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18 ENVIRONMENTAL MANAGEMENT

18.1 Introduction

It is the intention of Peel Environmental Ince Ltd to conduct their activities in such a way that the impact of the proposed development (including all of its component parts) on the environment during design, construction and operation is minimised. The following sections establish the means by which this would be undertaken and apply to both DBERR and CCC applications and both in combination, except where stated otherwise.

The proposed development has been designed to limit environmental impacts as far as possible with additional habitat creation, landscape screening and effective drainage systems. The project has also been designed to minimise the amount of heavy HGV traffic by encouraging the use of rail and water modes of transport.

In order to ensure that environmental standards are maintained during construction, Peel Environmental Ince Ltd and the construction contractor(s) employed would develop a project Environmental Management Plan (EMP), as a part of an overall Environmental Management System (EMS) for the site. The following sections outline the requirements of the EMP and summarises the likely impacts and proposed mitigation measures. These measures are likely to form the basis for planning conditions or Section 106 agreements.

During operation, as an Eco-Industrial park, the RRP would be expected to maintain the highest standards of environmental management. In order to achieve this an Environmental Management System (EMS) would be established to cover the operational site.

18.2 Environmental Impact Assessment

18.2.1 Mitigation and Monitoring

EIA is an on-going process. As a result of the ecological, archaeological and geotechnical surveys undertaken to date, the need for mitigation and monitoring has been identified. This would be undertaken during the detailed design and construction stages, and for some activities during operation. Mitigation measures proposed are summarised in Tables 18.1 and 18.2.

18.2.1 Consents and Licences

As well as consent under the Town and Country Planning Act and under Section 36 of the Electricity Act, a number of other consents are likely to be required for the proposed development. Since the original (January 2006) application to the DTI (now DBERR) for the RDF development, a Pollution Prevention and Control (PPC) permit has been granted for the RDF plant by the Environment Agency.

In addition, an application has been made for the permanent diversion of the C-class road and byway along Marsh Lane.

The identification and granting of all consents, licences and permissions during construction would be the responsibility of the main works contractor unless otherwise agreed. During operation, they would be the responsibility of the site management, with some responsibility delegated to industrial users.

Other possible consent requirements could include the following:

- Environment Agency consents under the *Water Resources Act 1991* or the *Land Drainage Act 1991* for works affecting watercourses (including drainage outfalls);
- Environment Agency consent under the *Water Resources Act 1991* for any proposed abstractions or discharges from watercourses;
- Natural England consent under the *Wildlife & Countryside Act 1981* or *Conservation (Natural Habitats) Regulations 1994* for works affecting protected species;
- Hazardous Substances Consent; and
- Waste Management Licensing.

Note that this list is by no means exhaustive.

18.2.3 External Communications

Peel Environmental Ince Ltd and its project team have consulted with a range of external consultees in preparing the development proposals and this EIA (see Section 1). The aim has been to establish the likely implications of the project at the earliest possible stage. In this way, contentious issues can be dealt with promptly.

Liaison would continue with residents likely to be affected by development activities and with external consultees during both construction and operational phases.

18.3 Environmental Management During Construction

18.3.1 Roles and Responsibilities

18.3.1.1 Role of Peel with respect to Environmental Management

Peel Environmental Ince Ltd would ensure that a robust EMS is employed on this project. The first key deliverable from this system is this EIA, which is designed to assess all of the potential effects and minimise the environmental impacts of the project.

Prior to construction, for all applications, the key deliverables from the project EMS are likely to be:

- the production of a project specific EMP for construction and site investigation activities including a description of environmental constraints and the procedures and method statements to be used;
- procedures for the selection, management and auditing of sub contractors; and
- method statements, procedures and plans covering the proposed ecological, archaeological and landscape mitigation outlined in this ES (for example detailed landscape planting plans), which is summarised in Table 18.1. These would implement the plans and mitigation submitted as a part of the application, for example, the Habitat Creation and Management Plan produced for the ecological mitigation areas which is attached as an appendix to this ES.

18.3.1.2 Role of the Contractor with respect to Environmental Management

A principal contractor would be appointed to facilitate the remediation and construction phases, and would acknowledge the operation of an effective EMS as being an essential part of the project. Provision of an effective system for the control of environmental issues would be made a condition of contract. The contractor would be responsible for ensuring that his operations do not damage the environment, and for properly managing waste, materials and the workforce on site.

18.3.2 Legislation and Best Practice

A vast amount of environmental and other legislation is applicable to major construction projects. This includes the following:

- Clean Air Act, 1993;
- Environmental Protection Act, 1990;
- Environment Act, 1995;
- Land Drainage Act 1991;
- Noise and Statutory Nuisance Act, 1993;
- Pollution Prevention and Control Act 1999;
- Water Act 2003;
- Water Resources Act, 1991;
- Wildlife and Countryside Act, 1981 (as amended);
- Control of Pollution (Oil Storage) Regulations, 2001;
- Environmental Protection (Duty of Care) Regulations, 1991;
- Groundwater Regulations, 1998;
- Hazardous Waste Regulations 2005; and
- Hedgerow Regulations, 1997.

The developer and construction contractor would ensure that measures are put in place to comply with all legislation. This would be detailed in the EMP (see Section 18.3.3 below).

Legislation provides a minimum standard to adhere to. The project would look, wherever possible, to set an example of best practice in its construction activities, for example with regards to recycling of materials, oil and chemical storage, and maintenance of plant and equipment.

As well as adhering to the above, the project would aim to meet the requirements of best practice standards such as the Environment Agency Pollution Prevention Guidance Notes (PPGs), in particular:

- PPG 1 - General guide to the prevention of water pollution

- PPG 2 - Above ground oil storage tanks
- PPG 3 - The use and design of oil separators
- PPG 5 - Works in near or liable to affect watercourses
- PPG 8 - Storage and disposal of used oils
- PPG 11 - Preventing pollution at industrial sites
- PPG 13 - High pressure water and steam cleaners
- PPG 18 - Control of spillages and fire fighting run-off
- PPG 19 - Garages and vehicle service centres
- PPG 23 - Maintenance of Structures over Water
- PPG 26 - Storage and Handling of Drums & Intermediate Bulk Containers

18.3.3 Project Environmental Management Plan

18.3.3.1 Purpose of an Environmental Management Plan (EMP)

The purpose of the production and maintenance of the EMP, and associated documents, is to ensure that the environment is suitably protected before, during and after construction by ensuring that legislative and regulatory requirements are met.

18.3.3.2 Environmental Legislation

The EMP would detail the practical measures required to ensure that legislative and regulatory requirements, including those set out in planning conditions, are met. These would include the requirement to obtain relevant licences and consents, keep waste disposal records; monitor water abstraction or discharge points etc.

18.3.3.3 General Principles of the EMP

The EMP would set out the mitigation proposed within this Environmental Statement within a framework to be implemented as part of the construction project (or discrete projects as phases are progressed) for either or both applications. It would aim to ensure that all construction activities take these mitigation measures into account. The EMP would be updated regularly as the design proceeds.

A number of additional plans would also be produced in support of the EMP, these include:

- Waste Management Plan (WMP);
- Surface Water Management Plan (SWMP);
- Landscape Master Plan (LMP); and
- Habitat Creation and Management Plan (HCMP).

These plans would provide a system against which to monitor and audit environmental performance. The plans would detail the practical methods required to ensure work is

completed in accordance with current best practice and to fulfil legislative and regulatory requirements.

18.3.3.4 Development of the EMP

The EMP, associated plans and method statements would be continually updated as required during construction.

18.3.4 Waste Management Plan

A variety of different materials would be used for construction of the RRP (or for the construction of the DBERR/CCC application components which make up the RRP). The project also involves removal of existing services which would produce waste materials. Wastes are likely to include metals, timber, brick and block and general wastes, as well as a small amount of hazardous material such as oils paints and coatings.

Prior to construction, a Waste Management Plan would be produced and implemented with respect to solid and liquid wastes. This would set at the requirements of the project including how the project would:

- minimise the waste generated;
- reuse or recycle wherever possible;
- collect, separate, store and contain securely and label all wastes;
- allocate responsibility for waste management on site;
- employ suitable licensed waste contractor(s) and audit their licence(s); and
- monitor and periodically audit the waste management scheme and activities.

The key to minimising the production of waste is to implement the waste hierarchy of Reduce, Reuse, Recycle, Dispose. Reducing the amount of materials used also has the effect of minimising use of natural resources and reducing costs.

18.3.5 Surface Water Management Plan

A project specific Surface Water Management Plan would be developed for the project including measures such as:

- All onsite diesel storage tanks to be placed on hard standing ground within the construction compound. To reduce the risk of pollution via tank leakage, a double skinned tank container would either be used, or the tank would be double banded with a capacity of 110% of the maximum stored volume as per the Control of Pollution (Oil Storage) Regulations 2001.
- Drip trays would be used under compressors, pumps, motors, redundant plant and during re-fuelling. These would be emptied and cleaned regularly especially after rainfall.
- Diesel bowsers would be double skinned and equipped with spill control kits.
- Control measures for controlling silt run-off to streams.
- All fuel storage and refuelling to be carried out at a minimum of 30m from watercourses.

This plan would build upon and implement the mitigation measures provided in Sections 6 and 7 of this ES.

18.3.6 *Landscape Master Plan*

Planting is the most effective form of mitigation to minimise visual impacts since much of the development is less than 20m high. In order to illustrate the proposed landscape structure of the proposed development in a more detailed format, a series of Landscape Masterplans (at A3) have been prepared for each application and are included at the end of Section 12.

18.3.7 *Habitat Creation Management Plan*

A draft Habitat Creation and Management Plan has already been created to provide further detail on the extensive ecological proposed for the site. This has taken the mitigation described in Section 10 and formulated a series of ‘prescriptions’ covering each area set aside for mitigation.

The draft HCMP has been submitted to key consultees for comment and it is intended that following the grant of permission for all or part of the RRP, that a series of workshops and further consultations would be undertaken with all of the key ecological stakeholders to develop the plan further.

18.3.8 *Environmental Awareness*

Site briefings would be given to all construction staff through induction talks before the start of construction, and tool-box talks setting out key procedures during the works. This would help ensure that site personnel are fully aware of the key environmental issues of the site and the management procedures that have been set in place to mitigate impacts. Appropriate aids, such as relevant authority videos and leaflets would be used.

Notices would be erected on site to warn staff of the precautions and measures required when working close to environmentally sensitive areas. For the duration of construction, notices/signs would also be erected at the public highway accessing the site, and at other locations warning of construction traffic and other issues as appropriate.

18.3.9 *Community Liaison*

Consultation with the local community is an ongoing process, and would continue throughout the planning process and beyond. Regular meetings with local community representatives would be held to provide updates on progress and details of upcoming works throughout the construction phase. Use would also be made of community notice boards to advise the local community of progress and provide details of specific issues.

18.3.10 *Inspection and Auditing*

The principal contractor would carry out site inspections and audits during the construction phase to ensure:

- that works comply with statutory, planning consent, and all contract requirements;
- to show that works are being undertaken in compliance with the project plans, procedures and method statements; and

- to demonstrate that remedial action has been taken, as necessary.

Although the intervals and scope for such inspections and audits would be in part determined by the principal contractor's own environmental management system and procedures, it is expected that documented environmental inspections of all construction activities would take place at least weekly and formal audits at least monthly throughout the construction period. This would follow an initial Pre-Construction Audit to ensure that all necessary consents are in place and to evaluate the systems put in place for the project.

In addition, the developer would undertake its own inspections/audits during the construction process to verify the contractor's environmental performance and compliance with environmental plans, procedures and method statements.

18.4 Environmental Management During Operation

18.4.1 Site Management

An EMS would be set up in order to ensure that the highest possible standards are maintained throughout the operation of the RRP site in keeping with the aim of Peel Environmental to establish an environmentally sustainable development. With the aim of being accredited to ISO 14001, this would involve:

- an assessment of the environmental impacts of the organisation;
- the development of an environmental policy;
- an environmental improvement programme with objectives and targets;
- clearly defined roles for all employees;
- environmental control procedures;
- defined systems for record keeping and document control;
- periodic auditing of the system; and
- a formal review of the system's effectiveness by senior management.

During operation, Peel Ports would be responsible for the site management of the canal berth and Peel Environmental would be responsible for the remainder of the development. This would include maintenance of land set aside for community and ecological enhancement and mitigation, roads and internal landscaping. Management of some aspects such as the main ecological mitigation areas may be given over to suitably experienced external organisations if this is deemed appropriate. The site management would be the first point of contact for local residents.

Peel Environmental would be responsible for site security. This would include regular monitoring of community areas to prevent vandalism and other anti-social behaviour.

Peel Environmental would also be responsible for further long-term environmental monitoring on the site. Requirements for such monitoring would be agreed during the planning and consenting process.

18.5 Environmental Management Summary

The most effective form of mitigation is to design a project to avoid environmental impacts at source. The proposed development has been designed as far as practicable to minimise environmental impacts and enhance certain parts of the environment. It has also been designed to high standards of sustainable development as discussed in Sections 2 and 17 and in the project Design and Access Statement (see Appendix 2.1).

The further measures outlined in this chapter, and those summarised in Table 18.1, would help to ensure that the temporary impacts caused by construction, and the ongoing impacts of operational activities are minimised as far as possible.

Tables 18.1 and 18.2 below summarise the mitigation measures detailed in this document. These would be expected to form the basis of planning conditions or Section 106 agreements.

