Proposed Battery Plant, IAMP Health Impact Assessment

Envision AESC UK Ltd

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1.0 Introduction

1.1 This Health Impact Assessment ('HIA') has been prepared by Lichfields on behalf of Envision AESC UK Ltd ('the applicant') to accompany a full planning application for the development of land to the west of International Drive and north of the A1290 at the International Advanced Manufacturing Park ('IAMP'), Washington.

1.2 This HIA has been prepared in accordance with Policy SP7 (Healthy and Safe Communities) of the '*Sunderland City Council Core Strategy and Development Plan 2015-2033*' (adopted January 2020) which requires the submission of a HIA as part of any application for large-scale development.

Purpose of the Assessment

1.3 The purpose of this HIA is to identify and assess any potential effects on the health of the population arising from the proposed development, and to recommend any intervention or mitigation measures required to minimise potential adverse effects on health. The scope of the assessment has been informed by:

- The vision and policies in the Sunderland Core Strategy and Development Plan, adopted in January 2020; and
- The Health Impact Assessment Developer Guidance published by Sunderland City Council in February 2020.

1.4 This HIA should be considered alongside the application submission including the Environmental Statement ('ES'), particularly the following chapters and supporting appendices:

- Air Quality;
- Noise;
- Climate Change;
- Landscape and Visual Impact;
- Water Resources;
- Transport; and
- Socio-Economic.

Report Structure

1.5 The remainder of this report is structured as follows:

- Section 2 sets out the site, surroundings, details of the proposed development and phasing;
- Section 3 identifies the assessment methodology;
- Section 4 identifies international, national and local policies relevant to the health context of the development;
- Section 5 sets out links between new development and health using determinants, pathways and impacts;
- Section 6 sets out the demographic, socio-economic and environmental context of the baseline area and benchmarks this against the Sunderland and regional averages; and
- Section 7 assesses the potential health impacts of the proposed development and identifies mitigation measures where appropriate.

2.0 The Proposed Development

2.1 Full planning permission is sought for the following development:

"Erection of industrial unit to be used for the manufacture of batteries for vehicles with ancillary office / welfare floorspace and associated infrastructure provision, accesses, parking, drainage and landscaping."

2.2 The proposed development consists of a single, three-storey industrial unit (Class B2) that is to house a battery manufacturing facility, comprising of two battery manufacturing plants separated by a central spine of offices. The facility will have an annual production capacity of 9 GWh.

2.3 The proposed facility will manufacture lithium-ion battery pouch cells and modules for electric vehicle (and other applications) via four production areas comprising of: electrode manufacture; cell production; formation and testing; and module assembly. The facility will employ approximately 1,000 staff consisting of circa 850 shift-based staff and circa 150 day-based (office) staff.

2.4 The proposed development will be of a modern design set within a landscaped plot, supported by necessary vehicle parking, loading/unloading bays and manoeuvring areas. The building itself will be operated over a 24-hour, 7-day week period and, as such, external operational areas will require to be lit during the hours of darkness to the minimum levels required for their safe operational use. The building will also incorporate the latest design specifications for energy efficiency and the use of sustainable resources.

Access and Parking

2.5 Access to the site will be from the A1290 via International Drive, whilst an emergency access will be provided onto the A1290 to the south. At the main site entrance, separate access lanes are provided for car and HGVs / delivery vehicles.

2.6 Once within the site, any cars would travel into the car park or to the drop off / pick up area near the main entrance to the building, whilst the HGVs / service vehicles would travel through a gatehouse and along an access route which travels around the eastern, southern and western sides of the buildings. Signage would be provided to direct vehicles to the correct areas. A separate access lane is provided for any emergency vehicles adjacent to the gatehouse.

2.7 The car park includes 685 spaces for staff and 40 spaces for visitors, which provides a total of 725 spaces. Of these 37 (5%) would be accessible located adjacent to the main entrance. The development also makes provision for 40 electric vehicle ('EV') points, with provision to increase to 80 if future demand requires

2.8 Provision for pedestrians and cyclists has been incorporated into the overall layout of the development area. A cycle shelter, which accommodates up to 80 bicycles, is proposed close to the main entrance to the building. The level of cycle parking provision will be continuously monitored and reviewed. If necessary, provision will be increased if demand begins to approach capacity.

2.9 The expectation is that the daily movement of construction staff will, wherever possible, take place via multi-occupancy trips using car sharing. Given the nature of the working patterns in the construction industry, these trips can be anticipated as occurring outside of the typical peak commuting periods.

Landscaping

2.10 The landscape strategy is to retain existing landscape assets and incorporate them into the development wherever possible. The landscaping scheme includes trees, hedgerows, shrubs, grasses and large swathes of wild flowers to provide seasonal interest, optimise biodiversity, enhance legibility and create an attractive and welcoming environment.

2.11 The landscaping proposals (as shown on Drawing 103 P03 - Proposed Landscape Plan) include the following:

- Screen planting of indigenous trees and shrubs around the perimeter of the site, including a percentage of grey poplar in addition to native woodland species. Some evergreen species (Scots pine, holly) will be included for year-round screening. The planting along the north-western boundary will have regard for the presence of the overhead electricity transmission line and will comprise relatively lower-growing species. National Grid clearance requirements will be adhered to;
- Existing hedging and tree planting that is retained on the perimeter of the site will be protected against damage during construction where possible and augmented with native hedgerow tree and shrub species;
- Verges within the development will be seeded with low maintenance grass mixes, to create a neat mown edge to roads and footpaths;
- Swales created within the site will be seeded with an appropriate wildflower / marginal species mix to increase biodiversity and enhance visual amenity;
- Screen planting (existing and as proposed) along the A1290 road frontage will be maintained;
- Feature tree and shrub planting will be used at the entrance to accentuate the sense of arrival and highlight the access point;
- Street furniture, lighting and signage will be co-ordinated across the development as a whole to create a unified style;
- Links will be provided for pedestrians and cyclists into the development area.
- To minimise light intrusion and reduce the prominence of the development at night, from surrounding areas, external lighting within the development will be fully cowled or else directed downwards / inwards, away from the perimeter of the site.

2.12 The landscaping scheme has been designed to provide a range of new ecological habitats to provide a biodiversity net gain, with the focus being on the planting of native species.

Drainage

2.13 The surface drainage approach for the proposed development relies upon underground storage tanks. The parking areas will use permeable paving with a porous sub-base and a network of collector drains in the sub-base to transfer the water percolating through the fill into the drain network that conveys the water to the storage block. Access roads will be drained by filter drains at the road's edges where layout permits or by gullies or kerb-drains where necessary. The combined flows will pass through a bypass oil separator prior to the storage. A similar arrangement will apply for the site entrance but on a smaller scale.

Sustainability

2.14 Energy efficiency and sustainability will form an intrinsic part of the development proposals.

2.15 The proposed development will be designed with a view of achieving a BREEAM 'Very Good' rating and hence the impacts of the project will be considered from a lifecycle perspective (i.e. from concept stage through to a fully constructed building). This includes driving sustainable building approaches and technologies.

2.16 Solar PV panels are proposed on the roof of the building and will be the primary means of reducing carbon emissions, along with Air Source Heat Pumps (ASHPs) in the office areas, improved fabric efficiency and potentially Waste Water Heat Recovery ('WWHR').

2.17 The energy demand from the proposed development will be split between regulated energy to operate the building facilities and unregulated energy which is used for running the manufacturing processes. There is a strong desire to decarbonise the production process but at present gas is the normal source of the heat that is required. If it can be demonstrated to be technically viable and affordable to do so, the plant will adopt an all-electric approach which will be much easier to decarbonise as the electric grid itself decarbonises. There will also be potential for additional onsite renewables to be added to the energy supply.

2.18 The mitigation proposed includes rooftop solar PV installation, which is expected to be rated at 6.2MWp, and the ASHPs that are proposed for the office spaces. These measures alone may be insufficient to meet the Future Building Standard so it is anticipated that enhanced fabric will be incorporated and WWHR may also be required to help deliver the target 27% emission reduction for regulated emissions. SBEM assessments will help determine this once final detail of internal design and fit out is confirmed. In all cases the minimum building regulations will be met or exceeded.

2.19 It is proposed that ongoing monitoring will take place through ongoing analysis of energy use statistics and ensuring mechanisms are in place to optimise use and increase efficiency wherever possible. In the unlikely event that regulated energy use is not performing as expected, remediatory action will be undertaken to ensure that these minimum standards are complied with, either through snagging improvements or through additional or alternative upgrade measures should this be necessary will be considered to ensure that, as a minimum, the proposed targets are met.

Hazardous Substances

Control of Major Accident Hazards (COMAH) Statement

2.20 Envision AESC is proposing to build a large-scale battery manufacturing facility and is reviewing the proposed factory's COMAH status within the Control of Major Accident Hazards Regulations 2015.

2.21 Due to the large volume of a Schedule 1 Part 1 material being processed as key component of the manufactured batteries it is expected, but still to be confirmed, that this site will be classed as an Upper Tier COMAH site. This means that a pre-construction and pre-operation safety report will have to be submitted prior to each stage and maintained throughout the lifetime of the plant.

2.22 These are extensive documents that review the safety of the proposed site that require in depth analysis of the site hazards.

