A planning application for the development of an Energy from Waste facility at Fengate in Peterborough has been submitted. An Environmental Statement has been prepared in accordance with the requirements of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999. Schedule 4 of those regulations requires that a summary of the Environmental Statement is provided in non technical language. This document forms the Non Technical Summary to satisfy these requirements.

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Introduction

Peterborough City Council currently recycles approximately 50% of the waste that it collects from households and businesses within the City at its Materials Recycling Facility (MRF) at Fourth Drove on the Eastern Industrial Estate, Fengate. The remainder of the waste, referred to as residual waste, is sent to the Dogsthorpe landfill.

The Council aims to increase recycling to 65% or more, while still promoting waste minimisation. The Council has investigated alternatives to landfill for the residual waste and has decided that Energy from Waste (EfW) is the way forward.

The City Council is now proposing to relocate the existing MRF and develop an EfW facility at the Fourth Drove site that will burn around 65,000 tonnes of residual waste a year. The heat produced will be used to generate electricity. The majority of this electricity will be exported to the national grid with some being used by the EfW facility itself. There is also the potential to provide heat and hot water for local businesses.

The Need for the Development

Peterborough City Council’s strategy, _Waste 2020: Doing Nothing Is Not An Option_, sets out the need for the EfW facility in detail.

Essentially, European and UK legislation sets targets for local authorities to reduce the amount of biodegradable waste they send to landfill. By 2020, the Council must have reduced the amount of such waste from current levels of approximately 50,000 tonnes to just 15,909 tonnes (35% of the 1995 levels), or they will face very heavy fines.

Landfill sites produce methane, a powerful global-warming gas. Peterborough City Council commissioned a study of the contribution to global warming of their use of landfill, compared with other means of dealing with their residual waste. This study concluded that EfW is an effective way of reducing emissions of global-warming gases.

The Dogsthorpe landfill site currently used by the Council is due to close in 2013. The Council therefore needs to find another means of dealing with residual waste by that time.
The Alternatives Considered

Peterborough City Council has considered a number of technologies for dealing with its residual waste. The Waste 2020 Strategy states that the most environmentally sound, sustainable and practicable solution will be chosen. It will also need to be able to treat the type and amount of residual waste that will arise in the future. In choosing a solution, the Council needed to take account of the legal requirements, environmental impacts and the financial considerations.

The Council considered a range of mechanical and biological waste treatment processes. EfW emerged as the preferred technology for the residual waste the City will produce. It can have a lower carbon footprint, is reported to be the most environmentally positive and is more affordable than other solutions. Its also has the ability to divert a very high proportion of waste from landfill.

The Council has considered a number of different sites for the location of the EfW facility, and in doing so has considered the environmental issues associated with those sites. The existing MRF site at Fourth Drove was chosen as, amongst other factors, it is within an industrial area with good transport links and does not entail development of a ‘Greenfield Site’.

In 2008, the adjacent site became available and was purchased by the Council, providing the opportunity for the EfW plant to become part of an integrated waste management facility, with a number of different waste processing activities being carried out on one site.

Stakeholder Engagement

Peterborough City Council's community consultation programme is carried out under the “65% Plus” campaign, which seeks to inform and educate the public about recycling and the waste strategy. The campaign’s website www.65percentplus.co.uk has a page dedicated to EfW technology and provides an opportunity for the public to comment on the proposals.

Information on the EfW proposals was included in a series of four roadshows that were carried out in early September 2008. The Council also held a public information exhibition specifically on the EfW facility on 25th and 26th September 2008.

Informal meetings and discussions have also been held with a number of other stakeholders, technical advisors and local interest groups.

Formal consultation about the potential environmental impacts of the EfW facility has been undertaken through the submission of an environmental ‘scoping report’ to the planning authority. This report set out the potential environmental issues that needed to be considered and the proposed approach to their assessment. The planning authority provided the Council with a written ‘scoping opinion’ which included the views and requirements of the environmental departments at the Council and the Environment Agency.

