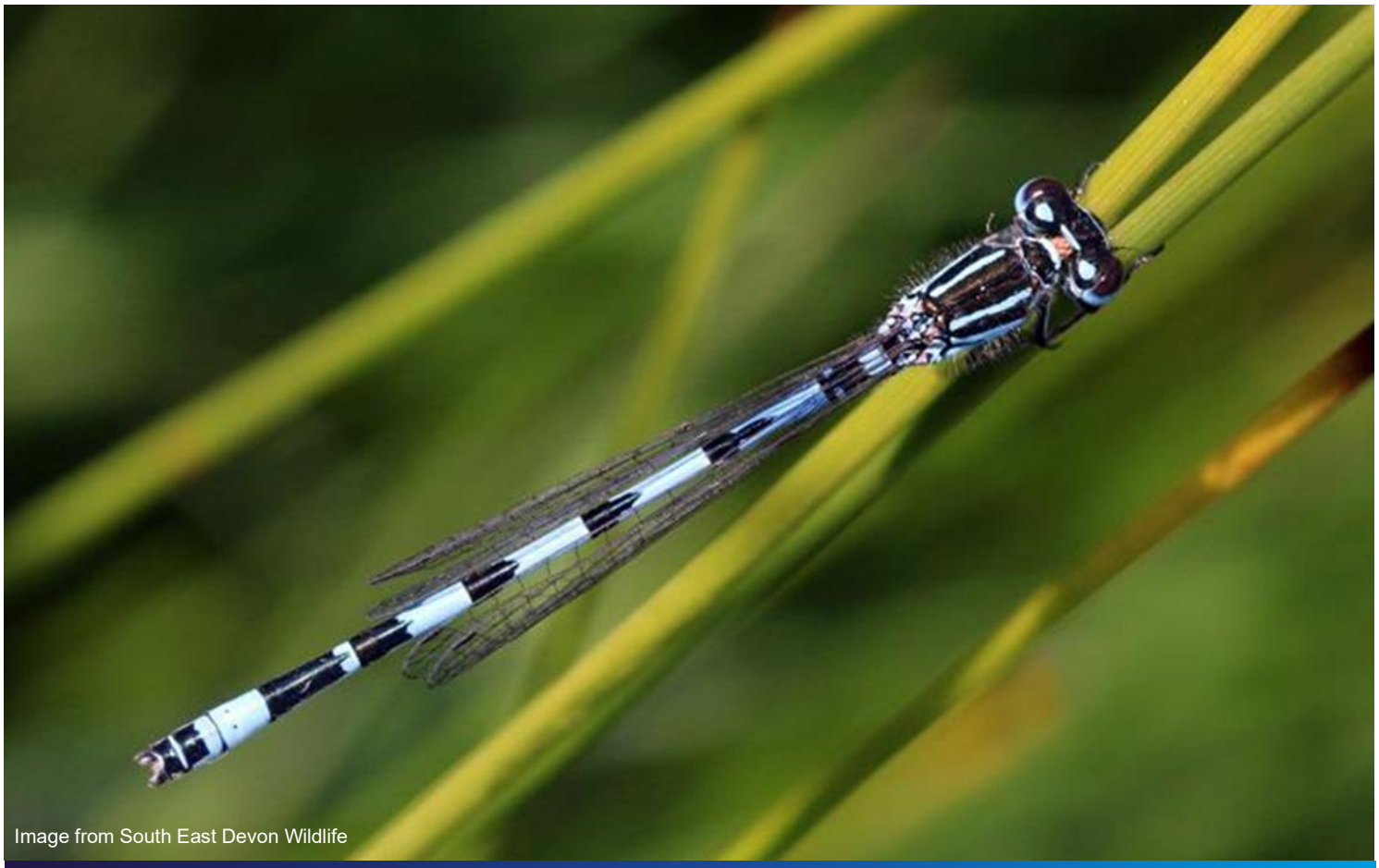

Image from South East Devon Wildlife

MITIGATION OF AIR QUALITY IMPACTS IN EAST DEVON

Mitigation Strategy

Report for: East Devon District Council

Ricardo ref. ED21793 Issue: 3 6 November 2025

Customer:
East Devon District Council

Customer reference:
Contract dated 12 May 2025

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Ricardo reference:
ED21793100_Issue3

Date:
6 November 2025

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1. INTRODUCTION

The district of East Devon is located in the county of Devon, and is adjacent to Dorset, Somerset, Mid Devon, and the city of Exeter. There are approximately 150,800 people[1] living in the district area of ~ 815 km^2. East Devon District Council (EDDC) is preparing a new local plan that will cover the period from 2020 through to 2042, which envisages the provision of approximately 21,000 new homes, as well as increased employment and commercial floorspace over the plan period[2]. The East Devon Local Plan (EDLP) has been developed in line with the Government's objectively assessed requirement for housing growth levels.

East Devon is characterised by its exceptional natural features, with over half of the district designated as National Landscape and a World Heritage Site coastline. It also contains numerous nature conservations areas of national and international importance. Increases in road traffic associated with the additional development in the EDLP may have the potential to adversely impact these nature conservation areas through increases in air concentrations of pollutants, particularly oxides of nitrogen and ammonia, and the deposition of these pollutants within sensitive habitats.

The Habitats Regulations Assessment (HRA) work undertaken to date has screened out the potential for adverse impacts at many of the internationally designated sites across the district; however, it has highlighted specific concerns relating to potential impacts on the East Devon Pebblebed Heaths (EDPH) Special Area of Conservation (SAC) and Special Protection Area (SPA).

This report contains an overview of the work undertaken to date, in regard to site condition and functioning, the Habitats Regulation Assessment outcomes, and the development of mitigation options as well as the steering group meetings that assisted in their creation and the next steps to ensure that there are no adverse effects to the Pebblebed Heaths designated sites.

2. OVERVIEW OF SITE INFORMATION AND FUNCTIONING

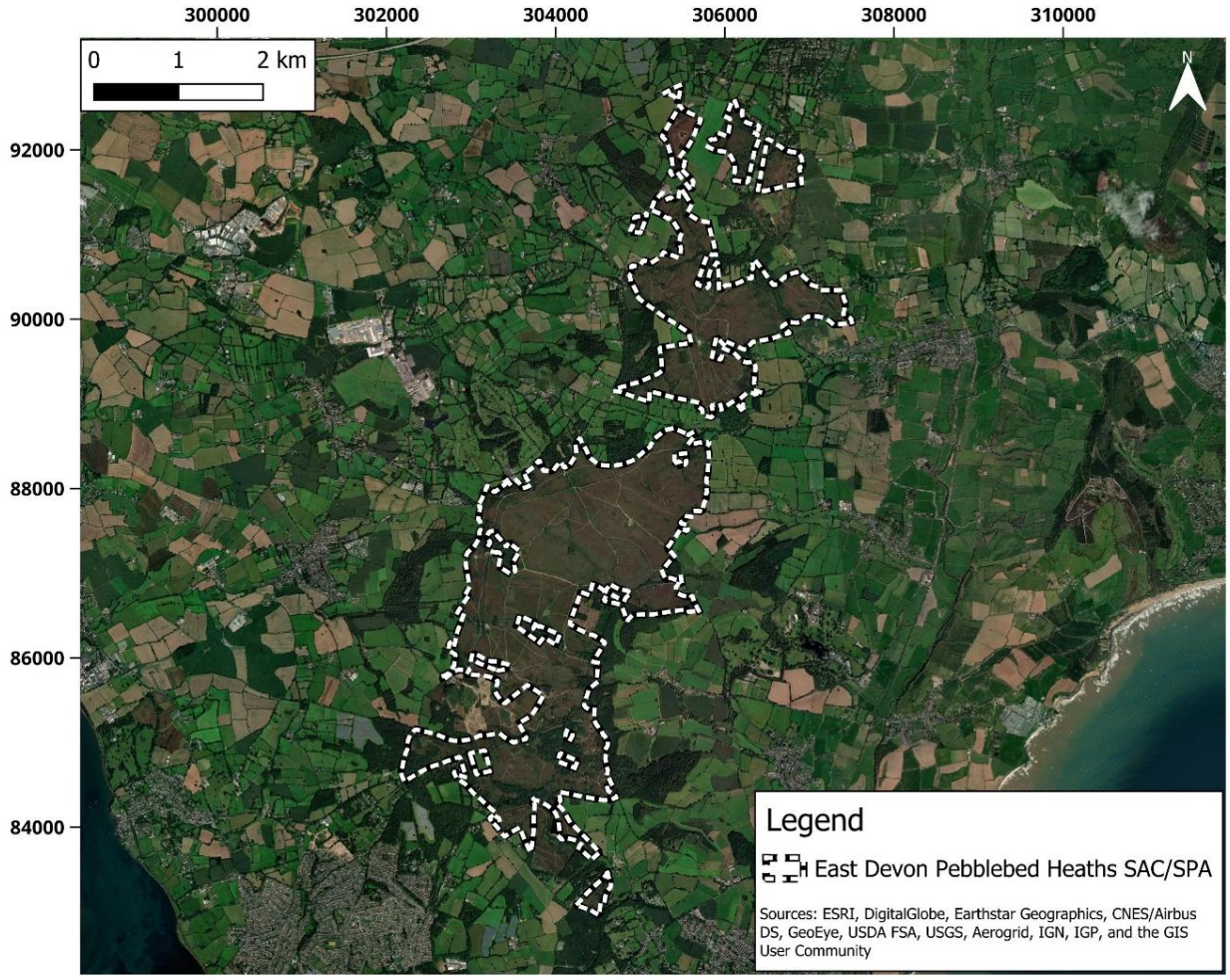
The East Devon Pebblebed Heaths (EDPH) are protected by multiple designations. This includes SAC, SPA, Sites of Species Scientific Interest (SSSI), and National Nature Reserve (NNR) designations. The East Devon Pebblebed Heaths SAC is designated for its Annex 1 habitats of northern Atlantic wet heaths with *Erica tetralix*, its European dry heaths, and its Annex 2 species of the *Coenagrion mercurial* (Southern Damselfly). The East Devon Heaths SPA is designated for important breeding birds including *Caprimulgus europaeus* (European Nightjar) and *Sylvia undata* (Dartford Warbler),

The SAC and SPA are legally underpinned by the East Devon Pebblebed Heaths SSSI. The SSSI is designated for breeding Dartford warbler, breeding European nightjar, assemblages of breeding birds, lowland dry acid grassland, lowland dry heath, lowland wet heath, *Ceriagrion tenellum* (small red damselfly), southern damselfly, outstanding dragonfly assemblages, and lowland valley fen. The Pebblebed Heaths NNR is part of the East Devon National Landscapes and covers approximately 1156ha including the SSSI. Detailed information on site information can be found in the Ricardo 2025 *Mitigation of Air Quality Impacts in East Devon – Long list mitigation summary report.* Figure 2-1 provides an overview of the location of the EDPH SAC and SPA.

[1] East Devon District Council: Census 2021, accessed 22/07/2025: https://eastdevon.gov.uk/council-and-democracy/knowing-east-devon/census-2021/

[2] East Devon Emerging Local Plan 2020-42: Draft (February 2025)

Figure 2-1 Overview of EDPH SAC and SPA boundary



2.1 SITE FUNCTIONING

2.1.1 General site function and condition

The SAC and SPA do not have condition assessments directly related to their qualifying features. As such, condition of relevant SSSI features and units have been used as a proxy to SAC/SPA condition.

There are 10 site features listed for the SSSI. Of these site features, eight are in “favourable” condition, one is in “unfavourable – no change” condition, and one is in “unfavourable – declining” condition. Details on site feature condition can be found in **Table 2-1**.

