

ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE DEMOLITION OF AGRICULTURAL STRUCTURES AND THE DEVELOPMENT OF A MATERIALS RECOVERY FACILITY AT DERRYARKIN, RHODE, CO. OFFALY

VOLUME 2 – MAIN BODY OF THE EIAR CHAPTER 3 - ALTERNATIVES

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3. ALTERNATIVES

3.1 Introduction

The proposed development is defined in Chapter 1 and a detailed description of the proposed development is set out in Chapter 4: Description of the Existing and Proposed Development.

Having established the need for the proposed development in Chapter 2 of Volume 2 of this EIAR, an assessment of reasonable alternatives to the proposal has been undertaken in accordance with Article 5(1)(d) of the 2014 EIA Directive (Directive 2014/52/EU). All reasonable alternatives that have been considered are identified and described, and an indication of the reasons for selecting the chosen option is provided. In carrying out this assessment regard has been had to the 'Do Nothing' scenario, alternative development site locations, alternative designs, and alternative processes. Regard has also been had to potential environmental impacts associated with reasonable alternatives considered.

3.1.1 Statement of Competency

Richard is a Senior Environmental Scientist working as part of the Waste and Environment Team in Fehily Timoney and Company. Richard is a Chartered Environmentalist with the Society for the Environment. Richard has ten years' experience working in the area of environmental assessment/management. Richard has a vast amount of experience coordinating the design, assessment and development of waste management facilities, from feasibility study stage to planning application / EIAR stage. Richard has close familiarity with the process of considering alternative locations, designs and processes during the waste management facility design and planning process. Richard has a vast amount of experience completing EIA Alternative Assessments for a wide variety of development projects.

3.2 Legislative Background

The identification and assessment of project alternatives is a key part of the EIA process. The 2014 EIA Directive (Directive 2014/52/EU). restated and amended the requirement to consider project alternatives of the 2011 EIA Directive (Directive 2011/92/EU) and introduced the concept of 'reasonable alternatives.'

Article 5(1) of the 2014 EIA Directive states that the developer shall include:

5(1)(d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment.

5(1)(f) any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.



Annex IV of the Directive point 2 states:

Annex IV(2) A description of the reasonable alternatives (for example in terms of project design, technology, location, size, and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.

The European Commission has provided guidance on consideration of reasonable project alternatives in their 2017 EIA guidance document 'Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment Report.' The Commission's guidance indicates in Section 1.5.1 reasonable alternatives "must be relevant to the proposed Project and its specific characteristics", alternatives should be feasible in terms of technical, economic, legal, and political criteria. Box 29 of the EIA guidance provides some key reasons why a project alternative might be considered unreasonable / infeasible and includes where technology costs or budget obstacles can preclude certain options.

The EIA directive requires a description of the reasonable alternatives relevant to the project and an indication of main reasons for selecting the option chosen, with regards to their environmental impacts. The EU Commission EIA guidance document confirms that developers need to provide the main reasons for selecting the chosen option, but that "intricate" explanation is not necessary provided the reasons are transparent.

This approach also accords with the EPA 2022 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' which states:

"It is generally sufficient to provide a broad description of each main alternative and the key issues associated with each, showing how environmental considerations were taken into account in deciding on the selected option."

Having regard to requirements in relation to project alternatives described in Annex IV of the EIA Directive, the 2017 EU Commission EIA Guidance and the EPA 2022 EIAR guidelines, it was determined to assess reasonable alternatives to Applicant's s proposed development in this instance under the following headings:

1. 'Do Nothing' Alternative Scenario;
2. Alternative development site locations;
3. Alternative designs;
4. Alternative Processes.



3.3 Assessment of Alternatives

3.3.1 'Do Nothing' Alternative Scenario

The project alternative of a 'Do Nothing' scenario is an important part of the assessment of alternatives in EIA. The proposal involves the construction of a new development on an existing site consisting of disused agricultural structures. The existing site structures are in a state of disuse and disrepair.

The 'Do Nothing' scenario involves the Applicant not progressing with the development of a Materials Recovery Facility on-site. The site, and structures present within its confines, will remain as is in this scenario. The site will remain in a state of disuse and disrepair and will continue to be unsightly to those present in areas surrounding the site that have views onto the site. The land use value associated with the site will remain very low. Asbestos containing material in existing buildings on-site will remain in-situ.

In the "Do Nothing" scenario, the potential residual environmental impacts of the proposed development as set out throughout this EIAR will not occur.

