

Proposed Expansion of Midleton Distillery, Midleton, Co. Cork

Environmental Impact Statement Volume 3. Non Technical Summary

November 2011



Irish Distillers
Pernod Ricard

Proposed Expansion of Midleton Distillery, Midleton, Co. Cork

Non Technical Summary - Environmental Impact Statement, November, 2011.

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1. Introduction

Overview

Irish Distillers Limited (IDL) is seeking a 10 year permission to expand its facilities at Midleton Distillery to cater for increased international demand for Jameson and Irish Whiskey.

IDL is a wholly owned subsidiary of Pernod Ricard. IDL's head office is at Simmonscourt Road, Dublin, although it operates from a number of locations around the country, including Midleton Distillery. The Distillery complex currently occupies a 45 ha site on the outskirts of Midleton town (Figure 1.1). It operates 24 hours a day, 7 days a week for an average of 303 days a year.

The Midleton Distillery includes a visitors' centre and produces a range of IDL spirits, including Jameson, Paddy, Powers and Midleton Very Rare Irish Whiskey. In addition to the Irish Distillers Brands, Midleton also supplies bulk whiskey for blending in many other well known Irish Whiskey brands and Irish Cream Liqueurs.

The distillery is expected to produce 33.5 million litres of alcohol (MLA) in 2011. The objective of this project is to increase production capacity at the distillery to 64 MLA per annum. This increase in capacity is proposed on a phased basis, by installing new process plant, to either supplement or replace existing plant.

Distillery & Irish Whiskey Production

The Irish Whiskey manufacturing process is most easily divided into two distinct phases:

1. The production of spirit from cereals (distillation).
2. Spirit Ageing in oak casks over time into whiskey (maturation).

Phase 1 takes approximately four days, after which the new make spirit is filled into oak casks of approximately 200 litres in capacity.

Phase 2 is the maturation of the immature spirit into Irish Whiskey over time in oak casks (by law a minimum of three years). This typically takes five years. Aged premium whiskeys can take 12 years, 18 years, or even longer to mature.

During the maturation period the casks of whiskey remain undisturbed in a maturation warehouse. A complex interaction develops between the spirit, oak wood and oxygen from the air to produce the unique flavour and colour associated with a mature Irish Whiskey. The production flow and stages of whiskey production at Midleton Distillery is illustrated on Figure 1.2.

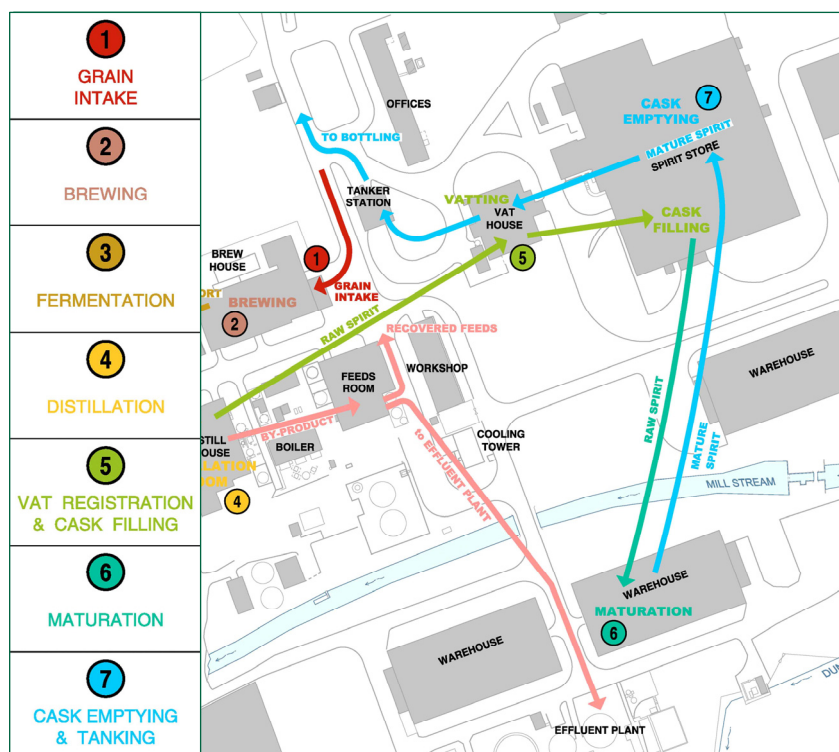


Figure 1.2 - Whiskey Production Process

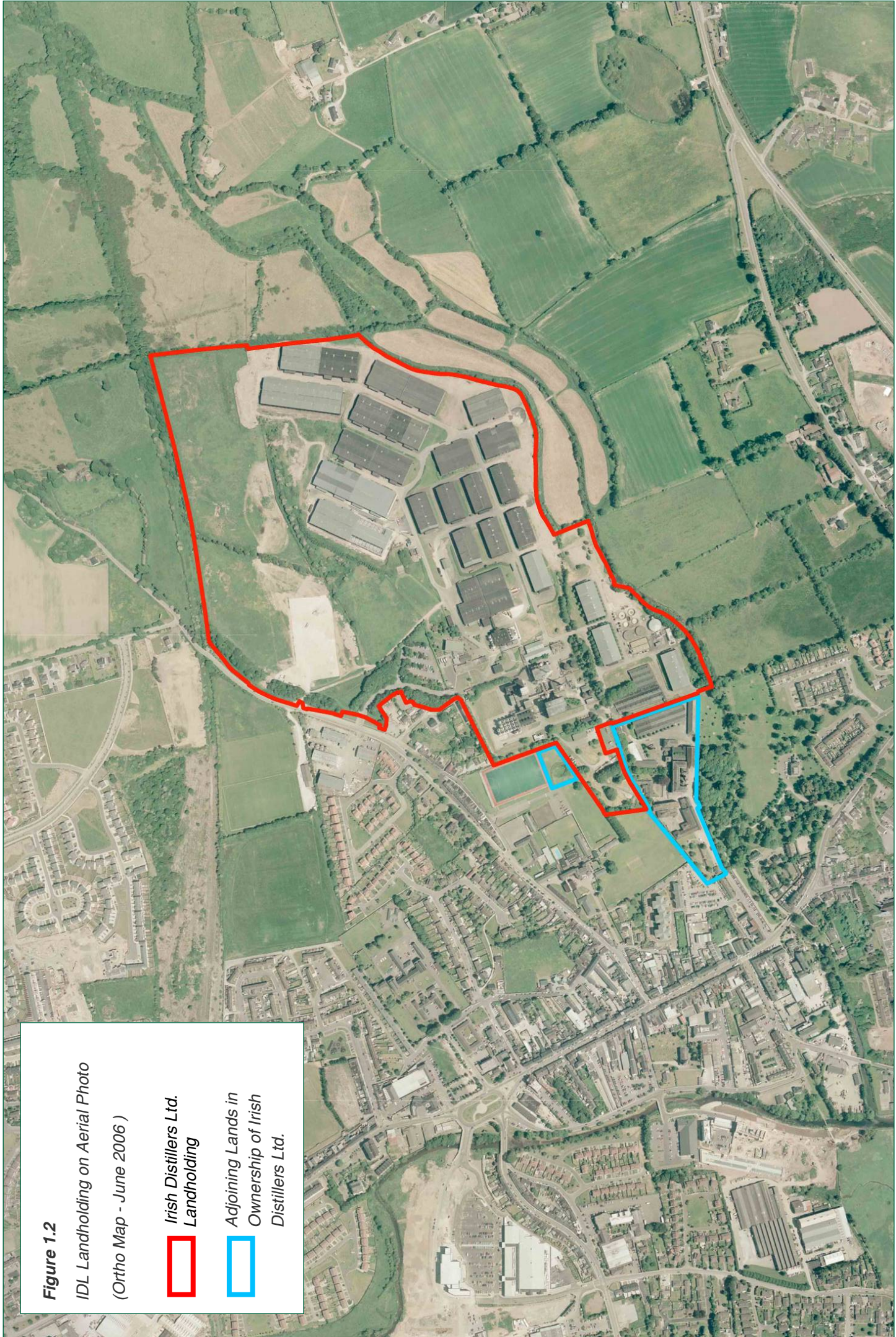


Figure 1.2

IDL Landholding on Aerial Photo

(Ortho Map - June 2006)



**Irish Distillers Ltd.
Landholding**



**Adjoining Lands in
Ownership of Irish
Distillers Ltd.**

2. Need for the Scheme

The Market

The Irish Whiskey category is the fastest growing spirits category worldwide. This growth is driven by Jameson whose global share of the Irish Whiskey Category has grown from 47% in 2000 to 61% in 2008 (source: Impact Databank November 2009). Global sales of Jameson are forecast to exceed 3 million cases in 2011 and 6 million cases by 2018. It is an objective of the company for the Jameson brand to become a top five global spirit brand, selling 10 million cases per annum. In addition a number of IDL's other brands, such as Paddy, Powers Gold Label, Redbreast and Midleton Very Rare, are growing their market share.

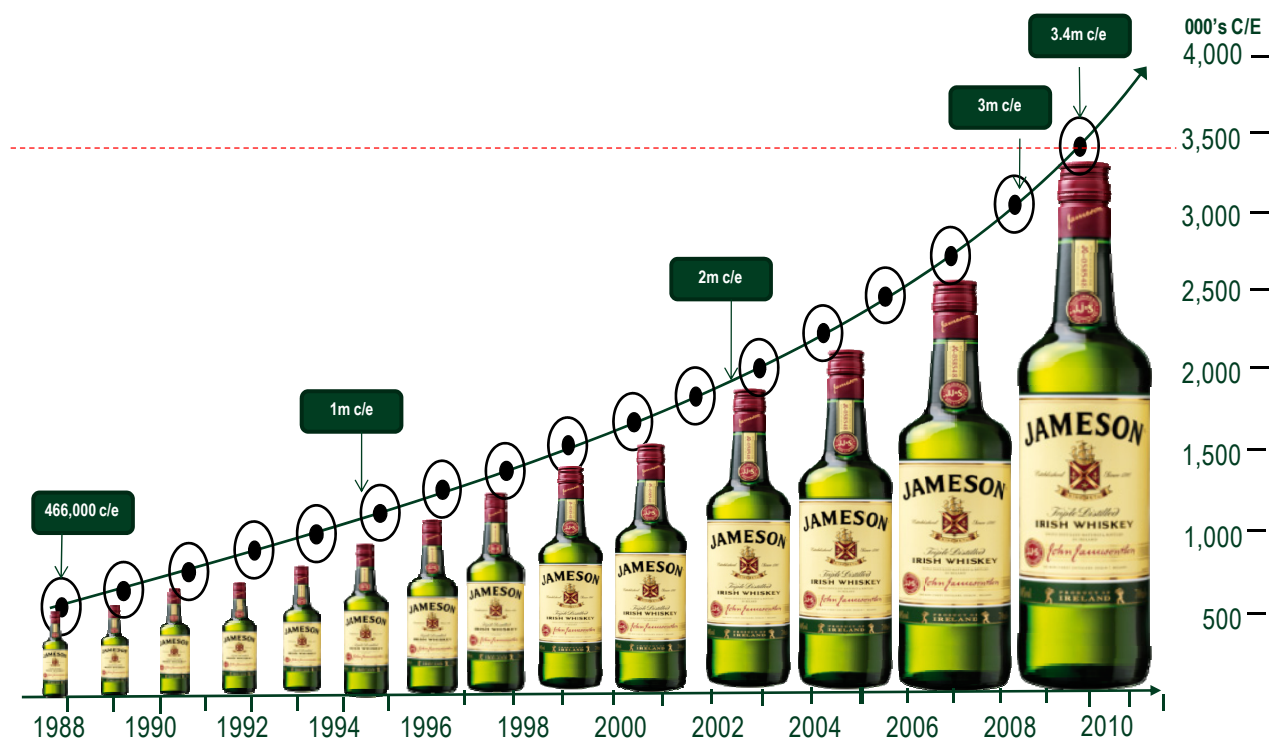


Figure 2.1 - Growth of Jameson

The growth, therefore, of Midleton Distillery is intrinsically linked not only with the growth of IDL's key brand, Jameson, but with the growth of the Irish Whiskey Category globally.

