North Muskham Parish Council
c/o The Clerk to the Council
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17th February 2025

To: info@gnrsolarpark.co.uk

Dear Sir/Madam

NORTH MUSKHAM RESPONSE TO PHASE 2 - STATUTORY CONSULTATION – GNR SOLAR & BIODIVERSITY PARK

North Muskham Parish Council (PC) has considered the documentation sent as part of the Phase 2 Statutory Consultation.

The PC object to the planned current design of this development for the following reasons:-

CUMULATIVE AFFECT

1. The PC are concerned regarding the cumulative impacts of GNR both individually (due to its excessive size), and collectively as a solar development but also as part of the overall provision and existence of industrialisation in the countryside, including utilities, transport and mineral extraction within the immediate Muskham area and indeed across the Trent Valley and Nottinghamshire.

2. As well as GNR and Foxholes solar proposals immediately to the west there is also at a further distance in the north east (One Earth). To the south and south west, there is the British Sugar factory ,the A46 and its proposed bypass, Kelham solar, Staythorpe power station and BESS and also now a proposed carbon capture facility. Additional smaller solar developments to the west include Knapthorpe and Kelham Hills.

3. To the north of the village but within the parish boundary, CEMEX are extending the Cromwell gravel quarry south towards the built area of the village and to the west of the River Trent and to the north east of the village immediately across the river, but partly within the village boundary, there is also further gravel extraction by Tarmac

4. This cumulative effect in particular, affects North Muskham due to its linear compression within a thin north to south parcel of land between the River Trent and the East Coast main line and A1. Unlike many rural villages, we have very little easy

access available to the open countryside and currently that being only to the west of the village, ie: in the proposed area to receive the GNR solar developments.

5. It is likely that cumulative impacts will have a significant effect on:

   a. The landscape of the area and loss of its traditional rural form
   b. Certainly, in the construction stage and potentially for a number of years; traffic congestion and loss of easy access for residents be they in vehicles, buses or as pedestrians
   c. The enjoyment of the countryside and the loss or at least the degradation of its physical and psychological benefits
   d. Increased noise and vibration
   e. visual dominance and loss of visual and audible tranquillity

Current and Planned Energy & Solar Developments across North Nottinghamshire

6. The UK's solar industry estimates that reaching the 70GW target by 2035 would require approximately 0.6% of the country's land area to be dedicated to solar farms.

7. For Newark & Sherwood district (N&S), encompassing 65,134 hectares (Ha), the Great North Road Solar project of 2,900Ha would, on its own, amount to 4.5% of all land, 4.82% of all non-developed land and 6.08% of Agricultural land in N&S.

8. Much of the agricultural land loss, when properly assessed, will likely fall into category 3a and some near to North Muskham is category 2, thus including it within the Best and Most Versatile (BMV) land in the country.

9. The GNR Solar Park would <u>double</u> the amount of land already occupied by Transport and Utilities in N&S from 4.02% (2,618Ha) to 8.47% (5,518Ha). It would occupy more land in N&S than all the residential dwellings, and their residential gardens combined which cover 4.18% (2,720Ha). It would increase the amount of land in development use in N&S from 7.39% (4,815Ha) to 11.84% (7,715Ha).

10. The GNR Solar Park is unusual (and possibly unique) given its circular nature. This means that the 2,900Ha site effectively extends across an area of 18,119Ha or <u>27.8% of the whole of N&S</u>. Certainly all people within this area will be adversely affected, as well those outside the circle for many miles.

11. The current rate of solar development in Newark and Sherwood is unprecedented for our region. The cumulative impact of multiple large-scale projects in such a small area could lead to significant environmental degradation and loss of agricultural land, overwhelming the district's capacity to manage and mitigate these changes effectively.

12. The visual landscape of Newark and Sherwood is a key aspect of our community's identity. Large solar installations would detract from the natural beauty and historical heritage that make our district unique.

Middle Super Output Area – Newark & Sherwood 003 (Muskham, Sutton on Trent and Walesby)

13. The figures are even more startling when looked at by the Middle Super Output Area (MSOA) that most closely corresponds to the geographical extent of the GNR Solar project ie Newark and Sherwood 003 (Muskham, Sutton on Trent and Walesby).

14. The GNR Solar Park on its own would amount to 18.26% of all land, 19% of all non-developed land and a staggering 21.58% of agricultural land in the MSOA.

15. It would occupy over nine times that of all residential dwellings and their residential gardens combined which cover just 2.27% (360Ha) on the MSOA. It would increase the amount of land in developed use from 4.86% (772Ha) to 23.12% (3,3672Ha)

References : 'Land use statistics: England 2022' published 27 October 2022 (latest available)

https://www.gov.uk/government/statistics/land-use-in-england-2022/land-use-statistics-england-2022
https://www.gov.uk/government/statistics/land-use-in-england-2022
https://app.powerbi.com/view?r=eyJrIjoiOWYxN2QyYWMtMTFmOS00MDQyLTgyZWItYzdmMWYxNzRlMjYwIiwidCI6ImJmMzQ2ODEwLTljN2QtNDNkZS1hODcyLTI0YTJlZjM5OTVhOCJ9.
https://www.gov.uk/government/collections/land-use-in-england

Request for Commitment to Assess Cumulative Impact.

16. The PC have received a considered and welcome response from Matt Lamb, Director of Planning & Growth NSDC, responding to their concerns regarding the cumulative impact of current solar proposals in Newark and Sherwood. This confirms that NSDCs will consider potential cumulative impact at the appropriate stage of applications. The PC have asked that this be fully extended to the consultee stages of current and future NSIPs as well as locally determined proposals.

17. The PC understand the point that a defined number/amount of solar and other developments is a difficult subject to address from a planning perspective. We do still however believe that there needs to be some direction on what levels are ultimately acceptable other than the grid capacity. This will allow people and groups across the district to make informed decisions as to whether to support or oppose any individual solar or other project based on the overall scale and cumulative impact.

Request for Comprehensive Mapping and Consideration of all Significant Projects

18. In light of these concerns, we have asked that NSDC commit to compiling a comprehensive mapping resource across North Nottinghamshire (inc N&S and Bassetlaw) and Eastern Lincolnshire (inc West Lindsey, North and South Kesteven) of all significant developments. This should include existing and operational energy

sites, all proposed energy schemes (DCOs and planning applications), all existing and proposed mineral sites, all existing major land uses such as Newark Sugar Factory, proposed urban extensions and local plan applications. It is not until this can be visualised that the full extent can be understood. We would hope that this would then be made publicly available.

19. The PC believe it is essential that decision makers at all levels need to have a proper overview of what is happening overall, rather than looking at schemes in relative isolation with perhaps only similar schemes immediately adjacent being considered.

20. Without some form of co-ordinated control the Trent Valley risks being overwhelmed by solar installations and other projects, leading to irreversible environmental changes. The cumulative impact would fundamentally alter our environment, making it difficult to restore or mitigate the changes once they have occurred.

LANDSCAPE & VISUAL IMPACT

21. There will be significant visual amenity impact from many vantage points in North Muskham. This impact will be particularly great when travelling between North Muskham and Bathley and South Muskham.

22. The impact on residents should not be underestimated when considering the overall development.

TRAFFIC, ROUTES & ACCESS

23. The PC are pleased to see that our suggestion to re-route southbound A1 traffic further south to the Ashiana/Nelson Lane roundabout and back north to gain access to Vicarage Lane has been included in the latest plans. Can EG please confirm that this is indeed the proposed route and that traffic will not access south into the top of Main Street North Muskham?

24. Whilst the rerouting as described above is welcome this does not in any way infer that the PC believe that Vicarage Lane is suitable for heavy constructions traffic. It is narrow and has no pavements and would requires significant investment in road infrastructure to accommodate the current proposal. Vicarage Lane in on the route of the very busy level crossing over the East Coast Mail Line. (ECML) See section on ECML below.

25. The Highways authority have recently objected to a proposal for a adjacent solar farm that uses much of the same route along Vicarage Lane and it is suggested that an alternative route is found.

26. Given extensive local knowledge the PC are well aware of the high frequency of accidents, delays, roadworks etc. on the A1 and the associated effect on traffic through the village. Contingency plans for these highly likely scenarios are not

adequately provided in the documentation and a clear plan for this is required to include enforcement measures.

27. The A46 Newark by-pass upgrade is also likely to be being constructed on a similar timeframe as well as other Solar Farms already in the local planning process. The impact on all proposed routes needs to acknowledge this and prepare plans accordingly.

28. The PC feel that the documentation makes assumptions that only commercial vehicles, pedestrians and cyclists will use Vicarage Lane and Bathley Lane. The documentation does not take into account agricultural vehicles or cars and vans sharing the road. Delivery vehicles may well meet on the road when dropping off and leaving between the site and the A1 or East Coast Main Line (ECML). Horses, cyclists and walkers also use this route and there is a stable nearby.

29. Further calculations of road widths throughout the route on Vicarage Lane is requested as those stated thus far do not appear to match those on the ground. Further assurances are required that the routes would realistically be able to support the stipulations set out in the Highways code given likely traffic volumes and types.

30. Residents remain concerned about construction vehicles re-routing or causing obstructions etc. If and when things do go wrong, or questions are raised, the PC would like to know that there is a contact number and real person that can be contacted straightaway to get an explanation or resolution. Ideally this would be a reasonably local site office that is manned and has the authority to resolve local issues.