2.23 As part of the preparation of the reports the following is currently planned:

- Review of design decisions and justification;
- Review of design standards for processing equipment;
- MAHAZID;

- Preparation of a MAPP document; and
- Environmental Risk Tolerability Assessment (CDOIF Assessment).

2.24 In addition to the above task, a selection of following (not extensive) list may be used to understand the risks and how to mitigate them:

- DSEAR Review;
- HAZIDs and HAZOPs;
- Layer of Protection Analysis (LOPA);
- Major Hazard Consequence Modelling; and
- QRA and analysis.

2.25 Envision AESC is aware of its responsibilities and will ensure that that the plant will use Best Available Techniques (BAT) and As Low as Reasonably Practical (ALARP) principle to ensure the safety of the site. The use of BAT and ALARP will be demonstrated through the safety report for the factory and will be maintained throughout the plant's operational lifetime.

2.26 Given that the scale and nature of the processes to be operated in the battery factory have no direct current comparator in the UK, Envision AESC is currently holding discussions with the Health and Safety Executive to agree the correct interpretation of the COMAH Regulations to the factory.

Environmental Permitting Regulations

2.27 The large-scale use of solvents in the manufacturing processes to be operated in the proposed battery factory will result in the Envision AESC development being subject to regulation under the Environmental Permitting (EP) Regulations (2016, as amended). A permit will be required under these regulations before the factory can commence operation.

2.28 The factory will be regulated as a Part A activity under the regulations, which means that the full range of impacts that the factory may have on the environment will need to be considered before the permit can be issued, including:

- Air quality impact;
- Water quality impact;
- Global warming potential;
- Waste production;
- Resource efficiency;
- Accident risk; and
- Noise and vibration impact.

2.29 Envision AESC is aware of its responsibilities and will ensure that that the plant will use Best Available Techniques (BAT) to minimise the factory's environmental impact in each of these areas. The use of BAT will be demonstrated as part of the permit application for the factory and will be maintained throughout the plant's operational lifetime.

2.30 Given that the scale and nature of the processes to be operated in the battery factory have no direct current comparator in the UK, Envision AESC is currently holding discussions with the Environment Agency to agree the correct interpretation of the EP Regulations for the factory. The discussions will affect who the responsible regulatory authority will be for the factory under

the EP Regulations (either the Environment Agency or the Local Authority) but the requirement to implement BAT processes and management techniques will not be affected.

2.31 The use and storage of any hazardous substances will be controlled through the environmental permitting regulations, which is a separate consenting regime and is separate from the planning process.

3.0 Assessment Methodology

3.1 There is no single best practice methodology for undertaking health impact assessments in England. However, Sunderland City Council ('the Council') has published guidance by way of the Health Impact Assessment Developer Guidance (February 2020), including a Health Impact Assessment Matrix. Therefore, this assessment combines Lichfields' own methodology which draws upon a number of respected approaches[1] to undertaking assessments of health impact from development with the HIA Matrix provided by the Council.

Definition of Health

3.2 The World Health Organisation ('WHO') has defined health as "*a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*". This definition demonstrates that health constitutes a wide range of interdependent fields rather than just biomedical conditions. For the purpose of this assessment, the WHO's definition of health has been adopted.

Stages of Assessment

3.3 The assessment methodology draws on best practice approaches and examples. Following a review of relevant policy and literature, the assessment identifies health determinants, pathways and outcomes linked to residential development based on the main components of the scheme and locational factors.

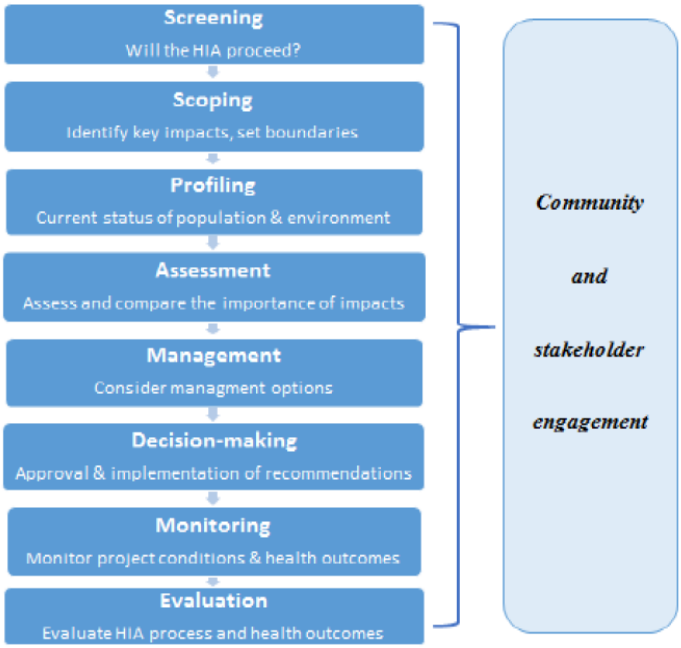
3.4 A baseline health profile is prepared of the defined local impact area taking account of demographic, health indicators, social-economic and environmental information using published data and other sources.

3.5 An assessment is then undertaken of the impacts of the proposed development on health outcomes within the general population of the baseline area as well as those within any identified priority groups. This assessment is based on the Council's HIA Matrix.

3.6 Figure 3.1 provides an outline methodology used to prepare the HIA:

[1] Including those by World Health Organization, London Healthy Urban Development Unit, Martin Burley, Public Health England and the Welsh Health Impact Assessment Support Unit.

Figure 3.1 HIA Process set out by SCC



Source: SCC Health Impact Assessment Developer Guidance, 2020

4.0 Policy and Literature Review

4.1 A review of the legislative and planning policy framework has been undertaken to identify the issues and policies relating specifically to health. This Section of the assessment summarises the key documents.

International Level

4.2 The WHO promotes the use of HIAs as a means of assessing the health impacts of policies, plans and projects in diverse economic sectors using quantitative, qualitative and participatory techniques. The WHO considers that a HIA is a practical approach used to judge the potential health effects of a policy, programme or project on a population, particularly on vulnerable or disadvantaged groups. Recommendations are produced for decision-makers and stakeholders, with the aim of maximising a proposal's positive health effects and minimising its negative health effects.

National Level

4.3 The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) which came into force in May 2017 now requires consideration as to whether the proposed development is likely to have significant effects on population and human health. If likely, population and human health must be considered as part of the Environmental Impact Assessment ('EIA') for a project.

4.4 Otherwise, there is no statutory requirement at a national level in the UK to undertake health impact assessments when submitting a planning application for development. Nevertheless, successive Governments have sought to endorse the importance of considering the consequence of policies, programmes or projects on health. This approach is now secured through national planning policy.

National Planning Policy Framework (2021)

4.5 The National Planning Policy Framework ('NPPF') (revised July 2021) sets out the overarching policy priorities for the planning system in England, against which local plans will be prepared and decisions made on planning applications. The document highlights the economic, social and environmental dimensions of sustainable development and the roles that planning has in each dimension.

4.6 Health is intrinsic to sustainable development and interacts with each of the three strands of sustainability. This is evidenced through links to planning and health being developed continually throughout the Framework, including policies on transport, high quality homes, good design, climate change and the natural environment. Chapter 8 'Promoting healthy and safe communities', in particular, sets out how planning policies and decisions should aim to achieve healthy, inclusive and safe places which promote social interaction, are safe and accessible and enable and support healthy lifestyles.

4.7 The importance of the links between planning and health is further underlined by Paragraph 8 of the Framework that sets out the social objective of the planning system:

"to support strong, vibrant and healthy communities…by fostering well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being".

4.8 The NPPF therefore adopts the World Health Organisation broad definition of health.

4.9 Paragraph 98 highlights the importance of access to a network of high-quality open spaces and opportunities for sport and physical activity for the health and well-being of communities, and can deliver wider benefits for nature and support efforts to address climate change.

4.10 Paragraph 124(e) states that planning policies and decisions should support development that takes account of the importance of securing well designed, attractive healthy places.

4.11 Paragraph 130(f) states that planning policies and decisions should create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users.

4.12 Paragraph 185(a) states that planning policies and decisions should avoid noise from development that would give rise to significant adverse impacts on health and the quality of life.

Planning Practice Guidance (2014)

4.13 The Planning Practice Guidance ('PPG') is an online "living" source of planning guidance issued by the Department for Communities and Local Government. The PPG sets out guidance across a range of planning issues, including health and wellbeing.

4.14 Paragraph 001 of the "Healthy and safe communities" section states that:

"The design and use of the built and natural environments, including green infrastructure are major determinants of health and wellbeing… Public health organisations, health service organisations, commissioners and providers, and local communities can use this guidance to help them work effectively with local planning authorities to promote healthy and inclusive communities and support appropriate health infrastructure" (Reference ID: 53-001-20190722).

4.15 Furthermore, paragraph 003 of the PPG sets out the Government's vision of a healthy place:

"A healthy place is one which supports and promotes healthy behaviours and environments and a reduction in health inequalities for people of all ages. It will provide the community with opportunities to improve their physical and mental health, and support community engagement and well-being. It is a place which is inclusive and promotes social interaction…It meets the needs of children and young people to grow and develop, as well as being adaptable to the needs of an increasingly elderly population… " (ID: 53-003-20191101).

Local Planning Policy

Sunderland Core Strategy and Development Plan

4.16 The Sunderland Core Strategy and Development Plan ('CSDP') 2015-2033 was adopted by the Council on 30th January 2020. The CSDP sets out a policy framework that will guide and shape future development in Sunderland and aims to assist in tackling health inequalities and deprivation within Sunderland.