Midleton Distillery Capacity

The new Midleton Distillery complex was commissioned and began to produce whiskey in 1975 and at that time had a capacity to produce 21 MLA per annum. Significant investment was made in the Distillery by Pernod Ricard in 1999 and as a result the capacity increased to 33.5 MLA per annum. Midleton has been near full capacity for the last two years. If output capacity is to be increased to 64 MLA per annum, it is necessary to supplement and / or replace existing production plant.

3. Planning Policy Context

A review of Government policy highlights the importance of the agri-food sector in the economy and that it accounted for €8.7 billion in exports in 2007. Despite the challenging conditions in the global economy the agri-food sector is identified in policy and action plans as a sector which can continue to grow through the development of new markets and growth in market share. It is estimated that exports in the agri-food sector could rise to €10 billion by 2011.

In the agri-food sector, alcoholic beverage exports are estimated to be worth €1.2 billion and it is one of the strongest potential growth areas. It is envisaged that alcoholic beverages exports will grow by a further €0.35 billion or 27% by 2011. Irish Whiskey is recognised as the key driver within this sector as it continues to gain market share and penetrate new markets. Given IDL's dominance of the Irish Whiskey market, the continued growth and expansion of the alcoholic beverages sector may be closely linked to the future expansion of Midleton Distilleries.

The important role that Midleton has to play in the future development of the region and success of the suburban rail project is outlined in the regional plans and highlighted in the strategic policies and objectives of the Cork County Development Plan 2009. Given its designation as an integrated employment centre, suitable serviced land in Midleton will have to be developed in a sustainable manner in order to deliver the population and employment growth envisaged in the CASP Update.

The expansion of the distillation capacity in Midleton Distillery will consolidate existing employment and deliver increased direct long-term employment in Midleton as well as supporting indirect employment growth. The principle of the expansion of Midleton Distilleries is consistent with national and regional level policies supporting the strategic growth of the food and beverage industries.

At a local level, the proposed development is consistent with the objectives of the 2009 Cork County Development Plan (2009 CDP) and the 2011 Midleton Electoral Area LAP (2011 Midleton LAP).

The 2009 CDP identifies Midleton as an Integrated Employment Centre, targeted for strong growth in employment over the lifetime of the plan. The importance of the agri-food sector to the County is highlighted in the 2009 CDP in section 5.5.7. ECON 3-1(a) of the 2009 CDP indicates that it is an objective to promote and preserve industrial areas for appropriate industrial development.

The 2011 Midleton LAP recognises Midleton Distillery as a significant employer in the town and is supportive of the expansion of distillation capacity on the site. The 2011 Plan notes that:

"3.3.10 Midleton Distillery, on the east side of the town centre, is designated under the Major Accidents (Seveso) Directive. The Distillery is a major local employer and has significantly expanded its operations in Midleton over the previous plan period.

3.3.11 In order to meet growing demand for Irish Whiskey (in particular Jameson) Irish Distillers Limited have plans to double the capacity of the Distillery in the next 5 years.

3.3.12 The potential for Irish Distillers Limited to expand on the current site is limited but the required increase in the distillation capacity can be accommodated."

While there is no statutory development plan in place for Midleton Town Council, the proposed development is consistent with the general policy objectives of the 2009 draft Plan, which are to strengthen and encourage the growth of employment opportunities and to improve tourism facilities. The proposals are also 'open to consideration' under the previous draft zoning objective of 'Town Centre / Mixed Use' and we consider the proposals to be consistent with the objectives of the previous draft Town Plan's zoning provisions.

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Seveso issues are dealt with by the Health Safety Authority, under regulations to control major accident hazards. The proposed development will not result in any increased risk off-site, indeed the provision of enhanced fire water retention capacity will result in a reduction of the off-site risk.

4. Project Description and Process Overview

Overview

The distillery produces two main types of Irish Whiskey; Pot Still Whiskey and Grain Whiskey. Pot Still Whiskey is distilled in a batch process from a mash of barley and malted barley. Grain Whiskey is distilled in a continuous process from a mash of corn (maize) and malted barley.

In its simplest form, the barley/malted barley/maize is first brewed and fermented with yeast to make beer and the beer is then distilled to extract the alcohol. The component parts of the overall whiskey making process are outlined in Figure 4.1. The increase in capacity to 64 MLA per annum, will be achieved by the installation of new process plant to either supplement or replace the existing production plant as highlighted in Figure 4.2. A description of the process and proposed expansion is provided under the following headings:

Grains Intake: - Three raw materials, maize, malt and barley are delivered to site in trucks. No expansion of the grains intake area is required as sufficient capacity exists to cater for the requirements in the medium term.

Brewing: The existing brew house contains the milling and brewing equipment for both the barley and corn lines. Spent grains from the process are transferred to feeds recovery. A proposal to provide an extension to the north of the brew house is the subject of a separate planning application. The existing yeast system and feed recovery plant have sufficient capacity for the expanded distillery.

Fermentation: There are currently 24 fermenters on site, 10 for the barley line and 14 for the corn line. There will be 12 new barley fermenters and 12 new corn fermenters installed on a phased basis during the project which will bring the total number of fermenters to 48.

Distillation – Pot Stills: The still house is where the core process in the distillery takes place. A new “showcase” still house (21.5 m high), located in the ‘Garden’ to the west of the existing still house will provide the required capacity for the barley line distillation process. The proposed still house will initially house three new copper pot stills, but is designed to accommodate a further three pot stills, which will be added in time.

The receivers associated with the pot stills will be located in a new bunded tank farm located to the west of the proposed still house. In total 27 receivers are proposed, ranging in capacity from 60,000 litres to 100,000 litres.

Column House – Distillation Columns: The existing Wash and Grain distillation columns are located in the existing still house. These will be replaced by 6 new distillation columns which will be installed in a new stand alone column distillation building (43.7m high) located to the south of the existing still house.

The receivers associated with distillation columns will be located in a new bunded tank farm adjacent to the new column still building. Ten receivers are proposed to be installed, ranging in capacity from 100,000 litres to 190,000 litres.

Post Distillation Phases - Maturation

Once the alcohol is distilled, it is vatted and filled into oak casks of approximately 200 litres in capacity. The immature spirit matures into Irish Whiskey over time in the oak casks (a minimum of three years). Once the whiskey has matured to the appropriate age it returns to the spirit store, is vatted and then transported by tanker to IDL’s bottling facilities.

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This project does not include any expansion to the Vat House, Spirit Store or Tanker Station as they have sufficient capacity to facilitate the proposed increase in production. There is also adequate maturation capacity on site and in IDL's recently permitted satellite maturation facility in Dungourney, Co. Cork to accommodate the proposed expansion.

Utilities and Services

Utilities and services on site will require expansion and upgrade to accommodate the proposed project; such measures will include expansion to the process water system, waste water treatment plant and sprinkler system, a new fire water retention pond, expansion to the electrical substation and relocation of the production services waste segregation area.

Waste Management & Sustainability

The IDL facility is licensed by the EPA under the IPPC licensing system and as such, the management of waste on site is subject to conditions stipulated in the IPPC Licence (P0442-01). IDL's waste management practices are further enhanced by the site's accreditation to ISO 14001 Environmental Management System (EMS). Both the construction and operational phases of the proposed expansion project will result in the generation of wastes.

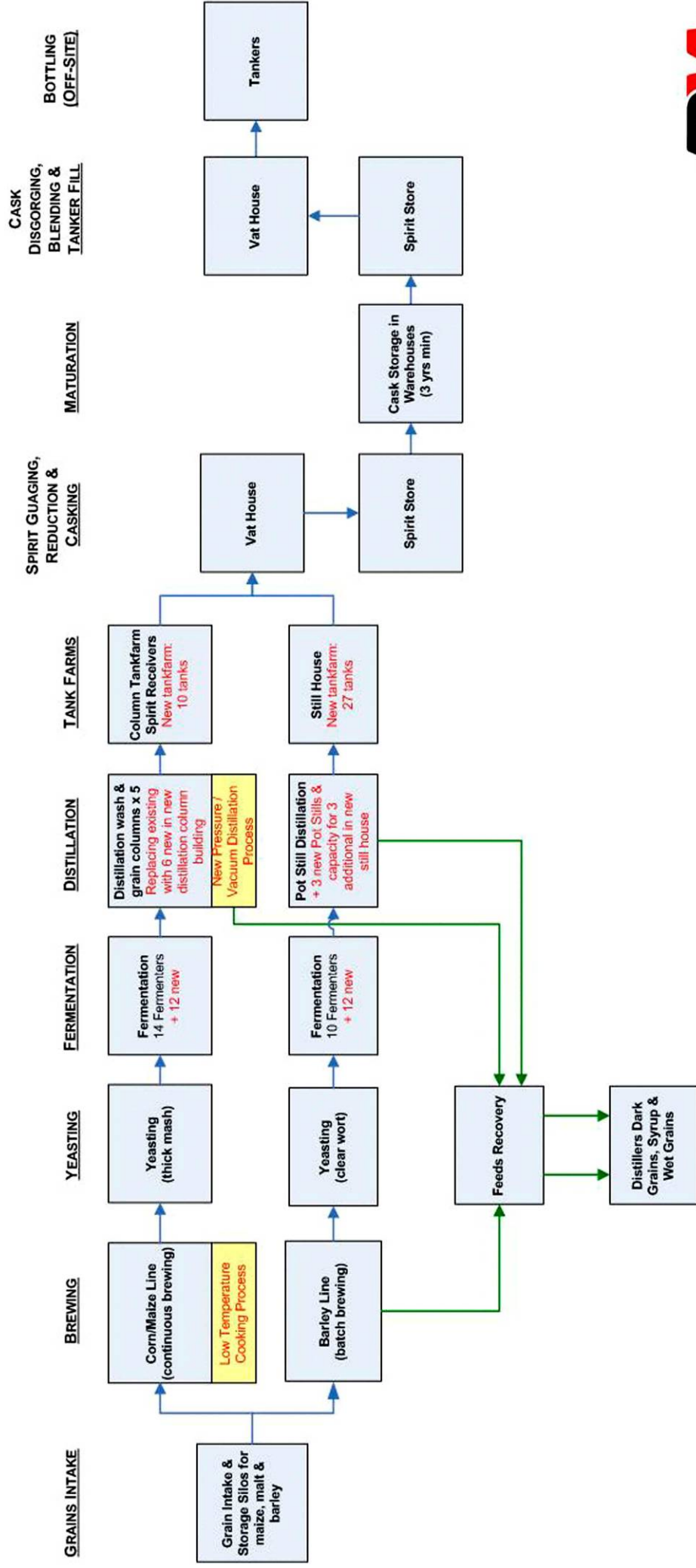
Construction waste will be managed, segregated, recycled and disposed of as part of the overall Construction Environmental Management Plan (CEMP) and in accordance with IPPC Licence requirements and national and EU legislation.