Feedback from the stakeholder engagement has generally been positive and it is the Council’s view that the public generally support the proposals.
The Site and Its Setting

The site proposed for the EfW facility is on Fourth Drove within the Eastern Industrial Estate, approximately 2.5km south east of Peterborough city centre. The industrial estate occupies land between the A1139 Frank Perkins Way in the west and the open fenland to the east.

Figure 1 shows the location proposed for the EfW site and some of the features of the locality that have been key considerations for the environmental impact assessment.

The site is surrounded by industrial premises including Peterborough Power Station to the north and the Vitas Business Centre to the south. The nearest residential area is the Fengate Mobile Home Park off Fengate Road approximately 800m south west of the EfW site. Red Brick Farm is nearly 1km to the north, and there are other properties and residential areas further away.

The EfW site is predominantly covered by hardstanding and buildings. There is little by way of ecology and conservation value at the site.

Surface water run-off at the site enters a drainage ditch that discharges to Cat’s Water Drain. This drain connects to the Padholme Drain and then to the River Nene. The site is partially in a zone at risk of flooding from a 1 in a 100 year flood event. The risk relates to flooding of the Padholme Drain and River Nene; however these water courses are protected by flood defences and the risk of flooding therefore only relates to a breach of these defences.

The geology at the site is the River Terrace Gravels, which are classed as a minor aquifer, overlying the Oxford Clay. Groundwater levels are at shallow depths beneath the site.

To the east of the site is Flag Fen, an area of drained agricultural land with a number residential houses and farms, as well as areas to which the public have access such as cycle routes and footpaths, and the Flag Fen Archaeology Park.

Flag Fen is noted for its buried Bronze Age archaeological remains which are considered to be of national importance, though the site has no statutory designation. The Archaeology Park is a 20 acre site within the fens that houses preserved archaeological remains. There is a potential for buried archaeological remains to be present beneath parts of the EfW site itself.

The Nene Washes is an important wetland habitat for birds. It is designated under the Ramsar Convention as a wetland of international importance. It has European designations as a Special Protection Area and a Special Area of Conservation. It is also a nationally important Site of Special Scientific Interest. At its closest point, the boundary of The Nene Washes designated area is approximately 900m to the south and east.

Peterborough City Council’s Integrated Waste Management Facility

The EfW facility in one of three developments that are proposed for the Council-owned land at Fengate, which in combination will form an Integrated Waste Management Facility.

The plan is to relocate the existing MRF to the neighbouring industrial unit. The new Integrated Materials Recycling Facility (IMRF) would have the capacity to recycle more waste and electrical appliances. A separate planning application for this was submitted in December 2008.

Once the MRF has been relocated, this part of the site would be cleared and the EfW facility built in this area.

Finally, a new facility for the treatment of kitchen wastes using Anaerobic Digestion (AD) is proposed. This is to be the subject of a third planning application that has yet to be submitted.

While the environmental impact assessment focuses on the EfW development, the combined effects with the IMRF and AD developments have been considered as well.

PREL Energypark

Beyond Peterborough Power Station to the north is land that is the subject of an application by Peterborough Renewable Energy Ltd (PREL) for the development of an energy park. The application has been submitted to the Department for Business, Enterprise and Regulatory Reform (BERR) as Government approval is required due to the amount of energy likely to be generated.

At the time that this Non Technical Summary was being prepared, no decision (approval or otherwise) on the PREL Energypark proposals had been made.

Where relevant, the environmental impact assessment of the EfW facility has considered the combined effects with the PREL Energypark.
Description of the Proposals

The proposed layout of the EfW development is shown in Drawing 15898/A1/102.

The building will about 35m high, with a chimney stack about 60m high. The EfW facility is to be a ‘landmark’ building. It will have copper and silver coloured cladding, and translucent panels to the front and sides that mean it will be lit at night.

Prior to construction, the existing MRF building will be demolished. Construction will include preparation of site roads and services, excavation of an 8m deep waste bunker, the erection of the building structure and installation of the EfW process equipment.

Construction will entail the use of a range of plant and equipment including piling rigs and mobile cranes. The works will be carried out between 7am and 7pm from Monday to Saturday and there may be a need for occasional night-time work.

