

# **Miltown Composting Systems Ltd.**

**Licence Review Reasoning**



## 1.0 Introduction

The Milltown Composting Systems Ltd. (Milltown) is an in-vessel composting facility at Milltown More, Fethard, County Tipperary operates under a reviewed Environmental Protection Agency (EPA) Waste Licence (Ref. W0270-02) issued on the 13<sup>th</sup> of September 2019. The facility also has approval from the Department of Agriculture Food and the Marine (DAFM) to operate as a composting plant accepting Category 2 and Category 3 animal by-products.

The facility originally began operations in 2004 under a Waste Permit (Ref. WP 019 02) issued by South Tipperary County Council. The predominant materials accepted was organic fines material from the treatment of mixed municipal solid waste, with smaller amounts of non-hazardous industrial and municipal wastewater sludges, and off specification animal feed. The actual amount processed on site is dependent on market conditions and fluctuates to meet market demand. The roll out of source segregated collection of household organic waste in the Southern Region, and the increased source segregation for commercial activities has increased the volume of organic bio-waste and organic fines material requiring biological processing in the Southern Waste Management Region. To meet the market demand for the requirements for increased biological treatment, Milltown proposes to increase its capacity to a maximum of 75,000 tonnes/year and to re-construct two old agricultural sheds as additional maturation capacity for the processed material.

### 1.1 Proposed Changes

Miltown propose to increase the throughput of material at the composting facility to approximately 240 tonnes per day (not exceeding 75,000 tonnes per annum) and to apply to the Environmental Protection Agency for the review of the current Industrial Emissions Licence W0270-02 to continue to regulate the facility. The future licenced area will be the same as the current waste licence (Ref. W0270-02) for the site. The reception area for organic material will continue to be in the existing reception shed where delivery trucks back in and deposit their loads to the reception area. The enclosed reception area provides additional controls over potential impacts to surface water quality from the yard surface. The roofed waste reception shed allows for the diversion of rainwater from the yard surface and reduce potential interaction between residual waste material and surface water in that area. Any leachate or minor surface water discharge in that area will be controlled and managed through a dedicated leachate control system. The proposed development will also include for the reconstruction of two old agricultural sheds (i.e., maturation sheds 2B and 3B) as additional maturation capacity for the proposed increased throughput in the composting bays.

The range of waste materials currently accepted at the composting facility as part of licence W0270-02 will not change. The site will continue to only accept biological waste material for treatment and it is envisaged that future operation of the facility will serve to accept increased volumes of these organic materials from waste collectors. The bio wastes (e.g., food waste and screened organic fines material) will continue to be delivered to site in enclosed trailers for aerobic composting and stabilisation. The increased compost processing throughput at the facility will allow the facility deal with a greater volume of bio-waste and increase the facility's capability to service the Southern Regions waste needs.

The current hours for accepting waste at the facility under the existing Industrial Emission Licence are between 07:00 and 19:00 Monday to Saturday (with the exception of Bank Holidays), with the current operational hours at the facility between 06:00 to 19:00 Monday to Saturday. Under the proposed development Miltown Composting do not propose to change the hours for accepting material or the operational hours. Any increased traffic related to the delivery and removal of organic material would be spread out over the day to avoid traffic issues related to the site.

## 2.0 Licence Review

The proposed changes to Miltown Composting Systems Ltd. waste licence are outlined in Table 1 below;

