

# General Lighthouse Authorities

## The United Kingdom and Ireland

The General Lighthouse Authorities Review of  
Aids to Navigation has been undertaken by:-  
Commissioners of Irish Lights  
Northern Lighthouse Board  
Trinity House Lighthouse Service

## Aids to Navigation Review 2010 - 2015

Aids to  
Navigation  
2010 - 2015

INTERNATIONAL STANDARDS

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RISK

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TRAFFIC

REVIEW

COST EFFECTIVE



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## 2. Introduction

The three General Lighthouse Authorities (GLAs) of the Commissioners of Irish Lights, the Northern Lighthouse Board and Trinity House, operate an integrated aids to navigation service throughout the coastal waters of Britain and Ireland. This service is delivered to recognised standards set by the International Association of Marine Aids to Navigation and Lighthouse Authorities so as to meet the responsibilities of the British and Irish Governments under the International Maritime Organisation (IMO) Safety of Life at Sea Convention (SOLAS).

The Mission Statement of the GLAs is:

**“To deliver a reliable, efficient and cost effective Aids to Navigation Service for the benefit and safety of all mariners.”**

This is the third 5-yearly Review in this format that has been undertaken by the three GLAs where they have conducted a formal, simultaneous and coordinated Review of all the Aids to Navigation (AtoNs) that they provide around the coasts of Britain and Ireland. This Review addresses the current and anticipated future requirements for the safe passage of national and international shipping. It also addresses the requirements of other mariners, such as fishing and leisure users.

This Review to 2015 has been prepared at a time of great turmoil in the world’s economic climate. The financial downturn has had significant adverse effects on international sea trade and on the shipping industry worldwide. The mandate of the GLAs and their statutory responsibility is to provide sufficient aids to navigation to mitigate risks and protect the marine environment. The GLAs are very conscious of the cost of the service they provide and continue to work with Government, shipping interests, and other stakeholders to minimise this cost.

The GLA Marine Aids to Navigation Strategy to 2025 (2025 & Beyond) which will be published in 2010, forms the strategic foundation of this Review. Various policy considerations are contained in the GLA’s Joint Navigation Requirement Policies (JNRP-2007), Radio Navigation Plan (GRNP-2007) and Visual Aids to Navigation Plan (VANP-2008). These documents expand the strategic view.

As detailed in the AtoN Review Policy document which is contained in the JNRP, it should be recognised that the nature of shipping and navigation continues to change. Consequently the AtoN infrastructure to assist safe passage requires periodic review to ensure that the AtoNs provided are appropriate. The requirement and the rate of change vary geographically depending on a number of factors. Within the GLA areas it is considered that a Strategic Plan (i.e. 2025 & Beyond) and Operational Plan (i.e. 5 year AtoN Review) caters for the short and longer term review requirements.



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The principle applied is that the amount, mix and nature of AtoNs provided are:

- Commensurate with the amount of and nature of the traffic
- Appropriate for the degree of risk
- Integrated and cost-effective
- Compliant with internationally accepted standards

The priorities in applying such principles are:-

- The safety of life at sea
- Safe passage of shipping
- The protection of the marine environment
- The maintenance of trade.

Each AtoN has been studied in isolation, as well as in relation to the other AtoN in its vicinity which is referred to as the "mix" of AtoN. The study has been carried out based solely on the minimum navigational requirements and does not at this stage take into account any other considerations.

The Aids to Navigation Review 2010 - 2015 is a supporting document of the GLA's Strategy 2025 & Beyond.



## 3. Review Process

### 3.1 Start and Finish of Review Process

The 2010 AtoN Review was formally announced at the Joint Users Consultative Group (JUCG) meeting in London on 20 May 2009.

The 2010 AtoN Review was formally published at the Joint Users Consultative Group (JUCG) meeting in London on 12 May 2010.

### 3.2 Conduct of the Review

Each GLA has carried out a review of its own area of responsibility. Where the boundaries of two or even all three, GLAs meet, a concerted view has been necessary. Thus, for example, in the North Channel/Isle of Man area, all three GLAs have combined to produce the recommendations covering these areas.

Therefore, in producing the recommendations contained in the Review, the GLAs have:

- Carried out their own internal study of the AtoN in their area of responsibility.
- Followed an identical review process.
- Completed identical Risk Assessment Forms and signoff procedures.
- Assessed AtoN individually and as part of a “mix”.
- Carried out cross-border discussions with other GLAs.
- Involved the Users in initial discussions and invited comment.
- Formally briefed the individual GLA User Consultative Groups on the recommendations.

### 3.3 Peer Review

In this review, the 3 GLAs have each presented their draft recommendations to the others for assessment, cross examination and comment.

### 3.4 User Consultation

While Users are consulted regularly and their input is always welcome, Users were formally consulted during 2009/2010 both for input into the Review and comment on the draft proposals. A number of the proposed changes contained in the Review have been incorporated as a direct result of user response obtained to date on specific areas of interest.

### 3.5 Transfers to LLAs and period of transfer

The changes recommended in this Review are intended to be completed within the period of the Review. In the case of transfer of AtoN to a Local Lighthouse Authority (LLA) it is possible that all recommendations may not be fully completed within the period. It is important that there is an orderly transfer of such AtoN and that they are transferred in good condition. However, these recommendations will shape the expenditure on the GLAs' Capital work programmes, maintenance schedules, buoyage programmes contained within the individual Corporate Plans.

### 3.6 The Principles applied in determining the Navigational Requirement

In December 2008, the IMO Maritime Safety Committee (MSC) approved an E-Navigation strategy. Whilst the end result and the timeframe to complete are not certain, nonetheless navigational technology continues to advance. At the same time, the reliance on the traditional system of lighthouses around the coast diminishes. With the exception of leading Lights and PELs, landfall lights and passing lights are now less important and their primary function now is for inshore navigation, confirmation of position and spatial awareness. Thus the “traditional” AtoNs can fairly be regarded as a secondary but complementary system to the primary navigation system of GNSS.

In this Review, the following principles are applied.

- Generally, the lights system can be considered a complementary but secondary system to GNSS.
- Generally, having one light in view is acceptable.
- Generally, a maximum range of 18 miles is considered sufficient for most lights.
- Generally, rotating optics are no longer a requirement.
- If practical, there can be a reduction in amount and diversity of flash characters on lighthouse lights.
- Leading lights remain important.
- Sectorised lights remain important.
- Fog signals are no longer considered to be AtoNs and will only be used as hazard warning signals.
- Generally, Major Floating AtoNs including light vessels can have the same light character if not in close proximity.
- Sequential or synchronised buoy lights should be utilised more.

### 3.7 Methodology

As in previous Reviews, the coasts of Britain and Ireland have been divided into 21 coastal areas. Areas 1 to 8 are the responsibility of NLB. Areas 9 to 14 are the responsibility of Trinity House. Areas 15 to 21 are the responsibility of Irish Lights.

- Both Qualitative and Quantitative data has been used as far as possible to inform the overall assessment of requirements
- AIS analysis has been used as much as possible to determine the volume, type, tracks and pattern of traffic.

- AIS analysis has also been used as much as possible when carrying out risk assessments.
- Use has been made of Geographic Information Systems (GIS) overlay tools to assist in the overall assessment of requirements.
- Information has been incorporated from RYA cruising routes and other new dangers affecting the safety of the Mariner, including proposals for Renewable Energy developments
- Each AtoN has been subject to a table top assessment under the headings below, but a full written Risk Assessment (RA) is only carried out on AtoN where changes are recommended.
- A Risk Assessment may be applied either to individual AtoN or to a group of interrelated AtoN.
- The GLAs have cross checked their RAs and recommendations with each other.

Assessment of AtoNs and the format of RAs carried out include the following considerations:

- 1 Is the AtoN a significant part of a group of Aids which will be affected by the change?
- 2 Assessment of local bathymetry against the proposed change?
- 3 Frequency and accuracy of hydrographic surveys?
- 4 Traffic density, type, size, draft and speed.
- 5 Traffic patterns to be considered in relation to conflict between route and types of vessel.
- 6 Existing obstructions and developments.
- 7 Planned new obstructions or developments.
- 8 IMO international and local charted traffic routing measures.
- 9 Port & Local Information Systems e.g. VTS, Information Service, Sailing Directions and Local NtoMs.
- 10 Local knowledge of users including the availability of pilotage.
- 11 Requirement in prevailing weather conditions including luminous range, sea conditions and background lighting.
- 12 Accident or incident history recorded for this station.
- 13 Any other considerations.

### 3.8 Forms

An overall summary of the recommended changes is contained in Section 13.

A spreadsheet of all the AtoN provided by the GLAs is included in Section 14. In this spreadsheet, any AtoN where changes are recommended is highlighted in yellow.

A Review Process flow chart is included in Section 15.

A sample Risk Assessment form is included in Section 15.

A completed sample Risk Assessment form is included in Section 15.

## 4. Background to Review & Factors relevant to the Review

### 4A Navigational Issues

#### 4A.1 Modern Navigation

The bridges of most modern commercial ships are fitted with a number of key navigational aids, which rely on inputs from GPS for position and timing. GPS has brought readily available and accurate position fixing to millions and has changed the manner in which the mariner conducts a voyage. An integrated bridge has GPS inputs to radar, electronic chart, autopilot, Automatic Identification System (AIS), Global Maritime Distress and Safety System (GMDSS) Voyage Data Recorders, Emergency Position Indicating Rescue Beacon (EPIRB) and more.

The fundamental nature of marine navigation has altered over the last decade as a result of the proliferation of good, reliable, mass-market GPS receivers with a nominal accuracy of 10 metres or better (since the removal of Selective Availability in 2000). The GLAs have operated a public service Differential GPS system since 1998, which offers an enhanced level of accuracy (5 metres or better) but most importantly includes an integrity warning of GPS service interruption or degradation.

However, there remains concern that in the maritime sector there is such high reliance on GPS for positioning fixing and timing due to the known vulnerability of the system to accidental or malicious interference. Glonass, and Galileo, Russian and European equivalent of GPS will only ameliorate concerns to a limited degree. The similarities of GPS and Galileo space based signal mean that they suffer from the same weaknesses. It is essential to retain a mix of complementary systems, as the fundamental principle of marine navigation is never to rely on a single source of navigation information when alternative sources are available. This is why the GLAs promote e-Loran as a land based radio navigation system that is fundamentally different to the satellite signals and does not suffer from the same vulnerabilities.

Given that it is estimated that approximately 90% of UK and Irish trade is carried by sea and our waters are some of the busiest in the world, the potential for accidents, disruption of trade, environmental damage and loss of life resulting from interruption to the GNSS signals is of great concern.

In 2010, the General Lighthouse Authorities published their Marine Aids to Navigation Strategy to 2025, known as '2025 & Beyond'. Whilst obviously attempting to look ahead, this strategy document looks carefully at trends in navigational practices in order to determine a future strategy for the provision of both visual and electronic Aids to Navigation and forms the foundation of this Review.

#### 4A.2 E-Loran

The low-power, high-frequency Global Navigation Satellite System (GNSS - GPS, GLONASS, Galileo...) signals are fragile and vulnerable to all sorts of intentional and unintentional interference. More satellite systems are not the answer: existing low-cost jammers are designed

to deny the civil and military signals of all GNSS systems. A 1.5W GPS jammer is capable of denying GPS for about 30km and causing hazardously misleading information beyond that. GLA trials have shown the extent to which GNSS (GPS) underpins current maritime systems on-board and ashore and has an impact on safe navigation.

Therefore, it is essential to retain a mix of complementary systems, as the fundamental principle of marine navigation is never to rely on a single source of navigation information when alternatives are available. This is driving the GLAs' eLoran programme and its participation in a pan-European Loran network on a trial basis. As a complement to GNSS, eLoran has many key characteristics: independence from GNSS; dissimilar failure modes; complementary performance supporting maritime general navigation applications; maintaining the user's concept of operations with a seamless transition when GNSS is lost; supporting interference detection and mitigation; and readily integrated with GPS at chip level. It also has potential as a systemic backup (i.e. it can support critical infrastructure needs - transport, finance, telecoms, power distribution..., across many user sectors) and this should allow economies of scale regarding user equipment and lower long-term average costs compared with sector-specific backups.

The US has decided to close down its previous generation system, Loran-C. At the same time, the US is analysing whether it needs a systemic backup to GPS: if so, then eLoran is certainly one of the alternatives. Elsewhere, there is growing interest in eLoran in Europe, Russia and the Far East both for maritime navigation and as a systemic backup for critical infrastructure.

### 4A.3 e-Navigation

e-Navigation is the next evolutionary step towards safer navigation. The IALA definition is:

*“e-Navigation is the harmonised collection, integration, exchange, presentation and analysis of maritime information onboard and ashore by electronic means, to enhance berth-to-berth navigation and related services, for safety and security at sea and protection of the marine environment”*

There are 3 fundamental building blocks that must be in place before e-Navigation is fully viable.

- 1 Secure and reliable PNT systems
- 2 Secure and reliable communications systems
- 3 Secure and accurate charts and charting displays

In the present time frame, it is estimated that the elements of e-Navigation will not be fully operational before 2018. Even then, it will not be a “silver bullet” delivered on a set date but rather it will be introduced selectively in various areas as it develops. Availability of an enhanced GNSS service has the potential, in time, to lead to reductions in other forms of aids to navigation.

GNSS will most likely remain the primary radio navigation means of position fixing from berth-to-berth for at least another ten years and the introduction of e-Navigation will further change the way that ships operate. As part of its introduction, we all need to understand what happens

when key e-Navigation components fail or are denied. Getting the human factors part of this right is also critical: before we follow the technology to the ultimate end, we must consider safety, liability, onboard training and duty of care.

IALA beacon DGNSS remains the internationally accepted means of providing DGNSS (DGPS at present) corrections and integrity information to airtime users. It is defined nationally with global standards, albeit with some regional harmonisation of frequencies through IALA and ITU. The GLAs will continue to provide the radiobeacon differential GNSS service. This service will be developed in line with GPS and Galileo to provide not only comprehensive but cost effective augmentation in terms of accuracy; but also to monitor the performance of GPS and Galileo and to provide timely integrity warnings of service degradation.

#### 4A.4 Transition phase to e-Navigation

The period covered by this review covers specifically the next 5 years with an onward view into future requirements. Contemporary technologies already provide the capability to deliver much of what IMO e-Navigation strategy envisages. However, if such technological advancement remains uncoordinated, there is a risk that the future development of the global shipping industry will be hampered through lack of standardisation on board and on land, incompatibility between vessels, and an increased and unnecessary level of complexity and cost.

### 4B Marine Traffic and Density

#### 4B.1 Aquaculture

Applications for aquaculture licenses are made to the various Government Departments responsible for such activities for almost every coastal region. Long-established salmon farming has been augmented by the cultivation of other fin-fish and many varieties of shellfish. The GLAs are consulted by the Government Departments responsible for aquaculture, regarding the impact of aquaculture on the safety of navigation in specific coastal areas. This includes the marking and lighting of fish farms, floating structures, cages and trestles. The issue here is increasingly crowded coastal waters with competing interests.

#### 4B.2 Fishing

Although the traditional fishing industry has been subject to considerable change due to EU and governmental regulation, it remains a viable industry throughout Britain and Ireland, both inshore and off shore. Indeed in recent years there has been a re emphasis of the desirability of maintaining coastal infrastructure by encouraging inshore activities. However, much of this activity is engaged in aquaculture.



### 4B.3 Marine Leisure

In recent years the marine leisure industry has grown significantly. A considerable number of yacht marinas have been built. Satellite navigation systems, electronic chart systems and even integrated navigation systems are common but not always fully understood as to the degree of accuracy and the possible vulnerabilities. Furthermore, the widespread availability of GPS and DGPS receivers, at low cost, is increasingly encouraging mariners of all classes to navigate either closer inshore or closer to dangers, sometimes doing so in conditions of darkness and reduced visibility where they would not have previously ventured.

Large passenger cruising is and continues to be a growth industry. In the current recession, Ports are actively encouraging calls by cruise liners, resulting in very significant growth in port tonnage in some areas.

Smaller 100/200 passenger, 100 metre length, specialist cruise ships are also a feature around the coasts, especially Scotland and the west of Ireland. The attraction for this type of trade is special-interest tours, calls at smaller ports and cruising the unspoilt coastlines.

Offshore islands continue to attract large numbers of tourists from the mainland harbours, carried in small ferries. Islands on our coasts are experiencing increasing traffic movements and very substantial passenger volumes.

### 4B.4 Offshore Renewable Energy Sites (OREs)

Since the last review there has been a proliferation of applications for offshore windpark sites around our coasts. This trend is set to continue as the UK and ROI Governments set target for power generation from renewable sources. Many more windparks are in the planning or consent stage. These sites present a particular challenge to the General Lighthouse Authorities to ensure they are marked correctly and do not impede safe navigation of vessels. This is especially so while in the construction phase.

In addition, there are applications for experimental stations in Orkney, Cornwall and the west of Ireland which are trialling wave and tidal energy devices. It is likely that, over the next five years, commercial production of wave and tidal energy power will commence. These sites are also challenging to mark, particularly wave generators that are often difficult to see, have a low freeboard and can potentially break free of their moorings.

### 4B.5 Routing Measures and Traffic Separation Schemes (TSS)

The practice of following predetermined routes has been operational for nearly 100 years. The application of the idea to the Dover Straits in the 1960s has led to the modern TSS where opposing traffic is separated into "lanes".

The International Maritime Organization is the specialist agency of the United Nations responsible for maritime safety. It is the only international body that can sanction measures on an international level concerning ship routeing and areas to be avoided by ships or certain classes of ships.

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Submissions regarding route proposals or areas to be avoided are the responsibility of Government, i.e. The Department of Transport (DOT) in Ireland and the Department for Transport (DfT) in the UK. In the UK this role has been delegated to the Maritime and Coastguard Agency, which is an Executive Agency of the DfT.

There are 13 TSSs adopted in the UK and Ireland. These are situated in the Approaches to The Humber, Dover Straits, the English Channel, Scilly Isles, Smalls, Anglesey, North Channel (Rathlin Is.), Fastnet and Tuskar. Associated with TSSs there may also be Inshore Traffic Zones (ITZ).

A Deep Water Route for tankers exists west of the Outer Hebrides.

There is likely to be an increase in local and specific Traffic Management Schemes to meet ever more stringent requirements at higher capacity levels.

The MCA and the IRCG have developed systems to monitor AIS vessel movements from shore stations. The sensitivity of our coasts, both from an environmental viewpoint, and from issues such as competing sea space for say windparks, may lead to Governments decreeing that certain classes of vessels (or all vessels) keep a certain distance off our coasts, or follow particular routes.

## 4C Technology Issues

### 4C.1 Automatic Identification System (AIS)

AIS has been developed as a transponder system which is a tool for monitoring ship movements and for state security. AIS is mandatory on SOLAS vessels greater than 300grt since 2004.

However, navigational safety can be enhanced by the use of AIS as an AtoN. An AIS transmitting AtoN is capable of display on the bridge ECDIS. Further information is available to the mariner on the status of the AtoN such as its “health” and position.

The AtoN provider can also monitor the status of the AtoN including real-time information on the AtoN position and complement the existing service provided to the mariner by facilitating identification of the AtoN. It is also possible to use both shore based and floating aids to provide meteorological and hydrological information.

There are various other ways that AIS can be used as an AtoN including display of virtual AtoN, where no physical AtoN is deployed but the symbol of the AtoN will be displayed on the ECDIS.

The GLAs have taken into account the fact that due to carriage requirements and equipment standards there are currently only a limited (but growing) number of Mariners capable of seeing the AIS AtoN on an appropriate display.

There are a number of vessels who are not required to carry AIS, including the leisure, fishing and smaller commercial vessels.

## 4C.2 Light Emitting Diodes (LEDs)

LED technology is now almost universal in the GLA buoy fleet. This has enabled the GLAs to standardise and improve on the luminous ranges of their buoys while increasing reliability, longevity and reducing the power requirement. The improvement in luminous range is particularly welcome in areas suffering from high levels of background lighting. Another advantage of LED lanterns is that they produce their full intensity almost instantaneously when switched on; unlike an incandescent lamp that has significant warm-up time. This allows a shorter “on time” to be used for LEDs that can save energy.

The use of LEDs has also been extended to beacons and lighthouses with similar advantages to those seen on buoys. Off the shelf omnidirectional LED AtoN lights can currently provide a nominal range of around 15M but they can have relatively high power requirements when compared with some traditional high intensity lighthouse lenses. However, ongoing research and development in LED technology is constantly delivering improvements in light intensity, efficacy and optical technology. Such progress should eventually influence the design of AtoN lights, bringing further improvements in nominal range and efficiency.

Light source products that use a single LED and advanced optical technology, such as total internal reflection (TIR), are currently available with a nominal range of 18M, albeit over a narrow sector. It is already evident that such advances in technology are changing the way in which AtoN lights are designed. Modern LED AtoN light design is typically based on a modular approach giving advantages in manufacture, QA, product flexibility and customer choice. If designed properly, a modular approach should also promote standardisation.

Advantages of LED AtoNs over traditional rotating lenses include improvements in robustness, reliability and conspicuity; all with reduced maintenance. LED AtoN lights are generally fully sealed units with no moving parts, thus requiring little or no maintenance over their long lifetime. Traditional rotating lenses have significant disadvantages such as: bearing/drive problems, hazardous mercury, and lamp/lamp-changer problems; all of which reduce reliability and increase maintenance. Replacing such optics with LED AtoN lights removes these problems, thereby increasing the overall reliability and reducing the maintenance burden. However, the rapid pace of technological change can promote early obsolescence and replacement LED units may be difficult to resource. There is also a note of caution relating to the susceptibility of semiconductor devices, such as LEDs, to the effects of static discharge and lightning. The replacement of a large number of LEDs due to lightning damage is a more onerous task than the replacement of a single lamp.

Traditional fixed lenses, typically used for omnidirectional sector lights, have fewer disadvantages than rotating types and have nominal ranges of up to 20M for white sectors and with a sharp transition or cut between different coloured sectors. Such performance is currently impossible to replicate using off the shelf LED products. Stand-alone LED omnidirectional sector lights are now available but nominal ranges are limited to less than 10M. However, the

adaptation of compact LED arrays for use as replacement light sources in traditional fixed lenses can provide the advantages of low maintenance and high reliability with sharp sector cut and nominal ranges of 15M or more.

In the area of AtoN lights, technical advice from commercial suppliers and from the GLA R&RNAV can give direction as to the evolving technology. The cost effectiveness of replacing traditional optics with LED AtoN lights can vary enormously depending on the navigational requirement. Furthermore, there may be no suitable LED product currently available for a given application. Therefore, each case should be considered individually. However, it is still the case that in many instances LED products can deliver significant savings at nominal ranges of up to 18M. The flexibility, performance and efficiency of such products are set to improve over time.

## 4D Future Issues

### 4D.1 2025 & Beyond

In 2010, the General Lighthouse Authorities will publish their Marine Aids to Navigation Strategy to 2025, known as '2025 and Beyond'. This strategy document looks carefully at trends in navigational practices and determines a future strategy for the provision of both visual and electronic Aids to Navigation.

The strategy takes into account the evolving shipboard practices and training requirements of seafarers. Traditional navigational skills sometimes appear to be superseded by over reliance on new technological advances however it is clear from in depth consultation with users that lighthouses, buoys and beacons will continue to play a role in a balanced AtoN system.

As already mentioned above, position fixing using GNSS is prevalent amongst both commercial and leisure users. Radar and visual aids are seen as a terrestrial backup to satellite systems as well as providing clear physical marking of wrecks, shoals and other hazards. As well as the importance of providing an appropriate backup for determination of position, physical AtoNs are essential in ensuring the Mariner maintains an appropriate level of spatial awareness to safely execute the voyage.

### 4D.2 Power Required for Daytime Lights and Restricted Visibility

The core premise of this Review is that the SOLAS test of 'AtoNs be commensurate with the degree of risk and volume of traffic' however we must also have regard to our mission statement which requires cost effective AtoN provision.

The Luminous Intensity table indicates that an 18 mile light will give a daytime range of somewhere between 2 and 3 miles (depending on light source), in restricted visibility these ranges would be further reduced.

In addition to 24 hour directional lights a small number of major lights are run as 24 hour stations or shown in restricted visibility. These were selected on the basis of the SOLAS test of volume and risk and may be located near TSSs, important ship routes or where the fog signals have previously been discontinued. Where daytime exhibition of lights has replaced a discontinued fog signal the light will not be activated until the visibility reduces to the threshold level which is generally 2 miles.

Daytime or reduced visibility exhibition of a light can contribute to spatial awareness. The daytime exhibition of a light may allow a user to more quickly identify the AtoN as they emerge from the reduced visibility. Conversely, the expectation that the light may be raised may encourage a user to approach too close to the station. The prudent mariner should be expected to stand off if he has no other reliable means of position fixing.

These issues are not resolved in this Review but where a light is exhibited during daytime or reduced visibility each light has been assessed on a case by case basis. Where lights are exhibited in daytime guidance should be available to the Mariner on the expected performance.

## 5. Contacts

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Any comments or observations on the Review may be sent to the appropriate GLA, as follows:

### Comments in respect of Areas 1 - 8

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### Comments in respect of Areas 15 - 21

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## 6. References and Acknowledgements

The following publications have been referred to during completion of the Review:

- EU Integrated Maritime Policy (Dec 07).
- EU Roadmap for Maritime Spatial Planning (Nov 08).
- Admiralty Charts, various, UKHO.
- Admiralty List of Lights, Volume A, NP74, UKHO.
- Admiralty List of Radio Signals, Volume 2, NP282, UKHO.
- Admiralty Sailing Directions, North Sea (West) Pilot, NP54, UKHO.
- Admiralty Sailing Directions, Dover Strait Pilot, NP28, UKHO.
- Admiralty Sailing Directions, Channel Pilot, NP 27, UKHO.
- Admiralty Sailing Directions, West Coast of England and Wales Pilot, NP 37, UKHO.
- Ship Routes Database Version 2.1, Anatec, 2004.
- 2025 and Beyond: Marine Aids to Navigation Strategy, GLAs, 2010.
- Joint Navigation Requirements Policy, GLAs, 2007.
- Visual Aids to Navigation Plan 2008.
- Radio Aids to Navigation Plan 2007.
- Corporate Plans of Irish Lights, Northern Lighthouse Board, Trinity House.
- The RYA Sailing Routes.
- Charts reproduced from the Admiralty Chart by permission of the Controller of Her Majesty's Stationery Office and the UK Hydrographic Office.



