PROPOSAL FOR A MARINA DEVELOPMENT AT SKERRIES HARBOUR

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EXECUTIVE SUMMARY

Skerries Harbour is recognized as an appropriate location for a marina, making use of the natural and man-made defenses which are already in-situ.

Industry analysts indicate that there exists a high latent demand for berthing facilities along the East Coast which can only be serviced by marinas established in viable locations.

Overall demand in North Fingal is estimated to be between 350 and 750 berths.

Per Capita boat ownership along the East Coast of Ireland is well below European norms.

A 250 berth marina in Skerries would potentially benefit local business by €850,000 - €1,2m per annum at start-up & increasing as new industry clusters around the development.

Marine tourism would be estimated to reach 600 visitor nights within the 1st 10 years of operation, spending multiples of their berthing fees within the local community.

A marina will provide Fingal County Council with an opportunity to redevelop what is currently an under-utilised resource.

For Fingal County Council, investment in such a project would deliver multiple socio-economic benefits, in conjunction with an ongoing annuity.

A marina would enhance property values in the area and lead to increased development and, increase rates income from new businesses

Skerries marina development itself would directly support up to 9 FTE and indirectly a further 50 FTE providing additional services in the wider community.

Construction Industry is estimated to remain in recession until 2013 thus providing a pricing opportunity for any new construction projects.

Tender prices have dropped by 17 – 20% and are currently at 1999 levels
Initial studies required to de-risk certain aspects of the proposal will cost region €30,000

Further design, contract, planning stages will cost in the region of €100,000.

Total build cost (estimate prior to further studies) will be approx €6.8M inclusive of preliminary studies.

Yields for the project based upon a conservative initial sales target of 50% occupancy in year 1 are at 5% gross, rising to 10% + from year 5 onwards.

Skerries Sailing Club has developed a broad, well defined base of water-users; from its youth training schemes to its dinghy, cruiser and motor-boat users & would expect demand from members to be between 85-100berths at start-up stage.

Skerries Sailing Club has already established its ability to manage significant marine leisure facilities and event management over the past 75 years

Development in conjunction with a not-for-profit organization such as Skerries Sailing Club reduces the pressure on realizing a short-term return on investment (ROI).
INTRODUCTION

Ireland has over 9,000 kilometers of coastline and although there has been some expansion in marina development in the past few years, with numbers growing from less than 10 in 1996 to over 22 in 2006. Given our population and location, marina development in Ireland needs to expand by at least 50% in the near future to facilitate forecast demand. However, following several marina developments in areas with unsustainable population bases and, without any clear government policy in this area, it is important that future marina projects are located in areas with adequate natural defensive properties and with proximity to population centres which can create a sustainable demand and with easy access to a large range of public transport routes.

This study will review previous reports concerning marina developments both in Skerries and at other locations and will explore the various political, economic, financial and geophysical factors that may effect any marina development at Skerries and, will endeavor to demonstrate that a proposal to build a marina facility within Skerries Harbour area is not only geographically logical & economically beneficial for all stakeholders, but is also financially feasible for Skerries Sailing Club and for Fingal County Council.

As early as July 1999, the Marine Institute in a strategic study\(^1\) asserted that the key requirements for development potential of marine leisure infrastructures should include:

- Access for all tidal, wind and wave conditions
- Easy navigation into & out of the structure
- Adequate and safe moorings
- Proximity to natural cruising routes
- Direct shoreline facilities
- General land facilities (shops, pubs, restaurants, parking)
- Land access – road, rail
- Public transport access
- Proximity to population centre

The Marine Institute, in assessing locations which satisfy the above criteria, recognized that Skerries has the potential for a large scale (>75 berths) marina development. Whilst not making any recommendations based on economic grounds, the study established the credentials of Skerries in providing an asset which would provide for not only local access but also for “sea to land” users i.e. marine tourism.

A further study by the Marine Institute\(^2\) notes; “Marinas are normally located in areas where boating activity is already present or where there is substantial demand for such facility. The marina site should have an adequate catchment population for financial viability drawing from a suitable socio-economic area. It should also be readily accessible by land and sea…Those marinas located adjacent to urban areas will have

\(^1\) A Development Strategy for Marine Leisure Infrastructure ISBN 1-902895-15-0
\(^2\) Guidelines for Planning a Marina Development July 2001 Marine Institute
the greatest chance of success as the marina & the town will potentially benefit from each others activity”. This study will seek to establish the credentials of the proposed marina within Skerries harbour in satisfying these parameters. (See Appendix I for details of water-based facilities available at North Dublin harbours).

As the most significant development costs for any marina will be the sea defense mechanisms, the dredging of the marina basin and the provision of access through all tidal ranges, any use of existing geographic (naturally sheltered bays), or infrastructural facilities (pre-existing harbours) can provide a strategic advantage to a marina development.

It has also been recognized that our small ports & harbours (SPHs) are a valuable public asset that are continually under-utilised and are maintained for use by a very small minority of marine users (fishing boats)³ There is an overarching need to broaden the activity base of these facilities to increase the economic value of the facility and to bring economic growth to the surrounding areas.

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³ Marine Recreation & Rejuvenation of Small Ports & Harbours. Brady et al. Marine Institute
STAKEHOLDERS IN THE PROJECT

- Skerries Sailing Club & Members
- Fingal County Council
- Dept of Communications, Energy & Natural Resources
- Dept of Environment, Heritage & Local Government
- Dept of Arts, Sports & Tourism
- The Marine Institute
- Skerries Community Association
- Skerries Sailing School
- Current occupiers of moorings
- Local commercial fishing group
- RNLI
- Irish Coastguard
- Local inshore fishing boats & anglers
- Business community on Harbour Rd
- Harbour Rd residents.
- North Beach users and residents
- Skerries Chamber of Commerce
- Skerries Sea-Scouts
- Skerries swimming groups
- Local Diving Clubs
- Residents Associations
- Historical Society
- Local angling clubs
SKERRIES SAILING CLUB

Now in its 76th year of operation, Skerries Sailing Club is one of the top ten sailing clubs in Ireland and each year hosts a series of major national or international sailing events for both adults and children. The club has developed an internationally recognised expertise in managing large water-sports events and has staged several European and World Championships. A few years ago it was one of two clubs used as a model by the Irish Sailing Association for a new scheme to promote excellence in other sailing clubs. (The Irish Sailing Association, affiliated to the National Sports Council, is the National Authority for sailing and recreational boating in Ireland).

With the exception perhaps of Howth, no other Fingal County sailing club hosts as many important events.

Skerries is also home to an active Sea Scout Troop, the only active Fingal unit north of Malahide.

The club also hosts a nationally recognised sail training school, which has introduced hundreds of adults and children to water-sports. In addition, the club runs its own youth training scheme, having trained hundreds of children over the years, and awards nationally recognised certificates (ISA) up to instructor status to successful participants. The Club and the Sailing School also provides motor boat training to nationally recognised standards to both club-members and members of the public.

Skerries Sailing Club is determined to expand its activities further into the local community. Each year it provides low-cost sail training for local children who are not club members and is now home to the largest fleet of Optimist boats for children age 8-12. The Club has provided introductory sail training and canoeing instruction free of charge to the local sea-scout troop. It has also embraced motor boating as a recreational discipline and worked closely with Fingal County Council in the framing of new powerboat controls. Skerries Sailing Club also provides facilities to other clubs which cannot afford their own premises including two bridge clubs, Women's Writers Group, Skerries Water-Safety, Skerries Town Twinning Association, Beavers Groups, Irish Dance Troupes, Skerries Film Society and a choir, among others.

Skerries as a Regional Watersports Centre.
Skerries has developed regional status, drawing its membership from as far south as Dublin City and as far North as Drogheda and inland from centres such as Trim and Navan. It is the only large sailing club between Malahide and the border region. Apart from Howth, Skerries is the only water-sports harbour in Fingal with direct public access to the sea for non-powered craft via slipways at all stages of the tide. Between Howth and the Border, Skerries is the only club which provides both dinghy and cruiser racing three times weekly on the open sea. It is also a recognised stopping off location for cruisers from Britain and Northern Ireland heading to marinas closer to Dublin. Skerries beaches are used by sailboarders and para-boarders, and its waters
also attract water-skiers. Skerries is also a popular launch-pad for angling trips, canoe trips, diving expeditions, and seabird watching outings.

In addition to club members, the town of Skerries has a traditional interest in boating and many townspeople are independent boat-owners. With the exception of Howth, this unique relationship between the town's culture and the harbour is not replicated anywhere else in Fingal. Skerries is also the home to the only Fingal Lifeboat station outside Howth. The presence of this RNLI station, backed up by rapid access by rescue helicopter from Dublin Airport, is an essential safety criterion in water-sports where speed of response in the event of accidents is essential.

One of the most important Water-sports Centres in Fingal.
With the exception of Howth, Skerries scores higher than all other harbours or inlets in Fingal over a wide range of criteria. These scores cover several important criteria including direct access to the sea, provision of moorings, provision of resources to the wider community, public access to slipways, public access to piers for boarding and unloading boats, scenic location of interest to boating visitors, availability of sailing club facilities, ability to stage major sailing and boating competitions to international standards, provision of sail training, facilities for non-members, and conservation of unique Irish traditional sailing craft. (See appendix I)

The unique status of Skerries is reflected in the current Fingal Development Plan which has, following submissions from Skerries Sailing Club, earmarked it for the development of a water-sports centre and/or marina.
PREVIOUS HARBOUR & MARINA DEVELOPMENT STUDIES

1989 Kirk McClure Morton

In 1989 a study was commissioned by Skerries Sailing Club and delivered by consulting engineering firm Kirk McClure & Morton. The study took account of the prevailing economic conditions, specifically the potential for a revitalised commercial fishing fleet. The recommendations made by the study included:

- Development of the harbour to include berths for up to 80 fishing vessels
- Development of the marina to include approximately 200 berths
- Extension of the current pier using hollow cube units with vertical sheet piled inner walls
- Construction of a new Southern & Western breakwater using rubble mound design.
- Shore-based facilities including; car-park, fish processing plant, dinghy parking.

With a capital cost of £2.3m (for the marina portion) and net income of £90,000, the project would have yielded 3.9% gross.

The report concluded that there was substantial demand for berths within the catchment area and that development would act as a catalyst for development of tourism in the area.


During 1999/2000, David Prior Associates Kirk McClure Morton were engaged by Skerries Sailing Club to examine the feasibility of a marina development which was to be part funded by the sale of the current site to a developer and relocation of the club to a new facility behind the harbour.

This report suggested a far more elaborate venture consisting of development of a 330 berth marina. Whilst noting that the project was technically feasible, there were questions over its financial viability. A massive breakwater running parallel and to the North of the existing pier was to extend for over 200m with a cranked end running North/South for an additional 120m. In addition, significant land reclamation at the root of the development would be used to build a new clubhouse, car-park and slipways.

The report suggested that an amount of £3.5m could be generated from the sale of the current site and re-invested in the new venture. However, it did point out that tax implications of such a sale would need investigation.
One of the major concerns of the consultants was that a minimum of 35% of the capital cost have to be raised through grant-aid of some kind to ensure viability. This was in addition to the 40% (£3.5m) raised from asset disposal by the club.

With projected gross income by year 3 (year 1 trading) of £354,000 and a total build cost of £7.4m, the gross yield is 4.8%.

However, the sheer scale of the defences systems required would have been prohibitively expensive along with being very visually intrusive and would have been seen as highly intrusive by residents which would have lead to many objections

**2008 Royal Haskoning on behalf of Fingal County Council**

This report was carried out on behalf of Fingal County Council which was investigating current resource utilisation and the potential for developing future revenue streams from its newly acquired harbour facilities. On April 21st 2008, the consulting group Royal Haskoning presented the results of its investigations into the development opportunities which existed for both Balbriggan and Skerries harbours.

The consultants reported that any scheme below 150 berths was unviable both from a return on investment period and in terms of creation of economic activity from peripheral business activity. They estimated that there was potential for a viable scheme but a compromise between commercial attraction (i.e. scale) and low visual/social impact would have to be reached.

Royal Haskoning also studied the results of local council involvement in marina development in several UK sites noting that; initial resistance overwhelmingly turned positive once the infrastructure was in place, marina size matters and, the benefits accrue to local economy as a whole rather than to specific minor interest groups.

The report concluded that:
(a) Investment by Fingal County Council could be justified if a marina development project was to lead to subsequent clusters of marina-related businesses which they note, has been the case in all of the case studies examined during the course of their study.

(b) The largest economic benefit to the local area derives from expenditure marina-related businesses rather than the marina itself.
POLITICAL FACTORS IMPACTING DEVELOPMENT

POLITICAL FACTORS – Central Government.

The prevailing political climate will influence various aspects of the marina project in the following areas; –

- Government policy towards marine infrastructure.
- Funding for projects from central exchequer.
- Legal aspects effecting such developments.

In a report in Afloat Magazine in June 2008, Tom Mac Sweeney - the respected RTE marine correspondent noted; “In the larger context of the State’s administrative apparatus, it appears that the marine sphere is meaningless. I have been told that a committee of senior civil servants decided that there was no need to include the word “marine” in the title of the Department of Transport….even though the Marine Safety directive is based there and it also has responsibility for the ports”

Because of the disjointed nature of government policy towards its maritime responsibilities, development of a marina at Skerries will be affected by a variety of Government Departments. Indeed, in a submission to Government by the Irish Sailing Association (ISA) they noted the fragmented nature of the marine industry in terms of departmental responsibility:

Dept of Transport & Marine is responsible for Maritime Safety*
Dept of Sport & Tourism is responsible for Marine Leisure
Dept of Agriculture & Fisheries is responsible for Foreshore Licenses**
Dept of Trade & Employment is responsible for Marine related Industry.

*This Department is now only responsible for inland fisheries.
**Now under Dept of the Environment.

Historical Development of Government Strategy.

The Department of Communications, Marine and Natural Resources was previously responsible for developing Irish marine policy. In its Strategy Statement for 2001-03 its stated objectives were; “To promote the sustainable development, management and regulation of the….marine sectors in support of national economic and social policy objectives”. In support of this objective and in particular for marine tourism its objectives were “to help secure the sustainable development of the marine tourism and leisure sector in the context of overall tourism development”

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4 Marine Recreation & the process of rejuvenation of small ports & harbours; Marine Institute
National Development Plan 2007-2013

One of the key government strategies for development of infrastructure in Ireland is the National Development Plan 2007-2013. A €184bn plan to “roadmap Ireland’s Future”.

From this budget a sum of €54.6bn is allocated towards investment in economic infrastructure and €480m is allocated towards upgrading of strategic port facilities and regional harbours. However, in the Marine Section, the NDP intends to concentrate funding on restructuring rural seafood industry. It does however comment; “support will be provided to assist fishing communities to diversify into other marine based activities” like…marine tourism”

Specific to ports, the NDP states; “Investment in regional harbours will take place with exchequer funding already earmarked for remedial works”.

Under the Enterprise sub-program of the NDP, tourism has been allocated €317m towards product and infrastructure development. Following from this, Failte Ireland has developed a Tourism Product Strategy for 2007-2013 in which its product analysis for Marine Tourism includes the following findings

- The visitor marina network in incomplete.
- There are no clear policies around planning and foreshore issues for marine tourism.
- There is a rather thin network of sailing, boating, water-sports & dive centres.

The Department of Arts, Sports & Tourism has set up its Tourism Infrastructure Fund with an average budget of 15m. Its targets include: “jetties and moorings”. An example of some of its projects include; Pier development at Lishaughera, Co Mayo.

Within this fund, an allocation of €28m has been set aside for the development of; water-sports centres, outdoor activity centres, learn-to resource centres & angling. However, it should be noted that whilst maritime marinas themselves are excluded from the program, the on-shore infrastructural element may qualify.

Foreshore Act 1933.

The administration of the Foreshore Act 1933 hands control of development on the State Foreshore to the Department of Agriculture (since 2007, but moved to Dept of

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5 http://www.ndp.ie
6 NPD 2007-2013 pp42 – Overall summary
7 Development of Business Plans for the Fishery Harbour Centres; Dept of Agriculture
Environment in 2010). Foreshore is defined as “the bed and the shore below the line of high water of ordinary or medium tides…and extends to the 12 mile nautical limit”.

Permission must be obtained from The Minister for the erection of any structure in the foreshore irrespective of ownership.

It has long been recognized that the Act is in urgent need of a review in the following areas.9

- The application process is anarchic.
- Lacks transparency
- No fixed timeframe for outcomes.
- No appeal process

The most consistent and most contentious issue in relation to the Foreshore License is the possibility that applications may take up to 10 years to process at the moment. Whilst, the Government (Minister Brendan Smith) announced in 2008 that the Act would be subject to review, consolidation and streamlining during a move to the Department of Environment, the outcome of such review remains unclear.

**Summary.**

It is clear therefore that central policy towards any marina development is ambiguous and disjointed in its approach and that bureaucratic impediments can delay developments. Exchequer funding options are severely limited in the current economic climate and as a result, the most optimistic expectations should be one of indifference to such development.

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9 The Potential for Growing Marine Leisure; An Interreg 111A Project. Countryside Consultancy
POLITICAL FACTORS – Local Government

Fingal Council Area Development Plan

The aims of the Fingal Area Development Plan are to set out the policies and objectives for the development of the County through to 2011. The current Development Plan (2005 – 2011) lists several important objectives which will impact on any development of a marina at Skerries Harbour and are of primary importance to any considered development of the harbour.

Broadly, Section 9.3\textsuperscript{10} of the Plan notes that “The single most significant natural resource in Fingal County is the coast.” It also expands on this statement through an aspiration to manage any development of this resource “in a way which protects and enhances its natural heritage and landscape”

In addition, the Plan also recognizes the dynamic of coastal erosion and predicted sea-level rises due to climate change. The harbour area of Skerries needs no reminders of the importance of such protection from storm surges and frequent flooding of the properties along Harbour Rd., bears witness to the need for flood protection. A breakwater incorporated into a marina development would provide greatly needed protection for this area from such storm surges.

However, from the outset, policy GBP26 sets out the objective of broadly supporting development of marinas once such development maintains the visual integrity of its location.

The Plan also notes the requirement of any development to include provisions for both traffic management and public access such that the development of the Coastal Way is not impinged upon -

**Objective GBO30**
To ensure that developments for water based leisure activities are not permitted where associated increases in traffic volume would exceed the capacity of the surrounding road network and require changes to the road network to an extent which would adversely affect the character of the area.

**Policy GBP19**
To ensure that there is appropriate public access to the coast including the provision of coastal walkways and cycle ways.

**Objective GBO37**
To plan and develop the Fingal Coastal Way from north of Balbriggan to Howth including, where necessary, land acquisition.

\textsuperscript{10} http://www.fingalcoco.ie/devplan/yourfingal/Stage4/written_statement/Part\%209-Green\%20Belts.pdf
Harbours, Marinas, Jetties and other Maritime Leisure Developments

Having noted the above broad objectives, the Plan further acknowledges that current use or disuse of several of its harbours require action to regenerate and rejuvenate these harbours taking account of any architecturally protected structures. In particular, development within harbours must take account of current commercial usage of such harbours. Additionally, a marina developer must be in a position to demonstrate that it has adequate plans to manage additional parking.

Policy GBP25
To encourage the extension of the use of harbours and ports in Fingal to include elements of active and passive leisure, tourism and service enterprises to create vibrant, attractive social and focal points for existing coastal settlements.

Objective GBO42
To ensure that the primary function of a harbour or port will take precedence over other uses. Where a proposed development will demonstrably interfere with the ‘working’ nature of a port or harbour, it shall not be permitted.

There is a growing demand for marinas and jetties for the purposes of recreation. The Council recognise that these installations and the activities associated with them require a coastal location. However they can be sources of maritime degradation unless strictly controlled both in design and environmental terms –

Policy GBP26
To encourage the development of marinas, jetties and facilities for other maritime leisure developments where the development of such installations and their supporting infrastructure will not detract from the visual amenity and environmental quality and stability of an area, or public access to beaches.

Objective GBO45
To ensure that marinas, jetties and other maritime leisure developments will not be permitted where associated increases in traffic volume would exceed the capacity of the surrounding road network and require changes to the road network to an extent which would adversely affect the character of the area.

Objective GBO46
To ensure that marinas, jetties and other maritime leisure developments shall, where possible, take advantage of sustainable transport alternatives through provision of pathways, cycle ways and links to the public transport system.