**Table 1: Proposed Licence Conditions for Review**

Condition/Schedule	Current	Proposed Change
<b>Introduction</b>	Miltown Composting Systems Limited operate an in-vessel composting facility in Fethard, County Tipperary. This licence is for the acceptance of 50,000 tonnes of organic fines material from the treatment of mixed municipal solid waste, with smaller amounts of non-hazardous industrial and municipal wastewater sludges	Miltown Composting Systems Limited operate an in-vessel composting facility in Fethard, County Tipperary. This licence is for the acceptance of <b>75,000 tonnes of organic material including brown bin</b> , organic fines material from the treatment of mixed municipal solid waste, with smaller amounts of non-hazardous industrial and municipal wastewater sludges
<b>Schedule A.2 (Table A.2)</b>	Maximum (Tonnes Per Calendar Year) – 50,000	Maximum (Tonnes Per Calendar Year) – <b>75,000</b>
<b>Schedule B.1.1</b>	Emission Limit Values for Biofilters  Emission Point Reference No. – A2-1 Biofilter Location E615717, N633439  Emission Point Reference No. – A2-2 Biofilter Location To be Agreed by Agency	Emission Limit Values for Biofilters  Emission Point Reference No. – A2-1 Biofilter Location E615717, N633439  Emission Point Reference No. – A2-2 Biofilter <b>Location E615787, N633520</b>  <b>Emission Point Reference No. – A2-3 Biofilter Location To be Agreed by Agency</b>
<b>Schedule C.1.1</b>	Control of Emissions to Air – Emission Point Reference No: A 2-1 (E615717, N633439) (Biofilter 1 to the South of Shed 1)  A 2-2 (to be agreed by the Agency) (Biofilter 2, to the north of Shed 2)	Control of Emissions to Air – Emission Point Reference No: A 2-1 (E615717, N633439) (Biofilter 1 to the South of Shed 1)  A 2-2 ( <b>E615787, N633520</b> ) (Biofilter 2, to the north of Shed 2)  <b>A 2-3 (to be agreed by the Agency) (Biofilter 3, to the south of maturation Shed 3B)</b>
<b>Schedule C.1.1</b>	Monitoring of Emissions to Air  Emission Point Reference No: A2-1, A2-2	Monitoring of Emissions to Air  Emission Point Reference No: A2-1, A2-2, <b>A2-3</b>

### 3.0 Reasons for Licence Review

The proposed changes will see a continuation of the existing composting process at the facility albeit at an increased throughput. The proposed development will continue to operate as an aerobic composting plant that can accept a broad range of compostable organic materials including source segregated household kitchen waste; catering wastes; non-hazardous industrial and municipal waste water sludges and organic fines generated in the physical treatment of mixed municipal waste (MMW). The reasoning for the proposed changes to the site licence are outlined in the following;

#### 3.1 Increase Throughput of Material from 50,000 t/a to a maximum of 75,000 t/a

There are a number of strategies in place with regards to waste management that effect the proposed increase of organic throughput at the Miltown site;

### National Waste Management Policy

The EU Waste Framework Directive 2008/98/EC was introduced to ensure coordination on waste management within Member States to limit waste generation and optimise waste management and treatment options. The Directive was transposed into Irish law by the European Communities (Waste Directive) Regulations 2011. Under the requirements of the Directive Member States must reuse or recycle 50% of certain household wastes and reuse, recover or recycle 70% of C&D waste by 2020.

The Waste Policy Statement “A Resource Opportunity- Waste Management Policy in Ireland 2012” is also based on the original EU waste hierarchy and includes requirements for waste prevention, reuse, recycling, recovery and disposal. The document includes ways that the Country can reduce reliance on finite resources, almost entirely reduce dependence on landfill and minimise the impact of waste management on the environment. A key objective of the policy is that when waste is created the maximum value should be extracted from it by ensuring that it is recycled, reused or recovered.

The most recent Waste Policy Statement “Waste Action Plan for a Circular Economy” introduced in 2020. Within the policy it is acknowledged that composting will be important in terms of waste policy going forward, as outlined below

- *We want to realise the Anaerobic Digestion (AD) and composting potential of the food waste resource. AD and composting provide opportunities for regional development with benefits for communities through sales of locally generated energy and compost.*
- *The EPA has estimated that correct use of the three household bins could reduce the volume of the general waste bin by a third, and that municipal recycling (including organic waste for composting and anaerobic digestion through the organic bin) rate could increase by 50% (from 40%).*

A key objective of the policy is to drive further segregation of wastes and to support indigenous recycling and recovery enterprises. Miltown Composting fit into the waste hierarchy by treating and biostabilising the organic fractions of municipal waste to ensure that it can be recovered as compost or as landfill cover material. When used as landfill cover the biostabilisation process removes the potential for leachate and landfill gas generation when the material is used at the landfill site and uses the material in a way that reduces the use of virgin cover material.

### Southern Region Waste Management Plan

In 2012, the Government’s blueprint for a circular waste economy, as set out in *A Resource Opportunity– Waste Management Policy in Ireland*, established a new framework for the provision of effective and efficient waste management services through the establishment of three waste management planning regions. The Southern Region (SR), serving a population of 1,541,439, includes the administrative areas of the following local authorities – Carlow County Council, Clare County Council, Cork City Council, Cork County Council, Kerry County Council, Kilkenny County Council, Limerick City & County Council, Tipperary County Council, Waterford City & County Council and Wexford County Council.