IDL expect to maintain their current recycling rates of in excess of 95% for the current recurring waste stream fraction.

Sustainability will be considered in all aspects of the design. Key initiatives will include:

- Proposal to seek LEED or BREEAM certification for the new still house.
- Proposal to recycle abstracted groundwater for process use following use as fermenter cooling resulting in 20% less water consumption per litre of alcohol distilled.
- Significant energy reductions associated with new distillation processes resulting in 33% less energy consumption per litre of alcohol distilled.

Irish Distillers Ltd – Process Blockflow Diagram



Energy savings are streamlined on these two main process users & will allow the existing boiler capacity to service the expanded distillery



Figure 4.1
Production Flow



EXISTING BUILDINGS AND INFRASTRUCTURE

- A Jameson Experience Heritage Centre
- B The Old Distillery
- C Existing Brew House
- D Existing Fermenters
- E Existing Still House
- F Existing Feeds Recovery Building
- G Existing Vat House
- H Existing Spirit Store
- I Existing Workshops
- J Existing Offices & Laboratory
- K Existing Warehouses
- L Existing Firewater Retention Pond
- M Existing Car-Park

PROPOSED DISTILLERY EXPANSION

- 1 New Still House
- 2 New Still House Receiver Tank Farm
- 3 New Distillation Columns Structure
- 4 New Distillation Columns Tank Farm
- 5 New Fermenters
- 6 New Sub-station Extension
- 7 New Firewater Retention Pond
- 8 Wastewater Treatment Plant Expansion
- 9 New Production Services yard & Shed
- 10 New Sprinkler Tank and Pump House
- + New ground water production Wells

CURRENT PROJECTS

- X New Water Treatment Plant
- Y New Brewhouse Extension
- Z New Warehouses

Figure 4.2
Proposed Distillery
Expansion



5. ALTERNATIVES CONSIDERED

It is a requirement of the EIA process that viable alternatives to the key project decisions have been evaluated in the context of environmental impact. The development of the proposals contained in this planning application has involved the following key project decisions:

- Why build this expansion?
- Consideration of options off site
- Selection of the required areas within the site
- Selection of the preferred process plant
- Selection of the preferred arrangement of the proposed buildings and structures

Why build this expansion?

Global sales of IDL's key brand, Jameson, reached 3 million cases in 2010 and are forecast to reach 6 million cases by 2018. Pernod Ricard Group predict that the brand has the potential to be a top five global spirit brand selling up to 10 million cases per annum in the future.

In a commercial market, if companies do not respond to growth in demand then there is a risk that they will lose market share, undermining existing demand. IDL's commercial appraisal has identified the need to increase output of its whiskey from 33.5 MLA per annum to 64 MLA per annum.

Consideration of Off Site Options

IDL undertook a detailed process of evaluation to determine the most appropriate way to increase output. There are two real alternatives to increase output, one is to develop the existing Midleton distillery site and the other is to develop a new separate site. The option of developing additional capacity at a second site was not seriously considered as in terms of operation and efficiency a single site would be preferable to a number of sites at various locations throughout Ireland.

The option of accommodating the required development on multiple sites was discounted early in the process as the proposed development involving the production of whiskey would be deemed to be a Seveso establishment. This has potential significant impacts on the area of land required to facilitate the development and adjoining land uses. From a land use planning perspective we consider that it would be more desirable to have a single Seveso establishment within the County, rather than a number of smaller Seveso sites. Furthermore the level of societal risk will be minimised by maintaining a single development, as opposed to a number of smaller developments.

The two options available, therefore, were to develop the existing site, or move the entire operation to a new location.

IDL and its parent company Pernod Ricard are keen to continue the almost 200 year tradition of distilling in Midleton and to further establish Midleton as the home of Irish Whiskey. The search, therefore, for alternative sites was confined to Midleton Electoral Area. Only two sites of a suitable size with appropriate zoning were available in the electoral area. Neither alternative site offered sufficient advantages to justify the relocation of the entire operation. It was, therefore, decided to proceed with a proposal to expand the existing distillery.

It was established that the existing site has the capacity to accommodate the expansion and has a number of essential site requirements available in order to meet the expansion criteria, and ensure the success of the project.

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Site Evaluation

In assessing the suitability of the existing IDL site, the evaluation process confirmed:

- The available utilities infrastructure onsite is capable (with upgrade) of meeting IDL's expansion needs.
- All of the required development criteria are fulfilled at the IDL site.
- The evaluation process did identify some important environmental factors that would require careful treatment by IDL in the planning of the proposed facility.

The early identification of these factors from the site evaluation process has supported the scoping exercise for the preparation of the project EIS and ensured appropriate mitigation measures have been incorporated into the design process.

Selection of the Preferred Process Plant

The increase in capacity will be achieved by the installation of new process plant to either supplement or replace the existing production plant. The proposed expansion will be based on the existing specialised distillery process of milling, mashing/cooking, fermentation and distillation on site. The new process equipment is being designed to maximise environmental sustainability.

Selection of Preferred Development Location within the Site:

The site is of sufficient size and configuration to satisfy IDL's requirement for plant expansion on site. It was determined at an early stage in the project that the south western area of the site i.e. the distillery process area was the most viable option for the expansion project. Of the 45 ha site, an area of approximately 10.4 hectares will accommodate the majority of the capacity expansion project.

The preferred locations for the buildings and plant are highlighted in Figure 4.2 above and indicated as numbers 1-10.

Selection of the Preferred Arrangement of the Proposed Buildings

The design of the proposed expansion has also considered alternative building arrangements and configurations. The preferred layout and building arrangements were selected for design development based on process operations, greater internal site efficiency, reduced site infrastructural impact, cost, minimum separation distances defined by fire safety and insurance requirements and minimisation of environmental factors such as noise and visual impact.

The site strategy takes cognisance of the existing conditions such as road infrastructure, proximity to existing distillery functions and geological rock formations. The proposed design aims to minimise ground-work and potential off-site impacts during the construction stages and maximise efficiencies and functionality during the production life of the distillery.

6. Construction Activity

The major construction phase is currently estimated to begin in Spring 2012 (subject to planning) and be essentially completed by Autumn 2013. The works will be carried out at different locations within the existing IDL Plant.

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The construction scope of work can be summarised as follows:

- Site Establishment Works
- Infrastructural and Site Services / Utilities Works
- Construction of a new Still House, and associated Tank Farm
- Construction of a new Distillation Columns Building and associated Tank Farm
- Construction of a Fire Water Retention Pond
- Installation of new Barley & Grain Fermenters
- Expansion of the existing Waste Water Treatment Plant
- Extension of existing substation
- Installation of groundwater production wells
- Increased capacity of the Sprinkler Reservoir

All construction-related potential environmental impacts are considered under the respective chapter headings within the EIS. Subject to planning approval, the management of all construction related activities and associated residual environmental impacts will be controlled via the following documented plans:

- Construction Management Plan (CMP)
- Construction Environmental Management Plan (CEMP)

Construction Management Plan (CMP)

The CMP will include several key construction management elements in addition to Construction Safety Arrangements and Construction Logistics, including a Traffic Management Plan.

Construction Safety Arrangements

As required by the Safety Health and Welfare at Work (Construction) Regulations 2001-2006, a Project Supervisor Design Process (PSDP) has been appointed to co-ordinate the design effort and to address and minimise construction risks during the design period. A Preliminary Health and Safety Plan will be passed on to the appointed Project Supervisor Construction Stage (PSCS) which will then be developed into a Construction Health and Safety Plan. The construction areas will be delineated and will be under the control of the PSCS who will co-ordinate and supervise all safety aspects of the project under the remit of a Safety File.

Construction Logistics including Traffic Management Plan

Traffic issues associated with the project will be addressed under a Traffic Management Plan as part of the CMP. These will mainly concern the delivery of construction materials and the transportation of construction workers and supervisory staff to the site. There will be up to 20 vendor equipment packages associated with the project and at peak it is envisaged to have up to 50 truck deliveries a day and up to 250 construction workers on site.

Standard working hours for construction will be 8.00am to 6.00pm Monday to Friday and 8.00am to 4.30pm on Saturday (if required). A temporary car park will be constructed within the site to cater for construction personnel with a provision for 200 spaces. Car pooling will be encouraged to minimise traffic numbers and start and finish times will be arranged to minimise disruption to the existing IDL operation, as well as to minimise interference with local community activities.

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Construction Environmental Management Plan (CEMP)

A separate plan to identify and control potential environmental impacts associated with the construction phase will be developed and implemented. This will address key environmental mitigation measures as identified in each specific chapter of the EIS and will also incorporate any environmental related planning conditions stipulated in the planning permission.

A Construction and Demolition Waste Management Plan (WMP) will be developed as part of the CEMP with the objective of minimising waste arising from construction activities.

Site Establishment and Building Works

Initial site development will include surveying and the establishment of local benchmark levels, the protection of agreed vegetation, the removal / re-routing of designated existing services and set up of construction fencing. Building construction works will commence in spring 2012 (subject to planning) and will be substantially complete in autumn 2013.

IDL have applied for a 10-year permission because, while the works will be substantially complete within an 18 month to 2 year period, fermenters and pot stills will be added based on production demand throughout the 10 year period.

7. LANDSCAPE AND VISUAL ASSESSMENT

A Landscape and Visual Assessment was carried out to identify the visual and landscape character impacts of the proposed development. The site is located just east of the town centre and the existing structures are already a visible entity throughout the town and as far away as 5km. Neighbouring lands include the Jameson Experience Midleton and Midleton College, both containing Protected Structures.

A number of other Historic and Protected Structures are scattered throughout Midleton and the north-eastern extents of Special Protection Area 004030 (Cork Harbour SPA) and Special Area of Conservation 001058 (Great Island Channel SAC) extends to Midleton Town Centre, approximately 1km from the site. The site is visible from the majority of these, as well as the National Secondary Road N25.

The distillation of whiskey has a long history in Midleton dating back to 1825. The proposed development is directly linked with this industry. Multiple structures, many of them unique industrial architectural pieces, are being proposed within the confines of the existing facility. This would provide cutting-edge whiskey distilling processes and ensure the viability of the site for many years to come. Amongst the proposed development are a 44m tall Distillation Column Structure and a 21.5 m tall Still House. Some existing structures on site reach heights of 48m.

The construction process results in the removal of some mature and semi-mature trees, approximately 6 of them currently providing some degree of visual screening. Sixty linear metres of a long-standing Mill Stream, which has been dry and unused for many years, will be culverted and covered. Approximately 25,000 cubic metres of soil will be redistributed to other parts of the site as a result of the proposed fire water retention pond excavation. The bulk of this will be located between the older and recently constructed warehouses to the eastern portion of the site. This earthen formation will be planted with trees providing notable additional screening when viewed from the northeast.

The nature of the development and its surroundings result in the site having a *Moderate* level of landscape sensitivity, and in this instance it refers to the impact that potential development on the site might have relative to surrounding receptors. Despite the adjacent historic structures, the relatively long distance to most receptors, coupled with the presence of an existing industrial skyline keeps the level of sensitivity from being *High*.

