

APPENDIX 1: Topic Specific Comments

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PREFACE

The Councils' capacity to fully engage with the Stage 1 Consultation has been impacted by the unprecedented impacts of the Coronavirus COVID 19 pandemic. The officer comments below have been limited by priority commitments to addressing the COVID 19 response, and similar impacts on other organisations and stakeholders that limited the normal level of co-ordination and discussion between colleagues before the comments were provided. Site visits were also cancelled due to home working. Whilst some officers could provide limited input, some officers were unable to provide comments on the Stage 1 Consultation at all due to COVID 19 impacts.

1. SUSTAINABILITY: CLIMATE CHANGE

1.1 A Zero Carbon Future

The Councils welcome the potential contribution towards the transition to a low or no carbon economy in support of climate change and sustainability. Further details of the proposals are requested, in terms of the carbon footprint of the development and the measures proposed that would support the transition to a zero-carbon economy and the provision a positive legacy that reaches beyond the supply of electricity from the power station. There are clear opportunities for the project to be an example of low carbon development that is transformational in its approach to development and transport.

The UK is bound by the Climate Change Act 2008 to achieve net zero carbon emissions by 2050. This shift to net zero target from the previous target of 80% reductions on a 1990 baseline has brought into sharp focus the need to radically tackle Green House Gases (GHG) across all sectors including the built environment and nuclear development.

ECC has made a commitment to formulate a Climate Action Plan to reduce carbon emissions across the county of Essex. In addition, ECC has inaugurated an independent, cross-party Essex Climate Change Commission with the purpose of:

- Identifying ways in which ECC can mitigate the effects of climate change, improve air quality, reduce waste across Essex and increase the amount of green infrastructure and biodiversity in the County, explore transport modal shift, research energy generation and fully engage with communities around behavioural change.
- Reducing the carbon footprint of both ECC and Essex as a whole – the Commission is expected to recommend an ambitious, but realistic target year to have achieved net zero greenhouse gas emissions.

As the UK transitions into a net zero carbon future, nuclear power stations have been recognised as important in generating the low carbon electricity mix required to power a sustainable UK. However, the scale of such nationally important infrastructure developments do carry an equally large and conflicting carbon footprint in their embodied and operational carbon. The Councils welcome the benefit that nuclear development at Bradwell can have to decarbonising the supply of energy in the UK but is equally concerned to see that material provisions are made in the development proposal that mitigate the carbon emissions generated from the construction and operation of the power station and its associated development.

Adequate provision for reduction and offsetting of carbon emissions, both embedded and operational, need to minimise the development's carbon footprint and mitigate the effects of climate change and with reference to planning principles set out nationally and locally including:

- National Planning Policy Framework, S14, para 148 which states: *"The planning system should support the transition to a low carbon future in a changing climate [...]. It should help to shape places in ways that contribute to radical reductions in greenhouse gas emissions [...] and support renewable and low carbon energy and associated infrastructure."*
- National Policy Statement for Nuclear Energy (EN-6), taken together with the Overarching National Planning Statement for Energy (EN-1), provides the primary basis for decisions taken by the Infrastructure Planning Commission (IPC) on applications it receives for nuclear power stations (capacity 50MW or more). Specifically, EN-1 5.2.11 states that the IPC should consider whether mitigation measures are needed both for operational and construction emissions over and above any which may form part of the project application. A construction management plan may help codify mitigation at this stage.
- Maldon District Local Development Plan policy D1 states that: "All development must [...] make a positive contribution in terms of energy and resource efficiency." Policy D2 states that: All non-residential development should achieve a minimum of BREEAM 'Very Good' rating or be supported by a bespoke assessment that demonstrates appropriate environmental performance results above current Building Regulation requirements; Development should seek to maximise the use of building materials from sustainable sources and apply sustainable construction methods where appropriate; Development will contribute towards making more efficient use or re-use of existing resources and reducing the lifecycle impact of materials used in construction. The Council may require large scale development proposals to be supported by a Site Waste Management Plan;

1.2 Minerals Local Plan (2014)

A key approach to reducing the demand for minerals in new developments is through encouraging and supporting aggregate recycling. Policy S4 – Reducing the use of mineral resources, criteria 4, seek to ensure:

The maximum possible recovery of materials from construction, demolition and excavation wastes produced at development and re-development sites. This will be promoted by on site re-use/recycling at other aggregate recycling facilities in proximity to the site.

1.3 Accommodation Strategy

The emerging accommodation strategy recognises that the relocation of staff onto the site is a major contributor in improving the sustainability of the workforce through reducing transport related emissions. There is also the recognition that a sustainable transport plan will further reduce the impact of the peak workforce for those not living on site and the Councils will want to see in detail the kind of measures that will be adopted to enable the Plan to be effective. We would also highlight the need for the accommodation development itself to ensure it is a net zero carbon accommodation development with high energy efficiency standards, use of on-site renewable energy technology to meet demand and measures to offset any net emissions after measures to maximise efficiency and generation measures have been maximised. This includes all other facilities

associated with the accommodation e.g. canteen, sports facilities, laundrette, shops, street lighting, health centre etc.

There are Building Research Establishment (BRE) guidelines which is recommended to BRB to promote exemplary practice; to encourage the exploration of the most suitable use of local energy generation; to devise a scheme for exploring this and for monitoring carbon use and emissions over the lifetime of the project. Such a scheme should be monitored throughout the life of the development together with adaptation to revisit and improve on the set targets if they are found not to be met.

1.4 Transport

The importance of sustainable transport and the use of rail and water over road during construction and operation is recognised; but requires further detailed investigation. There is a need to be more ambitious through the incorporation of net zero carbon principles into transport, for example, through the electrification of the park and ride and other bus fleets. With the national move away from fossil fuel vehicles and towards electric vehicles, we would encourage efforts towards the use of electric and ultra-low emissions vehicles as far as feasible, highlighting the opportunities for electrification of transport fleet for the movement of the workforce to and from site from the temporary “park and ride” sites and while on site, and the use of ULEVs for the movement of freight and goods. The provision of electric charging infrastructure is necessary along any selected road based “strategic route” and would be a welcomed legacy.

1.5 Main Development Site

We would also encourage the carbon footprint of the development to be considered in both the construction and operational phases through consideration of the use of sustainable materials as well as the impact of supply chains on the carbon footprint of the development. The Councils wish to see a plan to show how carbon is managed, through an agreed Carbon Plan, and how its impact can be lessened. We would encourage further thought into the sustainable use, recycling of materials and the lifecycle impact of materials.

1.6 Emissions Measurement and Mitigation

We recommend the measuring of the carbon footprint of the whole development throughout its life cycle, with the yearly disclosure of this information in aid of pursuing low carbon targets through the Carbon Plan. This is an omission from the proposal which would provide considerable support in monitoring, reducing, mitigating, as well as offsetting carbon emissions associated with the construction and operation of the development. In order to achieve national targets of net zero carbon by 2050, and to reduce the carbon footprint of Essex, the need to decarbonise large infrastructure developments in Essex is significant. Any measuring should be made available yearly and reviewed going forward.

The inclusion of the above suggestions will aid the development in not only attaining national low carbon targets, but also in achieving project aims for whole life sustainability and avoiding adverse environmental effects (Stage One Consultation, paragraph 2.1.13).

Supported by: Tom Day, Head of Energy and Low Carbon Programme (ECC)

2. SUSTAINABILITY: SOCIO-ECONOMIC

2.1 Economic Prosperity

2.1.1 Summary

The Councils welcome Bradwell B's plans around people and jobs, especially the explicit commitment to maximise positive economic effects whilst mitigating against any potential adverse effects the Project could have. The Councils have been in early dialogue with BRB (via the EDF Energy Workforce Development Strategy Team) in order to communicate and align our ambition and that of our existing skills ecosystem and partnerships. We have identified key skills ambitions drawn from various ECC and partner strategies, policies and action plans and mapped these to some potential interventions that could be part of the Bradwell B skills and employment plans, and which would complement and strengthen existing activity.

The construction of the Bradwell B Power station could undoubtedly create tens of thousands of jobs and deliver millions of pounds of investment. However, without careful planning, controls and mitigation, the risk is the short and longer-term economic effects will not be realised or benefit local residents. It is vital that the Project avoids harm to the area's existing business community, does not put future investment in the area at risk, or create displacement and disruption to the current workforce.

We welcome BRB's intention to maximise the positive economic effects and to understand any potential adverse effects the Project could have, so these can be avoided or mitigated (5.1.5 in the Consultation document). The Councils are committed to working with the Project Team to help them achieve these economic benefits and identify the adverse effects. We envisage a collaborative and supportive relationship that will enable BRB to realise such benefits and appropriately mitigate such effects. Including those identified by NPS EN-1 (Section 5.12) and EN-6:

- Sustained economic growth and prosperity in local businesses
- The creation of jobs, training opportunities and skills
- Provision of local services, improvements to local infrastructure and educational facilities
- Effects on tourism, including those caused by environmental, visual and transport impacts and socio-economic effects, and visitor facilities
- The effect of an influx of workers including pressures on local and regional resources and demographic change (also addressed as part of the Community response)

We know that where economic clusters are established, a virtuous circle emerges whereby inter-firm competition promotes innovation and productivity and ultimately means that local companies are able to compete for work. Our strategic aim, therefore, is to ensure that major projects work to bring about skills clusters that support the matching of workers to in-demand career opportunities and companies to communities where the skills exist (or are being trained for) that they need.

We welcome BRBs focus on the importance of creating a local supply chain and the need for a Supply Chain Team, which is also commented upon later. However more information is required regarding the way this will function and, post peak construction, how it will ensure longer-term stability for the businesses involved. It is the Councils' joint expectation that an independent dedicated Essex Supply Chain Team and Supply Chain Portal be created, focussed on supporting local businesses.

The consultation fails to recognise the risk of a short-term boom that cannot enable a sustainable long-term economic legacy for local business and the economy, nor how this will be mitigated. To manage this the Supply Chain Team and Portal should support and enable:

- Maldon District and Essex businesses to win contracts
- Bradwell B to show how it will maximise opportunities for local businesses through its procurement process.
- Local companies to access funded specialist accreditations and/or Health and Safety qualifications that are required to supply new nuclear.
- A legacy to support the post-construction sustainability of local businesses, who have enabled the construction and operation of the Power Station, through training and support.

The Project may have a significant adverse impact on other inward investment and entrepreneurship, especially in non-connected sectors. As local businesses will be affected by the limited availability of staff, land and resources, along with high wages. Failing to support the business community and the area's Sense of Place would result in considerable harm to the (existing and future) diverse and prosperous economy. This, along with other risks, must be managed through measures such as;

- Funding to support the economic development and tourism function of Maldon District Council
- Funding to commission necessary economic planning/studies and to facilitate and expedite strategic projects and objectives.
- Working with partners to build local supply chains from existing and new businesses
- Investment in the local workforce
- A business development grant funding program
- Creation of local incubation or enterprise facilities
- Measures to incentivise the reduction of future out-commuting
- Investment/expansion/creation of new schools and other skills/education facilities
- Commitment to encourage the opportunities for local employment to transfer into higher quality roles at Bradwell B
- Support initiatives to provide future investment and employment in growing sectors, such as green energy and infrastructure
- The provision of significant mitigation measures to address the effects the Project will have on businesses and tourism with regard to increased traffic flows, impact on environment, demands on local temporary and permanent accommodation and harm to the Maldon District "Sense of Place" brand and reputation
- Investment in the local visitor offer and facilities, accessible through sustainable modes, including electrically enabled travel and public transport.
- Investment in opportunities to create/develop and improve further education, apprenticeships and training to ensure a sustainable highly skilled workforce.

The ECC Employment and Skills Principles for Major Projects and Developers' requires that major projects, such as Bradwell B to:

- Cultivate and foster partnerships to develop a flexible and responsive skills system that aids regional and sub-regional business development, which develops industry clusters and skills engines.
- Develop highly-skilled sub-regional talent eco-systems with transferable skills and competence, responsive to current and future jobs; which:

- builds capacity and conditions to enable shared prosperity
- enables innovation, knowledge-driven and digital skills, which increases productivity; aiding wealth, output and opportunity
- Mitigate adverse employment effects, which may arise from a large-scale influx of non-home-based workers, which evidence suggests increases salaries and job competition, leading to higher churn and displacement effects. This crowding out effect raises the cost for all local people, including those not directly employed by the large employers, by increasing demand for property and local services. We would welcome early sight of your 'gravity model' assumptions, methodology and outputs in this regard.
- create the conditions for effective skills devolution by developing and taking forward an integrated whole-system approach to employability and skills.

Comments are provided on particular sections of the Stage 1 Consultation:

2.1.2 Approach to Managing Effects - Core Principles (Section 2.1.2)

The Project's core principles, as identified in the consultation document (reference para 5.4.2), complement the ECC's Skills and Employment Principles for Major Projects and Developments. However, we would welcome greater detail about specific actions to complement these principles. To meet our Employment and Skills principles and ambitions, Bradwell B will be expected to:

Link educators, business and people to develop a shared understanding of skills and drive local prosperity

- Drive strong leadership to enable local anchor institutions/strategic infrastructure projects to invest in and deliver local outreach and engagement to support sub-regional, latent talent pools; enabling future employment and agglomeration spin-out
- Ensure local educational provision aligns with sub-regional employment needs
- Develop and take forward integrated approaches to employability and skills with other agencies.
- Foster educational partnerships to upskill and train highly-skilled workers.

Cultivate skills needed for the future economy supporting productivity, future prosperity and the fourth industrial revolution

- Invest in lifelong learning, to adapt to changing employment landscapes
- Develop and unlock skills needed for future jobs
- Prioritise knowledge-driven skillsets and higher-level jobs

Develop and enhance sustainable high-value employment opportunities

- Support access to a highly skilled pool of local labour
- Drive knowledge economy jobs
- Increase the percentage of residents with skills at Level 3 and above
- Further utilise the apprenticeship levy and opportunities for skills devolution to support industry and develop highly-skilled sub-regional talent eco-systems
- Maximise local labour opportunities from regional developments, with career sustainability and lifelong learning at its foundation

Develop world class training and provision

- Invest in and support the local educational landscape including through primary and secondary, especially in the rural Maldon District where access to higher education may otherwise be limited.

- Develop a culture of education and industry knowledge share and pool of associate lecturers, teachers\ tutors and assessors to drive economic prosperity.
- Invest in new models of skills facilities and equipment which are aligned to employer skills need to support skills for the future and a knowledge-based economy
- Invest in and develop new vocational pathways such as apprenticeships, T-Levels and new models of Work Based Learning

Ensure a diverse and inclusive workforce

- Offer targeted opportunities for the hard to reach and those furthest away from the job market to access sustainable employment
- Address workforce gender imbalances and promote a culture of fairness, inclusion and respect for all, through vigorous outreach, local engagement and pro-active measures to break down negative perceptions
- Create localised initiatives addressing the skills needs of specific subregions of Essex, such as addressing: in work poverty, low skills levels, long term unemployment or high levels of individuals Not in Education, Employment or Training (NEET)
- Invest in and work with specific cohorts of residents that are furthest away from the jobs market to promote employability and skills development

Protect the visitor economy and existing businesses that rely on natural resources

- Identify and support opportunities for more domestic and international visitors, a greater proportion of overnight trips, and increased spend per visit to mitigate negative impacts on local landscape amenity
- Identify businesses that rely on natural resources and work with them to develop and implement appropriate strategies to mitigate any negative impacts on their activities

2.1.3 Proposed Jobs, Skills and Supply Chain Strategy (Section 2.1.3)

2.1.3.1 Employment and skills measures

It is welcomed that the development could enable the creation of significant numbers of skilled employment opportunities in Maldon District Council and the wider economy of Essex both for the project and to support the backfill to local companies. We would like to maximise through the school curriculum, apprenticeships, adult learning, training opportunities etc our residents' preparedness as the workforce for roles in construction and operations as well as auxiliary roles; security, catering, and drivers. We would also like to ensure as many local people as possible can benefit from the Project via sustainable employment. We agree that the Project provides a unique opportunity to help lower youth unemployment and provide them with clear and lasting career pathways for young people, and we welcome BRB's early engagement on this matter.

We particularly welcome the implementation of an Employment, Skills and Education Strategy (ESE) and a Jobs Service focussed on developing a local skills base in Maldon and the wider Essex area that can support the delivery of the Bradwell B Project. We agree that that BRB's ESE Strategy must focus on delivering local initiatives that support local people into work on the project, including both young people and those currently unemployed, along with facilitating programmes to re-train the local workforce. We support the emphasis on ensuring a pipeline of skills training starting with schools to inform and engage students in the opportunities arising from the scheme, and based on the industry leading "Inspire" programme introduced at Hinkley Point C.

As part of our ongoing dialogue with BRB, the Councils will expect SMART objectives to populate the Employment, Skills and Education plan which aim to create an environment where people can gain sustainable employment - including those from education and those who may not normally have access to such opportunities. We welcome Bradwell B's recognition of the importance of working collaboratively within existing structures for skills and education in the region in order to build a stronger infrastructure not only to deliver the Project but to leave an important and lasting legacy. We agree that these engagements must focus on understanding the existing skills and education landscape and then working in collaboration to identify intervention opportunities. As part of our ongoing engagement with EDF's Workforce Development Strategy Team, we have identified examples of some of the potential interventions:

Support an Integrated Job Shop and Brokerage Service (*Essex Works*)

- An Information, Advice and Guidance (IAG) and a single point of access for all employment and skills opportunities in Essex across the range of construction programmes.
- A Bradwell B Jobs service integrated with Jobcentre plus and other employment contacts in Essex.
- Tackle specific barriers to training and employment, including basic literacy and numeracy.
- Identify and implement measures to assist local resident labour to find alternative employment once the construction phase is over.
- Sustain and extend the lifecycle of existing one-stop-shop construction skills hubs.
- Use data to monitor skills shortage areas and future skills requirements for the various projects.
- Support and improve local access to jobs and training.
- Maximise local resident participation.
- Integrate new Bradwell B skills and jobs requirements into an update of the Essex Careers Guide 'What's Your Thing'.