31. To assist with enforcement the PC request that a Automatic Number Plate Recognition (ANPR) camera system is provided in North Muskham. This would need to be installed to cover entry points at the A1 south entry onto Main Street at the north end of the village to facilitate enforcement of the 7.5 tonne HGV restrictions in the village by NCC Highways and act as a deterrent to drivers.

32. The Highways authority have recently objected to a proposal for a adjacent solar farm that uses much of the same route along Vicarage Lane and it is suggested that an alternative route is found.

EAST COST MAIN LINE (ECML)

33. The PC remain surprised that there is little mention of the ECML rail level crossing on Vicarage Lane known as Norwell Crossing which is on the proposed route.

34. The level crossing at Vicarage Lane is extremely active give the number of trains on the ECML. This means that the crossing can be down for long stretches of time as several trains pass by. On other occasions the crossing remains open for extremely brief periods of only a few seconds before shutting again. This can and does lead to

tail backs onto the roundabout at Vicarage Lane and/or at Bathley Lane, especially when combined with delays on the A1.

35. It is noted that the Bathley Lane (ECML) rail level crossing is not being proposed but this needs to be strictly enforced given the dangers associated with any of the crossings and HGV traffic. Can EG clarify how this will be enforced?

36. The PC suggest that further safety arrangements are incorporated To avoid contact with overhead cables, breakdowns on or near the crossing etc. In addition, further steps should be considered to avoid vehicles (particularly long vehicles) from mis-timing their crossing. A plan for affecting and enforcing this should be included.

NATIONAL CYCLE ROUTE NETWORK

37. The Trent Vale Cycle Route (TVCR5) runs along some of the proposed construction route in Vicarage Lane. This further questions the suitability of the construction route when combined with all of the other points above. The PC suggests that this is reviewed further and incorporated in the proposal.

ONGOING MAINTENANCE OF SITE

38. The proposal includes new planting of hedges and trees to provide screening across the site. It is generally accepted that some of this may fail or be destroyed during the process. Plans for the maintenance should be addressed for the duration of the project.

39. The PC ask that as well as the new planting proposed, consideration is given to the repair and maintenance of currently existing hedgerows that form part of the screening of the site/s.

40. The PC ask that consideration is given to a likely increase in fly-tipping. This already happens across the district and the reduction/elimination of farm traffic and workers will only encourage this further. Plans need to be incorporated and budget associated for this highly likely increase.

41. If issues occur around hedging, screening, damage, fly-tipping etc, the PC would like to know that they can speak to a named individual for resolution. It is suggested that a hotline be available during the construction and operation of the development.

PUBLIC RIGHTS OF WAY (PROW) and PERMISSIVE PATHS

42. There is some very positive inclusions of additional permissive footpaths and bridleways within the current proposal and we welcome seeing them realised.

43. The inclusion of a footpath from Cromwell to Muskham on the east side of the East Coast Main Line (ECML) and/or some form of 'in field' path to avoid walking along

the badly sited road leading to the Cromwell Crossing would provide a much safer option than that currently proposed.

44. A submission by Dr John Gray sent to Elena Sarieva and others dated 10th February 2025 is included as an Annex A to this correspondence. This provides suggestions as to how a safe, enjoyable and convenient route might be achieved. The Parish Council would ask that this is seriously considered.

45. North Muskham Foot Paths No1 and No14 are key amenities for the villagers and it is requested that assurance be given that these will not be closed during the construction or at any time thereafter.

46. North Muskham Foot Path No1 is still shown in the wrong location.

47. Whilst Annex B addresses biodiversity it also includes a footpath recommendation that will be of advantage to residents' interest in biodiversity.

FLOODING & HYDROLOGICAL

48. Pluvial and fluvial extremes and return periods are being re-defined and will continue to do so as locked in climate change impacts increase. Climate change impacts on SUDS must be considered, especially in higher areas where overtopping will result in flooding at lower levels and down stream of watercourses.

49. Changes to the natural off flow from the land occupied by the Solar arrays is likely and is likely also to form new channels and ill-defined water courses. The risk of run off of any operational pollutants onto neighbouring arable land should be considered and scoped in.

50. Guarantees should be given to homeowners that areas that have not flooded previously will not become more vulnerable. Some form of redress and/or compensation should be included in the management plans.

51. The impact on acquifers in the development area should be determined, quantified and scoped in

GLINT and GLARE

52. The PC are concerned that it may be difficult to assess the scope of glint and glare impact until more exact panel height, type (fixed or tracking) and locations are known. Until then, as well as transport receptors, a precautionary approach that scopes in any ground receptor within the identified zones of visual influence should be taken.

USE OF BEST & MOST VERSATILE (BMV) LAND

53. Much of the land immediately west of North Muskham is high quality arable land being used for production of cereals, potatoes and sugar beet for the local sugar factory and for a significant part of the proposal area, similar crops are grown as well as maize for anaerobic digesters. Much of this is actually classed as Category 2 and it is expected that on a detailed assessment much of the remainder will likely be classed as 3a.

54. The documentation does not explain that much of the land proposed, particularly near to North Muskham, will be largely Best and Most Versatile (BMV) and it is suggested that this is addressed more clearly.

55. The report suggests that some sheep grazing under or near solar panels may be included. The report does not however reflect that sheep farming in the UK is in the decline. There is very little evidence to suggest that sheep farming on solar farms is successful and the PC believe this is included simply to appear to address the huge loss of farming, particularly on BMV land.

56. Sheep need to be kept in open spaces, where the shepherd can easily observe and monitor the flock. Daily inspections are critical for good animal husbandry, so that animals which are injured / lame / ill can be isolated from the herd and treated quickly (sheep are particularly prone to getting cast and dying if not righted within hours). However, within the confines of solar arrays, due to the configuration of the panels, all but near distance views are completely blocked.

57. It would be very difficult for sheepdogs to round up/separate sheep in that situation (quad bikes would be virtually impossible).

58. Due to the amount of shading from the panels, a healthy sward does not develop; thus, the grass does not provide the necessary amount of sugar and other nutrition that the sheep require for fattening-up. A poor sward can also adversely affect sheep's health.

59. It is contended here that very little (if any) weight should be given to the promise of sheep/continued food production argument. Using BMV cropland for sheep grazing is an inefficient use of that land. It is highly unlikely there are enough sheep locally to populate all the current and planned solar plants and with sheep numbers dropping each year, that gap will become even more pronounced.

ECOLOGY & BIO DIVERSITY

60. There is much written on the subject of biodiversity in relation to solar projects yet very little hard evidence. The GNR proposal will be the biggest in the UK and comparisons and evidence derived from similar projects in this country are not available. Natural England state "The lack of evidence relating to the ecological impact of solar farms is concerning".

61. In a survey carried out by BSG Ecology in 2019 (2) the following statement was made; "evidence of solar farms impact on biodiversity remains limited…. there is little empirical data on the subject".

62. The BSG report goes on to say that "Ground mounted PV panels have the potential to cause the highest impact on nature as they are installed on land which may have at least some value to wildlife".

63. It is suggested that the GNR project consider developing a trial area and partners with acknowledged academic experts to produce a fact-based report for wide distribution.

64. The PC believe that consideration of the following species should be included in the future documentation:- Barn Owls, Deer, Hen Harriers – one of the UK's rarest birds of prey. (Conservation status – Hen Harrier Classified in the UK as Red under the Birds of Conservation Concern 5: the Red List for Birds (2021). Protected in the UK under the Wildlife and Countryside Act, 19). Residents have seen these on numerous occasions in and around North and South Muskham.

65. It is not clear whether the proposal considers the impact on the stated species above in regard of their natural and habitual behaviour to travel significant distances from their base habitat. This is especially relevant with Otter and to a lesser extent Badger. It is suggested that the report and study should include the impacts that the substantial fencing will have on these behaviours and the wellbeing and sustainability of habitats and be scoped in.

66. Building solar farms usually means displacing large numbers of mammals, birds, insects, and other wildlife. This will be especially true for GNR given the currently unprecedented scale. Transitory animals have their traditional routes blocked, deer are often diverted onto roads, bird and bat deaths are common as they mistake the glass for water. The land is degraded with little potential for biodiversity as half of it will be in permanent shadow and rainwater run-off creates set channels without proper dispersal.

BIODIVERSITY & ECOLOGY COMMENTS - SPECIAL REPORT

67. Detailed Biodiversity and Ecology Comments can be found as Annex B to this correspondence. These have been produced by Jane Southey MCIEEM after extensive research and field walking. This Annex covers North Muskham and beyond but all content is pertinent to the residents of our parish.

68. The PC ask that all points contained in this Annex are considered. It is only by following this and similar comments that local residents will have some confidence the proposed net biodiversity gains can actually be met.

HEALTH & WELLBEING

69. Human Health Impact Assessment: ONS published 27/11/2023: "A million fewer people are gaining health benefits from nature since 2020 http://tinyurl.com/4zmbtmc8, estimating the financial and medical cost of post-covid reduction in accessing nature. It is therefore essential that this is considered in areas of the proposal. This also needs to be combined with the cumulative impact of additional solar outside of GNR and every expanding gravel extraction.