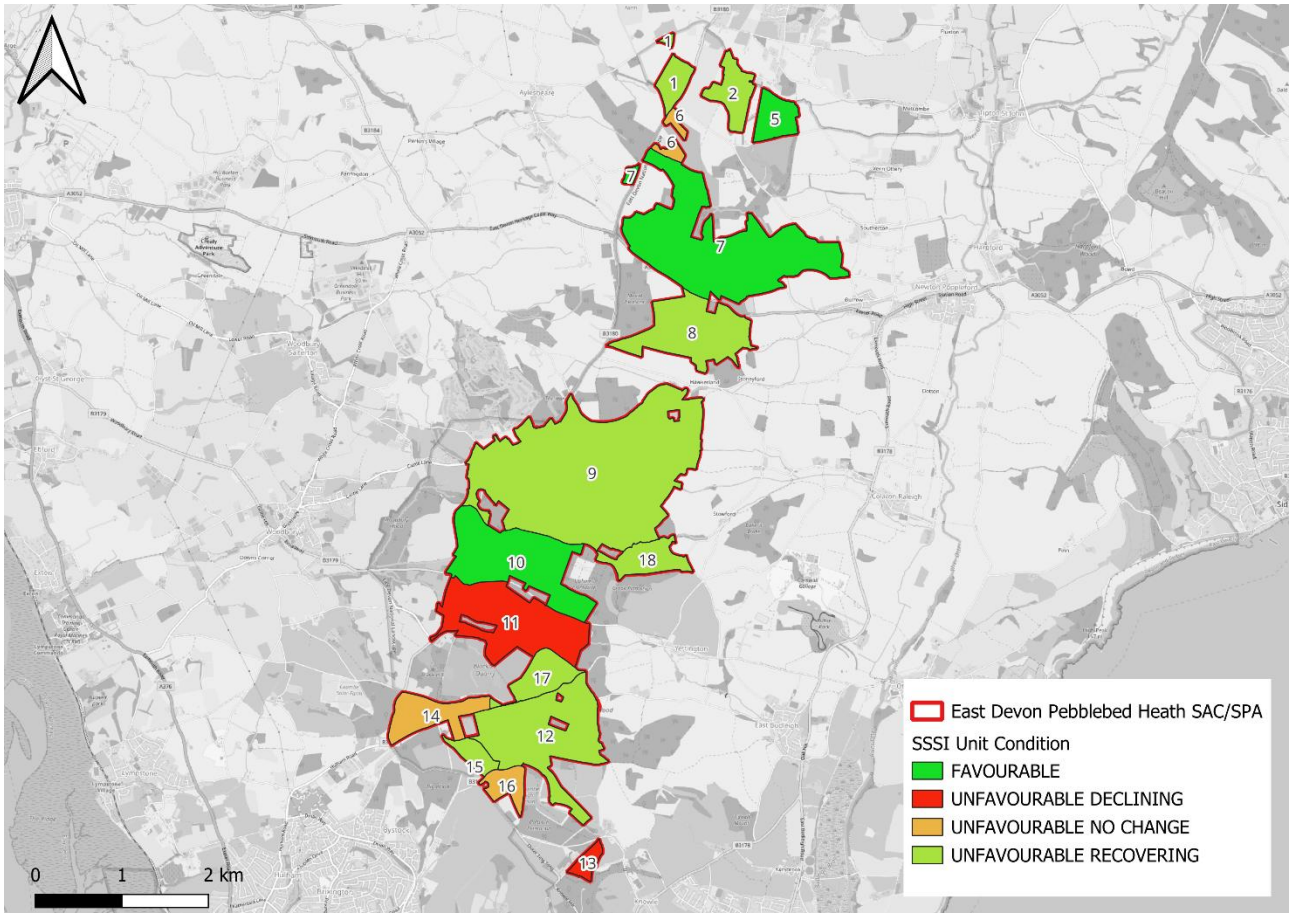
Table 2-1 – Condition of SSSI features

SSSI Feature	Condition
Aggregations of breeding birds Dartford warbler, *Sylvia undata*	Favourable
Aggregations of breeding birds - Nightjar, *Caprimulgus europaeus*	Favourable
Assemblages of breeding birds - variety of species	Favourable
Lowland dry acid grassland	Favourable
Lowland dry heath	Unfavourable no change
Lowland wet heath	Favourable

SSSI Feature	Condition
Nationally rare and scarce dragonfly species *Ceriagrion tenellum*, Small Red Damselfly	Favourable
Nationally rare and scarce dragonfly species – *Coenagrion mercuriale* Southern Damselfly	Unfavourable declining
Outstanding dragonfly assemblage	Favourable
Valley Fen (Lowland)	Favourable

There are 16 units within the SSSI, all of which have been categorised as dwarf shrub heath lowland. The locations of each unit and their condition can be seen in **Figure 2-2.** Of the 16 units, three are in favourable condition (Units 005, 007, 010), three are in unfavourable-no change condition (Units 006, 014, 016), eight are in unfavourable-recovering condition (Units 001, 002, 008, 009, 012, 015, 017, 018), and two units are in unfavourable declining condition (Units 011, 013). More specific information for the site condition assessments can be found in the Ricardo 2025 *Mitigation of Air Quality Impacts in East Devon – Long list mitigation summary report.*

Figure 2-2 Current SSSI Unit condition



Several pressures have been identified for the SAC in the Site Improvement Plan (SIP)[13]. These pressures are negatively impacting the overall functioning of the site. The pressures listed for the SAC in the SIP are also relevant for the SPA. These include:

- Inappropriate scrub control
- Under-grazing

- Changes in land management
- Public access and disturbance
- **Air pollution – atmospheric nitrogen deposition**
- Water pollution – nutrient enrichment
- Hydrological changes

Similar pressures have been identified for the SSSI. Pressures specific to the SSSI not included in the SAC/SPA SIP include stock feeding, weeds and inappropriate species, and freshwater Invasive Non-Native Species (INNS) excluding fish.

The conservation objectives and status of a SAC or SPA must be taken into account when carrying out a HRA, both when determining the likelihood of a significant effect on site integrity, and also when designing mitigation measures. Any such measures should not hinder the implementation of planned measures that are already in place to achieve the site's conservation objectives.

2.1.2 Air quality impacts to the designated site

The main focus of this report is to identify mitigation for pressures related to air quality. Air quality concerns have been raised for the East Devon Pebblebed Heaths SAC and the East Devon Heaths SPA as increases in air pollutants to the site may impact the overall condition and functioning of the site. These concerns have been outlined in the combined Site Improvement Plan and the Supplementary advice on conserving and restoring site features for both the SAC and SPA. The adverse effects related to air quality are impacting upon the supporting processes (on which the feature relies) Conservation Objective for all species and habitats found within the SAC and SPA. The SAC supplementary advice states that: "*Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition and causing the loss of sensitive typical species associated with it.".*[3] The SPA supplementary advice states that "*Exceeding critical values for air pollutants may result in changes to the chemical status of its habitat substrate, accelerating or damaging plant growth, altering vegetation structure and composition and thereby affecting the quality and availability of nesting, feeding or roosting habitats*."[4].

The Air Pollution Information System's (APIS) figures for the critical load (CL) for nitrogen inputs to dry heathland are 10-20 kg/ha/year and in wet heathland 10-25 kg/ha/ year, with the lower end of this range applied to sites with low intensity management. On the Pebblebed Heaths designated sites, the level of nitrogen deposition was estimated to be 20 kg/ha/yr in 2005, dropping to 15.68kg/ ha/yr by 2020[5].. At present, APIS estimates the level of nitrogen deposition to be 14-15kg/ha/yr[6]. Although there has been a decline in nitrogen levels at the site, they are still exceeding the lower CL provided by APIS. As such, a restore target has been put in place relating to the supporting processes Conservation Objective. The target states "*Restore as necessary, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk)."*[7].

2.2 SITE MANAGEMENT

The site is managed by multiple organisations including Natural England, Clinton Devon Estate, Devon Wildlife Trust, the RSPB, and the East Devon Pebblebed Heaths Conservation Trust. Recreational use at the site is limited by parking availability. General landscape and habitat management across the site includes felling and scrub management, grazing by cattle and ponies, scraping, mowing along roadside and for fire breaks, and burning. Scraping is used to remove the vegetation, and topsoil is carried out in discrete areas to target particular invertebrates Tree removal is also carried out where appropriate to maintain the heathland habitat.

[3]Natural England (2019) Supplementary advice on conserving and restoring site features: East Devon Pebblebed Heaths SAC UK0012602_East Devon Pebblebed Heaths_SAC_Published 10 Jul 2024

[4] Natural England (2019) Supplementary advice on conserving and restoring site features: East Devon Heaths SPA UK9010121_East Devon Heaths_SPA_Published 10 Jul 2024

[5] Bridgewater, S. M. G., and Kerry, L. M. (2016) East Devon Pebblebed Heaths Spaces for Nature Report. Biodiversity Audit. East-Devon-Pebblebed-Heaths.-Providing-Space-for-Nature-2016.pdf

[6] APIS app (2025) APIS app | APIS

[7] [7]Natural England (2019) Supplementary advice on conserving and restoring site features: East Devon Pebblebed Heaths SAC UK0012602_East Devon Pebblebed Heaths_SAC_Published 10 Jul 2024

Site specific management practices can be in the Ricardo 2025 *Mitigation of Air Quality Impacts in East Devon – Long list mitigation summary report.*

The site management activities were used to inform what potential mitigation were already in place to combat the impacts of air pollution. The management activities were also used to determine if additional management practices could be introduced or if existing practices could be intensified in order to be included in the long list of mitigation measures.

3. OVERVIEW OF AIR QUALITY HABITATS REGULATIONS ASSESSMENT

This section provides an overview of the Air Quality HRA in the context of the mitigation options development process. A summary of the key outcomes is provided below, with more detailed information available from the Ricardo 2025 "*Mitigation of Air Quality Impacts for the East Devon Pebblebed Heaths*" Technical Report.

3.1 METHODOLOGY

Air quality impacts on the designated site were assessed based on predicted annual average airborne concentrations of NOx and NH_3, together with annual deposition rates of nutrient nitrogen and acid. A sub-regional air dispersion model (RapidAIR) was used to model predicted air quality impacts at locations within the site at a resolution of 3m x 3m.

Three scenarios were generated to determine the air quality impacts associated with the local plan allocations:

1. 2022 Base Year: This scenario was designed to replicate 2022 traffic conditions within the study area in order to verify the performance of the air dispersion model.
2. 2042 Future Base: This scenario assumed background traffic growth in line with DfT's TEMPRO software (v8.0). Additionally, it included all known current development and infrastructure, as well as all committed development and infrastructure, up to 2042. Development associated with the EDLP was excluded from this scenario. This was a hypothetical scenario against which to test the impacts of the EDLP, as it assumes there will be no development within the district up to 2042 other than at sites which already have planning permission.
3. 2042 Future Year with Local Plan: This scenario is equivalent to the '2042 Future Base' scenario, with the addition of development proposed in the EDLP. A comparison of both scenarios made it possible to assess any impacts attributable to the EDLP in isolation.

The contributions attributable to the local plan were first compared to the screening threshold of 1% of the Critical Load or Critical Level applicable for each pollutant at the designated site. Likely Significant Effects (LSEs) were discounted where the model results and analysis indicated that the contribution from the local plan, alone and in-combination with other applicable plans and projects, is below the 1% screening threshold. Where the screening analysis indicated that LSEs on the designated site could not be ruled out, further analysis was undertaken in the form of an HRA Stage 2 Appropriate Assessment. This aided in refining the areas in which there could potentially be adverse effects related to air pollution, and therefore informed the development of the mitigation options for those areas.

