

APPENDIX

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Appendix i LIST OF PRE-PLAN SUBMISSIONS

Aldi Stores Ltd. (Ireland) c/o John Spain Associates

Blacklion Residents Association c/o Patricia Clery Brady, John c/o John Spain Associates Browne, Mr. Michael c/o Bernard J. Burke & Associates Byrne, Mrs. Margaret Byrne, Mr.& Mrs. c/o Remax Eamonn O'Donovan

Cawley, Evelyn Cawley, Evelyn (letter to Minister Dick Roche) Campbell, Susan Charlesland Residential Management Co. Ltd. c/o Tíros Resources Ltd. & RKD Architect Charlesland Residential Management Co. Ltd. c/o Tíros Resources Ltd. & RKD Architect Charlesland Residential Management Co. Ltd. c/o Tíros Resources Ltd. & RKD Architects Cherry, Ed and Ronan Rose-Roberts

Daly, Catríona & Denis Daly, Eugene & Margaret Delgany Community Council c/o Evelyn Cawley Delgany Community Council c/o Gogarty, Sheena Department of Education School Planning Section Donohue, Michael c/o P.D Lane Associates Doyle, Helen Doyle, Paul and Helen c/o Councillor Eleanor Roche Dunne, Brendan c/o Construction Industry Federation Dunne, Eugene F. c/o KMD Architecture

Eastern Regional Fisheries Board Educate Together Éire Óg Greystones GAA Club ESB Evans, David c/o John Spain & Associates Evans, Nikki & Sara c/o AOS Planning

Fáilte Ireland Fortune, Councillor Tom Fox, Mildred c/o Keith Simpson & Associates Finnucane, Pauline c/o P.D Lane Associates Fisher, Ms Josephine c/o Rory P.Benville & Co. Solicitors

Galligan, Mr. Con c/o Eugene Copeland Gerrard, John Greystones A.F.C. Greystones Community Centre Project Greystones District Chamber of Commerce c/o Noel P. Geraghty Greystones Lawn Tennis Club c/o Michael Geaney Greystones Protection and Development Assoc Greystones Tidy Town Committee c/o Colum Ó'Broin & Partners Greystones United Football Club Greystones Youth Initiative c/o Evelyn Campbell Higgs

Harmon, Leo c/o P.D Lane Associates Hartnett, Aidan Hewson, Norman Hogan, John Horan, Catherine Irish Mapping and GIS Solutions

Kelleher, Kathleen Kelly Family c/o Simon Clear and Associates Kennedy, Brendan

Lloyd, Rev. Enda Leith, Dr. Lewis and Patrick Kinsella c/o OMS Architects

Mc Cann, Mr Neil c/o Frank O' Gallachoir & Associates Ltd Mc Cusker, Pat McGill Planning Mc Govern, Derrick & Sharon Mc Mackin, Barbara Michael Mc Namara, & Co. & Durkin Residential c/o RWA & KMD Architects Minister for Communications, Marine & Natural Resources Mitchell, Councillor Derek

Noble, Mr. Michael c/o Colum Ó' Broin & Partners

O'Connell, Denis & Orla c/o P.D. Lane Associates O'Neill, Mr. and Mrs. c/o Frank O'Gallachoir & Associates Ltd. OPW O'Riordan, Cian

Power, Declan C.

Reilly, Ronald Roche, Councillor Eleanor

St. Bridgid's School St. Laurence's School St. Vincents de Paul, Greystones

Tempany, David The Friends of Historic Rathdown Thompson, Jane c/o Judy Osbourne Town Park Estates Ltd. c/o RPS Planning & Environment Town Park Estates Ltd. c/o Stephan Little & Associates Tracy Enterprises Ltd. c/o Alan Whelan, Tíros Resources Ltd

Walsh, David & Una Wood, Kieron Wildflower Ltd. c/o RWA Consultants

Zapi Properties Ltd. c/o Whelan Alan, Tíros Resources Ltd Zapi Properties Ltd. c/o Tony Horan and Alan Whelan

Appendix ii QUESTIONNAIRE ISSUED AT GREYSTONES/DELGANY PUBLIC CONSULTATION MEETING AT 7.00PM ON TUESDAY 15TH NOVEMBER 2005 IN GREYSTONES RUGBY CLUB

Bray Head	Greystones/Delgany Local Area Plan Questionnaire
	Please complete this confidential questionnaire and place it in the box titled "submissions".
A-t	Please tick the relevant box
1 2-1	Gender
	male female
	Age Group
N11 Graystones	13-17 18-25 26-35
	36-50 51-65 65+
	Where do you live?
	Growtheast Contraction Children Contract
Delgary	Greystones
Per 5 7-1	now dia you travel to this event?
1 Fm	Car Motorcycle Bus Dart
	Walk Cycle
	How did you learn about this event?
Pre-plan written submissions may be made up to December 9th 2005 to, Shella O'Leany, Service Decutive Officer, Planning Dept, Wicklow Council,	Newspaper Poster/Flyer Word of mouth
County Buildings, Writtaw Enalt, planew@wickRowccco.w Tubuning the diffusion of an and a state of the basis	Announcement at Church
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Wicklow County Council and Mc. Cabe Durney 2006, EIS Greystones Harbour North Beach

Appendix iv GLOSSARY

ACA - Architectural Conservation Areas

- Comparison Retail- high order goods that are required by households such as clothing, furniture, household equipment educational and recreational equipment and newspapers/ magazines
- Convenience Retail goods that are required by households and individuals on a daily basis such as food, beverages and non durable household goods
- cSAC Candidate Special Area of Conservation
- CSO Central Statistics Office
- DoEHLG Department of Environment Heritage and Local Government
- DTO Dublin Transportation Office
- ED Electoral Division
- GDA Greater Dublin Area
- IDA Industrial Development Authority
- IFP Integrated Framework Plan
- LAP Local Area Plan
- LBA Local Biodiversity Area
- MHL Metal halide lamps
- NSS National Spatial Strategy
- OD Over Datum
- **OPW** Office of Public Works
- **OS** Ordnance Survey
- PE Population Equivalent
- Plot ratio Total gross floor area of development divided by the total site area
- POS Private Open Space
- RIAI Royal Institute of Architects of Ireland
- RMP National Record of Monuments and Places
- **RPG** Regional Planning Guidelines
- **RPS** Record of Protected Structures
- SAAO Special Amenity Area Order
- SAR Southern Access Route