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Due to the relative long distances to visual receptors, the impact on landscape character and visual amenity is typically categorised as *Slight*. In select close-range instances, the impact is *Moderate*. The type of impact varies, with noticeably more *Positive* instances than *Neutral* or *Negative*. Additional negative impacts will occur during the construction phase, but these are only temporary.

Photomontages have been prepared to aid in the visual assessment and public understanding of the visual impact from key receptors. Sixteen view locations were selected following local authority consultation.

The majority of visual and landscape character *Degrees of Impact* are considered *Slight*. *Moderate* degrees of impact occur only on 2 occasions, both when the receptors are adjacent to the site.

The visual and landscape character *Types of Impact* are equally dispersed between *Positive*, *Neutral* and *Negative*. This varied result indicates that the impact is based more on the receptor and that the proposed development is generally of high quality. There are no *Moderate*, *Negative* types of impact and there are no *Significant* impacts.

Adverse landscape character and visual impacts can be slightly mitigated to reduce impact level. At close range, tree planting (particularly to the western end) can provide some future screening. At long range, tree planting will have no discernable impact on visual mitigation. Any mitigation at this distance must be dealt with through the use of appropriate building materials. Increased perimeter tree planting can provide significant long term filtering. Extensive use of native plant material and permeable paving can improve the local habitat and mitigate surface water flow to the Dungourney River.

In conclusion, the proposed development has a high degree of architectural diversity, complimentary to the adjacent Jameson Experience Midleton. The height of the structures does result in a permanent alteration to the Midleton skyline, but with long distances to visual receptors, the prospect for significant visual impact is greatly reduced. The proposed development consolidates the industrial portion of the skyline without detracting from the church spires, and is not out of character with the image of the town. Nonetheless, it does add background bulk which may be considered undesirable from centre viewpoints. With mitigation measures in place, close range impact can be mitigated. Overall, it is considered that the proposed scheme will not have any significant or profound residual landscape or visual impacts.



Figure 7.1 - Artist Impression of Proposed Still House and Distillation Column Building

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8. Traffic and Transport

The existing production facility is located approximately 500 metres east of Main Street, Midleton. Access to the existing facility is via the R627 (Dungourney Road).

The roadways in the vicinity of the existing facility are generally lightly trafficked and no significant queuing or delays are experienced in the area. However, there are some delays and queuing on Connolly Street on its approach to Main Street. Traffic counts were carried out on Wednesday the 25th of May 2011 to establish the current levels of traffic on the local road network and it was noted that traffic flows on Main Street were the busiest at over 1,000 vehicles per hour, traffic on the R627 (Dungourney Road) was noted between 300 and 500 vehicles per hour while traffic using Broomfield Village was noted at between 150 and 300 vehicles per hour.

The proposed development comprises the expansion of production facilities within the existing distillery. It is proposed to increase the existing production capacity from 33.5 MLA per annum to a maximum output of 64 MLA per annum. It is envisaged that this increase in capacity output will happen over time and that full production capacity is not expected before 2025. The expansion proposals for the distillery are expected to increase staff numbers by approximately 20% from 111 employees to 135.

As part of this project it is proposed to implement a new traffic management plan, which will restrict HGV access to the distillery from Connolly Street/ Main Street and require this traffic to arrive via the Northern Relief Road and Broomfield. This traffic management system will improve environmental conditions along Connolly Street.

The development proposals are expected to generate the following volume of traffic during the peak hour periods.

Table 8.1: Projected Traffic Generation

Link	AM Peak		PM Peak	
	07:15 – 08:15	08:15 – 09:15	16:00 – 17:00	17:15 – 18:15
Traffic Generation	24 vph	13 vph	21 vph	6 vph

vph = Vehicles per Hour

The development proposals when fully operational are expected to increase traffic on the surrounding network by a small amount. During the traditional morning peak and evening peak periods traffic is expected to increase on the local road system by between 1% and 3%. During the start and end of shifts at the distillery the increase is expected to be higher at between 4% and 8%. However, it is worth noting that during these periods particularly between the 07:15 and 08:15 period the existing baseline traffic flows are low which results in higher percentage increases.

The existing junctions were analysed as part of the traffic assessment and it concluded that all the junctions in the vicinity of the proposed development have sufficient capacity to accommodate the projected increase in the traffic. It was noted that the junction of Connolly Street/ Main Street is expected to be approaching capacity under 2025 traffic flows. However, it is worth noting that the proposed development is expected to increase traffic at this location during the traditional peak hour periods by a very small degree (1 to 3 vehicles) and will not impact on prevailing conditions at this location.

The primary construction phase of the development is expected to continue for approximately 18 months with peak employment on site estimated at 250 persons and this level of employment is expected to last for approximately 12 months. The construction activities on site are expected to generate approximately 150 trips during the peak hour periods. The junction of Connolly Street/ Main Street was assessed as part of the

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assessment and it was noted that it has sufficient capacity to accommodate the additional construction traffic.

The Broomfield Village Road and its junctions have sufficient capacity to accommodate the limited increase in traffic associated with the proposed development. From discussions with Cork County Council, it is proposed to improve the environment along the Broomfield Village Road from its junction with Mill Road to Dungourney Road. The improvement measures will primarily include the provision of additional traffic calming measures and resurfacing works.

9. Soils & Geology

The soils & geology analysis quantifies the current soils and geology characteristics of the site and looks at the potential impact of both the construction and operational phases of the proposed development.

The IDL site is underlain by massive karstic limestone and overlain by variable sequences of clay, sands silts and gravels. The existing process cooling water supply for the site is provided by a shallow groundwater source from a cavern in the south western corner of the site which is a geological heritage area of interest. There is farmland located to the east and south of the site. To the west are primary and secondary schools and their playing fields. The Dungourney River flows from north east to south west along the facilities, southern boundary.

There are no 'Legacy Landfills', active IPPC licensed facilities, active or historical quarries or mines, proposed National Heritage Area (pNHA), Special Protection Area (SPA) or Special Areas of Conservation (SAC) or Groundwater Dependant Terrestrial Ecosystem (GWDTE) within the vicinity or adjacent to the proposed development site. However, Cork Harbour a SPA and the Great North Channel, a SAC are located within approximately 1 kilometre of the site.

An impact assessment was undertaken under the following considerations: Magnitude, Significance and Duration of Impacts. Using these considerations the Predicted Geological Impacts during Construction Phase and during the Operational Phase have been determined. Taking recommended mitigation measures into account final residual impact ratings have been given for all identified soils and geology impacts. Predicted impacts during the construction phase of development include: 1) potential for accidental contamination through fuel spillage, 2) groundwater seepage from excavation slopes, 3) stability of weathered bedrock, 4) stability of ground for building construction and 5) removal of excavated material.

Predicted impacts during the operational phase of development include: 1) potential for accidental contamination through fuel spillage, 2) potential for soil contamination in the event of a fire from contaminated run-off waters 3) potential for radon gas accumulation in buildings and 4) potential groundwater seepage around backfilled fire water retention pond area.

A series of mitigation measures are recommended to address the potential impacts and following an impact assessment of both the construction and operational development phases and taking recommended mitigation measures into account, the final residual impact for all of the above impacts is rated to be Imperceptible.

10. Water & Aqueous Emissions

The use of water at the Irish Distillers site is categorised in terms of;

- Sources of water;
- Uses of water in the production process;
- Aqueous emissions arising from the production process.

The Hydrogeology, Hydrology and Ecology chapters within the EIS address specific aspects and impacts of the abstraction, use and discharge of water from the site.

Figure 10.1 is a site layout plan showing existing and proposed locations of water sources / abstractions, on-site treatment processes, and points of aqueous emission from the site.

Water used in the production of alcohol at the Irish Distillers site is currently derived from three sources. These are:

1. Water abstracted from the Dungourney River;
2. Water abstracted from the underground cavern source beneath the site;
3. Water from Cork County Council supply main.

Process water currently in the order of 1,500 m³/day required for the core production processes and utility services is primarily derived from the Dungourney River and treated on site. Water is abstracted from the Dungourney River in accordance with the terms of a Register of Abstraction from Waters from Cork County Council (CCC).

Groundwater supply in the order of 2,500 m³/day from the natural cavern beneath the site is abstracted to supply a 'once through' cooling loop around the fermenters again within the terms of a Register of Abstraction from Waters from CCC.

A mains water demand, currently in the order of 170 m³/day, is used in relation to domestic supply and product dilution.

The projected water demands to meet a production requirement of 66 MLA per annum is as follows;

- A projected cooling requirement of 6,120m³/day, this is proposed to be met by a combination of the existing cavern supply and a series of 8 proposed groundwater wells to be installed on the site.
- A projected process water requirement of 3,620m³/day, this is proposed to be met by the existing surface water abstraction from the Dungourney River, supplemented by the reuse of spent cooling water.
- A projected increase in mains water requirement to 400 m³/day.

Water uses in the process in turn generate a number of aqueous streams that are required to be returned to the environment. These include: spent cooling water, process wastewater and domestic wastewater.

In addition, there are a number of separate surface water run-off catchments within the site which, depending on circumstances, discharge to the receiving environment via different routes.

The management of risk due to potential fire water run-off is recognised through the completion of a fire water run-off risk assessment in accordance with EPA requirements.

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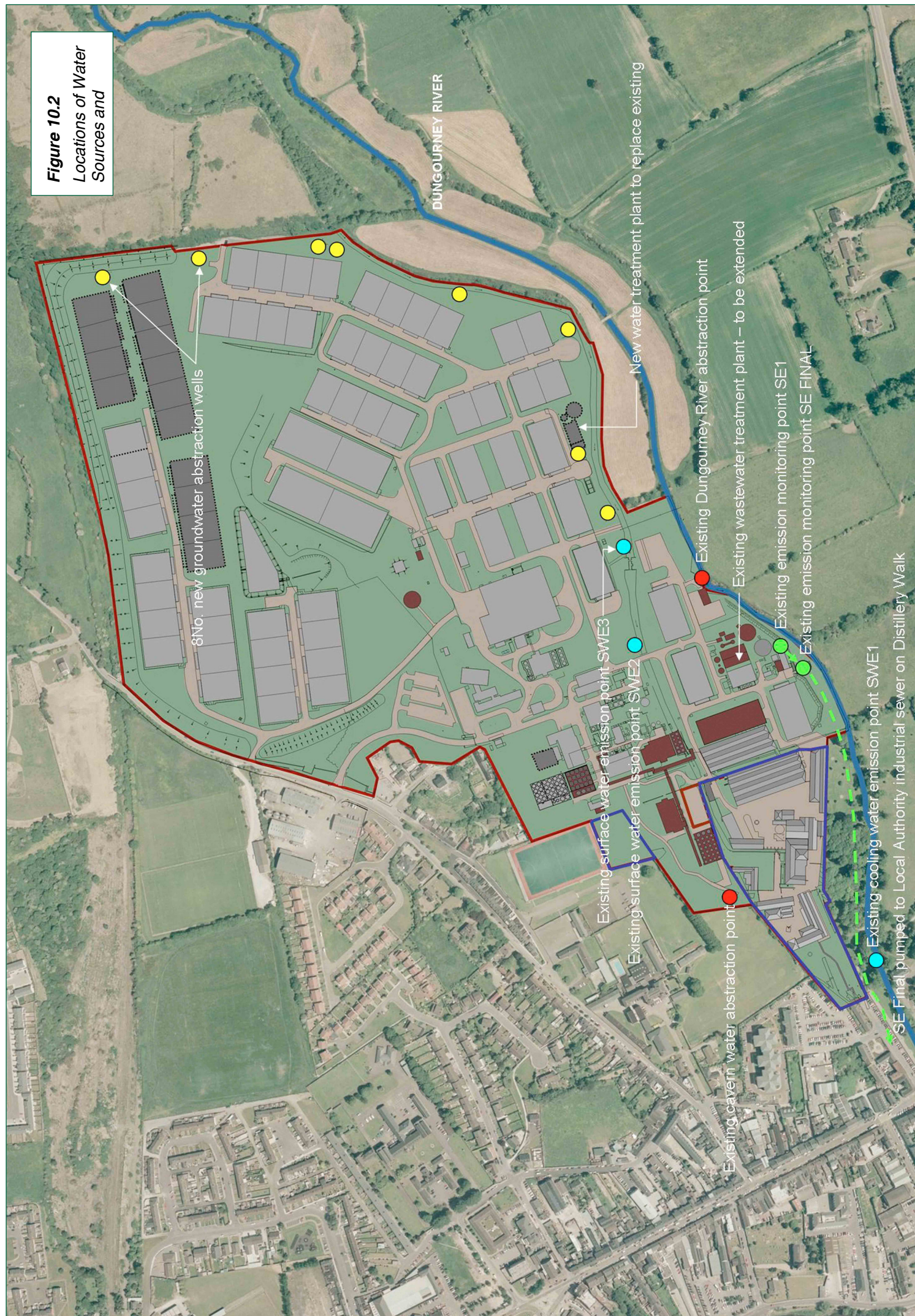
Presently, in the order of 2,560 m³ of spent cooling water from the underground cavern is discharged to the Dungourney River at a location downstream of the Millstream tailrace (IPPC Licence Reference SW1). The stream is continuously monitored for TOC and is inspected visually on a daily basis in accordance with the requirements of the IPPC Licence P0442-01 as amended. Other than a slight increase in temperature, the cooling water is the same quality as when abstracted from the ground and is suitable for return to the local surface water environment.

