3.0 ALTERNATIVES

3.1 EXAMINATION OF POSSIBLE ALTERNATIVES

Schedule 6, Article 94 of the Planning and Development Regulations 2001 requires that:

Information to be contained in an Environmental Impact Statement shall include –

(1d) an outline of the main alternatives studied by the developer and an indication of the main reasons for his or her choice, taking into account the effects on the environment.

This section investigates the following alternatives to the proposed development:

- Alternative Location;
- Alternative Layout and Design;
- Alternative Process.

3.2 ALTERNATIVE LOCATION

Banagher Chilling Ltd. considered the option of constructing a new abattoir facility at a greenfield site. However, this was ruled out at an early stage as the preferred option was to upgrade and extend an existing abattoir facility which would have utility connections (removing the need and cost associated with connecting to the relevant utilities) and existing slaughtering and de-boning equipment in place.

Furthermore, as an established abattoir facility would be part of the existing landscape of the area, an extension and upgrade to the existing infrastructure was considered to have the potential to pose a lesser risk of generating a significant additional visual impact.

Banagher Chilling Ltd. assessed three existing abattoir facilities which could be expanded to provide a phased development of a large throughput primary beef processing plant. The potential sites assessed included the following:

- Ard Na Rí Meats Limited, Rathfeigh, Co. Meath;
- Glynn Meats Company Limited, Patrickswell, Co. Limerick;
- Ossory Meats, Banagher, Co. Offaly.

Each of the sites were assessed under the following criteria:

- Condition of the building;
- Condition of abattoir equipment;
- Site layout;
- Traffic and road network;
- Proximity of residential dwellings;

- Effluent treatment facilities;
- Ability to extend existing buildings.

The site at Banagher was chosen, as it gave the best potential to expand the existing facility into adjacent lands, which were large enough to accommodate the required expansion for the proposed development, the abattoir equipment was in good condition, existing effluent treatment / holding tanks are present which could be used for the proposed development, and there are few residential dwellings located within the vicinity. The Banagher site was also the most preferable in terms of the road network, with access to a regional road,

As part of the decision process, Banagher Chilling Limited considered the options for the treatment and discharge of treated final effluent from the facility. The site at Banagher was the most preferable, as the site had sufficient lands to accommodate a new waste water treatment plant (WWTP) and integrated constructed wetlands (ICW) system, and had the potential for the discharge of treated final effluent to a watercourse, the Feeghroe Stream. As the Feeghroe Stream passes along the western site boundary, the construction of a treated effluent rising main is not required.

3.3 ALTERNATIVE LAYOUT AND DESIGN

The layout and design of the proposed abattoir and extensions has been primarily based upon the existing structures and process requirements, as discussed below.

The layout and design of the proposed WWTP extension has been based upon feasibility, potential for environmental impacts, efficiency of wastewater treatment and operational cost.

The ICW system has been designed in order to achieve the required water retention and flow rates in each pond.

The proposed WWTP has been designed to ensure wastewater treatment would be as efficient as possible, while ensuring treated effluent would be of high quality. Tanks have been designed to ensure adequate storage and treatment capacity.

Measures to improve environmental risk at the effluent plant have been incorporated by design. These include placing the entire effluent treatment works within a constructed bunded concrete compound, with internal drainage directed to the Balance Tank. This would ensure that any spills within the area would be effectively contained and treated.

An emergency return line from the final effluent sump on the biological plant (stage 2), prior to discharge to the ICW system. Effluent which may be found to exceed licenced quality specifications would be redirected to the start of the effluent treatment plant for re-treatment.

Access for tankers to the balance tank and final effluent tank have also been included in the design as a redundancy safety measure in the unlikely event of a critical plant failure. This would allow for the tankering of effluent offsite as a final measure to ensure adequate management of site effluent in a worst case scenario.

With regards odour, tanks have been designed to reduce the potential for odorous conditions through the provision of adequate aeration / mixing systems. In order to minimise the potential for environmental nuisance emissions, the Balance Tank and Sludge Holding Tank have also been designed to be covered tanks, ventilated to a carbon odour scrubber unit. While the operation of the effluent plant would not be anticipated to have a significant noise impact offsite, pumps, motors and aeration equipment have been placed to avoid noise break out from the area, in so far as was practical.

