



SIFP

Strategic Integrated Framework Plan
for the Shannon Estuary
2013-2020

Strategic Integrated Framework Plan for the Shannon Estuary

An inter-jurisdictional land and marine based framework to guide the future development and management of the Shannon Estuary

VOLUME 1: WRITTEN STATEMENT



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The SIFP Steering Group comprises

- Clare County Council (Lead Authority, with Mr Tom Coughlan as Chair)
- Kerry County Council
- Limerick County Council
- Limerick City Council
- Mid-West Regional Authority
- Department of Environment, Community and Local Government
- Shannon Development
- Shannon Foynes Port Company
- National Parks and Wildlife Service
- Marine Institute
- Environmental Protection Agency
- Office of Public Works
- National Monuments Service
- Limerick Clare Energy Agency
- Inland Fisheries Ireland
- Eirgrid
- Shannon Airport Authority
- Shannon International River Basin District Project





1.0 Introduction to the Plan

The Shannon Estuary is an immensely important asset and one of Ireland's most valuable natural resources...

...covering 500km² of navigable waters stretching 100km from Limerick City to Loop Head, Co Clare & Kerry Head, Co Kerry.

The Strategic Integrated Framework Plan (SIFP) for the Shannon Estuary is an inter-jurisdictional land and marine based framework plan to guide the future development and management of the Shannon Estuary. It has been commissioned by Clare County Council, Kerry County Council, Limerick City and County Councils, Shannon Development and the Shannon Foynes Port Company. The project is being overseen by a multi-agency steering group comprised of the above and other key stakeholders with an interest in the Estuary.

1.1 INTRODUCTION

The Shannon Estuary is an immensely important asset and one of the most valuable natural resources in Ireland and the Mid-West Region in particular – the fringe lands and the marine area both provide space and location for development, activities and opportunities to progress economic, social and environmental growth within the Region. However, if this is not progressed in a sustainable, integrated and carefully planned manner, opportunities will be lost to preserve, conserve and enhance the very attributes which sustain this natural resource. An over-arching, integrated framework for moving forward is required, to assist in the planning and sustainable development of this exceptional region.

The Estuary is the largest in Ireland, with a water body of some 31,500 ha, covering a distance of approximately 100km from Limerick City to Loop Head. It has a long established history of facilitating major industries, including Shannon Foynes Port at Foynes and Limerick Docks. The Port has grown to become Ireland second largest port operation, handling the largest vessels entering Irish waters, up to 200,000dwt. Shannon International Airport, ESB Moneypoint, Tarbert Power Station, NORA Fuel Storage, Aughinish Alumina have also grown and become major industrial and employment hubs within the Estuary, operating efficiently and sensitively within the estuarine environment.

The Estuary's deep water, generous hinterland, skilled resident population, and location at the entrance to the Gateway of Limerick City provide an attractive base for these various industries. It has become a major contributor to the energy supply market. ESB Moneypoint has been generating electricity for around 25 years, and with a capacity of 915 MW it is capable of meeting approximately 25% of Irelands demand for

electricity. Along with Tarbert Power Station (Photo I), it has created a strategic energy hub within the Shannon Estuary, facilitating the growth of strategic grid infrastructure and other synergistic industries such as renewable energy and combined heat and power.

The coast and shoreline has always been an important location for economic and social activity and the blend of natural and historical landscapes within the Estuary are a valuable tourism and recreational asset. Traditional activities such as commercial and recreational fishing and aquaculture, based on the core assets of the Estuary have served to create employment and a good standard of living for the coastal population.



Photo I - Tarbert from the N69

There has been an increase in human activities on the land and sea, utilising the Estuary resources, and harnessing its potential, not just shipping and fishing, but the emergence of marine renewable energy opportunities, maritime tourism and recreation/cruise ships. The Shannon Estuary is multi-functional, as the waters and adjoining lands support a range of functions, uses, communities, activities, and environmental resources/assets, which all bring character, prosperity and vibrancy to the area. The Estuary and the settlements directly adjoining it are outlined on Figures 1.2 - 1.3 Volume III.

Among the most notable functions are:

- Shipping/Port functions
- Marine related Industry/Industry
- Fishing/Aquaculture
- Marine Tourism, Leisure and Recreation
- Energy generation
- Fuel Storage
- Aviation

- Heritage and Landscape
- Valuable Habitats and Species

The Estuary also provides a wide range of habitats, including mudflats, rocky shores, salt marshes, beaches, and dunes amongst others. It is designated as Special Area of Conservation (SAC) as part of a network of sites across Europe under the Habitats Directive, known as the Lower River Shannon SAC. The entire Estuary as far west of Foynes is designated as a Special Protection Area (SPA) known as the River Shannon and Fergus Estuary SPA as part of a network of sites within Europe, under the Birds Directive, with a major extension proposed to cover the rest of the Estuary (Figure 2.7 Volume III).

This dual Natura 2000 designation within the Shannon Estuary emphasizes the uniqueness of its natural environment and resources, and places considerable responsibilities on those seeking to progress any proposals within the area, to ensure this uniqueness is maintained and safeguarded. The requirements of the Habitats and Birds Directive, will remain a key determinant in the future development of the overall Estuary.

There are several Natural Heritage Areas and proposed Natural Heritage Areas within the study area, which protect important habitats or protect threatened species of plants and animals. The conservation and enhancement of the Estuary's rich biodiversity is essential, to ensure that the integrity of its natural environment is preserved. Although conservation and enrichment of this delicate estuarine environment is vital, it has not prohibited the evolution and growth of many of the major industries and businesses which furnish the shores of the Estuary, providing economic and social well being of many of the coastal settlements and further afield.

The focus going forward is on optimizing opportunities for economic and social development within the Estuary to provide local employment, sustain coastal communities and help provide a better standard of living for all, building on the assets and resources already available, such as the Shannon Free Zone (Photo 2).

There is an increasing focus on the potential to be yielded from the area's natural resources and assets, in seeking to encourage economic development and investment in the Mid-West. The Estuary itself, its natural deep water, large hinterland, proximity to the

Gateway of Limerick / Shannon, access to the western seaboard, good transport linkages with the potential for multi-modal improvements to air, sea and rail connections, and a skilled labour force all create optimal baseline conditions for investment, industry, trade and employment, if encouraged, promoted and facilitated in an appropriate, sustainable and rational manner:



Photo 2 - East Park Shannon Free Zone

Careful consideration is required to ensure that harnessing economic growth and development opportunities within the Estuary does not place undue restriction, pressure or impact on some of the area's most precious resources. This can include environmental resources which form the basis of traditional industries including fish, shellfish, valuable landscape features, and recorded monuments, which create the tourism and leisure industries. Challenging conflicts can occur in respect of the potential impact of an activity or use on the sensitive environment, more specifically the valued habitats and species which structure and populate the Estuary's ecosystem.

Harnessing the potential of the opportunities for economic development needs to be developed in an integrated and balanced manner, which seeks to optimize the economic benefits and resources, improve social and environmental well-being, as well as securing the protection and conservation of the natural marine environment.

HOW CAN THE TWO SUCCESSFULLY EVOLVE FURTHER?

Over the past number of decades, numerous studies have been undertaken by various agencies and consultancies to assess the potential opportunities offered by the Estuary. These have centred on the natural resources of the Estuary in terms of its tourism, leisure and recreation potential, including the reports by ArthurYoung (1989) and Brady Shipman Martin (1999). Many studies have been carried out to examine a range of economic, business and industry opportunities for development potential, including the Ewbank Preece Study (1989), Price Waterhouse Cooper (1998), and various reports by Shannon Foynes Port Company.

The challenge for all users and the key statutory agencies, who act as custodians of the Estuary, is how to nurture and cultivate a place where local, regional and international activities dependant on it, can grow and expand to sustain its local communities and its economy, whilst protecting and enhancing the environmental qualities which underpin its exceptional and internationally valued ecological status. A strategic integrated framework is critical to providing the vehicle to deliver effectively managed development and sustainable growth by addressing these challenges, striking the appropriate balance between sustainable development choices and preventing detrimental impact on the environment.

The Regional Planning Guidelines and County Development Plans are important mechanisms for creating this balance, between protecting the delicate character of the Estuary, encouraging new development in urbanised area, and preserving the landscape of the open coastline. A core component of any framework plan will be the implementation of a development strategy consistent with the Regional Planning Guidelines, County Development Plans and the Strategic County Development Plan and the Strategic Environmental Assessment (SEA) Directive. The use of Strategic Environmental Assessment and Appropriate Assessment (AA) are key tools in assessing potential impacts of any future opportunities on sensitive estuarine resources, ensuring that environmental considerations are an integral part of sustainable, forward planning in the Estuary. This will assist the framework in achieving an appropriate balance, by exploring core issues and outlining the pathway to its successful establishment.

This framework has carefully considered the potential for harnessing economic growth and development opportunities within the Estuary, at a strategic level, within the context of ensuring it does not place undue restriction, pressure or impact on some of the area's most precious resources. However, in progressing future opportunities within the Estuary, all future proposals will be subject to the outcome of Appropriate Assessment, due to their location within/near part of the designated Natura 2000 network.

This process of assessment, at project level, has the potential to trigger Article 6(3) and should it be necessary, Article 6(4) of the Habitats Directive, as part of the Appropriate Assessment, when it cannot be proven beyond reasonable doubt, that the proposals, if implemented, will not result in an adverse effect on features of the Natura 2000 site. In this instance, the Competent Authority should give consideration as to whether the project will pose a risk of adverse effects on the Natura 2000 site, and in the absence of alternatives, will need to consider Imperative Reasons of Overriding Public Interest (IROPI) for the project to progress, at an early stage in the pre-application development process, to establish a robust and practical justification for the project. This will be acutely important should such a proposal involve the permanent loss of habitat, disturbance of a species or loss of habitat of a species protected under the Habitats Directive.

Although planning and regulation of the land and marine elements within the Estuary are delivered by different regimes, these areas are intimately connected and interdependent, economically, socially and environmentally particularly along the coastline interface. As such, it is crucial for the framework to adopt a balanced and integrated approach to harnessing the Estuary's economic growth potential, and to ensure the interrelationships are considered carefully and fully understood. Moreover, it is equally important to consider both in the context of the Estuary ecosystem, as the effects of all development can impact valuable habitats and species such as birds across the divide. The Estuary's sea space is able to sustain a large variety of activities in any one area. The multi-dimensional nature of a water body can accommodate numerous uses in the one location. However, this can give rise to a greater propensity for conflicts between uses, and between uses and the environment.

The publication of the Integrated Marine Plan for Ireland (Harnessing our Ocean Wealth, July 2012) has provided the most recent overview of key opportunities, targets

and actions, as well as advice and support for realizing the economic opportunities for sustainable growth within the marine area. In the absence of a Marine Spatial Plan and a formal framework for Integrated Coastal Zone Management within the Estuary, the approach to forward planning in the marine environment has been somewhat fragmented, with the focus on regulation and consent as opposed to defining future spatial direction. The SIFP will provide strategic guidance for development proposals and activities, as well as a high level framework for leading and achieving integrated planning within the marine area.

An over arching Framework setting out a strategy for an integrated and coordinated approach, within the context of the Development Plans and the Integrated Marine Plan, is essential to address the opportunities for sustainable development available now and in the future, and provide a robust foundation for moving forward.



Legend

- Study Area
- County Boundaries
- City
- Town

CLIENT

Clare County Council

PROJECT

Strategic Integrated Framework Plan
for the Shannon Estuary

TITLE

Site Location

FIGURE

Figure 2.2

Drawing No.:

IBEO638.01 Rev 01

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Approved By: S. Fay

Date: 01/08/13

Scale: 1:270,000 A3

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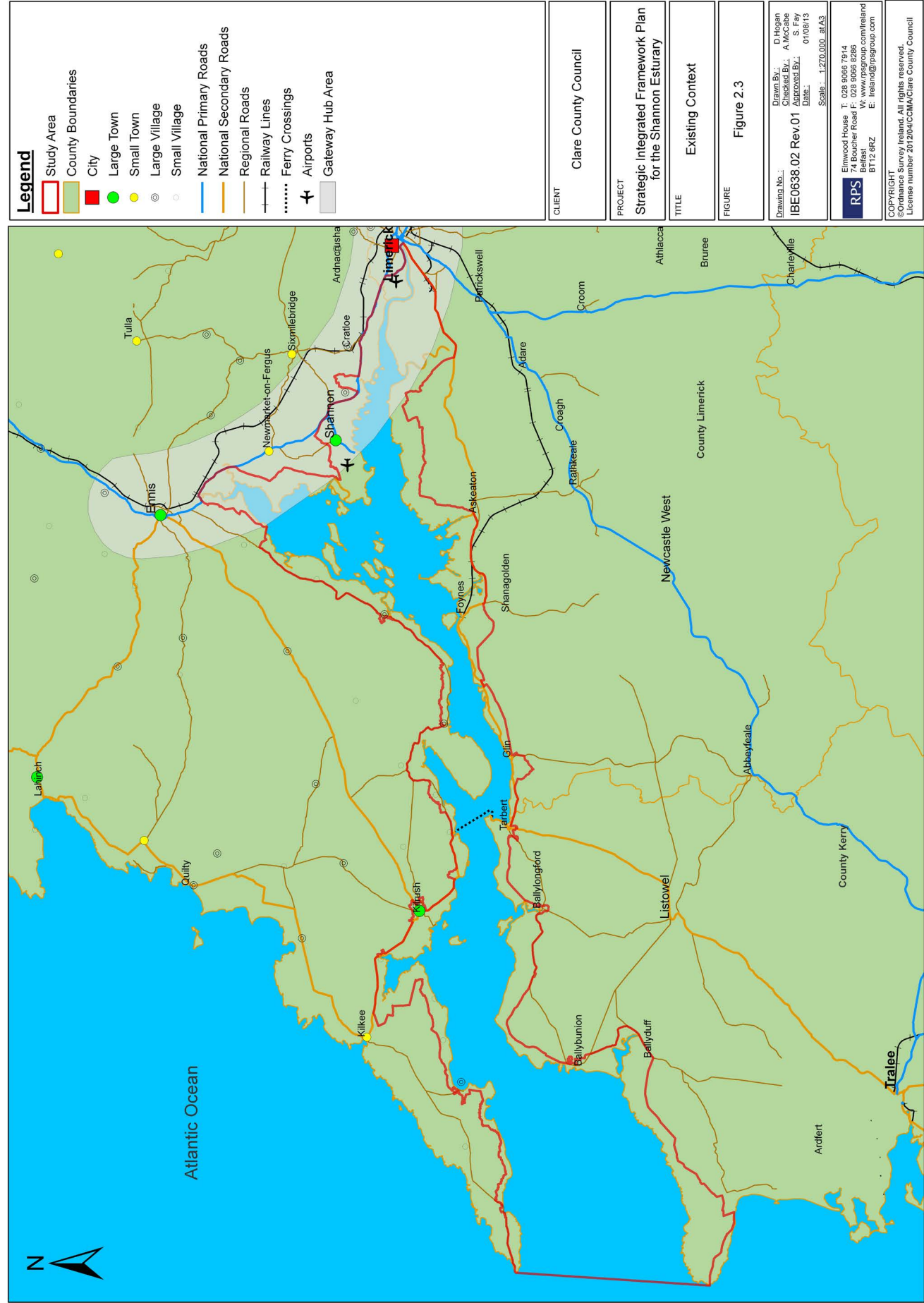
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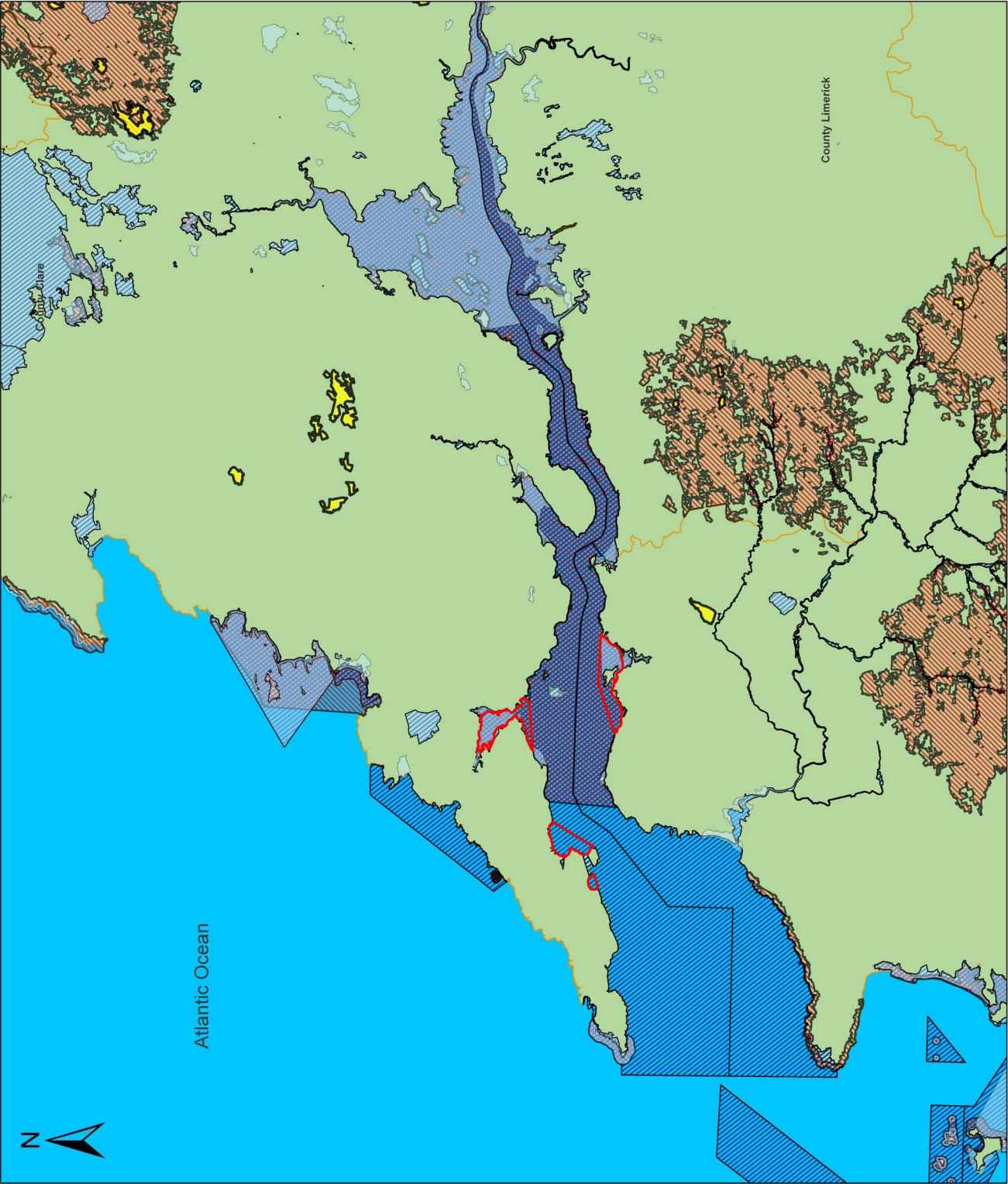
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Map I: Study Area



Map 2: Key Settlements & Road Network



Legend <div><div>Shellfish Protected Areas</div><div>Natural Heritage Areas</div><div>Potential Natural Heritage Areas</div><div>Special Protection Areas</div><div>Special Areas of Conservation</div><div>County Boundaries</div></div>	CLIENT Clare County Council	PROJECT Strategic Integrated Framework Plan for the Shannon Estuary	TITLE Designated Areas	FIGURE Figure 2.7	Drawing No.: IBEO638.06 Rev 01 Drawn By: D. Hagan Checked By: A. McCann Approved By: S. Fay Date: 01/08/13 Scale: 1:270,000 A3 RPS Elmwood House T: 095 8565 7914 74, Kesh Road F: 095 8565 8388 Belfast W: www.rpsgroup.com/ireland BT12 6RZ E: Ireland@rpsgroup.com COPYRIGHT © Ordnance Survey Ireland. All rights reserved. License number 201204/CMA/Clare County Council
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Map 3: Key Environmental Designations

I.2 BACKGROUND TO THE PLAN

The Framework area encompasses both the marine area of the Estuary and its fringe lands. Both are key resources, and provide space and location for potential development, stretching from the Shannon Bridge in Limerick City, to the first bridge in Clarecastle, along the Limerick and Clare shorelines, past Foynes and Moneypoint, towards Loop Head in Clare and Kerry Head in North Kerry.

The SIFP for the Shannon Estuary seeks to promote the Regional Planning Guidelines objectives to identify and harness the socio and economic development resources of the Estuary, which are compatible with sustainable development objectives and the protection of the environment. Its preparation was commissioned by Clare County Council, Kerry County Council, Limerick City and County Councils, Shannon Development and Shannon Foynes Port Company. It is being overseen by a multi-agency Steering Group comprising the above, and other key stakeholders with an interest in the Estuary, with Clare County Council as lead authority. One of the key roles for the Steering Group was to ensure all issues, challenges and opportunities outlined in each Development Plan were examined and comprehensively addressed. The goal at the outset of the SIFP preparation was to review existing relevant information and data, conduct additional essential research and prepare a marine and land use planning strategy for the SIFP study area. A Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) were initiated to guide and inform this process.

The SIFP will provide the strategic framework for future development in and around the Estuary by developing core principles and development objectives and by identifying locations of strategic importance in the future development of the Estuary. The provisions of SIFP will be adopted into the relevant County and City Development Plans by way of a variation that will incorporate the SIFP principles, policies and objectives. It will allow the Strategic Development Locations to be brought forward for further assessment and consultation, facilitating the defining of appropriate land use zonings, within the terrestrial environment, by each Local Authority. It is also anticipated that the Plan will be incorporated into the Shannon Foynes Port Company Masterplan to assist in guiding the future growth and development of the Port.

The key objective of this project is to research and develop an integrated approach to facilitating economic growth and promoting environmental management within and adjacent to the Shannon Estuary.

The Estuary and its environs is a multi-functional zone, with the waters and adjoining lands supporting a range of functions, uses, communities, activities, and environmental resources/assets which bring character, prosperity and vibrancy to the area. However, the development of plans, policies and objectives for these varied interests requires a comprehensive approach to carefully balance competing demands.

The Terms of Reference outlined the broad objectives of the Plan, namely to:

- Support the multi-functional nature of the Shannon Estuary, and identify opportunities to expand the existing economic base, including port related industry and other related activities;
- Facilitate the diversification of the economy, through the promotion of commercial/industrial employment (Photo 3), environmentally friendly aquaculture, maritime, energy, transport, recreation and tourism industries in a sustainable manner;
- Protect, manage and enhance the natural coastal environment along the Estuary, including its cultural, natural and built heritage;
- Safeguard the Estuary's sensitive environmental resources (Photo 4) and natural heritage of national, European and International significance.
- Establish an evidence-based approach to identifying areas for future development, to ensure proposals will work in harmony with the designated Natura 2000 sites.



Photo 3 - Aughinish Alumina Ltd is a large employer in the area

The Plan will deliver a co-operative and integrated approach between the statutory authorities and agencies involved and agencies involved in the area, within their statutory remit, and provide a sustainable, integrated and proactive vision for the future of the Shannon Estuary and its environs. The Plan will comply with the core strategies contained in each of the relevant County Development Plans and have regard to current planning and environmental legislation and statutory documents.

Overall, the SIFP objectives and spatial proposals aim to:

- Facilitate integration and optimising decision-making in a way that ensures the best use of available resources, combining those uses which are compatible and limiting those which are incompatible
- Actively promote synergies and facilitate co-use between the complexity and extent of stakeholder interests that come together within this coastal zone.

- Assist with strategic conflict resolution at a regional rather than project level.
- Create a level of investor confidence within the area and wider region, identifying locations for potential development, and inspiring confidence in the regulatory and decision-making processes

The preparation of the SIFP is a proactive framework responding to the need to plan future sustainable development and deal with undesired impacts. It aims to integrate aims and objectives from different stakeholder interests, responds to future trends and demands, and provides a framework for responding to these.



Photo 4 - Coastal Environment at Shannon Town

1.3 PURPOSE & SCOPE OF SIFP

The Local Authorities within the SIFP Study Area determine the spatial land use planning system, and control it using the objectives laid out in the County/City Development Plans, relative to their administrative areas covering Limerick City, Limerick County, County Clare and County Kerry as well as associated Town and Local Area Plans. These Plans, in conjunction with the relevant Regional Planning Guidelines, take account of and guide development proposals for various land uses up to the High Water Mark, in the context of the Planning and Development Act 2000 (as amended 2010).

The Study Area for the SIFP encompasses land based areas, which border the Estuary, and are directly related to it i.e. the uses and activities are in some way directly dependant on the Estuary for their income, outputs, views, heritage and environment.

The SIFP comprises the following documents:

- Volume I: Written Statement
- Volume II: Appendices
- Volume III: Maps & Figures

A Strategic Environmental Assessment and a Natura Impact Report have informed the preparation of the Plan, and are also published with the Plan for information.

1.3.1 IMPLEMENTATION

The SIFP will be adopted through variation of the relevant County and City Development Plans, and will become planning policy within the spatial land use planning system. As such, the local Authorities will undertake the primary role of enabling its implementation and delivery.

When adopted, the SIFP will provide statutory planning guidance for development proposals within the SIFP Study Area, for the land uses listed below, namely:

- Marine Related Industry and other large scale industry connected to the Estuary, including Ports and Port-related developments;
- Marine Tourism, Leisure and Recreation;
- Energy Generation, including fuel storage;
- Aviation and Aviation related proposals
- Commercial Fishing & Aquaculture

Development proposals will be subject to the environmental objectives in the SIFP. Following adoption of the SIFP into the relevant County Plans, it anticipated that the Strategic Development Locations (SDL) will be brought forward through the formal development plan process, with each SDL reflected within the Development Plan, as a land use zoning. Each Local Authority will carry out further analysis and consultation with key stakeholders, to identify a terrestrial boundary definition for an appropriate land-based zoning, where one does not already exist or where expansion of an existing zoning is required. It is expected that this terrestrial land zoning will be adopted, through the statutory variation process, into the County Development Plan, as a basis for future development planning.

The SIFP is limited to the themes/land-uses noted above, and does not include statutory provisions for residential or retailing land uses. The policies in the SIFP should be read in conjunction with the existing policies in the relevant County and City Development Plans. SIFP policies do not in any way alter the development priorities as set out in the NDP, NSS, Regional Planning Guidelines and the core strategies of the relevant County and City Development Plans.

The marine environment of the Estuary is also within the Study Area of the SIFP. This encompasses the intertidal and sub tidal areas and existing and/or proposed activities within this area. These are regulated by various statutory agencies, including the Department of Environment, Community and Local Government, Department of Communications, Energy and Natural Resources, Environmental Protection Agency and the Department of Agriculture Food & the Marine and the Shannon Foynes Port Company. Although Local Authority boundaries dissect this zone with a fairly arbitrary line, their remit in controlling and planning for uses and activities are limited, particularly, within a spatial context. It is intended that the SIFP will be employed as non-statutory guidance for uses and activities within the marine area, to assist the statutory agencies in their decision-making process.

The Steering Group members will be key partners to the Local Authorities, providing a supporting role, and assisting in the promotion and delivery of the objectives, over the Plan period. They play an important role in promoting the vision, implementing the overall strategy and delivering the development objectives for the regions. Although the draft SIFP will have no immediate statutory remit within marine waters, it is important that the Steering Group ensure that the outcomes and objectives of the draft SIFP are used to inform and guide the development of policies and objectives for the future development of the marine area. The SIFP will provide guidance to inform any future marine spatial planning exercise.

1.3.2 SEA & AA

The processes of SEA and AA have been carried out in tandem with the evolution of the draft SIFP, as shown in Diagram 1 below). It is clear in the accompanying SEA Environmental Report and Natura Impact Report that environmental considerations have been at the core of the decision-making process at each stage. The assessments have exerted a strong directional influence on the development of the draft Plan, both in terms of the Development Objectives and the selection of the Strategic Development Locations. The outcomes of these processes have identified mitigation measures which seek to reduce the likely significant effects on the sensitive environment, and have therefore been incorporated into the draft Plan.

The aim of the Plan is to promote and protect sustainable activity as a key element of the economic development of the Mid West Region, consistent with Harnessing Our Ocean Wealth (Photo 5) within the Shannon Estuary and its fringe lands. On this basis, it is crucial to consider a holistic approach to the land and marine areas together to ensure that the proposals for new functions, uses and activities directly relate to and are focused on the Estuary, and the environmental effects and interrelationship between the two is subject to a high level evaluation at this early stage, thereby creating an integrated approach.

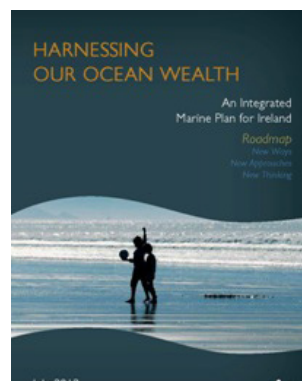


Photo 5 - Harnessing Our Oceans Wealth

Taking a holistic approach also involves collating data resources such as iWebs, habitat mapping and thereby creating a sound basis for a strategic and forward thinking Plan

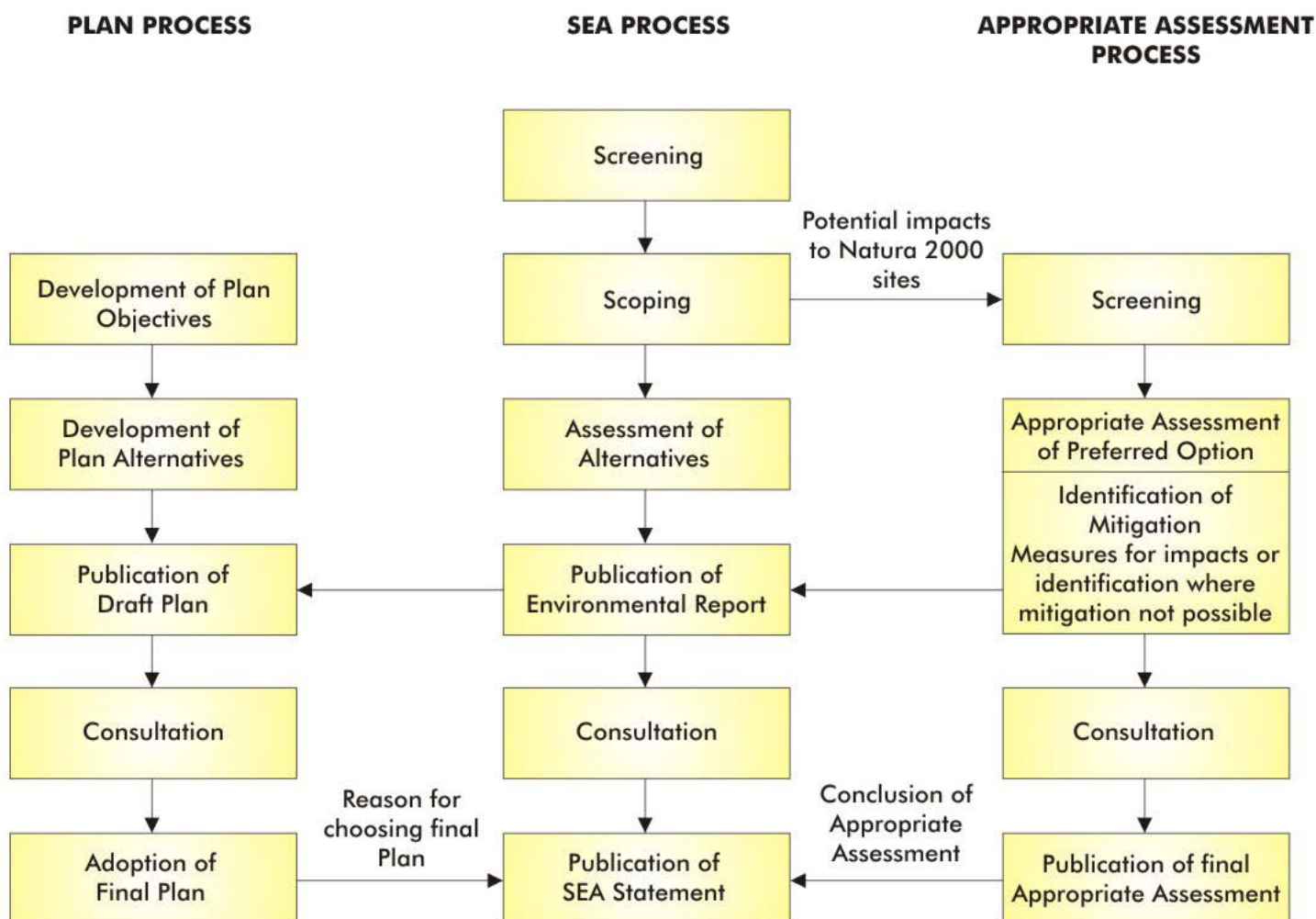


Diagram I: Integration of the SIFP, SEA and AA

I.4 STUDY AREA BOUNDARY

The SIFP boundary extends westwards from the Shannon Bridge in Limerick City, incorporating the Estuary in its entirety, right along to its interface with the Atlantic Ocean. The boundary is outlined in Figure 2.1, Volume III.

Within Limerick City, the boundary travels from the N69 onto Dock Road, crosses the Shannon Bridge, and travels west along the Condell Road, Ennis Road and joins the N18. As such, the majority of Limerick City urban area lies outside the core boundary of the SIFP. The preparation of an Economic Development and Spatial Implementation Plan for the revitalization for Limerick City has recently commenced, and will capture proposals for the urban area, which is outwith the SIFP study boundary.

In drawing up the preliminary SIFP boundary, consultation was undertaken with the Steering Group and other key stakeholders. In addition, a review of the physical topography of the landscape, visual appraisal; and a review of planning and environmental designations, was carried out within the Estuary and its associated river basins. The preliminary boundary (Area of Interest) extended approximately 1km inland from the Estuary shore line, incorporating an area of 926km².

Further refinements to the boundary were made following a detailed consultation period. The final SIFP Study Area boundary, outlined in Figure 2.2 Volume III, incorporates an area of 31,500 ha. The boundary has been refined, where possible, to follow distinguishable, existing boundaries with a hierarchical preference given to National Roads, Regional Roads and minor roads in that order. Where such roads were not sufficiently proximate to the Estuary (the SIFP boundary extends no further than approximately 3km from the Estuary shoreline at its most distant point), the boundary follows distinguishable features such as zonings outlined within the relevant County Development Plans. Where considered appropriate within the context of the proposals taken forward within the Plan, the boundary has also been refined to include the limits of settlements, as defined by relevant development plans.

A notable exception to the above is the extent of the SIFP boundary within the locale of Moneypoint Power Station. The SIFP boundary extends northwards from the alignment of the N67 to incorporate future development lands which were identified during early consultation with the Steering Group reflecting the significance of Moneypoint as Ireland's largest electricity generation station.



2.0 The Context

“The study area incorporates the Estuary in its entirety extending across the four administrative boundaries of Counties Limerick, Clare and Kerry, as well as Limerick City”

2.1 SOCIO-ECONOMIC CONTEXT

2.1.1 DEMOGRAPHICS

The study area for the SIFP extends westwards from Limerick City, incorporating the Estuary in its entirety, to its juncture with the Atlantic Ocean. The Study area extends across the County and City administrative boundaries of Kerry, Limerick, Clare and Limerick City which have coastlines along the Estuary.

All three counties, with the exception of Limerick City, have been experiencing increases in population since 2006, and the preliminary results from the census indicated the following key statistics (CSO I, 2011):

- Limerick City: population fell from 59,790 people (2006) to 56,779 (2011)
- Kerry County: population increased from 139,835 (2006) to 145,048 (2011)
- Clare County: population increased from 110,950 (2006) to 116,885 (2011)
- Limerick County: population increased from 124,265 (2006) to 134,527 (2011)
- Mid-West Regional Authority area: Population in general increased from 361,028 (2006) to 378,028 (2011)

The key aspects of the National Spatial Strategy and the Regional Planning Guidelines which have influenced the settlement structure within the county development plans include the populations targets for the Plan area, the spatial structure designating Limerick/Shannon as a Gateway, Ennis as a Hub, the complementary role of other towns and villages and the spatial planning framework to support sustainable rural settlement.

Limerick City is largest and most important settlement within the Study Area, and is part of the Limerick-Shannon Gateway identified in the National Spatial Strategy (NSS). The NSS identified the City as a key settlement in terms of providing:

*‘national scale social, economic infrastructure and support Services’
(NSS, 2002)*

Likewise Shannon's role as part of the Limerick-Shannon Gateway is recognised in the Clare County Development Plan:

'It is an objective of the Development Plan - To ensure that Shannon, as a linked gateway with Limerick in the NSS, is a driver of County and regional prosperity by harnessing its strategic location and access on the Atlantic corridor; in addition to its employment base, international airport and other competitive advantages.'

There are a number of other settlements distributed throughout the Study Area and its immediate locale. Ennis is identified as a Hub town within the NSS 25,360 (CSO, 2011) respectively, the towns serve as:

'supporting the national and international role of the gateways and in turn energising smaller towns and rural areas within their sphere of influence'
(NSS 2002-2020).

Of the smaller towns, Kilrush is significant as a designated Service Town where there is considerable potential to increase the contribution to the regional economy and the town's rural hinterland. Other important smaller settlements located within the study area including Ballybunnion, Tarbert, and Foynes. The geographical context of the study area and the distribution of settlements throughout are indicated in Figure 2.3.

The lower Shannon Estuary and its surrounding hinterland facilitate large scale, national industrial activities, and as such is considered by many as a key economic driver for the national and regional economy. The presence of the deepwater port at Foynes, the Moneypoint ESB power station and the Aughinish Alumina plant demonstrate the critical role played by the Shannon Estuary, in facilitating economic development within the national context.

The sea ports at Foynes and Limerick Docks are hugely important providing employment services and trade, particularly given that 99% of Ireland's international trade is facilitated through its Ports. More specifically, these Ports facilitate 35% of all bulk traffic and are the largest bulk traffic facility. Therefore, the Shannon Estuary and its Ports play a central role in accommodating Ireland's international trade (Photo 6) and are strategically important resources, both regionally and nationally.

The Shannon Estuary and its surrounding hinterland benefits human health by providing a peaceful recreational environment for residents and visitors alike. Its shorelines are currently used by tourists and locals for small scale boating, jet skiing, angling, canoeing, cycling and walking throughout its length. Parts of the Estuary contain beautiful and scenic beaches and designated walkways and drives.



Photo 6 - Aquaculture in West Clare

2.1.2 FISHING AND AQUACULTURE ACTIVITY

A considerable range of different fishing activities take place within the Shannon Estuary, providing an important commercial enterprise, employment source and recreational amenity for the local communities within the Estuary. The fishing activity includes mackerel and scad fished off Loop Head, whitefish trawlers from Fenit, Doonbeg and Rossaveal, with a voluntary V-notching lobster scheme operating in North Kerry and West Clare. There are eight licensed local boats which operate from piers and slips within the study area, working mainly pots (crab, lobster and shrimp), and gillnets, tanglenets. The gillnets take mainly white pollack, haddock, dogfish, black pollack, cod and ling while the summer tanglenet fishery operates on monkfish, turbot and ray. There are ten vessels fishing from the ports at Carraigaholt, Kilbaha, Cashen, Ballylongford and Tarbert. Shrimp fishing takes place within the Estuary during the late summer to early spring. As a commercial enterprise, numerous fish buyers operate in the area to varying extents (Cashen, Kerry and Carraigaholt).

The Estuary is recognised as an important area for shellfish growing and a number of areas have been designated under the Shellfish Waters Directive, reflecting existing aquaculture sites, wild shellfish harvesting sites and waters in need of protection or improvement. There are a number of active licences within the Estuary, for the cultivation of oysters – the majority use trestle farming methods, and are focused on areas in/near Rinevella (Photo 6), Carrigaholt, Poulnasherry Bay, Ballylongford Bay, Bunnaclogga Bay and near Aughinish Island.

Sea angling in the Shannon Estuary and along the coast of Co Kerry and Co Clare attracts significant numbers of both domestic and European anglers, and is evolving as an important tourist activity, generating significant revenue to the local Irish economy. Inland Fisheries Ireland estimates that the annual value of recreational angling to the national economy is in the region of a quarter of a billion euro. In addition, it is estimated that angling in rural and peripheral communities is estimated to support up to 5000 jobs. It is important that this tourism resources is developed further within the Estuary in a sustainable and balanced manner, as an important socio-economic activity for the community.

2.1.3 ECONOMY

The Shannon Estuary is of strategic significance to the regional and national economy. It currently hosts the following strategic economic assets:

- Ireland's premier deepwater resource. There are 6 main facilities handling a total of 1,000 ships per year, carrying in excess of 12 million tonnes of cargo, equivalent to 20% of goods tonnage handled at national ports in the context of 99% of Ireland's export trade going through the national ports.
- Shannon International Airport with a passenger throughput of 1.4m passengers in 2012 and providing 7,700 jobs in the surrounding commercial lands.
- The Shannon Free Zone comprises almost 250 ha of industrial lands, hosts numerous major multinational companies and provides employment for around 7,700 people.
- Strategic energy infrastructure including Moneypoint and Tarbert power stations that between them have capacity to provide in excess of 1400MW to the national power supply through a strategic transmission network.
- A large site at Stonehall in the Shannon Town Local Area Plan is already zoned for large scale green / renewable energy development should reinforce the overall objective for Shannon as a low carbon zone and could stimulate further investment in the area.
- A significant fishing and aquaculture industry.
- A significant tourist resource that attracted 850,000 foreign visitors to the Region in 2011 resulting in a tourism income of €271m, most notably the North American market which alone accounts for €100m spend.

A recent report (An Economic Overview of Ireland's Shannon Region, Shannon Development June 2012) highlights the area's development potential:

'The Shannon Region particularly benefits from Shannon International Airport, the Shannon Estuary, a strong enterprise base, excellent third level institutions, positive demographic trends, an educated and skilled labour force and good road infrastructure. Recent evidence shows that the Irish economy is currently experiencing a positive turnaround in relation to various economic indicators including exports, tourism visitor numbers

and age demographics. The Shannon Region is endowed with favourable resources and has significant unrealised potential to be exploited as the national and international economies begin to recover.
(Shannon Development 2012)

Harnessing Our Ocean Wealth (July 2012) is an Integrated Marine Plan for Ireland that identifies the ocean as a national asset that supports a diverse marine economy with:

“vast potential to tap into a €1,200 billion global marine market for seafood, tourism, oil and gas, marine renewable energy and new applications for health, medicine and technology.”
(Harnessing Our Ocean Wealth)

This ocean wealth is seen as a key element in Ireland's economic recovery and sustainable growth. The Government sets three high level goals to deliver this vision:

- Goal 1: a thriving maritime economy harnessing the market opportunities to achieve economic recovery and sustainable growth;
- Goal 2: healthy ecosystems that provide monetary and non-monetary goods and services;
- Goal 3: engagement with the sea, building on a rich maritime heritage, strengthening the maritime identity and increasing awareness of the value, opportunities and social benefits from this engagement.

In January 2012, the Irish Maritime Development Office undertook consultation with the port authorities to further develop a picture of areas where Ireland could achieve growth in the short to medium term in servicing the marine renewable energy industry.

The report known as the Irish Ports Offshore Renewable Energy Services Report (IPORES) provides an extensive review of information on port infrastructure, facilities and management plans in relation to meeting requirements for marine renewable energy developers. Ireland's offshore renewable energy resources are amongst the highest in the world with a potential of between 63,000 and 73,000 MW of power available from wind, wave and tidal resources (Photo 7).



Photo 7 - Port Infrastructure is required to service offshore wind farms

While the IPORES report confirms that the bulk of the business in the offshore renewable energy sector over the next decade will focus on installation, operations, maintenance and servicing of offshore wind farms in the Irish Sea, involving an investment of £17 billion by the UK government alone it is estimated that during the next twenty years, over 11,000 new offshore wind turbines will be built and installed in UK and Irish territorial waters at a cost of about £100 billion.

The report rates the Irish ports in terms of their capacity to meet requirements for marine renewable energy developers. Shannon Foynes Port is given an 'A' rating as demonstrating a high capacity to meet the service needs through existing infrastructure and critically the capacity to undertake sustainable expansion as required.

The Shannon Estuary's location on the south west coast provides an ideal gateway to Ireland's marine renewable energy activities off the west and south west coasts, Europe's closest point to some of the world's best wind, wave and tidal resources. IPORES predicts that through coordinated forward planning to maximise the benefit from its strategic location, employment at Shannon Foynes could rise by 25-100 by 2016 and potentially by up to 800 by 2026.

The Estuary is also likely to benefit from other significant foreign investment of around €500 million through implementation of planning approval for the first LNG terminal in Ireland at the Tarbert-Ballylongford Landbank near Tarbert. The scheme will contain four insulated storage tanks of 200,000 cubic metres capacity and a re-gasification facility linked to the existing gas transmission system. Such significant investments, particularly in energy infrastructure are likely to be a catalyst for other major foreign investment in the region.

2.1.4 REORGANISATION OF LOCAL GOVERNMENT

The reorganisation of local government within County Limerick offers the potential to build upon the opportunities for economic development presented by its status as a Gateway City, through the development of an Economic Development and Spatial Implementation Plan.

The merging of Limerick City and County Councils is likely to encompass proposals to take advantage of the emerging trends in renewable energy, the demand for high quality food products, through hi-tech industry and in international traded services, to optimise the economic growth potential of the export led recovery forecast by Forfas. Limerick has important assets in its natural resources, its skill base, and in its economic and educational institutions. Improvements in the air, road and rail network over the last number of decades, the growth of the Port of Foynes, and the Technology Parks at Plassey and University of Limerick have assisted the County in furthering economic development opportunities, and provide scope for greater growth and expansion in conjunction with the Estuary. This will be supported by the €250 billion Plan 'Limerick 2030 - An Economic and Spatial Plan for Limerick' which was launched in summer 2013, and aims to deliver employment, improve infrastructure and attract commercial investment. (Photo 8).



Photo 8 - Limerick City Council is merging with Limerick County Council

2.1.5 TRANSPORTATION

Both the National Spatial Strategy and the Mid West Regional Planning Guidelines outline the critical importance to the Mid-West of transport corridors. The strategic radial corridor of Dublin/Limerick provides excellent quality road and public transport connections to the mid-west, including access to Shannon International Airport and the Shannon Estuary ports and support services. The NSS recognises Limerick/ Shannon as an important Gateway, where further development should be prioritized. The extent of the existing road network is indicated on Figure 2.3, Volume 3.

There is an established network of National Primary and Secondary Roads within the study area, with most extending to and from Limerick City. These include the National Transportation Corridors (as identified within the NSS) the N69 (southwest to Tralee) N18 (Northwest to Galway) N20 (south to Cork) and M7 (northeast towards Dublin). Both the Mid-West Regional Planning Guidelines (MWRPG's) and the Mid-West Area Strategic Plan (MWASP) highlight the importance to the Mid-West economy of quality transport corridors. The National Secondary roads N69, N67 and N68 are within the study boundary. The N69 is a particularly important route, and is highlighted as being a strategic transport corridor providing key connections and linkages between key settlements, the Port of Foynes, the Gateway of Limerick / Shannon and the wider region. The NRA has instructed Limerick City and County Council to progress the Foynes to Limerick Major Road Improvement Scheme. Limerick City and County Council has therefore recently announced a major upgrade scheme for the N69 connecting the Port of Foynes with the M7/N18 at Limerick. The proposal for a high quality road aims to provide improved access to the Port and support the envisaged expansion of its capacity and usage outlined in the National Ports Policy 2013.

Shannon International Airport is of major significance in the national and regional economy (Photo 9). The airport is located approximately 16km west of Limerick City and serves not only a transatlantic role but a regional role on the basis of its strategic location between Limerick and Galway with wider connections to the UK and mainland Europe.



Photo 9 - Shannon International Airport

The Airport boasts the longest runway in Ireland, at 3,199 metres in length, 45 metres wide and in operation 24 hours per day, 365 days per year. The Airport has both scheduled and chartered flights to a range of destinations and has 24 aircraft stands. In 2000, the new Departures Building extension was opened.

The MWRPG recognise the importance of aviation, and the crucial role it can play in the future business, trade, tourism and connectivity with other locations. They also highlight the importance of connectivity between airports and public transport, which is a key element underpinning the Airport's role. Promoting multi-modal linkages to and from the Airport are vital.

Shannon Foynes Port Company (SFPC) has statutory jurisdiction over all marine activities on the 500 km² of the Shannon Estuary, stretching from Kerry/Loop Head to Limerick City. The national strategic location of SFPC terminals offers access to the vibrant economy and population of not only the immediate Limerick and Mid West region, but also a large part of Ireland. The company provides a variety of services, from controlling navigation and marine safety, to warehousing, logistics and cargo handling. SFPC handles the largest vessels entering Irish waters, up to 200,000 dwt, and has the deepest available water of any port in the country.

