flood risk.....	15
	MAP 5: Heritage constraints	16
	MAP 6: Landscape designations, ALC and PRoW.....	17
	MAP 7: Composite constraints.....	18
	MAP 8: Strategic context	19
	Appendix A : Agricultural Economy Report.....	20
	Contact	21

Document History

Issue	Date	Issued by	Comment
1.0	20/08/2025	LB	
2.0	2/10/2025	RA	

1. Introduction

- 1.1.1 This technical note has been prepared by Savills on behalf of Acorn Bioenergy (the Applicant) in relation to planning application reference PL/2023/03359 (the Application), for a renewable biomethane gas generating facility¹ (the Proposed Development) on land at land off Ashton Road, southeast of South Cerney, Ashton Keynes, Wiltshire, SN6 6QT (“the Site”). The Application is currently being considered for determination by Wiltshire Council.
- 1.1.2 Previous responses from the Applicant to landscape comments from Wiltshire Council have focussed on design amendments to reduce the landscape and visual impact of the Proposed Development. This technical note addresses why the Proposed Development is at the proposed Site within a rural location, another issue raised by the Council’s Landscape Team.
- 1.1.3 The Proposed Development responds to an opportunity to generate renewable biomethane gas using 91,000 tonnes per annum of regionally, mainly locally, sourced farm origin feedstock. It will also return to local farms c. 120,000tonnes of natural digestate fertiliser produced as a by-product from the gas generation process. These are the principal outputs of the Proposed Development that drive its locational requirements. It serves an agricultural community and so is located within an agricultural community.
- 1.1.4 The nature of the Proposed Development, relying as it does on agricultural feedstock, strongly drives a rural location. This aligns with the need for local farmers to protect their businesses and livelihoods through embracing a source of urgently needed and valuable farm diversification income, particularly in light of the decline in dairy farming in the area.
- 1.1.5 Equally, the produced natural digestate fertiliser that would be distributed back to local farmers to improve their field soil quality and boost crop yields further, underlines the need for the Proposed Development to be located within an agricultural setting. Generally, soils in this locality would benefit from the use of the digestate fertiliser by increasing the organic matter and drought resilience of the soil.
- 1.1.6 Therefore, at a high level, and given that the Proposed Development serves an agricultural community, the Applicant necessarily sought a location where there is a large existing local catchment area of farms from which feedstock could be sourced, and a receptive local market for the digestate fertiliser. There are many other factors driving location which are set out below, but these are the two fundamental requirements for the project.

¹ A biomethane gas generating facility exports biomethane gas to the public gas supply system and contrasts with biogas facilities which burn biogas (which includes impurities such as carbon dioxide⁰ to generate heat and or power.

2. Locational requirements

- 2.1.1 The siting of biomethane gas facilities, including the Proposed Development, is guided by the following key operational requirements:
- To be proximate to feedstock sources and a digestate market
 - To be accessible to a gas pipeline injection point
 - To be accessible from and to the strategic road network
 - On a site of at least 6Ha in size
 - Avoiding where possible environmental constraints
- 2.1.2 In addition to the above locational operational requirements are the relevant planning policy considerations. These include strategic policy considerations controlling the location of proposals in the Wiltshire area to deliver overall sustainability. It also includes other site-specific policy considerations that seek to ensure compatibility of proposals to adjacent uses and protected designations. These planning policy considerations as they relate to the Proposed Development are addressed in the Planning, Design and Access Statement (PDAS) and the 2025 Addendum accompanying the Application.
- 2.1.3 By way of high-level context it is worth noting at the outset that most of the country's biogas facilities are in rural areas (c. 800 plants, of which c. 150 are biomethane generating plants), and as such it is not at all unique to the Applicant's proposals.
- 2.1.4 The recent Government Biomass Strategy, published in August 2023, supports projects such as the Proposed Development as a means to delivering energy security amongst many other benefits, and states:
- "Our analysis suggests that over two thirds of existing biomethane plants are located in rural areas, with 80% of all GB plants located in areas with a lower-than-average Gross Value Added. Supporting the development of this industry therefore benefits the wider economy by creating jobs...and helping to diversify and grow the rural economy" (paragraph 156).*
- 2.1.5 Some biomethane generating facilities use feedstocks such as sewage sludge and food waste, which arise in towns. Excluding these the preference for a rural location is further pronounced.

3. Suitability of the wider area

3.1 The Rural Economy and Landscape of the Wiltshire/Gloucestershire Border

- 3.1.1 The Agricultural Economy Report (AER) 2025 prepared by Savills Food and Farming Team considers the farming context for the supply of the intended feedstock and the use of digestate (see Appendix A). It shows that within the local area (extending to a 10 miles radius from the Site) there is a very significant supply of all of the intended crop feedstocks. This takes full account of pre-existing smaller biomethane gas facilities already operating at:
- Castle Eaton Farm,
 - Smerrill Generating Plant,
 - Homeleaze Farm.
- 3.1.2 It is also notable that some 840 acres (c340 hectares) of the land area considered, located mainly in the immediate vicinity of the Site, to its north, is in the control of the Site landowner and hence its production is available to the Proposed Development. A significant proportion of the rye, maize, grass and straw required, one third of the silage inputs representing 15% of the total weight of feedstock would be sourced from this land,.
- 3.1.3 More generally, the AER 2025 shows farmers are continuously reviewing their production and land management activities to ensure that they operate optimally in balancing the need for profit in their businesses with the stewardship of their land.
- 3.1.4 Demands for different types of farm production vary over time with changes in food demand and pricing, and in the demands from agriculture for industrial and energy raw materials².
- 3.1.5 Management of land for biodiversity and other natural capital benefits such as water management, carbon sequestration, recreation, and beauty has become more significant in recent years. Farmers are also able to secure revenue to meet such environmental objectives.
- 3.1.6 Farming in the areas of north Wiltshire and southeast Gloucestershire surrounding the Site is to some extent in flux. In particular, the regional dairy herd has reduced and dairy production has become less profitable for smaller scale farms. Local farmers are also, as is common across the UK, under pressure to reduce inputs of artificial fertilisers to mitigate the effects of taxation of imported synthetic fertiliser from 2027. They are also experiencing the phase out by 2027 of the “delinked” farm payment system that replaced the former Basic Payment Scheme in 2023.
- 3.1.7 Managing the resulting changes in farming practice puts pressure on the rural economy. The supply of labour, machinery, capital, and services to support existing farming is geared towards its current focus. Any changes will be felt through this supply chain.
- 3.1.8 The existing ecology and landscape of the area is largely the product of recent and current farming, and of course longer history, and nature. The area is substantially characterised by relatively small field size and hence relatively dense networks of hedgerows³. These are predominant in the Wiltshire parts of the Upper Thames Clay Vales (UTCV) National Character Area (NCA) which forms the majority of the area. To the north is the extreme eastern dip slope of the Cotswold escarpment

² For example <https://www.bbc.co.uk/news/articles/c24zlel2y5yo>; this describes the effects of tariff free US bio-ethanol imports affecting domestic production from UK grown wheat

³ <https://nationalcharacterareas.co.uk/upper-thames-clay-vales/description/>

within the Cotswold NCA. The landscape across the dip slope is predominantly arable in character but noted to merge “gently” with that predominating in the adjacent NCA, which is mainly pastoral⁴.

- 3.1.9 Fields previously used to support dairy farming have in some cases been converted to arable but with as yet little or no increases in field size, notwithstanding such changes support the most efficient crop growing. Farmers and others are in general keen to conserve the character of the area and its habitats. Field boundaries are noted in the NCAs to be declining in the Cotswolds whilst recovering in the Clay Vales (albeit the LPA’s LCA suggest stress on the clay vale landscape); the farming changes identified in the AER would, other things being equal, tend to increase decline, or stall recovery, of field boundaries.

3.2 Suitability for biomethane production

- 3.2.1 Production of crops to supply biomethane production allows for retention of many of the same farming practices which evolved to support small scale dairy farms. Crops previously grown for feed can be diverted to biomethane production. Areas grazed can be retained in grass production and mown to supply silage for digestion. Straw can be retained locally for biomethane use, saving its transport further afield as at present.
- 3.2.2 These activities and other farming in the area provide a ready market for the digestate fertiliser produced by the Proposed Development which would replace artificial imported fertilisers.
- 3.2.3 Biomethane production can also provide an outlet for slurry and manure from remaining livestock farming in the area. It can play an important role in the wider region in taking manure from intensive poultry farming, particularly in the west of Gloucestershire and in neighbouring counties forming the Wye Valley. Here intensive poultry production is widespread and there is pressure to avoid resulting manure from being spread within the Wye catchment.
- 3.2.4 Reflecting these matters, the Applicant’s business analysis indicates a viable opportunity for the development of the Proposed Development in the area of the Wiltshire / Gloucestershire border near Cirencester.

⁴ <https://nationalcharacterareas.co.uk/cotswolds/description/>

4. Site requirements

4.1 Site size

- 4.1.1 The engineering process of the Proposed Development (including health and safety design considerations) drives a minimum site size area requirement of 6ha; ideally rectangular in shape and generally flat or capable of being made so. Further land is also typically required for highway access, landscaping and biodiversity enhancement. The Proposed Development occupies a total of 7ha and will also provide space for on-site Biodiversity Net Gain.
- 4.1.2 Such a relatively large site sizing requirement tends to push biomethane generating facilities into rural locations within farm holdings as opposed to, for example, utilising allocated employment/industrial land on the edge of settlements. Furthermore, allocated and highly valued employment/industrial sites are often stringently protected by local planning policies to prevent their loss to uses such as the Proposed Development, which are often seen as being incompatible given the agricultural nature of their operations.

4.2 Process outputs

- 4.2.1 The Proposed Development will produce three key outputs; renewable biomethane gas, natural digestate fertiliser and high-grade carbon dioxide.
- 4.2.2 **Renewable biomethane gas:** The gas is for supply to the gas grid and thence to domestic and other consumers. It replaces fossil origin gas the combustion of which contributes to global warming. Increasingly, fossil gas must be imported to the UK. This disadvantages the nation's trade balance and creates insecurity of supply and hence price risks resulting from geopolitical events such as Russia's invasion of Ukraine or attacks on shipping in the Red Sea and Gulf of Aden.
- 4.2.3 **Natural digestate fertiliser:** Produced in liquid and solid form, this is highly valuable in farming as a local source of fertiliser and soil conditioner to replace artificial inputs. Themselves made from fossil gas, artificial fertilisers have a higher propensity than digestate to cause pollution from run-off water, and are typically more expensive and imported e.g. from Egypt.
- 4.2.4 **Carbon dioxide gas:** AD plants typically vent this gas, as the main goal of the process is the production of biomethane. However, the Applicant believes this natural byproduct is a valuable resource, and the Proposed Development (as do all of the Applicant's UK AD projects) has been designed from the outset to include equipment to upgrade the CO₂ to 99.9% purity. The biogenic CO₂ gas is proposed to be supplied as a replacement for fossil-derived CO₂ for use in food, horticulture, construction, and medical product industries
- 4.2.5 The Applicant has entered into a 10-year CO₂ Offtake Agreement with a leading specialist gas company, BUSE Gases Limited. The Applicants are at the forefront of developing in this market and this partnership is an important step forward in securing a stable long-term end use for the CO₂ produced during the biomethane production process.
- 4.2.6 Biomethane gas can either be exported from AD plants by direct injection on-site to a gas main or by biomethane fuelled tankers (just 2 or 3 vehicles per day) to an injection site elsewhere. Digestate is best removed by farm vehicles or lorries. Carbon dioxide is removed by lorry.
- 4.2.7 These outputs drive a locational requirement to have good access to the strategic road network.

4.3 Strategic road network connection

- 4.3.1 The Cotswold Water Park (CWP) is one of the principal features of the Wiltshire/ Gloucestershire area in the vicinity of Cirencester. The CWP, an extensive area of artificial lakes, is the product of mineral extraction particularly that associated with the construction of the M4 motorway in the 1960s and urban developments in Swindon and along the Thames Valley. More recently it has become a focus for recreation and conservation activities.
- 4.3.2 Quarrying activity, which remains active in parts of the CWP, generated the need for extremely good road access to be built. This is in the form both of an internal spine road and connected haul roads, and also of the high-quality interconnection to the A419 to the east of the CWP. This junction was upgraded to a full two-way slip road junction on dualling of the road between near Gloucester and the M4 in the 1990s.
- 4.3.3 Via Ashton Road and Spine Road East the proposed Site connects to the national strategic road network on good quality roads designed for the passage of heavy goods vehicle traffic. At no point between the site entrance and the A419 dual carriageway does this route pass through villages. No residential properties have access directly from the route.
- 4.3.4 There are very few if any other locations in the Wiltshire / Gloucestershire border area near Cirencester where such access to the national highway network can be achieved without the intervening route passing through villages or past residential properties. There are certainly none with better road access within the feedstock area identified. Map 8 shows the national highway network. Easy access from the A419 as it runs broadly north west/ south east through the area is a key requirement for a biomethane gas facility in this area.