70. The proposed panel for GNR are photovoltaic (PV) technology. As the sun emits solar radiation, PV technology uses cells to absorb that radiation and turn it into electricity.

Cancer risk from radiation emitted from Solar Panels

71. Electric and magnetic fields together are called electromagnetic fields, or electromagnetic radiation. If these electromagnetic fields are on a spectrum, with low-frequency radiation on the low end, which includes things like power lines, and high-frequency radiation on the high end, which includes things like x-rays. Low-frequency radiation is less harmful than high-frequency radiation, which can damage DNA and cells.

72. Solar power plants give out electromagnetic radiation which may reduce life expectancy! This radiation doesn't come from the panels themselves, but rather the industrial equipment used to store the energy the panels produce.

73. Even though exposure to low level electromagnetic field has been studied 'extensively' the effect of acres of solar panels all emitting low level radiation has not been studied in the long term and these panels will remain in situ for 40 years!

74. Agencies, like the European Commission Scientific Committee on Emerging and Newly Identifiable Health Risks, have taken a cautious stance, stating that it's possible, that extremely low-frequency magnetic fields could be carcinogenic, or have the potential to cause cancer.

75. Solar power plants produce electromagnetic radiation that can affect the health of nearby residents. These rays are not coming from the solar panels themselves, but from industrial equipment used for the farms. While their effects are minimal, they can cause vision problems and headaches. Severe migraine has been reported by residents currently living near solar farms.

76. Other reported health risks associated with living near a solar farm are anaemia and behavioural issues. Children are especially susceptible to exposure to solar panels, as they are in their growth stage.

77. Only 1% of the UK population is epileptic, others have seizures for other reasons, and solar farms are terrible for anyone vulnerable to having seizures – whether they have previously had a seizure or not. Different things trigger seizures in different people. Glare and flashing lights are widely known to be common causes, and solar panels create both glare and flashing lights. Glare occurs just looking at one on a sunny day. Passing row after row of panels by train or car, the silver frames are flashing lights even on a dull day, or in headlights. Any epileptic living near a solar panel at ground level or wanting to walk in a field near a solar panel at ground level is at risk of having a seizure caused by glare.

Toxic Components of Solar Panels

78. Although there are no direct risks associated with solar farms, they are likely to pose a few hidden ones. The solar panels themselves are made from glass and commonly used plastic, as well as wires and aluminium frames. The silicon cells are what absorb the sunlight and convert it into electricity.

79. Despite their simple composition, solar panels can contain trace amounts of hazardous materials. However, since the materials are contained within the solar panel itself, most people will not have direct contact with them, but consideration needs to be given to maintaining damaged panels which can be on a large scale as recent storms have confirmed. Broken solar panels and other debris would be scattered throughout a wide area. The resulting smoke from solar panels could contain toxic metals and be inhaled by the nearby community. These toxic materials could harm the digestive, reproductive, and nervous systems. It is believed that Solar Farm Industry insiders state that Cadmium is a particular toxic waste problem.

80. ‘Contrary to previous assumptions, pollutants such as lead or carcinogenic cadmium can be almost completely washed out of the fragments of solar modules over a period of several months, for example by rainwater.’

81. Cadmium and its compounds are highly toxic and exposure to this metal is known to cause cancer and targets the body’s cardiovascular, renal, gastrointestinal, neurological, reproductive, and respiratory systems.

82. North Muskham and surrounding villages are very close to the River Trent, flooding is a constant problem, all the fields on the current plan drain into ditches / dykes and rivers which would become contaminated with toxic materials, endangering both humans and wildlife. Any toxic leaks would be devastating, killing organisms in rivers, destroying animals and plants and causing major reproductive complications in animals and plants in a contaminated area.

83. Improper handling and disposal of hazardous waste can cause severe health effects, including cancer, genetic mutations and birth defects. Entire communities can be hurt if hazardous waste seeps into water supplies and other public resources.

Fire risk and Toxicity from Lithium Battery Storage

84. Battery Energy Storage Systems are notoriously unsafe, liable to catch fire and require hundreds of gallons of water to extinguish. Run off from such a fire contains hazardous waste, as discussed above and can contaminate water courses.

85. There needs to be a 'Battery Safety Management Plan' put in place with the developers, local council and emergency services.

86. Analysis shows that new 'higher wattage' solar panels are at increased risk of 'thermal runaway'. Thermal runaway can become more likely when solar panels are operated in outdoor areas, an accumulation of dust or leaves can stop and reverse the current. There are increasing fears of explosion in every area affected by Solar Farm development and the explosion risk in storage facilities is very real.

87. Factors that contribute to the risk of explosion are: extreme heat (arc fault / flash), damaged or poor quality equipment, foundation failures, debris buildup, water, frost heave and poor installation.

Mental Health and Well Being of Local Residents

88. The majority of North Muskham residents chose to live here to experience the benefits of living in the countryside, walking, hiking, riding and beautiful views, we did not expect this to be compromised by the development of a huge solar farm project. Our countryside is going to be industrialised by the development of large-scale solar farms. Continuous rows of glass panels completely alter landscape character and boundaries are changed by security fencing and the intrusion of CCTV.

89. Although solar power is considered more environmentally friendly than non-renewable forms of energy, particularly when greenhouse emissions are included. This doesn't however mean they don't have any negative impacts on the environment. Specifically, solar power plants can cause significant deterioration of residents mental and physical health and habitat degradation.

90. Developers and government should absolutely ensure measures are put in place to monitor the health and wellbeing of residents. Any patients attending hospital, could easily be coded from postcodes that are affected by large scale solar industrialisation and conditions could be reported and monitored over the forty year life of the projects.

91. Special consideration with regard to health and wellbeing should be also given to all of the following areas:-

    a. Noise - particular during construction
    b. Routing - Construction and maintenance – avoiding villages and/or unsuitable roads
    c. Fly Tipping - This will likely increase given the large tracts of land without attendance
    d. Screening - This is crucial and must be meaningful and maintainable.
    e. Glint and Glare – Should be kept to a minimum in all areas.
    f. Maintenance and Enhancement of PROWs and Permissive Paths – This is extremely important and the joining up of routes would be of great benefit
    g. Enhancement of natural areas ie grassland, woods, orchards
    h. Protection of wildlife

HOST COMMUNITIES - RECOMPENSE

92. The villages forming part of that are near to the GNR and would be hosting a project for much wider benefit across the county and beyond. There is much discussion on the benefit of solar energy and the potential for managing energy costs. There is not however any mention of providing a direct benefit to the host communities. Reduced energy bills for instance would seem a logical approach given the huge changes and

disruption that local communities will endure. The PC ask that EG address this in their proposal.

<u>TRUE ENVIRONMENTAL IMPACT</u>

93. The proposal documents refer at length to the benefits of solar power but do not address the adverse impact caused by the construction materials. The PC ask that assurance are given that materials such as solar panels and associated equipment will not 1) transported thousands of miles to the UK, 2) Be produced using non-renewable energy.

The PC trust that these observations and suggestions are useful and will be taken on board. We would be pleased to discuss the points raised further should it assist.

Yours faithfully

Ian Harrison
Chair of North Muskham Parish Council

North Muskham Parish Council
February 2025

ANNEX A to NORTH MUSKHAM RESPONSE TO PHASE 2 - STATUTORY CONSULTATION – GNR SOLAR & BIODIVERSITY PARK (Page 1)

From: **John Gray, North Muskham**

To: **EG (FAO Elena Sarieva and Colleagues) Cc North Muskham PC Members, NCC ROWs Office**

Date: **10th February 2025**

Subject: **Public Rights of Way across Muskham Vale, A North Muskham Perspective**

Figure 1 Our PROW Network

Click here to access a detailed PDF copy of Figure 1.

Figure 1 The three parishes of North Muskham (NM), South Muskham & Little Carlton (SM) and Bathley (BT) straddle the boundary between the NE and SE areas shown in EG's PEIR Non-Technical Report [Ref:1,p.44, 46]. These "Muskham Vale" parishes form a distinct geographical and social entity with 1486 inhabitants [Ref:2,p.2], together making up a single Census LSOA, ***E01028337 Newark and Sherwood 003C***.

If the GNR Solar Park scheme gets approved these parishes will, with Cromwell to the North, be at the centre of public visibility of EG's PROW plans and promise [Ref:1,p.28, 34], since:-

- this is the place where the Great North Road Solar and Biodiversity Park actually meets the Great North Road itself.
- from the very first weeks following the announcement of EG's GNRSP plans, there has been a considered focus put on the amenity access implications by a number of local people.

Our network of footpaths and bridleways is a shared and well-used asset but is capable of enhancement by development if:-

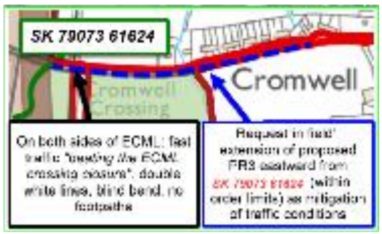
1. the Permissive Routes already proposed in the PEIR, and especially if the requests made below, are accepted, Fig.2
2. NG+ would support the Muskham Vale Loops proposal, Fig.3

Figure 2 Permissive Routes

Click *here* to access a detailed PDF copy of Figure 2.