- SEA Strategic Environmental Assessment
- SON High pressure sodium lamps
- SOX Low pressure sodium lamps
- SUDS Sustainable Urban Drainage Strategy
- TPO Tree Preservation Order

Appendix v SUSTAINABLE ENERGY IRELAND:

Guidance notes on energy efficient design in new building developments.

Approach

Wicklow County Council is committed to encouraging more sustainable development through energy end use efficiency, and increasing the use of renewable energy, in all new building projects within the Greystones/Delgany Local Area Plan.

It will achieve this by:

- Encouraging responsible environmental management in construction
- Promoting sustainable approaches to housing developments by spatial planning, layout, design and detailed specification
- Ensuring high standards of energy efficiency in all housing developments under its remit, and encouraging developers, owners, and tenants to improve the environmental performance of the building stock, including the deployment of renewable energy
- For housing, specifically adopting the SEI "House of Tomorrow" standard of energy performance as the norm to be applied as the norm within the catchment of the Local Area Plan, representing an improvement of 40% relative to prevailing norms as represented by the Building Regulations Part L
- For all other buildings, specifically applying a comparable improvement of 40% relative to prevailing norms as represented by the Building Regulations Part L
- Anticipating the operational implementation of the EU Directive on the Energy Performance of Buildings (EPBD) by encouraging the energy rating and labelling of building energy performance, so as to give visible recognition to such improvements.

The specific approach proposed for developers is to set a target, accompanied by a menu of design and technology options. this includes renewable energy technologies, as a means of offering flexibility towards meeting that target in the most technically and economically feasible manner on a case by case basis.

As an initial step towards achieving greater environmental sustainability, Wicklow County Council proposes the introduction of a performance based CO2 Emissions Target (CET) for new buildings being constructed within the Greystones – Delgany Local Area Plan.

Targets

All new buildings within the designated area will represent a significant improvement in energy and associated environmental performance relative to current prevailing practice. Either as a prerequisite to receiving planning approval (calculation report to be submitted with the planning application) or as a voluntary code, the following conditions have been adopted:

Housing:

Seek a reduction of at least 40% in CO2 emissions within the housing development, relative to a baseline of prevailing regulatory and design practice. This initial baseline of comparison is to be represented by the provisions of Technical Guidance Document L (TGD L) to the Building Regulations, 2002 using a conventional gas fired heating boiler with an assumed seasonal efficiency of 75%. The calculation is to be carried out for the time being using the Heat Energy Rating Method in TGD L, pending adoption of the official national methodology for determining energy performance of housing for the purposes of the EU Energy Performance of Buildings Directive (EPBD). In meeting this CO2 performance target, the development shall include:

- A collective average reduction of at least 40% in energy consumption for space and water heating, relative to the baseline of existing regulatory and design practice and using the methodology outlined above; and
- A contribution of 20% by renewable energy supply systems to meet the collective space and water heating requirements within the housing development.

Non-residential:

A collective reduction of at least 40% in CO2 emissions deriving from total energy usage (space heating, water heating, lighting, other) arising from all services within the development, relative to a baseline of existing regulatory and design practice. This initial baseline of comparison is to be represented by the provisions of TGD L to the Building Regulations, 2006. In the absence of an official national methodology for determining the energy performance of non-domestic buildings, this calculation is to be carried out using a method compliant with the draft European Standard prEN 13790.

In meeting this CO2 performance target, the development shall include:

- A collective average reduction of at least 40% in energy consumption for all services , relative to the baseline of existing regulatory and design practice and using a methodology as outlined above; and
- A contribution of 20% by renewable energy supply systems to meet the collective energy requirements within the development.

To illustrate the above, using the Heat Energy Rating methodology, the baseline energy performance of new housing is typically 125 kWh/m2/year for space and water heating when constructed to the minimum requirements of Building Regulations, 2002, and using a boiler with a seasonal efficiency of 75%. This translates into a CO2 performance of 23.7 kg/m2/ year using a gas fired heating system.

Wicklow County Council is proposing that new housing developments should aim to achieve a 40% reduction in CO2 emissions associated with space and water heating (i.e. to below 14.2 kg/m2/year), which must include a reduction in energy use for this purpose (i.e. to below 75 kWh/ m2/year) and a contribution of at least 20% by renewable energy systems to meet the collective space and water heating requirements within the development.

Menu of Options

In pursuit of these targets, a strong menu of superior design and specification options will include the following:

- Site layout and associated bio-climatic/ passive solar design measures
- Enhanced levels of insulation in walls, roofs, floors, glazing and doors
- Reduced uncontrolled air infiltration losses
- Use of healthy and controllable ventilation systems
- Heat recovery systems
- Use of daylight
- Water conservation measures
- More sustainable building materials
- Improved heat generation appliance efficiency, e.g. condensing boilers
- Intelligent heating system configuration and time/ temperature/ zone/ function controls

- Efficient provision of domestic hot water
- Fuel switching to low or zero CO2 emitting fuels
- Energy efficient lighting systems
- Incorporation of renewable energy systems, e.g. active solar, heat pumps, biomass
- Provision of appropriate group or district heating systems.