The Estuary is a key national strategic transport corridor and a natural deepwater resource which routinely hosts the largest vessels entering Irish waters (Photo 10). It has facilities that serve the local regional and national economy, as well as providing the necessary maritime and ancillary resources to facilitate value-added activities serving national, European and global markets. Recent research has found that the natural deepwater resource, availability of hinterland, and prime maritime location of the sheltered Estuary is creating an attractive

investment potential for transporting containers and bulk cargo, particularly on large transshipment vessels. This trend is emerging with the aspiration of possibly avoiding the busy shipping lanes in the English Channel and Atlantic routes, and increasing trading and transportation efficiencies throughout Europe and the International markets.

A car ferry between Killimer, Co. Clare and Tarbert Co. Kerry provides a key marine transportation route across the Shannon Estuary, creating a tourist amenity, and providing a crucial resource for the local community.



Photo 10: Large tanker moving through the Estuary

A railway line has been in existence at Foynes since 1858 and ran as a passenger line from Limerick City terminating at Foynes. The line was closed to passengers in 1963 and used by Iarnród Éireann as a freight line until 2000, when it was closed and has not been used since then. Discussions are ongoing between SFPC and Irish Rail regarding the possibility of reopening the rail line, and a scoping study has commenced to inform the project further.

Although Limerick Docks and Foynes Port are the most important Ports within the region, there are a number of smaller harbours, piers and jetties along the Estuary which are of key importance on a local and community scale (Photo 11). Fishing and aquaculture are carried out commercially from a number of the smaller harbours and piers (Photo 8). In addition, Kilrush hosts one of the largest marinas on the Estuary, and nearby Cappagh pier supports various commercial operations and is a popular tourist boating focal point.

The locations of the port facilities are indicated in Figure 2.5, Volume 3



Photo 11 - Glin Pier, Glin, Co Limerick

2.1.6 ENERGY

An extensive electrical transmission network exists throughout most of the study area with a network of 110kV and 220kV lines with associated substations, in place both north and south of the Estuary (Photo 12). A 400kV line extends northward and east from Moneypoint Power Station which is located on the northern shore of the Estuary, approximately 5km southeast from Kilrush. Permission has been recently granted for a north-south submarine interconnector sub-sea cable (between Moneypoint and Glencosagh Bay in Co Kerry) to support improvements to the grid network.

Moneypoint power station is owned and operated by ESB and is Ireland's largest electricity generation station with an output capacity of 915 MW. The site is a major hub for electricity transmission with a 400kV transmission station on site, connecting into the National Grid system. The station is coal fired and consequently reliant upon coal importations. The station can accept vessels up to 250,000dwt.



Photo 12 - Important grid infrastructure at Labasheeda

The extent of the energy infrastructure noted above is outlined in Figure 2.4, Volume 3.

2.2 PLANNING POLICY CONTEXT

The planning system directs and facilitates the delivery of development. The hierarchy of plans and strategies provide varying levels of guidance for developers, the public and those involved in or responsible for making planning decisions within planning authorities and An Bord Pleanála.

The development plan is part of the systematic hierarchy of land use and spatial plans, including the National Spatial Strategy and Regional Planning Guidelines. It is also informed by the plans and strategies of the Government and other public agencies in general. The SIFP is a strategic planning document, informed by the National Spatial Strategy, Regional Planning Guidelines as well as EU designations and designations. It will be integrated into planning policy as a variation to the relevant County and City Development Plans, and will serve to inform and provide a framework for local area planning exercises.

2.2.1 NATIONAL POLICY

At a national level, the National Development Plan (NDP) 2007-2013 recognises the Limerick/Shannon area as a key Gateway along the west coast of Ireland, supported by Ennis as an important 'hub' town. The focus for this strategic location is to strengthen the core land-use and transportation frameworks, encourage investment, and encourage an expansion of business, residential, service and amenity functions within the wider area. It also encourages harnessing the potential of the Estuary, within the context of its significant natural and cultural heritage assets. Aligned to this, the National Spatial Strategy supports the Gateway, and identifies the priority investments for the wider area (Photo 13).

Other Government strategies focus on specific sectors of the economy including the economy generally, energy, renewable energy, tourism, fishing/aquaculture and the environment. They all contribute to the overall policy context within which the provisions of the SIFP are founded.

Map 7 Mid West Region

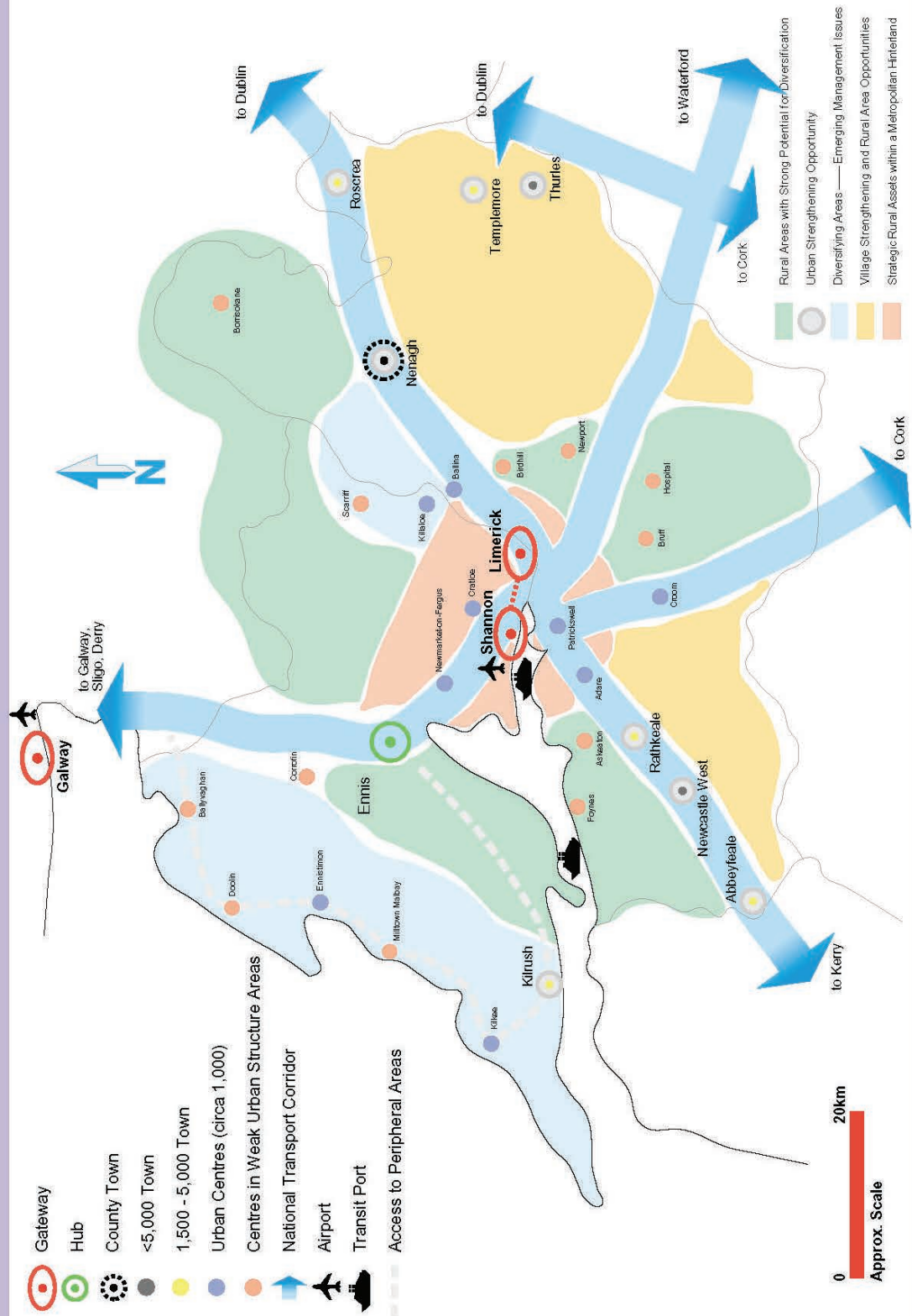


Photo 13 - Limerick - Shannon Gateway & Ennis Hub from the NSS

2.2.2 REGIONAL POLICY

At a regional level, the Mid-West Regional Planning Guidelines 2010-2022 and South West Regional Planning Guidelines recognise the significance of the Shannon Estuary, and provide a key policy bridge between national development priorities and local planning. This guidance recognises the economic, social and environmental potential of the Shannon Estuary and its environs, and also the complexities in coordinating and managing a balanced, comprehensive approach to economic growth and sustainable management of the area's natural assets. The MWRPG state that:

“The Shannon Estuary and its major ports of Foynes and Limerick as well as other ports at locations such as Kilrush, Moneypoint, Kiladysert and Cahiracon, provide a major goods transport link for the Region. The protection of the capacities of existing ports and improvement of access to them is another regional priority. Local authority development plans must be directed to contain specific economic development objectives which seek to harness the economic potential of the Estuary and capitalise on its natural deepwater characteristics for enhanced maritime activity.

Economic growth must be promoted along the shores of the Estuary, even outside existing settlements, in order to harness the true natural assets of the Estuary and its potential economic benefits to the Region.

It is a regional objective to facilitate the carrying out of an inter-jurisdictional Strategic Integrated Framework Plan for the Shannon Estuary. It should identify both the nature of the development, economic growth and employment that can be sustainably accommodated within the Shannon Estuary and the location of the sites that could accommodate specific types of development, while ensuring that the habitat status of the areas within the Estuary designated as Natura 2000 or other environmentally sensitive sites would not be reduced as a result of the short-term or long-term impact of such developments, their cumulative impact, or their impact in combination with other proposed or planned developments outside the area of the Estuary.”

(Extract from Mid-West Regional Planning Guidelines 2010-2022)

In order for the Limerick/Shannon Gateway and the Shannon Estuary component of the Gateway to

prosper, it is critical that strong integrated land use, transportation, environmental protection, physical, social and economic strategies are developed to provide for a strong cohesive region which optimises its sustainable resources while maintaining its competitiveness.

The adopted Mid- West Area Strategic Plan (MWASP) 2010-2030 is a non-statutory long term strategic regional land use and transportation plan incorporating a Public Transport Feasibility Study for the Mid-West Region. A key component of MWASP is the need to develop a strategic vision and implementation framework, which will provide for an integrated, flexible, reliable and over-arching land use and transport strategy which will guide future development and investment decision making in the plan area, thus achieving the optimal potential for the region and its citizens. SIFP, conforms to the provisions of MWASP in its formulation and proposes to build upon the key elements of this strategy.

MWASP provides a framework within which the physical and spatial development of the region can be developed to 2030, and is particularly relevant to the strategic integrated land use and transportation planning and development and provision of future infrastructure envisaged for the SIFP plan area. MWASP, through empirical research, promotes the strategic direction for the sustainable development of the region, the attainment of balanced regional growth, and support for the settlement hierarchy in terms of the RPGS, and the optimal social, economic, physical, infrastructural and cultural development of the study area. Land use planning supported by strong transport measures and infrastructure is critical to ensure accessibility and interconnectivity to promote national and international competitiveness of the region. The SIFP is aligned to the objectives of the Mid West and South West RPGs and adopted MWASP Land Use and Transport Strategy.

The SIFP takes cognisance of economic development and growth, environmental sustainability, and demographic changes, which are key regional issues requiring careful analysis and integration. The SIFP will ensure that the designated Limerick-Shannon Gateway remains the economic driver of the region, while harnessing the resources of the Shannon Estuary. It recognises that the integration of land use planning, economic development, and transportation policies is integral to the successful harnessing of the resources of the Shannon Estuary, and making informed investment decisions and optimal use of existing and future services and infrastructure in the region.

2.2.3 DEVELOPMENT PLANS

The Development Plans for Limerick City and County, Clare and Kerry have identified a range of objectives for harnessing the potential of the Estuary, as well as protecting and managing it as an important environmental asset, and the interrelationship between these objectives requires a comprehensive assessment

The Clare County Council Development Plan 2011-2017 recognizes the potential offered by the Shannon Estuary, within a variety of sectors. The area supports a range of functions, uses and activities, which coupled with the area's natural physical attributes, have considerable potential for economic, industrial, cultural, tourism, environmental and recreational development. The objectives in the County Plan acknowledge the significant and unique environmental resources throughout the area, and advocate an integrated approach to facilitating this economic potential along the Shannon Estuary whilst balancing environmental considerations.

It is an objective of the Clare County Development Plan to facilitate the carrying out of an inter-jurisdictional Strategic Integrated Framework Plan for the Shannon Estuary.

The Limerick County Development Plan 2010-2016 identifies two policies for the Shannon Estuary which encapsulates the aims and functions of the SIFP:

“Supporting and expanding the existing economic base, including port and harbour facilities and related activities, and seeking to diversify the economy through the promotion of industrial/business and employment opportunities, environmentally friendly aqua-culture, maritime, water related recreation and tourism industries in a sustainable manner”

The Kerry County Development Plan 2009-2015 identifies the Shannon Estuary as one of the premier national deepwater locations. The objectives recognise it as an area of significant potential for future development and an asset for the County whose potential must be maximised.

Three of the key objectives under Employment and Economic Activity in the Kerry County Development Plan look at facilitating the provision of the infrastructure necessary and promote the development of zoned lands to cater for the identified industrial need

at Ballylongford-Tarbert Landbank (Photo 14) which require deep water access. The plan also highlights the importance of EU designated sites under the Habitats Directive and the requirement for Article 6 Appropriate Assessments for development proposals in the vicinity of or affecting a designated European Site.

Limerick City Development Plan 2010-2016 acknowledges the potential in the Shannon Estuary which flows through the City limits, and the Plan objectives identify it as a key urban asset and a focus of the development strategy. It recognizes the important natural and built heritage offered, as well as the environmental areas of national and European significance, which are designated for protection.

A number of projects, including the Riverside City Initiative and the Shannon River Basin Management Project, have been undertaken in recent years, which have taken a comprehensive, inter-jurisdictional approach to land use, water protection and marine planning.

The planning context is further informed by the 'sectoral' strategies produced by Local Authorities covering issues including energy, renewable energy and tourism. Local Area Plans deal with land use and zonings at settlement level which is a critical consideration in developing policy across the settlement hierarchy.

Shannon Foynes Port Company, the statutory port authority mandated to manage, control, operate and develop the Shannon Estuary, has specific strategic objectives to identify and comply with all necessary environmental legislation to facilitate development of both the land resource adjoining specified deepwater sites and of the specified deepwater sites.

¹Shannon Development promotes economic growth on a regional basis across both the public and private sector in multiple areas from business and tourism to property management. Shannon Development recognises the potential of the Shannon Region to generate large scale economic development and employment. They are committed to supporting the development of renewable energy and environmental sustainability sector in the Shannon Region.

¹ Shannon Development is currently being restructured, and along with Shannon Airport, will be amalgamated into a new company, Shannon Commercial Enterprises Limit, which will be a subsidiary of a newly created company, Shannon Group plc.



Photo 14 - Land within ownership of Shannon Development with the Tarbert - Ballylongford Land Bank

2.3 ENVIRONMENTAL CONTEXT

The natural environment of the Shannon Estuary is protected by the EU legislative framework, supported by a strong national and local structure of policies and plans. These include provisions for water resources, waste management, pollution, climate change, flooding, and major accident hazards. These policies provide guidance, direction, conservation and preservation of the many natural and man-made features of the Estuary which have contributed to the uniqueness of this area. Some of these key features are shown on Figures 2.4 - 2.9, Volume III.

The Shannon Estuary incorporates the Fergus, Deel and Maigue Rivers. The Estuary is macrotidal, having the largest tidal range on the Irish coast (5.44 m at Limerick Docks). Water depths vary from approximately 37m at the Estuary mouth and along parts of the Clare and Kerry shoreline to less than 5m near Limerick City. The study area covers four distinct waterbodies under the EU Water Framework Directive in the Shannon IRBD, and the local planning framework in the County Plan includes objectives to meet the requirements of the River Basin Management Plans

The sheltered character of the Estuary combined with its deep water makes it a natural port. While the Estuary has considerable physical and infrastructure resources, the entire area is also designated as a Special Area of Conservation (SAC) (Photo 15) as part of a network of sites across Europe under the Habitats Directive. All of the Shannon Estuary as far west as

Foynes is also designated as a Special Protection Area (SPA), as part of a network of sites across Europe that are protected under the Birds Directive. This SPA is currently undergoing review which will involve a major extension to cover much of the Estuary.

These designations impose considerable obligations on those charged with their protection. In order to comply with the requirements of the Habitats and Birds Directive, all proposals within land use plans should not impact negatively on a designated site, either by itself or in combination with other plans, programmes or projects.

The Appropriate Assessment and the Strategic Environmental Assessment (SEA) look in detail at the environmental assets, resources, as well as the key elements of the Natura 2000 network, and addresses the key potential impacts and effects in the draft SIFP. The SEA took into account the environmental policy and legislative framework of the Shannon Estuary, to ensure the environmental objectives and targets of the plans, policies and programmes were reflected in the preparation of this strategic Plan. This legislative framework includes the following:

- EC Bathing Water Quality Regulations 2008
- EC Environmental Liability Regulations 2008
- EC Environmental objectives (Freshwater Pearl Mussel) Regulations, 2009
- EC Quality of Shellfish Waters (Amendment) Regulations 2009
- EU Urban Waste Water Treatment Regulations 2001, 2004 and 2010
- The EU Water Framework Directive (WFD)

The comprehensive list of key legislation, plans and programmes is outlined in more detail in Chapter 6 of the Strategic Environmental Assessment, which accompanies this Plan.

The Appropriate Assessment examined the Strategic Integrated Framework Plan based on best scientific knowledge, of the potential impacts of the strategic plan on the conservation objectives of any Natura 2000 site and the development, where necessary, of mitigation or avoidance measures to preclude negative effects. In accordance with the procedures stated in the Department's publication, Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning

Authorities (December 2009), a comprehensive, evidenced based, pre-cautionary approach has been adopted throughout the plan making process. The screening and assessment of objectives in the context of mitigation measures and potential impacts of the designated sites, is an iterative process throughout

each stage of the plan-making process. The Appropriate Assessment is outlined in detail in the Natura Impact Report, which accompanies this Plan.



**Photo 15 - Bottlenose Dolphins in the Shannon Estuary -
Source Simon Berrow**

2.4 MARITIME CONTEXT

The recent publication of the Integrated Marine Plan 'Harnessing our Ocean Wealth' represented the first step towards marine spatial planning, an overall system for managing development within the marine environment equivalent to the physical planning system which facilitates the delivery of terrestrial development as outlined in Section 2.2. With the exception of a number of core areas, where demands of shipping lanes, navigation safety and telecommunications needs require it, development within the marine environment is regulated through marine license / consents process. In particular:

- Works or activity on the State-owned foreshore (i.e. 0 – 12 nm) require consent under the Foreshore Acts 1933 – 2009; and
- Works or activity exploring and exploiting the seabed and subsoil outside the Territorial Sea will require consents under the Continental Shelf Act, 1968 (as amended).

The marine consenting process is complex, involving various legislation, consent regimes, competent authorities, including the following;

- Coastal Protection Act 1963: consent is required to remove/amend/construct coastal defences;
- The Foreshore Act 1993 as amended: consent is required for the removal of beach material from the foreshore
- The Dumping at Sea Act 1996 as amended: consent is required for the loading and dumping of dredged material at sea;
- Local Authority Developments on the foreshore, which require submission of an EIS come under Section 228 of the Planning and Development Act 2006 and are dealt with by An Bord Pleanála, Foreshore Act doesn't apply.
- Marine projects deemed to be strategic come under The Planning and Development (Strategic Infrastructure) Act 2006
- National Monuments Act 1930 - primary legislation which protects maritime archaeology; a licence must be granted by the Minister for the DECLG if interfering with marine archaeology is unavoidable.

However, a Planning and Foreshore (Planning) Bill to amend the Planning and Foreshore Acts has been drafted and is to be introduced; accordingly it is

expected that the marine consenting regime will fundamentally change in the short to medium term.

The transfer of foreshore functions to the DECLG, the Minister stated that the key objective for the new modernised model will be that the foreshore functions will operate within a "plan-led" policy framework which would:

- Provide greater certainty to developers concerning potentially acceptable locations for different types of development;
- Improve understanding and consideration of the cumulative and combined effects between different activities and the marine environment itself; and
- Facilitate proactive planning, rather than just reacting to applications, changes and situations.

Work is presently underway in the DECLG on the preparation of a General Scheme of the necessary legislation, and scoping out the requirements for the development of a Marine Spatial Plan to strategically plan development on the state foreshore and to manage the competing and often conflicting sectoral demands.



3.0 The Vision & Overall Strategy

“A Shannon Estuary that makes a meaningful contribution to the economic, social and environmental prosperity of the region, by optimising the sustainable development potential of its natural resources and assets to build a successful and vibrant estuarine economy and community, which protects, manages and enhances its considerable environmental qualities in a thriving natural ecosystem.”

3.1 THE VISION

The creation of a Vision for the Estuary provides it with focus and direction ensuring that established objectives, whether they are short, medium or long-term, or physical, social or economic, share one common factor: they must work together. The shared Vision has evolved from research, investigation, analysis and consultation and establishes the core objectives the Framework shall deliver.

The Strategy seeks to achieve this Vision for the Shannon Estuary over the next 30 years, by setting out the overall aim of the Framework and its guiding principles. The Strategy for moving forward has been outlined in the subsequent pages, taking a cross-sectoral approach to the key issues and incorporating principles which are designed to help the planning process achieve the aims that created the need for the Plan.

3.2 THE STRATEGY

The strategy seeks to encourage, facilitate and promote a balanced approach to harnessing the Estuary's economic growth potential, whilst simultaneously ensuring careful protection, management and enhancement of the natural environmental resources of the area. The strategy seeks to achieve the Vision within a 30 year timeframe. The strategy relates to the SIFP study area of the Shannon Estuary, and the interface between the terrestrial and marine areas.

The strategy is primarily objective-led relevant to the entire Estuary study boundary, comprising sustainable, forward looking and deliverable objectives, formulated in consultation with key stakeholders. These objectives will provide guidance and direction throughout the Estuary, and will identify a number of Strategic Development Locations where future strategic development potential is focussed. The objectives represent the link between the analysis of the key issues, the multi-functional nature of the Estuary, the challenges being faced, and the process of achieving the desired future state of the Estuary.

The general aims of the strategy are as follows:

- Support the multi-functional nature of the Shannon Estuary and identify opportunities to expand the existing economic base, including Port-related industry and other related activities;

- Facilitate the diversification of the economy, through the promotion of commercial/industrial employment, environmentally friendly aquaculture, maritime energy, transports, recreation and tourism industries in a sustainable manner;
- Protect, manage and enhance the natural coastal environment along the Estuary, including its cultural, natural and built heritage;
- Safeguard the Estuary's sensitive environmental resources and natural heritage of national, European and International significance;

In achieving the aforementioned aims, it is necessary to address the following issues:

Provide a framework to deliver an integrated approach to land use planning, and environmental management of the Estuary;

- Create a balance of economic activities including Ports and marine related industry, urban land use, nature protection (biodiversity and nature conservation resources) and recreational and leisure activities that take place in the Estuary and along the fringe lands;
- Bring together all those involved in the development, management and use of the Estuary within a framework which encourages the integration of their interests and responsibilities to achieve common interests.

A core component of the Strategy is the development of a Thematic Spatial Plan for the Estuary. A coherent spatial plan is required to provide the necessary direction and focus for future strategic development in a manner that facilitates realisation of the development potential of the Estuary, as a strategically important driver within the Irish economy, while safeguarding its important environmental assets.

The Spatial Plan aims to provide clarity of purpose and direction for future development and investment within the Estuary region, particularly for the private sector. As an integral part of the wider Framework, the spatial plan manifests the long term development potential of the Estuary, and enables effective prioritisation of expenditure and investment, at national, regional and local levels, across all jurisdictions, Departments, and administrative boundaries. Together, the Strategy and Spatial Plan provide a strategic framework and context within which local plans and development strategies can be formulated and refined, assisting statutory agencies in their decision making and providing a more robust, coordinated and integrated representation of

the region's vision, goals, and future potential.

The Thematic Spatial Plan has been developed in consultation with all key stakeholders, with an interest in the Estuary, and the Concept shown in Figure 3.1 Page 31 overleaf (larger version in Volume III), seeks to realise the following objectives and aspirations:

- Provide informed direction for future investments;
- Enhance the effectiveness of public and private financial and resource investment;
- Improve the speed quality accountability and transparency of decision making;
- Improve the effectiveness and consistency of regulatory compliance;
- Provide an improved understanding of the implications of sustainable use and development of the marine environment as a component of economic growth.

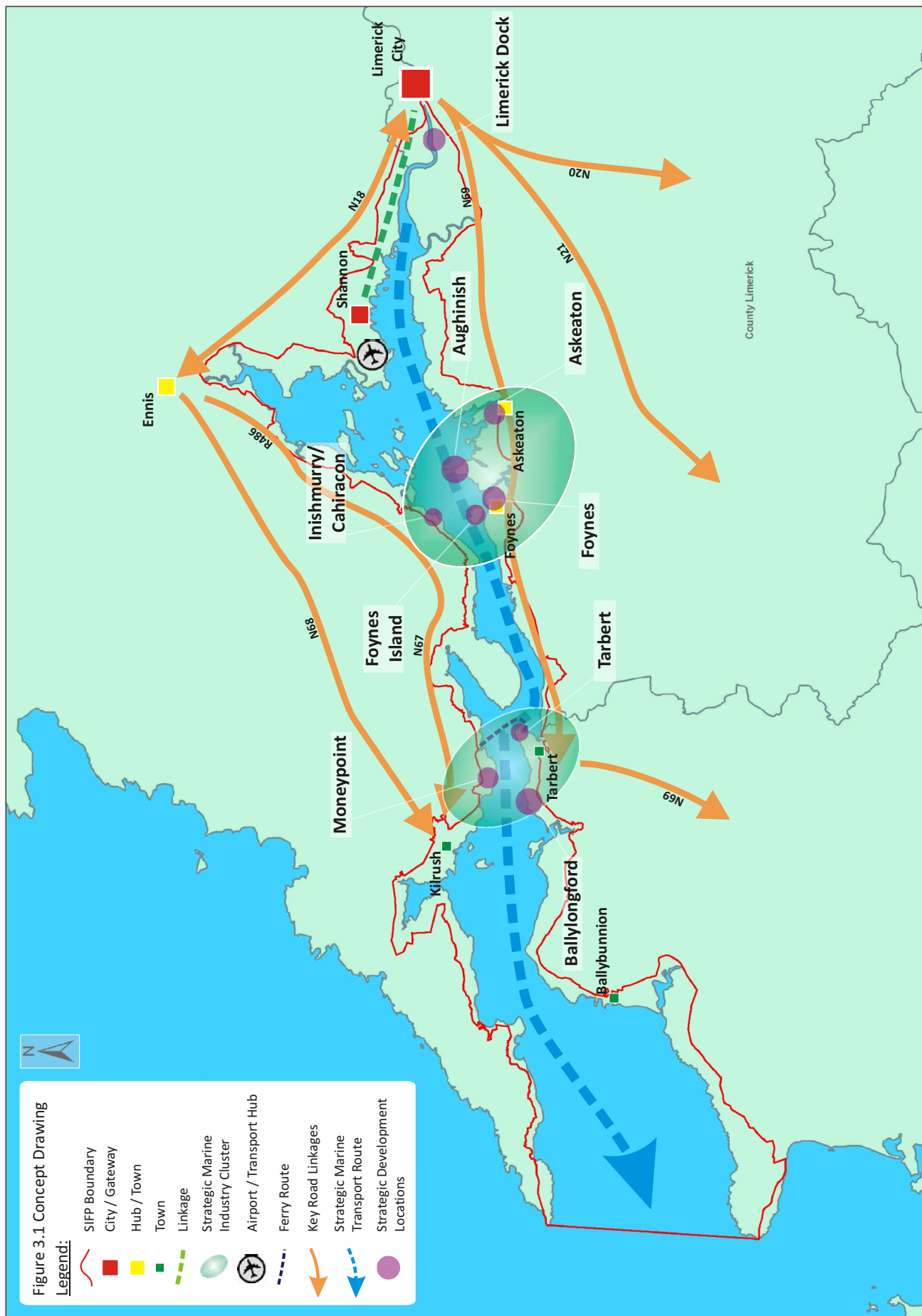


Figure 3.1 Concept Drawing

3.3 STRATEGY APPROACH

The approach is embedded in the principles of sustainable development which incorporates positive growth, making economic, environmental and social progress for this and future generations. Applying these to development focuses on looking at the assimilative capacity of the built and natural environment and seeing what potential it has to absorb further development. It is more efficient to re-use existing services, infrastructure and networks to support new development. It enhances their viability and efficiency and cost-effectiveness, and minimises the impacts on the surrounding environment. Through the adoption of this approach of sustainable estuarine management the aim is to reconcile development with conservation interests.

The strategy is based on sustainable estuarine management involving the integration of economic,

social and key environmental objectives into the overall plan. In line with Ireland's vision for biodiversity 2011- 2016 the plan seeks to conserve and where possible restore the key ecosystem of the Lower Shannon Estuary which will see essential benefits for all sectors. Through the adoption of an 'ecosystem' approach to the selection and prioritization of Strategic Development Locations throughout the Estuary for future development, the SIFP seeks to maintain the integrity of both the SAC and SPA, for which it has been designated, thereby avoiding the fragmentation of habitats and displacement of species. A key strand in this approach is to focus development within strategic locations, in and around well established industrial or developed areas, where development is less likely to pose a significant threat to the qualifying features of the Natura 2000 sites. This approach was informed by the EC Guidance Document 'The Implementation of the

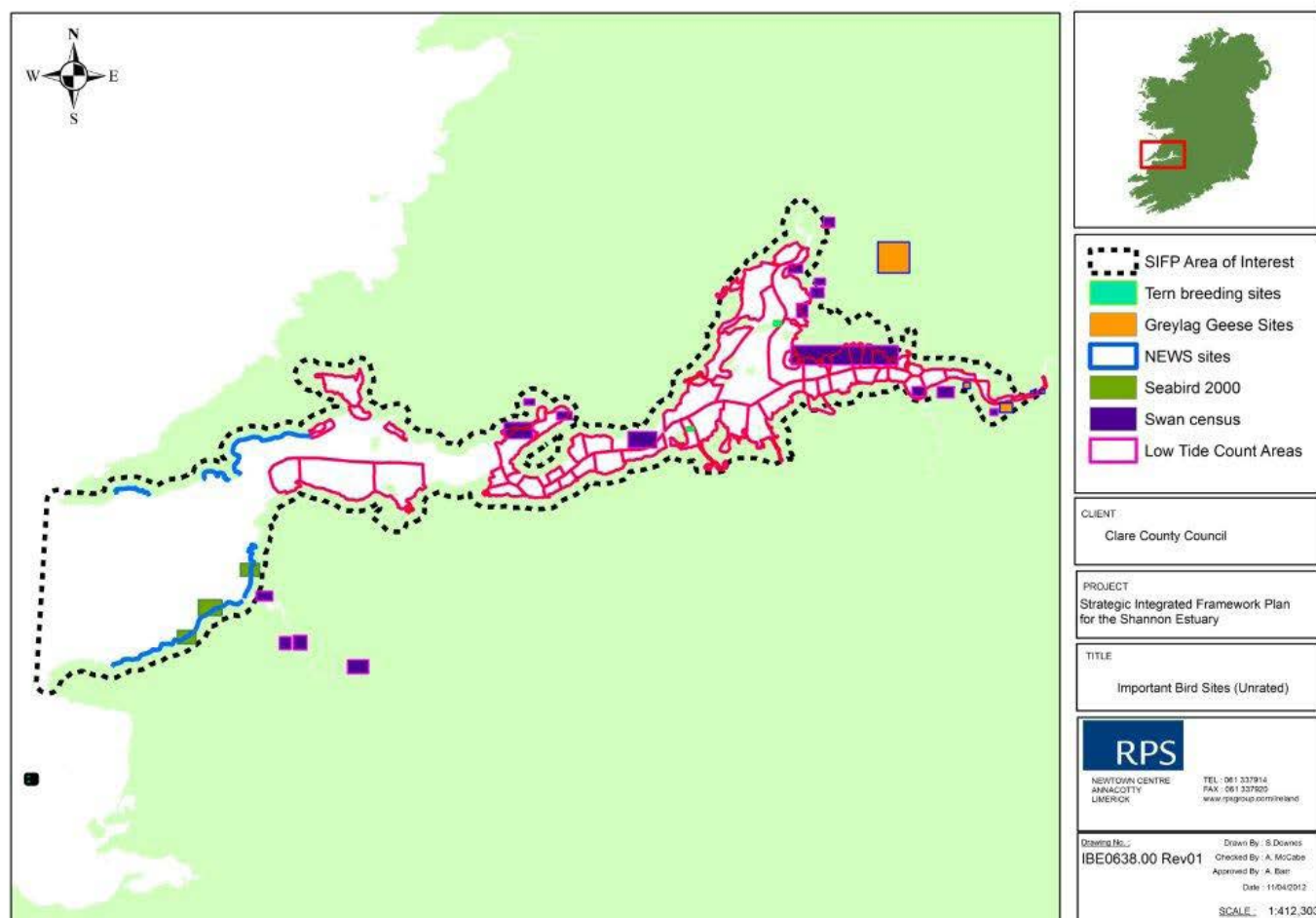


Photo 16 - Important Bird Sites within the Estuary where bird counts take place (unrated)

Birds and Habitats Directives in estuaries and coastal zones'.¹

By setting out proposals for guiding and planning the future development of the entire Lower Shannon Estuary together in one Plan, the entire ecosystem is considered as one continuum. It therefore provides the most comprehensive, transparent and holistic view of the most environmentally sustainable way forward for development. While it is critical for any future development to take cognisance of, and comply with the Birds and Habitats Directives, so too must the Plan be cognisant of the existing role and economic function of the Estuary.

The estuaries of the River Shannon and River Fergus form the largest estuarine complex in Ireland. It is also the most important coastal wetland site in Ireland for birds. Given the diversity of the ecosystem and the many habitats and species it supports there is a greater risk for both direct and indirect impacts, together with the potential for cumulative and in-combination effects from any future development. Given the importance of the Estuary an initial appraisal of the key environmental parameters within the estuarine environment was undertaken to identify the most sensitive or vulnerable areas through the SEA and AA process. These areas were identified as priority areas which within which Strategic Development Locations or Areas of Opportunity would be identified. They included, but were not limited to the Cloon freshwater pearl mussel catchment, the Fergus Estuary and priority habitat areas such as coastal lagoons or alluvial woodlands. It should be noted that this does not preclude non-strategic or smaller proposals coming forward or being considered through the planning process. Further information on this aspect is detailed within both the Strategic Environmental Assessment and Natura Impact Report, which accompany this Plan.

This initial appraisal also identified areas where development has taken place in the past and provided an account of the nature and extent of this development together with an account of the habitats and species present. It provided a broad indication of the status of the habitat or species based on best available data i.e. level of degradation or fragmentation. From this initial consideration, it emerged that these focused around those locations where larger scale development is already well established i.e. large coastal communities,

areas with large infrastructure i.e. Ports, and those areas with large maritime industries such as Moneypoint or Foynes where constant impact over an extended period of time has served to alter the existing habitat. The ecosystem approach and the goal of achieving a sensitive balance between development and safeguarding critical environmental interests resulted in previously developed hubs emerging as optimal locations for potential future development, and those habitats and species which were most vulnerable and sensitive being least favoured and therefore avoided, where possible. This method informed the evidence based approach of identifying possible Strategic Development Locations, where a range of potential strategic development types, of varying scale, were assessed against habitat type, conservation status and extent of habitat throughout the Estuarine ecosystem.

Integration of the SEA and AA process from the outset allowed all environmental considerations to be examined at all stages of the process. Early awareness also helped to reduce the negative findings in the assessment of the SIFP. In adopting the ecosystem approach to the identification of sites it also allowed for the consideration of in-combination and cumulative effects through the AA and SEA processes and for the consideration of all environmental topics under the SEA process.

Due to the lack of detailed conservation objectives at the outset of the project, and in order to inform the selection of the Strategic Development Locations and Areas of Opportunity, some limited field work was undertaken. This informed the SIFP process, supported the development objectives and helped establish the SDLs and AoO for the Plan. This fieldwork included a desk top review of all relevant bird data together with the identification and rating of bird areas within the River Shannon and River Fergus Estuaries (Photo 16). This served to highlight, at a strategic level within the SIFP, the bird areas within the Shannon and Fergus Estuaries, for which data is available, and which would be particularly vulnerable to future development. A key data gap identified through the scoping study was the lack of detailed scientific monitoring information on the usage of the inner estuary by cetaceans. Static Acoustic Monitoring was undertaken to highlight the importance of cetaceans within key deep water locations within the inner estuary, together with a review of monitoring data in order to inform the strategic location identification process in the SIFP (Photo 17).

¹ http://ec.europa.eu/transport/modes/maritime/doc/guidance_doc.pdf

The SIFP is a strategic framework, and the appraisals carried out during its preparation have also been strategic in nature and extent. The objectives provide a strong foundation aimed at guiding and influencing the sustainable growth and development of the Estuary in tandem with its conservation and protection - this strategic Plan provides a comprehensive and all-embracing starting point for all future stakeholders, users, visitors and investors.



Photo 17 - Deployment of C-Pods for Static Acoustic Monitoring at deep water locations

However, it is essential to highlight that further detailed work will be required, in terms of the economic, social, technical, environmental and planning aspects to support and deliver robust, sustainable and viable projects within the Estuary. These will be based on specific proposal information, and will be subject to the statutory consents and regulations, including detailed Appropriate Assessments, Environmental Impact Assessments, and other Project Level assessments required by the relevant consenting authority.

The actual or likely effects of implementing the findings of this Plan, especially in the absence of detailed proposals, are inevitably uncertain to a greater or lesser degree. Projects that evolve from the strategic objectives or SDLs and AoO in this Plan will be subject to detailed, statutory assessment to examine their effects on Natura 2000 sites, and will only be permitted if they meet the requirements of the Habitats Directive together with all other statutory licensing and permitting requirements. The accompanying Natura Impact Report and the supporting information for each of the SDLs or AoO provides a comprehensive environmental baseline, which highlights the potential effects and establishes the further investigations that

will be required at project level to meet the obligations of the Habitats Directive, prior to the determination of any future planning application, consent or licence application. It is a reasonable prospect that the scale, extent and complexity of the proposals anticipated within the Estuary, over the lifetime of the Plan, will need to be considered under Article 6 (4) of the Habitats Directive. The Competent Authority should give consideration as to whether the project will pose a risk of adverse effects on the Natura 2000 site, and in the absence of alternatives need to consider Imperative Reasons of Overriding Public Interest (IROPI)² for the project to progress, at an early stage in the pre-application development process, to establish a robust and practical justification for the project. This will be acutely important should such a proposal involve the permanent loss of habitat, disturbance of a species or loss of habitat of a species protected under the Habitats Directive, particularly in the context of the recent EC judgement on the N6 Galway Outer By-Pass scheme.³

A strategic Plan level assessment was undertaken within the accompanying Natura Impact Report. Although this was not a detailed assessment, it allowed the adverse effects on the integrity of the Natura 2000 sites located within the Shannon Estuary, to be broadly identified and avoided in the Plan. This approach establishes a more robust framework within which proposals can be taken forward to project level assessment allowing decision makers to be fully informed of the potential effects and proposed mitigation for such sites thereby avoiding the risk of adverse effects.

As noted previously, integration of the SEA and AA during Plan preparation allowed the consideration of a range of environmental topics at all stages of the process. In adopting the ecosystem approach, these assessment processes supported the identification of a range of mitigation measures - these are put forward to avoid, reduce and mitigate any risk of adverse effects on the environment through implementation of the Plan. They are formulated based on impact assessment results (at a strategic level) and enable integrating SEA and AA findings into the Plan proposals.

² Planning & Development (Amendment) Act 2010 <http://www.environ.ie/en/Legislation/DevelopmentandHousing/Planning/FileDownload,25759,en.pdf>

³ Case 258/11 <http://curia.europa.eu/juris/document/document.jsptext=&docid=136145&pageIndex=0&doclang=EN&mode=req&dir=&occ=first&part=1&cid=175106>

The SEA Environmental Report highlighted significant potential positive and negative environmental impacts from the implementation of the Plan (including cumulative impacts). A range of mitigation measures were identified under each of the SEA topics, and have been incorporated into the Plan, under the following headings:

- Over-arching Mitigation Measures:
- Mitigation Measures per theme
- Site-specific Mitigation Measures

These mitigation measures should be adhered to prior to and during any development associated with either the Strategic Development Locations or Areas of Opportunity, with the site specific measures likely to be required at individual project level.

In addition, mitigation measures have been identified through the Appropriate Assessment process. They aim to inform the future development of the Estuary, in terms of what should be avoided and future assessments that will be required in order to ensure no significant effect and compliance with Article 6(3) of the Habitats Directive. Any future development within the Estuary either related to one of the associated Plan themes or Strategic Development Locations and Areas of Opportunity will be subject to adherence with the findings of the appropriate assessment, and the mitigation measures, which are incorporated into the Plan, under the following headings:

- Overarching Mitigation Measures
- Mitigation Measures per theme
- Site Specific Mitigation Measures

The various mitigation measures are referenced within the Plan in Section 5.0, and are outlined in more detail in Volume II Appendices (as well as the accompanying SEA Environmental Report and Natura Impact Report).

3.4 PRINCIPLES OF THE STRATEGY

To set a framework within which this Strategy can be effectively delivered, a number of guiding principles have been established, to help shape the outcomes and deliver solutions. Based on the Vision, these guiding principles are designed to help the planning process achieve the aims that created the need for the Framework Plan at the outset. These are:

- Cultivation of an integrated and coordinated consultation process including all key stakeholders (Public and Private);
- Delivery of a Thematic Spatial Plan which provides direction on the future sustainable development of the Estuary, by appraising the interrelationship between activities and the environmental sensitivities and vulnerabilities, habitats & species and identifying appropriate potential development opportunities;
- Environmental protection and management through use of Strategic Environmental Assessment and Habitats Directive Assessment as an optimisation tool to safeguard critical environmental interests, resolve conflicts, add value and promote sustainable decision-making;
- Establishment of a robust approach to Implementation and Monitoring

The Estuaries of the River Shannon and River Fergus form the largest estuarine ecosystem complex in Ireland. As discussed, the SIFP adopts a holistic ecosystem approach to the planning, conservation, development and management of this prized asset.

The objectives outlined in the SIFP will be implemented through statutory variations of the relevant County Development Plans. It is critical to the successful delivery of these objectives that a holistic and integrated approach is carried through, in respect of implementation. Consultation, cooperation and coordination across administrative boundaries is important to ensure that potential effects of development proposals are assessed on an ecosystem basis. This is explored further in Section 4.0.

The Thematic Spatial Plan builds on the Concept, and provides the strategic direction on the range of activities that may be considered appropriate at various

locations within the ecosystem. The Plan is a reflection of the holistic assessment of the potential impacts of potential development at those locations, considered in the context of other potential uses within the lands and their key characteristics. It is a key tool in delivering consistency in promoting appropriate development and in the conservation and management of this natural resource. It is also a means to addressing the complexity of stakeholder interests that come together within this area. This principle is explored in further detail in Section 5.0.

It is also important to critically review the SIFP on a regular basis to take account of changing circumstances and to monitor the effectiveness of the individual objectives in delivering the overall aim of sustainability in the reasonable exploitation of the natural resource and adjust the strategy as required. These principles are explored in further detail in Section 6.0 and Section 7.0.

Section 4.0: The Strategy

Key Principle 1

Cultivation of an integrated and coordinated consultation process including all key stakeholders (both public and private)

4.1 INTRODUCTION

The Strategic Integrated Framework Plan (SIFP) proposes an integrated and sustainable approach to development within and adjacent to the Shannon Estuary.

The preparation of the Plan has been a participative process, involving a wide range of stakeholders involved at key stages. The Steering Group for the SIFP comprised a number of key stakeholders with various interests in the Estuary, including those tasked with various decision-making responsibilities within the Study Area. The four local Authorities, assisted by Shannon Foynes Port Company and Shannon Development brought together a core grouping of key state agencies and business interests all with different interests and perspectives (including political, economic, legislative and environmental) within the Shannon Estuary region, with different perspectives, to guide and direct the preparation of the Plan.

Bringing together all these decision-making regimes and organizations (both public and private) has created a central coordinating umbrella group overseeing the future of the Shannon Estuary, overcoming the limits of administrative boundaries to facilitate a consistent approach to decision making and resource management. This has greatly assisted the preparation of the Plan, by advocating an integrated and sustainable approach to all issues, ensuring that all aspects of economic, social and environmental development are addressed.

Consultation with the public was carried out on several occasions during the Plan preparation, including:

- Presentations to Elected Members
- Correspondence with statutory agencies
- Press release and public Notices on websites of Steering Group Members
- One to One meetings with Steering Group and private sector interests
- Invitations for submissions issued directly to Community Groups
- Invitations for submissions at the outset of the process
- Submissions to the draft SIFP Consultation
- Comments received during Workshops during draft SIFP Consultation



Photo 18 - Encouraging Participation by the public

This process was extremely helpful in identifying the key issues, collating relevant data, recognizing the opportunities and pressures, understand future needs and trends, and acknowledging potential conflicts. This ensured the Plan responded to the key issues affecting the local residents, business communities and other organisations. Embracing the core issues affecting the Estuary, its users and its residents is key to creating a robust Plan and ensuring its successful delivery and implementation.

4.2 ENCOURAGING GREATER PARTICIPATION

Stakeholder involvement in the SIFP process, both during its preparation and its implementation and delivery over the 30 year Plan period was seen as vital. It is a key vehicle in creating a Plan and a strategy which is likely to be more widely accepted within and along the Shannon Estuary. It can:

- Add value to the process
- Add value / knowledge to the information base
- Improve cost and efficiencies
- Improve publicity and policy acceptance

Public consultation is an essential component of a successful plan (Photo 19). It should be part of the review and implementation of the Plan, at each stage, to allow the communities, businesses and users of the Estuary to participate fully in the process. The implementation of the SIFP Objectives will be largely dependent on stakeholder willingness to co-operate. All reviews of the Plan should include the provision of information in an accessible and transparent manner; and opportunities for becoming more actively involved at different stages of the process (Photo 18).



Photo 19 - A Communication is important (Source Cadenza Comm)

4.3 FACILITATE CONTINUING COLLABORATION & PARTNERSHIPS BETWEEN ORGANISATIONS BETWEEN ORGANISATIONS ON THE ESTUARY

A beneficial and collaborative working relationship has gradually been established within Steering Group which has brought together all those agencies, organisations and individuals interested in or affected by the development and management of the Shannon Estuary.

The Steering Group brings together stakeholders with a keen interest in the Estuary, from groups with different perspectives, including political, economic, legislative, and environmental, who have invested time and effort, and established a process of dialogue and communication to drive Plan preparation. The excellent work that has been carried out to date and the momentum gained should be continued throughout the Plan period, to ensure communications and dialogue continues, in pursuit of achieving the overall Vision for the future of the Estuary.

4.4 ESTABLISHING GOOD COMMUNICATIONS

Following statutory adoptions of the draft SIFP a key task will be to establish a Communications Strategy between all key stakeholders to foster greater information sharing and liaison, in relation to future proposals in the Estuary. This should include:

- An up to date database of all key stakeholders and stakeholder engagement plan for the subsequent stages of the Plan period. This will include all those consulted during the preparation of the Plan.
- A system for inter-jurisdictional and inter-departmental consultation and feedback.
- An inventory of all information available to inform future proposals within the Study Area.
- GIS database of planning historical and environmental mapping information, to be maintained and updated a regular intervals.

This will ensure that the evidence base for the aims, objectives and spatial proposals is kept updated and relevant, in time for each review



Photo 20 - A Communication strategy is beneficial (Source - Brand Comm)



5.0 Thematic Spatial Plan

Key Principle 2

Delivery of a Thematic Spatial Plan which provides direction on the future sustainable development of the Estuary, by appraising the interrelationship between activities and the environmental sensitivities and vulnerabilities, habitats and species, and identifying potential development opportunities

SECTION 5.1	INTRODUCTION
SECTION 5.2	EVIDENCE BASED APPROACH
SECTION 5.3	STRATEGIC DEVELOPMENT LOCATIONS
SECTION 5.4	MARINE RELATED INDUSTRY
SECTION 5.5	SHIPPING & NAVIGATION
SECTION 5.6	ENERGY
SECTION 5.7	MARINE TOURISM LEISURE & RECREATION
SECTION 5.8	AVIATION
SECTION 5.9	COMMERCIAL FISHING & AQUACULTURE
SECTION 5.10	ENVIRONMENT



Section 5.1

Introduction

The key objective of the SIFP is to deliver an integrated approach to facilitating economic growth and promoting environmental management within and adjacent to the Shannon Estuary.