Table 18.1: Summary of Mitigation Measures (Construction Phase)

ES Section	Issue	Mitigation Measures
Entire Site		
Geology & Soils – Section 6		
Geology and Soils	Geology	<ul style="list-style-type: none"> • Prior to construction, standard engineering site investigations would be undertaken on all parts of the site. Should evidence of ground contamination be encountered during these works, it may be necessary to carry out some further, small scale, investigations into the presence of contamination would be carried out. • Construction plans would incorporate measures to prevent uncontrolled releases of potentially contaminative substances to ground. Appropriate spill and leak containment systems would be incorporated into the construction procedures to ensure no uncontrolled releases of contaminants occur. • Provision of refuelling areas for plant, appropriate land capacity for fuels stored on site and spill control and mitigation procedures. • Toolbox talks would be conducted in order to communicate the potential impacts to site personnel. • Site drainage - Surface water drains would be designed to carry only uncontaminated water. Foul drains would carry contaminated water to a sewage treatment works for treatment prior to discharge into a watercourse only when a consent has been granted by the sewerage undertaker; • Storage and handling of materials/oils/chemicals - All such materials would be stored in a designated area, lockable, with access via designated key holders/storesman/materials controller to enable effective control. Use and handling of such materials would be made with care, so as to prevent the potential for spillage to ground or contamination to surface water features. All fuel and oil would be held within fuel safe containers, and have a secondary containment system either by means of integrally bunded tanks / bowsers, or by means of a suitably constructed masonry bund, both of which to be capable of retaining at least 110% of the total capacity of the tank / container. All such containers to be labelled as to the contents and maximum capacity and be locked when not in use; • Refuelling of plant and equipment - All operatives on site would be inducted and made aware of best practice requirements when refuelling on site. Including use of designated refuelling areas (where possible), drip trays and funnels, and the provision of spill kits at conspicuous points to enable effective action to be taken if a spill were to occur. All mobile plant and equipment using fuels/oils would be contained within a drip tray at all times to minimise the potential for a pollution incident on site during the construction phase; • Contaminated land - During the construction phase, operatives may come across previously unidentified contaminated land. Reporting procedures would be in place to ensure any such identification is escalated to senior management promptly to allow for effective corrective action. Suitable controls would be in place to ensure any excavation of contamination is done in a manner which prevents cross contamination with other uncontaminated arisings stockpiles;

ES Section	Issue	Mitigation Measures
		<ul style="list-style-type: none"> • Concrete mixing - Concrete mixing is to be undertaken in designated areas to minimise the potential for impact on watercourses. Areas would be sited away from drains or identified surface water features. Washout of concrete wagons or mixers would be carried out only within designated areas again sited away from watercourses or site drainage; • Invasive Weeds – Site operatives would be made aware how to identify these weeds, including a site walkover prior to works commencing to ascertain whether present in the proposed construction area. The spread of these weeds through poor control on site and inadvertent cross contamination through ignorance or poor practice would be eliminated through training and effective control on site from senior management. A mechanism would be in place to report all incidents to site management for effective escalation and corrective action; • Silt Management - All site operatives would be made aware of drainage arrangements on site (where applicable). A strategic approach would be taken to effective silt management on site utilising a variety of preventive and corrective measures such as review of task and likelihood of generating excess silt, protecting drains using terram/straw, providing a regular road sweep/road brush to keep access roads clear of mud (and resulting silt), providing wheel wash facility prior to allowing vehicles to leave site (ensuring a closed loop recycling system or tinkered effluent system in place for the suitable removal of waste material), sheeting/battering stockpiles, sheeting lorries (i.e. when muck shifting). In extreme circumstances stone filled grips may be considered, however it is envisaged that the measures highlighted above would be effective; • Noise – Strict adherence to assigned working hours would be made. Use of low level noise plant and machinery would be made wherever possible, e.g. use of generators and compressors with low noise (e.g. operating at less than 65 db (A)). • Dust – This would be effectively monitored and managed on site so as to prevent nuisance issues. Controls would be in place to ensure dust is minimised (e.g. sheeting lorries during muck shift operations), utilisation of water sprays would enable dampening down of roads and alleviate potential dust problems. Careful consideration would be made of potential silt issues and the relevant controls (as identified above) applied to silt management.
Hydrology & Hydrogeology – Section 7		
Hydrology and Hydrogeology	Surface Water	<ul style="list-style-type: none"> • A project specific Surface Water Management Plan would be developed for the project including measures such as: <ul style="list-style-type: none"> ○ All onsite diesel storage tanks to be placed on hard standing ground within the construction compound. To reduce the risk of pollution via tank leakage, a double skinned tank container would either be used, or the tank would be double banded with a capacity of 110% of the maximum stored volume as per the Control of Pollution (Oil Storage) Regulations 2001. ○ Drip trays would be used under compressors, pumps, motors, redundant plant and during re-fuelling. These would be emptied and cleaned regularly especially after rainfall. ○ Diesel bowsers would be double skinned and equipped with spill control kits.

ES Section	Issue	Mitigation Measures
		<ul style="list-style-type: none"> ○ Control measures for controlling silt run-off to streams (as identified above). ○ All fuel storage and refuelling to be carried out at a minimum of 30m from watercourses. ● Extreme care would be taken when using concrete in foundations close to watercourses and in areas of excavation close to groundwater. ● Construction compounds would be located away from all watercourses to minimise risk of contamination ● Emergency management procedures would be incorporated within the overall facilities management plan to cater for emergency events. ● The drainage network to the site would be constructed at an early stage. This would enable early control of discharges and management of accidental spillages. ● Any waste storage and temporary storage of materials would be located on the higher parts of the site to minimise the potential for silt runoff resulting from flooding. ● A surface water monitoring programme of watercourses located on and around the site would be established and watercourses would be monitored before, during and on completion of construction works. Should any impact upon water quality be found to occur, a full investigation of cause would be undertaken. ● Dredging arisings would be transported to the receiving site under controlled waste handling conditions. ● Emergency Management Procedures would set out requirements in the event of an accidental release to ground.
Hydrology and Hydrogeology	Groundwater	<ul style="list-style-type: none"> ● Groundwater monitoring wells would be installed prior to construction of the site and a monitoring programme established throughout construction and afterwards. The elevation of the groundwater table is such that mitigation measures are likely to have to be employed during and following construction of the development (dewatering from sumps or well points and trench support for example). ● Construction plans would be required to incorporate measures to prevent uncontrolled releases of potentially polluting substances to ground. These would include an assessment of likely pollutant pathways in the event of a spillage, including the likelihood of shallow groundwater and the deeper groundwater table. ● Best practice construction methods would be employed to prevent such occurrences. Guidelines and procedures, for example Environment Agency Pollution Prevention Guidance would be adhered to at all times to minimise the potential release of contaminating substances to ground and to ensure control measures are in place to deal with any accidental spillages.
Air Quality – Section 8		
Air Quality		<ul style="list-style-type: none"> ● Dust generation during aggregate handling would be limited by wetting the aggregate when there is a significant risk of dust generation during

ES Section	Issue	Mitigation Measures
		<p>periods of dry weather.</p> <ul style="list-style-type: none"> It is intended that the site foundations would be piled using continuous flight augers, which are preferred because they are cleaner and quieter. Paved roads around the site would be swept regularly to prevent build up of dusty materials. Unpaved roadways on site would be wetted to prevent dust generation where necessary during dry weather periods. Lorries would be sheeted where they are likely to produce dust. Dust generation from other construction activities would be minimised through good site practices including the selection of equipment designed to minimise dust, its confinement through sheeting and timely removal of any dust generated.
Land Use & Agriculture – Section 9		
Land Use & Agriculture	Agricultural Operations	<ul style="list-style-type: none"> Short-term agreements between land tenants and Peel where phasing of the development may allow for particular agricultural fields to remain in production for longer periods. Access to field will be maintained for animals and farm machinery.. A pre- and post-construction drainage scheme would be implemented as required to ensure that drainage of the surrounding farmland is not affected.
Land Use & Agriculture	Agri-Environment Schemes	<ul style="list-style-type: none"> The crossing of the Shell pipeline easement (part of a Countryside Stewardship Scheme) would incorporate gaps in the bridge/culvert structures to allow its use as a wildlife corridor and allow connectivity of the feature across the site.
Land Use & Agriculture	Notifiable Scheduled Diseases	<ul style="list-style-type: none"> Construction and reinstatement procedures would be in accordance with guidance provided by DEFRA, including the DEFRA document, <i>Practical Guide to Preventing the Spread of Plant and Animal Diseases, 1991</i>. In the unlikely event of any animal burial pits being found during construction, DEFRA would be informed without delay and their advice taken regarding reburial or disposal. This is a requirement of Article 16 of the Animals (Miscellaneous Provisions) Order 1927. Should an outbreak occur during construction works, Peel would consult DEFRA on the need for any further project specific precautions and prompt action would be taken, as necessary.
Land Use & Agriculture	Invasive Species	<ul style="list-style-type: none"> Mitigation would follow the relevant best practice including the Environment Agency's code of practice on managing Japanese Knotweed (Environment Agency, 2006). Specialist advice would be taken for the removal or control of plants as required.
Ecology – Section 10		

ES Section	Issue	Mitigation Measures
Ecology		<i>Mitigation Measures for ecology are described separately in Table 18.3.</i>
Archaeology – Section 11		
Archaeology	Metal Detecting	<ul style="list-style-type: none"> A metal detecting survey would be undertaken in all areas that would be affected by ground breaking activities (including topsoil stripping), including the new roads and railway. The survey would be undertaken under the supervision of archaeologists and would aim to identify and recover any additional items and record any locations that may require further archaeological evaluation. Should the metal detecting survey highlight any specific areas, which may require further investigation, upon which the proposed scheme is likely to have an impact or on which the impact is uncertain, further evaluation and mitigation measures would be discussed and agreed with Cheshire County Council. If these measures are required then the archaeological work would be subject to a Written Scheme of Investigation that has been discussed with, and approved by Cheshire County Council
Archaeology	Watching Brief	<ul style="list-style-type: none"> A watching brief would be carried out on any new drainage ditches excavated within the development area. Any new ditches would be assessed by an appropriately qualified archaeologist for palaeo-environmental evidence. Further mitigation or analysis of this material would be determined once this assessment has been made. This work would be subject to a Written Scheme of Investigation that has been discussed with, and approved by Cheshire County Council. An archaeological watching brief would be carried out during construction work, in the area of the Manchester ship canal (RSK Site 20) where elements of the original canal structure may be uncovered. The watching brief would consist of monitoring, by an appropriately qualified archaeologist, of all topsoil stripping and excavations associated with the construction of the proposed development. Any archaeological deposits, features or finds identified during the watching brief would be adequately recorded. Hand excavation, stratigraphic recording, drawn, written and photographic records would be undertaken, as appropriate. If significant finds are made during the watching brief a suitable programme of mitigation would be agreed with Cheshire County Council. A watching brief will also be undertaken at the site of Grinsome Farm. The sluice gate will be protectively fenced.
Landscape & Visual – Section 12		
Construction compounds		<ul style="list-style-type: none"> Siting and layout of compounds will seek to utilise areas of natural screening etc to minimise visual impact. Early provision of mitigation areas and some landscape planting; planting at site edges will reduce impacts of successive phases of development.

ES Section	Issue	Mitigation Measures
Human & Socio-Economics – Section 13		
Human and Socio-economic	Recreation	<ul style="list-style-type: none"> A temporary diversion of the C-class highway/byway, to be agreed with CCC Public Rights of Way (PROW) Unit, local Highways Authority and Ellesmere Port and Neston Borough Council would be established where required from the commencement of construction to ensure continuous use of this footpath/recreation route throughout construction. Measures would be employed during construction so nuisance is not caused to users of the diverted right of way. This is likely to include noise and dust attenuation measures and provision of visual screens where required. Any footpath diversion required as a part of construction would be appropriately signed and fenced.
Traffic & Transportation – Section 14		
Traffic and Transportation	Traffic & signage	<ul style="list-style-type: none"> All construction site traffic will utilise the Pool Lane-Kemira Road route to minimise impact on surrounding village Clear signage will be provided for all construction work traffic such that the traffic impacts of the development do not compromise the safety and operation of the local highway network, or pedestrian or other road users safety. The mitigation of mud, noise and dust from the roads during construction is covered under site management in Geology & Soils above.
Noise – Section 15		
Noise	General construction noise	<ul style="list-style-type: none"> Construction hours will be limited to 0700-1900 (Mon to Fri) and 0800-1400 (Sat) with no noisy work allowed on Sundays or bank holidays. Local residents would be informed of any noisy work to be carried out outside of these times; this would also be agreed with the local authority.
	Vehicle noise	<ul style="list-style-type: none"> Site vehicles would not be over-revved. All machinery would be properly maintained and silenced according to manufacturer's instructions. All vehicles to observe set speed limits on site including 30mph on Kemira Road. Acoustic barrier scheme on Kemira Road to be established at an early stage of construction.
	Vibration	<ul style="list-style-type: none"> All plant brought on to the site would be properly maintained and operated in accordance with manufacturers' recommendations. The contractor and their sub-contractors would at all times apply the principles of Best Practicable Means as defined in Section 72 of the Control of Pollution Act 1974 and carry out all work in such a manner as to reduce any disturbance from noise and vibration to a minimum. Piling operations on and around the canal berth would be mitigated by using 'soft start' procedures, should this be deemed necessary.