The new approach aims to promote the following:

- prevent or minimize the production and harmful nature of waste,
- encourage and support the recovery of waste,
- ensure that such waste as cannot be prevented or recovered is safely disposed of, and
- address the need to give effect to the polluter pays principle, in relation to waste disposal.

Section 15.4.1 of the Southern Region Waste Management Plan assessed the waste projection in Ireland and according to the ESRI, reliance on landfill is projected to “*decrease significantly below current levels with recovery and recycling activities expected to dominate*”. It anticipates that incineration and other treatment technologies such as composting, refuse derived fuel manufacture etc., will play a key role in achieving waste management plan policy targets.

The ESRI also notes that *“figures suggest that, while pre collection activity (e.g., segregation of waste for recycling) is important, increasingly greater capacity will be needed in post collection treatment of the residual bin”*. This indicates that the post collection processing of residual waste including the removal and treatment of the organic fraction is projected to increase.

Section 19 of the Southern Region Waste Management Plan (SRWMP) indicates three main targets. Of the three targets, two are directly related to ensuring that recycling materials and reducing direct disposal of unprocessed waste to landfill. The main targets that relate to Miltown Composting are:

- Target 2 – achieving a recycling rate of 50% of managed municipal waste by 2020
- Target 3 – reducing to 0% *the direct disposal of unprocessed residual municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous Recovery practices”*. *(Unprocessed residual waste means residual municipal waste collected at kerbside or deposited at landfills/CA sites/transfer stations that has not undergone appropriate treatment through physical, biological, chemical or thermal processes, including sorting)*

To achieve the targets the SRWMP indicates that there will be a need to increase the level of kerbside collection, implement and regulate a pay-by-weight system, plan and develop higher quality waste treatment infrastructure (including biological treatment) and grow the biological treatment sector, in particular composting and anaerobic digestion.

Under the Waste Framework Directive, the recycling of waste is defined as *“any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes”* and *“includes the reprocessing of organic material”*.

The requirements of the SRWMP indicate the need for new waste management methods, moving away from the previous method of landfill.

Biological treatment facilities for the primary and co-treatment of agricultural waste, along with bio-wastes and other organic wastes, are also required in the region and the waste plan supports the development of such facilities. Managing waste from a growing agricultural sector is a challenge which needs to be addressed to support Ireland’s growing agri-food sector.

The requirements of the SRWMP indicate the need for new waste management methods, moving away from the previous method of landfill, and biological treatment is clearly an activity which sits on the recycling tier of the hierarchy. It is considered that the proposed increase of throughput at Miltown fits well with the current and future policy of the SRWMP. To meet the targets set out in the SRWMP there is a requirement for the increased processing of municipal waste prior to landfill with a subsequent need for treatment of the residual organic fine fraction resulting from that treatment as well as treatment of source segregated brown bin waste material.

Section 16.4.6 set out the levels of potentially composted waste within the Southern Region and the policy as outlined below:

*“In the region of 137,300 tonnes of treatment capacity is authorised to treat animal by-products between local authority and EPA sites. The national quantity of municipal brown bin material being treated in 2012 was over 94,000 tonnes and it is expected that this will continue to grow over the plan period, with a heightened focus on increasing the separate collection of food waste. Over 37,371 tonnes of garden waste was treated nationally in 2012, primarily by composting. Bio-waste materials tend to move shorter distances for treatment by comparison to residual wastes, which may be hauled across the country to treatment outlets. Over the plan period it is expected that bio-waste material generated will be principally treated within the region, and the capacity need has been examined on the basis of serving regional needs. This approach will support the development of treatment facilities of varying scales”*.

The above increased penetration of segregated food waste collections from household and commercial customers is expected to increase the quantities of this stream collection. It is expected that the food waste generated in each region will not be transported long distances but will rather be primarily treated in each region. The nature of the material, which is wet and odorous, can limit the distances such loads are transported although the current movement of biowaste to Northern Ireland is noted. The treatment capacity put forward in the proposed development is to ensure that there is sufficient capacity approved, in particular facilities which have animal by-product approval, and that there is a balanced distribution of capacity in the region.