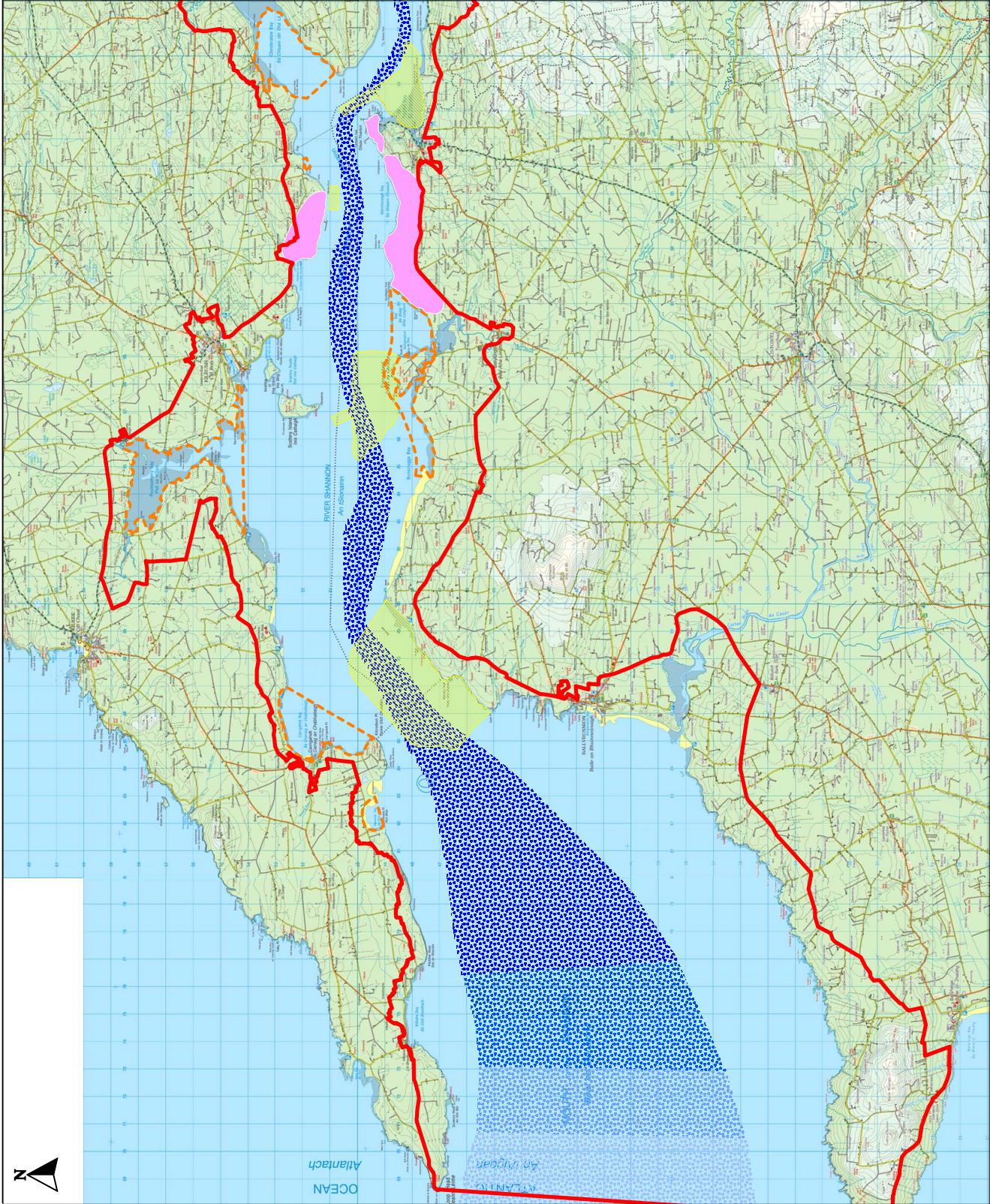
The Estuary and its environs is a multi-functional zone, with the waters and adjoining lands supporting a range of functions, uses, communities, activities, and environmental resources/assets which bring character, prosperity and vibrancy to the area. However, the development of plans, policies and objectives for these varied interests requires a comprehensive approach to carefully balance competing demands.

In seeking to deliver the key objective, SIFP is charged with identifying the nature of development, economic growth and employment that can be sustainably accommodated within the estuary and the locations where that sustainable development can be accommodated. In addition the SIFP seeks to identify key development objectives, which guide the nature of the use or range of uses/activity likely to be acceptable and, where appropriate, provide direction on relevant strategic location considerations to guide future development.

The creation of a Thematic Spatial Plan has numerous benefits, namely:

- Focuses on the identified development themes that are representative of the multi-functional nature of the Estuary;
- Identifies current issues and potential growth opportunities within each theme;
- Explores the interrelationship between the opportunities/other potential users/uses and valued environmental habitats and species using the ecosystem approach;
- Provides strategic direction on the range of sustainable development opportunities to expand the existing economic base, including port related industry and other related activities and to facilitate the diversification of the economy of the Estuary

The Thematic Spatial Plan is reflected in the Composite Maps provided in Figures 5.1A and 5.1B Volume III Maps and Figures (an excerpt is shown in this section).



LEGEND

SIFP Study Area

Core Commercial Shipping Lane

Anchorage

Airport Boundary

Areas of Opportunity for Tidal Energy

Areas of Opportunity for Aquaculture

Strategic Development Locations

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201204CCMAClare County Council

ISSUE DETAILS

Drawn: AMCE	Project No: RPS M 1345
Client: AMCC	
Author: RH	Status: Final
Date: July 2013	Drawing No: S 1.1
Scale: Not to Scale	Rev: 0001

RPS

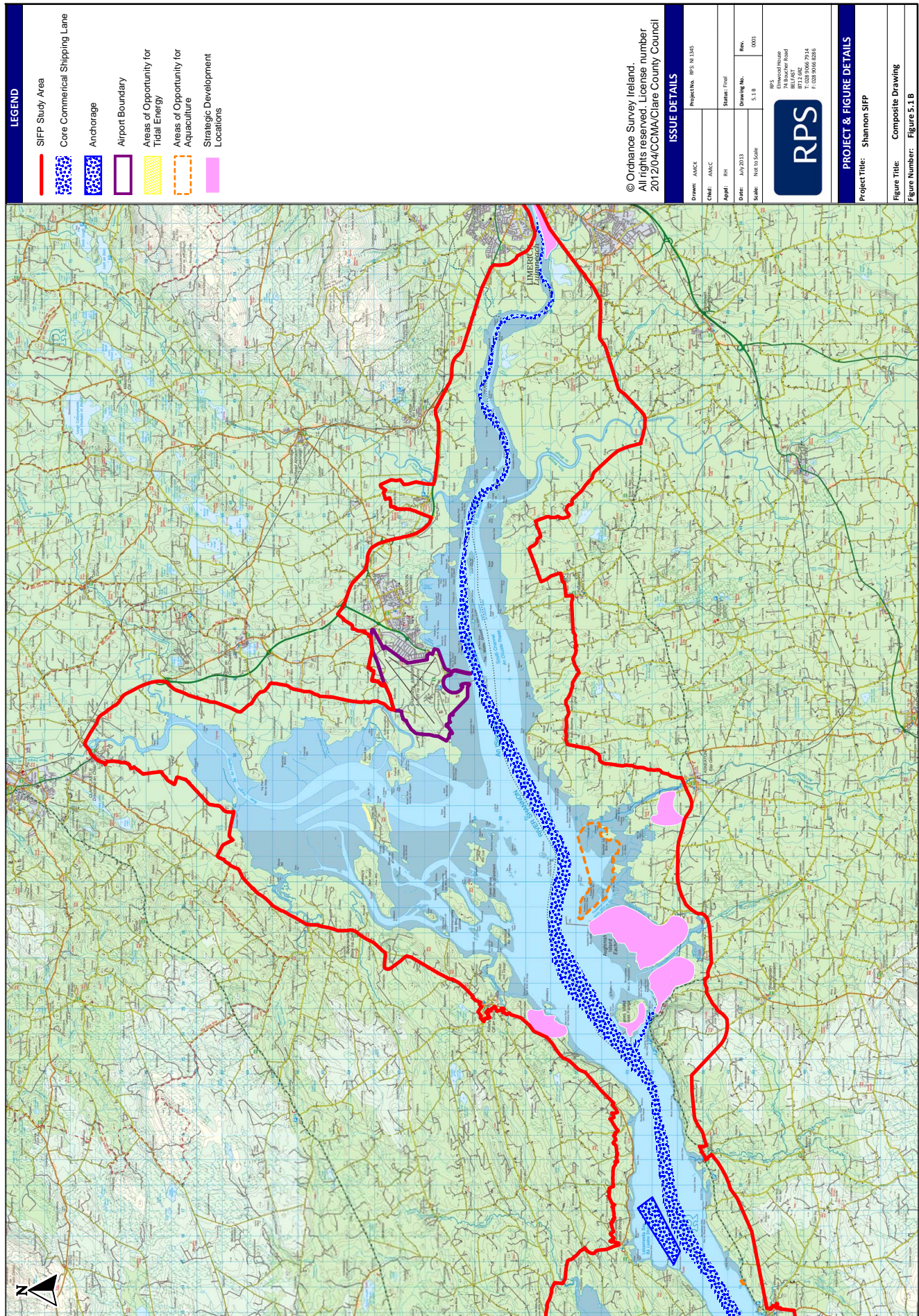
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PROJECT & FIGURE DETAILS

Project Title: Shannon SIFP

Figure Title: Composite Drawing

Figure Number: Figure 5.1 A





Section

5.2 Evidence Based Approach

To inform the Thematic Spatial Plan, a strategic level appraisal of the Estuary was undertaken, to provide a robust evidence based foundation to inform the development objectives, and the identification of the key strategic development locations and areas of opportunity. This approach included:

- Site Visits;
- Multi-disciplinary review of the study area;
- Information gathered from literature review;
- Information gathered from comprehensive stakeholder consultation;
- Information gathered from submissions received;
- Analysis of physical, social and environmental issues and parameters in the Estuary, including existing and proposed developments and infrastructure, as well as constraints (outlined in Volume III Maps & Figures)
- The application of an extensive matrix approach – a systematic, comprehensive and consistent assessment of key technical/feasibility, social and environmental considerations to identify strategic development locations and areas of opportunity, as appropriate, for the key development themes.
- Development of a series of development objectives, aimed at guiding and directing development and safeguarding the key resources.
- Public Consultation on the preliminary SIFP Draft Plan, and refinement of the Objectives based on the submissions received from members of the public and stakeholders.

The evidence based approach is outlined in detail in Volume II Appendices.

At the outset, the evidenced based approach provided guidance in confirming the key development themes, which best represented the multi-functional nature of the Estuary. These provided a clear structure for establishing key development objectives and formulating strategic spatial proposals, to assist in delivering the strategic objectives of SIFP. The strategic spatial proposals have been prepared in the context of current national and regional strategic policy as expressed in NDP, NSS, MWRPG, SWRPG MWASP and the Core Strategies and settlement hierarchies of relevant existing County Development Plans.

The SIFP evidence based approach identified two very strong clusters of strategic maritime industry, that characterise the strategic significance of the Estuary. The clusters cross the Estuary centred on the major power generating bases of Tarbert and Moneypoint towards the west and centred on the area around Foynes Port, Aughinish, Askeaton and Inishmurry/Cahiracon in the east. These strategic clusters are of significance to the region and in some instances, at a national level. The clusters are outlined on Figure 3.1 (Volume III Maps and Figures).

This systematic approach has defined nine Strategic Development Locations (SDL) in the Estuary. These locations are considered as key drivers in providing the necessary focus and direction to harnessing the economic and development potential within the Estuary. They have emerged from the systematic, high level appraisal undertaken, and represent the locations which offer the greatest opportunity for facilitating strategic development. The appraisal evaluated the broad environmental, social, technical/economic, and planning merits of numerous candidate locations along the Estuary coastline, within a range of themes or land use options. These were identified through both analysis and the consultation process, and identified as the likely economic growth areas within the region.

The Strategic Development Locations have emerged as the locations which were likely to generate the greatest potential opportunities in terms of economic and social aspirations, while still safeguarding the essential integrity of the natural environment. Areas of Opportunities have also been identified within the marine area for other potential strategically important development opportunities including renewable energy and fishing/aquaculture.

Other smaller scale development opportunities exist at a 'lower level' which, in themselves, are not strategic in respect of their scale but nevertheless are of potential benefit/risk to the long term sustainable development of the Estuary. The actual land use requirements of these uses are more appropriately dealt with at Local Area Plan level but still require a coordinated and integrated approach across the Estuary. The development objectives within the SIFP also provide direction in respect of those uses.

It should be noted that the sensitivity of the natural environment has been a critical consideration in the evidence based approach. The process for identifying

locations and the associated evaluation criteria were influenced and informed by the Strategic Environmental Assessment and the Habitats Directive Assessment, which considered the potential impacts on the Natura 2000 network.

The SIFP recognises that the dual Natura 2000 designation within the Shannon Estuary places considerable obligations on those seeking to progress any proposals, anywhere in the region. It should be noted that the SIFP has looked at potential environmental effects at a strategic level, and outlined this information and the outputs within the Plan, and its accompanying Appendices, Strategic Environmental Assessment and Habitats Directive Assessment. This has created a valuable and wide-ranging information base and consideration of the key issues, and highlighted those to be addressed by further analysis and assessment, at project level. This provides a strong foundation for all developers, users, and stakeholders involved in the decision making processes within the Estuary, including those progressing development proposals, and those safeguarding the natural environment.

This strategic level appraisal of potential environmental effects does highlight that future development proposals located within/near part of the designated Natura 2000 network, could potentially trigger Article 6(3) and should it be necessary, Article 6(4) of the Habitats Directive, as part of the Appropriate Assessment process, at project level. This is triggered when it cannot be proven, beyond reasonable doubt, that the proposals, if implemented as proposed, will not result in an adverse effect on features of the Natura 2000 site. In this instance, the Competent Authority will most likely need to examine reasonable alternatives, whether there are Imperative Reasons of Overriding Public Interest (IROPI) for the project to go ahead, and if so, whether compensatory measures can be developed and implemented to compensate for any loss of integrity.

Section 5.3

Strategic Development Locations

In designating the Strategic Development Locations (SDL) as part of the Thematic Spatial Plan, the SIFP plan seeks to reflect the development priorities established in NSS, the RPGs and County Development Plans. The SIFP recognises that the designated Limerick-Shannon Gateway remains the key economic driver of the region, and endeavours to sensitively harness the significant resources of the Shannon Estuary within that context.

The SIFP seeks to safeguard the future strategic role and function of the identified strategic locations by:

- Acknowledging any relevant existing development plan zoning in relation to individual strategic locations;
- Recognising the importance of locations where significant industrial development is already established but not currently recognised in a development plan zoning; and
- Framing development objectives that establish key principles in respect of the existing and future potential role of these locations;
- Providing direction/guidance on a range of mitigation measures in respect of key considerations in delivering future sustainable development of each of the strategic locations. This information is referenced within the subsequent sections, and is elaborated within Volume II Appendices.

The Strategic Development Locations are:

- Strategic Development Location A: Innishmurry / Cahiracon
- Strategic Development Location B: Moneypoint
- Strategic Development Location C: Foynes Island
- Strategic Development Location D: Lands to Rear of Foynes
- Strategic Development Location E: Askeaton
- Strategic Development Location F: Aughinish Island
- Strategic Development Location G: Tarbert
- Strategic Development Location H: Tarbert-Ballylongford
- Strategic Development Location I: Limerick Docks

Following adoption of the SIFP into the County Plans, it is anticipated that the SDLs will be brought forward through the formal development plan process, with each SDL reflected within the Development Plan, as a land use zoning. Each Local Authority will carry out further analysis and consultation with key stakeholders,

to identify a terrestrial boundary definition for an appropriate land-based zoning, where one does not already exist or where expansion of an existing zoning is required. The Strategic Development Locations outlined in the SIFP do not define the extent of future land zonings. It is anticipated that the identified SDLs will be taken forward for further assessment and definition of appropriate land zoning through a statutory variation process in the relevant County Development Plans.

The SIFP has no immediate statutory remit within marine waters and as such, the land use zoning will remain within the terrestrial environment. However, the outcomes and objectives of the SIFP should continue to guide and inform the development of policies and objectives for the future development within the marine area, and will be particularly useful as guidance in any future marine spatial planning exercise.

It is recognised that the identification of Strategic Development Locations does not automatically infer that all future development proposed at these locations (and subsequent land use zonings) will necessarily be considered as Strategic Infrastructure under the Planning and Development Act 2000 (PDA). All proposals will be considered on their own merits, under the provisions of Seventh Schedule of the PDA and subject to normal planning, sustainability and environmental considerations.

The SIFP acknowledges that this framework also needs to provide sufficient flexibility to accommodate projects of potentially national and regional significance that cannot be developed at the proposed Strategic Development Locations. Therefore, while all strategic projects within the Estuary should be required to consider development at a Strategic Development Location as a priority, the SIFP does not preclude such projects of national or regional significance, where it is demonstrated that the enterprise has specific critical requirements that cannot be met at an SDL. In all other respects such proposals must comply with the principles and objectives of SIFP and all statutory legislation pertaining to the safeguarding of European designated sites and strategic shipping interests.

The subsequent sections outline the policy aims and objectives for the various themes within the Estuary, which represent the multi-functional nature of the Estuary and its future growth framework.

Section 5.4

Marine Related Industry

5.4.1 INTRODUCTION

The Government Strategy for economic growth is based on re-orientating the economy towards exporting goods and services. Maritime shipping, ports and services employ around 7,200 people directly in Ireland and account for 99% volume and 95% (€128 billion) value of goods traded in Ireland in 2010. The Shannon Estuary as a prime maritime transportation hub, lying at the heart of the Mid-West Region, presents a considerable opportunity to stimulate greater economic growth, in a balanced and sustainable manner.

5.4.2 MARINE RELATED INDUSTRY

The Government Integrated Marine Plan for Ireland 'Harnessing Our Ocean Wealth' (2012) also estimates that the national asset that is the ocean could support a diverse marine economy with vast potential to tap into a €1,200 billion global marine market for seafood, tourism, oil and gas, marine renewable energy and many other new applications. Goal 1 of the Integrated Marine Plan is to harness market opportunities to deliver a thriving maritime economy built around the concept of sustainable development of the marine resource.

The Shannon Estuary is one of Ireland's premier maritime resources that already hosts a number of long-established and successful marine enterprises including ports and nationally significant industries and economic centres.

5.4.3 POLICY CONTEXT

National and regional policy set the context in which County and Local Plans formulate planning policy. In the Mid West Region further development of the Limerick/Ennis/Shannon area as a Gateway/Hub zone is a key component of the NSS seeking to capitalise on its strategic location at the convergence of a number of important road and rail corridors.

Transport corridors are identified as being critical to the Mid-West. The strategic radial corridor of Dublin/Limerick provides good quality road and public transport connections to the Mid-West, including access to Shannon International Airport and to the Shannon Estuary ports.

There are a number of key principles underpinning strategies and plans including:

- Recognition of a settlement hierarchy in which different settlements are expected to provide a different range and level of services;
- Development should be distributed in a way that assists in the enhancement of the existing settlement structure, but that also facilitates the continued development and enhancement of rural communities;
- The regional economy must respond to the needs and enterprise development potential of the more remote as well as the more centralised areas;
- The role of the Region in attracting major investment must be protected and enhanced;
- The principal access infrastructure must be protected and enhanced;
- The environmental resources of the Region must be protected and, where necessary enhanced;
- Development should have regard to the needs of the more disadvantaged as well as those that are able to participate fully in society.

The MWRPG outlines a number of potential economic development opportunities outside the Gateway / Hubs, which have the potential to bring wider economic and social benefits to the rural population and build on the strengths of the area's natural resources and assets. The Shannon Estuary is listed as one of three focus areas.

The Guidelines indicate that the Estuary has the potential to provide a scale of enterprise development beyond that which is usually associated with rural areas:

'The Shannon Estuary and its major ports of Foynes and Limerick, as well as other ports at locations such as Kilrush, Moneypoint, Kiladysert and Cahercon, provide a major goods transport link for the Region. The protection of the capacities of existing ports and improvement of access to them is another regional priority. Local authority development plans must be directed to contain specific economic development

objectives which seek to harness the economic potential of the Estuary and capitalise on its natural deepwater characteristics for enhanced maritime activity. Economic growth must be promoted along the shores of the Estuary, even outside existing settlements, in order to harness the true natural assets of the Estuary and its potential economic benefits to the Region.'

(MWRPG)

The SWRPG also recognise the strategic significance of the special attributes of the Estuary in the premier deepwater locations evident there, confirming that such locations are a development priority beyond the Gateway/hub designations.

5.4.4 STRATEGY FOR MARINE RELATED INDUSTRY / INDUSTRY

Strategic Aim:

To capitalise on the natural deep water potential and existing Port and maritime infrastructure, by facilitating and proactively encouraging the environmentally sustainable development of maritime industries at appropriate locations within the Shannon Estuary while seeking to improve and promote the road and rail connectivity of the deepwater ports

Marine related industry is land reserved for marine related industry, large scale energy uses or alternative land uses that create a synergy or are compatible with these uses. Marine-related industry shall be taken to include the use of the land for industry that, by its nature, requires a location adjacent to estuarine/deep-water including a dependency on marine transport, transshipment, bulk cargo or where the industrial processes benefit from a location adjacent to the marine area.

The historical development of Marine Related Industry/ Industry in the Estuary reflects its natural assets and attributes and as the industrial base has organically evolved the strength and attraction of individual SDLs has grown. The Estuary therefore has developed a strong maritime base which in itself has the potential to attract further significant investment. The key attributes are:

- Natural Deep Water locations throughout the Estuary that can accommodate vessels up to 200,000 DWT along with certain cruise ships with the potential for larger ships, enabling trade growth and competitive expansion;
- Existing Ports at Foynes and Limerick Docks already established as International Trade Gateways;
- Critical mass provided by the Gateway of Limerick-Shannon and well established rural communities within coastal communities and settlements
- Close proximity to Shannon International Airport, as an international gateway;

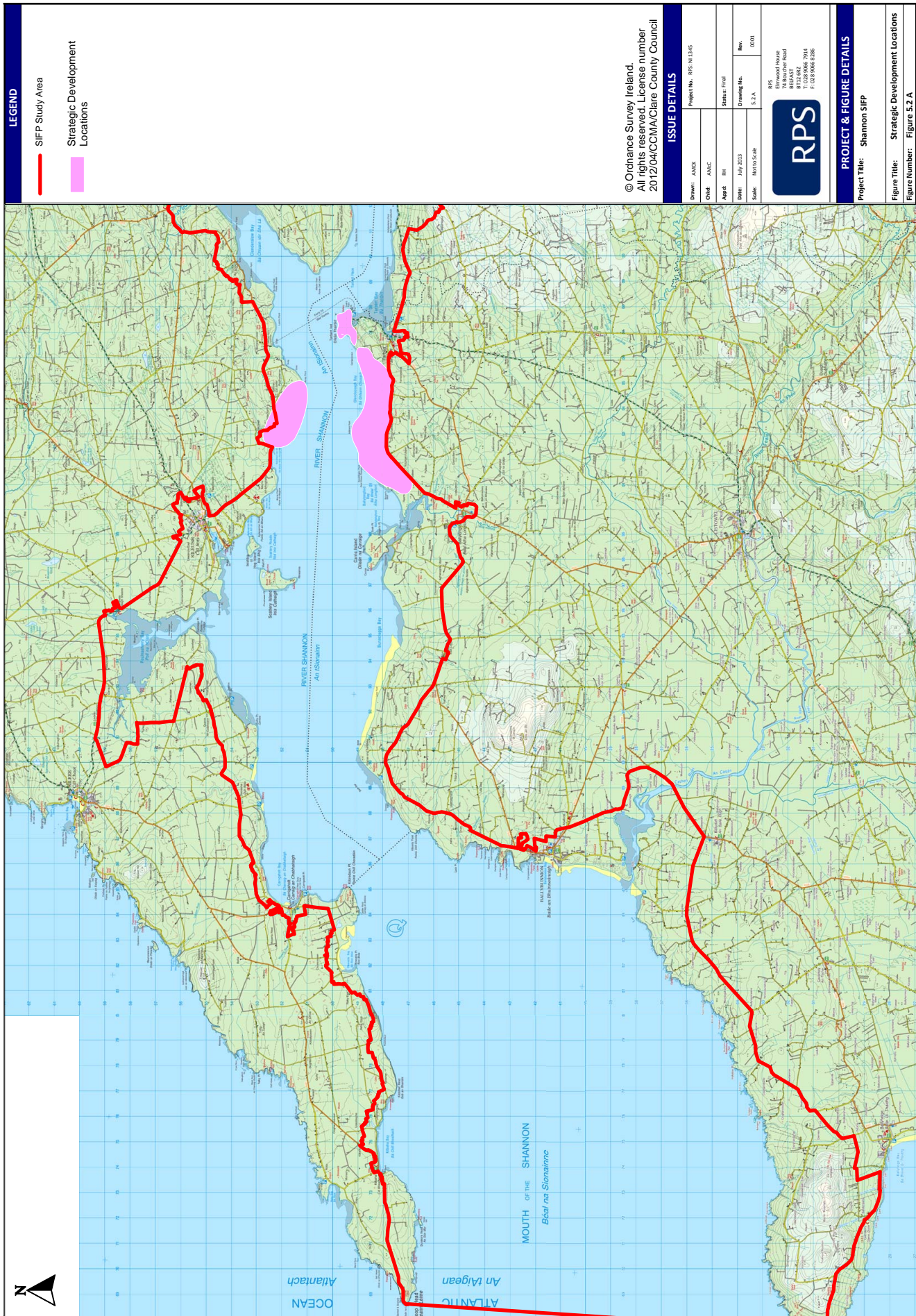
- Strong transport network of onshore connections;
- Existing major energy infrastructure within the area and significant potential to harness marine based renewable energy;
- Strong economic base & skilled labour force including third level institutions. Shannon Development Free Zone, connectivity with Shannon Development Knowledge network, a number of international and multi-national companies in the area and a rich agricultural hinterland supporting robust food sector;
- Strategic location on the Atlantic Seaboard with excellent connection into the Atlantic Corridor Transport Network.

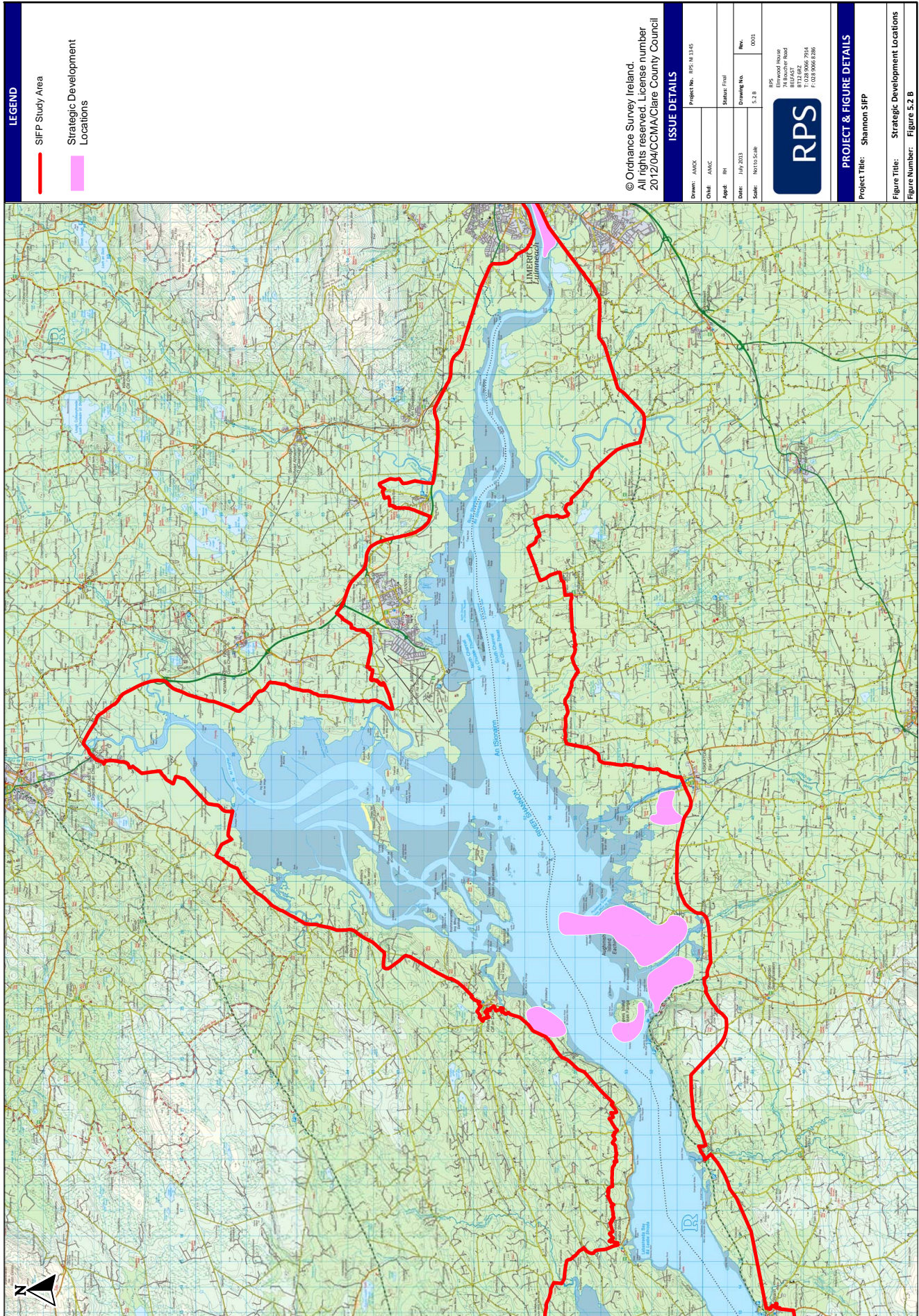
These characteristics have led to the emergence of two definable clusters of marine related industry in the Estuary, one concentrated broadly around Moneypoint/ Tarbert / Ballylongford, and another focussed around Foynes /Aughinish / Cahiracon. They have become broad focal points for the concentration of marine related industrial development, creating catalysts for further industrial development attracted by the synergies and associated uses. The location of the defined clusters are outlined on Figure 3.1 Volume III.

• Strategic Development Locations for Marine Related industry/ industry

SIFP recognises the primacy of the Limerick-Shannon Gateway in prioritising development, in line with national and regional spatial policy. The Strategic Development Locations (SDL) focus on the established development clusters in the Estuary where a strong industrial base is either already well established or approved in principle through the statutory planning process.

SIFP development objectives acknowledge the existing development plan zonings at Askeaton where the development priority is to safeguard the lands for the establishment of industry and enterprise of regional importance and at Limerick Docks where primary objective is the retention of the existing port and the development of an employment and residential hub to facilitate the sustainable development of the Docklands as a Strategic Employment Location.





Within that context SIFP will seek to encourage and facilitate appropriate Marine Related Industry and appropriate compatible uses at the Strategic Development Locations adjacent to the valuable deepwater resource within the Estuary. They are shown in Figures 5.2A and 5.2B.

The Strategic Development Locations (SDL) are critical to the future development potential of Marine Related Industry in the Estuary and it is a priority to safeguard their current role and function as well as allowing flexibility to encourage diversification into compatible activities that are attracted by the existing facilities and other synergies available currently at these locations. Each of the locations have varying characteristics that enhance the range of attractions to potential industrial investors. The nature of development likely to be acceptable on each, depends on the characteristics of each SDL and its particular established activities, physical characteristics and environmental assets/constraints. These features have helped tailor specific Development Objectives, guiding both a future land use zoning and future development proposals for each SDL - these are set out in the subsequent sections of this section. The mitigation measures developed through the SEA and AA are referenced at each Strategic Development Location, and expanded within Volume II, Appendices.

In addition, all proposals for future development within the Strategic Development Locations (and associated land use zonings) will be subject to the following Development Objectives (SIFP MRI 1.1, SIFP MRI 1.2, SIFP MRI 1.3, SIFP INF 1.4 and SIFP TPT 1.5).

SIFP MRI 1.1

Safeguarding the Role & Function of Strategic Development Locations

To safeguard the role and function of the Strategic Development Locations identified for marine related industry as outlined on Figure 5.2A and 5.2B in Volume III of the Plan, located within and adjacent to the Shannon Estuary, and encourage their sustainable growth, development and appropriate diversification for economic development in accordance with regional and national priorities and subject to the requirements of environmental objectives ENV 1.1 to 1.12, where relevant.

SIFP MRI 1.2

General Considerations

To permit sustainable proposals for marine related industry within the Strategic Development Locations identified in Figures 5.2A and 5.2B Volume III, subject to compliance with:

- The individual development objectives outlined in this Plan for the Strategic Development Locations;
- The objectives and requirements of the Habitats Directive specifically Article 6(3) and where necessary 6(4), Birds, Water Framework, and all other relevant EU Directives;
- All relevant principles of proper planning, flood risk, sustainability and environmental considerations, including the mitigation measures referenced in this Plan (Volume II Appendices).

SIFP MRI 1.3

Flood risk

All proposals for development within the Strategic Development Locations identified above, should examine in detail the potential risks from fluvial and coastal flooding, as well as sea level rise, to ensure the location and design of future development uses within these Locations:

- Pay due regard to available information on flooding and the outcome of the Shannon CFRAM study;
- Is appropriate for the level of flood risk identified at detailed planning and design stage;
- Does not increase flood risk elsewhere;
- Provides the appropriate level of flood protection where development in flood prone areas is deemed appropriate or justifiable;
- Proposals should pay due regard to the Guidelines produced by the DOECLG and OPW for Planning Authorities 'The Planning System and Flood Risk Management - Guidelines for Planning Authorities'.



5.4.4.1

STRATEGIC DEVELOPMENT LOCATION A:
INISHMURRY/CAHIRACON, KILADYSERT, CO CLARE

Inishmurry/Cahiracon SDL is broadly located outside the development limits of Kiladysert Village, Co Clare, off the main R473 Road from Clarecastle to Kilrush on the north shores of the Estuary and is accessed via a minor road L-2132 (Photos 22-23).The lands are predominantly used for agriculture and quarrying, and benefit from a planning approval for a major industrial project. There are existing piers and a large pocket of deep water is located on the edge of the SDL providing potential for maritime industry. A considerable portion is woodland, which allied to the topography, restricts views from the R473. The SDL is shown in detail in Figure 5.3, Volume III.

Designations

The SDL is located within the South West Zone in MWRPG, indicating potential for growth in commercial/ regional facilities, as a base for Foreign Direct Investment and indigenous industry, enterprise and culture. The Guidelines indicate that the potential of the Estuary must be harnessed, even at locations outside existing settlements.

The SDL is located adjacent to the Natura 2000 network, including the River Shannon & Fergus Estuary SPA and Lower Shannon SAC. The host landscape is classified as Working Landscape, outside the Heritage Landscape designation. The potential access route to the lands is designated as a Scenic Route, and Caheracon House is on the Record of Protected Structures. There are known heritage features located on the Record of Monumnets and Places within the vicinity, and in addition, records have shown underwater heritage potential within the inter-tidal and tidal areas, including presence of fish weirs

The Preliminary Flood Risk data, prepared by OPW, indicates a portion of these lands (the existing Pier) is subject to risk from coastal and pluvial flooding.

Assets

The SDL has potential for development of marine related industry due to:

- A well sheltered location with an existing pier offering direct access to a large pocket of well

sheltered deep water and the main navigation channel;

- A considerable area of hinterland available in close proximity to the R473;
- The MWRPG inclusion of the lands in the South West Zone indicates a realistic potential for marine related industry;
- A Strategic location opposite the SDL at the Port of Foynes;
- A previously developed coastline resulting from an existing planning approval for a significant marine related industrial development (Shannon Explosives) that included an Order for Felling of Trees on a portion of the lands;
- An opportunity to redevelop and re-use existing marine infrastructure at the existing piers, which minimises potential environmental impacts;
- There are significant flood embankments in place;

This SDL is prioritised for marine related industry, however it is also identified as offering development potential for appropriate Marine Leisure, Tourism and Recreation. Opportunities may exist to create synergies with lands adjacent around Caheracon House or as a multi-use maritime industry, incorporating components to potentially cater for Cruise Ship berths, enabling tourism linkages with the wider tourism offering in Co Clare and the Mid-West Region.

Mitigation Measures

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 12, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Theme Mitigation	BFF MM 11, S MM 1, W MM 6, CFAQ MM 1,
L MM 1, SN MM 1-7, MRI MM 1-8,	

*Refer also to Table 3.21 of the Natura Impact Report

This SDL is prioritised for marine related industry. The development objective is:

SIFP MRI 1.2.1

Inishmurry/Cahiracon Marine Related Industry

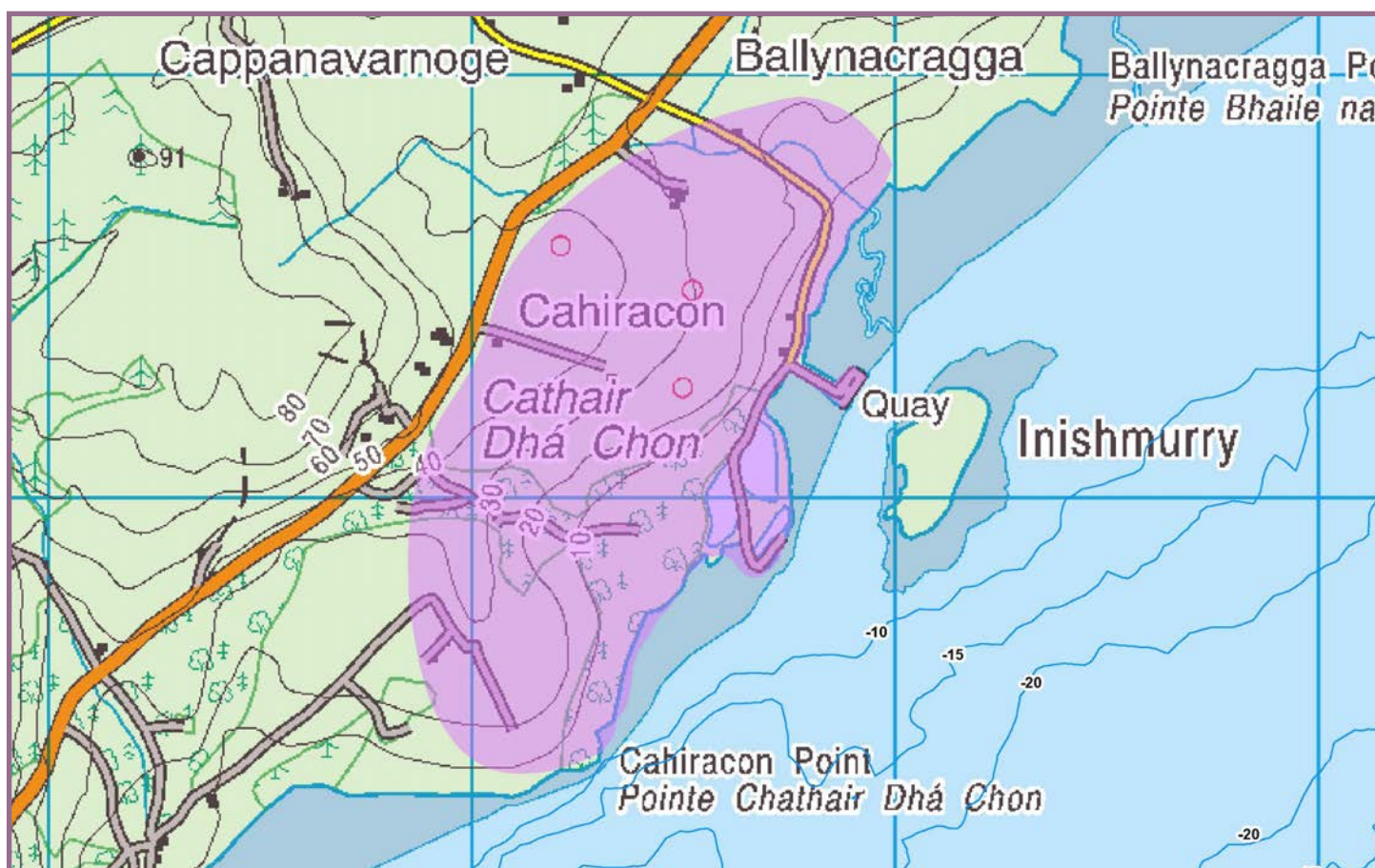
To facilitate and promote the sustainable development of these lands for marine related industry, utilising the presence of deep water, existing infrastructure, natural resources and location adjacent to the Port of Foynes to harness the potential for economic development. Alternative compatible land uses may be acceptable where the ability to deliver the primary use (maritime industry) is not compromised, subject to compliance with the criteria in SIFP MRI 1.2.



Photo 22 -View of Inishmurry-Cahiracon from the access Road



Photo 23 - View of Cahiracon House, within lies adjacent to the Strategic Development Location



Strategic Development Location A: Inishmurry/Cahiracon, Kiladysert, Co Clare

5.4.4.2

STRATEGIC DEVELOPMENT LOCATION B:
MONEYPPOINT & ADJACENT LANDS, CO CLARE

This SDL comprises land in close proximity to Kilrush Town in Co Clare. It accommodates the ESB major coal-fired generating station together with undeveloped land and coastline adjacent. There are a number of pockets of deep water in this area, and an identified tidal energy technical resource opportunity available for exploration. The SDL is shown in Figure 5.4, Volume III.

Moneypoint Generating Station is owned and operated by ESB (Photo 24), has an overall operational site of 227 hectares and an installed capacity of 915MW. The site is a major hub for electricity transmission with a 440kv Transmission station, connecting into the National Grid system. It is also a bulk supply point for the region, and an essential component of the ESB meshed transmission system. The SDL also includes land and coastline adjacent to Moneypoint, which is outside the ownership of ESB.

Designations

The Clare County Development Plan identifies the SDL as being located within the Working Landscape, a Rural Area under Strong Urban Pressure and adjacent to a Scenic Route. It is identified as being acceptable in principle for Wind Energy. MWRPG seeks to protect the status of major energy hubs. The SDL is adjacent to the SAC and SPA, and any proposals likely to have significant effects on their qualifying features, will require an Assessment under the Habitats Directive. ESB Moneypoint facility is a SEVESO Upper Tier Site, due to the presence of hazardous substances.

Assets

Moneypoint is an existing, strategically important energy hub in terms of capacity and security of supply through providing diversity in fuel supplies and providing critical energy storage in the global energy market. It has a network of 400, 220 and 110 kV power lines radiating from it, which are core elements of the national and regional grid network. ESB are committed to safeguarding its contribution in terms of capacity, in ensuring efficient production of electricity and security/ diversity of supply in the future.

There has already been significant investment in substantial maritime infrastructure including a large commercial jetty capable of accommodating vessels up to 250,000 tonnes DWT and 600,000 tonnes storage capacity (Photo 25). Significant development opportunities can be delivered without a need for major dredging activity. There are potential synergies for the development of marine related industry and renewable energy, with the potential to multi-use the existing infrastructure.

ESB consider the site to be of strategic importance in respect of security of energy supply but the current site is restricted and any expansion would require extension of the operational area and potentially upgrading of jetty facilities.

The SDL is close to the mouth of the Estuary with excellent transport linkages including direct access to sea traffic for fuel deliveries that ensures efficient replenishment of stand-by fuel generation reserves. The lands are well connected by the existing road network. There are a number of pockets of fairly well sheltered deep water in this area, and an identified tidal energy technical resource opportunity available for exploration.

Mitigation Measures

Table with 2 columns: Mitigation Measure, Reference (Volume II, Appendices)*. It lists two types of mitigation measures: Overarching Mitigation Measure and Site Specific & Theme Mitigation, with their corresponding references in the project documents.

*Refer also to Table 3.20 of the Natura Impact Report

This SDL identified and prioritised for marine related industry. The Development Objectives are:

SIFP MRI 1.2.2

Moneypoint Strategic Energy Location

To safeguard the role and function of ESB Moneypoint as a key strategic driver of economic growth in the Region, encouraging its sustainable growth, operational expansion and diversification in accordance with national and regional energy objectives.

SIFP MRI 1.2.3

Moneypoint Marine Related Industry

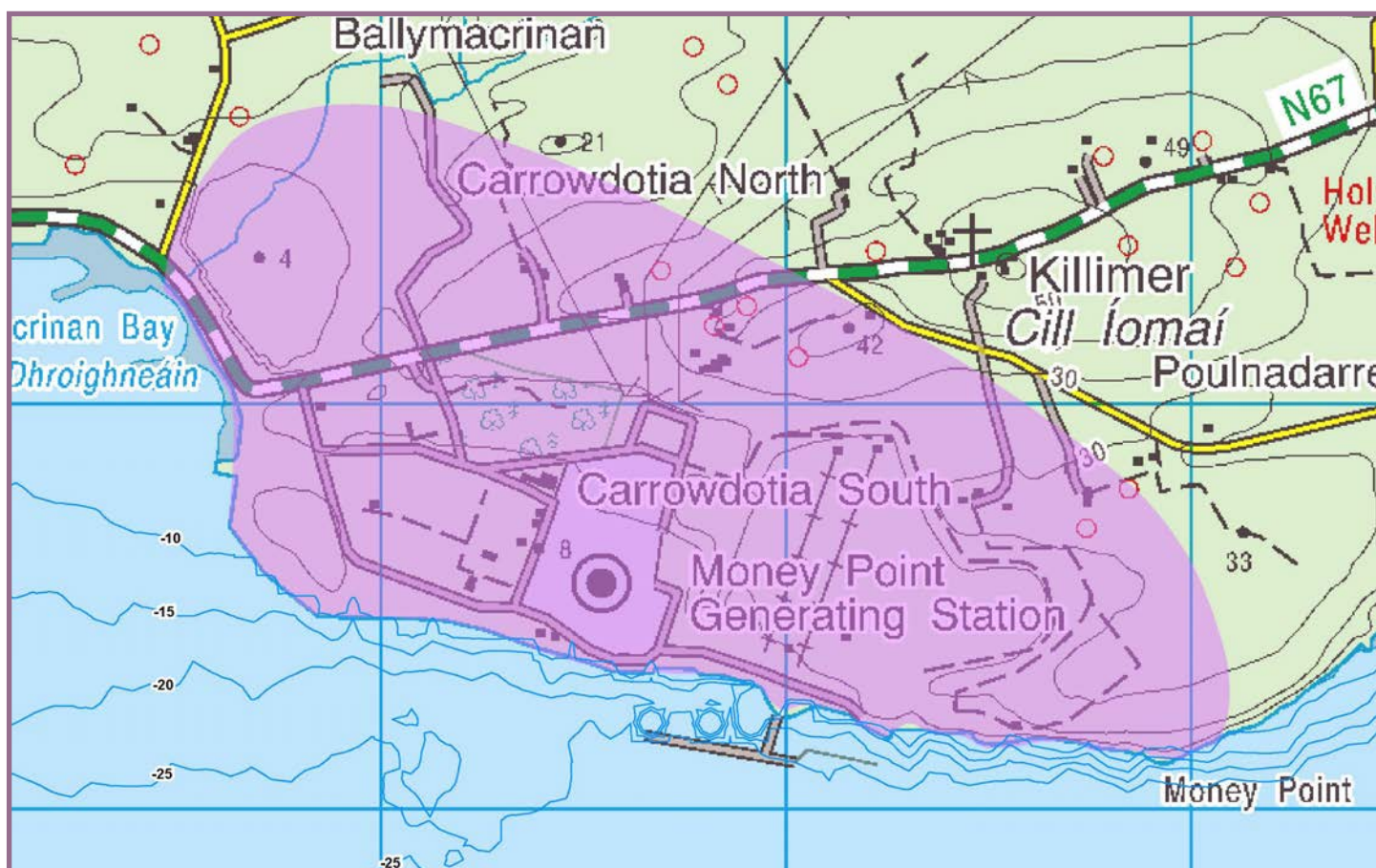
To support and facilitate the development of marine related industry on lands adjacent to Moneypoint, which is compatible with the primary use of this SDL, as a Strategic Energy Location, subject to compliance with the criteria in SIFP MRI 1.2.



Photo 24 - ESB Moneypoint from the Estuary



Photo 25 - Tanker arriving at Moneypoint



Strategic Development Location B: Moneypoint & adjacent lands, Co Clare

5.4.4.3

STRATEGIC DEVELOPMENT LOCATION C: FOYNES ISLAND, FOYNES, CO. LIMERICK

This SDL is located at the heart of the Estuary, adjacent to the Port of Foynes and the settlement of Foynes. The location includes undulating lands, steeply sloping woodland areas, along with a number of dwellings and a commercial fuel jetty. The SDL is located close to the core commercial shipping lane and borders onto the main channel entrance into the Port at Foynes. The SDL is shown in Figure 5.5, Volume III.

Designations

These lands are un-zoned within the Limerick County Development Plan, and are located in close proximity to Foynes, which is identified as a Tier 3 Centre on Transport Corridor, in the County Plan. The SDL is, adjacent to the Port of Foynes which is of national and regional significance, a regional investment priority under NDP, and is also recognised as a Tier 1 Port under the National Ports Policy. The SDL is included in a Natural Heritage Area designation as well as being part of the River Shannon & Fergus Estuary SPA, and the Lower Shannon SAC. The area is one where numerous structures have been identified in the study of underwater heritage potential.