The construction work will be controlled under a Construction Environmental Management Plan that will seek to control the environmental impacts during this stage.

All waste handling and treatment will be carried out inside the building with the doors closed. The EfW will operate 24 hours a day, 7 days a week, except for shut down periods for maintenance and repair. Waste will be brought to the site during normal working hours.

The main components of the EfW process will be:

- A waste reception area inside the building, where waste will be tipped into a deep bunker. There will be a crushing facility in this area for bulky items.
- The waste will then transferred by crane to the furnace where it will then undergo an efficient combustion process.
- The heat from combustion will be used to create steam and heat water in a boiler. The steam will pass to a turbine that generates electricity.
- The gases from the combustion process will be cleaned before being emitted to air via the 60m high chimney stack.
- The residues from the gas cleaning process include ‘fly ash’ which can be recycled or sent to landfill.
- The ‘bottom ash’ from the furnace will be cooled and the ferrous metal recovered before the ash is removed from the site potentially for recycling.
The Assessment of the Potential Environmental Effects

The EfW facility will operate under an Environmental Permit from the Environment Agency, and the Council will need to demonstrate that the ‘Best Available Techniques’ for the protection of the environment have been used.

An application for an Environmental Permit has been prepared and will be submitted shortly after the planning application.

The potential environmental impacts during the construction and operation of the EfW facility have been assessed. While several measures to minimise these impacts are incorporated into the design of the EfW facility, the assessment identified additional measures which are detailed in this summary.

Even with these measures in place, there will be some negative effect on the environment, and the impact assessment has gone on to determine whether these residual effects are significant.

Wherever possible, the Council has also committed to measures which can lead to a positive effect on the environment, known as environmental enhancements.

Traffic and Transport

The effect of the development on the capacity of the local roads has been assessed. This has been based on traffic data provided by, and in consultation with, the Council’s highways department. Traffic surveys were also carried out specifically for the purposes of the EfW proposals.

The majority of vehicles will be using local roads outside of peak hours and the EfW development is not likely to have a significant effect on highway capacity.

Before construction commences, a traffic management plan will be prepared to ensure that the effects on traffic and users of the local roads surrounding the site are minimised during the site works.

A Travel Plan has been prepared for use when the EfW facility is operational. The Travel Plan includes a number of measures to encourage staff who will work at the EfW site to reduce their car usage.

The traffic assessment concludes that the total traffic will increase by less than 2%. The number of HGVs will increase by approximately one every 7 to 8 minutes, increasing to one every 5 minutes when the IMRF and AD are also operational.

This increase in traffic, particularly HGVs, means that there will be a slight increase in level of concern of vulnerable road users, but a negligible effect on accident rates and delays.

In arranging contracts for the collection of waste to be sent to the EfW, the Council will ensure that there are controls on times when waste is brought to the site and the routes the HGVs are permitted to take to minimise the disruption to road users in the industrial estate.

There is currently no pavement on the EfW facility side of Fengate road and therefore recommendations have been made for a pedestrian footpath to improve safety in this area as well.

Socio-Economic Effects

A number of socio-economic effects have been considered:

- Community welfare and the effects on population and housing.
- Economic and business status including employment.
- Land and property values.
- Tourism and recreation.

A desk-based assessment has looked at a range of data and statistics relevant to the locality, including population, land uses, land values, employment figures and social indicators. The predicted environmental effects have also been considered, such as changes in air quality, increases in noise and landscape impacts.

The assessment concludes that generally there is a slight negative effect on the socio-economic indicators due to the low levels of noise and the visual impacts of the EfW facility from Flag Fen. However, there are benefits for employment both during construction and operation of the EfW site.
Air Quality

The air quality impact assessment has considered the effects of construction dust and traffic emissions. The assessment has also considered emissions of dust and odour during the general operation of the EfW facility.

The EfW facility will operate under an Environmental Permit from the Environment Agency which will place stringent limits on emissions. Therefore the control of emissions from the EfW process is inherent in its design.

Advanced dispersion modelling of the emissions to atmosphere from the EfW process has been undertaken using Environment Agency approved software called AEROMOD. The assessment assumed that emissions will be at the maximum concentrations permitted under the European Waste Incineration Directive. Most emissions will be consistently well below these limits.