3.1.1 In combination assessment

The dispersion modelling described above accounts for air quality impacts associated with road traffic emissions from development of the EDLP in isolation. However, guidance from Natural England[15], developed following the requirements of the Wealden Judgment, advises that the screening thresholds should be applied with consideration to impacts from individual proposed developments and with consideration to in-combination effects. In this study, in-combination impacts have been considered in the following ways:

1. The NOx pollutant background maps[16] used in the air dispersion model account for existing industrial activity, including large combustion installations, airports and shipping activity. Known industrial sources are modelled explicitly in the baseline year of the background maps, and future-year background maps are derived by incorporating datasets from the UK Department for Business, Energy & Industrial Strategy (BEIS) regarding projected energy and economic activity data for various

industrial sectors. The background maps therefore account for future growth in industrial sector emissions, within the limits of current government growth projections.

2. The National Infrastructure Planning website[23] was investigated to identify any potentially relevant major developments. This review did not highlight any relevant projects in the vicinity of the study area.
3. The district of East Devon shares its borders with Exeter, Teignbridge, and Mid Devon, with Somerset and Dorset nearby. Local Plan HRA studies from these neighbouring authorities were reviewed in order to extract relevant information concerning other sources of in-combination effects. In summary, potential in-combination impacts from all five neighbouring local authorities' Local Plans were ruled out based on the evidence available.

Please see the Ricardo 2025 "*Mitigation of Air Quality Impacts for the East Devon Pebblebed Heaths*" Technical Report for more detail on the consideration of in-combination impacts.

3.2 HRA STAGE 1: ASSESSMENT OF IMPACTS AGAINST SCREENING THRESHOLDS

3.2.1 Screening thresholds

Table 3-1 summarizes all of the critical loads for nutrient nitrogen deposition (kgN/ha-year) and acid deposition (kEq/ha-year), as well as the critical levels for airborne ammonia (µg/m^3) and airborne NOx (µg/m^3), applicable to the designated site. The most stringent critical load or critical level (CL) for each pollutant is indicated in bold[8].

The data provided in Table 3-1 is derived from APIS and is based on direct effects to the qualifying feature itself. We note that although the species in Table 3-1 are identified as not sensitive to airborne NH_3 and NOx, the habitats that support these species are sensitive and therefore mitigation will be required to meet the conservation objectives for these species.

[8] Air Pollution Information System, accessed 22/07/2025: https://www.apis.ac.uk/app

Table 3-1 Minimum Critical Load and Critical Level (CL) values and associated sensitive features for East Devon Pebblebed Heaths SAC and East Devon Heaths SPA

Designation	Sensitive feature	Minimum nutrient nitrogen deposition CLs (kgN/ha-year)	Minimum acid deposition CLs (MinCLMaxN, kEq/ha-year)	Minimum airborne NH_3 CLs ($\mu g/m^3$)	Minimum airborne NOx CLs ($\mu g/m^3$)
SAC	**European dry heaths**	**5**	**1.205**	**1**	**30**
SAC	**Northern Atlantic wet heaths with *Erica tetralix***	**5**	**1.205**	**1**	**30**
SAC	**Southern damselfly *Coenagrion mercuriale***	**5**	**1.205**	**1**	**30**
SPA	**European nightjar *Caprimulgus europaeus* (unmanaged broadleaved / coniferous woodland)**	**5**	**0.894**	**Not sensitive**	**Not sensitive**
SPA	**European nightjar *Caprimulgus europaeus* (dwarf shrub heath)**	**5**	**1.205**		
SPA	**Dartford warbler *Sylvia undata* (dwarf shrub heath)**	**5**	**1.205**	**Not sensitive**	**Not sensitive**

3.2.2 Screening results

Table 3-2 compares the maximum modelled process contribution (PC) of the EDLP to the lowest applicable CL for each pollutant. Values in **bold** exceed the 1% screening threshold. This screening exercise represents a precautionary approach, as it assumes that the most sensitive qualifying features (with the lowest CLs) are present throughout the site, including in the areas with the highest modelled PC (typically adjacent to the busiest road).

Table 3-2 Screening results based on dispersion modelling of 2042 Future Year with Local Plan scenario

Pollutant	Deposition type	Minimum CL	Maximum modelled PC	Maximum modelled PC as % of CL
Airborne NOx (µg/m^3)	**n/a**	**30**	**1.29**	**4 %**
Airborne NH_3 (µg/m^3)	**n/a**	**1**	**0.23**	**23 %**
Nutrient nitrogen deposition (kgN/ha-year)	**Grassland**	**5**	**1.27**	**25 %**
	Forest	**5**	**1.95**	**39 %**
Acid deposition (kEq/ha-year)	**Grassland**	**0.894**	**0.09**	**10 %**
		1.205		**7 %**
	Forest	**0.894**	**0.14**	**16 %**
		1.205		**12 %**

In summary, for the EDLP, adverse impacts could not be screened out for airborne NOx, airborne NH_3, nitrogen deposition, or acid deposition.

3.3 HRA STAGE 1: FURTHER SCREENING

This assessment considers the potentially damaging aspects of the proposed development in East Devon with potential effects on the EDPH site's qualifying features and likely achievement of conservation objectives. The potential for adverse effect on the integrity of the site depends on the scale and magnitude of the predicted air pollution impacts, taking into account the distribution of the designated features across the site in relation to the predicted impact.

3.3.1.1 Airborne NOx

Current background levels of NOx do not exceed 30 µg/m^3 within the EDPH site, and it is forecast that future concentrations of NOx will decrease significantly from current levels. The NOx background maps are produced by Defra on a periodic basis and are considered the best available information for future background levels of airborne NOx. There is no basis for reasonable scientific doubt in the forecast NOx levels. Additionally, the background map for the year 2040 (the latest year for which a NOx background map is available) is considered likely to over-predict NOx concentrations in 2042, which is the year applicable for our "Future Year with Local Plan" scenario.

Table 3-3 presents the total modelled NOx concentration for the 2042 "Future Year with Local Plan" scenario. The "Future Year with Local Plan" concentrations were added to the 2040 NOx background maps (with minor road contribution removed). The total NOx concentrations were then point-sampled to determine the maximum predicted environmental contribution (PEC).

Table 3-3 Summary of analysis for the maximum modelled total airborne NOx concentration

Scenario	Minimum CL (µg/m^3)	Maximum 2040 Background NOx (µg/m^3)	Maximum modelled PEC (µg/m^3)	PEC as % of CL
2042 Future Year with Local Plan	**30**	**3.2**	**9.7**	**32 %**

The PEC for NOx is predicted to be less than 50% of the applicable CL of 30 µg/m^3 throughout the designated site. On the basis of available evidence and agreed thresholds, it can therefore be concluded that no significant adverse effects are anticipated on the designated site from increased airborne NOx concentrations associated with the EDLP. No further investigation is therefore required for airborne NOx concentrations.

3.3.1.2 Ammonia

There are significant areas of the site that are likely to have European dry heaths, Northern Atlantic wet heaths with *Erica tetralix* present (and therefore the southern damselfly potentially, too), and which are exceeding 1% of the CL of 1 ug/m3 for airborne ammonia. Mitigation measures are needed to address this.

3.3.1.3 Nitrogen deposition

SUMMARY: There are significant areas of the site that are likely to have *Caprimulgus europaeus* (European nightjar), *Sylvia undata* (Dartford warbler) (SPA) and European dry heaths, Northern Atlantic wet heaths with *Erica tetralix, Coenagrion mercuriale* (SAC), which are exceeding 1% of the minimum CL of 5 kgN/ha/yr. Further research could consider where the important breeding sites for the birds and damselflies are, but mitigation measures will be needed to address this.

3.3.1.4 Acid deposition

SUMMARY: Able to rule out LSEs in some areas for some features, but still many exceedances (although smaller than for nitrogen deposition). Further research could consider where the important breeding sites for the birds and damselflies are, but mitigation measures will be needed to address this.

3.3.1.5 Detailed consideration of qualifying features

Table 3-1 below sets out considerations relating to the location of relevant features within the East Devon SAC and SPA.

Table 3-4 Detailed consideration of qualifying features for East Devon Pebblebed Heaths SAC and East Devon Heaths SPA

Designation	Sensitive feature	Potential effects	Adverse effect before mitigation? (on conservation objectives and site integrity)
SAC	European dry heaths	Increases in nitrogen deposition may result in changes of vegetation structure and community may be altered by changes in substrate chemistry and additional nutrients entering the habitat[9]. The SAC Supplementary Advice for Conservation Objectives (SACO) states that "*This habitat type is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition and causing the loss of sensitive typical species associated with it*."[10]. This habitat is located throughout the site and is found in all SSSI Units. Several Units are located outside the CL Exceedance zones. These comprise Unit 002, 005, 012, 017, and 018. As these units are not likely to be impacted due to distance, the aforementioned units have been screened out.	No – for habitat present in SSSI unit 002, 005, 012, 017, and 018. Yes – for other SSSI units
SAC	Northern Atlantic wet heaths with *Erica tetralix*	Additional nutrients, in this case, nitrogen, entering the habitat may cause eutrophication to aquatic habitats and increase the presence of unfavourable species. For non-aquatic habitats associated with wet-heaths, vegetation structure and community may be altered by changes in substrate chemistry and additional nutrients entering the habitat. The SAC Supplementary Advice for Conservation Objectives (SACO) states that "*This habitat type is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition and causing the loss of sensitive typical species associated with it*."[11] This habitat is mainly located in the eastern portion of SSSI Unit 011 and a small parcel is located in the north east of SSSI Unit 017. The entirety of this habitat is located outside of all Critical Load exceedance areas for all identified pollutants. The nearest patch of wet heath is located approximately 500m east from the nearest exceedance zone (nitrogen deposition for tall	No

[9] APIS Acid deposition :: Dwarf Shrub Heath | APIS
[10] Natural England (2019) Supplementary advice on conserving and restoring site features: East Devon Pebblebed Heaths SAC UK0012602_East Devon Pebblebed Heaths_SAC_Published 10 Jul 2024
[11] Natural England (2019) Supplementary advice on conserving and restoring site features: East Devon Pebblebed Heaths SAC UK0012602_East Devon Pebblebed Heaths_SAC_Published 10 Jul 2024

Designation	Sensitive feature	Potential effects	Adverse effect before mitigation? (on conservation objectives and site integrity)
		vegetation). As the habitat is located outside all outlined exceedance zones, no adverse effects are anticipated on the conservation objectives for this feature.	
SAC	Southern damselfly *Coenagrion mercuriale*	This site contains three small populations favouring wet areas of the site[12]. Additional nutrients, in this case, nitrogen, entering the habitat, specifically northern Atlantic wet heaths with *Erica tetralix*, may cause eutrophication to aquatic habitats and increase the presence of unfavourable species not conducive to the survival of the species. The SAC Supplementary Advice for Conservation Objectives (SACO) states that "*The supporting habitat of this feature is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition (including food-plants) and reducing supporting habitat quality and population viability of this feature*." Supporting habitat for this species is located in the eastern portion of SSSI Unit 011 and a small parcel is located in the north east of SSSI Unit 017. The entirety of this habitat is located outside of all Critical Load exceedance areas for all identified pollutants. The nearest parcel of wet heath is located approximately 500m east from the nearest Critical Load exceedance zone (nitrogen deposition for tall vegetation). As the habitat is located outside all outlined exceedance zones, no adverse effects are anticipated on the conservation objectives for this features.	No
SPA	European nightjar *Caprimulgus europaeus* (unmanaged broadleaved / coniferous woodland)	Night jars are associated with woodland edges and are found in woodland habitats when open glades are present. Perches are used in territorial displays and are usually found in mature trees within heathland habitats or along woodland edge. They can also be found in newly regenerated pine plantations. Although woodlands are not considered as a qualifying feature of the SPA, they are considered to be supporting habitat for nightjar. As such, adverse effects are impacting upon the supporting processes (on which the feature relies). The SPA SACO states that "*Exceeding critical values for air pollutants may result in changes to the chemical status of its habitat substrate, accelerating or damaging plant growth, altering vegetation structure and composition and thereby affecting the quality and availability of nesting, feeding or roosting habitats*."[13]..	Yes