4.17 Analysis underpinning the issues identified in the CSDP highlights that residents of Sunderland generally experience a higher level of social and economic disadvantage than the England average and that there is a strong link between high levels of socio-economic disadvantage and poor health. The Plan highlights that, based on the 2015 Indices of Deprivation, Sunderland was ranked as the 37th most deprived of the 326 local authorities in England. Life expectancy in Sunderland also lags behind the England average.

4.18 The CSDP recognises that Sunderland residents continue to follow unhealthy lifestyles when compared to England as a whole. It links this to a range of social, economic and environmental factors (known within HIAs as the determinants of health).

4.19 The CSDP recognises that our health is influenced by the environment we live in and the opportunities we have to exercise and access health and other facilities. It also recognises the impact that opportunities for work and recreation, attractive environments, personal relationships and feelings of safety and being part of a community can have on a wider sense of well-being.

4.20 The Spatial Vision 2033 sees Sunderland as a place that, among other aspirations, is healthy, safe and prosperous. To achieve this, the Strategic Priority 3 is to "*promote healthy lifestyles and ensuring the development of safe and inclusive communities, with facilities to meet daily needs that encourage social interaction and improve health & wellbeing for all*".

4.21 The Plan proposes for HIAs to be a requirement for large-scale developments (Strategic Policy SP7: Healthy and safe communities). These assessments will be required at the outset of developing planning proposals or strategies to ensure health impacts are considered.

4.22 Policy SP7 (Healthy and safe communities) states that the Council seeks to improve health and well-being in Sunderland by promoting and facilitating active and healthy lifestyles and by, inter alia, ensuring that new developments:

- Are age friendly, inclusive, safe, attractive and easily accessible on foot or by bicycle;
- Have a strong sense of place which encourages social interaction;
- Are designed to promote active travel and other physical activities through the arrangement of buildings, location of uses and access to open space;
- Promote improvements and enhance accessibility to the city's natural, built and historic environments;
- Do not have unacceptable adverse impacts upon amenity which cannot be adequately mitigated;
- Appropriately address any contaminated land to an acceptable level; and
- Submit a HIA as part of any application for large-scale development. Where significant adverse health impacts are identified, development should be resisted unless appropriate mitigation can be provided.

4.23 Policy HS1 (Quality of life and amenity) requires that development must demonstrate that it does not result in unacceptable adverse impacts which cannot be addressed through appropriate mitigation, arising through air quality, noise, dust, vibration, odour, emissions, land contamination and instability, illumination, run-off to protected waters or traffic. It states that development must ensure that the cumulative impact would not result in unacceptable adverse impacts on the local community and that development will not normally be supported where the existing neighbouring uses would unacceptably impact on the amenity of future occupants of the proposed development.

4.24 Policy HS2 (Noise-sensitive development) directs noise-sensitive development (including housing) to the most appropriate locations and seeks to protect against existing and proposed sources of noise.

4.25 Policy NE1 (Green and blue infrastructure) sets out the aim of the Council to maintain and improve the Green Infrastructure Network through enhancing, creating and managing multifunctional greenspaces and bluespaces that are well connected to each other and the wider countryside. The policy states that development should (inter alia):

- Incorporate existing and/or new green infrastructure features within their design and to improve accessibility to the surrounding area;
- Link walking and cycling routes to and through the corridors, where appropriate; and
- Include and/or enhancing formal and natural greenspace and bluespace provision.

4.26 Policy ST3 (Development and transport) states that development should provide safe and convenient access for all road users, in a way which would not compromise the free flow of traffic on the public highway, pedestrians or any other transport mode, including public transport and cycling; or exacerbate traffic congestion on the existing highway network or increase the risk of accidents or endanger the safety of road uses, including pedestrians, cyclists and other vulnerable road users. The policy also requires that development should incorporate pedestrian and cycle routes within and through the site, linking to the wider sustainable transport network.

4.27 Policy ID1 (Delivering Infrastructure) seeks to deliver new health and social infrastructure in accordance with priority needs.

4.28 Policy ID2 (Planning Obligations) seeks to secure planning contributions for infrastructures, including greenspace, play space, health, transport and education infrastructures.

IAMP Area Action Plan (AAP) 2017 to 2032 (adopted November 2017)

4.29 The AAP is a joint document prepared and adopted by Sunderland and South Tyneside local authorities which sets out the overall masterplan for the whole of the IAMP. A number of masterplan objectives are identified, of relevance for this assessment:

- Increase access to the site through sustainable transport networks;
- Optimise access and permeability for cyclists and pedestrians within the developed areas of the IAMP to encourage people to walk and cycle to work; and
- Providing opportunities for recreation enhancing connections to the Great North Forest Trail, increasing access to the countryside particularly for neighbouring areas, which will also increase opportunities for recreation which can benefit the user's health and well-being.

4.30 A range of policies are identified including:

- Policy D1 Masterplan Design;
- Policy D2 Public Realm; and
- Policy EN4 Amenity.

Other Considerations

Strategic Economic Plan

4.31 The North East Local Enterprise Partnership (NELEP) published The North East Strategic Economic Plan (SEP) in January 2019. The aim of the SEP is to focus regional and national action on closing performance gaps, delivering positive change and helping to rebalance the economy, and that by 2024, 70% of all new jobs created in the North East LEP area will be 'better' jobs.

4.32 The SEP identifies the IAMP as a whole as a crucial project to growing the sector, with the potential to generate around 5,000 new jobs. The plan also highlights that the wider Site is part of the North East Enterprise Zone and acknowledges the importance of supporting the attraction of new businesses and investment.

4.33 One of the targets of the SEP is to ensure that economic growth benefits the whole of the region by closing the gap in the employment rate for people aged 16-64 by 50% and reducing the gap in economic activity for people aged 16-64 by 100% by 2024 (Page 18). Further, it states that one of the LEP's deliverables is to provide intensive support for those most distant from the labour market because of disadvantage, poverty, and poor physical and mental health.

4.34 Relevant to this HIA, the LEP seeks to:

- Increase youth employment by creating and building pathways for the most vulnerable and disadvantaged young people into education, training and employment and helping young people understand why skills development is beneficial.
- Encourage the commission of holistic approaches that include employers and the integration of services so people facing health barriers are fit for work, have a clearer path to career progression, and that organisational culture prioritises wellbeing to reduce excessive workload and stress; and
- Reduce inactivity levels in our older workforce and help older employees develop new skills, encourage flexible employment and offer specific support to those out of the labour market.

4.35 Furthermore, the SEP sets out the ambition of improved greener and more sustainable transport options, including public transport, cycling and walking and highlights development of a regional walking and cycling strategy as a key initiative.

Joint Strategic Needs Assessment (not dated)

4.36 The Joint Strategic Needs Assessment (JSNA) led by Sunderland City Council identifies the current and future health and wellbeing needs in Sunderland. It provides the City Council and its partners with the information they require to agree priorities and delivery services that meets needs across Sunderland.

4.37 The JSNA recognises that the wider determinants of health and health behaviours are more important than healthcare in ensuring a healthy population. It identifies the current and future health and wellbeing needs in Sunderland which includes:

- Children and young people;
- Economy and the standard of living; and
- Physical inactivity.

4.38 All of these are of relevance and important to this assessment.

Sunderland's Joint Health and Wellbeing Strategy

4.39 The Sunderland Joint Health and Wellbeing Strategy forms a component of the Sunderland Joint Strategic Needs Assessment. It sets out the vision for the "*best possible health and wellbeing for Sunderland*" and for Sunderland to be "*a city where everyone is as healthy as they can be, people live longer, enjoy a good standard of wellbeing and we see a reduction in health inequalities*".

4.40 The Strategy establishes principles which will underpin the approach of health and wellbeing in Sunderland, which include, inter alia:

- Equity – providing access to excellent services dependent on need and preferences; and
- Addressing the factors that have a wider impact on health – education, housing, employment, environment.

Director for Public Health for Sunderland Annual Report (2019)

4.41 The Director for Public Health for Sunderland Annual Report (2019) presents an overview of the health of Sunderland's population with a particular focus on health inequalities and children and young people's health.

4.42 The report highlights that for both men and women, there is a life expectancy gap of 6 years between Sunderland and those areas of England with the highest life expectancy. Residents of Sunderland are also likely to spend more of their lives in ill-health, with both men and women living with illness or disability for up to 12 years more than in other areas of England.

4.43 One in five deaths in Sunderland is considered preventable, i.e. deaths caused by diseases (for example cancers and heart disease) known to be associated with behaviours such as smoking, regularly eating unhealthy foods, drinking too much alcohol and being physically inactive. Some of these behaviours start young; for example, by the time they leave primary school, 25% of children in Sunderland are obese, compared to 20% nationally.

4.44 The report highlights that resilience to unhealthy behaviours is normally associated with good living standards, better educational attainment, good quality employment and good mental well-being but that in Sunderland there are more people experiencing poverty and income deprivation than in other areas in England. People living in these conditions are more likely to take up unhealthy behaviours.

Conclusion

4.45 It is clear from the legislative, policy and strategy framework there is a need to consider the health implications of decisions that are made. The use of a HIA methodology is a tool to help the decision-makers and stakeholders in that process. Sunderland Council is currently promoting the use of HIA as part of major development proposals.