Also in section 16.4.6 the policy in relation to biological treatment and composting outlines that;

- The waste plan supports the development of at least 40,000 tonnes of additional biological treatment capacity in the region for the treatment of bio-waste (food waste and green waste) primarily from the region to ensure there is adequate active and competitive treatment in the market. The development of such treatment needs to comply with the relevant environmental protection criteria in the plan
- The waste plan supports the development of biological treatment capacity in the region in particular anaerobic digestion; to primarily treat agro-wastes and other organic wastes including industrial organic waste. The development of such treatment facilities need to comply with the relevant environmental protection criteria in the plan

As outlined in section 16.4.6, the national quantity of municipal brown bin material being treated in 2012 was over 94,000 tonnes and it is expected that this will continue to grow over the plan period, with a heightened focus on increasing the separate collection of food waste. There has been a notable rise in the treatment of organic fines at composting plants in Ireland, up from around 50,000 tonnes in 2013 to 138,000 tonnes in 2018, 152,000 tonnes in 2019 and 196,000 tonnes in 2020. This reflects the increase in mechanical pre-treatment at waste facilities before it is sent for recovery or disposal. The biostabilised fines can then be treated in composting facilities like Miltown and used as landfill cover without giving rise to odour and greenhouse gas emissions. The most recent figures are 2 years old but shows that the volume of material for biostabilisation has increased. Biowaste materials tend to move shorter distances for treatment by comparison to residual wastes, which may be hauled across the country to treatment outlets. Over the plan period it is expected that biowaste material generated will be principally treated within the region, and the capacity need has been examined on the basis of serving regional needs. This approach will support the development of treatment facilities of varying scales.

The requirements of the SRWMP indicate the need for new waste management methods, moving away from the previous method of landfill, and biological treatment is clearly an activity which sits on the recycling tier of the hierarchy. It is considered that the proposed increase of throughput at Miltown fits well with the current and future policy of the SRWMP. To meet the targets set out in the SRWMP there is a requirement for the increased processing of municipal waste prior to landfill with a subsequent need for treatment of the residual organic fine fraction resulting from that treatment as well as treatment of source segregated brown bin waste material.

#### **Reasons for Increase of Tonnage**

A number of National waste management policies have been implemented since the initial national waste management policy document “Changing Our Ways” was issued by the Department of the Environment and Local Government in 1998. The policy was linked to the EU waste management hierarchy and was supported by EU legislation (i.e., EU Landfill Directive 99/31/EC) that set targets for reducing volumes of biodegradable waste based on 1995 figures. Under this directive a target was set that biodegradable waste in BMW must be reduced by 65% by 2016, compared with 1995 figures.

The Southern Waste Plan supports the development of additional biological treatment capacity in the region for the treatment of bio-waste (food waste and green waste) primarily from the region to ensure there is adequate active and competitive treatment in the market.

The waste plan also supports the development of biological treatment capacity in the region in particular anaerobic digestion (AD); to primarily treat agro-wastes and other organic wastes including industrial organic waste. However, in the absence of AD facilities in the Southern Region there is a continued need for aerobic treatment of organic waste materials.

Additionally, as of July 2013 the Waste Management (Landfill Levy) (Amendment) Regulations 2013 (SI No 194 of 2013) increased the landfill levy by 10 euro to 75 euro per tonne for each tonne of waste disposed of at authorised landfill facilities. This levy will make pre-treatment more cost effective - particularly in respect of biodegradable municipal waste (BMW) - thereby reducing the quantities and costs of residual disposal to landfill.

Miltown's decision to increase the tonnage throughput at their existing facility is based on the need to meet market demands for organic waste recovery and stabilisation in the Southern Region and to meet the needs of the National Waste Management Plan and the Southern Waste Management Plan to treat biodegradable wastes to produce a useful product from waste and to reduce as far as possible the volume of biodegradable waste being disposed of to landfill. EPA figures for 2020 indicated that the treatment of wastes (organic fines) by biostabilisation increased by 29% in 2020 (up from 152,000 tonnes in 2019 to 196,000 tonnes in 2020). It would be expected based on the pressure experienced by the industry in 2021, that this figure would have increased again in 2021 and 2022.

In the past three years there has been growing pressure on organic treatment facilities from the waste collection sector to increase the throughput of their facilities to keep up with the pressures that are coming from increased waste tonnages collected and physically processed at the front end of the waste collection sector.

In 2021 an Evaluation Report was completed to assess the progress achieved under the Regional Waste Management Plans originally written in 2015. The original Policy Action E17 in 2015 indicated that *"The waste plan supports the development in the region of at least 40,000 tonnes\* of additional biological treatment capacity for the treatment of bio wastes (food waste and green waste) primarily from the region to ensure there is adequate active and competitive treatment in the market. The development of such treatment facilities needs to comply with the relevant environmental protection criteria"*.