[12] JNCC 1044 Southern damselfly Coenagrion mercuriale Southern damselfly (Coenagrion mercuriale) - Special Areas of Conservation

[13] Natural England (2019) Supplementary advice on conserving and restoring site features: East Devon Heaths SPA UK9010121_East Devon Heaths_SPA_Published 10 Jul 2024

Designation	Sensitive feature	Potential effects	Adverse effect before mitigation? (on conservation objectives and site integrity)
SPA	European nightjar *Caprimulgus europaeus* (dwarf shrub heath)	Both species can be found throughout the site, although they favour areas where there is limited disturbance from recreation. The species themselves are not sensitive to airborne pollutants such as NH_3 and NOx, as such, no adverse effects are anticipated for airborne pollutants only. Impacts related to air quality include reduced quality of breeding and foraging habitat due to increases in acidity and nitrogen deposition. This may alter the vegetation communities and structure to favour grassland habitats and the succession of unfavourable species. Both species rely on the dwarf shrub habitat for both breeding and Dartford warblers rely on this habitat for wintering. As such, adverse effects are impacting upon the supporting processes (on which the feature relies). The SPA SACO states that "*Exceeding critical values for air pollutants may result in changes to the chemical status of its habitat substrate, accelerating or damaging plant growth, altering vegetation structure and composition and thereby affecting the quality and availability of nesting, feeding or roosting habitats*."[14].. Supporting habitat for these species are located throughout the site and is found in all SSSI Units. However, several units are located outside the CL Exceedance zones for all pollutants of interest. These include Unit 002, 005, 012, 017, and 018. As these units are not likely to be impacted due to distance, the aforementioned units have been screened out.	No – for habitat present in SSSI unit 002, 005, 012, 017, and 018. Yes – for other SSSI units
SPA	Dartford warbler *Sylvia undata*		No – for habitat present in SSSI unit 002, 005, 012, 017, and 018. Yes – for other SSSI units

[14] Natural England (2019) Supplementary advice on conserving and restoring site features: East Devon Heaths SPA UK9010121_East Devon Heaths_SPA_Published 10 Jul 2024

The discussion above focuses on the zones within which forecast increases in air pollution / deposition rates are above the screening threshold of 1% of the critical levels/loads. However, an impact above the 1% threshold does not automatically mean that an adverse impact will occur.

This was also addressed in the HRA for the EDLP. Appendix 5 of the HRA for the East Devon Local Plan 2020 to 2042 (regulation 19 draft plan)[15] states that it was not possible to exclude the risk to site integrity from ammonia, nitrogen deposition and acid deposition. The air quality assessment goes on to state 'Whilst the contribution above 1% for acid deposition cannot be dismissed as irrelevant it is important to recognise that the predicted environmental concentrations are such that exceedance of the critical load is limited to up to 33m from the road edge on the A3052, up to 17m from road edge on B3180 (South), and up to 5m from the road edge along the B3180 (North). The risk to the overall site integrity from acid deposition is therefore heavily influenced by the small spatial scale over which any exceedance is predicted to occur.

The spatial scale of the impact is an important factor when considering the impact to the ecological functioning of the affected area alongside key guidance from Natural England to consider impacts when air pollution is above the 1% critical level. Other important factors include:

- The European site's conservation objectives.
- Background pollution (review critical loads/levels; check for exceedance; consider trends).
  These have already been taken into account in the modelling work carried out (see Technical Report)
- The designated site in national context.
- The best available evidence on small incremental impacts from nitrogen deposition.
- Site survey information.
- National, regional or local initiatives or measures which can be relied upon to reduce background levels at the site.
  These have already been taken into account in the modelling work carried out (see Technical Report)
- Measures to avoid or reduce the harmful effects of the plan or project on site integrity.
- Any likely in-combination effects with other live plans and projects from other sources.
  This has already been evaluated and no likely in-combination effects were identified

When these aspects were considered in the HRA for the EDLP, the following areas were identified where impacts above the screening thresholds could potentially affect the integrity of the SAC/SPA,

1. North/South along the B3180, the modelling study indicates exceedances of the screening threshold within 400 m of the road (SSSI units 1, 6, 7, 9, 10, 11, 14). Consideration of wider factors indicates a potential likely significant effect on the integrity of the SAC/SPA in a much less extensive zone extending 17 metres from the B3180 (South) and 5 metres from the B3180 (North);
2. East/West along the A3052 Exeter Road, the modelling study indicates exceedances of the screening threshold within 600 m of the road (SSSI units 7,8). Consideration of wider factors indicates a potential likely significant effect on the integrity of the SAC/SPA in a much less extensive zone extending 33 metres from the A3052;
3. Bystock Nature Reserve & Withycombe Raleigh Common adjacent to B3179, the modelling study indicates exceedances of the screening threshold within 300 m of the road (SSSI units 15, 16). Wider factors should also be considered, which would indicate a much more restricted zone around this road likely to extend less than 15 metres from the road;
4. Dalditch Common, the modelling study indicates exceedances of the screening threshold within 150 m of the road (SSSI unit 13). Wider factors should also be considered, which would be expected to indicate a much more restricted zone around this road. This zone may extend less than 5 metres from the road, and there may in fact be no likely significant effect on the integrity of the site near this road.

3.3.1.6 Conclusions and implications for mitigation options development

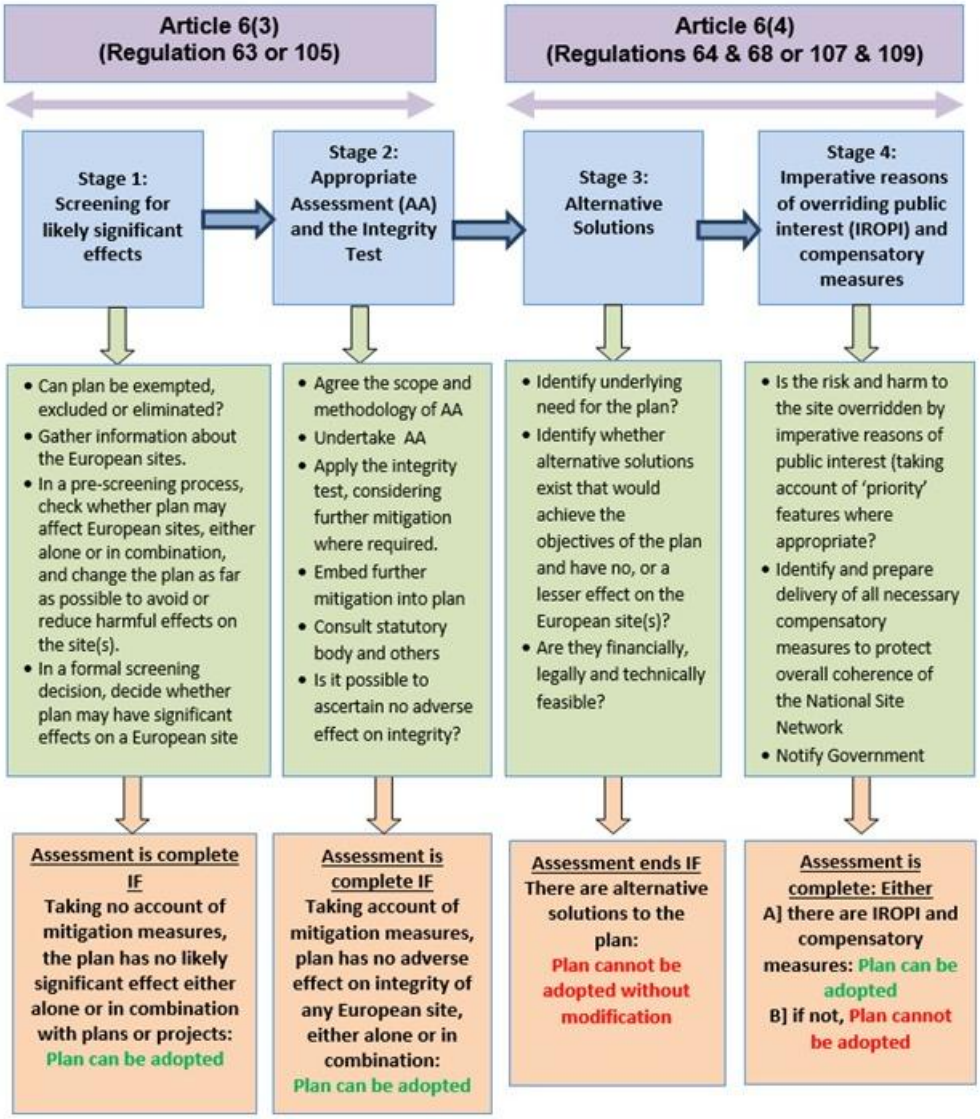
A preliminary review of the East Devon Local Plan 2020-2042: Key Diagram[16] identified that allocations at Sidmouth and Seaton, as well as service centres in East Budleigh, Woodbury and Otterton, Tipton St John are

[15] Habitats Regulation Assessment of the East Devon Local Plan 2020 to 2042 (Regulation 19 Draft Plan), Footprint Ecology (2025)
[16] East Devon Local Plan 2020-2042: Key Diagram, https://eastdevon.gov.uk/media/fuwhycqp/reg-19-key-diagram.pdf

likely to be the allocations that contribute the most traffic to roads passing through the SAC and SPA. This was developed further when considering potential mitigation measures in Section 4.3 of this report.

Figure 3-1 presents the four stage approach to the assessment of plans under the Habitats Regulations. HRA is an iterative process and its purpose is is to ensure that the strategy is compliant with the Habitats Regulations. As the identified mitigation measures do not fully address the adverse effect to the integrity of the site the HRA process cannot be concluded at this time.

Figure 3-1 Outline of the four stage approach to the assessment of plans under the Habitats Regulations. Extracted from The Habitats Regulations Assessment Handbook, DTA Publications Limited[17]

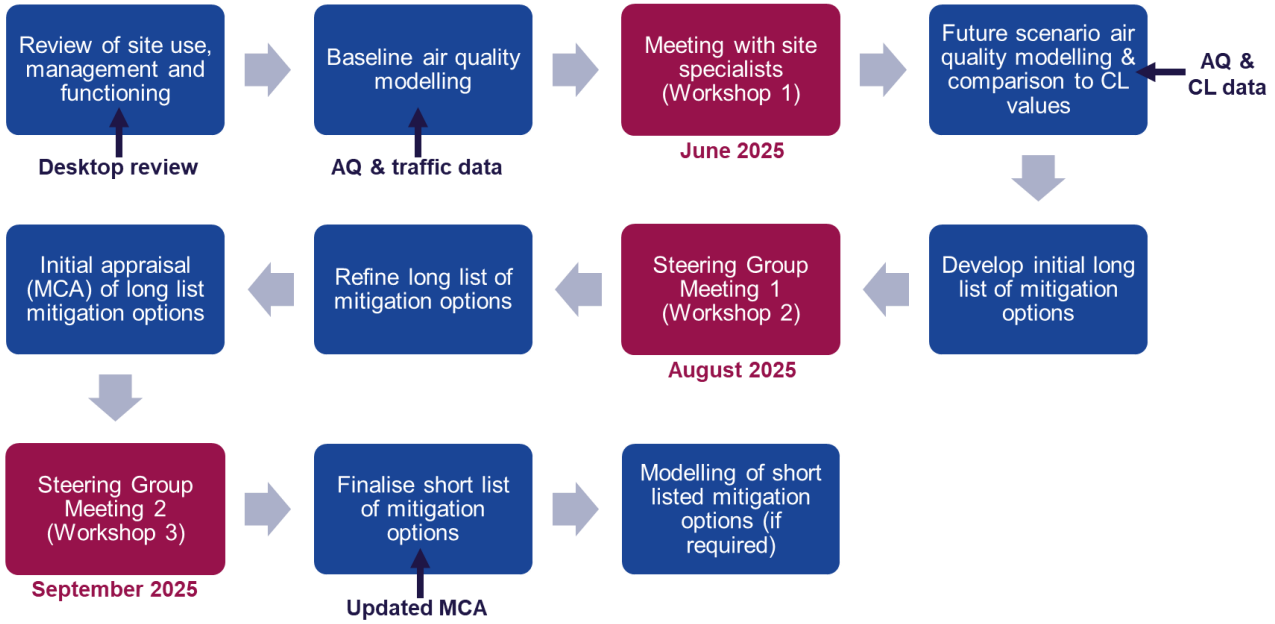


4. DEVELOPMENT OF MITIGATION OPTIONS

The process of developing options to mitigate the potential air pollution impact on the EDPH arising from road traffic associated with the EDLP, is presented in Figure 4-1 below. The process incorporated a desktop review, air quality modelling exercise, and extensive stakeholder engagement via three workshops. The evidence and outcomes leading to the shortlisting of mitigation options are provided in the sub-sections below.