4.4 Gas pipeline

- 4.4.1 In the Wiltshire/ Gloucestershire border area the only high-pressure gas pipeline runs through the Cotswold National Landscape area chiefly, save for a spur that runs to the south of Cirencester (Map 8). The Cotswold National Landscape Area is a sensitive designation with a high level of protection at a national level. It is not considered suitable for a project such as the Proposed Development.
- 4.4.2 The gas pipeline spur is entirely coincident in location with the planned urban expansion of Cirencester (Map 2) and as such is not considered suitable for the Proposed Development. Other short parts of the pipeline outside the National Landscaping have poor road access.
- 4.4.3 It is concluded that in this area, gas will of necessity be transported to market by road. The Proposed Development would require just 2-3 biomethane tankers each 24 hours to transport the biomethane gas.

4.5 Feedstock transport

- 4.5.1 Typically crop, slurry, and locally sourced manure arrive at biomethane sites by tractor/ trailer or lorry directly from the farm. This pattern of vehicle traffic substantially pre-exists, the effect of the biomethane plant being to re-direct it. The submitted Transport Statement accompanying the Application advises that pre-existing local farm traffic has been quantified as approximately 47% of the total forecast annual loads, nearly half.
- 4.5.2 Natural digestate fertiliser from biomethane sites is removed to land using similar vehicles and networks. Such traffic is also typical on rural roads and is in fact largely what they are there for. It

is advantageous for a biomethane plant to be within a rural area so as to maximise accessibility from farm vehicles and avoid them using urban roads.

- 4.5.3 Longer range feedstock, in this case mainly poultry manure from the Wye Valley, requires good road access to a site; such good road access is also needed for vehicles removing biomethane and carbon dioxide gases. Hence in the absence of an opportunity to co-locate a biomethane plant with a gas pipeline the need for good road access is paramount. Such access will also be used by that proportion of the local feedstock supply for which the main road network forms a part of its route to the site.

4.6 Other environmental constraints

- 4.6.1 The wider range of matters relevant to site location is illustrated by maps 3 to 6 which show major land use constraints within the local area of the Site.

4.6.2 Landscape constraints

- 4.6.3 The largest is the Cotswold National Landscape, covering most of the north western sectors of the area around 5km from the Site. The area is in fact to a large extent sandwiched between this and the North Wessex Downs National Landscape, which extends to the south of Swindon and the M4 around 16 km south of the Site; as also shown by Map 8.

- 4.6.4 The Kemble and Ewen Special Landscape Area (SLA), designated in the Cotswold Local Plan, is located at its closest point around 3km to the west of the Site. This SLA is a relatively small area focussed on the attractive setting of the villages of Kemble and Ewen and a westward spur of escarpment north of Cotswold Airport.

- 4.6.5 The Site is not located in a protected landscape and the surrounding Cotswold Water Park is shaped by the minerals industry, which continues to form part of the live landscape here, both through restored minerals extraction sites and active areas continuing to extract sand and gravel. The remaining mineral resource at the Cotswold Water Park is mostly at the site of the former Cotswold Community to the southwest of the Site and a smaller area immediately south of the Site (see Map 2).

4.6.6 SSSIs, Flood Risk, ancient woodland, agricultural land classification and heritage assets

- 4.6.7 SSSI, areas of high flood risk, ancient woodland, and conservation assets including historic parkland rule out sites across much of the rest of the local area. Maps 3 and 4 show the Site to be outside such areas, the closest being the Cotswold Water Park SSSI which the proposals will not harm.

- 4.6.8 As Map 6 illustrates the majority of the farmland in the area is Grades 1, 2 and 3. Grades 1 and 2 are considered Best and Most Versatile as is Grade 3a, which the most widely available data set does not distinguish from Grade 3b. The Site is Grade 3 land. There is no absolute prohibition of development on higher grade farmland although policy is to avoid it if possible. In this case it can be seen that absolute avoidance of Grade 3 land would rule out the vast majority of the otherwise unconstrained supply area.

4.6.9 Allocated land use and brownfield land

- 4.6.10 Positive filters in the form of allocations for development and registered brownfield land are illustrated in Maps 1 and 2. It is of course unclear whether allocations, including minerals and waste allocations, may be considered suitable for such a project, their purpose being to provide a supply of land for acknowledged sectors expected to require them. Indeed, a minerals allocation in proximity to the site is not preferred because its owners expect to be able to extract the minerals

subject to market demand. A biomethane gas facility would thus sterilise this, contrary to planning policy on mineral safeguarding (Minerals Core Strategy 2009: Policy MCS 6: Safeguarding Mineral Resources). No other brownfield or allocated site offers the benefits of separation from residential areas and good access that the Site benefits from.

4.6.11 Land availability

4.6.12 Strategic Housing Land Availability Assessment (SHLAA) sites indicate areas whose owners, developers or promoters wish to promote them for development but which are not (yet) allocated in development plans. In theory these may be available because their owners might prefer an earlier receipt from a biomethane gas facility developer than a later one from a housing developer. Map 2 shows their location. Not only is it the case that hoped for residential values outstrip likely receipts from biomethane developments, incentivising landowners to hold out for higher later values, but also such sites are almost exclusively adjacent existing or planned urban areas, hence making them likely to be unacceptable due to proximity to residential areas. Moreover the partial development of a site for a biomethane gas facility would sterilise much of all of the remaining land. The Government's targets to supply new homes might be compromised by use of SHLAA sites for biomethane.

4.6.13 Brownfield land

4.6.14 The brownfield land register identifies no sites located better than that proposed by the Applicant. The vast majority of locations are within or immediately adjacent to urban or other built up areas. Urban sites are fundamentally unsuitable for an activity which requires access by a large proportion of farm tractor hauled trailers, as well creating much longer journey distances and times from farmland into the urban areas and out again. Some of the brownfield sites coincide with allocations, such as the minerals allocation close to the Site, hence their future uses have been considered and policy is such that they are intended for other uses that would be denied were they to be developed as biomethane gas facilities.

4.6.15 Sustainable development

4.6.16 Paragraph 8 of the NPPF sets out the three pillars of sustainable development:

- **An economic objective** – building a strong economy, ensuring that sufficient land of the right type is available in the right place and at the right time to support growth, innovation and improved productivity; and by identifying and co-ordinating the provision of infrastructure.
- **A social objective** – supporting strong, vibrant and healthy communities, meeting the needs of future generations and fostering well-designed places.
- **An environmental objective** – making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including a low carbon economy.

4.6.17 As set out above the location of the proposed development as it is proposed within a rural area contributes to each pillar. Its location in an urban or semi-urban location less well tied into the agricultural economy of which it will form a part would undermine these pillars.

5. Summary and conclusion

5.1.1 It is concluded that:

- The Proposed Development is advantageous to the rural economy of the Wiltshire/ Gloucestershire border area near Cirencester because it will in effect replace the regionally declining dairy cow sector with a new market for feed crops, grass, and straw grown locally. This would minimise the adverse effects of the decline of small scale dairy farming on the established landscape and rural farming economy.
- The wider landscape effects of allowing the inevitable changes to farming that follow dairy farming diminishing may be considerable. This may be in field enlargement to accommodate arable farming or on a reducing ability of farmers to maintain the land because of insufficient revenue. Such changes in farming will also have economic and social effects as employment opportunities in the countryside decline.
- This local area is capable of supplying the Proposed Development with all of the grown feedstock via tractor and trailer, particularly as the Site is not within or on the edge of a settlement. Likewise, all the farmyard manure and slurry feedstock could be produced in this area.
- The local area is also capable of receiving all of the natural digestate fertiliser produced by the Proposed Development.
- Notwithstanding the necessity of a rural location for feedstock supply and digestate fertiliser usage, a location with good road access is essential for the Proposed Development. This is because chicken manure is envisaged as being imported from the wider region and also because biomethane and carbon dioxide, produced by the Proposed Development, must be exported by road. There is no practical option of connecting directly to a gas main as the nearest is principally within the Cotswolds National Landscape.
- The proposed site is unaffected by and its development will not affect important environmental designations of land for nature, landscape, water, or heritage conservation.
- The proposed Site has excellent existing road access being connected to a full four way slip-road junction of the A419 dual carriageway (part of the National Highways Network) via a purpose-built road designed to accommodate the heaviest HGVs which does not pass by any residential property. Although this route is around 5km from the A419 there are no comparable sites in the Wiltshire/ Gloucestershire border area proximate to Cirencester better served by road infrastructure.
- The local planning authority should also consider the wider merits of the scheme, particularly in terms of its economic benefit to the local rural economy and hence social benefit.

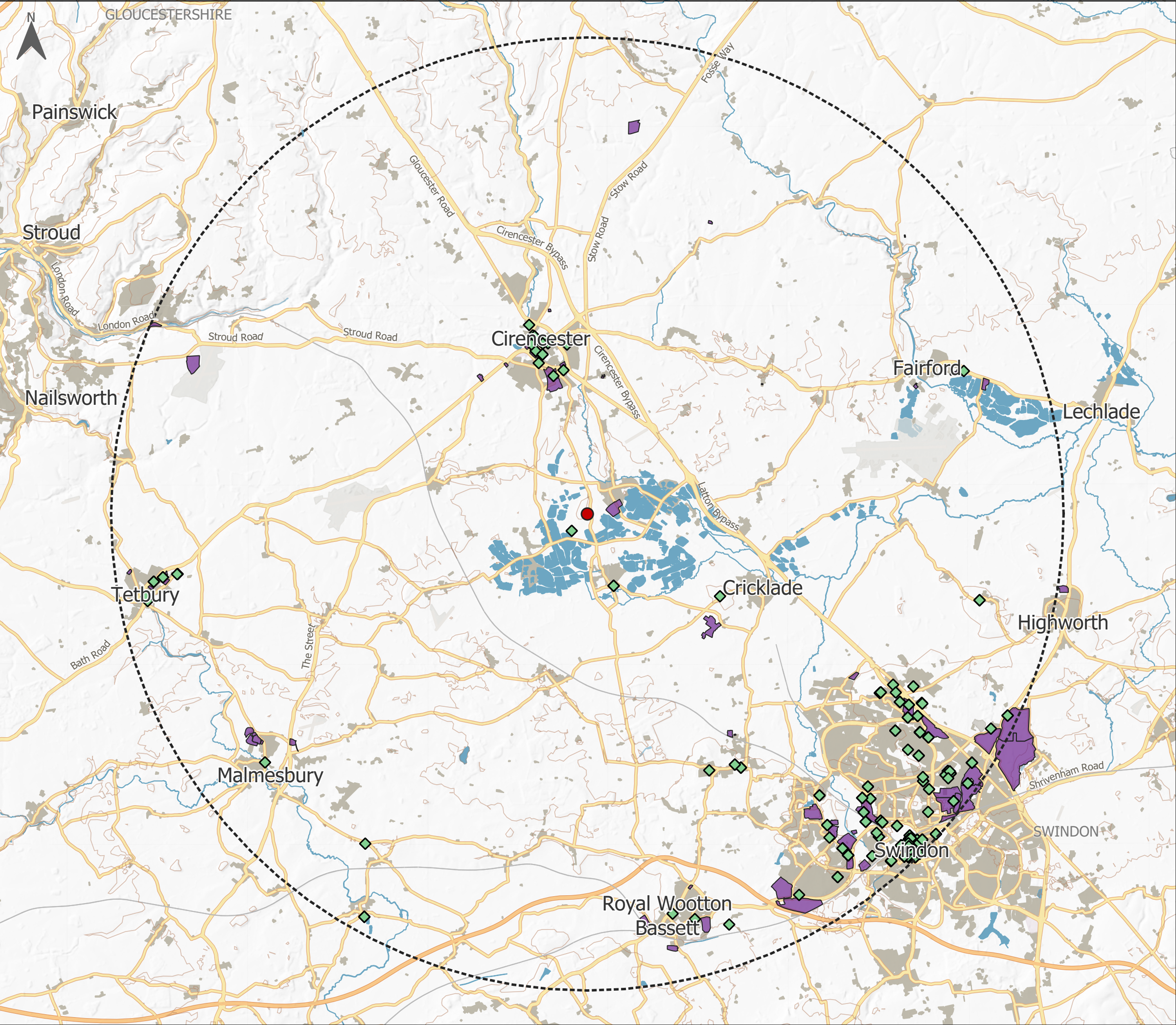
5.1.2 The Proposed Development is a renewable energy facility, with a life span of 25 years. It will support the local rural economy, by way of receiving feedstock crops from local farms, something that is already demonstrated as being successful due to the presence of at least three operational anaerobic digestion facilities in the Wiltshire-Gloucestershire border area.

5.1.3 There is sufficient feedstock supply in the area and a ready market for digestate. In the absence of a readily available gas injection point within the wider area, the Site is served by an existing haul road designed for the purpose of accommodating HGVs which links via a high quality junction to the national strategic road network. The Site also avoids protected landscapes to the north and south

and other key environmental constraints. It is the correct size and physically suitable for development.