The predicted concentrations of pollutants in air have then been compared with air quality criteria that have been set by the Government.

Construction Dust and Traffic Emissions

The control of dust during construction has been considered, assuming that established best practice measures will be employed. It is unlikely that there will be a noticeable impact on surrounding industrial and residential locations.

Increase in traffic associated with the EfW proposals is limited and the change in air quality due to traffic is not considered to be significant.

Once the detailed construction programme has been prepared, the air quality impacts will be re-assessed and the measures to minimise dust nuisance finalised. These will be part of the Construction Environmental Management Plan.

Fugitive Dust Emissions and Odour

Emissions that are released from the EfW that are not controlled, such as dust and odours from the waste when it is brought to the site, are known as fugitive emissions.

The EfW has been designed so that all processes are carried out inside, with the doors closed. A ventilation system will minimise the likelihood of fugitive emissions, so there is not likely to be an unacceptable degree of odour or dust from the EfW facility.

Operational Emissions and Effects on Health

The dispersion modelling has predicted the short-term and long-term ground level concentrations for comparison against regulatory air quality strategy (AQS) objectives, taking account of existing background air quality.

The pollutants considered included particulates, organic carbon, carbon monoxide, sulphur dioxide, hydrogen chloride, hydrogen fluoride, oxides of nitrogen, metals, dioxins and furans.

For substances not having air quality objectives, the environmental assessment levels (EALs) recommended by the Environment Agency have been used in the assessment.

The dispersion modelling study has demonstrated that the effects of the EfW emissions on long-term average pollutant concentrations are highly localised and centred within the industrial estate to the north east of the facility and in the adjoining agricultural area.

Short-term effects are also highly localised and are most evident within a few hundred metres to the north and to the west of the facility, within the industrial estate. Residential areas within the wider Peterborough area remain essentially unaffected by the facility.

For all pollutants evaluated, both the long-term and short-term process contributions were very small fractions of the relevant air quality criteria. In many instances they were so small as to be considered insignificant.

This was the case at all residential receptors other than at the nearest dwellings at Fengate Mobile Home Park where certain effects, although very small, were a few percent of the relevant air quality criteria.

Considering these effects together with the existing relatively good standard of air quality, future pollutant concentrations will remain substantially below the health based criteria. Emissions from the EfW facility are therefore not considered to materially affect local air quality conditions.

When considered in combination with the existing power station, emissions from the EfW are not likely to materially affect local air quality.
Operational Emissions and Effects on Sensitive Ecosystems
At the nearest designated ecological sites, The Nene Washes and Dogsthorpe Star Pit, the maximum annual average ground level concentrations of pollutants from the EfW are considered to be insignificant and it is concluded that no further evaluation at these locations is warranted.

Concentrations in the agricultural area at Flag Fen are insignificant.

Cumulative Effects of the Emissions from the EfW and the PREL Energypark
The Fengate Mobile Home Park is the residential location most at risk in relation to short-term cumulative effects, due to alignment of the EfW facility and the PREL Energypark when the wind direction is north westerly.

The assessment has concluded that there will be no material change in air quality at the mobile home park and no implications in terms of human health.

The PREL Energypark has reported nitrogen dioxide concentrations at a location in Flag Fen. The EfW contribution at this location is significantly lower than that of the PREL development, and the overall concentration would be below the AQS objective.

Conclusions
The air quality assessment has concluded that the effects during construction of dust emissions, and the air emissions associated with traffic are not likely to be significant.

The EfW design and operational controls will also mean that the fugitive emissions of dust and odour from the process are also not likely to be significant.

Advanced dispersion modelling demonstrates that the mitigation measures inherent in the design of the EfW are effective in preventing any adverse environmental effects due to the stack discharges, even assuming continuous emissions at the maximum rates permitted by the Waste Incineration Directive.

Noise and Vibration
An impact assessment has been carried out following the British Standards BS 5228 and BS 4142 for construction and operational noise. Traffic noise has been assessed following Highways Agency guidance.