In the case of non-domestic buildings, additional options include:

- Heating, ventilation and air conditioning systems and controls
- Electrical energy use including motive power
- Efficient lighting systems and controls
- Building Energy Management Systems
- Occupancy controls
- Monitoring and Targeting systems
- Combined Heat and Power (CHP)

Other measures which can contribute to the energy efficiency and renewable energy targets can also be considered.

This menu approach enables specifiers and developers to adopt approaches which are responsive to site and client circumstances and constraints. It also offers the flexibility to explore and employ different mixes of options on a case by case basis, to maximise technical and economic feasibility.

SEI April 2006

Greystones/Delgany Local Area Plan-Local Biodiversity Areas 20th February 2006

General Description of the natural environment

The following report was commissioned to assist in providing additional information for the Delgany/Greystones Local Area Plan. The Delgany/Greystones area is a coastal area located approximately between Bray Head and Kilcoole and east of the N11 at Glen of the Downs.

The eastern boundary comprises of the HWM of the Irish Sea (Figure 1). This area, along with its hinterland, represents one of the first green field areas south of Dublin and as a result is under significant development pressure.

Figure 1. Aerial image (2000) of Greystones/Delgany Area with LAP boundary and designated areas.



The study area comprises of medium to high density housing in and around the immediate areas of Greystones/Delgany (40% of the area). In the outlying areas, larger houses with substantial gardens comprise approximately 25% of the area and improved grassland/ amenity and scrub currently account for 35% of the area. The latter two areas are usually surrounded by well established hedgerows which are important wildlife refuges. However, with the introduction of the high density Charlesland development in the south east corner of the area, it is envisaged that the area of improved grassland/ amenity and scrub will be reduced dramatically to approximately 25% of the entire area and medium to high density housing will increase to approximately 50% of the study area. This and smaller scale developments will have significant negative impacts on the biodiversity of the region, which has already been confined to very few areas. As a result, the remaining wildlife refuges, though not necessarily nationally important due to the rarity of protected/rare species, should be classed as locally important with the function of maintaining biodiversity in the region. Wildlife refuges in the region are mainly concentrated, in substantial derelict sites, amenity areas, large well established gardens, hedgerows and along the banks of streams, the railway line and along the coast.

Designated Areas

The only designated area within the site is the southerly extension of the Bray Head SAC (Figure 1). This includes the eroding boulder clay/alluvial deposit cliffs in which sand martins nest each summer. The Glen of the Downs SAC is located outside the area, 300m to the west at its nearest point. However, the Three Trout Stream which feeds Glen of the Downs SAC and flows into the sea between the Charlesland Golf Club and the driving range, is a natural asset for the area and its importance cannot be underestimated. It is an important stream that contains migrating sea trout, eels, grey heron, dipper and otters (protected under Annex II of the Habitats Directive) and provides a strong natural wildlife corridor/refuge that divides the Greystones/Delgany area. No other designated areas occur in the area.

Local Biodiversity Areas

Following examination of aerial images (from 2000), 6" maps and discussions with National Parks and Wildlife Service/ Central Fisheries Board Staff the following areas (in blue) were selected for further study (Figure 2). Of the 25 areas highlighted and visited, 16 were deemed to be of importance to local biodiversity and 9 were dismissed as either being subsequently developed or were of low importance to biodiversity. The 16 areas of significant importance to local biodiversity are shown in figure 2 (a,b) and listed in Table 1.

Three Trout Stream was surveyed from its mouth to where it meets the N11. The coastal areas from HWM to the west side of the railway line on the eastern boundary, including part of Bray Head SAC were surveyed. The boundaries of all these areas were plotted on GIS (National Grid). In addition areas of Three Trout Stream that it was felt could be liable to seasonal flooding, based on the vegetation present and local knowledge were also geo-referenced and plotted on GIS. These areas were categorised into marsh areas (GM1) and Wet Grassland areas (GS4)(Figure 3).

The study was carried out from 16th -24th January 2006 and as a result could possibly underestimate areas of floral and seasonal migratory bird importance. However in contrast, winter migratory birds such as Brent Geese were observed in the study area.



Figure 2a Areas visited (blue) Local Biodiversity Areas identified with initial boundaries (numbered).

Figure 2b. Final extent of Local Biodiversity Areas including buffer zone on Three Trouts Stream

	Townland/site name	Habitats present (Fossitt 2000)	Faunal/ Flora Species present or likely	Possible Threats	Relative Biodiversity importance
1	Seashore to and including railway from south to Rocky outcrop (329839/212244)	CC1 Seawalls Piers and Jettys BL2 Earth Banks ED2 Spoil and Bare Ground LS2 Sandy Beach BL1 Stone Walls and other Stonework FW3 Canals	Seabirds (Gulls, Turnstones) Foxes	Human/canine disturbance Terrestrial litter Marine Pollution (oil, litter) Sea-level rise/ severe storms could impact	Low
2	Rocky outcrop to (329839/212244) Greystones Harbour	LR1 Exposed Rocky Shores CS3 Sedimentary Cliffs CB1 Shingle and Gravel Banks	Sand martins	Erosion of sea cliff. Human and canine disturbance at the top of the cliff.	Medium
3	North of Greystones harbour and part of Bray Head SAC	CB1 Shingle and Gravel Banks CS3 Sedimentary Cliffs HH1Dry Siliceous Heath GS2 Dry Meadows and Grassy Verges	Sand Martin Peregrine Falcon Kestrel	Erosion of sea cliff. Human and canine disturbance at the top of the cliff.	Medium
4	Three Trout Stream and surrounding area (entire length from boundary to the sea)	GS4 Wet Grassland GM1 Marsh WS1 Scrub ED3 Recolonising Bare Ground WN1 Oak Birch Holly woodland WL2 Treelines GA2 Amenity Grassland FW1 Eroding Upland Rivers FW2 Depositing Lowland Rivers BL1 Stone walls and other stonework WL1 Hedgerows	Sea Trout Common Eel Heron Mallard Stickleback Oak Willow Birch Dipper	Encroachment from development leading to accidental and intentional damming Litter Removal of treeline /scrub Siltation of gravel bed Pollution (organic/non organic)	Medium/ High