Objective GBO47
To ensure that marinas, jetties and other maritime leisure developments, which are designed to host major competitions, demonstrate the capacity to handle the additional car parking and traffic that would be generated by such events.

Objective GBO48
To reserve the right to impose conditions relating to hours of operation and noise levels in respect of marinas, jetties and other maritime leisure developments.
SKERRIES
Skerries is one of Fingal’s major coastal villages. It is an attractive, compact and architecturally intact village with significant tourist potential, yet limited scope for future expansion. It is essential that any redevelopment serves to capitalise on the village’s potential, while ensuring that its intrinsic character is maintained and enhanced.

Objective SKERRIES 1
To promote the development of Skerries as a vibrant local service, social and cultural centre and as a tourist and holiday resort.

Objective SKERRIES 4
To carry out a study to improve the amenity of the harbour and peninsula area

Objective SKERRIES 9
To promote the development of marine sports and recreational facilities in Skerries, subject to community consultation, the identification of a suitable location and the feasibility of developing such facilities in keeping with the character of the built and natural environment and coastal amenities of the town of Skerries

The future development plan for Fingal County is currently at the public consultation stage of its process. Within this Plan, the council again reiterates its goal to “promote its role as a local tourist destination”. Objectives specifically listed in the Skerries proposals include;

Objective SKERRIES 4
Prepare a master-plan for the harbour area incorporating mixed-use development including…..marina/water sports facilities.

Objective SKERRIES 7
Promote the development of marine sports and recreational facilities in Skerries, subject to the identification of suitable location and feasibility of developing such facilities in keeping with the character of the…..coastal amenities of the town.

General development in the coastal areas of Fingal…“Must consider the need for coastal defence. Development will only be permitted where the council is satisfied that the development will not add to the requirement for hard coastal defense works.”

Harbours and Marinas
Chapter 5 “The Natural Heritage” of the 2011-2017 Draft Development plan deals specifically with the development of marinas in the county and recognizes the balance

required between conservation and appropriate development. “The council recognise that demand for marinas will continue in the county. It is important that the siting of marinas is carefully considered due to the sensitive nature of the coast. For this reason the Council encourages the development of new marinas within existing harbours in the county”\textsuperscript{13}

**Objective CT23 & CT26**
Encourage the extension of the use of harbours in Fingal to create elements of active & passive leisure, tourism etc. Support the development of new marinas within existing harbours.

**Summary**
Fingal County Council has consistently recognised the nature of the change in demand for its harbour facilities and its own responsibilities to promote marine sports development in a considered fashion wherein such development does not detract from visual and environmental quality. In particular such development should promote environmentally sustainable transport practice. Use of rail facilities at Skerries, the very nature of the primary users of a marina being wind-powered craft, the lack of parking-demand spikes inherent in the use of marinas and a non-intrusive development of the harbour, offer an excellent fit between the Development Plan and a marina development located within the harbour area..

\textsuperscript{13} Fingal Draft Development Plan 2011-2017 Chapter5 PP 182
ENVIRONMENTAL FACTORS

Environmental Impact Assessment (EIA).

EIA requirements are derived from EU Directive 85/337/EEC and ensure that projects which are likely to have a significant impact on the environment are subject to an assessment of their likely impact.

No formal environmental assessment is required for the project as the proposed development of 250 berths is below the threshold for automatic requirement of an Environmental Impact Statement (EIS). However, both Marinas and Coastal Protection works are listed in Annex II of the Directive. This gives Ireland discretionary powers over the requirement to carry out an EIA given the nature of the project but, places a requirement on the authorities to carry out an EIA; “where the competent authorities consider that a development would be likely to have a significant effect on the environment” 14

Criteria which must be considered by the Authorities include –

- Characteristics of the project – size, waste, pollution etc
- Location of the project – in particular relationships with SPA’s
- Characteristics of potential impact – extent, complexity, probability, reversibility

Under the Planning and Development Regulations a planning authority must refer all planning applications that may have a significant effect on nature conservation to the Minister for the Environment to evaluate the possible impact on various designated sites.

Definition of the word “significant” is important in this context and has been the subject of much discussion. However, it is probable rather than possible that an EIA will be required. Anecdotally it is suggested that any planning application of this scale referred to An Bord Pleanala will be asked to supply an EIA as a matter of course.

Special Protection Areas (SPA)

SPA’s are defined as areas of conservation value for birds of importance in the EU designated internationally under the Birds Directive, (79/409/EEC) and implemented in Ireland under Statutory Instrument (1985) and encompassed by the Wildlife Acts 1976 and 2000.

The Skerries Islands and the Rockabill SPAs are protected under SI 904 of 2004. Both SPAs are also listed as Proposed National Heritage Areas (pNHAs) which may acquire legal protection under the Wildlife Act 2000.

The boundary of the SPAs extends to about 200m from the shore of each island.

Section 4(1) of the SI states - 4. (1) “A person shall not dispose of, throw down, place or leave in any part of the special protection area any deleterious matter so as to create or tend to create deterioration of habitats or any disturbance of the species to which Article 4 of the Directive relates in so far as the deterioration or disturbance would be significant having regard to the objectives of Article 4 of the Directive.”

Whilst the development will not impinge on the SPAs it is conceivable that disturbance of the seabed during construction phase could be construed as potentially causing the disposal of some deleterious material on the islands.

**Proposed National Heritage Areas (pNHAs)**

This is an area considered important for the habitats present or, which holds species of plants and animals whose habitat needs protection. There are many pNHA’s which are published on a non-statutory basis in 1995 but are not designated as yet. Both Skerries SPA’s are also listed as pNHA’s as is the Loughshinny coastline. As a pNHA, the Loughshinny coastline is entitled to recognition of its ecological value by the Planning and Licensing Authority. It is not envisaged that the project will have any impact on the Loughshinny coastline due to its distance from the project.

**Reserved Bathing Areas**

Both Skerries North Beach and South Beach are designated bathing areas under 2006 Bye-Laws. However, only South Beach is designated as a Reserved Bathing Area.

**Car Parking Facilities**

The Fingal Development Plan is quite clear in its discussions concerning both the requirement of any development to handle both additional car-parking (GB045) and traffic requirements whilst also promoting the desire to maximize use of public transport facilities (GB046).

Current best practice for Marina developments plan for 0.6 parking spaces for each berth.

A 250 berth marina would therefore require parking for 150 vehicles. Current standards indicate a parking bay should be a minimum of 2.4m wide and 4.8m long\(^\text{15}\) although future trends indicate that these dimensions are increasingly seen as too small given the increase in width and length of newer models of cars.

A survey of the current public parking spaces available on Harbour Rd and Red Island (excluding those outside residences and used by permit holders) and using a slightly longer space length of 5m, shows that there are currently 268 public spaces available in the immediate vicinity of the project.

\(^\text{15}\) Parking Consultants Ltd
Current demand for parking in the area is only exceeded during peak demand periods on Saturdays (between 2pm and 6pm) and Sunday (between 1pm and 6pm). Outside these times, supply always exceeds demand.

The nature of the usage patterns for marinas is different to those which occur for other sports (e.g. football grounds) in that parking demand is more evenly distributed both daily and hourly. The vast majority of users are recreational/tourism and as such tend to come and go along loosely defined time-patterns. In addition, many short-term users of marina facilities arrive by sea and thus have zero demand for car-parking facilities. The availability of good rail connections to Dublin will be an attraction to such users.

A proposal to incorporate development of a boardwalk through reclamation of land on the sea side of Harbour Rd to incorporate end-on parking would increase parking capacity by a further 80 spaces. (See pages 69 -71 for details of this aspect of the project)

Summary.

It is almost inevitable that an EIS will be required at some stage in the development of a marina. The distance of the marina from any of the current SPAs or pNHAs should provide some comfort from the possibility of environmental distress. However, crucial to the viability of a project would be the results of the soil contamination investigation (see page 58) as the presence of soil contamination (such as PCB’s) may require either removal to approved waste disposal facilities or specialist in-situ bioremediation or biorestoration.

Both disposal methods carry huge cost implications however, risk mitigation in the case of soil contamination is possible by ensuring that the excavation and construction process takes place in areas that are either not contaminated or being contaminated can be left in-situ and undisturbed; i.e. at least 10m away from the current pier walls.
ECONOMIC FACTORS

Demand for marina space

“Growth in the Irish Marine sector has not kept pace with international trends and the ratio of people to boats in Ireland is the highest in Europe”.16

Ireland is failing to take advantage of huge potential growth in the area of marine leisure through a lack of marina berths, in particular in areas with good air and ferry access to the UK boating population centres.

In 2005, the Irish market for marine leisure was estimated to be worth €680m per annum to the economy. Of this, €560m was derived from water based activity and €120m from shore based activity.17 Marina berths in Ireland at this time were less than 3,000 spread nationwide.

At the same time in the UK, there was an approximate boat population of 560,000 boats mainly concentrated on the South coast. Demand in this area of the UK has far exceeded supply resulting in (a) high charges for marina spaces and swinging moorings (prices of over £9,000 p/a are not uncommon) and (b) relocation of boats to marinas in Scotland, Wales or France and (c) constriction of the growth of local boat manufacturers.

In June 2008, the Marine Federation valued the economic contribution of the marine sector at €700m with another potential €400m to be earned from leisure tourism.

Current Marina Infrastructure

At present there are 1,778 berths available in 7 Marinas along the East Coast of Ireland between Carlingford, Co.Louth and Arklow, Co Wicklow –

<table>
<thead>
<tr>
<th>East Coast Marinas</th>
<th>County</th>
<th>Current Berths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlingford Marina,</td>
<td>Louth</td>
<td>150</td>
</tr>
<tr>
<td>Malahide Marina</td>
<td>Dublin</td>
<td>350</td>
</tr>
<tr>
<td>Howth Marina</td>
<td>Dublin</td>
<td>280</td>
</tr>
<tr>
<td>Dublin City Moorings</td>
<td>Dublin</td>
<td>25</td>
</tr>
<tr>
<td>Poolbeg Marina</td>
<td>Dublin</td>
<td>100</td>
</tr>
<tr>
<td>Dun Laoghaire Marina,</td>
<td>Dublin</td>
<td>800</td>
</tr>
<tr>
<td>Greystones Marina *</td>
<td>Wicklow</td>
<td>230</td>
</tr>
<tr>
<td>Arklow Marina</td>
<td>Wicklow</td>
<td>73</td>
</tr>
<tr>
<td>* Under construction</td>
<td>TOTAL</td>
<td>1778</td>
</tr>
</tbody>
</table>

16 The Potential for Growing Marine Leisure, Irish Sea Marine Sector Nov 07
National Boating Population

There is no current boat registry in Ireland so any estimate of numbers of boats is at best an educated estimate. The Irish Marine Federation estimate based on current berths, swinging moorings, inland waterways and sailing club figures indicate a total of 24,600 boats. Given our 2006 CSO population, this indicates a ratio of boats per capita of 1:172.

<table>
<thead>
<tr>
<th>EUROPE: Boat per Capita</th>
<th># Boats</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>1,300,000</td>
<td>1:7</td>
</tr>
<tr>
<td>France</td>
<td>600,000</td>
<td>1:66</td>
</tr>
<tr>
<td>Denmark</td>
<td>366,000</td>
<td>1:15</td>
</tr>
<tr>
<td>Germany</td>
<td>750,000</td>
<td>1:108</td>
</tr>
<tr>
<td>Holland</td>
<td>250,000</td>
<td>1:64</td>
</tr>
<tr>
<td>Spain</td>
<td>240,000</td>
<td>1:167</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>600,000</td>
<td>1:107</td>
</tr>
<tr>
<td>Ireland</td>
<td>24,650</td>
<td>1:172</td>
</tr>
</tbody>
</table>

With a European average of 1:46 per capita, and, a comparison with our nearest neighbour; the UK; (1:107) there is obvious scope for a huge increase in the boat population in Ireland.

East Coast Boating Population

In its 2007 report, the Irish Marine Federation estimated the boat ownership ratio within its study area (The east coast from the Boyne to Blackwater rivers) was 1:158 which was a slightly lower ratio than that indicated by national figures and, is to be expected given the socio-economic circumstances along this coast.

Fingal County currently has a high proportion of its population in the important ABC socio-economic group (39%), which is far higher than the average for Ireland of 32%\(^{18}\). It is this group that holds the primary boat-owning population.

Skerries Catchment Area (SCA) Boating Population

A study by Tourism Development Intl\(^{19}\), noted that boat owners normally prefer to keep their boat within approx 30 minutes drive of their home in order to make regular

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\(^{18}\) Fingal Draft County Development Plan 2011-2017 pp5

\(^{19}\) Cahersiveen Marina Review – Tourism Development International
inspection visits and use their boats during leisure time. Field research of the membership of Skerries Sailing Club indicate that boat owners are willing to travel up to a maximum of 45 minutes to access their boats thus defining an outer limit for the catchment area for the marina of approximately 30Km.

The population within the Skerries catchment (30km radius and North of Malahide) area is approximately 187,853 (CS0:2006). However, there would be some overlap between the catchment areas for the marinas at both Malahide and Howth. In this respect, excluding the Swords area population as it is the only major town closer to Malahide & Howth marinas than Skerries, the total population for the SCA is approx 140,000.

<table>
<thead>
<tr>
<th>POPULATION BY TOWNLAND</th>
<th>Yr - 2002</th>
<th>Yr - 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rush</td>
<td>6,769</td>
<td>8,286</td>
</tr>
<tr>
<td>Lusk</td>
<td>2,456</td>
<td>5,236</td>
</tr>
<tr>
<td>Skerries</td>
<td>9,149</td>
<td>9,535</td>
</tr>
<tr>
<td>Balbriggan</td>
<td>10,294</td>
<td>15,559</td>
</tr>
<tr>
<td>Drogheda</td>
<td>24,460</td>
<td>28,333</td>
</tr>
<tr>
<td>Loughshinny</td>
<td>663</td>
<td>641</td>
</tr>
<tr>
<td>Donabate</td>
<td>3,854</td>
<td>5,499</td>
</tr>
<tr>
<td>Portrane</td>
<td>1,726</td>
<td>1,532</td>
</tr>
<tr>
<td>Laytown/Bettystown</td>
<td>5,597</td>
<td>8,978</td>
</tr>
<tr>
<td>Ashbourne</td>
<td>6,362</td>
<td>8,528</td>
</tr>
<tr>
<td>Rathoath</td>
<td>3,794</td>
<td>7,249</td>
</tr>
<tr>
<td>Dunboyne</td>
<td>5,363</td>
<td>5,713</td>
</tr>
<tr>
<td>Navan</td>
<td>16,011</td>
<td>21,141</td>
</tr>
<tr>
<td>Duleek</td>
<td>2,173</td>
<td>3,236</td>
</tr>
<tr>
<td>Dunboyne</td>
<td>5,363</td>
<td>5,713</td>
</tr>
<tr>
<td>Dunshaughlin</td>
<td>3,063</td>
<td>3,384</td>
</tr>
<tr>
<td>Gormanston</td>
<td>504</td>
<td>355</td>
</tr>
<tr>
<td>Total</td>
<td>107,601</td>
<td>138,918</td>
</tr>
</tbody>
</table>

The growth rate in the catchment area is approx 29% over the intervening 4 year period. However, figures obtained from the CSO predict a decline in the rate of increase to approx 1.9% p.a. up to 2026 for the Greater Dublin Area.

Using the current Irish boating population ratio of 1:172, one can predict a boat population in the SCA of approx 800 boats. However, not all boats within the population would be likely to be held in a marina (e.g. dinghies, small ribs etc). Using statistics available on www.appollduck.ie and www.Boatshop.ie, it is possible to extrapolate the percentage of boats in excess of 6.5mt LOA in the general market at 41% of total boats on the market.

Thus, the minimum volume of leisure boats within the target market and requiring berths in a marina would be approx. 328 using current Irish boat ownership ratios.

Using the East Coast Area ratio, a potential market exists for 360 additional berths in the area.
If, the European ratio is used (which is the ratio sought by the Marine Industry) the potential market is for 1,842 gross, which equates to 755 boats with LOA in excess of 6.5mt.

With a population growth rate of almost 29% in the catchment area between the 2002 and 2006 census the creation of demand for berths will only increase and makes a strong case for creating in excess of 300 berths if possible.

**Sailing Club Membership & Boat Ownership**

Figures obtained from the Irish Sailing Association for membership of Sailing Clubs from 2002-2008 show small increases in Sailing Club memberships over those years –

<table>
<thead>
<tr>
<th>Membership of Sailing Clubs</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clontarf Yacht &amp; Boat Club</td>
<td>408</td>
<td>453</td>
<td>409</td>
<td>369</td>
<td>344</td>
<td>369</td>
<td>347</td>
</tr>
<tr>
<td>Dun Laoghaire Motor Yacht Club</td>
<td>734</td>
<td>696</td>
<td>675</td>
<td>697</td>
<td>655</td>
<td>562</td>
<td>463</td>
</tr>
<tr>
<td>Howth Sailing &amp; Boating Club</td>
<td>71</td>
<td>68</td>
<td>68</td>
<td>78</td>
<td>90</td>
<td>81</td>
<td>85</td>
</tr>
<tr>
<td>Howth Yacht Club</td>
<td>2143</td>
<td>2132</td>
<td>2109</td>
<td>2074</td>
<td>2101</td>
<td>2112</td>
<td>2001</td>
</tr>
<tr>
<td>Malahide Yacht Club</td>
<td>383</td>
<td>424</td>
<td>450</td>
<td>488</td>
<td>575</td>
<td>600</td>
<td>567</td>
</tr>
<tr>
<td>National Yacht Club</td>
<td>1149</td>
<td>1094</td>
<td>1129</td>
<td>1099</td>
<td>1167</td>
<td>1253</td>
<td>1444</td>
</tr>
<tr>
<td>Poolbeg Yacht, Boat Club &amp; Marina</td>
<td>147</td>
<td>181</td>
<td>208</td>
<td>263</td>
<td>313</td>
<td>304</td>
<td>280</td>
</tr>
<tr>
<td>Royal St George Yacht Club</td>
<td>1897</td>
<td>1972</td>
<td>2041</td>
<td>2050</td>
<td>2061</td>
<td>2224</td>
<td>2158</td>
</tr>
<tr>
<td>Rush Sailing Club</td>
<td>491</td>
<td>468</td>
<td>502</td>
<td>484</td>
<td>507</td>
<td>510</td>
<td>427</td>
</tr>
<tr>
<td>Sailing In Dublin (SID)</td>
<td>31</td>
<td>41</td>
<td>60</td>
<td>59</td>
<td>64</td>
<td>67</td>
<td>72</td>
</tr>
<tr>
<td>Skerries Sailing Club</td>
<td>604</td>
<td>650</td>
<td>700</td>
<td>682</td>
<td>570</td>
<td>655</td>
<td>666</td>
</tr>
<tr>
<td>Sutton Dinghy Club</td>
<td>367</td>
<td>351</td>
<td>266</td>
<td>302</td>
<td>289</td>
<td>302</td>
<td>322</td>
</tr>
<tr>
<td>Swords Sailing &amp; Boating Club</td>
<td>158</td>
<td>148</td>
<td>148</td>
<td>148</td>
<td>157</td>
<td>157</td>
<td>157</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>8,583</strong></td>
<td><strong>8,678</strong></td>
<td><strong>8,765</strong></td>
<td><strong>8,793</strong></td>
<td><strong>8,894</strong></td>
<td><strong>9,196</strong></td>
<td><strong>8,989</strong></td>
</tr>
</tbody>
</table>

It can be seen from the above figures that 37% of all ISA memberships originate in the greater Dublin area which has seen growth in memberships of approximately 5% over the past 6 years.

However, those clubs closely associated with a marina base have seen far higher increases in membership over the 6 year period –
The predominant activity at the clubs listed above is yacht racing/cruising. Growth in club/ISA membership in these clubs will naturally lead to increase in marina-based boat ownerships at those clubs.

### Clubs associated with Marinas

<table>
<thead>
<tr>
<th>Clubs associated with Marinas</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poolbeg</td>
<td>90%</td>
</tr>
<tr>
<td>Malahide</td>
<td>48%</td>
</tr>
<tr>
<td>National Dun Laoire</td>
<td>30%</td>
</tr>
<tr>
<td>Royal St George Dun Laoire</td>
<td>14%</td>
</tr>
<tr>
<td><strong>Average Growth rate</strong></td>
<td>46%</td>
</tr>
<tr>
<td>Dublin Area mean growth</td>
<td>5%</td>
</tr>
</tbody>
</table>

Skerries Sailing Club & Current Harbour Usage

One of the key initial target markets for sale of berths will be the membership base of Skerries Sailing Club. The average membership stands at approx 640 of which 65% are adult members. Total boat ownership in the club is 133 (excluding children’s dinghies).