Based on the Preliminary Flood Risk data carried out by OPW, a small portion of the SDL is subject to risk from coastal flooding.

Assets

The SDL lies close to deep water facilities and has the potential to deliver sheltered port facilities by virtue of the location on the island, and the additional shelter provided by the headland near Foynes Port.

There are existing marine infrastructure facilities including a disused oil terminal consisting of large pier and platforms on north side of Island which could potentially be upgraded for commercial use. In addition, a small pier and slipway on the south west side of island could also be upgraded. The hinterland is relatively free from development and could be rendered serviceable with some civil works.

Foynes Island is located within the Estuary (Photo26), adjacent to the Port of Foynes and Foynes Town, with considerable potential employment opportunities in relation to the existing Port uses. The Port has identified a number of key growth sectors involving new berthing facilities, onshore infrastructure and the ability to accommodate larger vessels, to serve wider markets in an efficient and competitive manner. This SDL at Foynes Island is the optimal location available to accommodate the larger 219m panamax vessels within the Port due to the proximity to deep water, the core shipping lane and the ability to safely navigate and service the Port. These lands are a vital component of the growth forecast for the Port of Foynes, to be safeguarded and maintained as a vital Port asset.

The existing commercial jetty will require upgrading to accommodate larger vessels and some civil works to link the lands into the existing Port facilities. Development works are restricted to the western part of the island to minimise the impact of any such works, on the natural environment.

Mitigation Measures

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Theme Mitigation	BFF MM 13, W MM 8, L MM 3, MA MM 4, SN MM 1-7, MRI MM 1-8

*Refer also to Table 3.21 of the Natura Impact Report

This SDL is identified and prioritised for marine related industry. The Development Objectives are:

SIFP MRI 1.2.4:

Foynes Island Marine Related Industry

To facilitate and promote the sustainable development of marine related industry at Foynes Island, utilising the presence of deep water; proximity to the core commercial shipping lane, and the established Port of Foynes to harness the potential opportunities within this location. Port related developments, or those considered complementary or compatible with the adjacent Port are likely to be acceptable in principle, subject to compliance with the criteria in SIFP MRI 1.2.

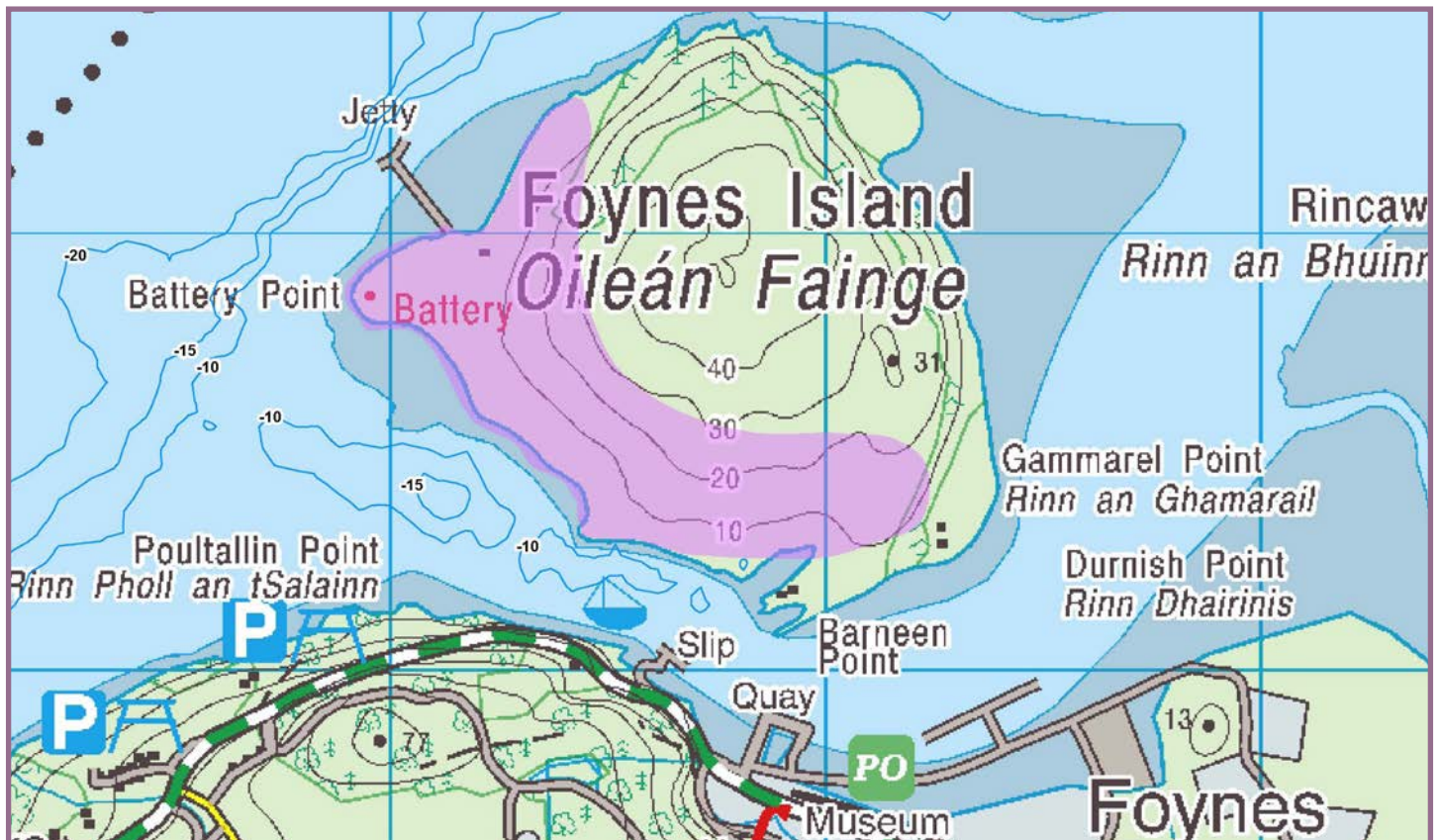


Photo 26 - Foynes Island

SIFP MRI 1.2.5:

Connectivity with the Port of Foynes

To support the sustainable development of appropriately located and well-designed linkages between Foynes Island and Foynes Port to facilitate the development of marine related industry, and provide essential connections to the main infrastructural and service network as a vital component of economic growth at this location, subject to compliance with the criteria in SIFP MRI 1.2.



Strategic Development Location C: Foynes Island, Foynes, Co. Limerick

5.4.4.4

STRATEGIC DEVELOPMENT LOCATION D: LANDS AT THE PORT OF FOYNES, FOYNES

This SDL is located on lands at the Port of Foynes, within Foynes settlement, and along a key Transport Corridor. The SDL incorporates the existing Port lands, as well as a portion of currently zoned for Port Operations & Industrial Uses (mostly undeveloped) within the Limerick County Development Plan. The SDL is shown in Figure 5.6, Volume III.

The location accesses both the main Port Access Road, and the N69 National Road Corridor (Photo 27), and straddles the corridor of the existing rail connection between Foynes Town and Limerick City, which is protected within the County Development Plan. There are a number of existing flood embankments within the western portion of the SDL, along Robertstown Creek. The Port itself has been operating as the main deep water facility within the Estuary for vessels up to 40,000dwt and up to 200m in length. It currently accommodates approximately 41,000m² of warehousing within the existing Port facility (Photo 28).

Designations

Ports are identified in the National Development Plan as a Regional Priority, and as such a key target for capital investment. This theme has filtered through the National Spatial Strategy, and has been embedded in the County Plan for Limerick and the Mid-West Regional Planning Guidelines (MWRPG's). The County Development Plan Objectives ED 05 supports the expansion of the Port through industrial development, particularly to cater for deep water berthage. In addition, it recognises the potential rail connections into Limerick City and beyond, along the currently unused Limerick-Foynes Rail Link. The lands are adjacent to a proposed Natural Heritage Area, the River Shannon & Fergus Estuary SPA, and the Lower Shannon SAC.

Based on the Preliminary Flood Risk data carried out by OPW, a considerable portion of the SDL is subject to risk from coastal flooding. It is anticipated that water compatible uses, consistent with Port-related activity is likely to be acceptable in these locations.

Assets

This SDL derives significant benefit from the existing port facilities and access to deep water. Shannon Foynes Port Company (SFPC) has identified a number of key growth sectors involving new berthing facilities, onshore infrastructure and the ability to accommodate larger vessels, to serve wider markets. To complement the growth in maritime infrastructure, a parallel growth in the hinterland available for storage, warehousing and other Port-related uses is also required. This is a vital opportunity for the Port of Foynes (Photo 29), and a key asset in the growth dynamic and sequential expansion of Port activity, to be safeguarded and maintained as a vital Port asset. The Port is a key economic driver in the Estuary, with the potential to support and enhance the function of the Gateway.

The location along the N69 as the key transport corridor provides direct access onto the National Road Network which is critical for the efficient movement of freight to/from the Port. The existing rail network provides significant opportunities for improved efficiency in freight movements, transportation modes, reducing greenhouse emissions, and creating more competitive market for existing and future Port users.

This SDL is prioritised for marine related industry. The development objectives are:

SIFP MRI 1.2.6

Port of Foynes

To safeguard the role and function of Foynes Port as a key strategic driver of economic growth and as the premier deepwater bulk port facility offering the greatest economies of scale in Ireland's bulk freight supply chain at a key gateway in the Mid West Region.

SIFP MRI 1.2.7

Expansion of the Port of Foynes

To support and facilitate the sustainable growth and expansion of Foynes Port, to enable greater capacity,

more competitive trade potential, and diversification of trade patterns to meet national and international market demands. Proposals for marine related industry, and more specifically sustainable port-related uses will be encouraged, along with alternative uses, which complement the existing proposed marine related uses within the site, and that demonstrate compatibility with the level of flood risk, including provision of appropriate estuarine buffer areas. Proposals will be subject to compliance with the criteria in Objective SIFP MRI 1.2.



Photo 27 - Port of Foyes from the N69 (I)

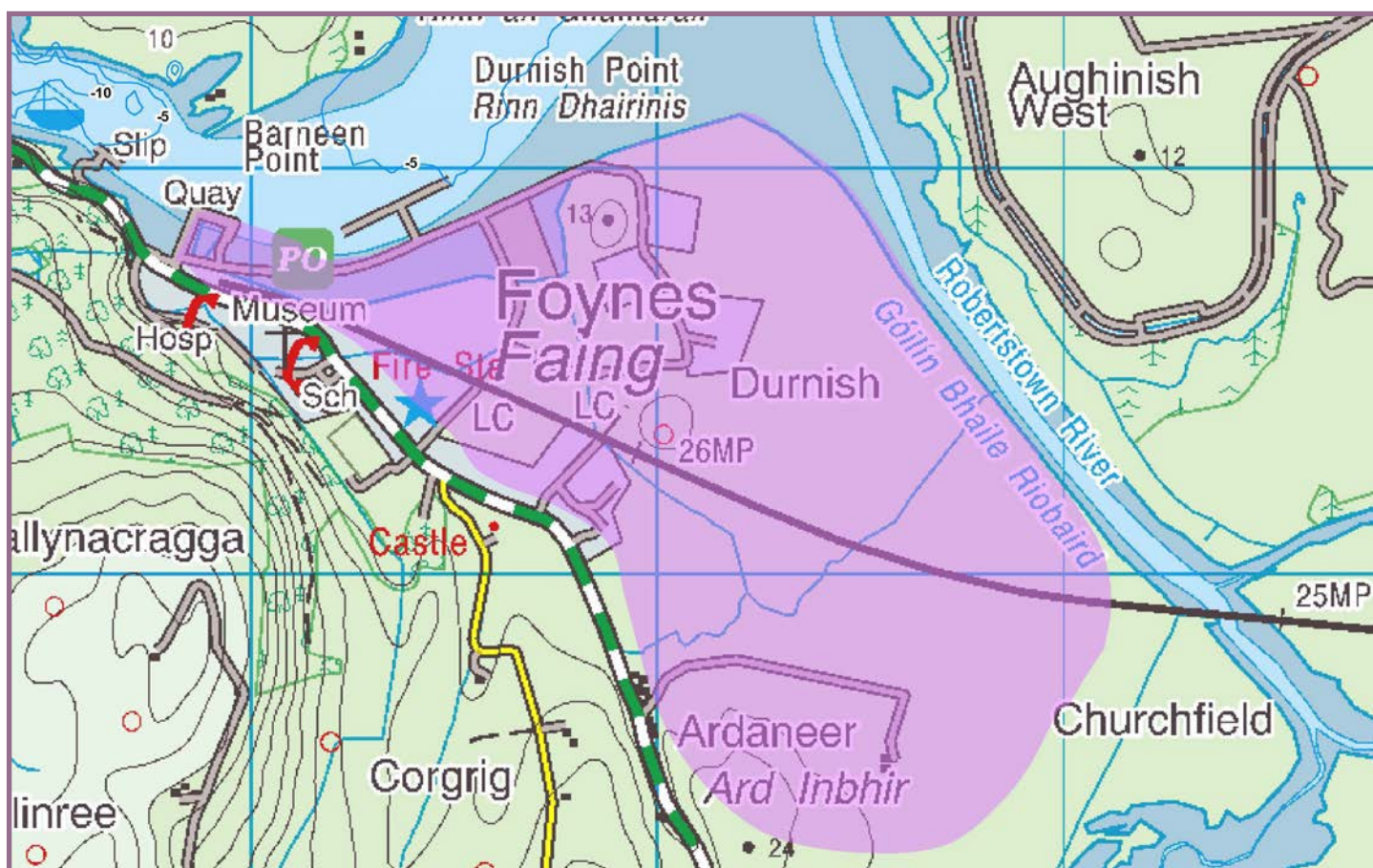


Photo 28 Port of Foyes.

Mitigation Measures

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Theme Mitigation	SN MM 1-7, MRI MM 1-8, BFF MM 14, W MM 9, MA MM 5

*Refer also to Table 3.22 of the Natura Impact Report



Strategic Development Location D: Lands at the Port of Foyes, Foyes

5.4.4.5

STRATEGIC DEVELOPMENT LOCATION E:
ASKEATON, CO LIMERICK

The SDL comprises relatively flat agricultural land, located outside the development limits of Askeaton, alongside the N69 Transport corridor. The SDL incorporates the entirety of the largely undeveloped Shannon Development Land Bank, currently zoned for industrial and employment uses and incorporates adjoining lands occupied by Pfizer Pharmaceuticals which is also established as a key industrial provider in the area. The SDL is shown in on Figure 5.7, Volume III.

Designations

The Shannon Development lands have been identified as a strategic industry and employment zoning in the Limerick County Development Plan and Objective ED 04 safeguards these lands for the establishment of industry and enterprise of regional importance.

The Preliminary Flood Risk data prepared by OPW indicates a small portion of the SDL (namely the existing Pier) maybe subject to fluvial flooding.

A proposed Natural Heritage Area is located adjacent to these lands. The SDL is located adjacent to the Natura 2000 network, including the River Shannon & Fergus Estuary SPA and Lower Shannon SAC.

Assets

This location is identified in the MWRPG, MWASP, and Limerick County Development Plan as occupying a strategic location alongside the N69, within close proximity to both Limerick City and the Port of Foynes. There are recognised potential synergies between the Port of Foynes and the Askeaton Strategic Development Location, as a remote location for port (marine) related development. Development at this location is likely to require further upgrades to the transport corridor of the N69 which has been approved by NRA and announced by Limerick City and County Council. The main access and internal service infrastructure has already been provided within the site.

Both IDA Ireland and Shannon Development are actively promoting and marketing the lands at Askeaton to potential investors as a strategic development location and are working closely to develop a common approach to planning (Photo 30).

The SIFP identifies the Askeaton SDL as existing strategic industrial land, where the development priority reflects the objective of the Limerick County Development Plan to safeguard the lands for the establishment of industry and enterprise of regional importance. The SIFP also recognises that these lands may be suitable as a remote location for Port / marine related development and seeks to encourage such development where it is consistent with the criteria in Policy Objective SIFP MRI 1.2.

The development objective is:

SIFP IND 1.2.8
Askeaton Industrial Lands

To support the continued safeguarding of the industrial lands at Askeaton for accommodation of large establishments of regional importance, and to encourage, in particular, the development of major sustainable projects where they complement the overall objectives of the SIFP. Marine related development will be subject to compliance with the criteria set out in Objective SIFP MRI 1.2.

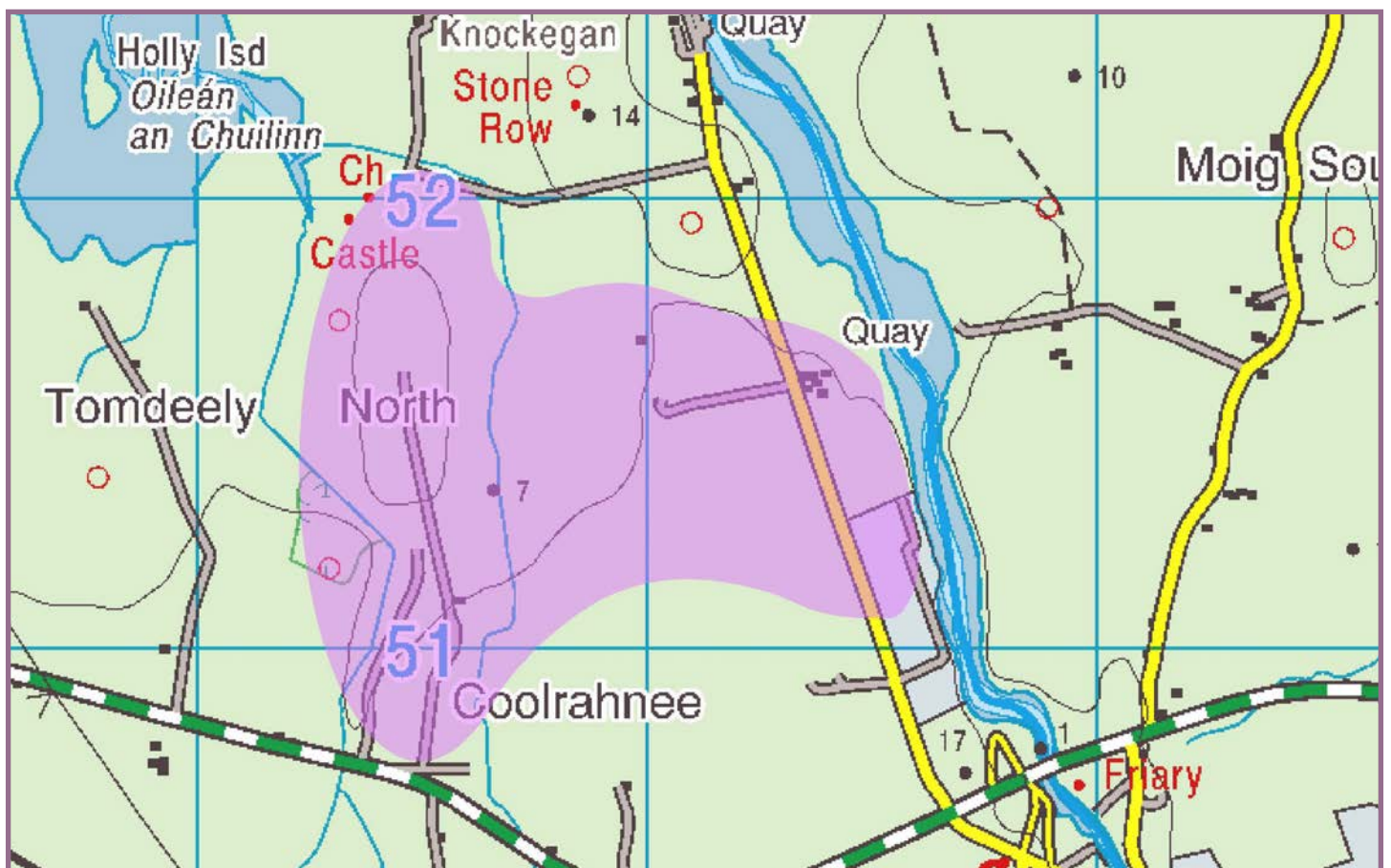
Mitigation Measures

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Theme Mitigation	SN MM 1-7, MRI MM 1-8, BFF MM 15, PHH MM 3, S MM 2, W MM 10, CFAQ MM 2, ACH MM 1, L MM 4, L MM 4, MA MM6

*Refer also to Table 3.23 of the Natura Impact Report



Photo 30 - Entrance to Shannon Development lands at Askeaton



Strategic Development Location E: Askeaton, Co Limerick

5.4.4.6

STRATEGIC DEVELOPMENT LOCATION F:
AUGHINISH ISLAND, CO LIMERICK

The Strategic Development Location at Aughinish Island incorporates the existing operations of Aughinish Alumina Ltd, and is outlined in Figure 5.8, Volume III.

Aughinish Alumina is the largest alumina refinery in Europe and the largest of the alumina facilities operated by UC RUSAL (Photo 32). The Plant was built and became operational in the early 1980's with an initial capacity of approximately 800,000 tonnes per year, employing 700 people. It imports bauxite from West Africa and Brazil to process into alumina, which is then exported. The present day annualised capacity of the plant is equivalent to 6.5million tonnes of cargo and includes the export of alumina hydrate via the Port of Foynes. The facility is accessed via a main access road, via the National Route of the N69. Today, and has an existing deepwater jetty length of 285m (outer). Today, the plant has a capacity of 1.95 million tonnes and employs 450 people full time, plus 150 maintenance and installation contract employees. Infrequent maintenance dredging is required to remove silt. The facility is currently subject to IPPC controls.

Designations

The lands are an established industrial development, which is currently un-zoned in the Limerick County Development Plan. The National Spatial Strategy, MWRPG, and MWASP actively promote the retention, safeguarding and promotion of industrial development. It is indicated as an area of town-land open to consideration for wind energy development. Based on the Preliminary Flood Risk data carried out by OPW, a considerable portion of the area is subject to risk from coastal flooding - however flood embankments are currently in situ along its boundary with the Robertstown Creek. Parts of the lands are included as proposed Natural Heritage Areas, and the SDL lies adjacent to the SAC and the SPA.

Assets

The SDL incorporates a well established, strategic, industrial complex where further growth in the primary industry is anticipated. This is likely to include the potential extension to the existing deepwater berthing facilities,

to take advantage of the potential for larger vessels and upgrading of loading machinery. The hinterlands of the SDL are relatively flat with good access to the N69, and also straddle the existing Limerick-Foynes rail network corridor. The area is connected via a spur line to the Bord Gais Natural Gas Ring Main, and is connected to the 110kV electricity transmission network with a number of substations located on site. The existing industrial development has permission to expand to the south, and is currently pursuing opportunities to increase production and storage capacity. The alumina facility anticipates remaining as a significant working industrial plant for the foreseeable future, generating considerable contributions and employment to the local and regional economy.

The facility has in recent years, developed a Combined Heat and Power facility, which supplies stream energy to the industrial process and feeds electricity into the National Grid.

The SIFP recognises Aughinish Island as a Strategic Development Location. It benefits from existing major berthing facilities that render it suitable for future marine related industrial development (Photo 31). Continued growth is anticipated including an extension to the existing berthing facilities and greater output efficiencies.

Mitigation Measures

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Theme Mitigation	SN MM 1-7, MRI 1-8, BFF MM 16, W MM 11, PHH MM 4, S MM 3, CFAQ MM 3, MA MM7

*Refer also to Table 3.24 of the Natura Impact Report

This Strategic Development Location is prioritised for marine related industry. The development objectives are:

SIFP MRI 1.2.9

Aughinish Alumina

To safeguard the role and function of Aughinish Alumina as a key driver of economic growth in the region, encouraging its sustainable growth, expansion and diversification to facilitate greater and more competitive trade potential.

SIFP MRI 1.2.10

Aughinish Marine Related Industry

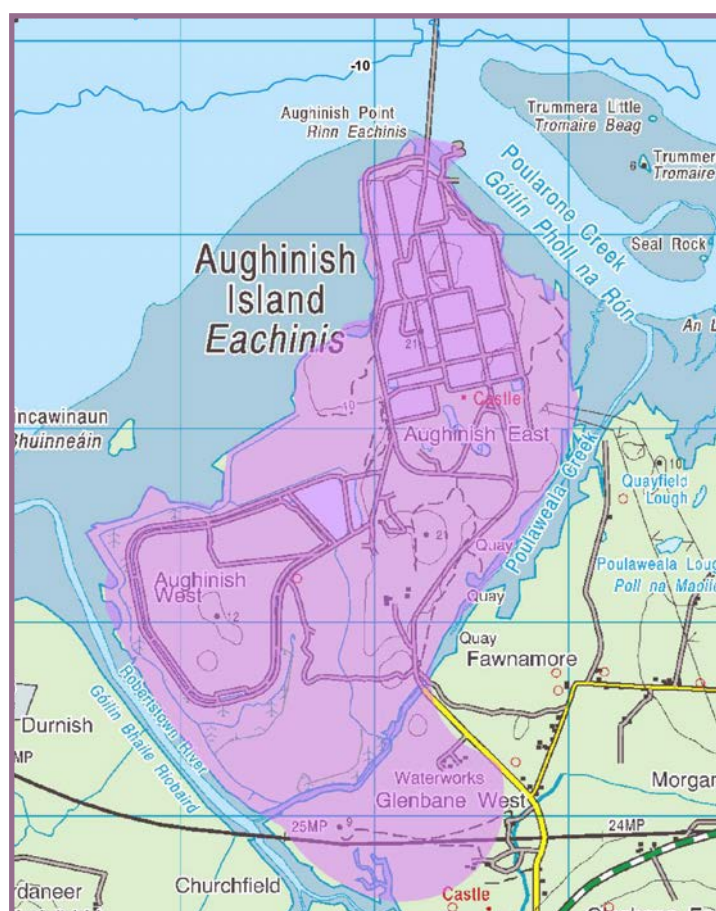
To support and facilitate the sustainable development of marine related industry on land within this Strategic Development Location, which harnesses the potential of the deep water, large hinterland and existing infrastructure. Other sustainable land uses may be acceptable where they are considered compatible or complementary with the level of flood risk, and where the ability to deliver the primary use (marine related industry) is not compromised. Development will be subject to compliance with the criteria set out in Objective SIFP MRI 1.2.



Photo 31 - Jetty at Aughinish Alumina Ltd



Photo 32 - Aughinish Alumina Ltd



Strategic Development Location F: Aughinish Island, Co Limerick

5.4.4.7

STRATEGIC DEVELOPMENT LOCATION G: TARBERT POWER PLANT, TARBERT, CO KERRY

The SDL incorporates the existing Power Plant at Tarbert, including the Strategic NORA lands. The Strategic Development Location is outlined in Figure 5.9, Volume III.

Tarbert Power Station comprises a major electricity generating station which operates on heavy fuel oil, with a rated output of 590MW (Photo 33). The oil is imported via oil tanker in the Estuary to serve the oil fired power plant. The National Oil Reserves Agency (NORA) has taken a 25 year lease on four large underutilised tanks just outside the main island facility, to store national reserves of diesel and kerosene oil.

The facility has just received planning approval for a combined cycle gas turbine, which will be completed in two phases. Phase 1 of the proposals will support the Grid in terms of the increase in winter energy likely and Phase 2 interlinks with the upgrades to the transmission network in the area under the Grid 25 project. This project seeks to secure electricity supply and create a robust network of energy generation, as well as utilise best available technology, achieve flexible performance, higher efficiency, minimising environmental impacts.

Designations

The National Spatial Strategy and South West Regional Guidelines endorse the primacy of the Tarbert Power Station as a principal energy resource for the region as a whole. The Kerry County Development Plan endorses the upgrade and promotion of the electricity network and confirms that this location is open to consideration for wind energy. Tarbert Power Plant facility is a SEVESO Upper Tier SDL, due to the presence of hazardous substances. The NORA Strategic Oil Reserve are also an Upper Tier SDL. Based on the Preliminary Flood Risk data carried out by OPW, a considerable portion of these lands are subject to risk from coastal flooding. The SDL is located adjacent to the SAC and SPA, and in close proximity to the Natural Heritage Area at Tarbert Bay

Assets

The SDL incorporates a well established strategic industrial and energy location with potential to diversify

from the heavy fuel oil industry into cleaner technologies delivering a sustainable reuse of previously developed land, which makes a viable contribution to regional and national energy targets.

The significant storage of oil reserves at this location is a further strategic asset confirming the importance of the SDL in a national context. The level of connectivity with the existing grid network together with synergies with ESB Moneypoint, and the extension of the natural gas network from the Combined Gas Cycle Turbine proposal and the adjacent proposal for the LNG facility presents a real opportunity. In addition, Tarbert is a key transport connection with the Shannon Ferry, which should not be compromised by any future development proposals at this location (Photo 34).

This SDL is identified and prioritised for marine related industry. The development objectives are:

SIFP MRI 1.2.11

Tarbert Strategic Energy SDL

To safeguard the role and function of the Power Plant Hub at Tarbert, including the NORA Strategic Oil Reserves Plant, as a key driver of economic growth in the Region, encouraging its sustainable growth and diversification, in accordance with Regional and National Energy Objectives

SIFP MRI 1.2.12

Tarbert Marine Related Industry

To facilitate and promote compatible sustainable marine related industry at this Strategic Development Location, harnessing the potential of the deep water, large hinterland, and existing infrastructure. All proposals for development shall be required to demonstrate that they are compatible with or complementary with the level of flood risk, and with the neighbouring industrial development. Proposals creating a synergy with or complementary energy proposals will be encouraged. Development will be subject to compliance with the criteria set out in Objective SIFP MRI 1.2.

Mitigation Measures

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Theme Mitigation	SN MM 1-7, MRI MM 1-8, BFF MM 17, PHH MM 5, S MM 4, W MM 12, CFAQ MM 4

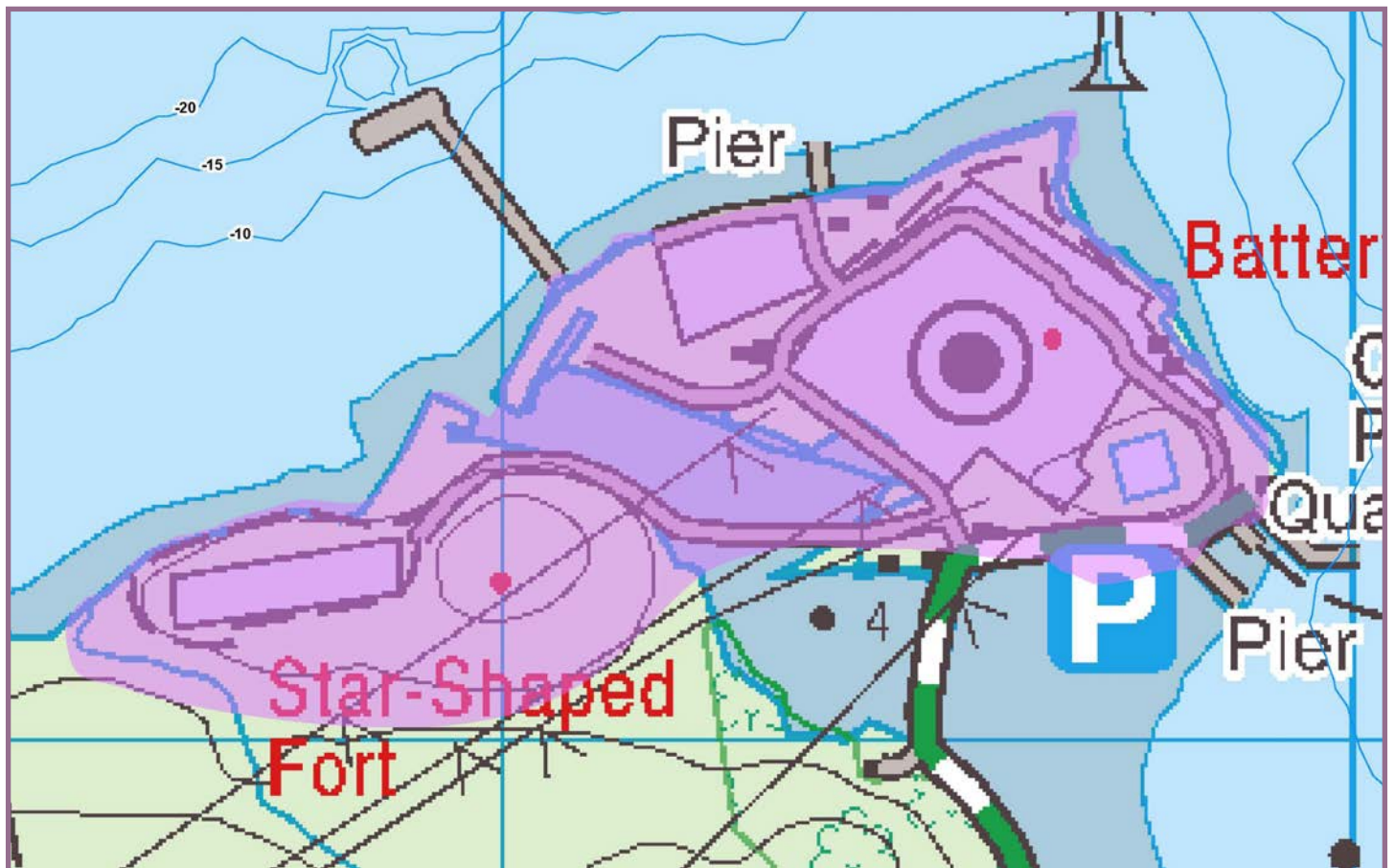
*Refer also to Table 3.25 of the Natura Impact Report



Photo 33 - Tarbert Power Station, Tarbert



Photo 34 - Shannon Ferry at Tarbert



Strategic Development Location G: Tarbert Power Plant, Tarbert, Co Kerry

5.4.4.8

STRATEGIC DEVELOPMENT LOCATION H:
TARBERT-BALLYLONGFORD LAND BANK,
BALLYLONGFORD

The Strategic Development Location at the Tarbert-Ballylongford Land Bank, adjacent to Ballylongford Bay. The SDL is outlined in Figure 5.10, Volume III. This location includes a significant portion of lands currently zoned for industrial use within the Kerry County Development Plan, including a portion that has extant planning permission for a major LNG Terminal.

Designations

The National Spatial Strategy and South West Regional Planning Guidelines identify the land bank as a strategic development location based on the unique resources of deep water facilities, highlighting it as an area of significant potential for future development and an asset for the Region. Kerry County Development Plan has zoned 398 hectares of land for industrial development within this location (Photo 35). It notes further that the proposed LNG plant will be a significant regional project which will act as a catalyst for further industrial development at this location in the future. The extension of the natural gas market and the existing electricity network distribution infrastructure already in place is intended to develop the area in a sustainable manner as a power generation hub within the region.

The N69 is identified as a road of strategic significance in linking the Tarbert-Ballylongford Land Bank and the Gateway City. The SDL is adjacent to the SAC and SPA.

Based on the Preliminary Flood Risk data carried out by OPW, a small portion of the SDL is subject to risk from coastal flooding.

Assets

The lands at this location, lie adjacent to a relatively well sheltered significant deepwater resource on the Shannon Estuary close to the N69. The lands comprise a considerable development hinterland adjacent to the deepwater resource close to a ready, reliable natural gas and electric power supply.

This SDL is identified and prioritised for marine related industry. The location offers significant potential for future development, with the LNG acting as a catalyst for

additional industrial development at this location in the future. With the extension of the natural gas network and the existing electricity distribution infrastructure in place the SDL lends itself to development in a sustainable manner as a power generation centre for the region.

The Development Objectives are:

SIFP MRI 1.2.13

Tarbert-Ballylongford Land Bank Marine Related Industry

To promote and facilitate the sustainable development of these lands for marine related industry, utilising the presence of deep water, existing infrastructure, natural resources, and waterside location to harness the potential of this Strategic Location. Alternative proposals for general industrial development, compatible or complementary with marine related industry, with the level of flood risk, and those creating a synergism with existing uses, and contributing to the development of a strategic energy hub at this location will also be encouraged. Development will be subject to compliance with the criteria set out in Objective SIFP MRI 1.2.

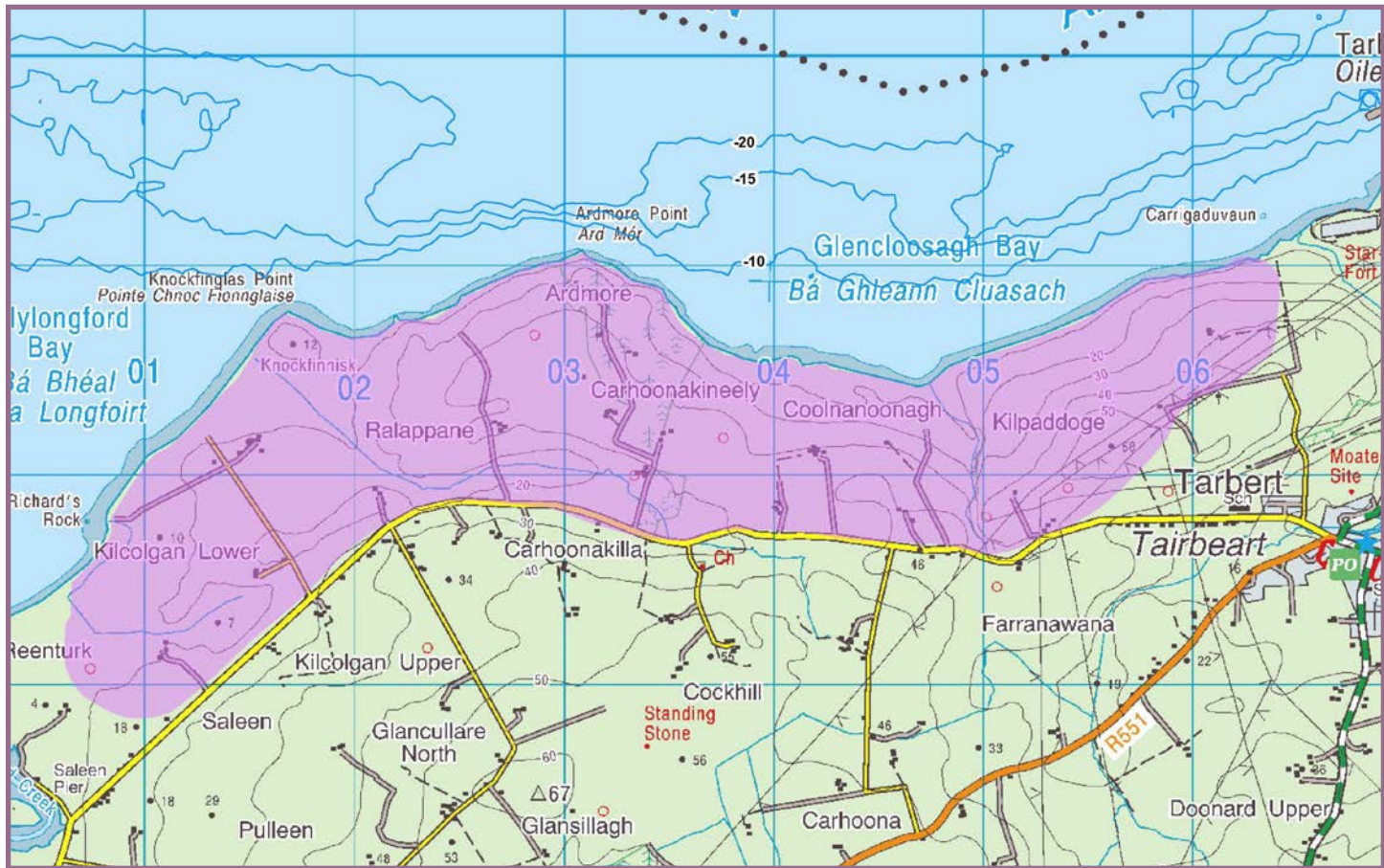
Mitigation Measures

Table with 2 columns: Mitigation Measure, Reference (Volume II, Appendices)*. It lists two mitigation measures: Overarching Mitigation Measure and Site Specific & Theme Mitigation, with their corresponding references in various Marine Management (MM) plans.

*Refer also to Table 3.26 of the Natura Impact Report



Photo 35 - Tarbert - Ballylongford Land Bank



Strategic Development Location H: Tarbert-Ballylongford Land Bank, Ballylongford

5.4.4.9

STRATEGIC DEVELOPMENT LOCATION I: LIMERICK DOCKS AND LANDS ADJACENT, LIMERICK CITY

This Strategic Development Location incorporates the existing area of Limerick Docks, as well as the adjacent industrial lands. The Limerick Docks are long established as part of the Shannon Foynes Port Company operational area, comprising primarily a general cargo handling facility for agri-business outputs, energy related cargo, and the export of recyclables, together with a range of warehousing and storage facilities, spread over 11 ha of operational land. The lands adjacent to the Docks are mostly taken up with a range of light industrial and business units within Corkcanree Business Park, warehousing, building merchants, and car showrooms. The SDL has direct access at a number of locations onto the Dock Road, which provides access onto the motorway and Atlantic Corridor, via the Limerick Tunnel. The SDL is outlined in Figure 5.11, Volume III.

Designations

The existing Docks are highlighted as a key transport infrastructure within the City in terms of short sea shipping, within the current Limerick City Plan 2010-2016, and the objectives proposed aim to protect the Docks as a logistical hub. The National Spatial Strategy identifies Limerick City as part of the Limerick-Shannon Gateway, and therefore a focus for investment, infrastructure and employment, which is endorsed in the Mid West Regional Guidelines.

The lands border onto a Natural Heritage Area, a small portion of the River Shannon & Fergus Estuary SPA, and the Lower Shannon SAC. There are four structures listed on the Record of Protected Structures, and the SDL borders onto the N69 which is identified for Road Improvements.

This SDL incorporates lands, identified within Flood Zone A. This has been supplemented in recent months with the publication of the Preliminary Flood Risk Assessment by OPW which has indicated that these lands are at risk from coastal flooding in particular. Limerick City has been indicated as an Area for Further Assessment within the Shannon CFRAMs Study.

This Strategic Development Location incorporates land currently zoned for mixed use, with an objective advocating employment and residential uses. The City zoning maps also indicate the presence of two SEVESO designations within these lands.

The Limerick City Development Plan identifies the Limerick Docks and adjacent lands as an under-utilized asset for the future economic development not just of the City but also of the Region. The Plan supports the retention of the existing port and the development of an employment and residential hub with a Policy (Policy EDS.3) to facilitate the sustainable development of the Limerick Docklands as a Strategic Employment Location within the City. (Photo 36).

Assets

The Strategic Development Location links to long established port facility with significant potential to provide further employment. The presence of the working Port within the City is considered a major asset within the City and the surrounding Region, a key transport access point into the Shannon Estuary, facilitating imports and exports, economic growth and employment, to be traded from the City directly on the global markets.

The existing berthing facilities at the Port remain adequate for the existing trade patterns and needs of the Port users, and that any additional storage capacity can be provided within the existing operational area. In this regard, no significant expansion of operational lands for the purposes of the Port are required, however the ability to maintain the working Port operations is vital (Photo 37).

The presence of the maritime infrastructure and trade route at the Port, provide the opportunity to attract complementary uses to the lands adjacent, which are already established industrial lands. Coupled with the transport connections along Dock Road into and out of the City, the improved accessibility to the regional transport and rail to the rest of Ireland, is a significant benefit to potential investors looking for new opportunities. There are synergistic opportunities to connect into the growing knowledge economy within the Gateway.

Mitigation Measures

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Theme Mitigation	SN MM 1-7, MRI MM 1-8, BFF MM 19, PHH MM 6, S MM 6, W MM 14, CFAQ MM 6, ACH MM 3, L MM 6.

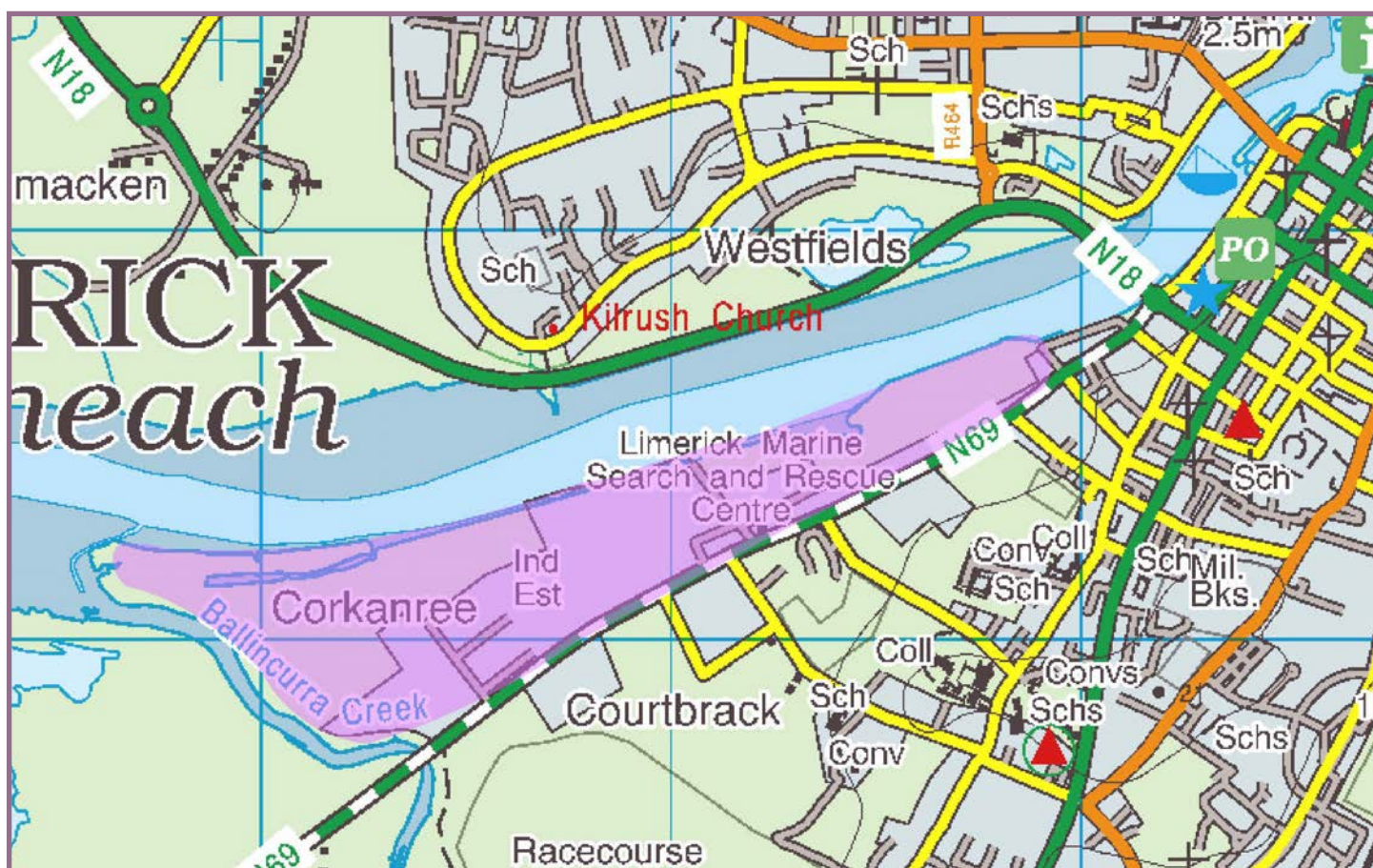
*Refer also to Table 3.27 of the Natura Impact Report



Photo 36 - Ted Russell Docks, Limerick City



Photo 37 - Limerick Docks as a working Port



Strategic Development Location I: Limerick Docks and lands adjacent, Limerick City

The SIFP identifies the Limerick Docks SDL as an existing strategic employment location, where the development priorities reflect the objectives of the Limerick City Development Plan to safeguard the retention of the port and promote sustainable general mixed use development. The SIFP recognises that these lands are suitable for Port / marine related development and seeks to encourage such development where it is consistent with the criteria in Policy Objective SIFP MRI 1.2.

SIFP MU 1.2.14.

Strategic Location

To promote the sustainable economic development of Limerick Docks and the adjacent lands, as an under-utilised asset within the City and wider region, by facilitating the development of a strategic employment location and a residential hub, as well as supporting the retention of the existing Port.

SIFP MU 1.2.15.

General Mixed Use

To promote the development of mixed uses that serves an area greater than its immediate catchment, and to ensure the creation of a vibrant and sustainable urban area.

SIFP MU 1.2.16

Limerick Dock

To safeguard the role and function of Limerick Docks as a working Port Facility and key driver of economic growth within the Estuary, Gateway and Mid West Region

SIFP MU 1.2.17

Operations at Limerick Docks

To facilitate and support the continued Port Operations, the sustainable development of Limerick Docks and lands adjacent, and support the diversification and re-use of lands not considered core Port assets for complementary, compatible and sustainable uses, which appropriately reflect the level of flood risk, and ensuring that overall Port operations are not compromised. Marine related development will be subject to compliance with the criteria set out in Objective SIFP MRI 1.2.