4.46 There are a number of local health policies and priorities for SCC and STC that are of direct relevance to the Proposed Development. These repeat a number of influences upon health that are widely accepted to be determinants of health that should be assessed within any HIA.

4.47 In summary these are considering whether the Proposed Development will:

a Be age friendly, inclusive, safe, attractive;

b Be accessible on foot or by bicycle and encourage active travel;

c Have a sense of place which encourages social interaction;

d Promote physical activity through the arrangement of buildings, location of uses and access to open space;

e Enhance accessibility to the city's natural, built and historic environments;

f Not have unacceptable adverse impacts upon amenity which cannot be adequately mitigated; and.

g Appropriately address any contaminated land to an acceptable level.

4.48 These recurring themes have been considered further in the determinants of health section of this HIA.

5.0 Health Determinants, Pathways and Outcomes

5.1 The HIA identifies links between new development and health using the determinants, pathways and outcomes approach. This analysis informs the identification of potential health impacts of the proposed development during the construction and operational phases of the development.

Health Determinants

5.2 Health determinants are factors that can influence health outcomes. Factors may be personal, social, cultural, economic and environmental. They include living and working conditions such as housing, employment, the environment, transport, education and access to services. The Dahlgren and Whitehead Health Map (1991) seeks to conceptualise these factors and are regularly summarised by Barton and Grant's 2006 health map at Figure 5.1. **Error! Reference source not found.**

Figure 5.1 Health Map

Source: Barton and Grant, 2010

Health Pathways

5.3 Health pathways are the factors that lead to a change in a determinant which creates the health outcome.

Health Outcomes

5.4 Health outcomes reflect the range of medical and general well-being impacts on a particular population. For the purpose of this assessment, health impacts are considered as potential changes in health outcomes arising from the proposed development.

5.5 Table 5.1 seeks to illustrate the relationship between health determinants, pathways and outcomes. The table seeks to give examples of pathways and outcomes relevant to the proposed development.

Table 5.1 Health Determinants, Pathways and Outcomes

Determinants	Pathways	Outcomes
Access to open space and nature: Access to good quality open space and nature promotes physical activity, fitness, positive mental well-being and healthy childhood development.	Mixed-use developments can incorporate open space for use by residents and possibly the general public. Design can improve access to existing open-space and nature by providing safe pedestrian and cycle routes to these spaces and thereby increase usage. Construction activities can cause temporary disruptions to access.	An increase in access and interaction with open-space and nature can lead to an improvement in mental health, well-being and stress reduction. It can lead to an improvement in physical fitness which in turn can help counteract obesity. It can also help reduce incidences of cardiovascular, diabetes, cancers and respiratory problems.
Air quality, noise and neighbourhood amenity: These factors can adversely affect health and well-being and life expectancy.	Construction activities can have short-term negative impacts on air quality and can increase noise and vibration levels particularly during demolition. There can be dust from site works. There can be increased levels of emissions associated with plant and construction traffic. The design and location of new development can impact on demand for car-borne travel, in turn affecting local air quality and noise. The design and layout of new buildings can determine the levels of insulation from noise and other amenity factors which affect the wellbeing of new residents and neighbours.	Poor air quality can reduce life expectancy by 7-8 months as a result of long-term exposure to small particles. Increases in air pollution can lead to increased cardiovascular and respiratory problems and mortality. Individuals, particularly at risk, also include those with existing respiratory problems and chronic illnesses such as asthma and chronic obstructive pulmonary disease. Impacts can be short-term and long-term. Fumes from diesel engines can also lead to higher incidences of cancer.
Accessibility and active travel: Walking and cycling are active forms of travel. Design measures that support active travel is a determining factor in increasing up-take. High quality, accessible new routes are important.	There can be disruption and reduced access to existing transport modes and routes from route closures and diversions during construction. Completed development can facilitate active travel options by improving infrastructure.	Limited and disrupted accessibility may reduce access to amenities and services, adversely affecting health and well-being. Disruption to pedestrian routes may result in a temporary increase in local traffic and congestion and higher risks of accidents. Increased levels of active travel and discouraging car use can have positive health impacts and act to reduce obesity.
Access to work and training: The construction and operational phases of mixed-use developments generate and support new employment opportunities. Employment is a positive factor for health providing financial security and contributing to self-esteem.	New employment opportunities can be generated by the construction phase as well as the operational phase for various social groups. Displacement of existing jobs.	People in employment experience better health. Employment is associated with financial security, social networks and status which are linked to better health, particularly mental health. Employment also reduces health inequalities experienced by low income families.
Minimising the use of resources: Reducing or minimising waste and encouraging recycling can improve human health.	Making the best use of existing land, incorporating recycling facilities, utilising sustainable design and construction and waste management could minimise the use of resources.	If waste is not managed correctly this can have negative health impacts, particularly for priority groups. Encouraging recycling can improve human health directly and indirectly by minimising environmental impact.
Climate change: Greenhouse Gases can contribute to climate change.	The construction phase can increase vehicle movements from construction vehicles. Embodied energy and carbon in construction materials can lead to an increase in fossil fuel use leading to an increase in Greenhouse Gases. Sustainable design measures can reduce impacts on the environment. Reducing car usage should help decrease Greenhouse Gases.	Climate change is an immediate and long-term threat to health and quality of life as a result of poorer air quality, prolonged heat waves and extremes of weather, such as more frequent storms, flooding, and drought events leading to, for example, increased fatalities, injury, infectious diseases, heat related deaths and incidences of skin cancer. In addition, the risks associated with energy and food

Determinants	Pathways	Outcomes
		security are likely to increase. Reduction in Greenhouse Gases will have a positive impact on health.

Source: HUDU/Planning for Health/Lichfields Analysis

6.0 Community Profile

6.1 This section provides an overview of the health and environmental context of the site area with regard to factors considered relevant to the proposed development.

Health-Related Indicators

6.2 As set out in Section 4.0, the Director for Public Health Annual Report (2019) highlights that one in five deaths in Sunderland is considered preventable, i.e. deaths caused by diseases (for example cancers and heart disease) known to be associated with behaviours such as smoking, regularly eating unhealthy foods, drinking too much alcohol and being physically inactive.

6.3 This is supported by data from Public Health England (PHE)[2] which benchmarks Sunderland against the North East and England averages. The data shows that:

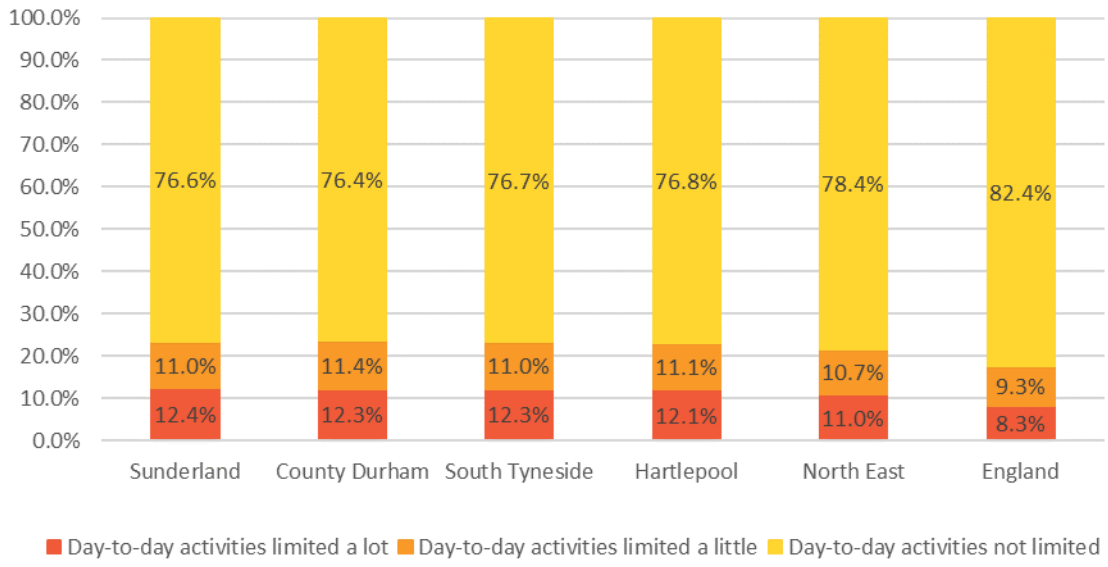
- Sunderland has a higher under 75 mortality rate from cardio-vascular diseases (89.0 per 100,000) compared to the North East (82.1 per 100,000) and England (70.4 per 100,000). Sunderland's rate is considered high compared to the regional and national benchmarks;
- Sunderland has a higher under 75 mortality rate from cancer (165.1 per 100,000) compared to the North East (149.0 per 100,000) and England (129.2 per 100,000). Sunderland's rate is considered high compared to the regional and national benchmarks;
- Sunderland performs poorly against the regional and national benchmarks with regard to physically active adults (59.5% in Sunderland compared to 64.9% in the North East and 67.2% nationally);
- The percentage of adults classified as overweight or obese is 66.0% in Sunderland, compared to 64.9% across the North East and 62.3% nationally. PHE consider Sunderland to be comparable to the North East and England;
- However, the percentage of obesity in year 6 aged children is 24.8%, which is high compared to the regional (22.8%) and national (20.2%) benchmarks;
- The percentage of smokers in Sunderland is 18.3%, compared to 15.2% across the North East and 10.4% nationally. The figure for Sunderland is considered high compared to the regional and national averages; and
- Sunderland has a suicide rate of 12.4 per 100,000 compared to North East (11.6 per 100,000) or England (10.1 per 100,000). However, PHE considered Sunderland to be similar to the national and regional benchmarks.