The current ratio of boats maintained afloat, to members is currently approx 1:8 –

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cruisers &gt; 9.5m</td>
<td>23</td>
</tr>
<tr>
<td>Cruisers &lt; 9.5m</td>
<td>21</td>
</tr>
<tr>
<td>Motor Boats &gt; 9.5m</td>
<td>2</td>
</tr>
<tr>
<td>Motor Boats &lt; 9.5m</td>
<td>22</td>
</tr>
<tr>
<td>Ribs</td>
<td>5</td>
</tr>
<tr>
<td>Dinghies requiring moorings</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total requiring berths</strong></td>
<td>85</td>
</tr>
</tbody>
</table>

A further 48 adult members own smaller dinghies which are maintained ashore. The experience at Howth and Dun Laoghaire sailing clubs indicate that a certain number of these boat owners will naturally migrate into cruiser ownership once a marina facility is available to owners.

If the figures for membership increases at clubs associated with marinas are applied to the Skerries model, it would not be unreasonable to expect an increase in the membership population to over 900 members within the next 6 years with a corresponding increase in boat population to over 116 excluding migrating dinghy boat owners. (164 including dinghies).

The Yacht Harbour Association estimates that the minimum size of a standalone marine (i.e. one without ancillary business support) is 200 berths.²⁰

²⁰ [www.yachtharbourassociation.com](http://www.yachtharbourassociation.com)
To avoid the mandatory requirement for an Environmental Impact Assessment (required for any sea water marina with 300 or more berths), the development should be limited in size to less than 300 berths.

Therefore, the requirement for a marina size greater than 200 berths and less than 300 berths can be 34% serviced by current harbour users with further potential from the base of small dinghy owners.

The average size of marinas on the East Coast of Ireland is 222 berths. The average size of marinas on the South coast of the UK is 206 berths.

**Summary.**

Current boat ownership figures indicate a lack of marina berth capacity along the Irish Sea. The explosion of growth in Sailing Clubs attached to marinas along the Irish Sea, also confirm a huge latent market for growth in boat ownership in the greater Dublin area.

A small marina (sub 150 berths) would be filled almost immediately whilst a very large marina (300+ berths) would require sustained economic growth. Therefore, a mid-sized development of approximately 250 berths is the best fit for current and anticipated demand.
ECONOMIC BENEFITS TO SKERRIES AREA

The economic benefits to the Skerries are arising from the development of marine leisure facilities are -

✓ Direct employment within the marina operation.
✓ Job creation from spin-off industry.
✓ Stimulation of & added-value to property market
✓ Rejuvenation of harbour area
✓ Long-term rates income for local council
✓ Stimulation of boat sales, manufacture and repair.
✓ Spending on marine equipment & services by berth holders
✓ Spending on food & entertainment by berth holders.
✓ Spending by visiting boats on marine equipment & services
✓ Spending by visiting boats on food & entertainment.
✓ UK owners moving base to Ireland to avail of much lower rates.

UK Model –

An overview of the UK Marine Leisure Industry which is concentrated in the South East and South West indicates there are at least 238 coastal marinas in the UK offering a total of 49,000 berths and employment of 1,700 (FTE (Full Time Equivalent Employees).

A report compiled by the British Marine Federation21 details the economic benefits to the country of such infrastructure –

- Operating turnover of £113million.
- Direct employment of 1,700 people
- Added value of £69million
- Each job in core marina sector supports a further 12 in the local economy
- Boating visitors spend £200m annually and support an estimated 5,350 local tourism jobs

21 http://www.britishmarine.co.uk/upload_pub/2027.pdf
- On site businesses employ 11,600 FTE and generate £280m of value added.
- There are approx 560,000 boats over 2.5m kept in the UK.

This report claims that the overall economic impact of the chain of 238 coastal marines measured in terms of Gross Value Added of more than £700million.

Studies of several marinas in the UK indicate that the ratio of FTE to berths is of the order 1:28 (Watchet 1:33, MaryPort 1:23, Pwllheli 1:27). The general UK model also stands at 1:29. A similar development at Skerries would establish approx 8-9 FTE.

The Royal Haskoning Report identified 2 marina developments on the UK’s west coast which were examples of public/private developments.

**Watchet Marina** (200 berths), employs 6 FTE and attracts an average benefit to the local economy from tourism of £300,000 P/A. They also noted that whilst initial local reaction to the plan was hostile, it is now recognized by the community that the marina has introduced significant benefits to the town and its community.  

**Pwllheli** in West Wales was also cited by Royal Haskoning as a very successful council-led development of 411 berths. In its report it stated that in extracts from council minutes (June 2005), £28m was being spent in the area every year as a result of the 411 berth marina. Using multipliers, the revenue created by the marina in 2005 was the equivalent of supporting 266 direct & indirect jobs. They also concluded that “the largest economic benefit to the local area derive from expenditure marina-related businesses rather than the marina itself”

The British Marine Federation also estimates that:
- For every £1 spent on boating, £6 is spent ashore.
- Visiting boats to UK Marinas contribute €175 each per night to the local economy
- Every job in the core marina sector supports 12 jobs in the local economy

**Ireland Model –**

A study of the Marine Leisure Industry estimated that almost 1.5 million adults in Ireland partake in some form of water based activity contributing approx €434m in expenditure.

In addition, the ISMS survey of 2005 indicated that in 2 of its case studies (Dun Laoghaire and Malahide) which are in relatively close proximity to Skerries, the secondary benefits (The multiplier effect of a marina project means that as purchases from nearby businesses increase, these businesses will, in turn, also spend their newly

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22 Skerries And Balbriggan Development Opportunities; PP11 Royal Haskoning Report Apr2008
23 ESRI Survey of Water Based Leisure Activities in Ireland (2003)
gained revenues nearby, and this, in turn, will generate still more revenues that will be spent locally, and so forth) to the local economy were of the order of €3,426* per berth in the case of Malahide and €4,800* per berth for Dun Laoghaire.

A further study of Cahersiveen24 marina arrived at an inflation adjusted figure of €3,524 per berth for direct and indirect economic impact of the 93 berth marina.

An InterReg Ireland-Wales study found that the average spend by visiting boats in local businesses was between €115 and €156*

*All 2005 figures adjusted by CPI to 2009 values.

Thus, a 250berth marina in Skerries would potentially benefit the local economy by €850,000 - €1,2m per annum.

**Carrickfergus Marina.**
Prior to 1985, Carrickfergus Borough Council was faced with an historic 12th century harbour which was host to a declining coal distribution business located in a wasteland area surrounding the harbour. Through central government, local government and voluntary group partnerships, a Maritime Area Comprehensive Development Scheme was adopted and work commenced within 18 months, on a development of new marina facilities and regeneration of the harbour area.

Completed in 1998 and now a 350 berth multi-award winning marina development, the harbour area has attracted hotel, cinema, shopping and residential development. Spending by the local Authority of £4m attracted an investment of £25m by private developers and the creation of over 300 jobs in the local area.

Today, the entire location has become international case-study in how local government & private partnership can work for the benefit of the entire community.

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24 Cahersiveen Marina Review, Tourism Development Intl. 2005
ECONOMIC BENEFIT TO FINGAL COUNTY COUNCIL

In its report on Marine Recreation and the Rejuvenation of Small Ports & Harbours (SPH)\textsuperscript{25}, the Marine Institute, in its concluding statements comments that; “The decline in traditional uses of SPH’s results in the need to find new alternative uses for redundant assets” It also noted that in parallel with this decline, there is also a corresponding growth in demand for marine recreational activity.

Using case studies, the report provided evidence that investment in marine leisure activity based in SPHs would stimulate the catchment area. However, it also noted that while the role of the Local Authority is “central” to rejuvenation initiatives, the adoption of “innovative PPP arrangements” offers opportunities for both council and private partners to bring their individual skill-sets to bear on a project which is driven not by financial goals but rather by socio-economic goals which will enhance the experience for all involved.

In a Report to the Inter-Departmental Group in relation to Public Private Partnerships it was stated; “The key feature for a successful PPP is the allocation of a project’s risks between the public & private sectors according to each party’s ability to manage & bear them without destroying the economic balance of the project”.\textsuperscript{26}

In the case of Skerries Marina, (as is the case with most marina developments) without a risk sharing partnership, the high capital costs of infrastructure when balanced against the single revenue stream of marina income, can make such project unviable unless substantial “non-marina” revenue streams are included – i.e. residential development. Such residential development will not fit the proposed project objectives of sympathetic development of current harbour facilities.

For Fingal County Council, investment in a marina project can deliver multiple socio-economic benefits to the area in conjunction with an ongoing annuity through;

(a) Ratable income
(b) Increased economic activity from current businesses
(c) Newly created business activity
(d) Tourism influx
(e) Increase in property development.
(f) Rejuvenation of the pier & harbour area
(g) Socio-economic benefit

(a) **Ratable Income** – Whilst the current valuations for rates in Fingal are undergoing a revaluation process, the average rate collected per berth is in the order of €181 (ARV 68.64) for 2009. Rates income to the council for the marina alone

\textsuperscript{25} Marine Recreation & Rejuvenation of Small Ports & Harbours. Brady et al. Marine Institute
\textsuperscript{26} Policy Framework for PPP Ireland, Evolution of PPP Policy in Ireland Dept of Environment Nov 2003
would be approximately €45,300 at 2009 valuations. Further income will be derived from the increased business activity and from additional parking levies.

(b) Increased Activity – As has been already described, the uplift to the local economy would be in the order of up to €1,2m P/A. This increase in activity amongst local business will both increase the value of local businesses for ratable purposes and create local employment.

(c) Newly Created Business – New business will arrive to service the marina population; both people and boats. These new businesses will give rise to further rates income for the council as the business community expands. Some of the new business activities that gravitate towards marina facilities include; chandlery, provisioning, rigging, engine repair & maintenance, electronics suppliers, boatyards and boat sales offices, sail & powerboat training schools, water-based tours & adventure tours, eco-tourism, angling providers.

(d) Tourism influx will increase visitors to all Fingal’s local attractions. A positive tourism experience for these visitors will turn them into tourism ambassadors for the local area. Skerries Sailing Club currently provides ferry services for arriving tourists and reports significant numbers of vessels decline to overnight given the lack of safe berthing facilities.

(e) Property Development Levy; Case studies of marina developments indicate that not only do property values increase with the development of a marina but, new developments are also attracted to the area and the presence of a marina is used as a positive marketing tool promising certain lifestyle affirmations. Income from development levies will be a positive cash-flow to the council. In Northern Ireland, following the development of a marina by Carrickfergus Borough Council, net public spending of £4m lead to a £25m private investment in property development in the harbour area and the creation of 335 new jobs. The report into Rejuvenation of Small Ports & Harbours reported significant increases in land values following development of the marina in the harbour area.

(f) Facility Rejuvenation: current commercial fishing operations at Skerries Pier will never be in a position to deliver sufficient (if any) revenue to Fingal County Council such that might either justify repairs to the pier or, enable the Council leverage future revenue from commercial fishing activity. Regeneration of the current pier and its extension via a further breakwater could provide the Council with an opportunity to levy appropriate commercial fees.

(g) Socio-Economic Impact; it is already clear that high demand exists in the area for a wide range of marine related activities. Apart from the obvious sailing and

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27 Rejuvenation of Small Ports & Harbours – Arthur Martin & The Marine Institute
motor-boating activities, diving, education & training activities, sea-trips, kayaking & sea-angling activities become year round activities when the resource of a marina becomes available thus extending the benefits to a wider range of the population and expanding the opportunities for local businesses over the quieter winter season when the current harbour area is practically deserted and many businesses operate curtailed opening hours.

**New Business Opportunities for Skerries Area**

The key economic benefits to the local community will not be derived from the marina itself. Rather, from current and new small & medium enterprises that will develop as a result of the increased economic activity brought about by the marina development itself.

“Economic impact assessments have indicated that just 5% of the income generated by a marina is derived from berth income itself, the majority of the economic benefits come from the services related to the marina.”

Such services form a cluster of businesses around the marina.

Once operational, a number of business opportunities directly linked to the presence of a marina will cluster around the Skerries area including:

- New & Used boat Sales
- Boat maintenance
- Sails and Chandlery
- Sail & powerboat training
- Boat delivery
- Dive training
- Bait & tackle shops
- Provisioning services
- Cleaning & boat valeting
- Water tours & safaris
- Restaurants & Bars

Because these on-shore facilities are ancillary to activities directly related to the operation of the marina facility, most businesses would be located not within the footprint of the marina but either;

- operating locally from small business parks or
- as mobile units with bases at a distance from the marina, or
- from sales offices located adjacent to the marina but using berthing facilities on a commercial basis within the marina.

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28 Skerries & Balbriggan Development Opportunities; Royal Haskoning Apr 2008.
**Employment Benefits**

Expenditure by marina berth holders along the East Coast of Ireland in 2005 contributed in the region of €20.78m and supported 416 FTE jobs\(^\text{29}\). Furthermore, studies conclude that in the cases of Malahide, Dun Laoghaire and Kilmore Quay, expenditure was €11.8m per annum and supported 237 FTE jobs.

The British Marine Federation estimates that every 1 job created in a marina support a further 12 jobs in the local economy through tenant business, suppliers, service providers and as a result of visitor and employee expenditure in the wider economy.

Based on both Irish and UK models, one would expect that the Skerries marina development itself would directly support up to 8 or 9 FTE and indirectly a further 50 FTE providing additional services and in the wider business community.

**Tourism Benefits**

Skerries Sailing Club currently monitor and provide ferry facilities for visiting boat owners and report that many owners decline to overnight in Skerries due to the lack of safe berthing facilities. Anecdotal evidence from Skerries boat owners who visit other marinas report consistent comments from local boat owners who criticize the lack of a marina at Skerries, which is one of the most desirable stopover locations along the East coast.

However, the presence of marinas not only attract seafarers, but their development usually attracts other tourists who are eager to participate in a water based experience; “Marinas can be important in attracting non-boating visitors to the town and should be integrated into council-led marketing efforts”\(^\text{30}\)

Size and quality are not the only determining factors in developing a water-based tourism product. Any given location needs to have the necessary tourism infrastructure to attract and retain visitors\(^\text{31}\). In addition, visitors must also be able to reach these locations with relative ease. This concept is most important in terms of marine tourism. To develop a marine tourism base at Skerries requires both access (sea side via the marina development and land-side via public transport access and air access), and infrastructure – secure base, visitor attractions and food & drink amenities. As the Dublin area attracts 4 times more visitors than other parts of Ireland, the attraction of developing marine tourism bases within easy public transport access of Dublin will naturally give a higher yield of tourism numbers.

\(^{29}\) IMF survey Potential for Growing Marine Leisure pp11
\(^{30}\) Skerries & Balbriggan Development Opportunities; pp12 Royal Haskoning April 2008.
\(^{31}\) Failte Ireland Tourism Product Development Strategy 2007-2013
The major tourism activities that can be enhanced by the development of a marina include:

- Sail & Motor visitors
- Sea Angling charters
- Dive visitors
- Sail training
- Dolphin & other wildlife watch
- Family orientated water based activities

Visiting boats alone would be estimated to deliver on average €115 - €156 per night.

Based on visitor numbers to nearby marinas (Dun Laoghaire approx 900 P/A, Malahide approx 400 P/A) with each visit an average duration of 3 nights, the effect on the local Skerries economy would be estimated to reach 600 visits (1800 visitor nights) within the 1st 5 years of operation with a total spend in the locality of up to €280,000 per annum.
**FINANCIAL FACTORS.**

**Global Economy**

The global economy has now moved on from the Lehman bankruptcy that brought the financial world to the brink. 2007 brought the first signs of market dislocation which 1st became apparent in the money markets and moved out to the credit markets and on to the stock markets. Coordinated policy interventions by the G20 have lead to a revival in markets since March 2009 in the same order as the collapse i.e. money – credit – stock market revivals. Several commentators are of the opinion that the upswing is not sustainable and are a result of the fiscal stimulus packages and inventory rebuilding from historic lows. However, most economists believe that the mistakes made in the 1930’s revival process will not be made this time around and will lead to cautious revival in sentiment and slowly increasing investor risk repositioning.

In Q2/09 the global economy grew and France, America, UK, Japan and Germany all emerged from recession. For Ireland the recession technically ended in Q2/10. Crucial to the Irish market is the revival in the US economy which grew close to 4% during Q3/09 which was its fastest rate of growth since October 2001. Of critical importance was the housing market of which the Case-Schiller index demonstrating house prices have bottomed out and started a slow climb. Household savings ratios have also decreased indicating a slow rise in consumer sentiment.

By Q2/10, the global economic recovery had both broadened and deepened as a result of global policy stimuli with signs of a slow building self-sustaining recovery. However, whilst corporate earnings have continued to surprise to the upside, financial deleveraging remains the order of the day albeit at a diminishing pace. It is this deleveraging coupled with ongoing risk capital starvation that delay much needed capital investment programs such as a marina projects.

**Ireland Economy.**

The Irish economy probably returned to growth in Q1/10 based on GNP volumes & this growth was further repeated in Q3/10. Forecasts predict that the recession, which commenced at the end of 2007, saw a drop in GNP of 17% over the period of the recession making it the most severe in the entire euro-area. During Q2/10, PMI indices for both manufacturing and for services passed the critical 50 level for the 1st time in 2 years leading forecasters to estimate growth of circa 1% per quarter going forward32

Investment in construction however, is not forecast to emerge from recession until 2013 with the PMI for construction still remaining below the 50 level for some time to come.

32 http://www.davydirect.ie/content/pubarticles/dotiecr20100428.pdf
However, according to the CSO, it was the service sector (which would include marina operators) who fared best in terms of weathering the recession with a peak-to-trough decline of only 3.6% for services sector compared to -50% for construction.

Marina berths and boat sales are highly discretionary spend items in the household budgets and are therefore the 1st to suffer from the decline in both household wealth and spending power. Indeed, current market conditions indicate a severe drop in both boat sales and marina berth sales in the order of 20%.

As an open economy, any strengthening of the global economy should quickly feed into Irish exports, in particular services. Predictions for the Irish economy are for the bottom to be reached at the end of 2009 with growth to resume albeit slow, in 2010. Davy Stockbrokers point out that Q2/09 GNP decline was only 0.5% quarter-on-quarter which was the slowest decline for 5 quarters. Both service and manufacturer Purchasing Managers Indices has almost reach 50. Above 50 indicates growth. Davy also forecast growth in GNP for 2010 of 0.5% and 4.1% for 2011 on an annual average basis.

Of importance to this project will be household savings ratios which peaked in 2009 at 11.5% and are indicators of a strong fear of unemployment and fear of loss of net household wealth. When these indicators start to decrease, the economy will have passed its trough and markets for discretionary spend (on boats and marina berths) will re-open.

In addition, the Society of Chartered Surveyors, report that building prices as reflected in tender prices have fallen by 17.3% in this time last year with current prices now at 1999 levels making now an ideal time to commence the tender process.

**Inflation Forecasts.**

Forecasts of inflation rates are based upon the difference between standard and inflation linked gilts. UK 10-year bonds are paying 3.4% compared to inflation linked bonds returning 0.75% which indicates UK inflation expectations of 2.65%. Irish equivalent 10 year gilts offer 5.59% with inflation linked yields of 5.6% indicating zero inflation expectations. European bonds show expectations of less than 2% inflation in the main Euro zone. July 2009 inflation rates in Ireland were -2.6% (Euro stat).

However, 12 months forecasts for the 3M Libor are for a rate range of 2 – 2.25% which will inevitably lead through into higher inflation rates for Ireland. January 2010, saw OECD annualized inflation rates increase to 2.1% whilst in Ireland, the annualized rate to June 2010 was -0.9%.

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33 Alpha Generator Research Report Oct 09 – Davy Research  
As it will be several years before any income generation for the marina project, it is proposed to use a mean inflation rate of 3% over the 1st 10 years of the project.
SWOT ANALYSIS

Project Strengths.

Geographic - A unique natural West-facing harbour on an Eastern seaboard with broad protection from weather provided by a natural tombola and by current pier. As the only West facing harbour along the East coast, Skerries is a natural choice for locating a marina.