5.4.5 SERVICES & TRANSPORTATION LINKS

One of the key elements of an attractive investment location for marine related industry is the robustness of the landward transport, access, connections, linkages, and opportunities to incorporate more sustainable modes of transport as part of larger developments. Directed by the NDP, considerable investment has been made in the strategic road infrastructure, particularly within the Gateways and Hubs. The motorways to Dublin and Atlantic Corridor sections provide vital connections between nodes of regional development, and allow the creation of a strong infrastructural base for economic activity. It is imperative that the strategic road network serving the Estuary is safeguarded from any inappropriate development which could compromise its primary function, and ability to serve the existing Gateway, Ports, settlements and wider communities.

The relationship between Ports, shore-side facilities and the availability of a high quality transport network in the hinterland has become fundamental in port competitiveness. Global trade leans on gateways and their maritime and inland competitiveness. As much as port infrastructure investments are important to keep up with traffic growth expectations as well as current performance requirements, the hinterland shapes growth potential by anchoring traffic and offering cargo rotation for inbound and outbound container flows. The improvement of road connectivity through the Atlantic Corridor initiative between Gateways in Ireland has been a positive move in terms of enhancing hinterland linkages and competitiveness.

The identification of Foynes Port as Category A Seaport in the EU (Ten-T) Trans European Transport Network is significant. The report indicates that these Ports, with a total annual volume of <1.5 million tonnes of freight or 200000 passengers are connected to the overland elements of the trans European transport network play a major role in international maritime transport. This should be built upon, and a subsequent report by the EU White paper 'Roadmap to a single European transport area' advocates a goal of encouraging a modal shift in transporting freight via waterborne transport in an effort to reduce greenhouse emissions, and the promotion of connections to rail freight to improve connectivity.

In this regard the NRA has instructed Limerick City and County Council to progress the Foynes to Limerick Major Road Improvement Scheme. Limerick City and County Council has therefore recently announced a major upgrade

scheme for the N69 connecting the Port of Foynes with the M7/N18 at Limerick. The proposal for a high quality road aims to provide improved access to the Port and support the envisaged expansion of its capacity and usage outlined in the National Ports Policy 2013. It is also necessary to promote the re-instatement of the existing rail line at Foynes to reflect the status of Foynes Port. It is imperative that the employment nodes identified at Strategic Development Locations are underpinned by optimised transportation arrangements to ensure they remain clear, accessible and attractive to investors. The development objectives are:

SIFP INF 1.4:

Services & Infrastructure

To ensure that all development at Strategic Development Locations / Areas of Opportunity adequately assess and address the need for appropriate infrastructure required to support of the proposals. In the case of road infrastructure, this should incorporate the principles of promoting sustainable modes of transport, improved linkages and enhanced connectivity in all associated transport solutions, as well as the objectives set out in the SIFP TPT 1.5.

SIFP TPT 1.5:

Transport

To support and facilitate, where necessary, a robust transport infrastructure network within the Shannon Estuary environs, providing a strong attractive base for supporting economic activity within the Strategic Development Locations to include:

- Safeguarding the National Road Network;
- Greater connectivity to the rail network, in particular the re-instatement of the Limerick / Foynes line connecting Foynes Port to Limerick City;
- Greater throughput/freight movement via maritime transport
- Improved linkages and connectivity to and within the National and Regional Transport Networks, in particular up-grades to the N69, R473, N67, and N68;
- Appropriate consultation with the National Roads Authority when identifying specific land use zonings, to confirm the wider road network/ access requirements, in the context of the Spatial planning and National Roads Guidelines for Planning Authorities (DoECLG, 2012).



Section 5.5 Shipping & Navigation

To facilitate and promote the economic growth of shipping, trade and investment within the Shannon Estuary, in a sustainable, safe and environmentally sensitive manner.

5.5.1 SHIPPING & NAVIGATION IN THE SHANNON ESTUARY

The Government's focus for economic recovery is centred on growing an export-led economy. Shipping is widely recognised as an important economic driver with 99% of Ireland's international trade carried by ship. The Shannon Estuary is a prime maritime transportation hub, lying at the heart of the Mid-West Region, and presents a considerable opportunity to stimulate greater economic growth, in a balanced and sustainable manner.

The Shannon Estuary is Ireland's premier deepwater resource which is a considerable strategic asset in national and regional terms. There are 6 main facilities handling a total of 1,000 ships per year, carrying in excess of 12 million tonnes of cargo, equivalent to 20 per cent of goods tonnage handled at national ports.

Shannon Foynes Port is Ireland's largest bulk cargo handler by tonnage and ships over 220,000 DWT and one of two ports in Ireland with the capacity for deep water vessels. Coal, bauxite, timber, fertiliser, animal feeds and oil are among the main products being shipped. The lower Shannon Estuary up to Tarbert can also accommodate ships up to 400,000 tonnes DWT.

Shipping is also a key driver for other significant maritime industries within the Estuary that depend on maritime transport to deliver their raw materials, to transfer finished products to European/global markets, and provide valuable operational services. Aughinish Alumina Ltd, ESB Moneypoint, and Shannon International Airport are all major economic drivers where shipping will play a key role in the potential to grow their economic activities.

There are also a range of significant commercial maritime activities at a lower level in the shipping hierarchy within the Estuary. Commercial fishing vessels are generally smaller and operate from a network of local harbours and piers throughout the Estuary. Smaller recreational angling vessels are also commonplace throughout the Estuary, playing an important role in the tourism economy, mooring at various piers, quays and harbours, such as Kilrush (Photo 38) and Kiladysert.



Photo 38 Kilrush Marina, Kilrush Co Clare

Commercial aquaculture represents a growing industry in the Estuary, with numerous licensed activities prevalent along the coastal areas of County Clare, at Carrigaholt, Poulinaherry and Kilrush. Both fishing and aquaculture depend on the availability and suitability of land based infrastructure and while these operations are traditional, small scale, indigenous activities, they represent an important component of the local economies of coastal and rural communities. The National Development Plan indicates that there is substantial scope for increasing fishing activities from Irish harbours.

Maritime leisure is important in the economy of the Estuary, with many pleasure boats availing of the links through Limerick City to the Erne Shannon Gateway, and contributing considerably to the tourist economy of the region. It is linked to a number of marinas, one of the largest being at Kilrush, where the majority of dolphin-watching boat trips and the day trips to Scattery Island are based. These marinas typically provide a range services providing employment in a range of maritime transport related jobs.

The Shannon Car Ferry provides a service for local communities, employers and tourism in the local area and in the wider Region. A ferry operates between Tarbert, County Kerry and Killimer, County Clare, connecting into the main road networks of the N69 and N67, and is well used by the local communities in connecting employers with local labour force and local services. The service connects well into the existing regional/secondary road network, with onward connections to the N67 (County Clare) and the N69 (County Kerry & County Limerick). This is an important service for the tourist economy within the Region, and is a key consideration in promoting a joined up approach to the overall tourism product in the Region.

5.5.2 GOVERNANCE

Marine navigation within the Estuary is principally governed by Shannon Foynes Port Authority (SFPC), supported in their governance by a number of agencies and stakeholders.

SFPC is the statutory navigational authority for commercial shipping on the Shannon Estuary. Their remit extends to:

- Management and control of port operations
- Development of its harbour and approach channels
- Promote investment in its harbour
- Port Safety & Security
- Nautical Services & Communications
- Cargo & Vessel Operations

The Harbours Act 1996-2009 directs SFPC to develop and issue byelaws which provide instructions to all vessels arriving, departing, moving and operating within the Estuary, to ensure safe passage.

SFPC operate two general cargo Port facilities at Foynes and Limerick Docks, as well as a dedicated aviation Jetty at Shannon International Airport. They are also responsible for providing marine services to the other privately owned facilities within the Estuary at Aughinish Alumina Limited, ESB Moneypoint and Tarbert Power Plant.

In addition, SFPC provide pilot boats and towage services to support the commercial shipping activities, and along with the Irish Commissioner for Lights, develops and maintains all navigation aids, including leading lights, lighthouses, buoys and anchorage areas as well as the coordination of all shipping movements.

SFPC published its masterplan, Vision 2041, in February 2013. Vision 2041 is a thirty year plan setting out a port development strategy that seeks to promote the ports as a key economic driver for the region and to influence the development strategies at the national, regional and local level thereby enhancing the attractiveness of the Shannon Estuary for marine related industry and investment. The Vision 2041 strategy is focused upon driving growth across all sectors based on entry into new sectors and expanding existing sectors in line with international and national growth forecasts, including biomass, energy, off-shore renewables, waste to energy and recycling. The masterplan has been

developed within the context of the emerging SIFP and is consistent with the objectives of SIFP.

5.5.3 SHIPPING & NAVIGATION STRATEGY

Strategic Aim:

To facilitate and promote the economic growth of shipping, trade and investment within the Shannon Estuary, in a sustainable, safe, and environmentally sensitive manner

The Shannon Estuary is a major strategic asset in national and regional terms due to the availability of a considerable sheltered natural deep water resource that provides significant opportunities to further develop and improve the potential for shipping and commercial activity in response to the changing nature and demands of the global shipping industry.

Growing future trade volume requires long planning horizons to ensure the correct infrastructure is in place to meet market demands and trade patterns, and to facilitate actual growth. Global trends in international shipping are influenced by the most significant routes, namely the Panama Canal and Suez Canal which have accelerated an advance towards larger vessels requiring deeper access channels and berths as companies seek to cut costs by using larger ships. The ability to accommodate larger ships significantly enhances trade potential and competitiveness on the global market. Port sectors must be cognizant of the need to upgrade and provide additional berthing facilities to accommodate ever larger vessels through deep water channels, deep draught berths, quayside infrastructure and cargo handling facilities. Otherwise the Estuary will become more reliant on feeder vessels (Photo 39) from secondary Ports, rather than on direct services. The Shannon Estuary deep water resource in critical locations provides significant opportunities for sustainable expansion and growth in response to these emerging demands in the global market.

The prospects for advancing economic activity and harnessing the growth potential of the Shannon Estuary in terms of maritime transportation are closely interrelated with the growth of other economic sectors, particularly existing marine related industries which are dependent on the maritime transport sector. The capacity to accommodate bigger ships (Photo 40) in

the Estuary is intricately related to growing economic activity. It will also improve the current marketing, attractiveness and investment potential within the Estuary and increase future growth potential in new maritime industries, including oil and gas exploration, offshore renewable energy, the Cruise Industry and Liquefied Natural Gas (LNG) within the Estuary. The Shannon Estuary is considered an ideal location for these activities due to its naturally occurring deepwater and its relatively uncongested waters from a maritime navigational perspective.

There has been an increasing trend in global shipping, towards containers and bulk cargoes being handled in increasingly larger ships based on the concept of moving cargoes in deep draft vessels and transferring to shallower vessels for onward distribution to regional ports. Significant volumes of bulk cargoes transit from locations such as Australia, China, USA and Brazil to Scandinavian and Baltic ports, before transfer from large ocean going vessels into shallower feeder vessels to service shallower draught ports. The continuing drive for greater efficiencies means that there is every prospect this trend in shipping will persist and further develop, well into the future.



Photo 40 Large vessels navigating into the Port of Foynes

• Transhipment

The Shannon Estuary, with its considerable deep water resource and location on the western edge of Europe, would appear to be well placed for the potential development of a transhipment port feeding into the near European, Baltic and Scandinavian Ports. It would allow large transhipment vessels to avoid the busy shipping lanes in the English Channel and is immediately accessible from the main Atlantic route. While a transhipment hub in the Estuary would result in smaller transhipment vessels undertaking a slightly longer route to those regional ports, than current transhipment ports, it has the ability to serve a larger

number of smaller markets. The enlargement of the Panama Canal scheduled for opening in 2014 could signal an increase in the flow of larger vessels from Asia and the western coasts of the Americas via the western Atlantic and thus benefit a transshipment hub in the Shannon Estuary.

The Estuary has a significant length of river channel with deep water and protection from the exposed Atlantic waves which render it suitable in principle for large port construction, capable of accommodating a transshipment hub, that requires extensive berth length. The access from the open sea is via a deep water access channel of circa 15-17m depth, which is generally well-sheltered and may be broadly suitable for various post-panamax vessels. The coastline has a considerable landbank where the topography is generally suitable for creation of the required storage hinterland and offers potential to create long quay lengths 1.5-2km or greater alongside to minimise transfer distances.

Increased shipping movements, larger vessels and the associated physical development requirements including, but not limited to, dredging, reclamation and pile driving associated with pier or jetty installation within the Estuary has the potential for increased environmental impacts within the sensitive Natura 2000 ecosystem of the Shannon Estuary. The challenge is to secure an environmentally sustainable growth in shipping within the Estuary, whilst safeguarding the essential integrity of the Natura 2000 network, and ensuring compliance with the legal obligations of the Habitats Directive and all other relevant legislation.

The sustainable delivery of such major development projects in the Estuary requires consideration and sensitive balancing of many complex issues, including technical aspects of the project, potential environmental impacts and socio-economic considerations, all in the context of the requirement to adhere to a complex network of European, National and local legislation, policy and regulation. Large scale projects may trigger the requirement for justification of the project under the Imperative Reasons of Overriding Public Interest (IROPI) provisions of Article 6 (4) of the Habitats Directive. This will be particularly important should the proposal involve the permanent loss of habitat, disturbance of a species or loss of habitat of a species protected under the Habitats Directive. The implementation of EU Directives obligates investors to achieve this balance between development and the protection of the environment within the Estuary.

These matters need to be carefully considered during the early stages of project development.

The potential for growth in shipping in the Estuary appears to be considerable with substantial benefits for both the domestic and national economy.

The Development Objective is:

SIFP SPN 1.1:

Sustainable growth in Shipping

To support the sustainable growth of shipping in the Estuary, subject to all proposals, including new or expanding shipping movements, adequately assess potential environmental effects. Those likely to have significant effects on the Natura 2000 network, associated with the Shannon Estuary, shall comply fully with the objectives and requirements of the Habitats Directive, in particular Article 6, ensuring the cumulative and in-combination impacts are adequately assessed and mitigated, where appropriated.



Photo 39 Large vessel docked at the Port of Foynes

SAFEGUARDING THE SHIPPING CHANNEL

The shipping industry requires clear and open navigation channels, as well as associated manoeuvring and turning areas, which are essential for ensuring safe passage of ships through the Estuary. In key areas, such as the entrance to the Ports at Foynes and Limerick Docks, as well as Tarbert, Moneypoint, and Shannon International Airport, it is imperative that clear channels are maintained.

A safe and efficient navigation channel is an imperative for the continued development of shipping in Shannon Estuary. It is essential to safeguard the existing shipping channel, essential navigational aids and valuable areas of deep water from inappropriate development that would compromise the delivery of maritime transport and the realisation of sustainable growth in maritime transportation.

The key shipping and navigation components to be safeguarded are outlined in Figures 5.12A and 5.12B (provided in Volume III).

SFPC play an important role in maintaining the navigable channel for shipping, and in various locations, they carry out maintenance dredging to ensure the navigable channel to the main ports and marine related industries is maintained. Maintenance dredging is carried out at Foynes Port and Limerick Docks to counteract the natural processes of sediment movement within the Estuary. There are three established 'dump at sea' sites within the Estuary, which are available if required for dumping of dredged material and it is essential to retain this facility.

The Development Objectives for Safeguarding the Shipping Channel are outlined below:

NB: *The shipping and navigation components outlined on Figures 5.12A and 5.12B (outlined in Volume III) outline the broad extent of the safeguarded areas – these are for information only and should not be taken as exact. Please refer to the relevant Admiralty Charts for exact detail.*

SIFP SPN 1.2:

Safeguard the Commercial Shipping Lane

To safeguard the core commercial shipping lane, port and berthing facilities, and associated turning areas within the Estuary, to provide a safe and efficient navigation channel for all vessels entering, departing and moving through the Estuary. Any activity or development which impedes safe and efficient marine navigation or port operations, or which poses a risk or hazard to these, is unlikely to be permitted.

SIFP SPN 1.3:

Navigation

To ensure that the effectiveness of all navigation aids and services, including pilotage, buoys, leading lights and lighthouses are not compromised by new developments on land or within the marine environment

SIFP SPN 1.4:

Dredge Spoil Dump Sites

To safeguard the existing approved dredge spoil dump sites within the Shannon Estuary from inappropriate activities or development which would compromise the ability of the Port Authority to use these sites where deemed appropriate and when no other option is practicable in order to provide and maintain safe and efficient access to all Ports and Jetties within the Estuary

SIFP SPN 1.5:

Consultation with Shannon Foynes Port Authority

To ensure Shannon Foynes Port Authority are consulted on any new commercial and leisure/recreation activities or proposed developments which would introduce new vessels or additional vessel movements into the Estuary, to explore the impacts on current navigation, marine safety and port operations and ensure no detrimental impact.

ACHIEVING APPROPRIATE BALANCE

Growth in shipping within the Estuary needs to be sustainable and consistent with the conservation objectives for the Estuary and in compliance with legal obligations in respect of water quality and habitat/species protection. In addition growth in shipping needs to take appropriate cognizance of other interests and users in the Estuary to ensure that the proper balance is found in promoting economic and social development within the Estuary.

Larger vessels (Photo 40) moving more frequently within the Estuary and the associated provision of appropriate berthing facilities are likely to increase the potential for greater environmental impacts particularly within the marine environment, from dredging, reclamation, noise and water pollution, changing erosion regimes, disruption to pipelines and cables, risk of introducing invasive species and impacts on habitats. There is a requirement to ensure that such potential impacts are assessed and appropriate mitigation measures adopted where required

The Development Objective is:

SIFP SPN 1.6:

Appropriate Balance

To adequately assess the environmental risks associated with increased marine traffic and in particular, larger vessels entering the Shannon Estuary. With regard to ship-sourced pollution, such as bilge and ballast water, oil and effluent sources, marine users will comply with the relevant EU and National legislative objectives and associated Codes of Practices, including the MARPOL Convention.



Photo 40 Large vessels docked at Foynes Port

The Estuarine waters are multi-functional and it is possible that multiple uses can be accommodated within individual sections of the waterbody subject to those other uses being compatible with shipping and navigation activity.

Activities that are generally compatible with shipping and navigation include:

- Recreational fishing / angling
- Marine tourism & eco-tourism, including dolphin watching
- Marine recreation & leisure, including sailing, pleasure boating

Other existing and expanding uses and the emergence of new industries within coastal and maritime locations can also create more competition for space within the maritime area, most crucially within the core navigation areas / shipping lanes (Photo 41) particularly where the industry spatial requirements are site specific or would require a fixed obstacle on the seabed or within the water column, which could create an impediment to safe and free navigation for all commercial vessels.

Potentially incompatible uses include:

- Aquaculture
- Some renewable energy devices
- Sand and gravel extraction
- Oil and gas exploration.

Where there is potential conflict with other developments, priority must be afforded to shipping and navigation in accordance with SIFP SPN 1.2 given its importance to the regional and national economy. Given the critical importance of the core commercial shipping lane to the overall development potential of the Estuary, its safeguarding for major commercial traffic must take priority over other potential activities those areas.



Photo 41 Large vessel waiting in one of the Estuary anchorage areas for pilotage

Realising the growth potential of the shipping in the Estuary may result in potential conflict with other users and with environmental and heritage interests.

Other smaller, community based enterprises, which are vital to the economy of coastal communities can be seriously impacted by the changing nature of shipping transportation within the Estuary. In developing the potential of the shipping industry, appropriate account needs to be taken of existing economic and social activities as well as environmental and heritage interests within the marine environment and along coastline of the Estuary.

The Development Objectives are:

SIFP SPN 1.7:

Other Interests

To ensure that any increase in marine traffic, associated with a new development or activity (and including expansion of an existing development or activity) is compatible with existing economic and social activities as well as environmental and heritage interests within the marine environment and along coastline of the Estuary

SIFP SPN 1.8:

Ferry Operations

To safeguard the operation of the Shannon Ferry between Co Clare and Co Kerry, as a vital community, tourism and economic linkage and resource, supporting its future expansion in accordance with the objectives above, and ensuring its route and operations are protected from incompatible land uses and activities



Section 5.6 Energy

To ensure that the Shannon Estuary fulfils its optimum role in contributing to the diversity and security of energy supply, and to harness the potential of the Estuary for the sustainable development of renewable energy sources to assist in meeting renewable energy targets, whilst ensuring that all developments shall comply with the requirements of the Habitats Directive and all other relevant EC Directives.

5.6.1 INTRODUCTION & BACKGROUND

The Shannon Estuary has a long established history of being a major contributor to the national energy supply market. Moneypoint has been generating electricity for around 25 years and remains one of the largest capital expenditure projects in the history of the Irish nation. With a capacity of 915MW, the station is capable of meeting approximately 25% of the nation's demand for electricity. Tarbert with 640MW capacity is also a significant contributor to the national energy supply. These generation stations form an important energy hub either side of the Estuary from which a high voltage network feeds into the national grid.

Energy and energy infrastructure will play a key role in the future development and economic growth of the Shannon Estuary and its hinterland. The provision of high quality and reliable energy infrastructure is essential for the region in terms of attracting and retaining high-tech economic investment and maintaining a high quality of life.

However these strategic locations also capture the essence of the delicate balance to be struck between developing major infrastructure essential for economic growth and quality of life and conserving the prized environmental assets of the Estuary that can only be delivered through an integrated approach.

Moneypoint is the single largest source of greenhouse gas emissions in the state and while the facility has made considerable progress in reducing these emissions, there is an imperative to reduce dependence on fossil fuels so that national and regional targets in relation to climate change are achieved (Photo 42).



Photo 42 Entrance to ESB Moneypoint

The Estuary and the west coast of Ireland generally possess a considerable but, as yet, un-harnessed renewable energy resource in its wind wave and tidal capacity. EirGrid and Bord Gáis have plans to upgrade and further develop their transmission networks in the area to accommodate rising demand as well as provide additional capacity for the anticipated renewable energy generating connections

The energy hubs also have very significant port infrastructure adjacent to a deepwater resource. These facilities allied to the existing energy infrastructure make the sites very attractive to other marine related industries and provide additional potential to service the renewable sector through technology development, transport, storage and assembly facilities.

A large site at Stonehall, which falls within the Shannon Town Local Area Plan, is already zoned for large scale green / renewable energy development. This is a strategically significant zoning close to the Estuary that should reinforce the overall objective for Shannon as a low carbon zone and could stimulate further investment within the area, particularly in respect of renewable energy and other industry that benefit from associated synergies.

The existing gas and electricity infrastructure on the Estuary provides considerable opportunities for alternative energy generation to assist in meeting the diversity and security of energy supply, in an efficient manner. For example, the opportunities for developing Combined Heat and Power facilities are considerable, particularly as a diversification and / or complementary process from existing industries.

All of this is set in the context of the international nature conservation designations, considerable culture and heritage interests, a strategic navigation channel and a high quality land and seascape. The SIFP energy strategy seeks to balance these competing interests through a comprehensive analysis of the issues and integrated approach to the formulation of policy objectives.

5.6.2 STRATEGIC POLICY CONTEXT

The context for formulation of energy policy in respect of the Shannon Estuary is shaped by obligations imposed by EU and Government strategies and initiatives introduced to ensure that we can meet those obligations.

EUROPEAN UNION OBLIGATIONS

Ireland is signatory to several international agreements on Energy & Climate Change. Much of Ireland's energy and renewable energy national policy is an implementation and recognition of Ireland's national responsibilities under European Union Directives on Energy

The EU introduced its 20:20:20 Energy & Climate Change Package in April 2009 requiring:

- 20% reduction in CO₂ emissions
- 20% reduction in Energy Use
- 20% increase in Renewable Energy

Directives in support of this framework include:

- 2006-32-EC: Energy end-use efficiency and energy services
- 2009-28-EC: Promotion of renewable energy & mandatory targets
- 2009-29-EC: Extension of the Greenhouse Gas Emissions Trading Scheme
- 2009-30-EC: Specification of transport fuels – lower ghg
- 2009-72-EC: Rules on the internal electricity market
- 2009-548-EC: Renewable Energy Policy Template
- 2010-31-EU: Energy Performance of Buildings Recast
- 2012/27-EU: Energy Efficiency Directive
- 2010/75-EC: Industrial Emissions Directive

All of these directives place a legally binding requirement on Ireland to reduce energy consumption and CO₂ emissions and to increase the use of renewable energy in electricity, heat and transport.

THE NATIONAL SPATIAL STRATEGY (NSS) 2002- 2020

The National Spatial Strategy aims to deliver balanced social, economic and physical development between regions which requires that the full potential of each region to contribute to the overall performance of the state be developed on a sustainable economic, social and environmental basis. The NSS recognises that the most mature and successful economies possess highly developed, well integrated infrastructure including energy networks that supports movement and converges at strategic points to drive dynamic sustainable development. Reliable and effective energy systems are recognised as prerequisites for effective regional development.

Prime considerations in terms of spatial policies relating to energy include:

- Developing energy infrastructure on an all-island basis to the practical and mutual benefit of both the Republic and Northern Ireland
- Strengthening energy networks in the West, North West, Border and North Eastern areas in particular
- Enhancing both the robustness and choice of energy supplies across the regions, through improvements to the national grids for electricity and gas.

The Strategy sees Ireland's future electricity and gas distribution networks integrated on an all-island basis underpinning and driving regional development.

NATIONAL DEVELOPMENT PLAN 2007-2013

The National Development Plan set out the Government's economic and social investment priorities for 2007-2013. The NDP reflects the strategic role of energy in underpinning the overall social and economic objectives. The Energy Programme allocated 8.5m investment in energy seeking to ensure:

- Security of energy supply;
- Competitive cost in energy supply;
- Environmental sustainability in respect of addressing climate change, delivery of services and in delivering appropriate research in technological development and innovation;
- EirGrid Grid25: A Strategy for the Development

of Ireland's Electricity Grid for a Sustainable and Competitive Future.

Grid25 is a strategy indicating how EirGrid intends to implement the 2007 Government White Paper on Energy 'Delivering a Sustainable Energy Future for Ireland'. Grid25 sets out a Government approved high level strategy for the development of the necessary transmission infrastructure to support Ireland's national renewable energy target and in the long term a more sustainable electricity supply.

The fifteen year strategy envisages the doubling of Ireland's grid capacity over the period to 2025, and will involve investment of 4 billion in this critical national infrastructure. Grid25 is a critical element in future-proofing Ireland's electricity needs by facilitating more sustainable, competitive, diverse and secure power supplies in support of economic and social development and renewable energy deployment. It proposes an investment of €31.5m in grid development in the regional transmission network including up-rating of over 250km of the existing network to facilitate higher capacity flows using existing corridors where possible and strengthening the transmission capacity across the Shannon Estuary.

GOVERNMENT POLICY STATEMENT ON STRATEGIC IMPORTANCE OF TRANSMISSION & OTHER ENERGY INFRASTRUCTURE

The Government published a policy statement on the strategic importance of Transmission and other Energy Infrastructure on 17th July 2012. Local Authorities and An Bord Pleanála are required to have regard to the Government policy statement as and from the date of publication. The statement reaffirms 'the imperative need for development and renewal of our energy networks, in order to meet both economic and social policy goals' and recognises the need to achieve balance between that need and the human, environmental and landscape impacts, in delivering the best possible engineering solutions.

The Government endorses supports and promotes EirGrid's Grid25 investment programme across the regions as 'the most important such investment in Ireland's transmission system for several generations'.

DELIVERING A SUSTAINABLE ENERGY FUTURE FOR IRELAND – THE ENERGY POLICY FRAMEWORK 2007-2020 WHITE PAPER

The White Paper set out the Government's Energy Policy Framework to deliver a sustainable energy future for Ireland. It is set in the global and European context that places energy security and climate change among the most pressing international challenges. The Framework is closely aligned to the Climate Change Strategy and sets out actions to achieve the strategic goals of:

- Ensuring Security of Energy Supply: through reliable access to oil and gas supplies with the infrastructure to import, distribute and store gas and oil, allied to robust networks and electricity generating capacity.
- Promoting Sustainability of Energy Supply & Use: through actions including accelerating growth of renewable energy sources, delivering an integrated approach to sustainable development and use of bio-energy resources.
- Enhancing the Competitiveness of Energy Supply: through structural change in the energy market, enabling competition and delivering consumer choice.

The expansion in the economy and population has contributed to the 25% increase in Ireland's greenhouse gas emissions over the past 15 years. Currently over 90% of Irish energy requirements are imported. Combined with its peripheral location and small market scale, this current reality leaves Ireland vulnerable to supply disruption and imported price volatility.

NATIONAL CLIMATE CHANGE STRATEGY (NCCS) 2007-2012

The National Climate Change Strategy 2007-2012 sets target for the key sectors within the State and economy in order to achieve overall Kyoto targets. Energy policy is required to make a substantial contribution to reducing greenhouse gas emission through energy efficiency, changes in fuel mixes and the increased use of renewable energy. Renewable energy is identified as the most effective way to reduce the contribution of power generation to greenhouse gas emissions. In addition to a considerable natural resource in wind energy, Ireland also has the potential to be a world leader in ocean energy technology. Government

has pledged to support research, development and deployment of emerging technologies.

NATIONAL RENEWABLE ENERGY ACTION PLAN

Article 4 of Directive 2009/28/EC on renewable energy requires each member state to adopt a National Renewable Energy Action Plan (NREAP) to be submitted to the European Commission. Ireland has a target of achieving 16% of energy from renewable sources by 2020.

The NREAP sets out national targets for 2020 in respect of the share of energy from renewable sources, consumed in transport, electricity and heating and cooling including 40% of electricity consumption from renewable sources by 2020.

The Government is also looking beyond 2020 in terms of significant opportunities to develop Ireland's abundant off-shore renewable energy resources including offshore wind, wave and tidal technology, recognising that these offer significant potential for coming decades.

The Government acknowledges the need for a fully integrated approach to provide the economic, infrastructural and planning conditions conducive to the sustainable development of Ireland's renewable resource which offers the potential for Ireland to become a significant future exporter of renewable energy.

DRAFT OFFSHORE RENEWABLE ENERGY DEVELOPMENT PLAN

The draft OREDP concludes that it is possible to achieve a potential output of 4,500MW from offshore wind and 1,500MW from wave and tidal energy nationally. The draft OREDP analysis adopts a precautionary approach based on developing areas outside all designated nature conservation sites to avoid any potential high level conflict with designation objectives. This does not necessarily infer that all renewable energy development would necessarily have a significant adverse effect on designated sites.

WIND FARM DEVELOPMENT GUIDELINES FOR PLANNING AUTHORITIES (DOEHLG, 2006)

The Wind Farm Development Guidelines for Planning Authorities, DoEHLG (2006) provide advice to planning authorities, developers and the wider public on planning for wind energy, addressing both the Development Plan and development management process. The objective is to ensure a national, consistent approach in the identification of appropriate locations for wind farm development and in the treatment of planning applications.

SOUTH WEST REGIONAL PLANNING GUIDELINES 2010-2022 (SWRPG)

SWRPG recognise the need to be more sustainable in the production and use of energy as the region continues to grow and develop in the 21st century. Demand for electricity in the SW region is expected to rise considerably by 2025.

The region has a key role to play in the attainment of the national renewable energy target of 40% supplied via renewable sources by 2020. There is a growing network of wind powered electricity generators in both Cork and Kerry and significant potential exists for additional electricity generation by sustainable wind, wave and tidal energy sources. However many of these sources of renewable energy are not served by existing electricity transmission routes. Significant reinforcement of the electricity grid would be required to cater for the new power flows from renewable generation.

SWRPG identifies the construction of a large LNG plant at Tarbert as a potential catalyst for the development of a strategic gas network in the area.

The SWRPG set out objectives that seek to promote, encourage and facilitate the sustainable development of renewable sources in accordance with the proper planning and sustainable development of the area and ensuring proper management of sensitive landscapes and protection of Natura 2000 sites.

MID-WEST REGIONAL PLANNING GUIDELINES 2010-2022 (MWRPG)

The MWRPG recognises that the long tradition of conventional power generation in the region has resulted in the development of a substantial distribution network.

EirGrid has identified a need to strengthen the transmission network in the Region with emphasis on three particular areas:

- Connectivity between the Tarbert and Money-point generating stations to provide a safe level of redundancy in the network.
- Augment the network serving Ennis and Shannon from Ardnacrusha.
- Make provision for the connection of renewable energy resources from suitable areas of the Region.

The Region is well served with trunk gas mains at present and it is important that this infrastructure and the distribution system are protected.

MWRPG confirms that the region is particularly well-placed to develop potential in a wide range of renewable energy generating resources including wind and wave power and a substantial biomass resource in its forestry. The Region should develop appropriate strategies to enable it to benefit from this very significant natural resource and realise the potential to become a leader in the provision of renewable energies, particularly those related to wind, wave, tide and biomass.

5.6.3 ENERGY STRATEGY FOR SHANNON ESTUARY

The energy strategy is developed in the context of the multi-functional nature of the Estuary area and the associated competing demands of safeguarding nature conservation interests of international standing and accommodating a wide range of functions, uses and activities. The context is also provided by national energy policy in respect of security of supply, the target for meeting 40% of the national energy supply from renewable resources, the existing energy infrastructure in the region, need to upgrade infrastructure (Photo 43) for the delivery and expansion of the electricity and gas networks and the technical capacity of the Estuary to accommodate growth in the energy sector:

Strategic Aim:

SIFP ERG 1.1

Securing Energy Supply

To ensure that the Shannon Estuary fulfils its optimum role in contributing to the diversity and security of energy supply and to harness the potential of the Estuary for the sustainable development of renewable energy sources to assist in meeting renewable energy targets, ensuring that all developments shall comply with the requirements of the Habitats Directive, Water Framework Directive and all other relevant EC Directives.



Photo 43 - Upgrading of Electricity Infrastructure is ongoing

5.6.4 STRATEGIC ENERGY SITES:

There are four sites within the Shannon Estuary that are of strategic significance in national and regional terms relative to their contribution to the security and diversity of energy supply and their further economic and energy potential. The status of these sites needs to be safeguarded, allied to facilitating development of energy infrastructure and supporting the potential to diversify and develop additional complementary sea-related industrial activities.

Priority will be given to proposals that reinforce the status of the sites as strategic national and regional energy sites.

MONEYPPOINT

The lands at Moneypoint constitute vital utility assets, both at present and into the future. The location on the Shannon Estuary has significant benefits:

- It is an established energy hub in relation to the established transmission network, most notably the 400kV regional and national distribution network;
- This location is well served by water supply, with a large diameter main between the New Doolough treatment plant to Moneypoint, primarily to supply cooling water for equipment;
- Direct access to sea traffic for fuel delivery ensures stand-by fuel generation reserves can be readily replenished at volumes in excess of the consumption rate.

Moneypoint makes a very significant contribution to the local economy and the facility continues to be strategically important regionally and nationally in terms of capacity, diversity and security of supply, providing critical energy storage in an increasingly volatile global energy market. The Moneypoint site is therefore a strategic asset that should be safeguarded to ensure the continuation of core power generation, transmission and distribution functions and to ensure that future expansion and re-development requirements in this area are not compromised by inappropriate neighbouring land uses or activities.

The SIFP proposes a Strategic Development Location (SDL) around the Moneypoint complex to accommodate further development of the energy

infrastructure. The proposed SDL should facilitate other marine related industrial development that will be attracted to such a significant site by virtue of potential synergies with the energy use and the valuable deepwater facilities.

TARBERT

Tarbert is a strategic site in the southwest for power generation with established connections to the kV Transmission Infrastructure, currently being heavily reinforced by EirGrid and has also potential access to the Bord Gáis natural gas ring main at Foynes which is relatively close by (within 20km). The proposed Shannon LNG Project would bring gas within 2km of the site boundary.

The facility has planning permission to replace the existing plant with a more efficient and environmentally friendly combined cycle gas turbine. The location and history of generation on this site was critical in attracting this significant investment. The Estuary provides a readily available supply of water for the purposes of once through cooling, which is considered to be the most energy efficient cooling system available for this type of plant. The infrastructure and abstraction methods for this cooling water are already in place and being used by the existing facility. The site is also located adjacent to the Tarbert - Killimer ferry terminal and in close proximity to the N67, N68, Foynes harbour and Shannon International Airport, providing easy access to the national transportation network.

Developments in the shipping industry may open up opportunities for additional uses of the surrounding lands for 'bunkering' of low sulphur marine fuels for vessels including perhaps gas bunkering for ships.

Due to the reclassification of heavy fuel oil the Plant is now classified as an Upper Tier SEVESO site which impact on the nature of appropriate neighbouring land uses.

The SIFP proposes a Strategic Development Location around the Tarbert complex to accommodate further development of the energy infrastructure and allow for economic development that will be attracted to such a significant site by virtue of its energy provision and deepwater facilities.

TARBERT-BALLYLONGFORD LAND BANK

Ballylongford benefits from a significant deepwater asset and extant permission for a major LNG plant, the availability of natural gas, the proximity to the national grid and the potential for refrigeration from the re-gasification process, combined with the additional physical infrastructure in terms of roads and water. This makes the lands a very attractive location for other industries to locate in the future. There is also potential for gas fuelled electricity generation in the future.

The SIFP proposes a Strategic Development Location around the Tarbert-Ballylongford complex to accommodate further development of the energy infrastructure and allow for economic development that will be attracted to such a significant site by virtue of its energy provision and deepwater facilities.

AUGHINISH ALUMINA

The Aughinish Alumina site is a significant energy facility in the Shannon Estuary. It makes a major contribution to the diversity and security of energy supply in the region via its on-site gas-fired Combined Heat and Power Plant (CHP). Currently the CHP plant has capacity to produce 165 megawatts of electricity, the majority of which is exported into the National Grid via the 110kV transmission network.

The extant planning permission permits a 300MW CHP plant and also provides for the conversion of the CHP plant to a 390MW Combined Cycle Generating Turbine plant as a second phase of development. The permission granted is for a duration of 15-years. Planning permission was secured in 2001 to connect the Aughinish Alumina CHP Plant to the 220kV transmission network.

The Energy Development Objectives are:

SIFP ERG 1.2:

Safeguarding the role & function of energy sites

To safeguard the role and function of the strategic energy infrastructure existing within and adjacent to the Shannon Estuary, and encourage the further sustainable development of energy, enterprise and industry within these identified strategic energy locations, subject to the requirements of the Habitats & Birds Directive, Water Framework Directive, and all other relevant EU Directives.

SIFP ERG 1.3:

Facilitating energy development

To facilitate the further development of the energy infrastructure at identified strategic energy sites and encourage appropriate diversification projects subject to compliance with sustainable planning, and the requirements of the Habitats & Birds Directive, Water Framework Directive and all other relevant EC Directives.

SIFP ERG 1.4:

Complimentary development

To facilitate complementary industrial activities at existing strategic energy sites, ensuring that all such developments do not result in significant adverse effects on the strategic energy infrastructure, or species and habitats designated by the Habitats & Birds Directives, the Water Framework Directive and all other relevant EC Directives.

5.6.5 ENERGY INFRASTRUCTURE

The area around the Shannon Estuary is well served by energy infrastructure. The energy networks are outlined on Figure 2.4 (Volume III), and are considered a vital link in the economic and social viability of the region. Moneypoint as a strategic energy hub has a network of 110, 220, and 400 kV power lines radiating from it transmitting power nationally.

Tarbert is also connected to the major electricity network and has potential access to the Bord Gáis natural gas ring main at Foynes which is relatively close by (20km). The proposed Shannon LNG Project would bring gas within 2km of the site boundary.

Bord Gáis has a strategic infrastructure project – the Pipeline to the West. This is a 322km high pressure transmission line linking Dublin with Galway and Limerick, ultimately connecting with the existing grid into Cork. The Pipeline to the West is part of an overall 1.4 billion infrastructural project which will ensure security of gas supply to 2025. The 2km crossing of the Shannon Estuary between Foynes and County Clare is a key element in this strategic infrastructure (Photo 44).

The strengthening of Ireland's transmission system is essential to allow increased integration of renewable energy in the Irish electricity system, facilitating the growth of secure indigenous energy resources and ensuring the capacity to export electricity generated in Ireland from renewable resources. The National Grid is a vital link between generators and users of electricity and a key pillar in promoting balanced regional growth.

In the West Region, EirGrid25 strategy acknowledges the importance of the existing large scale power stations at Tarbert and Moneypoint, the gas transmission pipeline from Galway to Limerick and the associated potential for increased gas generation. Peak demand for electricity in the West Region is predicted to increase considerably however the region also has an availability of natural resources for wind and ocean technologies with an expectation that 440MW of wind generation and 75MW of wave generation would come into the market.

In addition to the infrastructure strategies of Bord Gais and EirGrid, there is emerging interest in the exploration of the petroleum basins in the West of Ireland, with a number of licenses (and options to license) being considered for exploration and appraisal wells. The

future development of offshore hydrocarbon assets in the west of Ireland as a commercial enterprise, has the potential to be of great national strategic importance, both economically and for security of energy supply. The Shannon Estuary could have an integral and strategic role to play in this type of future development, by facilitating a connection between offshore hydrocarbon assets with onshore markets, local service providers and integrating into the existing infrastructure / transmission networks. As such, it has the potential to contribute to the economic and energy prosperity of the Shannon region over an extended period.



Photo 44 Installing the gas pipeline to the West

The Development Objectives are:

SIFP ERGI 1.5:

Electricity Network

To support and facilitate the sustainable development, upgrade and expansion of the electricity network, transmission, storage and distribution infrastructure ensuring that all such developments comply with the requirements of the Habitats & Birds Directives, Water Framework Directive, and all other EC Directives.

SIFP ERGI 1.6:

Gas Network

To support and facilitate the sustainable development, upgrade and expansion of the gas network, storage and distribution infrastructure ensuring that all such developments comply with the requirements of the Habitats & Birds Directives, Water Framework Directive and all other relevant EC Directives

SIFP ERGI 1.7:

Connecting renewable energy sources

To facilitate sustainable infrastructure connections to wind farms and other renewable energy sources, subject to proper assessment of visual impact, impact on protected landscapes, heritage and conservation interests.

5.6.6 RENEWABLE ENERGY

Increasing electricity generation from renewable sources is widely acknowledged as the most effective way of reducing Ireland’s greenhouse gas emissions resulting from power generation.

The Government has established ambitious national targets for the contribution of renewable sources to power generation including that 40% of electricity consumed will be from renewable sources by 2020, including a target of obtaining at least 500MW from wave and tidal energy by 2020 (Photo 45).

The draft OREDP confirms that Ireland has the world’s premier wave resource as well as a notable tidal resource with the Shannon Estuary confirmed as being among the top three potential tidal energy sources in the country. It refers to the tidal energy resource in the Shannon Estuary in its Table 8.5 (which is based on SEAI 2004), which is transposed below:

Table 8.5:Tidal Stream Energy Potential of Ireland based on SEAI, 2004

Site	Practical* Tidal Energy Resource (GWh/yr)	Viable*Tidal Energy Resource (GWh/yr)
Shannon Estuary	367	111

*Within the SEAI Study, the following definitions of energy resource are given

- Practical Resource: Technical resources limited by existing turbine support structure technology, water depth, sufficient current speed.
- Viable Resource: Practical resource limited by commercial constraints including development costs and market reward.

The draft OREDP estimates the development potential of tidal energy in the Estuary to be around 1,000MW.

It is recognized that the development of tidal energy in the Estuary will have technological, logistical and environmental issues to address. The analysis carried out in preparation of SIFP confirms that there is significant potential for development of the tidal energy resource

in the Shannon Estuary. In particular the Estuary has an important opportunity to utilise the considerable capacity and commitment within the region for research and development in this field to sensitively explore this renewable energy potential and ensure that appropriate projects that demonstrate compatibility with the critical environmental considerations and the strategic shipping/navigation interests may be progressed further.

The tidal nature and geographical shape of the Shannon has created tidal flows on a commercially viable scale. The SEAI Report ‘Tidal & Current Energy Resources in Ireland’ identified four areas within the Estuary deemed to be of best potential. The sites are shown in greater detail in Volume III Maps and Figures, however are outlined in the subsequent pages.

KILCONLY POINT

This large area of opportunity is located at the mouth of the Shannon Estuary, characterised by deep, fast water. There are number of wind energy projects in planning system near Beal that may provide potential to connect into the network. Although this area straddles the core commercial shipping lane, the vast array of emerging technologies may still enable positioning of appropriate viable devices from within this location, subject to priority being given to commercial shipping requirements. The steep topography on the cliffs along Beal/Kilconly and Kilcredaun Point, and the considerable distance from the sub-stations at Moneypoint and Tarbert may make on-shore connection routes more difficult.

In terms of the Natura 2000 interests, this site is considered moderately sensitive to future development however detailed assessment should examine the potential impacts of any tidal energy proposal on these sensitive features, particularly the Bottlenose Dolphins,

as well as the likely visual impact from protected views and potential effects on known ship wrecks. It should be noted that this is an important foraging area for Bottlenose Dolphins, and as such, devices with moving parts are unlikely to be suitable due to the increased potential for collision risk.

Mitigation Measures Tidal Energy - Kilconly Point

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	RE MM 1-6, BFF MM 21, PHH MM 7, S MM 8, W MM 16, MA MM 9
Site Specific & Theme Mitigation	RE MM 1-6, BFF MM 22, W MM 17, S MM 9, ACH MM 4, MA MM 10
*Refer also to Table 3.39 of the Natura Impact Report	



Kilconly Point Area of Opportunity

CARRAIG ISLAND

This area of opportunity benefits from excellent deepwater in a sheltered location offset from the main navigational channel. Its location within the Lower Shannon SAC raises the potential impact on qualifying features including Sea Lamprey, Atlantic Salmon and Bottlenose Dolphin. The area also appears highly sensitive in respect of waterbirds as a qualifying feature of the River Shannon and Fergus Estuaries SPA.

The site is located within a pNHA, is close to a Shellfish Protected Area and Carrigafoyle Castle, a Protected Structure.

Potential exists for commercial tidal energy generation depending on the nature of the tidal devices and subject to detailed assessment of the relevant environmental considerations.

Mitigation MeasuresTidal Energy - Carrig Island

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Theme Mitigation	RE MM 1-6, BFF MM 21, PHH MM 7, S MM 8, W MM 16, MA MM 9
<i>*Refer also to Table 3.38 of the Natura Impact Report</i>	



Carraig Island Area of Opportunity

TARBERT BAY

The area of opportunity at Tarbert exhibits all the necessary technical characteristics required for a viable commercial tidal energy resource.

However it is close to an established ferry route and to the commercial shipping channel within in a relatively congested area in terms of marine activity and submarine energy infrastructure. The site is considered moderately sensitive to future development in respect of the nature conservation interest associated with the SAC and SPA.

The Tarbert site is deemed to be suitable for the establishment of a small scale tidal test site in the future, but the constraints evident may restrict the viability of commercial tidal energy generation. Any proposal would be subject to detailed assessment of the potential impacts of any tidal energy proposal on the identified sensitive features

Mitigation Measures Tidal Energy - Tarbert Bay

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Theme Mitigation	RE MM 1-10, BFF MM 23, PHH MM 8, S MM 10, W MM 18, ACH MM 5, MA MM 11
<i>*Refer also to Table 3.36 of the Natura Impact Report</i>	



Tarbert Bay Area of Opportunity

ADJACENT TO MONEYPPOINT

This opportunity area is located just of the coast at the Moneypoint strategic energy site. Environmental Considerations. The site is located within the lower Shanon SAC

- Qualifying feature of SAC likely to be impacted may include:
- Large Shallow Inlet & Bay;
- Sea Lamprey
- Atlantic Salmon
- Bottlenose Dolphin

The site is located within the River Shannon & Fergus Estuaries SPA

While the site is located between intertidal areas used by wintering birds within other parts of the SPA the core of this site is located within a current industrial area which is not utilised by the qualifying features of this SPA.

Mitigation Measures Tidal Energy - Moneypoint

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Theme Mitigation	RE MM 1-6, BFF MM 20, S MM 7, W MM 15.
*Refer also to Table 3.37 of the Natura Impact Report	



Adjacent to Moneypoint Area of Opportunity

The Development Objectives are:

SIFP RE 1.8:

Renewable energy development

To support and facilitate the sustainable development of renewable energy developments within and along Shannon Estuary, in support of Ireland's legally binding obligations under EU Directives. All such developments will be required to demonstrate that they do not compromise identified strategic shipping and navigation interests or adversely affect species and habitats designated by the Habitats & Birds Directives, Water Framework Directive and all other relevant EC Directives, and comply with all other planning and environmental considerations.

SIFP RE 1.9:

Exploring potential for tidal energy

To explore the potential of tidal energy, as a viable renewable energy resource within the Estuary, in support of Ireland's legally binding obligations under EU Directives, at appropriate locations including the identified Areas of Opportunity. All proposals will be required to demonstrate that such developments or activities are balanced with planning and environmental considerations, and in particular that all such developments shall not compromise identified strategic shipping and navigation interests and comply with the Habitats & Birds Directives, Water Framework Directive and all other relevant EC Directives.

5.6.7 SERVICING OF OFFSHORE RENEWABLES

The growth of the offshore renewable energy sector presents an opportunity for the Shannon Estuary in respect of new infrastructure and supply chain opportunities, including servicing the assembly of towers and turbines, their transport to off-shore sites, installation and decommissioning engineering services, the provision of operations and maintenance services and on-shore back-up services.