## 7. Glossary of Terms

ALL	Admiralty List of Lights
AIS	Automatic Identification System
AtoN	Aid(s) to Navigation
BA	British Admiralty
CIL	Commissioners of Irish Lights
DGPS	Differential Global Positioning System
DfT	Department for Transport (UK)
DOT	Department of Transport (ROI)
DR	Dead Reckoning
E Loran	Enhanced Loran
e Nav	Electronic Navigation
EPIRB	Emergency Position Indicating Rescue Beacon
EU	European Union
F	Fixed
Fl	Flashing
G	Green
Galileo	European Satellite system
GLA	General Lighthouse Authority
GLONASS	Global Navigation Satellite System (Russian)
GMDSS	Global Maritime Distress and Safety System
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
IMO	International Maritime Organisation
Iso	Isophase
ITZ	Inshore Traffic Zone
L Fl	Long Flash
Ldg Lts	Leading Lights
LED	Light Emitting Diode
LORAN-C	Long Range Navigation System -Type C
NLB	Northern Lighthouse Board
Occ	Occulting
Q	Quick Flashing
R	Red
Racon	Radar Beacon
ROI	Republic of Ireland
RWG	Red White Green
SAR	Search and Rescue
SOLAS	Safety of Life at Sea (IMO Convention)
THLS	Trinity House Lighthouse Service
TSS	Traffic Separation Scheme
UK	United Kingdom
W	White
WR	White Red
WRG	White Red Green

## 8. List of Review Areas

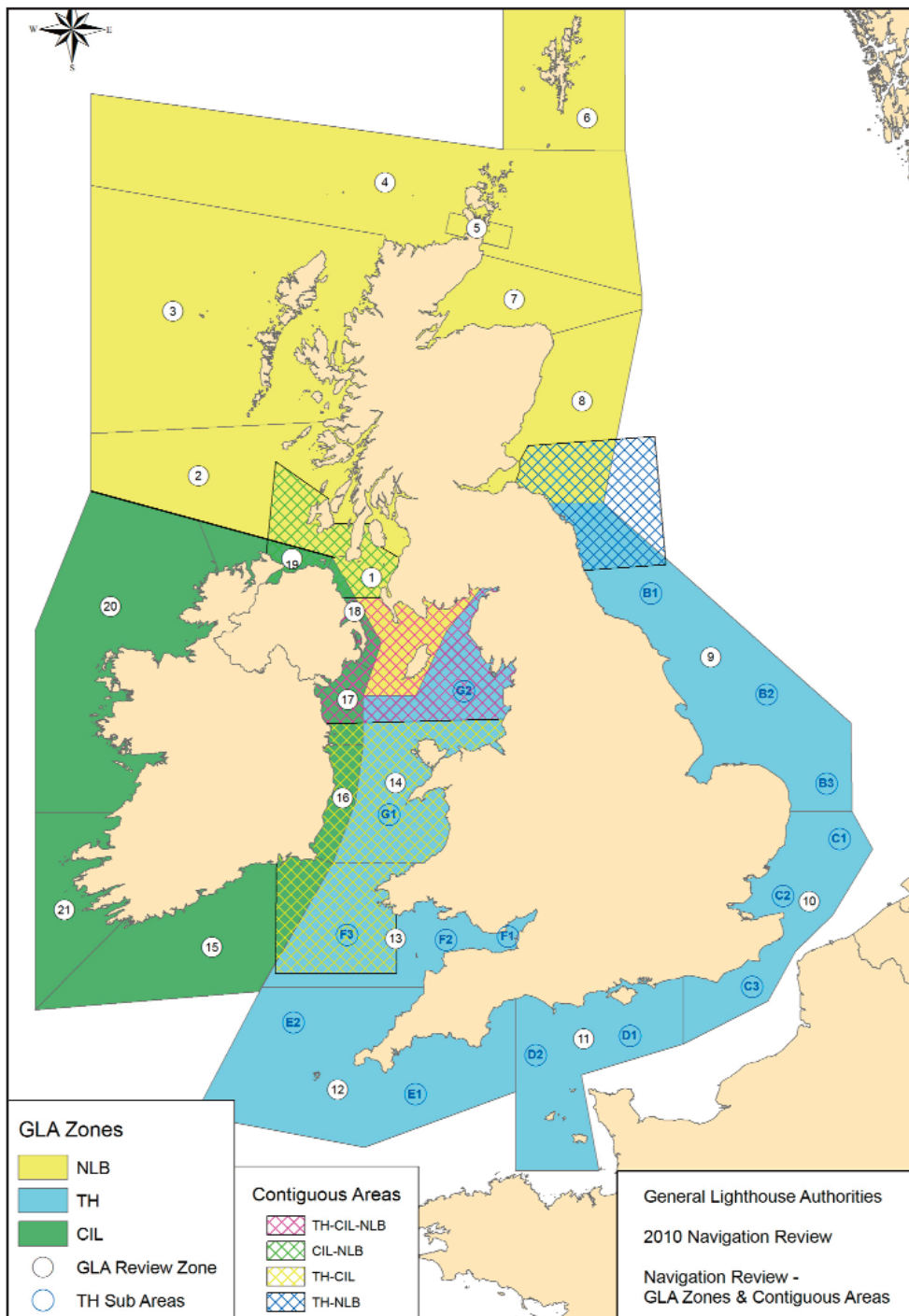
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Area 1	Isle of Man, North Channel, Clyde
Area 2	Mull of Kintyre to Ardnamurchan
Area 3	Ardnamurchan to Barra Head; Cape Wrath to The Flannan Isles
Area 4	Scotland N. Coast, Orkney Is (exc. Pentland Firth)
Area 5	Pentland Firth
Area 6	Shetland Islands
Area 7	Clythness to Rattray Head
Area 8	Rattray Head to St Abbs Head
Area 9	Berwick to Sizewell (Sub-divisions B1, B2, B3)
Area 10	Sizewell to Shoreham (Sub-divisions C1, C2, C3)
Area 11	Shoreham to Lyme Regis (Sub-divisions D1, D2)
Area 12	Lyme Regis to Bude (Sub-divisions E1, E2)
Area 13	Bude to Cardigan (Sub-divisions F1, F2, F3)
Area 14	Cardigan to Silloth (Sub-divisions G1, G2)
Area 15	Fastnet to Tuskar
Area 16	Tuskar to Baily
Area 17	Baily to St John's Point Down
Area 18	St John's Point Down to Rathlin Island
Area 19	Rathlin East to Tory Island
Area 20	Tory Island to Loop Head
Area 21	Loop Head to Fastnet

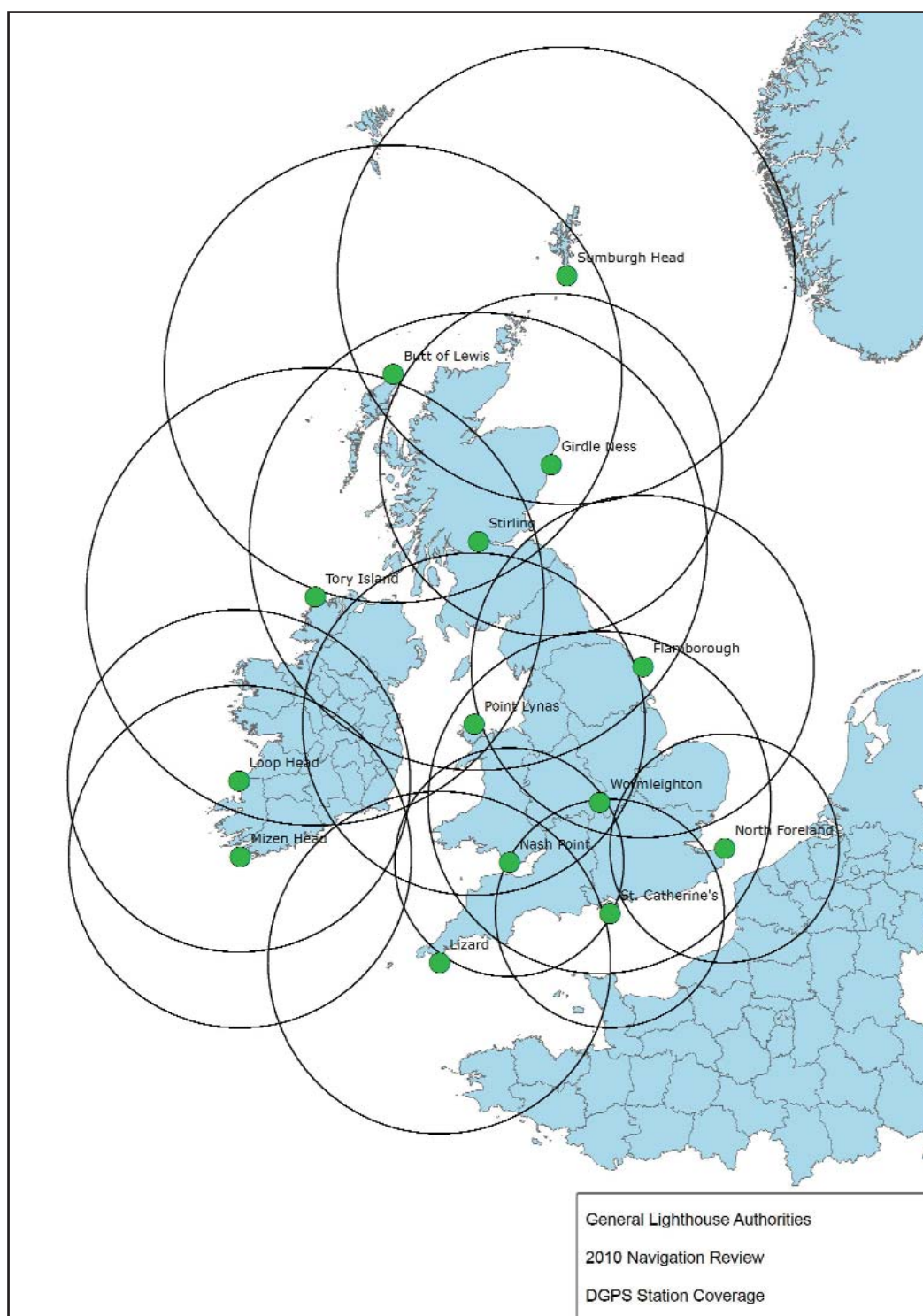
# Aids to Navigation 2010 - 2015 REVIEW

## 9. Inter-GLA Diagrams covering Review Areas

### a. Navigation Review Area with GLA Contiguous Zones

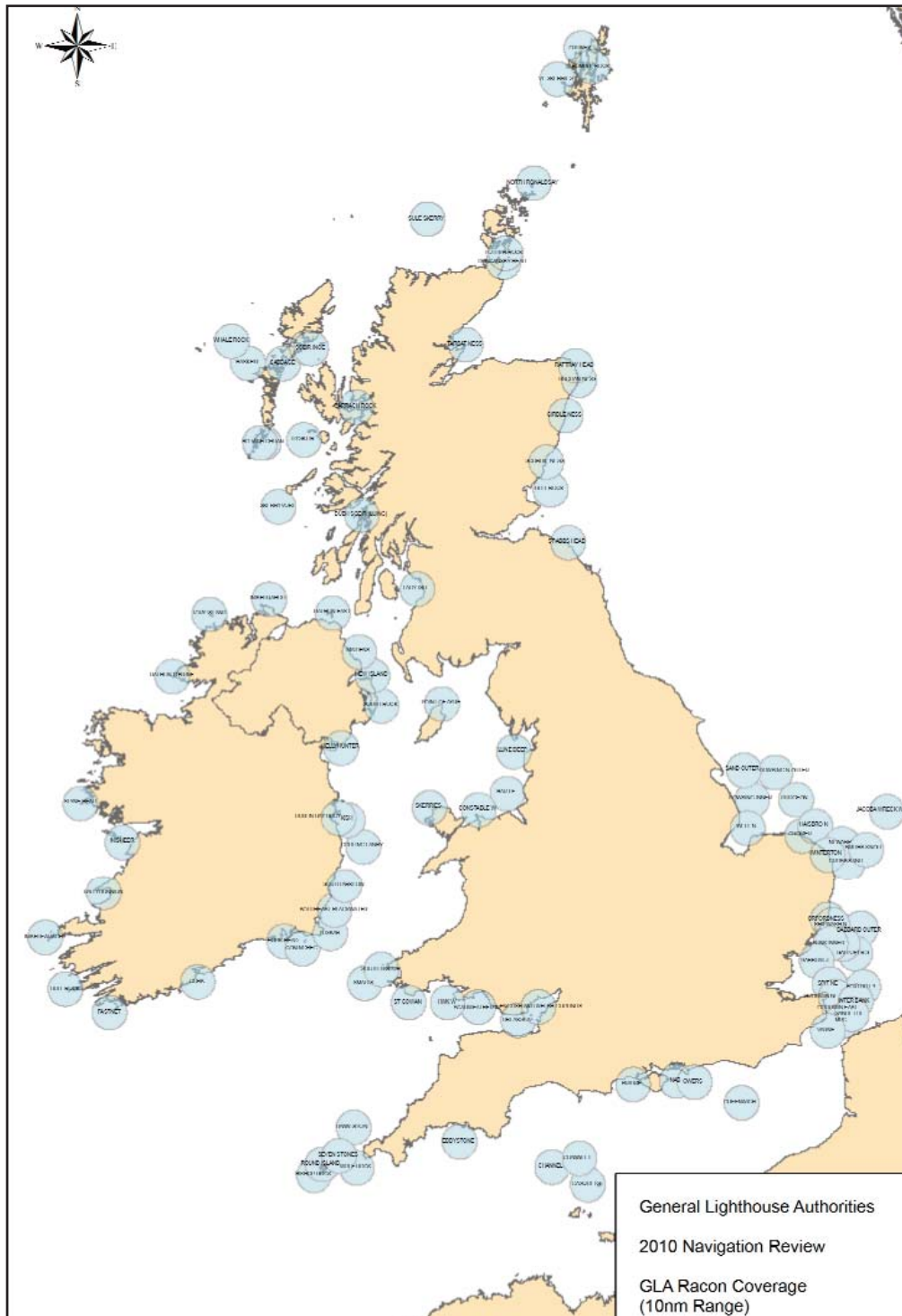


## b. Integrated Differential GPS System - overlapping coverage to 50 nm off all coasts

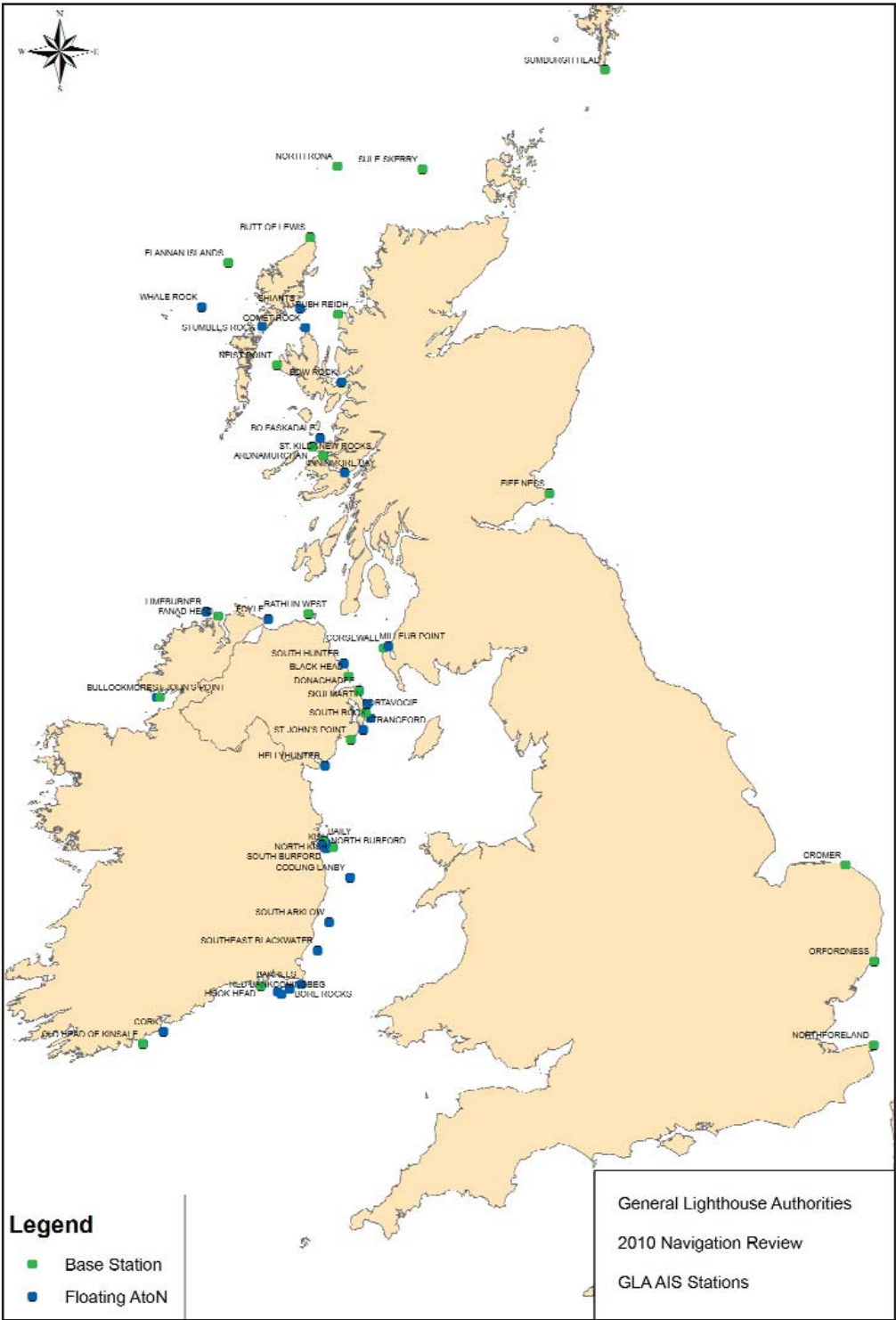


# Aids to Navigation 2010 - 2015 REVIEW

## c. GLA Racon Coverage – Range 10 NM



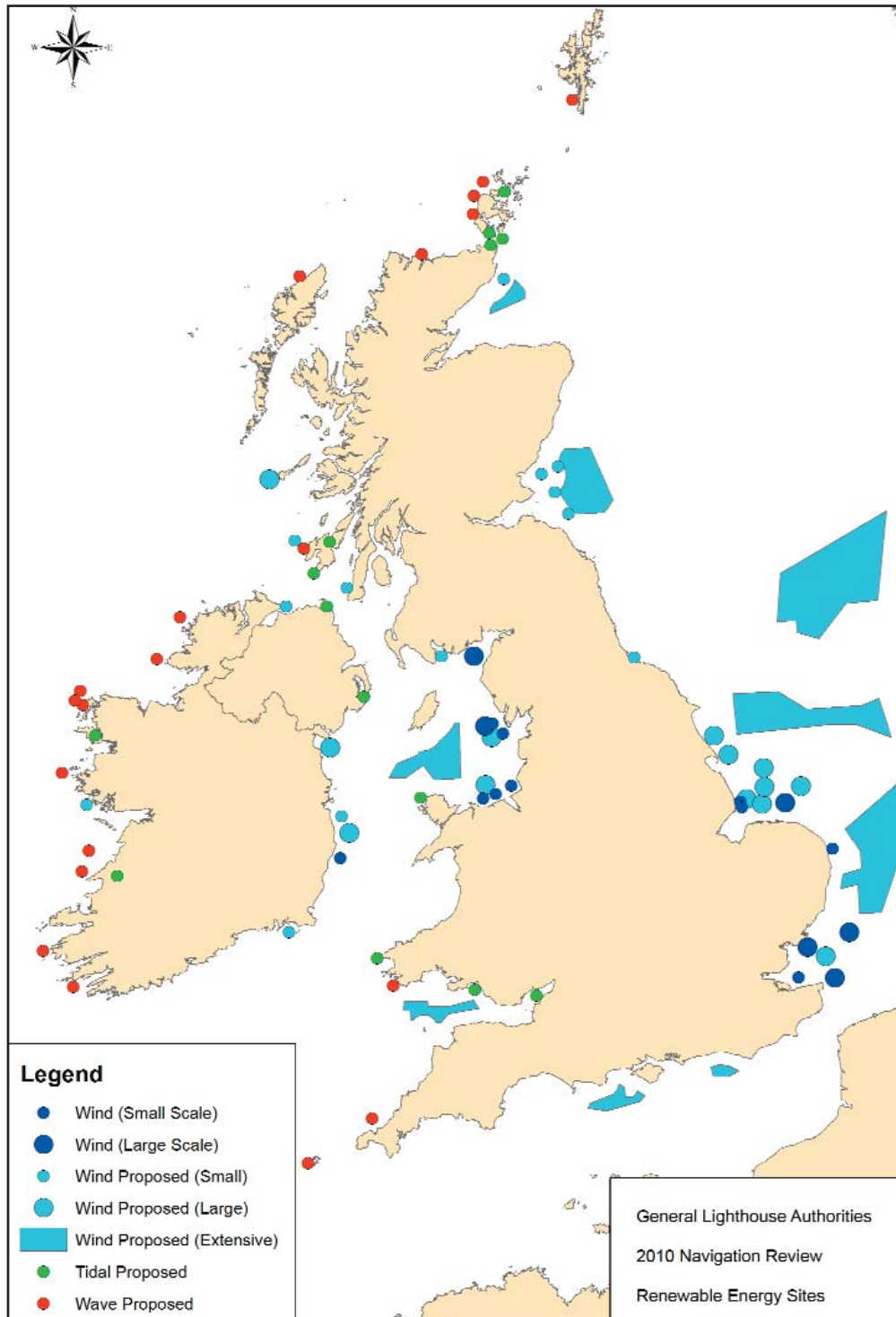
d. GLA AIS Rollout as of 1 February 2010





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## e. Renewable Energy Sites as of 1 March 2010





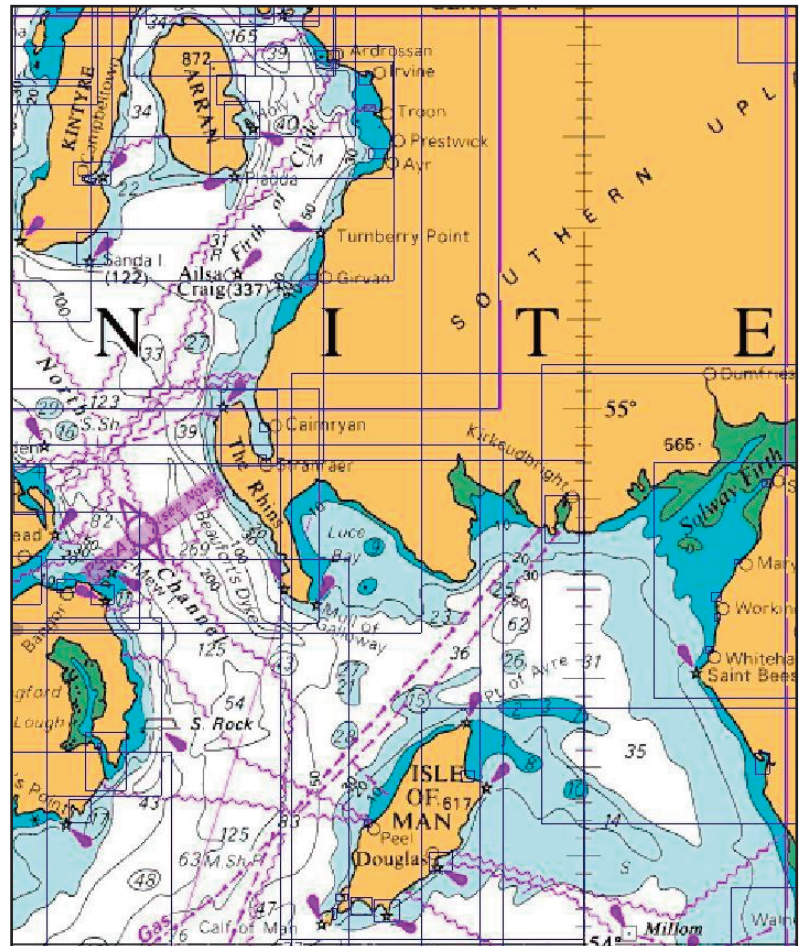
## 10.

## Review of Northern Lighthouse Board Areas (1 – 8)

### Area 1 – Isle of Man, North Channel and Clyde

The Isle of Man, lying mid way between the coasts of Cumbria and Northern Ireland, mainly consists of mountains and hills with east-west valleys. The North of the island is low lying and flat with banks and shallows off shore whilst the southern end of the island is heavily indented by small bays with isolated offshore drying rocks.

The south west coast of Scotland from Solway to Kintyre starts at the most eastern part of the Solway as low lying with shallow waters, numerous drying banks and shifting sands. As the coast runs west it becomes mainly bold and rocky, indented by bays rising to steep cliffs at the Mull of Galloway and along the Rhinns edging the North Channel, which is deep and unobstructed but experiences strong tidal flow. The Firth of Clyde, also deep and generally unobstructed, has a high and rocky coast and some sandy beaches on its eastern shore. The Firth has a number of rocky islands rising from its deep waters; Arran, Sanda and Pladda on its N and W edge and Ailsa Craig in the middle of an otherwise clear channel.



Principal ports in the area are Douglas serving the needs of the Isle of Man with Ro Ro and fast ferry, local fishing and coastal bulk cargoes. Kirkcudbright remains an important fishing port for shell fish (landing 5000 tonnes in 2008). In Loch Ryan, Stranraer and Cairnryan handle Ro Ro and HSC ferries for Northern Ireland (3.8 million tonnes /year) whilst the Clyde ports handle container traffic, coal imports, crude oil imports, petroleum product exports and bulk materials totalling 14.05 million tonnes per year along with Cruise and MOD vessels. Troon handles HSC and

# Aids to Navigation 2010 - 2015 REVIEW

conventional ferries for Belfast and Larne, and Campbeltown handles timber exports (110000 tonnes per annum), fishing and approx 200 small general cargo vessels per year. Smaller ports in the area serve the leisure industry, smaller fishing vessels and occasional coastal trade.

Local ferries operate Ardrossan to Arran and various other routes in the Upper Firth of Clyde.

Traffic of all types (passenger, cargo, leisure and Government) and sizes in significant quantity operate throughout this area, either departing or arriving at local ports or as through traffic transiting the Irish sea, passing west of the Isle of Man and through the North Channel in both directions. Additionally, traffic proceeds to and from major Irish and English ports, passing south and north of the Isle of Man. Fishing occurs throughout the area. There are a substantial number of leisure users who sail in the Firth of Clyde, with smaller numbers in Loch Ryan, the Solway Firth and Isle of Man.

**TSS:** There is no TSS or routing measures in this area.

**AtoNs provided:** 22 lights, 16 Buoys, 2 Racons, 4 unlit Beacons, 2 AIS.

**DGPS:** DGPS Coverage is provided for in this area by the Earls Hill (Stirling) and Point Lynas transmitters.

Future developments in the area that will affect AtoN provision post 2010 review are the extension of the Robin Rigg wind farm, the siting of a windfarm in Wigtown Bay and the relocation of Stranraer ferry operations to Cairnryan.

The proposed changes within this area are:

<b>Maughold Head</b>	Reduce to 15M (minimum) range on re-engineering
<b>Douglas Head</b>	Reduce to 15M (minimum) range on re-engineering (subject to conspicuity assessment)
<b>Chicken Rock</b>	Establish Racon
<b>Point of Ayre (minor light)</b>	Discontinue
<b>Two Foot Bank Buoy</b>	Discontinue
<b>Mull of Galloway</b>	Reduce to 18M (minimum) range on re-engineering
<b>Loch Ryan Buoyage</b>	Reassess as ferry port developments occur
<b>Holy Island (Outer)</b>	Reduce to 18M (minimum) range on re-engineering (b/f from 2005 Review)
<b>Holy Island (Inner)</b>	Reduce to 5M (minimum) range green light
<b>Davaar</b>	Reduce to 15M range on re-engineering; investigate possible handover to Campbeltown Harbour Authority
<b>Trench beacon</b>	Investigate possible handover to Campbeltown Harbour Authority

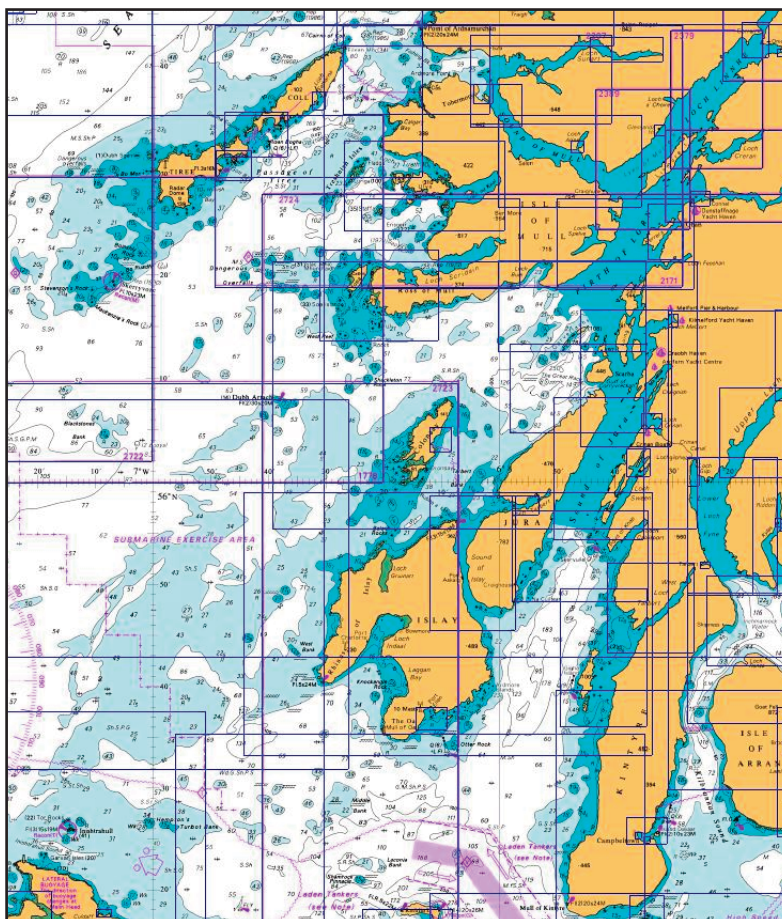
In addition to the above proposals, NLB is assessing the longer term future of major lights at:  
Ailsa Craig  
Turnberry

## Area 2 – Mull of Kintyre to Ardnamurchan

The west of Scotland presents an almost uninterrupted succession of deep indentations, fronted by bold rocky cliffs and headlands forming islands, narrows and sea lochs. Drying rocks and reefs are plentiful quite often with deep navigable waters immediately adjacent. The Mull of Kintyre to Ardnamurchan coast line is no exception exposed directly to the Atlantic Ocean and the full force of winter gales the coast is frequently obscured by low cloud and driving rain. Strong tidal streams, and eddies can be experienced in narrows and inshore.