Location - For visiting maritime tourists, Skerries lies within 1 days cruising range of many major departure points for visiting boats, both on the East coast of Ireland and the Isle of Man and North Wales and the large marinas located in Southern Scotland’s Clyde estuary.

Public Transport – Skerries has public transport links via rail to Dublin (40 minutes), Drogheda (15 minutes) and by bus to Swords (30 minutes). Dublin Airport is within a short taxi ride from Skerries and is served by local buses.

Boating Population – Skerries has a long history of boating and a population of boats already berthed in Skerries. Having such history greatly increases rate of growth of boat ownership where marinas are constructed.

Boating Population - Residents of the catchment area currently locate their boats in surrounding marinas (Malahide, Howth, Carlingford) and would relocate to Skerries where possible.

Marina Infrastructure – The location has been recognized in numerous studies as having strong potential for marine leisure/marine infrastructure.

Local Area Plan - Marina development included in Local Area Plan for Fingal Area

Financial – 3 month Libor rates have decreased greatly over the past year. Finance, where available is at much reduced rates.

Financial – current cost of infrastructure provision, in particular labour, machinery hire, engineering & consultancy costs are all well below the peaks of 2007 rates.

Construction – availability of heavy plant & machinery required for such work is more freely available and at much shorter notice than during peak construction years.

Construction - there has been a dramatic fall in tender prices since the peak in 2007 making the current an ideal time to commence tender proposals.
**Project Weaknesses**

**Current Pier** - The current pier requires major structural repairs at the foot end. Several piles have rusted away and infill rubble has leaked out of the structure creating voids beneath the concrete capping.

**Current Pier** - The length of the current pier is insufficient to protect any proposed marina basin.

**Financial** - The banking crisis and NAMA have greatly reduced access to capital and weakened bank balance sheets, restricting capital lending.

**Financial** – Current recession will inevitably place downward pressure on berthing rates in competing marinas leading to downward pressure on Skerries prices.

**Financial** – Current economic climate is causing cash flow issues at current marina operations with anecdotal evidence of non-performing contracts at several marinas.

**Financial** - Any weakness in Sterling will reduce attractiveness of Ireland in general for visitors from UK.

**Financial** – Without assistance from either Central Government or Fingal County Council the projects ROI is greatly extended for a single investor.

**Economic** - The current recession has reduced wealth of the target population and reduced their preponderance to purchase large ticket items such as boats and to provide seed capital for any such project.

**Economic** - Current Government deficits restrict access to central funding and government departments have severely restricted budgets for capital projects.

**Tourism** - Weakness in general tourism markets could reduce potential for visitors.

**Environment** - Environmental Impact Study required if marina has 300 or more berths & may be required regardless of size.

**Environment** – Potential quantities of toxins discovered during soil analysis thus making dredging and disposal costs prohibitive.

**Weather** – The proposal for a portion of the defenses to be served by a floating breakwater is subject to further suitability studies in the preliminaries stage.

**Wave Climate** – further studies at the preliminary stage are required to establish rates of accretion into the marina basin.
**Project Opportunities.**

**Environmental** - Regeneration of Skerries Harbour area including coastal zone. Studies of Small Ports & Harbours and Fisheries centres recognize that marina development will work in tandem with and complimentary to fishing industries to optimize the resource of the harbour.

**Environmental** - Include protective measures for business & residential communities in harbour area from storm flooding.

**Economic** - Large decline in cost of developing infrastructure due to current recession.

**Economic** – Change of use of the Harbour from fisheries to maritime leisure will activate revenue streams for Fingal County Council

**Financial** - Greater availability of heavy plant following decline in construction trade.

**Geographic** - Proximity of Skerries to users of Malahide & Howth Marinas for day-trips will increase contribution to local business communities.

**Economic** - Increase inflow of tourism & contribution to local business community.

**Economic** – Regeneration of the harbour will act as a catalyst for growth in the entire area.

**Social** - Creation of a marina will both increase demand for & enhance access to maritime leisure activities.

**Development** – Creation of a marina will inevitably lead to demand for further residential development in the area and will enhance current property values.
**Project Threats**

**Environmental** - Collapse of current pier before remedial work commences.

**Financial** - Lack of access to capital from banks.

**Financial** - Lack of access to government funding.

Financial – Decrease in personal wealth following property/stock-market crash.

**Political** - Lack of government policy in the area of marine leisure.

**Political** - Slow bureaucracy especially in Foreshore Licensing areas.

**Environmental** - Global warming – increased mean sea water levels.

**Environmental** – Damaging results from soil contamination surveys.

**Environmental** – Severe restrictions on disposal of spoil from excavation area.

**Social** - Objectors to development plan by local/special interest groups.

**Social** - Resistance from current mooring holders.

**Barriers** - constraints on supply of marina berths\(^{36}\) –

- More stringent environmental and planning restrictions
- Physical space limitations both on land and on the water
- Cost of infrastructure especially if not supported by other forms of value creation
- Cost of dredging and restrictions on disposal of spoil
- Increased health and safety restrictions

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\(^{36}\) Economic Benefits of Coastal Marinas – British Marine Federation 2007
DESIGN OF THE MARINA DEFENCE SYSTEMS

Design of an effective breakwater defense system at Skerries can usually be accomplished using empirical formulae derived from generic models (e.g. SWAN 3rd generation wave model for coastal regions – [www.citg.tudelft.nl](http://www.citg.tudelft.nl)) and using a combination of wave and wind studies.

_The incident wave climate for Skerries is primarily a result of the local wind conditions as there is no ocean wave effect._

The current harbour consists of a 120m 18th century limestone pier (which is a protected structure) cranked at one end, with a 60m sheet piled extension which lies along a 270 - 090° axis.

**Wind Climate for Skerries Harbour**[^37]

The orientation of the current pier is along the 270-090° axis almost parallel to the shoreline on the land-side opposite the pier.

Further protection on the 360°-180° axis is provided by the tombola adjoining Red Island with the mainland.

Data taken from the Met Eireann National database indicates that for Skerries area, the wind will range between the exposed West & North East directions for only 14% of the time.

Data taken from the Marine Data Buoy M2 over the past 12 months give a more accurate reference point for the relevant area of the Irish Sea which shows that West – North, North East wind direction affected the area 36% of the sample period.

Effective protection from such winds will be required to mitigate the wave height within the marina to below 300mm and it is from these directions that any new breakwater will have to be orientated to address wind influence on moored craft within the marina.

[^37]: Met Eireann
Wind Direction at Skerries Harbour

<table>
<thead>
<tr>
<th>Range</th>
<th>Orientation</th>
<th>% of Total</th>
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<tbody>
<tr>
<td>1 - 45 Deg</td>
<td>N to NE</td>
<td>5</td>
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<tr>
<td>45 - 90 Deg</td>
<td>NE to E</td>
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<td>E to SE</td>
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<td>135 - 180 Deg</td>
<td>SE to S</td>
<td>8</td>
</tr>
<tr>
<td>181 - 225 Deg</td>
<td>S – SW</td>
<td>26</td>
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<tr>
<td>226 - 270 Deg</td>
<td>SW to W</td>
<td>16</td>
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<tr>
<td>271 - 315 Deg</td>
<td>W to NW</td>
<td>21</td>
</tr>
<tr>
<td>316 - 360 Deg</td>
<td>Nw to N</td>
<td>10</td>
</tr>
</tbody>
</table>

Wind Speeds and Wave Heights -

When designing a breakwater consideration must be given to several performance considerations:

- Extreme condition structural integrity – allowing for a 1 in 200 year event.
- Operational performance conditions – allowing for a 1 in 50 year event.

Climate Predictions from Met Eireann are only available for 50 year events. The model below indicates that for the Skerries area this 50 Year Maximum Gust is 45 m/s – i.e. 87 Knots.

Further 30 year extreme event observations available for Dublin Airport reporting station between 1961-1990 indicate the highest gusts recorded in this period was 75 knots and a maximum mean 10-minute wind speed of 49 knots.

**WIND SPEEDS – 50 YEAR MAXIMUM GUSTS**

38 Met Eireann
For the Skerries area, the Mean Annual Wind Speed is 6 m/s - i.e. 12 knots. This figure is supported by the Met Eireann mean monthly wind speed recorded between 1961-1990 of 9.9 knots recorded at Dublin Airport station.

**Wave Action at Skerries Harbour**

- Moorings just outside the protection of the current pier

- The current breakwater is approx. 170m long and orientated at 270° – 090°

- An outlying reef protects from wave action between 010° and 030°

- To the south and east the harbour is protected by a tombola.

- The longest stretch of open water from pier end to the opposite shoreline is 600m on the 245° – 065° axes.
Because of the enclosed space that is the Irish Sea, the harbour at Skerries is not exposed to open-ocean type wave pitches or frequencies.

Furthermore, the orientation of the current pier is along the 270-090 axis almost parallel to the shoreline on the land-side opposite the pier.

**Exposure of Skerries Harbour to Wave Action**

Wave action is a direct result of a combination of Fetch length, Wind Speed and Duration of time the wind blows. A wave’s energy is proportional to the square of its height (potential) thus a 3m high wave has 9 times more energy than a 1m wave.

Skerries harbour area is exposed to waves from **approx 270° (W) to 020° (NNE)**. However, between 270° and 320° there is no fetch of open water and therefore minimal wave action within this quadrant.

From 320° through to 360° the fetch gradually increases to 30nm. However, it is from 360° (N) through to 045° (E) that the longest fetches are found with ranges from 40 to 110nm.
Wind Direction, Maximum Fetch and Max wind Gust

<table>
<thead>
<tr>
<th>Compass Direction</th>
<th>Fetch from Skerries</th>
<th>Ave Wind Sp</th>
<th>Max Gust</th>
</tr>
</thead>
<tbody>
<tr>
<td>320</td>
<td>6</td>
<td>17</td>
<td>45</td>
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<tr>
<td>90</td>
<td>100</td>
<td>16</td>
<td>42</td>
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</tbody>
</table>

The longest fetches across the Irish Sea to Skerries are:

- Soloway Firth, Scotland approx 110nm (204km). Bearing from Skerries approx 050° i.e. NE
- Kirkudbright Bay, Scotland approx 100nm (185km) Bearing from Skerries approx NE (045°) direction.
- From Dundalk Bay, which lies directly North of Skerries (from 350° – 360°) the fetch is max between 25nm and 30nm (55km).

Thus, in a fetch limited sea, the main threat of wave action to Skerries bay is the range of waves arriving between 030° and 050° (NE).

To protect the vulnerable 270° to 050° wind angles, the sea defense orientation to for Skerries Marina will be:

- 270° – 320° - No breakwater required due to shelter from shoreline
- 321° – 360° - Required with increasing protection heading North (360)
- 001 – 030° - Required with increasing protection heading East
- 030° + No new breakwater required due to shelter from shoreline
**Height of Breakwater**

Significant Wave Height (Hs) is the average wave height of the one-third largest waves.

Statistically it is estimated that about one in every 2,000 – 3,000 waves will exceed the height of significant waves (Hs) by 100% (Hmax). This represents the theoretical maximum wave height. Note however, this range is narrower where the fetch is limited.

The height of the highest 1% of waves (H1/100) is approximately equal to 1.67 times Hs

Using Wave Prediction models, the maximum predicted wave height for a fetch limited sea during a 50knot storm = 2.96metres at a water depth of 10metres.

However, using the 50 year storm model which anticipates 87knots one can anticipate a wave height of 4.23metres during such events. Using the same wave prediction model the max predicted wave height during a 50knot storm = 2.65m for the 50 year event, the anticipated wave height = 4.0m

A previous study\(^{39}\) of the harbour undertaken in 1989 predicted a significant wave height of between 4.3m (from a North-East direction) and 3.7m (from a northerly direction) arriving at the harbour area during a 6 hour storm.

**DATA from Marine Data Buoy M2 (Position approx 53º 29´ N , 5º 26´ W ).**

This Marine Data Buoy is positioned approx 33nm (61Km) and a bearing of 110º or ESE of Skerries Harbour.

Data received from the Marine Institute covering a 12 month period from 1\(^{st}\) Nov 2007 through to 31\(^{st}\) Oct 2008 indicated that for the wind directions in question, the maximum wave recorded for the period was 4m. Using statistical extrapolation the Theoretical Max H (max) wave indicates potential for waves of up to 4.8metres. However, from this direction protection is already provided by the current pier structure and the only threat to the inner harbour will be from wave wraparound. By adjusting the orientation of the new breakwater, this threat will be eliminated.

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### SUMMARY

Using the predictive models and historical data, any future development of a breakwater to provide safe moorings within the Skerries Harbour area should be designed to exclude an expected 50 year wave with a maximum height of 4.3 metres.

The most cost effective solution to the problem of wave action protection would be as follows:

- Extension of the current pier by 100m at an orientation of 240 - 060º
- Install a second floating 130m breakwater at an orientation of 350 - 170º

This would facilitate an entrance/exit from the harbour area towards open water for commercial and marina based vessels whilst offering protection from all angles through to 270º.

The entrance would be based at the deepest section of the harbour thus reducing the dredging requirements for the approach channel.

Furthermore, it would offer an additional entrance/exit to the marina area on its Southern side, suitable for smaller vessels including dinghies, small pleasure boats and RIBS, which could exit/enter on this Southern side of the breakwater systems.
Breakwater Orientation & Placement

BREACKWATER DESIGN FEATURES

Breakwater A
Extension of the existing jetty by 100m at an orientation of 240°. Actual length ~ 110m.
To be designed for a max wave height of 4.5m

Breakwater B (Reefing)
Northern end is 20m from cap of Breakwater A. Is composed of a 30m length plus 150m length at 240°.
To be designed to absorb any reflected wave energy and break excess wave in the narrow area.

(Image courtesy of McMahon Design & Management)
Photographic overlay of proposed pier extension and pontoon layout within harbour area. (Image courtesy of McMahon Design & Management)
BREAKWATER DESIGN

There are 3 main design options available for consideration:

- Fixed breakwater using vertical structures
- Rubble breakwater
- Floating breakwater

**Fixed Vertical Structure**

Generally one of two kinds of structure – (i) full depth wall structures and (ii) partial depth structures are used.

The Full Depth structure fully reflects all wave energy which creates much higher structural loads which can impact both the heights of structure required and also wave diffraction to surrounding areas (e.g. wrapping around marina entrance and into protected areas). Wave run up and overtopping can also be exacerbated by the vertical nature of the structure. Reflected waves can also become superimposed onto oncoming waves and dramatically increase crest heights.

Advantages

- Require minimal waterway intrusion
- Minimal footprint on the seabed
- Minimal impact on surrounding seabed environment
- 100% reflection of wave-energy

Disadvantages

- Most expensive structures
- High energy load due fully reflective
- Carry large structural loads
- Potential overtopping in extreme conditions
- Restrict water circulation and alter flow of sediments

Partial depth structures can be used to eliminate/dissipate some of the high forces exerted on the vertical structures as they allow some of the wave energy to pass beneath the structure and into the marina basin.

A Partial Depth structure can be used to influence accretion effects in the area.
The dissipation of wave energy through absorption rather than reflection is the distinguishing feature of the rubble mound breakwater. The energy is mainly dissipated through run-up within and over the rock armour. A sloping mound of stone or man-made concrete units placed in such manner as to resist the anticipated wave climate.

For a rubble mound breakwater, the USACE recommend that \( H_{1/10} \) i.e. the average of the 10 highest waves be used for the design.\(^{40}\) For Skerries this equates to a maximum of 3.38m.

<table>
<thead>
<tr>
<th>Wind Angle</th>
<th>( H_{1/10} )- ave of 10 highest waves</th>
</tr>
</thead>
<tbody>
<tr>
<td>360</td>
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<tr>
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<tr>
<td>300</td>
<td>1.59</td>
</tr>
<tr>
<td>290</td>
<td>2</td>
</tr>
</tbody>
</table>

**Advantages**
- Relatively cheap especially if local material available
- Good functional performance
- Absorption of wave energy
- Less reflective wave action in surrounding areas
- New geotextile container technology

**Disadvantages**
- Requires large seabed footprint
- Expensive if local rock not available

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\(^{40}\) Design and construction of rubble mound breakwaters Gavin N Palmer
Sample of man-made concrete armour units.

Armour units are classified as either compact (e.g. rock) interlocking (e.g. DOLOS) or Hollow (e.g. SHED)

DOLOS Armour Unit

SHED Armour Unit

Compact Units (Rock) use their weight to resist wave action
Interlocking Units (Dolos) rely mainly on their interlocking ability to resist waves.
Hollow Units (SHED) rely on the internal voids created to dissipate wave action.

Floating Breakwater

Defined as a moored (using piles or chains) structure (as opposed to fixed) that interacts with incident wave energy in the upper portion of the water column resulting in reduced wave height on the leeward side. Only considered useful in areas with low wave climate; i.e. preferably with wave periods of less than 3 seconds. At a fetch of 1nm a surface wind speed of 40kts+ is required to create a significant wave period in excess of 3 seconds.

Advantages

- Cheapest form of breakwater defense
- Minimal environmental impact
- Can become part of marina berthing
- Prefabrication onshore
- Does not impede flushing or circulation of water
- Mobility to relocate for future extension of marina

Disadvantages

- Relatively short lifespan
- High maintenance
- Limited application.
- Failure is usually sudden so consequences of failure can be severe.
Recommended application for Skerries.

The ability of the rubble mound structure to absorb wave energy and greatly reduce reflection and refraction combined with a lower cost of construction and lower overall height above mean sea level are the key performance benefits of this structure for the project.

1. Extension of existing pier by 100m using a rubble mound structure. As footprint is an important factor in this area due to access waterway to both marina berths and commercial traffic berthing on the pier proper, the option of a vertical leeward side to the structure should be considered.

2. Floating breakwater structure off the Western end of the fixed breakwater. Length of 130m total. The properties of a floating breakwater are such that they are only functional where wave periods are less than 3.0 seconds and fetch no longer than 6km. Above this frequency, waves start to carry over the top of the structure rather than dissipate under the structure. The floating breakwater should be moored by way of a piled system rather than chain systems for additional security and reduced maintenance.
EXCAVATION AND DREDGING WORKS.

The second major element of capital outlay for the project would be the removal and disposal of materials to construct –

- The marina basin surrounding the pontoon systems
- The safe water fairways leading into & out of the marina.

The cost of this element of the project is primarily dependent upon the following factors–

- Presence or absence of contamination of the soil.
- Makeup of the material being extracted
- Volume of material to be excavated
- Ability to dispose of spoil on-site as infill material
- Location of dump site
- Ability to carry out ground-works using dry excavation methods.

Soil Contamination.

An assessment of the site area to establish any presence of contaminants of concern (CoC) will be required. The assessment will be carried out in accordance with BS10175:2001, investigation of potentially contaminated sites under the guidance of the Marine Institute.

Site specific considerations would indicate that the main investigations would take place where contamination is likely to be concentrated e.g. beside the pier walls or adjacent to an impermeable layer. Substances that are considered of most concern are those with persistent properties, levels of toxicity and liability to accumulate. Typical contaminants include –

- Organotin compounds (e.g. TBT* “antifoul”)
- Heavy metals (usually naturally occurring from rock weathering)
- Polychlorinated biphenyls (PCB) (found in electrical equipment & hydraulic fluids)
- Polycyclic aromatic hydrocarbons (PAH) (oils & products of its combustion)
- Oils

* Application to vessels below 25metres banned since 1987

Presence of soil contamination (such as PCB’s) may require either removal to approved waste disposal facilities or specialist in-situ bioremediation or bio-restoration.

Current EU developments in the management of contaminated soils indicate that there is uncertainty over responsibility for decontamination or remediation under either the
Soil Framework Directive (SFD) or the Environmental Liability Directive (ELD); either the “polluter” or the “operator” carries responsibility. However, in the case of the Skerries Marina Project establishing who the polluter is/was would be almost impossible and the responsibility of the operator falls to those “whose activity caused the damage”. Therefore liability for disposal could become an issue. Potentially, the issue would be dealt with under the 1996 Irish Waste Management Act wherein responsibility lies with the land owner.

Risk mitigation in the case of soil contamination is possible by ensuring that the excavation and construction process takes place in areas that are either not contaminated or being contaminated can be left in-situ and undisturbed.

The proposed marina development would envisage mitigating this risk by maintaining a fairway of between 30m to 50m from the current pier and harbour retaining walls. Thus any contamination discovered in the high risk zones could be left undisturbed.