The Draft OREDP predicts that:

'The Shannon Estuary is well placed to capture a significant share of that market. Technical analysis of the Estuary includes the Irish Ports Offshore Renewable Energy Services (IPORES 2012) and its port infrastructure concludes that the Shannon Estuary has potential to become a European Ocean Energy Hub and Shannon Foynes would be an ideal location for the manufacturing, assembly and servicing of ocean energy generators'.

The Port has significant benefits including: considerable technical knowledge and expertise; substantial facilities and infrastructure; major advantages in terms of location, water depth, supporting industries, research and development and incentives. The Port of Shannon Foynes offers an attractive location as hub for future marine renewable activities off the west and south west coasts of Ireland particularly in relation to future offshore floating wind farms and wave energy converters (Photo 46).



Photo 46: Construction of an offshore wind farm

It has deep sheltered facilities, large potential land banks, good infrastructure and skills in various manufacturing and maritime industries. It has also one of the best wind and wave energy resources in the world on its doorstep. The Port has been classified as a Category A Port by IPORES in an assessment of suitability to serve the ocean renewables sector.

The potential for the west coast is likely to be in the wave and offshore wind sectors. The Shannon Estuary, with both its current and potential future facilities, is attractive to developers in terms of marine location as well as the supporting resources in the region. At the Foynes terminal, the port is progressing plans to develop additional port working area behind the existing east jetty and has a master plan to develop further quay and working areas adjacent to the east jetty should demand arise; it has also identified other sites with longer-term development potential.

The Shannon Estuary occupies a strategic location in respect of wave energy resource on the west coast and currently can provide sheltered facilities with good water depth and port services. Planned developments to provide additional quayside harbour working areas and possibly additional quay length at Foynes and other ports would further enhance the attractiveness of this location for developers.

The Development Objective is:

SIFP OS RE 1.10:

Servicing the renewable sector

To actively explore and pursue opportunities to service the renewable energy sector at existing ports, and to facilitate associated development required, subject to compliance with sustainable planning, and the requirements of the Habitats & Birds Directive, Water Framework Directive, and all other relevant EU Directives.

5.6.8 RESEARCH & DEVELOPMENT

The Shannon Estuary catchment area has considerable Research and Development capacity that could be directed towards technology development for the renewable energy sector. The combined capabilities of the University of Limerick, NUI Galway, Limerick IT and the IT in Tralee available to carry out applied research and advance the commercialisation of emerging technologies in the renewable energy sector linked to the identified tidal, wave and wind capacity in and around the Estuary provides a significant opportunity for technology research, design and testing.

The imperative to ensure that any exploitation of the identified tidal resource in the Estuary does not adversely impact on species and habitats designated by the Habitats Directive or on the critical shipping/navigation interests, will necessitate comprehensive research and exploration of alternatives to identify options worthy of project level assessment.

The Universities and Shannon Development have, in consultation with the local authorities and industry in the region, developed a plan for a 'Shannon Energy Valley' which it is believed could provide a National hub for Energy Research & Development, Industry and Commerce to attract mobile international investment and generate high end employment.

The concept aims to assist in driving the long term competitiveness and sustainability of the regions electricity generation requirements. The immediate future for sustainable energy in Ireland is seen as the construction of 10 Billion worth of windfarms, the majority of which will be within one hour of the Shannon Valley. The promoters of the concept also see possible potential in an Energy Park in Tarbert and a 'greenprint' re-vamp of Shannon Free Zone assisting in creating a critical mass attractive to mobile international investors. The concept has the support of the local authorities.

Harnessing this research and development potential in the context of the deepwater resource and well established major existing port and energy infrastructure, could place the Estuary at the forefront of development and servicing for the renewables sector and facilitate robust assessment of the viability of the renewable resource within the Estuary in the context environmental constraints and other competing activities (Photo 47).

The Development Objective is:

SIFP RD 1.1:

Research & Development

To explore the potential sustainable development and promotion of the Shannon Estuary as a centre of excellence in research and development of renewable energy technology.



Photo 47: The Potential of various renewable energy technologies such as open hydro should be explored



Section 5.7 Marine Tourism Leisure & Recreation

To facilitate and promote the sensitive and sustainable use of the Shannon Estuary's assets in an integrated manner leading to the development of a dynamic and sustainable tourism & leisure sector that delivers maximum social and economic benefits to the communities of the Estuary, while safeguarding the valuable landscape, heritage and environmental interests.

5.7.1 INTRODUCTION & BACKGROUND

Tourism makes a significant contribution to the national economy. The island of Ireland hosted €18.5 million domestic and overseas visits in 2009, contributing €5.4 billion to the economy in direct visitor expenditure. Some 7.6 million overseas visitors directly contributed 3.4 billion in earnings. Overall, the direct economic contribution of tourism to the island of Ireland equates to 3.3% of GDP. In addition, tourism makes an indirect contribution to the island of Ireland through the multiplier effect, as the money visitors spend circulates throughout the economy. Tourism is also an important source of employment, supporting an estimated 229,000 jobs on the island of Ireland in 2009.

Tourism is also widely acknowledged to be an important contributor to balanced economic growth. The Midwest Regional Authority reports that in 2007 the region received 2 million tourist visitors with associated revenue of around €518 million, amounting to 9% of the national total.

The Shannon Estuary is a marketable tourist asset with a considerable range of attractions in terms of the scale and variety of the offer. Shannon International Airport is a key gateway to the region and to the west of Ireland. There are a number of major tourist attractions in and around the Estuary from Bunratty Castle in the east, Loop Head in the west to Ballybunion and Foynes on the southern shores of the Estuary. Sea angling and marine ecotourism are thriving tourism industries within the Estuary and the West Clare Peninsula, with the potential to grow further within the lifetime of the SIFP. The Estuary is a well-established premier angling destination, with over 80 different species of fish, including bass salmon and sea trout which are particularly prized by anglers. The County Clare Tourism Strategy estimated that the revenue from tourism within County Clare alone was worth 390million to the economy, with a significant portion of this generated by sea angling.

In developing the tourist asset to ensure that the community derives optimum benefit from those assets, it is essential to adopt an integrated strategic approach that provides the necessary linkages to facilitate marketing and promotion while at the same time safeguarding the essential quality, nature conservation and cultural heritage interest that are the core of the tourist offer.

The environment of the Shannon Estuary is internationally recognised for its nature conservation interest. It is imperative that the tourist strategy complies with the requirements of the Habitats Directive in particular but also generally directs tourist development projects to focus on the settlements around the Estuary, pitching development at a level commensurate with the status of the settlement in the hierarchy and reflecting a sensitive exploitation of the tourist asset. The strategy is to encourage and facilitate expansion and re-development of existing facilities where possible to minimise the potential for harm to the prized environment and ensure that those settlements around the fringes of the Estuary profit from the economic, social and environmental benefits associated with a successful tourist strategy.

5.7.2 POLICY CONTEXT

NATIONAL DEVELOPMENT PLAN 2007-2013

The National Development Plan sets out a programme of integrated investments aimed at underpinning Ireland's ability to grow in a manner that is economically, socially and environmentally sustainable.

The NDP recognises the potential of tourism in ensuring balance regional growth as it is a major instrument of regional and rural development. Support for developing rural tourism will be maintained and developed under the provisions of the NDP. The NDP therefore supports further development of the tourist industry which has the potential to attract 10million visitors per annum by 2012 as per the New Horizons Report

NATIONAL SPATIAL STRATEGY (2002-2020)

Sustainable development is at the heart of the National Spatial Strategy (NSS) seeking to make best use of natural resources, bring jobs closer to where people live, and ensure a high quality natural and built environment. The NSS outlines the spatial responses needed to maximise the potential of the tourism sector in order to support balanced regional development.

It highlights that the success of established tourism areas in County Clare can be sustained through effective management and the sustainable development of assets such as natural and cultural heritage. Physical access can be enhanced and the potential of underdeveloped areas can be developed in tourism and other areas particularly in upland or estuarine areas such as west Limerick and the Shannon Estuary. Kilrush is identified as an urban strengthening opportunity

The NSS highlights the fact that tourism activities can often be focused in areas that otherwise have a weak economic base.

OUR SUSTAINABLE FUTURE, FRAMEWORK FOR SUSTAINABLE DEVELOPMENT

Our Sustainable Future is a joined-up approach to policy making on sustainable development, it sets out 70 measures that will ensure we improve our quality of life for current and future generations and sets out clear measures, responsibilities and timelines in an implementation plan. These include areas such as the sustainability of public finances and economic resilience, natural resources, agriculture, climate change, transport, public health, education, innovation and research, education, skills and training, and global poverty

FÁILTE IRELAND TOURISM PRODUCT DEVELOPMENT STRATEGY 2007-2013

This national review of the tourism sector confirms that tourism has a critical role to play in the development of the Irish economy. It has the potential to contribute consistently to regionally balanced and sustainable development in terms of creating and maintaining employment, investment in local communities and in contribution to the national exchequer. It is recognised that the future success of Irish tourism depends on a shared vision and the actions of a wide range of players, public and private. They will need to dovetail their work to create an environment that provides a competitive and attractive.

The audit of the Irish tourism product has shown that it needs to catch up with its EU competitors on its core tourism products such as:

- Heritage and culture;
- Walking;
- Cycling; and
- Marine sports.

The strategy highlights a number of issues in respect of Marine tourism:

- Modern public facilities in Ireland and services for visitors, linked to best practice in beach management, are not as high as the standards commonly seen abroad.
- The visitor marina network is incomplete, particularly along the west and north-west coastline.

- There are no clear policies around planning and foreshore issues for marine tourism.
- There is a rather thin network of sailing, boating, water-sports and dive centres. There are also very few marine or water-themed visitor centres, in key strategic locations.
- There are localised shortages of sea angling and small tourism vessels.
- Viewing points or vessels for whale and dolphin watching are poorly provided compared with our neighbouring competitors.
- New horizons for Irish Tourism: An Agenda for Action (June 2008) – Report of the Tourism Policy Review

This Review and Action Plan recognises that tourism development will continue to be largely determined by the rate of global and regional economic growth and associated increases in disposable incomes. The tourism development strategy provides a set of actions to support the further development of tourism in Ireland and its regions.

Direct and competitive access, particularly by air, from key source markets is seen as being essential to sustain and grow tourism.

At national and international level, the interrelationship between tourism and travel, on the one hand, and the environment and sustainable development on the other has become a major focus of attention. This relationship will impact on tourism product, promotion and consumer behaviour as well as access and transport. It stresses the importance of sustainable development reinforcing the positive image of Ireland as a “clean, green” island.

MID WEST REGIONAL PLANNING GUIDELINES (2010-2022)

The MWRPG recognise that tourism plays a significant role in the economy of the Mid-West. In 2007 the region received 2 million tourist visitors with associated revenue of around 518 million, amounting to 9% of the national total. Recent years have experienced a major shift in travel by holiday-makers from sea to air, brought on by the growth of low-cost carriers. According to Fáilte Ireland data, over 50% of the Region's holiday-makers use Shannon International Airport illustrating its increased importance. Route development and

international connectivity through Shannon as well as airport access will be vital for tourism in the future.

The Region contains a number of key tourism zones, including several attractions of national and international significance that include:

- The Limerick/Ennis/Shannon area; Ennis is recognised as the Boutique capital of Ireland;
- Bunratty Castle and Folk Park is a major international attraction;
- The West Clare peninsula, with Loop Head, is a distinctive destination of marine and coastal interest;
- The N69 tourism route offers a network of attractions along the Shannon Estuary;
- The major attraction provided by the Flying Boat Museum at Foynes
- The Region is, in general, and across all counties, very well served with a variety of outdoor trails. These include long-distance walking routes, looped walks, cycle hubs and trails, water-based trails and horse-trekking trails;
- The Region is also well served with water-based tourism facilities including sea, lake, river and canals and activities ranging from swimming and deep-sea diving, to sea-based and inland fishing and a variety of craft-based activities.

SOUTH WEST REGIONAL PLANNING GUIDELINES (2010-2022)

The South West Regional Planning Guidelines (SWRPG) acclaims the region's range of valuable natural and cultural assets that supports the tourism industry and identifies an opportunity to build on the visitor draw to the region on the basis of the very attractive marine environment of many small ports and harbours around the coastline, supported by attractive towns and villages in the coastal areas. There is potential for the sustainable development of additional marinas, pontoons and other facilities to attract yachting, anglers, and other visitors to prolong their visits to the region.

SWRPG acknowledge that tourism and recreation can negatively impact on habitats and species that are important for biodiversity including the threat of the introduction and spread of invasive species.

Development of tourism and recreation projects, strategies and activities should ensure that the ecological integrity of the region's natural environment

is maintained and where possible enhanced. Developments need to take account of this, particularly in the case of internationally designated sites of nature conservation importance (Natura 2000).

The Guidelines advocate the development of a coordinated strategy involving all stakeholders for the development of sustainable quality marine tourism in the south west.

SHANNON DEVELOPMENT-TOURISM STRATEGY FOR THE SHANNON REGION (2008-2010)

This regional tourism strategy published by Shannon Development, in collaboration with the Shannon Region Tourism Board, although dated, still provides a strategic approach to provision of a coherent and agreed framework to guide the actions of the many interests involved in this important sector.

The strategy concentrates on two critical dimension the tourism product integrated with marketing that matches the region's capabilities with access points to Shannon International Airport.

Highlights of the strategy include:

- The potential of tourism in the national context;
- A healthy record of tourist growth in recent years within the Shannon Region;
- Issues of competitiveness, connectivity, branding and innovation;
- A specific Action Plan and key targets for visitor numbers.

CLARE COUNTY COUNCIL TOURISM STRATEGY 2010-2014

This Strategy sets out how Clare County Council's overall vision for the County will be realised in relation to tourism, whilst also reflecting national policies and strategies. Integration, coordination and sustainability are key values underpinning the development of the strategy. The strategic vision is 'to support and facilitate the development of a cohesive and sustainable tourism sector in County Clare that will make a significant contribution to the local economy'.

The strategy identifies a number of strengths of the tourism sector in the county including Shannon

International Airport, ferry facilities at Tarbert and the wide range of tourism products, attractions and activities available. Perceived weaknesses include a lack of integration and cooperation in the tourist sector; branding and marketing is weak, and problems with accessibility and connectivity particularly from obtaining direct access to the county through Shannon International Airport.

The Strategy includes an Action Plan which focuses on the areas of product development and marketing and promotion.

COUNTY CLARE TOURISM STRATEGY 2011-2014

The County Clare Development Board strategy comprises short and medium term goals for the County driving towards a vision for 2014. The purpose of the Strategy is to provide a coherent and agreed framework to guide the actions of the many interests involved in the tourism sector. The Strategy includes priorities and recommended actions to achieve the vision based on a main to sustain and grow visitor numbers and revenue in County Clare through more focused marketing, product development, improved access to the County, and enhanced tourism research. Critical emphasis is placed on the importance of the performance of Shannon International Airport and ensuring that it will be a sustainable international airport and international hub for passengers and cargo with a particular emphasis on servicing the western seaboard.

SHANNON AIRPORT CATCHMENT AREA ECONOMIC AND TOURISM DEVELOPMENT PLAN – DEPARTMENT OF TRANSPORT (2008)

This Plan aims to establish a focused tourism marketing programme for the wider Shannon catchment area in addition to the existing programmes of Tourism Ireland, Fáilte Ireland and Shannon Development. It notes that a special tourism marketing initiative will only deliver sustainable benefit, if there is a cost-efficient airport; proper route development particularly to mainland Europe and Britain; and accelerated provision of improved ground transport connections to the airport.

The Plan sets out a series of measures relating both to the airport itself, key supporting infrastructure in the region and enterprise and tourism development. Specifically the Plan envisages the establishment of a focused tourism marketing programme to promote the wider Shannon catchment area in addition to the ongoing roll-out of existing programmes by Tourism Ireland, Fáilte Ireland and Shannon Development.

WILD ATLANTIC WAY

The Wild Atlantic Way is set to be Ireland's first long distance tourist route which will stretch for about 1,400km from Donegal to West Cork. It will follow the coastline and will showcase the best views and experiences that Ireland's Atlantic coast has to offer.

The Wild Atlantic Way is a five stage project and is currently at stage two - the route identification stage. Some of the work that needs to take place over next two years will include:

- Erecting directional signs,
- Developing loops and itineraries in each of the destinations through which the route passes
- Devising a comprehensive marketing strategy and campaign
- Commencing development of a series of world class viewing points (Discovery Points) along the west coast

5.7.3 STRATEGY FOR MARINE TOURISM & LEISURE

The development of tourism around the Shannon Estuary varies markedly. In Clare there is a recognised regional economic value deriving from the multitude of marine related tourism and leisure activities that currently take place around the Shannon Estuary, whereas Limerick has considerable potential for tourism, which remains largely untapped, notwithstanding its proximity to Shannon international airport. In Kerry the potential for further development of the recreation sector around the Estuary is largely focussed on Ballybunion and through development of niche markets in walking/cycling holidays, archaeological and nature tours and specialist activity holidays, environmental or culture based tourism.

An integrated approach is required to sustainably develop the Estuary for marine and leisure activities in order to generate the economic and quality of life benefits to the coastal region and to increase the usage of the natural marine environment for water sports by people from overseas and for local leisure needs. Existing marine leisure initiatives form a solid foundation for further expansion where coastal settlements can enhance their role by virtue of their existing under-utilised quays and new opportunities for sustainable development of eco-tourism and water sports can be also be explored.



Photo 48 Ballybunnion Golf Club is a valued tourism product

The range of potential attractions and facilities is extensive and diverse in character and there is a common theme that the resource requires sensitive and balanced exploitation to ensure that it is sustainable and does not cause damage to the natural, built and

cultural heritage features that form the basis of the tourism draw. Small improvements and additions to the marine infrastructure within the Estuary, have the potential to facilitate a broad and successful expansion of the marine tourism, eco-tourism and sea angling industry in the Estuary, bringing significant economic and social benefits to the people living on or adjacent to the Estuary.

There is a discernible hierarchy in the existing tourist provision and in the potential to further develop the sector around the Shannon Estuary that broadly reflects the regional settlement hierarchy:

- Limerick as the Gateway City has a significant role to play as a base for regional tourism. The City Development Plan recognises the importance of tourism as an economic driver in the City and region beyond. The City benefits from its size and strategic location at the confluence of road, rail and maritime transport and proximity to Shannon International Airport.
- Shannon International Airport is a key driver for economic, tourism and commercial development for the Shannon Region and the greater West of Ireland.
- Foynes Port has significant port infrastructure that lends itself to exploitation of the cruise ship market.
- Bunratty is a village and well-developed tourist destination based around Bunratty Castle and Folk Park, close to the Limerick-Shannon Gateway and Shannon Airport. The South Clare Local Plan 2012-2018 has zoned a significant land bank for tourism reflecting the trade and employment opportunities which, allied to its proximity to Shannon international airport, this coupled with good road linkages to Counties Clare, Limerick and Kerry make it an important tourist site on the fringe of the SIFP area.
- The village of Clarecastle is located south of Ennis, and its rich heritage and historical importance as a military base, commercial port and fishing village, provide plentiful opportunity to raise its tourism profile. Forthcoming proposals for the redevelopment of the Clarecastle Quay as a valuable tourism amenity and the Strategic Improvements Plan for the core urban area present exciting opportunities to enhance the historical features, and create a strong basis for the development and marketing of the area for tourism and marine leisure.

- Ballybunnion is a District Centre in the settlement hierarchy and is a celebrated tourist resort with an internationally renowned championship golf course, Blue Flag beaches (Photo 48), rich history and built heritage.
- Kilrush is a service town and has well developed marina facilities. Tourism has the potential to contribute significantly to the economic success of Kilrush and its hinterland through the Marina (Photo 49), Cappa Pier,Vandeleur Gardens, and the potential to create a tourism-based link between the nearby popular seaside resort in Kilkee. There are a wealth of opportunities in Kilrush as a Heritage Town, both in terms of natural and built heritage, along with a blue flag beach at Cappa, Scatterry Island, dolphin watch, tourist trails and the cruise on the Shannon Estuary.
- At a lower level in the hierarchy is the net- work of marinas around the Estuary, in smaller coastal settlements with under-developed infrastructure and tourist assets.



Photo 49 Kilrush Marina has the potential to expand & improve

Sea angling and observational marine tourism are growing in importance throughout the Estuary, building on the intrinsic natural resources of the marine environment. Inland Fisheries Ireland are currently working to maximise the potential for sea angling and charter boat operations for angling tourism in the Estuary. Over the years, over 80 species of fish present in the Estuary have become important for angling, including sea trout. The Plan aims to facilitate the improvement of facilities and infrastructure required to cater for the angling community and charter boats, as well as activities for observing cetaceans.

The Estuary is home to the only known resident group of bottlenose dolphins in Ireland, making them a unique tourism product. Currently, several vessels operate wildlife watching trips to see the dolphins, to inform tourist of the conservation and protection of these and other marine species. They all operate in accordance with the Shannon Dolphin and Wildlife Foundation Codes of Conduct, which advises on good practice, minimal disturbance and regular monitoring. There is significant potential for the development of further commercial dolphin watching activities, both by boat and land-based watching,⁷ as well as considerable research opportunities, which could grow this exciting and unique natural resource.

Throughout the Estuary and its hinterlands there is substantial potential for marine based tourism and leisure to make a significant contribution to the social and economic well being of the coastal communities and the region as a whole.

The Strategic aim is:

SIFP MTL 1.1:

Promoting sustainable tourism

To facilitate and promote the sensitive and sustainable use of the Shannon Estuary’s assets in an integrated manner leading to the development of a dynamic and sustainable tourism and leisure sector that delivers maximum social and economic benefit to the communities of the Estuary while safeguarding valued landscape, heritage and environmental interests.

Mitigation Measures - Marine Tourism, Leisure & Recreation

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Theme Mitigation	MTL MM 1-8

5.7.4 SHANNON INTERNATIONAL AIRPORT

Shannon International Airport is at the heart of the region and plays a significant role in international connectivity to the western seaboard of North America and Europe and increasing prosperity to the region as a critical conduit for tourism and exports. Connectivity and access to the Airport are critical and the opening of the Shannon Tunnel, completion of the M7 motorway, together with large sections of the M18 to Gort, have made access to the region and its International Airport more efficient.

Although the Airport has seen a reduction in passenger numbers in recent years, almost 1.4 million passengers passed through the Airport in 2012. The Airport has achieved significant success already in 2013 with the introduction of new routes to Philadelphia, Chicago, Faro, Alicante and Glasgow and serves 32 destinations. Shannon has transatlantic services which fly directly from the Airport to the United States and Canada (New York JFK, Newark, Boston, Philadelphia, Chicago and Toronto) and sees significant growth in particular in the North American market in 2013. The airport was the first outside of the Americas to implement a US Customs and Border Protection facility which provides full pre-clearance for passengers into the US.

The Shannon Free Zone currently provides 7,700 employment opportunities in the Manufacturing, International Trade Services, Aviation, Tourism, and Logistics services. There are also potential new development opportunities in freight handling, USA Customs Clearance, high end manufacturing and Aviation Training and Maintenance

These developments all offer potential for more passengers passing through Shannon International Airport as the gateway to the Shannon Region and the west of Ireland generally. There are significant opportunities for business tourism with so many high end commercial enterprises located in such close proximity to the airport. The capacity of this high value sector could provide a stimulus for enhanced conference and accommodation in the locality.

An integrated approach that enhances linkage with other major tourist nodes including Bunratty Castle and Folk Park could deliver further significant synergies in marketing and promotion.

The airport is an important generator of economic activity in the region. The 2011 Paper entitled 'Economic Benefits from Air Transport in Ireland,' published by Oxford Economics showed that the aviation sector facilitated over 6% of jobs in Ireland when its full economic footprint is taken into account. This includes the aviation sector itself including airlines and ground-based infrastructure, but also its supply chain and induced spending.

The development objective is:

SIFP MTL 1.2:

Promoting Shannon International Airport

To facilitate the long term sustainable development of Shannon International Airport as a major tourist gateway of regional and national importance ensuring that all such developments shall not adversely affect species and habitats designated by the Habitats & Birds Directive, Water Framework Directive and all other relevant EU Directives.

5.7.5 CRUISE SHIPS

The cruise ship industry is becoming an increasingly important element of the tourism sector in Ireland. In 2010, cruise ships made 202 calls to Irish ports carrying over 200,000 passengers. Over half the cruise ships making calls to Irish ports have capacity for over 2,000 passengers and are of a 4 - 4.5 star rating. Direct spend from passengers and crew who disembarked at Irish ports, including port charges, was estimated at 20.3 million. This sector of the tourism economy appears to offer considerable potential as the cruise industry continues to be the fastest growing sector in the travel and leisure industry.

In response to this growth, Fáilte Ireland commissioned Red C Research Ltd to conduct interviews with passengers and international cruise operators during 2010. Cruise operators highlighted that revenue, cost, guest satisfaction, excursions and port facilities are key considerations for them when planning their itineraries. Ireland could increase its attractiveness as an international cruise destination and establish itself within key routes by collaborating with a number of countries. Such collaboration would allow member ports to set service levels and market themselves under the one brand to cruise operators.

The greatest value appears to be in attracting shorter cruises and those in the middle stage of their itinerary. Sixty per cent of cruise ships calling in Ireland originated in Britain with a further 25% of ships beginning in Northern Europe and 11% in Germany. Four out of five cruises are in the early to middle stage of their itinerary when they arrive at Ireland with the majority of cruises lasting 8-12 nights. Ireland is ideally placed being close to the United Kingdom which is the second largest cruise market in the world. In 2006 the Port of Dover gained £19.6m in direct revenue from cruise ships and 226 FTE jobs.

It will be necessary for Ireland to develop both the port and on-shore services to maximise its appeal to international operators and cruise passengers in the future. Operators believe that Ireland is a well defined cruise destination offering a depth of onshore excursions. Its geographical location allows it to be included in both British Isles and transatlantic cruises. The proximity of ports within Ireland also provides optimum cruising distances.

Currently the main cruise ports are Dublin and Cork with Waterford and Galway increasing business. Shannon Development has been successful in attracting cruise ships into the Estuary at Port of Foynes. An estimated 3,000 cruise passengers are expected to visit the region 2012, up 36% from 2,200 cruise visitors last year. Foynes Port is the preferred destination within the Estuary in respect of the desirable combination of deepwater availability, suitable port infrastructure, and proximity to the N69 tourist route connecting to the hub of Limerick City (Photo 50).

There is a challenge in attracting cruise ships on a regular basis to the Estuary due to a number of factors including the degree of deviation from established routes and perceptions relative to the weather. It appears that the market in the Estuary may be for smaller vessels carrying less than 1000 passengers and there is an imperative to provide attractive packages in terms of onshore excursions and attractions. This requires an integrated approach to marketing linking the cruise facilities with other major attractions such as Bunratty Castle, the Estuary ferry service and niche tourism sectors.

The development objective is:

SIFP MTL 1.3:

Cruise Ship Industry

To support and facilitate the sustainable use of the Estuary by the Cruise Ship Industry by maintaining and safeguarding critical navigational channels, anchorage and berthing facilities, ensuring that all such developments shall not adversely affect species and habitats designated by the Habitats & Birds Directive, Water Framework Directive and all other relevant EU Directives.



Photo 50 A Cruise Liner recently docked in Foynes

5.7.6 DEVELOPMENT MARINE TOURISM IN THE ESTUARY

Maritime traffic is an important component of the Estuary's tourism and leisure industry. The Shannon Estuary exhibits a discernible hierarchy in terms of the existing marine infrastructure and capacity. The two major ports, Port of Foynes and Limerick Docks, have capacity to receive large vessels primarily serving the commercial port industry but with a proven capacity for cruise ships. Moneypoint, Tarbert and Aughinish also have access to deep water facilities that would have capacity for marine related tourism development but the current land-uses are incompatible and not likely to be attractive to tourist consumers.

The Shannon Estuary itself has natural deep water pockets throughout its extent, which presents numerous opportunities to improve the potential for new facilities and berthing areas capable of accommodating larger ships. However, deep water on its own is not the only material consideration. The Estuary is a sensitive natural environment and the nature conservation interests that have merited international recognition in the SAC and SPA designations, allied to cultural heritage and landscape considerations mean that any proposal to create major new berthing facilities has to be balanced against environmental considerations generally and the requirements of the Habitats Directive in particular. The priority in the first instance is, where possible, to diversify, upgrade and extend existing major berthing facilities to meet the needs of larger tourist vessels.

The Shannon Car Ferry is a vital maritime transport resource within the Shannon Estuary, providing an important service for local communities, employers and tourism in the local area and in the wider Region, between Tarbert in County Kerry and Killimer in County Clare, connecting into the main road networks of the N69 and N67. This is a vital service for the tourist economy within the Region, and is a key linkage in developing an integrated tourism strategy for the Estuary.

At a lower level in the hierarchy is the distribution of marina's throughout the Estuary. One of the largest is at Kilrush where the majority of dolphin-watching boat trips and the day trips to Scattery Island are based. It provides important services for the smaller vessels, which the local communities rely on. There is a well equipped marina services building, with an extensive

boatyard, including a large indoor boat storage and repair facility. The marina accommodates smaller boats, yachts and sailing craft all year round, for hire / charter for tours, cruising and angling, and has become an integral part of the local economy along the Clare coastline, providing a multitude of employment in a range of maritime transport related jobs. The level of facilities available is consistent with the role of Kilrush as a service town which should continue to play a key role in the marine tourism sector in the Estuary. The natural heritage of Kilrush is one of its assets most notably the Bottlenose dolphins of the Shannon Estuary which are the only known resident population of this Annex II together with Poulmasherry Bay and Carrigaholt - Rinevella which are designated shellfish waters.

The large village of Carrigaholt and the smaller settlement of Kilbaha serve the award winning Loop Head tourist initiative which has successfully achieved the balance of sensitively exploiting the natural assets through bird and dolphin watching, sea fishing, enjoying spectacular coastal scenery and the cultural heritage.

In all these, and similar settlements, for example at Ballybunion, Foynes town and Glin where there is already a well established tourist node, sustainability objectives will be best served by further sensitive expansion of existing infrastructure to facilitate additional development options at a nature and scale appropriate to each individual settlement.

Ballybunion is a District Centre in the settlement hierarchy and is a tourist resort based on a combination of an internationally renowned championship golf course, Blue Flag beaches, rich history and built heritage. However the town has traditionally been a place to visit rather than stay and the economy suffers from seasonality issues as well as a lack of anchor attractions that hold tourist for longer. Ballybunion epitomises the challenge throughout the Estuary in that there is a need to capitalise more fully on these assets to ensure that it becomes an established destination characterised by a sustainable realisation of its full tourist potential.

Activities such as walking and cycling have potential to be utilised as a vehicle to promote particular themes such as nature conservation interests, cultural heritage/ social history in designated trails, building on the established network particularly around North Kerry and Ballysteen / Ringmoylan, in Co Limerick (Photo 51).

The integrated tourism strategy must link together the key elements that capture the essence of the Estuary from Shannon International Airport, Bunratty Castle and Folk Park, the tourist port and marina facilities and the themes of nature, landscape and cultural heritage. All developments must ensure that they do not unacceptably jeopardise the asset they are seeking to exploit or indirectly affect another vital natural asset and in all case be in compliance with the Habitat Directive Assessment.



Photo 51 Improvements to existing facilities & infrastructure

The Development Objectives are:

SIFP MTL 1.4:

Supporting Sustainable Tourism & Leisure

To support the sustainable development of appropriate tourism and leisure projects within and around identified hubs in the Shannon Estuary ensuring that all such developments shall not adversely affect species and habitats designated by the Habitats & Birds Directives, and all other relevant EU Directives, or unduly compromise identified priority shipping/navigational facilities.

SIFP MTL 1.5:

Tourism in Settlements

To support and facilitate new sustainable land-based tourism development within existing settlements where they can best support the provision of services and the general economic vitality of these settlements, ensuring that all such developments shall not adversely affect species and habitats designated by the Habitats & Birds Directives, and all other relevant EU Directives, and pay due regard to valued landscape and heritage features.

SIFP MTL 1.6:

Marina facilities

To support and facilitate the sustainable development and upgrading of marina facilities at appropriate locations where associated activity is already underway, or where a tangible demand for such a facility exists ensuring that all such developments shall not significantly affect species and habitats designated by the Habitats Directive, Water Framework Directive and all other relevant EC Directives.

SIFP MTL 1.7:

Marine based activities

To encourage and facilitate the sustainable expansion of existing marine based leisure schemes and the development of new opportunities for sustainable development of eco-tourism and water sports along the Estuary, ensuring that all such developments shall not adversely affect species and habitats designated by the Habitats & Birds Directives, Water Framework Directive and all other relevant EU Directives

5.7.7 THE ISLANDS

The islands of the Estuary offer potential for the sustainable development of eco-tourism and heritage based tourism. Although uninhabited since the 1970s, the islands are still farmed despite the challenging nature of the workplace. A knowledge of the Estuary tides and their hazards is essential. The quays and slipways of the area are generally in poor condition and landing is subject to the tidal regime.

Each island has its own story to tell in the social history of the Shannon Estuary. They host a wealth of cultural heritage from the substantial remains of Canon Island Abbey, founded in 1190 situated on the northeast of the island, reputed an important centre for learning in its early years where it is said that hundreds of students were in residence in the 13th and 14th Centuries. The ancient church on Coney Island dates back to St Brendan in 550AD and of more recent interest is the small pier on the western side of the island and a lane leads from it to a small village of deserted houses and a school house, still in excellent condition.

The Shannon Estuary is also one of the most important sites in Ireland for wintering and migrating waterbirds, supporting 10 bird species in numbers of international importance and a further 13 bird species occurring in numbers of national importance. The Estuary as far west as Foynes is designated as a Special Protection Area (SPA). This SPA is currently proposed for re-designation with a major extension to cover much of the outer Estuary also. The Shannon and Fergus Estuaries as a whole are of International importance and the intertidal area is a continuum. All parts of the Estuary are considered to be important for birds but bird usage will vary in different parts of the Estuary itself.

The Estuary around the islands has also considerable potential for bird watching and other nature conservation based pursuits. In combination with the rich cultural heritage and a remarkable landscape setting this represents a significant tourist opportunity. A recent feasibility study has been undertaken of the Shannon Fergus Islands, to explore potential business and tourism opportunities. However the nature conservation is a very high priority in this part of the Estuary and any development would need to ensure that the objectives of the Natura 2000 designations are not unacceptably compromised. The thresholds of acceptable activity would need to be properly assessed

in respect of the range of activities involved and any ancillary facilities that might seriously impact this sensitive environment.

The development objective is:

SIFP MTL 1.8: Evaluation of Island Tourist Potential

To facilitate an evaluation of the tourism/leisure potential of the islands within the Estuary in the context of landscape / heritage sensitivities, and European and local environmental designations.





Section 5.8 Aviation

To realise the long term potential of Shannon International Airport & its environs, and encourage the sustainable development of Shannon International Airport as a strategic economic driver, to achieve economic and social benefits for in the Shannon Estuary region and the wider Mid-West Region.

5.8.1 INTRODUCTION & BACKGROUND

Shannon International Airport is at the heart of the Shannon Region and plays a significant role in providing international connectivity to the western seaboard of North America and Europe and increasing prosperity to the region. The airport is a key driver for economic, tourism and industrial development for the Shannon Region and the greater West of Ireland as a critical conduit for tourism and exports.

The Airport was officially opened in 1945 and later that year the first commercial trans-Atlantic flight landed at the Airport. In 1947, Shannon gained status as the world's first duty free airport.

The Airport has the longest runway in Ireland (3,199 metres) and is in operation 24 hours per day, 365 days per year. Shannon caters for both scheduled and chartered flights to a range of destinations and has 24 aircraft stands. The airport has experienced a significant decrease in passenger numbers in recent years.

The airport lands amount to over 850 hectares. There is therefore considerable scope to build on the heritage of Shannon and the traditional base of MRO (Maintenance, Repair and Overhaul). The Airport also provides considerable scope to accommodate complementary industries such as a logistics hub (Photo 52).

The Shannon Free Zone (SFZ) is a 243 hectare industrial area with more than 7,700 people working in over 100 companies, including Manufacturing, International Trade Services, Aviation, Tourism, and Logistics services in for premier multinational firms and the largest concentration of North American companies in Ireland outside of Dublin. The Zone generates exports in excess of 3.3 billion per annum.

The Airport adjoins the Estuary, creating a key transport hub at the gateway to south west Ireland, adjacent to focal areas of deep water. The airport lands amount to 850ha and are zoned for aviation use within the Shannon Town Local Area Plan.

5.8.2 POLICY CONTEXT

NATIONAL DEVELOPMENT PLAN

The NDP seeks to promote balanced development of all the regions of Ireland. Designated Gateway areas such as the Limerick-Shannon will be given priority for investment in strategic infrastructure required to achieve this objective

NATIONAL SPATIAL STRATEGY

The NSS asserts that the Limerick-Shannon gateway will have to perform better at the national/international level to contribute to balanced regional development of the Mid-West. This is needed to lever additional investment for the overall region, through its critical mass, strategic location, capacity for innovation and development and connections within the national transport framework including linkage with Shannon International Airport.

MID WEST REGIONAL PLANNING GUIDELINES

Under the heading of Priority Transport Infrastructure, the MWRPG states that road and rail access, and transportation generally, are crucial elements of the strategic development of the Region in a socially inclusive and sustainable manner and as aviation is vital to the future business of the country in tourism and exports, connectivity between airports and public transport is a key requirement.

The major road network within the Region, and between the Region and adjoining regions, is crucial in a number of respects. It is a major factor in facilitating co-operative activities and integration between the resources of the Region's Gateway and those of adjoining regions, in providing access to Shannon International Airport from its natural hinterland to the North and South.

THE SHANNON TOWN AND ENVIRONS LOCAL AREA PLAN 2012-2018

The strategic importance of Shannon is recognised in its designation in the National Spatial Strategy 2002-2020 as part of the Limerick / Shannon Gateway. Shannon Town and Environs are of critical importance to the future economic development of the Mid-West Region, occupying a strategic position along the Atlantic corridor and has excellent road connectivity to the Gateway cities of Limerick, Cork and Galway.

The Shannon Town and Environs Local Area Plan 2012-2018 sets out the land use plan for the proper planning and sustainable development of the settlement of Shannon and its environs. The Shannon Town and Environs Plan area is defined by a number of component parts, namely Shannon International Airport, Shannon Free Zone and Smithstown Industrial Estates, Shannon town, and agricultural lands to the east, west and north. The Plan acknowledges that the area designated as 'Airport Lands' in the Shannon Town and Environs Local Area Plan 2012 – 2018 lies partly within and adjacent to the Natura 2000 sites and as such any proposed development must comply with the requirements of Habitats Directive.

In relation to the SIFP, the Plan identifies the critical aspect in terms of future development is the adoption of an integrated management approach to the potential of the Estuary. Shannon's location adjacent to the Estuary, along with its existing infrastructural resources and other competitive advantages, means that is ideally placed to capitalise on future development potential and to be a key driver in optimising development potential of the Estuary



Photo 52 Shannon International Airport

5.8.3 AVIATION STRATEGY

Strategic Aim:

SIFP AVI.1:

Promoting the development of Shannon International Airport

To support and facilitate the sustainable development potential of Shannon International Airport as a strategic economic driver in the Shannon Estuary and the wider region.

Safeguarding the position of Shannon International Airport as the international gateway for the Shannon region is a priority objective. If the Shannon Estuary is to realize its economic potential then it must maximise the advantage accruing from the presence of the international airport at its gateway along with its associated strategic industrial lands and level of connectivity with America, Europe, the United Kingdom.

Although the Airport in has seen a reduction in passenger numbers in recent years, almost 1.4 million passengers passed through the Airport in 2012. The Airport has achieved significant success already in 2013 with the introduction of new routes to Philadelphia, Chicago, Faro, Alicante and Glasgow and serves 32 destinations. Shannon has transatlantic services which fly directly from the Airport to the United States and Canada (New York JFK, Newark, Boston, Philadelphia, Chicago and Toronto) and sees significant growth in particular in the North American market in 2013.

The Shannon Free Zone is a significant regional employer, providing 7700 jobs in 2011 in multi-national high end commercial companies whose sales amounted to 3 billion, 90% of which was to overseas markets.

These developments all offer potential for more passengers passing through Shannon International Airport as the gateway to the Shannon Region and the west of Ireland generally. There are significant opportunities for business tourism with so many high end commercial enterprises located in such close proximity to the airport. The capacity of this high value sector could provide a stimulus for enhanced conference and accommodation in the locality. On the 3rd December 2012 the Government announced that Shannon Airport was to be separated from the Dublin Airport Authority and Shannon Airport and elements

of a restructured Shannon Development were to be brought together, with a view to the delivery of coherent and integrated services in the Shannon region. On the 31st December 2012, Shannon Airport Authority took over the management, operation and development of Shannon Airport. Legislation is to be enacted later in 2013 to provide for the creation of Shannon Group plc. Shannon Airport and the restructured Shannon Development which will be re-named as Shannon Commercial Enterprises Limited will become subsidiaries of Shannon Group plc. Shannon Group plc will also promote and develop an international aviation services centre on the Shannon campus, centred on the airport.

Shannon International Airport is therefore a strategic driver in the SIFP integrated approach to Shannon Estuary. It offers the potential for significant synergies with other industrial, port and tourist drivers in the Estuary. Bunratty Castle and Folk Park, Limerick and Foynes ports are just some of the major drivers that can derive benefit from safeguarding and building on the strategic role of the Airport.

It is an objective therefore to safeguard the airport lands for future airport expansion and rationalisation so that only aviation and other compatible uses that do not compromise the long term sustainability of the airport are permitted. Priority will be given to:

- Expansion of airport operational activities and uses complementary to the operation of the airport;
- Aircraft servicing & maintenance and freight cargo handling facilities related to airport activities, business park use, primarily related to airport, servicing, management and maintenance activities;
- Complementary uses including flight schools, international logistics centre and research.

The Development Objectives and Mitigation Measures from the SEA and AA are outlined in subsequent pages:

SIFP AVI.2: Safety

To safeguard current and future operational, safety, technical and development requirements of Shannon International Airport.

SIFP AVI.3:
Safeguarding

To have regard to, and implement the national land use policies and guidance in relation to the Red Zones and Public Safety Zones, identified within the Local Area Plan for Shannon International Airport;

SIFP AVI.4:
Consultation on development proposals

To have regard to the advice of the Airport Authority with regard to the effects of any development proposals in the vicinity of Shannon International Airport, on the safety of aircraft or the safe and efficient navigation thereof, in particular within the Red Safety Zones and Public Safety Zones identified within the Local Area Plan.

SIFP AVI.5:
Developments lands at Shannon International Airport

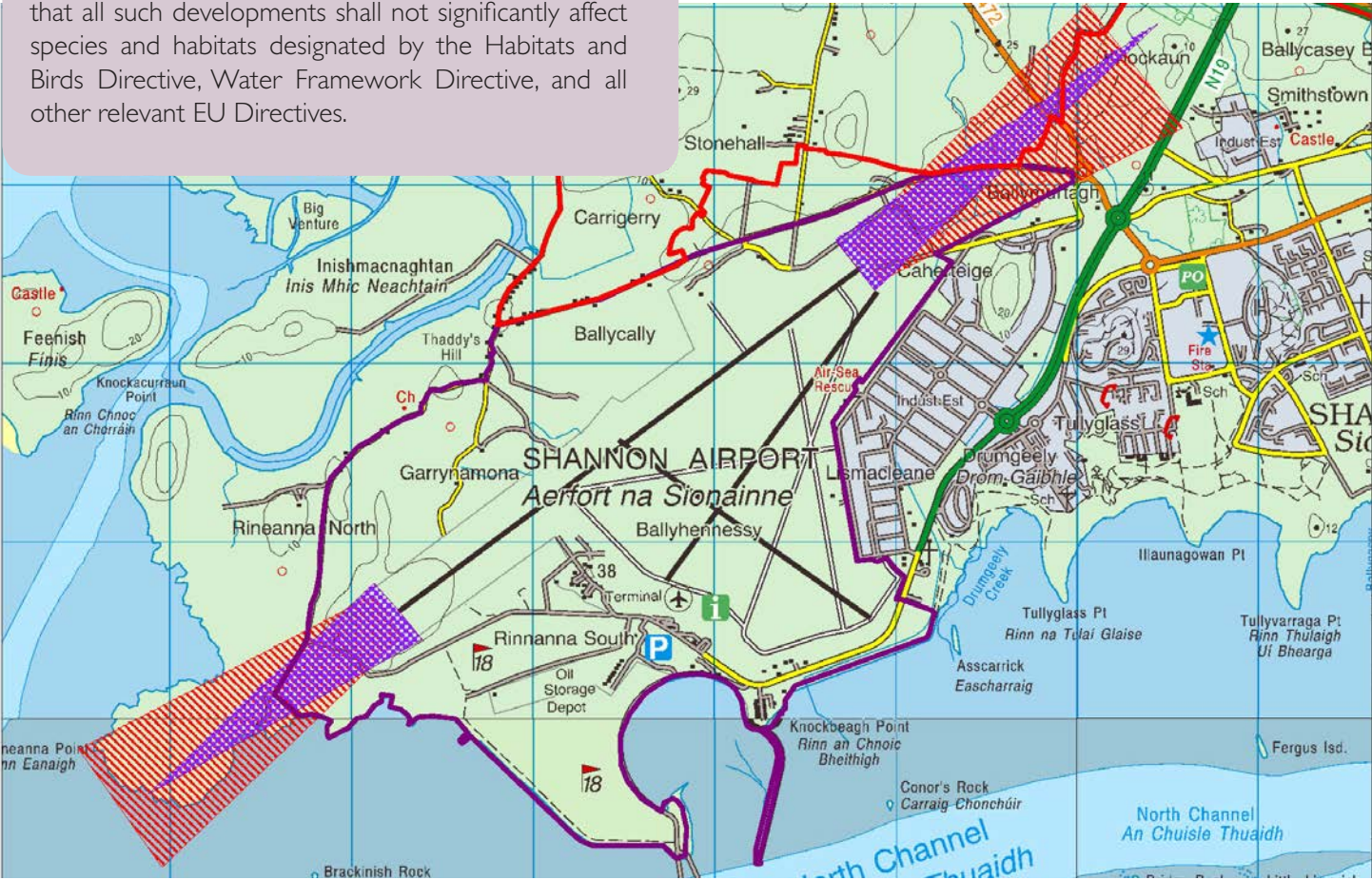
To support and facilitate the sustainable development of the lands around the airport for aviation related and other complementary or compatible uses ensuring that all such developments shall not significantly affect species and habitats designated by the Habitats and Birds Directive, Water Framework Directive, and all other relevant EU Directives.

SIFP AVI.6:
Connection to Shannon Estuary

To explore sustainable opportunities to improve connectivity and linkages between the Shannon International airport lands and waters of the Shannon Estuary to facilitate additional, complementary uses of existing jetty facilities.

Mitigation Measures - Aviation

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Theme Mitigation	A MM 1-7



Section 5.9 Commercial Fishing & Aquaculture

To contribute to the **diversification of the local economy, growth in employment and social well-being of coastal communities through facilitation and promotion of environmentally sustainable commercial fishing and aquaculture, in compliance with the requirements of the Birds and Habitats Directives, and the objectives and targets set by other relevant EU Directives.**

5.9.1 INTRODUCTION & BACKGROUND

The Food & Agriculture Organisation of the United Nations (FAO) estimates that an extra 42million tonnes of farmed seafood will be required annually by 2030. The Irish Seafood Industry is worth over 700million and aquaculture alone produces more than 27,000 tonnes of seafood per annum. BIM have estimated that the market value of exports in 2011 were 430million.

The demand for fish and seafood produce throughout Ireland, the UK and Europe has grown this sector, which now employs almost 12,000 people in Ireland, mainly in the most remote coastal locations where it is critical to the social and economic viability of these communities.

The National Development Plan endorses the importance of harnessing the potential of the food industry, and has confirmed its commitment to ongoing investment in process, aquaculture and the development of fishing harbours. In their annual report, Bord Iascaigh Mhara note that the seafood sector has the potential to ensure meaningful and long term assistance to the future economic recovery of Ireland.

The Government Integrated Marine Plan 'Harnessing Our Ocean Wealth' confirms that Ireland's coastline, inshore and offshore waters contain some of the largest and most valuable sea fisheries in Europe and are an ideal location for finfish, shellfish and seaweed aquaculture. Aquaculture and commercial fishery activities are continually developing, with new technologies, new seafood products, and new markets, contributing to the national economy in terms of output, employment and exports.

5.9.2 AQUACULTURE & FISHERIES IN THE SHANNON ESTUARY

Fishing has traditionally formed the backbone of the local economy for coastal communities, both as a commercial trade activity and as a leisure / recreational activity (Photo 54). However increasing environmental controls and restrictions on the amount and type of commercial fishing, has resulted in a degree of decline of this activity in the Estuary.