[17] The Habitats Regulations Assessment Handbook, DTA Publications Limited, https://www.dtapublications.co.uk/handbook/

Figure 4-1 Overview of mitigation options development process



4.1 DESKTOP REVIEW

A wide range of potential options were available to EDDC and other stakeholders to mitigate air quality impacts on the East Devon Heaths sites. Therefore, at the onset of the measure development process, it is appropriate to consider all potential options. An initial long list of possible options to mitigate air quality impacts was developed, drawing on:

- Current and predicted air quality impacts on the EDPH, based on the air quality model results
- Current site management plans and future management aspirations
- Ricardo's recent work for Natural England to develop mitigation strategies and measures for the purposes of HRA, including guidance and tools to assist in identifying and designing effective mitigation
- Engagement with local stakeholders (both within the Council and externally) at a Site Specialists' Workshop in June 2025
- The expertise held by the assembled project team including our understanding of the powers held by local authorities, and options that were considered and/or implemented as part of other studies that we have been involved in
- Review of other Planning Authorities' air quality assessments and mitigation strategies
- The DTA Handbook for HRA
- Identification of Potential Remedies for Air Pollution (nitrogen) Impacts on Designated Sites (RAPIDS)
- National Highways
- Review of relevant scientific literature

In addition to providing a list of mitigation options, an effectiveness score was provided using information provided by RAPIDS. This effectiveness score uses the duration of mitigation, percent reduction, and range of mitigation to produce a score of Small, Moderate or Large. Where there are multiple levels of effectiveness, the influencing factors are listed. Not all mitigation options outlined are present in the RAPIDS Report. For these options, we have assigned a score using our own professional judgement.

4.2 STAKEHOLDER ENGAGEMENT

The following provides an overview of the three stakeholder engagement workshops carried out as part of the mitigation options development process:

Workshop 1 (online) – Site Management Specialists (17th June)

- **Aim:** discuss current site management and identify management challenges
- Management practices and challenges, current mitigation measures being implemented and their success, key details around visitor pressure and air pollution concerns
- Any identified changes in management that would align with improving site integrity and provide mitigation

Workshop 2 (online) – First Steering Group Meeting (14th August)

- **Aim:** introduce stakeholders and develop the long list of mitigation measures
- Current site use, management and functioning, local AQ situation, key contributing sources and the extent of the problem to be solved
- Existing mitigation actions and what they are likely to achieve
- Facilitated discussion on further ideas for mitigation options (including provisional long list of options), and complementary mitigation options
- Initial consideration of likely feasibility and acceptability of mitigation options

Workshop 3 (in person) – Second Steering Group Meeting (15th September)

- **Aim:** finalise the shortlist of mitigation measures
- Present the finalised long list of options for the consideration of the group
- Present results of options appraisal (MCA), discussion and refinement of scores by Steering Group
- Refine the long list to an agreed short list of options

The Steering Group included stakeholders from:

- East Devon District Council (including Planning Policy, Environmental Health, Environmental Protection, South East Devon Wildlife, National Landscape, Ecology)
- Devon County Council (including Transport, Ecology and Environment, Public Health, and Planning)
- Pebblebed Heaths Trust (part of Clinton Devon Estates)
- RSPB
- Natural England
- Devon Wildlife Trust

The key points from each workshop, and how they informed development of the mitigation options, are provided in the following sub-sections.

4.2.1 Site Specialists Workshop

This workshop was held on Tuesday 17th June 10:00-11:30 online via Teams. A smaller group of stakeholders from East Devon District Council, Pebblebed Heaths Trust (Clinton Devon Estates), RSPB and Natural England were invited to the workshop due to their involvement in current management of the site.

The main aims of the workshop were to discuss current site management (including mitigation measures) and identify any challenges, present the emerging results of the desktop review, and fill data gaps. The findings of the workshop were used to inform the review of the site's use, management and functioning, as well as development of the long and short lists of mitigation options and Workshops 2 and 3.

During the workshop, the desktop information was presented to the site specialists and verified, with stakeholders such as the Pebblebed Heaths Trust clarifying some points on existing management practices and potential additional datasets (e.g., biodiversity audits) that could feed into the analysis of the site. There was also discussion from Natural England on the importance of a thorough in-combination assessment and they raised the development of a Protected Site Strategy[18] in the South West for which they are aiming to determine air quality mitigation measures. This discussion highlighted that Natural England would prefer that any mitigation options developed are bespoke for the EDLP and specifically, the increase in road transport emissions resulting from the plan's development.

[18] Protected Site Strategies – Problems Shared, Natural England Blog, June 2025, https://naturalengland.blog.gov.uk/2025/06/16/protected-site-strategies-problems-shared/

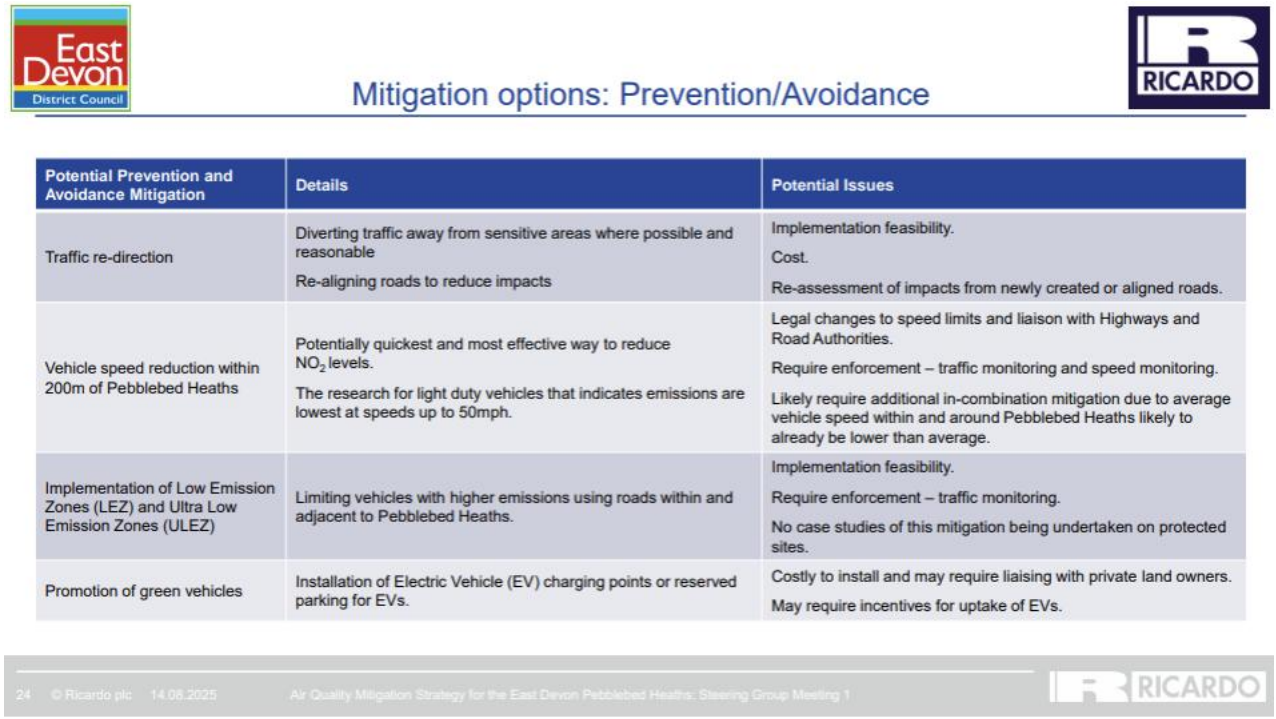
4.2.2 Steering Group Meeting 1

This workshop was held on Thursday 14th August 14:00-16:00 online via Teams, with the full Steering Group in attendance.

The aims of the workshop were to introduce the Steering Group members to one another, present the results of the desktop review and air quality modelling study, and discuss an initial long list of potential options for the mitigation of air quality impacts. The outcomes of this workshop were used develop/refine the long and short lists of mitigation options, and to inform the second Steering Group Meeting.

During the meeting, following presentations on the project background, desktop review and air quality model results, the initial list of mitigation options were presented within four categories and discussed in more detail (an example slide is shown below).

Figure 4-2 Example slide presenting a selection of mitigation options discussed as part of the 'initial long list'



Potential Prevention and Avoidance Mitigation	Details	Potential Issues
Traffic re-direction	Diverting traffic away from sensitive areas where possible and reasonable Re-aligning roads to reduce impacts	Implementation feasibility. Cost. Re-assessment of impacts from newly created or aligned roads.
Vehicle speed reduction within 200m of Pebblebed Heaths	Potentially quickest and most effective way to reduce NO_2 levels. The research for light duty vehicles that indicates emissions are lowest at speeds up to 50mph.	Legal changes to speed limits and liaison with Highways and Road Authorities. Require enforcement – traffic monitoring and speed monitoring. Likely require additional in-combination mitigation due to average vehicle speed within and around Pebblebed Heaths likely to already be lower than average.
Implementation of Low Emission Zones (LEZ) and Ultra Low Emission Zones (ULEZ)	Limiting vehicles with higher emissions using roads within and adjacent to Pebblebed Heaths.	Implementation feasibility. Require enforcement – traffic monitoring. No case studies of this mitigation being undertaken on protected sites.
Promotion of green vehicles	Installation of Electric Vehicle (EV) charging points or reserved parking for EVs.	Costly to install and may require liaising with private land owners. May require incentives for uptake of EVs.

The discussion of potential mitigation options centred around the feasibility of mitigation measures, as well as their likely impact on air pollution emissions (relating back to the mitigation hierarchy) and the ability to pass the integrity test. Stakeholders were also invited to share any other ideas for mitigation options in addition to those on the initial long list.

The key discussion points included:

- Any mitigation measures that do not fall within the 'prevention / avoidance' stage of the mitigation hierarchy cannot really be considered as mitigation for HRA. They should only be explored once all possible prevention / avoidance measures have been considered / implemented / ruled out with reasoning.
- Mitigation options need to be evaluated in terms of certainty.
- Some of the mitigation options were considered infeasible in the context of East Devon District and the EDPH. For example, traffic redirection and LEZ/ULEZ.
- Other actions raised by stakeholders that were not on the initial long list included improving public transport provision, and consideration of car park charging (as car parks are currently free).