The proposed creation of Permissive Route PR03 connecting Cromwell and North Muskham is really very welcome. However, there are two aspects of its routing that are of concern:-

1. there is a safety concern with the planned northern termination of PR03 at SK 79073 61624, which exposes walkers moving to/from Cromwell to 600+ metres of fast road between ❶ and❸ in Figure 2 with no roadside footpath. I recommend an *'in field'* extension as indicated in the inset.



2. for users located on the eastern side of the ECML the route's value is *compromised by delays that are likely to be experienced at its two ECML crossings at . which will only worsen when Network Rail increase line speed to 140 mph.*

In August 2024 a submission was made to EG [Ref:3] for a PR between Cromwell and North Muskham, like PR03, a circular route exemplar *Embedded Enhancement Measure* [Ref:4,p.16]

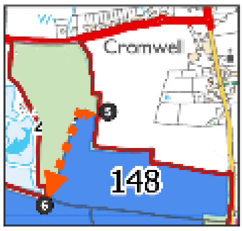
In the event our submission was not accepted but, aware you are still willing to consider modifications to the PEIR, Figure 2 details the proposed route of a PR *on the eastern side of the ECML*. The significance of the numbered markers on Figure 2 is explained in the notes on the following page.

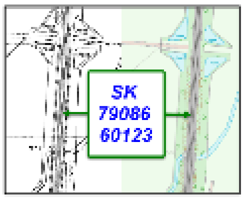
JG, jgray.muskham@gmail.com 10 February 2025 Page **1** of **2**

ANNEX A to NORTH MUSKHAM RESPONSE TO PHASE 2 - STATUTORY CONSULTATION – GNR SOLAR & BIODIVERSITY PARK (Page 1)

The need for an *'in field'* connection between ❶ and❸ in Figure 2 has already been detailed as it relates to the EG proposed PR03, the notes below relate to *the additional permissive route requested* referred to as **NMPR**.

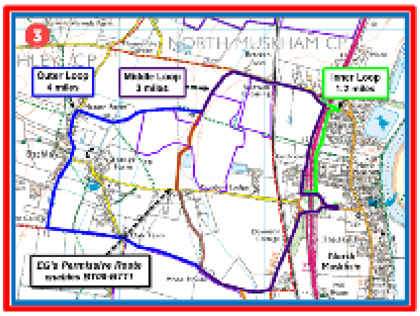
1. between ❷ and ❸ NMPR would need an *'in field'* connection in light of the absence of any roadside footpath - if the above PR03-related is accepted, no further work would be needed, the two paths would share.
2. NMPR would commence at SK 79686 61654 having arrived there using a roadside path from the bus stop in Cromwell at SK 79843 61676 – users arriving there on foot between ❹ and ❸ would likely have used, starting at The Muskham Ferry, NM-BW07, NM-FP09, CR-FP05 and Cromwell Great North Road to arrive there.
3. between ❷ and ❻, following the field edge to ❺ where NMPR would then track the western margin of Field 148 as shown in the inset to arrive at ❻
4. between ❻ and ❽ our preference would be to follow the solid line route to ❼ and on to ❽ via the *riparian corridor* but the availability of pathways through Fields 16 and 17 is unknown
5. a less attractive, but still welcome, route would be the direct ❻ *to* ❽ shown by the heavy dashed line running north to south along the eastern side of the ECML
6. at ❽ there is, hopefully, a special feature that could add real flexibility to the use of both PR03 *and* NMPR: aerial photography and generations of OS mapping show that there are two structures that appear to pass *underneath* the ECML, but they are inaccessible and *may not* be useable for a path. [Ref:3,p.2]





7. *if not*, then NMRP would run eastwards from ❽ and terminate at the junction with the A1 cycle track at ❾
8. *if yes*, then NMRP connects with the proposed PR03 *and both get onward access southward* via ❿

Figure 3 Muskham Vale Loops
An NG+ Proposal



Click *here* to access a detailed PDF copy of Figure 3.

Click *here* to download, as background, Ref.3 below.

Figure 3, first publicised in 2024 [Ref:3,p.2] points to the EG PR15 permissive as central to enabling the 'Middle Loop' in the Muskham Vale Loops which I developed as a long term ambition some years ago.

The 'Loops' in question are a series of circular walks, partly or wholly in existence already, which involve using a combination roadside paths and existing PROWs, which would (if/when the really useful Permissive Routes discussed above are created), provide a variety of routes of different lengths.

Is there a conversation to be had about making this a reality?

The idea emerged during the B60 research project as a contributor to making NM an *'age friendly community'* [Ref:5,p.223], given NM's steadily ageing population, and elders' varying capacity/need for outside exercise.

References

1. EG, *PEIR Non-Technical Summary*. 2024. Online at: https://tinyurl.com/38c6us4v
2. ONS. (2021). *E01028337 : Newark and Sherwood 003C 2021 Lower-layer SOA*. Online at: https://tinyurl.com/yc5sjehj
3. Gray, J. (2024). *Proposal for Creation of Permissive Paths in Cromwell and North Muskham*. Online at: https://tinyurl.com/3debs4xf
4. EG, *PEIR Chapter 18 – Recreation*. 2024. Online at: https://tinyurl.com/4kvbjt29
5. Gray, J.A. (2021). *Becoming Older, Being Well An Empirical Study in a Village Community in the English East Midlands*. Online at: https://tinyurl.com/4w9zwbem

ANNEX B to NORTH MUSKHAM RESPONSE TO PHASE 2 - STATUTORY CONSULTATION – GNR SOLAR & BIODIVERSITY PARK (Page 1)

BY JANE SOUTHEY

Biodiversity and Ecology Comments

Comments in this document centre on ecology and biodiversity with some cross reference to landscape, public access and health where relevant. The final section deals with bridleways with come reference to footpaths, access features that enable people to safely enjoy the benefits of being in nature.

Most of the specific comments relate to the areas covered by Bathley, North Muskham, Kelham and Little Carlton and South Muskham Parish areas, although specific reference is also made to the Park Leas, Averham and Eakring areas.

Biodiversity and ecology

These comments refer to biodiversity related documents provided in support of the Great North Road Solar and Biodiversity Park.

Documents accessed include:

Volume 1 –Preliminary Environmental Information Report PEIR (Non-Technical Summary - January 2025

Volume 2 - PEIR Main Text - January 2025

Volume 3 - Figures - January 2025

Volume 4 - Technical Appendices - January 2025

Design Approach Document - January 2025

Draft Development Consent Order - January 2025

Commitments Register - January 2025

https://www.gnrsolarpark.co.uk/s/240731_Great-North-Road-Phase-One-Consultation-Summary-Report-ht2k.pdf

The large scale nature of the proposed development (hereafter referred to as the "Order") means that the developers "*recognise that many aspects of the development design are still required*.." (PEIR TA A5.1 Draft outline Landscape and ecology). The following comments have taken that statement into account.

Contents

Summary

1. The approach taken for the assessment of the biodiversity and ecological aspects of the Order has largely followed standard desk study, field survey and data gathering and assessment techniques; and impact assessment methodologies. Limitations of the data set have been defined and rationalised. For example, not all the habitat survey has been undertaken at the optimal time of year. It is considered that where areas of grassland and woodland and hedgerows have been identified during outside of the optimal survey period, that will be affected by the scheme, then further detailed survey data should be undertaken at the appropriate time of year to inform the final design and mitigation and enhancement process.

2. The otter *Lutra lutra* and water vole *Arvicola amphibious* are both fully protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). The otter is

also classified under the Habitats Directive (92/43/EEC) as a species requiring strict protection in Europe. In the UK this is enabled by the Conservation of Habitats and Species Regulations 2010 (as amended). There are significant adverse effects predicted for water vole and otter (Table 8.11 Summary of Likely Effects Chapter 8), which will be determined as part of the development consent order informed by additional survey data and the development of more detailed mitigation and enhancement measures to be included in the final environmental impact assessment report and associated project delivery documents.

3. This response is aimed at trying to maximise the ecological and biodiversity benefits alongside minimising the effects of the construction and operational phase and maximising the amount of semi natural habitat retained during the decommissioning phase.

4. In a world with changing politics and climate change the appropriateness of the assumptions that have been made about the predicted impact assessment resulting in a largely "neutral effect" for the decommissioning phase is open to question especially in relation to which biodiversity features will be removed to return the land to a "pre-development state".

5. Many of the local hedgerows are in a poor functional state for biodiversity and historical agricultural practice and policy drivers have led to the loss and degradation of other habitats including orchards, wetlands, species-rich grassland and woodlands.

6. The predicted negative effects of the construction phase are acknowledged, and this phase will have the greatest environmental effects which will need careful mitigation. The mitigation and enhancement process provides an opportunity to enhance local habitats through actions such as hedgerow infill and the creation of a range of habitats including woodland, grassland and wetlands. The developer will have a *legal obligation* to appropriately manage these habitats which will be documented in the Statutory Instrument Development Order. The project delivery will be guided and controlled by a framework of management documents covering all phases of the project from construction through to decommissioning.

7. The content and full delivery of the actions given in documents such as the construction environmental management plan (CEMP) which includes the Construction Ecological Management Plan (CEcMP); and the landscape and ecology master plan (LEMP) are pivotal to the scheme. The provision of an independent LEMP Steering Group (SG) to help inform the development of the LEMP and to provide advice and oversight during its implementation is important.