Principal ports in the area are Oban and Fort William (Corpach). The former provides a major ferry hub for routes to the islands, fishing, small numbers of general bulk cargo, fish farm support (feed and smolt) and frequent seasonal cruise vessel traffic along with a substantial number of leisure craft. Corpach handles bulk timber and quarry products while Fort William at the S end of the Caledonian Canal sees significant leisure traffic. Throughout the area particularly on the islands there are a number of smaller ferry and coaster berths, fishing harbours and leisure craft moorings & marinas. A quarry terminal at Glensanda operates large bulk carriers.

Local life line ferries operate Kennacraig to Port Ellen and Port Askaig; Oban to Colonsay, Port Askaig, Craginure, Lismore, Coll, Tiree, Barra & South Uist; across the Sound of Mull and to Iona and Gigha. There are further council operated ferries at Corran, Lismore, Luining, Easdale, Fort William and Jura.



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Traffic patterns have not substantially changed since 2005 other than a significant increase in cruise vessels visiting the area. Traffic of all types: passenger ferry, cargo, leisure and Government in small but significant quantity operate throughout this area either departing or arriving at local ports providing essential transport for the economy of the area.

Through traffic falls into two types. Larger vessels remain within the TSS to/from the North Channel and keep to the SW of Skerryvore before turning north to the Minch or heading northwest for the deep water route or west. Smaller coastal vessels often choose to pass through the sound of Islay and to the east of Coll and Tiree. Fishing occurs throughout the area.

**TSS:** A TSS lies between Rathlin Island and Mull of Kintyre for vessels approaching/exiting the North Channel.

**AtoNs provided:** 40 lights, 46 Buoys, 2 Racons, 3 unlit Beacons, 3 AIS.

**DGPS:** DGPS Coverage is provided for in this area by the Butt of Lewis, Tory Island and Earls Hill transmitters

Future developments in the area that will affect AtoN provision include a tidal energy site to SW of Islay which may restrict depths for some vessels which currently use the area and in the sound of Islay. In addition large wind farms are planned for the Skerryvore reef, west of Islay and west of the Mull of Kintyre.

The proposed changes within this area are:

<b>Ardluing Buoy</b>	Change to South Cardinal; relocate SW to 20m contour.
<b>Bogha Ghair</b>	Assess impact of buoy type change with regard to conspicuity, change to East Cardinal if trials indicate a benefit.
<b>Oban NLB Pier</b>	Replace with 2 FG(vert) on NW of pier.
<b>Bo Rocks Buoy</b>	Discontinue.
<b>New Rock</b>	Add buoyage. South Cardinal at Little Stirk.
<b>Skerryvore</b>	Reassess as windfarm developments occur.
<b>Scarinish</b>	Reduce to 12M (minimum) range on re-engineering.
<b>Branra Rock Beacon</b>	Light (b/f from 2005 Review).
<b>Small Isles Beacon</b>	Light (b/f from 2005 Review).
<b>Heather Island</b>	Establish additional minor light - Fl R 2.5s 2M.
<b>(Sound of Kerrera)</b>	



### Area 3 – Ardnamurchan to Barra Head; Cape Wrath to the Flannan Isles

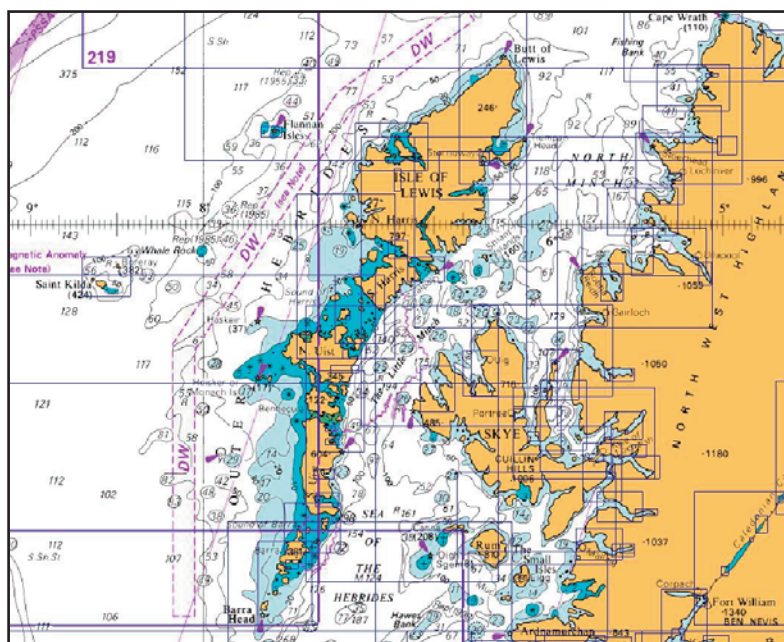
Between Ardnamurchan and Cape Wrath the almost uninterrupted succession of deep indentations, fronted by bold rocky cliffs and headlands, forming islands, narrows and sea lochs continue. Strong tidal streams and eddies can be experienced in narrows and inshore.

A chain of about 30 islands known as the Hebrides lies parallel and a short distance from the mainland. These islands are in two groups the Outer and Inner Hebrides separated by the Sea of the Hebrides and the Little

Minch. Further north the Outer Hebrides are separated from the mainland by the North Minch. The outer islands are exposed to the Atlantic Ocean. To the west of the Outer Hebrides, which are generally low lying, the coastal bank extends up to 15 miles offshore and in places rock pinnacles extend beyond the bank. Outside of the deep water route surveys are incomplete. The passage between the Inner and Outer Hebrides affords some shelter from the Atlantic but depths within the Little Minch are very irregular and several banks some of which are extensive lie across the NE entrance. Consequently traffic routing and reporting measures are in place. The Little Minch in bad weather forms a dangerous sea area due to the wind, tidal streams and uneven nature of the bottom producing high and turbulent seas. The sound of Harris provides a route from Little Minch to the Atlantic for coastal craft.

Throughout the area there are numerous small ports and harbours supporting the general local economy or specific operation where direct road access is poor. Collectively they provide for significant levels of trade. Ports such as Mallaig, Ullapool and Stornaway provide for ferry terminals for routes to the islands, fishing, coastal general bulk cargo, fish farm support and frequent seasonal cruise vessel traffic. Timber is exported from mainland ports such as Kishorn with substantial quarry traffic also occurring. Local life line ferries operate Mallaig to Eigg, Muck, Canna & Rhum; Mallaig to Armadale; Ullapool to Stornaway; Uig to Tarbert and Lochmaddy; Berneray to Leverburgh; Oban to Lochboisdale and Castlebay and Barra to Eriskay.

Traffic patterns have not substantially changed since 2005 other than a significant increase in cruise vessels visiting the area. Traffic of all types - passenger ferry, cargo, leisure and Government in small but significant quantity operate throughout this area either departing or arriving at local ports providing essential transport for the economy of the area. Throughout the area but particularly in the southern half there is substantial seasonal leisure craft activity. Through traffic consists of large and smaller crude and product tankers, to and from North Sea



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and Flotta, Scapa and the Forth, oilfield support vessels repositioning to and from the North Sea, seasonal cruise ship traffic up to and including Queen Mary II, Coaster trade to/from Orkney, Shetland or east coast ports, or Scandinavia. The routing measures for the Minch and west of the Hebrides largely govern through traffic patterns. With larger laden tankers over 35000 DWT use the deep water route west of the Hebrides but when in ballast often choose to navigate through the Minch north bound. All other traffic generally uses the Minch north and south bound. Fishing occurs throughout the area.

**TSS:** There is a new TSS at Neist Point to separate north and south bound traffic in the Little Minch. IMO approved routing measures are in place in the Little Minch and west of Outer Hebrides.

**AtoNs provided:** 54 lights, 68 Buoys, 6 Racons, 20 unlit Beacons, 10 AIS.

**DGPS:** DGPS Coverage is provided for in this area by the Butt of Lewis, Tory Island and Earls Hill transmitters.

There are no known future developments in the area that will affect AtoN provision.

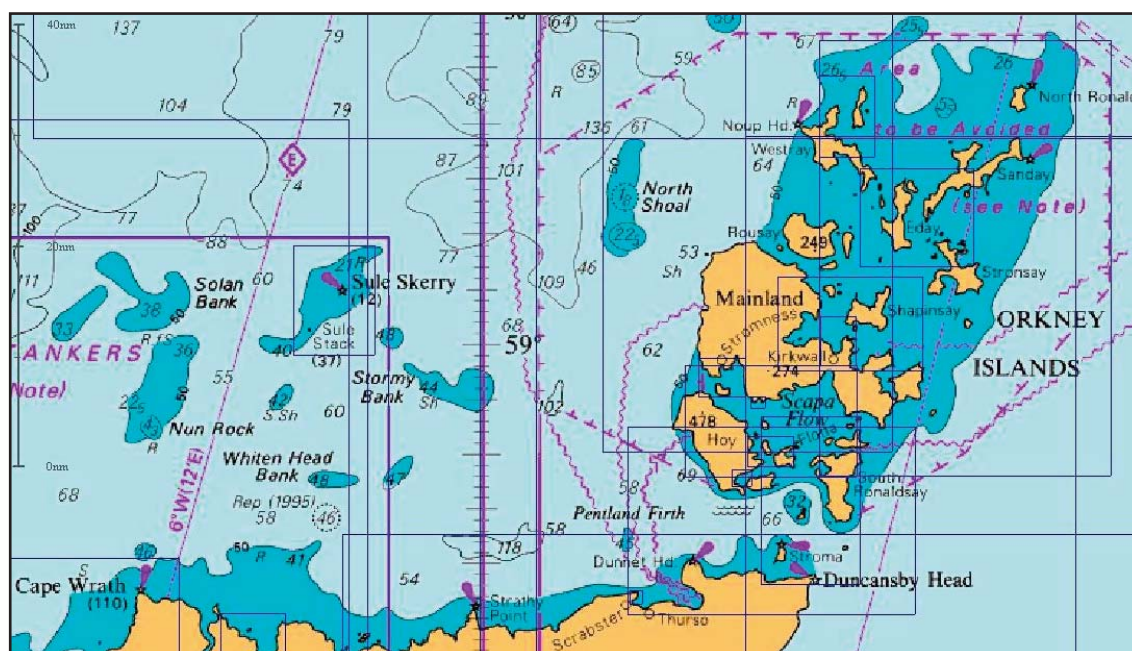
The proposed changes within this area are:

<b>Dunvegan</b>	Improve sector cut-offs.
<b>Gasker</b>	Upgrade to 12M (minimum) light.
<b>Ushenish</b>	Remove red sector on re-engineering.
<b>Cope Passage Fairway/Cope Passage 6/ Cope Passage 7/Cope Passage 9/Cope Passage 10/ Cope Passage West Buoys</b>	Discontinue on completion of Red Rocks light.
<b>Eilean Glas</b>	Reduce to 18M (minimum) range on re-engineering.
<b>Tiumpán Head</b>	Reduce to 18M (minimum) range on re-engineering.
<b>Ornsay</b>	Reduce to 12M (minimum) range on re-engineering.
<b>Sgeir Uilibhe Beacon</b>	Establish South Cardinal buoy (b/f from 2005 Review).
<b>Bo Golach Beacon</b>	Light (b/f from 2005 Review).
<b>Bogha Dubh Sgeir</b>	Light.
<b>Sgeir Thraid Beacon</b>	Light or buoy (b/f from 2005 Review), whichever is more cost-effective.
<b>Rubh Re</b>	Reduce to 18M (minimum) range on re-engineering.
<b>Stoer Head</b>	Reduce to 18M (minimum) range on re-engineering.
<b>Sgeir Ghoblach Beacon</b>	Light (b/f from 2005 Review).
<b>Red Rocks Beacon</b>	Establish Sector light (b/f from 2007 local review).

In addition to the above proposals, NLB is assessing the longer term future of major lights at:

Stoer Head  
Tiumpán Head  
Rubh Re  
Ushenish

## Area 4 – Scotland North Coast; Orkney Islands (excluding Pentland Firth)



The north coast of Scotland from Cape Wrath to Dunnet Head is mainly heavily indented cliffs with a few off lying dangers inshore.

The Orkney Islands, a group of more than 50 islands separated from mainland Scotland by the Pentland Firth are mainly low lying except for Hoy. Their coasts are much indented and generally rocky but there are also extensive sandy beaches especially on the NE side of the group. On the SW side the coasts consist of steep cliffs in places reaching 300m. About midway between South and North Ronaldsay the Orkney Islands are divided into two parts by the Stronsay Firth and Westray Firth which together form a continuous passage running NW and SE linking the Atlantic to E & W Orkney Islands. Scapa Flow, virtually a small inland sea, lies in the south part of the group with navigable entrances to the Atlantic and Pentland Firth.

The principal ports in the area lie to the east with the Orkneys dominating, collectively handling 7.75 million tonnes of cargo per annum. The majority of this is crude oil transfers from the Flotta terminal or ship to ship crude oil transfers which frequently occur in Scapa Flow. The main ports are Kirkwall and Stromness, but throughout the Orkneys there are numerous small mixed use ports and harbours supporting the general local economy and the large number of inter island ferry routes or specific operations. Fishing, coastal general bulk cargo, fish farm support and frequent seasonal cruise vessel visits along with oil field related vessels are all part of port activity. Local ferries outside of LLA waters operate Scrabster to Stromness, Aberdeen to Kirkwall and Stromness, and Gill's Bay to South Ronaldsay. Traffic patterns have not substantially changed since 2005 other than a significant increase in cruise vessels visiting the area.



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Traffic of all types passenger ferry, cargo, leisure and Government in small but significant quantity operate particularly around and to and from the Orkneys providing essential transport for the economy of the area, significant numbers of crude oil tankers enter Scapa Flow from the Pentland Firth. A through route from Pentland Firth via Scapa Flow to Stromness is utilised on occasion. Traffic along the north coast consists of large and smaller crude and product tankers, to and from the North Sea and Flotta, Scapa and the Forth, oilfield support vessels repositioning to and from the North sea, seasonal cruise ship traffic up to and including Queen Mary II, Coaster trade to/from Orkney, Shetland or east coast ports, or Scandinavia. Fishing occurs throughout the area.

**TSS:** There are IMO routing measures in the Fair Isle Channel to the North of this area; an area to be avoided by laden tankers is in place around the Orkney Islands.

**AtoNs provided:** 22 lights, 14 Buoys, 2 Racons, 3 unlit Beacons, 2 AIS.

**DGPS:** DGPS Coverage is provided for in this area by the Butt of Lewis and Sumburgh transmitters.

Future developments that will affect AtoN provision post 2010 review include:-

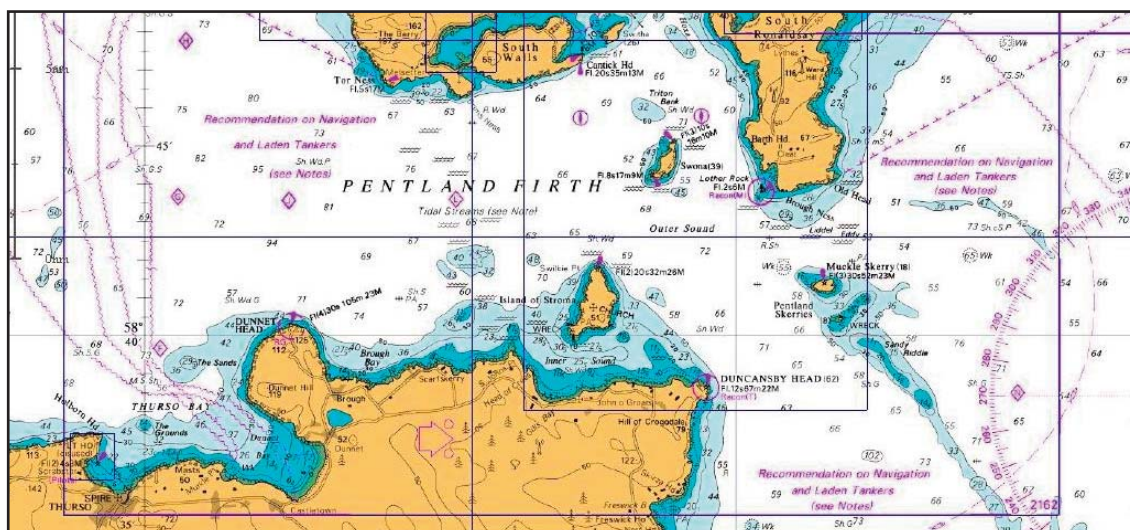
There are numerous small scale tidal and wave energy developments planned around Orkney. The potential for a container Hub port, often hinted at for the Orkneys, is unlikely to come to fruition in the medium term. Although the Flotta terminal is in decline Scapa Flow as one of the few locations in UK waters that allow ship to ship transfer of crude oil and petroleum products will remain an important location for the oil industry.

The proposed changes within this area are:

<b>North Ronaldsay</b>	Reduce to 18M (minimum) range on re-engineering
<b>Helliar Holm</b>	Handover to Orkney Harbours
<b>Strathy Point</b>	Reduce to 18M (minimum) range on re-engineering
<b>Noss Head</b>	Consider range reduction post-windfarm development
<b>Seal Skerry Beacon</b>	Light as red light (b/f from 2005 Review).
<b>The Riv Beacon</b>	Light (b/f from 2005 Review)
<b>North Shoal</b>	Trial Virtual AtoN

In addition to the above proposals, NLB is assessing the longer term future of major lights at:  
Strathy Point  
Hoy High

## Area 5 – Pentland Firth



The Pentland Firth is bordered by the rocky mainland coast to the south from Dunnet Head to Duncansby head which is indented by numerous bays and coves. The Orkney Islands provide its northern boundary with similar rocky coast around Hoy, South Walls and South Ronaldsay. Within the Firth its deep waters are interspersed with the islands of Stroma, Swona and Pentland Skerries. The latter with associated 10 mile long narrow bank substantially reducing depths and creating funnel ling effect. Tidal streams within the firth are renowned and can reach up to 12 knots creating tidal races and eddies which can be dangerous particularly in combination with adverse weather. Substantial seas occur (wind against tide) in circumstances of strong westerly or SE winds. Consequently reporting measures are in place and the Firth may be closed to some or all traffic by HMCG.

The principal port in the area excluding the Orkneys is Scrabster which handles nearly 11000 tonnes of fish a year, has a Ro Ro facility for the ferry to Stromness and handles local coastal cargoes, including fuel, timber & rock salt. In addition oil industry vessels utilise the lay by facility and seasonal cruise vessel visit numbers are growing. Wick further round the coast provides similar but smaller facilities. Local ferry routes are Scrabster to Stromness and Gills Bay to South Ronaldsay, which is now operated by an HSC. The Pentland Firth remains a key route for UK and international traffic.

Traffic patterns have not substantially changed since 2005 other than a significant increase in cruise vessels visiting the area. Traffic of all types - passenger ferry, cruise, cargo, and Government in small but significant a quantity operate to and from the Orkneys and Scrabster via the Pentland Firth. Significant numbers of crude oil tankers enter/leave Scapa Flow via the Pentland Firth loaded and in Ballast.

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Through traffic consists of large and smaller crude and product tankers, to and from the North Sea and Flotta, Scapa and the Forth, oilfield support vessels repositioning to and from the North Sea, seasonal cruise ship traffic up to and including Queen Mary II, Coaster trade to/from east coast ports, or Scandinavia.

Fishing does not occur within the Pentland Firth due to tidal conditions but it remains a key route for fishing vessels in transit and landing at Scrabster.

**TSS:** There are no TSS or routing measures in the area, an area to be avoided by laden tankers is in place around the Orkney Islands.

**AtoNs provided:** 9 lights, 0 Buoys, 2 Racons, 1 unlit Beacon, 0 AIS

**DGPS:** DGPS Coverage is provided for in this area by the Butt of Lewis and Sumburgh transmitters

Future developments that will affect AtoN provision post 2010 review include:-

Large scale tidal energy is planned for areas of the Firth around Stroma, Duncansby Head and off South Ronaldsay. The potential for a container Hub port, often hinted at for the Orkneys, is unlikely to come to fruition in the medium term. Although the Flotta terminal is in decline Scapa Flow as one of the few locations in UK waters that allow ship to ship transfer of crude oil and petroleum products will remain an important location for the oil industry.

The proposed changes within this area are:

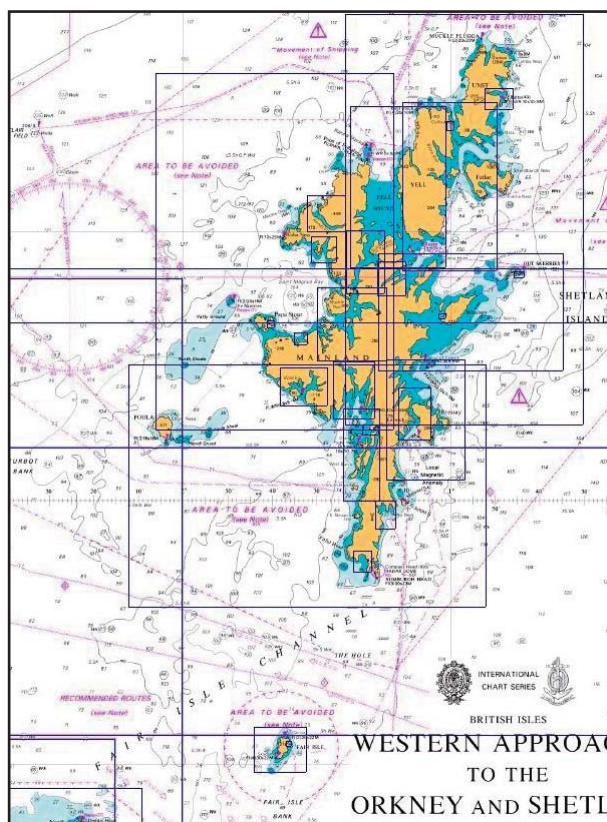
<b>Stroma</b>	Reduce to 18M (minimum) range on re-engineering
<b>Stroma St Johns Beacon</b> (Stroma Skerries)	Light (b/f from 2005 Review)

## Area 6 – Shetland Islands

The Shetland Islands a group of more than 100 islands, holms and rocks, lie with Sumburgh Head as their southern extremity and stretch some 60 miles north to Muckle Flugga. The principal islands are Mainland, Yell and Unst. The Shetland Islands are for the most part relatively high, undulating, fringed by bold cliffs and separated by narrow sounds. Toward the N end of the group Yell and Bluemull Sounds both navigable passages run, N&S through the islands between Mainland and Yell, and Yell and Unst respectively. The high and rocky island of Fair Isle also forms part of the Shetlands dividing the otherwise deep unobstructed passage collectively known as Fair Isle Channel between Orkney and Shetland Islands. The NLB is responsible for all but port AtoNs in this area.

Principal ports in the area are Sullom Voe whose oil terminal handles 12.4 million tonnes of cargo a year and Lerwick an important mixed use port serving the needs of the Shetlands population and the oil industry. Lerwick is the UK's second most important fishing harbour landing some 66,500 tonnes in 2008. The port handles around 5,500 vessels per annum including cruise, Ro Ro ferry, coastal tankers, feeder container fish farm and oil industry support as well as leisure users. Throughout the Shetlands there are numerous small mixed use harbours such as Scalloway supporting the general local economy and the large number of inter island ferry routes, fishing, leisure or specific operations. Ferries operate Lerwick to Kirkwall and Aberdeen. Numerous Local ferries operate throughout the islands. Fishing and inshore fish farming occur extensively throughout the area.

Traffic patterns have not substantially changed since 2005 other than a significant increase in cruise vessels visiting the area. Traffic of all types passenger ferry, cargo, leisure, fishing and fish farm and Government in significant quantity operate throughout this area inter island or either departing or arriving at local ports from the Orkneys, mainland Scotland or Scandinavia. There is significant oil industry traffic to the west of Shetland as well as the N North Sea with vessels transiting through the Shetlands and using its ports. There is substantial tanker traffic to/from Sullom Voe.



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The Fair Isle Channel remains an important route for Scandinavian trade bound for the Atlantic, and for tankers loaded and in ballast for Sullom Voe or in transit to/from the west.

**TSS:** There are no TSS in the area, IMO approved routing is in place in the Fair Isle channel. Areas to be avoided by laden tankers are in place around the Orkney Islands, Fair Isle and Shetlands.

**AtoNs provided:** 43 lights, 4 Buoys, 4 Racons, 1 unlit Beacon, 1 AIS.

**DGPS:** DGPS Coverage is provided for in this area by the Butt of Lewis, Sumburgh and Girdle Ness transmitters, with overlapping coverage from Torshavn in the Faeroe Islands.

Future developments that will affect AtoN provision post 2010:-

Sullom Voe established in the 1970s originally had a 30 year intended life. A number of significant AtoN were established specifically for tanker traffic with the intention that these be discontinued when the terminal ceased to operate. The terminal life has now been extended and will continue to operate for the foreseeable future. The associated AtoNs continue to be required.

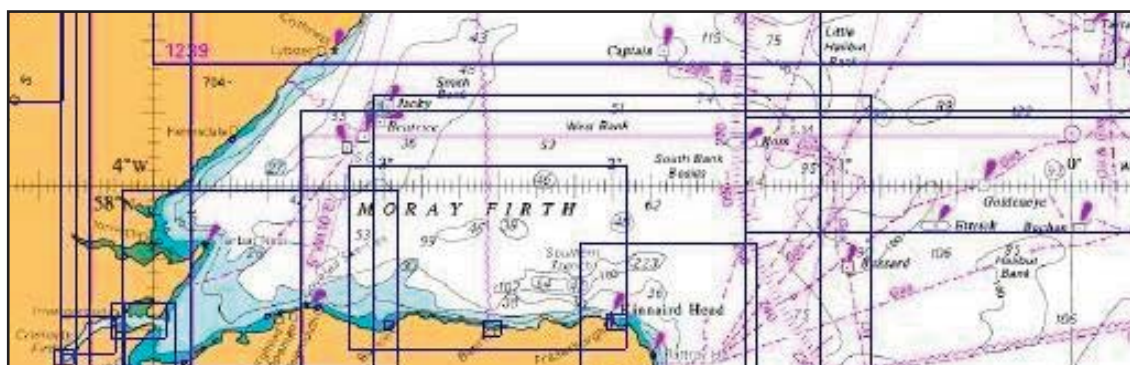
The main proposals for change within this area are:

<b>Foula</b>	Establish red sector to East (257° - 277°)
<b>Vaila Sound</b>	Handover to Shetland Islands Council.
<b>Point of Fethaland</b>	Reduce to 18M (minimum) range on re-engineering.