The final maximum quantity of spent cooling water required to be returned to the environment following its immediate cooling duty is 4,020m³/day. It is proposed that the spent cooling water will continue to be returned to Dungourney River in the same manner as present.

Water abstracted from the Dungourney River used in the various production operations around the site ultimately generates a series of process wastewater streams requiring on-site treatment prior to discharge back to the receiving environment.

No domestic (foul) effluent from the site operations (toilets, canteen, etc) is directed to the site wastewater treatment plant (WWTP). Domestic effluent is collected separately and directed to the Midleton urban WWTP.

Figure 10.2
Locations of Water
Sources and



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The on-site wastewater treatment plant provides continuous biological secondary and tertiary treatment to all process wastewaters arriving at the plant. The existing treatment plant has a capacity to treat a combined flow of 1,250m³/day.

The future operation of the site WWTP will require a phased expansion to meet the incremental increase in wastewater loads. Essentially the capacity of the treatment plant will be doubled from an existing load of 1,250 m³/day to 2,500 m³/day.

The licensing and control of the WWTP, covering the effluent quality standards that must be achieved, is set out in the site's IPPC Licence. IDL operate at close to 100% compliance against the emission limit values stipulated in the site's IPPC licence.

The licence currently sets limits for two aqueous emissions from the site which are defined as 'Emissions to Sewer'. SE1 refers to the treated effluent discharge from the WWTP. SE FINAL refers to the final pumped effluent discharge from the site comprising the treated effluent from the WWTP (SE1) combined with any other flows to the final outfall pumping station.

While the volumetric discharge limit for the treated effluent from the WWTP SE1 will need to increase from the current level of 1,250 m³/day to 2,500 m³/day, there will be no change to the licence limits that currently govern the final emission from the site (SE Final) as the SE1 volumetric increase can readily be accommodated within the current SE Final limit of 5,000 m³/day.

Impact on Receiving Waters

The discharge of SE Final from IDL is entirely separate from all other wastewater sources in Midleton and conveyed via a dedicated industrial sewer independently to Ballinacurra pumping station.

En route to Ballinacurra, the IDL SE Final stream is mixed with the treated effluent from the Midleton municipal WWTP. From Ballinacurra pumping station the combined IDL SE Final and the treated municipal stream is pumped to a tidal holding tank at Rathcoursey prior to discharging to the North Channel of Great Island at Rathcoursey via a diffuser outfall.

The primary discharge at Rathcoursey (combined effluent of Midleton WWTP and the effluent from Irish Distillers Limited) has been reported to be of a high quality, with good assimilative capacity and achieved the emission standards specified in the Urban Waste Water Treatment Regulations, 2001 (S.I. No. 254 of 2001) (UWW regulations).

Part of the North Channel has recently been designated as shellfish waters (2009). With respect to bacteriological quality and shellfish waters, the SE Final discharge from the Irish Distillers site has no domestic sewage component and is subjected to ultra violet treatment. The measured concentrations of faecal coliforms in the SE Final discharge is consistently close to zero. Additionally, the IDL component of the overall Midleton discharge is only likely to have a very minor impact on the temperature of the receiving waters outside the mixing zone.

Domestic wastewater (or foul effluent) from the distillery in the order of 20 m³/day is conveyed separately from the site to the Midleton municipal wastewater treatment plant. The future hydraulic load to the municipal sewer is not expected to exceed 40 m³/day. The impact of the proposed expansion due to increased domestic effluent load to the municipal sewer and treatment plant is negligible.

Surface water run-off from the Irish Distillers site is collected in a dedicated surface water drainage network serving the entire site. The network comprises four main catchments. In overall terms, the proposed development will result in no impact to the local receiving waters or ground waters due to increases in surface water run-off arising on the site. A small increase in overall run off quantity will be confined to the production area catchment which drains to the site pumping station for discharge to the Cork Harbour outfall.

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The Irish Distillers site currently has a 7,800 m³ fire water retention pond which serves a section of the warehouse maturation area of the site referred to as 'the Lower Fields'. The pond is designed to cater for the most extreme event likely to occur in terms of a fire occurrence. The pond is designed in full accordance with the Environmental Protection Agency's Guidance Note to Industry on the Requirements for Fire Water Retention Facilities (1995).

As part of the proposed development it is now planned to install a 7,600 m³ fire water retention facility complete with drainage works that will meet the requirements of the EPA's Guidance Note. This new retention pond will protect the remainder of the site (i.e. the Warehouse Catchment, the Spirit Store and Vat House Catchment and Production Area Catchment) diverting any potentially contaminated run off from the specific catchments into the new pond area.

11. Hydrogeology

The existing water supply for cooling and process demand on the site is provided by a combination of surface water from the Dungourney River and a shallow groundwater source from a cavern in the south western corner of the site (under the existing abstraction licence Reg. AB/24/97). A public mains supply provides potable water in the vicinity of the site.

There are several existing groundwater abstraction wells in the Midleton area but none in the immediate vicinity of the site. There is farmland located to the east and south of the site. To the west are primary and secondary schools and their playing fields. The Dungourney River flows from north east to south west along the facilities southern boundary.

There are no 'Legacy Landfills', active IPPC licensed facilities, active or historical quarries or mines, proposed National Heritage Area (pNHA), Special Protection Area (SPA) or Special Areas of Conservation (SAC) or Groundwater Dependant Terrestrial Ecosystem (GWDTE) within 500m of the proposed development site.

Groundwater Supply Wells

In order to assess the groundwater resource on-site a well field of eight groundwater abstraction boreholes was drilled within the limestone bedrock beneath the site with a productive gravel aquifer resource encountered along the eastern site boundary. The gravel aquifer encountered ranges from 7m to 17m in thickness. Bedrock is seen to range from surface outcrop to a depth of 30m below ground level in the east of the site. The water table varies from 2.5mOD (Cavern) in the south western region of the site (down-gradient) to 4mOD (PW8) in the eastern region of the site (up-gradient).

Given the karst environment the hydraulic connection between the groundwater and surface water is likely to be quite complex with the river gaining baseflow from the aquifer during high water table and losing it to the natural sediments and bedrock during drier periods.

Proposed Groundwater Requirements

The existing cavern (~2,500m³/day) and river (~1,500m³/day) abstractions for the site cooling and process is expected to double which means an additional groundwater resource requirement of up to 4,000m³/day if the existing supplies are maintained.

The proposed cooling requirement is 6,120m³/day to be obtained from groundwater wells and the cavern with process requirement of 3,620m³/day to be obtained both from surface water and groundwater wells, with re-use of cooling water as process water to reduce overall water requirements. Groundwater abstraction where the annual volume of water exceeds 2 million cubic metres (5,479m³/day) requires an Environmental Impact Statement (EIS).

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Pumping Test

Pumping test works were carried out to assess the sustainable yields of the eight groundwater wells. There was a site wide groundwater level influence identified from the pumping test. Several rounds of groundwater samples were taken from each abstraction well together with the river. The combined sustainable pumping test discharge rate was 8,680m³/day which is more than the proposed maximum required abstraction rate.

Findings

The groundwater flow direction beneath the site is seen to be in a south westerly flow direction. During the pumping test there was one cone of depression between the three test wells PW2 to PW4 along the southern site boundary and a second from PW5 to PW9 along the western site boundary. There was little to no impact on the groundwater flow direction identified in the south western region of the site near the cavern abstraction point.

There was no effect on the river during the 5-day pumping test. Given the size of the sustainable aquifer resource identified there is no potential long term groundwater abstraction impact anticipated on the Dungourney River, however this will be confirmed by long term monitoring of the river and groundwater well field prior to the commissioning works and during the operation phase. The sustainable yields of the test well field is seen to be in the region of 6,800m³/day taking into account drought periods which is sufficient to meet the proposed site expansion water requirements.

The Middleton Town Groundwater Body (GWB) of which the IDL site is located on its eastern boundary had an abstraction risk of 2a (probably not at risk). There is no immediate risk from Saline Intrusion at the IDL site and there is no GWDTE/SAC to impact on from groundwater abstraction.

The Water Framework Directive, defines risk based on groundwater abstraction as a percentage of recharge, indicates a moderate impact potential on the Dungourney River for the proposed increase in groundwater abstraction. However, this excludes loss of river water to groundwater seasonally. The groundwater quality analysis indicates elevated manganese in groundwater along the eastern side of the site with high hardness across the site. Groundwater bacteriological quality is very low compared to the River.

Predicted Impacts

Predicted impacts during the construction phase of development include: 1) drainage of perched groundwater from the soils, 2) drainage of groundwater from potentially excavated weathered bedrock in the new fire water retention pond, 3) presence of groundwater wells (PW1, TW1, GW2) in development area, 4) potential for accidental contamination through fuel spillage and rainfall runoff, 5) impact to groundwater supply of existing on-site wells and 6) impact to groundwater supply of neighbouring wells.

Predicted impacts during the operation phase of development include: 1) potential drainage of groundwater from backfilled excavations, 2) potential for accidental contamination through fuel spillage and surface runoff, 3) potential for alcohol liquid (raw product) to be released to ground in the event of a fire and other emergency events and 4) potential impact to nearby Dungourney River levels and flows together with potential for elevated temperature in the discharge waters from cooling operations.

Mitigation Measures

A number of mitigation measures have been recommended in order to minimize any risk to groundwater from the construction activities. These measures include: good construction practices, good drainage systems, extensive fire fighting measures and a Source Protection Plan for the proposed groundwater wells on-site.