Project benefits will not be accrued in a 'Do Nothing' scenario. The benefits associated with improving waste management and recovery/recycling capacity nationally will not be realized (these benefits are discussed in Chapter 2, Need for the Proposed Development, in Volume 2 of this EIAR). The benefits associated with promoting and supporting circular economy policy objectives defined in the National Planning Framework, the Waste Action Plan for a Circular Economy (2020), the Eastern Midlands Region Waste Management Plan 2015 – 2021 and the Eastern and Midlands Regional Spatial and Economic Strategy will also not be realized (these benefits are discussed Chapter 5 Planning and Policy Context, in Volume 2 of this EIAR).

The socio-economic benefits associated with the proposed development will not be realized. The 'Do Nothing' scenario will prevent the realization of job creation associated with the project, both during its construction phase and operational phase. Potential economic benefits to the local economy and business associated with providing and supplying services, goods and materials to the proposed development during either its construction or operational phases will not be realized either.

3.3.2 Alternative Development Site Locations

The Applicant considered several potential site locations for the proposed development prior to selecting the proposed site. The process of selecting the most suitable site in the Midlands for the development of a Materials Recovery Facility was very extensive and has lasted since 2011.

Table 3-1 details the alternative sites considered for the proposed development over this timeframe. It also outlines environmental, planning, business and economic, factors relevant to each potential site location that were considered, as well as the overall reasons for not proceeding with the development.



Table 3.1: Alternative Sites Considered

Alternative Sites Considered	Site Coordinates (Lat, Long)	Brief Description of Existing Site Character	Business, economic, planning and environmental factors taken into account when deciding whether or not to proceed with the development at the site	Overall reasons for not proceeding with the development at the site
Barnan, Daingean, Co. Offaly.	53.329778, -7.314278	Existing Construction and Demolition Waste Recycling Facility (operated by the Applicant).	In 2011 an application was made to expand this existing facility was made (Planning File Reference: PL2/11/39). This application was refused on the basis that the road network surrounding the existing facility was inadequate to cater for development traffic levels associated with the operational phase of the proposed development.	1. Inadequate surrounding road network which is not capable of accommodating traffic associated with a waste management facility.
Derryclare, Tullamore, Co. Offaly.	53.231527, -7.473263	Existing Civic Amenity Facility adjacent to a closed landfill (operated by the Applicant)	It was assessed whether this existing waste management site (consisting of a Civic Amenity facility adjoining a closed landfill) would be suitable for a Waste Facility. Preliminary Site Geotechnical Investigation was undertaken to ascertain the suitability of the site for constructing the proposed site structures. It was determined that the site was situated on ca. 2 metres of peat type soil and was therefore unsuitable for the proposed structures.	1. Inadequate ground and subsurface characteristics to support foundations required for the proposed facility structures.
Capincur, Tullamore, Co. Offaly.	53.272996, -7.462176	Greenfield Site	This greenfield site east of the town of Tullamore was considered for the development of a waste facility. Pre-application consultation was undertaken with Offaly County Council regarding this site. It was determined that the junction accessing the site would have been unsuitable for a development of this nature and	1. Inadequate surrounding road network which is not capable of accommodating traffic associated with a waste management facility. 2. The extensive effort and cost associated with diverting existing surface water drainage channels



Alternative Sites Considered	Site Coordinates (Lat, Long)	Brief Description of Existing Site Character	Business, economic, planning and environmental factors taken into account when deciding whether or not to proceed with the development at the site	Overall reasons for not proceeding with the development at the site
Axis Business Park, Tullamore, Co. Offaly.	53.2827783, -7.518775	Brownfield site in a business park	<p>that the surrounding road network leading to the site was not designed to accommodate HGV traffic. In addition, two existing surface water drainage channels traverse the site. The extensive effort and cost associated with diverting these channels also impeded progressing the development at this site.</p> <p>It was assessed whether a number of brown and greenfield sites situated in the business park would have been suitable for a Waste Facility. It was determined that the Axis Business Park area was light industrial or commercial in character, and therefore unsuitable for a waste facility of this nature. Moderately sensitive receptors that may have been impacted by the operation of the facility were present in the business park. It was considered that the proposed development would be better suited to an area that was heavy industrial in character and/or remote from sensitive receptors.</p>	<p>on-site impeded development of a waste management facility at this site.</p> <p>1. Unsuitable existing land use character in the vicinity of the site.</p>
Flynn's, Mullingar, Westmeath.	53.500885, -7.231648	Existing commercial facility and yard	<p>This commercial facility and yard was considered for the proposed development of a waste facility. There were a number of buildings and yard areas on-site that could potentially have facilitated the proposed waste facility. The Applicant was ultimately outbid during the site purchase bidding process. The purchase of the site at or above the sold price and the retrofitting of the facility to accommodate waste management operations</p>	<p>1. The Applicant was outbid during the site purchase bidding process. The purchase of the site at or above the sold price and the retrofitting of the facility to accommodate waste management operations</p>