8. The SG will be convened during the pre-application phase and will run until the completion of decommissioning.

9. *…The SG is purely advisory and will not be responsible for the content of the LEMP or its implementation and outcomes. The terms of reference for the SG will be developed in the final LEMP in consultation with the SG. At this stage, it is envisaged that the SG will:*
    a. *Monitor compliance of the LEMP with regard to its aims, objectives and measurable outcomes*

    b. *Provide advice about amendments to the LEMP;*

    c. *Communicate and coordinate with third parties (outside the SG); and*

    d. *Provide advice about related matters…* extracted from PEIR Technical Appendix A5.1 Draft Outline LEMP

10. The support and advice of the SG provides is seen as a very positive thing for biodiversity and ecology because the development will be guided by local biodiversity specialists.

Public concerns over Landscape and Biodiversity

11. *Landscape and visual* and *local ecology and biodiversity* came back as the top two issues that concerned consultees during the Phase 1 public consultation for the Order with 181 and 172 responses respectively from a total of 276 responses and this concern needs to be fully addressed by the proposed development in a fair and proportionate manner.

12. Source GNR Solar Park Phase 1 consultation report July 2024

13. Biodiversity and ecological function has intrinsic value in its own right; alongside its landscape and climate resilience function and it is important to our wellbeing via being in nature and increased access to those areas. By providing further support to ecology and biodiversity and "natural capital", some of the concerns of the development voiced through the consultation will potentially be reduced.

14. *Natural capital is the parts of nature that provide benefits to people. We depend on it for the air we breathe, the water we drink and the food we eat. It boosts our health and wellbeing. It captures and stores carbon and has a vital role to play in helping us adapt to the impacts of climate change. Natural capital is also an economic concept. It considers nature as a stock of assets, which we have to invest in. Ecosystem assets need to be in a healthy state to support the benefits society relies on…* State of Natural Capital Report for England 2024 Natural England Research Report NERR137

15. Considering the scale of the GNR solar and biodiversity park as a national Infrastructure project it is considered that further steps should be taken for biodiversity, ecology and natural capital guided by the following actions recommended in the State of Natural Capital Report and ensure that the detailed design is informed by these recommendations. Additionally, if the development is granted permission, then these recommendations should be taken into consideration when devising the detailed design and defining the final project management documentation.

    a. *Create and restore semi-natural grasslands supporting pollinators, pest controlling species, wildlife, carbon, slowing flows and providing cultural benefits.*

    b. *Create species-rich farmland networks of field margins, boundary features and larger areas, supporting wildlife, pollinators and species controlling agricultural pests and diseases*

    c. *Create and restore native woodland, through management for wildlife, natural regeneration and planting "the right tree in the right place"*

    d. *Reduce water and air pollution from all sources including point, diffuse, intermittent, pesticides, chemicals and plastics.*

    e. *Sustainably manage soils including for carbon, water infiltration, soil-life and food production.* Source State of Natural Capital Report for England 2024 Natural England Research Report NERR137

Recommendations

16. There is a lack of clarity on any proposed land use changes to areas within the Order area which currently have no land use category allocated to them, although they may be included in a work area eg cable and access corridor (see for example land use area queries given Figures 1 and 2). This needs to be clarified and the public needs confirmation that such areas will not be used for additional areas of PV. A commitment to these areas being used for food production or new areas of semi natural habitat.

1 Hedgerows

17. Aside from their own intrinsic ecological and natural capital value, hedgerows are an important connecting habitat between areas of semi-natural habitat. In this rural setting hedgerow are also a pivotal natural landscape tool for visual screening of the PV areas. They are also included in the UK Priority Habitat list.

18. With the changing face of agriculture and a reduction in the need for hedgerows as stock proof fencing many of the existing hedgerows within the Order are gappy and have been poorly managed. Table A8.3.3 in Chapter 8 of the PEIR documents the lack of hedgerows with trees with just 57.6 km out of circa 186 total hedgerow length. Species-rich hedgerow totalled just 8.2km demonstrating the species paucity of the existing hedgerows. By way of example see Figure 1 which shows some of the extent of new hedgerow need and hedgerows requiring species-rich infill planting, and or laying.

19. PEIR Chapter 7 Landscape and Visual Assessment provides Table 7.3 Embedded mitigation measures. The table includes “hedgerow in fill”, but it does not include hedgerow laying as part of “reinforcement of existing hedgerows”. Hedge laying is a useful tool worthy of consideration for outgrown hedgerows.

20. Double row planting is recommended for all new hedgerows and for hedgerow restoration and this is especially important where the new hedgerow has a visual screening function.

21. Care should be taken in ensuring that the shrub and tree species chosen for infill and new planting are native and in line with the local land character, locally sourced and derived from disease free UK genetic stock. Disease vulnerable species such as ash *Fraxinus excelsior* should not be planted. The addition of hedgerow trees would be expected in new and enhanced hedgerows especially along northern, north western and north eastern edge boundaries where they would have minimal effect on the efficiency of the solar arrays.

22. The detailed location of the proposed new hedgerow on the corner of Trent Lane could be slightly set back to the boundaries of the cottages on Ollerton Road. This would enable a larger area of species rich grassland to be established as part of the Order.

2 Ponds

23. Ponds are included in the UK Priority Habitat list and the location of new ponds and all of the existing ponds should be very clear in the final design. 36 ponds were identified in the habitat survey area (PEIR), but ponds are not fully indicated on the draft PEIR mapping (see T1 on figure 1 for example) and they should be added as an obvious habitat category on the final master planning documents. The potential for new ponds to be future classified as Priority habitat will depend in part upon the

quality of the pond design along with other factors such as management and adjacent habitat.

24. New biodiversity focussed ponds with a range of bank profiles and depths should be incorporated into the final design across the Order to support both highly protected species such as great crested newt *Triturus cristatus* (see T2 Figure 2 for suggested new pond location) and provide habitat for a range of wildlife. Additionally, restoration efforts such as bank reprofiling, de-silting and scrub removal should be focussed on existing water bodies to create an improvement for wildlife. The location of two ponds that would benefit from some bank reprofiling to provide some shallow, marginal habitat are given in Figure 1 as T1 and T2.

25. New wildfowl scrapes are included in the PEIR in grassland Little Carlton (see T3 in Figure 1) and in the riparian corridor. These areas are naturally low-lying and would also benefit from a year wet wildlife pond habitat with a range of bank profiles and water depth.

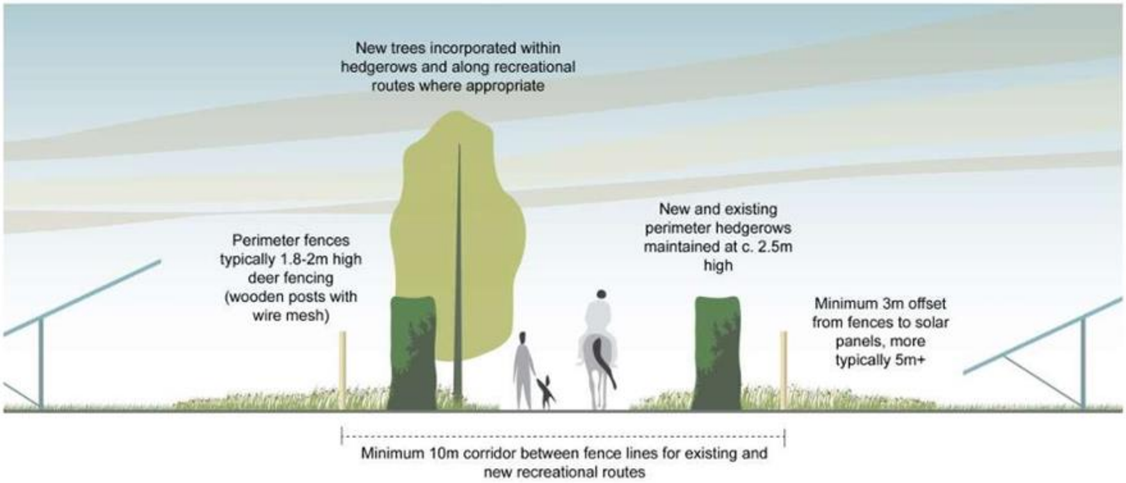
26. Species-rich Grassland SRG (species diverse grassland PV on the masterplan)

27. Wild-flower rich meadows have declined by circa 97 percent since the Second World War and steps should be taken to reinstate this valuable wildlife habitat. There are "species diverse grassland PV" areas included in the masterplan, but further areas are recommended (see Figure 1 T7 and Figure 2 T1). Both areas are currently given as permanent grassland, but this is recommended to be SRG. The proposed SRG area shown on Figure 2 for Kelham would be visually appealing and accessible to local residents as the field margin would potentially include continued footpath access.

28. These SRG could be managed by hay cropping and aftermath grazing, potentially using the Order sheep flock planned for grazing within the Order area There are likely further areas within the Order area that would benefit from the creation of areas of species-rich grassland.

29. The PV arrays provide further opportunities for species rich grassland strips around their margins. A typical recreational route arrangement taken from the PEIR inset 18.1 is given below. There is scope to establish a species-rich hedge bottom flora along the edges of boundary hedgerows. It is assumed that this would be a typical arrangement for what will be used for public access routes such as the bridleway section given as T5 on Figure 2.