6.4 As shown in Figure 6.1, the proportion of people with a disability or long-term health problem which limits their day-to-day activities a lot is comparable across these four local authorities, between 76% and 77%. Similarly, approximately 11% of residents in each of the four local authorities reported that they had a disability or long-term health condition which limited their day-to-day activities a little.

6.5 These figures indicate that across the four local authorities from which the majority of Eye Infirmary patients come, there is a slightly higher proportion of people with disabilities or long-term health problems which limit their day-to-day than the regional average. The proportion of people with a long-term health problem or disability across England is lower than the four LPAs or the North East.

[2] Source Public Health England. Public Health Profiles. 2020. https://fingertips.phe.org.uk © Crown copyright 2020 Accessed 05.01.2021

Figure 6.1 Residents with a long-term health problem or disability which limits their day-to-day activities



Source: Census 2011/Lichfields analysis

Deprivation

6.6 Deprivation is measured by the Index of Multiple Deprivation (IMD), which uses a series of data to rank areas across seven domains that range from income to health. These categories combined together produce a multiple deprivation score for each local area.

6.7 Sunderland local authority area is ranked within the top 20% most deprived areas in England. According to the IMD, of the 317 local authorities in England, Sunderland is ranked the 33rd most deprived[3].

Air

6.8 The 2019 Air Quality Annual Status Report for Sunderland states that "*Health based objectives known as the Air Quality Objectives are being met across the City and we have seen a general decline in some of the pollutants measured. We have not declared any Air Quality Management Areas in our City*."[4]

6.9 An Air Quality Screening Assessment has been prepared as part of the planning application to consider the potential air quality effects during both the construction and operational phases of the proposed development. The details of assessment are included in the Air Quality Chapter of the ES.

6.10 During the construction phase, the assessment has identified that the risk of dust soiling and human health effects is not negligible for all the activities and therefore site-specific mitigation will need to be implemented to ensure dust effects from these activities will not be significant. . Best practice dust control measures are recommended and will be set out in more detail within a Dust Management Plan, prepared as part of a Construction Environmental Management Plan, which can be secured by way of planning condition. This will substantially reduce the potential for nuisance dust and particulate matter to be generated

[3] Indices of Multiple Deprivation 2019, Rank of average rank.
[4] https://www.sunderland.gov.uk/media/22045/Air-Quality-Report-2019/pdf/ASR_Sunderland_2019.pdf?m=637097748250170000

6.11 A qualitative review of the potential air quality effects during the operational phase of the development has been undertaken, which indicates that the pollutant concentrations in the local area are well below the air quality objectives and limit values. A negligible (not significant) effect is predicted, and no significant cumulative impacts on air quality have been identified.

Noise

6.12 The Noise Chapter of the ES assesses the likely significant effects of the proposed development on the nearest Existing Sensitive Receptors at North Moor Farm. Potential noise impacts are assessed for the construction and operational phases of development using a combination of measured and predicted noise levels.

6.13 The baseline noise levels at North Moor Farm have been taken from those identified within the previous IAMP ONE application. Baseline data was used to establish potential threshold for construction noise which were compared to predictions of construction noise levels.

6.14 The effects of noise during construction was found to be not significant and no mitigation measures are required. The use of best practice during construction should, however, be employed in order to reduce the level of effect of potential impacts and examples have been provided.

6.15 In the absence of detailed information, indicative noise predictions have been carried out for the potential noise sources during the operational phase. The predicted noise levels at North Moor Farm were compared to background levels. The effects of noise during operation is predicted to be below background levels and not significant. Indicative mitigation measures are suggested and will be reviewed at the detailed design stage. To provide mitigation and ensure that there are no harmful effects on the amenity of the residents of North Moor Farm, a 1m high acoustic barrier is proposed. This will be situated inside the proposed landscaping belt along the north western boundary. Once the landscaping grows, it will screen the barrier from views from North Moor Farm and the Green Belt.

6.16 No cumulative noise impacts have been identified.

Traffic Collisions

6.17 Collision data has been sourced from the Tyne & Wear Traffic and Accident Data Unit (TADU), which compiles road accident data on behalf of the Tyne and Wear Local Authorities.

6.18 A review of the collision records has been undertaken to identify patterns of collision types that may be attributed to issues from existing road design, layout or construction. The pattern of collisions and collision details are discussed in greater detail within this chapter.

6.19 Within the 5-year study period, it is seen that there were 168 collisions recorded, of which 138 were considered to be slight in severity, 28 were serious and two collisions resulted in a fatality. Both of the fatal collisions (one located on the A1290 and the other on the A19) can both be attributed to driver error, such as speeding or failing to look.

6.20 The results are demonstrated that cars represented 67% of the recorded collisions and 32% involved goods vehicles.

6.21 There were 11 collisions involving cyclists and one involving a pedestrian.

6.22 The collision records do not indicate any particular road safety concerns. It should be noted that road safety along the A19 is expected to improve with the new layouts at Testo's and Downhill Lane junction improving operational performance and provisions for Non-Motorised Users.

Crime

6.23 Public Health England data[5] indicate that the rate of hospital admissions for violence is 71.8 per 100,000 in Sunderland, which performs worse than the regional (62.0 per 100,000) or national (44.9 per 100,000) benchmarks.

Flooding Risk Assessment

6.24 A Flood Risk Assessment and Drainage Strategy has been prepared by Systra to accompany the planning application. The assessment develops a full appreciation of possible flood risks to the proposed development and other properties in the surrounding areas that may be affected as a result. It also identifies suitable strategies for managing the drainage needs of the proposed development in accordance with national planning requirements.

6.25 The assessment sets out that the application site lies almost entirely within Flood Zone 1 (areas with less than 0.1% chance of flooding every year). The EA's indicative mapping for surface flooding across the IAMP development indicates that the application site is of very low risk of surface water flooding and overall, surface flooding is considered to present a very low risk, with isolated areas of the site known to be prone to ponding or waterlogging in prolonged wet weather at present. There is also no material risk from groundwater identified within the wider IAMP ONE Phase 2 site boundary. Groundwater is therefore not considered to pose any meaningful risk of flooding to the site and has been identified as low risk.

6.26 The proposed development is to be elevated compared with existing ground levels across its lower northern section so that the predicted overland flow route from increasing fluvial flood risk is impeded or blocked outright to protect both the development and the Nissan plant. The floor levels will be set at 600mm above the design flood level (35.65mOD) based on the vulnerability classification. Post development, the risk of external surface flooding affecting the site is minimal due to the absence of large paved areas surrounding the proposed development to shed run off quickly onto the site. The proposed development also creates significant areas of paved surface and building roofs, which significantly increases the rate of runoff from the site. The surface drainage approach for this scheme will rely upon underground storage tanks, porous paving for parking areas, filter drains for internal roads and proprietary oil separators in order to achieve the required train of treatments for the proposed outfalls.

Climate Change

6.27 The Climate Change Chapter of the ES reports the likely significant effects of the proposed development with respect to climate change and risk mitigation in the context of the site, surrounding area and the wider environment.

6.28 The proposed development's absolute emissions with embedded mitigation were modelled to be significantly below the baseline emissions (from a 'typical' similar development) which is a positive major beneficial impact. The emission saving achieved over the 60-year project lifetime was reduced when taking into account the decarbonisation of the national grid which negates any additional savings over a longer timeframe. The applicant is considering measures that exceed the minimum standards required by Building Regulations as well as meeting the Future Buildings Standard. Overall, this represents a positive impact which is Significant.

[5] Source Public Health England. Public Health Profiles. 2020. https://fingertips.phe.org.uk © Crown copyright 2020 Accessed 04.12.2020

Consultation

6.29 The applicant has been keen to ensure that the Government's objectives for community consultation, and also those of SCC, have been embraced in their proposals.

6.30 In accordance with the updated legislation and PPG, a leaflet drop was carried out on 8 July 2021 to publicise the proposed development. Around 2,800 leaflets were distributed amongst businesses and households located within a defined consultation zone. The leaflet showcased details of the proposed development and included a questionnaire for recipients to complete and return via free-post. The questionnaire comprised a series of structured questions and included a comments box to allow respondents to submit detailed feedback.

6.31 Recipients of the consultation leaflet were advised to submit their questionnaire responses and any other comments by 19 July 2021, at which point the consultation engagement exercised concluded. In total, 33 respondents submitted a questionnaire via free-post.

Baseline Priority Groups

6.32 In light of the findings above, the HIA will highlight the possible impacts of development to the general population of the area but also to:

- Residents of the surrounding area – who are most likely to be impacted by air quality and noise generated by the proposed development, temporary closure of routes which enable active travel, and loss of amenity;
- Unemployed people within the local area who may benefit from job and training opportunities generated by the development (IMD data show that income levels are relatively low in the baseline area);
- Those with health conditions which are exacerbated by risk behaviours (highlighted in the Director of Public Health Sunderland Annual Report), including conditions worsened by physical inactivity; and
- Those with health conditions that would be affected by a deterioration in air quality related to the development (such as those with existing heart and lung conditions). This priority group was recommended for consideration during consultation with Public Health Specialists at the Council.