**Excavation Materials.**

The cost of excavation of both marina basin and safe-water fairways is primarily dependent upon 2 factors –

- Make-up of the seabed
- Capability to use land based equipment.

A series of studies and surveys have already been prepared to establish the make-up of the seabed in the excavation area. Primarily, a geophysical survey carried out on behalf of Fingal County council with the objectives of establishing:

- Seabed levels in the harbour area
- Determine natural rock-head levels
- Establish thickness of the overburden
- Establish presence of any unusual hard features within the overburden.

The survey extended 40m west of the current pier-head and approximately 300m north/south.

In addition, a series of trial pits were excavated by the Sailing Club within the harbour area. A further set of trial pits were excavated by GSI which indicated bedrock lying at 10m below the seabed.

General conclusions extrapolated from these surveys and boreholes indicate a probable depth to rockhead of between 3m – 5m within the harbour and between 4m – 7m outside the harbour. Several hard reflectors were however discovered which

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41 Geophysical Survey Skerries Harbour, Hydrographic Surveys Ltd. 2006
would suggest a further study would be required to fully de-risk the excavation costs. However, the broad information currently available indicates excavation costs would be at the lower end of the scale.

The seabed profile of the area of excavation and the proximity of the 5 metre seabed contour to the shoreline is such that approx 65% of excavation of the basin can be carried out using land based machinery. Only in the extreme western area and the safe-water fairway excavation would require water-based excavation equipment.

The depth of the excavation in these zones at LAT (lowest astronomical tide) required to give a 4 metre depth of water at all stages of tide would be approx 2.3m at the eastern end of the excavation dropping to approx 1m at the western extremity.

**Volume of Excavation**

The marina basin and entrance fairways will require a minimum depth of 3.5m – 4.0m at LAT (Lowest Astronomical Tide). At this depth, a minimum clearance of 0.5m will be possible for almost all sailing yachts up to 17m (except possible deep draft racing yachts) and all motorboats and “super-yachts” up to 35m and above in many cases.

Following a survey of over 100 current draft constrained boat types (including racing/sailing yachts) It can be established that excluding small craft below 20ft (6m)LOA:

(a) 57% of draft constrained boats will require a max depth of 2.24m.
(b) 41% of draft constrained boats will require a max depth of 2.88m
(c) A very small minority will require draft exceeding 3.9m

Examination of the UK equivalent sailing vessel population indicates that whilst the length of boats is greater, at least 90% of draft constrained vessels can still be accommodated by a dredging depth of 2.88m (incl 0.5m clearance at LAT)

<table>
<thead>
<tr>
<th>Class</th>
<th>Metric</th>
<th>Minimum Draft</th>
<th>Max Draft</th>
<th>Average Draft</th>
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<td>&lt;19.8m</td>
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42 Excluding RIBS and other small craft less than 20ft LOA (<6m)
<table>
<thead>
<tr>
<th>Ft</th>
<th>Boat Population UK</th>
<th>%</th>
<th>Ft</th>
<th>Boat Population IRL</th>
<th>%</th>
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<td>61 - 70</td>
<td>18.31 - 21.3</td>
<td>1</td>
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<td>51 - 60</td>
<td>15.21 - 18.3</td>
<td>1</td>
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<td>12.21 - 15.2</td>
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<td>31 - 40</td>
<td>9.21 - 12.2</td>
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<tr>
<td>20 - 30</td>
<td>6.01 - 9.2</td>
<td>32</td>
<td>20 - 30</td>
<td>6.01 - 9.2</td>
<td>57</td>
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It would therefore be proposed that the marina basin area be dredged at 2 distinct levels

(I) The Eastern pocket (A) dredged to **-2.5m at LAT**
(II) The Western pocket (B) dredged to **-3.0m at LAT**
(III) The fairways and approaches dredged to min **-4m at LAT**

The Eastern pocket (A) has an approximate area of 22,500 M². With a depth of -2.5m plus an average height above ground of 0.75m the volume of excavation would be approximately 68,000M³

The Western pocket (B) has an approximate area of 16,500 M². With a required depth of 3.0m LAT the volume of excavation is approximately 25,000M³

The approach channel/safe water fairway has an approximate area of 5000 M² and will require minimal excavation as the water depth there is already at least -2m at all tides.
Layout & area of the dredged pockets

(Image courtesy of McMahon Design & Management)
Groundworks.

Given that the drying area of the harbour extends almost to the western extremity of the current harbour wall, the vast majority of the excavation work can be carried out from the land using dry-excavation equipment. The only areas which will require a water-based excavation method will be the approach fairways.

This will have a highly favorable effect on the cost of excavation and removal of spoil.

Location of Dump Site.

The dumping of spoil at sea is only acceptable when other methods of disposal or reuse have been eliminated for ecological, social or economic reasons.
Under the Dumping at Sea Acts 1996 and 2004, a Dumping at Sea Permit (Section 5 & 5A), is required from the Minister for the disposal of dredge material from ports, harbours and marinas (in the absence of suitable alternative reuse and disposal methods).

The permit system is currently operated by The Department of Marine (DCMNR) and approvals are issued on the advice of the Marine License Vetting Committee (MLVC). Applications will require site surveys, dispersion models and chemical analysis.

Where possible, the preferred location for dumping of spoil would be at an onshore facility or local re-use e.g. coastal defense works and preferably nearby.

The proposal to infill along Harbour Rd to create a boardwalk for the public could absorb much of the spoil.

Summary

Whilst there is a risk of soil contamination resulting from previous shipping being left to rot alongside the pier, risk mitigation will arise through retaining the current seabed alongside the pier structure and commencing dredging some distance away from likely contamination sites.

The quantity of spoil to be removed is quite substantial however, current evidence indicates that the vast majority is not rock and further, the majority of the excavation works can be carried out by dry-excavation which is quicker, cheaper and less environmentally intrusive.

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43 Guidelines for the Assessment of Dredge Materials for disposal in Irish Waters; Marine Institute 2006
Prior to any development of the project, a full evaluation and geophysical feasibility study will be required in advance of final design stage and planning application. Whilst the prior studies of topography & geophysics reveal no sign of any impediment to the project, further analysis will be required to verify the data already surmised in this appraisal and fully de-risk the pricing model. To this end, the following studies will be required to be included in the preliminary studies in order to bring an effective proposal to Fingal County Council Planning Department. Indeed, prior consultation with the Planning Department will be essential.

The studies which will be carried out prior to planning application will include:

**Sediment Sampling** – AS previously discussed, soil contamination in the dredge area would become a serious impediment to the successful implementation of this project. A sediment sampling process will be required from the outset, to establish the chemical make-up of the seabed. Preliminary contact with The Marine Institute indicate 5 areas from which they would require soil sample to be extracted and sent for laboratory testing. Any negative findings from these samples could render the project unfeasible. This survey will therefore be of core importance and should be the 1st survey undertaken.

**Hydrographic & Geotechnical Study** – Although a previous study has been carried out in 2006 by Hydrographic Surveys, some of the areas included in the current proposal were not covered by the previous study. In addition, further detailed geotechnical investigations using boreholes driven to at least 4m will be required to investigate several echoes which appear on the current survey and to confirm precise dredging volumes, soil types, pile locations, pier foundations etc.

**Hydrodynamic Survey** – Whilst the initial results contained in this report appear favourable, further detailed analysis of both wave and tidal action are required to establish the full breakwater design parameters and to assess the breakwater design. Previous MIKE21 EMS studies carried out in 1989 are unclear in regards to the suitability of the floating breakwater in its proposed location. In addition, tidal analysis will be required to establish scouring or sedimentation patterns which would affect the ongoing maintenance of the dredged pockets and fairways.

**Archaeology** - A brief archaeological study of the inter-tidal zone and the immediate seabed may be required as part of the planning requirements.

**Environmental Impact Statement** – As indicated earlier, although the scope of the project does not immediately require the completion of an EIS, given the proximity to the SPA’s and from previous examples of similar work undertaken elsewhere in Ireland, it is highly probable that an EIS will be required prior to planning approval and as part of either the planning process or as a result of a referral to An Bord Pleanala.

Successful completion of the above preliminary work will enable the design team to complete a detailed design of marina, breakwaters, landside infrastructures and any
additional details both for planning application purposes, Foreshore Licence and, for final tender process.

**Foreshore Consent**
The Foreshore Acts 1933 – 2005, require that prior to commencement of any works on the foreshore (the land and seabed between high water of ordinary tides and the 12 mile limit); a lease must be obtained from The Minister for the erection of any long-term structures and other works. The Coastal Zone Management Division of the Department of Agriculture was responsible for administration of the Licence up to 2009. Effective January 2010, applications are managed by The Foreshore Unit, Dept of the Environment, Heritage & Local Government.

Stages in the Consent Process -
1. The application is reviewed by internal and external advisors including Engineering staff, Sea Food Control Division and the Marine Survey Office, DEHLG Heritage Service, local harbour authorities and regional fisheries boards. Large impact developments are often referred to the Marine Licence Vetting Committee.

2. Applicant is given permission to advertise the project in a locally read newspaper and to put plans on public display.

3. Plans are displayed for 21 days for non-EIS projects (see Foreshore and EIS for information on projects requiring Environmental Impact Assessment). This allows the public to make representations/objections on the development.

4. Applicant is given an opportunity to comment on the public objections received.

5. Final report is made to the Minister.

6. Minister makes decision on whether to grant or refuse a foreshore consent application.

It is highly recommended that prior to application, a consultation process is established with the planning authority regarding the proposal. Severe delays can be anticipated in the processing of the Foreshore Application, however steps are underway to review the entire process following a review by The Minister.
Summary.

Following representations to several Marina Consultancies based in Ireland an average cost for preliminaries came to €135,000 based upon early 2009 prices. (€119,000:2010).

However, it would be proposed that the high risk studies be carried out as an initial stage – Soil Sediment, Geotechnical and Hydrodynamic. Costs for these would be in the region of €30,000.

As the nature of such preliminary work is exploratory, such expenditure would be highly speculative and carry a high degree of risk. With this in mind, it would be envisaged that debt finance for this aspect of a project would be foolhardy. As a result, this cost would have to be borne almost entirely by speculative capital investment. However, it should be possible to arrange some incentive for investors through either shareholdings in a holding company or through reward based berthing scheme (e.g. “life membership” type schemes) down the line once a marina is functioning.
**MARINA DEVELOPMENT**

The development of the Marina at Skerries Harbour would consist of the following major infrastructural works –

1. Construction of a 100m rubble mound fixed extension to current pier.
2. Construction of 130m floating of breakwater fixed by piling to the seabed.
3. Installation of 250 berths & pontoons with single entry gangway and associated works.
4. Removal of current slipway and relocation further south to site opposite entrance to Sailing Club

**ONSHORE DEVELOPMENT**

1. Seafront with extension for end-on parking and walking/seating promenade*
2. Incorporating sea defenses against flooding during spring tides.
3. Drop-off and short-term parking adjacent to entrance to pontoons.
4. Small boat parking yard on sea-side of Harbour Rd.
5. Hard-stand area adjacent to pontoons to facilitate light maintenance.

*As a further enhancement/development of the harbour area experience for visitors and local businesses/residents.
The current promenade at Skerries harbour is badly in need of regeneration and refurbishment. Furthermore, the exposed nature of the current barrier between sea and land permits ingress of sea water and overtopping during high water springs causing flooding of roadway and premises. Predicted rising of water levels from global warming will only exacerbate this problem for local residents and businesses alike.

The marina development provides an ideal opportunity to rejuvenate the entire harbour area and in particular the sea-front area. It is proposed that an option should be considered to widen Harbour Rd from the current pier head to the buildings currently located on the sea-side of the road using in-fill material from the excavation of the harbour.

By adding an additional 7.5m to the width of the road along the 380m length a 5m wide promenade would be created which would facilitate;

(a) increased public access and enjoyment of the harbour
(b) public seating, recreation and viewing areas
(c) Seating and dining areas for the current 5 restaurants/bars on the road.
(d) Incorporate cambering to raise the height above sea level.

Furthermore, in excess of 14,250m³ of spoil from the dredging works could be incorporated into the promenade extension thus reducing (i) requirement to remove waste off-site, (ii) reduced movement of heavy vehicles through the town during development phase.
**Flood Prevention**

In recent years, premises along the Harbour Rd and in particular those on the Northern end of the road have experienced flooding from a combination of spring tides, low pressures & easterly winds. When combined, these conditions lead to sea levels rising to above the current road height.

The Intergovernmental Panel on Climate Change (IPCC), Third Assessment Report (TAR) suggests that mean sea levels will rise by approximately 50cm in the next 100 years. By incorporating a slight elevation to the road height along Harbour Rd, it would be possible to eliminate current flooding risks and future-proof against anticipated rises in flood risk.

**Additional Parking Facilities**

Current parking bays on Harbour Rd (sea-side) provide parking for approx 150m of its length giving parking for 38 cars (using standard 4.5m lengths). By creating a promenade with end-on parking, the parking volume would increase to 120 spaces (excluding an area of 60m around the entrance to the pontoons).
**Fulfillment of Development Plan Objectives**

Provision of the promenade walkway would also be seen to as a part of the Fingal Coastal Walkway plan listed as **Objective GBO37** of the current development plan. Part-funding for this part of the project may be possible to obtain from the Failte Ireland NDP program, part of which is dedicated to development of the National Coastal Walk Program. Failte Ireland has already advised local councils on how to obtain grants from the program to facilitate this work.

**Drop-off and Hard Stand Area.**

An area of approximately 50m wide (north/south aspect) and extending into the harbour by 15m would be proposed to facilitate both drop-off and short-term parking, dinghy parking and hard stand area for light boat maintenance for berth holders.

The entrance gangway to the pontoons would be positioned on this platform and would require safe areas for users of the marina to safely congregate. Waste and recycling facilities and storage of wheelie-bins for transporting equipment and provisions to/from berths all require positioning as close to pontoon fingers as possible to facilitate all users.

Further seating and observation areas for the general public can also be provided in this area.

The size of the reclaimed land in this area would facilitate the use of a further 3,750m³ of dredged material from the site excavation.

A Hard Standing area adjacent to this entrance area would be used to facilitate cleaning of boats, minor repair work and other maintenance works commonly carried out by boat-owners requiring drying out of their boats.
MARKETING PLAN

A marina project will target the following markets with a variety of offerings suited to the needs of a diverse customer base;

- Boat owners living within the 30km catchment area.
- Non-boat owners with aspirations towards ownership.
- Boat owners living remote from this area but wanting to keep a boat in the area for a limited time (e.g. seasonal)
- Non-resident boat owners wanting to keep a boat in the area for a time
- Marine tourists using the marina as a stopping place.
- Mariners using the marina as a safe haven.
- Casual sea anglers
- Small business based sea anglers.
- Dive clubs & sub aqua schools
- Sail & powerboat training providers
- Small commercial fishing boats (e.g. lobster boats)
- Local residents taking part in water-sports
- Land based visitors taking part in water-sports.
- 3rd level colleges basing sports clubs at the Marina
- High level training teams (e.g. Olympic squads)

Analysis of customer needs in terms of marina facilities indicate that the product offerings common across all customer types should include;

- Consistent access,
- Safety,
- Proximity to home,
- Services.

Further offerings to more specific customers include; access to populations with similar aspirations (for dive clubs, angling clubs etc), access to local transport and international air/sea links (for international tourists), access to provisioning and hostelries (for tourists).

Value proposition

The Skerries Marina project will aim to satisfy all of the above needs through;

- geographic location
- design for access at all tides/sea states,
- location central to a large population base
- rail and bus services
- proximity to Dublin airport and UK sea-links and
- well established bars & restaurants.
In fact these features will become the basis for the marina’s unique selling point and value proposition –

*accessibility, security and proximity.*

The target price will be as laid out in the relevant pricing section (see page 82). Whilst the price target will remain competitive with other locations, the pricing strategy foresees an eventual premium for the product if it proves compelling enough for the target customer. To this end, measures of the marina’s performance will include both customer-focused measures and competitor based measures, testing both financial and competitive performance.

**Key Performance Indicators**

Service quality performance will be the key to both justifying the current price and establishing any price premium which the project will hope to achieve once the product has been launched. Key Performance Indicators (KPI’s) will be measured by;

Access (not only by sea, but also to local facilities and further afield via public transport)

Aesthetics (physical layout, services, staff, resources; Golden Anchor, Blue Flag etc)

Availability (e.g. water, electric, waste, fuel, provisioning, laundering, showers etc)

Cleanliness (both of environment and equipment)

Comfort (for overnight stays, local residents – noise control, ease of berthing)

Competence (both of the staff and of the information about the facility)

Reliability (of sea access, of services, of space, of safety)

Responsiveness (flexibility of management and staff to various customer types)

Security (both of vessels and of possessions)
MARKET CHANNELS

Key Marketing Channels used to promote the Marina will include –

- Bespoke website and Facebook site with active booking and information systems.
- Sailing Club membership
- Local TV & Radio launch programs.
- National and local print media launch.
- Promotion via Irish Sailing Association.
- Joint promotional activities with Tourism Boards
- Marina Twining (especially with those located in North Wales and Northern Ireland).
- Cruise in Company events
- Cruiser racing between sailing clubs in both Ireland and Wales and/or Scotland
- Brand creation
- Boat-show participation
- Almanac and directory inclusion
- Specialist Magazine advertising (Afloat, PBO, Yachts & Yachting etc)
- Building links with key sporting organizations in the area to expand access to water.
- Disability Access and promotion of sport with local disability groups
- Action based on the “Women in Sport” organization to increase female participation.
- Education program for local schools & provided access to the sea and to water based activity.
- ³rd Level College advertising

Marketing – Key Focus Areas

The UK Water-sports & Leisure Participation report for 2008\(^{44}\) indicates the figures for adult participation in water-sports in the UK. From a survey of 12,000 adults, 6.2% participated in some form of boating activity.

Other findings include:

- Males show higher participation rates in almost all activities, although the trend for female participation in boating activities has increased over the last seven years.

\(^{44}\) http://www.britishmarine.co.uk/news_press/news_article.aspx?NewsArticleId=2235
• The 16-34 year old age group is the most likely to get involved in boating activities, however there is an overall declining trend for this group.

• The 35-54 and 55+ age groups are slowly but steadily increasing their participation.

• The socio-economic group AB has the highest participation rate in 15 of the 21 activities, whilst the C1 group represents the highest number of actual participants in the majority of activities due to its larger overall size.

• Student/workers in a house share and couples under 55 have the highest participation rate for the majority of activities, whilst adults in families account for the greatest actual number of participants.

**Marketing - Tourism**

Whilst Sailing Tourism clients will only provide a relatively small revenue stream to the marina itself, the importance of this market to both the community and as a marketing tool for the marina into the future cannot be underestimated. In an exert from Franklin Market Research/Failte Ireland study 2006 it was noted that; during 2005, an estimated 9,000 sailors visited Ireland and when staying at marinas it was found that –

• The average length of sailing trip is 30 days.

• The average time spent sailing in Ireland was 15 days.

• Overseas visitors spent €136 per boat per day while Irish visitors spent €367 per boat per day.

• The mean length of stay in any location was 3 nights.

The top five factors considered by visiting sailors were:

- The availability of good sailing grounds.
- The availability of weather reports.
- The availability of facilities such as shops, restaurants and pubs.
- The quality of the scenery and
- The availability of moorings & berths.
The disadvantages most mentioned by visiting sailors were.

- Weather (47%).
- Facilities (37%).
- Cost (22%) and
- Distance between safe moorings (9%).
- Capacity was seen as the biggest issue facing the Irish marine sector.
COST ESTIMATES

Development Costs

Outline development costs have been obtained from consultation meetings during 2009 with a variety of marine consultants and engineers. NOTE – all outline prices are best estimates based upon currently available geophysical, geographic bathymetric and environmental studies and ALL consultants have qualified their estimates and advised that further ground exploration is required to de-risk the estimates.

Development costs can be broadly broken into 8 categories –

(i) Preliminaries
(ii) Earthworks
(iii) Breakwater development
(iv) Marina infrastructure
(v) Amenity/ coastal development.
(vi) Professional Fees
(vii) Contingency fees + other fees
(viii) Administration building

Preliminaries.