Noise levels are reported in A-weighted decibels, dB(A). The assessment is based on the change in noise levels at a noise sensitive location and whether this change is likely to be noticeable.

A baseline survey was undertaken of existing noise levels during the day and night-time at noise sensitive areas around the EfW site including the adjacent Vitas Business Centre, the residential development at Fengate Mobile Home Park and at residential locations across Flag Fen, as well as the Archaeology Park visitor’s centre.

Traffic Noise
The increase in traffic noise during construction and operation of the EfW is predicted to be less than 1 dB(A) at the noise sensitive areas. This increase would not be noticeable.

The increase in traffic noise from the Integrated Waste Management Facility, i.e. the cumulative noise of traffic from the EfW, IMRF and AD developments, is predicted to be less than 1 dB(A) which again would not be noticeable.

Construction Noise and Vibration
General construction activities are not likely to result in a change in noise levels at the noise sensitive areas.

The noisiest construction activities will be during demolition and the construction of deep foundations by piling. There is likely to be a 2 dB(A) increase in noise at adjacent business units during the noisiest construction activities, which would be noticeable.

At the Flag Fen visitor’s centre there would be a 3 dB(A) increase in noise during the noisiest construction activities, which is considered to be a slight impact.

Vibration during construction is not likely to be perceptible at the adjacent business units and no structural damage to buildings is likely.
Once the detailed construction programme has been prepared, the noise impacts during construction will be re-assessed and additional measures put in place, if required, to minimise noise nuisance. These will form part of the Construction Environmental Management Plan.

Normal Operational Noise

Data from a similar EfW plant have been used for the assessment of operational noise, taking account of the size and layout of the proposed development at Fengate, and also the time period that individual pieces of equipment will be operated during the day or night-time.

There is likely to be a slight impact at adjacent business units due to an increase in daytime noise of 3 dB(A). The increase in daytime noise at Flag Fen visitor’s centre during operation of the EfW is predicted to be only 1 dB(A).

At the closest residential developments and those further afield across the fens, the predicted noise levels from the EfW would not result in increase above background noise levels.

The cumulative effect of the operation of the EfW and the IMRF has been assessed. The increase in noise at adjacent businesses is predicted to be 3 dB(A) which is likely to be noticeable.

Start-Up Noise

The EfW will be shut down for maintenance and repair at least twice and possibly up to eight times a year. The main source of noise during start-up is a steam vent located high in the turbine roof which runs for 5 to 8 hours and would be operated during the daytime only.

For adjacent business units and at the Flag Fen visitor’s centre, the impact of such noise during start-up is likely to be over 10 dB(A) which is substantial and complaints of noise during these periods are likely.

At the nearest residential area, the noise during start-up would be noticeable but not significant.

As part of the final detailed design, the location, orientation and noise insulation of plant such as the steam vent will be considered further in order to minimise these effects.

Conclusion

There will be an increase in noise during construction and normal operation of the EfW facility but the increase is not considered to be significant.

During start-up, daytime noise levels at adjacent business units and the Flag Fen visitor’s centre could rise to levels where complaints are likely.

As the start-up activities are of relatively short duration and infrequent, these impacts are considered to be of moderate significance.
Landscape

The landscape assessment has been undertaken following guidance published by the Landscape Institute, and methods recommended by Natural England. It has considered the effects of the development on the general landscape character and the views from key locations.

It considers the features within the landscape and the effects of the proposed EfW development on these features. It also considers the overall character of the landscape and townscape, as defined in the policies and assessments published by Peterborough City Council and Natural England.

The proposed EfW development will be similar in mass and height to Peterborough Power Station, an existing prominent feature in the landscape. The cladding materials selected for the proposed development will distinguish the structure as a landmark building to those in the immediate vicinity.

However, the distinctive cladding will result in the building being more prominent in the landscape from a distance than a structure clad in similar materials to the power station.

Due to the general urban fabric of the Eastern Industrial Estate and Peterborough City Centre, and the presence of the Frank Perkins dual carriageway, the proposed development will have a neutral effect on the Peterborough townscape.