Following Steering Group Meeting 1, the feedback provided during and after the meeting (including the points above) was considered and the initial long list of mitigation options was refined into a long list of seven options for further assessment.

An explanation of the mitigation hierarchy and the initial long list of mitigation options is presented below.

4.2.2.1 Initial long list of mitigation options

The Institute of Air Quality Management (IAQM) has set out a Position Statement on the mitigation of air quality impacts from development. It states that "*the appropriate mitigation solution for the operational air quality impact of any given individual general development scheme should be principle-led rather than specified by detailed prescription"*[19]. To reflect this approach, the David Tyldesley & Associates (DTA) 'mitigation hierarchy[20]' was followed to develop a mitigation scheme. The first step in the hierarchy is the avoidance of adverse impacts; then cancellation (or neutralisation) of effects, then to reduce impacts that cannot be avoided; and lastly compensate for any unavoidable impacts[21]. The mitigation hierarchy is detailed in Table 4-1 and is intended to ensure that the mitigation scheme is able to be sufficiently tested during Stages 2 to 4 of the HRA.

Table 4-1 Mitigation hierarchy

Mitigation stage	Description	Example
1. Prevention / avoidance	**Stop or prevent effects from occurring.**	**Re-locate developments outside the Zone of Influence.**
2. Cancellation	**Neutralise or fully negate the adverse nature of effects.**	**Allocate a rest period where recreation is prohibited at sensitive areas of a designated site.**
3. Reduction	**Reduce the amount of, degree size, or likelihood of effects.**	**Implement the use of barriers to reduce the likelihood of pollutants reaching sensitive habitats.**
4. Compensation[22]	**Offset the integrity of a designated site if effects cannot be fully reduced by the above three measures.**	**Habitat enhancement or creation of sensitive habitats outside the designated site boundary.**

A total of 18 potential mitigation options were included in the initial long list. Further detail regarding the long list mitigation methodology, the evidence base, and the mitigation measures themselves can be found in the Ricardo 2025 "*Long List Mitigation Summary"* Report.

The mitigation measures considered in the long list report are as follows:

- Traffic re-direction
- Speed reduction
- Low Emission Zones and Ultra Low Emission Zones
- Provisions of alternative recreational sites
- Advertisement of additional recreational sites
- In the inclusion of air pollution specific planning conditions in the planning process
- Promotion of green vehicles
- Providing additional road signage
- Temporary site closures
- Covering slurry tanks
- Increased land management at the designated sites
- Air quality barriers/screens

[19] IAQM Position Statement: Mitigation of Development Air Quality Impacts, Version 1.1, IAQM, June 2018. *Available at: https://iaqm.co.uk/text/position_statements/mitigation_of_development.pdf*

[20] Tyldesley, D., and Chapman C. (2013) The Habitat regulations Assessment Handbook: Chapter 5:4. Mitigation measures and the use of conditions – Defining mitigation and compensatory measures.

[21] Tyldesley, D., and Chapman C. (2013) The Habitat regulations Assessment Handbook: Chapter 5:4. Mitigation measures and the use of conditions – Defining mitigation and compensatory measures.

[22] Compensation should not be used as a mitigation option during stage 2 Appropriate Assessment. Compensation can only be explored where all other mitigation options re not sufficient to mitigation all adverse effects. Compensation must be agreed during stages 3 and 4 of the HRA process.

- Local Plan policy alteration
- Alteration of Local Plan allocations
- Offsite habitat creation[23]
- Removal of pollutants from other sources
- Site enhancement
- Monitoring of adverse effects[24]

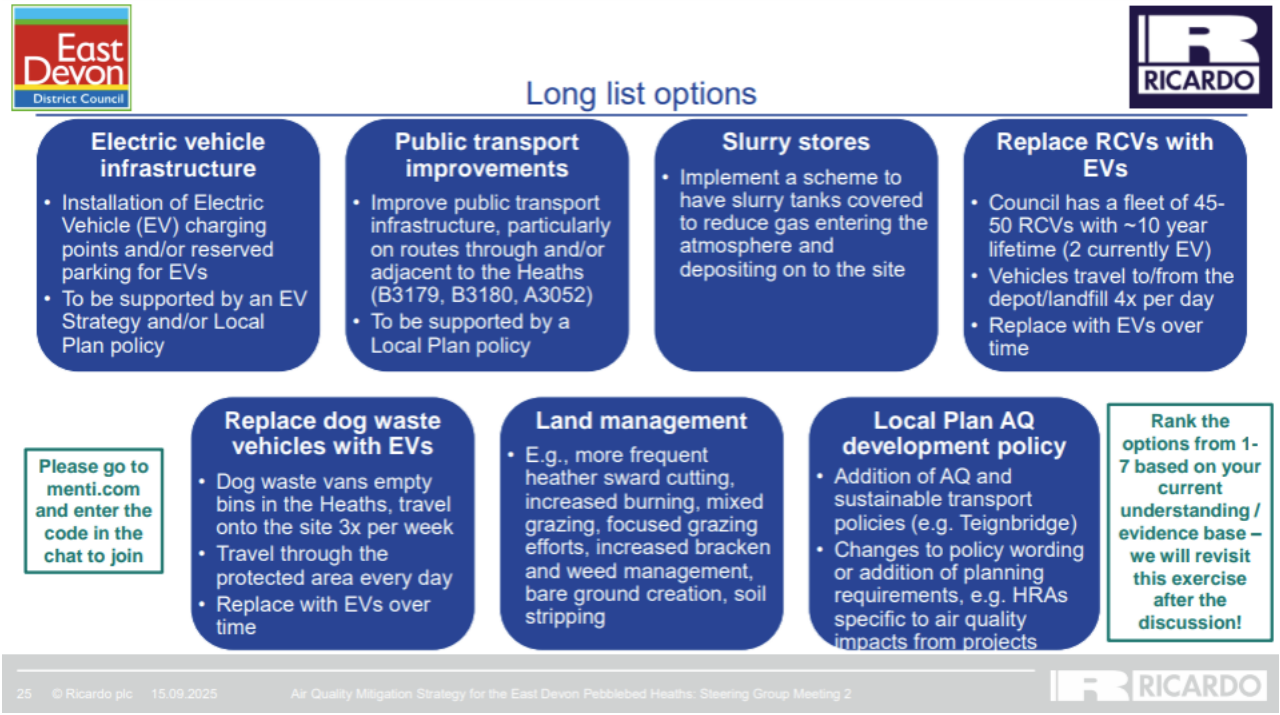
4.2.3 Steering Group Meeting 2

This workshop was held on Monday 15th September 14:00-16:00 in person at East Devon District Council's offices in Honiton, with a hybrid option online via Teams.

During the meeting, following presentations recapping the project background, desktop review, air quality assessment and discussion in Steering Group Meeting 1, further discussion was undertaken on each long list mitigation option with the aim of refining both the number of options to be taken forward in the mitigation strategy, and better defining the options themselves.

Prior to discussing the mitigation options in detail, the stakeholders were presented with an overview of the measures and asked to provide an initial ranking of the options using Mentimeter. At the end of the workshop, after the detailed discussion, participants were asked to repeat the ranking exercise to see whether opinions had changed. The results of the rankings are provided in Figure 4-6 alongside the multi-criteria analysis results also undertaken before and after the discussion.

Figure 4-3 Overview of the long list of mitigation options as provided during Steering Group Meeting 2



A multi-criteria analysis (MCA) was undertaken on the long list of mitigation options, to help identify the proposed short list of mitigation options. The draft MCA scoring, carried out by the project team, was circulated prior to Steering Group Meeting 2, and is summarised in Figure 4-4.

The criteria against which the long list options were assessed were as follows:

[23] Compensation is not a mitigation method that is applicable at Stage 2 Appropriate Assessment. This measure must go through all relevant derogation tests.

[24] Monitoring is not a suitable method of mitigation but can be used as an early warning system to determine the success of mitigation or alert the competent authority if additional mitigation measures are required.

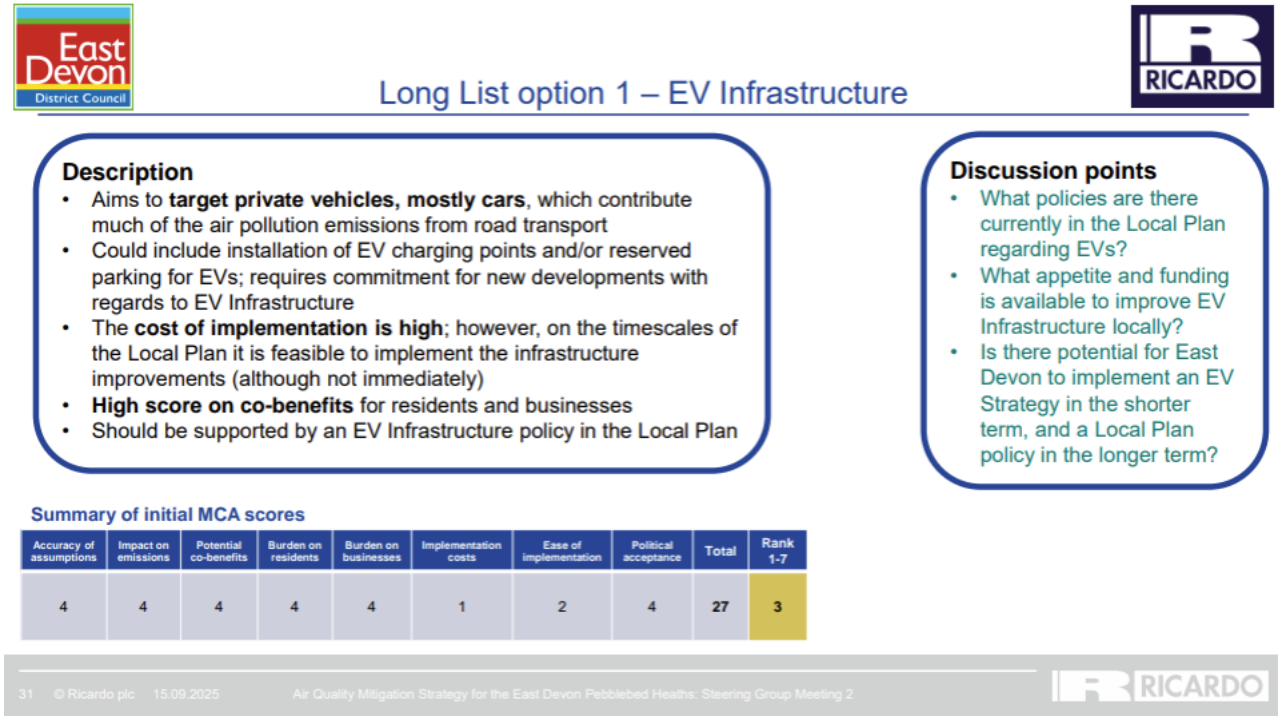
Accuracy of assumptions	Level of detail and accuracy in the assumptions are major factors in the robustness of the estimation of air quality impacts for the options
1 = general/high level assumptions, 5 = assumptions based on strong (local) evidence	
Impact on emissions	Considers the expected level of impact on air pollution emissions, based on available evidence
1 = low impact, 5 = high impact	
Potential co-benefits	Can include GHG/climate, reduction in congestion, noise, health benefits, improved travel options, etc.
1 = low potential/no. of co-benefits, 5 = high potential/no. of co-benefits	
Burden on residents	Could include financial impact, restrictions (e.g., on parking or travel options), complicated rules, etc.
1 = heavy burden, 5 = light burden	
Burden on businesses	Could include restrictions, complicated rules, other factors affecting business operations, etc.
1 = heavy burden, 5 = light burden	
Implementation costs	Considers the expected cost for the Council to implement, and likelihood of funding
1 = high cost, 5 = low cost	
Ease of implementation	Considers practicality of implementation, skills required, and timeline for implementation
1 = difficult to implement, 5 = easier to implement	
Political acceptance	Considers whether there is a risk to reputation, and how politically acceptable the option is
1 = low political acceptability, 5 = high political acceptability	

Figure 4-4 Initial MCA scoring for the long list of mitigation options, carried out by the project team prior to Steering Group Meeting 2

Option	Accuracy of assumptions	Impact on emissions	Potential co-benefits	Burden on residents	Burden on businesses	Implementation costs	Ease of implementation	Political acceptance	Total	Rank 1-7
Electric Vehicle Infrastructure	4	4	4	4	4	1	2	4	27	3
Public transport infrastructure improvements	2	3	4	4	5	2	3	4	27	3
Slurry stores	4	4	2	5	5	2	2	5	29	1
Replace Refuse Collection Vehicles with e-vehicles	3	2	2	4	4	3	3	4	25	7
Replace dog waste vehicles with e-vehicles	3	2	2	5	5	3	3	5	28	2
Land management	3	2	2	4	5	3	3	4	26	6
Local Plan Air Quality Development policy	3	5	3	4	4	3	2	3	27	3

For each of the seven long list measures, a facilitated discussion was undertaken to further define the measures, where possible, and consider the feasibility in more detail. An example of the slides used to facilitate the discussion is provided below. Alongside the discussion, the project team noted feedback and updated the MCA scoring accordingly in the background.