- 5.1.4 The proposed biomethane gas facility cannot be considered separately from the local and wider rural context within which it is of necessity located. The rural location is necessary because of the pattern of energy crop and manure/ slurry delivery and digestate export. These material flows are intrinsically related to the rural area in which they are situated. They are strongly related to support of the wider rural economy, population, and natural and visual environment.
- 5.1.5 We do not conclude irrefutably that the proposed site is the best or that no alternatives exist. Consideration of the maps accompanying this note however leads quickly to a view that the number of possible alternatives is at best limited. Such alternatives would themselves be rural in locations and it is apparent that no better connected site exists serving the local area. Considering the paramountcy of good access to the strategic highway network as a factor this lends significant support to the location of the proposals.

MAP 1: Brownfield land and employment allocations



**ASHTON KEYNES
ALTERNATIVE SITES
ASSESSMENT**

Date:	20-08-2025
Paper size:	A3
Scale:	1:125,000
0 2,000 4,000 6,000 8,000 m	

- Key:**
- Ashton Keynes AD Plant Site
 - ⬡ 10 mile Study Area
 - Employment allocations
 - ◆ Brownfield land register

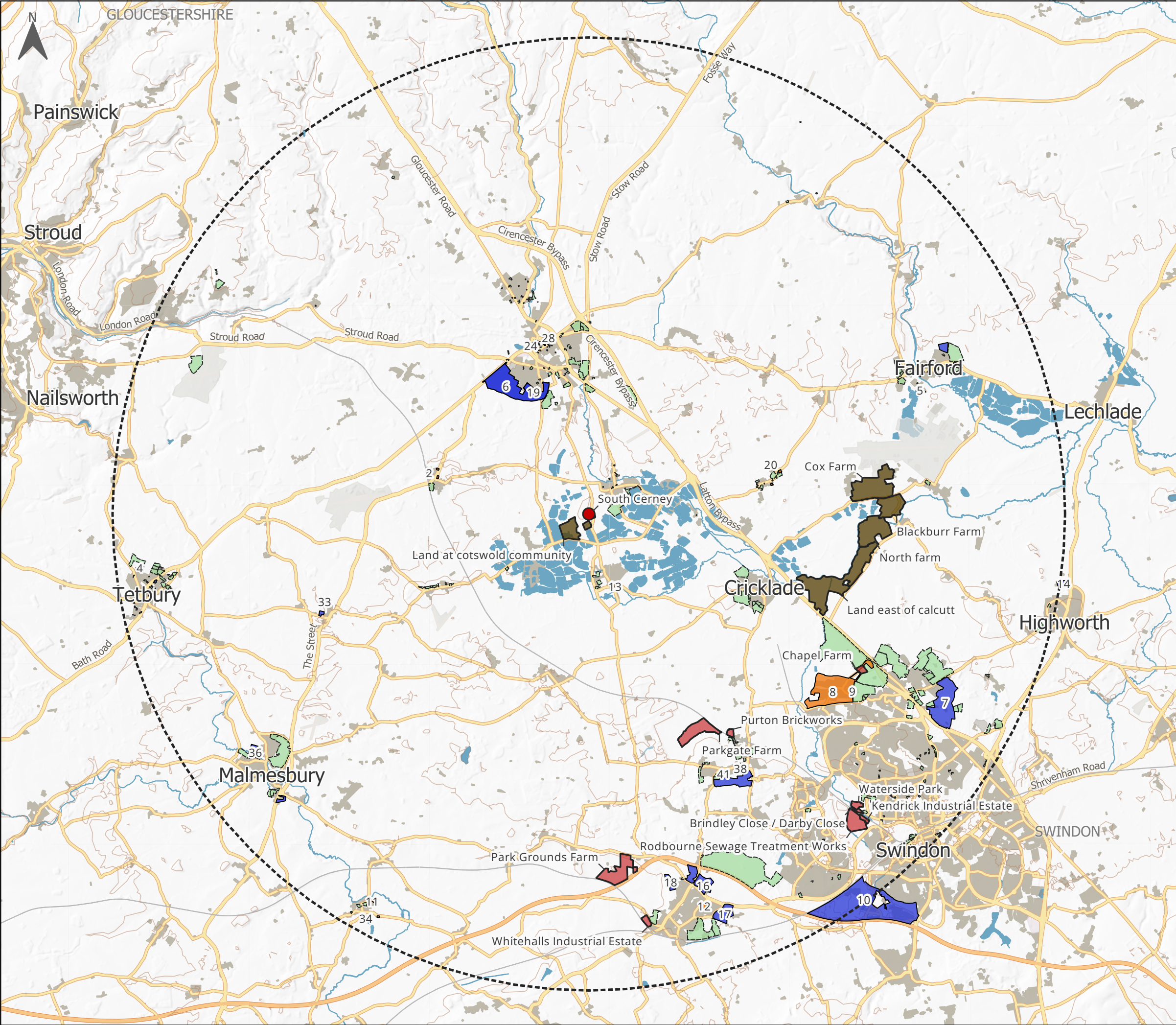


**Map 1: Brownfield land and
employment allocations**

Drawn by:	Rhys Williams
Approved by:	Rob Asquith
Drawing Reference:	723817-SAV-ASA-ASH-0001-V2

© Crown copyright, license number 100024244 Savills (UK) Limited. Public sector information licensed under Open Government Licence v3.0. © Crown copyright and database right 2025. © OpenStreetMap contributors 2025. Maps Data: Google, @ 2025. Copyright © Esri. All rights reserved.

MAP 2: Other development allocations and potential sites



ASHTON KEYNES ALTERNATIVE SITES ASSESSMENT

Date:	20-08-2025
Paper size:	A3
Scale:	1:125,000

02,0004,0006,0008,000 m

Key:

- Ashton Keynes AD Plant Site
- 10 mile Study Area
- Minerals allocations
- Waste allocations
- Positive SHLAA sites
- Residential and Community allocations
 - Not built out
 - Built out

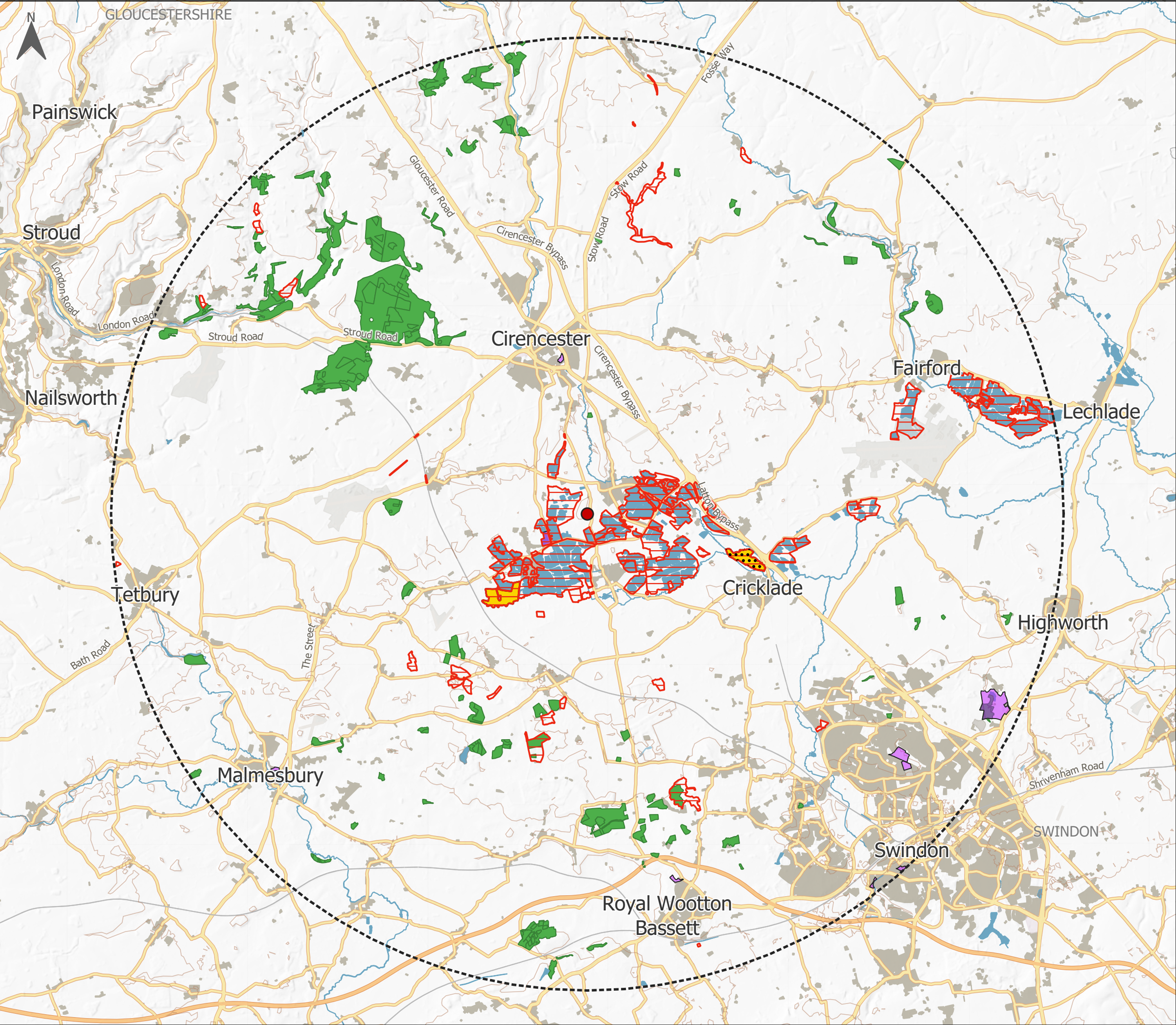
Map 2: Other development allocations and potential sites

Drawn by:	Rhys Williams
Approved by:	Rob Asquith
Drawing Reference:	723817-SAV-ASA-ASH-0002-V3

© Crown copyright, license number 100024244 Savills (UK) Limited. Public sector information licensed under Open Government Licence v3.0. © Crown copyright and database right 2025. © OpenStreetMap contributors 2025. Maps Data: Google, @ 2025. Copyright © Esri. All rights reserved.

Wessex House
Priors Walk
Wimborne
BH21 1PB

MAP 3: Environmental constraints



**ASHTON KEYNES
ALTERNATIVE SITES
ASSESSMENT**

Date:	20-08-2025
Paper size:	A3
Scale:	1:125,000
02,0004,0006,0008,000 m	

- Key:**
- Ashton Keynes AD Plant Site
 - 10 mile Study Area
 - Site of Special Scientific Interest
 - National Nature Reserve
 - Special Area of Conservation
 - Local Nature Reserve
 - Ancient Woodland

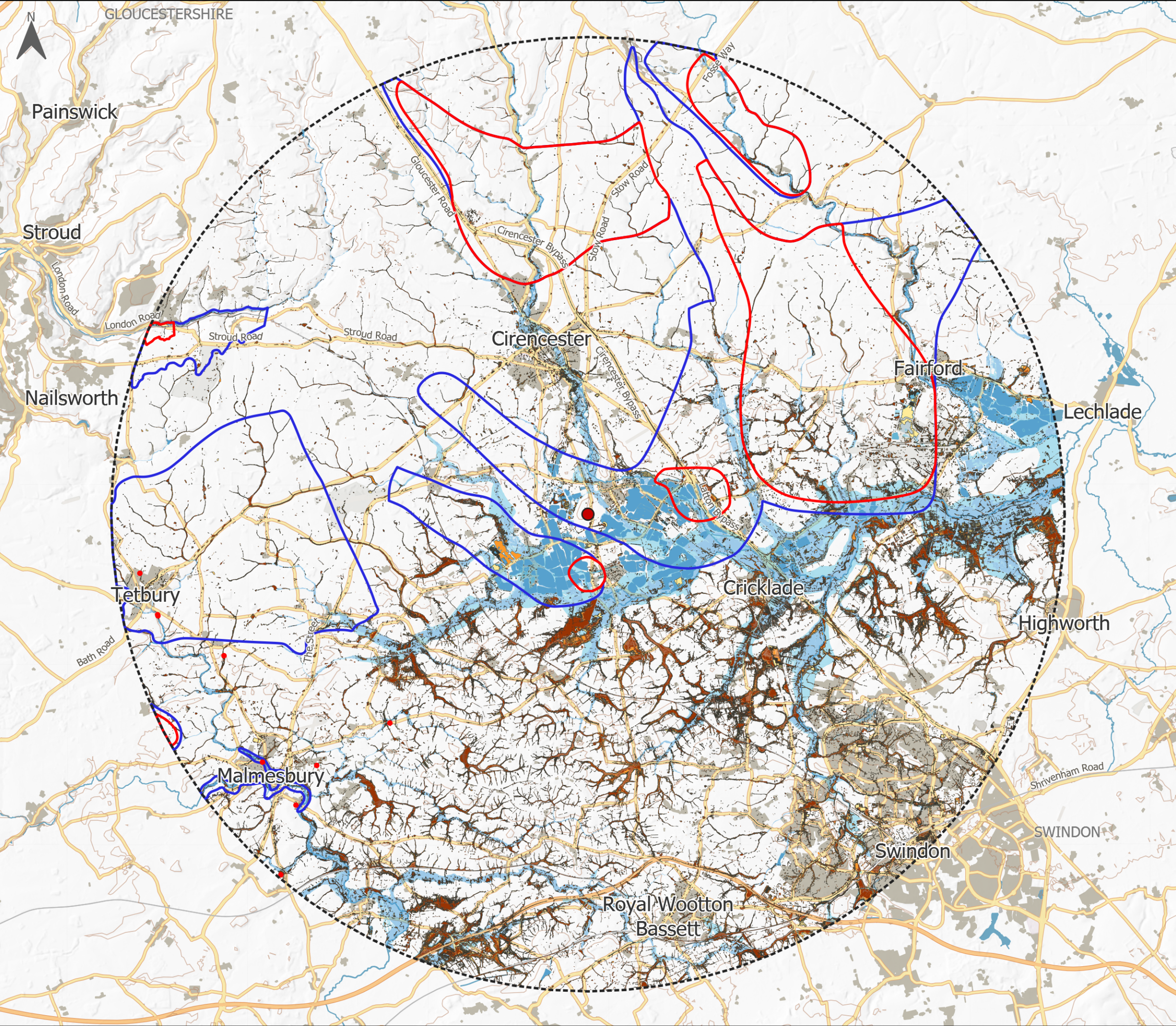


Map 3: Environmental constraints

Drawn by:	Rhys Williams
Approved by:	Rob Asquith
Drawing Reference:	723817-SAV-ASA-ASH-0003-V3

© Crown copyright, license number 100024244 Savills (UK) Limited. Public sector information licensed under Open Government Licence v3.0. © Crown copyright and database right 2025. © OpenStreetMap contributors 2025. Maps Data: Google, @ 2025. Copyright © Esri. All rights reserved.