Complement Councils' skills and economic growth plans, especially those targeting specific localities and sectors

- Target economic interventions that ensure the benefits of growth are experienced more widely, including within economically disadvantaged communities and for new entrants to the labour market. We will seek to work with Bradwell to identify key localities for focussed skills engagement and outreach.
- Link in with ECC's Skills for Growth programme, which will maximise our ability to address skills gaps and support greater inclusion in the labour market. ECC intends to engage with government to secure greater control of the skills system and capital investments in key places in order to better support our productivity objectives, and by working closely with employers to encourage in-work training and progression.
- Help MDC and ECC make Maldon and Essex a destination of choice for local, national and international businesses.
- Support local community centres, schools and libraries to provide outreach facilities.
- "Back to work" schemes for disadvantaged communities.
- Funding for specific ECC and MDC identified projects that target young people and promote training and development opportunities to help maintain social cohesion.
- Promote direct employment and social enterprise contract opportunities for disadvantaged people so that they can gain experience working on small scale community projects related to the project, such as landscaping.
- Bring new employers to the County.
- Develop the capacity of existing employers to deliver.
- Encourage and widen the labour market.

- Support for local businesses where key staff are displaced due to the Bradwell B development, including skills training to increase the pool of people in skills shortage areas.
- Support outreach delivered by voluntary and third sector organisations, including Princes Trust, to promote work with disengaged youth and adults in deprived communities.

Consider and engage with other major construction projects in Essex in order to ensure that planning for construction skills training, apprenticeships etc – and demand/supply issues – are considered on a strategic and ongoing basis.

- Projects to consider and engage with should include the Garden Communities and Lower Thames Crossing.
- Other major road projects.

Champion a schools and education engagement programme

- Raise awareness of project plans and future skills requirements at the appropriate time of the project cycle.
- Workforce planning for the five phases of the project.
- Engage schools on CEIAG related to the knowledge economy, nuclear skills and high-level skills.
- Engage School Governors to promote Bradwell B as an opportunity.
- Branded study programmes specific to an employer or sector (via employer group)

Apprenticeships

- Raise the aspirations of all young people.
- Provide opportunities for adults that are distant from the labour market and help them to re-integrate into work.
- Identify and support aspirational number of pre-apprenticeships, apprenticeships and higher-level qualifications, as well as traineeships.
- Maximise use of levy budgets across the partnership by sharing unused levy from Tier 1 and Tier 2 contractors through to local supply chain.
- Support a portal whereby all construction vacancies are detailed, training listed, and companies can register for Apprenticeship levy transfer.
- Pledged levy and apprenticeship vacancies tied to postcodes with target KPIs for demographics.

Support regional Higher Education (HE) and Further Education (FE) skills development plans

Support investment in Essex's infrastructure to:

- Deliver higher level skills to bolster a knowledge economy.
- Improve FE infrastructure to mitigate for increase in skills requirements and displacement.
- Increase supply of level 3 and 4 and beyond to support Bradwell B's requirements and ECC's ambitions.
- Improve FE infrastructure to support availability of STEM skills and construction skills potentially using Institute of Technology (IoT) exemplar.
- Support a tutoring hub and bank of STEM based Associate Lecturers from industry.
- Champion sector experts to enhance learning by providing Training for teaching staff on specialist areas (train the trainer).
- Increase the Knowledge base of residents and local businesses and improve productivity.
- Support expansion of existing HE provision to meet the needs of Bradwell B and ECC's Higher Education growth plans.

Align ambitions with the North Essex Economic Strategy Group

- Support measures to enable workforce development.

- Develop productive strategic relationships between influential industrialists, FE & HE, to ensure the advent of centres of excellence across North Essex and in key areas of opportunity.
- Prioritise capital funding projects linked to HE & FE provision in STEM related disciplines and leadership and management linked to improved productivity as part of an agreed strategic approach.
- Support the introduction of a quality kitemark which recognises agreed standards of employment in a business and will be awarded across North Essex. This will include fair pay and conditions, workplace health and wellbeing, skills and development and diversity in the workplace and recruitment.
- Support the FE sector to capitalise on future capital investment opportunities, by actively championing a joint portfolio of strategic planning both in terms of Greater Essex and at a higher level across SELEP, importantly to include the promotion of virtual tuition (the hub and spoke approach).

2.1.3.2 ASEC Fund

The Councils welcome the creation of a flexible Asset Skills Enhancement and Capability (ASEC) Fund to support local skills providers to deliver appropriate training to support Project requirements alongside direct support and provision to local training centres. We expect the ASEC to support Maldon and Essex's Productivity and Prosperity Plans and our ambitions to grow the knowledge sector, technology and the knowledge economy. We also welcome the suggestion of an ECC appointed Regional Skills Coordinator to provide a link between local providers, and supply chain businesses to ensure the Project delivers an effective, joined-up approach on skills. We support BRB's intention to ensure the training sector in Essex, Maldon and the wider region has the capacity to provide major upskilling for local workers and we will assist all efforts to provide advance information on the jobs and skills that will be needed, so that training can be carried out in good time, and the skilled workforce is available when required.

2.1.3.3 Supply chain

The Councils propose the development of an independent dedicated Essex Supply Chain Team and Supply Chain Portal focussed on developing local businesses which will benefit from the Supply Chain partnership. We would expect this portal to enable Essex businesses in winning contracts for the supply of goods and services to deliver the Project. We therefore expect Bradwell B to use the Portal to provide information to partners on:

- How Bradwell B is contacting businesses in Essex to ensure that they are aware of the project/engagement events, and how to register an interest or seek further information.
- The future activities and timeline in relation to supply chain and engagement with local businesses.
- How Bradwell B intends to maximise opportunities for local businesses in Essex through its procurement process.
- How Bradwell B will ensure the maximisation of the local Social Value elements of its supply Chain.
- How local companies can access funded specialist accreditations and/or Health and Safety qualifications that are required to supply new nuclear.
- Calendar of virtual and/or face to face events for supply chain companies. We would encourage Bradwell B to actively engage with the Best Growth Hub which can act as a referral point to businesses for all supply chain-related enquiries and activities.

2.1.4 Effects on tourism, including those caused by environmental impacts and socio-economic effects, and visitor facilities

We are pleased that the consultation recognises the risk to tourism. However, the consultation appears to underestimate the vital part the visitor economy plays in the local economy and Maldon District Sense of Place. Economically tourism accounts for about 15% of economic value and jobs. However, its effects are far wider as it supports visitor attractions, heritage assets, recreational activities, key organised events, and retail, spent in the town centres and villages including restaurants and cafes that rely on the increased and high value trade to survive. Accordingly, any damage to the area's attractiveness for visitors would impact negatively on the food and drink sectors, and the brand and reputation of the District and would be considered an unacceptable risk. Further work is required to identify and assess how any impact on the tourism economy will be managed and mitigated.

To mitigate the significant impact on visitor and tourist facilities; a close working partnership with Maldon District Council, the Maldon Sense of Place Board, Visit Essex and BRB is important. Some opportunity also exists to develop mutually beneficial visitor centres and facilities either at the site or at other visitor/tourism locations.

The area's visitor offer also relies on the availability of its visitor accommodation offer (eg bed and breakfast, camping, caravan and static sites etc) which is in high demand especially during the peak summer months. Any short-term disruptions to this accommodation supply would have lasting effects on repeat visitor numbers. It is vital that this increased demand on certain types of accommodation during the peak construction period does not negatively impact on the visitor numbers and will need to be managed during the construction and operational phases. The Councils seek the provision of legacy benefits through the provision of new and improved existing accommodation alongside create new, sustainable, quality visitor accommodation.

Given the importance of tourism in the area the Councils consider it necessary for BRB to undertake a detailed study to address the concerns as raised above. The Councils are willing to assist in the scoping and commissioning of any study.

2.1.5 The effect of an influx of workers including pressures on local and regional resources and demographic change

From the information submitted it is clear that far more information is required on the approach to managing the effects of the size and distribution of the workforce. While there may be a short-term gross gain in local job numbers, this consultation appears to fail to recognise the level of risk that; without timely and significant investment and mitigation in advance of the construction phase, for example in transport services and infrastructure, the net and longer-term impact may be detrimental to the District's diverse and prosperous economy.

More information is also required in relation to mitigating the effect of increased housing demand and traffic on existing businesses, longer term investment, tourism and sense of place. The consultation indicates that local businesses will benefit from increased demand for services and accommodation, while this may be true for a short period it fails to recognise that a short-term peak in demand may have a negative legacy without significant mitigation. The impacts on environment, landscape and the perception of the area could also escalate the negative consequences without careful management and mitigation.

2.1.6 Other economic infrastructure observations

Where technically feasible the project should ensure that any new communications infrastructure should be of high quality to benefit local residents and support economic growth and wellbeing. Ideally, this would be Fibre to the Premises; however, fully operational 5G mobile connectivity may also be accepted as appropriate broadband coverage, if arrangements are made for premises to access this at affordable prices, comparable to a fixed-line fibre broadband service, and this access is fully available at the time of completion of the build.

The project is expected to increase the demand for local business accommodation. Bradwell B is expected to generate 900 post-construction direct jobs. Applying multipliers for the electricity sector, a further 720 indirect jobs and 90 induced jobs can be expected – 810 jobs in total, taking the likely total to 1710 jobs in total during the operational phase of 60 years. Applying the current mix of employment activity in Maldon District and typical employment densities, this would generate demand for some 2,136 sq m of office; 4,183 sq m of industrial; and 7,910 sq m of warehousing floorspace. However, whilst Bradwell B proposals would generate a demand/need for such floorspace to support its ongoing operation, the Maldon Local Plan evidence base suggests that there could be viability issues associated with the delivery of new speculative business accommodation – we would therefore welcome an ongoing discussion with BRB regarding how the scheme could support the delivery of supporting economic floorspace, for example through financial support for the delivery of a new Enterprise Centre at Maldon.

Supported by: Robert Willis, Economic Infrastructure Manager (ECC); Hassan Shami, Commissioner for Skills Development (ECC); and Jack Ellum, Strategic Theme Lead (MDC)

2.2 Social / Community

The impacts of Bradwell B on communities and their services will be significant. The opportunities and impacts on communities during the construction, operation and decommissioning of the nuclear power station will be a 'once in a lifetime' occurrence. Bradwell B will leave a legacy on existing and future communities and it is therefore critical to consider the wide ranging social and community impacts which include, but are not limited to:

- Community services and infrastructure,
- Community safety,
- Leisure and recreation,
- Health and wellbeing,
- Educational provision (primary, secondary, sixth form and early years and childcare services, and
- Communication to our communities.

The BRB commitment to work in partnership with the Councils and the community to manage the impacts of Bradwell B and maximise the benefits for the community is welcomed. Only by working in partnership will we be able to achieve the best outcomes for existing and future communities.

Whilst it is acknowledged that this is an early Stage 1 consultation, there is some concern that there is no substantive assessment or detail included on the impact that this development proposal will have on communities, including health and wellbeing. The National Planning Policy Framework (NPPF) requires development to enable and support healthy lifestyles, especially where this would address identified local health and wellbeing needs – for example through the provision of safe and accessible green infrastructure, sports facilities, local shops, access to healthier foods, allotments,

walking and cycling. These fundamental matters will need to be addressed and the Councils seek early discussions to understand how the project will be assessing and addressing community impacts in this area moving forward.

BRB is required to undertake an Environmental Impact Assessment (EIA) and the Councils' recommend that population and human health elements are considered in the EIA. Given the scale, size and significance of the project and the health and wellbeing impacts that may arise from the proposal, it is recommended that BRB should also undertake a stand-alone Health Impact Assessment (HIA) and BRB should consider how elements of the HIA might support the socio-economic and behavioural elements of this chapter. The biophysical elements of the population and human health chapter should be directed by the relevant technical and scientific environmental scientists and health protection officers within both Public Health England's Centre for Radiation, Chemicals and Environmental Hazards and relevant local authorities.

The Essex Design Guide (2018) includes supplementary guidance regarding the updated Essex Planning Officers' Association Health Impact Assessment guide, which also includes the wider Essex Healthier Places guidance. These provide more in-depth information on what needs to be considered when looking at health, wellbeing, the environment and communities (<https://www.essexdesignguide.co.uk/supplementary-guidance/health-impact-assessments/>)

The Councils recommend that the HIA is a fully participatory assessment incorporating a robust literature review and involves extensive stakeholder community engagement, consistent with the HIA Guide. As part of this, the Councils request that a stakeholder engagement group is set up, facilitated by BRB, to ensure that key health, wellbeing and community stakeholders can be engaged in this process. The Councils can provide a list of suggested stakeholders for this group. In addition, it is recommended that the Public Health England Healthy Places nationally significance infrastructure projects (NSIPs) lead officers are engaged to provide a national strategic public health overview in addition to that provided at a local level.

The community stakeholder engagement group would also help to influence and drive the Bradwell B legacy at a local level with local residents, Parish Councils, stakeholder groups and organisations participating. This group should be integral to moving the project forward and ensuring that local communities are brought into this process. Key local organisations and community groups should be included whilst also linking in to other local boards, such as the Llivewell Group, Maldon Youth Strategy Group, Maldon Sense of Place, Maldon Children's Advisory Board for example.

Due to the complexity and range of potential impacts upon the various communities surrounding the development over the extensive and multiple construction phases, assessments should consider impact at differing community levels. Some of our preliminary thinking which will be refined at the HIA scoping phase will be required to consider the impacts upon the immediate villages within the Dengie Peninsula, such as Bradwell village, the villages adjacent and surrounding Bradwell within the Dengie Peninsula, and the wider sphere of influence in Maldon District and the county of Essex. We would wish to consider the impact on East of England as a region and further but would wish to discuss this with relevant other stakeholders to understand their requirements, especially those concerning socio-economics, economic growth and highway matters.

Any formal recommendations arising from the HIA should relate back to the aims of the HIA from the scoping assessment. Any recommendations should seek to maximise the potential health and well-being benefits as well as minimising unintended consequences that have been identified. The HIA will enable the Councils and BRB to understand how the various development options proposed will impact upon each identified community, health or wellbeing element and what the effect the

impact will be. For some pathways, this is likely to provide multiple options and having this level of detail will enable us to promote the best options for health and wellbeing in existing and proposed communities. For the assessments, we must understand the magnitude, significance and duration of the preferred option's effect and as part of this specifically, the impact on any group that may be impacted by this including those impacted by inequalities including with protected characteristics, those impacted by differences in socio-economic circumstances, those impacted by differences through place/locality and those in excluded and under-served groups. Sensitive receptors sites must also be identified and impacts and effects on these must be considered at the differing community levels as raised above.

Where any community or health effect is identified through the various options proposed, it is the expectation that clear mitigation measures are included within the proposals before preferred proposals are identified. Should positive elements of the proposal be identified, it needs to be demonstrated how these can be maximised and whether they can play a part in legacy arrangements that might be secured. This is especially relevant to socio-economic opportunities such as skills, training and employment as well as housing and other social infrastructure, as examples. Where any negative, unintended consequences are raised, it must be clear how the applicant proposes to either remove, minimise or mitigate against these and the duration of this mitigation.

With regards to any potential legacy funds to be set up, the Councils would wish to discuss how these are allocated with relevant stakeholders, to give an understanding of the project funding, the scale of the project proposed, and the amount of funding necessary. It is envisaged that a local stakeholder engagement group will be important to ensure an appropriate breadth of representation on discussions as to how best funds are allocated.

Extensive public engagement, and the feedback that arises from this, on matters related to health, wellbeing and communities should be included in any HIA so that stakeholders are aware of these and can be involved as appropriate. The role of Parish Councils should also be fully recognised.

At this stage, the Councils wish to highlight a number of community, health and wellbeing issues that should be considered by the BRB as it develops its proposals. This list will expand:

Construction workforce

- Access to a range of Healthcare and the impacts on commissioned public health services
- Housing and the impact on the need for temporary housing, tourist accommodation and the capacity within the local housing market to accommodate demand including the impact on available affordable housing for local people
- Physical sport and formal and informal activity opportunities
- Mental wellbeing
- Emergency planning
- Skills, training and employment opportunities for local people including supply chain
- Impact on other local and strategic social infrastructure from the workforce not mentioned above
- Community safety implication and demands
- Local community health and voluntary service demands
- Active travel (walking and cycling) and general travel by river, train, bus, car etc.
- Liaison with education providers (service capacity, pupil and childcare, apprenticeship and career opportunities)
- Community integration opportunities preventing severance and isolation.
- Code of conduct agreements

Construction phase

- Impacts on community including impacts on facilities, services and social infrastructure including healthcare and education premises
- Impacts on physical activity opportunities for leisure and recreational use including use of the Blackwater Estuary.
- Severance of Public Rights of Way (footpaths, bridleways and byways), cycle routes and footways physical activity routes and active travel routes including coastal paths (including the emerging England Coastal Path) and routes connecting relevant places of natural beauty and heritage sites
- Creation of active design principles regarding sustainable travel and environmentally friendly travel initiatives, routes and measures to link with and enhance local Green Infrastructure provision.
- Impacts of significant HGV movements, the movement of the construction workforce (including park and ride), potential rail and water transport movements on health and wellbeing including relevant safety issues and environmental concerns including but not limited to noise and air quality
- Impact on the local and strategic road network, the performance of that network and access for local people to key services
- Planning blight
- Impacts on public mental health, including community cohesion and social isolation.
- Community safety both perceived and actual threat
- Impacts on the opportunity for local employment to successfully compete for direct and indirect supply chain opportunities
- Opportunities for training and skills support for local population including apprenticeship schemes and careers engagement for schools
- Impacts on access to appropriate housing on local population (including impacts on affordable housing)

Operational

- Impacts on community including impacts on facilities, services and social infrastructure including healthcare, community and education premises
- Impacts on physical activity opportunities for leisure and recreational use including use of the Blackwater Estuary and potential improvements to local Green Infrastructure.
- Severance of PROW, physical activity routes and active travel routes including coastal paths and relevant places of natural beauty and heritage sites
- Creation of active travel and environmentally friendly travel initiatives, routes and infrastructure, building on and with reference to the Maldon Cycle Action Plan.
- Impacts of HGV, construction workforce, potential rail and water routes on health and wellbeing including relevant safety issues and environmental concerns including noise and air quality
- Impact on road network and access for local people to key services
- Planning blight
- Impacts on public mental health, including community cohesion.
- Community safety both perceived and actual threat
- Impacts on local employment to include direct and indirect supply chain opportunities
- Opportunities for training and skills support for local population including apprenticeship schemes and careers engagement for schools
- Impacts on housing on local population (including impacts on affordable housing)
- Community services and infrastructure impact
- Severance of coastal paths, walking routes and heritage sites and impact on health and wellbeing

Decommissioning

The Councils would wish to have decommissioning considerations included in assessments.