Figure 4-5 Example slide used to facilitate discussion on one of the long list mitigation options



Following discussion of all seven long list mitigation options, the MCA scores were updated and collated alongside the initial MCA scoring and the Mentimeter rankings before and after the discussion, as presented in Figure 4-6. Within the individual MCA criteria scores, red indicates a score was lowered during the discussion, and green indicates a score was raised during the discussion, thereby taking the stakeholder feedback into account.

Figure 4-6 shows that the MCA scores and rankings remained mixed before and after the discussion (although it should be noted that, overall, the MCA scores were very similar and so their ranking is not definitive). Slurry stores consistently ranked highest for the MCA scores and were ranked third via Mentimeter. The options targeting RCVs and dog waste vehicles, as well as land management, were ranked lower in the Mentimeter scoring but the latter two scored higher via the MCA. Local Plan Air Quality Development Policy scored relatively highly across both the Mentimeter and MCA scorings, and EV and Public Transport Infrastructure improvements both ranked relatively highly via Mentimeter, but lower on the MCA scoring (partly due to the cost and ease of implementation scores). The key feedback raised regarding each long list option is summarised in Table 4-2.

In summary, the Mentimeter and MCA ranking exercises, while useful to facilitate discussion around the mitigation options, did not provide a definitive answer as to which mitigation options are most suitable to mitigate air quality impacts on the EDPH. This reflects the complex nature of the situation and the difficulty in selecting air quality mitigation options which we can be confident would solve the problem, whilst also being feasible to implement.

Figure 4-6 Final MCA scoring and Mentimeter rankings for the long list of mitigation options, carried out by the Steering Group during Meeting 2

Option	Accuracy of assumptions	Impact on emissions	Potential co-benefits	Burden on residents	Burden on businesses	Implementation costs	Ease of implementation	Political acceptance	Total	Final MCA ranking	Initial MCA ranking	Initial Menti ranking	Final Menti ranking
Electric Vehicle Infrastructure	4	4	4	4	4	1	1	4	26	5	3	4	2
Public transport infrastructure improvements	2	2	4	4	5	2	3	4	26	5	3	1	4
Slurry stores	4	4	2	5	5	2	1	5	28	1	1	3	3
Replace Refuse Collection Vehicles with e-vehicles	3	2	2	4	4	3	2	4	24	7	7	5	5
Replace dog waste vehicles with e-vehicles	3	2	2	5	5	3	2	5	27	2	2	7	7
Land management	3	2	2	4	5	3	4	4	27	2	6	6	6
Local Plan Air Quality Development policy	3	5	3	4	4	3	2	3	27	2	3	2	1

Barriers/screens were another mitigation option discussed during the workshop. This measure was included in the initial long list of mitigation options but not taken forward to the refined long list. The general feedback in the workshop was that screens, whether natural (e.g., trees/bushes) or artificial, were not appropriate for the habitat site, primarily because the roads causing the problem run directly through the site. Therefore, there is no way to install such screens without damaging the site itself.

Following the conclusions of the options discussion in Steering Group Meeting 2, feedback was requested from Natural England on whether there were any mitigation options they could identify that had been missed during the mitigation options development process (noting that stakeholders had been offered multiple opportunities to suggest additional ideas for mitigation options throughout the engagement workshops and in-between workshops). Natural England confirmed that they had considered both online and offline, whether there were any other mitigation options that could practically be implemented and their impact on emissions quantified, and that they had not been able to identify any other mitigation options.

4.2.3.1 Refined long list of mitigation options

After Steering Group Workshop 1, the initial brainstorm of mitigation options were refined to a long list of seven options to undergo a Multi-Criteria Analysis (MCA) exercise. Some mitigation options present in the initial long list were not explored initially, but were included in the refined long list after discussions with stakeholders. These measures were:

- Public Transport Improvements
- Replacing refuse collection vehicles (RCVs) with electric vehicles (EVs)
- Replacing dog waste vehicles with EVs

The long list mitigation options were presented to stakeholders during the Steering Group Meeting 2. The final long list of mitigation options is presented in Table 4-2 below, including a summary of the feedback obtained at Steering Group Meeting 2, and available cost information.

Table 4-2 Long list of air quality mitigation options

Mitigation Option	Details	Information available on cost	Summary of feedback from Steering Group Meeting 2
Electric Vehicle infrastructure	Installation of Electric Vehicle (EV) charging points and/or reserved parking for EVs. To be supported by an EV Strategy and/or Local Plan policy.	Indicative capital and operating costs for EV charge points range from (lower limit) £1,000 for a Standard/Fast Off-Street charge point, up to (higher limit) around £170,000 for an Ultra Rapid charge point[25]. However, significant variability in grid connection costs are expected (e.g., subject to local conditions, distance of the connection and whether any upgrades are required). The Devon County Council EV Charging Strategy estimated that East Devon would require 345 fast and 17 rapid chargers to be installed by the public sector by 2030[26] (in addition to chargers installed by the private sector). The estimated cost for this may be in the region of £5 million for that number of fast chargers and £1.5 million for the rapid chargers.	The cost of implementation is high; however, on the timescales of the Local Plan it is feasible to implement the infrastructure improvements (although not immediately). High score on co-benefits. Concerns around where charging points could be located (not in/near the EDPH) and whether providing infrastructure would actually result in uptake by members of the public.
Public transport improvements	Improve public transport infrastructure, particularly on routes through and/or adjacent to the Heaths (B3179, B3180, A3052). To be supported by a Local Plan policy.	It is not possible to estimate the costs associated with public transport infrastructure improvements at this stage, as the mitigation option is not well-defined. In addition, it is very unlikely that this option will be taken forward as a mitigation measure for air quality improvement based on stakeholder feedback.	Ease of implementation is moderate as this is not straight forward. The cost of implementation is relatively high; however, would expect this to focus on changing the services available, rather than purchasing a fleet of new buses. High score on co-benefits. Concerns around whether the improvements would actually result in increased uptake – local insight thinks it unlikely.
Slurry stores	Implement a scheme to have slurry tanks covered to reduce gas entering the	There are a number of types of slurry store cover; impermeable covers include[27]:	Does not mitigate the emissions from road transport. Although this option is expected to perform well in terms of emissions reduction

[25] Table 7: Indicative capital and operating cost ranges for EVCPs by location type, Electric Vehicle Charging Strategy, Devon County Council / WSP, January 2024. https://democracy.devon.gov.uk/documents/s47564/Devon%20Electric%20Vehicle%20Charging%20Strategy%20-%20Final%20with%20appendix.pdf

[26] Table 11: Mid-range forecast, EVCPs requiring public sector intervention, by area, Electric Vehicle Charging Strategy, Devon County Council / WSP, January 2024. https://democracy.devon.gov.uk/documents/s47564/Devon%20Electric%20Vehicle%20Charging%20Strategy%20-%20Final%20with%20appendix.pdf

[27] Benefits of covering slurry stores, Agriculture and Horticulture Development Board, https://ahdb.org.uk/knowledge-library/benefits-of-covering-slurry-stores (accessed October 2025).

Mitigation Option	Details	Information available on cost	Summary of feedback from Steering Group Meeting 2
	atmosphere and depositing on to the site.	• For lagoons – fixed floating plastic membrane: moderate to high cost • For tanks – free-floating plastic cover: low to moderate cost • For tanks – fixed cover: high cost • Integral store and cover (bag): moderate cost There are grant contributions available from the UK Government, e.g., Round 2 of the Slurry Infrastructure Grant[28] and there is potential for additional funding to be sought from a pool contributed to by developers. In 2023, the National Farmers' Union indicated that grants for a self-supporting slurry store were available at £26.50 per square metre. For a typical store size of 100 square metres, this would correspond to approximately £3,000 per store.[29]	and accuracy of assumptions it will require landowners to agree to covering slurry tanks alongside identifying uncovered slurry tanks in closer proximity to EDPH. This option would need further work to define where slurry stores are and if they are already covered. Concerns on cost, accessing grants and uptake.
Replace RCVs with EVs	The Council has a fleet of 45-50 RCVs with ~10 year lifetime (2 currently EV). Vehicles travel to/from the depot/landfill 4x per day. Replace with EVs over time; 25 are due for replacement during 2026/27.	According to East Devon District Council, an EV RCV costs approximately £480,000; a diesel RCV costs approximately £185,000[30]. These costs would fall on the Council, with the potential to recoup some costs, e.g., via Council Tax, Community Infrastructure Levy (CIL), and developer contributions.	Only affect a small proportion of the vehicle fleet, but HGVs are highly polluting. On the timescale of the LP there is scope to replace a significant proportion of the fleets, over time (as lifetime ~10 years). Cost is a major factor. It would be hard, though not impossible, to guarantee the new RCVs are the ones travelling through the site. Issue of EV infrastructure for such vehicles.
Replace dog waste vehicles with EVs	Dog waste vans empty bins in the Heaths, travel onto the site 3x per week. Travel through the protected area every day.	According to East Devon District Council, these are "transit-style" vans. As of October 2025, a new Ford E-Transit can be purchased from around £45,000[31]. These costs would fall on the Council, with the potential to recoup some costs, e.g., via Council Tax Community Infrastructure Levy (CIL), and developer contributions..	Only affect a small proportion of the vehicle fleet, but the vans travel through the site itself. Issue of EV infrastructure for such vehicles. Unlikely to make a big difference to air quality concentrations.

[28] Item specification and grant contribution in round 2 of the Slurry Infrastructure grant, Rural Payments Agency, UK Government, updated July 2025, https://www.gov.uk/government/publications/slurry-infrastructure-grant-round-2-applicant-guidance/item-specification-and-grant-contribution

[29] https://www.nfuonline.com/updates-and-information/cut-costs-and-protect-the-environment-with-a-slurry-store-cover/

[30] Information provided during a teleconference with East Devon District Council, 5th September 2025.

[31] Ford E-Transit Custom, https://www.ford.co.uk/vans-and-pickups/e-transit-custom#intro (accessed October 2025).