Alternative Sites Considered	Site Coordinates (Lat, Long)	Brief Description of Existing Site Character	Business, economic, planning and environmental factors taken into account when deciding whether or not to proceed with the development at the site	Overall reasons for not proceeding with the development at the site
Clonmore, Mullingar Business Park, Co. Westmeath.	53.512913, -7.355824	Existing Waste Management Facility	<p>retrofitting of the facility to accommodate waste management operations was not determined to be economical by the Applicant</p> <p>The Applicant considered acquiring and upgrading an existing waste management facility based outside Mullingar, Westmeath. The Applicant was outbid during the site purchase bidding process. The purchase of the site at or above the sold price and the retrofitting of the facility to accommodate waste management operations was not determined to be economical by the Applicant</p>	<p>was not determined to be economical by the Applicant.</p> <p>1. The Applicant was outbid during the site purchase bidding process. The purchase of the site at or above the sold price and the retrofitting of the facility to accommodate waste management operations was not determined to be economical by the Applicant.</p>
Bayroad Business Park, Mountmellick, Co. Laois.	53.126892, -7.329242	Existing commercial facility and yard	<p>This site was assessed to determine if it was suitable for development as a Waste Facility. This site was not deemed suitable for use as a waste facility given nature of surrounding land use in particular the presence of several residences to the south of the site at the junction between Bay Road and the access road leading to the site. Existing building eave heights were considered to be too low for proposed operations.</p>	<p>1. Unsuitable existing land use character in the vicinity of the site. 2. Existing building eave height too low to accommodate envisaged waste processing plant to be situated at the site.</p>





The chosen site for the proposed development was ultimately the site in question at Derryarkin, Rhode, Co. Offaly. The main business, economic, planning and environmental reasons for the choosing this site are outlined below:

- The subject lands were available to be purchased at a price that was economical for the Applicant. It was further decided that it would be economical for the Applicant to purchase this site, carry out site clearance and demolition of existing structures, and develop the site anew.
- The site is situated in the centre of the Midlands area and is connected to a good road network (including the R400, R441 R446 and M6), making it an ideal site for the Applicant to bring its waste collection vehicles serving the wider Midlands region and surrounding regions for processing. The site is also central to a number of key settlement areas in the region.
- There is suitable site access from the R400 road. The site access road leading to the site is currently utilized by heavy goods vehicles travelling to and from Kilmurry Precast Concrete Ltd.'s active quarry/infill site. HGV traffic movements are currently taking place along this route without causing any unacceptable public safety risks.
- The site is situated in area that is already characterized by commercial/industrial activity and as such would be well suited for a Materials Recovery Facility of this nature. A piggery is located immediately north/north-west of the development site. An active quarry/infill site is located ca. 80m west of the site (at its closest point). The wider area surrounding the site is characterized by peatland worked by Bord na Móna. Finally, Bord na Móna's substantially sized Drumman timber storage, seasoning and chipping facility situated ca. 1.5 km north east of the development site.
- There are no sensitive receptors within close proximity to the site that may be particularly vulnerable to noise, dust or odour emissions arising during facility operations. Adequate separation distance between the site and sensitive receptors exists. The nearest sensitive receptor consists of a one-off dwelling and is situated ca. 755 metres to the south of the development site. Other one-off dwellings are located ca. 760 metres to the south west of the site and 770 metres to the south of the site and ca. 890 metres to the south west of the site. There are no other sensitive receptors within 1 km of the proposed development site.
- According to site geotechnical investigation the site has suitable ground and drainage conditions for accommodating proposed facility structures including yard areas (which will be used by heavy vehicles) and buildings (administration building and processing building).
- There is an absence of any other significant environmental constraints at the site. There are no areas of significant ecological value within the confines of the site or in the immediate vicinity of the site. There are no Recorded Monuments within the proposed development site. The site is not considered to be particularly sensitive from a landscape and visual impact perspective or public health perspective.