The Fengate area will experience a slight beneficial effect from the construction of a landmark building.

The extensive shelter belt planting on the eastern edge of the industrial area and the mass of Peterborough Power Station screen some views from the open fenland to the east. However, the proposed development will be visible above the tree line and will therefore increase the scale and visibility of the industrial skyline at the western boundary of Fenland Edge.

This will have a slight adverse impact on views from the Flag Fen Archaeology Park, and will be visible above the shelter belt screening from a number of residential areas within the fenland such as Mason’s Farm, Poplar Farm and Northey Bungalow.

There will also be a slight adverse impact on views from the larger residential developments at Park Farm in Stanground and the Connect 21 development currently under construction to the south west of Fengate.

Conclusion

The proposed development will result in a neutral to slight adverse effect on more distant receptors and those whose views are screened or partially screened by existing shelter belt vegetation.

Photomontage showing the proposed EfW development to the left of the Peterborough Power Station, with Flag Fen Archaeology Park in the foreground. Prepared by RPS.
Water

The potential for the EfW development to result in changes in water volumes, water flows and water quality has been considered for both groundwater and surface water.

Flood Risk Assessment

A flood risk assessment has been prepared following Planning Policy Statement PPG25. The flood risk assessment is for the Integrated Waste Management Facility as a whole, to ensure that each of the three developments has the necessary infrastructure and design to deliver the flood risk mitigation required.

The eastern part of the EfW site lies within the 1 in a 100 year Flood Zone associated with flooding of the River Nene and Padholme Drain. Taking account of the flood defences, the EfW process is not at risk of flooding.

The overall strategy for the Integrated Waste Management Facility is to address the 1.2 hectare increase in impermeable area for the whole development. For the EfW site, there will be an increase in impermeable area of 13% and consideration of the effects of the flood zone.

Consultation with the Environment Agency has identified that the site is partly within an allocated area of the Padholme Flood Protection Strategy and that management of flood risks should be through discharge to the Padholme Catchment drainage system, with local management measures not being required.

The surface water run-off from the site will be discharged to the existing drainage system, which will be upgraded to accommodate the additional run-off and will include pollution controls. This drainage system discharges to the Padholme Catchment where flood risks are then managed by the Environment Agency.

Dewatering Impacts

Dewatering of the 8m deep waste bunker during excavation has the potential for short term localised effects on groundwater levels, though the likelihood is considered to be low.

Such changes in groundwater levels could adversely affect buried archaeology, so a management strategy will be prepared prior to construction.

Pollution of Surface Waters and Groundwater

During construction and operation of the development, there is a potential for pollution of the surface water drain adjacent to the site through the accidental discharge of hazardous substances.

The site overlies a minor aquifer and this is also at risk of groundwater pollution during construction and operation of the EfW.

A surface water management plan will form part of the Construction Environmental Management Plan, and will include requirements for appropriate pollution control in accordance with Environment Agency guidance and best practice.

The operation of the site will be carried out under an Environmental Permit which will require hazardous substances to be appropriately managed and contained during their use on site.

Conclusions

The development of the EfW facility is not likely to have a significant effect on the hydrological and hydrogeological regimes at the site. Appropriate measures have been taken to manage flood risks and surface water discharges. Measures will also be included to manage dewatering during construction in order to minimise the effects on groundwater levels in the fen.
Cultural Heritage

Potential issues regarding the likely impact of the EFW facility on heritage resources would include damage to buried archaeological remains, impacts on historic buildings including their setting, and effects on the historic landscape.

The impact assessment has been carried out following guidance issued by the Institute of Archaeologists and the Highways Agency.

The Historic Landscape

The appreciation of the fen historic landscape is not significantly impaired by the developments along the gravel ridge as they are partially obscured by extensive shelter belt screening along the eastern edge of the industrial estate.

Archaeological Remains in the Adjacent Fens

Flag Fen and the Archaeology Park located to the east of the site is a nationally important heritage asset, though it has no statutory designation.

The impact assessment has considered buried archaeological remains that survive beneath Flag Fen. These remains are preserved due to the high water table and a lowering of groundwater levels could cause them damage.