In addition to the above proposals, NLB is assessing the longer term future of major lights at: Esha Ness



## Area 7 – Clythness to Rattray Head



From Clythness the coast runs in a generally SSW direction mainly composed of rocky cliffs fringed by drying rocks and boulders but are generally clear of dangers beyond 2 cables from shore. Further south the coast line changes with cliffs reducing and receding into a large bight which forms the approach to the Dornoch Firth. At the eastern end of this bight lies Tarbat Ness at the low lying extremity of the peninsula. Heading south from Tarbat Ness the coast again becomes rocky forming cliffs with hills behind which gradually increase in height to the SW with the entrance to Cromarty Firth forming a distinct cleft. At Rosemarkie these cliffs lead inshore and the coast line becomes a low lying tongue of sand and shingle forming the north shore to the Inverness Firth. The southern seaward shore of the Inverness Firth leads east and is initially low lying and sandy with drying banks. From Scar Nose east rocky cliffs, fringed by drying reefs prevail with some sandy stretches to Rattray Head. The Beatrice oilfield and small offshore wind farm lie within the Moray Firth to the NE of Tarbat Ness whilst numerous oil installations lie to the east of Rattray Head.

Principal ports: Cromarty Firth handles 1.8 million tonnes per annum consisting of largely crude oil from the Nigg oil terminal and ship to ship transfers at the terminal, general bulk agricultural and timber cargoes. Oil industry support is provided and the Firth is a major semi submersible rig layup and maintenance location. Cruise vessels of all sizes are regular seasonal visitors. Inverness recently expanded as a mixed use port handling coastal fuel, timber, grain etc as well as an important east coast marina at the head of the Caledonian Canal. The coast to the east has a number of fishing harbours with the largest Fraserburgh landing 28,000 tonnes in 2008. Some of these harbours support limited other mixed use and marinas.

Fishing occurs extensively throughout this area.

Traffic patterns have not substantially changed since 2005 other than a significant increase in cruise vessels visiting the area, Cargo, leisure, fishing vessels in significant quantity operate throughout this area either departing or arriving at local ports other mainland Scotland ports, Europe or Scandinavia. Tankers loaded and in ballast, cruise vessels and oil support vessels for

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the Cromarty Firth arrive depart to/from the east or Pentland Firth. Shuttle tankers and other oil support craft anchor along the Moray coast sheltered from the prevailing weather. Through traffic of all types and sizes to /from the Pentland Firth crosses the area on a NW/SE heading from Rattray Head to Duncansby Head. There is significant oil industry traffic to the east of Rattray Head serving the numerous oil installations.

**TSS:** There are no TSS or routing measures in this area.

**AtoNs provided:** 8 lights, 12 Buoys, 1 Racon, 1 unlit Beacons, 0 AIS.

**DGPS:** DGPS Coverage is provided for in this area by the Sumburgh and Girdle Ness transmitters

Future developments post 2010: The Beatrice wind farm currently a three turbine demonstrator site is to be expanded up the 12 mile limit with a further wind farm immediately adjacent which may impact on vessels routing from NW/SE - Duncansby Head to Rattray Head.

The main proposals for change within this area are:

<b>Clythness</b>	Discontinue
<b>Tarbat Ness</b>	Reduce to 18M (minimum) range on re-engineering
<b>Halliman Skerries</b>	Establish buoy or light
<b>Chanonry</b>	Reduce to 12M (minimum) range on re-engineering
<b>Covesea Skerries</b>	Remove red sector on re-engineering

In addition to the above proposals, NLB is assessing the longer term future of major lights at: Covesea Skerries



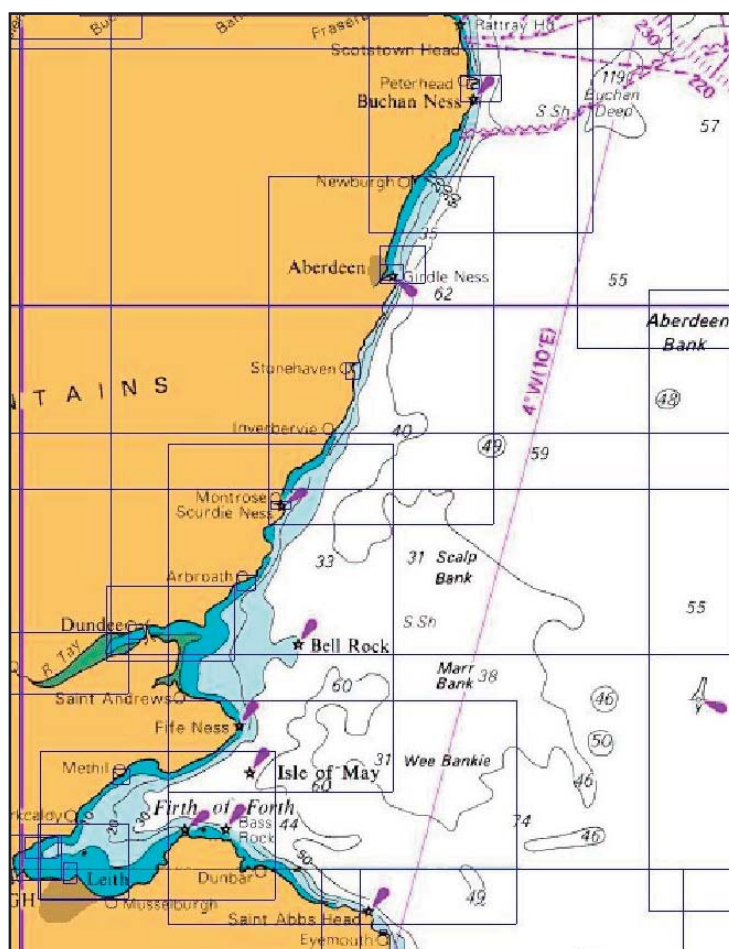
## Area 8 – Rattray Head to St Abb’s Head

From Rattray Head the coast runs in a generally SSW direction to Fifeness. The Isle of May lies toward the centre of the approach to the Firth of Forth. The coast north of the Forth is mainly composed of rocky cliffs, fringed by drying reefs. There are several sandy stretches from Rattray Head to Peterhead, north of Aberdeen and north of Montrose as well as the Mouth of the Tay.

The Island of Fidra lies to the SW of the Isle of May from where the coast runs ESE to St Abb’s Head. From Fidra south, the coast is a mixture of rocky cliffs fringed with reefs and sandy bays. There are a number of outlying banks and deeps along the coast most notably Bell Rock lying 9.5 miles SE of Whiting Ness.

There are a number of offshore installations offshore to the east. This stretch of Coast is home to a number of significant ports - Peterhead, as well as the UK’s largest fishing port landing 113000 tonnes in 2008, is a major oil industry support base and small marina. Aberdeen is the UK primary oil industry support facility, as well as ferry port and general bulk cargo port handling 4.7 million tonnes per annum. In addition fishing vessels landed 7000 tonnes in 2008. Montrose provides mixed general bulk and oil industry support facilities. Dundee has similar but larger facilities and also handles larger crude tankers for the small refinery in the port and cruise vessels.

The Firth of Forth under one port authority provides a number of ports and terminals which collectively handle some 39million tonnes per annum. The Forth is a major petroleum port exporting crude oil in up to VLCC size vessels as well as handling products and gas shipments. Large numbers of feeder container vessels visit whilst general bulk facilities are at a number of



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locations dealing with timber, coal, aggregates etc. An International ferry operates from Rosyth and Cruise vessels of all sizes visit the river. Oil industry support vessels are handled. Small scale fishing is undertaken from some of the Fife coast ports and there is significant numbers of leisure users based in a number of marinas within the port authority area. There has been little change in traffic since 2005 other than an increase in cruise traffic.

Dominant traffic patterns are for vessels of all sizes and types to approach/depart the Forth/Tay to the SE for the European ports and Dover Straits staying quite close to the coast to St Abb's Head, to head ENE/WSW for the Skagerrak and Scandinavian ports or NNE/SSW along the coast to/from Rattray Head. Traffic not for Scottish East coast ports navigating the UK coast stays off shore to/from Rattray Head. Aberdeen and Peterhead traffic is dominated by oil and fishing traffic heading east and NE to the oil platforms and fishing areas.

Ferries operating in this area are the Rosyth to Zeebrugge and Aberdeen Orkney/Shetland.

There is a significant fishing off shore throughout this area.

**TSS:** There are no TSS or routing measures in this area.

**AtoNs provided:** 11 lights, 2 Buoys, 6 Racons, 3 unlit Beacons, 1 AIS.

**DGPS:** DGPS Coverage is provided for in this area by the Girdle Ness, Earls Hill and Flamborough Head transmitters.

Future developments post 2010: A small wind farm is planned close to shore at Aberdeen. Larger windfarm developments are planned off the Tay and Firth of Forth to the 12 mile limit with an adjacent windfarm extending further offshore to the east which collectively will have over 1000 turbines.

The main proposals for change within this area are:

<b>Rattray Head</b>	Reduce to 18M (minimum) range on re-engineering.
<b>Buchan Ness</b>	Reduce to 18M (minimum) range on re-engineering.
<b>Bell Rock</b>	Reassess as windfarm developments occur.
<b>Fife Ness</b>	Reduce to 15M (minimum) range on re-engineering.
<b>South Carr Beacon</b>	Light as 3M light (b/f from 2005 Review (was 5M) or buoy.

In addition to the above proposals, NLB is assessing the longer term future of the major light at: St Abb's Head

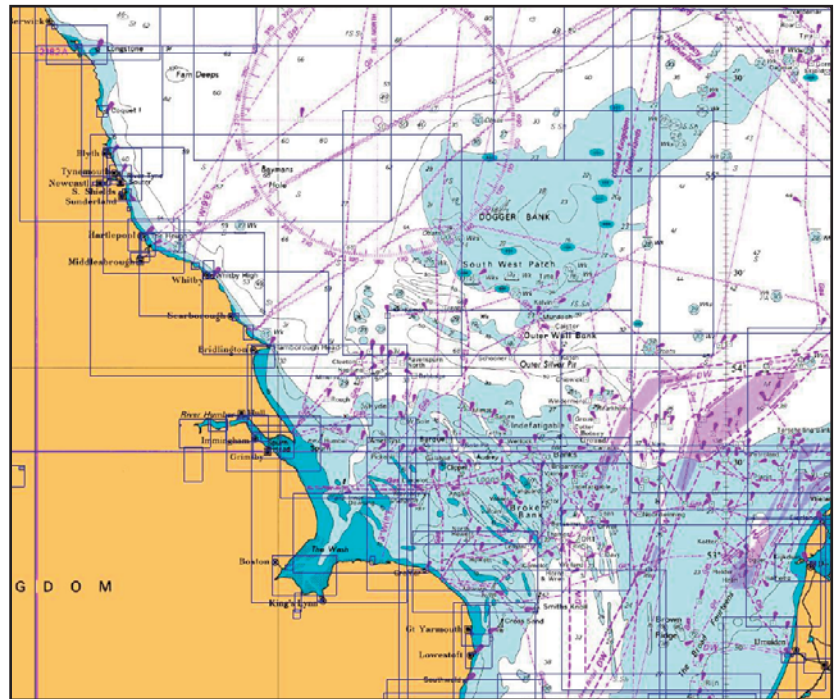
## 11.

## Review of Trinity House Areas (9 – 14)

### Area 9 – Berwick to Sizewell

The area covers three sub-areas, the NE Coast; the Wash, which includes the Humber; and Yarmouth which covers the East Coast of Norfolk and Suffolk Coast.

Throughout the area developments of Offshore Wind Farms for Rounds 1, 2, 3 and the possible proposed round 1 & 2 extensions may affect AtoN provision post the 2010 review. There may also be increased construction activity and traffic associated with offshore renewable energy sites.



The **NE Coast** area from Berwick to Spurn Head is one in which there are numerous dangers, in the form of off-lying Islands and isolated rocks. These, together with some off-lying banks, are mainly encountered within the 20m-depth contour. The most prominent coastal feature is the headland to the north of Bridlington, marked by Flamborough Head Lighthouse. Offshore, tidal streams are regular and rarely exceed 1 knot at springs. The major commercial ports of Berwick; Blyth; Tyne; Sunderland; Seaham; Tees & Hartlepool lie within this region, together with numerous fishing and leisure ports/harbours. DfT Maritime Statistics (2008) shows the ports above have a combined tonnage (exports and imports) of 53.32 million tonnes which is 9.5% of all United Kingdoms port traffic.

The **Wash** area from Spurn to Cromer has two major outlets, the Humber and Wash into which numerous rivers drain. The estuaries are both bordered by large flats. South of the Humber, the navigable channels are restricted by numerous off-lying shoals and the coastline is low lying. Tidal streams are stronger and the tidal range at springs in the Wash increases to 6m. A number of commercial ports lie on the River Humber and on the rivers flowing into the Wash, in addition, in the southern part of the area there are a number of small fishing ports/harbours. Within this

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sub-area offshore production platforms and drilling rigs are encountered, offshore wind farms already exist in this area. DfT Maritime Statistics (2008) shows the Humber Ports together with Boston, Wisbech, Sutton Bridge and Kings Lynn have a combined tonnage of 93.558 million tonnes which is 16.64% of all United Kingdoms port traffic.

The **Yarmouth** area is dominated by constantly changing sandbanks and shoals close offshore and a low-lying featureless coastline. The banks are subject to frequent surveys and buoyage marking the navigable channels is subject to regular review. Depths are shallower, over the off-lying banks in the vicinity of Great Yarmouth and Lowestoft. Tidal ranges and rates are less than those encountered in the Wash. DfT Maritime Statistics (2008) shows the ports of Lowestoft and Great Yarmouth (Eastport) to have a combined tonnage of 0.953 million tonnes.

**TSS:** There is an IMO recognized TSS in the approaches to the River Humber.

**AtoNs provided:** 11 Lights; 79 Buoys; 3 beacons; 12 Racons; and 2 AIS.

**DGPS:** DGPS Coverage is provided for in this area by the Stirling; Girdleness; Flamborough; Wormleighton & North Foreland transmitters.

The proposed changes within this area are:

<b>Flamborough Head Lighthouse</b>	Reduce light range to 18nm on re-engineering
<b>Guile &amp; Heugh Lighthouses</b>	Synchronise Light Sequence on re-engineering
<b>Longstone Lighthouse</b>	Reduce light range to 18nm and alter character to Fl 7.5 seconds on re-engineering. Consider discontinuance of fog signal after further consultation with local users
<b>Corton Buoy</b>	Discontinue whistle
<b>Lowestoft Lighthouse</b>	Reduce light range to 18nm on re-engineering
<b>Southwold Lighthouse</b>	Increase light range to 24nm; discontinue red sectors and expand white sectors to cover existing red sectors after further consultation with local users and in combination with proposals for Orfordness (See area 10)
<b>Winterton</b>	Discontinue Racon



## Area 10 – Sizewell to Shoreham

The area covers three distinctive sub-areas, Harwich, Estuary and Dover.

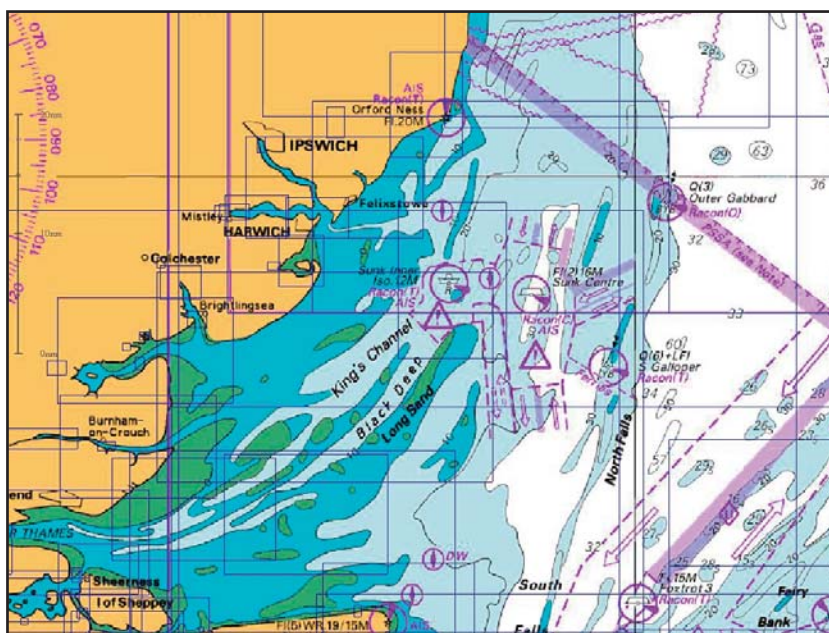
Throughout the area developments of Offshore Wind Farms for Rounds 1, 2, 3 and the possible proposed round 1 & 2 extensions may affect AtoN provision post the 2010 review. There may also be increased construction activity and traffic associated with offshore renewable energy sites.

The Harwich area coastline is generally low lying and

featureless with outflows from several major rivers. Offshore there are numerous shoals many of which have less than 5 metres over them, with narrow navigable channels between. Tidal streams generally follow the direction of the coast and overfalls may be encountered. There is a high level of leisure craft activity based in the Harwich/Ipswich area; the River Deben; Orford Haven, River Colne and the Blackwater's. Commercial traffic for the ports of Felixstowe, Ipswich and Harwich, includes ferries and cruise vessels using Harwich International Port. The Haven ports listed above have a combined tonnage (imports & exports) of 31.46 million tonnes which is 5.59% of all United Kingdoms port traffic.

The Estuary area is dominated by outflows from the Thames, Medway and The Swale as well as by numerous off-lying shoals with narrow navigable channels between, some of which are subject to constant change. Consequently they are surveyed at frequent intervals and the buoyage marking the navigable channels is subject to regular review. The main channels are marked to 10 or 12 metres, where depths permit. The maximum tidal steams encountered are 2.9 knots and tend to follow the direction of the channels. Maximum tidal ranges of some 3m at the seaward limits of the area increase to over 5m in the approaches to the River Thames. The major commercial ports of London; Medway and Whitstable and the smaller ports of Brightlingsea and Wallasea lie within this region, together with fishing and leisure ports/harbours. DfT Statistics (2008) shows these ports to have a combined tonnage (exports & imports) of 68.25 million tonnes which is 12.14% of all United Kingdoms port traffic.

The Dover Strait is characterized by shallow water with dangerous offshore banks, shoals, and numerous wrecks which restrict vessels navigating through the area. The area comprises of three major headlands, with the exception of Dungeness, these headlands are bounded by steep cliff features of rock or chalk cliffs. The water is generally shallow to the extent that certain large vessels cannot proceed through the Strait at their maximum draft. Tidal stream rates reach a maximum of 3.7 Knots off the Goodwin's, and are generally in the direction of the off lying shoals and banks, the



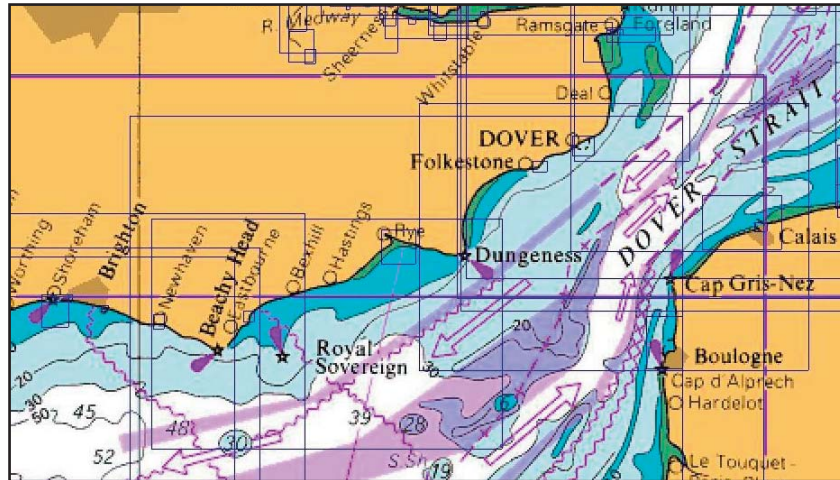
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area is also one of high fishing and leisure craft activity.

Due to the high volume of traffic, the constriction of the through traffic, caused by the banks and shoals, coupled with the high volume of crossing ferry traffic which includes High Speed Craft, between the Channel ports and the Continental ports, the area is one of high collision risk. The bulk of the deep-sea vessels trading to North European ports from other ports of the world traverse through the Dover Strait.



The major commercial ports of Ramsgate; Dover; Newhaven and Shoreham lie within this region, together with fishing and leisure ports / harbours. DfT Statistics (2008) shows these ports to have a combined tonnage (exports & imports) of 29.3 million tonnes which is 5.21% of all United Kingdoms port traffic.

**TSS:** There are IMO recognized TSS in the Sunk area and northern approaches to the Thames Estuary and in the Straits of Dover and adjacent waters. Within these schemes Deep Draft Routes have been established. An Inshore Traffic Zone (ITZ) lies to the landward of the TSS through the Dover Straits.

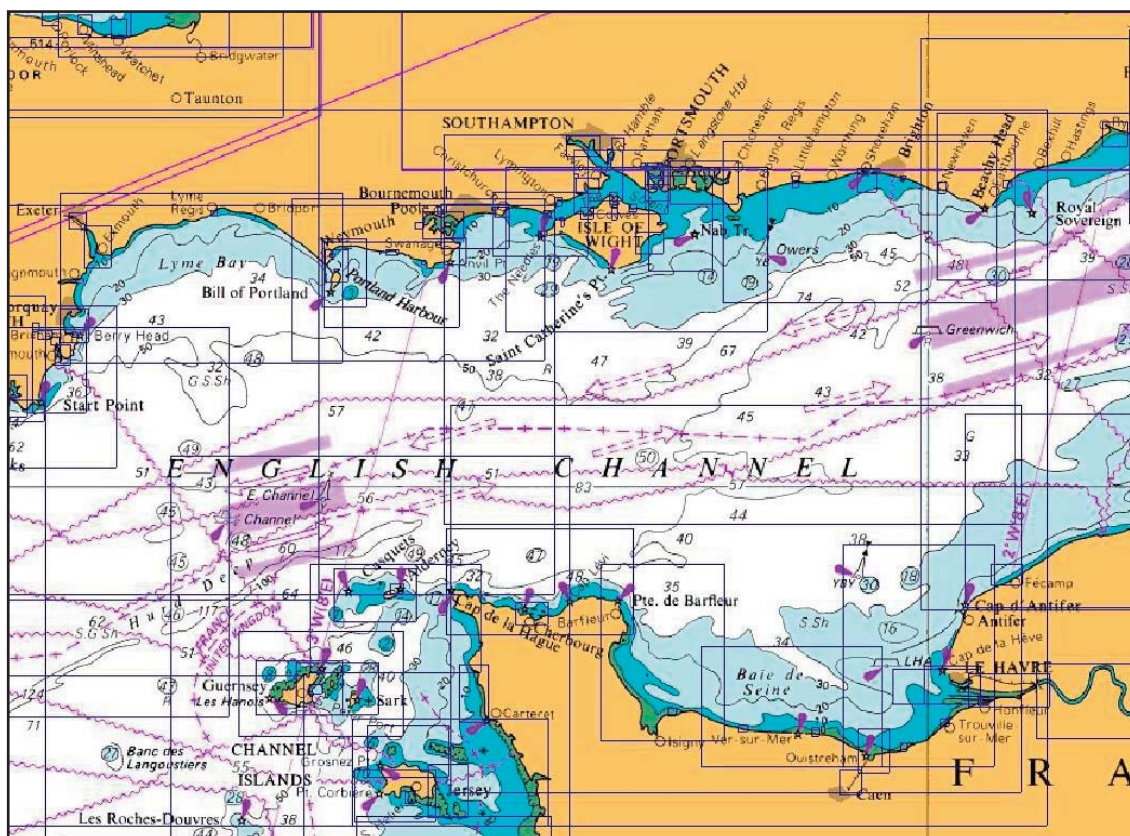
**AtoNs provided:** 5 Lights; 198 Buoys; 16 Racons; 1 beacon; 6 Lightvessels; 1 Lightfloat and 1 AIS.

**DGPS:** DGPS Coverage is provided for in this area by the Flamborough; Wormleighton; North Foreland and St Catherine's transmitters.

The proposed changes within this area are:

<b>Orfordness Lighthouse</b>	Discontinue - subject to further local user consultation (see also Area 9 - Southwold)
<b>Knob NE Buoy</b>	Discontinue
<b>Knob SE Buoy</b>	Discontinue
<b>Shingles mid (Estuary) Buoy</b>	Discontinue
<b>Shingles N Buoy</b>	Discontinue
<b>Shingles NW Buoy</b>	Discontinue
<b>Shingles Patch Buoy</b>	Discontinue
<b>Tizard Buoy</b>	Discontinue
<b>Beachy Head Lighthouse</b>	Reduce light range to 8nm and discontinue Fog Signal on re-engineering
<b>CS5 Buoy</b>	Discontinue (subject to advising IMO)

## Area 11 – Shoreham to Lyme Regis



The area is divided into two sub-areas, Wight and Channel.

Within the area, Offshore Wind Farms proposed for Round 3 may affect AtoN provision post the 2010 review. There may also be increased construction activity and traffic associated with offshore renewable energy sites.

The **Wight** area has three major headlands, Portland Bill, Durlston Head and St Catherine's Point, two bays and marked channels to the West and East of The Solent and Southampton Water. The coastline is distinctive and radar conspicuous, the Shambles bank is a danger to vessels navigating in the vicinity of Weymouth Bay; The Needles Channel affords a particularly narrow entrance to the Western Solent for commercial vessels, with outcrops of isolated rocks off The Needles to the east and the Shingles Bank to the West which is subject to movement at its southern extremity.



The tidal streams are greater in strength in this sub-area; off St Catherine's they can reach 3.8kts. Tidal ranges are greater towards the French coast than on the English coast, for example, at the NW Minquiers Lighted Buoy these are in the region of 9.75m. Tidal streams are very strong off Portland Bill, up to 7kts, and may cause heavy seas. Strong winds in the opposite direction to the tidal streams can lead to steep seas.

Crossing traffic between the English and French ports can lead to increased risk of collision with traffic bound to and from the Dover Strait TSS. Principal ferry routes run between Weymouth; Poole and the Solent to the Channel Islands, Cherbourg and Northern Spain. The area also has a very high level of small craft activity, including fishing and leisure.

The **Channel** area includes the Channel Islands and the Minquiers Plateau. These are surrounded by numerous rocks and shoals, which present dangers to all classes of mariner. The tidal streams in the Channel Islands are strong, and tidal ranges increase towards the French Coast. As is the case with the Wight sub-area, crossing traffic between the ports on the south coast of England, the Channel Islands and the French Ports can lead to the increased risk of collision. High Speed Craft operate on these routes and between ports in the Channel Islands.

The major commercial ports of Littlehampton; Portsmouth; Southampton; Cowes and Poole lie within this region, together with fishing and leisure ports/harbours. DfT Statistics (2008) shows these ports to have a combined tonnage (exports & imports) of 46.76 million tonnes which is 8.31% of all United Kingdoms port traffic.