4a	Glacial meltwater channel	FW1 Eroding Upland Rivers WL2 Treelines((Enda Mullen NPWS Pers Comm.)	Mainly of Geological interest	Development of site and drainage upstream resulting in loss of habitat and water that feeds stream	Medium
4b	Oak, birch and holly woodland bordering Three Trout Stream	WN1 Oak, birch and holly woodland	Birch Oak Holly	Removal of trees and scrub resulting in loss of habitat	Medium
4c	Marsh areas that border Three Trout Stream	GM1 Marsh	Possible frog breeding areas and important floral habitat	Removal/drainage of habitat.	Medium
5	Small stream at Redford Bridge (328170/213579)	FW1 Eroding Upland Rivers WS1 Scrub	Holly Birch Willow Ash	Development/removal or small stand of native scrub	Low
6	Ruins of Captain Tarrants Farmhouse and St. Crispins Cell, Rathdown 328692/ 213663	WS1 Scrub BL1 Stone walls and other stonework	Bats Barn Owl (?) Willow sp. Bramble Gorse	Development of the site would lead to loss of habitat/ nesting site/ loss of prey habitat Vandalism and human disturbance of buildings is evident. Loss or roof covering	Medium

7	Redford Bridge Graveyard 328462/213222	WS1 Scrub BL1 Stone walls and other stonework	Large Stand of Willow sp.	Development. In Littering is already a problem	Low/ Medium
8	Stream from Redford Bridge to shore 328649/213500 to 328920/213625	FW1 Eroding Upland Rivers WS1 Scrub (20m wide) and 150m wide gorse dominated close to shore BL1 Stone walls and other stonework	Willow sp Bramble Ash Ivy Wide gorse area	Development would lead to loss of trees/pollution. Littering is already a problem	Low/ Medium
9	Small stream South of Redford	FW1 Eroding Upland Rivers WS1 Scrub (20m wide x 30m long)	Bramble Elder Sycamore	Development/pollution from new and current development upstream/litter	Low
10	Greystones Golf Course	WS1 Scrub (Gorse dominated) WD5 Scattered Trees and Parkland	Gorse Oak Bats	Removal of broadleaf trees, hedgerows and scrub areas resulting in loss of habitat.	Low/ Medium
11	Treeline west of DART carpark (329996/211406)- (329893-211620)	WL2 Treeline	Scots Pine Beech Bat species	Development\felling resulting in loss of trees	Low/ Medium

12	Treeline between R762 and sewage treatment works (330062/211014)- (329798/21187)- (329793 211558)	WL2 Treeline	Scots Pine Ash	Development/infrastructure resulting in loss of treeline and scrub areas.	Low/ Medium
13	Old Mill ruins (329068/210744)	WS2 Scrub BL1 Stone walls and other stonework	Barn Owl Bat Species	Development resulting in loss of nesting/roosting habitat and felling of surrounding trees	Medium/ High
14	Charlesland House and surrounding farm buildings	WS2 Scrub BL1 Stone walls and other stonework BL3 Buildings and artificial surfaces	Barn Owl Bat Species	Development	Medium/ High
15	Treeline at (328520/211598)- (328498/211761)	WL2 Treeline	Scots Pine	Development resulting in felling of trees	Low
16	South of Kindelstown	WS2 Scrub FW1 Eroding Upland Rivers WL2 Treeline	Elder Ash Willow Holly	Development resulting in loss of habitat.	Low

Areas meriting special attention 1) Three Trout Stream

Three Trout Stream Survey

The Three Trout Stream flows for 4km approximately within the Greystones/Delgany area and forms one of, if not the most important wildlife area in the Greystones/Delgany LAP area. It forms a natural and important wildlife corridor/refuge from Glen of the Downs SAC to the sea and is recognised as important for the migration of sea trout to the point where it reaches the N11. It is predominantly clear, fast flowing, shallow in nature with a significant gravel bed along most of its length.

The stream enters the sea between Charlesland driving range and golfcourse (330407/211099). Going upstream the stream initially passes under the railway and follows concrete banks either side of which is a 5m wide low scrub corridor, between golf course to the south and driving range to the north. Brent Geese (150 approxametely) and oystercatchers were observed on the driving range. Following the bridge beside the sewage treatment works (330218/211038) taller scrub and steeper banks develop. The field on the north bank of the stream (centre point 329947/210748) is substantially lower than that of the golf course on the other side of the stream, and is poorly drained grassland (GS4) and is possibly open to seasonal/ periodic flooding. Despite a steep incline 3-4m at the northern end of this field the wet grassland continues up the slope indicating a high water table. Significant littering of the stream is evident at the bottlebank/ waste centre of the golf club (330104/210608).

A culverted stream enters Three Trout Stream just prior to an apartment complex (329952/210483) where the wildlife corridor has been removed for 100m. The Three Trout Stream is blocked by a fallen tree with builder's waste (timber, styrofoam, flooring, signs etc.) forming an impasse to fish at 329869/10513. Following on from the dual carriageway bridge at 329779/210531 the wildlife corridor widens to 10 m on the northside of the stream which contains willio sp, elder, gorse and holly. On the southside scrub has been removed and replaced by fencing. This has been vandalised to provide access to the stream. Littering including building waste is evident here also. Possible seasonal flooding up to 5m from the stream is evident at 329395/210601.

Encroachment of housing and littering from (329348/210591) to (329019/ 210517) is clearly evident east of Three Trout Bridge, and impacts strongly on local biodiversity. Following the bridge at 328951//210465 and additional site of possible flooding is found on the north bank of the stream where the corridor is 2-3m wide. A substantial area of marsh (GM1) (70m x200m) with very high water table is located on the south side of the river at Farankelly House (328689 210473). The field on the north side of the river contains wet grassland (GS4) for approximately 40 meters from the stream.