The preliminary works will include all studies and testing required to move the project from current outline design to planning & foreshore design stages. Further studies at this stage will include –

- Marine Sediment testing
- Geotechnical investigation
- Wave climate computational modeling.
- Planning documentation
- Foreshore license documentation

Cost estimates for this stage range from €95,000 to €175,000. At this stage of the process, costs vary considerably given the lack of 100% information. The mean price indicated by consultants is €135,000 for all Preliminaries. These are 2009 based prices and current indications indicate a deflationary impact on pricing in these markets of -12\%.\(^{45}\) Thus a 2010 price of €119,000 is used for this study.

Earthworks.

The earthworks costs will be heavily influenced by the presence of rock within the excavation areas. In this regard, and with reference to the currently available

\(^{45}\) Cyril Sweet PLC Group Tender Price Forecast Q1 2010.
geophysical and borehole analysis, it is possible to de-risk the possibility of rock excavation by ensuring the excavation be placed as far from the head of the current pier area as possible (this is the area which has already been identified as being rock-head).

Estimates for excavation range from approx €12 to €18 per cubic metre. As there is still some element of uncertainty as to the makeup of the materials the highest price will be used for the estimates. Therefore a cost of €1,764,000 will be applied to the project. (2010 projected cost of €1,552,000).

**Breakwater Development.**

There are 2 elements to the breakwater systems – (a) fixed rubble breakwater and (b) floating internal breakwater. Without conclusive wave study analysis, both size and suitability of these structures cannot be fully determined. However, with the currently available information and studies, it is generally agreed by all consultants and engineers consulted that the breakwater type and size should be close to final design.

A fixed rubble mound breakwater 100m long and extending from the current pier has been priced ranging between €20,000 and €22,000 per metre. However, prices seen for breakwater structures in other locations indicate a price range between €14,000 and €18,000 per metre are achievable. In this case, it is proposed to take the lowest price indicated by consultants at €20,000 per metre i.e. €2,000,000 for 100m length. (2010: €1,760,000)

The floating breakwater sitting inside the protection of the extended pier will protect the marina from westerly short frequency waves and waves diffracted around the side of the extended pier. Price returns vary between €1,540 per metre and €2,000 per metre. Requiring an estimated length of 130m costs will range from €200,200 to €260,000. Price competition and low current demand indicates that the lower price can be achieved for this structure i.e. €200,200. (2010: €176,176).

**Marina Infrastructure.**

Infrastructure will include pontoons, fingers and anchoring systems for 250 berths. Facility pylons to include water and electricity and deck lighting. Access arm from land to pontoons.

Costs for provision of the above infrastructure vary from €4,500 to €5,500. Evidence from the UK and from contractors indicates that prices are falling in this area due to lack of demand. Therefore the lowest price indicated per berth has been taken. Total cost for 250 berths will be €1,125,000. (2010: €990,000)
Amenity and Coastal Development.

Costs for the set-down, facilities area at the entrance to the pontoons are approx €80 per m². This cost may be reduced by use of spoil from the dredging area. However, for pricing estimates a total area of 750 m² will cost €60,000.

As a new slipway would be required to facilitate both public access to the water and provide access for dinghy sailors, the cost of this slipway will be included. A price of €180,000 has been obtained for this.

The further reclamation and widening of Harbour Rd falls should be priced as a separate project.

Professional Fees

Prices for professional fees are generally set at a percent of the total project cost. Current projections range from 3.25% to 5%. Again, given price competition in the area, it is expected that the lowest price can be achieved.

Contingency Fees

Several contingencies must be planned for at this stage of the project to reflect the risk of certain unknown aspects of the construction work at this time. The primary contingencies are; (a) a full EIS study may be required. (b) earth-works prices may have to increase to include rock removal, (c) standard errors and omissions (d) modifications or changes to the scope of the project during construction. Therefore, it is proposed to allow for higher than normal contingency at 15% of build costs given the risk to pricing that currently exists in certain areas of the project.

Administration Building.

The development will require administration space for:

- Marina Management Offices
- Male & Female Shower, WC & changing areas
- Disabled Shower, WC & changing areas
- Laundry area
- Waste and recycling area

It would be envisaged that provision for the above facilities can be provided for within the current Sailing Club buildings where provision of some of these facilities are already accommodated.
A provision of €300,000 (2010: €264,000) for refurbishment and expansion of some space will be provided for in the cost estimates.

**Operating Costs**

Estimates for operating costs of the project are based upon information received via the CRO on financial statements filed by several marina operators, by interviews with marina management and through research into previous reports on operation of marinas in Ireland.

Using the available data, prices for operating the marina range from €900 per berth up to €2,000 per berth. Some of the higher operating costs pertain to smaller marinas (less than 100 berths) wherein the apportionment of fixed costs is over a much smaller base thus explaining the higher cost. In some cases, the costs were spread over cost-centres which were unique to that operation (e.g. full boat yard repair facilities, sales offices incorporated into company accounts etc).

However, taking the above into consideration, the project should target an operating cost per berth of approx €1,300.
## PROJECT COSTING SUMMARY

### 250 BERTH MARINA COSTS
(excl Boardwalk and road widening costs)

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost 2009</th>
<th>Cost 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminaries</td>
<td>135,000</td>
<td>118,800</td>
</tr>
<tr>
<td>Earthworks</td>
<td>1,764,000</td>
<td>1,552,320</td>
</tr>
<tr>
<td>Breakwater 1</td>
<td>2,000,000</td>
<td>1,760,000</td>
</tr>
<tr>
<td>Breakwater 2</td>
<td>200,200</td>
<td>176,176</td>
</tr>
<tr>
<td>Pontoon Infrastructure</td>
<td>1,125,000</td>
<td>990,000</td>
</tr>
<tr>
<td>Entrance Reclamation</td>
<td>60,000</td>
<td>52,800</td>
</tr>
<tr>
<td>Shore Facilities</td>
<td>300,000</td>
<td>264,000</td>
</tr>
<tr>
<td>Slipway</td>
<td>180,000</td>
<td>158,400</td>
</tr>
<tr>
<td>Contingency (at 15%)</td>
<td>864,630</td>
<td>760,874</td>
</tr>
<tr>
<td><strong>Sub Total</strong></td>
<td>6,628,830</td>
<td>5,833,370</td>
</tr>
<tr>
<td>Professional Fees @ 3.25%</td>
<td>215,437</td>
<td>189,585</td>
</tr>
<tr>
<td><strong>Sub Total</strong></td>
<td>6,844,267</td>
<td>6,022,955</td>
</tr>
<tr>
<td><strong>VAT 13.5%</strong></td>
<td>894,892</td>
<td>787,505</td>
</tr>
<tr>
<td><strong>Vat 21.5%</strong></td>
<td>46,319</td>
<td>40,761</td>
</tr>
<tr>
<td><strong>Total INCL VAT</strong></td>
<td>7,785,478</td>
<td>6,851,221</td>
</tr>
</tbody>
</table>
INCOME ESTIMATES

Income from the marina will be from a mixture of sources –

- Annual Berthing contracts
- Short-term/seasonal berthing charges
- Daily visitor berth charges
- Commercial berthing contracts
- Long-lease berthing contracts
- Ancillary services income
- Low level maintenance

Annual Berthing Contracts -

The Annual Berthing Contract is the most important revenue stream for any marina. Price setting at this stage is predicated upon current pricing data available from neighbouring marinas which will be in a competitive position once the project is underway.

The Income Equation becomes a function of; **Unit Price per Metre x Boat Size.**

For 2009/2010 the full annual contract Rate per Metre for East Coast marinas is –

<table>
<thead>
<tr>
<th><strong>East Coast Marinas</strong></th>
<th><strong>County</strong></th>
<th><strong>Current Berths</strong></th>
<th><strong>Annual Fee per Meter</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlingford Marina, Louth</td>
<td>150</td>
<td>265</td>
<td></td>
</tr>
<tr>
<td>Malahide Marina Dublin</td>
<td>350</td>
<td>397</td>
<td></td>
</tr>
<tr>
<td>Howth Marina,* Dublin</td>
<td>280</td>
<td>744 *</td>
<td></td>
</tr>
<tr>
<td>Poolbeg Marina** Dublin</td>
<td>100</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Dun Laoghaire Marina, Dublin</td>
<td>800</td>
<td>455</td>
<td></td>
</tr>
<tr>
<td>Greystones Marina *** Wicklow</td>
<td>230</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arklow Marina Wickow</td>
<td>73</td>
<td>325</td>
<td></td>
</tr>
</tbody>
</table>

* Howth published tariff for members €62 p/metre & €81p/metre for non-members
* Howth offers 10% reduction p/a for 1st 5 years. So after 5yrs, cost p/m is only €375
**Poolbeg requires membership of the club. An additional €550 yr 1 and €250 p/a thereafter
*** Greystones marina still under construction

Price comparison with other marinas located in Northern Ireland and North Wales
Indicate that the marinas located on the East Coast of Ireland do charge a premium over those located within 1 days sailing of Dublin -
In establishing a target price for Skerries marina, the four marinas located at Carlingford, Malahide, Howth and Poolbeg will be key price drivers. Dun Laoghaire will most likely be the lead price maker in the market given its strategic & demographic advantages over other locations. In this respect, it can be stated that a current price ceiling of €455 p/m exists in the target market.

When asked, management at Dun Laoghaire marina expected prices to reduce for 2010 season due to the current economic climate.

**UNIT PRICE ; Pricing Strategy.**

For Skerries, the pricing strategies of Carlingford, Howth and Malahide will be of vital importance in setting guide prices for the operation.

**Carlingford** currently operates a low price strategy with a current offering of €265 p/m.

Whilst this location is only 50 minutes drive from Skerries it does have several important deficiencies which drive prices down;

1. Access is via Carlingford Lough which is 4 miles to open water. This adds approximately 1 hour motoring for boats entering or leaving the marina.
2. Strong tides at the entrance to the Lough effectively make the approaches subject to favourable tides.
3. The only public transport facilities are local bus to Newry or Dundalk where rail connection are possible.

**Malahide** has restricted access due to depth constraints across the entrance bar and access for anything other than the shallowest draft boats is restricted during the 2 hours either side of low water. However, the facilities offered are top class and public transport links are marginally better than at Skerries. Currently Malahide does not have either Blue Flag or Golden Anchor awards.

Whilst, Skerries may not be in a position to attach a price premium in the initial stages of the operation, the proposed Skerries marina would have a major competitive advantage over Malahide as a result of its zero-tidal restriction. Further, Skerries, being the most northerly of the Dublin based marinas, would provide the most attractive option for residents north of Swords.
Howth is accessible at all tides and access to open water is almost immediate. Facilities are excellent although it does not have either Blue Flag or Golden Anchor awards. Public transport access is excellent as are tourism attractions. The sailing club currently has a waiting list for berths and is oversubscribed for new berths which should become available during 2011. Skerries would not be in a position to charge a premium to the Howth fees.

Poolbeg is a relatively new marina. Whilst access is possible at all stages of the tide, the marina is located within Dublin Port and requires motoring for approx 45 minutes to reach open waters. In addition, as it is a major shipping area it is not considered to be “sailing friendly” waters given the attention to traffic required at all times. Facilities are not good at this location and access to public transport is reasonable although approx 20 minutes walk from the facility. Proximity to Dublin city Centre would be seen as a major tourism draw for the facility. Skerries should be in a position to attract a premium price to that charged at Poolbeg.

**Summary Pricing Strategy**

Given the above pricing constraints, a unit price per metre of €375 P/A would be the **upper limit** during the customer building phase of the development.

**Price Inflation.**

Marina berth inflation rates have been running at 4% - 5% P/A for the past 5 years. However, sampling of current operators indicates that price inflation was 0% for 2009 and most operators anticipate price inflation of 0% or small price reductions for the 2010 season. Evidence to date suggests a price reduction of 5% has been effected for 2010. Our analysis of the future trends in price inflation indicate that by building in price inflation expectations of a maximum 3% would be prudent.

**Unit Price Conclusions.**

With an established upper price level of €375 and negative inflation applicable to the 2010 season coupled with probable price targeting by current operators and Skerries marketing strategies in the initial 1-2 years of operation, it is envisaged that a target price slightly below the upper level would be required. For marketing purposes, a target price of **€360 p/metre**, would be an effective pricing entry point during year 1 to attract sales to the new venture.

As previously noted, historic price inflation in the industry has been in the order of approx 4% P/A over the past 5 years. As established by respondents to a survey of local marina operators, there are no price increases being considered for 2010. However, given current economic conditions an average inflation of 3% over the 10 year initial phase would be an acceptable pricing model going forward.
**Boat Lengths**

The 2\textsuperscript{nd} part of the pricing equation is the length of the boat. Average boat lengths from a survey of boats for sale for both UK and Ireland are shown below -

<table>
<thead>
<tr>
<th>Ft</th>
<th>Boat Population UK</th>
<th>%</th>
<th>Ft</th>
<th>Boat Population IRL</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>91 - 100</td>
<td>27.41 - 30.5</td>
<td>0</td>
<td>91 - 100</td>
<td>27.41 - 30.5</td>
<td>0</td>
</tr>
<tr>
<td>81 - 90</td>
<td>24.41 - 27.4</td>
<td>1</td>
<td>81 - 90</td>
<td>24.41 - 27.4</td>
<td>0</td>
</tr>
<tr>
<td>71 - 80</td>
<td>21.31 - 24.4</td>
<td>3</td>
<td>71 - 80</td>
<td>21.31 - 24.4</td>
<td>0</td>
</tr>
<tr>
<td>61 - 70</td>
<td>18.31 - 21.3</td>
<td>6</td>
<td>61 - 70</td>
<td>18.31 - 21.3</td>
<td>1</td>
</tr>
<tr>
<td>51 - 60</td>
<td>15.21 - 18.3</td>
<td>13</td>
<td>51 - 60</td>
<td>15.21 - 18.3</td>
<td>1</td>
</tr>
<tr>
<td>41 - 50</td>
<td>12.21 - 15.2</td>
<td>17</td>
<td>41 - 50</td>
<td>12.21 - 15.2</td>
<td>8</td>
</tr>
<tr>
<td>31 - 40</td>
<td>9.21 - 12.2</td>
<td>28</td>
<td>31 - 40</td>
<td>9.21 - 12.2</td>
<td>33</td>
</tr>
<tr>
<td>20 - 30</td>
<td>6.01 - 9.2</td>
<td>32</td>
<td>20 - 30</td>
<td>6.01 - 9.2</td>
<td>57</td>
</tr>
</tbody>
</table>

The Irish average boat length is \textbf{9.5m} whereas in the UK it is longer at \textbf{12m}. As boat population in the UK is younger and more expensive boats are the norm in the UK, the Irish model is used for pricing purposes. However, it should be noted that the trend for Irish boat ownership will tend towards longer units.

In the long run, average boat length in Ireland will grow to \textbf{12m}.

Income stream from annual leasing would then become a product of mean boat length, price per metre & berths available where:

\[
\text{Price Per Metre} = \text{€360} \\
\text{Mean Length} = 9.5\text{m} \\
\text{Max Berths} = 250
\]

\[(\text{€360} \times 9.5 \times 250 = \text{€855,000 per annum}).\]

This level of income is based upon 100\% occupancy and 100\% annual leasing – a configuration that will not be possible to implement in practice during build-up in market share. Further stress testing will take place in the sections below.

**Daily Berthing Charges.**

The price for overnight stays at East Coast marinas appears to be consistent at approx \text{€4 per metre}. Northern Ireland and West Wales prices equate to just over \text{€3 per meter}.

There would be no price pressure on Skerries to operate a pricing strategy below the current offering in the area. Hence a price of \text{€4 per metre} is sustainable.
The standard capacity allowance for daily/visitor berths is 5 – 10% of total berths. However, because of the timing of most visitors to a marina are during summer months, duplication of berths is possible i.e. a marina can avail of long-term lease holder’s berths to provide short-term capacity for visitors where the long-term holder is away from the marina. Thus an allowance of 8% all year can become 10% during peak demand.

Average length of stay of visiting boats is 3 nights for areas with major attractions and access to public transport.

**Commercial Berthing Charges.**

The general market rate for commercial berths at a marina is an approximate 50 – 60% premium on the standard berth rates. These rates would obviously be negotiable depending on the type of activity and the type and quantity of berths being used for commercial purposes.

A maximum of 10 berths would be practical in the development as no more than 3 commercial operators would be envisaged made up of; Boat Sales, Sea Tourism & Fishing Experience.

**Long Lease Berthing Charges.**

Operating 10-year leases is an attractive method for raising capital for a project although at the expense of cash-flow especially in the latter stages of the lease.

The undiscounted base cost of a 10 year lease for an average boat (9.5m) is €34,200.

However, the income to the marina over the 10 years at a 3% rate of inflation is €39,200 i.e. the boat owner would have paid this amount in 10 years to the marina.

The Net Present Value to the marina of the 10-years of income (at a discount rate of 4%) is €32,757 –

<table>
<thead>
<tr>
<th>Years</th>
<th>Income</th>
<th>Discount Factor</th>
<th>Present Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yr0</td>
<td>€3,420.00</td>
<td>1.000</td>
<td>3,420</td>
</tr>
<tr>
<td>yr 1</td>
<td>3,522.60</td>
<td>0.9615</td>
<td>3,387</td>
</tr>
<tr>
<td>Yr 2</td>
<td>3,628.28</td>
<td>0.9246</td>
<td>3,355</td>
</tr>
<tr>
<td>yr 3</td>
<td>3,737.13</td>
<td>0.8890</td>
<td>3,322</td>
</tr>
<tr>
<td>yr 4</td>
<td>3,849.24</td>
<td>0.8548</td>
<td>3,290</td>
</tr>
<tr>
<td>yr 5</td>
<td>3,964.72</td>
<td>0.8219</td>
<td>3,259</td>
</tr>
<tr>
<td>yr 6</td>
<td>4,083.66</td>
<td>0.7903</td>
<td>3,227</td>
</tr>
<tr>
<td>yr 7</td>
<td>4,206.17</td>
<td>0.7599</td>
<td>3,196</td>
</tr>
<tr>
<td>yr 8</td>
<td>4,332.35</td>
<td>0.7307</td>
<td>3,166</td>
</tr>
<tr>
<td>yr 9</td>
<td>4,462.32</td>
<td>0.7026</td>
<td>3,135</td>
</tr>
<tr>
<td>Total Income</td>
<td>€39,206.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Present Value</td>
<td></td>
<td>32,757</td>
<td></td>
</tr>
</tbody>
</table>
Therefore, an offer of a 10 year lease can be for €32,757 without any cost to the marina.

<table>
<thead>
<tr>
<th>Discount Factor</th>
<th>Price</th>
<th>Actual discount</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>€30,780</td>
<td>6%</td>
</tr>
<tr>
<td>15%</td>
<td>€29,070</td>
<td>11%</td>
</tr>
<tr>
<td>20%</td>
<td>€27,360</td>
<td>16%</td>
</tr>
<tr>
<td>25%</td>
<td>€25,650</td>
<td>21%</td>
</tr>
</tbody>
</table>

It can be seen from the above examples that by offering a 10% discount to the standard rate, the actual loss of income to the marina is actually 6% net.

**Ancillary Services & Maintenance Income.**

Additional income is available to a marina operator under the following cost-centres:

- Boat Cleaning, Sling-washing & Valet Services
- Boat Provisioning Services
- Boat delivery services
- Commissions from mobile workstations (e.g. electronic fitters, spars & rigging fitters)
- Divers commission
- Fuel charges
- Pump-out charges
- Electricity charges
- Laundry Charges
- Hard-standing charges

However, the income receivable from such services is marginal at best when compared with the primary sources of income – berth leasing and commercial leasing.

A gross income of 5% of standard berth income would be considered appropriate in this case.
FINANCE

(1) Debt Financing

For commercial mortgages and loans, the key driver of rates is the 3 month Euribor rate.

The following table indicates the 3 month rate since the start of the millennium –

<table>
<thead>
<tr>
<th>Year</th>
<th>Euribor 3 Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>3.34%</td>
</tr>
<tr>
<td>2001</td>
<td>4.84%</td>
</tr>
<tr>
<td>2002</td>
<td>2.15%</td>
</tr>
<tr>
<td>2003</td>
<td>2.12%</td>
</tr>
<tr>
<td>2004</td>
<td>2.86%</td>
</tr>
<tr>
<td>2005</td>
<td>2.49%</td>
</tr>
<tr>
<td>2006</td>
<td>3.73%</td>
</tr>
<tr>
<td>2007</td>
<td>4.67%</td>
</tr>
<tr>
<td>2008</td>
<td>2.86%</td>
</tr>
<tr>
<td>2009</td>
<td>1.39%</td>
</tr>
</tbody>
</table>

The average rate over this period has been 3.04%. However, the rate currently prevailing in 2009/2010 is not considered due to exceptional market conditions as was the high rates during 2001. Excluding these outliers a more accurate figure for the average rate can be achieved by removing the lower and upper quartiles. The mean interest rate is 2.9%

For commercial Mortgages and loans, a premium in the order of approximately 2.5% is normally charged over and above the 3 month Euribor.