**TSS:** There is an IMO recognized TSS off Casquets.

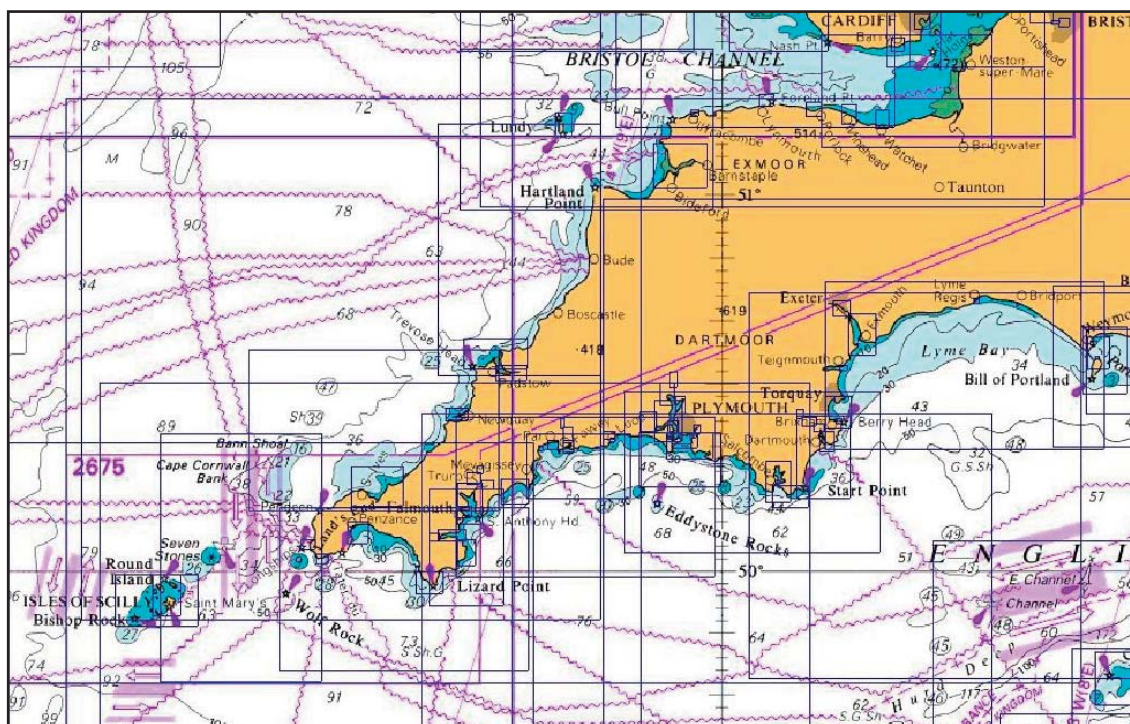
**AtoNs provided:** 10 Lights; 1 Light Vessel; 41 Buoys; 1 beacon and 6 Racons.

**DGPS:** DGPS Coverage is provided for in this area by the St Catherine's; Lizard and Nash transmitters.

The proposed changes within this area are:

<b>Anvil Lighthouse</b>	Reduce light range to 9nm on re-engineering
<b>Nab Lighthouse</b>	Reduce light range to 12nm on re-engineering
<b>Alderney Lighthouse</b>	Reduce light range to 12nm on re-engineering
<b>Casquets Lighthouse</b>	Reduce light range to 18nm on re-engineering
<b>Hanois Lighthouse</b>	Reduce light range to 18nm on re-engineering
<b>Portland Bill Lighthouse</b>	Reduce Fog signal range to 2nm
<b>Sark Lighthouse</b>	Reduce light range to 18nm on re-engineering

## Area 12 – Lyme Regis to Bude



The area is divided into two sub-areas. Penzance which covers the Western part of the English Channel and the second sub-area named Lands End which encompasses the major landfall of Bishop Rock in the Isles of Scilly and Landsend.

Within the area, Offshore Wind Farms proposed for Round 3 and areas suitable for wave and tidal energy may affect AtoN provision post the 2010 review. There may also be increased construction activity and traffic associated with offshore renewable energy sites.

The **Penzance** area coastline presents a distinctive radar target at the rock headlands of the Lizard and Start Point, with isolated rocks encountered in the bays of Penzance, Lyme Bay and Tor Bay. Tidal streams off The Lizard are reasonably strong. There are numerous ports and anchorages where shelter can be sought on this part of the coast. However, apart from Dartmouth and Tor Bay, there is little shelter during strong SW Winds Eastward of Start Point where in conditions of strong offshore winds and ground swell, entering some of the harbours in Mounts Bay is not recommended. From Penzance Bay to Lyme Bay there are a number of commercial ports, as well as small tidal harbours. Lyme Bay is used for the transhipment of liquid cargo between tankers. Fishing and leisure craft activity is also encountered within the harbours to varying degrees.

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The **Landsend** area also presents a distinctive radar target, having similar features to the Penzance sub-area, such as bold headlands and rocky cliffs, which are steep too. From St. Ives the coastline is lower and recedes around St Ives Bay to Godrevy Point.

The south-western most danger of the Isles of Scilly is marked by Bishop Rock Lighthouse, which provides a major landfall for vessels approaching the British Isles. The tidal streams around the Isles of Scilly are not that strong, however, they do increase in strength off the main promontories. Within the Islands the traffic mainly comprises fishing and leisure craft. Commercial traffic is limited to the island ferries, although cruise liners are now using St Mary's as a port of call.

The commercial ports in the area are Teignmouth; Plymouth; Fowey and Falmouth together with numerous fishing and leisure ports/harbours. DfT Statistics (2008) shows these ports to have a combined tonnage (exports & imports) of 4.568 million tonnes.

**TSS:** There are three IMO recognized TSS: off Land's End between Seven Stones and Longships; to the South of the Scilly Islands; and to the West of the Scilly Islands.

**AtoNs provided:** 15 Lights; 1 Lightvessel; 24 Buoys; 11 beacons and 6 Racons.

**DGPS:** DGPS Coverage is provided for in this area by the St Catherine's; Lizard and Nash transmitters and Wormleighton.

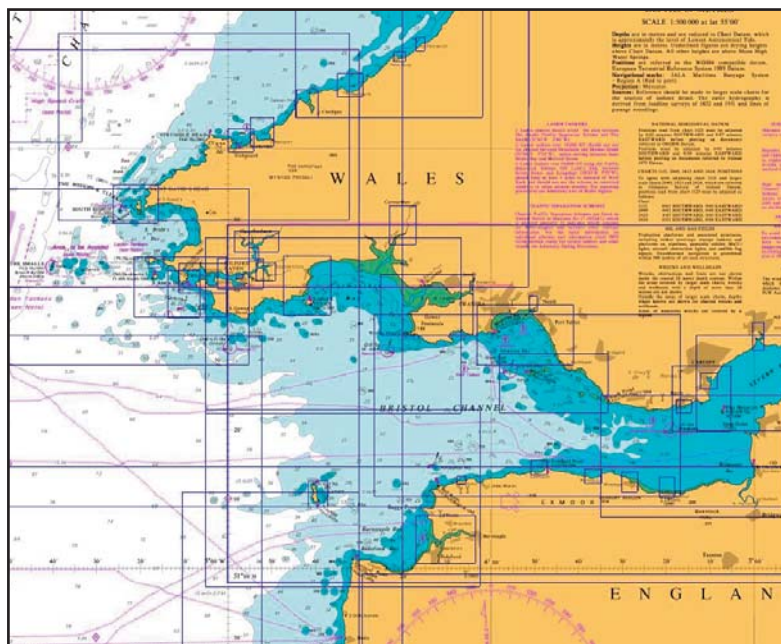
The proposed changes within this area are:

<b>Berry Head Lighthouse</b>	Reduce light range to 16nm on re-engineering.
<b>St Anthony Lighthouse</b>	Reduce light range to 12nm and sector light ranges to 9nm on re-engineering.
<b>Start Point Lighthouse</b>	Reduce red sector light range to 9nm on re-engineering.
<b>Tater Du Lighthouse</b>	Reduce light range to 16nm and red sector light to 9nm on re-engineering.
<b>Godrevy Lighthouse</b>	Reduce main and sector light to 8nm on re-engineering.
<b>Peninnis Lighthouse</b>	Reduce light range to 9nm on re-engineering.

## Area 13 – Bude to Cardigan

This area is divided into three sub-areas, Swansea, Cardiff and Milford. The latter area borders onto CIL jurisdiction, and therefore has been the subject of joint discussions. Within the area, Offshore Wind Farms proposed for Round 3 and areas suitable for wave and tidal energy may affect AtoN provision post the 2010 review. There may also be increased construction activity and traffic associated with offshore renewable energy sites.

The **Swansea** area covers the Bristol Channel from just West of Hartland Point to Worms Head eastwards to a line drawn between Barry and Watchet. It includes the major headlands of Hartland Point, Bull Point, Nash Point and Worms Head. Swansea and Barnstaple Bays, together with the headlands provide a radar conspicuous coastline. Swansea Bay has extensive shoals, extending west from its east side, parallel to the main shipping route.



Ground Swell from the Atlantic may be encountered, except when easterly winds have prevailed, the effects of this swell are felt mainly on the North shore as far East as Swansea Bay. Tidal stream rates and ranges increase as one proceeds up the Bristol Channel. Typical speeds off Morte Point are 3.2 knots with tidal ranges of 7.8m compared with a speed of 4.4 knots and a range of 10.2m off the Breaksea Buoy.

The area includes the commercial ports of Swansea, Port Talbot and Neath Harbour, as well as the harbours of Barnstable and Ilfracombe and other smaller harbours, where fishing and leisure craft operate. Ilfracombe is a focal point for small passenger traffic vessels plying between the mainland and Lundy Island.

The **Cardiff** area covers the eastern part of the Bristol Channel and the Severn Estuary. The coastline decreases in height east of Nash Point, and east of Hurlstone Point. In general, the coastline is low lying; however, there are areas of higher coastline with cliffs. It is indented to the south by Bridgewater Bay.

Flat Holm and Steep Holm Islands lie in the approaches to the Severn Estuary, a number of banks and shoals are encountered, together with mud flats. The Bristol Channel in this sub-area narrows from approximately 10 miles wide at the Western end to 2 miles at the commencement of the River Severn. Tidal stream rates are high, reaching a maximum of 8 knots. And tidal ranges increase considerably as one proceeds eastward, reaching a maximum of some 12m at the Elbow and N W Elbow buoy stations. The area also has a very high level of small craft activity, including fishing and leisure.



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Within this area are the Ports of Bridgwater; Bristol; Gloucester and Sharpness; Newport; Cardiff; Barry; Port Talbot; Neath and Swansea. DfT statistics (2008) shows these ports to have a combined tonnage (exports and imports) of 27.49 million tonnes which is 4.89% of all UK port traffic. Vessel activity at Bridgwater may increase if approval is given to construct Hinkley Point 'C' Nuclear Power Station.

The **Milford** area encompasses the Welsh Coast from the Burry Inlet round to Cardigan and includes the major headlands of St Govan's Head, St Ann's Head, St David's Head and Strumble Head. The coastline is radar conspicuous, consisting of moderately high cliffs, indented by several bays and inlets, including the Barry Inlet, Carmarthen Bay, Milford Haven, St Brides Bay, and Fishguard Bay. This is an area of numerous off-lying islands and rocks, including Caldey Island, The Smalls, Skokholm, Grassholm, The Bishops and Clerks and Ramsey Island. Shifting sands are encountered over much of the Burry Inlet and depths are therefore subject to frequent change. The harbours of Burry Port and Llanelli, Tenby and Saundersfoot are mainly used by fishing and leisure craft, as are the Afon Taf and Tywi.

Safe water anchorages are available off Caldey Island and subject to suitable weather conditions in Rhossili Bay. Milford Haven provides good shelter and a harbour of refuge. The Helwick Sands should be given a wide berth, as Westerly winds against the tide cause heavy seas and the East going tidal stream sets NE towards the sands. An area to be avoided has been established enclosing The Smalls and Grassholm. In addition laden tankers over 10 000GRT should not use the channel between Grassholm and Skomer Island unless moving between St. Brides Bay and Milford Haven. In the vicinity of The Smalls, tidal stream rates vary from 3kts to 5kts. Due to the exposed nature of the coast, tidal races and constricted channels are encountered around Skokholm, Skomer, and Grassholm and between The Bishops and Clerks and Ramsey Island. Tiderips, dangerous to small craft, are also encountered near shoals and banks south of Milford Haven and amongst some of the aforementioned Islands.

Milford Haven is the main commercial harbour in this area, and the port is used by a large number of vessels, ranging from deep draught vessels laden with oil and gas to small pleasure craft. From Fishguard Harbour cross channel passenger and cargo traffic operates to Ireland. Small craft and fishing vessels also operate out of the harbour.

DfT statistics (2008) shows the ports of Milford Haven and Fishguard to have a combined tonnage (exports and imports) of 36.435 million tonnes which is 6.48% of all UK port traffic.

**TSS:** There is an IMO recognized TSS off the Smalls

**AtoNs provided:** 19 Lights; 59 Buoys, 7 Racons and 2 beacons.

**DGPS:** DGPS Coverage is provided for in this area by the Lizard; Nash; Point Lynas and Wormleighton transmitters.

The proposed changes within this area are:

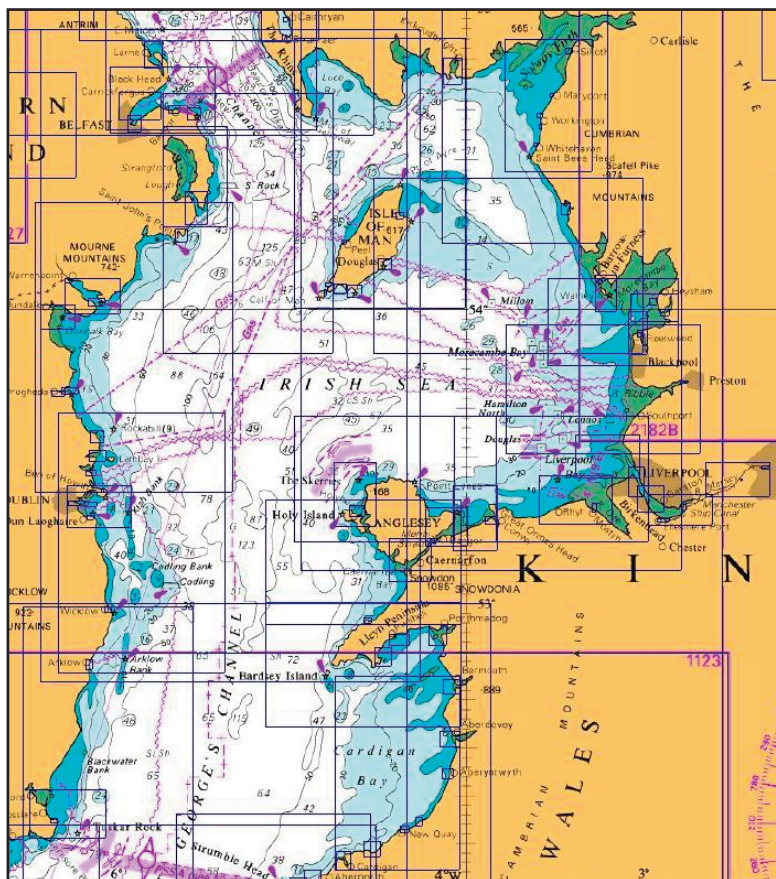
<b>Blacknore Lighthouse</b>	Discontinue station
<b>Hartland Point Lighthouse</b>	Establish new light with 8nm range and discontinue fog signal
<b>Skokholm Lighthouse</b>	Establish new light with 8nm range - retain existing sectors

## Area 14 – Cardigan to Silloth

The southern half of this area borders CIL jurisdiction and therefore has been the subject of joint discussions, the northern part is a joint area involving all three GLAs. The area is divided into two sub-areas, Holyhead and the Irish Sea.

Throughout the area developments of Offshore Wind Farms for Rounds 1, 2, 3 and the possible proposed round 1 & 2 extensions may affect AtoN provision post the 2010 review. In the future areas suitable for wave and tidal energy have also been identified, together with offshore LNG storage sites.

The **Holyhead** area lies between Cardigan and the Isle of Anglesey, where the northern seaward border adjoins the jurisdiction of CIL and NLB. Cardigan Bay forms a major feature with numerous smaller bays within, the area affords good radar returns. Tide races and tide rips are evident in Cardigan Bay which has numerous small craft harbours. Between Aberystwyth and Bardsey Island the Coastline consists of low-lying ground interspersed with rocky cliffs, dangerous shoals extend offshore. The prominent headland, formed by the Llyn Peninsula, lies to the north, again a number of small craft harbours lie in the region principally used as yachting centres. The Menai Strait separates the Isle of Anglesey from the mainland. Tidal rates are strongest off the main headlands, with races and tide rips. The port of Holyhead operates cargo and passenger service to Ireland. Harbours and ports in the Menai Strait provide commercial, as well as fishing and leisure craft, facilities.





# Aids to Navigation

2010 - 2015

## REVIEW

The **Irish Sea** area comprises a number of bays, affording suitable shelter for small coasters, fishing and leisure craft. The area is dominated by Liverpool Bay and Morecambe Bay, into each of which flow a number of rivers. The area from Great Ormes Head to the Point of Ayr comprises a combination of low-lying coastline, backed by high land on the North Wales Coast. Rigs and production platforms are situated in both Liverpool and Morecambe Bays. A number of shoals and banks are encountered in the approaches to the Dee Estuary and the River Mersey. Liverpool Bay, the Ribble Estuary and Morecambe Bay all feature low lying coastlines, with considerable areas of drying sands. North of St Bees Head the coastline is deeply indented by several bays, which are wide and separated by bold headlands. A large proportion of the Solway Firth has continually shifting drying sandbanks with channels in-between. Tidal stream rates off the entrance to the Solway Firth are up to 2kts. These rates increase to 4kts as the Firth is approached.

The main commercial ports are Holyhead; Mostyn; Liverpool; Garston; Manchester; Fleetwood; Lancaster; Heysham Barrow; Workington and Silloth. Some of this is ferry traffic to and from Northern Ireland and the Isle of Man. A number of other smaller ports/harbours in the sub-area are principally used by fishing and leisure craft. DfT statistics (2008) shows the ports above to have a combined tonnage (exports and imports) of 49.023 million tonnes which is 8.72% of all UK port traffic.

**TSS:** There are two IMO recognized TSS in the area: off Skerries and in Liverpool Bay.

**AtoNs provided:** 9 Lights; 1 light float; 41 Buoys; 3 beacons; 4 Racons.

**DGPS:** DGPS Coverage is provided for in this area by the Nash: Point Lynas; Wormleighton and Stirling transmitters.

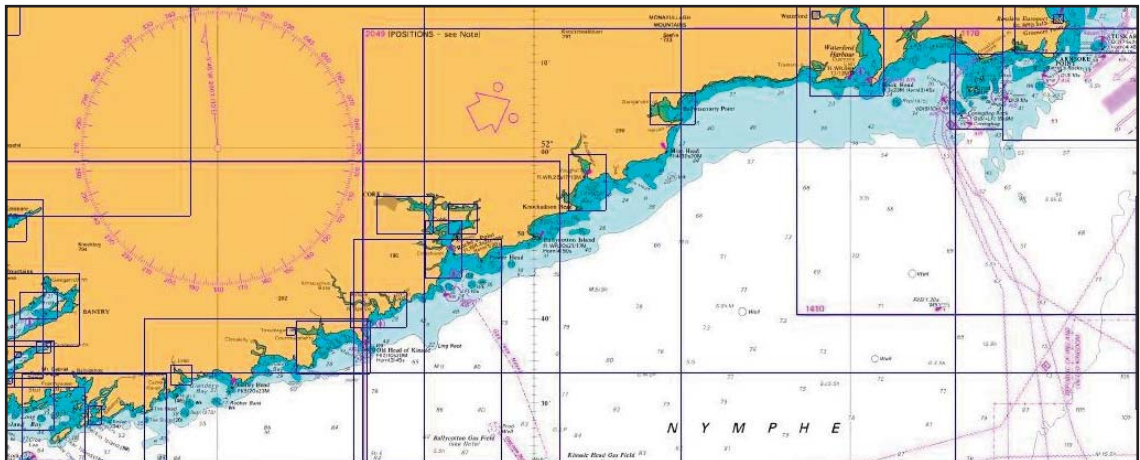
The proposed changes within this area are:

<b>South Stack Lighthouse</b>	Reduce Fog Signal range to 2nm.
<b>Bar Lightfloat</b>	Enter negotiations to hand over to the Port of Liverpool.
<b>HE1/HE2/HE3 Buoys</b>	Enter negotiations to hand over to the Port of Liverpool.
<b>Hoyle N Buoy</b>	Discontinue station in line with construction of Gwynt-y-Mor OWF.
<b>Maryport Lighthouse</b>	Enter negotiations to hand over to Maryport Harbour Authority.

## 12.

## Review of Irish Lights Areas (15 -21)

### Area 15 - Fastnet to Tuskar



The Fastnet to Tuskar coastline consists of relatively safe waters for vessels making offshore passages but dangerous inshore waters. The coastline, particularly in the West of the region, is high and rocky with bold cliffs and headlands. The eastern area has the Coningbeg rocks and Saltee Islands projecting off the coast.

The main commercial ports in the area are Cork and Waterford (Belview and Fiddown) and New Ross within the Waterford River estuary. The approaches to these ports are comparatively straightforward. However, the smaller leisure and fishing ports, anchorages and bays can be difficult, often with dangerous rocks and reefs.

The main fishing ports are at Schull, Baltimore, Union Hall, Cork, Ballycotton, Dungarvan, Youghal, Dunmore East, and Kilmore Quay. There is an increasing mix of commercial fishing and commercial/leisure angling.

The main leisure centres are at Crookhaven, Schull, Baltimore, Union Hall, Cork, Ballycotton, Dungarvan, Youghal, Dunmore East, Waterford and Kilmore Quay.

The Fastnet Rock is a common waypoint for eastbound transatlantic traffic bound for the Irish Sea or Bristol Channel ports or for westbound traffic to North America.

The only isolated dangers in the offshore route are Fastnet Rock itself and the two Kinsale Head Gas production platforms, which are subject to a 500m-exclusion zone.

**TSS:** There are two IMO recognised Traffic Separation Schemes in force - one off Fastnet and one off Tuskar. The Offshore route between these schemes covers a distance of 140' taking vessels clear of all headlands and the Coningbeg Superbuoy, (6' off the Old Head of Kinsale when east bound, 1.5' off the Old Head when west bound).

**ORES:** While generally the waters are too deep for offshore renewable energy sites, there are plans for a major development of wind turbines off Kilmore Quay.

# Aids to Navigation

## 2010 - 2015

### REVIEW

**AtoNs provided:** 9 x major lighthouses, 3 x minor lighthouses, 1 x Major Floating Aid (Coningbeg Lightfloat replaced with Superbuoy), 10 x 1st Class Buoys, 5 x 2nd Class Buoys, 4 x 3rd Class Buoys, 6 Fog Signals (to be disestablished), 1 x DGPS beacon, 4 x Racons, 11 x Beacons/Perches.

**DGPS:** DGPS Coverage extends up to 50 miles off the coast from Mizen Head and Lizard stations.

**Racons:** There are Racons at Fastnet Lighthouse, Cork Buoy and Hook Head Lighthouse.

**AIS:** It has been necessary to provide a mixture of buoys, beacons and lighthouses to adequately mark the inshore dangers and support the offshore route.

The changes proposed for this area are as follows:

<b>Fastnet Lighthouse</b>	Reduce range to 18 NM if cost effective. Discontinue fog signal. Retain fog detector and operate light in reduced visibility. Establish AIS AtoN.
<b>Cush buoy</b>	Open negotiations to transfer to Cork County Council.
<b>Wallis buoy</b>	Open negotiations to transfer to Baltimore Harbour.
<b>Lousy Rocks unlit beacon</b>	Open negotiations to transfer to Baltimore Harbour Board.
<b>Kowloon Bridge buoy</b>	Resurvey wreck to determine requirement for buoy.
<b>Glandore Lighted beacon</b>	Open negotiations to transfer Glandore AtoNs to DOT and/or Cork County Council.
<b>Middle unlit beacon</b>	Open negotiations to transfer Glandore AtoNs to DOT and/or Cork County Council.
<b>North unlit beacon</b>	Open negotiations to transfer Glandore AtoNs to DOT and/or Cork County Council.
<b>Sunk Buoy</b>	Open negotiations to transfer Glandore AtoNs to DOT and/or Cork County Council.
<b>Wind Rock unlit beacon</b>	Open negotiations to transfer to Cork County Council.
<b>Courtmacsherry buoy</b>	Open negotiations to transfer to Courtmacsherry Development Group and/or Cork County Council.
<b>Old Head of Kinsale Lighthouse</b>	Reduce range to 18 NM if cost effective. Discontinue fog signal. Retain fog detector and operate light in reduced visibility. AIS station.
<b>Charlesfort Lighthouse</b>	Open negotiations to transfer to Kinsale Harbour Company.
<b>Roches Point Lighthouse</b>	Reduce range to 18 NM if cost effective. Discontinue fog signal. Retain fog detector and operate light in reduced visibility.
<b>Ballycotton Lighthouse</b>	Reduce range to 18NM if cost effective. Discontinue fog signal. Retain fog detector and operate light in reduced visibility.
<b>Youghal Lighthouse</b>	Open negotiations to transfer to Youghal Town Council.
<b>Minehead Lighthouse</b>	Reclassify as minor light. Reduce range to 10 -12 NM.
<b>Dunmore East Lighthouse</b>	Open negotiations to transfer to Waterford County Council and/or Waterford Harbour Company and/or DFHC or DAFF.
<b>Hook Head Lighthouse</b>	Reduce range to 18nm if cost effective. Discontinue fog signal.
<b>Carrick Rock Beacon</b>	Retain fog detector and operate light in reduced visibility. Remove topmark and disestablish as an AtoN.

## Area 16 - Tuskar to Baily

The Tuskar to Baily region features a series of shallow sandbanks. The coastline, with the exception of some prominent headlands, is low lying. This, combined with the distance offshore of the dangerous banks, necessitates a reliance on floating aids.

The sandbanks extend up to nine miles off the coast with some drying out at low water. These banks are subject to movement following southerly or easterly gales and are gradually changing, requiring ongoing survey in order to ensure the buoyage is in the optimum positions.

In assessing the AtoN requirements in this area, it should be borne in mind that, due to the prevailing south-westerly winds, many smaller or lower powered vessels, on coastal passage, seek the shelter of the land during heavy weather from this direction, and thus pass well inside most of the off-lying sandbanks.

The main commercial ports in the area are Rosslare and Dublin. There are smaller ports at Arklow and Wicklow. The approaches to all these ports are through channels between sandbanks.

The main fishing ports are at Rosslare, Wexford, Arklow and Wicklow. There is also a significant angling industry.

The main leisure centres are at Wexford, Courtown, Arklow, Wicklow, Bray and Dun Laoghaire.

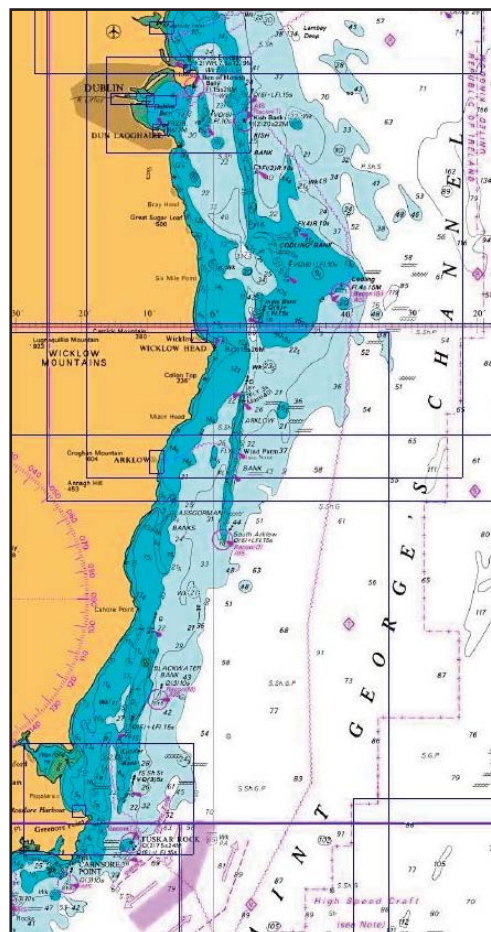
The principal shipping routes through the region are:

- A through route for vessels bound for the North Channel or Ports on the West Coast of the U.K.
- An offshore route to Dublin Bay.
- A coastal route to Dublin Bay and Ports between Rosslare and Dublin.
- The East/West corridors through the Banks.

Within the coastal route are a number of internal channels, the North and South Shears, the Rusk Channel, and channels between the Codling, India and Arklow Banks and the Blackwater and Lucifer Banks.