It is stressed that detail information and stakeholder engagement is required to establish the level of community services required to support the needs of the proposals, either temporary or permanent. The need for permanent homes to meet the needs of the operational phase is not currently addressed, as identified in the housing response below, and so community impacts are impossible to assess at this stage. The demographic profile of construction workers and operation workers, as well as potential indirect impacts, is necessary to robustly assess and help inform likely community needs e.g. for additional school places, libraries or health facilities. Detailed discussions based upon relevant evidence will be essential following details of any future demographic profiling.

The impacts arising from Bradwell B on communities and their necessary infrastructure covers a range of inter-related topic matters. For example, the selected option for movement of freight and workers will have a direct impact on matters such as highway capacity, air quality, noise, and road safety along route corridors through villages. It could also lead to the severance of safe walking routes required for sustainable movements to existing schools. The Councils expect avoidance or mitigation of adverse impacts if impacts are significant.

It is a concern that the Stage 1 Consultation makes no reference to the impact on or on the potential benefits to upgrade and enhance the Green Infrastructure and the development's contribution and connectivity to the wider network (including blue infrastructure). The impact on the recreational use of the Blackwater Estuary will also need to be considered. The Councils will welcome details and discussions on this important topic. The Councils recommend consideration is given to the Green Essex Strategy (2020) and the Maldon Green Infrastructure Strategy SPD (2019).

The Green Essex Strategy seeks to take a positive approach to enhance, protect and create an inclusive and integrated network of high-quality green infrastructure in Greater Essex, to create a county-wide understanding of green infrastructure – its functions and values, and to identify opportunities for delivering green infrastructure. The aim is to guide and shape planning and other services through setting principles that can inform plans and strategies, that will enable a coherent approach and partner collaboration in the delivery and long-term management of multi-functional natural assets, which will provide environmental, social and economic benefits.

The proposed discussions on emergency planning are welcomed with safety at the heart of the proposals. It is acknowledged that the Generic Design Assessment Process and the operating approvals from Office for Nuclear Regulation and Environment Agency will separately assess the safety of the site operation and UK HPR1000 nuclear technology.

The Radiation (Emergency Preparedness and Public Information) Regulations (REPPiR) 2019 impose requirements for off-site emergency arrangements relating to Bradwell B following the nuclear operator completing the hazard assessment process. Clarification would be welcomed on BRB's proposals to ensure appropriate off-site emergency plans for the project, including workers during the construction phase (see Stage 1 Consultation, para.2.15).

The Office for Nuclear Regulation (ONR) provides land use planning policy advice. This, in conjunction with REPPiR 2019, confirms that Essex County Council Emergency Planning will only get legally involved once a nuclear operator provides a Consequence Report. At that stage ECC would commence the process of consultation and preparation of Off-site planning with partner agencies.

MDC would welcome clarification from BRB on proposals during the construction and pre- nuclear phase of the project including the following details relevant to emergency planning:

- Proposals to manage an incident on a haul route to the site which may impact upon local residents and business which could result in evacuation or significant disruption to transport in and out of the Dengie peninsular during an incident.
- Any construction process or activity on site which could have off site consequences to local residents and business (including evacuation and maritime pollution arrangements)
- Any construction process, activity or incident involving on-site residential accommodation which could result in the evacuation of the workforce from the site and the proposals to manage and support displaced workers during an emergency
- Details of the proposed timeline for the emergency planning workstream would be welcomed.

Supported by: Laura Taylor-Green, Head of Wellbeing and Public Health: Healthy Places and People (ECC); Ben Page, Strategic Theme Lead – Community (MDC); Blaise Gammie, School Place Planning Manager (ECC); James Pinnock, Customer Business Development Lead (ECC); Jayne Rogers, Environment Officer (ECC); and Mick Gurden, Emergency Planning and Resilience Consultant, Emergency Planning & Resilience Team (ECC); Richard Holmes, Director of Service Delivery (MDC).

2.3 Housing / Accommodation

The impacts of Bradwell B development would have wide-ranging and long-term impacts on the housing market within the Maldon District and probably beyond. The scale and scope of these impacts will bring challenges as well as opportunities for the area. This will need to be positively planned following a thorough consideration of the potential impacts of the proposals which will be understood once the relevant evidence has been gathered. Such evidence must include a thorough housing market impact assessment to understand the housing needs of the new workforce, both during construction of the station and when operational, and how and where those needs will be located. Future housing needs can then be incorporated into the planning of new transport and community infrastructure.

The Stage 1 Consultation does not adequately evidence or explain the proposals to meet the housing needs of the project and to address the impacts of the proposal. Engagement with BRB will be welcomed to discuss the strategic approach to housing, including meeting the needs of workers during the operation of the power station and housing market impacts during the construction and operational phases. The need for permanent homes to meet the needs of the operational phase is not currently addressed within the Stage 1 consultation.

There are potential housing issues that will need to be addressed, including but not limited to:

- Local housing impacts arising from the construction workforce. Exiting residents could be out priced on new build and existing homes for sale leading to pressure being placed on the Local Authority Housing Register. This could place additional pressure on the limited social rented sector.
- Impacts on tourist accommodation that could negatively impact on the availability of temporary accommodation available to support homeless applicants to the Council. There is concern that this would increase placements outside of the local area, which has several disadvantages over local placements.
- The role that permanent housing will be part of the housing strategy for the development together with details on its location, scale, dwelling type, tenure and contribution to a positive local legacy.

- Impacts on the small private rented sector, including effects on the available premises available to the Council to fulfil duties to the homeless.
- The potential for applications from workers to be placed on the Housing Register to access limited local affordable housing provision.
- The potential for homeless approaches arising from loss of employment family breakdown within the workforce community.
- Homeless approaches from worker with family where private landlord has served notice on property (possibly due to selling property). If workers and family have been resident for six months or more they have a Local Connection under the Housing Act and potentially a duty by the local authority to place into temporary accommodation/possibly secure long term permanent housing.
- The measures proposed to avoid, mitigation or compensate for negative impacts or to maximise positive impacts from the housing proposals. Discussion on the opportunities for affordable housing, working with Registered Providers to provide affordable rental homes, will be especially welcomed.

It is acknowledged that paragraph 5.7.25 of the Stage 1 Consultation document provides a brief reference to measures that other large-scale infrastructure projects have used to support local housing markets but we will welcome discussions specific to the Bradwell B proposal. Whilst paragraph 5.5.9 references the potential for a flexible Housing Fund it also does not appear to be specific to a thorough understanding of the Maldon District and surrounding areas. There is a small private sector housing sector within the Maldon District and BRB's expectation that it will only be marginally impacted during the construction peak period will need to be supported by evidence.

Strategic and detailed discussions are requested to inform the baseline assessment and the development of BRB's preferred specific proposals by Stage 2 of the consultation.

Supported by: Damion Ghela, Lead Specialist Community (MDC); John Swords, Senior Housing Specialist (MDC); Matt Leigh, Lead Specialist Place (MDC); Christopher Downes, Housing Growth Lead (ECC).

3 SUSTAINABILITY: ENVIRONMENT

3.1 Environment: Environmental Health

There is potential for the proposed development to have a significant impact on environmental health issues. However, there is inadequate information included in the Stage 1 Consultation for an informed view to be provided at this stage. Evidence and assessments are nevertheless expected later in the DCO process and early discussion with the Environmental Health service on assessment methodologies will be welcomed. Pre-application engagements as the proposals develop are also requested.

The proposals for the main site and areas of search for Associated Development are inadequately detailed or too broad for advice to be provided at this stage. It is notable to see that some of the main local environmental impacts (noise and air quality from associated development in particular) have not been acknowledged at this stage. The Air Quality Management Area at Griffin Hill, Danbury, should also have been acknowledged.

A more detailed account of existing baseline environmental conditions on the main development site, associated development sites, search areas and preferred strategic transport routes is considered essential. This will need to be informed through desk-based studies, environmental surveys, new traffic surveys and associated traffic modelling, and site investigations; include the methodologies employed to undertake the environmental impact assessment; the outcomes of any assessments to date; proposed mitigation and potential residual and cumulative effects.

All data collection, assessment methodologies and traffic modelling should be clearly described and justified in the context of relevant national guidance and planning policy. Clear identification of sources of pollution and quantification of adverse effect levels at sensitive human (and ecological) receptors is necessary for all phases of the development.

Supported by: David Cant, Senior Specialist Environmental Health (MDC).

3.2 Environment: Ecology

3.2.1 Ecology

The location of Bradwell B adjacent to the Blackwater Estuary and the Essex coast lies in a highly sensitive coastal area. There is potential for unacceptable impacts from the project on:

- Internationally important sites are designated under the Conservation of Habitats and Species Regulations 2017 - Special Protection Areas (SPAs) and Special Areas for Conservation (SAC) and the Ramsar convention on wetlands (Ramsar sites);
- Nationally important sites e.g. Sites of Special Scientific Interest (SSSIs) designated under Wildlife & Countryside Act 1981 as amended and Marine Conservation Zones (MCZs) designated under the Marine and Coastal Access Act 2000
- Non-statutory designated sites eg, Local Wildlife Sites (LoWS)
- European Protected Species listed in the Conservation of Habitats and Species Regulations 2017
- UK protected species listed in Wildlife & Countryside Act 1981 as amended, and

- Priority habitats and species Listed under s41 Natural Environment and Rural Communities (NERC) Act 2006 - to ensure the Secretary of State can fulfil their statutory duty to have regard to conserving biodiversity under s40 NERC Act.

Ecological assessment will therefore need to cover potential impacts on a wide range of habitats and species from internationally important numbers of non-breeding and breeding birds which depend on the inter-tidal zone, marine species such as the native oyster and a range of fish to terrestrial species such as water voles, bats roosting in trees and farmland birds. The likely impacts of development stretch beyond the Main Development site to Associated Development sites and all of these will require the same high level of ecological survey and assessment to inform choices on options.

The submitted documentation has identified a list of designated sites which could be affected including the Blackwater Estuary SPA & Ramsar site, the Essex Coast SAC and the Blackwater, Crouch, Roach and Colne Estuaries Marine Conservation Zones. However it is recognised that an early decision has been made to opt for setting the power station back from the coast (retaining the borrow dyke and all other designated habitat on its seaward side) and not proceeding with direct cooling as set out in the nomination documents for Bradwell and National Policy Statement EN1 Vol II Annex C, and instead to cool the condensers indirectly using cooling towers (reducing the impact on the marine environment, particularly on native oysters or other wildlife). Evidence to support the options considered and the relative environmental impacts is needed.

3.2.2 Baseline Information requirements

Section 3 on terrestrial ecology has identified the likely impacts from the Main Development site on features of the ten statutory designated sites close to and within the site e.g. protected species likely to be present and affected by the development. It is noted that the terrestrial interest associated with the main development site includes foraging habitat for wintering dark bellied Brent geese, and the arable fields may also support other wintering waders and wildfowl. The borrow dyke may support water voles and other protected species may be present on the field margins. This baseline assessment needs to be expanded to include the results of a range of ecological surveys, to be agreed on through early stakeholder engagement, in order to ensure a robust starting point for decisions on options and detailed design.

The reference to an Evidence Plan to produce a Shadow Habitats Regulations Assessment (HRA) is welcomed as the Bradwell B project will be required to assess if the proposal is likely to result in an adverse effect on site integrity (either alone or in combination with other plans and projects) for the Habitats (European) sites within scope of the Part One Appropriate Assessment. This will be necessary for the Secretary of State to provide sufficient information for Natural England to consider this before the any Development Consent Order can be approved. It is noted that NPS EN6 Vol II Annexes paragraph C.8.102 states: “...there may be interactions and cumulative effects on biodiversity should both Bradwell and Sizewell C sites be developed. Guidance on the consideration of cumulative effects is in EN-1. For instance, Section 4.2 says that *“the IPC should consider how the accumulation of effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place”*”.

It will be essential to assess possible significant adverse effects on nationally important nature conservation sites and further studies will need to be carried out, as part of the Environmental Impact Assessment process, to determine the significance of the effects and the effectiveness of any

mitigation measures. Any key inter-relationships between biodiversity and other sustainability effects will need to be identified particularly in relation to flood risk management and water quality.

The Associated Development sites need to be assessed to an equal level for ecological impacts as woodland and other habitats affected by these, in addition to the Main Development site.

There is no reference to a desktop data search to inform surveys so it is recommended that data searches are sought from both Essex Field Club and Essex Wildlife Trust Biological Records Centre to inform terrestrial and marine ecology surveys for discussion with key stakeholders i.e. before Stage 2 consultation and the Preliminary Ecological Information Report.

The reference to farmland bird species of conservation importance is welcomed as these may use the arable fields on the main development site, including species such as turtle dove, grey partridge and skylark. It is recommended that the scope of surveys should also cover Priority s41 species (both terrestrial and marine) and any Schedule 9 species which could affect the proposal.

The potential impact on all the relevant species and habitats must be effectively assessed and appropriate avoidance, mitigation and compensation identified to minimise adverse impacts on the environment. In delivering new schemes, the Government expects applicants to avoid and mitigate environmental impacts in line with the principles set out in the National Planning Policy Framework (NPPF) and the Government's Planning Practice Guidance (PPG).

The use of nationally agreed guidelines for surveys and that all survey work is to be undertaken in the appropriate season by appropriately qualified ecological consultants is good practice and supported. Survey and assessment should meet the requirements of both Natural England Standing Advice, and the Essex Biodiversity Validation Checklist, using Defra's biodiversity metrics, as well as CIEEM Guidelines for Ecological Impact Assessment (EcIA) 2016.

Surveys should include walkover surveys to inform further surveys on habitats and species, to include Priority habitats and both protected and Priority species, sufficient for the Secretary of State to discharge all associated statutory duties, including NERC s40. This should meet the EcIA definitions of Important Ecological Features of local or greater importance for biodiversity and include terrestrial and marine environments. The assessment of likely ecological impacts needs to inform the evaluation of alternatives and incorporate effective and deliverable mitigation measures to minimise the impacts as well as identify compensation including offsite measures for any residual impacts. There will be seasonal constraints for species surveys so these need to be scheduled carefully to meet the programme timetable.

Ecological assessment needs to cover the entire development area, including all ancillary sites (new highway routes, roads, park and ride and freight compounds, permanent and temporary housing, marking, pylons, new transmission infrastructure on or off site) and any offsite works needing to be secured, and assess potential impacts on the marine, inter-tidal and terrestrial environments.

The work to support early discussions should include identification of statutory designated sites within any evidenced zone of influence (not a generic distance from the site) and non-statutory Priority habitats at least within 1km of the Main or Associated Development route or site.

Identification of biological records for protected and Priority species records should inform surveys and assessments of all parts of this development.

3.2.3 Approach to landscaping and managing environmental effects

There will be opportunities to enhance parts of the site, in particular by creating Priority habitats such as hedgerows, to improve connectivity across the landscape particularly to mitigate for disconnections caused by road improvements. The ecology chapter of the Environmental Statement (ES) should thoroughly explore all reasonable options to enhance the development for biodiversity including Protected and Priority species to support the Secretary of State in demonstrating the statutory duty to have regard to conserving biodiversity (s41 NERC Act 2006).

As well as the options for mitigation set out in EN-1, the Nuclear Appraisal of Sustainability and HRA, have identified possible mitigation options for Energy projects which include variations to building layout to avoid ecologically sensitive areas and on-site measures to protect habitats and species and to avoid or minimise pollution and the disturbance of wildlife.

It is expected that, during the EIA process, all opportunities to deliver biodiversity enhancements will be explored in consultation with appropriate stakeholders as a mechanism to deliver measurable net gain for biodiversity. BRB are requested to confirm its commitment to achieving Biodiversity Net Gain which is not explicit in the Stage 1 Consultation.

It is noted that NPS EN1 para 5.3.4 states that *“the applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests”* and para 5.3.8 *“In taking decisions, the IPC should ensure that appropriate weight is attached to designated sites of international, national and local importance; protected species; habitats and other species of principal importance (Priority) for the conservation of biodiversity; and to biodiversity and geological interests within the wider environment”*.

For Priority habitats and species, EN1 para 5.3.17 states that these *“...species and habitats have been identified as being of principal importance for the conservation of biodiversity in England and Wales and thereby requiring conservation action. The IPC should ensure that these species and habitats are protected from the adverse effects of development by using requirements or planning obligations. The IPC should refuse consent where harm to the habitats or species and their habitats would result, unless the benefits (including need) of the development outweigh that harm. In this context the IPC should give substantial weight to any such harm to the detriment of biodiversity features of national or regional importance which it considers may result from a proposed development.”*

In line with para 5.3.18 of the NPS, the applicant should therefore include appropriate mitigation measures as an integral part of the proposed development. In particular, the applicant should demonstrate that:

- during construction, they will seek to ensure that activities will be confined to the minimum areas required for the works;
- during construction and operation best practice will be followed to ensure that risk of disturbance or damage to species or habitats is minimised, including as a consequence of transport access arrangements;
- habitats will, where practicable, be restored after construction works have finished; and
- opportunities will be taken to enhance existing habitats and, where practicable, to create new habitats of value within the site landscaping proposals.

It is expected that the Bradwell B project maximises opportunities in and around developments in order to ensure that such beneficial features are delivered. A monitoring strategy is also expected

with clear objectives outlined for those significant environmental effects that remain following mitigation.

It is pleasing to see that the ecological principles of respecting the outstanding marine biodiversity of the Blackwater Estuary and protecting the rich biodiversity and ecology of the Dengie Peninsula are both acknowledged as being important to the emerging proposals for the main site. The success of delivering the project to these principles will require a full programme of surveys and assessments and that sufficient information is provided to the statutory consultees in a timely manner to inform their responses to consultations.

3.2.4 Accommodation Options

Ecological impacts are likely to result from disturbance during construction of the workforce accommodation and its temporary, though long-term operation, and decommissioning, as well as loss of foraging habitat along the coast. Areas that may be used by protected wintering wildfowl should particularly be avoided and minimised when considering the potential sites. At this stage, without detailed surveys and assessment, it is considered that Site 3 is likely to be the preferred location from an ecological perspective and Site 1 may be unacceptable.

3.2.5 Transport and associated works

It is noted that the proposed options could affect areas which could potentially be functionally linked land for designated features of statutory designated sites. Priority habitats, including deciduous woodland and hedgerows (loss and severance) are also likely to be affected. In line with the suggested design principles, the mitigation hierarchy should be followed, and opportunities taken to inform decisions on highways improvements, park and ride sites and freight management facilities to avoid and minimise ecological impacts. Compensation will be expected for all losses and biodiversity enhancements to deliver net gain.