MAP 4: Flood risk



**ASHTON KEYNES
ALTERNATIVE SITES
ASSESSMENT**

Date:	20-08-2025
Paper size:	A3
Scale:	1:125,000
02,0004,0006,0008,000 m	

- Key:**
- Ashton Keynes AD Plant Site
 - 10 mile Study Area
 - Fluvial flood risk
 - Flood Zone 3
 - Flood Zone 2
 - Surface water flood risk
 - High
 - Medium
 - Low
 - Source Protection Zones
 - 1
 - 2



Map 4: Flood risk

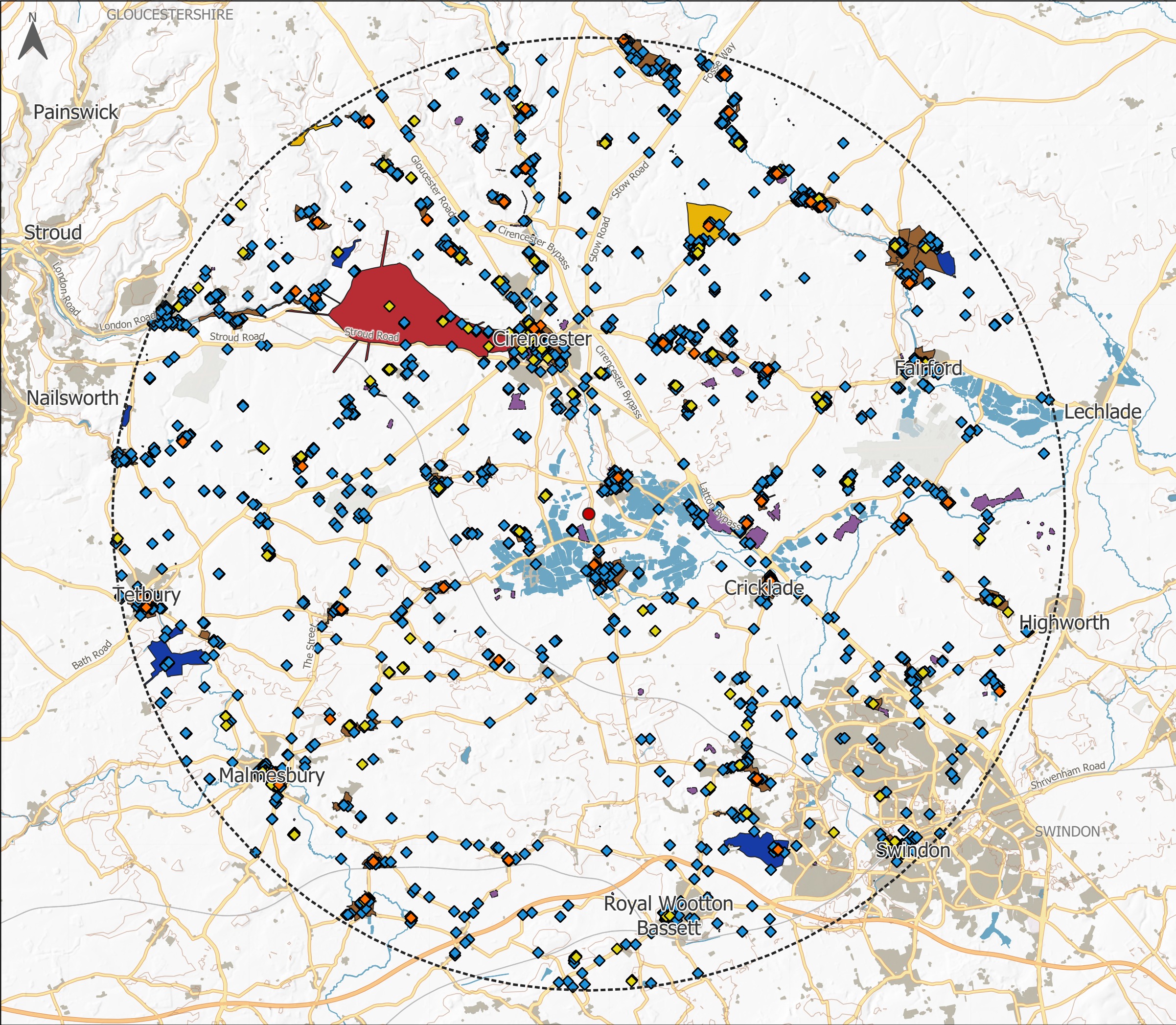
Drawn by:	Rhys Williams
Approved by:	Rob Asquith
Drawing Reference:	723817-SAV-ASA-ASH-0004-V4

© Crown copyright, license number 100024244 Savills (UK) Limited. Public sector information licensed under Open Government Licence v3.0. © Crown copyright and database right 2025. © OpenStreetMap contributors 2025. Maps Data: Google, @ 2025. Copyright © Esri. All rights reserved.

Wessex House
Priors Walk
Wimborne
BH21 1PB



MAP 5: Heritage constraints



ASHTON KEYNES ALTERNATIVE SITES ASSESSMENT

Date:	20-08-2025
Paper size:	A3
Scale:	1:125,000

02,0004,0006,0008,000 m

Key:

- Ashton Keynes AD Plant Site
- 10 mile Study Area
- Scheduled Monuments
- Conservation Areas
- Listed Buildings
 - I
 - II*
 - II
- Registered Parks and Gardens
 - I
 - II*
 - II

Map 5: Heritage constraints

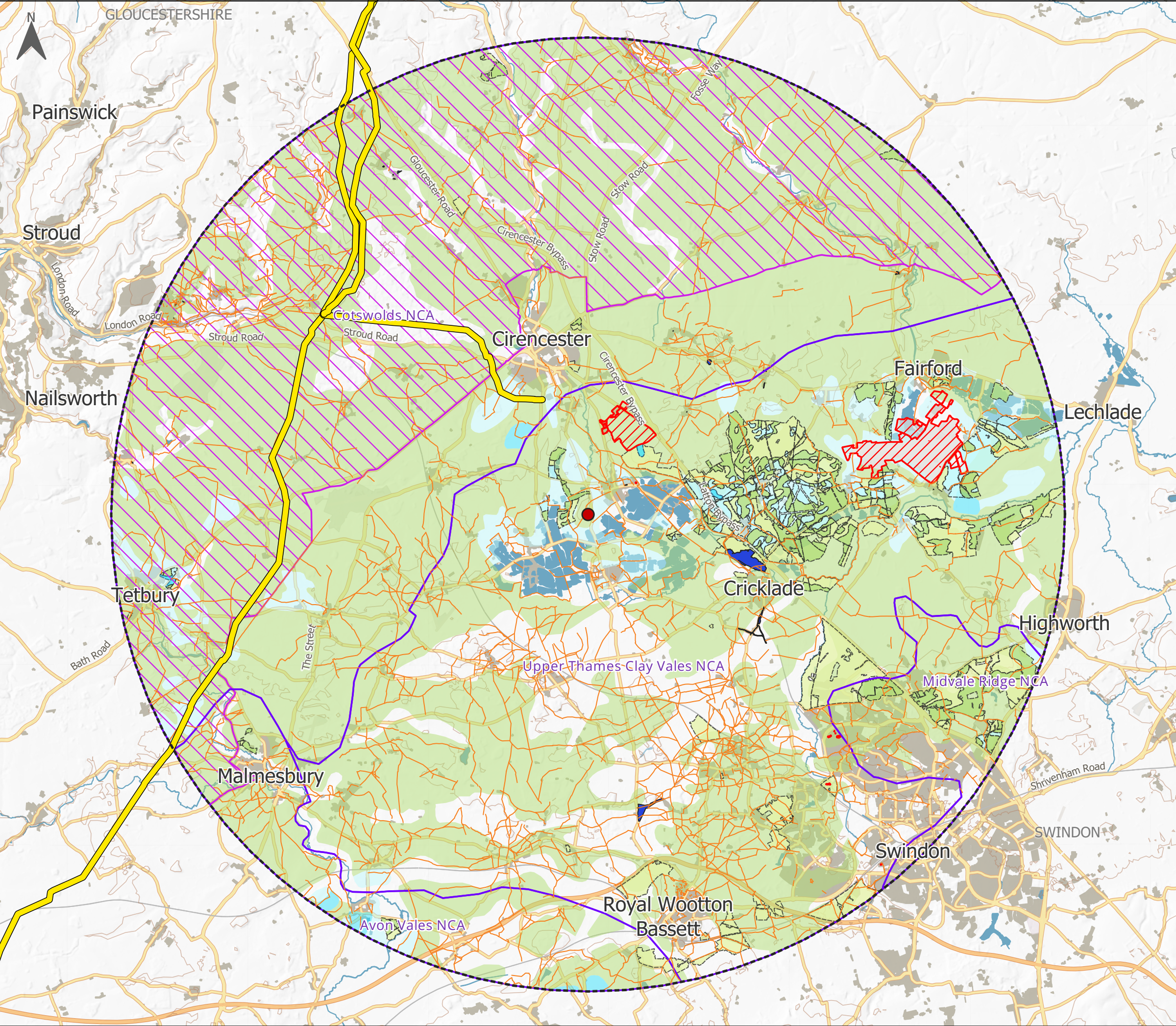
Drawn by:	Rhys Williams
Approved by:	Rob Asquith
Drawing Reference:	723817-SAV-ASA-ASH-0005-V3

© Crown copyright, license number 100024244 Savills (UK) Limited. Public sector information licensed under Open Government Licence v3.0. © Crown copyright and database right 2025. © OpenStreetMap contributors 2025. Maps Data: Google, @ 2025. Copyright © Esri. All rights reserved.