There is a clear requirement for the provision of suitable AtoN for the safe inshore passage around Tuskar Rock Lighthouse.

**TSS:** There is an IMO designated Traffic Separation Schemes at Tuskar Rock. There is a non IMO designated TSS in Dublin Bay.



# Aids to Navigation

## 2010 - 2015

### REVIEW

**ORES:** Wind parks are planned for the Blackwater, Arklow, Codling, Bray and Kish banks.

**AtoNs provided:** 4 x major lighthouses, 3 x minor lighthouses, 2 x Major Floating Aids (Arklow Lanby replaced with Superbuoy, Codling Lanby to be disestablished Summer 2010), 36 x 1st Class Buoys, 7 x 2nd Class Buoys, 1x 3rd Class Buoy, 1 x Mooring buoy, 6 x Fog Signals (to be disestablished), 2 x DGPS Beacons and 4 x Racons.

**DGPS:** DGPS coverage extends up to 50 miles off the coast from Lynas and Lizard stations.

**Racons:** There are Racons at Tuskar Lighthouse, Southeast Blackwater Type 1 buoy, South Arklow Type 1 buoy, Codling Lanby, Kish Lighthouse and the Dublin Bay Buoy.

The changes proposed for this area are as follows:

<b>Tuskar Lighthouse</b>	Maintain range of 24NM and maintain daylight range of 6NM. Maintain 24 hour light. Discontinue fog signal. Retain fog detector for met data but operate light 24hrs. Establish AIS AtoN.
<b>Splough buoy</b>	Consider as a pair of gate buoys and synchronise. Consider additionally sequential. Upgrade to BPNS. Fit AIS and met/hydro.
<b>South Long buoy</b>	Alter to Starboard lateral. Upgrade to BPNS. Fit AIS. Move 2 cables south west to maintain gate of 7 cables.
<b>Calmines and South Holdens buoy</b>	Considered as a pair. Already synchronised. Consider additionally sequential.
<b>West Holdens buoy</b>	Consider sequential with above.
<b>Lucifer buoy</b>	Fit AIS.
<b>No. 1 Glassgorman buoy</b>	Reposition 1.4 NM south.
<b>No. 2 Glassgorman buoy</b>	Reposition 0.8 NM north.
<b>Horseshoe buoy</b>	Reposition ENE 0.6m to clearing line. Fit AIS.
<b>Wicklow Head Lighthouse</b>	Reduce range to 18 NM if cost effective. Restrict White sector to channel between Arklow and India banks. Align with clearing line. Remainder of arc to be red light of c. 14NM.
<b>Codling Lanby</b>	Replace with east cardinal superbuoy under MFA Plan.
<b>East Codling buoy</b>	Upgrade to BPNS. Increase range to 6 NM. Reposition east 0.6 NM to bearing between Codling Superbuoy and Kish Lighthouse.
<b>Kish Lighthouse</b>	Maintain 24 hour light. Discontinue fog signal.
<b>Bennet Bank buoy</b>	Fit AIS.
<b>North and South Burford buoys</b>	Fit AIS.
<b>Dun Laoghaire East and West Lighthouses</b>	Continue negotiations to hand over to Dun Laoghaire Harbour Company.
<b>Rosbeg East buoy</b>	Open negotiations to hand over to Dublin Port Company.
<b>Baily Lighthouse</b>	Reduce range to 18 NM if cost effective. Retain fog detector. Operate light in reduced visibility.



## Area 17 - Baily to St John's Point Down

This area has a coastline, which can be characterised throughout its entire length by a very low-lying featureless foreshore. There is only one notable exception to this and that is the area of the high coastal slopes of the Mourne Mountains, that border the sea on the western shore of Dundrum Bay.

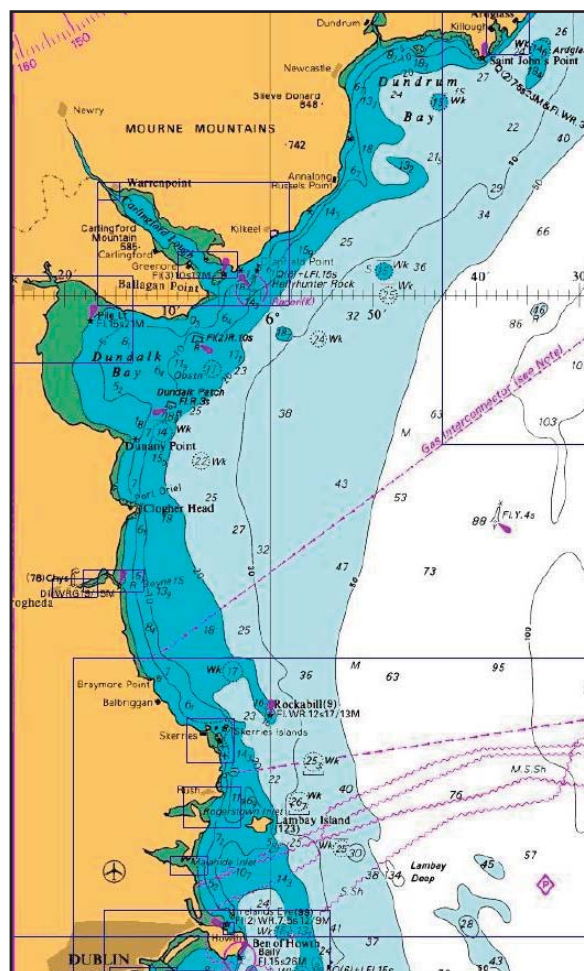
Through-traffic in the Irish Sea, on passage between the Codling Lanby, or Kish Tower, and the South Rock superbuoy, transits well to the east of the coast.

However, there are many harbours and ports in the area, which generate considerable coastal traffic, including commercial, fishing and leisure craft.

The principal commercial ports are Drogheda, Dundalk, Greenore, and Warrenpoint.

The principal fishing harbours are Howth, Rush, Skerries, Balbriggan, Port Oriel, Kilkeel and Annalong.

The principal leisure boat harbours are Howth, Malahide, Rush, Skerries, Balbriggan, Carlingford Lough, Kilkeel and Annalong.



Most of the ports in this region have tidal limitations or restrictions, as the foreshore throughout its length is shelving and shallow, consisting mainly of sand and gravel but with some off-lying rocks in the vicinity of the south Down coast and the Skerries/Loughshinny area of the north County Dublin coast.

With the exception of Carlingford Lough, there is virtually no safe anchorage for vessels seeking shelter from strong on-shore winds in this region. It is a very exposed coast, which is consequently subject to local structural damage and erosion in heavy easterly weather.



# Aids to Navigation 2010 - 2015 REVIEW

**TSS:** There are no Traffic Separation Schemes in this area.

**ORES:** A Wind park is planned for Dundalk Bay.

**AtoNs provided:** 6 x major lighthouses, 2 x minor lighthouses, 4 x 1st Class Buoys, 3 x 2nd Class Buoys, 4 x 3rd Class Buoys, 3 x Fog Signals (to be disestablished), and two Beacons/Perches.

**DGPS:** DGPS coverage extends up to 50 miles off the coast from Lynas and Tory Island.

**Racons:** There is a Racon at Hellyhunter buoy.

**AIS:** Establish AIS AtoN at Rockabill and St Johns Point Down.

The changes proposed for this area are as follows:

<b>Howth Lighthouse</b>	Open negotiations to hand over to HFHC or DAFF.
<b>Burren Rock Beacon</b>	Light beacon as a starboard lateral. Presently a West Cardinal.
<b>Rockabill Lighthouse</b>	Establish AIS AtoN.
<b>Cardy Rocks Beacon</b>	Potentially light but await Braemore Port developments.
<b>Dundalk Pile Lighthouse</b>	Open negotiations to hand over to Dundalk Port.
<b>Haulbowline Lighthouse</b>	Downgrade to 10 NM light.
<b>St Johns Point Lighthouse</b>	Reduce range to 18 NM if cost effective.
	Remove Aux light and incorporate sector in main light. Show white 223° to 078° and red 078° to land 152°.
	Establish AIS AtoN.

## Area 18 - St John's Point Down To Rathlin Island

St. John's Point, Co. Down to Rathlin Island forms the entire Southwest side of the North Channel, which carries a considerable volume of seaborne traffic through a relatively narrow seaway.

This coastal area can be divided roughly in two for the purpose of describing the natural features of its terrain.

With the exceptions of the Maidens Rocks and Hunter Rock, both of which are very well marked, the coast from Fair Head to Black Head, at the north-eastern entrance to Belfast Lough, is quite steep-to, with deep water off, and no navigational hazards to speak of.

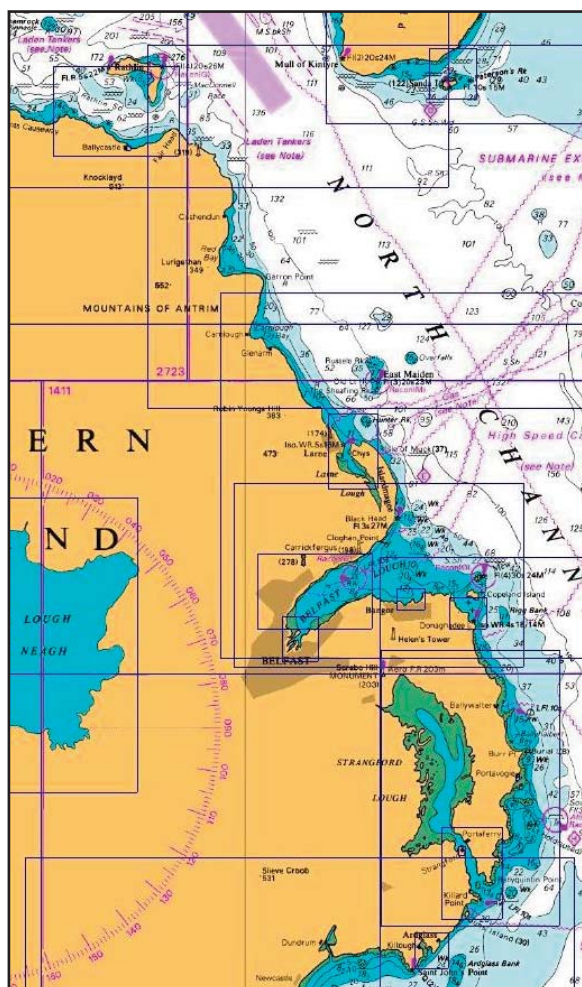
However, on passing South of Belfast Lough, the coast from Mew Island to the entrance to Strangford Lough is low-lying with offshore rocks and hazards. There are no inshore channels, as all craft keep well east of the major waypoint of the South Rock Type 1 buoy.

In the case of Donaghadee Sound, this buoyed passage has in it a number of shoal patches. It is not generally suitable for large vessels but does attract a considerable amount of Belfast traffic, which would otherwise be obliged to pass East and North of Mew Island.

Belfast and Strangford Loughs are the only two inlets, which offer shelter to vessels seeking refuge. Belfast Lough is very open to the East is of limited use in this respect. However, Audley Roads, in Strangford Lough, provides an all-weather anchorage for smaller commercial vessels, fishing boats and leisure craft.

There are two commercial ports, Belfast and Larne.

The Fishing ports are Kilkee, Killough, Portaferry and Portavogie.



# Aids to Navigation

## 2010 - 2015

### REVIEW

There are Leisure ports such as Bangor, Portavogie, Ballywalter, Portaferry, Strangford and Ardglass.

**TSS:** There is a Traffic Separation Scheme at Rathlin Island.

**OREs:** There are no OREs in this region.

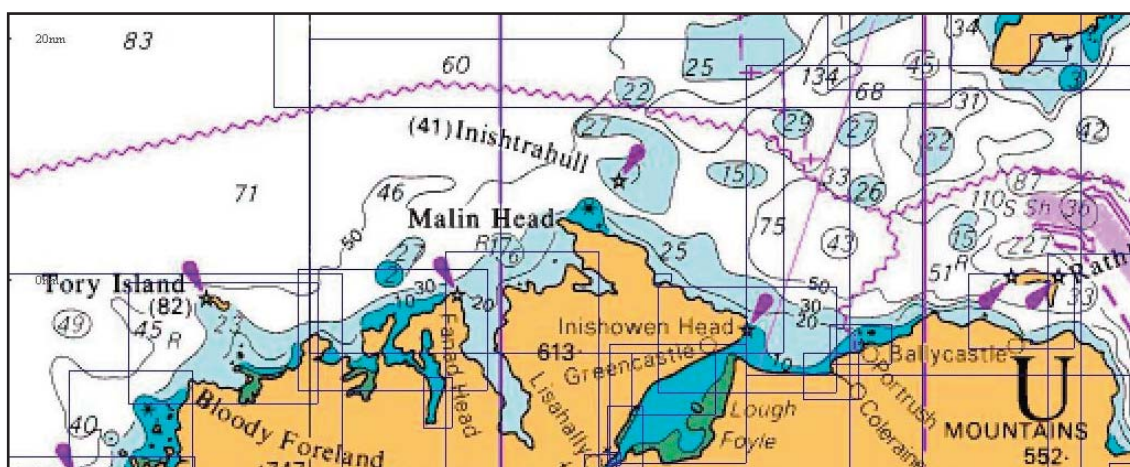
**Racons:** There are Racons at Mew Island and Maidens Lighthouses.

**AtoNs provided:** 5 x major lighthouses, 2 x minor lighthouses, 1 x Major Floating Aid (South Rock Lightfloat replaced with a Superbuoy), 9 X 1st Class Buoys, 7 x 2nd Class Buoys, 2 x 3rd Class Buoys, 1 x Hauling Off Buoy, 4 x Fog Signals (to be disestablished), DGPS Beacon at Tory Island, 2 x Racons, 11 x Beacons/Perches.

The changes proposed for this area are as follows:

<b>Pladdy Lug Beacon</b>	Open negotiations to hand over to Ards Borough Council.
<b>Angus Rock Lighthouse</b>	Open negotiations to hand over to Down District Council.
<b>Angus Rock H/O buoy</b>	Disestablish.
<b>North Rocks Beacon</b>	Establish red can topmark.
<b>Skulmartin Buoy</b>	Fit AIS.
<b>Deputy &amp; Governor Buoy</b>	Synchronise lights.
<b>Carn Buoy</b>	Establish new Starboard lateral buoy approx 2 cables north of Foreland buoy and synchronise both.
<b>Foreland Buoy</b>	Synchronise with new Carn buoy.
<b>Mew Island Lighthouse</b>	Maintain range 24NM.
	Exhibit 24 hour light.
	Establish AIS AtoN.
	Retain fog detector.
<b>Blackhead Lighthouse</b>	Reduce range to 18 NM if cost effective.
<b>Larne Buoys &amp; Beacons</b>	Complete handover to Larne Port Company.
<b>Chaine Tower Lighthouse</b>	Open negotiations to hand over to Larne Borough Council or disestablish.

## Area 19 - Rathlin East to Tory Island



The North Irish coast between Rathlin East Lighthouse and Tory Island is relatively clear of hazards to navigation.

The three principal islands which lie off this coast, Rathlin, Inishtrahull and Tory, are each provided with sufficient AtoNs, to guide the deeper draught, North Atlantic traffic, bound in or out of the North Channel, well north of any inshore hazards which lie along the coast.

As far as the needs of inshore traffic is concerned, the mainland coast can be described as a series of prominent headlands, jutting out into comparatively deep water, with few exceptions, and a number of very deep, navigable inlets, the principal ones being Lough Foyle, Lough Swilly, Mulroy Bay and Sheephaven.

On the eastern section of the coast, Rathlin Sound is an important passage for shipping, which is well served by the lighthouses at Rathlin West and Rue Point. The tidal streams and overfalls in this area can be strong and turbulent and these two AtoNs, at either end of the sound, can greatly assist the safe transit of inshore traffic.

Inshore navigation between Inishtrahull Sound and Rathlin Island does not pose any particular problems. Any identifiable hazards are minor and so close to the mainland that they do not call for attention beyond that which is already provided.

Fanad Head and Malin Head are also relatively free of immediate dangers except for the Limeburner shoal. However, Inishtrahull Sound, which lies close East of Malin Head can be a treacherous sea passage for smaller vessels in certain weather and tidal conditions, and the unlighted Garvan Isles which lie on the landward side of the Sound are a danger to be particularly avoided. The powerful light and Racon on Inishtrahull are considered adequate for the guidance of vessels transiting the Sound or taking the offshore route.

# Aids to Navigation 2010 - 2015 REVIEW

Horn Head is quite clear of off-lying dangers, and the shoals on either side of the entrance to Mulroy Bay are sufficiently inshore as not to constitute a serious danger. The isolated Limeburner Rock, with only 2 metres of water over it, is adequately marked by a type 2 lighted buoy which also serves as a useful waypoint for offshore traffic.

Tory Sound is deep and navigable, delineated by night by the sectored local authority light on Bloody Foreland, as well as the major light on Tory Island.

**TSS:** In the east of this region, the Rathlin Traffic Separation System and Tanker exclusion zones require particular attention.

**ORES:** There are no wind parks in this region.

**AtoNs provided:** 5 x major lighthouses , 3 x minor lighthouses, 4 x 1st Class Buoys, 7 x 2nd Class Buoys, 2 x Fog Signals (to be disestablished), 1 x Racon and 3 x Beacon/Perches.

The changes proposed for this area are as follows:

<b>Rathlin West Lighthouse</b>	Change from red to white. Reduce White sector to 18 NM if cost effective and put red sector over Shamrock and Laconia Banks. Consider character change (Fl R 5s) in relation to Rue (Fl (2) W 5s).
<b>Stork Rocks Beacon</b>	Not IALA compliant but well known locally and functional.
<b>Skerries Buoy</b>	Install new Port Hand buoy 0.5 NM north of the east end of Skerries.
<b>Tuns Buoy</b>	Upgrade to Type 2.
<b>Inishtrahull</b>	Reduce to 18 NM if cost effective.
<b>Colpagh Buoy</b>	Move buoy south-west to 10 metre line.
<b>Bar Rocks Beacon</b>	Initiate negotiations to hand over to Donegal County Council.



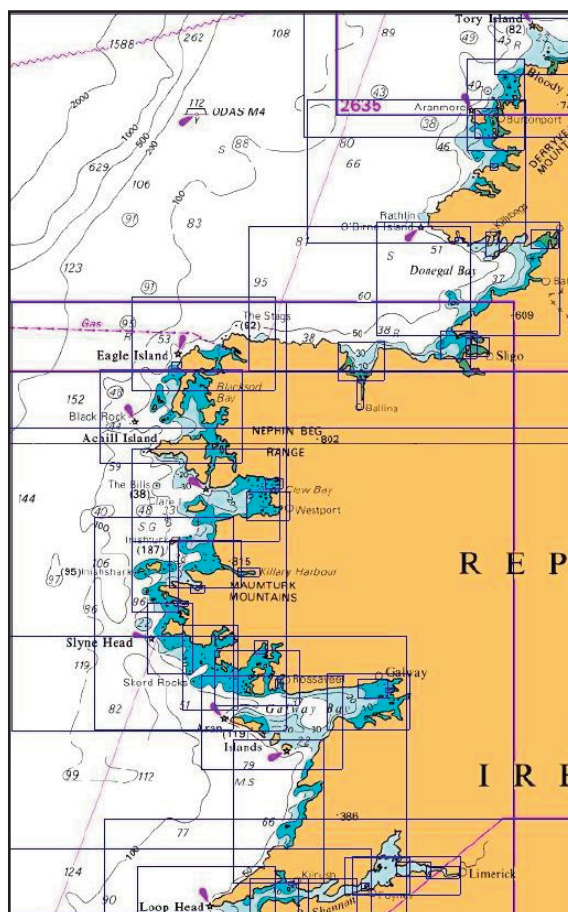
## Area 20 - Tory Island to Loop Head

The Tory Island to Loop Head region is one of the most exposed areas in Northwest Europe, as it takes the full brunt of the prevailing winds and North Atlantic storms. There is limited all weather shelter for any large vessel seeking refuge.

The geographical features of this coastline vary considerably along its whole length from fractured coastlines in Donegal and Mayo to high sheer cliffs in Clare.

The coast from Tory island to Donegal Bay, within which is the fishing port of Killybegs, is characterised by the highest sea cliffs in the country. The physical nature of the coastline changes dramatically between Eagle Island and the Aran Islands. The shoaled and rock strewn coasts of Mayo and Galway protrude out into the North Atlantic and present a formidable number of hazards for the inshore mariner. Killary Lough and Blacksod Bay have limited availability as places of refuge.

Galway Bay is, in general, well served by the natural protection it receives from the strategic location of the Aran Islands. The Bay is adequately lighted, but offers limited shelter. However, the anchorage to the East of Blackhead Lighthouse is tenable in certain weather conditions and is frequently used by vessels awaiting suitable conditions to enter Galway Harbour.



**TSS:** There are no Traffic Separation Schemes in this area.

**ORES:** There are no wind parks in this area but experimental wind powered turbines are planned to take place in a 37 sea acre site off Spiddal in Galway Bay. An experimental energy site is planned off Eagle Island.

**AtoNs provided:** 11 x major lighthouses, 11 x minor lighthouses, 8 x 1st Class Buoys, 8 x 2nd Class Buoys, 2 x 3rd Class Buoys, 2 x Hauling Off Buoys, 2 x DGPS Beacons (Tory Island and Loop Head), 2 x Racons and 13 x Beacons/Perches.

# Aids to Navigation 2010 - 2015 REVIEW

The changes proposed for this area are as follows:

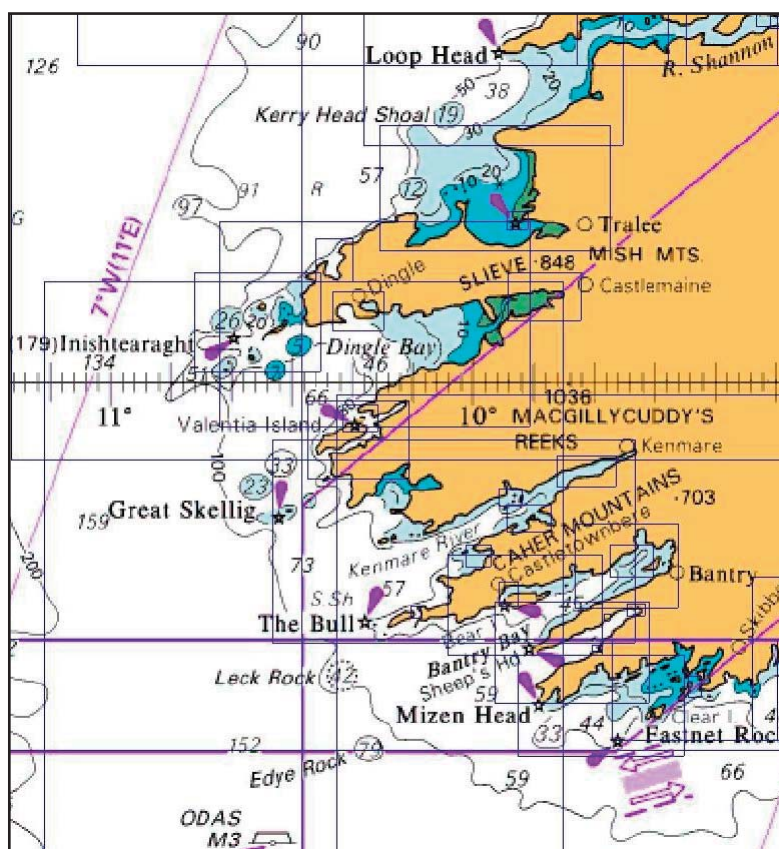
<b>Aranmore Lighthouse</b>	Reduce range to 18 NM if cost effective. Incorporate red sector into main light.
<b>Anchorage Beacon</b>	Initiate negotiations to hand over to Donegal County Council.
<b>South Channel Beacon</b>	Initiate negotiations to hand over to Donegal County Council.
<b>Killybegs Inner Buoy</b>	Progress negotiations to hand over to Killybegs Harbour (KFHC) or DAFF.
<b>Killybegs Outer Buoy</b>	Progress negotiations to hand over to Killybegs Harbour (KFHC) or DAFF.
<b>Bullockmore Buoy</b>	Upgraded to Type 2 buoy
<b>Metal Man (front lead)</b>	Initiate negotiations to hand over to Sligo County Council
<b>Oyster Island (back lead)</b>	Initiate negotiations to hand over to Sligo County Council
<b>Lower Rosses</b>	Initiate negotiations to hand over to Sligo County Council
<b>Blackrock Mayo Lighthouse</b>	Reduce range to 18 NM if cost effective.
<b>Inishboffin North Beacon</b>	Complete negotiations to hand over to Galway County Council
<b>Inishboffin South Beacon</b>	Complete negotiations to hand over to Galway County Council
<b>Gun Rock Beacon</b>	Initiate negotiations to hand over to Dept of Transport
<b>Slyne Head Lighthouse</b>	Reduce to 18 NM if cost effective. Restrict white sector from 162° to 320°. Introduce Red sectors to land.
<b>Cannon Rock Buoy</b>	Initiate negotiations to hand over to Rossaveal Fishery Harbour Centre. Outside Rossaveal jurisdiction but considered to be more beneficial to Rossaveal.
<b>Cashla Bay Lighthouse</b>	Initiate negotiations to hand over to Rossaveal Fishery Harbour Centre.
<b>Blackrock Beacon</b>	Consider dis-establishment following consultation with Galway Harbour Master.
<b>Tawin Shoals Buoy</b>	Initiate negotiations to hand over to Galway Harbour Company
<b>Straw Island Lighthouse</b>	Keep under review pending development of Leading Lights and harbour works by the Local Authority.

## Area 21 - Loop Head to Fastnet

The Coast in this area is characterised by high cliffs and headlands and deep bays. There are a large number of offshore islands. Approaches to ports and harbours are invariably hazardous due to the rocky nature of the area.

Severe weather conditions in this in this zone can force vessels to seek shelter in the numerous bays in the area. The Shannon Estuary and Bantry Bay in particular are the main ports of refuge for large vessels.

Through traffic will normally follow the offshore route outside the major islands. Coastal traffic and vessels bound for ports within the zone mainly use the inshore passages, particularly during adverse weather conditions.



There is a busy fishing trade in the area ranging from small inshore boats to large offshore trawlers and deep-sea longliners.

**AtoNs provided:** 10 x major lighthouses , 6 x minor lighthouses, 11 x 1st Class Buoys, 9 x 2nd Class Buoys, 2 x Hauling Off Buoys, 2 x DGPS Beacons (Mizen, Loop Head), 3 x Racons, 8 x Beacons/Perches.

**TSS:** There is a TSS in operation at Fastnet.

**OREs:** There are no OREs in this region.

# Aids to Navigation

## 2010 - 2015

### REVIEW

The changes proposed for this area are as follows:

<b>Loophead Lighthouse</b>	Reduce light to 18 NM if cost effective.
<b>Ballybunnion Buoy</b>	Putting Met hydro on this buoy.
<b>Kilcredaune Lighthouse</b>	Dis-establish lighthouse.
<b>Kilcredaune Buoy</b>	Remove preferred channel nomination and change to Port Hand lateral buoy and synchronise with Tail of Beal buoy.
<b>Tail of Beal Buoy</b>	Change to Starboard Hand lateral buoy and synchronise with Kilcredaune buoy.
<b>Carrigaholt Buoy</b>	Synchronise with Beal Spit buoy.
<b>Beal Spit Buoy</b>	Change to Starboard Hand lateral buoy and synchronise with Carrigaholt buoy.

The four above changes to be made in consultation with the Harbour Master of Shannon Foynes Port Company.

Consider indicating secondary channel on chart to west of Kilcredaune and Carrigaholt Buoys.

Mark dotted line from 30m mark past Doonaha Buoy on Corlis Leads.

**Rineanna Buoy** Open negotiations to hand over to Shannon Foynes Port Company.

**Scattery Island Lighthouse** In consultation with the Harbour Master, consider dis-establishment or transfer of lighthouse to Shannon Foynes Port Company.