First obstruction to stream (image taken from downstream)

Encroachment if housing and dumping along the Three Trout Stream

A significant tributary enters the stream slightly west of Farankelly House (328508 210505). This was followed northwards. The west side of this stream was wet grassland (GS4) marshy in areas (GM1) for approx 50 m from the stream. The eastern bank of the stream forms a steep grassy slope and contains willow sp., holly gorse Ivy and bramble. A housing development (at 328513/210717) has removed the northern bank of the stream and the bed of the stream is now made of hardcore. The flora of northern banks and southern banks of the stream have also been removed further upstream (328434/210745).

From the junction with the tributary above, the Three Trout Stream continues towards Delgany. Scrub (WS1) is 25m in width approx and contains Holly, *Salix* species. Another impasse to fish, backed up with litter and building waste is located at 328246/210502. A significant building site is located on the western bank where all scrub has been removed. A new, possibly drainage, outfall is located at (328246/210502). At this point the eastern side of the stream forms a slope of approximately 25m wide, 45°. While this area is classified as WN1 according to Fossit (2000) the area is too small to be considered of any real conservation significance. It does however represent a small fragment of native Irish woodland, a habitat which is in serious decline and for this reason should not be impacted on further. Another impasse to migrating trout/eels is located further upstream (at 328015/210628).

Following the bridge at Delgany (327848/210659) recolonising bare ground (ED3) is possibly susceptible to flooding. Scrub is maintained on both sides of the stream for approx 3-4 m until it widens to 30m further up stream (at 327451 210621). Of noteworthy importance is a canopy covered ravine containing a small stream, located on the border of the Greystones Delgany boundary. This ravine is potentially of geological significance as is one of several glacial meltwater channels.

The stream is currently extremely vulnerable to human based pressure and unless strict and significant preservation measures are put in place the Greystones Delgany area will imminently loose its main Local Biodiversity Area. It is clear from examining the 6" maps, local flora and local knowledge that areas of this stream are liable to flooding. The presence of wet grassland and marsh in the area would tend to indicate areas that are possibly open to seasonal flooding. This includes areas within the proposed Charlesland development and in the Delgany area.

Threats To Three Trout Stream

Development, encroachment and their corresponding side-effects appear to currently be the most significant threat to the stream. This stream is a shallow and predominantly gravel based with very few pool areas. As such it is sensitive to extreme temperatures in summer, resulting in lower oxygen levels and is also sensitive to siltation of gravel areas (possible egg laying/nursery areas). The removal of native vegetation from the sides of the banks increases both of these threats significantly. When the aerial image from 2000 is compared to the current status of the area and the current planning images, significant development has been carried out and is due to be carried **out which will impact directly on the stream. With the potential scale of development that could arise, significant additional pressure could be placed both north and south of the stream resulting in a significant loss in the biodiversity associated with this stream.**

In addition, the development of significant areas of land within the watershed reduces the absorbing nature of the land and as a result the stream is more liable to suffer flooding and also lower water levels in times of drought, when the stream is most sensitive to impacts such as pollution. With no current monitoring system in place for the stream it is difficult to assess if pollution incidents are occurring. The Eastern Region Fisheries Board does not recall serious pollution incidents in the stream. However is evident (NPWS), that there has been disintegration in the quality of the stream over the past ten years.

Recommendations in relation to Three Trout Stream High Priority

- The stream is currently impassable for migrating fish at a minimum of three points. It is essential that these structures are removed as quickly as possible.
- Development of new houses and encroachment of by current inhabitants has removed the scrub and trees along the bank of the river making the river more vulnerable to extreme summer temperatures (reducing oxygen content) and an increases in particulates (clogging gravel beds). It is essential to the stream that the practice of scrub removal from either side of the bank is halted immediately and in areas that it has been removed, e.g. Charlesland, that these are replaced with similar native species. It is strongly recommended that a minimum of a 20m buffer zone of native vegetation, from each bank, is maintained along the bank of the stream and its main tributary, which would be extended where relevant to incorporate additional wooded/scrub/marsh areas (Figure 4). This would be deemed essential to protect the stream from extreme summer temperatures and reduce the threat of particulate material ending up in the stream, which would clog up spaces in gravelbed. It is also suggested where possible that an additional 3m of grassland/amenity area is maintained outside the buffer zone providing a "flyzone" for bats and Owl species. In areas where dense scrub (nor briar dominated) and tall trees have already been established that these are retained. Flushes of particulates due to construction, as observed during field work, should be avoided as it can cause fish mortality/irritations on fish gills and block gravel beds.
- Areas liable to seasonal flooding/marsh areas should not be developed (Figure 3). Instead areas of wet grassland, especially in the Charlesland area could be used to absorb runoff (including associated pollutants and silt) from developed areas through the use of reed beds. This would actively encourage and increase biodiversity while reducing the impact of development on the stream and avoiding the flooding of developments which could be placed in areas liable to flooding. Flooding becomes increasingly likely the more development that continues in the watershed. In

addition in recent years summer rainfall levels have been lower on average than previously recorded. However, studies have shown that there has been a significant increase in winter rainfall over the past 40 years and it is predicted that climate change will introduce more erratic weather patterns including heavy rain and flooding. It is therefore emphasised that the areas outlined as marsh and wet grassland (Figure 3) are potentially conservative in relation to the flooding risk along this stream and the drawing of exclusion zones based on these alone should be done with caution. In addition these areas did not include bare of disturbed ground and amenity grassland due to the lack of indicator species.