Existing water levels are not likely to be significantly affected by the EFW development. All surface water and roof run-off is to be discharged to the Padholme Catchment in order to mitigate flood risks at the site.

Further consideration of the effects of piling and dewatering will be made before such works commence on site and water levels in the adjacent fens will be monitored before and during the works in order to assess the ongoing impacts.

The strategy for managing impacts on water levels during piling and dewatering will be developed in consultation with English Heritage and the County Archaeologist.

Archaeological Remains on Site

The Bronze Age landscape extended to the eastern edge of the EFW site and there is a potential for buried Bronze Age remains to be present in this area.

During the Iron Age, settlements shifted westwards and the remainder of the EFW site may also overlie Iron Age remains.

The EFW development may physically affect archaeological remains, if these are present beneath the site. Such remains are most likely to survive in areas of the site where the ground has been undisturbed, such as on the western side of the EFW where the site fronts on to Fengate.

Conclusion

The EFW development does not impact on designated sites such as Scheduled Monuments. The impact on the archaeological remains at Flag Fen is considered to be negligible.

The potential effects of the development of the Integrated Waste Management Facility are considered to be of moderate significance due to the potential impacts on buried remains on site. An archaeological mitigation strategy will be implemented as part of the Construction Environmental Management Plan comprising:

- Watching Briefs - observation of excavations where there is a low potential for remains.
- Strip, Map & Sample - where there is a high potential for remains, soils will be stripped and the remains mapped before potentially being sampled.
Ecology

An ecological impact assessment has been undertaken following current best practice and in particular the Institute of Ecology and Environmental Management's guidelines.

A review of available records was undertaken to identify potential ecological sites within 1km of the EfW site. In addition, consideration of the effects on The Nene Washes and Dogsthorpe Star Pit ecosystems was also included in the assessment.

Ecology Surveys

A series of field surveys were undertaken to cover the area of the Integrated Waste Management Facility and the immediate surrounds. These entailed an assessment of habitats, invasive species and the potential for the presence of legally protected species.

No evidence was found for the presence of protected species such as badgers, great crested newts, water voles, otters or white clawed crayfish.

The existing MRF buildings were considered to have a negligible potential for supporting roosting bats and there were limited suitable habitats for wild birds to nest.

Whereas the habitat at the site generally has limited potential for reptiles, the temporary storage of pallets and boxes, for example, may provide rests for commoner species such as common lizards and grass snakes.

A stand of Japanese Knotweed was identified to the east of the site, within 5m of the EfW site boundary.

Assessment of Effects on Ecology on Site

Overall, the site has a negligible ecological and nature conservation value and the development of the EfW facility is therefore likely to have a negligible impact.

Best practice measures will be included within the construction stage to address the legal requirements for the protection of nesting birds and the avoidance of the spread of Japanese Knotweed. These will be delivered through the Construction Environmental Management Plan.

Enhancement measures are also to be included within the final development design including, where practicable, the construction of habitats for reptiles and foraging birds.

The Nene Washes

The Nene Washes has both international and national statutory designations and represents one of the country’s few remaining areas of washland habitats. The impact assessment has considered the effects on the EfW development on this ecosystem by considering:

- Hydrology
- Hydrogeology
- Noise and vibration
- Air quality

The assessment has also considered the cumulative effects of the EfW and PREL developments on air quality at The Nene Washes.

The impact assessment concludes that there is not likely to be a significant effect on The Nene Washes during the construction and operation of the EfW facility for each of these individual environmental aspects. Furthermore, the assessment concludes that the cumulative effects are also not likely to be significant.

Dogsthorpe Star Pit

The Dogsthorpe Star Pit is a nationally designated site approximately 3.5km north of the EfW site. Due to its distance, the consideration of the potential effects has been limited to air quality.

The air quality assessment concludes that the changes in air quality at this site are not likely to be significant.