Inset 18.1 Typical recreational route arrangement amongst solar infrastructure



30. Species-rich grassland area have been successfully established in the local area within a three-year period (pers. Comm. John Miller regenerative farming advisor for the order), and so his input is encouraged for this aspect of habitat creation.

31. There is a hybrid orchid stand of southern marsh orchid x common spotted orchid *Dactylorhiza* X *grandis* (T4 on Figure 2) that requires suitable management within the current grassland headland. There is species-rich grassland strip included in the masterplan along the northern edge of Cheveral Wood, but it is recommended that the layout of this strip is informed by current detailed vegetation survey data gathered in late June to early July to inform what is done along this strip.

32. Eakring and Maplebeck Meadows Site of Special Scientific Interest (SSSI)

33. The creation and enhancement of 72 ha of habitats (including potential floodplain meadow and a possible wildlife site) circa 500 m downstream of the SSSI, will improve landscape connectivity and help to reduce disturbance. Combined with Eakring Meadows LWS, Hunt's Meadow LWS and Kersall Grassland LWS, which are situated between the SSSI and this area of habitat management, a larger and better-connected network of wildlife sites will be created. It is recommended that at least part of this habitat creation includes SRG.

3 Enhancement of Riparian Corridor

34. "Enhancement of riparian corridor" is indicated in area T3 in Figure 1. The suggestion of a 10m standoff and using sensitive methodology for the necessary cabling along this route is supported, but with caution, as this area includes the Moorhouse Lane Drain which is a local wildlife site designated for its aquatic plant assemblage which flourishes in part due to its very clear water. Aquatic plants can be sensitive to changes in water quality.

35. There are also records for water vole and otter along this water course which could be affected by the proposed works through direct harm and disturbance, the creation of barriers and changes in water quality.

36. The most damaging predicted activities for aquatic plants and riparian mammals are during the construction phase cabling and access route installation which should be delivered in line with a well-defined, prescriptive final CEMP and CEcMP including ecology clerk of works supervision of the most sensitive works such as ditch crossings for cabling and vehicle access.

37. The northern end of the LWS drain beyond Moor House Lane has been for many years, flanked by a wide grass verge minimising dust inputs and soil input from surface water runoff from the adjacent land. Accordingly ongoing construction and operational access along the proposed site access route should be controlled to avoid excessive mud dispersal and dust in the vicinity of the drain.

4 Woodland

38. The shrub and tree species chosen for new woodland planting should be native, physically suitable and in keeping with land character, locally sourced and derived from disease free UK genetic stock. Disease vulnerable species such as ash *Fraxinus excelsior* should not be planted. Climate resilience should also be part of species selection.

39. An additional area of woodland is recommended, and its location is given in Figure 1 as T4. This woodland stand would provide a useful contiguous addition to the adjacent riparian corridor, and Moor House Lane grassland and hedgerow habitats. It would also in time provide a landscape screen for the upstairs rooms of Moor Lodge which face south over the PV area.

40. Riparian tree planting should be considered in Kelham in area T5 given in Figure 1 with the inclusion a range of suitable species including male and female specimens of the native black poplar *Populus nigra* ssp*. betulifolia*. This is an ideal area for planting this flood plain tree which has suffered national decline. Tree planting may also help with flood mitigation along Trent Lane.

5 Orchard

41. New community orchards are proposed as part of the scheme which will provide a good community facility and in time potentially help people to interact better with food sources and the importance of pollinators. The orchard at the northern end of Figure 1 has been well sited next to the new orchard at Bracken Farm which lies directly north on Vicarage Lane. Two closely sited orchards provide a more robust habitat for pollinators and other wildlife.

42. The orchard should include flower-rich borders for pollinators and people and a wildlife pond with plenty of shallow margins for pollinators and other wildlife for bathing and drinking. The boundary hedgerow should include native species which produce additional fruit and blossom for visual amenity and orchard pollinators. Suitable species would include common hawthorn *Cratageus monogyna*, guelder rose *Viburnum opulus*, crab apple *Malus sylvestris* and bird cherry *Prunus avium*.

43. Black thorn *Prunus spinosa* can be an invasive shrub and it should not be included in the hedgerow planting mix not be used in case it becomes a management issue in the orchard.

44. The access route through the orchard and/or signage for the orchard could be way marked using invertebrate refuge totem poles such as those given in the photographs below taken from the Chatto Housing Estate in Essex. These could also be used in other areas of the Order for signage.

45.


46.


7 Other wildlife features

47. Some hedgerow removal will be necessary to create gateway access etcetera. Where removal of woody material is required during site works, then the arisings could be incorporated into non-living hedges/ wildlife piles to provide cover and habitat for a range of wildlife potentially, and as appropriate, in combination with other features such as beetle banks.

48. There is scope to incorporate a range of wildlife refugia and nest boxes and the PEIR and appendices include provision for these. Artificial bird nesting and bat roosting provision should be provided across the Order area including on all built structures,

with features provided focussed on the local habitats and the likely birds using those areas. Any breeding or nesting units should be long life and wood crete or similar with easy cleaning and survey access. Specialist nest boxes for colonial species such as house sparrow *Passer domesticus* that have suffered a population decline in recent years could also be considered.

9 Owls and other raptors

49. There is a good local population of barn owls *Tyto alba* (Schedule 1 bird species on the Wildlife and Countryside Act as amended) from Kelham to Norwell and out to Caunton, and further over the Order area; but one of the things that can limit breeding is the lack of suitable nesting places. Several of the local nest boxes need replacement and some new boxes could be provided at alternative sites.

50. The increase in grassland that will accompany the solar arrays, depending on grazing pressure, may provide an increase in suitable habitat for small mammals and insects, which serve as owl prey items for owls and other raptors such as kestrel *Falco tinnunculus*.

51. There are several local landowners from Kelham to Bathley who have suitable nest locations and would be happy to host a barn owl box.

52. This would be an appropriate wildlife enhancement for the proposed scheme and nesting provision for owls was included in the PEIR appendices.

53. Nesting provision should also be considered for other raptor species which occur locally such as kestrel, tawny owl *Strix aluco* and little owl *Athene noctua*.

8 Other

Fly Tipping

54. The LEMP and CEMP should include provision to deal with fly tipping within the Order area. This is an ongoing problem that needs addressing due to potential ecological effects on water quality, habitats and wildlife. This is alongside potential physical access issues for the public on dedicated access routes as well as potential health effects from contaminated materials.

Monitoring

55. The is a very large-scale NI project and it is recommended that as part of the SI Order the project team provides update reports of monitoring compliance available to the public on request during the life of the project.

Decommissioning

56. Ref point 38 TA A5.1.3.4

57. It is recommended that during decommissioning that scrub, community orchard, hedgerows and species-rich grassland areas created as part of the Order should all be viewed as "longer term interventions" and retained. Otherwise there will be a considerable habitat deficit to account for that in forty years' time which will not potentially result in a neutral outcome for the impact assessment of this phase.

Bridleway and Footpath Access

58. With roads increasingly becoming busy provision of safe off-road foot, cycle and horse riding routes has become increasingly important. The Order area includes some new routes, but informed by local knowledge the following routes are recommended.

1 Bathley south circular route

59. A new circular multi use route (see Figure 1 and 3) is proposed for the area between the southern edge of Bathley and little Carlton and South Muskham taking in the proposed bridleway route given in the current access plan. Figure 3 also includes current permissive bridleway routes which are available in Bathley, depending upon the farming calendar.

60. As there is no multi-access route along Main Street this road can be a hazardous route for horse riders and walkers, especially during commuter times.

61. Bathley Mill house stables with circa 30 horses has a range of riding ability and the availability of safe off road riding is important to help to prevent road traffic accidents. There are also other local horse riders. With increasing traffic levels, the provision of safe off-road routes for recreation users is important. The stretch along the western side of the Moorhouse Dyke LWS on the eastern leg of the loop has a semi-natural river form which is visually very aesthetic and well sheltered from the noise of the busy B6325. The opportunity to access this loop would provide a valuable, aesthetically pleasant recreation resource. Accessing the western side of the drain south of the prosed split in the access paths would minimise disturbance to wildlife using the proposed wildlife area, especially if wildfowl scrapes are constructed.

62. This circular route was proposed verbally with Ryan Hildred during the first GNR solar park consultation period with no written response to the design. it has been discussed with other residents with positive support. North Muskham Parish Council is also supportive of the proposed route and will include it in their formal response to GNR solar park as given in Figure 5.

2 Kelham

63. The horse livery at Manor Farm has a typical occupancy of up to 13 riders plus guest riders and they currently have permissive riding access to much of the field margins and tracks land farmed from Manor Farm and the other land at Park Leas and

Averham. There is also a livery yard at Parkleas with usually two riders and riders from both yards regularly ride across all the permissive verges. Figures 2 and 4 detail the current permissive bridleways and preferred options for the Order. The fields at Park Leas and Averham are accessed from Kelham via Broadgate Lane and the Park Leas Lane which are both currently suitable for horse riders.

64. Safe off road riding provision is essential in Kelham with the busy A617 running through it which is considered too hazardous for horse riders to use. Ollerton Road and Trent Lane also present potential road traffic accident (RTA) risk for riders. Accordingly, off road riding routes need to be accessed from safe entry points. Safe entry points are indicated on Figures 2 and 4.