<b>Little Samphire Island Lighthouse</b>	Open negotiations to hand over to Tralee and Fenit Harbour Commissioners.
<b>Inishtearaght Lighthouse</b>	Reduce light to 18 NM if cost effective.
<b>Castlemaine Beacon</b>	Dis-establish.
<b>Valentia Leading Lights</b>	Remove rear leads and replace front lead with daylight sectored PEL light.
<b>Portmagee Beacon</b>	Open negotiations to hand over to Kerry County Council.
<b>Bull Rock</b>	Reduce light to 18 NM if cost effective.
<b>Ardnakinna Lighthouse</b>	Reclassify as minor lt. Reduce light to 12 NM. Red range 9NM
<b>Castletownbere Leads</b>	Replace front lead with daylight PEL on separate structure. On establishment of front lead, dis-establish rear lead.
<b>Bardini Reefer Buoy</b>	Regularise arrangement with DoT/Castletownbere Fishery Harbour.
<b>Carrigavaddra Beacon</b>	Maintain south mark and fit light.
<b>Roancarrig Lighthouse</b>	Re classify as minor light. Consult with Bantry Harbour Commissioners regarding reducing range to 12 NM W, 9NM R.
<b>Horse Buoy</b>	Re-open negotiations to hand over to Bantry Harbour Commissioners.
<b>Gurteenroe Buoy</b>	Re-open negotiations to hand over to Bantry Harbour Commissioners.
<b>Chapel Buoy</b>	Re-open negotiations to hand over to Bantry Harbour Commissioners.
<b>Mizen Head Lighthouse</b>	Re-classify as minor light. Reduce range to 12NM.
<b>Crookhaven Lighthouse</b>	Re-classify as minor light. Reduce range to 9NM.

## 13. List of All Recommended Changes

### Area 1 – Isle of Man, North Channel and Clyde

Maughold Head	Reduce to 15M (minimum) range on re-engineering.
Douglas Head	Reduce to 15M (minimum) range on re-engineering (subject to conspicuity assessment).
Chicken Rock	Establish Racon.
Point of Ayre (minor light)	Discontinue.
Two Foot Bank Buoy	Discontinue.
Mull of Galloway	Reduce to 18M (minimum) range on re-engineering.
Loch Ryan Buoyage	Reassess as ferry port developments occur.
Holy Island (Outer)	Reduce to 18M (minimum) range on re-engineering (b/f from 2005 Review).
Holy Island (Inner)	Reduce to 5M (minimum) range green light.
Davaar	Reduce to 15M range on re-engineering; investigate possible handover to Campbeltown Harbour Authority.
Trench Beacon	Investigate possible handover to Campbeltown Harbour Authority.

### Area 2 – Mull of Kintyre to Ardnamurchan

Ardluing Buoy	Change to South Cardinal; relocate SW to 20m contour.
Bogha Ghair	Assess impact of buoy type change with regard to conspicuity, change to East Cardinal if trials indicate a benefit.
Oban NLB Pier	Replace with 2 FG(vert) on NW of pier.
Bo Rocks Buoy	Discontinue.
New Rock	Add buoyage. South Cardinal at Little Stirk.
Skerryvore	Reassess as windfarm developments occur.
Scarinish	Reduce to 12M (minimum) range on re-engineering.
Branra Rock Beacon	Light (b/f from 2005 Review).
Small Isles Beacon	Light (b/f from 2005 Review).
Heather Island (Sound of Kerrera)	Establish additional minor light - Fl R 2.5s 2M.

### Area 3 – Ardnamurchan to Barra Head; Cape Wrath to the Flannan Isles

Dunvegan	Improve sector cut-offs.
Gasker	Upgrade to 12M (minimum) light.
Ushenish	Remove red sector on re-engineering.
Cope Passage Fairway/	
Cope Passage 6/Cope Passage 7/	
Cope Passage 9/Cope Passage 10/	
Cope Passage West Buoys	Discontinue on completion of Red Rocks light.
Eilean Glas	Reduce to 18M (minimum) range on re-engineering.
Tiumpnan Head	Reduce to 18M (minimum) range on re-engineering.



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Ornsay	Reduce to 12M (minimum) range on re-engineering.
Sgeir Ulibhe Beacon	Establish South Cardinal buoy (b/f from 2005 Review).
Bo Golach Beacon	Light (b/f from 2005 Review).
Bogha Dubh Sgeir	Light.
Sgeir Thraid Beacon	Light or buoy (b/f from 2005 Review), whichever is more cost-effective.
Rubh Reidh	Reduce to 18M (minimum) range on re-engineering.
Stoer Head	Reduce to 18M (minimum) range on re-engineering.
Sgeir Ghoblach Beacon	Light (b/f from 2005 Review).
Red Rocks Beacon	Establish Sector light (b/f from 2007 local review).

## Area 4 – Scotland North Coast; Orkney Islands (excluding Pentland Firth)

North Ronaldsay	Reduce to 18M (minimum) range on re-engineering.
Helliar Holm	Handover to Orkney Harbours.
Strathy Point	Reduce to 18M (minimum) range on re-engineering.
Noss Head	Consider range reduction post-windfarm development.
Seal Skerry Beacon	Light as red light (b/f from 2005 Review).
The Riv Beacon	Light (b/f from 2005 Review).
North Shoal	Trial Virtual AtoN.

## Area 5 – Pentland Firth

Stroma	Reduce to 18M (minimum) range on re-engineering.
Stroma St Johns Beacon (Stroma Skerries)	Light (b/f from 2005 Review).

## Area 6 – Shetland Islands

Foula	Establish red sector to East (257° - 277°).
Vaila Sound	Handover to Shetland Islands Council.
Point of Fethaland	Reduce to 18M (minimum) range on re-engineering.

## Area 7 – Clythness to Rattray Head

Clythness	Discontinue.
Tarbat Ness	Reduce to 18M (minimum) range on re-engineering.
Halliman Skerries	Establish buoy or light.
Chanonry	Reduce to 12M (minimum) range on re-engineering.
Covesea Skerries	Remove red sector on re-engineering.

## Area 8 – Ratray Head to St Abb’s Head

Ratray Head	Reduce to 18M (minimum) range on re-engineering.
Buchan Ness	Reduce to 18M (minimum) range on re-engineering.
Bell Rock	Reassess as windfarm developments occur.
Fife Ness	Reduce to 15M (minimum) range on re-engineering.
South Carr Beacon	Light as 3M light (b/f from 2005 Review (was 5M) or buoy.

## Area 9 - Berwick to Sizewell

Flamborough Head Lighthouse	Reduce light range to 18nm on re-engineering
Guile & Heugh Lighthouses	Synchronise Light Sequence on re-engineering
Longstone Lighthouse	Reduce light range to 18nm and alter character to Fl 7.5 seconds on re-engineering. Consider discontinuance of fog signal after further consultation with local users
Corton Buoy	Discontinue whistle
Lowestoft Lighthouse	Reduce light range to 18nm on re-engineering
Southwold Lighthouse	Increase light range to 24nm; discontinue red sectors and expand white sectors to cover existing red sectors after further consultation with local users and in combination with proposals for Orfordness (See area 10)
Winterton	Discontinue Racon

## Area 10 – Sizewell to Shoreham

Orfordness Lighthouse	Discontinue - subject to further local user consultation (see also Area 9 - Southwold)
Knob NE Buoy	Discontinue
Knob SE Buoy	Discontinue
Shingles mid (Estuary) Buoy	Discontinue
Shingles N Buoy	Discontinue
Shingles NW Buoy	Discontinue
Shingles Patch Buoy	Discontinue
Tizard Buoy	Discontinue
Beachy Head Lighthouse	Reduce light range to 8nm and discontinue Fog Signal on re-engineering
CS5 Buoy	Discontinue (subject to advising IMO)

## Area 11 - Shoreham to Lyme Regis

Anvil Lighthouse	Reduce light range to 9nm on re-engineering
Nab Lighthouse	Reduce light range to 12nm on re-engineering
Alderney Lighthouse	Reduce light range to 12nm on re-engineering
Casquets Lighthouse	Reduce light range to 18nm on re-engineering
Hanois Lighthouse	Reduce light range to 18nm on re-engineering
Portland Bill Lighthouse	Reduce Fog signal range to 2nm
Sark Lighthouse	Reduce light range to 18nm on re-engineering

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#### Area 12 – Lyme Regis to Bude

Berry Head Lighthouse	Reduce light range to 16nm on re-engineering.
St Anthony Lighthouse	Reduce light range to 12nm and sector light ranges to 9nm on re-engineering.
Start Point Lighthouse	Reduce red sector light range to 9nm on re-engineering.
Tater Du Lighthouse	Reduce light range to 16nm and red sector light to 9nm on re-engineering.
Godrevy Lighthouse	Reduce main and sector light to 8nm on re-engineering.
Peninnis Lighthouse	Reduce light range to 9nm on re-engineering.

#### Area 13 – Bude to Cardigan

Blacknore Lighthouse	Discontinue station
Hartland Point Lighthouse	Reduce light range to 8nm and discontinue fog signal on re-engineering
Skokholm Lighthouse	Reduce light range to 8nm - retaining existing sectors

#### Area 14 – Cardigan to Sillioth

South Stack Lighthouse	Reduce Fog Signal range to 2nm.
Bar Lightfloat	Enter negotiations to hand over to the Port of Liverpool.
HE1/HE2/HE3 Buoys	Enter negotiations to hand over to the Port of Liverpool.
Hoyle N Buoy	Discontinue station in line with construction of Gwynt-y-Mor OWF.
Maryport Lighthouse	Enter negotiations to hand over to Maryport Harbour Authority.

#### Area 15 – Fastnet to Tuskar

Fastnet Lighthouse	Reduce range to 18 NM if cost effective. Discontinue fog signal. Retain fog detector and operate light in reduced visibility. Establish AIS AtoN.
Cush buoy	Open negotiations to transfer to Cork County Council.
Wallis buoy	Open negotiations to transfer to Baltimore Harbour.
Lousy Rocks unlit beacon	Open negotiations to transfer to Baltimore Harbour Board.
Kowloon Bridge buoy	Resurvey wreck to determine requirement for buoy.
Glandore Lighted beacon	Open negotiations to transfer Glandore AtoNs to DOT and/or Cork County Council.
Middle unlit beacon	Open negotiations to transfer Glandore AtoNs to DOT and/or Cork County Council.
North unlit beacon	Open negotiations to transfer Glandore AtoNs to DOT and/or Cork County Council.
Sunk Buoy	Open negotiations to transfer Glandore AtoNs to DOT and/or Cork County Council.
Wind Rock unlit beacon	Open negotiations to transfer to Cork County Council.
Courtmacsherry buoy	Open negotiations to transfer to Courtmacsherry Development Group and/or Cork County Council.

Old Head of Kinsale Lighthouse	Reduce range to 18 NM if cost effective. Discontinue fog signal. Retain fog detector and operate light in reduced visibility. AIS station.
Charlesfort Lighthouse	Open negotiations to transfer to Kinsale Harbour Company.
Roches Point Lighthouse	Reduce range to 18 NM if cost effective. Discontinue fog signal. Retain fog detector and operate light in reduced visibility.
Ballycotton Lighthouse	Reduce range to 18NM if cost effective. Discontinue fog signal. Retain fog detector and operate light in reduced visibility.
Youghal Lighthouse	Open negotiations to transfer to Youghal Town Council.
Minehead Lighthouse	Reclassify as minor light. Reduce range to 10 -12 NM.
Dunmore East Lighthouse	Open negotiations to transfer to Waterford County Council and/or Waterford Harbour Company and/or DFHC or DAFF.
Hook Head Lighthouse	Reduce range to 18nm if cost effective. Discontinue fog signal. Retain fog detector and operate light in reduced visibility.
Carrick Rock Beacon	Remove topmark and disestablish as an AtoN.

## Area 16 – Tuskar to Baily

Tuskar Lighthouse	Maintain range of 24NM and maintain daylight range of 6NM. Maintain 24 hour light. Discontinue fog signal. Retain fog detector for met data but operate light 24hrs. Establish AIS AtoN.
Splough buoy	Consider as a pair of gate buoys and synchronise. Consider additionally sequential. Upgrade to BPNS. Fit AIS and met/hydro.
South Long buoy	Alter to Starboard lateral. Upgrade to BPNS. Fit AIS. Move 2 cables south west to maintain gate of 7 cables.
Calmines and South Holdens buoy	Considered as a pair. Already synchronised. Consider additionally sequential.
West Holdens buoy	Consider sequential with above.
Lucifer buoy	Fit AIS.
No. 1 Glassgorman buoy	Reposition 1.4 NM south.
No. 2 Glassgorman buoy	Reposition 0.8 NM north.
Horseshoe buoy	Reposition ENE 0.6m to clearing line. Fit AIS.
Wicklow Head Lighthouse	Reduce range to 18 NM if cost effective. Restrict White sector to channel between Arklow and India banks. Align with clearing line. Remainder of arc to be red light of c. 14NM.
Codling Lanby	Replace with east cardinal superbouy under MFA Plan.

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East Codling buoy	Upgrade to BPNS. Increase range to 6 NM. Reposition east 0.6 NM to bearing between Codling Superbuoy and Kish Lighthouse.
Kish Lighthouse	Maintain 24 hour light. Discontinue fog signal.
Bennet Bank buoy	Fit AIS.
North and South Burford buoys	Fit AIS.
Dun Laoghaire East and West Lighthouses	Continue negotiations to hand over to Dun Laoghaire Harbour Company.
Rosbeg East Buoy	Open negotiations to hand over to Dublin Port Company.
Baily Lighthouse	Reduce range to 18 NM if cost effective. Retain fog detector. Operate light in reduced visibility.

#### Area 17 – Baily to St Johns Point Down

Howth Lighthouse	Open negotiations to hand over to HFHC or DAFF.
Burren Rock Beacon	Light beacon as a starboard lateral. Presently a West Cardinal.
Rockabill Lighthouse	Establish AIS AtoN.
Cardy Rocks Beacon	Potentially light but await Braemore Port developments.
Dundalk Pile Lighthouse	Open negotiations to hand over to Dundalk Port.
Haulbowline Lighthouse	Downgrade to 10 NM light.
St Johns Point Lighthouse	Reduce range to 18 NM if cost effective. Remove Aux light and incorporate sector in main light. Show white 223° to 078° and red 078° to land 152°. Establish AIS AtoN.

#### Area 18 – St Johns Point Down to Rathlin Island

Pladdy Lug Beacon	Open negotiations to hand over to Ards Borough Council.
Angus Rock Lighthouse	Open negotiations to hand over to Down District Council.
Angus Rock H/O Buoy	Disestablish.
North Rocks Beacon	Establish red can topmark.
Skulmartin Buoy	Fit AIS.
Deputy & Governor Buoy	Synchronise lights.
Carn buoy	Establish new Starboard lateral buoy approx 2 cables north of Foreland buoy and synchronise both.
Foreland Buoy	Synchronise with new Carn buoy.
Mew Island Lighthouse	Maintain range 24NM. Exhibit 24 hour light. Establish AIS AtoN. Retain fog detector.
Blackhead Lighthouse	Reduce range to 18 NM if cost effective.
Larne Buoys & Beacons	Complete handover to Larne Port Company.
Chaine Tower Lighthouse	Open negotiations to hand over to Larne Borough Council or disestablish.



## Area 19 – Rathlin Island to Tory Island

Rathlin West Lighthouse	Change from red to white. Reduce White sector to 18 NM if cost effective and put red sector over Shamrock and Laconia Banks.
Stork Rocks Beacon	Consider character change (Fl R 5s) in relation to Rue (Fl (2) W 5s
Skerries Buoy	Not IALA compliant but well known locally and functional.
Tuns Buoy	Install new Port Hand buoy 0.5 NM north of the east end of Skerries.
Inishtrahull	Upgrade to Type 2.
Colpagh Buoy	Reduce to 18 NM if cost effective.
Bar Rocks Beacon	Move buoy south-west to 10 metre line.
	Initiate negotiations to hand over to Donegal County Council.

## Area 20 – Tory Island to Loophead

Aranmore Lighthouse	Reduce range to 18 NM if cost effective. Incorporate red sector into main light.
Anchorage Beacon	Initiate negotiations to hand over to Donegal County Council.
South Channel Beacon	Initiate negotiations to hand over to Donegal County Council.
Killybegs Inner Buoy	Progress negotiations to hand over to Killybegs Harbour (KFHC) or DAFF.
Killybegs Outer Buoy	Progress negotiations to hand over to Killybegs Harbour (KFHC) or DAFF.
Bullockmore Buoy	Upgraded to Type 2 buoy
Metal Man (front lead)	Initiate negotiations to hand over to Sligo County Council
Oyster Island (back lead)	Initiate negotiations to hand over to Sligo County Council
Lower Rosses	Initiate negotiations to hand over to Sligo County Council
Blackrock Mayo Lighthouse	Reduce range to 18 NM if cost effective.
Inishboffin North Beacon	Complete negotiations to hand over to Galway County Council
Inishboffin South Beacon	Complete negotiations to hand over to Galway County Council
Gun Rock Beacon	Initiate negotiations to hand over to Dept of Transport
Slyne Head Lighthouse	Reduce to 18 NM if cost effective. Restrict white sector from 162° to 320°. Introduce Red sectors to land.
Cannon Rock Buoy	Initiate negotiations to hand over to Rossaveal Fishery Harbour Centre (RFHC) or DAFF. (Outside Rossaveal jurisdiction but considered to be solely beneficial to Rossaveal, not Galway Co Co.
Cashla Bay Lighthouse	Initiate negotiations to hand over to Rossaveal Fishery Harbour Centre.
Blackrock Beacon	Consider dis-establishment following consultation with Galway Harbour Master.
Tawin Shoals Buoy	Initiate negotiations to hand over to Galway Harbour Company
Straw Island Lighthouse	Keep under review pending development of Leading Lights and harbour works by the Local Authority.

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## Area 21 – Loophead to Fastnet

Loophead Lighthouse	Reduce light to 18 NM if cost effective.
Ballybunnion Buoy	Putting Met hydro on this buoy.
Kilcredaune Lighthouse	Dis-establish lighthouse.
Kilcredaune Buoy	Remove preferred channel nomination and change to Port Hand lateral buoy and synchronise with Tail of Beal buoy.
Tail of Beal Buoy	Change to Starboard Hand lateral buoy and synchronise with Kilcredaune buoy.
Carrigaholt Buoy	Synchronise with Beal Spit buoy.
Beal Spit Buoy	Change to Starboard Hand lateral buoy and synchronise with Carrigaholt buoy.
The four above changes to be made in consultation with the Harbour Master of Shannon Foynes Port Company.	
Consider indicating secondary channel on chart to west of Kilcredaune and Carrigaholt Buoys.	
Mark dotted line from 30m mark past Doonaha Buoy on Corlis Leads.	
Rineanna Buoy	Open negotiations to hand over to Shannon Foynes Port Company.
Scattery Island Lighthouse	In consultation with the Harbour Master, consider dis-establishment or transfer of lighthouse to Shannon Foynes Port Company.
Little Samphire Island Lighthouse	Open negotiations to hand over to Tralee and Fenit Harbour Commissioners.
Inishtearaght Lighthouse	Reduce light to 18 NM if cost effective.
Castlemaine Beacon	Dis-establish.
Valentia Leading Lights	Remove rear leads and replace front lead with daylight sectored PEL light.
Portmagee Beacon	Open negotiations to hand over to Kerry County Council.
Bull Rock	Reduce light to 18 NM if cost effective.
Ardnakinna Lighthouse	Reclassify as minor lt. Reduce light to 12 NM. Red range 9NM
Castletownbere Leads	Replace front lead with daylight PEL on separate structure. On establishment of front lead, dis-establish rear lead.
Bardini Reefer Buoy	Regularise arrangement with DoT/Castletownbere Fishery Harbour.
Carrigavaddra Beacon	Maintain south mark and fit light.
Roancarrig Lighthouse	Re classify as minor light. Consult with Bantry Harbour Commissioners regarding reducing range to 12 NM W, 9NM red.
Horse Buoy	Re-open negotiations to hand over to Bantry Harbour Commissioners.
Gurteenroe Buoy	Re-open negotiations to hand over to Bantry Harbour Commissioners.
Chapel Buoy	Re-open negotiations to hand over to Bantry Harbour Commissioners.
Mizen Head Lighthouse	Re-classify as minor light. Reduce range to 12NM.
Crookhaven Lighthouse	Re-classify as minor light. Reduce range to 9NM.

## 14. GLA – Navigational Risk Assessment

### Definition of Impact levels

Failure to provide this service may potentially result in one or more of the following:

	Safety	Environmental	Finance
Severe (3)	Multiple (>10) loss of life	Major pollution incident	Loss or damage of significant vessel Cost > £10M
Moderate (2)	Possible loss of life on a limited scale	Limited pollution incident	Major damage to large vessel/probable loss of small vessel
Minor (1)	Unlikely to result in loss of life	Little or no pollution	Minor damage to large vessel/possible loss of small vessel Cost <£500k

### Definition of Likelihood levels

Noting current and predicted traffic patterns, the probability of an incident of this impact is assessed as:

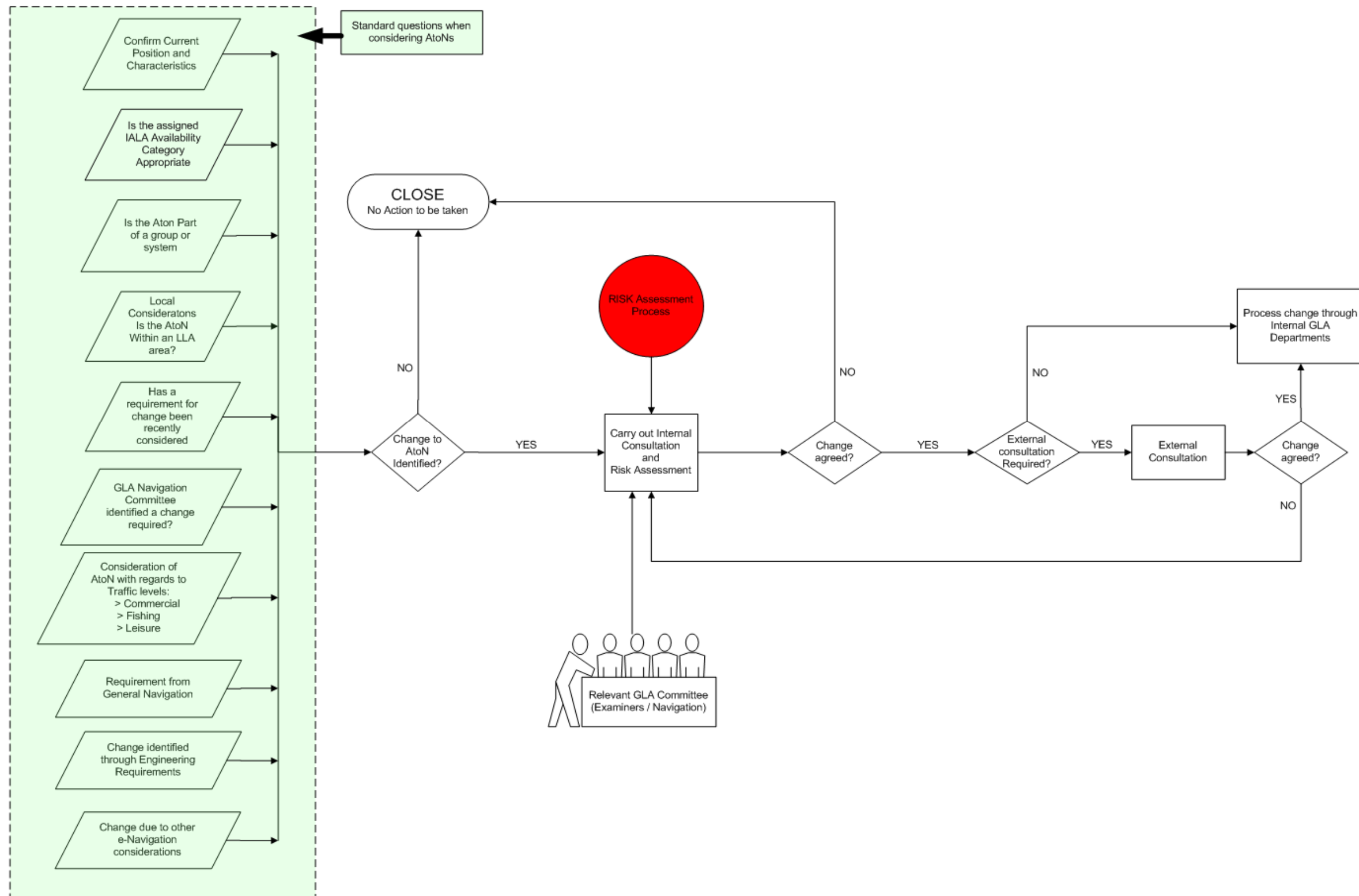
High (3)	This type of incident has occurred in the past and may be repeated, or it is assessed as likely
Medium (2)	Possible
Low (1)	A remotely possible occurrence

## Section 15 – Flow Diagrams and Risk Assessment Forms

## Section 16 – Definitive Lists of all Aids to Navigation

## 15. Flow Diagrams and Risk Assessment Forms

### GLAs Aid to Navigation Review Process





NAVIGATION RISK ASSESSMENT – *To be completed for each Aid Changed*

Name of Aid to Navigation	Crubon Rock Buoy	Items Considered	
Location	Kilbrannan Sound	Discontinue Buoy	
Date Considered	19 November 2009		

IMPACT	Severe 3	3	6	9
	Moderate 2	2	4	6
	Minor 1	1	2	3
		LOW 1	MEDIUM 2	HIGH 3
		LIKELIHOOD		

	Unacceptable Level of Risk
	Acceptable Level of Risk with Caution
	Acceptable Level of Risk

**Process:** Make an assessment of all the risks involved, considering at least the items in the adjacent table and assessing both before and after the proposed change. Having made your assessment enter the appropriate number against Impact and Likelihood. Use the table above to determine the consequential overall risk level.