Taking the mean Euribor over the past 10 years, would give a commercial rate of approximately 5.4%.

Without a fixed rate, it would be expected that for the initial periods of the loan, the rate would be lower than this and for some periods of the loan it may be higher than this figure. However, it would be possible to fix the rate by use of Interest Rate Swaps. As current rates are at the bottom of the cycle, the project should endeavor to fix some or, the entire loan. The term-loan can be amortised out of regular operating income. Tax relief will be available in the interest element of the loan.

Current practice amongst financial institutions indicates that the maximum finance that would be available for the project is 80%. Therefore the project will be required to raise 20% equity plus preliminaries.

This equity could be raised either through BES schemes, sales of long-term leases, or grant aid or a combination of all 3.

(2) Long-Term Leasing,

A key source of finance for the development could be the prior sale of long-term leases. Generally, for VAT reasons, a 9 year 11 month lease is the industry standard and the discount available ranges from 0% to 10%.
The sale of long-term leases will have an on-going impact on cash-flow for the development.

If 20 berths are allocated and sold for a nominal 10 year lease (9 years 11 months), the initial income in year 0 will be €615,600 and in year 10 will be €802,000 (annual rate in yr 10 less 10% discount). The income generated by these sales during Year 10, would be amortised over the following 10 year period as they will be used to fund operations rather than capital repayment.

<table>
<thead>
<tr>
<th>Berths on Long Lease</th>
<th>Unit Price</th>
<th>Income</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>€30,780</td>
<td>€615,600</td>
<td>Year 0</td>
</tr>
<tr>
<td>20</td>
<td>€40,100</td>
<td>€802,000</td>
<td>Year 10</td>
</tr>
</tbody>
</table>

To raise the entire equity stake in the project by this means would involve pre-sales of 50 berths on 10 year leases. This option is considered in Scenario # 1

**3) Business Expansion Scheme (BES)**

Several marina developments are currently being funded through BES finance including: Black Cove Marina in Kinsale and Monkstown Bay Marina in Cork. Therefore it can be assumed that a marina development in Skerries should be in a position to obtain certification from Failte Ireland to operate a BES scheme. However, uptake on BES schemes has been badly hit in the current economic climate and most funds are under financed at this time.

The scheme allows an individual investor to obtain income tax relief on investments up to a maximum of €150,000 per annum in each tax year up to 2013. Relief is available at the investor’s highest rate of income tax. An investor who cannot obtain relief on all his/her investment in a year of assessment, either because his/her investment exceeds the maximum of €150,000 or his/her income in that year is insufficient to absorb all of it, can carry forward the unrelieved amount to following years up to and including 2013.

In order to qualify, investments must be made in companies engaged in certain manufacturing; service; tourism; Etc.
- The investor companies must be unquoted,
- Investors must purchase new ordinary share capital in the company.
- Shares must carry no preferential rights.
- Normally, the minimum investment by an individual in any one company that qualifies is €250.
- The maximum investment by all investors in any one company or group of companies is €2,000,000 subject to a maximum of €1,500,000 in any one twelve month period.
- There must be no condition that would eliminate the investor’s risk.

\(^{46}\) IT55 – Revenue Commissioners
• Relief can be claimed immediately in the case of established companies or after four months' trading in the case of new companies.
• If the company is not trading at the time the shares are issued, it must commence trading within two years of the share issue.
• Shares must be held and certain conditions satisfied in relation to the investor for a period of five years. Other conditions in relation to the company need only be satisfied for three years.

(a) Qualifying Investments
Each investment breaks down into a number of component parts. These are as follows:

• The investor,
• The company and its trade,
• The shares purchased,
• How the company uses the money invested.

Each of the above must meet certain criteria to ensure that the investment qualifies under the scheme.

(a) The Investor
A qualifying investor is an individual who: is resident & not-connected with the company.

(b) The Company
A qualifying company is one which:

• is a Micro, Small or Medium Sized Enterprise within the European Commission definition in force for the relevant period (see notes below for a definition and for details of restrictions applying to medium-sized enterprises).

• is incorporated in the State or another European Economic Area (EEA) State.

• is resident in the State or is resident in another EEA State and carries on business in the State through a branch or agency.

• is an unquoted company.

• is engaged in a qualifying trade or whose business consists of holding shares or securities in one or more qualifying subsidiaries; and

• has its issued share capital fully paid up.

(c) The Trade
The company in which investment is made must carry on qualifying trading operations. One of which is operating a marina. (The operation of certain tourist traffic undertakings) The trade must be certified by Failte Ireland via the submission of a marketing proposal.
(4) Disposal of Assets.

The Sailing Club could raise a portion of its capital through the disposal of one or more assets belonging to the members.

(a) The Old Clubhouse. – This building is currently attached to the main building and is part-utilised by members for; event management, meetings, snooker, storage & training.

In the past 4 years there have been several property sales along Harbour Road providing some guidelines as to the market value of this asset at the moment;

<table>
<thead>
<tr>
<th>Year</th>
<th>Type</th>
<th>Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>3 Bed Det Bungalow</td>
<td>€690,000</td>
</tr>
<tr>
<td>2006</td>
<td>4 Bed Tce</td>
<td>€1,100,000</td>
</tr>
<tr>
<td>2006</td>
<td>4 Bed Semi</td>
<td>€750,000</td>
</tr>
<tr>
<td>2006</td>
<td>5 bed Semi *</td>
<td>€1,700,000</td>
</tr>
</tbody>
</table>

*The 5-Bed Semi is a substantial property with FPP for a piano bar and or other commercial use and is approx 560m2. However, it should be noted that up to 2009 this property remains unsold. Disregarding this property, a base price in 2006 for the Old-Clubhouse would be approx €1,100,000 given the amount of work involved in bringing the property to market and noting that there is no rear garden. With the decline in values from the peak in 2006 to 2004 levels, the current AMV for the property would be no more than €700,000.

From the proceeds, it would be necessary to deduct (a) cost of sales i.e. cost to bring the property to market (allow €50,000 for substantial rebuilding of internal walls, legal fees, & estate agency fees) and (b) Capital Gains Tax (CGT- allow approx €150,000), the net gain to the club would be at most €500,000.

However, resulting from the sale of the building, any facilities which would have been sited in this location (e.g. Marina administration and public offices) + all current club used facilities would need to be relocated elsewhere. This would require extension of the remaining property either to the rear or on the roof. Such extension work would consume at least €200,000 of the remaining capital, leaving a net amount of less than €300,000 for use on the project.

*It should also be pointed out that sale of this asset may not survive an approval process by the members of the sailing club given its historical status within the club.*

At this point, any disposal of this asset would not be seen to be worthwhile.

(b) The Boat-Yard - The club currently has a freehold interest on the Harbour Rd, a portion of which is currently used for boat storage – mainly dinghy parking during summer and both cruiser and dinghy parking during winter months. Current income from parking fees is approximately €20,000 P/A, although the revenue generating capacity of the facility is of secondary importance to the members.
The area in question extends to approx 1263M² (approx 0.3 acres) with full road frontage and would be considered prime real-estate in the town. Following a valuation of approximately €1.75m in 2008, the yard would probably currently achieve up to €1.2 m.

After CGT, (ignoring the indexed cost of the site at 1976), the net realizable value of the site would be approx – €900,000.

However, once again a replacement location for storage of the member’s boats; in particular the dinghy fleets, would be required. In this case the only location left available would be a hard-stand or floating facility on-the-water. It would be likely that a cost for such facility would be approx €250,000. The net available for use by the project would be approx – €650,000.

Whilst the disposal of this asset would be more tenable amongst the membership of the sailing club, the introduction of a boat-park area on the sea-side of the Harbour Rd would introduce potential planning issues and could make the entire project more prone to objections from outside interests.

At this point, any disposal of this asset would not be seen to be worthwhile.

**Depreciation**

Depreciation of the assets will in accordance with FRS15 and will be at a rate of 4% for the furniture and floating assets & 2% for buildings.

Because of the length of the estimated remaining useful life of the fixed breakwater structure and as the estimated residual value of the structure is not materially different from the carrying amount, an annual impairment test is required for this structure.
SAMPLE REVENUE STREAMS

1. Visitor Berth Rentals.

<table>
<thead>
<tr>
<th>Summary of Forecast Day Berths Sales for Year 1 -10</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipated Visitors</td>
<td>275</td>
<td>336</td>
<td>407</td>
<td>458</td>
<td>509</td>
</tr>
<tr>
<td>Anticipated Income</td>
<td>€31,312</td>
<td>€39,414</td>
<td>€49,224</td>
<td>€57,053</td>
<td>€65,309</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipated Visitors</td>
<td>560</td>
<td>571</td>
<td>581</td>
<td>611</td>
</tr>
<tr>
<td>Anticipated Income</td>
<td>€74,008</td>
<td>€77,680</td>
<td>€81,459</td>
<td>€88,284</td>
</tr>
</tbody>
</table>

The project would envisage the provision of at least 20 berths of various sizes for visiting boats (both day trippers and overnight visitors). Initial targets for visitors are lower than one would expect for a 250 berth marina to allow for the marketing of the venture to filter through to the target visitor population. Therefore, targets for year 1 range from 0 visitors during off-peak months, up to 20% occupancy during peak summer months.

Targets for growth in visitor arrivals are increased progressively over the 1st 10 years of operation, reaching over 640 by year 10. (See appendix II for detailed sales forecast figures for Years 1 – 10).

Use of allocated visitor berths can increase the capacity of the marina by up to 10% through duplication of berth slots during peak season. (long-term holders who vacate their berths for holiday periods leave behind valuable space which can then be rented out to overnight visitors). Thus capacity to handle daily and overnight visitors could be increased to 700 by year 10 without any decrease in capacity for other rental contracts.
2. Annual Berth Leasing

<table>
<thead>
<tr>
<th>Annual Lease Forecasts</th>
<th>Yr1</th>
<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Sales Target</td>
<td>50%</td>
<td>60%</td>
<td>70%</td>
<td>80%</td>
<td>90%</td>
</tr>
<tr>
<td>Annual Income (L x R) X S)x i</td>
<td>€342,000</td>
<td>€422,712</td>
<td>€507,959</td>
<td>€597,940</td>
<td>€692,863</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annual Lease Forecasts</th>
<th>Yr 6</th>
<th>Yr 7</th>
<th>Yr 8</th>
<th>Yr 9</th>
<th>Yr 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Sales Target</td>
<td>95%</td>
<td>95%</td>
<td>95%</td>
<td>95%</td>
<td>95%</td>
</tr>
<tr>
<td>Annual Income (L x R) X S)x i</td>
<td>€753,296</td>
<td>€775,895</td>
<td>€799,172</td>
<td>€823,147</td>
<td>€847,842</td>
</tr>
</tbody>
</table>

Sales forecasts for the 1st year of operation are based upon conversion of the local boat owning population augmented by a very small defection of boats from neighboring marinas. The target of 100 berth sales in year 1 would be viewed as conservative by most operators spoken to. However, given the current economic climate, a prudent approach to forecasted sales is recommended.

3. Commercial Berths

In general commercial berths command an approx 50% premium over the standard annual lease.

<table>
<thead>
<tr>
<th>Annual Lease Forecasts</th>
<th>Yr1</th>
<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Sales Target</td>
<td>50%</td>
<td>60%</td>
<td>70%</td>
<td>80%</td>
<td>90%</td>
</tr>
<tr>
<td>Annual Income (L x R) X S)x i</td>
<td>€24,938</td>
<td>€30,823</td>
<td>€37,039</td>
<td>€43,600</td>
<td>€50,521</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annual Lease Forecasts</th>
<th>Yr 6</th>
<th>Yr 7</th>
<th>Yr 8</th>
<th>Yr 9</th>
<th>Yr 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Sales Target</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Annual Income (L x R) X S)x i</td>
<td>€57,819</td>
<td>€59,553</td>
<td>€61,340</td>
<td>€63,180</td>
<td>€65,076</td>
</tr>
</tbody>
</table>
4. Long-Term Leases.

<table>
<thead>
<tr>
<th>Berths on Long Lease</th>
<th>Unit Price</th>
<th>Income</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>€30,000</td>
<td>€600,000</td>
<td>Year 0</td>
</tr>
<tr>
<td>20</td>
<td>€39,000</td>
<td>€780,000</td>
<td>Year 10</td>
</tr>
</tbody>
</table>

5. Ancillary Service Income.

Most marina operators spoken to during the course of this study indicated that income from this stream was only incidental to the entire operation. An indicated income of approximately 5% of gross revenue was deemed to be a reasonable expectation by respondents.
FINANCIAL CASE STUDIES FOR THE DEVELOPMENT OF SKERRIES MARINA

The scenarios developed in this section are based upon the forecasts and sample revenue streams indicated in the previous sections.

**Scenario #1**

In this case study, the capital contribution (20%) to the project by the Sailing Club is made up entirely of sales of 10 year-leases. Sales targets for annual berths are 50% of capacity in year 1 & increasing to 95% by year 6. Preliminaries are considered to be already funded and completed at this stage.

The remaining finance is raised via bank debt and is expected to be repaid over a 20 year term.

Conditions for Scenario 1 are:

<table>
<thead>
<tr>
<th>Finance</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-Leases</td>
<td>50 @€30,780</td>
<td>€1,539,000</td>
</tr>
<tr>
<td>Debt</td>
<td>1</td>
<td>€5,193,000</td>
</tr>
</tbody>
</table>

- Target of 50 x units pre-sold on long-term leases prior to Year 1 and allocated as equity holding in the project.
- 170 units for sale as annual contracts. Sales targets year 1 = 50% up to 95% in year 6
- 20 units for visitor berths. Forecast visitor usage year 1 – 275 up to 642 in year 10.
- The Internal Rate of Return (IRR) is 4.51%
- Year 1 gross yield of 5.7%

Note; in this scenario, cash-flow becomes a serious issue from year 1 through to year 10.

Net Present Value of the project is Positive at a rate of 5.4% (€268,000). This would make the project under Scenario #1 viable at an expected rate of return of 5.4%.

Internal Rate of Return (IRR) is positive at 5.84% which is higher than the cost of capital used (5.4%)
**Scenario #2**

Conditions for scenario 2 are as follows –

Equity for an initial phase of the project is accessed via combination of BES funding and the sale of 25 x long-term leases prior to Year 1 and a further 25 long-term leases after year 5 & the capital raised here will be used to pay down the BES investors.

<table>
<thead>
<tr>
<th>Finance</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BES Funding</td>
<td>-</td>
<td>€750,000</td>
</tr>
<tr>
<td>Long-Leases</td>
<td>25</td>
<td>€769,500</td>
</tr>
<tr>
<td>Debt</td>
<td>1</td>
<td>€5,450,000</td>
</tr>
</tbody>
</table>

**Year 5.**

<table>
<thead>
<tr>
<th>Finance</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-Leases</td>
<td>25</td>
<td>€872,741</td>
</tr>
<tr>
<td>BES Funding</td>
<td></td>
<td>(€750,000)</td>
</tr>
</tbody>
</table>

Repayment of the BES investors in year 5 will be via the sale of a further 25 x long-term leases.

Annual contracts are available for a maximum of 195 units from year 1 – 4 and 170 units from year 5. From year 11, all contracts will be on an annual basis only.

- Sales targets for the annual leases are as per Scenario 1 (i.e. 50% yr 1 to 95% year 6+)
- Visitor berths as her scenario 1. See visitor berth sales targets in appendix II
- Net Present Value of the project is Positive at a rate of 5.4%
- The Internal Rate of Return (IRR) is 5.91%
- Yr 1 gross yield of 6.3%
Scenario # 3

This case study envisages the creation of a PPP between Fingal County Council and Skerries Sailing Club through which the building and payment of the breakwater extension is undertaken by either Central Government or by Fingal County Council. The revenues generated by both Council Rates, Commercial Fishing Rates and Foreshore Licence fees in addition to the socio-economic value added for the wider Skerries community justify the intervention of either local authority or central government in the part-funding of the project.

<table>
<thead>
<tr>
<th>Item</th>
<th>Apportionment</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakwater</td>
<td>100%</td>
<td>2,000,000</td>
</tr>
<tr>
<td>Contingency</td>
<td>29%</td>
<td>248,785</td>
</tr>
<tr>
<td>Fees</td>
<td>29%</td>
<td>61,989</td>
</tr>
<tr>
<td>VAT</td>
<td></td>
<td>270,820</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td></td>
<td><strong>2,581,594</strong></td>
</tr>
</tbody>
</table>

The effective ARV inflation rate since 2005 has been 4%. Therefore with an estimated annual Rate of €181 per berth, PAYBACK period for the investment by Fingal County Council is 30 years. This Payback period however is predicated on the ratable income from the marina alone. In practice as discussed earlier in this study, revenue streams from other sources will flow to the Council as a consequence of the project.

<table>
<thead>
<tr>
<th>Item</th>
<th>Apportionment</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marina</td>
<td>100%</td>
<td>3,584,000</td>
</tr>
<tr>
<td>Contingency</td>
<td>71%</td>
<td>609,095</td>
</tr>
<tr>
<td>Fees</td>
<td>71%</td>
<td>151,766</td>
</tr>
<tr>
<td>VAT</td>
<td></td>
<td>630,413</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td></td>
<td><strong>4,975,274</strong></td>
</tr>
</tbody>
</table>

The equity which would now be required to be raised for the marina development portion of the project would be reduced to €1,000,000 (assuming 20% debt/equity ratio required by financial institutions).

<table>
<thead>
<tr>
<th>Finance</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-Leases</td>
<td>-</td>
<td>35</td>
</tr>
<tr>
<td>Debt</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>
• The IRR for this aspect of the project becomes 6.91%.

• NPV of €900,000.

• Payback for this portion of the project will be just 12 years.

• The scheme becomes profitable at year 5.
**Scenario # 4.**

In this case, the Sailing club disposes of one of its major assets (Boat Park) and realizes €1m net of CGT. A sum of €250,000 will be required to be set aside for addition of new boat-parking facilities as part of the marina project.

The PPP aspect of this project is for a shared cost of development of the breakwater defenses. I.E. Fingal County Council fund 50% of this portion of the project (€1,290,000)

<table>
<thead>
<tr>
<th>Finance</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPP</td>
<td>1</td>
<td>€1,290,000</td>
</tr>
</tbody>
</table>

Additional capital will be raised via the sale of 25 x 10-year leases in year 0.

<table>
<thead>
<tr>
<th>Finance</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset disposal (net)</td>
<td>-</td>
<td>€750,000</td>
</tr>
<tr>
<td>Long-Leases</td>
<td>25</td>
<td>€769,500</td>
</tr>
<tr>
<td>Debt</td>
<td>1</td>
<td>€4,780,000</td>
</tr>
</tbody>
</table>

For the PPP aspect, Payback to Fingal County council is in 19 years but IRR is less than 1%. Again, this assumes no other income source is taken into consideration for Fingal Council.