Mitigation measures and controls which will be put in place, from the outset, to protect the surface and groundwater sources in the long term will include:

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- Two gauging stations, one upstream of the site and the other downstream of the surface water abstraction point, will be installed on the river. These will be used to establish the baseline data on the river level and flows prior to commissioning the wells.
- The sustainable yield for each well was established during the development phase. The abstraction from each well will be automatically capped at a percentage of its sustainable yield.
- The groundwater level and discharge flow volumes will be continuously monitored in each well to ensure that there is no excessive drawdown of the groundwater.
- Routine analysis of the abstracted groundwater will be carried out to monitor for water quality parameters to assess potential surface water influences as part of the long term monitoring programme.
- The cone of depression of wells PW2 to PW4 (nearest to the river) will be closely monitored. In the unlikely event of it encroaching on the river the abstraction from the wells will be reduced or stopped.
- The cone of depression of wells PW5 to PW9 will also be monitored. However this is further from the river and will have no impact on the flows in the river.
- Given that the combined capacity of the wells is far in excess of the anticipated long-term demand a system of resting the wells, in rotation, will be employed.
- In the extremely unlikely event of an adverse impact on the river it will be possible to reduce the surface water abstraction activity by recycling more groundwater and treating it in the Water Treatment Plant for use as process water. Ultimately, if necessary, the abstraction of groundwater would cease in order to protect the river.
- The monitoring will continue to be employed as long as the site is in operation.
- A reporting regime will be agreed with the relevant statutory body.
- The location of the gauging station will be agreed with the relevant authorities.
- The frequency of monitoring is yet to be decided but will be agreed prior to completion.

Conclusions

The sustainable yield of the well field was determined to be 8700 m³/day and even in drought conditions the yield is 6800 m³/day. This compares to an anticipated long-term demand of 3500m³/day. In other words the abstraction rate will be a mere 40% of the sustainable yield and 50% of the drought yield. In light of the above and given that the ground water levels will be continuously monitored and controlled the proposed abstraction activity will not have an adverse impact on the groundwater resource.

In relation to the river a monitoring programme will be in place for several months prior to commissioning the wells in order to establish the baseline data. Once the production wells have been approved and commissioned using submersible pumps, level probes, flowmeters and associated well head works the mitigation measures outlined above will be implemented to ensure that there are no adverse impacts on the river due to the groundwater abstraction activities.

12. Hydrology

The Dungourney River forms part of the south eastern boundary of the IDL site and is the main receiving watercourse in the area. The Dungourney River is a tributary of the Owennacurra River, which it joins approximately 500m downstream from the existing discharge location. The Owennacurra River is tidal where the confluence with Dungourney River occurs and the Dungourney River is tidal to a point approximately

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80m downstream of the IDL discharge point. IDL currently discharges approximately 2,560 cubic metres per day of process water, at a temperature of between 19 to 23 °C, to the Mill Race that flows through the Old Distillery grounds, over the mill wheel in the museum area and along an open channel to the river. There is some loss of water, (estimated to be ~10 to 15%) through evaporation and percolation as well as some cooling of the process water as it travels in the Mill Race to the discharge point at the river. The temperature of the water that reaches the river is expected to be lower due to heat loss as it goes through the Mill Race and ranges in temperatures of between about 18 to 21°C were identified during monitoring in Sep-Oct 2011.

The mill race discharge to the Dungourney enters at a ninety degree angle and monitoring indicates that the warm water stays close to the right bank (as you look down river) when it flows down stream. Water level monitoring confirmed the tidal influence in the Dungourney to within 100m of the cooling water discharge location.

Discharges cease during the period of the IDL annual shutdown, which takes place in July each year and lasts for approximately three weeks with the result that there is a continuous period in high summer when there is no surface water abstraction or discharge. It should be noted that slightly higher discharge temperatures would be expected during a very hot summer period and therefore the discharge temperature to the river in the model has been set to 23°C, to reflect the absolute worst case condition.

Characteristics of the Proposal

The proposed development entails expanding the existing process plant and increasing the discharge volume to the river to a maximum of 4020 cubic metres per day. The hydrology assessment considers the potential of the proposed discharge flow to increase flood risk and to elevate water temperature beyond guideline limits.

Hydraulic Model

An hydraulic model was developed for a section of Dungourney and Owennacurra Rivers. This model covers a river length of approximately 1km and includes three river crossings and 11 river cross sections. Flow and water temperature monitoring were undertaken at the discharge location providing up-to-date baseline monitoring data. Model runs were undertaken for summer and winter conditions and a number of flow profiles covering the existing condition (with existing site discharge), the proposed condition (with increased site discharge) and the baseline condition (without site discharge).

Findings - Temperature Assessment

Findings show that the proposed discharge would not cause any significant hydrological impact during the daily mean flow condition of the Dungourney River and this is independent of the season. During the worst case condition, which was assessed as the summer low flow drought condition, water temperature of the Dungourney River was found to increase by 2.2°C in comparison to the baseline condition for a river length of 500m. Once the Dungourney River joins the Owennacurra River, the water temperature assimilates to its background temperature. The model does not take into account tidal influences in the Dungourney River which extend over the majority of the lower 500m section of the river between the discharge point and the confluence with the Owennacurra River. There are a number of management options available to control water volumes and to mitigate the discharge of the additional cooling water to the Dungourney River during extreme low flow conditions.

Findings - Flood Assessment

Design flood flows were estimated using a number of different flood flow estimation techniques. Local gauging station data was used to compare the annual flood flow to the 2-year design flow estimate suggesting that these are in the right order.

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The hydraulic model was used to predict existing and proposed flood levels along the Dungourney and Owennacurra River and results show that the impact of the additional discharge would have negligible impact on flood levels.

Mitigation Measures

The flood assessment has shown that the proposed development will have negligible impact during flood conditions and no mitigation measures are required.

The temperature assessment has shown that the proposed condition would result in an acceptable level of temperature increase of less than 1.5 degrees above background for most of the time. It is only during extreme summer low flow conditions of the Dungourney River where the discharge to the river is greater than 21.5 degrees that the background water temperature would be exceeded by more than 1.5°C to about 2.2 °C (an increase of 0.7°C).

There are a number of mitigation measures that could be adopted during these worst case low flow (95%-ile) or drought (98%-ile) conditions and these include:

- Cease surface water abstraction from the river by recycling more groundwater,
- Discharge volumes can to be reduced to the existing levels by diverting process waters to the site's effluent discharge.
- Alternatively, additional onsite cooling to reduce the discharge temperature from 23°C to below 21.5°C for low flow or 20°C for drought conditions.
- Or a section of the Dungourney River could be declared as a mixing zone, within which the 2.2°C increase in background temperature would be acceptable.

Conclusions

Following this impact assessment of the proposed increase in process water discharge to the Dungourney River and taking mitigation measures into account, the final residual impact on the surface water environment is rated to be Slight.

13. Ecology

An ecological assessment was carried out to establish current status of habitats and species that could be affected by a proposed development at Midleton Distillery. This assessment included a Natura Impact Statement, which accompanies the planning application.

The survey consisted of direct evaluation of habitat quality and species on-site, assessment of biological water quality of the Dungourney River, examination of habitats in proximity to the existing treated effluent discharge in Cork Harbour, consultation with relevant authorities and checking of any available records pertaining to the local ecology.

The site of the proposed development is approximately one kilometre from both the Great Island Channel SAC and Cork Harbour SPA. The cooling water discharges to the Dungourney River c. 500m upstream of these Natura 2000 sites. The treated effluent is discharged by a Cork County Council sewer to an outfall off Rathcoursey Point, near the southern boundary of the Natura 2000 sites. Potential impacts on habitats and species for which these sites are designated were assessed.

The site of the proposed development consists of an existing industrial site, which is of relatively low habitat quality. No protected species of flora or invertebrate were found. An existing warehouse to be demolished to facilitate the proposed works and an adjacent warehouse were checked for the presence of bats, but none

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were found. Bats were recorded around the trees behind the existing supervisor's office. Several of these trees were heavily laden with ivy and could have been supporting roosting bats. Since the survey was undertaken the trees designated to be removed have been stripped of all ivy (in November 2011) and are no longer considered suitable of support roosting bats. Some common bird species are present in the general area of the site, but no birds' nests were found on buildings to be demolished.

The Dungourney River, which flows close to south of the site and to which the cooling water is discharged via the tail race of the old mill stream, is of importance for both salmon and sea trout spawning. Biological water quality assessment shows the Dungourney River to be in Poor Ecological Status, both upstream and downstream of the IDL plant, but that IDL is not responsible for this unsatisfactory status. No habitats designated for protection were found in the vicinity of the treated effluent discharge at Rathcoursey Point.

In accordance with National Roads Authority Guidelines, the site of the proposed development is classified as being of **Rating E (Low Value, locally important)**, the Dungourney River is classified as being of **Rating B (Nationally important)** and the North Channel of Cork Harbour is classified as being of **Rating A (Internationally important)**.

Main Potential Impacts in the Absence of Mitigation

The main potential impacts from the proposed development on species would be:

- Impacts from site clearance and construction activities.
- Impact from contaminants draining to the Dungourney River.

Appropriate Assessment Screening/ Natura Impact Statement

Following an appraisal of the qualifying interests of the Special Area of Conservation and the Special Protection Area in Cork Harbour, it was objectively concluded that there are not likely to be significant effects on the Natura 2000 sites from the proposed development provided the process waste waters are adequately treated in accordance with the existing IPPC Licence emission limit values.

Mitigation Measures

Reduction of Potential Impacts on Bats & Birds

Suitable timing of the clearance of bushes and trees is specified. Planting and installation of bat boxes to compensate for lost habitat within the site are recommended.

Reduction of Potential Impacts on Fish in the Dungourney River

Methods to prevent contaminants, mainly hydrocarbons, from reaching the Dungourney River, are recommended.

Residual Impacts Following Mitigation

If all mitigation measures are fully implemented, there will be no significant negative ecological impact arising from the construction or operational phases of the proposed development.

Worst Case Scenario

In the worst case scenario, if mitigation measures were to substantially fail, common bat and passerine bird populations would not be significantly affected by a slight decrease in suitable habitat. There could be a significant negative impact on salmon and trout in the lowermost freshwater section of the Dungourney River if hydrocarbons were not prevented from reaching the river.

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14. Noise and Vibration

The proposed expansion consists of a number of new process equipment / buildings that is expected to double the output capacity of the distillery.

The existing noise climate around the boundary of the site was surveyed in October 2011, during both daytime and night-time periods and has been found to be mostly controlled by noise emissions from the facility. The most critical noise sensitive locations are the residences located along the northern property boundary and the Midleton College, primary school and crèche buildings located immediately to the west. A few additional private dwellings located remote to the south and west are situated a sufficient distance away from the facility not to experience any real noise or vibration impact from the expansion.

Characteristics of Proposed Development and Likely Impact

When considering a development of this nature, the potential noise & vibration impact on the surroundings must be considered for each of two distinct phases: the short term impact of the construction phase and the longer term impact of the operational phase.

Subject to good working practice during the construction phase and not exceeding any limits proposed within the EIS, it is anticipated that noise and vibration will not cause any significant problems. Noise from construction works (including traffic) will be within the specified criteria. Vibration and impacts from rock breaking during excavation will also not have any significant impact on adjacent residences.

During the operational phase, potential causes of disturbance are considered to be mechanical equipment process noise and noise emissions from additional vehicular traffic on public roads. There are no significant sources of vibration associated with the operational phase of the proposed development. Prediction calculations for the expansion have been conducted using proprietary noise calculation software "Predictor".