Continuous monitoring of the stream is needed to ensure that it retains its wildlife. This would include the monitoring of biological and chemical contamination as well as vigilance in relation to dumping, removal of the scrub corridor and discharge of contaminants, as well as accidential/intentional damming. Three sites for this monitoring would be suggested:

> Junction of N11 and Three Trout Stream Delgany East side of new housing development. Downstream of Charlesland Development

Medium Priority

- Littering is evident where development occurs beside the stream. These areas have been highlighted. The golf course needs to issue stronger litter management procedures which could include fencing of waste areas.
- The stream is not currently treated as an asset by the local community and this philosophy should be changed as soon as possible. The inclusion of a walkway from Delgany to Greystones and education initiative in local schools/along the stream could assist. The danger is that with additional development along the stream an increase in the dumping of waste could occur.
- An assessment of the impacts of a development whose boundary is within 20m of the stream or its tributaries should be carried out pre, during and post development. This could have pre-empted the current damming of the stream and construction litter problems in the Charlesland and Delgany areas.

Figure 3. Possible sites of seasonal flooding based on vegetation present (Purple: Wet grassland, Yellow: Marsh & Blue: Scrub likely to flood). Areas of bare/disturbed ground and amenity grassland are not included in this image due to the lack of vegetative indicators.)

Figure 4. Three Trout Stream with a 20m buffer zone from each bank of the stream (blue) which also includes specific areas of interest A) Glacial meltwater channel B) Marsh areas C) Oak Birch and Holly woodland. Areas of wet grassland (Purple) indicate possible seasonal flooding or a high water table.

2) Coastal area survey from Charlesland Boundary to Bray Head SAC

The southeastern boundary of the area begins at the southern boundary of the Charlesland Golf club (330698/210600) on the a 20m wide boulder beach (man made). Beside the railway track was boulder clay and Gravel (CC1, BL1 and ED2) which was species poor. On the west side of the track is a golf course. Sandy Beach (LS2) starts opposite the golf course (at 330498/210988) and a grass verge 3m wide starts shortly after (at 330356/211181) between the railway track and boulders (BL1/ED2). The distance between the track and the railway at this point is 10m and as a result this area may be prone to sea based intrusion. On the west side of the track is the southern end of the driving range which contained Brent Geese, Oystercatcher and Turnstones.

Towards Greystones marram grass starts on the beach (at 330234/211364) and ends with the boulders (at 330096/211566) as the grassy bank also begins beside the railway. The terrestrial habitat along the majority of railway track behind the boulder defence is grassy verge (GS2). The main vegetation consists of Taraxicum sp., Senecio vulgaris, Senecio jacobaea, Cirsium vulgare and Valeriana officinalis and various grass species. A small area of marram grass (Ammophila arenaria) occurs on the beach to the east of the railway track at the northern edge of the driving range. The area behind railway track (west of track) appears to be slightly damper than the area to the east of the railway track and supports a community dominated by Common reed (Phragmites australis), Ivy (Hedera helix), Wood avens (Geum urbanum) and Butterbur (Petasites hybridus). The wildlife corridor area of the track stops prior to Greystones. The beach ends at a rocky outcrop 329873/212268. Up to this point the area is species poor and no noteworthy besides those mentioned above were found. However, grey seals, protected under Annex II of the Habitats directive are known to frequent the sea in the northern section of this beach.

On the boulderclay cliffs (CS3) behind the rocky cove at Carrig Eden (329666/21602) a possible nesting site for sand martins is located. No other noteworthy species or habitats were found in this area.

Fence post hanging in mid air due to erosion of sedimentary sea cliffs (Above)

North of Greystones Harbour is a stony beach (CB1 above and below strandline). Birds observed in this area included great Black backed gull, cormorant, ringed plover, juvenile herring gulls, turnstone and oystercatcher. This beach continues northwards into the Bray Head SAC and is likely to be a result of the erosion of the boulder clay cliffs north of the harbour. The littoral and sublittoral areas of the proposed marina were examined by Aquafact International Services in 2000. Aquafact found very few faunal species and none that were deemed to be rare or sensitive or "listed under any sort of designation as requiring protection".

The terrestrial habitat along the cliff top is dry coastal heath and grassy verges, broadly corresponding to Fossit's (2000) classification of HH1 and GS2, the heath occurs as a mosaic grading into scrub (WS1) which is dominated by Bramble (*Rubus fruticosus*), and grasses (*Agrostis canina* and *A. stolonifera*). Gorse (*Ulex europaeus*) also occurs frequently within this area. Land use at the site consists of recreational use. A well-worn path is located along the cliff for much of the site and is regularly used for walking. Severe erosion of the sea cliffs is having an obvious impact on this marginal area. A model of the erosion of these cliffs from the Greystones Harbour EIS (3rd January 2006) estimates that these cliffs will recede 20m at the toe of the cliff, and even more on the upper cliffs, over the next 30 years. As a result this habitat is likely to disappear. Sand martins nest in these cliffs each summer. However the nest site changes annually depending on where the cliffs have been eroded.

Behind the beach at the beginning of the "Cliff Walk" a waste ground area, on the northern edge of the proposed harbour development (329188/213111) is located. This marks the beginning of a scrub (WS1) based, bramble dominated, 30m wide wildlife corridor between the cliff walk and the railway line which extends as far as the football pitch (328978/213314). A substantial gorse dominated enclosed scrub area WS1 (150m x 150m) follows the northern extent of the football pitch that extends from the railway to the sea cliffs. This area marks the location of a stream that flows down from the Redford area.

Recommendations in relation to the coastal zone area

The potential impacts of the proposed marina on the coastal zone need to be adequately assessed. The potential for the increased erosion of the cliffs within the SAC area needs to be reviewed.

The main threat to the coastal zone on south beach is from possible pollution. Littering either sea or land based can result in the entanglement of wildlife species and injury to bathers. Adequate refuse points along

this stretch of coastline should be provided.

3) Additional survey of hedgerows and treelines.