The evaluation report indicates that *"Policy E17 varies between the three regions but combined the policy proposes 155,000 tonnes of additional capacity on top of the existing 246,000 tonnes per annum. The latest data from the EPA estimates that there are 687,660 tonnes per annum of biological treatment capacity (including composting, anaerobic digestion and bio stabilisation of organic fines). This data suggests that the capacities proposed within policy E17 have been achieved and exceeded over the plan period. Notwithstanding this achievement, it is recommended that a more detailed assessment of current and projected treatment capacity is undertaken to inform the revised or replacement Plan"*.

However, the market pressures currently being experienced by Miltown Composting from the waste industry to continue to increase their tonnage intake indicate that the outcome of the evaluation report above is not being experienced on the ground. To meet the ongoing increasing demand for aerobic treatment of organic materials (including stabilisation of organic fines), Miltown have been engaged with Tipperary County Council over the past 2 years to seek planning permission to increase their tonnage throughput. Miltown have been successful in receiving permission to increase throughput and are seeking a review of their waste licence from the Agency and it would be hoped that this would be completed in an expedited fashion by the Agency to ensure that this ever increasing waste fraction continues to be appropriately treated under licensed conditions.

The existing composting facility is suited for the recovery of organic waste materials for the following reasons:

- The facility is in a good location in terms of distance from waste generation areas such as Cashel, Thurles, Carrick on Suir, Waterford, Kilkenny and the Southeast.
- The facility is situated in a secluded rural area with the closest sensitive receptor located approximately 900m away;

- The proposed activities are compatible with existing operations taking place on-site;
- The facility has existing controls on site to mitigate potential environmental impacts from the existing or facility. The proposed development of additional maturation sheds will include abatement and environmental controls as part of their design (e.g., additional biofilter for treatment of odorous air).
- Additionally, the new maturation buildings will be constructed to ensure that any leaks or spillages will be contained within the building footprint and managed appropriately to prevent contamination.

In the past number of years Miltown have been requested by their customers to increase the tonnages of organic fines that they accept on site. This is due to increased tonnages that they have been experiencing for processing as part of the production of refuse derived fuel (RDF) material. In addition, the development of the new buildings could allow for potential processing of brown bin and organic fines material on site in the future with the newly developed buildings allowing for the separation of the processes. If the project were not to proceed then it would result in reduced tonnages of biodegradable waste being treated within close proximity to its source and require an increase in transportation of waste material from the Southern Region to other composting processing facilities or to landfill. Miltown complete a recovery activity with the biological treatment of organic fines, transforming the organic fraction material into a lighter and dryer compost like output with a much reduced moisture content.

### **Proposed Change**

To be flexible in the market place Miltown are proposing to increase the capacity of the Miltown Composting facility to be in a position to cater for source segregated bio-waste (i.e., brown bin waste) as well as continuing to continue to stabilize the increasing volumes of organic fines from waste processing facilities. As already outlined in 16.4.6 of the SRWMP, biological treatment is an activity which sits on the recycling tier of the hierarchy. The increased capacity at the site for biological treatment of organic fines would help meet the requirements of the SRWMP targets.

The proposed development will be a continuation of the existing composting process at the facility albeit at an increased throughput. The proposed development will continue to operate as an aerobic composting plant with the capacity to accept a broad range of compostable organic materials including source segregated household kitchen waste; catering wastes; non-hazardous industrial and municipal waste water sludges and organic fines generated in the physical treatment of mixed municipal waste (MMW).

The proposal is to increase the tonnage throughput in the plant from 50,000 tonnes per annum to up to 75,000 tonnes per annum. Due to the relatively short time period that the organic material spends in the composting bays during the process phase in Shed 1 and the waste reception shed it is considered that the existing process facility bays will be capable of processing the increased throughput. However, the capacity to mature the material following processing will require an increase in maturation area at the facility. It is proposed that the old agricultural sheds located to the west of the compost reception shed will be reconstructed as maturation sheds 2B and 3B and fitted with an under floor forced air system to allow for the maturation of organic material in static piles as an extension of the maturation process completed in Sheds 2 and 3.