3.3.3 Alternative Designs

It was initially envisaged that the proposed facility would accept a maximum of 50,000 tonnes of waste per annum. Following consideration of demand for waste management capacity in the Midlands region and surrounding regions to be served by the facility, it was determined that the facility would at a capacity 90,000 tonnes of waste acceptance per annum at its maximum operational capacity (i.e. during Phase 2 of the operations).



During the early stage of the project, the Applicant considered situating two small units on-site to accommodate staff facilities. It was decided early on that a more substantial administration building providing office space, sanitary facilities and canteen facilities would be provided on-site for administrative and operational staff.

An alternative site layout was originally proposed.

This site layout was rearranged during the design process for the following reasons:

1. To accommodate the inclusion of an on-site wastewater treatment plant and an associated percolation area. As a result, the administration building, workshop, loading bays and staff parking on-site were re-located, and the arrangement of processing areas inside the processing building was altered.
2. To accommodate the intermittent operation of mobile timber shredding plant on-site. Outdoor waste storage bays were arranged in such a fashion so that these could be re-utilized where necessary for timber processing operations including the storage of unprocessed and processed timber.

Please see Drawing Ref: P2344-0100-0005 in Volume 4 of this EIA for detail on the actual proposed site layout.

Please see Figure 3-1 for detail on the site layout as originally envisaged.

During the later stages of the design process it was decided to install rooftop solar panel on the Materials Recovery Facility building and Administration building. This measure is increasingly being adopted by similar facilities in the waste management sector and across the commercial and industrial sector. The installation of rooftop solar panels on-site will ensure the facility sources a substantial portion of its energy from renewable sources, will reduce reliance on fossil fuel-based energy sourced from the electrical grid, and reduce energy costs for the applicant. This measure is expected to bring about significant climate change benefits in the context of the proposed development.

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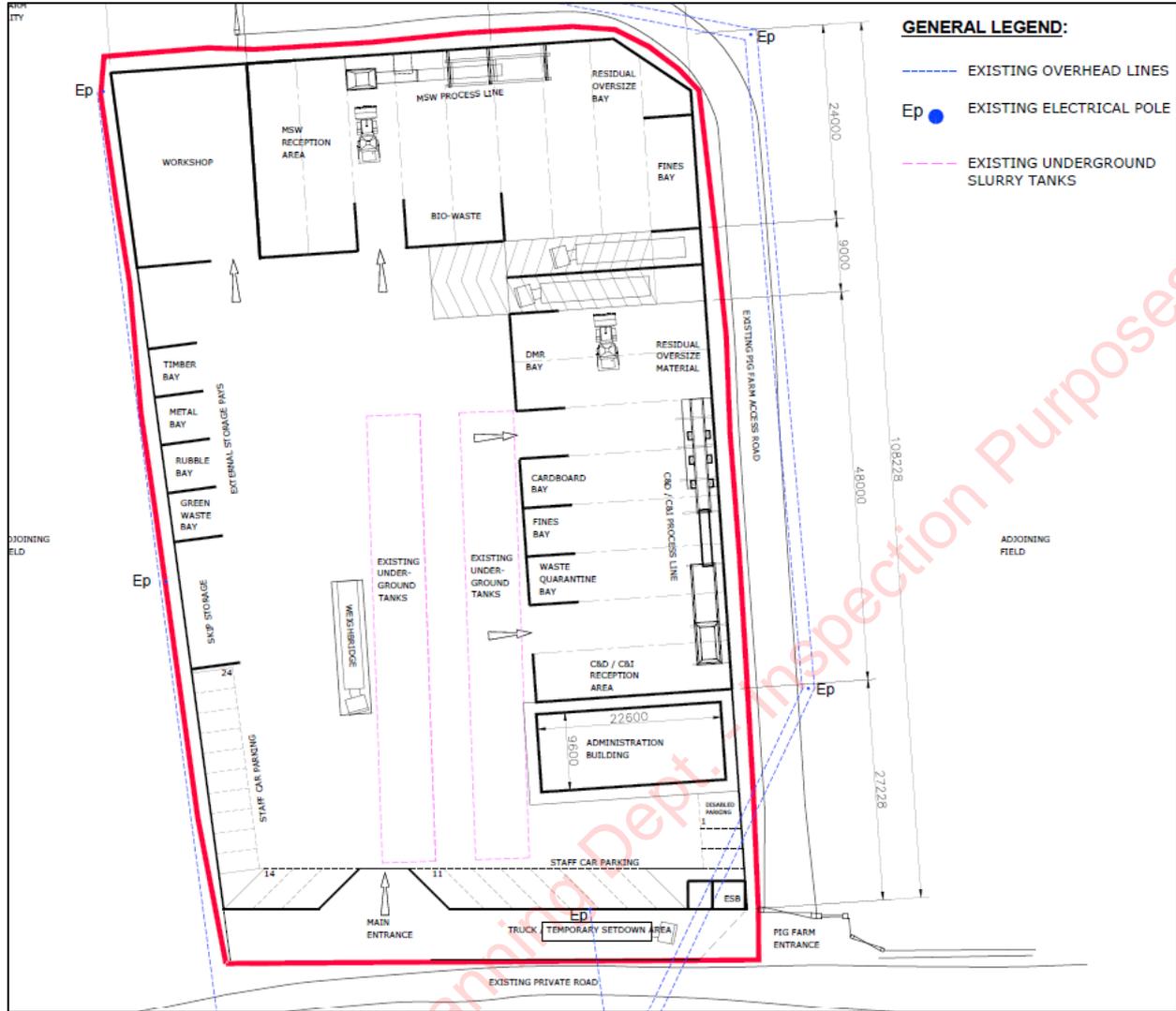