At present, there is a range of different commercial fishing activities take place in the Estuary. Mackerel and scad are sometimes fished off Loop Head. Whitefish

trawlers from Fenit, Doonbeg and Rossaveal also visit the area. Fishing is a licensed activity, currently regulated by the Fisheries Acts (1959-2006)



Photo 53 Farming of Oysters

There are approximately 8 licensed local boats which work mainly pots (crab, lobster and shrimp) gillnets, and tanglenets. Much of the fishing activity takes place outside of the Estuary. The gillnets take mainly white Pollack, haddock, dogfish, black pollack, cod and ling while the summer tanglenet fishery operates on monkfish, turbot and ray. Shrimp fishing takes place within the Estuary during the late Autumn and Winter months.

The Estuary is recognised as being an important area for the commercial aquaculture, and the current licensed operations are focused on the cultivation of shellfish, in particular the Pacific oysters (Photo 53). Although there is a long history of this activity in the Estuary, dating back to pre-Christian times, it has been somewhat slow to develop to its full potential. The majority of oyster cultivation is using trestle farming methods, and are focused on areas in/near Rinevella, Carrigaholt, Poulnisherry Bay, Ballylongford Bay, Bunnaclugga Bay and near Aughinish Island. Marine finfish farming has not traditionally been a feature of the Estuary, however the renewed focus on fish farming along the west coast of Ireland may encourage new opportunities in the Estuary to be explored.

The slow development of aquaculture has been influenced by natural constraints relating to the physical environment of the Estuary such as high currents and sediment loads, as well as uncertainty about potential industrial pollution along the coastline. The intertidal and inshore resources along the north and south shores of the Estuary are quite considerable being several hundred kilometres long, however the biological and

topographic conditions vary locally due to exposure, substrate type, tidal ranges, waters depth and water quality.

Together, fishing, fish/shellfish processing, distribution, aquaculture and related activities continue to generate significant direct employment in these enterprises and also in terms of secondary employment in processing and retailing outlets.



Photo 54: Recreational fishing in the River Shannon is an important recreational activity

5.9.3 CURRENT STAKEHOLDERS & CONSENTING REGIME

There are a range of agencies who contribute to governance of the marine waters, and overseeing the regulation of the activities of fishing and aquaculture in the Estuary, from a number of different perspectives.

The key stakeholders include:

- Department of Communications, Energy & Natural Resources;
- Department of Agriculture, Food & Marine;
- Inland Fisheries Ireland;
- The Marine Institute; and
- Bord Iascaigh Mhara (BIM).

These agencies have developed strong working relationships over time, ensuring that all aspects of fishing and aquaculture have progressed in a sustainable, holistic and environmentally responsible manner. The existing consents and licensing systems for fishing and aquaculture ensure that agencies can comprehensively review all elements of proposals including details of operations, practices, technologies, and the sustainability of the proposal, as well as the likely effects of the operations on the economy, the local ecology, and the environment in general (Photo 58).

The development of aquaculture in particular has derived significant benefit from the local knowledge, support and area management of the Co-ordinated Local Aquaculture Management Systems (CLAMS) initiative evolved by Bord Iascaigh Mhara (BIM) together with the Marine Institute (MI). CLAMS establish a process of joined up thinking, linking the objectives of the national and regional policy and regulation by Government Departments, with local companies/operators and area-specific needs/issues, to create locally based solutions with a strong basis for economic growth.

The concept focuses at local bay level while still taking on board relevant national policies providing a basis for the successful integration of aquaculture into coastal development taking cognisance of the need to improve environmental compliance, product quality and consumer confidence. This initiative has been successful in integrating the principles of sustainable development, the local aspirations for aquaculture in the different bays, with the future management of the Estuary, its coastline and its natural resources. There

are two CLAMS groups operating within the Estuary, namely North Shannon and South Shannon CLAMS Groups, which have produced detailed guidance on the aquaculture industry.

It is widely acknowledged by all stakeholders that there is the potential to expand the commercial fishing and aquaculture industries within the Shannon Estuary, however in a manner which is environmentally sustainable and compatible with existing and proposed uses within the area.



Photo 55: Pier and slipway at Kiladysert

5.9.4 KEY CHALLENGES & ISSUES

The potential for growth in this activity within the Estuary highlights the need for integrated approach toward planning and management of the marine area. Other major users of the marine area including shipping, offshore renewable energy, and water-based recreation and tourism are often all competing for the same marine resource.

The potential growth of aquaculture and fishing is dependent on ensuring that the environmental impacts of its operations are not detrimental to the core environmental resources upon which it is heavily dependent on for its growth. Aquaculture depends on good quality, unpolluted water; appropriate water flows, stable sediment regimes, access to the foreshore and marine area.

The actual environmental impacts are influenced by the finfish and shellfish species, culture methods, stocking densities, feed types, site hydrographic properties, operational and management practices, and numerous other variables and are therefore difficult to predict generally.

Generally, the potential ecological effects on the conservation objectives for the designated sites, relate to the physical and biological effects of fishing gears and aquaculture structures, and human activities on designated species, intertidal and sub-tidal habitats and invertebrate communities and biotopes of those habitats.

As a large proportion of the Estuary is covered by the Lower Shannon SAC, and the River Shannon and River Fergus Estuaries SPA (Natura 2000 Network) a Habitats Directive Assessment is required, under the EC (Birds & Natural Habitats) Regulations 2001 (SI 477 of 2011) for all activities likely to have a significant effect on the Natura 2000 Network. The farming practices and technologies employed by aquaculture can be varied and numerous, and impact on the sensitive estuarine ecosystem in numerous ways, with the potential for negative impacts on the conservation objectives of both designations.

A programme for the Habitats Directive Assessment of all aquaculture licences and inshore fishing activities in and adjacent to all Natura 2000 sites in Ireland is currently underway by the Marine Institute, including

those within the Estuary. Baseline data to inform these assessments and assist with the development of Conservation Objectives for the sites has been collected under the supervision of the Marine Institute. BIM are assisting in the process, and are focused on carrying out aquaculture profiling and developing Fisheries Natura Plans. These assessments are focused on assessing both existing and proposed aquaculture and fishing activities within the Estuary (and their in-combination effects) against the conservation objectives available for the designated ecological features within the sites as defined by NPWS. The key is to ensure consistency with the objectives, and determine if these activities will lead to a deterioration in the attributes of the habitats and species over time, and identify if / what mitigation is required. All future development proposals will be assessed in the context of the Conservation Objectives being developed for the Natura 2000 sites (Lower Shannon SAC and River Shannon and River Fergus Estuaries SPA), within the Estuary, and in the context of the requirements and objectives of the Water Framework Directive.

Other marine industries can adversely impact the quality of the marine waters and the natural resources on which aquaculture and fishing depends, and compromise the long term sustainability and growth prospects of the industry. The growth of industrial activity along the coastline, expansion of urban areas, increased shipping activity, land based discharges (sewage and industrial effluent) agricultural activities can all impact the environmental quality, and in particular the aquatic environment within the Estuary.

The natural ecosystem of the Estuary supports a diverse range of aquatic habitats and species and their associated food webs, which are key natural resources for the commercial fishing and aquaculture industries. The Estuary is an important zone of passage for a number of designated and protected fish species in particular salmon, lamprey species, European eels, and it is important to note that new or expanding developments do not hinder the movement of these up the Estuary. Therefore, baseline data and careful monitoring are crucial to establish a robust and comprehensive fisheries and habitat baseline, to ensure development proposals can be adequately considered and assessed within the context of the estuarine ecosystem.

Ongoing programmes and measures, particularly the River Basin District Management Plans under the Water

Framework Directive (WFD) in relation to pollution of the marine environment are vital to ensure pollution does not impact adversely on the biodiversity of coastal and marine ecosystems. The Water Framework Directive has set objectives to achieve Good Ecological Status in Ireland's inland, surface and ground waters by 2015, and requiring all waterbodies to be assessed to determine their defined status based on their ecological quality (biological & chemical terms). The South West and Shannon River Basin Districts list of objectives for the Shannon Estuary and a programme of measures to achieve good ecological status.

The Marine Strategy Framework Directive (MSFD) requires Ireland's marine areas to achieve Good Environmental Status by 2020. Similar to WFD, the MSFD advocates that the ecological analysis of each water body should be assessed using the ecosystem based approach. Ireland has commenced implementation of the Directive, and identifying appropriate environmental targets and indicators, along with a programme of measures, to achieve good environmental status by 2017.

The implications of these Directives for aquaculture will not be fully known until the assessments are complete and the full programme of measures outlines the key issues for aquaculture.

The EU Shellfish Waters Directive aims to protect or improve shellfish waters in order to support shellfish life and growth. It requires Ireland to designate waters that need protection in order to support the life and growth of Shellfish such as oysters, mussels, cockles, scallops and clams, and sets physical, chemical and microbiological requirements that designated waters must either comply with or endeavour to improve. The Estuary is recognised as an important area for shellfish growing and a number of areas have been designated under the Shellfish Directive, reflecting existing aquaculture sites, wild shellfish harvesting sites and waters in need of protection or improvement. These are;

- West Shannon Rinevella Bay,
- West Shannon Carrigaholt,
- West Shannon Poulmasherry Bay,
- West Shannon Ballylongford

The main threats to the success of these designated areas is pollution and under article 5 of the Shellfish Water Directive a shellfish pollution reduction programme has been established for each area so as to ensure compliance with the Quality of Shellfish Waters Regulations (S.I. 268 of 2006).

5.9.5 STRATEGY, AIMS & OBJECTIVES

There is significant growth potential in the fishing and aquaculture industry in the Estuary subject to careful management to ensure the potential is harnessed in a sustainable manner consistent with the Conservation Objectives of the Natura 2000 site, the River Basin Management Plans, the Shellfish Waters Directive Pollution Reduction Programme, and the forthcoming environmental targets and measures that will be set as part of the National MSFD strategy.

The growth of these industries needs to be coordinated with the growth of other marine industries and activities, such as offshore renewable (including tidal) energy, increased shipping activity, and increased water-based recreation and tourism, which are spatial competing for marine resources.

Strategic Aim:

To contribute to the diversification of the local economy, growth in employment and social well-being of coastal communities through the facilitation and promotion of environmentally sustainable commercial fishing and aquaculture in compliance with the requirements of the Birds and Habitats Directives, and the objectives and targets set by other relevant EU Directives.

The development objectives in respect of commercial fishing and aquaculture should be read with the environmental objectives outlined in Section 5.10 and will guide all proposals for new and expanded activities for commercial fishing and aquaculture within the Estuary.

In support of Development Objectives, a number of Areas of Opportunity have been provisionally identified as being most suitable for the promotion, development and expansion of aquaculture activities in terms of site suitability, environmental considerations, existing infrastructure, and compatibility with existing uses. They are based on the location of existing and pending licences, other consent applications for aquaculture, the Shellfish Directive designated areas, and on advice from key stakeholders.

The Estuarine waters are multi-functional and can accommodate more than one use in one section of the waterbody, subject to those uses being compatible with aquaculture activity. Compatible uses generally include the following uses:

- Recreational fishing / angling
- Marine tourism & eco-tourism, including dolphin watching
- Marine recreation & leisure, including sailing, pleasure boating

The degree of potential conflict with other marine uses depends to a great extent on the nature of the harvesting or cultivation techniques being utilised. The following uses are unlikely to be compatible subject to the specific nature of individual activities:

- Shipping & core shipping navigation areas
- Sand & Gravel Extraction
- Oil & Gas Exploration
- Land / Foreshore Development which includes dredging
- Dredge disposal sites
- Marine renewable energy devices

The Development Objectives and Mitigation Measures from the SEA and AA are outlined in the subsequent pages:

SIFP CFA 1.1

Assessing Proposals

To ensure all proposals for aquaculture and commercial fishing likely to have significant effects on the Natura 2000 network are adequately assessed and comply fully with the objectives and requirements of the Habitats Directive, in particular Article 6. Proposals falling within the remit of the Appropriate Assessment of fishing and aquaculture activities in the Estuary, shall comply with the outcomes and recommendations of such assessment.

SIFP CFA 1.2

Supporting sustainable fishing & aquaculture

To encourage the development of sustainable commercial fishing and aquaculture activities (including farming of new species), which endorses a market-led and profitable production operation, to assist in the diversification and growth of the local economy, in accordance with EU quotas and guidance. Any future expansion will be subject to compliance with the detailed Conservation Objectives of the Lower Shannon SAC, and the requirements of the Shannon International River Basin Management Plan.

SIFP CFA 1.3

Aquaculture Areas of Opportunity

To support and promote where sustainable, the development of aquaculture activities within the Areas of Opportunity outlined below, subject to compliance with SIFP CFA 1.1.

- Area of Opportunity N - Carrig Island
- Area of Opportunity O - Poulmasherry Bay
- Area of Opportunity P – Carrigaholt Bay
- Area of Opportunity Q – Rinevella Bay
- Area of Opportunity R – Greenish Island
- Area of Opportunity S – Long Rock
- Area of Opportunity T – Killimer
- Area of Opportunity U – Clonderlaw Bay

Development and activities proposed within these locations, which may be incompatible with aquaculture, should adequately assess the potential impacts of their proposals on current and proposed aquaculture activities. Any future expansion will be subject to compliance with the detailed Conservation Objectives of the Lower Shannon SAC, and the River Shannon and River Fergus Estuaries SPA.

SIFP CFA 1.4

Providing Infrastructure

To support the provision of appropriate infrastructure, including access routes and points, piers, harbours and processing facilities, required for growth in the fishing and aquaculture sector; in accordance with the relevant principles of proper planning, sustainability and environmental considerations.

SIFP CFA 1.5

Management Practice

To support the development and implementation of environmentally sustainable management practices, including innovative technologies, waste management systems and environmentally friendly fishing methods and practices.

SIFP CFA 1.6

Water Quality

To ensure existing and future proposals for aquaculture development and inshore fishing do not cause adverse impacts on water quality within the Estuary, and these activities do not conflict with the objectives and measures outlined in the Shannon River Basin Management Plans, the objectives of the Water Framework Directive and the objectives, measures and targets for achieving good 'Environmental Status' under the forthcoming Marine Strategy Framework Directive.

SIFP CFA 1.7 Designated Shellfish Waters

To ensure all activities maintain and where possible improve the physical, chemical and microbiological requirements for Designated Shellfish Waters, in compliance with the standards and objectives established by the Shellfish Pollution Reduction Programmes for the designated shellfish growing waters, any future expansions to the current designations, and any further new designations

SIFP CFA 1.8 Monitoring

To support the continued monitoring by Government Agencies within the marine environment, particularly baseline data, to improve the technical and scientific advice available to operators, managers, and policy and decision-makers, and to allow informed and solution based decision-making

SIFP CFA 1.9 Stakeholder Consultation

To encourage all proposals for commercial fishing and aquaculture carry out pre-application consultation with key stakeholders. In the case of aquaculture, pre-application consultation with the local CLAMS agency is strongly advised.

Mitigation Measures Aquaculture - Kilimer

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measures	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Themes	CFA MM 1-7, BFF MM 30, PHH MM 15, S MM 17, W MM 25, ACH MM 11, MA MM 14
<i>*Refer also to Table 3.36 of the Natura Impact Report</i>	

Mitigation Measures Aquaculture - Clonderlaw Bay

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measures	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Themes	CFA MM 1-7, BFF MM 31, PHH MM 16, S MM 18, W MM 26, ACH MM 12, MA MM 15
<i>*Refer also to Table 3.37 of the Natura Impact Report</i>	

Mitigation Measures Aquaculture - Carrig Island

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Theme Mitigation	CFA MM 1-7, BFF MM 24, PHH MM 9, S MM 11, W MM 19, MA MM 12
<i>*Refer also to Table 3.30 of the Natura Impact Report</i>	

Mitigation Measures Aquaculture - Poulasherry Bay

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Theme Mitigation	CFA MM 1-7, BFF MM 25, PHH MM 10, S MM 12, W MM 20, ACH MM 6
<i>*Refer also to Table 3.31 of the Natura Impact Report</i>	

Mitigation Measures Aquaculture - Carrigaholt Bay

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Theme Mitigation	CFA MM 1-7, BFF MM 26, PHH MM 11, S MM 13, W MM 21, ACH MM 7
<i>*Refer also to Table 3.32 of the Natura Impact Report</i>	

Mitigation Measures Aquaculture - Rinevella Bay

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Theme Mitigation	CFA MM 1-7, BFF MM 27, PHH MM 12, S MM 14, W MM 22, ACH MM 8
<i>*Refer also to Table 3.33 of the Natura Impact Report</i>	

Mitigation Measures Aquaculture - Greenish Island / Poularone

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Theme Mitigation	CFA MM 1-7, BFF MM 28, PHH MM 13, S MM 15, W MM 23, ACH MM 9, MA MM 12
<i>*Refer also to Table 3.42 of the Natura Impact Report</i>	

Mitigation Measures Aquaculture - Long Rock

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Site Specific & Theme Mitigation	CFA MM 1-7, BFF MM 29, PHH MM 14, S MM 16, W MM 24, ACH MM 10, MA MM 13
<i>*Refer also to Table 3.35 of the Natura Impact Report</i>	



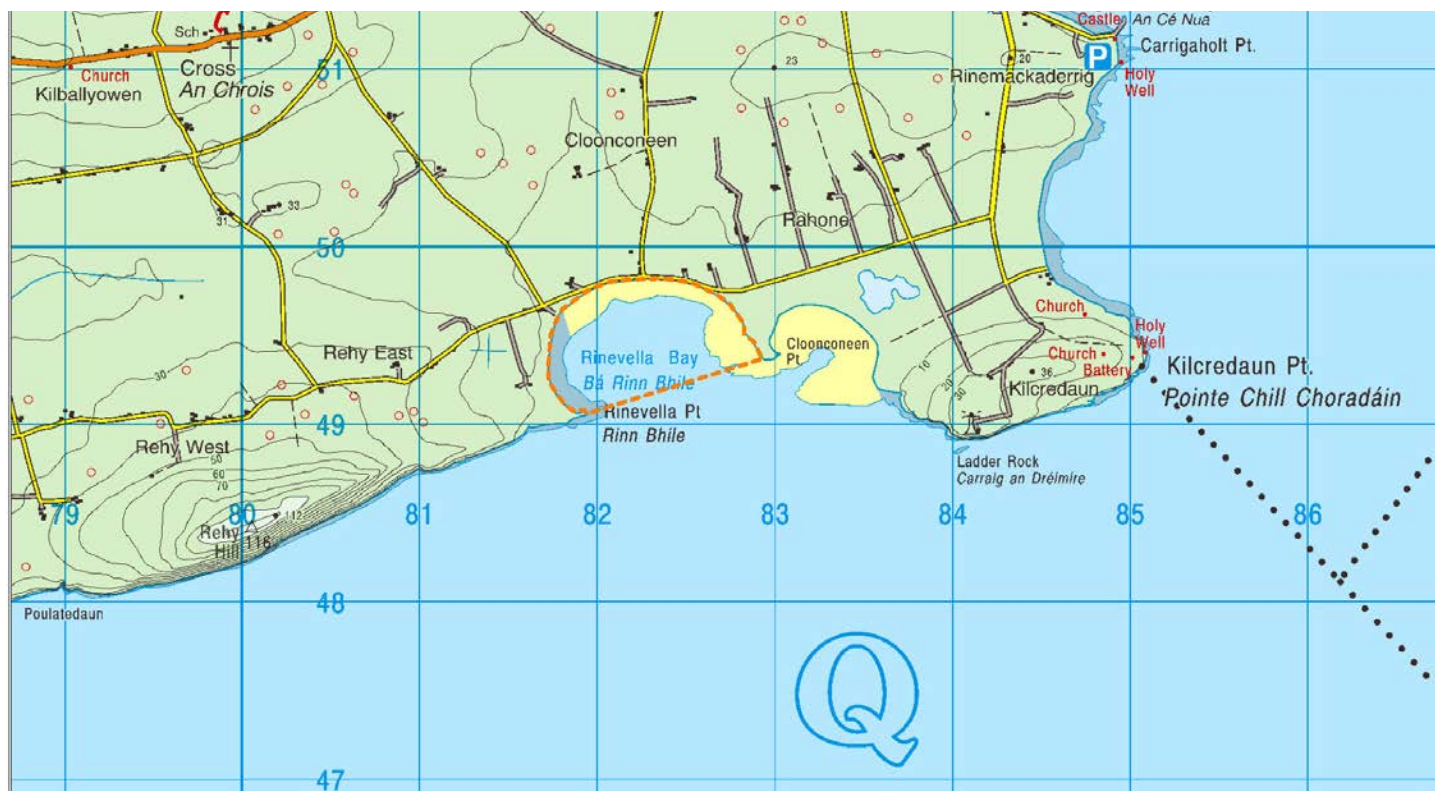
Area of Opportunity N - Carrig Island



Area of Opportunity O - Poulnasherry Bay



Area of Opportunity P – Carrigaholt Bay



Area of Opportunity Q – Rinevella Bay



Area of Opportunity R – Greenish Island / Poularone



Area of Opportunity S – Long Rock



Area of Opportunity T – Killimer



Area of Opportunity U – Clonderlaw Bay

Section 5.10 Environment

To facilitate a development framework which is compatible with the areas of the Estuary which are designated under the Habitats and Birds Directives, whilst ensuring that the environment is protected, conserved, maintained and where possible restored, ensuring the dual goals of sustainable economic development and environmental conservation can be achieved

5.10.1 INTRODUCTION

The Shannon Estuary is a unique ecosystem in Ireland and of international significance, being one of the few large estuaries on the Atlantic seaboard of Europe. The greater Shannon Estuary comprises the tidal reaches of the Lower River Shannon between Limerick City and the Atlantic and incorporates the Fergus Estuary south of Clarecastle. The importance of the Estuary for birds, plants and animals is acknowledged through the designation of the Estuary as a candidate Special Area of Conservation (EU Habitats Directive 92/43/EEC) and an existing Special Protection Area for birds (EU Birds Directive 2009/147/EC). SPAs and SACs together make up the network of Natura 2000 sites across Europe.

The Shannon Estuary and its surrounding hinterland has been a well established area for settlement, major communication and transport corridor and other human activity for thousands of years. The area is therefore also rich in cultural heritage, with many castles and fortifications, crannógs, enclosures, industrial archaeology and religious sites within the vicinity of the shoreline and on the numerous islands throughout the Estuary.

The Estuary waters were also the reason for the selection of a site at Rineanna in the 1930s for the development of a trans-Atlantic Airport known today as Shannon International Airport.

This natural and cultural heritage allied to the attractive rural landscape and small towns and villages in coastal settings result in an environment that is a real asset to the communities living there and to the wider region.

The Shannon Estuary is also an important shipping channel and hosts a number of major ports and berthing facilities with associated industrial use. This multi-faceted and multi-functional character use of the Estuary also includes major energy generation and infrastructure, tourism and leisure, fishing and aquaculture.

The communities of the Shannon Estuary require a quality environment that provides them with opportunities for accommodation, work, recreation and socialising. The environment of the Estuary is heavily regulated through nature conservation designations, protections of the cultural heritage, planning, licensing and other consent regulations. An integrated and

sustainable approach is required to deliver necessary development that will not seriously compromise the environment which is the core asset of the region.

The environment strategy sets out the environmental objectives of the Strategic Integrated Framework Plan in relation to optimising the sustainable development of the Shannon Estuary and its surrounding hinterland while ensuring the protection of habitats and species, the prevention of pollution and major accidents, consideration of the effects of climate change and flood risk assessment, promotion of biodiversity and the appreciation of Archaeology and Cultural Heritage.

5.10.2 POLICY CONTEXT

NATIONAL DEVELOPMENT PLAN 2007-2013

At a national level, the National Development Plan recognises the Limerick/Shannon area as a key “Gateway” along the west coast of Ireland, supported by Ennis as an important ‘hub’ town. It also encourages harnessing the potential of the Estuary, within the context of its significant natural and cultural heritage assets. The NDP identifies that investment under the plan will make a major contribution to the enhancement and sustainability of our environment including significant measures to assist the limiting of Ireland’s emission of greenhouse gases in line with international obligations. These measures have a direct link with the future development of the Shannon Estuary in the context of existing industrial sites and the potential development of future sites.

NATIONAL SPATIAL STRATEGY 2002- 2020

The National Spatial Strategy supports the Gateway, and identifies the priority investments for the wider area. The NSS promotes environmental sustainability while emphasising the importance of the development of coastal infrastructure appropriate to its location as being integral to the economic development of coastal communities.

OUR SUSTAINABLE FUTURE, FRAMEWORK FOR SUSTAINABLE DEVELOPMENT

Our Sustainable Future is an integrated approach to policy making on sustainable development, it sets out 70 measures that will ensure we improve our quality of life for current and future generations and sets out clear measures, responsibilities and timelines in an implementation plan. These include areas such as the sustainability of public finances and economic resilience, natural resources, agriculture, climate change, transport, public health, education, innovation and research, education, skills and training, and global poverty.

MID-WEST REGIONAL PLANNING GUIDELINES 2010-2022

At a regional level, the Mid-West Regional Planning Guidelines 2010-2022 recognizes the significance of the Shannon Estuary, and provides a key policy bridge between national development priorities and local planning. The Guidelines recognise the economic, social and environmental potential of the Shannon Estuary and its environs, and also the complexities in coordinating and managing a balanced, comprehensive approach to economic growth and sustainable management of the area's natural assets.

SOUTH-WEST REGIONAL PLANNING GUIDELINES 2010-2022

The South-West Regional Planning Guidelines emphasise that a quality environment plays an increasingly critical role in social and economic development, as well as in the tourist and leisure industries.

In relation to the coastal environment, the SWRPG promote the inclusion of policies in all local authority development plans relating to the sustainable development and conservation of these areas. Issues such as potential rise in sea level, coastal erosion, protection of biodiversity, flooding and development are required to be addressed in an integrated manner. SWRPG include an objective to promote integrated coastal management strategies for the region's coastline that will involve the key stakeholders and which will:-

- examine the impact of sea level rise;
- examine the potential of off-shore renewables;
- identify potential social and economic development.
- recognise the environmental sensitivity of the coastal areas, including Natura 2000 sites, seascapes and landscapes.
- Promote coordinated land and maritime zone spatial planning.

5.10.3 LEGISLATIVE FRAMEWORK

There are a myriad of legislative provisions that govern how activities within the Shannon Estuary are regulated and the situation is ever-changing. The most critical in respect of the natural environment of the Estuary include:

- The EU Water Framework Directive (WFD) is implemented in Ireland under the Water Policy Regulations 2003
- The EU Birds and Habitats Directives are implemented in Ireland under the European Communities Birds and Natural Habitats Regulations 2011.
- The EU Marine Strategy Framework Directive is implemented in Ireland through European Communities (Marine Strategy Framework) Regulations 2011
- The EU Floods Directive is implanted in Ireland through European Communities (Assessment and Management of flood risks) Regulations 2010
- EC Shellfish Waters Directive
- EC Bathing Water Regulations 2008
- EC Environmental Liability Regulations 2008
- EC Environmental objectives (Freshwater Pearl Mussel) Regulations 2009
- EC Environmental objectives (Surface Waters) Regulations 2009
- EC Quality of Shellfish Waters (Amendment) Regulations 2009
- EC Urban Waste Water Treatment Regulations 2001, 2004 and 2010
- EC (Drinking Water No. 2) Regulations 2007
- EC Environmental objectives (Groundwater) Regulations 2010
- Protection of the Environment Act 2003

5.10.4 CHALLENGES & STRATEGY

5.10.4.1 ENVIRONMENTAL DATA

Much of the baseline information required to effectively implement policies and legislation including the Water Framework Directive and to satisfy planning requirements in terms of Environmental Impact and Appropriate Assessments is not readily available for the Shannon Estuary. Informed and scientific assessment of potential impacts deriving from development proposals will normally require comparisons across a number of years in terms of bird usage or habitat degradation. However although surveys and counts have been undertaken in the Estuary since the 1970s, logistical difficulties in carrying out regular surveys and census over such a large area has resulted in a lack of consistency in how data is collected and incomplete data in respect of some parts of the Estuary meaning that proper comparisons are difficult to make (Photo 56).



Photo 56 Updated environmental data is an essential tool for decision-makers

This can lead to considerable lead in times and delays in bringing projects forward for planning due to the lack of data. The National Biodiversity Centre has begun to address such difficulties at a national level through publication of their “Knowledge Gap” document in 2010. This document for the first time in Ireland takes stock of the state of Ireland’s biological diversity and also identifies the critical knowledge gaps which could be realistically filled by 2020. It could provide direction for addressing the issue in the Shannon Estuary.

The development objective is:

SIFP ENV 1.1

Environmental Information

To explore the potential for cooperation between public and private sector agencies in identifying and addressing critical gaps in baseline environmental information relating to Shannon Estuary.

5.10.4.2 CONSERVATION MANAGEMENT

National Parks & Wildlife Service is required to prepare a detailed integrated Conservation Management Plan (CMP) containing specific conservation objectives for the cSAC or SPA/pSPA, to define the distribution of the overall wetland ecosystem and inform the formal adoption of SPA and SAC boundaries. A CMP will include descriptive information and a management framework outlining objectives and strategies as well as supporting maps including indicative habitat maps. The preparation of a conservation management plan is a priority to enhance investor confidence and to provide greater clarity in respect of the critical issues involved in developing and operating in such a sensitive and susceptible environment (Photo 57).

Failure to produce a coordinated and sustainable conservation management plan for the Estuary may hinder development projects as there would be no baseline measurements outside of the generic conservation objectives from which to evaluate the potential impact of a project or procedure. The development objective is:

SIFP ENV 1.2:

Conservation Management Plan

To support the preparation of detailed Conservation Objectives for SAC's and SPA's surrounding the Shannon Estuary, and a detailed Conservation Management Plan for the Shannon Estuary SAC and SPA.



Photo 57 Redshank *Tringa Totanus* is a qualifying feature of the SPA

5.10.4.3 DREDGING

The upper Shannon catchment area is subjected to varying degrees of runoff and soil erosion, which contributes to sediment accretion throughout the Estuary. In the estuarine area of the river vast quantities of sediment are eroded, held in suspension by the velocity of the tide and then deposited during slack water periods at high and low tide times. Sediment accretion in the Estuary is further compounded during a dry Summer and Autumn as the amount of fresh water released from the upper Shannon into the Estuary is vastly reduced to maintain the head of water required to power the Hydroelectric Station at Ardnacrusha which reduces the volume of water available to scour the silt in certain parts of the upper Estuary. Between the middle to lower end of the Estuary eroded silt from tributaries feeding into the Estuary i.e. the Maigue, the Deel and the Fergus, further increase the volume of silt deposited in the lower Estuary particularly during a wet Summer and Autumn when the volume of runoff water is suddenly increased.

These high volumes of silt deposited annually necessitate dredging to maintain the operational function of facilities such as Ted Russell Dock, Limerick, Foynes Port, Tarbert Power Plant, the lock gates at Kilrush Marina and occasionally the water outfalls at Moneypoint (Photo 58).

Maintenance or capital dredging is controlled through a Foreshore License issued by the Department of Environment, Community and Local Government or the Department of Agriculture, Food and the marine, while the loading and dumping of dredged material at sea is controlled by a Dumping at Sea Permit issued by the EPA. Other organisations consulted include Inland Fisheries Ireland, the Sea Fisheries Protection Authority, the Marine Institute, the Radiological Protection Institute of Ireland, the Department of Transport, the Department of Communications, Energy and Natural Resources, An Taisce, and the relevant local Authority.

Applications must consider the impacts from their dredging and dumping operations and assess any cumulative impacts with other dredging operations in the Estuary. Information on cumulative impacts of other dredging operations can be difficult to ascertain and quantify.

Preparation of a dredging management plan for the

Shannon Estuary would greatly assist in understanding the potential impacts and the overall requirements on an estuarine wide basis. It would address the information requirements across all sectors, apply consistency to methodology, agree appropriate disposal options and provide for a more informed discussion on cumulative impacts. A dredging management plan for the Shannon Estuary would provide for a strategic integrated approach in respect of this issue and could contribute significantly to Port Master Plans, Conservation Management Plans and submissions for individual industrial sites along the Estuary as necessary. As part of this Plan, consideration should be given to exploring the potential for new and emerging technologies such as Water Injection Dredging.

The development objective is:

SIFP ENV I.3:

Dredging Management

To explore the potential for cooperation across relevant sectors in utilising new and emerging technologies, and in preparing a Strategic Dredging Management Plan, including a Dredging Mitigation Strategy, for the Shannon Estuary.



Photo 58 Dredging is an essential component of maintaining a safe and navigable waterway

5.10.4.4 WATER QUALITY

WATER FRAMEWORK DIRECTIVE

The EU Water Framework Directive establishes a framework for Community action in the field of water policy committing member states to achieve good qualitative and quantitative status of all water bodies (including marine waters up to one nautical mile from shore) by 2015. It is a framework for the protection of all waters including rivers (Photo 59), lakes, estuaries, coastal waters and groundwater, and their dependent wildlife/habitats under one piece of environmental legislation. Specifically the WFD aims to:

- protect/enhance all waters (surface, ground and coastal waters)
- achieve “good status” for all waters by December 2015
- manage water bodies based on river basins (or catchments)
- involve the public
- streamline legislation

The implementation of the Water Framework Directive is being carried out through the establishment of River Basin Districts - in the case of the Shannon Estuary - the Shannon River Basin District. Clare, Kerry and Limerick County Councils together with Limerick City Council all form part of the Shannon River Basin District. The Shannon River Basin District Plan (SRBDP) establishes four core environmental objectives to be achieved generally by 2015:

- prevent deterioration;
- restore good status;
- reduce chemical pollution;
- achieve water related protected areas objectives.

The SRBP also sets out the measures to be taken to achieve those objectives. Many of the measures are already provided for in national legislation and are being implemented. These include, for example, regulations in respect of Urban Waste Water Treatment, Bathing Water, the European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations and the Quality of Shellfish Waters Regulations.

The SIFP will promote compliance with the requirement of the WFD through the objectives and measures of the Shannon River Basin Management Plan.

The development objective is:

SIFP ENV 1.4:

Water Framework Directive

To ensure that development within the SIFP area does not conflict with the requirements and objectives of the Water Framework Directive, and in particular, Article 4.7 and the Shannon River Basin Management Plan and associated Programme of Measures.



Photo 59 Protecting River Corridors is a key objective of WFD

5.10.4.5 NATURAL ENVIRONMENT

The Shannon and Fergus estuaries form the largest estuarine complex in Ireland stretching from the upper tidal limits of the Shannon and Fergus Rivers to the mouth of the Shannon Estuary. Several large tributaries feed into the River Shannon and Fergus Estuaries including the Deel River, Mulkear River and Maigue River. To the west of Foynes, a number of small estuaries form indentations in the predominantly hard coastline, at Poulmasherry Bay, Ballylongford Bay, Clonderlaw Bay and the Feale or Cashen River Estuary.

EU DESIGNATIONS

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, better known as “The Habitats Directive” provides for the designation of protected sites, Special Areas of Conservation (SACs), for a number of habitat types and certain species of flora and fauna.

The EU Birds Directive (Council Directive 2009/147/EC on the Conservation of Wild Birds) is the primary legislation for protection, management and control of bird species making provision for the creation of the Special Protection Areas (SPAs) for the protection of Annex I species as well as for regularly occurring migratory species not listed in Annex I. The Birds Directive is implemented in Ireland under the Wildlife Act (1976) and the Wildlife (Amendment) Act (2000).

SACs, together with SPAs designated under the Birds Directive, form the Natura 2000 network.

The Estuary is a candidate SAC selected for a range of environmental interests:

- lagoons and alluvial wet woodlands, both habitats listed on Annex I of the EU Habitats Directive.
- floating river vegetation, Molinia meadows, estuaries, Salicornia mudflats, sandbanks, perennial vegetation of stony banks, sea cliffs, reefs and large shallow inlets and bays all habitats listed on Annex I of the EU Habitats Directive.
- The following species listed on Annex II of the same directive – Bottle-nosed Dolphin, Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Atlantic Salmon and Otter.

This wide range of habitats and species for which the cSAC has been designated render the Estuary susceptible to a wide and varied number of threats and impacts.

The Shannon Estuary is also one of the most important sites in Ireland for wintering and migrating waterbirds, supporting 10 bird species in numbers of international importance and a further 13 bird species occurring in numbers of national importance (Crowe, 2005). The Estuary as far west as Foynes is designated as a Special Protection Area (SPA), known as the River Shannon & Fergus Estuary SPA. A major extension to this designation, is proposed to cover the rest of the outer part of the Estuary, which was previously undesignated as an SPA. This section of the pSPA is afforded the same level of protection as those areas which were previously designated as an SPA from the date of its notification (which was June 2011). It should be noted that the Shannon and Fergus Estuaries as a whole are of International importance and that the intertidal area is a continuum. All parts of the Estuary are considered to be important for birds but bird usage will vary in different parts of the Estuary itself.

The European Communities (Birds and Natural Habitats) Regulations 2011 which seeks to address deficiencies in Irish law in implementation of the EU Birds and Habitats Directives, sets out obligations and responsibilities of local authorities and various statutory bodies. The regulations apply to flora, fauna and habitats, with a particular emphasis on strengthening the protection of birds. They set out the requirements for appropriate assessment screening by the public authority prior to a decision to undertake or adopt a plan.

NATIONAL DESIGNATIONS

Natural Heritage Areas (NHA) are sites designated because they are deemed to be of national significance in terms of habitats and species in Ireland. Proposed Natural Heritage Areas (pNHA) are sites that have been proposed but not yet formally designated. When formally designated, a NHA is legally protected from damage under Irish legislation in the form of the Wildlife (Amendment) Act 2000 alongside the Wildlife Acts.

The SAC's, SPA's and NHA's designated throughout the SIFP area of interest at time of publication are illustrated on Map 3 Page 4.

The designation of SPA and SAC sites does not imply a total restriction or ban on all development. There is a requirement under Article 6 of The Habitats Directive that any works, plans, or projects likely to impact on European Sites whether directly or indirectly, or in combination with other plan(s) or project(s) must

be subject to an Appropriate Assessment. Proposed plans or projects can normally only be approved if it has been ascertained that they will not adversely affect the integrity or qualifying interests of the Natura 2000 site(s) concerned. In the case of a negative assessment and where there are no alternative solutions, a project or plan can only be permitted for reasons of overriding public interest and subject to approval by the European Commission.

In the absence of a comprehensive Plan, development or future expansion of the various themes identified in the draft SIFP would progress in an adhoc and uncoordinated manner. In particular, the potential for significant cumulative impacts arising from individual projects undertaken in the absence of the Plan may be significantly higher. The SIFP approach allows an assessment of the vulnerabilities and sensitivities in the Plan area, and also allows decision makers to select preferred areas for development taking into account other Plans/Programmes/Projects and existing environmental sensitivities. Development could continue to take place in a dispersed manner, with control provided by existing mechanism and systems of plans such as the Mid- West Regional Guidelines and County Development plans. This approach does lack a strategic, coordinated and comprehensive estuarine approach to both the decision making process and specific project level applications for approval and consent.

This places further pressure on water and wastewater services in not only the immediate area requiring planning permission but also adjacent areas, leading to adverse impacts on human health and population from poor water quality, in the form of possible cryptosporidium outbreaks, e-coli contamination and deterioration of bathing water quality. As a result of manmade greenhouse gas emissions, climate change is predicted to occur in the future regardless of action.

The potential impacts from sea level increases, increased flooding, summer droughts, etc., will impact on future development. Some cultural heritage features would continue to be at risk from marine and land based development and exploitation

The development objectives are:

SIFP ENV 1.5

Safeguarding Natura 2000 Sites

To safeguard the integrity of all designated Natura 2000 sites by applying the appropriate level of protection in accordance with relevant Directives and associated legislation, regulations and guidance.

SIFP ENV 1.6

Appropriate Assessment

To ensure that there is appropriate protection of the qualifying features or interest features of the Natura 2000 network, by requiring all development proposals likely to impact on such sites to be subject to Appropriate Assessment and to comply with the requirements of the Habitats Directive.

SIFP ENV 1.7

Mitigating Impacts

To ensure that any development proposal in the vicinity of or affecting in any way a designated European Site or NHA or pNHA, or Annexed Habitats & Species located outside designated sites, provides sufficient information on the likely impact of the proposal on the designated site and how any such impact will be appropriately mitigated.

SIFP ENV 1.8

Natural Heritage Areas

To safeguard the conservation value of NHA's and pNHA's. In accordance with the provisions of national legislation.

5.10.4.6

BIODIVERSITY

In 2002, the Parties to the Convention on Biological Diversity, including Ireland, committed themselves to achieve a significant reduction of the current rate of biodiversity loss at the global, regional and national levels by 2010. The National Biodiversity Plan 2002 recognised that conservation and the enhancement of biological diversity is essential for sustainable development and for maintaining quality of life.

The 'Actions for Biodiversity 2011-2016' is Ireland's National Biodiversity Plan and it recognises that much of the country's richest biodiversity is located in the marine environment, including a great range of invertebrate communities, high numbers of whale and dolphin species, and large seabird breeding colonies. Ireland is also important for migratory birds and holds significant populations of birds rare elsewhere in Europe as well as internationally important wetland bird communities.

Nationally, although significant progress has been made in the past decade, biodiversity loss has not been halted in Ireland. The status of many of our habitats and some of our species is judged to be poor or bad.

According to the Third Global Biodiversity Outlook, issued by the CBD in 2010, the five principal pressures directly driving biodiversity loss (habitat change, overexploitation, pollution, invasive alien species and climate change) are either constant or increasing in intensity. These issues can disrupt and detrimentally impact the healthy ecosystems within which support the species in the land and marine environments rely on. Baseline monitoring and associated strategies for monitoring will ensure that development within the Estuary is balanced and sustainable, and adheres to the overall protection and conservation of all elements of the Shannon ecosystems.

An Irish study 'The Economic and Social Benefits of Biodiversity' (2008) concluded that the value of national ecosystem services, in terms of their productive output and human utility, was estimated at over 2.6 billion per year. Biodiversity makes significant economic contributions to agriculture, forestry, fishing, and aquaculture and is important in emerging national green tourism initiatives. Healthy ecosystems are clearly worth conserving for their economic value alone as well as for their contribution to quality of life.

The National Biodiversity Plan is based on an Ecosystem Approach, defined as a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. It requires that each Local Authority prepare a Local Biodiversity Action Plan in consultation with relevant stakeholders, and to designate a contact officer for natural heritage matters in its area. The National Parks and Wildlife Service are responsible for the implementation of the National Biodiversity Plan.

The SIFP also seeks to enshrine an Ecosystem Approach to planning and management of the Shannon Estuary.

The development objectives are:

SIFP ENV 1.9

Promoting Biodiversity

To promote biodiversity protection, management, monitoring, and awareness throughout the Shannon Estuary and to implement the relevant objectives of the Actions for Biodiversity 2011-2016 and any subsequent national biodiversity plans.

SIFP ENV 1.10

Sharing Knowledge

To encourage and support development of a shared knowledge database for biodiversity, conservation, sustainable development, water and fisheries management within the Estuary, on both the land and marine environment.

SIFP ENV 1.11

Protecting & Enhancing Biodiversity

To ensure proposals for development within the Shannon Estuary are designed to protect and enhance biodiversity, wherever possible, by minimizing adverse impacts on existing habitats and by including mitigation and/or compensation measures, as appropriate, which will ensure that biodiversity and landscape and seascape character, is maintained.

SIFP ENV 1.12

Invasive & Alien Species

To support and promote measures to control and manage the presence of alien/invasive species and weeds both on the land and in the marine environment in consultation with the National Parks and Wildlife Service and Inland Fisheries Ireland.

5.10.4.7 ARCHAEOLOGY & CULTURAL HERITAGE

The Shannon Estuary and its surrounding hinterland has been a well established area for settlement, major communication and transport corridor and other human activity for thousands of years. The area is therefore rich in cultural heritage, with many castles and fortifications, crannógs, enclosures, industrial archaeology and religious sites within the vicinity of the shoreline and on the numerous islands throughout the Estuary.

The distribution of archaeological records is spread along both sides of the Estuary but there are perhaps two notable clusters; one on the southern shore around Foynes and Aughinish, the other on the northern shore around Clonderalaw Bay. In both instances, large expanses of mud flats survive, showing comparison with the landscape type in which the rich archaeological material has been found already at the mouth of the River Maigue by Carrigdirty on the south side of the Estuary, and along the Fergus and Owenogarney Rivers on the north side. Smaller expanses of soft sediments survive in the Lower Estuary, for example at Carrig Island/Ballylongford on the southern shore, and in Poulmarsherry Bay on the northern shore, facing the famous early ecclesiastical site of Scatterry Island.

The location of all known monuments is recorded on The Record of Monuments and Places (RMP). Archaeological sites are protected under the National Monuments Acts 1930 to 2004. The National Monuments Service of the Department of Arts, Heritage and the Gaeltacht has responsibility for the protection of the archaeological heritage.

Recent archaeological surveys of intertidal areas in the Shannon Estuary commissioned for the SIFP, have uncovered a wealth of archaeological material including evidence of prehistoric settlement dating back to 7000 BC. There are 8 submerged forest locations, which represent relict woodland that has been inundated by rising water levels and which can date back far into prehistory.

The Shipwreck Inventory of Ireland database, held by the Underwater Archaeology Unit in the National Monuments Service, retains a large volume of material on wrecks from the Shannon region. The Inventory

indicates references to 127 wrecking events between the sixteenth and the early twentieth century. However, only 16 wreck sites can be located precisely. There is little that can be determined from their distribution through the Estuary, other than a slight focus at the point where the seaward side of the Estuary narrows between Kilconly Point on the Kerry side, and Kilcredaun Point to the north on the Clare side.

All wrecks over 100-years old are protected under the 1987 National Monuments (Amendment) Act and should not be impacted, damaged or interfered with. All diving on such wrecks or the use of detection devices at the sites of such wrecks require a licence to be taken out from the Department of Arts, Heritage and the Gaeltacht.

SEA & AA Mitigation Measures - Archaeology & Cultural Heritage

Mitigation Measure	Reference (Volume II, Appendices)*
Overarching Mitigation Measure	BFF MM 1-10 & 32-40, CAAH MM 1, PHH MM 1-2, MA MM 1-2, W MM 1-5 & 27-30
Theme Mitigation	ACH MM 1-7

The development objectives are:

SIFP ACH 1.1: Safeguarding Archaeological Interests

To safeguard sites and features of archaeological interest.

SIFP ACH 1.2: Preserving Sites

To secure the preservation of all known sites of archaeological and historic interest in situ or exceptionally by record in accordance with the advice and recommendations of The National Monuments Service and other relevant statutory agencies

SIFP ACH 1.3:

Having Regard to Archaeological Interests

To have due regard for archaeological concerns in assessing all development proposals that could potentially impact on historic and archaeological interest and seek appropriate mitigation measures as required, in accordance with the advice and recommendations of The National Monuments Service and other relevant statutory agencies.

SIFP ACH 1.4:

Protecting Underwater Sites

To protect and preserve the archaeological integrity of underwater archaeological sites and features in the inter-tidal and sub-tidal environments.

SIFP ACH 1.5:

Coordinating the Information Resource

To build on the database which has been established as part of the SIFP on the Archaeological and Cultural Heritage potential through support for enhanced coordination and development of the inventory for sites and features of archaeological interest located within the inter-tidal and sub-tidal areas of the Estuary

SIFP ACH 1.6:

Protecting Industrial Archaeology

To protect and preserve the archaeological value of industrial sites including mills, lighthouses, and harbours. Proposals for refurbishment works to, or redevelopment/conversion of, these sites will be subject to a full architectural and archaeological assessment.

SIFP ACH 1.7:

Promoting Awareness

To promote greater public awareness of the archaeological and historic heritage of the Shannon Estuary and encourage enhanced conservation, consolidation and presentation of sites as appropriate, and subject to advice and guidance from The National Monuments Service and other relevant statutory agencies.

5.10.4.8 FLOODING

The Office of Public Works (OPW) was appointed as the lead agency for flood risk management in Ireland and is the national competent authority for the EU Directive on the assessment and management of flood risks [2007/60/EC], also referred to as the 'Floods' Directive. It is a Framework Directive that requires Member States to follow a certain process:

- Undertake a Preliminary Flood Risk Assessment (PFRA) by 22 December 2011, to identify areas of existing or foreseeable future potentially significant flood risk (referred to as 'Areas for Further Assessment, or 'AFA's);
- Prepare flood hazard and risk maps for the AFAs by 22 December 2013; and
- Prepare flood risk management plans by 22 December 2015, setting objectives for managing the flood risk within the AFAs and setting out a prioritised set of measures for achieving those objectives.

To implement the Directive, rivers and coastlines have been assigned into either Units of Management or International River Basin Districts (IRBDs). The Shannon Estuary falls within the Shannon IRBD. The National Catchment Flood Risk and Assessment (CFRAM) Programme was developed to meet the needs of the EU 'Floods' Directive and commenced in Ireland in 2011.

The objectives of the CFRAM Studies are to:

- identify and map the existing and potential future flood hazard and risk areas within the Study Area;
- build the strategic information base necessary for making informed decisions in relation to managing flood risk;
- identify viable structural and non-structural measures and options for managing the flood risks for localised high-risk areas and within the catchment as a whole; and
- prepare (a) Catchment Flood Risk Management Plan(s) for the area, and associated Strategic Environmental Assessment, that sets out prioritised measures and policies, that should be pursued by the OPW, Local Authorities and other Stakeholders to achieve the most cost-effective and sustainable management of flood risk within the Study Area.