The four options set out for marine transport are based on initial considerations and although option 1 Beach Landing Facility (BLF) appears to result in the least environmental impacts, detailed investigations in the coming months will be necessary to inform the choice of options and specific locations. This is necessary to avoid, minimise and compensate for any impacts in the estuary and in the inter-tidal area will before a final choice on options is made, particularly if two BLFs are considered necessary.

The Councils recommend that all the potential transport mitigation options considered should consider how they will be taken to contribute to the creation of coherent and resilient ecological networks as highlighted in the Government's Environment Bill 2020.

3.2.6 Further information required:

It is recommended that integrated and ongoing engagement with key stakeholders on a range of ecological and habitat issues is undertaken at the earliest opportunity during the pre-application period. This is essential to inform and refine the project scope and options before Stage Two Consultation. Consideration of alternatives will be key to all decisions and will be expected. From an ecology point of view, consultation on Environmental Impact Assessment (EIA) scoping will be key to securing the necessary surveys and assessment of likely ecological impacts from the Main site and Associated Development. It is expected that this assessment will need to consider any impacts in combination with other plans and projects, including Sizewell C in Suffolk.

To avoid delays, it is expected that EIA assessments and details of avoidance, mitigation and compensation measures will feed into the early versions and consultation on the Preliminary Environmental Impact Report (PEIR) ahead of the Stage Two consultation. It is considered too late to leave this detail until the full Environmental Statement is submitted as part of the DCO application.

The Councils will need to be involved in discussions on the preparation of an Outline Code of Construction Practice (containing embedded avoidance and mitigation measures) and an Outline Landscape and Ecological Management Plan (LEMP). This needs to be part of the ongoing discussions with key stakeholders rather than leaving this detail until Stage Two consultation.

The EIA documentation will need to clearly set out the details of the environmental avoidance, mitigation, compensation and enhancements plans for the Main site and the Associated Development sites.

Supported by: Sue Hooton, Principal Ecological Consultant (Place Services advising MDC) and Nicky Spurr, Environment Officer (ECC).

3.3 Environment: Historic Environment

Bradwell B and its associated infrastructure has the potential to result in adverse impacts on the historic environment, including both designated and non-designated heritage assets. In addition to the physical impact on below-ground archaeological remains the development will also be intrusive within the wider historic landscape, and the settings of multiple heritage assets, resulting in potential harm to their significance.

The *NPS for Energy* (EN1) states that 'All proposals for projects that are subject to the European Environmental Impact Assessment Directive must be accompanied by an Environmental Statement (ES) describing the aspects of the environment likely to be significantly affected by the project.' The Directive specifically refers to effects on human beings, fauna and flora, soil, water, air, climate, the landscape, material assets and cultural heritage, and the interaction between them. The Directive requires an assessment of the likely significant effects of the proposed project on the environment, covering the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects at all stages of the project, and also of the measures envisaged for avoiding or mitigating significant adverse effects. The requirements for appropriate assessment are covered under Section 5.8, including that the applicant should provide a description of the significance of the heritage assets affected by the proposed development and the contribution of their setting to their significance.

The *Annexes to the National Policy Statement for Nuclear Power Generation* (EN-6), D8: Areas of amenity, cultural heritage and landscape value identified 'potential adverse effects on the settings of Othona Roman Fort and St Peter's Chapel, other nearby scheduled monuments, listed buildings and the West Mersea Conservation Area, as well as on buried archaeology of potentially high importance'.

The primary legislation with regard to Scheduled Monuments is provided in the Ancient Monuments and Archaeological Areas Act (AMAA) 1979. In order to be scheduled, a monument should be of 'national importance' (section 1 (3) of the AMAA. The National Planning Policy Framework (NPPF) states that the setting of a designated heritage asset can contribute to its significance. Most of the buildings affected by Bradwell B proposals are listed buildings. Listed buildings are buildings of special architectural and historic interest. In accordance with section 66(1) of the *Planning (Listed*

Buildings and Conservation Areas) Act 1990, the Secretary of State must have special regard to the desirability of preserving any affected listed building or its setting or any features of special architectural or historic interest which it possesses. There are also local lists of important heritage assets.

Maldon District Council's Heritage and Conservation Specialist has produced an assessment of impacts on above-ground built heritage assets potentially impacted by Bradwell B, including designated and locally listed buildings within the Maldon District. This full report is attached as Addendum to this Appendix and forms part of this topic-based response.

Whilst the attached report focuses on listed buildings it is probable that each of these buildings will also have associated archaeological deposits which relate to the origins and development of these heritage assets.

The proposal will also impact upon the setting of the Bradwell-on-Sea Conservation Area and the report in Appendix B provides some consideration of potential impacts. Conservation areas are 'areas of special architectural and historic interest, the character and appearance of which it is desirable to preserve and enhance'. Section 72(1) of the *Planning (Listed Buildings and Conservation Areas) Act 1990* requires the Secretary of State to pay special attention to the desirability of preserving or enhancing the character or appearance of the conservation area.

In addition to the many above-ground heritage assets that could be affected by the proposals, the location of the proposed power station lies within a highly sensitive area of archaeological significance. It has been identified in the submitted documentation that several heritage assets will be impacted, including the grade I Listed Chapel of St Peter on the Wall and the Scheduled Roman Saxon Shore Fort at Othona, as well as numerous grade II Listed buildings and locally listed buildings. The Councils also raise concern regarding the Scheduled fish-traps within the estuary which although just outside the main site area have the potential to be impacted by sea-borne traffic and changes to tidal processes. There is also concern that BRB have yet to appropriately consider the non-designated heritage assets or the historic landscape which will be impacted by BRB's proposals. In addition to the significance of these assets in their own right, they also contribute to the setting and significance of the designated assets. These will need to be included in BRB's assessment and the Councils expect that Historic England will be making similar recommendations. It also needs to be understood that the impacts of the scheme are not only on individual heritage assets (both designated and non-designated), but also the cumulative impacts of many changes to the historic environment along the length of the Dengie peninsula and beyond.

It is clear that the scheme will involve major landscape disturbance from the very start of the scheme and as such it is essential that the archaeological assessment and field evaluation for the proposed scheme should be completed early in the DCO process so that all of the heritage assets that will be impacted can be identified, and the nature of their significance understood and taken into account as BRB's proposals develop.

As this development will impact on extensive designated and non-designated heritage assets both on land and within the estuary it is essential that heritage meetings are held jointly with local authority advisors and Historic England to ensure the best outcome for the heritage of the area. Other NSIPs (Lower Thames Crossing, Tilbury 2) have all been undertaken in this way which ensures a consistent approach. There needs to be clear communication, early discussion and evaluation of the archaeological deposits and setting assessments to facilitate a robust understanding of the impact that the scheme will have on the historic environment.

The following Historic Environment Research Strategies apply to this area; The Greater Thames Research framework, The East of England Research Framework and Agenda (both the extant versions and the ongoing revisions). Historic Environment Characterisation has been undertaken for the entirety of Maldon District and should be used to inform the development of a historic environment strategy for the scheme.

3.3.2 Requirements for the DCO Process

Archaeological assessment needs to cover the entire development area, including all ancillary sites (highways, areas of search for park and ride compounds, housing, marking, pylons) and environmental off-setting. It needs to cover both marine, inter-tidal and terrestrial environments, and the interactions between the three. This work needs to be undertaken as early as possible within the DCO process.

The work to support the DCO process should include:

- *Desk Based Assessment*

Identification of designated and non-designated assets, to include archaeological and built heritage (integrated with the documentary and cartographic assessment)

Assessment of the Historic Environment Record Data

Assessment of the National Monument Record

Assessment of landscape character including identification of historic trees/hedges/ponds

WWII assessment of Bradwell Bay airfield and its surviving assets

- *Aerial photographic and Lidar assessment and rectification*

All available sources (including Google Earth) should be used, to better than 2m accuracy

- *Documentary and cartographic assessment*

Cartographic assessment within the Record Office

Initial assessment by a qualified historian as to the nature, range and potential of the documentary archive available

- *Built heritage assessment*

Designated and non-designated built heritage assets (including WWII structures) and their settings need assessing.

- *Deposit model/geotechnical work*

The Medway channel, alluvial deposits and saltworks, former creeks

Blackwater estuary

Interpretative mapping of landforms (former coastline, cheniers, former islands, sand-banks, palaeochannels, sea defences, etc.

(there is potential for information to be gained if this work is integrated with the overall geotechnical work being undertaken)

The project will require a geoarchaeologist and a Palaeolithic specialist in order to fully integrate the geoarchaeological information, including all past geotechnical work and surveys in the area and forthcoming geotechnical work and surveys. This will have to be a document that is added to as survey work progresses.

- *Geophysics survey – land and water*

All methods, including magnetometer, GPR and side-scanning sonar will need to be considered (potential for information to be gained if this work is integrated with the overall unexploded ordnance surveys being undertaken)

- **Shoreline assessment**

The inter-tidal area will require a walkover and recording exercise after each set of winter storms at a period of low tide

- ***Trial-trenching***

Geoarchaeological test-pits will be excavated within a selection of the trenches to provide transects across the site to refine the Palaeolithic potential of the site. The results are to be integrated back into the deposit model

Trial-trenching at a density of 5% of the area (this is the standard approach used across Essex for this type of work), using 30m trenches on a staggered grid pattern (with some adjustment to target previously identified features). In the area of the airfield trial-trenching maybe the only appropriate method to use.

- ***Tidal flow and erosion survey and its impact on scheduled monuments and archaeological sites on the foreshore***

- ***Setting assessments of heritage assets***

Setting assessments for designated and non-designated heritage assets. This must also be included within the Landscape and Visual Impact Assessment (LVIA)

- ***Integrated conclusions from the above surveys***

To include phased interpretation of the historic landscape, to include the geoarchaeological interpretation as well as the information from the Historic Environment Record (HER), aerial photos, geophysics, trenching and cartographic/documentary evidence.

3.3.3 The proposals for Bradwell B, including the BRB approach to landscaping and managing environmental effects.

The proposed development will have a significant impact on the historic environment, a full programme of assessments will be required in order to inform the development of a robust strategy to deal with potential impacts. This might include avoidance, preservation *in situ*, management or restoration of heritage assets, or preservation by record.

The development area and its surroundings are a largely flat, open country with wide views both inland and along the estuary. The Grade I Listed Saxon chapel of St Peter-on-the-Wall and the Scheduled Roman Saxon Shore fort are located on the eastern edge of the area. The inter-relationship between the two nationally important heritage assets and their setting majorly contributes to the significance of these assets. The Roman Saxon Shore Fort was located on the tip of on a ridge of slightly higher ground projecting out through the marshes and guarding the entrance to the Blackwater and the wider Greater Thames Estuary. Saxon Shore forts were heavily defended later Roman military installations. They were all constructed during the third century AD, probably between c.AD 225 and AD 285. They were built to provide protection against the sea-borne Saxon raiders who began to threaten the coast towards the end of the second century AD, and all Saxon Shore forts are situated on or very close to river estuaries or on the coast, between the Wash and the Isle of Wight. The fort is approached by Eastend Road, which follows the line of the original Roman road to the fort. The fort was reused in the 7th century when St Cedd founded a monastery

there as part of his work to convert the then pagan Anglo-Saxon inhabitants of Essex to Christianity. St Peter's Chapel is located in the gateway of the Roman fort and is constructed from reused Roman building materials. It is typical of monasteries founded by missionaries trained in the Irish tradition of Christianity in that it is sited in a remote location, albeit one with excellent sea links. The proposed landscaping will impact on the setting of these nationally important heritage assets by, amongst other things, curtailing views out across the landscape and impinging on historic routeways to it.

The historic field-scape comprises rectilinear sub-axial fields of possible mid -Saxon origin. The road network is also ancient in origin and is noted for its sharp right-angle bends as it fits into the historic field pattern. The Dengie peninsula was bordered by extensive salt-marshes which were largely enclosed in the 18th and 19th centuries. The Southminster-Tillingham gravel ridge is located near the eastern end of the Dengie peninsula. The gravels relate to the former pre-Anglian glaciation course of the River Medway and contain important Pleistocene remains. The ridge reaches a maximum elevation of around 37 metres OD at St. Lawrence and has extensive views out across the marshes to the North Sea.

The historic settlement pattern comprises dispersed settlement along the roads on the top of the ridge. Settlements developed at Southminster, Asheldham, Tillingham and Bradwell all of which have Historic settlement assessments which provide in depth historic environment information for each settlement and associated parish. Throughout the area there are dispersed farmsteads and Halls many of which have their origins in the medieval or early post medieval period. The settlement on the gravel ridge had a close relationship with the reclaimed marsh and marshland to the east with this providing the main sheep grazing area. The gravel ridge has attracted settlement since earliest times, and finds of Neolithic, Bronze Age and Iron Age, material are known from quarrying and other ground disturbance. There is an important concentration of cropmarks following the line of the ridge, the only such examples within the Dengie peninsula, these represent a range of site types of multi-period date. There are a number of probable Roman settlement sites on the site of the proposed power-station and it is possible that some or all of these were contemporary with the Saxon Shore fort.

The edge of the Dengie peninsula is bordered by an extensive area of present and former salt and grazing marsh. The landscape is very flat, in places bisected by old creek tributaries, with wide, open views to the North Sea and eastwards to the North Sea, and inwards to the dryland. Within the marshland the remains of Late Iron Age and Roman salt working sites (Red Hills) are identified as burnt areas visible both from the ground and the air. In the medieval and post medieval period the marshes were a valuable resource, providing pasture for sheep, salt making sites, fisheries and hunting grounds related to the settlements on the gravel ridge above the marshes. Finally, during the Second World War (WWII) defences were built into the sea wall to protect the area from German invasion. The power station site is located on the former WWII Bradwell airfield.

The intertidal zone contains nationally important archaeological sites stretching back to the Neolithic. Extensive surveys have been undertaken over the last two decades assessing the eroding landscape in the inter-tidal zone which has shown occupation of multi-period date. During the Neolithic sea level was still considerably lower than it is today but the sea was much closer to the present coast and in the Blackwater estuary it seems that the present low water mark was roughly the position of high water during the early Neolithic. Large areas of what is now the intertidal zone were still dryland and some of the best evidence of early Neolithic settlement in the East of England comes from the Blackwater estuary. The area is particularly significant for the extent and variety of archaeological remains reflecting the exploitation of coastal resources, it is also important for military defences relating to the wars of the 20th century. Within the estuary a number of very large Middle Saxon fish traps have been identified which comprise a series of surviving timber posts,

visible at very low tides. The largest complex of fish traps, at Collins Creek stretches for about 1km. Three of these sites are now protected as Scheduled Monuments. Saxon burials have been recorded eroding out of the foreshore beside Bradwell A. A range of archaeological sites dating to the post medieval period are located in this area including groups of oyster pits, remains of wrecks and a series of hulks. There is a close and important relationship between the estuary and the Dengie peninsula.

The proposed landscaping works will need to take into consideration the present historic landscape and how this relates to the setting and significance of the associated heritage assets. There is concern that the land-raising proposals would have an adverse impact on the historic landscape, and the setting and significance of heritage assets.

It is pleasing to see that the historic environment is well represented within the initial design principles. However, this will require a full programme of investigation to allow an appropriate understanding of the complex historic environment of the area and how the adverse impacts of the scheme can be avoided, mitigated, or compensated.

With regard to work within the estuary it will be important to understand the impact on tidal processes, including erosion and how these in turn will impact the Scheduled fish-traps and the surviving Neolithic land-surfaces in the inter-tidal area. In addition, Saxon burials have been found washing out of the foreshore beside Bradwell A, and it is anticipated that further burials may be present. An appropriate assessment will need to be put in place to establish both the effects of the proposed changes to the Indicative Zone for Marine Infrastructure and its surrounding area and to establish a baseline as to what heritage assets are present and their significance. It will be important to have joint discussions with Historic England regarding the designated fish traps.

3.3.4 Accommodation

There is the potential for surviving below-ground archaeological deposits in the areas of the proposed accommodation developments. These should be assessed and evaluated in order to fully define the impacts of the proposed scheme. Any assessment should include an assessment of the setting of the historic settlements, listed buildings and other heritage assets impacted by the proposal.

3.3.4.1 *Scenario 1 – Land west of the existing Bradwell Power Station site*

This accommodation site will need to be appropriately assessed for impacts on heritage assets and an appropriate mitigation strategy put in place. Any assessment should include an assessment of the setting of the historic settlements, listed buildings and other heritage assets.

3.3.4.2 *Scenario 2 – Land west of the existing Bradwell Power Station site with extension sites*

This accommodation site will need to be appropriately assessed for impacts on heritage assets and an appropriate mitigation strategy put in place. Any assessment should include an assessment of the setting of the historic settlements, listed buildings and other heritage assets.

3.3.5 Transport and associated works

The initial proposals will largely impact on the Dengie peninsula. There has been little archaeological fieldwork in this area to date and the soils are not conducive to cropmark formation. However, small scale excavations in advance of development have demonstrated that the area has been settled since the later prehistoric period. The area is characterised by a distinctive co-axial rectilinear field

pattern that is of considerable antiquity and may have its origins in the middle Saxon period, if not before. The field boundaries on the peninsula were historically bordered by elm hedgerows, which were severely affected by Dutch Elm disease, with the loss of standard trees the hedges are now dominated by elm scrub. Historically, settlement was highly dispersed with isolated farms and moated sites. There are a number of church/hall complexes such as those at Purleigh, North Fambridge, Snoreham, Mayland, Althorne and Steeple.

It is notable that in Table 4.1, relating to Park and Ride search areas, the 'Potential for impacts on buried archaeology, which is recognised as a key risk and requires further study' is only referenced for Search Areas 1a and 1b. This constraint is also applicable to the remainder of the Search Areas and should be included accordingly. The constraint should also be reflected in Table 4.2 relating to Freight Management Facility Areas.

3.3.6 Marine transport:

For any works in the estuary area joint meetings with Historic England and the Local Authority representatives will be required to discuss heritage impacts. Early heritage assessment such as side-beam sonar and magnetometer surveys will be required to help define appropriate routes for moving freight by sea. Both the potential for wrecks and the extensive surviving prehistoric land-surfaces, as well as other heritage assets including burials, both within the estuary and in the inter-tidal area will need to be assessed to support the DCO process. A protocol will also need to be put in place to avoid inadvertent impacts by shipping on the Scheduled fish-traps which lie immediately to the east and west of the Indicative Marine Zone.