CCC Application		
Geology & Soils – Section 6		
Geology and Soils	Geology	<ul style="list-style-type: none"> • Prior to construction, standard engineering site investigations would be undertaken on all parts of the site. Should evidence of ground contamination be encountered during these works, it may be necessary to carry out some further, small scale, investigations into the presence of contamination would be carried out. • Construction plans would incorporate measures to prevent uncontrolled releases of potentially contaminative substances to ground. Appropriate spill and leak containment systems would be incorporated into the construction procedures to ensure no uncontrolled releases of contaminants occur. • Provision of refuelling areas for plant, appropriate land capacity for fuels stored on site and spill control and mitigation procedures. • Toolbox talks would be conducted in order to communicate the potential impacts to site personnel. • Site drainage - Surface water drains would be designed to carry only uncontaminated water. Foul drains would carry contaminated water to a sewage treatment works for treatment prior to discharge into a watercourse only when a consent has been granted by the sewerage undertaker; • Storage and handling of materials/oils/chemicals - All such materials would be stored in a designated area, lockable, with access via designated key holders/storesman/materials controller to enable effective control. Use and handling of such materials would be made with care, so as to prevent the potential for spillage to ground or contamination to surface water features. All fuel and oil would be held within fuel safe containers, and have a secondary containment system either by means of integrally bunded tanks / bowsers, or by means of a suitably constructed masonry bund, both of which to be capable of retaining at least 110% of the total capacity of the tank / container. All such containers to be labelled as to the contents and maximum capacity and be locked when not in use; • Refuelling of plant and equipment - All operatives on site would be inducted and made aware of best practice requirements when refuelling on site. Including use of designated refuelling areas (where possible), drip trays and funnels, and the provision of spill kits at conspicuous points to enable effective action to be taken if a spill were to occur. All mobile plant and equipment using fuels/oils would be contained within a drip tray at all times to minimise the potential for a pollution incident on site during the construction phase; • Contaminated land - During the construction phase, operatives may come across previously unidentified contaminated land. Reporting procedures would be in place to ensure any such identification is escalated to senior management promptly to allow for effective corrective action. Suitable controls would be in place to ensure any excavation of contamination is done in a manner which prevents cross contamination with other uncontaminated arisings stockpiles; • Concrete mixing - Concrete mixing is to be undertaken in designated areas to minimise the potential for impact on watercourses. Areas would be sited away from drains or identified surface water features. Washout of concrete wagons or mixers would be carried out only within

		<p>designated areas again sited away from watercourses or site drainage;</p> <ul style="list-style-type: none"> • Invasive Weeds – Site operatives would be made aware how to identify these weeds, including a site walkover prior to works commencing to ascertain whether present in the proposed construction area. The spread of these weeds through poor control on site and inadvertent cross contamination through ignorance or poor practice would be eliminated through training and effective control on site from senior management. A mechanism would be in place to report all incidents to site management for effective escalation and corrective action; • Silt Management - All site operatives would be made aware of drainage arrangements on site (where applicable). A strategic approach would be taken to effective silt management on site utilising a variety of preventive and corrective measures such as review of task and likelihood of generating excess silt, protecting drains using terram/straw, providing a regular road sweep/road brush to keep access roads clear of mud (and resulting silt), providing wheel wash facility prior to allowing vehicles to leave site (ensuring a closed loop recycling system or tinkered effluent system in place for the suitable removal of waste material), sheeting/battering stockpiles, sheeting lorries (i.e. when muck shifting). In extreme circumstances stone filled grips may be considered, however it is envisaged that the measures highlighted above would be effective; • Noise – Strict adherence to assigned working hours would be made. Use of low level noise plant and machinery would be made wherever possible, e.g. use of generators and compressors with low noise (e.g. operating at less than 65 db (A)). • Dust – This would be effectively monitored and managed on site so as to prevent nuisance issues. Controls would be in place to ensure dust is minimised (e.g. sheeting lorries during muck shift operations), utilisation of water sprays would enable dampening down of roads and alleviate potential dust problems. Careful consideration would be made of potential silt issues and the relevant controls (as identified above) applied to silt management.
<p>Hydrology & Hydrogeology – Section 7</p>		
<p>Hydrology and Hydrogeology</p>	<p>Surface Water</p>	<ul style="list-style-type: none"> • A project specific Surface Water Management Plan would be developed for the project including measures such as: <ul style="list-style-type: none"> ○ All onsite diesel storage tanks to be placed on hard standing ground within the construction compound. To reduce the risk of pollution via tank leakage, a double skinned tank container would either be used, or the tank would be double banded with a capacity of 110% of the maximum stored volume as per the Control of Pollution (Oil Storage) Regulations 2001. ○ Drip trays would be used under compressors, pumps, motors, redundant plant and during re-fuelling. These would be emptied and cleaned regularly especially after rainfall. ○ Diesel bowsers would be double skinned and equipped with spill control kits. <ul style="list-style-type: none"> ○ Control measures for controlling silt run-off to streams (as identified above). ○ All fuel storage and refuelling to be carried out at a minimum of 30m from watercourses.

		<ul style="list-style-type: none"> • Extreme care would be taken when using concrete in foundations close to watercourses and in areas of excavation close to groundwater. • Construction compounds would be located away from all watercourses to minimise risk of contamination • Emergency management procedures would be incorporated within the overall facilities management plan to cater for emergency events. • The drainage network to the site would be constructed at an early stage. This would enable early control of discharges and management of accidental spillages. • Any waste storage and temporary storage of materials would be located on the higher parts of the site to minimise the potential for silt runoff resulting from flooding. • A surface water monitoring programme of watercourses located on and around the site would be established and watercourses would be monitored before, during and on completion of construction works. Should any impact upon water quality be found to occur, a full investigation of cause would be undertaken. • Dredging arisings would be transported to the receiving site under controlled waste handling conditions. • Emergency Management Procedures would set out requirements in the event of an accidental release to ground.
Hydrology and Hydrogeology	Groundwater	<ul style="list-style-type: none"> • Groundwater monitoring wells would be installed prior to construction of the site and a monitoring programme established throughout construction and afterwards. • The elevation of the groundwater table is such that mitigation measures are likely to have to be employed during and following construction of the development (dewatering from sumps or well points and trench support for example). • Construction plans would be required to incorporate measures to prevent uncontrolled releases of potentially polluting substances to ground. These would include an assessment of likely pollutant pathways in the event of a spillage, including the likelihood of shallow groundwater and the deeper groundwater table. • Best practice construction methods would be employed to prevent such occurrences. Guidelines and procedures, for example Environment Agency Pollution Prevention Guidance would be adhered to at all times to minimise the potential release of contaminating substances to ground and to ensure control measures are in place to deal with any accidental spillages.
Air Quality – Section 8		
Air Quality		<ul style="list-style-type: none"> • Dust generation during aggregate handling would be limited by wetting the aggregate when there is a significant risk of dust generation during periods of dry weather. • It is intended that the site foundations would be piled using continuous flight augers, which are preferred because they are cleaner and quieter.

		<ul style="list-style-type: none"> • Paved roads around the site would be swept regularly to prevent build up of dusty materials. Unpaved roadways on site would be wetted to prevent dust generation where necessary during dry weather periods. • Lorries would be sheeted where they are likely to produce dust. • Dust generation from other construction activities would be minimised through good site practices including the selection of equipment designed to minimise dust, its confinement through sheeting and timely removal of any dust generated.
Land Use & Agriculture – Section 9		
Land Use & Agriculture	Agricultural Operations	<ul style="list-style-type: none"> • Short-term agreements between land tenants and Peel where phasing of the development may allow for particular agricultural fields to remain in production for longer periods. • Access to field will be maintained for animals and farm machinery. • A pre- and post-construction drainage scheme would be implemented as required to ensure that drainage of the surrounding farmland is not affected.
Land Use & Agriculture	Agri-Environment Schemes	<ul style="list-style-type: none"> • The crossing of the Shell pipeline easement (part of a Countryside Stewardship Scheme) would incorporate gaps in the bridge/culvert structures to allow its use as a wildlife corridor and allow connectivity of the feature across the site.
Land Use & Agriculture	Notifiable Scheduled Diseases	<ul style="list-style-type: none"> • Construction and reinstatement procedures would be in accordance with guidance provided by DEFRA, including the DEFRA document, <i>Practical Guide to Preventing the Spread of Plant and Animal Diseases, 1991</i>. • In the unlikely event of any animal burial pits being found during construction, DEFRA would be informed without delay and their advice taken regarding reburial or disposal. This is a requirement of Article 16 of the Animals (Miscellaneous Provisions) Order 1927. Should an outbreak occur during construction works, Peel would consult DEFRA on the need for any further project specific precautions and prompt action would be taken, as necessary.
Land Use & Agriculture	Invasive Species	<ul style="list-style-type: none"> • Mitigation would follow the relevant best practice including the Environment Agency's code of practice on managing Japanese Knotweed (Environment Agency, 2006). Specialist advice would be taken for the removal or control of plants as required.
Ecology – Section 10		
Ecology		<i>Mitigation Measures for ecology are described separately in Table 18.3.</i>
Archaeology – Section 11		
Archaeology	Metal	<ul style="list-style-type: none"> • A metal detecting survey would be undertaken in all areas that would be affected by ground breaking activities (including topsoil stripping),

	Detecting	<p>including the new roads and railway. The survey would be undertaken under the supervision of archaeologists and would aim to identify and recover any additional items and record any locations that may require further archaeological evaluation.</p> <ul style="list-style-type: none"> • Should the metal detecting survey highlight any specific areas, which may require further investigation, upon which the proposed scheme is likely to have an impact or on which the impact is uncertain, further evaluation and mitigation measures would be discussed and agreed with Cheshire County Council. • If these measures are required then the archaeological work would be subject to a Written Scheme of Investigation that has been discussed with, and approved by Cheshire County Council
Archaeology	Watching Brief	<ul style="list-style-type: none"> • A watching brief would be carried out on any new drainage ditches excavated within the development area. Any new ditches would be assessed by an appropriately qualified archaeologist for palaeo-environmental evidence. Further mitigation or analysis of this material would be determined once this assessment has been made. This work would be subject to a Written Scheme of Investigation that has been discussed with, and approved by Cheshire County Council. • An archaeological watching brief would be carried out during construction work, in the area of the Manchester ship canal (RSK Site 20) where elements of the original canal structure may be uncovered. The watching brief would consist of monitoring, by an appropriately qualified archaeologist, of all topsoil stripping and excavations associated with the construction of the proposed development. Any archaeological deposits, features or finds identified during the watching brief would be adequately recorded. Hand excavation, stratigraphic recording, drawn, written and photographic records would be undertaken, as appropriate. If significant finds are made during the watching brief a suitable programme of mitigation would be agreed with Cheshire County Council. • A watching brief will also be undertaken at the site of Grinsome Farm. • The sluice gate will be protectively fenced.
Landscape & Visual – Section 12		
Construction compounds		<ul style="list-style-type: none"> • Siting and layout of compounds will seek to utilise areas of natural screening etc to minimise visual impact. • Early provision of mitigation areas and some landscape planting; planting at site edges will reduce impacts of successive phases of development.
Human & Socio-Economics – Section 13		
Human and Socio-economic	Recreation	<ul style="list-style-type: none"> • A temporary diversion of the C-class highway/byway, to be agreed with CCC Public Rights of Way (PROW) Unit, local Highways Authority and Ellesmere Port and Neston Borough Council would be established where required from the commencement of construction to ensure continuous use of this footpath/recreation route throughout construction. Measures would be employed during construction so nuisance is not caused to users of the diverted right of way. This is likely to include noise and dust attenuation measures and provision of visual screens where required.

		<ul style="list-style-type: none"> Any footpath diversion required as a part of construction would be appropriately signed and fenced.
Traffic & Transportation – Section 14		
Traffic and Transportation	Traffic & signage	<ul style="list-style-type: none"> All construction site traffic will utilise the Pool Lane-Kemira Road route to minimise impact on surrounding village Clear signage will be provided for all construction work traffic such that the traffic impacts of the development do not compromise the safety and operation of the local highway network, or pedestrian or other road users safety. The mitigation of mud, noise and dust from the roads during construction is covered under site management in Geology & Soils above.
Noise – Section 15		
Noise	General construction noise	<ul style="list-style-type: none"> Construction hours will be limited to 0700-1900 (Mon to Fri) and 0800-1400 (Sat) with no noisy work allowed on Sundays or bank holidays. Local residents would be informed of any noisy work to be carried out outside of these times; this would also be agreed with the local authority.
	Vehicle noise	<ul style="list-style-type: none"> Site vehicles would not be over-revved. All machinery would be properly maintained and silenced according to manufacturer's instructions. All vehicles to observe set speed limits on site including 30mph on Kemira Road. Acoustic barrier scheme on Kemira Road to be established at an early stage of construction.
	Vibration	<ul style="list-style-type: none"> All plant brought on to the site would be properly maintained and operated in accordance with manufacturers' recommendations. The contractor and their sub-contractors would at all times apply the principles of Best Practicable Means as defined in Section 72 of the Control of Pollution Act 1974 and carry out all work in such a manner as to reduce any disturbance from noise and vibration to a minimum. Piling operations on and around the canal berth would be mitigated by using 'soft start' procedures, should this be deemed necessary.
		<ul style="list-style-type: none">

DBERR Application		
Geology & Soils – Section 6		
Geology and Soils	Geology	<ul style="list-style-type: none"> • Prior to construction, standard engineering site investigations would be undertaken on all parts of the site. Should evidence of ground contamination be encountered during these works, it may be necessary to carry out some further, small scale, investigations into the presence of contamination would be carried out. • Construction plans would incorporate measures to prevent uncontrolled releases of potentially contaminative substances to ground. Appropriate spill and leak containment systems would be incorporated into the construction procedures to ensure no uncontrolled releases of contaminants occur. • Provision of refuelling areas for plant, appropriate land capacity for fuels stored on site and spill control and mitigation procedures. • Toolbox talks would be conducted in order to communicate the potential impacts to site personnel. • Site drainage - Surface water drains would be designed to carry only uncontaminated water. Foul drains would carry contaminated water to a sewage treatment works for treatment prior to discharge into a watercourse only when a consent has been granted by the sewerage undertaker; • Storage and handling of materials/oils/chemicals - All such materials would be stored in a designated area, lockable, with access via designated key holders/storesman/materials controller to enable effective control. Use and handling of such materials would be made with care, so as to prevent the potential for spillage to ground or contamination to surface water features. All fuel and oil would be held within fuel safe containers, and have a secondary containment system either by means of integrally bunded tanks / bowsers, or by means of a suitably constructed masonry bund, both of which to be capable of retaining at least 110% of the total capacity of the tank / container. All such containers to be labelled as to the contents and maximum capacity and be locked when not in use; • Refuelling of plant and equipment - All operatives on site would be inducted and made aware of best practice requirements when refuelling on site. Including use of designated refuelling areas (where possible), drip trays and funnels, and the provision of spill kits at conspicuous points to enable effective action to be taken if a spill were to occur. All mobile plant and equipment using fuels/oils would be contained within a drip tray at all times to minimise the potential for a pollution incident on site during the construction phase; • Contaminated land - During the construction phase, operatives may come across previously unidentified contaminated land. Reporting procedures would be in place to ensure any such identification is escalated to senior management promptly to allow for effective corrective action. Suitable controls would be in place to ensure any excavation of contamination is done in a manner which prevents cross contamination with other uncontaminated arisings stockpiles; • Concrete mixing - Concrete mixing is to be undertaken in designated areas to minimise the potential for impact on watercourses. Areas would be sited away from drains or identified surface water features. Washout of concrete wagons or mixers would be carried out only within