An additional survey of the hedgerows and treelines of significance outside local biodiversity areas was carried out. Areas with prominent treelines and areas of native hedgerows that should be preserved were identified. The main area of significance within the LAP is the hillside south of Delgany. Here hedgerows have grown to include mature ash, beech, willow etc. giving the hillside a wooded appearance.

Additional Recommendations in relation to Greystones/Delgany LAP-Local Biodiversity areas.

With increasing development in the Greystones/Delgany area biodiversity is clearly being reduced and apparently at an alarming rate. When the aerial image from 2000 is compared to the current situation on the ground, which is in turn compared to the proposed planning developments especially in the Charlesland area, there will soon be no real space for wildlife outside garden hedgerows and specific amenity areas in the Greystones/Delgany area. If this is the case one would have to question the existence of any Local Biodiversity Areas in the region. This may not sound significant but it is likely result in the loss of the remaining protected/rare species of resident mammals and birds such as otters and barn owls from the area. This need not be the case and the incorporation of certain recommendations as outlined below, from the planning permission level would assist in the presence of areas that are important wildlife refuges.

- The maintenance of all hedgerows, treelines, scrub and native wooded areas would be deemed essential to preserve biodiversity in the area and their removal should be prohibited. The planting of native hedgerows/trees possibly as a percentage of remaining green areas should be "encouraged".
- Derelict Buildings that currently possess protected species should be preserved and if possible enhanced to increase their biodiversity value e.g. incorporation of bat boxes, additional nesting sites etc.
- Buffer zones should be placed around areas that are deemed important to wildlife. This includes areas such as Three Trout Stream.
- The planning permission stage would be seen as the key to encourage biodiversity in the remaining areas that are going to be developed in the area.
- A biodiversity education programme should be incorporated into local schools to encourage the enhancing of biodiversity.
- Wildlife corridors should be maintained. This is especially important in relation to streams and infrastructural projects e.g. roads bridges etc. cross wildlife areas.

- Careful consideration needs to be taken in relation to flooding and the location of developments. It is felt that areas that are possibly prone to seasonal/ infrequent flooding have been built upon in the past five years near the Three Trout Stream.
- An Expansion of the western edge of the LAP by 40 m to include glacial melt water channel
- An expansion of the LAP area to include the prominent tree line of Scots Pine on hill east of Drummin (observed from N11 and LAP area) (See figure 5)
- Both the Mill brook Mill and Charlesland house have been identified by National Parks and Wildlife Service as areas containing barn owls. As a result these are sensitive areas that require special attention and conservation. This would include prohibiting/ restricting development and possibly enhancing the conservation value of these areas to increase biodiversity. However, the preservation of these areas needs to be in tandem with the conservation of surrounding hedgerows, linear scrub and treelines in order to maintain the value of these sites.

Prominent treeline of Scots pine just outside LAP area (viewed from Kindlestown)

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viii STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA) STATEMENT

1.0 BACKGROUND

The Greystones/Delgany Local Area Plan 2006-2012 was adopted, with amendments, on 4th December 2006 by the elected members of Wicklow County Council.

The Local Area Plan sets out the spatial planning framework for the settlement of Greystones/Delgany for the period 2006-2012 encompassing the town of Greystones, it's harbour and associated foreshore, and the villages of Delgany, Killincarrig, Blacklion, and Charlesland, providing for a projected population of 19,000-21,000.

The Local Area Plan process was subject to a Strategic Environmental Assessment (SEA) in accordance with the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. No. 436 of 2004). The SEA process involved the following:

- 'Scoping' the content and level of detail of the Environmental Report with the prescribed Environmental Authorities.
- Pre-Plan consultation with the Environmental Authorities.
- Preparation of the Environmental Report.
- Consultations with the Environmental Authorities and the public on the draft Plan & Environmental Report.
- 'Scoping' the content and level of detail of the Environmental Report on the Amendments to the draft Plan with the prescribed Environmental Authorities.
- Consultation with the Environmental Authorities on the Amendments to the draft Plan.
- Preparation of the Environmental Report on the Amendments to the draft Plan.
- Consultations with the Environmental Authorities and the public on the draft Plan, as amended & associated Environmental Report on the Amendments.

2.0 SEA Statement

2.1 Summary of how environmental considerations and the Environmental Report were factored into the plan.

The preparation of the environmental report informed the preparation of the draft Plan.

The compilation of baseline information, including a report on the locally-important areas of biodiversity, provided the basis for including the following in the Plan:

- the identification of environmentally-sensitive areas.
- the integration of local biodiversity objectives.
- the provision of an enhanced policy framework for the natural and built heritage and landscape; including the identification of Architectural Conservation Areas, a Local Urban Character Area and Areas of Special Amenity.

- the promotion of a compact urban form to limit the physical spread of the settlement.
- the identification of environmental constraints to development.
- the inclusion of enhanced policies for the development of town and village centres within the settlement.

2.2 Summary of how submissions/consultations were taken into account

Consultations with the Environmental Authorities, the Eastern Regional Fisheries Board, the Office of Public Works and the Public (through submissions/observations on the Environmental Report to the draft Plan and the Environmental Report to the Plan, as amended), resulted in the following additions/changes to the Plan:

- Inclusion of 6 no. policies to protect the quality and integrity of the Three Trout's Stream, including monitoring.
- Identification of 3 no. areas of particular environmental sensitivity: residential area north of Delgany as vulnerable to groundwater pollution; the Three Trout's Stream and associated floodplains; and the coastline.
- Inclusion of polices for groundwater protection.
- Inclusion of policies relating to minimising flood-risk.
- Inclusion of policies to protect hedgerows and legally protected species (policy HL 16).
- The spatial containment of the settlement within the existing northern boundary with a view to protecting the Bray Head Special Area of Conservation (cSAC).
- Inclusion of an energy policy to reduce energy use, and associated targets.
- Provision for the preparation of integrated management plans for all large-scale residential and commercial developments during the lifetime of the Plan (Section 7.3.3 of the Plan).
- Provision for a policy to promote the recycling and recovery of appropriate wastes within the municipal waste stream.
- Cross-referencing the Housing Chapter of the Plan to the Section concerning the Archaeological Heritage and section of plan concerning water, wastewater, communications infrastructure, energy, waste management and sustainable urban drainage strategies.
- Identification of proposals for monitoring the future potable water and waste water demands of the settlement with a view to protecting water quality and the material assets currently enjoyed in the settlement.