3.3.7 Road Transport Strategic route 1:

There is potential for surviving below-ground archaeological deposits in the areas of the proposed groundworks. These should be assessed and evaluated in order to fully define the impacts of the proposed scheme. Any assessment should include an assessment of the setting of heritage assets.

3.3.8 Road Transport Strategic route 2:

Strategic Route 2 will require a much larger land-take than Strategic Route 1 and the scale of its impacts will be correspondingly larger. In particular, the construction of an entire new length of road cutting across from Foxhall Road to Bradwell is likely to have a significant impact on below-ground deposits dating from the Palaeolithic period onwards, as well as on the wider historic landscape and its legibility. There is potential for surviving below-ground archaeological deposits in the areas of the proposed groundworks. These should be assessed and evaluated in order to fully define the impacts of the proposed scheme. Any assessment should include an assessment of the setting of heritage assets.

3.3.9 Transport: Freight management facility

There is potential for surviving below-ground archaeological deposits in the areas of the proposed groundworks. These should be assessed and evaluated in order to fully define the impacts of the proposed scheme. Any assessment should include an assessment of the setting of heritage assets.

3.3.10 Transport: Park and Ride

There is potential for surviving below-ground archaeological deposits in the areas of the proposed groundworks. These should be assessed and evaluated in order to fully define the impacts of the proposed scheme. Any assessment should include an assessment of the setting of heritage assets.

3.3.11 Consultation process

It is recommended that early meetings are held to discuss the impacts on the historic environment, including the historic landscape, involving the Councils' archaeological specialist advisors, local specialist conservation officers and Historic England inspectors. This will facilitate an integrated approach to the management of the heritage response to this major scheme.

Supported by: Maria Medlycott, Senior Historic Environment Consultant (Place Services advising MDC) and Tim Howson, Specialist – Heritage and Conservation (MDC)

3.4 Environment: Landscape

3.4.1 Landscape

Given the site is a predominantly flat, low-lying coastal landscape with wide views both inland and along the estuary, it is likely that the proposal will have a major adverse visual and landscape impact.

The Stage One consultation document states that the "landscape characteristics include large open and mostly arable fields. Where present, hedgerows tend to be small and non-continuous, and provide little screening. A general absence of trees further contributes to the sense of openness, affording panoramic views across the marsh and out to sea" (Para. 3.2.9). Although to the east of the site, this is very apparent, there are wooded clusters/copses and extensive hedgerows and hedgerow trees to the south west and west (i.e. Curds Grove). For this reason, a more comprehensive assessment of the landscape character and existing qualities needs to be undertaken.

The open nature of the area is visually sensitive to new development, which would be visible within views from adjacent character areas. Primarily, the landscape offers a sense of historic integrity, resulting from historic field boundaries, including water-filled ditches and remnants of old sea walls. The main development site primarily falls within the Bradwell Drained Estuarine Marsh Landscape Character Area (LCA) (Braintree, Brentwood, Chelmsford, Maldon And Uttlesford Landscape Character Assessments (2006)). Although referenced in the document, there is little detail provided in terms of its landscape and visual characteristics.

Key characteristics include:

- the sense of huge sky, sound of birds, tranquillity, and panoramic views across the marshland and out to sea.
- restricted access provided by a very few lanes; absence of settlements.
- Bradwell Nuclear Power Station A as a visual landmark.
- St Peter-on-the-Wall church.
- Strong sense of being windswept and desolate.
- Field boundaries comprising water-filled ditches.
- Remnants of the original seawalls, which are still visible as relict landscape features.
- Unimproved grasslands

Given this proposal will bring forth visually intrusive development it is important that where possible, existing landscape characteristics and qualities are conserved and enhanced on-site, and off-site interventions are also explored. For instance, enhancements to declining hedgerows and field boundaries as well the preservation of drained marsh and sinuous ditches. The current document does not provide any of these landscape details and therefore it is expected that a comprehensive landscape assessment of the sites landscape value, qualities and characteristics will be undertaken to fully understand the special qualities this area of the LCA holds, and which should be retained. This should be undertaken to inform proposals as part of the Stage 2 consultation process.

Reference has also not been made to the Landscape Character Assessment of the Essex Shore (2005). In this document the development areas fall within the Dengie Coastlands Landscape Character Area. This large distinctive character area extends from the small remnant of marshland east of Bradwell to the broad tracts of polder several miles in extent between Burnham and the sea. It includes the fringing salt marshes and the broad sweeps of the Dengie Flats and Ray Sand, which at low tide forces all but boats of the shallowest draft well offshore. Generally, settlement in this area is not characteristic of the diverse coastal marshland but scattered established farmsteads instead with private lanes and tracks linking one to another. The boundary between the uniform marshland and the more diverse coastal marshland is generally aligned along the change in soil type from the good quality silts of the uniform marshland, to the harder-to-work clays of the older diverse marshland.

It is agreed that views from across the estuary are an important consideration when discussing visual and landscape impacts of the proposed development. The document states that “the horizontal spread of the development across the peninsula is an important consideration. Siting the permanent development as far to the south and west as possible - close to the existing Bradwell power station buildings - helps to reduce this impact. (Para 3.4.5)”. The Councils concur with this statement but further consideration will be required to ensure the best alignment of buildings having regard to key views, especially considering the size of the cooling towers which offers limited opportunities to use landscape for screening. We understand that ‘architectural composition’ is important, and it is clear the towers will become a prominent feature of the skyline, but it is also important to reduce impacts where possible.

Landscape mitigation is more plausible from viewpoints from the south and south-west. The Council’s concur that there are likely opportunities “to reduce impacts on visual amenity by replicating and extending the increased tree cover which prevails in this area.” However, as the project progresses, the detail of landscape mitigation locations needs to be carefully considered in line with existing and historic field patterns, ditches and tree cover to retain and enhance the green infrastructure network and character of the area

The construction of Bradwell B will have its own landscape and visual impacts, for example the storage of soil and spoil from earth works. These storage areas can be significant in mass and height; therefore, we would recommend that these, along with other construction facilities are shown on visualisations where possible and their impacts fully assessed. In principle, temporary screening that becomes long-term mitigation to alleviate impacts on local residents is welcomed.

As part of the site works, the consultation document states that the Bradwell B station platform will be raised to 7.4m AOD and ground reprofiling around properties will be needed. This is a significant operation, and the likely impacts are major. There are concerns that the area set out for soil and spoil storage may cause fragmentation of habitats and current GI network of the area. Therefore,

opportunities for advanced planting in the early stages of construction should be sought, where practicable. We would also expect all slopes to be gentle with appropriate landscape treatment given the existing landscape character. At present, the section illustration (Figure 3.29) shown in the document are considered inappropriate and we would welcome discussion in advance of the next stage of consultation.

3.4.2 Approach to landscaping and managing environmental effects

The Councils require that all the landscaping work referenced in paragraphs 3.5.8-3.5.13 should take into consideration the existing landscape qualities such as the planting palette and habitats present, as well as the historic landscape and how this relates to the setting and significance of impacted heritage assets. The consultation document declares that the vision of Bradwell B is “to take account of its distinctive local landscape and seascape setting as far as possible, whilst also recognising that existing energy infrastructure dominates the skyline from a number of views.” We look forward to seeing proposals for how this can be completed, both on and off site.

The National Planning Statement (NPS) EN-1 Section 5.10 sets out recommendations and requirements in relation to land use including open spaces, green infrastructure and green belt. These include that the mitigation of any adverse effects on Landscape, Green Infrastructure (GI), and other forms of open space. Maldon District Green Infrastructure Strategy Supplementary Planning Document and the Green Essex Strategy 2020 provides guidance regarding the Council's approach to green infrastructure provision in the District. As stated under Policy N3 of the Maldon District Pre-Submission Local Development Plan 2014-2029: “development should not increase existing deficiencies of open space” and therefore, if not to be retained, alternative and improved provision should be provided that retain and enhance existing landscape features and qualities, and are in the “most appropriate and accessible location in the locality for existing and future users.”

The footpath (PRoW 241-15) along the top of the flood embankment that wraps around the main development site has been identified as important, given it is a proposed England Coast Path National Trail (ECP). The section between Burnham-on-Crouch and Maldon covers 62km and passes around the main development site. The project is at stage 4 – Determine, whereby Natural England has consulted upon proposals and submitted a report to the Secretary of State (SoS). An Inspector will make recommendations to the SoS on any objections received. Once the Secretary of State has approved the report, Natural England will start work with ECC on preparing the route for public use and to contact will be made with owners and occupiers of the affected land to discuss the design and location of any new infrastructure. Temporarily closures may be acceptable during construction, however an alternative footpath route that provides a positive substitute during periods of closure will be required. The trail will also be impacted by the proposed sea defences; it is envisaged that the new sea defences would need to have a crest level (top) up to 9.8m AOD to protect Bradwell B from flooding over the full lifetime of the plant. Therefore, it's important that consideration is given to the footpath, and the user experience, whether that's through landscape mitigation and/or material treatment. Figure 3.28 of the consultation document identifies different areas within the main development site that will take a different approach to landscaping, following construction of the power station; Permanent development integration area, Landscape restoration and Estuarine marsh restoration. Although briefly defined, there is little detail provided and the analysis process behind the justification and implementation needs further thought as the landscape / planting strategy is key, as it needs to be a balance between responding to the local conditions, with the need to provide an effective visual screening where necessary.

Consideration will also need to be given to the potential impacts on existing Green Infrastructure and future provision.

3.4.3 Road Transport

The Councils consider that all potential strategic highway routes, junctions/route improvements and freight management/park and ride areas of search have an adverse environmental and landscape impact. However, at this stage of the project, given the detail provided, it is unclear to what these impacts will be. From a landscape perspective, any new routes and areas of search that are closer to existing settlements and infrastructure will reduce the impact on the wider landscape.

The Stage 1 Consultation document describes the key environmental sensitivities as being “roadside habitat, including deciduous woodland, hedgerow and drainage ditches; highway drainage and the potential for interaction with surface water flow routes and flood plain; roadside residential properties, which may be susceptible to noise and/or visual intrusion; and roadside listed buildings and buried archaeology. (Para. 4.7.53)”. Given the unique landscape character and qualities this landscape provides it is recommended that further detailed landscape studies to be undertaken before either of the as proposed strategic routes are chosen as the preferred option. These are necessary to measure potential impacts, vegetation loss and ensure mitigation and enhancement proposals are appropriate

3.4.4 Marine Transport

Early seascape and visual impact assessment studies should be undertaken to understand the extent of the impacts for each option being considered.

3.4.5 Accommodation

Of the accommodation locations proposed, location one and two may have less landscape and visual impact than location three but any conclusions cannot be made until full detailed assessments are undertaken. It is important to understand how the sites will be sympathetic to their surroundings and integrate into the existing settlement through layout and design and how the landscape and visual impacts can be mitigated.

Both accommodation scenarios will require access to green spaces and green infrastructure to create a sense of place and for the health and wellbeing of employees and the communities. Localised cycling and walking routes will need to be considered along with how the accommodation will integrate into the existing neighbourhood/community. Importantly, any proposal should integrate and utilise the existing landscape features present, which is why further landscape baseline information is necessary before any formal view can be provided.

3.4.6 Further information required:

There is little detail regarding the impact on the existing landscape features present across the main development site and areas of associated development. Therefore, before assessment studies are undertaken, the Councils would expect additional landscape baseline information is collected across all areas of the scheme. This includes; landscape assets such as existing trees, hedgerows, shrub planting, recreational routes and habitat areas as well as characteristics such as topography, scenic quality and landscape typology. Once complete, an appropriate review of the proposed landscape loss, preservation and enhancements can be undertaken, and assessments made.

Once sufficient baseline information has been collected, the Councils would expect to see an Arboricultural survey and impact assessment to give us a greater understanding of the impact on trees and hedgerows that may be impacted on within the local area. This assessment should be undertaken in accordance with BS 5837:2012 Trees in relation to design demolition and construction recommendations and should provide details on trees and shrubs quality, those to be retained and/or removed, the impact on them and any constraints.

A Landscape and Ecological Mitigation Strategy will be required to provide clear details of the design for the whole site (including ecological area, landscape integration area and area surrounding the accommodation), types of planting, management and maintenance and should include Green Infrastructure (GI) where the Environmental Impact Assessment (EIA) indicates potentially significant effects on landscape character, visual amenity, nature designated sites, biodiversity net gain value and health and wellbeing of the community (i.e. access to open spaces, encouraging active travel and recreation and reduce air pollution etc.) that may require mitigation. The EIA, ES and Landscape, ecological and GI strategy(s) will need to clearly set out the details of the environmental mitigation, compensation and enhancements plans for the whole site.

The Landscape and Visual Impact Assessment (LVIA) will need to follow the principles set out on the third edition of "Guidelines for Landscape and Visual Impact Assessment" (GLVIA3). The Councils would expect the assessment methodology to be agreed with the Councils prior to being undertaken. Currently there is a set of viewpoints proposed (Figure 3.25), however, before these can be reviewed, we would expect baseline evidence such as a Zone of Theoretical Visibility (ZTV)/ Zone of Visual Influence (ZVI) to be submitted to truly understand where viewpoints are necessary. Viewpoints can then be chosen and agreed with the Councils before surveys are undertaken. We would also recommend the Councils' landscape consultant(s) attends the surveys with the applicant to review and amend viewpoints, photo angles and locations accordingly. It will be expected that LVIAs are undertaken for all associated developments and infrastructure (such as highways) as these will also have an adverse impact on visual amenity, landscape quality and character. The same methodology and Council review process should be used to ensure consistency and compliance. As stated in the Overarching National Policy Statement for Energy (EN-1) The "assessment should include the effects during construction of the project and the effects of the completed development and its operation on landscape components and landscape character (Para 5.9.6)." The assessment should also "include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity. This should include light pollution effects, including on local amenity, and nature conservation (5.9.7).

All visual representation with any submitted Landscape and Visual Impact Assessment (LVIA) should be in line with The Visual Representation of Development Proposals Technical Guidance Note (TGN) 06/19 (Landscape Institute, September 2019) to ensure the assessment of visual impact is accurate and in turn an appropriate judgement of the assessed impacts can be made.

Due to the indicative location for the main development site and associated development, many residential properties will be adversely impacted, whether that's through a deterioration of visual amenity, increase in noise, light and/or other disturbances. Because of this, as part of the landscape and visual impact assessment we would expect a Residential Visual Amenity Assessment (RVAA) addendum to also be included. The purpose of RVAA is to provide an informed, well-reasoned answer to the question: 'is the effect of the development on Residential Visual Amenity of such nature and / or magnitude that it potentially affects 'living conditions' or Residential Amenity', otherwise known as the Residential Visual Amenity Threshold. In keeping with recommendations in GLVIA3 this should be done using succinct narrative as opposed to a numerical tabular assessment

format. Tables summarising narrative can, however, be very helpful. For further guidance details, please see the Residential Visual Amenity Assessment (RVAA) Technical Guidance Note 2/19 (Landscape Institute, 2019).

Given the scale and magnitude of the proposal, the Councils recommend an Environmental Colour Assessment (ECA) is undertaken. An ECA is an objective process that helps to resolve many of the issues associated with colour selection and specification, especially in the external environment. Its use can also support landscape and visual mitigation. Such mitigation can range from effectively camouflaging or minimising the visual appearance of a building, to emphasising the distinctive character and qualities of a place through architecture, expressed in colour, form and massing. For reference, an example of an effective ECA is the 'Guidance on the selection and use of colour in development' produced by Waygood Colour for Dedham Vale AONB (July 2018). Further assessment details can also be found in the Environmental Colour Assessment Technical Information Note 04/2018 (Landscape Institute, 2019).

Supported by: Ryan Mills, Senior Landscape Consultant (Place Services advising MDC)

3.5 Environment: Masterplanning and Design

3.5.1 Masterplanning and Design

The Stage 1 Consultation Report sets out a broad approach to design topics. However, the Councils consider that there is a lack of information (and justification) to how some of the approaches have evolved through the report. This is evidenced by assessments against criteria not being presented, development of design principles with little or no back reference, and with assumptions being made around wider development approaches. Design principles provide the key link in demonstrating a clear understanding of the project requirements from both a local and national level, while committing to ongoing reference and review.

The National Infrastructure Commission design principles, which reflect the wider effects and benefits when planning for national infrastructure projects, appear to be directly relevant to this national energy infrastructure scheme.

As stated in the Overarching National Policy Statement for Energy (EN-1), good design is not purely related to the visual appearance of a building but *“should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible. (EN-1 para 4.5.1)”*.

The Overarching National Policy Statement for Energy (EN-1) and National Policy Statement for Nuclear Power Generation (EN-6) provide clear approaches and expectations regarding “good design”, quality and reference to context and setting. The following comments refer to the National Design Guide around core principles and approaches associated with both infrastructure and quality. At local level and where applicable, the following comments have referenced the Essex Design Guide to provide a context driven approach at a local and community level.

3.5.2 Design Principles

The creation of design principles is an important tool that the Stage 1 report can set early in the design process. This will provide constant reference, grounding and focus around the approach and delivery of development.

The Councils consider that the current 13 design principles included within the Stage 1 Consultation cover a range of topics and approaches but consider there is no clear approach to the project vision. Each of the 13 principles included within the Stage 1 report fail to provide any justification of the design principles. At this stage, the Councils would have expected to see a more detailed series of desired outcomes which are measurable, responsive and accountable as the project moves forward.

The National Infrastructure Commission; Climate, People, Place, Value guidance (February 2020) provides a review of approaches and topics around setting design principles around national infrastructure and the Councils request that the BRB project align with this recent and relevant guidance moving forward. The guidance provides a direct and clear method in the creation of flexible and measurable principles while ensuring clear methods in championing design and quality. We would recommend that each of the design principles are clear and to the point, avoiding the need for a long list of principles to be proposed.

The principles should be flexible and not over prescriptive especially where design and other influences will change and amend over the lifespan of a project. There should be a clear drive for innovation in design and a push to improve the quality of life for local communities and workforce.

The overall principles should have measurable outcomes rather than open statements. A clear drive in improving design, environment, climate, quality of life and other factors need to be consistently referenced.

It's clear from the principles proposed that many of these could become measurable outcomes within a wider overarching design principle, in turn reducing the amount of core principles proposed. These should align with national guidance and include value, sustainability, health, wellbeing and climate, which are currently not addressed. These topics can fall across multiple approaches and it is expected to see a continued reference made through the development of design principles.

In summary the Councils consider that further refinement is required in both how the design principles are addressed together with a method establishing how these will be measured, reviewed and improved through the lifetime of the development process.