		<p>designated areas again sited away from watercourses or site drainage;</p> <ul style="list-style-type: none"> • Invasive Weeds – Site operatives would be made aware how to identify these weeds, including a site walkover prior to works commencing to ascertain whether present in the proposed construction area. The spread of these weeds through poor control on site and inadvertent cross contamination through ignorance or poor practice would be eliminated through training and effective control on site from senior management. A mechanism would be in place to report all incidents to site management for effective escalation and corrective action; • Silt Management - All site operatives would be made aware of drainage arrangements on site (where applicable). A strategic approach would be taken to effective silt management on site utilising a variety of preventive and corrective measures such as review of task and likelihood of generating excess silt, protecting drains using terram/straw, providing a regular road sweep/road brush to keep access roads clear of mud (and resulting silt), providing wheel wash facility prior to allowing vehicles to leave site (ensuring a closed loop recycling system or tinkered effluent system in place for the suitable removal of waste material), sheeting/battering stockpiles, sheeting lorries (i.e. when muck shifting). In extreme circumstances stone filled grips may be considered, however it is envisaged that the measures highlighted above would be effective; • Noise – Strict adherence to assigned working hours would be made. Use of low level noise plant and machinery would be made wherever possible, e.g. use of generators and compressors with low noise (e.g. operating at less than 65 db (A)). • Dust – This would be effectively monitored and managed on site so as to prevent nuisance issues. Controls would be in place to ensure dust is minimised (e.g. sheeting lorries during muck shift operations), utilisation of water sprays would enable dampening down of roads and alleviate potential dust problems. Careful consideration would be made of potential silt issues and the relevant controls (as identified above) applied to silt management.
<p>Hydrology & Hydrogeology – Section 7</p>		
<p>Hydrology and Hydrogeology</p>	<p>Surface Water</p>	<ul style="list-style-type: none"> • A project specific Surface Water Management Plan would be developed for the project including measures such as: <ul style="list-style-type: none"> ○ All onsite diesel storage tanks to be placed on hard standing ground within the construction compound. To reduce the risk of pollution via tank leakage, a double skinned tank container would either be used, or the tank would be double banded with a capacity of 110% of the maximum stored volume as per the Control of Pollution (Oil Storage) Regulations 2001. ○ Drip trays would be used under compressors, pumps, motors, redundant plant and during re-fuelling. These would be emptied and cleaned regularly especially after rainfall. ○ Diesel bowsers would be double skinned and equipped with spill control kits. ○ Control measures for controlling silt run-off to streams (as identified above). ○ All fuel storage and refuelling to be carried out at a minimum of 30m from watercourses.

		<ul style="list-style-type: none"> • Extreme care would be taken when using concrete in foundations close to watercourses and in areas of excavation close to groundwater. • Construction compounds would be located away from all watercourses to minimise risk of contamination • Emergency management procedures would be incorporated within the overall facilities management plan to cater for emergency events. • The drainage network to the site would be constructed at an early stage. This would enable early control of discharges and management of accidental spillages. • Any waste storage and temporary storage of materials would be located on the higher parts of the site to minimise the potential for silt runoff resulting from flooding. • A surface water monitoring programme of watercourses located on and around the site would be established and watercourses would be monitored before, during and on completion of construction works. Should any impact upon water quality be found to occur, a full investigation of cause would be undertaken. • Dredging arisings would be transported to the receiving site under controlled waste handling conditions. • Emergency Management Procedures would set out requirements in the event of an accidental release to ground.
Hydrology and Hydrogeology	Groundwater	<ul style="list-style-type: none"> • Groundwater monitoring wells would be installed prior to construction of the site and a monitoring programme established throughout construction and afterwards. • The elevation of the groundwater table is such that mitigation measures are likely to have to be employed during and following construction of the development (dewatering from sumps or well points and trench support for example). • Construction plans would be required to incorporate measures to prevent uncontrolled releases of potentially polluting substances to ground. These would include an assessment of likely pollutant pathways in the event of a spillage, including the likelihood of shallow groundwater and the deeper groundwater table. • Best practice construction methods would be employed to prevent such occurrences. Guidelines and procedures, for example Environment Agency Pollution Prevention Guidance would be adhered to at all times to minimise the potential release of contaminating substances to ground and to ensure control measures are in place to deal with any accidental spillages.
Air Quality – Section 8		
Air Quality		<ul style="list-style-type: none"> • Dust generation during aggregate handling would be limited by wetting the aggregate when there is a significant risk of dust generation during periods of dry weather. • It is intended that the site foundations would be piled using continuous flight augers, which are preferred because they are cleaner and quieter.

		<ul style="list-style-type: none"> • Paved roads around the site would be swept regularly to prevent build up of dusty materials. Unpaved roadways on site would be wetted to prevent dust generation where necessary during dry weather periods. • Lorries would be sheeted where they are likely to produce dust. • Dust generation from other construction activities would be minimised through good site practices including the selection of equipment designed to minimise dust, its confinement through sheeting and timely removal of any dust generated.
Land Use & Agriculture – Section 9		
Land Use & Agriculture	Agricultural Operations	<ul style="list-style-type: none"> • Access to field will be maintained for animals and farm machinery. • A pre- and post-construction drainage scheme would be implemented as required to ensure that drainage of the surrounding farmland is not affected.
Land Use & Agriculture	Agri-Environment Schemes	<ul style="list-style-type: none"> • The crossing of the Shell pipeline easement (part of a Countryside Stewardship Scheme) would incorporate gaps in the bridge/culvert structures to allow its use as a wildlife corridor and allow connectivity of the feature across the site.
Land Use & Agriculture	Notifiable Scheduled Diseases	<ul style="list-style-type: none"> • Construction and reinstatement procedures would be in accordance with guidance provided by DEFRA, including the DEFRA document, <i>Practical Guide to Preventing the Spread of Plant and Animal Diseases, 1991</i>. • In the unlikely event of any animal burial pits being found during construction, DEFRA would be informed without delay and their advice taken regarding reburial or disposal. This is a requirement of Article 16 of the Animals (Miscellaneous Provisions) Order 1927. Should an outbreak occur during construction works, Peel would consult DEFRA on the need for any further project specific precautions and prompt action would be taken, as necessary.
Land Use & Agriculture	Invasive Species	<ul style="list-style-type: none"> • Mitigation would follow the relevant best practice including the Environment Agency's code of practice on managing Japanese Knotweed (Environment Agency, 2006). Specialist advice would be taken for the removal or control of plants as required.
Ecology – Section 10		
Ecology		<i>Mitigation Measures for ecology are described separately in Table 18.3.</i>
Archaeology – Section 11		
Archaeology	Metal Detecting	<ul style="list-style-type: none"> • A metal detecting survey would be undertaken in all areas that would be affected by ground breaking activities (including topsoil stripping), including the new roads and railway. The survey would be undertaken under the supervision of archaeologists and would aim to identify and recover any additional items and record any locations that may require further archaeological evaluation. • Should the metal detecting survey highlight any specific areas, which may require further investigation, upon which the proposed scheme is

		<p>likely to have an impact or on which the impact is uncertain, further evaluation and mitigation measures would be discussed and agreed with Cheshire County Council.</p> <ul style="list-style-type: none"> • If these measures are required then the archaeological work would be subject to a Written Scheme of Investigation that has been discussed with, and approved by Cheshire County Council
Archaeology	Watching Brief	<ul style="list-style-type: none"> • A watching brief would be carried out on any new drainage ditches excavated within the development area. Any new ditches would be assessed by an appropriately qualified archaeologist for palaeo-environmental evidence. Further mitigation or analysis of this material would be determined once this assessment has been made. This work would be subject to a Written Scheme of Investigation that has been discussed with, and approved by Cheshire County Council. • An archaeological watching brief would be carried out during construction work, in the area of the Manchester ship canal (RSK Site 20) where elements of the original canal structure may be uncovered. The watching brief would consist of monitoring, by an appropriately qualified archaeologist, of all topsoil stripping and excavations associated with the construction of the proposed development. Any archaeological deposits, features or finds identified during the watching brief would be adequately recorded. Hand excavation, stratigraphic recording, drawn, written and photographic records would be undertaken, as appropriate. If significant finds are made during the watching brief a suitable programme of mitigation would be agreed with Cheshire County Council. • A watching brief will also be undertaken at the site of Grinsome Farm. • The sluice gate will be protectively fenced.
Landscape & Visual – Section 12		
Construction compounds		<ul style="list-style-type: none"> • Siting and layout of compounds will seek to utilise areas of natural screening etc to minimise visual impact. • Early provision of mitigation areas and some landscape planting; planting at site edges will reduce impacts of development.
Human & Socio-Economics – Section 13		
Human & Socio Impacts		<i>No specific mitigation.</i>
Traffic & Transportation – Section 14		
Traffic and Transportation	Traffic & signage	<ul style="list-style-type: none"> • All construction site traffic will utilise the Pool Lane-Kemira Road route to minimise impact on surrounding villages. • Clear signage will be provided for all construction work traffic such that the traffic impacts of the development do not compromise the safety and operation of the local highway network, or pedestrian or other road users safety. • The mitigation of mud, noise and dust from the roads during construction is covered under site management in Geology & Soils above.

Noise – Section 15		
Noise	General construction noise	<ul style="list-style-type: none"> • Construction hours will be limited to 0700-1900 (Mon to Fri) and 0800-1400 (Sat) with no noisy work allowed on Sundays or bank holidays. • Local residents would be informed of any noisy work to be carried out outside of these times; this would also be agreed with the local authority.
	Vehicle noise	<ul style="list-style-type: none"> • Site vehicles would not be over-revved. All machinery would be properly maintained and silenced according to manufacturer's instructions. • All vehicles to observe set speed limits on site including 30mph on Kemira Road. • Acoustic barrier scheme on Kemira Road to be established at an early stage of construction.
	Vibration	<ul style="list-style-type: none"> • All plant brought on to the site would be properly maintained and operated in accordance with manufacturers' recommendations. • The contractor and their sub-contractors would at all times apply the principles of Best Practicable Means as defined in Section 72 of the Control of Pollution Act 1974 and carry out all work in such a manner as to reduce any disturbance from noise and vibration to a minimum. • Piling operations on and around the canal berth would be mitigated by using 'soft start' procedures, should this be deemed necessary.

Table 18.2: Summary of Mitigation Measures (Operational Phase)

ES Section	Issue	Mitigation Measures
Entire Site		
Geology & Soils – Section 6		
Geology and Soils	Pollution risk (to ground or water)	<ul style="list-style-type: none"> Discharges would be periodically monitored to ensure that contaminant concentrations remain within the bands allowed by the discharge consents. PPC requirements would apply to discharge monitoring. An emergency response plan would be produced to ensure that the risks of fires or other unplanned events are minimised. Should these events occur, the emergency response plan would detail the action to be taken to minimise environmental impacts e.g. due to fire-fighting water or combustion products. Processes at the site have contained drainage. All material inputs and outputs from site processes with the potential to pollute would be kept in designated storage areas with contained drainage. Spill kits would be maintained to seal drains and confine spills.
Hydrology & Hydrogeology – Section 7		
Water Resources	Flood Risk	<ul style="list-style-type: none"> All buildings are to be constructed with a minimum finished floor level of 5.063m AOD. All main access roads and strategic pedestrian links are to have a finished surface level of 4.763m AOD. Interceptors and below ground foul drainage pipework would be fitted with sealed covers to prevent leakage. Flood storage compensation volumes as detailed in Tables 7.8 and 7.9 are to be provided as part of the SUDS wetland scheme.
Water Resources		<ul style="list-style-type: none"> Much of the operational mitigation would be similar to that implemented during the construction phase. Measures for dealing with accidental spillages from the liquid storage areas would be implemented including bunding these areas, and procedures for waste transfer, such as sealed containers and covered wagons. Petrol interceptors to be installed on all areas that drain vehicle parking, as well as the washdown and garage facilities. All process water and water from storage areas is to be passed to the site water treatment plant via contained drainage systems. Outfall levels into the surrounding ditches would be close to or at the invert of the minor ditches. Flap valves would be installed to minimise the potential for flood waters to re-enter the on-site drainage system and flush out the contents of

ES Section	Issue	Mitigation Measures
		<p>petrol interceptors and silt traps. The internal pipework on-site would be upsized to provide additional storage volumes.</p> <ul style="list-style-type: none"> • Foul drainage would be collected in a separate drainage system to the surface water and treated at the water treatment plant. • The drainage system would be designed to minimise the risk of back flooding during severe storm events where ground water or surface water could enter the foul system. • Sealed covers to manholes and pumping stations would be provided. • If a sealed containment tank or pumping station is to be used for foul drainage then this plant would be located at higher elevation to protect it from flooding, and would also be designed to minimise the potential for leakage or spillage during maintenance or emptying. A kerbed area forming a bund is to be incorporated into the access for this facility. • All petrol interceptors would be fitted with isolation valves such that sections can be isolated if potentially polluting materials reach the surface water drainage system. • A maintenance schedule for all the on-site mitigation features would be employed to monitor the condition of silt traps, catchpits and petrol interceptors and arrange for each of these to be cleaned out when required. In addition the operation of flap valves and isolation valves would be checked at regular intervals.
Air Quality – Section 8		
Air Quality	Air Emissions	<ul style="list-style-type: none"> • Mitigation for operational air quality impact has been built into the design of individual facilities, in particular with respect to the stack height. As a result of this, no air quality objectives are expected to be exceeded, therefore no further mitigation is required
Air Quality	Odour	<ul style="list-style-type: none"> • The berth, MRF, RDF store, soils plant, plastics village, WEEE facility, timber recycling and warehousing/industrial units would all contain any odours by the following measures: <ul style="list-style-type: none"> ○ Reception of waste materials with any odour potential in enclosed buildings; ○ Ventilation to control dust and any potential odour in the building, and filtration prior to release to atmosphere; ○ Limited storage of any potentially putrescible material, such as rejected material, to ensure that this would not start to decompose and create odours; and ○ No storage of odorous material outdoors. • The RDF fired power plant would control any potential odours by the following measures:

ES Section	Issue	Mitigation Measures
		<ul style="list-style-type: none"> ○ All areas containing RDF would be maintained under a negative pressure by extracting air for the combustion units; ○ The combustion process takes place under negative pressure to prevent any local emissions of smoke or fumes; ○ All flue gas would be emitted from the 100m tall stack, ensuring that no odour would be detectable at ground level; and ○ Ammonia emissions would be controlled and limited from the stack at a very low level. This ensures that the flue gases do not add to any existing odours and that the ash removed does not smell of ammonia. ● The MBT plant and the composting plant have the greatest potential for creating nuisance due to odours. Odours would be controlled and mitigated as follows: <ul style="list-style-type: none"> ○ All waste deliveries would be tipped into an enclosed reception area. Air would be extracted from this area to maintain a negative pressure and ensure that odour cannot escape; ○ Residual waste and green/kitchen waste would be processed within a day of delivery and passed to the appropriate biological treatment area; ○ All air removed from the reception, biological treatment or waste handling areas would be passed through a biofilter to remove the smells; ○ The biofilter would be monitored and moisture controlled to ensure they remain effective; ○ Odour emissions and condition of the biofilters would be monitored daily to maintain the biofilters in good condition; ○ The biofilters would be topped up with fresh material whenever necessary to maintain the correct operating depth of material; ○ Material would be removed from composting tunnels in an enclosed area, ventilated to ensure that any potentially odorous releases are captured and treated prior to release; ○ Reception areas and areas in which waste is processed would be designed to areas where waste can stand for long periods; and ○ Areas around the facility would be monitored regularly as agreed with the Environment Agency to confirm that no significant odours are being released from the facilities.
Land Use & Agriculture – Section 9		
Land Use and Agriculture		<ul style="list-style-type: none"> ● Post construction drainage scheme is to be implemented to ensure that drainage of the remaining farmland is not affected. ● Access to fields to be maintained. ● Ecological mitigation compensates for loss of Stewardship sites.

ES Section	Issue	Mitigation Measures
Ecology – Section 10		
Ecology		<i>Mitigation Measures for ecology are described separately in Table 18.3.</i>
Archaeology – Section 11		
Archaeology	Post-Excavation	<ul style="list-style-type: none"> On completion of any archaeological fieldwork, a comprehensive programme of post-excavation assessment, analysis, reporting and publication would be implemented. The post-excavation programme would be subject to a Written Scheme of Investigation that has been discussed with, and approved by Cheshire County Council.
Landscape & Visual – Section 12		
Landscape and Visual	Colour	<ul style="list-style-type: none"> The massing of IWMF/ETC buildings, Ethanol Plant and RDF Plant would be visible features from many viewpoints. The intention to use coated metal cladding throughout would give the opportunity to vary colours, even on a single elevation and so provide some simple camouflaging effects. The preferred colours would be as follows: <ul style="list-style-type: none"> Roofing - in an overall grey tone, it would provide a neutral, non-reflective finish, and help reduce the impacts from the middle and long distance viewpoints. Elevations - consideration has been given to the extent of colour and finishes on the elevations and smaller elements of the development. The use of subdued muted tones of blue and grey used on the buildings at the edge of the development would help merge with the proposed mitigation planting. Small elements such as storage containers, roller shutter doors and buildings within the core of the development would be able to include such colours as muted red/brown and brown since they are likely to be already partially screened by the outer buildings. The RDF plant is assessed to have the greatest visual impact. For this reason, a higher quality of architectural design is proposed such that it could become a landmark building.
Landscape and Visual	Lighting	<ul style="list-style-type: none"> Through the use of full horizontal cut-off to minimise light trespass and glow and conformance to current British road lighting standards BS 5489-1:2003, lighting impacts would be reduced.
Landscape and Visual	Planting	<ul style="list-style-type: none"> Landscape planting proposals would include: <ul style="list-style-type: none"> Restoration of grassland habitats disturbed by construction; Tree screening belts adjacent to the boundaries of the development; Thorn hedge planting to road and rail boundaries together with occasional hedge trees such as Oak and Ash;

ES Section	Issue	Mitigation Measures
		<ul style="list-style-type: none"> ○ Internal tree planting within the development around car parks and as 'avenues' along access roads. • The proposed boundary planting would be designed in copses of indigenous tree planting to reflect the existing character and comprise of species that are already found in the local area. • Extensive ecological mitigation and wetland areas which would also provide mitigation for landscape & visual impacts.
Human & Socio-Economics – Section 13		
Human & Socio-Economic	Employment	<ul style="list-style-type: none"> • The gain in employment opportunities is likely to strongly outweigh any loss of agricultural employment at the site.
	Recreation	<ul style="list-style-type: none"> • C-class highway/byway to be diverted and resurfaced for the CCC Application to provide safe route for horse-riders, cyclists, walkers etc. • New Community Park to be created for the CCC Application including mosaic of grassland & woodland and a series of footpaths to provide a recreational resource for surrounding villages. To connect with the diverted byway and with other footpaths around the site. • Educational facility to be provided as a part of the development.
Traffic & Transportation – Section 14		
Traffic and Transportation		<ul style="list-style-type: none"> • All road traffic to utilise the Pool Lane-Kemira Road preventing traffic impacts on surrounding villages. • The main pedestrian and cycle access would be improved as part of the upgrading works to Kemira Road. • All mode access is available to the site. A proportion of inputs and outputs to arrive by rail and canal, reducing road traffic. • It is proposed to widen Kemira Road to a 9.3m cross section comprising a 7.3m carriageway for vehicles and cyclists and a 2.0m footway on the south side. • Highway Authority are promoting to assist cyclists negotiate M53 Junction 10. • A shuttle bus would be provided at key commuting and shift change times linking the sites with Ellesmere Port and its environs where staff travel to work surveys have indicated a large percentage of the Quinn Glass work force, and it is to be anticipated the Ince work force, live. • The impact of the traffic generated by the development at the Pool Lane / Kemira Road roundabout and operational issues at the Pool Lane railway bridge would be mitigated by the proposed improvement described in Section 7 of the TAR.
Noise – Section 15		

ES Section	Issue	Mitigation Measures
Noise	Road Traffic	<ul style="list-style-type: none">• A scheme of roadside barriers would be implemented around the intersection of the Kemira road and Station Road in conjunction with the existing earth bank around the bridge.• Traffic calming measures would be introduced along the road, such that the velocity of vehicles is reduced.
	Plant Noise	<ul style="list-style-type: none">• Plot boundary noise criteria have been proposed for the scheme. This would be expected to be enforced by condition.

CCC Application		
Geology & Soils – Section 6		
Geology and Soils	Pollution risk (to ground or water)	<ul style="list-style-type: none"> Discharges would be periodically monitored to ensure that contaminant concentrations remain within the bands allowed by the discharge consents. PPC requirements would apply to discharge monitoring. An emergency response plan would be produced to ensure that the risks of fires or other unplanned events are minimised. Should these events occur, the emergency response plan would detail the action to be taken to minimise environmental impacts e.g. due to fire-fighting water or combustion products. Processes at the site have contained drainage. All material inputs and outputs from site processes with the potential to pollute would be kept in designated storage areas with contained drainage. Spill kits would be maintained to seal drains and confine spills.
Hydrology & Hydrogeology – Section 7		
Water Resources	Flood Risk	<ul style="list-style-type: none"> All buildings are to be constructed with a minimum finished floor level of 5.063m AOD. All main access roads and strategic pedestrian links are to have a finished surface level of 4.763m AOD. Interceptors and below ground foul drainage pipework would be fitted with sealed covers to prevent leakage. Flood storage compensation volumes as detailed in Table 7.8 are to be provided as part of the SUDS wetland scheme.
Water Resources		<ul style="list-style-type: none"> Emergency management systems for dealing with accidental spillages from liquid storage areas would be implemented. Measures would include bunding these areas, and procedures for waste transfer, such as sealed containers and covered wagons. Petrol interceptors to be installed on all areas that drain vehicle parking, as well as the washdown and garage facilities. All process water and water from storage areas is to be passed to the site water treatment plant. Outfall levels into the surrounding ditches would be close to or at the invert of the minor ditches. Flap valves would be installed to minimise the potential for flood waters to re-enter the on-site drainage system and flush out the contents of petrol interceptors and silt traps. The internal pipework on-site would be upsized to provide additional storage volumes. Foul drainage would be collected in a separate drainage system to the surface water and treated at the water treatment plant. The drainage system would be designed to minimise the risk of back flooding during severe storm events where ground water or surface water

		<p>could enter the foul system.</p> <ul style="list-style-type: none"> • Sealed covers to manholes and pumping stations would be provided. • If a sealed containment tank or pumping station is to be used for foul drainage then this plant would be located at higher elevation to protect it from flooding, and would also be designed to minimise the potential for leakage or spillage during maintenance or emptying. A kerbed area forming a bund is to be incorporated into the access for this facility. • All petrol interceptors would be fitted with isolation valves such that sections can be isolated if potentially polluting materials reach the surface water drainage system. • A maintenance schedule for all the on-site mitigation features would be employed to monitor the condition of silt traps, catchpits and petrol interceptors and arrange for each of these to be cleaned out when required. In addition the operation of flap valves and isolation valves would be checked at regular intervals.
Air Quality – Section 8		
Air Quality	Air Emissions	<ul style="list-style-type: none"> • Mitigation for operational air quality impact has been built into the design of individual facilities, in particular with respect to the stack height. As a result of this, no air quality objectives are expected to be exceeded, therefore no further mitigation is required
Air Quality	Odour	<ul style="list-style-type: none"> • The berth, MRF, soils plant, plastics village, WEEE facility, timber recycling and warehousing/industrial units would all contain any odours by the following measures: <ul style="list-style-type: none"> ○ Reception of waste materials with any odour potential in enclosed buildings; ○ Ventilation to control dust and any potential odour in the building, and filtration prior to release to atmosphere; ○ Limited storage of any potentially putrescible material, such as rejected material, to ensure that this would not start to decompose and create odours; and ○ No storage of odorous material outdoors. • The MBT plant and the composting plant have the greatest potential for creating nuisance due to odours. Odours would be controlled and mitigated as follows: <ul style="list-style-type: none"> ○ All waste deliveries would be tipped into an enclosed reception area. Air would be extracted from this area to maintain a negative pressure and ensure that odour cannot escape; ○ Residual waste and green/kitchen waste would be processed within a day of delivery and passed to the appropriate biological treatment area;

		<ul style="list-style-type: none"> ○ All air removed from the reception, biological treatment or waste handling areas would be passed through a biofilter to remove the smells; ○ The biofilter would be monitored and moisture controlled to ensure they remain effective; ○ Odour emissions and condition of the biofilters would be monitored daily to maintain the biofilters in good condition; ○ The biofilters would be topped up with fresh material whenever necessary to maintain the correct operating depth of material; ○ Material would be removed from composting tunnels in an enclosed area, ventilated to ensure that any potentially odorous releases are captured and treated prior to release; ○ Reception areas and areas in which waste is processed would be designed to areas where waste can stand for long periods; and ○ Areas around the facility would be monitored regularly as agreed with the Environment Agency to confirm that no significant odours are being released from the facilities
Land Use & Agriculture – Section 9		
Land Use & Agriculture	Agricultural Operations	<ul style="list-style-type: none"> ● Post construction drainage scheme is to be implemented to ensure that drainage of the remaining farmland is not affected. ● Access to fields to be maintained. ● Ecological mitigation compensates for loss of Stewardship sites.
Ecology – Section 10		
Ecology		<i>Mitigation Measures for ecology are described separately in Table 18.3.</i>
Archaeology – Section 11		
Archaeology	Post-Excavation	<ul style="list-style-type: none"> ● On completion of any archaeological fieldwork, a comprehensive programme of post-excavation assessment, analysis, reporting and publication would be implemented. The post-excavation programme would be subject to a Written Scheme of Investigation that has been discussed with, and approved by Cheshire County Council.
Landscape & Visual – Section 12		
Landscape and Visual	Colour	<ul style="list-style-type: none"> ● The massing of IWMMF/ETC and Ethanol plant buildings would be visible features from a number of viewpoints. The intention to use coated metal cladding throughout would give the opportunity to vary colours, even on a single elevation and so provide some simple camouflaging effects. The preferred colours would be as follows: <ul style="list-style-type: none"> ○ Roofing - in an overall grey tone, it would provide a neutral, non-reflective finish, and help reduce the impacts from the middle and long

		<p>distance viewpoints.</p> <ul style="list-style-type: none"> ○ Elevations - consideration has been given to the extent of colour and finishes on the elevations and smaller elements of the development. The use of subdued muted tones of blue and grey used on the buildings at the edge of the development would help merge with the proposed mitigation planting. Small elements such as storage containers, roller shutter doors and buildings within the core of the development would be able to include such colours as muted red/brown and brown since they are likely to be already partially screened by the outer buildings.
Landscape and Visual	Lighting	<ul style="list-style-type: none"> ● Through the use of full horizontal cut-off to minimise light trespass and glow and conformance to current British road lighting standards BS 5489-1:2003, lighting impacts would be reduced.
Landscape and Visual	Planting	<ul style="list-style-type: none"> ● Landscape planting proposals would include: <ul style="list-style-type: none"> ○ Restoration of grassland habitats disturbed by construction; ○ Tree screening belts adjacent to the boundaries of the development; ○ Thorn hedge planting to road and rail boundaries together with occasional hedge trees such as Oak and Ash; ○ Internal tree planting within the development around car parks and as 'avenues' along access roads. ● The proposed boundary planting would be designed in copses of indigenous tree planting to reflect the existing character and comprise of species that are already found in the local area. ● Extensive ecological mitigation and wetland areas which would also provide mitigation for landscape & visual impacts.
Human & Socio-Economics – Section 13		
Human & Socio-Economic	Employment	<ul style="list-style-type: none"> ● The gain in employment opportunities is likely to strongly outweigh any loss of agricultural employment at the site.
	Recreation	<ul style="list-style-type: none"> ● C-class highway/byway to be diverted and resurfaced for the CCC Application to provide safe route for horse-riders, cyclists, walkers etc. ● New Community Park to be created for the CCC Application including mosaic of grassland & woodland and a series of footpaths to provide a recreational resource for surrounding villages. To connect with the diverted byway and with other footpaths around the site. ● Educational facility to be provided as a part of the development.
Traffic & Transportation – Section 14		
Traffic & Transportation		<ul style="list-style-type: none"> ● All road traffic to utilise the Pool Lane-Kemira Road preventing traffic impacts on surrounding villages.