As part of the proposed development it is proposed that two reconstructed agricultural sheds to the west of the reception shed (i.e., maturation sheds 2B and 3B) occupying a floor area of 3,560m<sup>2</sup> would be used for extended maturation capacity for sheds 2 and 3 to allow for the proposed increase in throughput (see Tables 1 and 2 below). The site office, canteen/changing room and the container used to store lubricating/hydraulic oil and the power washer will remain in the same location as present. The existing biofilters south of Shed 1 and north of shed 3 will not change but there is a proposed third biofilter that would treat extracted air from maturation sheds 2B and 3B from the maturation of organic material. That biofilter would be located to the south of maturation shed 2B.



### **Increased Tonnage Throughput Capacity at Facility**

To increase material throughput and to be able to process up to 75.000 tonnes per annum Miltown will have a flexible system whereby they can continue to biostabilize organic fines material or process of brown bin organic waste for the production of compost (following appropriate decontamination works). Miltown have allowed for both scenarios with regard to Animal By-Product (ABP) Regulation compliance and adherence to the effective biostabilization of organic fines and/or the production of Class 2 compost material. The processes involved in each scenarios are outlined below;

#### **Scenario 1: Organic Fines Stabilisation**

As long as the demand for processing organic fines continues in the market place Miltown would adhere to the Animal-by-Product Type 8 processing standard which would negate the requirement for pasteurisation because the material would still be considered waste and could only be used at licensed waste facilities. The Type 8 process allows for an efficient composting and biostabilization regimen which would result in full maturation of the material in a 6 week period. One of the main obstacles for the processing of additional tonnes of material at the site is maturation capacity once the material has been composted in the vessel system. The development of two additional maturation sheds will provide the capacity to appropriately mature the material prior to transfer off-site.

The proposed development will continue to process material in the same way as the existing facility (i.e., blending with bulking agents, composting in separate enclosed bays, maturation in windrows and post treatment to remove impurities). Due to the modular lay-out, the composting tunnels/bays will be able to be operated independently, which will provide flexibility in processing different organic waste streams. The finished product can, depending on quality, either be used for horticultural and agricultural purposes, or as landfill cover.

#### **Process Capacity**

Based on the current processing regimen at the Miltown facility the retention time in the process bays during the intensive composting process would be approximately 2-3 weeks. The capacity of the process bays (as outlined in the site storage plan) is outlined in Table 1 below:

**Table 1 – Existing Estimated Process Capacity at Miltown Composting**

Area Ref.	Floor Area	Max Stockpile Height (m)	Volume (m <sup>3</sup> )	Estimated Tonnage
<b>Compost Processing Area - Composting</b>				
Process Tunnel A	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	168.75
Process Tunnel B	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	168.75
Process Tunnel C	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	168.75
Process Tunnel D	150 m <sup>2</sup>	3.0	450 m <sup>3</sup>	337.5
Process Tunnel E	150 m <sup>2</sup>	3.0	450 m <sup>3</sup>	337.5
Process Tunnel F	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	168.75
Process Tunnel G	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	168.75
Process Tunnel H (process bay)	111 m <sup>2</sup>	3.0	333 m <sup>3</sup>	249.75
Process Tunnel I (old mixing bay)	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	168.75
Process Tunnel 1	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	157.5
Process Tunnel 2	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	157.5
Process Tunnel 3	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	157.5
Process Tunnel 4	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	157.5
Process Tunnel 5	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	157.5
Process Tunnel 6	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	157.5
Process Tunnel 7	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	157.5
Process Tunnel 8	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	157.5
<b>TOTAL ESTIMATED PROCESS BAYS VOLUME / TONNAGE</b>			<b>4,383</b>	<b>3,197.25</b>

The Miltown Compost facility has the capacity to process an estimated 3,197.25 tonnes of organic material at any one time. The time frame for the material to be processed in the primary composting tunnels is two to three weeks. Therefore, the facility has the capacity to process between 1,065 and 1,598 tonnes of material per week which would result in the facility being able to process between 55,500 tonnes and 83,096 tonnes. The proposed maximum capacity to be accepted at the facility as part of the licence review would be 240 tonnes per day which would result in a maximum weekly input of 1,440 tonnes and an annual maximum of 74,880 tonnes. It is not expected that the absolute maximum tonnage would be processed at the facility due to market fluctuations restricting material deliveries and also potential process restrictions (e.g., batches potentially requiring longer process times). Therefore, to allow for flexibility it is calculated that the facility could process up to a maximum of 75,000 based on the existing process infrastructure.