To improve resource use on the site as a whole, a greywater tank has been included within the effluent plant. Greywater would be used onsite for lairage and lorry-washing in order to offset the use of abstracted groundwater.

3.4 ALTERNATIVE PROCESSES

The slaughtering and primal de-boning processes proposed for the development are standard for the industry, and take cognisance of the BREF document for Slaughterhouses and Animals By-products Industries (2005).

With regards wastewater generated from the proposed development, the option of tankering untreated wastewater to Banagher WWTP was considered. However, this was ruled out at an early stage as Banagher WWTP has no available capacity. Furthermore, the onsite treatment of wastewater would eliminate the potential negative impacts associated with the transport of raw effluent from the site (such as a risk of spillage and subsequent deterioration in water quality and increased vehicle emissions to air).

While alternative wastewater treatment processes are available, the biological treatment process is the standard for the industry. The biological treatment process is also noted by the BREF document for Slaughterhouses and Animals By-products Industries (2005) as being the best available technique (BAT).

The following table summarises BAT for the treatment of wastewater from slaughterhouses and animal by-products installations, as per Section 5.1.5 – Treatment of Waste Water, and the proposed implementation of these measures as part of the proposed WWTP development.

Table 3.1: BAT for Wastewater Treatment and Proposed WWTP Measures

BAT	PROPOSED WWTP DEVELOPMENT
Prevent waste water stagnation	Drainage would be laid with sufficient gradient to avoid stagnation and / or pumps would be used. Tanks would be installed with sufficient aeration and mixing to ensure stagnation does not occur.
Apply an initial screening of solids using sieves at the slaughterhouse or animal by-products installation	A meva screen with an aperture of <5mm would be connected to the inlet sump pipe. A drum screen would be installed before the proposed balance tank.
Remove fat from waste water, using a fat trap	A Dissolved Air Floatation (DAF) unit would be installed after the balance tank, with fats solidifying and floating at the top, allowing for removal.

BAT	PROPOSED WWTP DEVELOPMENT
Use a flotation plant, possibly combined with the use of flocculants, to remove additional solids	A Dissolved Air Flotation (DAF) would be installed to treat effluent from the balance tank. The DAF unit would remove solids using a chemical programme with a coagulant and flocculent, followed by diffused air.
Use a waste water equalisation tank	The proposed balance tank would provide storage capacity to buffer the effluent composition / loading and balance out flow fluctuations from the facility.
Provide a waste water holding capacity in excess of routine requirements	The balance tank would have sufficient capacity for approximately 2 days at the maximum hydraulic capacity of 250m^3. An emergency return connection would be installed from the outlet sump to the balance tank, providing storage for emergencies or other such contingency purposes.
Prevent liquid seepage and odour emissions from waste water treatment tanks, by sealing their sides and bases and either covering them or aerating them	Tanks would be lined and sealed as standard practice, and constructed on a base. Integrity testing would be undertaken every three years, as is best practice. Tanks would be mixed / aerated where necessary to minimise the potential for odour generation. The Balance Tank and Sludge Holding Tank would be covered and ventilated to an Odour Scrubber to prevent odour impacts offsite.
Subject the effluent to a biological treatment process	Effluent would undergo biological treatment via the aeration basins and the anoxic tank.
Remove nitrogen and phosphorus	Nitrogen removal would take place in the aeration basins and anoxic tank, through the use of bacteria in nitrification and denitrification processes. While some phosphorous removal would be achieved during biological treatment, the proposed addition of a coagulant and subsequent solids removal would significantly reduce phosphorous levels in wastewater.
Remove the sludges produced and subject them to further animal by-product uses.	Sludges would be either directed for landspreading, anaerobic digestion or composting as appropriate. Should sludges be landspread, landspreading would be in accordance with the Nitrates Regulations.
Use CH4 gas produced during anaerobic treatment for the production of heat and/or power	Not applicable.
Subject the resulting effluent to tertiary treatment	The proposed WWTP would include a sand filtration system and an Integrated Constructed Wetlands (ICW) system, which would reduce further the suspended solids in the final effluent. This would also lower the COD / BOD level of the effluent.
Regularly conduct laboratory analyses of the effluent composition and maintain records	Should planning consent be granted, Banagher Chilling Limited would apply to Offaly County Council for a Local Authority Section 4 (Trade

BAT	PROPOSED WWTP DEVELOPMENT
	Effluent) Discharge Licence. Proposed emission limit values would be assessed by Offaly County Council, and once agreed, would be specified within the discharge licence. Banagher Chilling Limited would be required to undertake scheduled monitoring of the discharge for the parameters specified by the County Council in the discharge licence. This monitoring would ensure that final treated effluent quality would remain high.