Wessex House
Priors Walk
Wimborne
BH21 1PB

savills

MAP 6: Landscape designations, ALC and PRow



ASHTON KEYNES ALTERNATIVE SITES ASSESSMENT

Date:	20-08-2025
Paper size:	A3
Scale:	1:125,000

02,0004,0006,0008,000 m

Key:

- Ashton Keynes AD Plant Site
- 10 mile Study Area
- MOD Land Ownership
- Public Rights of Way
- Gas pipeline
- National Landscapes
- Registered Common Land
- National Character Areas

Agricultural Land Classification Post 1998 (surveyed)

- Grade 1
- Grade 2
- Grade 3a
- Grade 3b

Agricultural Land Classification (modelled)

- GRADE 1
- GRADE 2
- GRADE 3

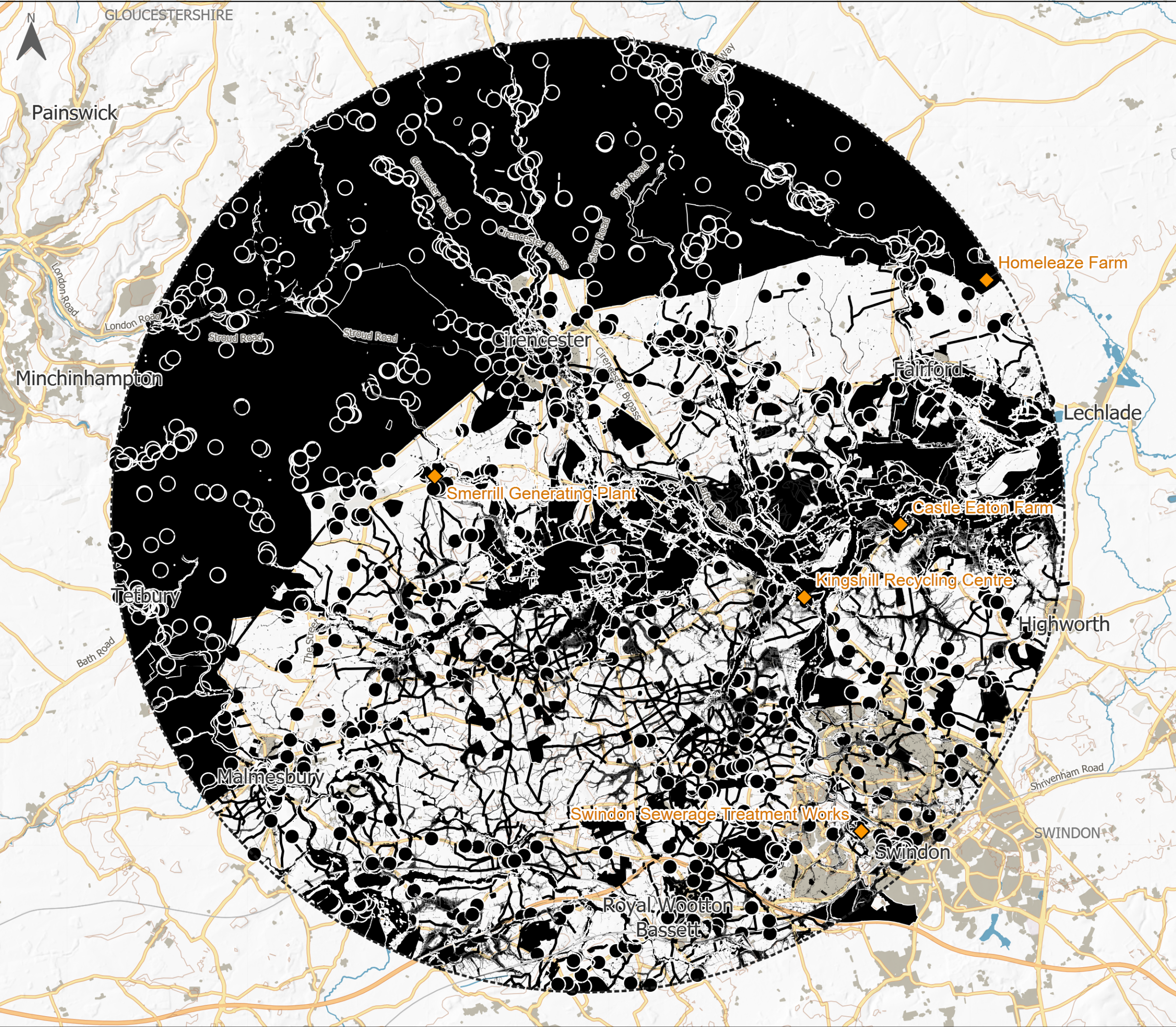
Map 6: National landscapes, ALC, and public rights of way

Drawn by:	Rhys Williams
Approved by:	Rob Asquith
Drawing Reference:	723817-SAV-ASA-ASH-0006-V4

© Crown copyright, license number 100024244 Savills (UK) Limited. Public sector information licensed under Open Government Licence v3.0. © Crown copyright and database right 2025. © OpenStreetMap contributors 2025. Maps Data: Google, @ 2025. Copyright © Esri. All rights reserved.

Wessex House
Priors Walk
Wimborne
BH21 1PB

MAP 7: Composite constraints



ASHTON KEYNES
ALTERNATIVE SITES
ASSESSMENT

Date:19-08-2025

Paper size:A3

Scale:1:125,000

02,0004,0006,0008,000 m

Key:

10 mile Study Area

Operational AD Plants

Area constraints

Listed buildings

Map 7: Composite constraints

Drawn by:Rhys Williams

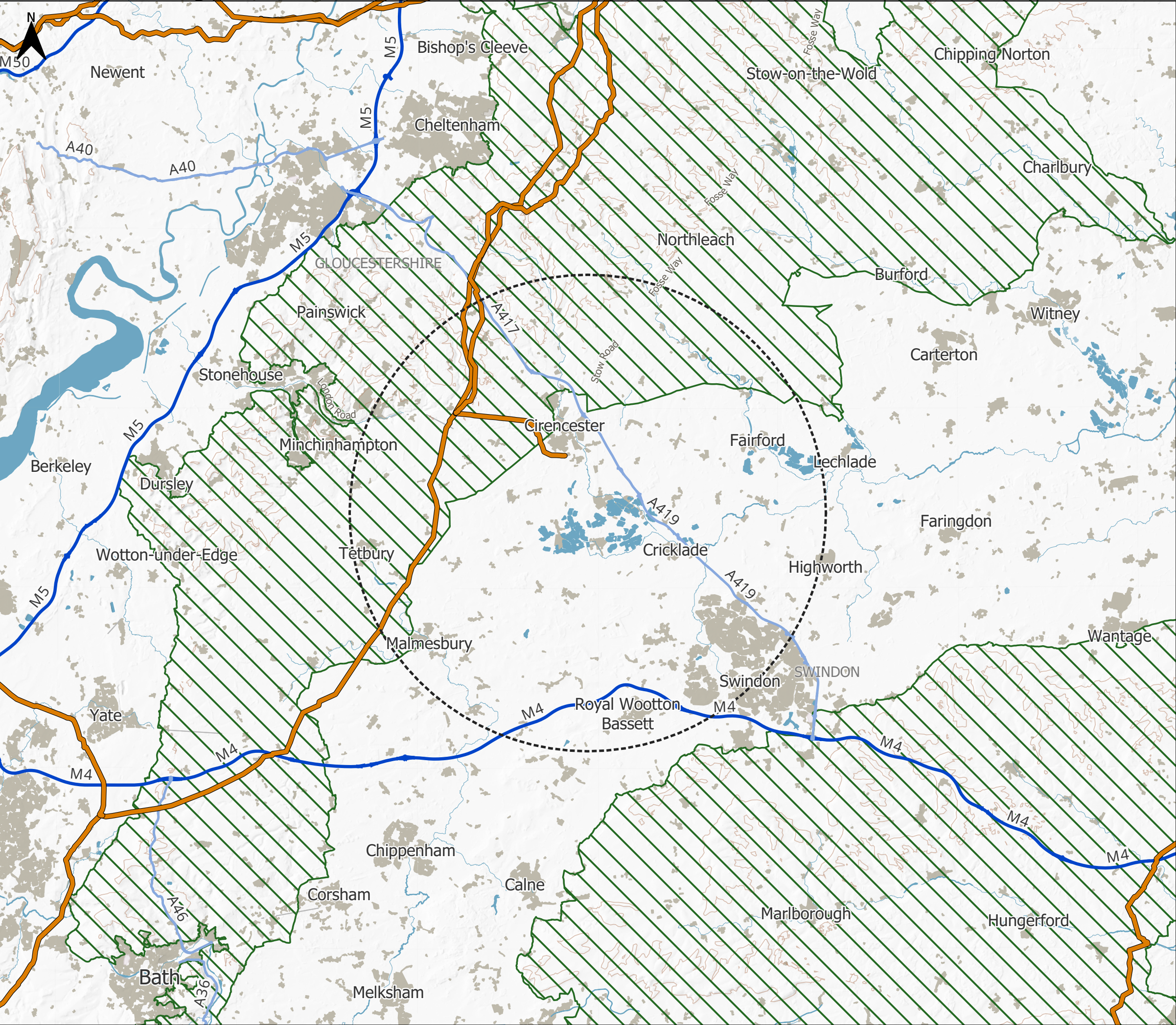
Approved by:Rob Asquith

Drawing Reference:723817-SAV-ASA-ASH-0007-V6

© Crown copyright, license number 100024244 Savills (UK) Limited. Public sector information licensed under Open Government Licence v3.0. © Crown copyright and database right 2025. © OpenStreetMap contributors 2025. Maps Data: Google, @ 2025. Copyright © Esri. All rights reserved.

Wessex House
Priors Walk
Wimborne
BH21 1PB

MAP 8: Strategic context



ASHTON KEYNES ALTERNATIVE SITES ASSESSMENT

Date:	19-08-2025
Paper size:	A3
Scale:	1:250,000

04,0008,00012,00016,000 m

Key:

10 mile Study Area

National Landscape

National Gas Transmission Network

Strategic Road Network

Motorway

A Road

acorn

BIOENERGY

Map 8: Strategic Context

Drawn by:

Rhys Williams

Approved by:

Rob Asquith

Drawing Reference:

723817-SAV-ASA-ASH-0008-V2

© Crown copyright, license number 100024244 Savills (UK) Limited. Public sector information licensed under Open Government Licence v3.0. © Crown copyright and database right 2025. © OpenStreetMap contributors 2025. Maps Data: Google, @ 2025. Copyright © Esri. All rights reserved.

Wessex House
Priors Walk
Wimborne
BH21 1PB

savills

Appendix A : Agricultural Economy Report

Agricultural Economy Report

Date of report: July 2025

PREPARED FOR



Contents

1.	Executive Summary.....	3
2.	Introduction.....	4
3.	Area specific farming insights	5
3.1	Farming within the 10 mile radius	5
3.2	Growing AD crops within the 10 mile radius	5
3.3	AD Plants within the 10 mile radius	5
4.	Land Use Framework Consultation.....	7
4.1	Land Use Framework for England	7
4.2	Future Demands on Farmland.....	7
5.	Feedstock supply from farms.....	8
6.	Feedstock	9
6.2	Rye silage.....	9
6.3	Maize	9
6.4	Grass.....	9
6.5	Straw	11
6.6	Poultry Litter	13
6.7	Farm Yard Manure.....	13
6.8	Slurry	13
7.	Livestock Decline.....	14
7.1	Dairy Cows	14
7.2	Overall Cattle Numbers	14
7.3	Future Livestock	14
8.	Fertiliser and Digestate.....	16
8.1	Cropping estimate for nitrogen supply	16
8.2	Digestate as a replacement to manufactured fertiliser in terms of economic benefit.....	16
9.	Conclusion.....	18
10.	Appendices.....	19
10.1	Appendix A. Feedstock Map	19
10.2	Appendix A1. Crop Map of England Results (DEFRA DATA).....	20
10.3	Appendix B. Agricultural Land Classification Map.....	21
10.4	Appendix B1. Agricultural Land Grades within different radius'	22

10.5 Appendix C. Fertiliser costs26

Authors27



1. Executive Summary

- 1.1.1 This report has been produced by Savills (UK) Limited on behalf of Acorn Bioenergy (the Applicant) to accompany a planning application (Ref: PL/2023/03359) for a proposed anaerobic digestion (AD) plant (the Proposed Development) at land off Ashton Road, south east of South Cerney, Ashton Keynes, Wiltshire, SN6 6QT (the Site). It presents a detailed analysis of farming activity and land use within a 10-mile radius of the Proposed Development, with emphasis on feedstock resources, economic contributions, and sustainability. It has been prepared to help respond to questions raised during the planning process regarding why the Proposed Development is located in a rural location.
- 1.1.2 Key insights of this report highlight the prevalence of cropping and livestock farming, along with their positive impact on the local economy. It also considers modern pressures on land use, referencing the Land Use Framework consultation for England as a foundation for future planning.
- 1.1.3 The report outlines the agricultural feedstocks necessary for the Proposed Development including rye, maize, grass, straw, poultry litter, farmyard manure, and slurry, thereby demonstrating both the viability of the Proposed Development and the strong demand for its natural digestate fertiliser by-product by local farms. A notable decline in livestock numbers, particularly cattle, raises concerns about the long-term sustainability of current farming systems in the area.
- 1.1.4 A potential solution lies in supporting a resilient local market for AD plant feedstock and fertiliser, utilising farmers' existing skill sets, machinery, and infrastructure. Farms are under increasing pressure to pursue net zero targets, with synthetic fertilisers being one of the largest sources of agricultural greenhouse gas emissions. From January 2027, the UK government's Carbon Border Adjustment Mechanism will apply a carbon tax to imported synthetic fertilisers. Based on current estimated carbon content and current trading prices the price for such fertiliser might increase by £20 or more per tonne.
- 1.1.5 In light of this, digestate fertiliser represents a promising alternative, lowering environmental impact and operating costs. The AD plant is positioned to play a pivotal role in supporting sustainable fertiliser strategies across nearby farms.
- 1.1.6 The report concludes that the chosen site for the Proposed Development offers strategic advantages for feedstock sourcing, regional sustainability, and future-proofing agricultural practices.

2. Introduction

- 2.1.1 This report presents a comprehensive analysis of agricultural practices, land use patterns, and feedstock availability local to the Proposed Development. The proposed development will require approximately:
- 15,000 tonnes/year of rye silage
 - 12,000 tonnes/year of maize
 - 14,000 tonnes/year of grass
 - 20,000 tonnes/year of straw
 - 15,000 tonnes/year of poultry litter
 - 10,000 tonnes/year of farmyard manure
 - 5,000 tonnes/year of slurry
- 2.1.2 The report offers a view of the area's farming landscape, identifying its contribution to the local economy and the potential for sustainable resource utilisation. It examines current cropping and livestock operations, assessing their scale, productivity, and interdependence with evolving land use priorities. Particularly in relation to national frameworks such as the Land Use Framework consultation for England.
- 2.1.3 In addition, the report evaluates the role of feedstock supply in local farming systems, highlighting the importance of reliable and local sources of inputs for AD plants. It further investigates the decline in livestock numbers especially dairy and beef cattle, considering the broader implications of this trend on the long-term viability and environmental resilience of agriculture within the area. This context formed the basis for assessing opportunities to support a circular farming economy through feedstock management and Digestate distribution.
- 2.1.4 Sources of information include websites and articles referenced in this report as well as conversations with the employees of the applicant.