		<ul style="list-style-type: none"> • The main pedestrian and cycle access would be improved as part of the upgrading works to Kemira Road. • All mode access is available to the site. A proportion of inputs and outputs to arrive by rail and canal, reducing road traffic. • It is proposed to widen Kemira Road to a 9.3m cross section comprising a 7.3m carriageway for vehicles and cyclists and a 2.0m footway on the south side. • Highway Authority are promoting to assist cyclists negotiate M53 Junction 10. • A shuttle bus would be provided at key commuting and shift change times linking the sites with Ellesmere Port and its environs where staff travel to work surveys have indicated a large percentage of the Quinn Glass work force, and it is to be anticipated the Ince work force, live. • The impact of the traffic generated by the development at the Pool Lane / Kemira Road roundabout and operational issues at the Pool Lane railway bridge would be mitigated by the proposed improvement described in Section 7 of the TAR.
Noise – Section 15		
Noise	Road Traffic	<ul style="list-style-type: none"> • A scheme of roadside barriers would be implemented around the intersection of the Kemira road and Station Road in conjunction with the existing earth bank around the bridge. • Traffic calming measures would be introduced along the road, such that the velocity of vehicles is reduced.
	Plant Noise	<ul style="list-style-type: none"> • Plot boundary noise criteria have been proposed for the scheme. This would be expected to be enforced by condition.

DBERR Application		
Geology & Soils – Section 6		
Geology and Soils	Pollution risk (to ground or water)	<ul style="list-style-type: none"> • Discharges would be periodically monitored to ensure that contaminant concentrations remain within the bands allowed by the discharge consents. PPC requirements would apply to discharge monitoring. • An emergency response plan would be produced to ensure that the risks of fires or other unplanned events are minimised. Should these events occur, the emergency response plan would detail the action to be taken to minimise environmental impacts e.g. due to fire-fighting water or combustion products. • Processes at the site have contained drainage. All material inputs and outputs from site processes with the potential to pollute would be kept in designated storage areas with contained drainage. • Spill kits would be maintained to seal drains and confine spills.
Hydrology & Hydrogeology – Section 7		
Water Resources	Flood Risk	<ul style="list-style-type: none"> • All buildings are to be constructed with a minimum finished floor level of 5.063m AOD. • All main access roads and strategic pedestrian links are to have a finished surface level of 4.763m AOD. • Interceptors and below ground foul drainage pipework would be fitted with sealed covers to prevent leakage. • Flood storage compensation volumes as detailed in Tables 7.9 are to be provided as part of the SUDS wetland scheme.
Water Resources		<ul style="list-style-type: none"> • Emergency management systems for dealing with accidental spillages from liquid storage areas would be implemented. Measures would include bunding these areas, and procedures for waste transfer, such as sealed containers and covered wagons. • Petrol interceptors to be installed on all areas that drain vehicle parking, as well as the washdown and garage facilities. • All process water and water from storage areas is to be passed to the site water treatment plant. • Outfall levels into the surrounding ditches would be close to or at the invert of the minor ditches. • Flap valves would be installed to minimise the potential for flood waters to re-enter the on-site drainage system and flush out the contents of petrol interceptors and silt traps. The internal pipework on-site would be upsized to provide additional storage volumes. • Foul drainage would be collected in a separate drainage system to the surface water and treated at the water treatment plant. • The drainage system would be designed to minimise the risk of back flooding during severe storm events where ground water or surface water

		<p>could enter the foul system.</p> <ul style="list-style-type: none"> Sealed covers to manholes and pumping stations would be provided. If a sealed containment tank or pumping station is to be used for foul drainage then this plant would be located at higher elevation to protect it from flooding, and would also be designed to minimise the potential for leakage or spillage during maintenance or emptying. A kerbed area forming a bund is to be incorporated into the access for this facility. All petrol interceptors would be fitted with isolation valves such that sections can be isolated if potentially polluting materials reach the surface water drainage system. A maintenance schedule for all the on-site mitigation features would be employed to monitor the condition of silt traps, catchpits and petrol interceptors and arrange for each of these to be cleaned out when required. In addition the operation of flap valves and isolation valves would be checked at regular intervals.
Air Quality – Section 8		
Air Quality	Air Emissions	<ul style="list-style-type: none"> Mitigation for operational air quality impact has been built into the design of individual facilities, in particular with respect to the stack height. As a result of this, no air quality objectives are expected to be exceeded, therefore no further mitigation is required
Air Quality	Odour	<ul style="list-style-type: none"> The berth, RDF store, and warehousing/industrial units would all contain any odours by the following measures: <ul style="list-style-type: none"> Reception of waste materials with any odour potential in enclosed buildings; Ventilation to control dust and any potential odour in the building, and filtration prior to release to atmosphere; The RDF fired power plant would control any potential odours by the following measures: <ul style="list-style-type: none"> All areas containing RDF would be maintained under a negative pressure by extracting air for the combustion units; The combustion process takes place under negative pressure to prevent any local emissions of smoke or fumes; All flue gas would be emitted from the 100m tall stack, ensuring that no odour would be detectable at ground level; and Ammonia emissions would be controlled and limited from the stack at a very low level. This ensures that the flue gases do not add to any existing odours and that the ash removed does not smell of ammonia.
Land Use & Agriculture – Section 9		
Land Use &		<ul style="list-style-type: none"> Post construction drainage scheme is to be implemented to ensure that drainage of the remaining farmland is not affected.

Agriculture		<ul style="list-style-type: none"> • Access to fields to be maintained. • Ecological mitigation would more than compensate for smaller loss of Stewardship sites (than for the CCC Application).
Ecology – Section 10		
Ecology		<i>Mitigation Measures for ecology are described separately in Table 18.3.</i>
Archaeology – Section 11		
Archaeology	Post-Excavation	<ul style="list-style-type: none"> • On completion of any archaeological fieldwork, a comprehensive programme of post-excavation assessment, analysis, reporting and publication would be implemented. The post-excavation programme would be subject to a Written Scheme of Investigation that has been discussed with, and approved by Cheshire County Council.
Landscape & Visual – Section 12		
Landscape and Visual	Colour	<ul style="list-style-type: none"> • The RDF Plant and canal berth would be a visible feature from many viewpoints. The intention to use coated metal cladding throughout would give the opportunity to vary colours, even on a single elevation and so provide some simple camouflaging effects. The preferred colours would be as follows: <ul style="list-style-type: none"> ○ Roofing - in an overall grey tone, it would provide a neutral, non-reflective finish, and help reduce the impacts from the middle and long distance viewpoints. ○ Elevations - consideration has been given to the extent of colour and finishes on the elevations and smaller elements of the development. The use of subdued muted tones of blue and grey used on the buildings at the edge of the development would help merge with the proposed mitigation planting. Small elements such as storage containers, roller shutter doors and buildings within the core of the development would be able to include such colours as muted red/brown and brown since they are likely to be already partially screened by the outer buildings. ○ The RDF plant is assessed to have the greatest visual impact. For this reason, a higher quality of architectural design is proposed such that it could become a landmark building.
Landscape and Visual	Lighting	<ul style="list-style-type: none"> • Through the use of full horizontal cut-off to minimise light trespass and glow and conformance to current British road lighting standards BS 5489-1:2003, lighting impacts would be reduced.
Landscape and Visual	Planting	<ul style="list-style-type: none"> • Landscape planting proposals would include: <ul style="list-style-type: none"> ○ Restoration of grassland habitats disturbed by construction; ○ Tree screening belts adjacent to the boundaries of the development;

		<ul style="list-style-type: none"> ○ Thorn hedge planting to road and rail boundaries together with occasional hedge trees such as Oak and Ash; ○ Internal tree planting within the development around car parks and as 'avenues' along access roads. ● The proposed boundary planting would be designed in copses of indigenous tree planting to reflect the existing character and comprise of species that are already found in the local area.
Human & Socio-Economics – Section 13		
Human & Socio-Economic	Employment	<ul style="list-style-type: none"> ● The gain in employment opportunities is likely to strongly outweigh any loss of agricultural employment at the site.
Traffic & Transportation – Section 14		
Traffic & Transportation		<ul style="list-style-type: none"> ● All road traffic to utilise the Pool Lane-Kemira Road preventing traffic impacts on surrounding villages. ● The main pedestrian and cycle access would be improved as part of the upgrading works to Kemira Road. ● All mode access is available to the site. A proportion of inputs and outputs to arrive by rail and canal, reducing road traffic. ● It is proposed to widen Kemira Road to a 9.3m cross section comprising a 7.3m carriageway for vehicles and cyclists and a 2.0m footway on the south side. ● Highway Authority are promoting to assist cyclists negotiate M53 Junction 10. ● A shuttle bus would be provided at key commuting and shift change times linking the sites with Ellesmere Port and its environs where staff travel to work surveys have indicated a large percentage of the Quinn Glass work force, and it is to be anticipated the Ince work force, live. ● The impact of the traffic generated by the development at the Pool Lane / Kemira Road roundabout and operational issues at the Pool Lane railway bridge would be mitigated by the proposed improvement described in Section 7 of the TAR.
Noise – Section 15		
Noise	Road Traffic	<ul style="list-style-type: none"> ● A scheme of roadside barriers would be implemented around the intersection of the Kemira road and Station Road in conjunction with the existing earth bank around the bridge. ● Traffic calming measures would be introduced along the road, such that the velocity of vehicles is reduced.
	Plant Noise	<ul style="list-style-type: none"> ● Plot boundary noise criteria have been proposed for the scheme. This would be expected to be enforced by condition.

Table 18.3: Summary of Mitigation Measures (Ecology – Construction & Operation)

Entire Site	
SPA/SSSI/Ramsar Site	<ul style="list-style-type: none"> • If work is to be undertaken in the winter months when qualifying bird species are present in significant numbers, no work shall take place at high tide. • No construction activity to take place when temperatures fall below -3 degrees Celsius. • Particulate levels will be monitored during construction to ensure they do not exceed recommended guidelines and normal avoidance measures, such as wheel washes, will be used. • Lighting along the canal will where possible use the equivalent to low-pressure sodium lamps in preference to high-pressure sodium. • Lighting will be designed with hoods or similar to direct the light below the horizontal plane (preferably at an angle < 70 degrees). • Mitigation areas of 31.5 ha will be retained for habitat creation and enhancement. These areas will include the following features to mitigate for the loss of existing bird habitat: <ul style="list-style-type: none"> • A series of shallow scrapes will be formed to provide habitat for wintering waders • Larger waterbodies to be created as a part of the SUDS system. • Areas of reed-beds. • The two main areas provided for mitigation will have no public access with the aim to provide disturbance-free habitat.. The proposed mitigation area to the west of the canal berth is already well-protected by the existing ditch to the south and east, by a good hedgerow to the west, and by fencing to the north. Where required, these existing boundaries will be supplemented to prevent access to the area. • Additional land set aside for landscape planting and creation of a community woodland. • Areas proposed for mitigation will be created/enhanced prior to construction to ensure that suitable foraging areas are available. • Areas of suitable habitat retained or created within the application site will be buffered from the proposed development by existing or newly-created hedgerows or other ecological features to minimise disturbance during the operational phase of development. • A management plan for the site and its mitigation areas will be discussed and agreed with key stakeholders including RSPB, Natural England, Wildlife Trust, Environment Agency and Cheshire County Council. Funds will be set aside for ongoing management and monitoring of these areas in accordance with the management plan. A draft plan is provided as Appendix 10.20. • <i>See also mitigation for birds below.</i>

SBI Site	<ul style="list-style-type: none"> • During construction, areas of the SBI due to be retained within the proposed development will be fenced off or appropriately marked to prevent encroachment by construction machinery. • <i>See also impacts on the SPA/Ramsar/SSSI above, and upon birds, water voles and watercourses below.</i>
Woodland	<ul style="list-style-type: none"> • Extensive additional planting of native species (including black poplar, an LBAP species) will be undertaken. • An area of woodland habitat will be created in the west of the application site using a native species mix. • Areas of habitat due to be retained within the development will be fenced-off or marked with high visibility tape during construction to prevent encroachment. No machinery or vehicles will be stored within these areas.
Scrub	<ul style="list-style-type: none"> • Additional planting of scrub of a native species mix will be undertaken. • Areas of habitat due to be retained within the development will be fenced-off or marked with high visibility tape during construction to prevent encroachment. No machinery or vehicles will be stored within these areas.
Hedgerows & Mature Trees	<ul style="list-style-type: none"> • Screening and structure planting will be planted through out the site. New hedgerows will also be planted in some of the areas set aside for ecological mitigation. • Retained hedgerows will be gapped up with native species where necessary/desirable.
Grassland (Unimproved and Semi-improved)	<ul style="list-style-type: none"> • Areas of habitat due to be retained within the development will be fenced-off or marked with high visibility tape during construction to prevent encroachment. No machinery or vehicles will be stored within these areas. • New areas of grassland will be created with mitigation/SUDS areas and within the proposed development. These will be seeded with a native wildflower mix. • Road verges, railway embankments and areas of amenity grassland will be sown with a wildflower mix tolerant of mowing.
Grassland (Improved)	<ul style="list-style-type: none"> • 8 fields of improved grassland to be retained as ecological areas and SUDAS wetland, increasing their value for local fauna (including SPA-qualifying bird species) and increasing biodiversity. • Mitigation areas will be managed in the long-term to increase their conservation value using management techniques that are sympathetic to protected, rare and notable fauna. • Areas of habitat due to be retained within the development will be fenced-off or marked with high visibility tape during construction to prevent encroachment. No machinery or vehicles will be stored within these areas.
Arable farmland	<ul style="list-style-type: none"> • Retention of 5 fields of arable land within the development to be managed in the long-term for ecological benefit, e.g. as over-winter stubble for birds.