With regards sludge dewatering, a belt press and centrifuge were considered, however the proposed sludge screw press was considered standard for the industry, and was viewed as being BAT for the proposed development.

A membrane bioreactor (MBR) was considered as an alternative to the proposed clarifier and sand filter system. MBR units combine activated sludge treatment with a membrane liquid-solid separation process, with the membrane component using either low pressure microfiltration or ultrafiltration membranes. An MBR unit has a greater amount of operational maintenance and has an increase susceptibility to clogging with fats and grits. In making an informed decision, several sites were visited in order to assess the wastewater treatment systems. The use of a clarifier and sand filter were standard for the industry in Ireland, and were viewed as being BAT for the project.

3.5 "DO-NOTHING" SCENARIO

The "Do-Nothing" alternative would result in no upgrade and extension to the existing abattoir facility within the townlands of Meenwaun and Boheradurrow at Banagher, Co. Offaly. The existing abattoir at the site would remain in a derelict state, while the remainder of the site, comprising of agricultural land, would continue to be used for agricultural purposes.

The "Do-Nothing" alternative would deny the locality the opportunity to gain from the economic benefits associated with the construction and operation of the facility – namely the employment of 250 construction workers for approximately 18 months, the full time employment of 110 workers (including administration staff, slaughtering and boning staff and cleaning staff), and indirect employment opportunities, for example, via haulier contractors, gardening and landscaping contractors and pest control contractors. The provision of employment would likely contribute to the economy of the area through direct spending of goods and services in the Banagher area and surrounds.

According to the Offaly County Development Plan, 2014 – 2020, Banagher town is classified as a Tier 4 Local Service Town. Local Service Towns perform "*important local level residential, retailing, social and leisure functions and provide appropriate local services to a wider rural hinterland. Local enterprise is encouraged within this settlement tier and the location of industry where appropriate may also be considered."*

The following Settlement Strategy Policy relates to Local Service Towns:

SSP-11 *It is Council policy to conserve, enhance and strengthen the Local Service Towns within the county ensuring that the appropriate scale of growth is supported by sufficient physical and social infrastructure. Growth in these towns should be commensurate with their envisaged role.*

Should the proposed development proceed, it would support the following policies outlined in the Offaly County Development Plan, 2014 - 2020:

RDP–01 *It is Council policy to support the development of agriculture where it is compatible with the sustainable development of the county and commensurate with sustaining the farming community.*

RDP–03 *It is Council policy to favourably consider proposals for the expansion of existing industrial or new business enterprise in the countryside where the proposal is;*
a) an appropriate size and scale,
b) does not negatively impact on the character and amenity of the surrounding area, and
c) has regard to and complies with other guidelines/standards including traffic, noise and environmental considerations.
This policy will generally relate to enterprises which are rural resource based and which have the potential to strengthen rural areas.

RDP–11 *It is Council policy to encourage expansion and employment in industries such as agriculture, horticulture, forestry, peatlands, food, crafts, tourism and energy.*

EntP-04 *It is Council policy to support local employment creation where it can mitigate against long distance commuting.*

The "do-nothing" alternative would deny local farmers, composting facilities and / or anaerobic digestion facilities of a potential valuable source of fertiliser / feedstock. The former legal definition of organic fertilisers as a 'waste' requiring disposal has changed and has been redefined as a by-product, indicating that this product is recognised as an economically valuable resource. Due to increasing costs for chemical fertilisers, manure and effluent sludge by-products are becoming an essential part of the agricultural industry in Ireland. Higher transportation costs in the future will make the availability of local organic fertiliser by-product producers an asset to local agri-business.