3.5.3 Masterplanning

The consultation report sets out a basic approach to how layout, scale and location/arrangement of the main development site has been considered to date. These are, as expected, high level statements which at this stage in the design process and will require considerable development moving forward. Further work will be required including topographical analysis, site and wider landscape sections and detailed visual assessments. There is a need to fully analyse context for all development before starting the design process and prior to further work progressing regarding design.

The wider masterplanning of associated development is limited at this stage; basic information has been provided within the report to outline the development but further clarification around site

selection, opportunities, impact and a steer on the use of permanent and temporary builds are required. Discussions on masterplanning will be welcomed to explore the relationship between temporary and permanent development and how these can be phased to consider impacts on the communities, landscape and wider considerations. These require coordination and consideration in terms of infrastructure, location, scale and how this translates into the existing communities.

The report outlines that further considerations are required around the final proposed placements of the two cooling towers and this is noted. The current proposals will have a significant impact on key viewpoints, landscape character and wider ecological and heritage considerations. It is clear there will be significant impact on views from Mersea Island and Tollesbury to the north, broken views from existing settlements on the Dengie to the west and south, and from local PROWs. The approach taken to reducing the field of view from the crucial vantage points would be key in reducing the visual impact. The Councils seek early discussions to review the detailed criteria used to inform the initial proposals and to review detailed assessments on visual character impacts moving forward.

The Councils are disappointed that no alternative assessment has been provided for the options in terms of the visual appearance of the cooling towers within the consultation. The impact the plant and towers will have on the surrounding landscape character and communities appears to be based on scale alone. The Councils recommend that further engagement is necessary to consider the form, appearance and setting of the cooling towers. Structures of this size and scale will inevitably be prominent in the flat open landscape and a clear approach is needed to show how this is going to be addressed going forward.

3.5.4 Adaptability, Phasing & Associated Works

Considering the construction timescales and associated works the Councils would have expected further clarity to have been provided around how the built form would respond to the demands and growth of the workforce. At its peak it is expected to see 4500 new bed spaces provided to accommodate workers. The Consultation provides little reference to the phasing of these associated works, their impacts on existing communities, (including how this impact will be mitigated) and the extent of amenities required to accommodate the workforce. A workforce of some 4500 people will have a significant impact on the quality of life for existing residents' infrastructure and services to communities and a clear strategy into how this is managed is necessary moving forward.

Similar to the other impacts of other components of the main development site the construction of 6 storey accommodation blocks will have impacts on hugely significant visual amenity and character of place. The Councils recommend further work is required to see an approach and vision which highlights how accommodation will be phased to scale up to the anticipated peak workforce on site. The potential legacy uses of associated development should also be explored.

3.5.5 Design Process and Tools

The Stage 1 report includes very little or no reference to how championing good design will be led and developed as part of the project. It is considered there are several options the project could explore and put forward to ensure design is at the forefront of discussions and considerations.

The appointment of a design champion will ensure good design is prioritised from Stage 1 consultation. Their role would be to provide a continual review and promotion of design

vision/principles throughout the project, this would include planning but also project management and delivery.

Design Review Panel.

This would provide a robust and independent resource for applications and projects. Their focus is to improve quality of design through independent panel members. Their value in expertise, experience and knowledge can be a great resource for the project and design team. Early engagement and continued referral will see the most beneficial. NPPF, paragraph 129 seeks to ensure that local authorities have access to, and make appropriate use of, tools and processes for assessing and improving the design of development. The Essex Planning Officers Association (EPOA) has appointed Place Services to manage and deliver the Essex Quality Review Panel. results.

Design Champion.

It is considered that a resource such as a Design Champion and/or Design Review Panel are incredibly important to demonstrate a clear drive for quality in design by the applicant. Having a resource which pushes, and tests approaches will hold decision making accountable and achieve high value and high-quality developments.

The Councils consider that the above would be an integral part of the design process in line with planning, a clear approach in design documents should be outlined going forward, enabling various designs to be tested provide for accountable decision making. A commitment to the production of design codes, briefs and guides will allow design principles and visions to be promoted through to detail. Design parameter plans may be appropriate for temporary structures. This level of detail around design, both from an aesthetical, safety, quality and setting approach, is important at every stage.

3.5.6 Further information required:

In order to ensure a clear narrative of the approach to design, the Councils expect to see further information and works presented around the design principles. As outlined within the response, this process is critical around setting expectations and conveying BRB's commitment to the development, quality, community and setting. The Councils will expect to see clear measurable principles covering a set of approaches in line with current guidance and able to push and improve standards and quality of development.

The Councils are disappointed that the Consultation does not provide the background assessment information and criteria used to assess the design development. Even if this would have been presented as an appendix. As outlined above there are several sections within the report that state criteria have been assessed where the current masterplan option has been presented. Given the lack of criteria and justification the Councils would have expected to see the assessment process in more detail to provide constructive feedback. This should be provided to support discussions going forward.

Further clarification on the approach to the cooling towers, in particular around the siting, scale, design and clear approach to either blend or promote.

The Council recommends that Design Codes are used to ensure high quality design for the associated works such as accommodation blocks etc. Codes will be crucial in driving design, materiality, scale and other details expected as part of development.

National Policy Statement NE1 and the Essex Design Guide identifies the use of a Design Review Panel to promote and drive the quality of design. The Councils recommend that BRB provide a clear commitment to this process going forward to demonstrate commitment in quality through design. This can be complemented through the appointment of a design champion to provide the ongoing drive and promotion of quality in design.

It is considered there is a lack of approach to the topics such as sustainability, climate health, wellbeing and value, these appearing entirely missing at this time. Good design adds value, whether it incorporates safety and sustainability or identifies social benefits for existing communities, or adding value to the setting of development, landscape and character. The Councils ask that the design approach be informed by the National Infrastructure Commission design principles.

Supported by: Chris King, Senior Urban Design Consultant (Place Services advising MDC) and Jackie Longman, Strategic Theme Lead - Place (MDC)

3.6 Environment: Flood Risk

3.6.1 Flood Risk

Essex County Council is the Lead Local Flood Authority (LLFA) and provides advice on Sustainable Drainage Systems (SuDS) schemes for major developments. The Environment Agency is also a key organisation in relation to flood risk.

It is expected that sustainable drainage proposals comply with the required standards as set out in the following documents:

- Non-statutory technical standards for sustainable drainage systems
- Essex County Council's adopted Sustainable Drainage Systems Design Guide
- The CIRIA SuDS Manual (C753)
- BS8582 Code of practice for surface water management for development sites.

The LLFA has the following comments in relation to the DCO Stage 1 Consultation:

3.6.2 Flood Risk Assessment

The development will need a detailed Flood Risk Assessment which should consider all form of flood risk.

This should include:

- Flooding from the sea or tidal flooding;
- Flooding from land;
- Flooding from groundwater;
- Flooding from sewers; and
- Flooding from reservoirs, canals, and other artificial sources. It should be considered how any flood risk will interact with the development and drainage scheme.

It should be considered how any flood risk will interact with the development and drainage scheme.

3.6.3 Run off Destinations

Surface water run-off should be disposed of in line with the discharge hierarchy and should be investigated in the below order:

- Discharge via infiltration
- Discharge to a watercourse
- Discharge to a sewer

If infiltration is proposed, groundwater and infiltration testing in line with the BRE 365 testing procedure and methods found in Chapter 25.3 of The CIRIA SuDS Manual C753 will need to be submitted to show that this is feasible. Any infiltration storage devices should have 1m between the base of the storage device and seasonal high groundwater level. If infiltration is unlikely to be possible at the site due to ground conditions, then the LLFA will still require high level ground investigations to be carried out in order to prove that this is not a viable option.

If discharge to a watercourse or sewer is proposed, it must be ensured that the site discharges at a suitable rate and any appropriate permissions are in place.

Where the discharge is to a watercourse, the outfall should be above the 1 in 100 plus climate change level or alternatively the effect of surcharging of the outfall should be modelled and appropriate mitigation measures should be put in place.

3.6.4 Peak Flow

If following the discharge hierarchy infiltration is not found to be feasible on site, discharge from the site should be limited to the Greenfield 1 in 1 year rate.

Alternatively, surface water can be discharged at equivalent Greenfield rates with the inclusion of long-term storage. Information would need to be provided about the values used to calculate this rate and these would be reviewed on submission of any Flood Risk Assessment to inform any Stage 2 Consultation

If discharge is direct to the Blackwater Estuary, then the rate may be less restricted although the impact of such on the coastal environment and its array of ecological designations needs to be proven.

Please also note that the LLFA does not accept a flat rate of 5l/s discharging from the site if the Greenfield 1 in 1 year rate is below 5l/s. Historically 5l/s was applied to an outlet where Qbar was lower than 5l/s, as most devices would require an outlet orifice size smaller than 50mm, which would increase the susceptibility of blockage and failure.

There are now vortex flow control devices which can be designed to a discharge at 1l/s, with 600mm shallow design head and still provide a more than 50mm orifice diameter. Furthermore, it is expected that appropriate measure should be put in place to remove materials that are likely to cause blockage before they reach the flow control device.

3.6.5 Storage requirements

It should be demonstrated how surface water up to the 1 in 100 year plus climate change event is managed within the main development site.

The Environment Agency updated their climate change allowance in February 2016 and the LLFA requires the design to be to the upper end allowance (i.e. 40%).

Details regarding the half-drain time of any storage device should also be submitted for review which, in this instance could be demonstrated by the 1 in 30yr +CC RP, followed by the 1 in 10yr RP storm event as necessary.

Detailed calculations considering a range of summer and winter storms should be submitted for storage requirements.

Storage features should be located outside of the 1 in 100 year plus climate change overland exceedance flood level, however where this is not possible it must be demonstrated that the storage feature will be sized appropriately to accommodate surface water from the site, along with any additional flows that may enter.

3.6.6 Water Quality

There should be treatment in line with Chapter 26 of the CIRIA SuDS Manual C753 for all areas of the site.

Whether the main development site is considered a medium or low pollutant risk depends on the traffic movements expected on the development. If the development is expected to have, for example, over 300 daily traffic movements then the medium pollution indices should be applied whereas the low pollution indices should be applied if less than 300 daily traffic movements are expected. . Given there will be up to 4500 workers on site during construction and average daily two-way HGV movements at peak of between 500-700, it is likely that the medium pollution indices should be applied.

Considering impact of water pollution, in line with Paragraph 170 of the NPPF, priority should be given to SuDS and all SuDS options should be explored. However, if proprietary features are used, it should be demonstrated how these features will provide sufficient treatment in terms of total suspended solids, hydrocarbons and metals in line with Chapter 26 of the CIRIA SuDS Manual C753.

The LLFA does not consider that trapped gullies and catch pits are appropriate forms of pollution mitigation because of the high risk of remobilisation of pollutants.

3.6.7 Residual Flood Risk

It should be ensured that surface water is managed so that there is no flooding in a 1 in 30-year storm event and no internal flooding in a 1 in 100 year, inclusive of climate change storm event. It is acknowledged that the power station itself will be protected to a higher standard. Detail should also be given with regards to exceedance routes above the critical 1 in 100 year, inclusive of climate change storm event, which should be directed away from properties.

3.6.8 Maintenance and Adoption

The on-going maintenance of any features will be necessary to ensure that flooding does not occur due to failure of components. A Maintenance Plan should be provided as part of the DCO process detailing the maintenance activities and frequencies as well as who will be maintaining the system. The maintenance of such a system as may be agreed should be managed and maintained in perpetuity on the development site for its lifetime at no cost to the SUDs authority.

3.6.9 Additional comments:

The following additional comments to the Stage 1 Consultation are also raised.

Within the report it states:

3.2.35 Our proposals would retain Weymark's River as the primary drainage feature within the site, although a section of the river would need to be culverted on a temporary basis to provide access for construction vehicles while Bradwell B is being built. All of the other land drains within the main development site, which are classified as 'Ordinary Watercourses', would be backfilled. See Section 3.7 for further information on our proposed construction masterplan.

Temporary works associated with this development should not increase flood risk and it should also be ensured that water quality is managed.

It is noted that under Section 23 of the Land Drainage act (1991) any proposed structure that impacts on the cross-sectional area of a watercourse first requires Ordinary Watercourse consent to be sought from Essex County Council. This consent is required for both temporary and permanent changes. This consultation states that culverting and backfilling of ditches will be undertaken which both require section 23 consent. Such applications are separate from and are required in addition to the planning process. Please contact Floods@essex.gov.uk.

The LLFA would expect the following documentation to be submitted at DCO stage and be covered in full in an accompanying Environmental Impact Assessment.

- Flood Risk Assessment
- Drainage strategy
- Preliminary ground investigation report, to show potential infiltration viability
- Evidence of third-party agreement to discharge
- Detailed storage calculations
- Detailed drainage network calculations
- Detailed drainage layout including location of features, exceedance routes, finished floor levels, discharge locations and rates
- Full structural, hydraulic and ground investigations, including detailed infiltration testing in line with BRE365, groundwater level

This is not an exhaustive list and other information may need to be submitted alongside the application, depending on the site-specific requirements. We request pre-application consultation on these matters and look forward to stakeholder engagement prior to the development of firm proposals for the main site and associated development.

Supported by: Richard Horswill, Development and Flood Risk Officer (ECC)

3.7 Environment: Minerals and Waste

3.7.1 Mineral Safeguarding Issues

The proposed development at Bradwell-on-Sea lies within a Mineral Safeguarding Area (MSA) for sand and gravel and is therefore subject to Policy S8 of the Essex Minerals Local Plan 2014 (MLP). The MLP can be viewed on the County Council's website via the following link:

<https://www.essex.gov.uk/minerals-waste-planning-policy/minerals-local-plan>

Policy S8 states “... *Proposals which would unnecessarily sterilise mineral resources or conflict with the effective workings of permitted minerals development or Preferred Mineral site allocation shall be opposed.*”

Policy S8 of the MLP requires that a non-mineral proposal located within an MSA which exceeds defined thresholds must be supported by a Minerals Resource Assessment to establish the existence, or otherwise, of a mineral resource capable of having economic importance. This will ascertain whether there is an opportunity for the prior extraction of that mineral to avoid the sterilisation of the resource, as required by the National Planning Policy Framework (Paragraphs 203 & 204).

Our records show that the area of the proposed development that is located on land designated as an MSA for sand and gravel is approximately 207 hectares. This is shown in Appendix One. This exceeds the 5ha threshold for sand and gravel as set out in Policy S8 of the Essex Minerals Local Plan (MLP). Therefore, a Mineral Resource Assessment (MRA) would be required as part of the planning application.

The scope and level of detail of an MRA will be influenced by the specific characteristics of the site's location and its geology. However, several key requirements can be identified which are likely to satisfy the MPA that the viability and practicality of prior extraction has been suitably assessed in the MRA. For development of the magnitude proposed at Bradwell-on-Sea, it is expected that particular consideration is given in the MRA to the potential to use indigenous material as part of the construction of the facility, or whether it could serve another market.

MRA Section	Matters to Cover
Nature of the Application	Description of proposed development.
	Area of proposed development (text and red line boundary on appropriate scaled map). To include building footprints if known.
	Any previous reference to show mineral may be present (including any Development Plan Allocation).
Nature of the existing mineral	An appraisal of the geology of the site.
	Whether there is any previous relevant site history – this could include any previous mineral assessments and market appraisals, boreholes, site investigations, technical reports and applications to the Minerals Planning Authority for extraction.
	The type and extent of mineral present at the site.
	Depth of deposit and overburden with commentary to include any variations across the site. To be expressed as both actual depths and ratio of overburden to deposit.

	Mineral quality (BSI standard) and how processing may impact on quality. Consideration should be given to the extent to which material available on site would meet the specifications required for construction
	To what extent mineral resources are likely to be sterilised if it is not prior extracted.
Constraints impacting on the practicality of mineral extraction	Contextual information regarding the site and any existing development or designations in close proximity such as ecology designations, landscape character, heritage designations, proximity to existing dwellings, highways infrastructure, proximal waterbodies, hydrology, land stability, utilities present etc. These should be assessed in light of the fact that construction of the non-minerals development would be taking place, should the practicalities of prior extraction be expressed as unviable. It is held that mitigation methods employed as part of the construction of the non-minerals development may be appropriate to allow prior extraction at that locality.
The viability of prior extraction	An assessment of the current and future economic and/or special value of the mineral resource.
	Whether prior extraction is practicable at the site.
	Distance/route to potential market.
	Any evidence of discussions with local operators to confirm the viability of prior extraction.
	Where prior extraction can be undertaken, an assessment of the amount of material that can be extracted and an explanation of how this will be carried out as part of the overall development scheme.
	Any opportunities for incidental extraction as part of the development of the site such as foundations, footings, landscaping, sustainable drainage systems.
	The potential for indigenous material to be used in the construction of the proposed development.

Please note that borehole logs do not have to be commissioned specifically for an MRA where they already exist, but they must be indicative of the site as a whole, taken from within the application boundary and conform to industry standards.

To ensure that a comprehensive assessment is undertaken on a site, it is recommended that:

- a draft borehole location plan is agreed with the County Council as early as possible and preferably as part of pre-application;
- the borehole depths should be the full extent of the mineral to the bedrock;
- borehole analysis must note the depth of the water table; and
- a non-stratified sampling technique is applied. An initial spacing of approximately 100m-150m centre to centre should be considered, with additional locations if required to determine the extent of deposits on site.

The MRA should be prepared using the Pan-European Standard for Reporting of Exploration Results, Mineral Resources and Reserves (PERC) Standard, which was revised and published on 23 May 2013.

3.7.2 The Sourcing of Constructing Materials

Notwithstanding the amount of indigenous material that may be able to support construction, given the mineral take of the Bradwell B development, ECC requests that a mineral supply audit is carried out in relation to the proposal. Such a supply audit should consider the approximate volume of mineral required to facilitate the development on a phased basis (ie linked to the phasing as set out in Paragraph 3.7.3 and disaggregated from the approximated 6mt of 'construction materials' required over the project as stated in Paragraph 4.6.1), the broad area(s) where aggregate will likely be supplied from, implications for this demand on local aggregate supply and the impact on any proximal infrastructure that may potentially arise as a consequence of the need to import that aggregate.