Figure 3-1: Site Layout Plan as originally envisaged

3.3.4 Alternative Processes

It was established early on during the design phase that the following processes will be carried out at the facility ultimately:

- Phase 1 Processing Operations
 - The acceptance, processing and onward transfer of C&D / C&I skip waste.
 - The acceptance, bulk loading and onward transfer of MSW.
- Operations occurring during both Phases 1 and 2
 - The acceptance, bulk loading and onward transfer of DMR.
 - The acceptance, shredding and onward transfer of timber waste.
- Phase 2 Processing Operations
 - The acceptance, processing and onward transfer of C&D / C&I skip wastes.
 - The acceptance, processing / pre-treatment, and onward transfer of MSW.



These processes are sufficient for facilitating the effective management of waste types collected by the Applicant in the Midlands region and surrounding regions and are in accordance with relevant public policy on the circular economy and the waste hierarchy. Process flow / flow diagrams for each of these processing operations were developed. Processing plant designs were procured from a processing plant provider Turmec and considered when preparing the design of the proposed development.

No other processing operations were considered for the proposed facility.

3.4 Conclusions on Alternatives Assessment

Following an extensive site selection process, the Applicant determined that the subject Derryarkin site was most suitable for the development of a Materials Recovery Facility of all the sites considered. The site was significantly better than other alternative sites considered, having particular regard to the planning and environmental sensitivities and constraints associated with these alternative sites. The Derryarkin site was ultimately selected on the basis of economic criteria (E.g. purchase and development of the site into a waste facility represented good economic value), business criteria (E.g. the site is situated in a location that is ideal for facilitating the acceptance and processing of waste collected by the Applicant in the Midlands region), and environmental criteria (E.g. the site is in a remote location away from sensitive receptors that is characterized by industrial/intensive land use and which is served by a good road network).

The site layout was developed via a reiterative design processes between the Applicant and Fehily Timoney and Company Engineers. Ultimately, the chosen proposed layout was deemed to be the most suitable layout having regard to operational criteria (E.g. process flows) and environmental criteria (E.g. installation of solar panels to reduce facility reliance on fossil fuel derived energy).

Facility processing operations were designed in a manner that ensures the facility is capable of accepting and processing the variety of waste types collected by the Applicant in the Midlands region and surrounding regions. The array and type of processes that are proposed for the facility on-site will facilitate the effective management of waste in line with relevant public policy on the circular economy and waste hierarchy principles.

Overall, it is concluded the proposed development as designed and envisaged maximizes benefits to the Applicant, the local area and wider region compared to the alternatives considered. Conversely, it is concluded that the proposed development achieves the minimum possible environmental impact on surrounding environmental receptors compared with the alternatives considered.



References

1. Environmental Protection Agency (EPA), “Guidelines on the information to be contained in Environmental Impact Assessment Reports (draft),” 2017.
2. European Commission, “Directive 2011/92/EU of the European Parliament and of the Council on the assessment of the effects of certain public and private projects on the environment,” 2011.
3. European Commission, “Directive 2014/52/EU of the European Parliament and of the Council, amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment,” 2014.
4. European Commission, “Environmental Impact Assessment of Projects - Guidance on the preparation of the Environmental Impact Assessment Report’,” 2017.

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