3. Area specific farming insights

3.1 Local Farming

- 3.1.1 The local agricultural landscape surrounding the Proposed Development site is characterised by a range of farming businesses, reflecting both traditional and modern practices. The region supports a mixture of cropping and livestock enterprises, with many farms operating integrated systems.
- 3.1.2 Arable farms predominantly cultivate wheat, barley, rye, maize, and grass for silage, supplying both local feed demand and wider markets. Livestock enterprises in the area are mostly dairy and beef cattle, sheep, and some pig units, contributing to regional food production and supporting ancillary industries such as butchery and dairy processing.
- 3.1.3 In addition to conventional farming operations, the area includes several organic and regenerative farms committed to sustainable practices, biodiversity enhancement, and low-input production. These enterprises often supply direct-to-consumer outlets via farm shops, box schemes, and seasonal produce stands, further strengthening the local food economy.
- 3.1.4 Smaller-scale speciality farms and small holdings also operate in the region, raising alpacas, goats, bees, and niche poultry breeds. These businesses focus on high-welfare, artisanal products including fibre, honey, and craft goods, often serving premium or local markets.
- 3.1.5 Alongside primary agricultural production, there is a presence of agricultural support services such as machinery contracting, agronomy advice, and feed and fertiliser suppliers, which all enhance operational efficiency and regional connectivity.
- 3.1.6 Taken together, this diverse mix of farming activity provides a robust foundation for feedstock supply, economic and environmental resilience, and potential partnerships in support of the Proposed Development.

3.2 Growing AD feedstock locally

- 3.2.1 This report focuses on land grades 1-3 as these soils are best suited to growing AD feedstock crops (appendix B1). DEFRA data has been analysed to understand the type and area of crops currently grown by farmers. If the preferred AD crops were all to be grown locally e.g. within a 15km radius the proportion of grade 1-3 land required would be:
- Maize: 3-3.9%
 - Rye: 5.7-6.8%
 - Straw: 25-57% (depending on straw yield and frequency of growing straw based crops in the rotation).
- 3.2.2 Grass is more typically grown on lower grade land – poorer grade 3 and grade 4 – the 14,000 tonnes required will either come from existing grassland area or growing grass as a break crop in an arable rotation this will typically require 350ha of grassland assuming a 3-cut per year system.
- 3.2.3 Analysis of arable cropping currently grown in the local area shows a total of c22,000ha (see appendix A). It may be assumed a proportion of would become AD specific feedstock crops as well as taking grass from existing grassland farms.

3.3 Other local AD Plants

- 3.3.1 There are a number of operational AD plants within the local area of the Proposed Development some of which are listed below:

- Charlton Park SN16 0HT (north of Malmesbury) – 51,000 tpa ,mixed slurry and crop feedstock mostly provided by the estates farming business.
- Smerill Dairy GL7 6BW – smaller sized plant compared to some of the other operational plants, 20,000 tpa. The main feedstock is slurry (12,000 tpa) (directly from the dairy) and crops (8,000 tpa) which are supplied directly from the farm/estate.
- Homeleaze Farm (north east of Fairford) – 21,000 tpa fed from livestock waste (8,000 tpa) and cropped feedstock (43,000 tpa) sourced from wider local farming businesses including the Down Ampney Estate which is mentioned in section 7 of this report.

3.3.2 None of the operational AD plants within the local area will have an impact on the Proposed Development because they currently all have their own feedstock arrangements. Charlton Park and Homeleaze Farm are at the outer edge of the area considered. As shown later in this report, there is enough land within this area to supply an additional AD plant. Indeed, from the perspective of local farmers competition for local feedstock supply will likely drive price thus creating economic growth.

4. Land Use Framework Consultation

4.1 Land Use Framework for England

- 4.1.1 Farmland has primarily been used for producing food, fuel, and fibre. However, the demands on this finite resource have expanded and diversified, reflecting broader economic, environmental, and social priorities.

4.2 Future Demands on Farmland

- 4.2.1 The demands on farmland are more complex than they were historically. Driven by climate change, environmental priorities, and population growth (UK population projected to reach seventy-eight million by 2050) – all of which necessitates a balance of needs from land. Whilst food production remains a critical function, land use must also accommodate development, the transition to renewable energy sources, and environmental recovery to name a few.
- 4.2.2 The overriding aim of the Government is to deliver growth, and it is proposed that an LUF would allow landowners to make the best use of land to:
- “Boost food production” - to maintain long-term food security and protect the highest quality of agricultural land.
 - Build 1.5 million homes.
 - Execute the Clean Power 2030 Action Plan.
 - Protect and restore nature through the targets set in the Environment Act 2021.
- 4.2.3 The country requires a multifaceted approach to mitigate impacts and foster growth, with farming businesses central to managing this finite resource and delivering viable solutions.
- 4.2.4 For farming businesses within the area local to the Proposed Development, these developments present both challenges and opportunities. As key custodians of land, these enterprises are positioned at the intersection of environmental stewardship, renewable energy generation, and food security. Their deep-rooted knowledge, established infrastructure, and capacity for integrated land management make them essential contributors to national objectives under the LUF.

5. Feedstock supply from farms

- 5.1.1 In order to secure supply of feedstock from farms it is necessary to provide growers with a price that leaves the farmer with a higher net return than can be provided by competing farm outputs.
- 5.1.2 In addition, AD feedstocks are bulky and relatively expensive to transport. As a consequence, feedstock supply is dependent on local supply making it impossible for lower cost producers elsewhere (in the UK or world) to compete. This is in contrast with most other crops, such as grain, which can be imported at low cost if unavailable. In the 10-mile search radius the competition for feedstocks is from mainly beef and dairy farms. The numbers of this type of farming business are reducing.
- 5.1.3 Furthermore, AD plants involve commitment to the investment of considerable capital and this project is modelled over 25 years. It is reliant on partnerships with farming businesses. While contracts for feedstocks are often negotiated annually, there is mutual awareness that the contract needs to be for the long-term making abusive contract terms unsustainable.
- 5.1.4 While difficult to quantify, all these aspects supply financial benefit to farmer feedstock suppliers and local contractors. If there is no advantage to the grower, or contractor, feedstock is not harvested and supplied, and the farmer is no worse off than at present.
- 5.1.5 The price of feedstock need not mirror the value of traditional agricultural commodities at least in the short term but the price of energy (in the longer term the demand for land is determined by the profitability of competing crops). This creates a new pricing mechanism, and while on occasion the prices do move in parallel, this is not always the case, providing the grower with a degree of price risk management. In addition, because the feedstocks are not grown speculatively (as a sizeable percentage of the other crops are) the price is set around 12 months prior to harvest hedging price and thus farm profitability compared with crops sold after harvest or post planting.
- 5.1.6 An estimate of the available area for crop feedstocks is provided in Appendix A. Appendix A shows that the feedstock required to run the plant can mostly be sourced within a 10-mile search area and grade 1-3 classifications as shown in Appendix B.

6. Feedstock

- 6.1.1 This section of the report focuses on the availability and source of the individual feed stocks required to operate the plant in a 12-month period as mentioned in section 2. The feedstock tonnages have been provided by the Applicant. The majority of the annual feedstock requirement will be forwarded contracted but where there are shortages/price fluctuations in a given year the feedstock 'mix' can be altered accordingly. This section of the report links to Appendix A which details the current crops that are grown within the area local to the Proposed Development.

6.2 Rye silage

Total Rye silage requirement: 15,000 t/yr.

- 6.2.1 Rye is an important energy crop as its growing cycle is short, and the growing costs are low and the financial benefit to the farm remains high. The Proposed Development is looking for 15,000 tons per year of rye silage. Based on average yields of 27.5 t/ha the total area required for this crop is 545ha. This area can be satisfied within a 10-mile radius of the site.

6.3 Maize

Total Maize requirement: 12,000 t/yr.

- 6.3.1 Maize is known to be grown around the immediate area of the Proposed Development and historically has been grown to feed cattle primarily used in dairy farming. As detailed in section 6 of this report there is a forecasted decline in cow numbers thus creating a local alternative demand for this crop which is already grown. In turn this makes use of local skills. The total area required for maize growth is 300ha and can be satisfied within the 10-mile radius of the site (see Appendix A).

6.4 Grass

Total Grass requirement: 14,000 t/yr

- 6.4.1 This area is suited to grass growing and grass, it is the predominant crop grown in the area. The total area required to supply the grass tonnage is 350ha based on a yield of forty tons per hectare. Grass yields can be highly variable, dependent on the growing season, as evidenced by the extremely dry summer of 2025. The likelihood of consecutive dry summers is low so that a carry over or 'buffer stock' can help manage variations between years. Taken as an average over a 5 year period there will be enough grass grown within the local area of the Proposed Development to satisfy its feedstock requirement. The area to the south of the Site is most suited to growing grass as shown in the map in Appendix A.
- 6.4.2 Grass (for silage) will likely come from two main sources:
1. Ex livestock farmers who have retained areas of grassland either because their land is suitable for grassland or there is a local market to sell grazing or mowing crops. In the case of the latter, production can likely be increased (by addition of digestate as a fertiliser) such that both the demand for grass from the Proposed Development and from local graziers can be met simultaneously.
 2. Where grass is introduced as part of an arable rotation to help control problem weeds such as blackgrass. This is typically for 2-3 year duration, so when part of a typical 6-8 year rotation grass can make up c35% of the total cropped area. Historically this has been incentivised by

support schemes such as 'Countryside Stewardship' and 'Sustainable Farming Incentive' however, as part of wider changes to public support, the level of support may decrease in future thus a 'commercial' case for maintaining grass in an arable rotation, such as supplying the Proposed Development AD, will be attractive to arable farmers.

6.5 Straw

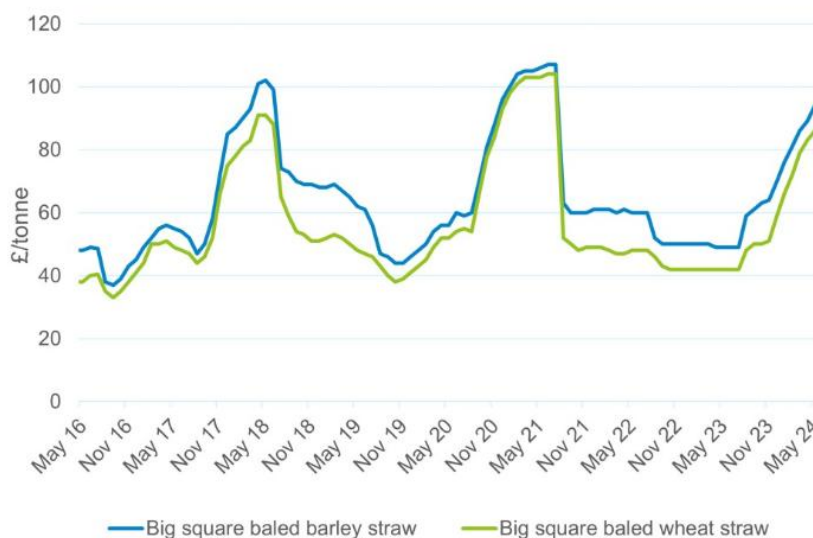
Total Straw requirement: 20,000 t/yr

- 6.5.1 Based on an average yield of 2.5tonnes/ha there is a requirement for 8,000ha of straw crops, which can all be sourced within the local area around the Proposed Development. There is an established national straw dealing network and the Proposed Development has good access to main road networks as well as being within close proximity of a straw producing area as shown on the crop map of England (Appendix A). When farmers sell straw within a 10 mile radius of their holdings, it increases the farm gate price of straw because it has lower transport costs, which often make up as much as 30-40% of the delivered straw price.

Demand for Straw

- 6.5.2 According to the Agriculture and Horticulture Development Board (AHDB) short-term price fluctuations are driven by demand surges: for example, spikes in animal feed and bedding demand during long, wet winters, and straw supply (both quantity and quality) impacted by weather, especially in wet years. Regional differences also exist.
- 6.5.3 In the most recent five years, UK big bale straw prices remained supported mostly above £40/t, with spikes seen above £80/t and reaching over £100/t in 2021.