Mitigation Option	Details	Information available on cost	Summary of feedback from Steering Group Meeting 2
	Replace with EVs over time.		
Land management	E.g., more frequent heather sward cutting, increased burning, mixed grazing, focused grazing efforts, increased bracken and weed management, bare ground creation, soil stripping.	It is not possible to estimate the costs associated with land management at this stage; further definition as to the exact management to be delivered, scope and frequency is required. This will need to be discussed and decided upon with the relevant stakeholders, for example Clinton Devon Estates and RSPB. For context, the National Audit Office estimated in 2008 that the cost of managing SSSIs in England between 2000 and 2008 was approximately £50 per hectare per year.[32] This may give a starting point for estimating potential costs of more intensive management. The costs for this mitigation option could be funded by Community Infrastructure Levy (CIL), and developer contributions.	Provides resilience to site degradation. Can be used to mitigate the effects of traffic pollution, although this measure would not remove transport emissions. Ease of implementation is lower as it would involve multiple land managers adjusting management types.
Local Plan Air Quality Development policy	Addition of AQ and sustainable transport policies (e.g. Teignbridge). Changes to policy wording addition of planning requirements, e.g. HRA specific to air quality impacts from projects.	It is not possible to estimate the costs associated with Local Plan Air Quality Development policy at this stage. However, it would be expected that the bulk of the costs for implementation of any conditions would fall on the developer. The Council would be required to invest the time to develop and enforce the policies, as well as engaging with the developer.	Difficult to assess at this stage, but scores lower on ease of implementation due to resources required to agree new planning policies. Scores high for impact on air pollution emissions as policy measures can be directly relevant to AQ impacts on Pebblebed Heaths, for example ensuring no project-level development goes ahead unless LSEs are ruled out (but needs better definition).

[32] https://www.nao.org.uk/reports/natural-englands-role-in-improving-sites-of-special-scientific-interest/

4.3 SHORTLISTING MITIGATION OPTIONS

The aim of the mitigation options development exercise was to refine all potential mitigation options to a short list of mitigation measures that would mitigate the quantified air quality impacts arising from increased road traffic as a result of the EDLP.

4.3.1 Short list of mitigation options that could be considered for further development and testing

The following mitigation options could be further refined to confirm practicality, and air dispersion modelling carried out to estimate their impact on the PC of the EDLP.

1. Electric Vehicle infrastructure – this mitigation option would need to further be developed into an actionable and committed plan (for example, an EV Strategy for East Devon District) and be supported by a Local Plan policy. From this, assumptions could be made regarding EV uptake and applied to the air quality model.

   Potential benefit: currently, approximately 5% of vehicles on the UK's roads are electric vehicles.[33] it is already known that an increasing proportion of vehicles will comprise EVs in future years, with the number of EVs expected to increase by a factor of five or more by 2030.[34] This leaves significant opportunity to reduce the impact of new development from this "business as usual" baseline. Reducing the proportion of ICE vehicles in vehicles used by residents of a new development in East Devon in 2030 from around 50% to around 10% of vehicle movements would result in a reduction in the air quality impact of the development at the SAC/SPA by approximately 80%.

2. Slurry stores – this mitigation option would need to be further investigated (i.e., suitable sites identified) and an actionable and committed plan developed. From this, assumptions regarding uptake and estimations as to the air pollution reduction could be made.

   Potential benefit: fitting a fixed impermeable cover on a slurry store results in a reduction in ammonia emissions of approximately 80%.[35] This can result in a significant reduction in ammonia levels, acid deposition and nitrogen deposition in the area surrounding the slurry store. Preliminary work carried out by Ricardo indicates that this may have a benefit in offsetting road vehicle ammonia emissions in the area within 1-2 km of a slurry store. This means that a network of slurry store improvements may be needed to secure benefits across the full area requiring mitigation described in Section 3.3.1.5. It would be necessary to identify and engage support from a number of farmers in order to successfully implement this mitigation measures. If this can be done, slurry store improvements would represent a potentially viable mitigation solution.

3. Replacing refuse collection vehicles (RCVs) with electric vehicles (EVs)

   Potential benefit: The Council operates a fleet of 45 to 50 RCVs. These travel through the SAC/SPA on most days of the week, transiting through the SAC/SPA area four times each day. Additionally, a smaller number of vehicles carry out refuse collections within the SAC/SPA itself. The lifetime of RCVs is typically ten years. The Council is currently trialling the use of electric recycling vehicles via two EV RCVs. Procuring electric RCVs in place of diesel-powered vehicles would result in an additional cost of approximately £300,000 per vehicle at 2025 prices. It may not be practicable to replace the entire fleet due to limitations on the electricity supply at the vehicle depot. However, if these difficulties could be overcome, potentially up to 200 heavy duty vehicle movements per day could be offset by funding replacement of diesel RCVs with electric vehicles. This would have a capital cost for purchase of electric RCVs of the order of £15 million over a 10 year period. If partly or fully deliverable under the EDLP, this could offset a significant proportion of the passenger vehicle movements forecast to arise from implementation of the plan.

4. Replacing dog waste vehicles with EVs

   Potential benefit: A fleet of vans is used to empty dog waste bins. These vehicles travel into and around the SAC/SPA three times per week, and travel through the SAC/SPA every day. Replacing these with electric vehicles would directly offset the impacts of the proposed development plan to a relatively

[33] https://www.rac.co.uk/drive/electric-cars/choosing/road-to-electric/

[34] https://www.local.gov.uk/electric-vehicles-whats-going-out-there

[35] CEH for Defra, "*Analysis of the impact to ammonia emissions of covers on slurry/digestate stores near nitrogen-sensitive protected habitats in England*", December 2021 https://nora.nerc.ac.uk/id/eprint/531497/

small extent – this could be estimated as offsetting the equivalent of approximately 10-20 car/van movements per day. This could be part of a mitigation plan for the EDLP.

5. Land management

   Potential benefit: More intensive land management in the areas affected by the proposed development plan can be an effective means of offsetting impacts due to increased nitrogen deposition. Nitrogen deposition tends to result in an increase in non-specialist species, and consequently a reduction in biodiversity as species which have adapted to thrive in the habitats which exist in the Pebblebed Heaths are crowded out. Physical removal of these species can ensure that the characteristic species of the SAC/SPA are able to thrive. Other measures such as management of water levels can also be effective in enabling protected species and habitats to improve.

6. Local Plan Air Quality Development policy

   A policy may be required to secure funding for mitigation measures to be implemented under the EDLP. This could be achieved through a levy linked to property numbers and/or forecast impact on the East Devon Pebblebed Heaths.

   A policy should be included in the Local Plan which requires all developers to carry out a screening assessment and (if required) an impact assessment in accordance with the Habitats Regulations to determine the impact of their development. Developers could potentially then have the option of either contributing to the funding of centrally managed mitigation measures, or designing and implementing their own project-level mitigation measures, provided these comply with the relevant requirements of HRA. Teignbridge Council has included this policy wording: "*Development that is likely to have a significant effect on a European Wildlife Site with respect to air quality, will not be permitted unless an Appropriate Assessment has ascertained that following mitigation there is no adverse effect on the integrity of the site.*" This policy could also encourage developers to consider potential impacts on the SAC/SPA at an early stage in their scheme design, ensuring that potential impacts and mitigation requirements can be minimised. The Teignbridge plan includes specific provisions in relation to agricultural development in this regard.

4.4 AMENDMENTS TO THE LOCAL PLAN

Based on the work carried out to date, it is possible that there may be no practicable options which would fully mitigate the impacts of the EDLP. This situation arises partially due to the unusually large contribution of the EDLP to air pollution at the SAC. This is because of the location of the European site centrally within the Council area, and the sensitivity of the European site to air pollution impacts.

5. CONCLUSIONS AND RECOMMENDATIONS

The aim of this report was to assess the potential air quality impacts of the East Devon Local Plan (EDLP) on the East Devon Pebblebed Heaths SAC and Devon Heaths SPA, and to outline mitigation strategies that will reduce effects from the Local Plan such that no adverse effect on the integrity of the SAC and SPA can be concluded.

Through consultation with stakeholders it has become clear that several mitigation options originally put forward are unlikely to be feasible in the local context, as described in Section 4.2.

Conclusion 1: During the assessment process we have determined that both East Devon Pebblebed Heaths SAC and East Devon Heaths SPA in their entirety have been screened out for airborne NOx due to forecasted concentrations resulting from the Local Plan being below the CL for both sites.

Conclusion 2: Two qualifying features for the SAC have been screened out for all pollutants as they are located outside of the modelled area of exceedance and therefore there will be no effect:

- Wet Atlantic heaths with *Erica tetralix*
- Southern damselfly

Conclusion 3: Several SSSI Units associated with the SAC and SPA have been screened out in their entirety for all pollutants due to distance from the key road links. These comprise Unit 002, 005, 012, 017, and 018. All qualifying features included in these Units have also been screened out from further assessment.

Conclusion 4: It was not possible to screen out a Likely Significant Effect for other units within the EDPH SAC and SPA. This is consistent with the findings of the Appropriate Assessment prepared for the emerging East Devon Local Plan[36].

Recommendation 1: It is recommended that further work be conducted in regard to traffic and emissions modelling to enable mitigation to be specified in more detail, and the appropriate assessment to be completed. This includes:

- Further development and refinement of strategic mitigation options for testing
    - EV Strategy / similar
    - Slurry stores
    - Land management
    - Implementation of electric Refuse Collection Vehicles across a proportion of the fleet to be deployed on routes crossing the EDPH.
    - Amended development policies
- Sensitivity testing to estimate the proportion of EDLP traffic that would need to be removed from the LP scenario in order to rule out LSE (i.e., to be below the 1% threshold of the minimum CLs for NH3, Ndep and Adep, or otherwise rule out LSE based on wider considerations)
- Review of species and habitat data for the areas where exceedances of the 1% screening threshold or LSE are forecast to occur, or completion of surveys if data is not available.

Conclusion 5: A range of mitigation measures are available at a strategic level as set out under Recommendation 1. We can be confident that these would reduce impacts on site integrity, but at present there is not complete certainty on the effectiveness of the strategic mitigation options to determine if these would be sufficient to avoid effects such that no adverse effects to site integrity will occur for the remaining features of the SAC and the SPA.

Recommendation 2: It is recommended that more detailed mitigation measure design and sensitivity testing should be carried out to determine whether the measures outlined above could be designed to be sufficient to avoid all Likely Significant Effects on the integrity of the EDPH SAC and SPA. If so, the EDLP should be updated to require and enable such measures to be integrated into the plan at a strategic level. For example, developers could be required to pay a levy per property to enable the Council to progressively implement strategic mitigation measures.

Recommendation 3: A principle of HRA is that a proposed plan or project must meet the requirements of the Habitats Regulations. Any identified impact on the integrity of a European site must be mitigated. Developers bringing forward schemes under the EDLP should be required to carry out a project-level Habitats Regulations Assessment to demonstrate the expected scale of impacts on the EDPH SAC and SPA. If mitigation of impacts is required, this should be deliverable on the basis of the plan-level mitigation plan developed for the EDLP. However, it would also be possible to allow for developers to develop alternative mitigation solutions which could be checked and (provided they are effective) implemented instead of the plan-level mitigation. If a developer is able to fully mitigate any increase in air pollution impacts at the habitat sites, this could be a means of waiving a requirement to contribute to strategic-level mitigation under Recommendation 2.

Recommendation 4: In the event that, following completion of Recommendation 2, the identified mitigation measures are found not to fully address the effects of the EDLP resulting in a residual adverse effect to integrity, the Local Plan will need to be amended to eliminate this residual adverse effect.

[36] Liley, D., Rush, E. Cork, C. & Chapman, C. (2025). Habitats Regulations Assessment of the East Devon Local Plan 202 to 2040 (Regulation 19 Draft Plan). At https://eastdevon.gov.uk/media/ya3hdlaq/csd-006-se-devon-local-plan-hra-reg-19-300125.pdf. Accessed October 2025