### **Maturation Capacity**

Following the initial composting process the material is then matured for up to four weeks to allow for the material to appropriately stabilise. In Summer 2022 Miltown made a Specified Engineering Works (SEW) submission for the construction of maturation bays in sheds 3 and 4 at the site to ensure appropriate material separation. These bays are included in the maturation capacity estimation in Table 2 below.

**Table 2 - Existing Estimated Maturation Capacity at Miltown Composting**

Area Ref.	Floor Area	Max Stockpile Height (m)	Volume (m <sup>3</sup> )	Estimated Tonnage
<b>Compost Maturation Area</b>				
Shed 2 – Static Pile Bay 1	351 m <sup>2</sup>	3.0	1,053 m <sup>3</sup>	737
Shed 2 - Static Pile Bay 2	310 m <sup>2</sup>	3.0	930 m <sup>3</sup>	651
Shed 2 - Static Pile Bay 3	310 m <sup>2</sup>	3.0	930 m <sup>3</sup>	651
Shed 2 – Static Pile Bay 4	351 m <sup>2</sup>	3.0	1,053 m <sup>3</sup>	737
Shed 3 – Static Pile Bay A	220 m <sup>2</sup>	3.0	660 m <sup>3</sup>	462
Shed 3 – Static Pile Bay B	150 m <sup>2</sup>	3.0	450 m <sup>3</sup>	315
Shed 3 – Static Pile Bay C	200 m <sup>2</sup>	3.0	600 m <sup>3</sup>	420
Shed 3 – Static Pile Bay D	400 m <sup>2</sup>	3.0	1,200 m <sup>3</sup>	840
Shed 4 – Static Pile Bay E	121m <sup>2</sup>	3.0	363 m <sup>3</sup>	254
Shed 4 – Static Pile Bay F	121 m <sup>2</sup>	3.0	363 m <sup>3</sup>	254
Shed 4 – Static Pile Bay G	110 m <sup>2</sup>	3.0	330 m <sup>3</sup>	231
<b>TOTAL ESTIMATED MATURATION BAYS VOLUME / TONNAGE</b>			<b>7,932</b>	<b>5,552</b>

The Miltown Compost facility currently has the capacity to mature an estimated 5,552 tonnes of organic material at any one time. The time frame for the material to be matured is approximately 5 weeks. Therefore, the facility currently has the capacity to mature approximately 57,740 tonnes per year at maximum capacity and does not allow for any flexibility in potential extended maturation timeframes. This would result in the facility being able to process material but be unable to mature much of the additional material proposed in the licence review in the existing maturation sheds if the maturation process was to take 5 weeks to complete. To accommodate the additional throughput, in terms of maturation capacity, the development of the additional maturation sheds 2B and 3B will provide up to 25,000 tonnes of additional maturation capacity. It is not expected that the absolute maximum tonnage would be processed at the facility due to market fluctuations restricting material deliveries and also potential process restrictions (e.g., batches potentially requiring longer process times). Therefore, to allow for flexibility it is estimated that facility would require additional maturation capacity to mature up to a maximum of 75,000 based on the existing process infrastructure.

Waste reception and blending will continue in the reception shed area and maturation will continue to be carried out in the covered yard area to the east of Shed 1 and in Sheds to the east. The site office, canteen/changing room and the bunded area in the reception building used to store fuel, lubricating/hydraulic oil and the power washer will remain in the same location as present. The biofilter location will not change but the volume will be increased to accommodate increased air flow from the process bays and the new reception area.

## **Scenario 2: Brown Bin Compost Production**

In the event of a change in the market and the supply of brown bin organic waste is increased as has been predicted in the Regional waste plans, Miltown would change their intake to this material. In order to adhere to the ABP regulations Miltown would switch over to the European processing standard (all the material is kept equal to or above 70°C for 1 hour with a particle size of 12mm) to allow for proper pasteurization to take place. In order to achieve this Miltown would convert four of the current 150 tonne APB bays at the eastern end of the process shed (by the exit to the middle covered yard) into 2 x 300 tonne EU standard pasteurisation bays. As pasteurisation can normally be achieved in 3-4 days, this will give adequate pasteurisation scope to cater for the proposed increased tonnage. Also as the material would be in the pasteurisation units for only 3-4 days and is aerated when filling and emptying, the rate of composting is not reduced to any significant degree.