The NPPF states at Paragraph 207 that mineral planning authorities need to plan for a steady and adequate supply of aggregates by (inter-alia) taking into account relevant local information. The ability for proximal mineral authorities to accommodate the mineral demand of a local project of the uniqueness of Bradwell B would greatly benefit from the submission of such an aggregate supply audit as described above. These proposals amount to a significant one-off project for the area and the amount of aggregate required to facilitate the construction of the new station, and necessary associated infrastructure, has not been specifically quantified in future demand forecasts within each individual MPA area. Essex County Council has not, for instance, been able to make any specific allowance, qualitative or otherwise, relating to the demand the construction of the facility may have on the county's existing aggregate reserves, although the consultation material highlights that there are a number of existing quarries in the area that are of interest.

It is acknowledged that material would need to come from a wide area and may not be immediately attributable to any one MPA area. It is further acknowledged that market availability will dictate where the mineral is sourced from and therefore any detailed quantification at an administrative level may not be possible. An assessment of the approximate volume of material required and its potential supply areas should however be possible. With regard to the use of mineral on-site, the potential use of borrow pits and the stockpiling of excavated material for eventual backfilling, as set out as part of the Earthworks Strategy, is strongly supported. The MPA explicitly support the use of borrow pits through Policy S6 of the MLP.

Paragraph 3.1.11 of the consultation material states that "We will need to transport significant quantities of construction materials to site to construct the power station" and that sustainable transport options are being considered. In this regard, the Mineral Planning Authority (MPA) note the intention to use beach landing facilities as a means of transporting the 'majority' of sand, aggregate and cement to the site, as set out in Paragraph 3.7.19 and expanded on through the presentation of a number of marine based transport options under Section 3.9. The intention is then restated in Paragraph 4.6.2 as transporting 'at least 50% of bulk construction materials' by sustainable modes, with early work suggesting marine transport could accommodate this stated commitment.

It is further noted that the consultation material recognises the need for technical studies to confirm project needs regards the quality and quantity of aggregate. The MPA welcomes the production of this document.

3.7.3 Emerging Design Principles

Whilst the 'Design for efficiency' principle states a need to ensure that 'related construction processes are well connected and streamlined', there is no design principle that explicitly sets out that sustainable construction methods will be employed, both in the sourcing and use of construction materials and in the methods used to manage any waste material arising from the construction of the facility. To ensure a holistic approach to sustainable development, consideration must also be given to these aspects of the development's life cycle.

3.7.4 The Earthworks Strategy

As previously noted, the use of borrow pits is supported by the MPA, and this is further recognised in the consultation material at paragraph 3.8.9.

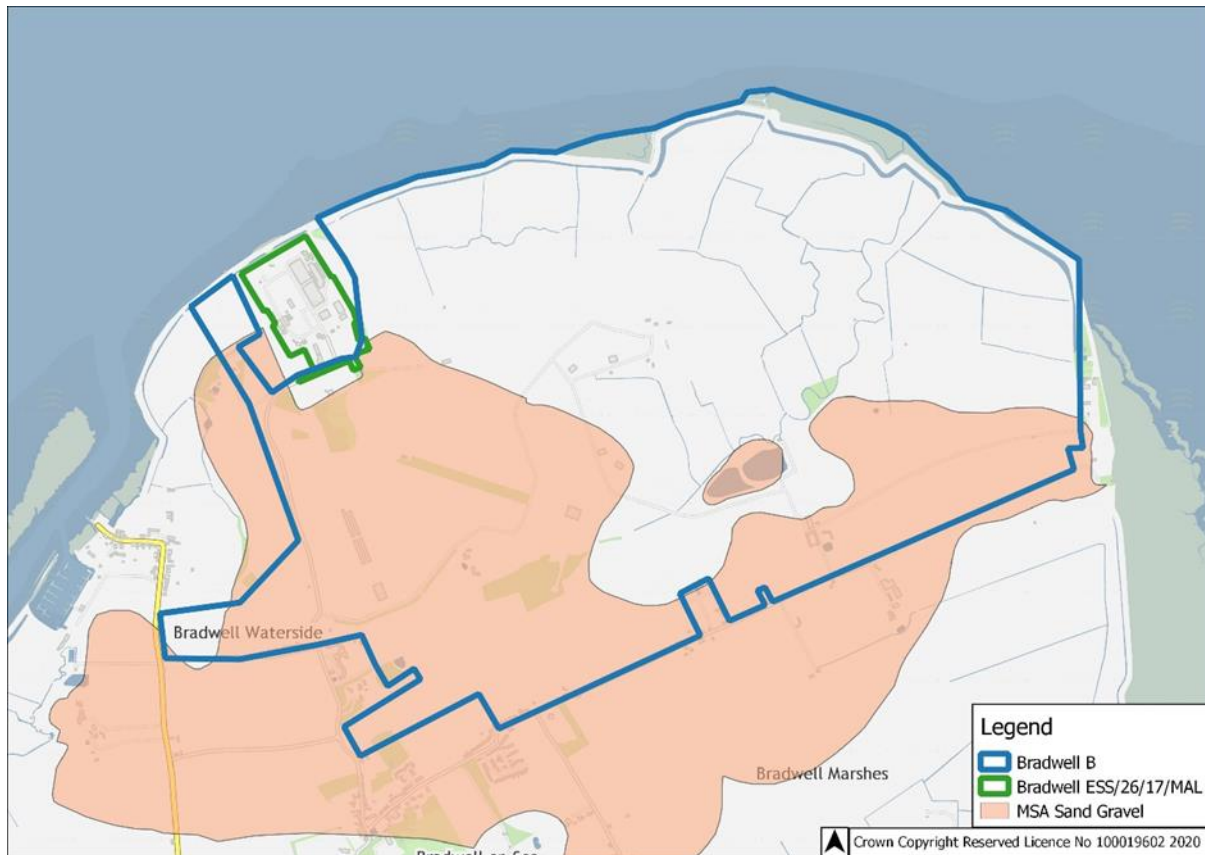
It is however important to note Paragraph 3.8.5, which states that 'Should excess material be generated during construction that cannot sustainably be re-used on-site, it would need to be re-used off site. We are aware of schemes, such as habitat creation being carried out by the RSPB at Wallasea Island, which may provide opportunities to utilise this material.'

The project at Wallasea Island has been completed and there is currently no planning permission for any further importation of restoration materials. Whilst this doesn't necessarily preclude further importation in the future, there would need to be a change of restoration scheme and the appropriate planning permission in place before further material could be accepted at this site.

3.7.5 Waste Matters

As touched on above, the proposed development of Bradwell B is also considered to have potential ramifications for ECC in its role as the Waste Planning Authority for Essex. Any future application for development on this site should contain an audit and associated management strategy for what is likely to be a considerable amount of waste arising from the development, particularly Construction, Demolition and Excavation (CDE) waste. Any such audit and waste management strategy should identify the composition and volumes of waste arising on a phased basis, which aligns with the phased delivery of the proposals, in the context of relevant known and indicative waste management capacity across each delivery phase. Future technical studies carried out to support any emerging project should include a Soil Management Plan and link to a Site Waste Management Plan (SWMP). The SWMP should ensure that unavoidable waste is managed in accordance with the waste hierarchy and other relevant legislative requirements and could detail information on the waste carriers and waste management facilities that would be used. The SWMP should be continually reviewed and updated as proposals progress.

Appendix One – Relationship between Proposed Development Site and Sand and Gravel Mineral Safeguarding Area



Waste Management

The proposed development has potential impacts on Essex County Council as the Waste Disposal Authority for Essex. The temporary accommodation of high numbers of staff on site and the influx of workers into the local area over an extended period of time during construction has the potential for significant local increases in municipal waste arisings, for collection and disposal. Any future application for development should contain a waste management strategy (in addition to the Site Waste Management Plan [SWMP] detailed in para. 3.7.5) detailing the volume and composition of municipal waste streams expected to be generated as a direct result of the development over the phases of construction. This strategy should ensure all waste is managed in line with the principles of the Resource and Waste Strategy for England and in accordance with all relevant legislation. It should detail how this waste is intended to be managed and consider all implications on the Local Authority Collected Municipal Waste (LACMW) operations and activities.

4 Sustainability: Transport

4.1 Transport

The Councils consider that the proposed Bradwell B NSIP will have significant impacts on the highway, rail and marine transportation networks, and consequently there is a need for a well-developed and evidenced transport strategy for the project. The Councils consider this is presently not clearly defined or evidenced in the Stage 1 Consultation.

The Councils recommend that further work is necessary to demonstrate that the approach to transportation of both goods and people is driven by a clearly defined transport strategy that integrates all modes of transport and that a range of potential transport scenarios have been examined. The Councils seek additional joint working to progress any transportation strategy

4.2 Transport Strategy Structure

A preferred possible structure could include the following:

Transport Strategy

- Vision, Outcomes sought
- Scenarios and their testing.
- Favoured approach.
- Measures of success

Existing Transport Context

Movement of Construction Workforce

- Overall approach - measures to minimise demand and impact linked to the delivery of the strategy
- Quantification of people that need to be moved, when and from where
- Workforce travel plan
- Sustainable modes (walking, cycling, bus, P&R, rail, sea)
- Personal car travel – managing demand

Movement of Freight

- Overall approach - measures to minimise demand and impact linked to strategy
- Quantification goods that need to be moved, when and from where
- Transport by sea
- Transport by rail
- Road transport (including freight consolidation etc)

Potential Transport interventions (referring back to the strategy)

- Sea
- Rail
- Sustainable modes including a Travel Plan
- Highway

4.3 Transport Strategy

The importance of a robust transport strategy cannot be underestimated to support the emerging proposals for Bradwell B. This requirement has been stressed by the transportation and highway authority in the limited engagement to date. It is noted that substantial transport strategy documents are in place for other NSIPs (power station developments), such as Hinkley Point C. Unfortunately, the Stage 1 consultation acknowledges that the transport strategy is emerging and requires further development. The Councils recommend further work is undertaken to identify a clear and integrated transport strategy for the movement of people and freight by highway, rail and seaborne modes, before any comments on specific proposals and mitigation can be provided. Clearly, the specific levels of movement of people and goods between individual modes, will have an impact on the type and scale of mitigation necessary.

The strategy should contain clearly defined outcomes and objectives and evidence that the strategy is driving decision making. The strategy should cover all aspects of transport of people and goods during full period of construction, including during any early work period, to minimise any impacts on transportation networks. The strategy should also consider transport requirements of the site during its operation.

The strategy should define:

- A clear Vision covering how transport will assist in delivering Bradwell B during early works, its construction and operation phases, and provide a transport legacy in the area.
- Clearly defined outcomes and objectives and an explanation of how success will be measured.
- The methodology to test alternative scenarios against the outcomes and objectives of the strategy; and to identify and explain the selection of the preferred strategy.
- The approach and each of the tested scenarios should consider the role of each mode; sea, rail and road land-based travel for both people and goods.
- The strategy will need to consider the quantity (and types of) materials and people requiring transport including variations over time during all phases of construction.
- The strategy should include clear targets for sustainable transport during construction and operational phases, and evidence to support mode share decisions based upon scenario testing.

The Councils have previously sought this information from BRB during early engagement but, to date, it has not been forthcoming.

The transport strategy objectives are identified in section 4.4 but are considered to lack clarity. The Councils require these objectives to be further developed and evidenced into a preferred transport strategy, as discussed above.

Once the preferred strategic approach has been identified it can provide the framework necessary for further assessment of more specific transport options and defining of modelling requirements.

It is important to note that before any meaningful modelling can take place the demand for travel, and the modal approach to the movement of people and goods, needs to be understood so that the appropriate extent and approach to modelling can be agreed. The Councils recommend that further discussions are undertaken to agree the scope and details of further transport modelling necessary once the strategy has been further developed.

The Councils have stressed in previous transport discussions prior to the Stage 1 Consultation that sustainable transport is the preferred choice for movement of goods and people. It will also be

important to consider other transport related matters such as carbon impacts, air quality, noise and impacts on the immediate, district and strategic transport networks in terms of development traffic (sea, rail and road) itself, and its impact on other journeys and uses of the transport networks. Construction of a low carbon power station should be seeking to minimise the carbon impacts of transport and construction.

4.4 Specific comments related to the consultation

Whilst the main feedback on the Stage 1 Consultation relates to the need for a developed transport strategy to be prepared, the Councils also have the following comments.

4.4.1 Working in Partnership with other Transport Authorities and Operators

Bradwell B is of such a scale and will have a far-reaching impact on transportation networks that any future transport strategy will need to involve a number of stakeholders and additional consultation with Highways England; Network Rail, Port and Maritime authorities as well as a number of bus and rail operators. The Councils recommend that a holistic working group is formed to agree the strategy and the overall approach to scenario planning. This way an agreed holistic approach will be arrived at which will help at DCO process moving forward.

ECC has made initial contacts with relevant officers at both Highways England and Network Rail and would be happy to assist with the development of these discussions.

4.4.2 Temporary workforce accommodation:

When the development works begin there will be a large number of contractors employed to undertake the work on Bradwell B and therefore early mitigation work on the local transport network will be necessary. It is therefore logical to provide temporary workforce accommodation on site to minimise daily traffic movements on the network. An accommodation capacity of 4500 of the non-home-based construction workers is proposed, and their impact on the transport network will need to be evidenced, and mitigated, as early as possible. It is very important to understand in this context what would the provision of additional on-site accommodation have to further reduce traffic movements.

4.4.3 The Highway Network

In the absence of any clear transport strategy it is not possible at this moment in time to provide definitive comments on either Strategic Routes 1 and 2, and the specific local mitigation improvements to junctions, bypasses or re-alignment improvements along those routes. The preferred route and necessary highway interventions can only be considered with further clarity through a clear strategy evidenced by the level of movements of goods and people, and the proposed mix of those movements by transport mode. Otherwise, it may lead to over engineered mitigation in specific locations that may not be necessary, and at an additional cost. However, with regards the overall scale of movement of goods and people it is certain that significant stress will be placed on the existing transport networks as consequence of the development. The following provides a high-level indication of existing pressures on the highway network, which will require further consideration within the context of the emerging transport strategy.

4.4.4 The Rural Road Network

The nature of the road network serving the Dengie Peninsular is not considered suitable for the movement of HGV traffic, being windy and narrow in nature preventing turning movements of HGVs. The Councils recommend further detailed discussion is required on specific proposals for the necessary enhancements to accommodate the anticipated traffic movements associated with the Bradwell B proposals to be identified. Previous smaller scale developments involving the construction of onshore wind farms in the vicinity of the site, which used the existing rural highway network, resulted in significant challenges over a twelve-month construction period.

4.4.5 Capacity Constraints on the Road Network: A414

4.4.5.1 A414 - Highway Mitigation Measures

Essex County Council has been proactive in identifying the necessary mitigation along the A414 Chelmsford to Maldon route corridor to accommodate growth identified in the adopted Maldon Local Development Plan (MLP) to 2029. The mitigation sought to minimise any impacts on the strategic highway network around Maldon and along the A414 to the A12 at junction 18. These mitigation measures are described below and include capacity upgrades to existing junctions along the A414 and enhancements to the existing public transport network serving the Maldon and Heybridge area. Whilst these improvements satisfied the Inspector that the Local Plan growth did not have a severe impact on the network, there would still be some additional delays experienced at Eves Corner, Danbury even with the installation of pre-signals to prioritise A414 traffic once growth has been delivered. There were a number of alternative mitigation options considered for the junction, including priority and signalised junction options, which either lead to delays for the minor routes and engineering issues inhibiting HGV movements. In conclusion, the installation of pre-signals was considered the only suitable solution.

Whilst the A414 is considered a strategic route connecting to the A12 it should be emphasised that it passes through the built-up area of Danbury, and delays are often experienced through vehicles taking access into driveways and residential roads. Delays can also occur due to the hilly and windy nature of the road through the centre of Danbury and slow-moving vehicles e.g. refuse vehicles and parked vehicles, and this would be exacerbated by any park and ride or HGV daily movements.

Consequently, the Bradwell B proposals would be likely to add significant pressures along this route and should be incorporated within any future modelling.

4.4.5.2 A414 – Eves Corner in Danbury (AQMA)

An Air Quality Management Area (AQMA) has been designated along the stretch of road between Gay Bowers Lane and Danbury Village Green and adjacent properties, and an Air Quality Action Plan is being prepared. Consequently, the movement of an average daily two-way HGV movements at peak of between 500-700 vehicles would be detrimental to the AQMA, and hence there is support for identifying a new route for HGV movements.

4.4.5.3 A414 – Danbury and Bicknacre

The Chelmsford Infrastructure Delivery Plan (EB018B) identifies the infrastructure required to support the growth proposed in the Local Plan, with reference to the proposed new Bradwell B power station, Bicknacre and on the A414, at Danbury, a route that links Chelmsford and Bradwell B

area. There will be potentially serious implications if, on top of the new housing that is permitted and proposed, the go ahead is given and construction starts on the new power station and the accompanying service traffic starts to operate.

ECC considers that no traffic movements should be directed via the B1418, Maldon Road, through Bicknacre and Danbury, to join the A414. Any traffic should be routed to join the strategic routes as soon as possible which in this case is the A130. There will be potentially serious implications if, on top of the new housing that is permitted and proposed, the go ahead is given and construction starts on the new power station and the accompanying service traffic starts to operate

4.4.5.4 A414 – 4 key junction improvements

ECC secured funding from the South East Local Economic Partnership (SELEP) Local Growth Fund for the following package of junction improvements along the A414 between Maldon and Chelmsford to accommodate growth in the MLP. Only the improvements at Oak Corner are to be completed and will be funded through s106 contributions from the strategic growth sites in the adopted MLP. In order of priority, the schemes were as follows.

(a)A414 / B1018 Limebrook Way, Maldon

The widening of Limebrook Way and A414 West approaches to the junction and widening of the A414 North exit arm. Widening provides two entry lanes on all four approaches to the junction. Additional left turn slips for both the A414 eastbound to A414 northbound (the higher priority), and Limebrook Way to A414 westbound have been provided.

(b)A414 / Little Baddow Road / Mayes Lane (Eves Corner), Danbury

Pre-signals have been installed on the minor approaches (Little Baddow Road and Mayes Lane) to the junction to provide additional capacity and improve peak time traffic operations on the A414. The benefits will be experienced as the growth in Maldon is delivered, and the situation is presently being monitored prior to their operation.

(c)A414 / Well Lane, Danbury

The approaches to the junction have been resurfaced to improve braking and approaches to junction.

(d)A414 / Spital Road, Maldon

Widening to provide a dedicated northbound lane at the roundabout and widening of the north and southbound approaches to the junction.