Tall ruderal/swamp vegetation	<ul style="list-style-type: none"> • Creation of areas of swamp and tall ruderal vegetation within ecological mitigation and SUDS areas. • Areas of habitat due to be retained within the development will be fenced-off or marked with high visibility tape during construction to prevent encroachment. No machinery or vehicles will be stored within these areas.
Standing Water	<ul style="list-style-type: none"> • Extensive creation of new wetland, including standing water within ecological and SUDS areas.
Running Water	<ul style="list-style-type: none"> • All 'main' drains within the application site will be retained. • All watercourses due to be retained within the proposed development will be fenced along a buffer zone during construction to restrict disturbance/damage. Suitable buffer zones will also be maintained during operation. • All materials and arisings will be stored away from watercourses. Materials, especially oils and chemicals, will be stored as per EA Pollution Prevention Guidelines. Spill kits will be available on site and construction staff trained in its use. • Dewatering will take place according to EA consents as required. • A surface water management plan as described in Section 6 will be put in place to ensure that silt is prevented from contaminating watercourses. • A SUDS scheme will be constructed to aid floodwater control.
Invasive species	<ul style="list-style-type: none"> • Areas on Indian balsam within the application site will be identified and eradicated prior to construction to prevent its spread.
Bats	<ul style="list-style-type: none"> • Any mature trees identified as having potential for bats, due to be removed as a part of the proposed development, will be surveyed by an experienced ecologist prior to removal to ensure no bat roosts are present. • In the event that a bat roost is found, a licence from Natural England will be sought to fell the tree with a suitable mitigation strategy employed relevant to the number and species of bat. • Even if bats are not found, a precautionary approach will be adopted and trees felled using a soft-felling technique where limbs are cut and lowered to the ground then left for two days before removal. This allows bats time to fly out of their own accord. • Areas for mitigation will be created/enhanced prior to construction to ensure that suitable foraging areas remain available. • Lighting will utilise the equivalent of low-pressure sodium lamps in preference to high-pressure sodium along habitat boundaries (e.g. along the edges of mitigation areas, hedgerows or woodland). Upward lighting will be minimised and light restricted through use of hoods or similar to direct the light below the horizontal plane (preferably at an angle < 70 degrees). • Twenty bat boxes will be erected at suitable locations within the site to offset loss of mature trees. • New habitats in the form of species-rich hedgerows, high-quality ditches, standing water and wild-flower grassland will be created as a part of the

	<p>development.</p> <ul style="list-style-type: none"> • Planting and improvement of existing hedgerows along access roads and as boundary features, including a species rich hedgerow to link the two main mitigation areas (A and C). • Planting of standard trees that in the long-term will provide potential roosting opportunities. • Creation of a number of habitats based around species of local provenance to encourage invertebrate fauna on site, increasing food availability.
Water voles	<ul style="list-style-type: none"> • Pre-construction surveys will be undertaken to establish the exact locations of water voles at time of construction. • Where water voles are affected by construction, a detailed mitigation strategy will be prepared in consultation with Natural England, including where appropriate, displacement of population, erection of exclusion fencing, habitat manipulation, trapping and translocation and monitoring. • Main drains will be retained and enhanced within the proposed development and drains of a higher quality will be created to replace those lost. Connectivity will be maximised across the site utilising both retained and newly created ditches. • Drains to be retained within the proposed development will be protected by a fenced buffer zone, to prevent encroachment into these areas from construction machinery. • Areas proposed for mitigation will be created/enhanced in the first instance, to ensure that suitable foraging areas are available from the start of development. • The SUDS on site will be designed to be colonised by Water Vole, greatly increasing the availability of suitable bank habitat. All ditches will be managed in the long-term and management will be sympathetic to the Water Vole population. • Management within the ecological mitigation areas will be of benefit to this species as no pesticides or herbicides will be used. Water quality within the ditch system will improve over the long-term, therefore increasing the quality of water Vole habitat within the application site.
Invertebrates	<ul style="list-style-type: none"> • New habitat creation and enhancements within the proposed development will be of benefit, including new areas of wetland.
Wintering birds	<ul style="list-style-type: none"> • As above, mitigation areas of 31.5 ha will be retained for habitat creation and enhancement. These areas will include the following features to mitigate for the loss of existing bird habitat: <ul style="list-style-type: none"> • A series of shallow scrapes will be formed to provide habitat for wintering waders • Larger waterbodies to be created as a part of the SUDS system. • Areas of reed-beds. • Areas of scattered scrub.

	<ul style="list-style-type: none"> • Annual sowing of single fields of Barley and Oil Seed Rape with 25% set aside in certain areas with stubble retained over winter (Barley) or ploughed in late autumn (set aside/Oil Seed Rape). • No herbicide or pesticide use. • Botanically mixed hedgerow bordering and crossing fields. • The two main areas provided for mitigation will have no public access with the aim to provide disturbance-free habitat.. • Areas proposed for mitigation will be created/enhanced prior to construction to ensure that suitable foraging areas are available. • Areas of suitable habitat retained or created within the application site will be buffered from the proposed development by existing or newly-created hedgerows or other ecological features to minimise disturbance during the operational phase of development. • All lighting will be designed to minimise impacts on protected species (see mitigation for bats above).
Breeding Birds	<ul style="list-style-type: none"> • Clearance of trees, hedgerow or scrub will be undertaken outside of the main breeding season (March to August). Should this not be possible, potential nesting habitat will be subject to a check by an experienced ecologist immediately prior to removal. Should an active nest be found, a 10m buffer will be established around the nest until the young have fledged. • Areas set aside for mitigation will contain a mosaic of habitat types that will provide foraging and nesting opportunities for a wide range of nesting bird species (standing water, long grassland, crops, hedgerow and scrub habitat). • The provision of new areas of landscape planting, including hedgerows, woodland, trees and scrub, throughout the application site will provide opportunities for breeding birds. Planting will be of a native species mix with the emphasis on berry/nut bearing varieties that will provide foraging opportunities in the future. • A variety of styles of nest boxes will be erected (including Barn Owl boxes). These will provide further breeding opportunities and will be of particular value whilst the new areas of landscape planting mature. With the use of various types of nest boxes there is an opportunity to attract species that are currently absent from the application site. <p><i>See also mitigation for wintering birds and the SPA/Ramsar/SBI (above).</i></p>
Brown Hares	<ul style="list-style-type: none"> • Large areas of suitable habitat will remain for this species and areas of mixed habitat created.
Eels	<ul style="list-style-type: none"> • Main ditches are to be retained and a network of new ditches created, providing additional suitable habitat for this species.

CCC Application	
SPA/SSSI/Ramsar Site	<ul style="list-style-type: none"> • If work is to be undertaken in the winter months when qualifying bird species are present in significant numbers, no work shall take place at high tide. • No construction activity to take place when temperatures fall below -3 degrees Celsius. • Particulate levels will be monitored during construction to ensure they do not exceed recommended guidelines and normal avoidance measures, such as wheel washes, will be used. • Lighting along the canal will where possible use the equivalent to low-pressure sodium lamps in preference to high-pressure sodium. • Lighting will be designed with hoods or similar to direct the light below the horizontal plane (preferably at an angle < 70 degrees). • Mitigation areas of 31.5 ha will be retained for habitat creation and enhancement. These areas will include the following features to mitigate for the loss of existing bird habitat: <ul style="list-style-type: none"> • A series of shallow scrapes will be formed to provide habitat for wintering waders • Larger waterbodies to be created as a part of the SUDS system. • Areas of reed-beds. • The two main areas provided for mitigation will have no public access with the aim to provide disturbance-free habitat.. The proposed mitigation area to the west of the canal berth is already well-protected by the existing ditch to the south and east, by a good hedgerow to the west, and by fencing to the north. Where required, these existing boundaries will be supplemented to prevent access to the area. • Additional land set aside for landscape planting and creation of a community woodland. • Areas proposed for mitigation will be created/enhanced prior to construction to ensure that suitable foraging areas are available. • Areas of suitable habitat retained or created within the application site will be buffered from the proposed development by existing or newly-created hedgerows or other ecological features to minimise disturbance during the operational phase of development. • A management plan for the site and its mitigation areas will be discussed and agreed with key stakeholders including RSPB, Natural England, Wildlife Trust, Environment Agency and Cheshire County Council. Funds will be set aside for ongoing management and monitoring of these areas in accordance with the management plan. A draft plan is provided as Appendix 10.20. • <i>See also mitigation for birds below.</i>

SBI Site	<ul style="list-style-type: none"> • During construction, areas of the SBI due to be retained within the proposed development will be fenced off or appropriately marked to prevent encroachment by construction machinery. • <i>See also impacts on the SPA/Ramsar/SSSI above, and upon birds, water voles and watercourses below.</i>
Woodland	<ul style="list-style-type: none"> • Extensive additional planting of native species (including black poplar, an LBAP species) will be undertaken. • An area of woodland habitat will be created in the west of the application site using a native species mix. • Areas of habitat due to be retained within the development will be fenced-off or marked with high visibility tape during construction to prevent encroachment. No machinery or vehicles will be stored within these areas.
Scrub	<ul style="list-style-type: none"> • Additional planting of scrub of a native species mix will be undertaken. • Areas of habitat due to be retained within the development will be fenced-off or marked with high visibility tape during construction to prevent encroachment. No machinery or vehicles will be stored within these areas.
Hedgerows & Mature Trees	<ul style="list-style-type: none"> • Screening and structure planting will be planted through out the site. New hedgerows will also be planted in some of the areas set aside for ecological mitigation. • Retained hedgerows will be gapped up with native species where necessary/desirable.
Grassland (Unimproved and Semi-improved)	<ul style="list-style-type: none"> • Areas of habitat due to be retained within the development will be fenced-off or marked with high visibility tape during construction to prevent encroachment. No machinery or vehicles will be stored within these areas. • New areas of grassland will be created with mitigation/SUDS areas and within the proposed development.. These will be seeded with a native wildflower mix. • Road verges, railway embankments and areas of amenity grassland will be sown with a wildflower mix tolerant of mowing.
Grassland (Improved)	<ul style="list-style-type: none"> • 8 fields of improved grassland to be retained as ecological areas and SUDAS wetland, increasing their value for local fauna (including SPA-qualifying bird species) and increasing biodiversity. • Mitigation areas will be managed in the long-term to increase their conservation value using management techniques that are sympathetic to protected, rare and notable fauna. • Areas of habitat due to be retained within the development will be fenced-off or marked with high visibility tape during construction to prevent encroachment. No machinery or vehicles will be stored within these areas.
Arable farmland	<ul style="list-style-type: none"> • Retention of 5 fields of arable land within the development to be managed in the long-term for ecological benefit, e.g. as over-winter stubble for birds.

Tall ruderal/swamp vegetation	<ul style="list-style-type: none"> • Creation of areas of swamp and tall ruderal vegetation within ecological mitigation and SUDS areas. • Areas of habitat due to be retained within the development will be fenced-off or marked with high visibility tape during construction to prevent encroachment. No machinery or vehicles will be stored within these areas.
Standing Water	<ul style="list-style-type: none"> • Extensive creation of new wetland, including standing water within ecological and SUDS areas.
Running Water	<ul style="list-style-type: none"> • All 'main' drains within the application site will be retained. • All watercourses due to be retained within the proposed development will be fenced along a buffer zone during construction to restrict disturbance/damage. Suitable buffer zones will also be maintained during operation. • All materials and arisings will be stored away from watercourses. Materials, especially oils and chemicals, will be stored as per EA Pollution Prevention Guidelines. Spill kits will be available on site and construction staff trained in its use. • Dewatering will take place according to EA consents as required. • A surface water management plan as described in Section 6 will be put in place to ensure that silt is prevented from contaminating watercourses. • A SUDS scheme will be constructed to aid floodwater control.
Invasive species	<ul style="list-style-type: none"> • Areas on Indian balsam within the application site will be identified and eradicated prior to construction to prevent its spread.
Bats	<ul style="list-style-type: none"> • Any mature trees identified as having potential for bats, due to be removed as a part of the proposed development, will be surveyed by an experienced ecologist prior to removal to ensure no bat roosts are present. • In the event that a bat roost is found, a licence from Natural England will be sought to fell the tree with a suitable mitigation strategy employed relevant to the number and species of bat. • Even if bats are not found, a precautionary approach will be adopted and trees felled using a soft-felling technique where limbs are cut and lowered to the ground then left for two days before removal. This allows bats time to fly out of their own accord. • Areas for mitigation will be created/enhanced prior to construction to ensure that suitable foraging areas remain available. • Lighting will utilise the equivalent of low-pressure sodium lamps in preference to high-pressure sodium along habitat boundaries (e.g. along the edges of mitigation areas, hedgerows or woodland). Upward lighting will be minimised and light restricted through use of hoods or similar to direct the light below the horizontal plane (preferably at an angle < 70 degrees). • Twenty bat boxes will be erected at suitable locations within the site to offset loss of mature trees. • New habitats in the form of species-rich hedgerows, high-quality ditches, standing water and wild-flower grassland will be created as a part of the

	<p>development.</p> <ul style="list-style-type: none"> • Planting and improvement of existing hedgerows along access roads and as boundary features, including a species rich hedgerow to link the two main mitigation areas (A and C). • Planting of standard trees that in the long-term will providing potential roosting opportunities. • Creation of a number of habitats based around species of local provenance to encourage invertebrate fauna on site, increasing food availability.
Water voles	<ul style="list-style-type: none"> • Pre-construction surveys will be undertaken to establish the exact locations of water voles at time of construction. • Where water voles are affected by construction, a detailed mitigation strategy will be prepared in consultation with Natural England, including where appropriate, displacement of population, erection of exclusion fencing, habitat manipulation, trapping and translocation and monitoring. • Main drains will be retained and enhanced within the proposed development and drains of a higher quality will be created to replace those lost. Connectivity will be maximised across the site utilising both retained and newly created ditches. • Drains to be retained within the proposed development will be protected by a fenced buffer zone, to prevent encroachment into these areas from construction machinery. • Areas proposed for mitigation will be created/enhanced in the first instance, to ensure that suitable foraging areas are available from the start of development. • The SUDS on site will be designed to be colonised by Water Vole, greatly increasing the availability of suitable bank habitat. All ditches will be managed in the long-term and management will be sympathetic to the Water Vole population. • Management within the ecological mitigation areas will be of benefit to this species as no pesticides or herbicides will be used. Water quality within the ditch system will improve over the long-term, therefore increasing the quality of water Vole habitat within the application site.
Invertebrates	<ul style="list-style-type: none"> • New habitat creation and enhancements within the proposed development will be of benefit, including new areas of wetland.
Wintering birds	<ul style="list-style-type: none"> • As above, mitigation areas of 31.5 ha will be retained for habitat creation and enhancement. These areas will include the following features to mitigate for the loss of existing bird habitat: <ul style="list-style-type: none"> • A series of shallow scrapes will be formed to provide habitat for wintering waders • Larger waterbodies to be created as a part of the SUDS system. • Areas of reed-beds. • Areas of scattered scrub.