As above, the existing maturation sheds and the proposed new maturation sheds would be used for maturation, giving approximately 4-5 weeks maturation capacity. Based on this Miltown would have adequate capacity to process the proposed increased tonnage.

### **Mitigation Measures**

A number of improvements and replacements have been introduced to the existing site and number of others are proposed to be introduced on site for the protection of the surrounding environment with the site processing up to 75,000 t/a.

- A containment tank (47.54 m<sup>3</sup>) is in place as part of the leachate recirculation system at the southwest corner of Shed 1. This tank can be used for the storage and recirculation of potentially contaminated surface water runoff from the ramped waste intake area to ensure that any runoff is directed in a controlled manner to the on-site contaminated water/leachate recirculation system. The impacted water will be used as part of the composting process (dampening the pre-composting bays in Shed 1). This system will ensure that contaminated liquids related to deliveries of waste material are contained and controlled and will not migrate to soils or groundwater.
- As part of the revised leachate collection system, collected impacted water from the composting process can be directed initially to an 11.36m<sup>3</sup> leachate tank in the reception area and then to the new pump/sump tank located south of the amendment storage area, from where it can be pumped to the recirculation tank for recirculation into the process. This system ensures that contaminated liquids related to the process are contained within the building and recirculation system and will not migrate to soils or groundwater.
- Depending on the volume of liquid directed to the pump sump tank through the leachate collection system the collected liquid can be manually pumped from the pump/sump tank back up to the filtration system in the pump house for re-circulation to the pre-composting bays. For large volumes of liquid release (i.e., large spill or fire water) automatic pumping will take place to pump any possible initial firewater or major spillage liquid back up the new consigned contaminated water storage tank. This pump/sump tank has a high level liquid alarm which sends a text to the site managers and operators in the event of a problem. This system will ensure that any contaminated liquids related to site activities or fire suppression are contained and controlled and will not migrate to soils or groundwater.
- The existing air management system and biofilter treatment will continue to collect and treat air from the existing reception shed and process shed (Biofilter 1) and maturation sheds 2, 3 and 4 (Biofilter 2). Based on the sampling results at A2-1 (biofilter 1) and A2-2 (biofilter 2) the residence time for treatment in the biofilters is adequate to appropriately treat the exhausted air from the sheds. The motor on the fans are fitted with variable speed controllers to control the air volume extracted from the buildings
- Non-impacted stormwater from the site shed roofs and yard areas are diverted to the existing Integrated Constructed Wetlands (ICW) onsite. The ICW ponds provide treatment on the stormwater from the site to ensure that it receives additional treatment before discharge from the site to reduce the potential for impacts to soils or groundwater receptors.

### Proposed Further Mitigation Measures

To further reduce further potential impacts on environmental receptors from the proposed development, Miltown also have some additional proposed mitigation measures outlined below;

- It is proposed by Miltown that non-impacted surface water from the site shed roofs and yard areas will be diverted to the existing Integrated Constructed Wetlands (ICW) onsite. The ICW ponds will provide treatment on the non-impacted (i.e., open yard and roofs) surface water from the site to ensure that any surface water produced from the site receives additional treatment before discharge from the site to reduce the potential for impacts to soils or groundwater receptors.
- Any new fans and motors for air input to the maturation bays in sheds 2B and 3B would be situated within the fabric of the building to mitigate potential noise from the fan/motor operations. Metal cladded walls in both sheds has the capacity to reduce noise migration from the fans located within the building by up to 24dB.
- Any air extraction fans installed at maturation sheds 2B and 3B for the removal and treatment of exhausted air within the building will be located at the south of the shed close to the proposed new biofilter. Although it is not anticipated that the operation of the air extraction fans at the south of Building 2B will result in noise nuisance from the site, the fans will be fitted with an automation system whereby, if required, fan speeds can be reduced (particularly at night) to reduce potential noise impacts on sensitive receptors in the area.
- The proposed new maturation sheds 2B and 3B would be designed and built with air input for the maturation process and with an air extraction and treatment system that would be exhausted through a dedicated biofilter system. In order to meet the requirements of the current 'Draft BAT Conclusions Specific to Indoor Composting for Vessel or Enclosed Building Design' - air extraction should be designed and maintained to move and handle the volume of air to provide a clear working environment. It is intended to aspirate the proposed maturation sheds 2B and 3B at a maximum of 2.5 air changes per hour, this will require the additional air to be treated in the biofilter