Figure 1: A graph showing straw price over a 8 year period:



Source: British Hay & Straw Merchants' Association, Defra

Figure 2: Table showing straw crops within the local area – based on RPA Crop Map of England 2019

Land Use Code	Land Use	Land use Area (ha)	Straw Yield Total Tonnes	based on 50% being baled and 50% incorporated
AC66	Winter Wheat	9,035	22,587	11,293
AC01	Spring Barley	5,282	13,204	6,602
AC67	Winter Oilseed	3,906	9,766	4,883

AC63	Winter Barley	2,801	7,002	3,501
AC19	Spring Oats	311	778	389
AC65	Winter Oats	298	745	373
AC32	Spring Wheat	84	210	105
AC68	Winter Rye	55	137	69
			Total Market supply (tonnes)	27,214
			Acorn Bioenergy's Feedstock requirement (tonnes)	20,000

- 6.5.4 With the decline in livestock numbers as detailed in section 7 of this report it is reasonable to assume that the demand for straw for livestock bedding in the South West is also reducing (larger modern dairy units may also switch to alternatives such as sand for management reasons) and therefore creating an opportunity for straw still to be used within the region via the AD plant, this will be beneficial to the established network of farm contractors, straw merchants and specialist hauliers.
- 6.5.5 Contact with local farmers indicates much of the locally produced straw is transported to areas where livestock is more densely populated such as Wales and the far south west. Having an outlet for straw within a local supply network/10 mile radius will reduce the carbon intensity of this product which is a considerable factor for farming business that are under pressure from supply chains to improve their carbon footprints.

6.6 Poultry Litter

Total poultry litter requirement: 15,000 t/yr

- 6.6.1 The Applicant is already in discussions with Gamber Poultry Litter to take poultry litter from the Wye catchment. This follows a commitment by the region's major poultry producer, AVARA foods, to halt the sale of poultry litter from their supplier farms to arable farms in the Wye catchment from January 2024. According to Gamber, 160,000t of poultry litter is produced within the Wye catchment most of which now has to be exported from it. This is an advantage for farmland around the Proposed Development, as spreading of digestate from poultry litter will enhance Nitrogen & Phosphate supply to arable soils.

6.7 Farm Yard Manure (FYM) and slurry

Total farm yard manure requirement: 10,000 t/yr

- 6.7.1 The Applicant is already in discussions with a number of livestock farmers in the area that keep cattle on a system which produces farmyard manure. The feedstock requirement of 10,000 tons per year could be produced from approximately 1,200 head of cattle housed in doors for 12 months/year. Slurry

Total slurry requirement: 5,000 t/yr

- 6.7.2 The Applicant is in discussions with a number of farming business that will be able to provide slurry as a feedstock. Specifically, within the local area there is one farming business that has expressed interest in providing the full tonnage in return for digestate. This is on the basis that there will be an opportunity to have a more nutrient dense product back in return for the slurry they provide. As farming businesses continue to look for financial savings the understanding of nutrient cycling and benefits of a short supply chain are increasing; in addition livestock farmers are looking for ways to comply with nitrate vulnerable zone (NVZ) legislation which include exporting slurry and manures off their holdings.

7. Livestock Decline

7.1 Dairy Cows

- 7.1.1 According to DEFRA data, the number of dairy cows in Southwest England has been declining since 2016. According to a report from Dairy4Future¹, the trend is expected to continue, with a projected decrease from 428,000 in 2019 to 416,000 in 2030 (2.8%). This decrease aligns with the broader trend of a long-term decline in the GB dairy herd.

7.2 Overall Cattle Numbers

- 7.2.1 While the dairy sector is a major part of the cattle industry in the Southwest, beef farming is also significant. According to the House of Commons Library, the region holds 34% of the total cattle population in England. However, recent data indicates a decline in young cattle, with a reduction in the number of animals aged under 12 months, suggesting potential future supply reductions in the beef market.

- 7.2.2 Several factors contribute to trends in changing cattle numbers, including:

- Market Prices: Fluctuations in beef prices can influence farmers' decisions on breeding and culling practices.
- Farm Support Payments: Changes in government policies and support for agriculture can also play a role in farm management decisions.
- Weather Conditions: Unfavourable weather can impact grazing and feed availability, potentially affecting cattle numbers.
- Finishing Times: Changes in how long cattle are kept on farms for finishing can also influence supply and market trends.

7.3 Future Livestock

- 7.3.1 Current data suggests that cattle numbers may continue to decrease, particularly in the younger age groups.

- 7.3.2 Changes in dairy farm practices merit further consideration here as:

- Operational dairy units compete for straw to use as bedding
- Soil and climatic factors generally make them suitable for growing crops such as maize, whole crop rye and grass.
- Surplus farm infrastructure such as silage clamps and slurry/waste water storage facilities can be utilised by AD facilities such as that proposed at Ashton Keynes
- North Wiltshire was historically a dairy farming area

- 7.3.3 This last point can be illustrated by the demise of Co-Operative Farms dairy farming operations at nearby Down Ampney where up to the early 2000s c1,000 dairy cows were kept to supply milk direct to Co-operative stores. As a result of a downturn in dairy farming fortunes the herds were sold and the land converted to arable production. Prior to this the Co-operative had been the largest dairy farmer in the UK.

- 7.3.4 In terms of the number of dairy farms the Dairy4Future report states there were 2,200 dairy farms in South West England as of 2019 but this is projected to fall by 37% to just under 1,400 by 2030. It can be seen that the predicted percentage decline in the number of dairy farms is much steeper

¹ <https://dairy4future.eu/wp-content/uploads/2022/09/Perspective-for-milk-growth-2030-South-West-England-1.pdf>

than the decline in dairy cow numbers, this can be explained by the average size of dairy herds getting bigger – average herd size is projected to increase by 54% from 194 cows to 299.

- 7.3.5 Assuming an average stocking rate of 2.28 cows/ha (Kingshay Dairy Costings Focus Annual report 2021) and 25% replacement rate the predicted reduction in the regions dairy herd (including dairy youngstock) could 'free up' c6,600 ha of land currently engaged in dairy farming for alternative uses including AD feedstock production. Accordingly between 165,000 and 297,000 tonnes of AD feedstock could be produced annually.
- 7.3.6 Given the environmental and labour constraints placed on dairy farming it is unlikely that the number of dairy holdings will ever return to historic levels. The number of dairy cows will also likely continue to decline steadily as improved genetics, and management means that yield per cow will continues to decrease but demand remains relatively static.

8. Fertiliser and Digestate

8.1 Cropping estimate for nitrogen supply

- 8.1.1 This section outlines the estimated nitrogen requirements for key feedstock crops based on projected land usage within the Proposed Development's feedstock supply area:

Figure 3: Estimated nitrogen requirements on farmland within a 10-mile radius of the site

Crop	Area Required (ha)	Nitrogen Required (Kg/ha)	Total Nitrogen (tonnes)	Equivalent 34.5% AN Product (tonnes)	Digestate type	Digestate required (tonnes)
Maize	300	110	33	95	Fibre	6,600
Rye	550	50	27	80	Fibre	5,450
Grass	350	250	88	253	Liquor	13,300

- 8.1.2 All estimates are based on standard nitrogen application rates and conversion factors for ammonium nitrate (AN) fertiliser at 34.5% concentration. Digestate is considered as a viable alternative input, offering environmental and economic benefits while satisfying all crop nutrition demands. The amount of digestate products required to satisfy the key feedstock sources is approximately 20% of the total amount produced meaning that the wider area will be able to benefit from the product and subsequently benefitting from the environmental and economic uplift.

8.2 Digestate as a replacement to manufactured fertiliser in terms of economic benefit

- 8.2.1 The utilisation of digestate fertiliser as a replacement for conventional manufactured fertilisers presents an economic advantage to farming businesses within the Proposed Development's supply area. The Proposed Development's forecast total annual digestate output for both fibre and liquid is projected to be:

- Fibre Digestate: 63,882 tonnes
- Liquid Digestate: 56,784 tonnes
- Total Digestate Output: 120,666 tonnes

- 8.2.2 Digestate contains essential crop nutrients—nitrogen (N), phosphorus (P), and potassium (K)—that can offset the need for synthetic fertilisers such as ammonium nitrate (AN), triple super phosphate (TSP), and muriate of potash (MoP). Figure 4 below outlines the average nutrient concentrations found in digestate:

Figure 4: Average nutrient concentrations for AD digestate

Nutrient content (kg/t) – Acorn Bioenergy estimate			
	Kg of N/t	Kg of P/t	Kg of K/t
Fibre	5	4.5	2
Liquid	6.6	2.5	4.3

Based on commercial fertiliser prices and nutrient concentrations (see Appendix B2), the estimated monetary value of digestate nutrient replacement is calculated below:

Figure 5: Value of AD digestate

Estimated Value of Digestate based on Nutrient content					
	N £/yr	P £/yr	K £/yr	TOTAL	
				£/yr	£/t
Fibre	351,351	298,968	74,103	724,422	11.34
Liquid	412,252	147,638	141,619	701,510	12.35
TOTAL	763,603	446,606	215,722	1,425,931	

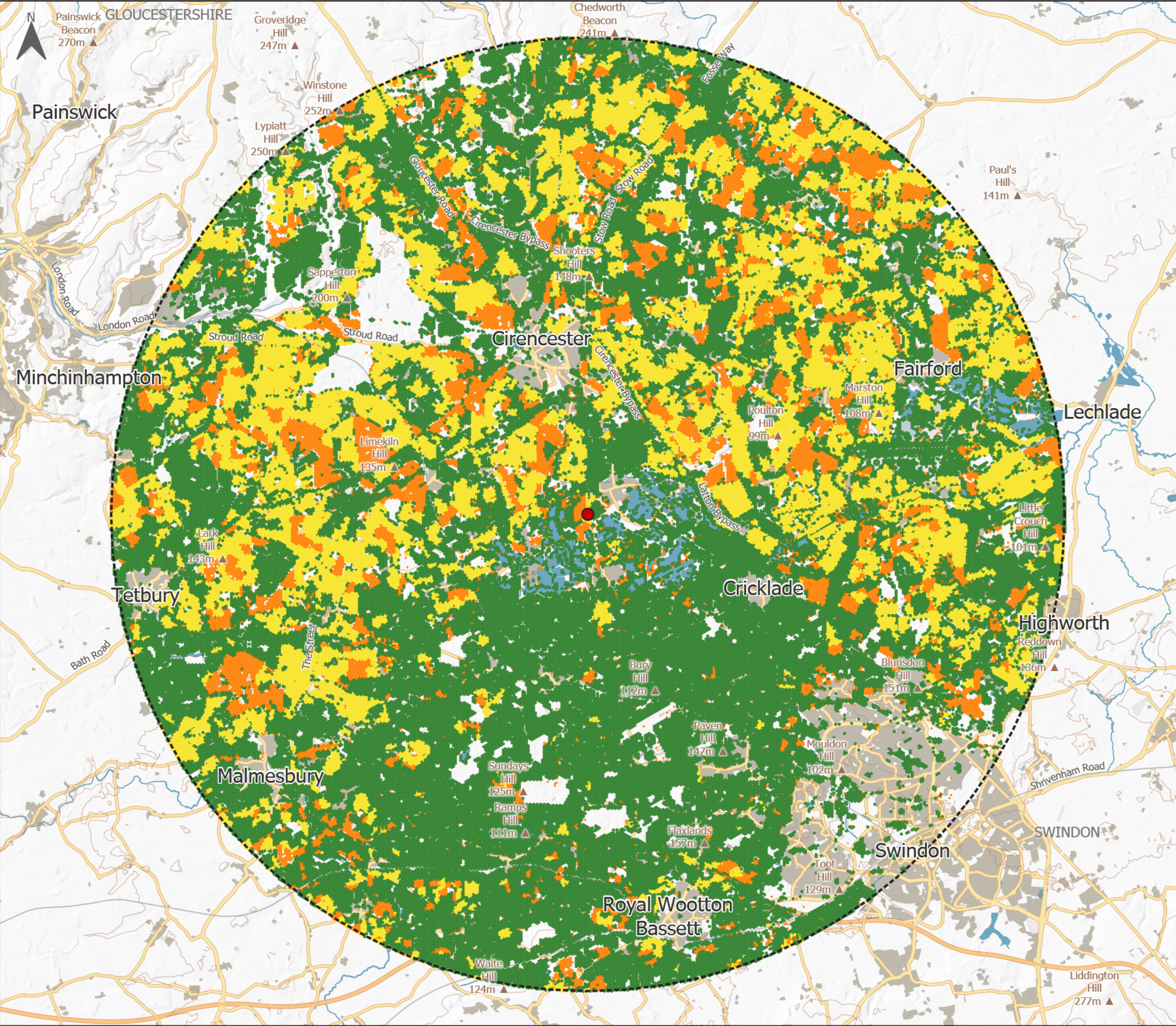
- 8.2.4 This represents a combined nutrient replacement value of over £1.4 million per year, offering savings to farmers within the catchment area. These savings not only support business resilience but also incentivise the adoption of digestate in place of manufactured fertilisers especially in light of upcoming carbon taxation on synthetic inputs from 2027.
- 8.2.5 In addition to its economic benefits, digestate contributes to improved soil health as it is classed an organic fertiliser, it reduces greenhouse gas emissions and supports circular agricultural systems including nutrient cycling. This all reinforces the strategic value of the AD plant to local farming network.
- 8.2.6 Farms are under increasing pressure to pursue net zero targets, with synthetic fertilisers being one of the largest sources of agricultural greenhouse gas emissions. From January 2027, the UK government's Carbon Border Adjustment Mechanism will apply a carbon tax to imported synthetic fertilisers. Based on current estimated carbon content and current trading prices, the price for such fertiliser might increase by £20 or more per tonne.
- 8.2.7 In light of this, digestate fertiliser represents a promising alternative, lowering environmental impact and operating costs. The AD plant is positioned to play a pivotal role in supporting sustainable fertiliser strategies across nearby farms.