	<ul style="list-style-type: none"> • Annual sowing of single fields of Barley and Oil Seed Rape with 25% set aside in certain areas with stubble retained over winter (Barley) or ploughed in late autumn (set aside/Oil Seed Rape). • No herbicide or pesticide use. • Botanically mixed hedgerow bordering and crossing fields. • The two main areas provided for mitigation will have no public access with the aim to provide disturbance-free habitat.. • Areas proposed for mitigation will be created/enhanced prior to construction to ensure that suitable foraging areas are available. • Areas of suitable habitat retained or created within the application site will be buffered from the proposed development by existing or newly-created hedgerows or other ecological features to minimise disturbance during the operational phase of development. • All lighting will be designed to minimise impacts on protected species (see mitigation for bats above).
Breeding Birds	<ul style="list-style-type: none"> • Clearance of trees, hedgerow or scrub will be undertaken outside of the main breeding season (March to August). Should this not be possible, potential nesting habitat will be subject to a check by an experienced ecologist immediately prior to removal. Should an active nest be found, a 10m buffer will be established around the nest until the young have fledged. • Areas set aside for mitigation will contain a mosaic of habitat types that will provide foraging and nesting opportunities for a wide range of nesting bird species (standing water, long grassland, crops, hedgerow and scrub habitat). • The provision of new areas of landscape planting, including hedgerows, woodland, trees and scrub, throughout the application site will provide opportunities for breeding birds. Planting will be of a native species mix with the emphasis on berry/nut bearing varieties that will provide foraging opportunities in the future. • A variety of styles of nest boxes will be erected (including Barn Owl boxes). These will provide further breeding opportunities and will be of particular value whilst the new areas of landscape planting mature. With the use of various types of nest boxes there is an opportunity to attract species that are currently absent from the application site. • <i>See also mitigation for wintering birds and the SPA/Ramsar/SBI (above).</i>
Brown Hares	<ul style="list-style-type: none"> • Large areas of suitable habitat will remain for this species and areas of mixed habitat created.
Eels	<ul style="list-style-type: none"> • Main ditches are to be retained and a network of new ditches created, providing additional suitable habitat for this species.

DBERR Application	
SPA/SSSI/Ramsar Site	<ul style="list-style-type: none"> • If work is to be undertaken in the winter months when qualifying bird species are present in significant numbers, no work shall take place at high tide. • No construction activity to take place when temperatures fall below -3 degrees Celsius. • Particulate levels will be monitored during construction to ensure they do not exceed recommended guidelines and normal avoidance measures, such as wheel washes, will be used. • Lighting along the canal will where possible use the equivalent to low-pressure sodium lamps in preference to high-pressure sodium. • Lighting will be designed with hoods or similar to direct the light below the horizontal plane (preferably at an angle < 70 degrees). • Mitigation areas of 25 ha will be retained for habitat creation and enhancement. These areas will include the following features to mitigate for the loss of existing bird habitat: <ul style="list-style-type: none"> • A series of shallow scrapes will be formed to provide habitat for wintering waders • Larger waterbodies to be created as a part of the SUDS system. • Areas of reed-beds. • The two main areas provided for mitigation will have no public access with the aim to provide disturbance-free habitat. The proposed mitigation area to the west of the canal berth is already well-protected by the existing ditch to the south and east, by a good hedgerow to the west, and by fencing to the north. Where required, these existing boundaries will be supplemented to prevent access to the area. • Additional land set aside for landscape planting and creation of a community woodland. • Areas proposed for mitigation will be created/enhanced prior to construction to ensure that suitable foraging areas are available. • Areas of suitable habitat retained or created within the application site will be buffered from the proposed development by existing or newly-created hedgerows or other ecological features to minimise disturbance during the operational phase of development. • A management plan for the site and its mitigation areas will be discussed and agreed with key stakeholders including RSPB, Natural England, Wildlife Trust, Environment Agency and Cheshire County Council. Funds will be set aside for ongoing management and monitoring of these areas in accordance with the management plan. A draft plan is provided as Appendix 10.20. • <i>See also mitigation for birds below.</i>

SBI Site	<ul style="list-style-type: none"> • During construction, areas of the SBI due to be retained within the proposed development will be fenced off or appropriately marked to prevent encroachment by construction machinery. • <i>See also impacts on the SPA/Ramsar/SSSI above, and upon birds, water voles and watercourses below.</i>
Woodland	<ul style="list-style-type: none"> • Extensive additional planting of native species (including black poplar, an LBAP species) will be undertaken. • An area of woodland habitat will be created in the west of the application site using a native species mix. • Areas of habitat due to be retained within the development will be fenced-off or marked with high visibility tape during construction to prevent encroachment. No machinery or vehicles will be stored within these areas.
Scrub	<ul style="list-style-type: none"> • Additional planting of scrub of a native species mix will be undertaken. • Areas of habitat due to be retained within the development will be fenced-off or marked with high visibility tape during construction to prevent encroachment. No machinery or vehicles will be stored within these areas.
Hedgerows & Mature Trees	<ul style="list-style-type: none"> • Screening and structure planting will be planted through out the site. New hedgerows will also be planted in some of the areas set aside for ecological mitigation. • Retained hedgerows will be gapped up with native species where necessary/desirable.
Grassland (Unimproved and Semi-improved)	<ul style="list-style-type: none"> • Areas of habitat due to be retained within the development will be fenced-off or marked with high visibility tape during construction to prevent encroachment. No machinery or vehicles will be stored within these areas. • New areas of grassland will be created with mitigation/SUDS areas and within the proposed development.. These will be seeded with a native wildflower mix. • Road verges, railway embankments and areas of amenity grassland will be sown with a wildflower mix tolerant of mowing.
Grassland (Improved)	<ul style="list-style-type: none"> • 8 fields of improved grassland to be retained as ecological areas and SUDAS wetland, increasing their value for local fauna (including SPA-qualifying bird species) and increasing biodiversity. • Mitigation areas will be managed in the long-term to increase their conservation value using management techniques that are sympathetic to protected, rare and notable fauna. • Areas of habitat due to be retained within the development will be fenced-off or marked with high visibility tape during construction to prevent encroachment. No machinery or vehicles will be stored within these areas.
Arable farmland	<ul style="list-style-type: none"> • Retention of 5 fields of arable land within the development to be managed in the long-term for ecological benefit, e.g. as over-winter stubble for birds.

Tall ruderal/swamp vegetation	<ul style="list-style-type: none"> • Creation of areas of swamp and tall ruderal vegetation within ecological mitigation and SUDS areas. • Areas of habitat due to be retained within the development will be fenced-off or marked with high visibility tape during construction to prevent encroachment. No machinery or vehicles will be stored within these areas.
Standing Water	<ul style="list-style-type: none"> • Extensive creation of new wetland, including standing water within ecological and SUDS areas.
Running Water	<ul style="list-style-type: none"> • All 'main' drains within the application site will be retained. • All watercourses due to be retained within the proposed development will be fenced along a buffer zone during construction to restrict disturbance/damage. Suitable buffer zones will also be maintained during operation. • All materials and arisings will be stored away from watercourses. Materials, especially oils and chemicals, will be stored as per EA Pollution Prevention Guidelines. Spill kits will be available on site and construction staff trained in its use. • Dewatering will take place according to EA consents as required. • A surface water management plan as described in Section 6 will be put in place to ensure that silt is prevented from contaminating watercourses. • A SUDS scheme will be constructed to aid floodwater control.
Invasive species	<ul style="list-style-type: none"> • Areas on Indian balsam within the application site will be identified and eradicated prior to construction to prevent its spread.
Bats	<ul style="list-style-type: none"> • Any mature trees identified as having potential for bats, due to be removed as a part of the proposed development, will be surveyed by an experienced ecologist prior to removal to ensure no bat roosts are present. • In the event that a bat roost is found, a licence from Natural England will be sought to fell the tree with a suitable mitigation strategy employed relevant to the number and species of bat. • Even if bats are not found, a precautionary approach will be adopted and trees felled using a soft-felling technique where limbs are cut and lowered to the ground then left for two days before removal. This allows bats time to fly out of their own accord. • Areas for mitigation will be created/enhanced prior to construction to ensure that suitable foraging areas remain available. • Lighting will utilise the equivalent of low-pressure sodium lamps in preference to high-pressure sodium along habitat boundaries (e.g. along the edges of mitigation areas, hedgerows or woodland). Upward lighting will be minimised and light restricted through use of hoods or similar to direct the light below the horizontal plane (preferably at an angle < 70 degrees). • Twenty bat boxes will be erected at suitable locations within the site to offset loss of mature trees. • New habitats in the form of species-rich hedgerows, high-quality ditches, standing water and wild-flower grassland will be created as a part of the

	<p>development.</p> <ul style="list-style-type: none"> • Planting and improvement of existing hedgerows along access roads and as boundary features, including a species rich hedgerow to link the two main mitigation areas (A and C). • Planting of standard trees that in the long-term will providing potential roosting opportunities. • Creation of a number of habitats based around species of local provenance to encourage invertebrate fauna on site, increasing food availability.
Water voles	<ul style="list-style-type: none"> • Pre-construction surveys will be undertaken to establish the exact locations of water voles at time of construction. • Where water voles are affected by construction, a detailed mitigation strategy will be prepared in consultation with Natural England, including where appropriate, displacement of population, erection of exclusion fencing, habitat manipulation, trapping and translocation and monitoring. • Main drains will be retained and enhanced within the proposed development and drains of a higher quality will be created to replace those lost. Connectivity will be maximised across the site utilising both retained and newly created ditches. • Drains to be retained within the proposed development will be protected by a fenced buffer zone, to prevent encroachment into these areas from construction machinery. • Areas proposed for mitigation will be created/enhanced in the first instance, to ensure that suitable foraging areas are available from the start of development. • The SUDS on site will be designed to be colonised by Water Vole, greatly increasing the availability of suitable bank habitat. All ditches will be managed in the long-term and management will be sympathetic to the Water Vole population. • Management within the ecological mitigation areas will be of benefit to this species as no pesticides or herbicides will be used. Water quality within the ditch system will improve over the long-term, therefore increasing the quality of water Vole habitat within the application site.
Invertebrates	<ul style="list-style-type: none"> • New habitat creation and enhancements within the proposed development will be of benefit, including new areas of wetland.
Wintering birds	<ul style="list-style-type: none"> • As above, mitigation areas of 25 ha will be retained for habitat creation and enhancement. These areas will include the following features to mitigate for the loss of existing bird habitat: <ul style="list-style-type: none"> • A series of shallow scrapes will be formed to provide habitat for wintering waders • Larger waterbodies to be created as a part of the SUDS system. • Areas of reed-beds. • Areas of scattered scrub.

	<ul style="list-style-type: none"> • Annual sowing of single fields of Barley and Oil Seed Rape with 25% set aside in certain areas with stubble retained over winter (Barley) or ploughed in late autumn (set aside/Oil Seed Rape). • No herbicide or pesticide use. • Botanically mixed hedgerow bordering and crossing fields. • The two main areas provided for mitigation will have no public access with the aim to provide disturbance-free habitat.. • Areas proposed for mitigation will be created/enhanced prior to construction to ensure that suitable foraging areas are available. • Areas of suitable habitat retained or created within the application site will be buffered from the proposed development by existing or newly-created hedgerows or other ecological features to minimise disturbance during the operational phase of development. • All lighting will be designed to minimise impacts on protected species (see mitigation for bats above).
Breeding Birds	<ul style="list-style-type: none"> • Clearance of trees, hedgerow or scrub will be undertaken outside of the main breeding season (March to August). Should this not be possible, potential nesting habitat will be subject to a check by an experienced ecologist immediately prior to removal. Should an active nest be found, a 10m buffer will be established around the nest until the young have fledged. • Areas set aside for mitigation will contain a mosaic of habitat types that will provide foraging and nesting opportunities for a wide range of nesting bird species (standing water, long grassland, crops, hedgerow and scrub habitat). • The provision of new areas of landscape planting, including hedgerows, woodland, trees and scrub, throughout the application site will provide opportunities for breeding birds. Planting will be of a native species mix with the emphasis on berry/nut bearing varieties that will provide foraging opportunities in the future. • A variety of styles of nest boxes will be erected (including Barn Owl boxes). These will provide further breeding opportunities and will be of particular value whilst the new areas of landscape planting mature. With the use of various types of nest boxes there is an opportunity to attract species that are currently absent from the application site. • <i>See also mitigation for wintering birds and the SPA/Ramsar/SBI (above).</i>
Brown Hares	<ul style="list-style-type: none"> • Large areas of suitable habitat will remain for this species and areas of mixed habitat created.
Eels	<ul style="list-style-type: none"> • Main ditches are to be retained and a network of new ditches created, providing additional suitable habitat for this species.