An existing Predictor computer model of the IDL facility was updated to include the new noise sources and building structure geometry associated with the proposed expansion. Traffic noise levels were predicted in accordance with guidance set out in Calculation of Road Traffic Noise (CRTN).

It has been predicted that neither of the potential sources i.e. mechanical equipment process noise and additional vehicular traffic on public roads will increase the existing noise climate sufficiently so as to be likely to cause a disturbance.

The increase in mechanical equipment process noise emission levels at all adjacent noise sensitive locations is predicted to range from 0.0dB(A) to 1.5dB(A). A reduction on existing noise levels is expected on the northern boundary due to the shielding effect the proposed fermenters and Brewhouse extension (proposed under separate application) will have on the noise productions areas of the facility. Overall the resultant noise impact is therefore not considered significant. The noise impact assessment demonstrated that mitigation measures are not required providing the mechanical plant is selected appropriately.

The increase in the level of road traffic noise on most of the existing roads will be less than 0.4dB(A) along delivery and adjacent traffic routes. The resultant noise impact is therefore not considered significant.

15. Air Quality & Climate

Air quality in the vicinity of the proposed development is average / good and shows typical levels for suburban area with all pollutants (carbon monoxide, nitrogen oxides, sulphur dioxide and PM₁₀ and PM_{2.5}) within the relevant Irish and EU limits (for similar sized population centres). It was noted that the prevailing wind direction for the area is to the southwest.

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Impacts to air quality will arise during the construction phase, such as from the generation of construction dust, construction plant emissions and from emissions of construction traffic. The construction activities have been examined to identify those that have the potential for air emissions. Where applicable, a series of suitable mitigation measures have been listed. There will be a potential increase in direct impacts on climate as a result of the operation of the proposed development through changes in emissions generated by the new development and intensification of some existing operations. These emissions are produced by new processes to be provided within the development and through intensification of use of existing scheduled emission points.

Specific air quality impact is predicted at each sensitive receptor location (e.g. houses and businesses) in the vicinity of the existing facility as illustrated in Figure 15.1 and compared to the relevant National and European air quality standards.

The predicted impacts of the existing facility for odours were examined utilising collected baseline odour emission rate data. Odours from brewing operations arise mainly from the release of odorous gases from:

- The brewing process
- Pumping of liquids between tanks,
- Drying of recovered feed,
- Feed delivery operations,
- Fermentation process itself.
- Distillation Processes
- Waste Water Treatment Plant

A value of less than 3.0 OuE/m³ at the 98th percentile of hourly averages for 5 years of screened hourly sequential meteorological data was examined as this was considered the most appropriate odour impact criterion given the nature of the activity. The overall odour emission rate from identified processes of 74,161 OuE/s was inputted into the dispersion model AERMOD Prime with meteorological data, terrain and building and source characteristics to allow for the examination of base line odour levels at each of the identified sensitive receptors.

The maximum predicted ground level concentration of odour at the worst case receptor R7 was less than or equal to 1.17 OuE/m³ at the 98th percentile of hourly averages for worst case meteorological year Cork 2005. This is 39% of the odour impact criterion.

Potential impacts on air quality resulting from the construction phase (dust and traffic) of the proposed development were assessed on a local scale to determine impact on human health. As all sensitive receptors will be located greater than 50m away from construction activities it was therefore concluded that the impact can be considered minimal. It was also concluded that there was no significant increase in the air quality impact as a result of construction phase traffic.

Air quality impact contribution as part of the operation phase of the project can be as a result of increased traffic and/or process based emissions.

It was concluded that there is no significant increase in the air quality impact of carbon monoxide, benzene, oxides of nitrogen and particulate matter as a result of increased traffic numbers between 2011 and 2025. There is a slight increase in pollutant concentration in the order of 1 to 2 % and therefore this is considered negligible. When this added to baseline data for each named pollutant, this will remain well within the air quality limits.

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The predicted impacts of the proposed facility for classical air pollutants and odours from scheduled emission points was examined utilising collected odour and air quality emission rate data and predicted increases in classical air pollutants and odours as a result of the expansion / intensification at the facility. Cumulative air quality was accounted for through utilisation of predicted air quality impacts as a result of the expansion / intensification at the facility, increased pollutants as a result of increased traffic numbers and baseline data for the surrounding area.

Existing scheduled emission point A2-1 (feeds recovery driers) and boiler emission points A1-1, A1-2 and A1-3 (as per IPPC licence P0442-01) will be operated for close to 100% of the operating year. The expansion of the waste water treatment process will potentially lead to an increase in odour emissions from the facility while the operation of the feeds recovery drier for longer periods of time will increase the frequency of odour emission from this process. This is also the case for classical air pollutants where the operation of the existing site boilers for longer periods of time will lead to an increase in the frequency of classical air pollutants emitted from these processes.

The overall odour emission rate from identified processes is 79,446 OuE/s which is a predicted increase of 6.6% over existing conditions. The maximum predicted ground level concentration of odour at the worst case receptor R7 was less than or equal to 1.62 OuE/m³ at the 98th percentile of hourly averages for worst case meteorological year Cork 2005. This is 64% of the odour impact criterion. The predicted odour plume spread does not impact on any of the identified receptors with the contour travelling mainly in a north south direction and 90 to 100m beyond the boundary of the facility.

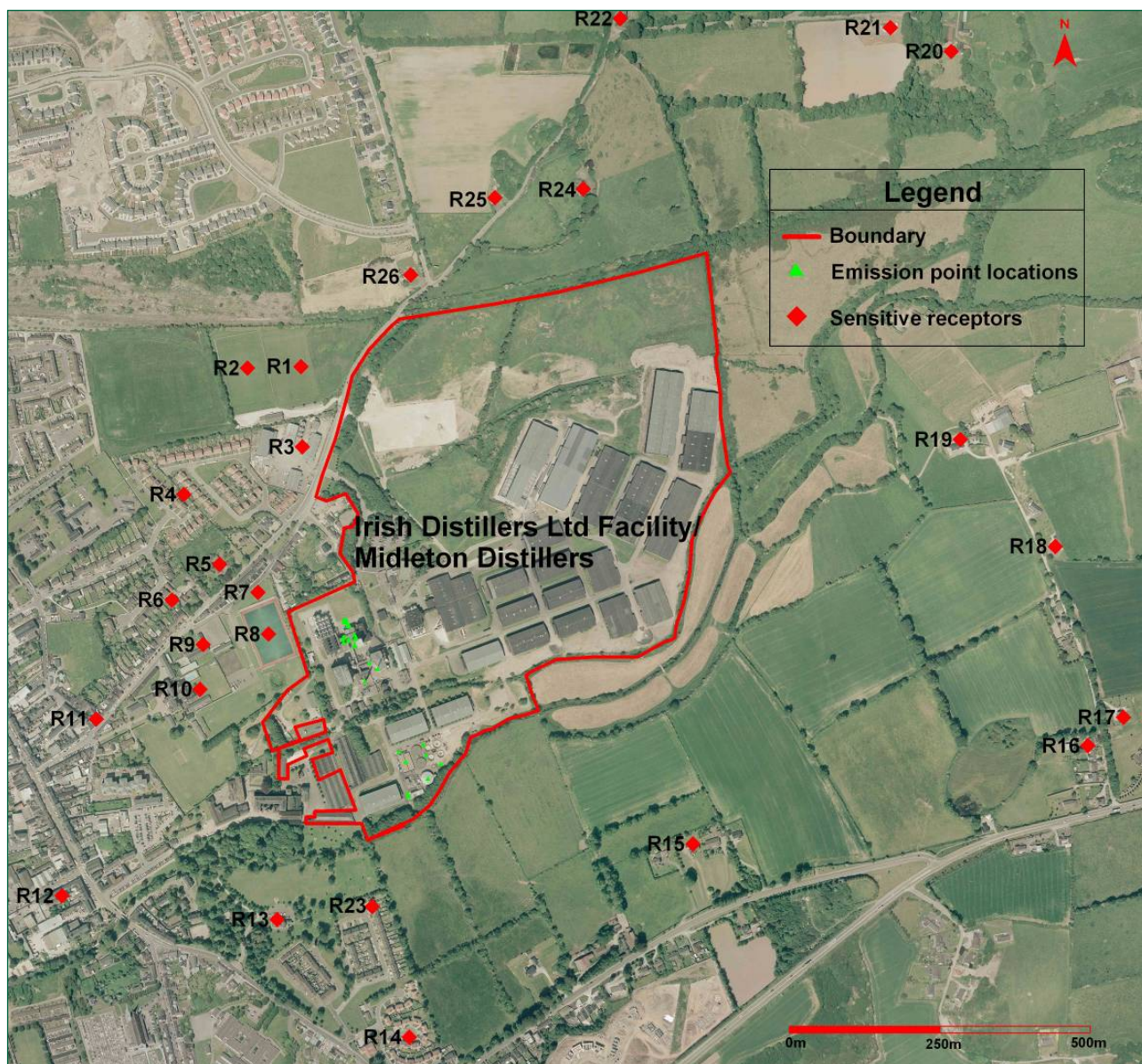
The maximum cumulative predicted ground level concentrations of carbon monoxide, oxides of nitrogen, sulphur dioxide and particulate matter as PM₁₀ and PM_{2.5} when the proposed expansion facility is at 100% operation, are well within the specified air quality limit values (range of less than 5.02 to 72.57% of impact criterion) at each of the named sensitive receptors in the vicinity of the facility.

The effect of construction of the facility on air quality will not be significant following the implementation of the proposed mitigation measures such as speed restrictions and water misting measures. In order to ensure that no construction dust nuisance occurs, a full traffic management plan and dust management plan will be implemented into the Construction Environmental Management Plan (CEMP) in order to minimise such emission. This will be generated specifically for the development when detailed design is completed.

Scheduled emission points operated within the facility are currently regulated through the EPA IPPC licence P0442-01. This assessment demonstrated that the level of emission will not result in any air quality impact in line with Irish and European assessment criteria limits. The current IPPC licence outlines monitoring requirements for the scheduled emission points and it is recommended that this monitoring regime be continued.

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Figure 15.1 - Location of sensitive receptor locations relative to the existing facility.



16. Material Assets

The material assets chapter examines the cultural heritage of the development site and a surrounding study area of 1km as well as looking at important features in the landscape beyond. The term cultural heritage is a generic one that spans thousands of years and covers a multitude of cultural, archaeological and architectural sites and monuments within the landscape. It also includes history, landscape and garden design, folklore and tradition, geological features, language and dialect, religion, settlements, inland waterways (rivers) and place names according to the Environmental Protection Agency Guidelines (2003).

There are twenty recorded archaeological sites listed in the Record of Monuments and Places (RMP) for Co Cork within the 1km study area of the proposed development site. The earliest of these sites date to the Bronze Age and are a pit burial in Oatencake (CO076-062) and a fulacht fiadh in Killeagh (CO076-026). Most of the sites within the study area relate to the urban settlement of Midleton, within which most of the development site lies. The earliest settlement in the area of the town appears to have been a Cistercian abbey founded in Townparks (CO076-06303) in 1180 called St. Mary of Chore (Power 1994, 240). The site

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is now occupied by the Church of Ireland Church and graveyard (CO076-06302 and CO076-063-01). The origins of Midleton date to a grant of land to the Fitzgeralds of Cloyne in the 16th century (Zajac et. al. 1995, 79). The town was located on an important routeway between Youghal and Cork approximately half way between the two and this location appears to have given the town its name (Cadogan 1998, 354).