The CFRAM Programme includes three main consultative stages:

- 2011 Preliminary Flood Risk Assessments
- 2013 Flood Hazard Mapping
- 2015 Flood Risk Management Plans

The PFRA has identified a number of key sites around the Shannon Estuary as Areas of Further Assessment (AFA) or Individual Risk Receptors (IRR). These are outlined in Diagram 2.0 below:

Areas of Further Assessment (AFA) are areas where, based on the Preliminary Flood Risk Assessment and the risks associated with flooding are potentially significant, and where further, more detailed assessment is required to determine the degree of flood risk, and develop measures to manage and reduce the flood risk. Future development proposals will be required to take appropriate account of the emerging findings from the Shannon CFRAM Study.

The DoECLG and OPW issued guidelines 'The Planning System and Flood Risk Management', in November 2009. The guidelines require that the assessment of flood risk is undertaken as part of the preparation and ongoing revision of development plans and local area plans, and that planning applications received following

the publication of the guidelines must be accompanied by flood risk assessments where necessary. Under Section 28 of the 2000 Planning and Development Act, planning authorities and An Bord Pleanála are required to have proper regard to the principles and procedures of these guidelines in carrying out their functions.

The development objectives are:

SIFP FR 1.1:

Following Government Guidelines

To pay due regard to the guidance and actions set out in DoECLG and OPW Guidelines in respect of flood risk management and to take account of predicted sea level rise in the assessment of proposed developments along the Estuary

SIFP FR 1.2:

Flood Risk Assessment

To require all applications for proposals for development, in areas at risk of flooding, to carry out a flood risk assessment, and pay due regard to the OPW and DOECLG Guidelines 'The Planning System and Flood Risk'.

Site	ID No.	RBD	County	Final Status
Askeaton	240365	Shannon	Limerick	AFA
Ballylongford	240370	Shannon	Kerry	AFA
Foynes	240383	Shannon	Limerick	AFA
Bunratty	270471	Shannon	Clare	AFA
Ennis	270474	Shannon	Clare	AFA
Kilrush	270476	Shannon	Clare	AFA
Limerick City & Environs	270477	Shannon	Limerick City	AFA
Shannon	270481	Shannon	Clare	AFA
I Power_Tarbert	240363	Shannon	Kerry	IRR
Shannon International Airport	275484	Shannon	Clare	IRR

Table 1.0

5.10.4.9 COASTAL MANAGEMENT & EROSION

The Shannon Estuary has a coastline of approximately 1000km (mainland) and 178km (Islands), which accommodates various uses including traditional settlements, ports and harbours, leisure, amenity, fishing, aquaculture and infrastructure. The coastal zone is of intrinsic natural and special amenity value and contains a number of areas that have been designated at European, National and County level to safeguard the conservation value of particular habitats and the species of flora and fauna contained within them or due to the desire to preserve areas of high quality physical landscape. The coastline has always been perceived as an attractive place to live. Recently coastal areas have been coming under increased pressure from development endeavouring to utilise its value as a social, economic and recreational resource and increasingly from coastal erosion processes (Photo 60).

The coastal zone is a vital but sensitive asset with limited capacity to absorb development. It requires careful management of the nature and scale of development to ensure long term sustainability that prevents serious damage to the inherent qualities and attractions that make it such an asset for the Shannon region.

A wide range of different agencies have responsibilities in the area of the coastal zone management. These include local authorities, the National Parks & Wildlife Service, the EPA, the Department of Agriculture, Food and the Marine and the Department of Environment, Community & Local Government. In some instances, these agencies have overlapping objectives and responsibilities, reinforcing the imperative for an integrated approach to the management of coastal areas.

The European Commission Erosion study, Living with Coastal Erosion in Europe, (2004), highlighted the risks in dealing effectively with this issue, including the fact that some interventions, while solving erosion problems locally, can exacerbate coastal erosion at other locations or generate other environmental problems.

That study also highlights the concept of 'coastal squeeze' which occurs in low-lying and inter-tidal areas that would otherwise naturally adjust to change in sea levels, storms and tides but cannot do so due to the construction of sea walls and other inflexible coastal barriers. The outcome can often be a gradual loss of amenity beach and habitat.

The development objectives are:

SIFP CMR 1.1:

Monitoring & Assessment

To facilitate enhanced understanding of coastal erosion issues within Shannon Estuary through on-going monitoring and assessment of coastal erosion processes in the Estuary.

SIFP CMR 1.2:

Ensuring development does not result in coastal erosion

To permit development only where it is reasonably demonstrated that the development will not result in an increase in coastal erosion either at the subject site or elsewhere in the Estuary.

SIFP CMR 1.3:

Development at Risk from Coastal Erosion

To permit development only where it will not be at risk of coastal erosion.

SIFP CMR 1.4:

Assessing Coastal Protection Works

To permit coastal protection works only where the design of such works has been appropriately assessed in respect of likely impact on the marine and coastal environment.



Photo 60 Coastal Protection along Coast Road, Lahinch

5.10.4.10 LANDSCAPE

The landscape of the Shannon Estuary is made up of a range of different elements but the dominant landscape characteristic is the Estuary itself. The relevant County Development Plans (CDPs) characterise the landscape in different ways. The Clare County Development Plan 2011-2017 classifies the landscape as a combination of Heritage Landscape and Working Landscape. The Limerick County Development Plan 2010-2016 refers to a Shannon Coastal Zone Landscape, while in the Kerry CDP 2009-2015, the lands around the Estuary are classified in terms of their primary use, landscape character and vulnerability to development pressure.

The Shannon Estuary landscape is an asset not just regionally but nationally. There is recognition in the CDPs of a need to protect and conserve views and prospects adjoining public roads around the Estuary for future generations.

There is a need to conserve the character of this landscape including monuments and their settings, natural areas, buildings and settlements and their wider contexts.

The development objectives are:

SIFP LDS 1.1:

Conserving the Valued Landscape

To conserve, and where possible, enhance the special and distinctive character and quality of the Estuary's landscape and seascape.

SIFP LDS 1.2:

Due regard to Quality of Landscape and Seascape

To ensure that all proposals for development take into account the special quality of the landscape and seascape of the Shannon Estuary, and take appropriate measures to minimise detrimental visual effects.

5.10.4.11 SEVESO

The EC COMAH Directive 96/82/EC, as amended by Directive 2003/105/EC, is also known as the Seveso II or the COMAH Directive. The Directive was implemented in Ireland as the European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2006.

The purpose of the Regulations is to ensure that, at locations where dangerous substances are handled in quantities above the specified thresholds; there will be a high level of protection for people, property and the environment. This is to be achieved by:

- preventing or minimising the risk of a major accident, and
- taking all the necessary measures to limit the consequences of such an accident, should it occur.

The HSA has been designated as the Central Competent Authority (CCA) for enforcement of the Regulations and there is provision to appoint public authorities as local competent authorities (LCA's) for the purposes of emergency planning.

The planning system through land-use policy must take account of the need to maintain appropriate distances between major accident hazard establishments and residential areas, buildings and areas of public use, major transport routes as far as possible, recreational areas and areas of particular natural sensitivity or interest, and, in the case of existing establishments, of the need for additional technical measures so as not to increase the risks to people.

The HSA determines a consultation distance for each establishment and advises the relevant planning authority in relation to all planning applications within the consultation distance.

Sites are classified as Lower Tier or Upper Tier sites depending on whether the lower or upper threshold is exceeded. Upper-Tier sites are required to notify the public within a specified area, prepare a safety report and liaise with the local competent authorities in preparation of an external emergency plan.

Relevant facilities in the Shannon Estuary are shown in Table 2.

Facility	Address	County / City	Tier	Consultation Distance (metres)
Grassland Fertilizers Ltd	Dock Road, Limerick City	Limerick City	Lower	200
Topaz Energy Ltd	Courtbrack Road, Limerick	Limerick City	Lower	200
Gouldings Chemicals Ltd	Morgans South, Askeaton	Co Limerick	Upper	360
Irish Bulk Storage Ltd	Foynes Harbour, Limerick	Co Limerick	Lower	300
Atlantic Fuel Supply Company Ltd	Foynes Harbour, Limerick	Co Limerick	Upper	400
National Oil Reserves Agency	Mainland Tank Farm, Tarbert	Co Kerry	Upper	300
Enva Ireland Ltd	Smithstown Industrial Estate, Shannon	Co Clare	Lower	200
Tarbert Thermal Power Plant	Tarbert	Co Kerry	Upper	300
UCB Manufacturing Irl Ltd	Shannon Industrial Estate, Shannon	Co Clare	Lower	200
Roche Ireland Ltd	Clarecastle	Co Clare	Lower	1000
Shannon Aviation Fuels – Aer Rianta	Fuel Farm Road, Shannon International Airport	Co Clare	Upper	300
ESB Moneypoint	Kilrush	Co Clare	Upper	300

Table 2

The Development Objectives are:

SIFP SVO 1.1:

Consultation on Proposals affecting SEVESO Sites

To consult with the Health & Safety Authority on all proposals for development, including expansion of existing activities and new developments, within the consultation zone of sites designated under the EC SEVESO II Directive and associated Regulations, to allow a determination of the potential risks and consequences with regard to the objectives of the Directive.

SIFP SVO 1.2:

Information on Development at SEVESO Sites

To ensure adequate information is provided on all proposals for development, which are likely to meet the specified thresholds for named hazardous substances under the EC (Control of Major Accident Hazards involving Dangerous Substances) Regulations, including new development or expansion of existing activities, to enable a robust assessment to be carried

out by the Health & Safety Authority, to determine the levels of risk and potential consequences to the environment and surrounding sensitive receptors, to inform an evaluation on the level of compliance with the objectives of the SEVESO II Directive.

SIFP SVO 1.3:

Consultation on Proposals at SEVESO Sites

To encourage early consultation with the Health & Safety Authority on all proposals which are likely to meet the specified thresholds for named hazardous substances under the EC (Control of Major Accident Hazards involving Dangerous Substances) Regulations, including new development or expansion of existing activities, which are proposed within the consultation zone of a site currently designated under the EC SEVESO II Directive to identify the extent of the information which will be required to enable a rigorous evaluation of the combined risks and potential consequences to the environment and surrounding sensitive receptors.

5.10.4.12 STRATEGIC ENVIRONMENTAL ASSESSMENT

The European Directive (2001/42/EC) on the Assessment of the Effects of Certain Plans and Programmes on the Environment (the SEA Directive), was transposed into national legislation in Ireland by the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. 435/2004) and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. 436/2004). Further to the transposition of this Directive two amending regulations which were signed into Irish law on the 3rd of May 2011:

European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011, (S.I. No. 200 of 2011), amending the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. No. 435 of 2004), and Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations 2011, (S.I. No. 201 of 2011), amending the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. No. 436 of 2004).

Strategic Environmental Assessment (SEA) is a process for evaluating, at the earliest appropriate stage, the environmental quality and consequences of Policy, Plan or Programme initiatives by statutory bodies. The purpose is to ensure that the environmental consequences of plans and programmes are assessed both during their preparation and prior to adoption which may also include a programme of monitoring.

The SEA process also gives interested parties an opportunity to comment on the environmental impacts of the proposed plan or programme and to be kept informed during the decision making process.

The SEA Directive requires that certain Plans and Programmes, prepared by statutory bodies, which are likely to have a significant impact on the environment, be subject to the SEA process. The SEA process is comprised of the following steps:

- Screening: Decision on whether or not an SEA of a Plan/Programme is required;
- Scoping: Consultation with the defined statutory

bodies on the scope and level of detail to be considered in the assessment;

- Environmental Assessment: An assessment of the likely significant impacts on the environment as a result of the Plan or Programme;
- An Environmental Report;
- Consultation on the draft Plan/Programme and associated Environmental Report;
- Evaluation of the submissions and observations made on the draft Plan/Programme and Environmental Report; and
- Issuance of an SEA Statement (identifying how environmental considerations and consultation have been integrated into the Final Plan/Programme)
- Monitoring/follow-up protocol
- Up-dating of plan and associated SEA and AA in light of future plans which will be developed over the coming years e.g. Shannon CFRAMS, Lower Shannon Estuary Conservation Management Plan and other Natura 2000 conservation plans within the plan area of interest.

The development objectives are:

SIFP SEA 1.1:

Using SEA & HDA in Decision-making

Encouraging the holistic use of Strategic Environmental Assessment and Habitats Directive Assessment as optimisation tools to safeguard critical environmental resources, resolve potential conflicts, add value and promote evidence based, sustainable decision-making.

SIFP SEA 1.2:

SEA of Subsequent Plans & Programmes

To ensure that Strategic Environmental Assessment is utilised during the preparation of plans and programmes by statutory bodies, which are likely to have a significant impact on the environment, in accordance with the EC (Environmental Assessment of Certain Plans and

Programmes)(Amendment) Regulations 2011 & Planning & Development (Strategic Environmental Assessment) (Regulations) 2011 (or as amended in the future) to ensure that environmental considerations are an integral part of the plan making process from the outset

SIFP SEA 1.3:

Assessing Future Proposals under HDA

To ensure that all future planning proposals, including land use planning and zoning, and proposals for development, are subject to compliance with the objectives and principles of the Habitats & Birds Directives, Water Framework Directive, and all other relevant EU Directives, to ensure that the potential impacts/effects on the integrity of the Natura 2000 network are adequately assessed and mitigated, where appropriate.



Source: Isabel Baker

5.10.4.13 INTEGRATED ENVIRONMENTAL MANAGEMENT PLAN

Many different authorities are responsible for a range of different functions in the Shannon Estuary. These are performed or managed by many different parts of these organisations, often with limited resources. Integrated environmental management (IEM) offers a tool to improve the consistency and coherence between different bodies across a variety of responsibilities, from an environmental perspective. In addition, it offers a means to maximise the effectiveness to which these responsibilities are carried out, within available budgets. It can also offer greater transparency in policy development and encourage greater public involvement and acceptance.

Integrated environmental management is entirely consistent with the Lisbon Strategy for innovation, competitiveness, growth and employment and experience demonstrates that establishing a system of IEM can help to promote the objectives of sustainability. An Integrated Environmental Management Plan would ensure that the environmental consequences of development proposals are understood and adequately considered in the planning process and to resolve or mitigate appropriately any negative impacts and to enhance positive aspects of development proposals.

The IEM could continue the integrated approach adopted by the SIFP, and continue to build on the information gathered and experienced gained during the Plan preparation process, and the assessment carried out through SEA and the Appropriate Assessment. It may also provide a cost-effective mechanism for identifying and collating baseline data and survey information, on an Estuary-wide basis, to supplement biodiversity data gaps, contribute to the establishment of regular monitoring, to assist in future iterations of the SIFP.

Some of the issues which could be addressed by an integrated approach, within an IEM for the Shannon Estuary, could include some or all of the following topics:

- Environmental Monitoring
- Improving water quality
- Improving waste management
- Increasing energy efficiency and use of renewable energy

- Reducing greenhouse gas emissions
- Improving outdoor air quality
- Improving urban transport
- Preventing and reducing noise and protecting quiet areas
- Better local governance
- Better land use and planning
- Increasing biodiversity and green space
- Reducing environmental risks

The list is not exhaustive, however reflects best practice themes within integrated environmental management. The topics and issues for inclusion should be agreed with key stakeholders at the outset of the IEM preparation.

SIFP SEA I.4:

Integrated Environmental Management Plan

To support and facilitate the preparation of an Integrated Environmental Management Plan for the Shannon Estuary, which should incorporate a range of baseline studies / survey information, a regular programme of monitoring and review, and a coordinated approach by all stakeholders to balancing key resource demands.



Section 6.0 SEA & HDA

Key Principle 3

Environmental protection and management through use of Strategic Environmental Assessment and Habitats Directive Assessment, as a optimisation tools, to safeguard critical environmental interests, resolve conflicts, add value and promote sustainable decision-making.

6.1 INTRODUCTION

The Plan proposes an integrated and sustainable approach to development within and adjacent to the Shannon Estuary, which has been informed, influenced and adjusted by the processes of Strategic Environmental Assessment (SEA) and Habitats Directive Assessment (HDA). These have been carried out in parallel with the Plan preparation. The estuaries of the River Shannon and River Fergus form the largest estuarine complex in Ireland. It is also the most important coastal wetland site in Ireland for birds. Given the diversity of the ecosystem and the many habitats and species it supports, as well as the important heritage, landscape and archaeological features it supports there is a greater risk for both direct and indirect impacts from any future development. Environmental considerations have been a core element in the development of the overall strategy and preparation of objectives to guide future development, in the Shannon Estuary.

Integration of the SEA and HDA process from the outset allowed all environmental considerations to be examined at all stages of the process, identifying potential environmental topics, impacts and vulnerabilities, both in the preparation of the development objectives, and through the identification and selection of Strategic Development Locations. The process undertaken is embodied in Diagram 1 in Section 1.0 of this report. Early awareness also helped to reduce the negative findings in the assessment of the SIFP. The adoption of the ecosystem approach during the process of formulating the spatial proposals, also allowed for consideration of the in-combination and cumulative effects to be examined in detail through the SEA and HDA.

The key outputs of the SEA and HDA are outlined in Volume II Appendices. The detailed process, assessment and outcomes of the SEA are set out in detail in the SEA Environmental Report which accompanies the SIFP. The Habitats Directive Assessment is outlined in detail in the accompanying Natura Impact Report which also accompanies the SIFP. A brief summary of both is set out in this section.

6.2 STRATEGIC ENVIRONMENTAL ASSESSMENT

Strategic Environmental Assessment (SEA) is a systematic method of considering the likely significant environmental effects of a Plan or Programme by integrating environmental factors into the development of the Plan and related decision-making process, at the earliest appropriate stage. The objective of Article 1 of the SEA Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans or programmes with a view to promoting sustainable development.

The development of the SEA in parallel with Plan preparation has provided a valuable insight and directional tool in identifying the key environmental issues, resolving or highlighting potential conflicts, and informing spatial planning decisions, in a sustainable manner. The SEA Environmental Report contains the evaluation and findings of the assessment of the likely significant effects on the environment, of implementing the proposed SIFP. It also outlines the changes to the Objectives proposed (by way of tracked changes), following assessment, and the mitigation measures resulting from the assessment, to be read in conjunction with the Plan Objectives, are also outlined in Chapter 6 of the SEA.

6.2.1 IDENTIFICATION OF ENVIRONMENTAL ISSUES

During the early stages of the Plan preparation, the SEA examined the baseline environment, and identified the key environmental concerns and problems within the Estuary and surrounding lands. This includes the SEA topics of flora, fauna and biodiversity, human health, water, air, and landscape amongst others. Consultation with statutory agencies, key stakeholder, elected members and the general public provided a further insight into the key environmental issues which, together with the baseline analysis, provided the foundation for the strategic environmental objectives, targets and indicators. During the preparatory stages of the Plan, these informed the strategic aims and objectives for the Plan, along with its Vision and Strategy. The Strategic Environmental Objectives were

devised to test the environmental effects of the SIFP, reflecting the existing environmental concerns within the study area and providing a desired direction of change. They were used to assess the likely effects of the development objectives outlined in the Plan on the environment. They were also used to inform the identification of the Strategic Development Locations and Areas of Opportunity, to develop appropriate mitigation measures, and to produce a programme of monitoring to support the SIFP in its delivery and implementation.

6.2.2 ASSESSMENT OF DEVELOPMENT OBJECTIVES

The development objectives in the SIFP collectively provide an over-arching and integrated framework for promoting sustainable development within the Shannon Estuary. This area is covered by either a Natura 2000 designation or areas of scenic or archaeological importance, amongst other factors. As such, these objectives were assessed to consider their potential impact on the environment. Within the environmental report, an objective led assessment considered each objective against the key strategic environmental objectives / indicators, using assessment matrices, supported in places by a baseline-led assessment. Objectives likely to have positive impacts were screened out, and objectives with potential negative impacts were further assessed, with suggestions for rewording proposed as mitigation. The proposed mitigation for the objectives and agreed amendments are outlined in Section 5.0 of this Plan and elaborated in Volume II Appendices. They are also outlined Chapter 8 of the SEA Environmental Report (which accompanies this Plan).

6.2.3 ASSESSMENT OF STRATEGIC DEVELOPMENT LOCATIONS

Environmental considerations were a key factor in the identification of the Strategic Development Locations and the Areas of Opportunity, in support of the Thematic Spatial Plan. The aim of this process was to bring forward those locations with the greatest potential for providing economic benefits, with the least environmental impact in terms of habitats, species, landscape and archaeology amongst others. The evidence based approach to their identification is outlined in detail in Volume II Appendices, and details

the environmental factors and objectives considered at each stage of the selection process, informed by the strategic environmental objectives and targets.

Analysis and consultation for the SEA informed the location selection process from the outset, with the avoidance of priority habitat areas, the many bays and inlets which are critical to the SPA such as the Fergus Estuary and Robertstown River, together with priority habitats such as coastal lagoons and alluvial woodlands during the identification of opportunities for development potential. Following the identification of opportunities, the Preliminary Screen Table (PST) matrices incorporated a high level environmental review (informed by the SEA) to help identify those sites which may be susceptible to greater environmental impact from strategic sites development, in addition to criteria assessing technical, social and planning issues. This allowed those opportunities and the alternatives showing the greatest development potential with the least environmental impact likely to be brought forward for further consideration. The preliminary review of all areas of interest is outlined in Appendix D of the SEA Environmental Report (which accompanies this Plan).

After a further short listing, the most favourable areas of interests emerged, and were subject a high level appraisal as part of a Multi-Criteria Analysis (MCA) matrix. The SEA topics of Social and Environment were core criteria of this matrix, aimed at identifying key issues, features and considerations, and determining the suitability of the area to be brought forward as a Strategic Development Location (SDL). The detailed consideration of these locations and the areas of opportunity are provided in Appendix E of the SEA Environmental Report (which accompanies this Plan). The SDL's were brought forward into the Plan, and are outlined in Section 5.0 of this Plan. Each are supported by guiding principles and mitigation measures which have evolved, as important considerations, through this assessment, and include key environmental features and issues requiring further assessment at Project Level. This information is provided in Volume II Appendices.

Informed by the MCA, the SEA Environmental Report recommended further mitigation measures for each of the SDL's and Areas of Opportunities identified in Section 5.0, where deemed necessary due to potential negative impacts. These are outlined in Volume II Appendices, in support of the Guiding Principles.

6.2.4 MITIGATION AND MONITORING

It should be noted that the implementation of the Plan through the future development of key Strategic Development Locations or Areas of Opportunity may take some time to be realised however the time lapse should be used to obtain key baseline information which can feed into the site, project level assessments, or a wider Integrated Environmental Management Plan. In the context of the SIFP, mitigation measures are put forward to prevent, reduce and, as fully as possible, offset any predicted significant adverse effects on the environment through implementation of the Plan. They are formulated based on impact assessment results and enable integration of the SEA and AA findings into the proposal. Mitigation measures can generally be hierarchically divided into those that:

- Avoid the identified potential effects – which generally entail removing Plan objectives that have an impact on the environment
- Reduce the magnitude, extent, probability or severity of potential effects – which commonly entails re-wording of the Plan objectives
- Offset effects after they have occurred – which entail devising positive measures to compensate for biodiversity impacts deriving from unavoidable actions (this is often the case in light of a statement of case for IROPI). This option is considered, to some extent, a remedial action

Chapter 7 of the SEA Environmental Report provides the assessment of the Plan objectives which identifies the likely significant effects on the environment of the Lower Shannon Estuary through implementing the components of the SIFP. It also contains the SEA Assessment Unit tables which assess each of the SDL's and provides specific mitigation where deemed necessary, due to potential negative impacts.

The Environmental Report has highlighted the more significant potential positive and negative environmental impacts from the future implementation of the Plan (including cumulative impacts). The mitigation measures (as listed in Table 11.2 of the SEA Environmental Report) are the arching mitigation measures arising from the SEA process which must be adhered to prior to or during the development of any Strategic Development Location or Area of Opportunity. In addition, the mitigation measures which have been identified

and proposed through the detailed SDL/Areas of Opportunity SEA Assessment Tables in Chapter 7, and as summarised in Table 11.3, are also integrated into the SIFP, more specifically Objective SIFP MRI 1.2.

Detailed mitigation measures, additional to those outlined in the Plan and SEA, are likely to be required at individual project level, e.g. through habitat and species survey, Ecological Impact Assessment and Habitats Directive Assessments. Any further changes to the Plan following consultation will require review, evaluation and integration into the Environmental Report. During the lifetime of the Plan and through the six yearly reviews, regard should be had to future legislation, policies and guidelines.

Article 10 of the SEA Directive requires that monitoring be carried out to identify at an early stage any unforeseen adverse effects on the environment, as the Plan is implemented, in order to take remedial action. The SEA proposes a programme of monitoring, to be carried out in parallel with the implementation of the SIFP. Depending on the results of this monitoring, adjustment to the targets and indicators set during the early stages of the project may be required, to ensure effective and optimal environmental protection. This Programme of Monitoring is outlined in Chapter 10 of the accompanying SEA Environmental Report.

6.3 HABITATS DIRECTIVE ASSESSMENT

A Habitats Directive Assessment (HDA) is required under the EC Habitats Directive (92/43/EEC) for any plan or project likely to have significant effect on an internationally important site for nature conservation. These internationally important sites include Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) which together form the Natura 2000 network of protected areas, which cover a significant portion of the Shannon Estuary. Article 6(3) of the Habitats Directive establishes the need for this assessment.

It is a phased process to ascertain if integrity of the Lower Shannon SAC and the River Shannon and River Fergus Estuary Special Protection Areas (SPA) could be adversely affected by the development opportunities and policies proposed in the SIFP. This assessment of the SIFP is based on best scientific knowledge, of the potential impacts of the strategic framework on the conservation objectives of any Natura 2000 site and the development, where necessary, of mitigation or avoidance measures to preclude negative effects.

The process of AA has been fully integrated with and carried out in parallel with the various stages of SIFP preparation in order to ensure that the ecological implications of the plan do not impact upon designated Natura 2000 sites. It has provided direction within the plan making process, and has guided refinement and clarification for both the preparation of objectives and the site selection process. A comprehensive, evidenced based, pre-cautionary approach has been adopted throughout the plan making process, and the SIFP has incorporated amendments to objectives and mitigation measures emanating from the AA process, to avoid or mitigate impacts on the Natura 2000 network.

6.3.1 STAGE 1 SCREENING

The Stage 1 AA Screening carried out indicated that the implementation of the SIFP had the potential to cause long term, direct and indirect adverse impacts on the protection and conservation of the Natura 2000 sites, in the absence of mitigation, and unless certain policies and objectives were included in the Plan. This prompted the requirement for a Stage 2 Assessment.

6.3.2 STAGE 2 ASSESSMENT

During the preparation of the SIFP careful consideration was given to the protection of Natura 2000 sites. The early stages of the assessment involved identifying the detailed Conservation Objectives of the Natura 2000 sites under consideration, and distinguishing those aspects of the SIFP which might (along or in combination with other plans or projects) affect these Objectives. A number of potential significant adverse effects on the SACs and SPAs both within and adjacent to the SIFP Study area, including:

- Direct habitat loss, fragmentation and degradation;
- Alteration of water quality or quantity;
- Disturbance;
- Cumulative impacts.

Article 6(3) requires those significant effects be assessed in view of the sites conservation objectives.

Consideration of the qualifying interests and the special conservation interests was the key criterion within the identification of Strategic Development Locations and Areas of Opportunity, due to the potential for significant adverse effects, as well as cumulative and in-combination effects on the Natura 2000 sites. The aim of this process was to bring forward those sites with the greatest potential for providing economic benefits, with the least adverse effect on the qualifying features of the Natura network. The evidence based approach to site selection is summarised in Section 5.0 of the SIFP, and outlined in detail in Volume II Appendices. It details the environmental factors and qualifying features considered at each stage of the selection process.

At the outset of the site selection process, the AA assisted the overall approach by ensuring environmental matters were taken into account at the earliest possible opportunity. Priority areas of the SPA and SAC, deemed to be of high importance to the qualifying interest features, were avoided during the identification of opportunities for development potential. Following identification of a range of opportunities, it was considered that the extent of these identified across the Estuary Natura 2000 sites would constitute significant effects on the conservations objectives for numerous reasons.

In conjunction with the SEA and assessment of alternatives through the PST matrices, only those areas of interest showing the greatest development

potential with the least environmental impact likely to be brought forward for further consideration. A core guiding principle in this preliminary assessment matrix was the precautionary approach, which was deemed necessary to protect and conserve the overall integrity of the Natura 2000 sites within the study area and to ensure a 'no net loss' principle thereby protecting the overall ecosystem.

The most favourable areas of interests emerged, and were subject a high level appraisal as part of a Multi- Criteria Analysis (MCA) matrix, and a number of Strategic Development Locations were brought forward. The preliminary review of all areas of interest (PST) and the MCA are outlined in Appendices D and E of the SEA Environmental Report (accompanying this Plan).

Following the PST and Multi Criteria Analysis each of the strategic locations were subject to a detailed appropriate assessment. This sought to identify any perceived impacts which may occur at a strategic level and any alterations to areas identified, which would, if amended, avoid certain qualifying features. This would remove the potential for direct impact or identify mitigation measures which would serve to offset against potential impacts.

The AA tables are grouped per theme and provide an assessment of the potential for impact, based on the best available information on the qualifying interest features of the Natura 2000 sites. This assessment aims to inform the future development of this location, in terms of what should be avoided, future assessments that will be required, detailed mitigation measures in order to ensure no significant effect and compliance with Article 6(3) of the Habitats Directive. The AA tables are provided in Chapter 3 of the Natura Impact Report (which accompanies this Plan).

6.3.3 CUMULATIVE AND IN-COMBINATION EFFECTS

Cumulative effects are referred to in a number of SEA guidance documents and are defined in the EPA SEA Process Checklist (2011) as "effects on the environment that result from incremental changes caused by the strategic action together with other past, present, and reasonably foreseeable future actions. These effects can result from individually minor but collectively significant actions taking place over time or space".

Therefore, the combined effect of human activity can pose a serious threat on the environment. These effects can be insignificant individually but cumulatively over time and from a number of sources can result in the degradation of sensitive environmental resources.

Therefore, under the SEA and the Assessment of Alternatives this issue was addressed and the most strategic locations for this first planning cycle were brought forward into the Plan thereby reducing the cumulative impact and meeting the requirements of the SEA Directive by providing a high level of protection to the environment. Environmental considerations were a key factor in the identifications of the SDL's and the Areas of Opportunity which support the Thematic Spatial Plan.

The aim of the evidenced based approach was to bring forward those locations with the greatest potential for providing economic benefits, with the least environmental impact in terms of habitats, species, landscape and archaeology amongst others. The evidence based approach to selection is outlined in detail in Volume II Appendices, and describes the environmental factors and objectives considered at each stage of the selection process, informed by the strategic environmental objectives and targets. The findings from the cumulative and in-combination assessments carried out as part of the SEA (Chapter 10) and HDA process (Chapter 5) should be taken into consideration at project level. These reports both accompany the Plan.

6.3.4 MITIGATION MEASURES.

This part of the assessment identifies a range of measures to mitigate against the likely adverse effects of the proposals in the SIFP. These measures are put forward to prevent, reduce and as fully as possible, offset any predicted significant adverse effects on the environment through implementation of the Plan.

The appropriate assessment process involved four tiers of assessment which led to the development of mitigation measures which been adopted in the appropriate assessment process and documented in Natura Impact Report. Any future development within the Estuary either related to one of the associated Plan themes, Strategic Development Locations, or Areas of Opportunity will be subject to adherence with these mitigation measures and the findings of the Natura Impact Report.

Tiers of assessment and associated mitigation measures include;

- The inclusion of appropriate assessment criteria at the forefront of the strategic location selection process through the Preliminary Screening Tables and Multi Criteria Analysis to ensure locations with the highest risk of impact to Natura 2000 sites were scored accordingly in terms of the potential for impact.
- Appropriate Assessment of the Strategic Development Locations and Areas of Opportunity as outlined in the Natura Impact Report which provides mitigation on the qualifying interest features specific to each Strategic Development Location or Area of Opportunity.
- Overarching mitigation measures arising from the appropriate assessment of the Plan in general;
- General mitigation measures per theme;
- Review of Plan objectives in light of the AA process with suggested mitigation.

This assessment aims to inform the future development within the Estuary in terms of what should be avoided, future assessments that will be required, detailed mitigation measures in order to ensure no significant effect and compliance with Article 6(3) of the Habitats Directive. The AA tables are provided in Chapter 3 of the Natura Impact Report (which accompanies this Plan).

6.3.5 CONCLUSION

The processes of SEA and AA were carried out in tandem with the evolution of the SIFP. It is clear in the accompanying SEA Environmental Report and the Natura Impact Report that environmental considerations were at the core of decision-making at each stage of the process. The assessment processes exerted a strong directional influence on the development of the Plan, both in terms of the Development Objectives and the identification of the Strategic Development Locations and the Areas of Opportunity. The outcomes of these processes have identified mitigation measures which seek to reduce the likely significant effects on the sensitive environment, and have therefore been incorporated into the Plan.





Section 7.0 Review & Monitoring

Key Principle 4

Establishment of a robust approach to Review and Monitoring

7.1 INTRODUCTION

The Strategic Integrated Framework Plan (SIFP) sets out an overall strategy for the proper sustainable growth and development of the Shannon Estuary region, for the next 30 years. The policies and objectives have been developed in recognition of the unique characteristics of the Estuary, both its land and marine environment, and in consultation with the key stakeholders in the region. The framework outlined in the previous sections highlights the Vision for the region, which seeks to improve the economic, social and environmental well-being of the people who live, work and visit the area, by optimising the opportunities available in this unique area, to encourage investment, employment and a sustainable conservation of the areas valuable resources.

The Plan must be able to respond to changing circumstances within its 30 year lifetime. Regular monitoring of the relationship between the Plan and changes within a wider EU and national policy context, development pressures and varying local priorities are important if the policies and objectives are to remain effective and relevant throughout the lifetime of the Plan. Over time there will be changes in national government policy, and policies governing the regional and local areas. The Estuary region is also constantly changing and developing in terms of its population, lifestyles and aspirations for the future, and regular reviews ensure that the SIFP reflects any changes that may take place.

7.2 REVIEW

The SIFP is a guidance document and a positive enabling resource. It will become part of the County and City Development Plan for County Clare, County Limerick and County Kerry, as well as Limerick City, and its vision and objectives will be achieved through the actions and policies of the local Authorities. The key stakeholders within the SIFP Steering Group also need to play an important role in guiding, assisting and facilitating the Authorities in achieving and delivering the vision.

It is recommended that a review of the SIFP is commenced by the Steering Group at six-yearly intervals. The first review period will commence in 2019. This should include a detailed evaluation on the progress achieved in accomplishing the Vision and

securing the development objectives in the Plan. Each objective should be reviewed in terms of its current status, progress achieved, further delivery mechanisms required, barriers to implementation, and detail of its relevancy at the time of review.

It is recommended that the status of the Strategic Development Locations and Areas of Opportunity are also reviewed and updated. This should include a review of their policy context, planning status, development proposals permitted / pending, and any ongoing discussions or constraints that arise during the course of the review period. These are core elements of the overall strategy, and a key component of its delivery.

The SIFP will be adopted into the relevant statutory County Development Plans through formal variation of the Plans, and as such, the local Authorities will undertake the primary role of enabling implementation and delivery. At this stage, and as outlined in Section 5.0, it anticipated that the Strategic Development Locations (SDL) will be brought forward through the formal development plan process, with each SDL reflected within the development plan, as a land use zoning. Each Local Authority will carry out further analysis and consultation with key stakeholders, to identify a terrestrial boundary definition for an appropriate land-based zoning, where one does not already exist or where expansion of an existing zoning is required. It is expected that this zoning will be adopted, through the statutory variation process, into the County Development Plan, as a basis for future development planning. The SIFP has no immediate statutory remit within marine waters and as such, the land use zoning will remain within the terrestrial environment.

Each Local Authority will contribute their own resources, where feasible, and aim to create conditions where proposals can be achieved and the objectives of the SIFP realised. The strategy and objectives will be underpinned by the Development Management policies within the Development Plans as well as proper planning, environmental and sustainability principles, which will assist with the implementation of the SIFP.

Following statutory variation, each Local Authority should undertake a review of all Local Area Plans and Town Plans, to ensure consistency and compliance with the SIFP and the County Development Plans, in accordance with the provisions of the Planning and Development (Amendment) Act 2010.

All members of the Steering Group will continue to play an important role in achieving the vision, implementing the overall strategy and delivering the development objectives for the regions, subject to the statutory provisions. The Steering Group will continue to be key partners to the Local Authorities, providing a supporting role, and assisting in the promotion and delivery of the objectives, over the Plan period. Although the SIFP will have no immediate statutory remit within marine waters, it is important that the Steering Group ensure that the outcomes and objectives of the SIFP are used to inform and guide the development of policies and objectives for the future development within the marine area. This document will also be particularly useful as guidance in any future marine spatial planning exercise.

In addition to these core issues, the following components of the SIFP should be re-examined during the review period.

7.3 POLICY AND LEGISLATIVE CONTEXT

The SIFP has been prepared within the current legislative and policy context, which guides and directs development and environmental conservation both on land and in the marine area in Ireland (as summarised in Section 2.0). As the Plan period progresses, this national, strategic and regional context is subject to change, and future reviews should ensure the Vision, Objectives and policy guidance within the SIFP is compliant with both the over-arching policy and legislative context.

For example, the SIFP is aware of the forthcoming Planning and Foreshore Act which is likely to provide a more integrated and consistent approach to forward planning and development between land and the marine environment, and therefore the context and mechanisms for delivering some of the objectives within the SIFP. County Development Plans are compelled to review their policies and objectives at six-yearly intervals, and any changes to these or the core strategy is a key point of reference to ensure the policies and objectives of the SIFP remain compliant and consistent with the proper and sustainable development directions of the relevant Local Authorities.

The Marine Institute are currently undertaking an Appropriate Assessment study within the Shannon Estuary bays (Bay by Bay Assessment) to determine

key issues and effects, relating to aquaculture practices within the Natura 2000 network. The outcomes and recommendations emanating from this study are important in the context of the future feasibility of aquaculture as an economic activity within the marine area, and the relevancy of the development objectives.

7.4 PUBLIC CONSULTATION

The Shannon Estuary region is constantly changing and developing in terms of its population, lifestyles and aspirations for the future. The reviews of the Plan should encompass these changes, by carrying out a public consultation period during the review period, to ensure that the SIFP reflects any changes that may take place. Providing a quality service for the customers and citizens is a important commitment by each of the local Authorities.

7.5 GOVERNANCE

The SIFP has been prepared in the context of the governance arrangements in place at the time of publication. As the Local Authorities and their partners in the SIFP Steering Group are key drivers for the delivery and implementation of the SIFP, it is imperative that any adjustment to the structure and responsibilities of these entities and their policy objectives, is considered during the review period, to examine any bearing on the Plan strategy.

The Governments Action Plan for the reform of local government Putting People First involves the most fundamental set of changes in local government in the history of the state from regional and county level through to the municipal level of governance. The emphasis in this action programme is the streamlining of local government structures, changes in funding, accountability & governance arrangements, and an enhanced role for economic development and enterprise support through, amongst other initiatives the introduction of Regional Spatial and Economic Strategies (SESs). The new NSS will be required to give direction to future SESs and EU Directives are to be integrated into Irish Spatial Economic, Social and Environmental planning legislation.

The process to merge Limerick City and County Councils, as well as Limerick Regeneration Agencies

is underway, and is expected to complete in June 2014. A key priority for the merger is to maximise the economic development of Limerick and the overall Mid-West region, and the preparation of an Economic Development and Spatial Implementation Plan, to assist in FDI investment and greater employment opportunities. Also, changes in the governance of Shannon International Airport, and the anticipated reallocation of the economic development role of Shannon Development to the IDA and Enterprise Ireland may result in changes or modification to the overall role and objectives for future development within the Shannon Estuary and wider Mid-West Region. This should be reviewed and monitored during the Review period. Changes within government agencies and other semi-state agencies are also possible during the Plan period, and should be examined to determine the effect on the SIFP strategy.

7.6 CREATE MECHANISMS FOR REGULAR MONITORING, REVIEW AND EVALUATION

This SIFP sets out all the policies and proposals to guide development within the Shannon Estuary over the next 30 years. The Steering Group needs to make sure that these are implemented so that its vision and priorities for the future can be delivered. It is recommended that bi-annual meetings are programmed in to review progress, with a cross-jurisdictional inter-agency database is set up to review progress and priorities. This should also include a inventory of GIS environmental data carried out in the intervening period, and a catalogue of reports and studies carried out within the Study area. This will enable the reviews of the draft SIFP to be undertaken in an efficient and robust manner.

Following adoption of the SIFP, the Steering Group should consider the prioritization of the baseline data requirements and bring forward proposals for monitoring, as recommended in the SEA. It should consider the benefits of a programme of pressure monitoring in conjunction with targeted biotic monitoring in order to establish links with habitat degradation or species loss in a pressure-receptor scenario and establish the pathway between both.

If commenced, the most significant data gaps which should be prioritized - these are bird surveys (inter-

tidal feeding areas, wintering and migratory) on an appropriate spatial and temporal scale together with cetacean monitoring upstream from Tarbert.

This may be brought forward independently, or as part of an Integrated Environmental Management Plan for the Shannon Estuary. This would aim to utilise and build on the existing information and structure which has been collated and established through the SIFP process. This is a recommendation from the SEA Environmental Report, which has been transposed as Objective SIFP SEA I.4 of the Plan.

It is also recommended that consideration is given to the implementation of a shared GIS database, which is supported by environmental information and a robust monitoring system for the Estuary to provide a strong basis for evidence based decision making. The starting point for this should be the GIS layers which have been collated as part of the SIFP process and developed for use in the Plan, SEA and AA. As new information becomes available through a variety of sources over the coming years, for example, the detailed flood risk maps, detailed conservation objectives and mapping these should be integrated, where possible, into such a system.

Any review of the Plan should be accompanied by a Strategic Environmental Assessment and a Habitats Directive Assessment to guide and inform the revisions and amendments to the Plan, in terms of environmental considerations.

7.7 MONITORING

Monitoring is an important part of the planning process, in order to see how far the plan aims and objectives are being met, and to gauge their effectiveness as they are implemented. Continual monitoring of the SIFP is required to ensure that the development objectives and policies are working, and to ensure the Vision and overall Strategy remain appropriate for the context of the Shannon Estuary. It is important that the information contained in the SIFP is kept up-to-date. The monitoring process highlights the areas of the Plan which need reviewing and gives an indication as to whether the Plan is achieving its aims.

A Strategic Environmental Assessment has been prepared in tandem with the SIFP, to assess the likely effects of the likely effects of the policies and objectives, and their implementation over the Plan period. The SEA Environmental Report accompanies the Plan. The SEA Directive requires that monitoring should be carried out in order to identify at an early stage any unforeseen adverse effects due to implementation of the Plan, with the view to taking remedial action where adverse effects are identified through monitoring.

An environmental monitoring programme has been developed as part of the SEA. It is based on environmental indicators which have been developed to show changes attributable to the Plan, and which have been selected to track progress towards achieving strategic environmental objectives and reaching targets, enabling positive and negative impacts on the environment to be measured. Continual monitoring of the Plan is required by each Local Authorities and Steering Group members, as the Plan period progresses. Depending on monitoring results, adjustments to targets and indicators may be made to ensure the continued effectiveness of the monitoring programme in the interest of optimal environmental protection.

Glossary of Terms / Acronyms

Alien species	Invasive alien species are non-native plants or animals that successfully establish themselves in aquatic and fringing habitats and damage our natural flora and fauna.
Appropriate Assessment (AA):	An assessment of the effects of a plan or project on the Natura 2000 network. The Natura 2000 network comprises Special Protection Areas under the Birds Directive, Special Areas of Conservation under the Habitats Directive and Ramsar sites designated under the Ramsar Convention (collectively referred to as European sites).
Aquifers:	A water bearing rock which readily transmits water to wells and springs.
Baseline environment:	A description of the present state of the environment of the Plan area.
Biodiversity:	Word commonly used for biological diversity and defined as assemblage of living organisms from all habitats including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part.
Birds Directive:	Council Directive of 2nd April 1979 on the conservation of wild birds (79/409/EEC).
Coastal Waters:	Is that area of surface water on the landward side of a line, every point of which is at a distance of one nautical mile on the seaward side from the nearest point of the baseline from which the breadth of territorial waters is measured, extending where appropriate up to the outer limit of transitional waters.
Cumulative effects:	Effects on the environment that result from incremental changes caused by the strategic action together with other past, present, and reasonably foreseeable future actions. These effects can result from individually minor but collectively significant actions taking place over time or space.
Designated authority:	An organisation that must be consulted in accordance with the SEA Regulations.
Ecology:	The study of the relationship among organisms and between those organisms and their non-living environment.
Ecosystem:	A community of interdependent organisms together with the environment they inhabit and with which they interact, and which is distinct from adjacent communities and environments
Ecological status:	Is an expression of the structure and functioning of aquatic ecosystems associated with surface waters. Such waters are classified as being of good ecological status when they meet the requirements of the Directive.
Environmental assessment:	The preparation of an environmental report, the carrying out of consultations, the taking into account of the environmental report and the results of the consultations in decision-making and the provision of information on the decision (in accordance with Articles 4 to 9 of the SEA Directive).
Environmental indicator:	An environmental indicator is a measure of an environmental variable over time, used to measure achievements of environmental objectives and targets.
Environmental objective:	Environmental objectives are broad, overarching principles which should specify a desired direction of environmental change.
Environmental report (ER):	A document required by the SEA Directive as part of a strategic environmental assessment which identifies, describes and evaluates the likely significant effects on the environment of implementing a plan or programme.

Habitats Directive:	Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild flora and fauna.
Hierarchy of plans:	Both higher and lower level Plan relevant to the Plan being assessed.
Key environmental issues:	Those significant environmental issues, which are of particular relevance and significance within a PLAN area and/or the zone of influence of that Plan. These issues should be identified during SEA Scoping process.
Mitigation measures:	Measures to avoid/prevent, minimise/reduce, or as fully as possible, offset/compensate for any significant adverse effects on the environment, as a result of implementing a Plan.
Monitoring:	A continuing assessment of environmental conditions at, and surrounding, the plan or programme. This determines if effects occur as predicted or if operations remain within acceptable limits, and if mitigation measures are as effective as predicted. The primary purpose of monitoring is to identify significant environmental effects which arise during the implementation stage against those predicted during the plan preparation stage.
MCA:	Multi-Criteria Analysis
MWRA:	Mid West Regional Authority
MWASP:	Mid-West Area Strategic Plan
Natural Heritage Area (NHA):	An area considered important for the habitats present or which holds species of plants and animals whose habitat needs protection.
NDP:	National Development Plan
PST:	Preliminary Screening Tables
Ramsar sites:	Sites designated as internationally important wetland habitats under the International Convention on Wetlands of International Importance (1976) (Ramsar Convention).
River Basin:	Means the area of land from which all surface water run-off flows, through a sequence of streams, rivers and lakes into the sea at a single river mouth, Estuary or delta.
River Basin Districts (RBD):	Administrative areas for coordinated water management and are comprised of multiple river basins (or catchments), with cross-border basins (i.e. those covering the territory of more than one Member State) assigned to an international RBD.
Scoping:	the process of deciding the content and level of detail of an SEA, including the key environmental issues, likely significant environmental effects and alternatives which need to be considered, the assessment methods to be employed, and the structure and contents of the Environmental Report
Screening:	The determination of whether implementation of a PLAN would be likely to have significant environmental effects on the environment. The process of deciding whether a PLAN requires an SEA.
SEA Directive:	Directive 2001/42/EC 'on the assessment of the effects of certain plans and programmes on the environment'.
SEA Statement:	A statement summarising: <ul style="list-style-type: none"> • how environmental considerations have been integrated into the PLAN • how the ER, the opinions of the public, and designated authorities, and the results of transboundary consultations have been taken into account • the reasons for choosing the PLAN as adopted in the light of other reasonable alternatives.
Significant effects:	Effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.
Special Area of Conservation (SAC):	Site designated according to the habitats directive.

Special Protection Area (SPA):	An area designated under the European Directive on the Conservation of Wild Birds
SIFP:	Strategic Integrated Framework Plan
Statutory authority:	The authority by which or on whose behalf the plan or programme is prepared.
Statutory Instrument:	Any order, regulation, rule, scheme or byelaw made in exercise of a power conferred by statute.
SWRA:	South West Regional Authority
Transitional waters:	Bodies of surface water in the vicinity of river mouths which are partly saline in character as a result of their vicinity to coastal waters, but which are substantially influenced by freshwater flows.
Water body:	A discrete and significant element of surface water such as a river, lake or reservoir; or a distinct volume of groundwater within an aquifer.
Water Framework Directive:	The Water Framework Directive is a new piece of European legislation that promotes a new approach to water management through river basin planning. The legislation addresses inland surface waters, estuarine waters, coastal waters and groundwater.