65. One of the very regularly used Kelham permissive bridleways is also a footpath and this has been used since 2009. Entry into the Kelham Hills fields outside the Order area is via a permissive bridleway which will fall within the Order area and so this access should be maintained. The access point for the Kelham Hills area needs to be within the Order from Broadgate Lane because the field access gate on Ollerton Road is unsafe for rider use and the locations of these two field access locations are given in Figure 4.

66. The bridleways currently suggested between Little Carlton and Kelham are linear without crossing the busy A616 and that typically presents an unacceptable RTA risk. The preferred options are given in Figure 4 and with some additional sections the proposed bridleways given in the PEIR Access Proposals can provide some safe circular bridle routes.

67. The prosed cycle route on the Access Plan that runs westwards towards the BESS along the southern edge of Kelham woods is recommended to also serve as a bridleway. This, in combination with a short section of existing permitted bridleway (part of Manor Farm access) and part of Broadgate could provide another short circular bridle route at Kelham.

68. A new Bridleway is proposed to run North from the Battery Energy Storage System (BESS) to meet the western leg of Broadgate Lane with a ride loop then returning back to Kelham down Broadgate lane.

3 Parkleas and Averham

69. The bridleway map for Parkleas and Averham is given as Figure 2 along with biodiversity features.

70. One designated public bridle path runs from Cheveral wood to Parkleas. This bridleway connects in with a large series of marginal permissive bridleways which are under regular use. There are three essential rider entry points to enable access to the

main permissive off road riding areas aside from access from Parkleas Lane. Recommendations for retention of existing bridleway routes with a primary priority for retention are given along with one new route graded as a second priority route

which runs north out towards Muskham Woodhouse Farm and would include a short section on their farm access track.

JANE SOUTHEY

APPENDIX 1 FIGURES

Figures have been prepared by annotating GNR Solar and Biodiversity Park plans and the usage of this mapping is acknowledged.

APPENDIX 1 - FIGURE 1 Biodiversity and Access

APPENIDX 2 - FIGURE 2 Bridleway and biodiversity proposals Parkleas and Averham

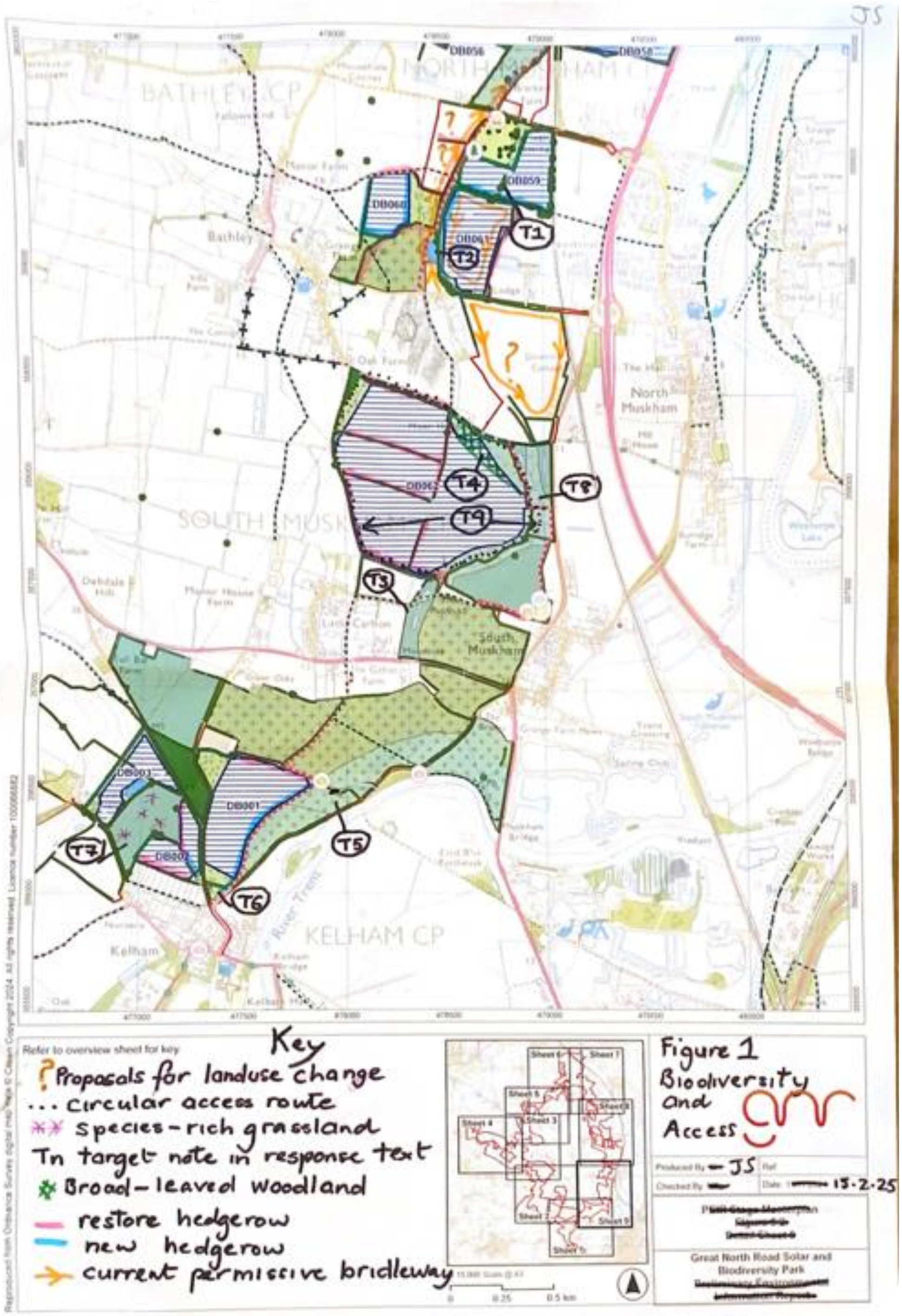
APPENIDX 3 - FIGURE 3 Bridleways Bathley

APPENIDIX 4 - FIGURE 4 Bridlepath and Footpath proposals Kelham

APPENDIX 5 - FIGURE 5 The southern bridleway and footpath extension submitted by North Muskham Parish Council

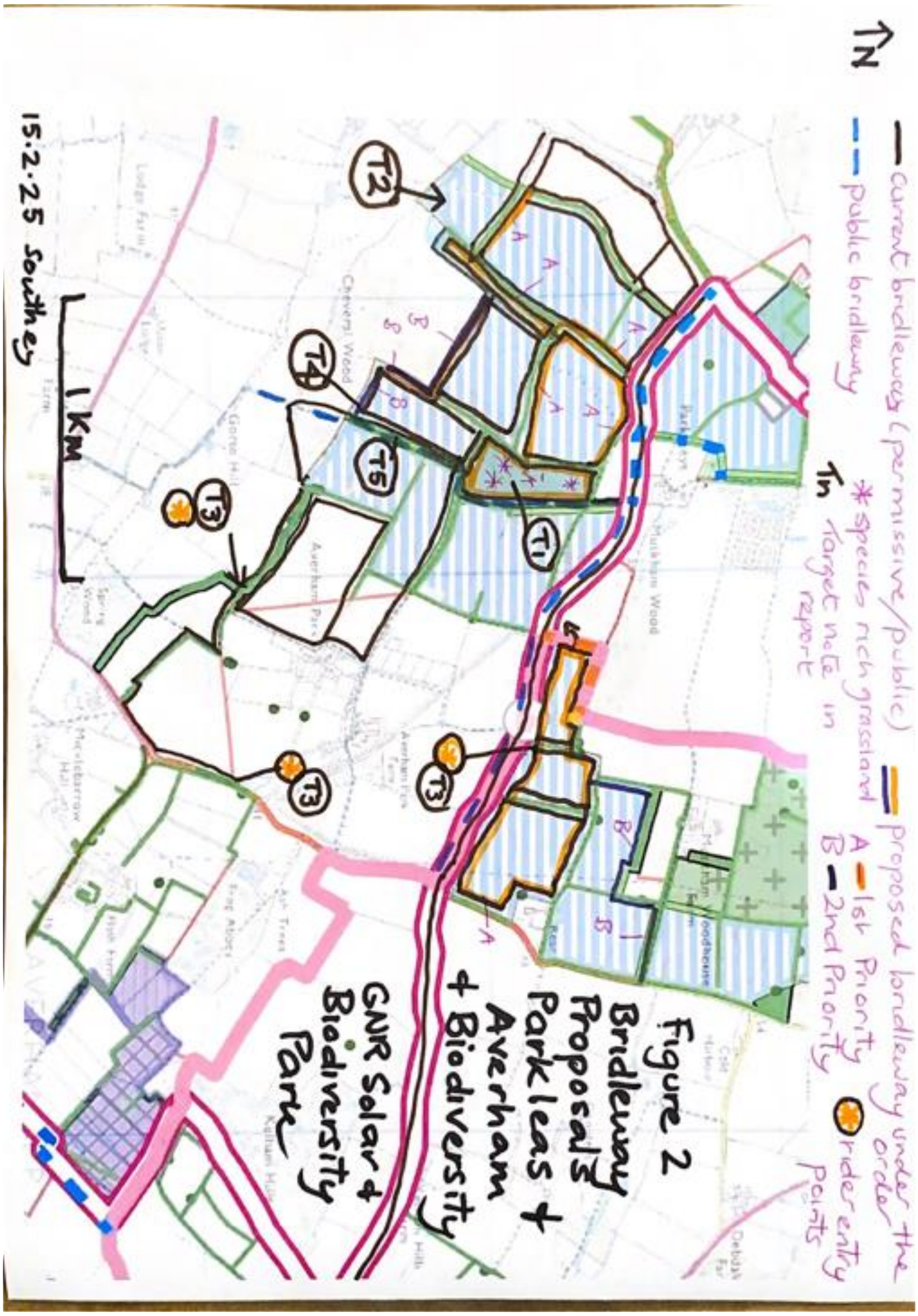
APPENDIX 1 (FIGURE 1) to BIODIVERSITY and ECOLOGY COMMENTS