- NPV of the remainder of the project is €840,000
- IRR for this project will be 6.9%
- Payback is 12 years.
- The scheme becomes profitable after 6 years.
## Appendix I Facilities currently available at Skerries Harbour

<table>
<thead>
<tr>
<th>Harbour, Inlet</th>
<th>Public Access to Pier (or no pier)</th>
<th>Public Access to Slipways (or none)</th>
<th>No of Safe Public Slips</th>
<th>Public Car Park</th>
<th>Small Sail craft Access to Sea at all Tide stages</th>
<th>Sailing Club</th>
<th>Recognised for Staging International Events</th>
<th>Trad’al Irish Boat Conservat-ion</th>
<th>Provision of Club Sail Training on the Sea</th>
<th>Sail Training for non-member children</th>
<th>Sail training for non-member adults</th>
<th>Sea Scout Troop</th>
<th>Funds for PPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Howth*</td>
<td>Yes</td>
<td>Yes</td>
<td>1</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Baldoyle</td>
<td>No</td>
<td>No</td>
<td>None</td>
<td>None</td>
<td>No</td>
<td>No</td>
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Comparison of Facilities in Fingal Harbours, Inlets and Estuaries plus Drogheda shows how, next to Howth, Skerries is the second most active watersports centre in Fingal and the North East Coast

*Only Howth and Skerries have Lifeboat Stations.*
**APPENDIX - II  DAILY RATE INCOME CALCULATIONS : MINIMUM 8% OF AVAILABLE BERTHS KEPT FOR VISITING BOATS**

* Assumptions - Median Length of Stay = 3 nights
L = Mean Length 9.5
R = Rate per metre €4
S = median stay length 3
I = Annual inflation allowed of 3%

### Daily Berth Income Yr 1

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## Daily Berth Income Yr 5

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## Daily Berth Income Yr 8

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<td>35%</td>
<td>25%</td>
<td>10%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Berths nights sold</td>
<td>0</td>
<td>28</td>
<td>31</td>
<td>90</td>
<td>248</td>
<td>270</td>
<td>310</td>
<td>310</td>
<td>210</td>
<td>155</td>
<td>60</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Monthly Income (L x R x S) x i</td>
<td>1,309</td>
<td>1,449</td>
<td>4,206</td>
<td>13,039</td>
<td>12,619</td>
<td>14,488</td>
<td>14,488</td>
<td>9,814</td>
<td>7,244</td>
<td>2,804</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ttl Visitors Yr 5</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

## Daily Berth Income Yr 9

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Total day lease income Yr 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max possible berth nights for sale</td>
<td>620</td>
<td>560</td>
<td>620</td>
<td>600</td>
<td>620</td>
<td>600</td>
<td>620</td>
<td>600</td>
<td>620</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>€88,284</td>
</tr>
<tr>
<td>Forecast % Occupancy</td>
<td>0%</td>
<td>5%</td>
<td>5%</td>
<td>15%</td>
<td>45%</td>
<td>45%</td>
<td>50%</td>
<td>50%</td>
<td>35%</td>
<td>25%</td>
<td>10%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Berths nights sold</td>
<td>0</td>
<td>28</td>
<td>31</td>
<td>90</td>
<td>248</td>
<td>300</td>
<td>341</td>
<td>341</td>
<td>240</td>
<td>155</td>
<td>60</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Monthly Income (L x R x S) x i</td>
<td>1,348</td>
<td>1,492</td>
<td>4,332</td>
<td>11,938</td>
<td>14,441</td>
<td>16,415</td>
<td>16,415</td>
<td>11,553</td>
<td>7,461</td>
<td>2,888</td>
<td>0</td>
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<tr>
<td>Ttl Visitors Yr 5</td>
<td>20</td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

## Daily Berth Income Yr 10

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Total day lease income Yr 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max possible berth nights for sale</td>
<td>620</td>
<td>560</td>
<td>620</td>
<td>600</td>
<td>620</td>
<td>600</td>
<td>600</td>
<td>620</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>€95,494</td>
</tr>
<tr>
<td>Forecast % Occupancy</td>
<td>0%</td>
<td>5%</td>
<td>5%</td>
<td>15%</td>
<td>45%</td>
<td>45%</td>
<td>50%</td>
<td>50%</td>
<td>35%</td>
<td>25%</td>
<td>10%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Berths nights sold</td>
<td>0</td>
<td>28</td>
<td>31</td>
<td>90</td>
<td>248</td>
<td>330</td>
<td>372</td>
<td>372</td>
<td>240</td>
<td>155</td>
<td>60</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Monthly Income (L x R x S) x i</td>
<td>1,388</td>
<td>1,537</td>
<td>4,462</td>
<td>12,296</td>
<td>16,382</td>
<td>18,444</td>
<td>18,444</td>
<td>11,900</td>
<td>7,685</td>
<td>2,975</td>
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<td>Ttl Visitors Yr 5</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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</tr>
</tbody>
</table>
### APPENDIX - III  Annual Lease Income forecasts

Berths 200
L = Mean Length 9.5
R = Rate per metre €360
S = Sales Target
I = Annual inflation allowed of 3%

<table>
<thead>
<tr>
<th></th>
<th>Yr 1</th>
<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capacity</strong></td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td><strong>Sales Target</strong></td>
<td>50%</td>
<td>60%</td>
<td>70%</td>
<td>80%</td>
<td>90%</td>
</tr>
<tr>
<td><strong>Annual Income (L x R x S) x I</strong></td>
<td>€342,000</td>
<td>€422,712</td>
<td>€507,959</td>
<td>€597,940</td>
<td>€692,863</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Yr 6</th>
<th>Yr 7</th>
<th>Yr 8</th>
<th>Yr 9</th>
<th>Yr 10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capacity</strong></td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td><strong>Sales Target</strong></td>
<td>95%</td>
<td>95%</td>
<td>95%</td>
<td>95%</td>
<td>95%</td>
</tr>
<tr>
<td><strong>Annual Income (L x R x S) x I</strong></td>
<td>€753,296</td>
<td>€775,895</td>
<td>€799,172</td>
<td>€823,147</td>
<td>€847,842</td>
</tr>
</tbody>
</table>

### APPENDIX - III  Commercial leases

Assumed capacity of 10 x berths 10
L = Mean Length 9.5
R = Rate per metre €525
S = Sales Target
I = Annual inflation allowed of 3%

<table>
<thead>
<tr>
<th></th>
<th>Yr 1</th>
<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capacity</strong></td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td><strong>Sales Target</strong></td>
<td>50%</td>
<td>60%</td>
<td>70%</td>
<td>80%</td>
<td>90%</td>
</tr>
<tr>
<td><strong>Annual Income (L x R x S) x I</strong></td>
<td>€24,938</td>
<td>€30,823</td>
<td>€37,039</td>
<td>€43,600</td>
<td>€50,521</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Yr 6</th>
<th>Yr 7</th>
<th>Yr 8</th>
<th>Yr 9</th>
<th>Yr 10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capacity</strong></td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td><strong>Sales Target</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Annual Income (L x R x S) x I</strong></td>
<td>€57,819</td>
<td>€59,553</td>
<td>€61,340</td>
<td>€63,180</td>
<td>€65,076</td>
</tr>
</tbody>
</table>
Scenario # 1

Conditions:
Presales of 10 year leases: 50
Annual Leases: 170
Visitor Berths: 20
Commercial Berths: 10
Total Berths: 250

Income Forecast for year 1 - year 10

<table>
<thead>
<tr>
<th>Max Berths</th>
<th>Yr 1</th>
<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 9</th>
<th>Yr 10</th>
<th>Yr 11</th>
<th>Yr 17</th>
<th>Yr 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 year Leases *</td>
<td>50</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>200,500</td>
<td>200,500</td>
<td>200,500</td>
<td>200,500</td>
</tr>
<tr>
<td>Annual Lease</td>
<td>170</td>
<td>€290,700</td>
<td>359,305</td>
<td>431,765</td>
<td>508,249</td>
<td>736,500</td>
<td>758,595</td>
<td>781,353</td>
<td>932,976</td>
</tr>
<tr>
<td>Commercial Berths</td>
<td>10</td>
<td>49,875</td>
<td>30,823</td>
<td>37,039</td>
<td>43,600</td>
<td>56,862</td>
<td>58,568</td>
<td>60,325</td>
<td>72,031</td>
</tr>
<tr>
<td>Ancillary Service income</td>
<td>0</td>
<td>18,594</td>
<td>19,152</td>
<td>19,727</td>
<td>20,319</td>
<td>4,494</td>
<td>5,494</td>
<td>9,549</td>
<td>11,744</td>
</tr>
<tr>
<td>Total Marina Income</td>
<td>250</td>
<td>€390,481</td>
<td>€448,694</td>
<td>€537,754</td>
<td>€629,221</td>
<td>€925,728</td>
<td>€1,168,815</td>
<td>€1,197,864</td>
<td>€1,391,405</td>
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</tbody>
</table>

* In Year 10 the sale of a further 50 long-term leases are to be amortised over the following 10 year period

Annual Lease Forecasts

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Yr 1</th>
<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 9</th>
<th>Yr 10</th>
<th>Yr 11</th>
<th>Yr 17</th>
<th>Yr 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 year Leases *</td>
<td>170</td>
<td>170</td>
<td>170</td>
<td>170</td>
<td>170</td>
<td>170</td>
<td>170</td>
<td>170</td>
<td>170</td>
</tr>
<tr>
<td>Sales Target</td>
<td>50%</td>
<td>60%</td>
<td>70%</td>
<td>80%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Cost per berth per metre</td>
<td>360</td>
<td>371</td>
<td>382</td>
<td>393</td>
<td>456</td>
<td>470</td>
<td>484</td>
<td>578</td>
<td>631</td>
</tr>
</tbody>
</table>

Annual income (L x R) x S) x i

<table>
<thead>
<tr>
<th>Yr 1</th>
<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 9</th>
<th>Yr 10</th>
<th>Yr 11</th>
<th>Yr 17</th>
<th>Yr 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>€290,700</td>
<td>€359,305</td>
<td>€431,765</td>
<td>€508,249</td>
<td>€736,500</td>
<td>€758,595</td>
<td>€781,353</td>
<td>€932,976</td>
<td>€1,019,488</td>
</tr>
</tbody>
</table>

P&L projection for year 0 - year 10

Income based upon sales targets:
Year 1: 50%
Year 5+: 95%
Year 8+: 100%
Inflation: 3%
Operating cost per berth: €1,300
Depn of floating assets @ 4%: €1,675,674

<table>
<thead>
<tr>
<th>Year</th>
<th>Income</th>
<th>Expenses</th>
<th>EBITDA</th>
<th>Depn</th>
<th>EBIT (operating income)</th>
<th>Bank Charges</th>
<th>Profit before Tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yr 1</td>
<td>€390,481</td>
<td>€325,000</td>
<td>€65,481</td>
<td>€67,027</td>
<td>-€1,546</td>
<td>-€165,500</td>
<td>-€167,046</td>
</tr>
<tr>
<td>Yr 2</td>
<td>€448,694</td>
<td>€344,793</td>
<td>€113,944</td>
<td>€67,027</td>
<td>-€4,917</td>
<td>-€165,500</td>
<td>-€118,583</td>
</tr>
<tr>
<td>Yr 3</td>
<td>€537,754</td>
<td>€355,136</td>
<td>€192,962</td>
<td>€67,027</td>
<td>-€125,935</td>
<td>-€165,500</td>
<td>-€39,565</td>
</tr>
<tr>
<td>Yr 4</td>
<td>€629,221</td>
<td>€411,700</td>
<td>€274,085</td>
<td>€67,027</td>
<td>-€207,058</td>
<td>-€165,500</td>
<td>€41,558</td>
</tr>
<tr>
<td>Yr 9</td>
<td>€925,728</td>
<td>€424,051</td>
<td>€514,028</td>
<td>€67,027</td>
<td>-€447,001</td>
<td>-€165,500</td>
<td>€281,501</td>
</tr>
<tr>
<td>Yr 10</td>
<td>€736,500</td>
<td>€436,773</td>
<td>€744,763</td>
<td>€67,027</td>
<td>-€694,064</td>
<td>-€165,500</td>
<td>€512,236</td>
</tr>
<tr>
<td>Yr 11</td>
<td>€758,595</td>
<td>€521,530</td>
<td>€781,091</td>
<td>€67,027</td>
<td>-€802,848</td>
<td>-€165,500</td>
<td>€528,564</td>
</tr>
<tr>
<td>Yr 17</td>
<td>€781,353</td>
<td>€569,889</td>
<td>€869,875</td>
<td>€67,027</td>
<td>-€864,918</td>
<td>-€165,500</td>
<td>€637,348</td>
</tr>
<tr>
<td>Yr 20</td>
<td>€932,976</td>
<td>€1,019,488</td>
<td>€931,945</td>
<td>€67,027</td>
<td>-€699,418</td>
<td>-€165,500</td>
<td>-€150,1834</td>
</tr>
</tbody>
</table>
## Scenario # 2

**Conditions :**
- Presale of long-leases Yr 0: 25
- Sale of long-leases Yr 5: 25
- Annual Leases yr 1 - 4: 195
- Annual Leases yr 5 +: 170
- Visitor Berths: 20
- Commercial Berths: 10
- Total Berths: 250

### Income Forecast for year 1 - year 10

<table>
<thead>
<tr>
<th>Max Berths</th>
<th>Yr 1</th>
<th>Yr 2</th>
<th>Yr 6</th>
<th>Yr 7</th>
<th>Yr 10</th>
<th>Yr 11</th>
<th>Yr 17</th>
<th>Yr 18</th>
<th>Yr 19</th>
<th>Yr 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 year Leases *</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Annual Lease</td>
<td>195</td>
<td>€333,450</td>
<td>412,144</td>
<td>640,302</td>
<td>659,511</td>
<td>758,595</td>
<td>896,258</td>
<td>1,207,381</td>
<td>1,243,603</td>
<td>1,280,911</td>
</tr>
<tr>
<td>Daily Berth Income</td>
<td>20</td>
<td>31,312</td>
<td>39,414</td>
<td>74,008</td>
<td>77,680</td>
<td>95,494</td>
<td>98,359</td>
<td>117,445</td>
<td>120,969</td>
<td>124,598</td>
</tr>
<tr>
<td>Commercial Berths</td>
<td>10</td>
<td>49,875</td>
<td>30,823</td>
<td>52,037</td>
<td>53,598</td>
<td>58,568</td>
<td>60,325</td>
<td>72,031</td>
<td>74,192</td>
<td>76,418</td>
</tr>
<tr>
<td>Ancilliary Service income</td>
<td>0</td>
<td>20,732</td>
<td>21,354</td>
<td>38,317</td>
<td>39,539</td>
<td>45,633</td>
<td>47,002</td>
<td>56,123</td>
<td>57,806</td>
<td>59,541</td>
</tr>
<tr>
<td>Total Marina Income</td>
<td>250</td>
<td>435,369</td>
<td>503,735</td>
<td>804,664</td>
<td>830,329</td>
<td>958,290</td>
<td>1,101,943</td>
<td>1,452,980</td>
<td>1,496,570</td>
<td>1,541,467</td>
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</table>

* In Year 6 the sale of a further 25 long-term leases are to be used to pay down BES funding

### Annual Lease Forecasts

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Yr 1</th>
<th>Yr 2</th>
<th>Yr 6</th>
<th>Yr 7</th>
<th>Yr 10</th>
<th>Yr 11</th>
<th>Yr 17</th>
<th>Yr 18</th>
<th>Yr 19</th>
<th>Yr 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Target</td>
<td>50%</td>
<td>60%</td>
<td>95%</td>
<td>95%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Cost per berth per metre</td>
<td>360</td>
<td>371</td>
<td>417</td>
<td>430</td>
<td>470</td>
<td>484</td>
<td>578</td>
<td>595</td>
<td>613</td>
<td>631</td>
</tr>
<tr>
<td>Annual Income (L x R) X S)x i</td>
<td>€333,450</td>
<td>€412,144</td>
<td>€640,302</td>
<td>€659,511</td>
<td>€758,595</td>
<td>€896,258</td>
<td>€1,207,381</td>
<td>€1,243,603</td>
<td>€1,280,911</td>
<td>€1,319,338</td>
</tr>
</tbody>
</table>

### P&L projection for year 0 - year 10

Income based upon sales targets:
- Year 1: 50%
- Year 5+: 95%
- Year 8+: 100%
- Inflation: 3%
- Operating cost per berth: €1,300
- Depn of floating assets: 4%

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Yr 2</th>
<th>Yr 6</th>
<th>Yr 7</th>
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<th>Yr 11</th>
<th>Yr 17</th>
<th>Yr 18</th>
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<td>€553,291</td>
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Scenario # 3
Conditions : Units
Presales of 10 year leases 35
Annual Leases 185
Visitor Berths 20
Commercial Berths 10
Total Berths 250

Income Forecast for year 1 - year 10

<table>
<thead>
<tr>
<th></th>
<th>Max Berths</th>
<th>Yr 1</th>
<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 9</th>
<th>Yr 10</th>
<th>Yr 11</th>
<th>Yr 12</th>
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<td>391,009</td>
<td>469,862</td>
<td>801,485</td>
<td>825,530</td>
<td>850,296</td>
<td>875,805</td>
<td>1,077,129</td>
<td>1,109,443</td>
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<tr>
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<td>31,312</td>
<td>39,414</td>
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<td>88,284</td>
<td>95,494</td>
<td>98,359</td>
<td>101,309</td>
<td>124,598</td>
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<td>56,862</td>
<td>58,568</td>
<td>60,325</td>
<td>62,135</td>
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<td>20,473</td>
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<td>481,718</td>
<td>577,212</td>
<td>993,963</td>
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<td>1,207,006</td>
<td>1,239,006</td>
<td>1,491,559</td>
<td>1,532,095</td>
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* In Year 10 the sale of a further 35 long-term leases are to be amortised over the following 10 year period

### Annual Lease Forecasts

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<tr>
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<th>Yr1</th>
<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 9</th>
<th>Yr 10</th>
<th>Yr 11</th>
<th>Yr 12</th>
<th>Yr 19</th>
<th>Yr 20</th>
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<td>70%</td>
<td>100%</td>
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<td>382</td>
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<td>€801,485</td>
<td>€825,530</td>
<td>€850,296</td>
<td>€875,805</td>
<td>€1,077,129</td>
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### P&L projection for year 0 - year 10

Income based upon sales targets :

- Year 1 : 50%
- Year 5+ : 95%
- Year 8+ : 100%
- Inflation : 3%

Operating cost per berth : €1,300
Depn of floating assets @ 4% : €1,694,369

<table>
<thead>
<tr>
<th></th>
<th>Yr 1</th>
<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 9</th>
<th>Yr 10</th>
<th>Yr 11</th>
<th>Yr 12</th>
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<tbody>
<tr>
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<td>€1,239,006</td>
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<tr>
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<td>€325,000</td>
<td>€334,750</td>
<td>€344,793</td>
<td>€411,700</td>
<td>€424,051</td>
<td>€436,773</td>
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### Scenario # 4

#### Conditions: Units
- Presales of 10 year leases: 25
- Annual Leases: 195
- Visitor Berths: 20
- Commercial Berths: 10
- Total Berths: 250

#### Income Forecast for year 1 - year 10

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<thead>
<tr>
<th>Max Berths</th>
<th>Yr 1</th>
<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 9</th>
<th>Yr 10</th>
<th>Yr 11</th>
<th>Yr 18</th>
<th>Yr 19</th>
<th>Yr 20</th>
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<td>Commercial Berths</td>
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<tr>
<td>Ancilliary Service income</td>
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<td>603,517</td>
<td>706,299</td>
<td>1,039,453</td>
<td>1,075,426</td>
<td>1,107,689</td>
<td>1,362,317</td>
<td>1,403,187</td>
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#### Annual Lease Forecasts

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<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 9</th>
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<th>Yr 11</th>
<th>Yr 18</th>
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<tr>
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#### P&L projection for year 0 - year 10

**Income based upon sales targets:**
- Year 1: 50%
- Year 5 +: 95%
- Year 8+: 100%
- Inflation: 3%

**Operating cost per berth**: €1,300

**Depn of floating assets @ 4%**: €1,694,369

<table>
<thead>
<tr>
<th>Income</th>
<th>Yr 1</th>
<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 9</th>
<th>Yr 10</th>
<th>Yr 11</th>
<th>Yr 18</th>
<th>Yr 19</th>
<th>Yr 20</th>
</tr>
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<tbody>
<tr>
<td>€435,369</td>
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<table>
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<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 9</th>
<th>Yr 10</th>
<th>Yr 11</th>
<th>Yr 18</th>
<th>Yr 19</th>
<th>Yr 20</th>
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<tbody>
<tr>
<td>€325,000</td>
<td>€334,750</td>
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<td>€411,700</td>
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<table>
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<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 9</th>
<th>Yr 10</th>
<th>Yr 11</th>
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<th>Yr 4</th>
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<table>
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<th>EBIT ( operating income)</th>
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<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 9</th>
<th>Yr 10</th>
<th>Yr 11</th>
<th>Yr 18</th>
<th>Yr 19</th>
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<th>Yr 4</th>
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<th>Yr 10</th>
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<th>Yr 20</th>
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<table>
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<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 9</th>
<th>Yr 10</th>
<th>Yr 11</th>
<th>Yr 18</th>
<th>Yr 19</th>
<th>Yr 20</th>
</tr>
</thead>
</table>
1989 Kirk, McClure & Morton Design 1
2000 Kirk McClure Morton David Prior Associates Design 1