The proposed development site is adjacent to two structures which are listed on the Protected Structures Register in Midleton Development Plan (2003, 32). The historic Mills Jameson Distillery (Reference 1 in Appendix 16, Volume 2) adjoins the proposed development site to the south, and Midleton College (Reference 10 in Appendix 16, Volume 2) adjoins the proposed development site to the northwest. Both are also included in the RMP for Co Cork the latter as a distillery (CO076-025) and the former as a college (CO076-108). Further from the site a large number of buildings located in Midleton town centre are also listed on the Protected Structures Register in Midleton Development Plan (2003).

It is considered that there are five primary areas with potential to impact on cultural heritage (named Areas 1 -5 in the course of the chapter) were inspected and no previously unrecorded archaeological features were identified. The proposed development will impact on one previously recorded archaeological feature: the mill race associated with the distillery (CO076-025). It is proposed to culvert a 60m length of the earth -cut portion of the mill race.

Mitigation is proposed including: compiling a photographic and written record of the section of mill race to be removed; and archaeological testing of two green areas which appear not to have been previously disturbed. If archaeological material is uncovered it is proposed to preserve it by record which would require the excavation of the material to professional standards of archaeological practice. This work will be funded by the developer.

17 Human Beings

This chapter assesses the potential impacts of the proposed development on human beings and details mitigation measure proposed.

In identifying the potential impacts on human beings (described in the chapter as 'receptors') detailed consideration has been given to the routes to the site. The potential receptors identified from the analysis area as follows:

- Residential properties in close proximity to the site.
- Residential properties adjacent to the transport routes to and from the distillery.

The following community facilities:

- Midleton College
- Singing in the Rain Crèche
- St John the Baptist National School
- Midleton Educate Together National School
- Recreational Facilities in grounds of Midleton College
- Midleton Rugby Club
- Cope Foundation, Broomfield
- Jack & Jill Crèche, Avoncore.

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- Existing and future employees for the distillery.

Owners and employees of other commercial activities which may be impacted, including the adjacent industrial estate; suppliers of raw materials and related products and users of the by-products.

The potential impacts on human beings were assessed under the following headings:

- Amenity of Dwellings & Community Facilities
- Population and Economic Activity
- Land Use
- Local Amenity
- Health & Safety

Amenity of Dwellings & Community Facilities

The potential impacts of the proposed development on the amenity of dwellings and community facilities were identified as related to construction activities; visual impact; traffic and transport; noise and vibration; and air quality & climate.

Construction Impacts:

Overall it is considered that, with appropriate mitigation measures, the impact of the construction phase of the development on residential amenity and community facilities will predominately be neutral. There may be a slight negative traffic impact on Jack & Jill Crèche on Avoncore Road, due to its poor set-down and parking arrangements. This impact will be reduced when the construction process is completed. The construction works will result in a change to the Midleton skyline, but this is considered to be in keeping with the character of the town and the industrial nature of the existing facility.

Operational impacts:

Operation impacts from the proposed development are considered to be neutral to imperceptible – as there will be no dust, emissions or significant noise generated from the site. Operational traffic will increase on a phased basis, but the local road network has sufficient capacity to accommodate the increase without negative impacts on residential amenity and community facilities.

Mitigation Measures:

A number of mitigation measures have been integrated into the design, or are proposed to reduce or negate any potential impact of the proposed development on residential amenity and community facilities. These are:

- The implementation of a Construction Management Plan, to include several key elements, including: construction safety arrangements; construction logistics and a traffic management plan.
- The implementation of a dust minimisation plan during the construction phase of the development.
- The traffic management plan will divert HGV traffic from the Main Street / Connolly Road junction.
- Building design and plant specifications have taken into account the necessity to limit noise emissions from the distillery processes.
- Building design of the still house has ensured a high quality building, which will enhance the setting of the existing distillery.

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- Building design and siting of additional plant has reduced the visual impact of the proposed development.
- Landscaping proposals to screen plant & buildings from close range views.

Population and Economic Activity

Midleton Town and Environs is targeted for strong population and employment growth. 2011 census data indicates that there was a strong growth in population in the Midleton Rural DED, with a slight decline in population with Midleton Urban District. Overall the population has grown more rapidly than county or national averages, indicating that the spatial strategy for targeting growth to the settlement is being implemented. In terms of economic activity, in 2006 employment rates in Midleton were very strong but analysis of live register data indicates that there has been a sharp decline in employment since 2007. 2011 census data on household size; age categories or employment will not be available until sometime in 2012.

The construction and operational impacts of the proposed development are considered to be either neutral or positive. The construction phase will require the employment of circa 250 contractors and a range of building materials and supplies. The operational phase will consolidate existing employment and will result in an increase in the workforce of approximately 20%.

The construction management plan will place restrictions on the hours of operation of construction and of construction traffic accessing the site, to minimise any disturbance to the population and local businesses in the area. It is considered that no further mitigation measures are required, as the impacts on population and economic activity will be either neutral or positive.

Land Use

The majority of the site is within Cork County Council boundary and currently zoned as existing built up area. The use of these lands is divided between distillation/production and maturation storage. The majority of the proposed development will be located within these brownfield lands. There will therefore be an intensification of land use in this area.

The lands to the north of the Jameson Experience Midleton are currently described as the 'Garden' of the Distillery. The area offers some storage for the distillery and consists of low quality landscaping. This area was proposed to be zoned for 'Town Centre / Mixed Use' in the 2009 Draft Midleton Town Plan. It is proposed that the new still house will be developed in this area, enhanced by appropriate landscaping.

The development will result in a permanent change in land use in this area. This change of use is considered to be a moderate positive impact because:

- The land is currently underutilised;
- Its development as a production facility would result in the efficient use of land; and
- Building design; landscaping is to be of a high standard.

Local Amenity

The hockey pitch in the grounds of Midleton College and Midleton Rugby Club are the only local amenities in the vicinity of the proposed development, or located on access routes to the Distillery. The impact on the amenities is considered to be neutral and therefore no mitigation measures are required.

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Health & Safety

The Health & Safety risk associated with the proposed development relate to construction activities, which are addressed in the Construction Health & Safety Plan, in compliance with the Safety, Health and Welfare at Work (Construction) Regulations 2001-2006.

As a result of the site's Seveso designation, IDL will revise the Safety Report, currently approved by the HSA, prior to any work commencing. Compliance with the HSA approved Safety Report will ensure mitigation of any health & safety operational impacts.

18. Cumulative Impacts & Interaction of Impacts

Cumulative Impacts

The assessment of cumulative impacts considers past, present and probable future projects. The predicted impacts between the proposed development and other developments are outlined below:

Increased Demand on Rathcoursey Holding Tank

The Rathcoursey Holding Tank has sufficient capacity to accommodate the projected increase in output from the distillery and a population equivalent (PE) of 15,000 for Midleton. The long term spatial strategy for Midleton will require this tank to be upgraded to accommodate future population and employment growth. This requirement is identified in the Midleton Electoral Area Local Area Plan and prioritised for investment by Cork County Council. The development contributions from the proposed development will assist in financing a future upgrade.

Increased traffic on the R627 Dungourney Road

The permitted development of a satellite warehousing facility at Dungourney permitted in May 2011 (planning reference 10/08418) will, in conjunction with this proposed development result in some increase in traffic on the R627 Dungourney Road. It is concluded that the road has sufficient capacity to accommodate any increase in traffic. The cumulative impact of the developments is therefore negligible.

Visual Impact from Midleton College

In terms of cumulative impacts, the two permitted extensions to Midleton College will change the visual context from the protected structure of Midleton College. The structures will restrict some of the views from the College into the site - providing some screening of the distillery plant. The cumulative impact of the developments is therefore considered to be slight positive in terms of views from the College – as the primary views will be the extended college buildings and the high quality designed still house.

Distillery Capacity

There are a number of other past, present and probable future developments related directly to the distillery site. These developments are linked to improving logistics; operational procedures and the employee environment. Cumulatively, the other developments will support the proposed expansion of output at the distillery but they will not increase capacity beyond 64 MLA per annum. The proposed development of the brew house will have a positive impact on the environment, as it will provide some screening of noise from existing and proposed plant.

In general terms, Midleton Town and Environs is projected for substantial population and employment growth within the national, regional and local planning policy context. The proposed expansion of Midleton Distillery was identified within the Midleton EA LAP and the proposed expansion of employment is consistent with the objectives of the plan, and contributes to the overall target of employment growth. The cumulative impacts of the proposed development with other general development objectives in the Midleton area are therefore

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considered to be positive in the context of contributing toward the strategic planning objectives for the town and its environs.

Indirect Impacts

A number of potential indirect impacts have been identified during the preparation of this EIS, particularly within the Human Beings Chapter. Indirect impacts are considered to be:

Increase in the Demand for Raw Materials.

The consequence of this will be a moderate positive impact for grain merchants delivering supplies to IDL and by association, farmers who provide raw materials to grain merchants.

Increase in Tourism; Marketing and Retail related to IDL's Products.

The consequence of the proposed development will be increased production and volume sales of IDL's range of Irish Whiskey and other products. Increased marketing and promotion of these products particularly abroad will increase awareness of the Distillery and there will be a slight positive economic impact on these sectors.

Creation of Employment in Construction Sector

The proposed development will lead to the creation of direct employment in the construction sector and support and create employment in associated building products industry . The consequence of this will be a slight positive economic impact for relevant building suppliers.

No other indirect impacts of the proposed development were identified.

Significant Interaction of Impacts

In terms of interaction of impacts, in practice many impacts have slight or subtle interactions with other disciplines. Interactions which are considered to be potentially significant have been identified and are highlighted in Table 18.1 – Matrix of Interactions.

Discussion of the nature and effect of the interaction is primarily undertaken within relevant chapters of the EIS. The aim of chapter 18 is to highlight important interactions and to ensure that they have been appropriately considered elsewhere within the EIS.

Table 18.1: Matrix of Potential Interaction of Impacts

	Waste Management & Sustainability	Construction Activities	Landscape & Visual Impact	Traffic & Transport	Soils & Geology	Hydro-geology	Hydrology	Ecology	Noise & Vibration	Air Quality & Climate	Material Assets	Human Beings
Waste Management & Sustainability	-	C	-	-	C/O	C/O	C/O	O	-	O	-	O
Construction Activities	C	-	C	C	C	C	-	C	C	C	C	C
Landscape & Visual Impact	-	C	-	-	-	-	-	-	-	-	C/O	C/O
Traffic & Transport	-	C	-	-	-	-	-	-	C/O	-	-	C/O
Soils & Geology	C/O	C	-	-	-	C/O	-	C/O	-	-	-	O
Hydrogeology	C/O	C	-	-	C/O	-	O	O	-	-	-	-
Hydrology	C/O	-	-	-	-	C/O	-	O	-	-	-	O
Ecology	C/O	C	-	-	C/O	O	O	-	-	-	-	-
Noise & Vibration	-	C	-	-	-	-	-	-	-	-	-	C/O
Air Quality & Climate	C	C	-	-	-	-	-	-	-	-	-	C
Material Assets	-	C	C/O	-	-	-	-	-	-	-	-	-
Human Beings	C/O	C	C/O	C/O	O	-	O	-	C/O	C	-	-