JANE SOUTHEY



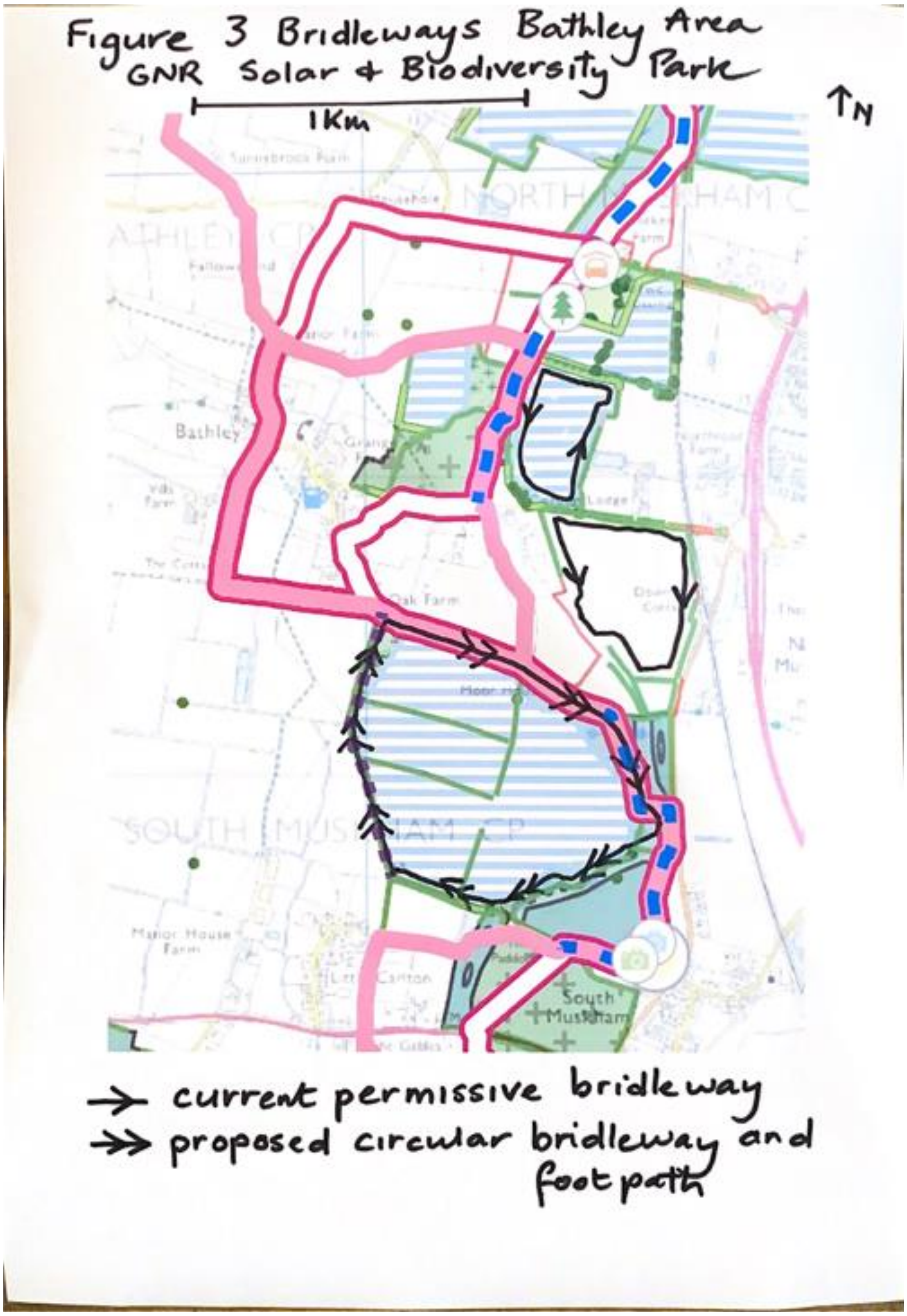
APPENDIX 2 (FIGURE 1) to BIODIVERSITY and ECOLOGY COMMENTS

JANE SOUTHEY



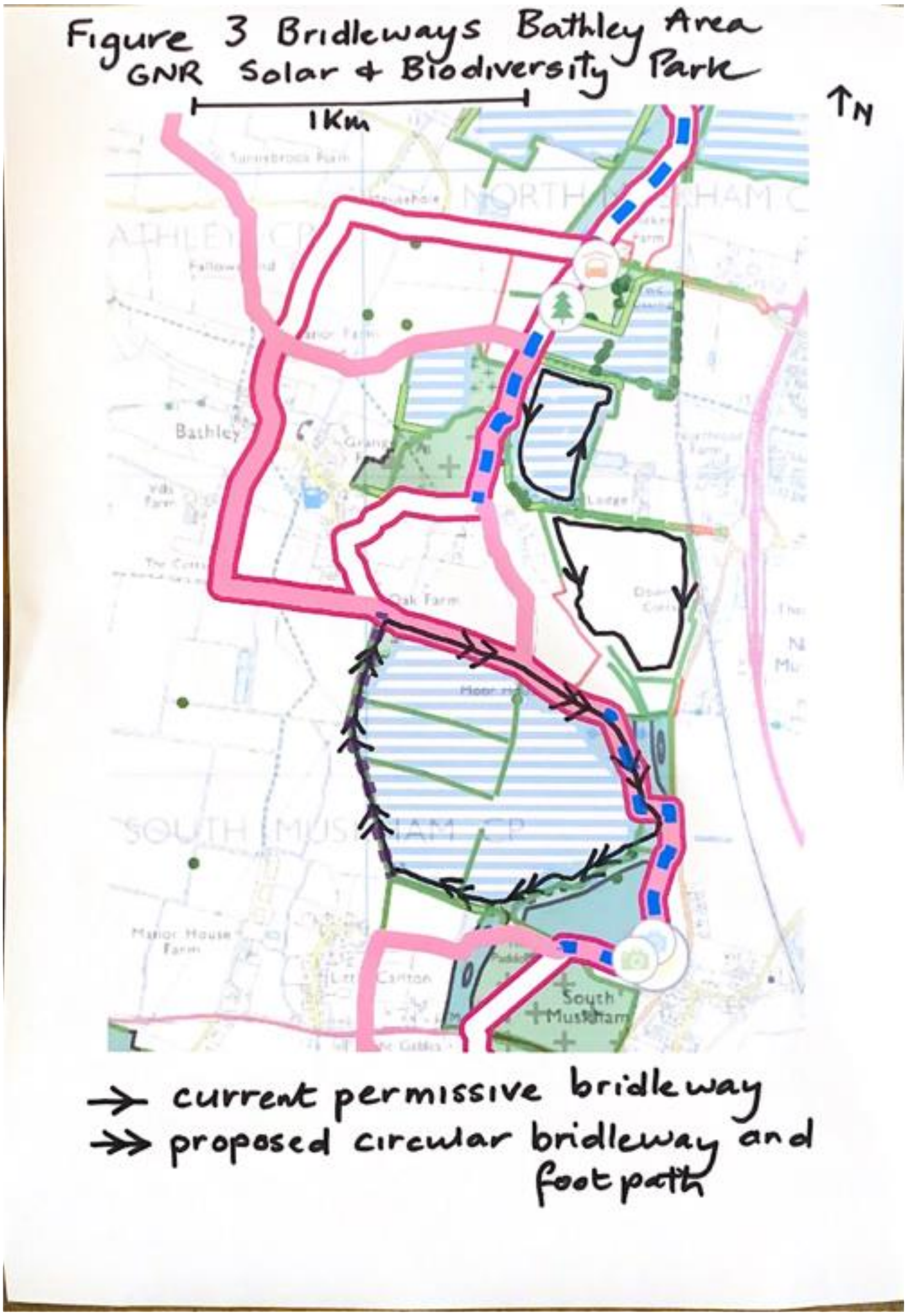
APPENDIX 3 (FIGURE 1) to BIODIVERSITY and ECOLOGY COMMENTS

JANE SOUTHEY



APPENDIX 4 (FIGURE 1) to BIODIVERSITY and ECOLOGY COMMENTS

JANE SOUTHEY



APPENDIX 5 (FIGURE 1) to BIODIVERSITY and ECOLOGY COMMENTS

JANE SOUTHEY