7.0 Assessment

7.1 The following section assesses the potential impacts of the proposed development, using the HIA Matrix provided by the Council. The criteria from the Council's HIA Matrix which have been scoped into this assessment are set out below:

1 Population;

2 Access to open spaces and nature;

3 Accessibility and active travel;

4 Air quality, noise and neighbourhood amenity;

5 Crime reduction and community safety;

6 Access to work and training;

7 Climate Change; and

8 Minimising use of resources.

7.2 Tables 7.1 to 7.8 overleaf show the impacts anticipated to be directly impacted by the proposed development in relation to each of the above criterion.

Table 7.1: Population

Population				
Assessment Criteria	**Relevant**	**Details/Evidence**	**Potential health impact**	**Recommended mitigation or enhancement actions**
Could population groups be affected differentially by the proposal?	Yes	Public Health England encourage us to take regular activity such walking and where possible to integrate this into daily life. During construction, there may be disruption to existing footpath on International Drive when the new access is created into the site. However, as there is an alternative footpath on the opposite side of International Drive, such works are not considered to have any adverse effects and will not reduce people's opportunities for active travel (e.g. walking and cycling). It is also not considered that such works would have an adverse impact on those with health conditions (such as heart disease or obesity) that are exacerbated by inactivity.	Neutral	
Disabled people (including includes physical disability, learning disability and sensory impairment)		In terms of the building design, level access will be provided into the building and dedicated wheelchair-accessible parking spaces are proposed near to the main entrance into the building. External surfaces will be chosen and lit to facilitate easy and safe access. The buildings will be designed and built out to comply with Building Regulations Document Part M.	Neutral	

People with long term medical conditions and mental health problems	Yes	**Transport** The Access and Transport Chapter of the ES identifies that the proposed development could have a minor adverse impact on driver stress, a minor to moderate adverse impact on pedestrian and cycle amenity and a minor to major adverse impact on fear and intimidation as a result of increased queuing and changes in traffic flows (including increased HGV movements) along the A1290 from Glover Road to the A1290/A19 Downhill Lane junction. These impacts could have a greater effect on those with mental health problems. In terms of the major adverse impact on fear and intimidation, a key factor is the proximity of vehicles to people or the lack of protection caused by factors such as narrow pavement widths. In this case, given that a 3m wide shared use footway / cycleway is available offering a safe route for users, the reported 'major adverse impact' is considered an unfair representation of the conditions on the identified link. A range of mitigation measures are proposed including the management of construction traffic through a Construction Traffic Management Plan, the management of shift patterns so that they are off-set from Nissan's shift change over times through a Highways Operational Management Plan, the implementation of road improvements works at the A1290/A19 Downhill Lane junction and the management of the number of staff travelling in the private car and single occupancy journeys through a Travel Plan, with the aim of encouraging staff to travel by more sustainable modes. **Air Quality** Sunderland has relatively low levels of physical activity and high mortality rates from cardio-vascular disease, which can be exacerbated by physical inactivity. People living near or working on the site with conditions that might be affected by any deterioration in air quality (including heart and lung conditions) should therefore be considered. The Air Quality Chapter of the ES identifies that pollutant concentrations in the local area are well below the air quality objectives and limit values. This assessment identified that the risk of dust soiling and human health effects is not negligible for all the activities and therefore site-specific mitigation is required. A Dust Management Plan is proposed which will set out a range of measures for controlling dust. This document will form part of the Construction Environmental Management Plan (CEMP) and can be secured via a planning condition. With the implementation of the measures set out in the DMP, the residual effects are expected to be Negligible and hence there are not considered to be any harmful effects on those with long-term medical conditions.	Minor to Major Adverse (permanent)	The recommended mitigation is a Construction Traffic Management Plan, Highways Operational Management Plan, Travel Plan and a Dust Management Plan. With the implementation of the traffic measures, it is considered that there will not be any significant residual effects.

Minority ethnic people (includes Gypsy/ Travellers, non-English speakers). Refugees & asylum seekers. People with different religions or beliefs	N/A	It is not anticipated that these population groups will be differentially impacted by the proposed development so these are considered within the general population.	Neutral	
Vulnerable groups such as Lesbian, gay, bisexual. People living in poverty/people of low income. Carers (include parents, especially lone parents; and elderly carers)	Yes	The area is characterised by relatively high levels of deprivation, including with regard to incomes. The proposed development will generate jobs and training opportunities which may help to boost incomes within the local population.	Positive (permanent)	

Table 7.2: Access to Open Spaces and Nature

Access to Open Spaces and Nature				
Assessment Criteria	**Relevant**	**Details/Evidence**	**Potential health impact**	**Recommended mitigation or enhancement actions**
Does the proposal retain and enhance existing open and natural spaces?	Yes	The application site primarily consists of arable agricultural land and so there will inevitably be an initial loss of existing open and natural spaces. The landscaping scheme includes trees, hedgerows, shrubs, grasses and large swathes of wild flowers to provide seasonal interest, optimise biodiversity, enhance legibility and create an attractive and welcoming environment. The proposed development includes various on-site ecological enhancement measures to enhance the site's ecology and biodiversity. This includes extensive native tree planting; a native buffer shrub planting mix; a native hedge mix; a native wetland shrub mix; and a native marginal planting mix. An ornamental shrub mix closer to the buildings will provide further habitat for wildlife, as well as year-round visual amenity for the development. The masterplan also includes areas of green space and grass which can be used by staff for recreational use during work breaks. Furthermore, in order to provide further mitigation and ensure biodiversity net gain, enhancements are proposed to the IAMP ONE Ecological and Landscape Mitigation Area ('ELMA') which lies to the north and northwest of the application site. ELMA works have already been delivered as part of the 2018 IAMP ONE planning permission. The proposals as part of the current application are to undertake further habitat enhancements to this ELMA. The ELMA mitigation strategy proposes to establish a wetland mosaic, wet woodland, neutral grassland and new hedgerows, scrub and woodland. Overall, the ELMA proposals will deliver a net gain for biodiversity.	Positive (permanent)	
In areas of deficiency, does the proposal provide new open or natural space, or improve access to existing spaces?	Yes	As advised above, the proposals are to deliver on-site and off-site ecological mitigation which will ensure biodiversity net gain. The masterplan also includes areas of green space and grassing which can be used by staff for recreational use during work breaks.	Positive (permanent)	

Does the proposal provide a range of play spaces for children and young people?	N/A		N/A	
Are the open and natural spaces welcoming and safe and accessible for all?	Yes	As noted above, the masterplan includes areas of green space and grass which may be used by staff to take strolls and get fresh air during work breaks. The open spaces have been designed to be open and natural, as well as being safe and accessible to all.	Positive (permanent)	
Does the proposal set out how new open space will be managed and maintained?	Yes	Any landscaping and open spaces within Envision's site boundary will be managed and maintained by Envision. The ELMA works will be managed by a management company appointed by the IAMP LLP.	Neutral	
Does the proposal create an environment that promotes or hinders physical activities such as sport, active play and active travel?	NA		N/A	

Table 7.3: Accessibility and Active Travel

Accessibility and active travel				
Assessment Criteria	**Relevant**	**Details/Evidence**	**Potential health impact**	**Recommended mitigation or enhancement actions**
Does the proposal prioritise and encourage walking (such as through shared spaces?)	Yes	The proposed development will be connected to pedestrian links to encourage the use of walking as a means of sustainable transport. There is generally a good network of footways within close proximity to IAMP ONE Phase 2 and the proposed development will offer a choice of suitable routes to nearby bus stops. External pedestrian routes in the vicinity are well lit and generally in good condition.	Positive (permanent)	
Does the proposal prioritise and encourage cycling (for example by providing secure cycle parking, showers and cycle lanes)?	Yes	The proposed development will be connected to cycle links to encourage cycling as a means of sustainable transport. Cycling has the potential to cater for many trips and is considered a viable mode of travel for journeys less than five kilometres. The potential for cycling trips is significant, as a 30-minute journey from the site covers northwest Sunderland, Washington, Wardley, Hedworth and Boldon. The proposed development also encourages cycling through the provision of appropriate cycling facilities such as cycle parking, showers and storage.	Positive (permanent)	
Does the proposal connect public realm and internal routes to local and strategic cycle and walking networks?	Yes	New pedestrian links and footways are provided within the IAMP ONE development. These include the creation of a Non-Motorised User ('NMU') route along the section of Follingsby Lane within the IAMP ONE site, which has been introduced by virtue of a prohibition of motor vehicles along this route, allowing walkers, cyclists and horse riders to pass through without conflict with motor vehicles. There are controlled pedestrian crossing facilities on the A1290 near the Nissan Access junction which includes a central refuse island, dropped kerbs and tactile paving. There is also a pedestrian guardrail on the A1290 near the bus stops. Pedestrians can travel along Washington Road to access a footbridge over the A19. This route links to the residential area of Town End Farm. To the west of the footbridge is a direct pedestrian access to Nissan for staff.	Positive (permanent)	