In addition to the above consultation, a site visit was conducted with Tadhg O'Mahony of the Environmental Protection Agency in November 2005.

2.3 Reasons for choosing the plan as adopted, in light of other reasonable alternatives considered

In drafting the Plan, sustainable spatial planning principles were identified at the outset, and included principles that promoted the development of a compact urban form that would maximise the efficient use of land, particularly in close proximity to public transport nodes; promoting a mix of uses to make best use of proximity to transport and services; promoting the protection and enhancement of the natural and cultural heritage; and promoting development that takes into account the environmental carrying capacity of the area as a whole.

The following development scenarios were ruled-out at an early stage of Plan preparation:

- Promoting the spread of development to the north due to the potential negative impact on the protected area of Bray Head cSAC.
- Promoting the spread of development to the south due to consequent inefficiencies in the use of land, particularly land in close proximity to public transport nodes, and also to minimise the loss of agricultural land and encroachment on the rural landscape.
- Intensification of development on land zoned R4 in the 1999 Plan (To permit residential development at 2.5 houses/hectare) to the west of the settlement due to its identification as an environmentally-sensitive area with regard to groundwater vulnerability.
- Zoning of additional lands for purely residential development due to the accelerated growth of the settlement in the period 2002-2005 and consequent pressure on resources and services.

An adopted amendment to the Plan allowed for intensification of development on land zoned R4 in the 1999 Plan, however it was agreed that such an Amendment must be contingent upon connection to the public wastewater treatment system in order to protect groundwater quality.

Further amendments to the Plan allowed for increased residential development, resulting in the identification of potential negative environmental impacts in the Environmental Report on the Amendments. The amendments were carried on the basis of a desire to provide for local need. In relation to the area identified as Z5, the amendment was carried on basis of strengthening Blacklion village centre, allowing for the provision of lands for school facilities and housing to meet local demand.

An amendment to the Plan to provide for a district-level shopping centre within the area zoned E2 at Charlesland was included in the Plan and resulted in the identification of potential negative environmental impacts in the Environmental Report on the Amendments. The amendment was carried on the basis of a desire to increase the retail provision and choice available to residents of the settlement and the delivery of associated community (school site, site for Garda station, site for recycling centre) and employment facilities (Enterprise Centre with start-up facility).

The public consultation element of the planning process identified an over-riding concern of the potential coalescence of the urban centres of the settlement. Using this information, a spatial strategy for the settlement was drafted which took account of the sustainable spatial planning principles set out in the 'Vision for Sustainable Urban Settlement' (see Section 3.1 of the Plan), together with the information compiled as part of the Environmental Report and the knowledge gained from the public consultation process.

The resulting strategy identifies a 'collection of villages' and sets out distinct policies and objectives for each urban settlement, including distinct policies for the protection and enhancement of the natural and cultural heritage and natural environmental resources of Greystones/Delgany.

2.4 Monitoring Measures

Table 2.4Monitoring Measures & Suggested Indicators for Environmental Monitoring of Greystones/Delgany
LAP 2006 - 2012

Environmental Category	Monitoring Measure	Suggested Indicator
Biodiversity, Flora & Fauna	Biological and chemical monitoring of the Three Trout's Stream	Biological & chemical water quality results from continuous monitoring of Three Trout's Stream at 3 locations as recommended in Section 14.2.1 of the Environmental Report.
Population & Human Health	Groundwater monitoring at locations within identified Environmentally-Sensitive Areas (see Section 3.2.8 of the LAP).	Number of recorded groundwater pollution incidents.
	Preparation & Monitoring of 'Future Capacity Study' with regard to wastewater demand. Air Quality Monitoring of the primary pollutants of SO ₂ , NO ₂ , and PM at various locations throughout the settlement.	Retention/Non-Retention of 'Blue Flag' Beach Status at Greystones. Number of breaches of respective limits for SO _{2'} NO _{2'} & PM within settlement.
Soil	Monitoring of mitigation measures in Section 3.4.5 of the Harbour EIS.	Coastal habitat and species presence/absence, e.g. sand martin presence/absence at cliffs at Greystones.
Water	Groundwater quality monitoring (as above). Monitoring of construction works at Greystones Harbour.	Number of recorded groundwater pollution incidents. Retention/Non- Retention of 'Blue Flag' Beach Status at Greystones.
Air & Climate	Air quality monitoring programme & recommended Traffic Management Plan.	Traffic volumes/modal split; % of new development within 400m of public transport stop; number of bicycle parking places. Amount of renewable energy generated from renewable
Material Assets	Preparation & Implementation of recommended 'Water Needs Study'. Preparation & Monitoring of recommended 'Future Capacity' Study. Monitoring construction waste generation.	sources. Number of water shortages recorded within the settlement. Retention of 'Blue Flag' Beach Status at Greystones.
		at Rampere Landfill compared with estimated generation levels outlined in Harbour EIS.

Cultural Heritage	Record known loss or damage to sites/ structures using in-house GIS database as the baseline.	Number of sites/structures protected within the settlement.
		Draft a set of 'qualitative' indicators for ACA's designated in the Plan.
Landscape	Monitor development within rural landscape.	Number of planning permissions granted within areas with landscape category 'rural'.