Conclusion

Overall, the site has a negligible ecological and nature conservation value and the development of the EfW facility is therefore likely to have a negligible impact. Nor will there be a significant impact on sites with a statutory designation such as The Nene Washes and Dogsthorpe Star Pit habitats.
Contaminated Land

A preliminary geo-environmental investigation across the Integrated Waste Management Facility site was undertaken in order to gather information on ground conditions and contamination. A contaminated land risk assessment in accordance with Environment Agency guidance was undertaken, considering the risks for human health, controlled waters and buildings.

The levels of contaminants in soils, groundwater and ground gas concentrations were low and there was unlikely to be a significant risk.

The Construction Environmental Management Plan will include measures to avoid accidental spillages of potentially polluting substances. The Environmental Permit then also requires that the quality of the land does not deteriorate due to the operation of the facility.

Waste and Litter

The effects of construction and demolition wastes and the means of disposal of the solid residues from the EfW process have been considered, as well as the effects of litter and the associated problems of nuisance, vermin and birds.

Construction and Demolition Wastes

The waste arising from the construction and demolition of the EfW will be managed under a Site Waste Management Plan. Materials will be recovered for reuse or recycling wherever practicable, with amount of waste to landfill will be minimised.

Operational Wastes

The EfW will treat 65,000 tonnes per year of residual municipal waste. From this, the solid residues will include approximately:

- 13,000 tonnes a year of bottom ash which can be re-used as secondary aggregate.
- 2,000 tonnes per year of ferrous metal which can be recycled.
- 3,000 tonnes a year of flue gas treatment residues which include materials that can be re-used as aggregates or in some industrial process.

This 18,000 tonnes a year of residual waste is equivalent to a 73% reduction in the mass (weight) of waste and a 95% reduction in the volume when compared to the residual waste that would otherwise go to landfill.

The ability to re-use and recycle these residues will depend on the availability of markets. Even if all these EfW process residues were disposed to landfill, there would still be a large beneficial effect as the quantities would be significantly reduced.

Litter

The existing MRF has recycled materials stored outside and the management of litter is an ongoing issue for the site. Both the EfW and the IMRF will have all materials stored within buildings and therefore the problem of litter, and the potential problems of vermin and birds, will be minimised. The impact assessment therefore concludes that this is a beneficial environmental effect.

Summary and Conclusions

The impact assessment has sought to understand both the direct and indirect effects of the EfW development and has considered their duration. Where relevant, the cumulative effects of the EfW proposals with other developments have informed the assessment.

Generally, the environmental impact assessment has determined that the overall impact of the EfW facility will be insignificant in terms of air quality, ecology, visual amenity and health.

While there are slight adverse impacts regarding noise and nuisance, these are limited to the construction phase or to occasional occurrences like start-up of the plant.

Additional mitigation measures have been identified across a range of environmental aspects where appropriate. These are measures not currently included within the design, but which Peterborough City Council is committed to deliver through the ongoing development of the EfW proposals; through design, construction management and operational controls.
1. If this drawing has been received electronically it is the recipients' responsibility to print the document to the correct scale.

2. All dimensions are in millimetres unless stated otherwise. It is recommended that information is not scaled off this drawing.

3. This drawing should be read in conjunction with all other relevant drawings and specifications.

4. This map is reproduced from Ordnance Survey material with permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office.


6. Proposed Substation

7. Proposed additional parking (8 No. spaces)

8. Proposed pedestrian & cycle access (access controlled)

9. Processing Hall/Bunker Hall/Reception Area

10. Metal & Ash Recycling

11. Water Process

12. Bulky Waste Shredding Area

13. Turbine Hall

14. Air Cool Condenser

15. Proposed 'Out' Gatehouse & Weighbridge

16. 12 No. Staff & visitor parking spaces (2 No. accessible)

17. Proposed 16 No. covered cycle & smoking shelters

18. Office (3 storey)

19. Workshop

20. Proposed 'In' Gatehouse & Weighbridge

21. Proposed altered site entrance

22. Proposed Pipe Bridge

23. Proposed Condensate Cooler

24. Proposed Cabinet Ejectors/Condensate tank

25. Gas Cabinet

26. Block planting of Hornbeam trees in raised bed

27. Gravel margins

28. Tarmacadam pavement/parking

29. Car Park amended to tarmacadam.

30. Dimensions to boundary added.