(e)A414 Oak Corner Junction, Maldon

This junction has been shown to operate above capacity in both peak periods in 2026 with the addition of traffic from proposed developments at Heybridge and South Maldon. The A414 is proposed to be one of the potential main routes for Bradwell B in the early phases and during construction with servicing vehicles, and is the route used by park and ride areas of search (2 and 4), and so capacity will be of utmost concern. Indicative mitigation measures have been identified at the junction, where there is land available for a range of mitigation options. Any option will be subject to

detailed design and safety audit. Mitigation will be funded by pooled s106 contributions from the strategic sites, of which all have planning consent, and most are under construction.

4.4.6 Constraints on the Road Network: A132

4.4.6.1 A132 – Role of the Route

The A132 is the primary route connecting the A130 to the north of South Woodham Ferrers (SWF); and is the main connection between SWF and the Strategic Road Network.

The A132 Burnham Road is the main route connecting the A130 to the north of South Woodham Ferrers to the Strategic Road Network. Whilst the A132 is not directly part of the Strategic Road Network, it plays a significant function as a Main Distributor in the Development Management Hierarchy (ECC Development Management Policy DM2). As such, the route is required to carry traffic efficiently and safely between major centres in the County.

4.4.6.2 A132 – A132 Route Based Strategy (RBS)

Essex Highways is preparing a Route Based Strategy and Integrated Transport Package for SWF and the A132, to consider future demands on the A132 and develop options to increase safety, increase the proportion of trips by sustainable travel modes and support the local economy. Implications of the development and operation of Bradwell B should be given due consideration in regard to HGV movements and other specialist service vehicles along the route.

The A132 and specific key junctions have already been identified as requiring improvements to mitigate the planned development of 1,000 new homes north of SWF in the Chelmsford Local Plan, which has been found 'sound', but not yet adopted by the City Council due to COVID-19. However, with the proposed Bradwell B, and potential vehicle and freight movements, the road condition issues will need to be further investigated and the necessary mitigation to compensate for this development will be required.

4.4.6.3 A132 Access to South Woodham Ferrers Stage 1A Baseline Report (Transport Consultancy March 2018)

Engineering constraints along the A132 route largely relate to the substandard elements of its alignment, although along the widened sections forward visibility is considered to be 'good'. Hayes Leisure Park also has a dedicated local road in parallel to the A132 for entry and egress. On Ferrers Road there is a number of private and business accesses, pedestrian crossings and inline bus stops together with street furniture (such as street lighting and communications units).

In terms of potential widening of the single carriageway for future traffic growth, constraints between Rettendon Turnpike roundabout and A132/Ferrers Road/Burnham Rd/Willow Grove roundabout primarily relate to the railway line to the east; properties and businesses on the west side of the corridor along with electricity pylons, which would only be able to be moved at significant cost.

There are sections of the A132 where widening could be achieved into the verges within the highway boundary, but some sections are limited by other physical constraints such as high embankments populated by trees and heavy vegetation near the railway line. Any changes to verges and associated landscaping will need assessment in terms of its impact on ecology, biodiversity and landscape impact.

The draining culverts also provide a constraint for alignment improvement and the need to provide increased width to these would also require improvements or replacements. Any improvement proposed to change the drainage culverts or the road embankments on approach to the drainage culverts may change the hydraulic arrangement for the streams, particularly during flooding events. Flood studies are likely to be required prior to any improvements are proposed at this location.

4.4.6.4 A132: Strategic Growth Site 7 – North of South Woodham Ferrers

The Chelmsford Local Plan covers the period 2021 – 2036 and allocates around 1,000 new homes; 1,000 sq. m business space and 1,900 sq. m retail to the north of South Woodham Ferrers.

The site is required to mitigate its impacts on the local and strategic road network, which may include appropriate road and junction highway improvements along Burnham Road (B1012), the roundabout junctions at the B1418, Ferrers Road and Rettendon Turnpike, and the A132 and local junctions between the Town and the A130. Multi-user crossings of the B1012 in South Woodham Ferrers which may include a bridge and/or at grade-controlled crossings are also considered necessary. Work is progressing on site master planning and consideration is being given to the housing having their active frontages front Burnham Road, in order to change the nature of the route, and improve connectivity to the existing town. Whilst this would be sympathetic to reducing the speed limit of the A132/B1012, the highway authority considers it should not enable any direct access from the route. The impact of some 500 – 700 HGV movements a day along this route will have an impact on securing safe crossing points from the new development to the town and its services.

Further consideration will also be required to any traffic movements from the development to the adjoining districts of Basildon, Rochford and Maldon. Any improvements to the existing highway required to mitigate the impact of development will be primarily focussed on junction enhancements, such as to the A132/B1012 Rettendon Turnpike, in order to improve the flow of traffic onto the strategic road network. These should not encourage through-traffic movements to use the local road network through neighbouring settlements such as Runwell and Wickford.

The Preferred Option Strategic and Local Junction Modelling report undertaken to inform the Chelmsford Local Plan identified the following junctions that will need to be mitigated in some form by the developers of SGS7, namely:

- A132/Willow Grove roundabout;
- Burnham Road/B1418 roundabout;
- and Burnham Road/Hullbridge Road junction (now converted into roundabout by Sainsbury's)

Furthermore, junction capacity improvements were also identified as being necessary at the Rettendon and Hawk Hill Roundabouts, linking with the A130.

The modelling also identified the following junction likely to be operating over capacity during at least one of the peak hours up to 2036.

- A130-A132 Runwell Road, South Woodham Ferrers

The following junctions were forecast to be nearing, at or over capacity by 2036, but were not considered for mitigation because of physical constraints at the junctions and the expectation that more people will be working from home, and developers will implement hard and soft measures to provide for and encourage the use of sustainable modes of travel.

- A132 – Burnham Road, South Woodham Ferrers
- B1418 – Burnham Road, South Woodham Ferrers

In light of the planned housing growth set out in the emerging Chelmsford Local Plan and other district's housings allocations, any additional Bradwell B traffic movements will need to be accounted for when considering infrastructure support, and the Councils recommend this is considered as part of the scheme modelling to inform the preferred transport strategy.

4.4.7 Proposed Rapid Transport Link Between Witham and Maldon.

A submission is currently being assessed by the Department of Transport for feasibility work under Restore your Railway Ideas Fund. The location of a new Maldon Terminus and mobility hub is proposed just outside of the park and ride Search Area 4 – north-west of Maldon. This should be expanded to include Elms Farm Park where the proposed Maldon Terminus Mobility Hub is proposed.

Restoration of the Maldon to Witham Branch Line connection has wide ranging socio-economic benefits that align with the emerging Bradwell B Transport Strategy to connect and move people to and from the Bradwell B site via Strategic Routes linking with main road and rail networks and bus, taxi and DART services. Such low carbon travel will align with the ethos of carbon free fuel generation at Bradwell B.

4.4.8 Potential Highway Works for 'Early Years'.

Without the identification of an overarching transport strategy and an understanding of the number and distribution of vehicles for workers and freight, the Councils consider it is difficult to comment on whether the traffic generated by Bradwell B could reasonably be accommodated on the existing highway network within the existing highway boundary or with the potential improvement options identified in the consultation. ECC have serious concerns that this could potentially impact negatively on the local community in terms of the resilience of the existing network during the construction phase, and particularly if construction of the main development site is to commence in advance of any 'up front' mitigation being provided.

The concept of an 'in and out routing loop' is understood but this would still impact heavily on the route between Latchingdon and Bradwell-on-Sea that would be required to accommodate two-way HGV movements. Further concern is highlighted with regards HGV movements along the A414 through Danbury given its hilly and windy nature, and likely impact on the free flow of other highway traffic. The requirement for a Construction Traffic Management Plan (that has the capability of being rigorously enforced) is essential and welcomed by the Councils.

4.5 Public Transport

The Stage 1 consultation pays little reference to the current limited number and frequency of passenger transport services in the area, with few peak hour services and poor supporting infrastructure. This impacts on accessibility for those who are dependent on such services and provides little incentive or opportunity to encourage a change from the car to more sustainable modes. The Councils recommend that BRB consider measures that would provide a lasting transport legacy to improve the existing 'transport challenges' in the area and improve its connectivity to other urban areas and key destinations within the district, and beyond.

4.6 Rail Network

The Councils recommend further work is undertaken to investigate the opportunities providing by rail for the movement of workers and freight, in order that the impact on the highway network can be minimised and potential legacy benefits assessed. A rail option feasibility study is requested. The following issues highlighted in the consultation are noted, but further discussion and investigation with Network Rail should be undertaken, as referenced in paragraph 4.2.14.

Paragraph 4.2.12 identifies the freight interchanges at Chelmsford and Southminster, with onward movements having to be undertaken by rail. Capacity issues along the A414 and within the urban area of Chelmsford do not lean themselves to additional freight movements. However, further investigation should be undertaken regarding Southminster and potential other new interchanges. Paragraph 4.2.13 acknowledges the route between London and Southminster via Wickford does not form part of Network Rail's "Strategic Freight Network". The consultation infers that detailed investigation has not been undertaken regarding the capability of the branch line in accommodating large freight trains without significant upgrade, including potential engineering reinforcement works, and a new longer passing loop to allow passenger and freight trains to pass each other. These should be further investigated prior to being dismissed as options.

Paragraph 4.2.14 infers that there are significant capacity constraints, particularly around Shenfield, which limit the availability of new freight paths, with limited scope to increase capacity.

Paragraph 4.2.15 considers there may be opportunities to move rail freight to existing interchanges co-located with port facilities, for onward transport to the site by sea.

Paragraph 4.2.16 identifies the potential to transport construction workers to site, subject to provision of 'rail and ride' bus services at key railway stations, such as at Southminster, which is acknowledged to be fully explored as part of future transport studies.

ECC has made initial contacts with relevant officers at Network Rail and would be happy to assist with the development of these discussions.

4.7 Proposed Park and Ride Locations

The principle of providing park and ride facilities during the construction phase of the project to intercept workforce trips by car reducing the amount of worker traffic on local roads to the main development site, and reduce potential environmental effects is supported (paragraph 4.5.14). Park and Ride is a concept supported by the highway authority.

In principle, areas of search 2, 3a and 3b are considered to be in locations that could intercept trips given their proximity to the strategic/main highway network, and thereby minimising impact on the local road network. However, these potential locations would result in additional traffic at locations which already experience highway capacity constraints, namely junction 18 A12 (site 2) and Rettendon Turnpike (sites 3a and 3b). Area of Search 2 would result in additional vehicle trips along the A414 which already experiences high levels of vehicle movements and an AQMA has been designated in Danbury. However, movements of park and ride buses would be preferable to private vehicles and so reduce the number of trips. The Councils recommend the route is included as part of the modelling to inform the preferred transport strategy, in order that appropriate mitigation is identified.

Area of Search 4 may encourage further vehicle trips along the B1019 between Hatfield Peverel and Maldon and B1022 between Colchester and Maldon which is not desirable given the distance from the strategic network, namely A12, junction 20B. As previously noted, other Areas of Search are located in close proximity to the strategic highway network. Is it anticipated that this site would serve Maldon and its local area or is it intended to intercept trips from the wider strategic road network?

Areas of Search 1a and 1b are located on the Dengie peninsula and are likely to encourage additional vehicle trips through the Dengie via the rural road network, passing through rural villages. In principle, a preferred strategy is to intercept vehicle as close to the strategic/main road network as is feasible. The Councils recommend all areas of search and their implications on the local and strategic network are incorporated into any future modelling.

In summary, the Councils have the following initial concerns regarding the Areas of Search, which will be informed and refined by additional modelling and the definition of a preferred transport strategy:

- Areas of Search 3a and 3b - the Rettendon Turnpike junction (A130/A132) is presently operating over capacity.
- Area of Search 2 – junction 18 A12, near to the existing Sandon park and ride site already experiences capacity issues, and is already being monitored, at the request of Highways England, regarding the operation of Sandon park and ride.
- Areas of Search 1a and 1b – the impact of vehicle trips from the strategic highway network via the rural network and villages.

4.8 Proposed Freight Management Locations

The Councils have similar initial concerns regarding the Areas of Search for freight management, which should also be informed and refined by the definition of a preferred transport strategy and subsequent modelling.

Area of Search 3, in principle the location of freight management locations in proximity to the strategic/main road network is supported. However, as previously stated there are existing highway capacity issues at the A130/A132 Rettendon Turnpike junction. Concerns also raised over structural integrity of the A132 and road capacity constraints around South Woodham Ferrers. As identified in the Chelmsford Local Plan transportation modelling work.

Areas of Search Options 1 and 2 are both located in the Dengie peninsula and are likely to encourage additional vehicle trips through the Dengie via the rural road network, passing through rural villages. In principle, a preferred strategy is to intercept vehicle as close to the strategic/main road network as is feasible.

4.9 Potential highway works for peak construction – HGV Strategic Routes 1 and 2:

Two strategic HGV route options have been proposed, that could be combined (in part), to move HGVs from the strategic road network to the main development site. At present, and without an overarching transport strategy and evidence to support marine and rail options for freight movement the Councils are not able to comment on the detail provided in the stage one consultation response.

However, the following factors, although not exhaustive, will need to be considered when determining the preferred route choice for freight movements by road:

- Number of residual HGV trips (including PSVs) that cannot be accommodated by marine or rail options.
- Number of residual private car trips.
- Condition of the existing road network and specific structures.
- Location of highway boundary and the ability to carry out necessary road widening.
- Accident data (total number and location).
- Asset Management issues, including whether any new routes would be adopted as public highway or remain as private haul routes? This has an impact on follow on maintenance costs.
- Creating a transport legacy are the new routes to be permanent or dismantled following the construction phase. Would either of the strategic route options provide the routing and infrastructure to serve any future spatial strategy to be identified in the review of the Maldon Local Plan.
- Potential reclassification of the road network through the Dengie Peninsula.
- Planning, environmental and economic impacts.

4.10 Marine Options

The Councils would strongly support the delivering freight to site by sea to be maximised, subject to appropriate consultation and mitigation on the marine environment, as it will help reduce HGV traffic on the local highway network.

The Councils strongly support marine options 1 and 3 on the basis that they have the capability of accommodating a wide range of bulk materials, thereby reducing the impact of HGVs on the highway network.

The Councils would like to understand better the potential of developing these marine options and the evidence that exist as to what constrains the volume of bulk material that can arrive via marine based transport. It is suggested that at least 50% of bulk materials can arrive by marine options but why is this not more? Fundamentally, the Councils need to understand the constraint on marine transport options before entering into detailed discussions regarding any proposed highway transport scenarios and any transport modelling.

4.11 Sustainable Transport

The Councils support references in paragraphs 4.5.30 and 31 to walking and cycling, and in particular:

To maximise the number of workers walking/cycling as part of the accommodation strategy
The preparation of a Construction Workforce Travel Plan to encourage the use of walking and cycling as far as practicable from the outset.

Any transport strategy will also be required to consider the implications on pedestrians and cyclists in terms of accessibility and safety to park and ride sites, and any strategic route that passes through, or nearby existing villages and existing public rights of way.

The Essex Cycle Strategy and Chelmsford and Maldon Cycle Action Plans are key policy documents that should be referenced in preparing the transport strategy, as they highlight the policy position of encouraging cycling for its health and wellbeing benefits and encouraging more sustainable and affordable travel options. The Action Plans identify the existing network and potential infrastructure improvements.

Infrastructure improvements to support the transition to zero carbon sustainable transport would also be welcomed.

4.12 Highway condition and structures

ECC, as highway authority, has previously provided BRB with current information regarding relevant structures and road condition. However, it is acknowledged that some assessments of structures are dated, and others have not been appropriately assessed. SCANNER is used to assess the condition of the road surface itself but does not cover its underlying layers. The latter is not often assessed, and while any assessment using SCANNER may appear satisfactory, it may not be a true reflection of the impact of traffic on the road condition in some locations.

ECC, as highway authority, acknowledge that there could be between 500-700 daily HGV movements during the construction phase, subject to further development of the transport strategy. It is strongly recommended that additional investigations are undertaken by BRB to consider the impact on the condition of the highway and its relevant structures.

The Councils welcome the acknowledgement of the additional transport related workstreams required to assist with reaching conclusions and informing a Stage 2 consultation, and would welcome the opportunity to engage further with the Bradwell B team

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List of Abbreviations

The Councils	Essex County Council and Maldon District Council
ECC	Essex County Council
MDC	Maldon District Council
The Project	The Bradwell B Nuclear Development Project
CGN	China General Nuclear Power Group
EDF	<u>Électricité de France</u>
BRB	CGN and EDF Partnership
DCO	Development Consent Order
SOS	Secretary of State
NSIP	National Strategic Infrastructure Project
NPS	National Policy Statement
NPPF	National Planning Policy Framework
NEET	Not in Education, Employment or Training
ESE	Employment, Skills & Education
IAG	Information, Advice & Guidance
CEIAG	Careers Education Information, Advice & Guidance
HE	Higher Education
FE	Further Education
STEM	Science, Technology, Engineering & Mathematics
ASEC	Asset Skills Enhancement and Capability
HGV	Heavy Goods Vehicle
PROW	Public Rights of Way
REPPiR	The Radiation (Emergency Preparedness and Public Information) Regulations
ONR	Office for Nuclear Regulation
EA	The Environment Agency
MCZ	Marine Conservation Zone
LoWS	Local Wildlife Sites
SPA	Special Protection Area
SAC	Special Area for Conservation

Ramsar Site	A site designated under the Ramsar Convention on Wetlands of International Importance
SSSI	Site of Special Scientific Interest
NERC	Natural Environment and Rural Communities
HRA	Habitats Regulation Assessment
EclA	Ecological Impact Assessment
EIA	Environmental Impact Assessment
PEIR	Preliminary Environmental Impact Assessment
AMAA	Ancient Monuments and Archaeological Areas Act
AOD	Above Ordnance Datum
RVAA	Residential Visual Amenity Assessment
GLVIA	Guidelines for Landscape and Visual Impact Assessment
ZTV	Zone of Theoretical Visibility
ZVI	Zone of Visual Influence
LVIA	Landscape and Visual Impact Assessment
ECA	Environmental Colour Assessment
EPOA	Essex Planning Officers Association
SuDS	Sustainable Drainage System
CIRIA	Construction Industry Research and Information Association
LFFA	Lead Local Flood Authority
RSPB	Royal Society for the Protection of Birds
MPA	Mineral Planning Authority
CDE	Construction, Demolition & Excavation
SMP	Soil Management Plan
SMWP	Site Waste Management Plan
SELEP	South East Local Economic Partnership
MLP	Maldon Local Development Plan
AQMA	Air Quality Management Area