Does the proposal include traffic management and calming measures to help reduce and minimise road injuries?		Highway improvement works on the A1290 have already taken place as part of the 2018 IAMP ONE permission. The proposed development will have fewer staff and will generate fewer vehicle movements than those assessed within the IAMP ONE Phases One and Two permissions. Notwithstanding the above, calming measures will be incorporated to help manage traffic. These include an operated shift pattern between the end users of IAMP ONE and Nissan which is offset by one hour in the morning and afternoon periods. This will be in place until improvement works to the A19 and Downhill Lane are completed. The Highways Operational Management Plan ('HOMP') provides more detail.	Positive (permanent)	The recommended mitigation is a Highways Operational Management Plan.
Is the proposal well connected to public transport, local services and facilities?	Yes	The site is served by existing public transport services and IAMP ONE includes a range of measures to enhance connections, including the provision of new bus shelters to existing bus stops on the A1290. Bus services 50 and '56 Fab Fifty-Six' are located on the A1290 within 500m of the site, offering a 30-minue and 15-minute frequency respectively Monday to Saturday. On Sunday, the frequency of service is 60 minutes and 20 minutes respectively. There is a proposed enhanced bus service between the IAMP and surrounding residential areas including Heworth, Sunderland, Hebburn, Jarrow, South Shields and Washington. The proposed development will offer a clear and safe walking route to the proposed bus stops. It is also proposed that there will be new bus stops and improved waiting facilities within the IAMP AAP area. The proposed development will also provide information on up-to-date bus timetables as well as information on any local bus transport deals that may be available to help encourage their use.	Positive (permanent)	
Does the proposal seek to reduce car use by reducing car parking provision, supported by the controlled parking zones, car clubs and travel plans measures?	Yes	The proposed development will provide 685 spaces for staff and 40 spaces for visitors, delivering a total of 725 spaces. This level of parking is considered appropriate to meet operational needs. A potential neutral/slight adverse impact on health may result from provision of car parking spaces, which may encourage some employees to drive to the site. However, a Travel Plan accompanies the planning application which includes measures to encourage walking, cycling and public transport; greener car travel (car sharing/ultra-low emissions vehicles/car clubs); smart business travel; and minimising the need for travel by sourcing locally. A Full Travel Plan will need to be prepared in due course which will provide more specific measures. The proposed development will also encourage electric car use by making provision for car and bicycle electric charging points within parking areas across the site. It is proposed to include no.	Neutral / Slight Positive (permanent)	The recommended mitigation is a Full Travel Plan.

		40 7kW EV charging points in the main carpark with the potential to increase to no. 80 in the future. A small number of 50kW fast chargers will also be installed on site.		
Does the proposal allow people with mobility problems or a disability to access buildings and places?	NA	In terms of the building design, level access will be provided into the building and dedicated wheelchair-accessible parking spaces are proposed near to the main entrance into the building. External surfaces will be chosen and lit to facilitate easy and safe access. The buildings will be designed and built out to comply with Building Regulations Document Part M.	Positive (permanent)	

Table 7.4: Air Quality, Noise and Neighbourhood Amenity

Air quality, noise and neighbourhood amenity				
Assessment Criteria	**Relevant**	**Details/Evidence**	**Potential health impact**	**Recommended mitigation or enhancement actions**
Does the proposal minimise construction impacts such as dust, noise, vibration and odours?	Yes	A Construction Environmental Management Plan ('CEMP') will be produced for the proposed development which will include measures to control construction hours, reduce construction related noise, minimise dust emissions and provide routes for construction vehicles. A best practice Dust Management Plan ('DMP') contained within the CEMP will be implemented. Examples of dust controls will include: • Regular grading and maintenance of haul roads, if used within the site; • Speed restrictions on vehicles within the site; • Minimising of stockpiling heights, thereby reducing wind whipping and lofting; • Laden lorries to be covered before leaving the site; and • Provision of training to the site personnel on dust mitigation; all dust complaints and associated actions will be recorded along with a detailed written log of received information and complaints, and actions taken to resolve the situation. Water bowsers will also be provided to spray haul roads and stockpiles with water to suppress dust emissions, as necessary.	Neutral	The recommended mitigation is a CEMP.
Does the proposal minimise air pollution caused by traffic and energy facilities?	Yes	The large-scale use of solvents in the manufacturing processes to be operated in the proposed battery factory will result in the Envision AESC development being subject to regulation under the Environmental Permitting (EP) Regulations (2016, as amended). A permit will be required under these regulations before the factory can commence operation. Envision AESC is aware of its responsibilities and will ensure that that the plant will use Best Available Techniques (BAT) to minimise the factory's environmental impact in each of these areas. The use of BAT will be demonstrated as part of the permit application for the factory and will be maintained throughout the plant's operational lifetime.	Neutral	The recommended mitigation is a Travel Plan.

		As previously noted, the proposed development will not generate any additional traffic due to the constraint on floor space being limited to that previously consented for IAMP ONE Phases One and Two. Pollution from transport emissions will however be reduced by a programme of actions which look to include: • EV recharging infrastructure facilities; • Low emission vehicle parking spaces; • Support local walking and cycling initiatives; • Low emission bus service provision; • Bike / e-bike hire schemes; and • Implementation of a Green Travel Plan. During the operational phase, a travel plan will help to manage vehicular movements.		
Does the proposal minimise noise pollution caused by traffic and commercial uses?	Yes	Best working practice will be set out in the CEMP with the following measures put in place to minimise noise emissions: • Implement set working hours during the week and at weekends, and adherence to any time limits imposed on noisy works by the local authority; • Should earthworks and/or construction activities need to be carried out during night-time hours, advance notice and details of any night working can be provided to the Council by way of planning condition; • Screening noise sources via temporary screens may be used when works are taking place within close proximity to North Moor Farm; • All machinery should be regularly maintained to control noise emissions, with particular emphasis on lubrication of bearings and the integrity of silencers; • Site staff will be made aware that they are working adjacent to a sensitive area and avoid all unnecessary activities due to misuse of tools and equipment, unnecessary shouting and radios; • As far as possible, the avoidance of two noisy operations occurring simultaneously in close proximity to the same sensitive receptor; and • Ensure engines are turned-off when possible. The following indicative measures have been proposed for potential adoption:	Neutral	The recommended mitigation is a CEMP.

		• Evaluation of each unit to be undertaken at detailed design stage and mitigation measures proposed accordingly (if required); • External plant can be specified to reduce noise levels. Where necessary, silencers may be applied to plant to attenuate tonal components; • Where possible, building access points (e.g. shutters and loading bay doors) may be positioned to face away from North Moor Farm (north); and • White noise reversing alarms for movements within yards may be specified (if required).		

Table 7.5: Crime Reduction and Community Safety

Crime reduction and community safety				
Assessment Criteria	**Relevant**	**Details/Evidence**	**Potential health impact**	**Recommended mitigation or enhancement actions**
Does the proposal incorporate elements to help design out crime?	Yes	The proposed development will operate on a 24/7 basis and so workers will have access to the site at all times, providing a means of natural surveillance across the development. Alternating shift patterns will also provide an added layer of natural surveillance as workers access and egress the development. Lighting across the site is also designed to provide an even spread of illumination to eliminate any dark areas.	Positive (permanent	
Does the proposal create a safe and inclusive environment that acts to prevent accidents and discourage crime and antisocial behaviour?	Yes	The proposed development has been designed to ensure the majority of the site will not be accessible to the public. Open spaces within the site layout have been designed in such a way that allows for sufficient means of surveillance. There is an area of green space included around most of the perimeter of the site which will provide a buffer to those trying to enter the proposed development. Fences will also be introduced around the boundary to provide both a visible and physical deterrent to unwelcome visitors, separating the proposed development from public areas. The fencing will comprise a combination of a 2.4m high paladin fence across more exposed frontages, and a 1.2m timber post and wire mesh fence around more enclosed areas.	Neutral	
Has engagement and consultation been carried out with the local community?	Yes	As set out in the Statement of Community Involvement ('SCI'), a public engagement exercise comprising a leaflet drop has been undertaken in light of the Covid-19 pandemic. The exercise found that 79% of 33respondents either strongly agreed or agreed that the proposed development is welcomed as part of the continuing development of IAMP for advanced manufacturing and automotive uses.	Neutral	

Table 7.6: Access to Work and Training

Access to work and training				
Assessment Criteria	**Relevant**	**Details/Evidence**	**Potential health impact**	**Recommended mitigation or enhancement actions**
Does the proposal provide access to local employment and training opportunities, including apprenticeships and volunteering?	Yes	During the construction phase, it is estimated that there will be 550 direct full time equivalent (FTE) construction jobs on-site, plus a further 610 FTE equivalent indirect jobs in the supply chain. Once operational, the proposed development will generate significant numbers of new jobs, which includes 700 new jobs, as well as the relocation of 300 jobs from the existing factory. There will be further additional "spin-off" jobs in the local area. This impact could have significant effects on unemployed people or those on low incomes in the local area.	Positive (permanent)	
Does the proposal provide childcare facilities?	N/A	N/A	N/A	N/A
Does the proposal include managed and affordable workspace for local businesses?	N/A	N/A	N/A	N/A
Does the proposal include opportunities for work for local people via local procurement arrangements?	Yes	The contractors will be encouraged to provide measures to promote local recruitment and provide local training and work experience opportunities. Once operational, Envision has a goal to employ local staff, they are currently running a graduate training programme and this will continue to operate in the new facility. Additionally, Envision will considering future apprenticeships and training opportunities.	Positive (permanent)	