9. Conclusion

- 9.1.1 The findings of this report point to a clear opportunity for anaerobic digestion (AD) development in the Ashton Keynes area, supported by robust agricultural capacity and shifting policy priorities. Key conclusions include:
- **Feedstock Viability:** Local farms provide consistent access to maize, rye, grass, and organic waste streams, ensuring reliable supply for AD operations.
 - **Livestock Trends:** Declining dairy and cattle numbers signal the need to diversify farm income and improve sustainability through renewable energy integration.
 - **Fertiliser Transition:** Digestate offers an economically and environmentally beneficial alternative to manufactured fertilisers especially as a carbon tax on synthetic inputs takes effect in 2027.
 - **Land Use:** The AD proposal aligns with national goals outlined in the Land Use Framework Consultation, supporting clean energy, food security, nature recovery, and rural growth.
 - **Local Farm Benefits:** By providing an outlet for feedstock and digestate fertiliser, the AD plant strengthens circular farming practices and supports long-term business viability.
 - **Strategic Location:** Ashton Keynes offers a geographically advantageous site, close to both feedstock sources and end-users of digestate, maximising economic and logistical efficiency.
- 9.1.2 It is considered that the Proposed Development presents not only a technical solution but also a strategic opportunity to align farming practices with the evolving energy, environmental, economic, and policy landscape.

10. Appendices

10.1 Appendix A. Feedstock Map



ASHTON KEYNES ALTERNATIVE SITES ASSESSMENT

Date:	16-07-2025
Paper size:	A3
Scale:	1:125,000

02,0004,0006,0008,000 m

Key:

- Ashton Keynes AD Plant Site
- 10 mile Study Area
- Grass
- Winter Wheat
Spring Barley
Winter Barley
Spring Wheat
Winter Rye
Winter Triticale
- Winter Oilseed
Maize
Fallow Land
Spring Oats
Winter Oats
Spring Field Beans
Potato
Spring Peas
Spring Linseed

Crop of England Results

Drawn by:	Rhys Williams
Approved by:	Kieran Vallance
Drawing Reference:	723817-SAV-ASA-ASH-0051-V1

© Crown copyright, license number 100024244 Savills (UK) Limited. Public sector information licensed under Open Government Licence v3.0. © Crown copyright and database right 2025. © OpenStreetMap contributors 2025. Maps Data: Google, @ 2025. Copyright © Esri. All rights reserved.

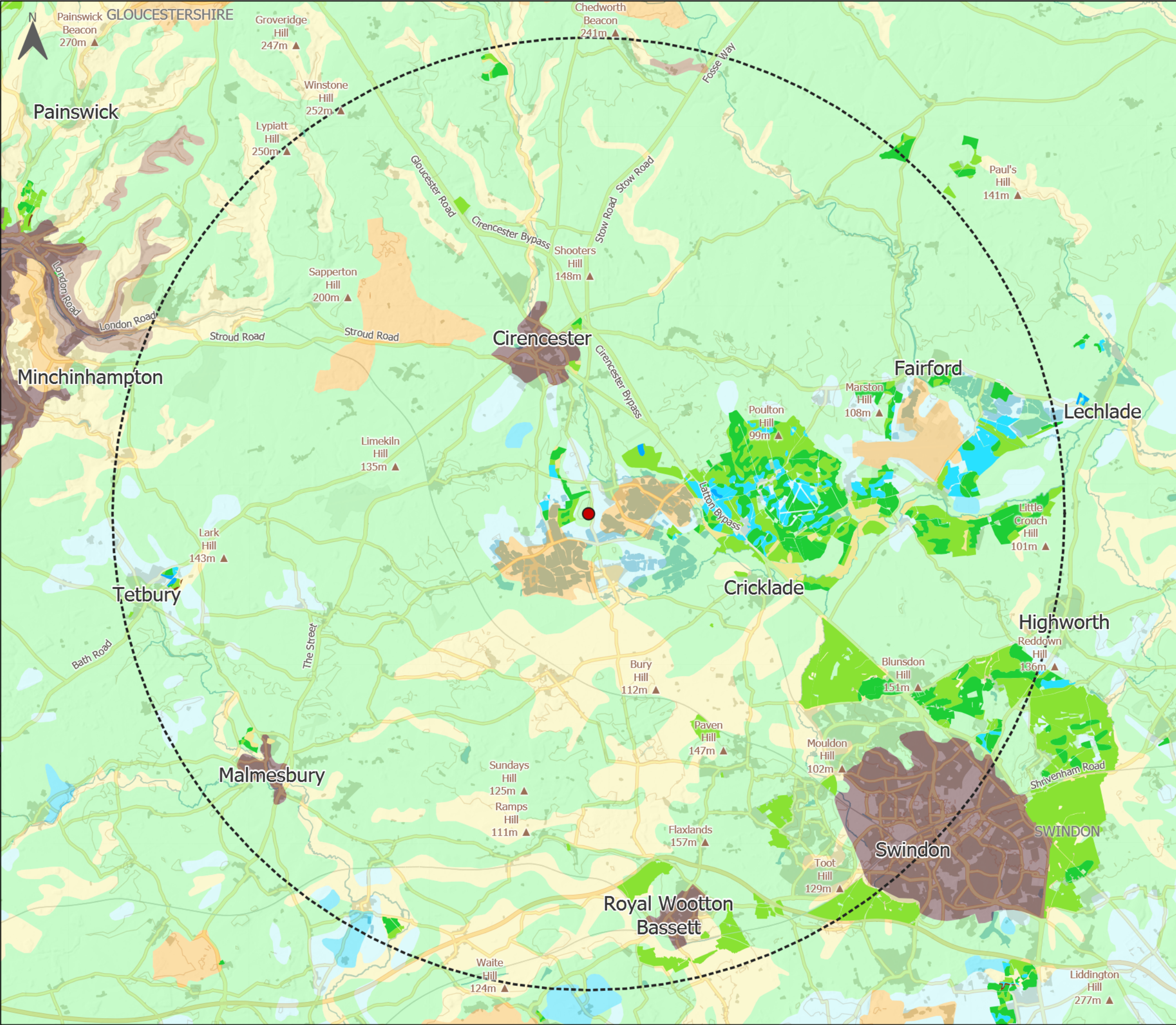
Wessex House
Priors Walk
Wimborne
BH21 1PB

savills

10.2 Appendix A1. Crop Map of England Results (DEFRA DATA)

Land use code	Land Use	Area (ha)	%
PG01	Grass	38,678	47%
AC66	Winter Wheat	9,035	11%
NA01	Non-vegetated or sparsely-vegetated Land	6,883	8%
WO12	Trees and Scrubs, short Woody plants, hedgerows	5,781	7%
AC01	Spring Barley	5,282	6%
AC67	Winter Oilseed	3,906	5%
AC63	Winter Barley	2,801	3%
TC01	Perennial Crops and Isolated Trees	2,475	3%
AC17	Maize	2,426	3%
FA01	Fallow Land	1,481	2%
WA01	Water	800	1%
LG20	Winter Field beans	552	1%
AC19	Spring Oats	311	0%
AC65	Winter Oats	298	0%
LG03	Spring Field beans	273	0%
AC44	Potato	222	0%
LG07	Spring Peas	176	0%
AC32	Spring Wheat	84	0%
AC16	Spring Linseed	79	0%
HEAT	Heather	63	0%
AC68	Winter Rye	55	0%

10.3 Appendix B. Agricultural Land Classification Map



ASHTON KEYNES ALTERNATIVE SITES ASSESSMENT

Date:	16-07-2025
Paper size:	A3
Scale:	1:125,000

02,0004,0006,0008,000 m

Key:

- Ashton Keynes AD Plant Site
- 10 mile Study Area

Agricultural Land Classification
Post 1988

- Grade 1
- Grade 2
- Grade 3a
- Grade 3b
- Grade 4
- Grade 5

Agricultural Land Classification (modelled)

- Grade 1
- Grade 2
- Grade 3
- Grade 4
- Grade 5
- NA - Non-agricultural
- U - Urban

Agricultural Land Classification

Drawn by:	Rhys Williams
Approved by:	Kieran Vallance
Drawing Reference:	723817-SAV-ASA-ASH-0052-V1

© Crown copyright, license number 100024244 Savills (UK) Limited. Public sector information licensed under Open Government Licence v3.0. © Crown copyright and database right 2025. © OpenStreetMap contributors 2025. Maps Data: Google, @ 2025. Copyright © Esri. All rights reserved.

Wessex House
Priors Walk
Wimborne
BH21 1PB

10.4 Appendix B1. Agricultural Land Grades within different radius'

Grade 1-3 within 15km						
		Grade				
		1	2	3		
Hectares		104	2901	41129		
of which						
Maize	20%	20.8	580.2	8225.8		
Rye	20%	20.8	580.2	8225.8		
Straw crops	40%	41.6	1160.4	16451.6		(5 year 'AD' rotation less maize/wholecrop rye/OSR)
Straw crops	60%	62.4	1740.6	24677.4		(5 year 'combinable' rotation less Beans/OSR)
					Total potential	
Maize yield	35 t/ha	728	20307	287903	308938	
	45 t/ha	936	26109	370161	397206	
Rye yield	25 t/ha	520	14505	205645	220670	
	30 t/ha	624	17406	246774	264804	
Straw yield (2yrs in 5)	2 t/ha	83.2	2320.8	32903.2	35307.2	
	3 t/ha	124.8	3481.2	49354.8	52960.8	
Straw yield (3yrs in 5)	2 t/ha	124.8	3481.2	49354.8	52960.8	

	3 t/ha	187.2	5221.8	74032.2	79441.2	
Target feedstock tonnages						
Maize					12000	
Rye					15000	
Straw					20000	
as % of Potential:						
Maize	35 t/ha				3.9%	
	45 t/ha				3.0%	
Rye	25 t/ha				6.8%	
	30 t/ha				5.7%	
Straw (2yrs in 5)	2t/ha				57%	
	3t/ha				38%	
Straw (3yrs in 5)	2t/ha				38%	
	3t/ha				25%	
Grade 1-3 within 10km						
		Grade				
		1	2	3		
Hectares		52	1581	17939		
of which						
Maize	20%	10.4	316.2	3587.8		
Rye	20%	10.4	316.2	3587.8		
Straw crops	40%	20.8	632.4	7175.6		

Straw crops	60%	31.2	948.6	10763.4		
					Total potential	
Maize yield	35 t/ha	364	11067	125573	137004	
	45 t/ha	468	14229	161451	176148	
Rye yield	25 t/ha	260	7905	89695	97860	
	30 t/ha	312	9486	107634	117432	
Straw yield (2yrs in 5)	2 t/ha	41.6	1264.8	14351.2	15657.6	
	3 t/ha	62.4	1897.2	21526.8	23486.4	
Straw yield (3yrs in 5)	2 t/ha	62.4	1897.2	21526.8	23486.4	
	3 t/ha	93.6	2845.8	32290.2	35229.6	
Target feedstock tonnages						
Maize					12000	
Rye					15000	
Straw					20000	
as % of Potential:						
Maize	35 t/ha				8.8%	
	45 t/ha				6.8%	
Rye	25 t/ha				15.3%	
	30 t/ha				12.8%	
Straw (2yrs in 5)	2 t/ha				128%	

	3 t/ha				85%	
Straw (3yrs in 5)	2 t/ha				85%	
	3 t/ha				57%	

10.5 Appendix C. Fertiliser costs

Nutrient Values used in calculation of digestate value:

Nutrient Value	AN	TSP	MoP
£/t	380	480	350
Nutrient content	345 (kg N)	460 (kg P2O5)	600 (kg K)
£/kg nutrient	1.10	1.04	0.58

Authors

Ashley Lilley

Director – Food and Farming

01285627590

07770652964

Alilley@savills.com

Kieran Vallance

Associate Director – Food and Farming

01242548012

07816184211

kieran.vallance@savills.com

Offices and associates throughout the Americas, Europe, Asia Pacific, Africa and the Middle East.

Savills (UK) Limited. Chartered Surveyors. Regulated by RICS.

A subsidiary of Savills plc. Registered in England No. 2605138. Registered office: 33 Margaret Street, London, W1G 0JD



Contact

Rob Asquith

Director – Head of National Infrastructure Planning

Direct telephone

+44 7796 941547

RAsquith@savills.com

Offices and associates throughout the Americas, Europe, Asia Pacific, Africa and the Middle East.

Savills (UK) Limited. Chartered Surveyors. Regulated by RICS.

A subsidiary of Savills plc. Registered in England No. 2605138. Registered office: 33 Margaret Street, London, W1G 0JD

The Savills logo, consisting of the word "savills" in a lowercase, sans-serif font, with the 's' in a darker shade of red than the rest of the word. It is positioned within a light yellow rectangular box.

Sensitive