Table 7.7: Climate Change

Climate Change				
Assessment Criteria	**Relevant**	**Details/Evidence**	**Potential health impact**	**Recommended mitigation or enhancement actions**
Does the proposal incorporate renewable energy?	Yes	Solar PV panels are proposed on the roof of the building and will be the primary means of reducing carbon emissions, along with Air Source Heat Pumps (ASHPs) in the office areas, improved fabric efficiency and potentially Waste Water Heat Recovery ('WWHR').	Positive (permanent)	
Will the proposal have an impact on energy use and waste. How will energy use, carbon emissions and waste be minimised? How will effects of climate change be dealt with?	Yes	The proposed development will be designed with a view of achieving a BREEAM 'Very Good' rating and hence the impacts of the project will be considered from a lifecycle perspective (i.e. from concept stage through to a fully constructed building). This includes driving sustainable building approaches and technologies. The proposals include a rooftop solar PV installation and ASHPs for the office spaces. These measures alone may be insufficient to meet the Future Building Standard so it is anticipated that enhanced fabric efficiency will be incorporated and WWHR may also be required to help deliver the target 27% emission reduction for regulated emissions. SBEM assessments will help determine this once final detail of internal design and fit out is confirmed. In all cases the minimum building regulations will be met or exceeded. Sustainable travel modes will be promoted through implementation of the Travel Plan. The Air Quality Chapter indicates that electric vehicle charging points will be provided to support the use of electric/hybrid vehicles. In terms of waste, a Site Waste Management Plan will be prepared by the Principal Contractor. The purpose is to ensure the efficient management of building materials, legal disposal of waste and the maximisation of material recycling, reuse and recovery. Cut and fill management will be employed to minimise waste removal offsite using both inert demolition materials and soil. The plan spans across pre-construction activities through to post construction review.	Positive (permanent)	The recommended mitigation is a Site Waste Management Plan.

		All members of the workforce will be made aware of the waste strategy and will receive relevant training. Training will ensure proper waste management handling procedures are implemented.		

Table 7.8: Minimising Use of Resources

Minimising use of resources				
Assessment Criteria	**Relevant**	**Details/Evidence**	**Potential health impact**	**Recommended mitigation or enhancement actions**
Does the proposal make best use of existing land?	Yes	The proposed development will be delivered on land allocated for employment use in accordance with the Core Strategy and Development Plan and IAMP Area Action Plan.	Positive (permanent)	
Does the proposal encourage recycling (including building materials)?	Yes	During operation, the Site Waste Management Plan will ensure the efficient management of building materials, including the maximisation of material recycling, reuse and recovery. The plan spans across pre-construction activities through to post construction review. Recycling and re-use of materials will involve waste to be monitored, sorted and stored in as many segregated waste streams as appropriate. Adequate storage space for recyclable and compostable materials will be provided in commercial buildings. The layout of the Proposed Development will take into consideration the need for recycling collection.	Positive (permanent)	
Does the proposal incorporate sustainable design and construction techniques?	Yes	A Sustainability Statement has also been prepared by Wardell Armstrong to accompany the planning application. The statement outlines how the proposed development will meet the various sustainability objectives. Following a review of the relevant national, regional and local sustainability objectives, the following sustainability topics have been identified, against which the proposed development have been evaluated: • Waste & Recycling (includes Construction & Demolition); • Flood Risk; • Development Ratings; • Materials; • Energy; • Water;	Positive (permanent)	

		• Pollution; • Biodiversity; • Secure Design; • Contaminated Land; • Travel; and • Adapting to Climate Change. The statement demonstrates the approach that has been taken to sustainability during the design process and demonstrates that the proposals will deliver a highly sustainable development.		

8.0 Monitoring and Other Matters

8.1 Several measures identified in the above tables will be monitored. The details are summarised as follows:

- The contractors will be monitored against the CEMP, their approved method statements and relevant environmental legislation. This is to ensure that construction work takes place in a satisfactory manner and does not cause a nuisance, waste issues or create pollution. This will include a daily walk-over by the principal contractor;
- The construction noise levels will be monitored to ensure agreed thresholds are not exceeded at the closest noise sensitive receptors;
- The compliance of construction activities against the Dust Management Plan will be monitored, including regular site inspections when activities are taking place with a high potential to produce dust and during prolonged dry or windy conditions;
- The implementation of the ecological mitigation will be monitored, and the relevant legislation in relation to protected species will need to be complied with; and
- Once the development is operational, a Detailed Travel Plan will incorporate a monitoring regime for the transport related impacts of the proposed development. This will monitor the trip generation for the development as well as model share and progress towards increasing the share of active and more sustainable modes of travel.

Other Matters

Overhead Cables

8.2 Whilst not identified in SCC's HIA Matrix there are overhead lines running along the western site boundary. There is an ongoing debate over the possibility of hazard to health from low level electric and magnetic fields but the consensus of the international scientific community after more than 35 years of research is that the science has not established a causal link between exposure to electric and magnetic fields and public health (National Grid, 2015).

9.0 Conclusion

9.1 This HIA has been prepared by Lichfields to assess the potential impacts of the proposed development upon the health of the local population by looking at the changes to the determinants of health and the pathways that could have temporary and permanent impacts upon the population of the baseline area.

9.2 The HIA uses the WHO's definition of health which encompasses physical and mental health and well-being, reflecting the approach taken in national planning policy. The HIA focuses on the assessment criteria set out in the Council's HIA Developer Guidance and takes into account the aims of the CSDP which include seeking to address the causes of ill health, supporting healthy behaviours, managing long-term conditions and mitigating the effects of socio-economic deprivation.

9.3 Envision AESC is proposing to build a large-scale battery manufacturing facility and is reviewing the proposed factory's COMAH status within the Control of Major Accident Hazards Regulations 2015. It is expected, but still to be confirmed, that the site will be classed as an Upper Tier COMAH site. This is due to the large volume of a Schedule 1 Part 1 material being processed as key component of the manufactured batteries. Envision AESC is aware of its responsibilities and will ensure that that the plant will use Best Available Techniques (BAT) and As Low as Reasonably Practical (ALARP) principle to ensure the safety of the site. The use of BAT and ALARP will be demonstrated through the safety report for the factory and will be maintained throughout the plant's operational lifetime.

9.4 Given the large-scale use of solvents, the development will be subject to regulation under the Environmental Permitting Regulations and a permit will be required under these regulations before the factory can commence operation. Envision AESC is aware of its responsibilities and will ensure that that the plant will use BAT to minimise the factory's environmental impact.

9.5 The use and storage of any hazardous substances will be controlled through the environmental permitting regulations, which is a separate consenting regime and is separate from the planning process.

9.6 Overall, this HIA has identified mainly neutral or positive effects on health.

9.7 With regard to access to open space and nature, the development is anticipated to have a positive impact on health. The landscaping scheme has been designed to include trees, hedgerows, shrubs, grasses and large swathes of wild flowers to provide seasonal interest, optimise biodiversity, enhance legibility and create an attractive and welcoming environment. The masterplan also includes areas of green space and grassing which can be used by staff for recreational use during work breaks.

9.8 Potential health impacts relating to accessibility and active travel are positive. The site is well connected to the existing pedestrian and cycle networks and public transport, with measures being set out in the Framework Travel Plan, and subsequent Full Travel Plan, which will seek to promote walking and cycling, which may have positive health impacts particularly for employees with health conditions that are worsened by physical inactivity. Pedestrian access to buildings will be segregated from vehicles and mitigation measures for construction vehicles will be set out in the CEMP. A potential neutral/slight adverse impact on health may result from provision of car parking spaces, which may encourage some employees to drive to the site. However, the ratios of parking provision are considered to be appropriate to cater for likely operational needs and are in line with SCC parking standards. Again, measures to reduce the number of single occupancy car trips will be set out in the Framework Travel Plan and Full Travel Plans.

Wheelchair-accessible parking and level access will be provided, ensuring access to employees or visitors with mobility problems.

9.9 With regard to air quality, noise and neighbourhood amenity, during the construction phase a CEMP will be used to help reduce the construction related impacts. This management plan will include a range of measures including measures to reduce noise levels, minimise dust and to ensure that construction traffic uses defined routes. During operation, it is not anticipated that there will be any processes likely to emit significant pollutants from point sources and any processes likely to generate significant vibration will be damped.

9.10 The proposed development will provide significant numbers of new jobs, likely to have positive health benefits for unemployed people or those on low incomes in the local area, where there is significant deprivation. Measures should be implemented to increase local skill levels and promote local recruit to maximise these potential health benefits.

9.11 In terms of climate change, the building has been designed to include solar photovoltaic panels on the roof and to use air source heat pumps in the office accommodation. The proposed development will be designed with a view of achieving a BREEAM 'Very Good' rating and hence the impacts of the project will be considered from a lifecycle perspective (i.e. from concept stage through to a fully constructed building). This includes driving sustainable building approaches and technologies. Appropriate vehicle charging infrastructure to reduce emissions will be provided. Measures to minimise waste are set out within the Waste Management Plan in the CEMP.

9.12 With regard to minimising use of resources, the proposals include sustainable design and construction techniques wherever possible. Reuse of material is promoted within the Waste Management Plan. Building materials with recycled content will be used wherever practicable.

9.13 Overall, this development is considered to have primarily positive or neutral permanent benefits on health and accords with Policy SP7 (Healthy and safe communities) of the CSDP which relates to improving health and well-being in Sunderland by promoting and facilitating active and healthy lifestyles.

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