Trinity House

Title	Name /Signature	Date
INTERNAL		
Director/Navigation Manager	Signature	7/1/10
	Signature	
GLA APPROVAL		
TH	Signature	7/1/10
	Signature	
CIL	Signature	7/1/10
NLB		

Overall Impact and Likelihood Assessment

Considerations will include but not be limited to the following:

1	Is the AtoN a significant part of a group of Aids which will be affected by the change?		Yes	<p>Crubon Rock is a Port Hand Lateral buoy marking an inshore hazard to the East of Carradale Point.</p> <p>(4) Within the area there is limited fishing activity out of Carradale. Small vessel anchorage at Carradale bay is exposed to South.</p> <p>The buoy is considered to have negligible value in marking a hazard which is close to the shoreline. Discontinuation of buoy proposed at NLB Masters’ Workshop 15-16 April 2009.</p> <p>Proposal opposed by Clyde Fisherman Association.</p> <p>Conclusion: This buoy is valued by local fisherman, but appears to contribute little to safe navigation.</p>
2	Assessment of local bathymetry against the proposed change		Yes	
3	Frequency and accuracy of hydrographic surveys		Yes	
4	Traffic Density, type, size, draft and speed.		Yes	
5	Traffic patterns to be considered in relation to conflict between routes and types of vessel		Yes	
6	Existing Obstructions and developments		Yes	
7	Planned new obstructions or developments		Yes	
8	IMO international and Local Charted Traffic routing measures		Yes	
9	Port and Local Information Systems	VTS	N/A	
		Information Service	N/A	
		Sailing Directions and Local notices to Mariners	Yes	
10	Local knowledge of users including the availability of Pilotage		Yes	
11	Requirement in prevailing weather conditions including luminous range, sea conditions and background lighting		Yes	
12	Accident or Incident History recorded for this station		Yes	
13	Any other considerations		Yes	

Risk Assessment	Before Change	After Change	DECISION
IMPACT	2	2	Discontinue the buoy station.
LIKELIHOOD	1	1	
ASSESSED RISK	2	2	

# 16. Definitive Lists of all Aids to Navigation

Any AtoN where changes have been recommended are highlighted in yellow

Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
1	Maughold Head	Light	M F	54° 17.734' N	004° 18.585' W	FI(3) 30s	21				Reduce to 15NM
1	Bahama	Buoy	M F	54° 20.029' N	004° 08.585' W	VQ(6) + L.FI 10s			2		No change considered necessary
1	Douglas Head	Light	M F	54° 08.599' N	004° 27.947' W	FI 10s	24				Reduce to 15NM
1	Langness	Light	M F	54° 03.294' N	004° 37.509' W	FI(2) 30s	12				No change considered necessary
1	Chicken Rock	Light	M F	54° 02.271' N	004° 50.315' W	FI 5s	21				Establish Racon
1	Thousla Rock	Light	L	54° 03.728' N	004° 48.042' W	FI R 3s	4				No change considered necessary
1	Point of Ayre (Minor Light)	Light	M F L	54° 25.043' N	004° 21.858' W	FI 3s	8				Discontinue
1	Point of Ayre	Light	M F L	54° 24.959' N	004° 22.111' W	FI(4)W 20s	19			Racon	No change considered necessary
1	Whitestone Bank	Buoy	M F L	54° 24.600' N	004° 20.411' W	Q(9) W 15s	5		2		No change considered necessary
1	Two Feet Bank	Buoy	F	54° 42.907' N	003° 47.121' W	Q(9) 15s			2		Discontinue
1	Hestan Island	Light	F L	54° 49.973' N	003° 48.581' W	FI(2) 10s	9				No change considered necessary
1	Little Ross	Light	F L	54° 45.944' N	004° 05.096' W	FI 5s	12				No change considered necessary
1	Little Ross Beacon	Leading Light	F L	54° 46.064' N	004° 05.020' W	FI(2) 5s	5				No change considered necessary
1	Mulberry Wreck	Buoy	L	54° 46.359' N	004° 21.215' W	Q(3) W 10s			3		No change considered necessary
1	Mull of Galloway	Light	M F	54° 38.105' N	004° 51.436' W	FI 20s	28				Reduce to 18NM
1	Crammag Head	Light	M L	54° 39.910' N	004° 57.903' W	FI 10s	18				No change considered necessary
1	Craig Laggan	Beacon (Unlighted)	L	54° 58.573' N	005° 11.432' W						No change considered necessary
1	Corsewall	Light	M L	55° 00.429' N	005° 09.564' W	FI(5) 30s	22			AIS	No change considered necessary
1	Spit of Scaur	Buoy	M F L	54° 57.102' N	005° 01.472' W	FI G 6s	4		2		No change considered necessary
1	Lock Ryan	Light	M L	54° 58.467' N	005° 01.845' W	FI(2) R 10s	12				No change considered necessary
1	Loch Ryan West	Buoy	M F	54° 58.467' N	005° 01.845' W	Q G			2		No change considered necessary
1	Forbes Shoal	Buoy	M F	54° 59.482' N	005° 02.955' W	Q R			2		No change considered necessary
1	Milleur Point	Buoy	M	55° 01.288' N	005° 05.656' W	Q			2	AIS	No change considered necessary
1	Loch Ryan Fairway	Buoy	M	54° 59.770' N	005° 03.820' W	Iso 4s	5		2		No change considered necessary
1	Ailsa Craig	Light	M L	55° 15.126' N	005° 06.523' W	FI W 4s	17				Assess long term future
1	Brest Rocks	Beacon (Unlighted)	L	55° 18.247' N	004° 51.190' W						No change considered necessary
1	Turnberry	Light	F L	55° 19.572' N	004° 50.655' W	FI W 15s	24				Assess long term future
1	Lady Isle	Light	M F L	55° 31.632' N	004° 44.047' W	FI 2s	11			Racon	No change considered necessary
1	Lappock Rock	Beacon (Unlighted)	L	55° 34.624' N	004° 41.720' W						No change considered necessary
1	Hamilton Rock	Buoy	M	55° 32.631' N	005° 04.902' W	FI R 6s			2		No change considered necessary
1	Fullarton Rock	Buoy	M F L	55° 30.647' N	005° 04.576' W	FI(2) R 12s			3		No change considered necessary
1	Holy Island (Inner)	Light	M L	55° 30.736' N	005° 04.211' W	FI G 3s	10				Reduce to 5NM
1	Holy Island (Outer)	Light	M L	55° 31.042' N	005° 03.653' W	FI(2) 20s	25				Reduce to 18NM
1	Pladda	Light	M F L	55° 25.512' N	005° 07.113' W	FI(3) 30s	17				No change considered necessary
1	Iron Rock Ledges	Buoy	M F L	55° 26.839' N	005° 18.854' W	FI G 6s			2		No change considered necessary
1	Crubon Rock	Buoy	F	55° 34.476' N	005° 27.092' W	FI(2) R 12s			2		No change considered necessary
1	Otterard	Buoy	F L	55° 27.064' N	005° 31.111' W	Q(3) 10s			2		No change considered necessary
1	Trench Flat	Beacon (Unlighted)	F L	55° 25.489' N	005° 34.579' W						Investigate handover to Campbeltown Harbour Authority
1	Davaar	Light	M F L	55° 25.688' N	005° 32.428' W	FI(2) 10s	23				Reduce to 15NM, Investigate handover to Campbeltown Harbour Authority
1	Arranman's Barrel	Buoy	M F L	55° 19.415' N	005° 32.877' W	FI(2) R 12s			2		No change considered necessary
1	Maoosh Rock	Buoy	M F L	55° 17.947' N	005° 36.993' W	FI R 6s			2		No change considered necessary
1	Patersons Rock	Buoy	M F L	55° 16.912' N	005° 32.477' W	FL(3) R 18s			2		No change considered necessary
1	Sanda	Light	M F L	55° 16.508' N	005° 34.980' W	FI 10s	15				No change considered necessary
1	Mull of Kintyre	Light	M F L	55° 18.626' N	005° 48.208' W	FI(2) 20s	24				No change considered necessary

Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
2	Gigalum Rocks	Buoy	M F L	55° 39.202' N	005° 43.698' W	Q(9) 15s			2		No change considered necessary
2	Sgeir Gigalum	Buoy	M F L	55° 39.973' N	005° 42.669' W	FI G 6s	4		2		No change considered necessary
2	Sgeir Nuadh	Buoy	M F L	55° 41.781' N	005° 42.059' W	FI R 6s			2		No change considered necessary
2	Badh Rock	Buoy	M F L	55° 42.301' N	005° 41.224' W	FI(2) G 12s			2		No change considered necessary
2	Gamhna Gigha	Light	M L	55° 43.778' N	005° 41.075' W	FI(2)W 6s	5				No change considered necessary
2	Cathsgeir	Buoy	M F L	55° 39.666' N	005° 47.503' W	Q(9) 15s			2		No change considered necessary
2	Rinns of Islay	Light	M L	55° 40.390' N	006° 30.812' W	FI W 5s	24				No change considered necessary
2	Loch Indaal	Sector Light	M L	55° 44.690' N	006° 22.344' W	FI(2) WR 7s	W11,R8				No change considered necessary
2	Otter Rock	Buoy	M F L	55° 33.875' N	006° 07.918' W	Q(6)+L.FI 15s			2		No change considered necessary
2	Port Ellen	Buoy	M F L	55° 37.007' N	006° 12.273' W	Q G			2		No change considered necessary
2	Port Ellen Sector	Sector Light	M L	55° 37.218' N	006° 12.707' W	FI WRG 3s	W8, R6, G6				No change considered necessary
2	Eileana Chuirn	Light	M L	55° 40.129' N	006° 01.210' W	FI(3) 18s	8				No change considered necessary
2	McArthur's head	Sector Light	M L	55° 45.831' N	006° 02.865' W	FI(2) WR 10s	W13, R10				No change considered necessary
2	Black Rocks	Buoy	M F L	55° 47.504' N	006° 04.093' W	FI G 6s			2		No change considered necessary
2	Carragh Mhor	Sector Light	M L	55° 50.423' N	006° 06.109' W	FI(2)WR 6s	W8, R6				No change considered necessary
2	Carragh an T'Sruith	Light	M L	55° 52.309' N	006° 05.770' W	FI 3s	W9				No change considered necessary
2	Rivaal (Rubh' A'Mhail)	Sector Light	M L	55° 56.181' N	006° 07.409' W	FI(3)W 15s	19				No change considered necessary
2	Na Cuiltean	Light	M L	55° 48.642' N	005° 54.891' W	FI W 10s	9				No change considered necessary
2	Small Isles	Beacon (Unlighted)	L	55° 49.977' N	005° 56.428' W						Light
2	Eilean Nan Gabhar	Light	M L	55° 50.039' N	005° 56.242' W	FI W 5s	8				No change considered necessary
2	Nine Feet Rock	Buoy	M F L	55° 52.468' N	005° 52.955' W	Q(3) 10s			2		No change considered necessary
2	Skervuile	Light	M L	55° 52.457' N	005° 49.849' W	FI W 15s	9				No change considered necessary
2	Bow of Knap	Buoy	L	55° 53.047' N	005° 41.968' W	Q(9) 15s			2		No change considered necessary
2	Ruadh Sgeir	Light	M L	56° 04.321' N	005° 39.778' W	FI W 6s	8				No change considered necessary
2	Reisa An T-Struith	Light	M L	56° 07.776' N	005° 38.907' W	FI(2)W 12s	7				No change considered necessary
2	Ardluing	Buoy	L	56° 11.017' N	005° 38.481' W	FI(2) G 6s			3		Change to South Cardinal. Relocate SW
2	Scalasaig	Sector Light	M L	56° 04.007' N	006° 10.897' W	FI(2)WR 10s	W8, R6				No change considered necessary
2	The Garvellachs	Light	M L	56° 13.040' N	005° 49.056' W	FI W 6s	9				No change considered necessary
2	Bogha Ant Sagart	Buoy	M F L	56° 13.030' N	005° 45.260' W	Q(9) 15s			2		No change considered necessary
2	Dubh Sgeir (Luing)	Sector Light	M L	56° 14.767' N	005° 40.201' W	FI WRG 6s	W6, R4, G4			Racon	No change considered necessary
2	Fladda	Sector Light	M L	56° 14.897' N	005° 40.830' W	FI(2)WRG 9s	W11, R9, G9				No change considered necessary
2	Bogha Ghair	Buoy	M L	56° 16.490' N	005° 40.500' W	FI (4) R 12s			2		Trial change to East Cardinal
2	Bono Rock	Buoy	L	56° 16.204' N	005° 41.276' W	Q(9) 15s			2		No change considered necessary
2	Bogha Nuadh	Buoy	M F L	56° 21.689' N	005° 37.877' W	Q(6)+L.FI 15s			2		No change considered necessary
2	Dubh Sgeir (Kerrera)	Light	M L	56° 22.814' N	005° 32.264' W	FI(2)W 12s	5				No change considered necessary
2	Little Horseshoe	Buoy	M L	56° 23.221' N	005° 31.829' W	FI(4) R 12s			3		No change considered necessary
2	Ferry Rocks NW	Buoy	M F L	56° 24.110' N	005° 30.698' W	Q G			2		No change considered necessary
2	Ferry Rocks Se	Buoy	L	56° 23.996' N	005° 30.529' W	FI R 5s			3		No change considered necessary
2	Ardbhan	Buoy	M L	56° 24.185' N	005° 30.388' W	FI G 5s			2		No change considered necessary
2	Heather Island (New Aton)	Light	M F L	56° 24.420' N	005° 30.225' W	FL R 2.5s					Establish additional minor light
2	Sgeir Rathaid South	Buoy	M F L	56° 24.747' N	005° 29.367' W	Q(6)+L.FI 15s			2		No change considered necessary
2	Sgeir Rathaid North	Buoy	M F L	56° 24.918' N	005° 29.234' W	Q			2		No change considered necessary
2	Oban NLB Pier	Light	M F L	56° 34.700' N	005° 28.869' W	Oc G 6s	5				Replace with 2 FG(vert) on NW of pier
2	Rubh' A' Chruidh	Light	M F L	56° 25.322' N	005° 29.291' W	Q R	4				No change considered necessary
2	Corran Ledge	Buoy	M F L	56° 25.192' N	005° 29.108' W	VQ(9) 10s			2		No change considered necessary
2	Dunollie	Sector Light	M F L	56° 25.374' N	005° 29.045' W	FI(2)WRG 6s	W8, R6, G6				No change considered necessary
2	North Spit Of Kerrera	Light	M F L	56° 25.489' N	005° 29.561' W	FI R 3s	5				No change considered necessary
2	Duart Point	Sector Light	M F L	56° 26.835' N	005° 38.767' W	FI(3)WR 18s	W5, R3				No change considered necessary
2	Lady Rock	Light	M F L	56° 26.908' N	005° 37.040' W	FI 6s	5				No change considered necessary

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2	Lismore	Light	M F L	56° 27.333' N	005° 36.449' W	FI 10s	17				No change considered necessary
2	Branra Rock	Beacon (Unlighted)	M L	56° 32.028' N	005° 26.603' W						Light
2	Appin Point	Buoy	M F L	56° 32.690' N	005° 25.968' W	FI G 6s			2		No change considered necessary
2	Sgeir Bhuidhe	Sector Light	M L	56° 33.646' N	005° 24.648' W	FI(2) WR 7s	9				No change considered necessary
2	Culchenna Spit	Buoy	M F L	56° 41.171' N	005° 15.724' W	FI G 6s			2		No change considered necessary
2	Eilean Na Creiche	Buoy	M F L	56° 50.396' N	005° 07.380' W	FI R 3s	4		2		No change considered necessary
2	Corpach	Buoy	M	56° 50.293' N	005° 07.011' W	FI R 6s			2		No change considered necessary
2	Maclean Rock	Buoy	M F L	56° 49.804' N	005° 07.038' W	FI(2) R 12s	4		2		No change considered necessary
2	Lochy Flat South	Buoy	M F L	56° 49.538' N	005° 07.023' W	Q G			2		No change considered necessary
2	Corran Narrows NE	Light	M L	56° 43.616' N	005° 13.900' W	FI W 5s	4				No change considered necessary
2	Corran Shoal	Buoy	M F L	56° 43.690' N	005° 14.390' W	Q R			2		No change considered necessary
2	Corran Point	Sector Light	M L	56° 43.253' N	005° 14.539' W	Iso WRG 4s	W10, R7,G7				No change considered necessary
2	Corran Flat	Buoy	M L	56° 42.859' N	005° 14.933' W	FI(4) R 10s			3		No change considered necessary
2	Clovulin Spit	Buoy	M F L	56° 42.290' N	005° 15.558' W	FI(2) R 15s			2		No change considered necessary
2	Sallachan Point	Beacon (Unlighted)	M L	56° 42.047' N	005° 17.007' W						No change considered necessary
2	Grey Rocks	Light	M L	56° 29.790' N	005° 42.828' W	FI W 3s	6				No change considered necessary
2	Inninmore Bay	Buoy	M	56° 30.363' N	005° 43.465' W	Q			2		No change considered necessary
2	Yule Rock	Buoy	L	56° 30.016' N	005° 43.958' W	FI R 15s			3		No change considered necessary
2	Ardtornish	Sector Light	M F L	56° 31.092' N	005° 45.214' W	FI (2)WRG 10s	W8, R6, G6				No change considered necessary
2	Avon Rock	Buoy	M L	56° 30.790' N	005° 46.798' W	FI(4) R 10s			3		No change considered necessary
2	Fuinary Spit	Buoy	M F L	56° 32.661' N	005° 53.162' W	FI G 6s			2		No change considered necessary
2	Bo Rocks	Buoy	L	56° 31.530' N	005° 55.534' W	FI(2) G 6s			3		Discontinue
2	Green Island	Light	M L	56° 32.261' N	005° 54.790' W	FI W 6s	8				No change considered necessary
2	Hispania Wreck	Buoy	M F L	56° 34.958' N	005° 59.120' W	FI(2) R 10s			2		No change considered necessary
2	Bogha Bhuilg	Buoy	M L	56° 36.131' N	005° 59.134' W	FI G 5s			2		No change considered necessary
2	Little Stirk (New Aton)	Buoy	M L	56° 38.515' N	006° 01.517' W	Q(6) + LFI 15s			2		Add new buoyage
2	Rubha Nan Gall	Light	M L	56° 38.232' N	006° 03.969' W	FI W 3s	15				No change considered necessary
2	New Rocks	Buoy	M F L	56° 39.053' N	006° 03.299' W	FI G 6s	4		2	AIS	No change considered necessary
2	Ardmore	Light	M L	56° 39.370' N	006° 07.698' W	FI(2) 10s	13				No change considered necessary
2	Bunessan	Sector Light	L	56° 20.566' N	006° 16.377' W	FI WR 6s	W8, R6				No change considered necessary
2	Bogha Hun A Chuhoil	Buoy	M L	56° 16.630' N	006° 24.970' W	Q(6) + LFI 15s			2		No change considered necessary
2	Iona Bank South	Buoy	M F L	56° 19.448' N	006° 23.120' W	Q(6)+L.FI 15			2		No change considered necessary
2	Bo Na Sliganach	Buoy	L	56° 19.343' N	006° 22.955' W	FI(2) G 6s			2		No change considered necessary
2	Bogha Choilta	Buoy	L	56° 18.586' N	006° 23.429' W	FI G 5s			2		No change considered necessary
2	Bogha Nan Ramfhear	Buoy	M L	56° 15.700' N	006° 20.370' W	Q			2		No change considered necessary
2	Dubh Artach	Light	M L	56° 07.946' N	006° 38.079' W	FI(2) 30s	20				No change considered necessary
2	Skerryvore	Light	M L	56° 19.381' N	007° 06.865' W	FI W 10s	23			Racon	Reassess as windfarm developments occur
2	Scarinish	Light	M L	56° 30.015' N	006° 48.266' W	FI W 3s	16				Reduce to 12NM
2	Plocaid Bo	Buoy	M F L	56° 33.232' N	006° 43.998' W	FI G 4s			2		No change considered necessary
2	Roan Bogha	Buoy	M F L	56° 32.256' N	006° 40.164' W	Q(6)+LFI W 15s	5		2		No change considered necessary
2	Cairn Na Burgh More	Light	M L	56° 31.046' N	006° 22.956' W	FI(3) W 15s	8				No change considered necessary
2	Chieftain Rock	Buoy	M F L	56° 36.650' N	006° 30.900' W	FI G 6s			2		No change considered necessary
2	Cairn Of Coll	Light	M L	56° 42.264' N	006° 26.729' W	FI 12s	10				No change considered necessary
2	Ardnamurchan	Light	M F L	56° 43.630' N	006° 13.567' W	FI(2) 20s	24			AIS	No change considered necessary
3	Bo Faskadale	Buoy	M F L	56° 48.177' N	006° 06.370' W	FI(3)G 18s	4		2	AIS	No change considered necessary
3	Eigg	Light	M L	56° 52.261' N	006° 07.289' W	FI W 6s	8				No change considered necessary
3	Hyskeir	Light	M F L	56° 58.139' N	006° 40.851' W	FI(3) 30s	24			Racon	No change considered necessary
3	Humla	Buoy	M F L	57° 00.439' N	006° 37.338' W	FI G 6s	4		2		No change considered necessary
3	Canna	Light	M L	57° 02.819' N	006° 28.002' W	FI 10s	9				No change considered necessary



Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
3	Ardtreck	Light	M L	57° 20.384' N	006° 25.859' W	FI 6s	9				No change considered necessary
3	Neist Point	Light	M F L	57° 25.401' N	006° 47.337' W	FI 5s	16			AIS	No change considered necessary
3	Bo Na Famachd	Buoy	L	57° 26.796' N	006° 35.859' W	FI G 5s			2		No change considered necessary
3	Dunvegan	Sector Light	M L	57° 26.826' N	006° 36.594' W	FI WRG 3s	W7, R5, G5				Improve Sector cut-offs
3	Vaternish	Light	M F L	57° 36.484' N	006° 38.049' W	FI 20s	8				No change considered necessary
3	Eilean Trodday	Sector Light	M F	57° 43.627' N	006° 17.919' W	FI(2) WRG 10s	W12, R9, G9				No change considered necessary
3	Comet Rock	Buoy	M F L	57° 44.575' N	006° 20.586' W	FI R 6s	4		2	AIS	No change considered necessary
3	Eugenie Rock	Buoy	M F L	57° 46.489' N	006° 27.324' W	Q(6)+L.FI 15s			2		No change considered necessary
3	Sgeir Nam Maol	Beacon (Unlighted)	M F L	57° 44.863' N	006° 22.760' W						No change considered necessary
3	An T-Iasgair	Light	M F L	57° 41.112' N	006° 26.009' W	FI W 6s	9				No change considered necessary
3	St. Kilda	AIS	nil	56° 39.053' N	006° 03.299' W						No change considered necessary
3	Gasker	Light	M F L	57° 59.053' N	007° 17.224' W	FI(3)10s	10				Upgrade to 12NM light
3	Whale Rock South	Buoy	nil	57° 54.243' N	008° 00.673' W	Q(6)LFI 15s	5		2		No change considered necessary
3	Whale Rock	Buoy	M F	57° 54.378' N	007° 59.968' W	Q(3)10s	5		1	Racon, AIS	No change considered necessary
3	Flannan Islands	Light	M F L	58° 17.294' N	007° 35.394' W	FI(2)30s	20			AIS	No change considered necessary
3	Monach Isles	Light	M F L	57° 31.549' N	007° 41.763' W	FI(2)15s	18				No change considered necessary
3	Haskeir	Light	M F L	57° 41.983' N	007° 41.738' W	FI 20s	23			Racon	No change considered necessary
3	Fiaray Beacon (W)	Beacon (Unlighted)	F L	57° 04.036' N	007° 26.571' W						No change considered necessary
3	Fiaray Beacon (E)	Beacon (Unlighted)	F L	57° 04.029' N	007° 26.339' W						No change considered necessary
3	Barra Head	Light	M F L	56° 47.128' N	007° 39.220' W	FI 15s	18				No change considered necessary
3	Sgeir Na Treanne	Buoy	M F L	56° 56.501' N	007° 29.677' W	FI R 3s			2		No change considered necessary
3	Castlebay Inner	Buoy	M F L	56° 56.528' N	007° 29.352' W	FI G 3s	4		2		No change considered necessary
3	Sgeir A Scape	Buoy	M F L	56° 56.264' N	007° 27.269' W	FI(2) G 8s			2		No change considered necessary
3	Castlebay South	Buoy	M F L	56° 56.091' N	007° 27.210' W	FI(2)R 8s	4		2	Racon	No change considered necessary
3	Bo-Vich-Chuan	Buoy	M F L	56° 56.157' N	007° 23.306' W	Q(6)+L.FI 15s	4		2	Racon	No change considered necessary
3	Rubh Glas Rear	Light	M F L	56° 56.875' N	007° 31.048' W	F Bu	6				No change considered necessary
3	Rubh Glas Front	Light	M F L	56° 56.770' N	007° 30.636' W	F Bu	6				No change considered necessary
3	Sgeir Liath	Beacon (Unlighted)	M F L	56° 56.638' N	007° 30.769' W						No change considered necessary
3	Channel Rock	Sector Light	M F L	56° 56.238' N	007° 28.925' W	FI WR 6s	W6, R4				No change considered necessary
3	Dubh Sgeir (Castlebay)	Light	M F L	56° 56.409' N	007° 28.920' W	Q(3)G 6s	5				No change considered necessary
3	Curachan	Buoy	M F L	56° 58.587' N	007° 20.485' W	Q(3) 10s			2		No change considered necessary
3	Grianamul	Buoy	M F L	57° 01.567' N	007° 23.347' W	Q(9) 15s			3		No change considered necessary
3	Sgeir Meall Na Hoe	Buoy	M F L	57° 02.029' N	007° 22.119' W	VQ(3) 5s			3		No change considered necessary
3	Bo Tanna	Buoy	M F L	57° 03.077' N	007° 20.043' W	Q(3) 10s			2		No change considered necessary
3	Drover Rock	Buoy	F L	57° 04.100' N	007° 23.600' W	Q(6)&LFI.15s			2		No change considered necessary
3	Binch Rock	Buoy	M L	57° 01.721' N	007° 17.163' W	Q(6)+L.FI 15s			2		No change considered necessary
3	Sgor Rock	Buoy	M F L	57° 09.087' N	007° 17.759' W	FI G 3s	4		2		No change considered necessary
3	Gasay Island	Sector Light	M F L	57° 08.929' N	007° 17.387' W	FI WR 5s	W7, R4				No change considered necessary
3	Calvay	Sector Light	M F L	57° 08.530' N	007° 15.377' W	FI(2)WRG 10s	W7, R4, G4				No change considered necessary
3	Mackenzie Rock	Buoy	M F L	57° 08.246' N	007° 13.715' W	FI(3) R 15s	4		2		No change considered necessary
3	Ushenish	Sector Light	M F L	57° 17.895' N	007° 11.580' W	FI WR 20s	W19, R15				Remove red sector
3	Weavers Point	Light	M F L	57° 36.493' N	007° 06.001' W	FI 3s	7				No change considered necessary
3	Sleicham Spit	Beacon (Unlighted)	F	57° 45.090' N	007° 02.967' W						No change considered necessary
3	Coddem East	Beacon (Unlighted)	F	57° 44.937' N	007° 03.708' W						No change considered necessary
3	Coddem West	Beacon (Unlighted)	F	57° 44.909' N	007° 03.820' W						No change considered necessary
3	Berneray Spit	Buoy	M	57° 42.031' N	007° 10.374' W	FI R 3s			3		No change considered necessary
3	Drowning Rock	Light	F L	57° 42.490' N	007° 09.325' W	FI(2) G 8s	2				No change considered necessary
3	Mccaskill ROCK	Buoy	F L	57° 42.299' N	007° 09.388' W	FI R 5s			4		No change considered necessary
3	Trench	Buoy	M F L	57° 41.888' N	007° 09.007' W	Q(3) G 10s			3		No change considered necessary



Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
3	Ceann Na Dige	Buoy	M F L	57° 41.762' N	007° 08.479' W	Q R			4		No change considered necessary
3	Portain	Buoy	M F L	57° 41.715' N	007° 08.321' W	FI G 3s			4		No change considered necessary
3	Nf6	Buoy	M F L	57° 41.552' N	007° 07.866' W	FI R 5s			3		No change considered necessary
3	Nf5	Buoy	M F L	57° 41.520' N	007° 07.591' W	FI(2)G 8s			3		No change considered necessary
3	Nf1	Buoy	M F L	57° 41.600' N	007° 04.514' W	FI(2)G 4s	3		3		No change considered necessary
3	Nf2	Light	M F L	57° 41.422' N	007° 06.801' W	FI R 10s	3				No change considered necessary
3	Bhrusda	Buoy	M F L	57° 41.460' N	007° 05.570' W	FI R 2s			3		No change considered necessary
3	Sgeir An Iaruinn Perch	Beacon (Unlighted)	nil	57° 41.669' N	007° 04.819' W						Scheduled for demolition
3	Sgeir An Iaruinn	Buoy	M F L	57° 41.478' N	007° 05.000' W	FI G 5s			3		No change considered necessary
3	Narstay	Light	M F L	57° 41.370' N	007° 04.779' W	FI(2)R 8s	3				No change considered necessary
3	Suilven	Buoy	M F L	57° 41.679' N	007° 04.363' W	FL(3) R 10S			3		No change considered necessary
3	Cabbage South	Light	M F L	57° 41.856' N	007° 04.240' W	FI R 3s	2				No change considered necessary
3	Cabbage North	Light	M F L	57° 41.996' N	007° 04.317' W	FI W 5s	3				No change considered necessary
3	Cabbage	Buoy	M F L	57° 42.130' N	007° 03.960' W	FI(2)R 6s			2	Racon	No change considered necessary
3	L1	Buoy	M	57° 42.604' N	007° 03.205' W	FI(2)G 5s			3		No change considered necessary
3	Sgeir Chruaidh	Light	M	57° 42.709' N	007° 02.873' W	FI R 5s	2				No change considered necessary
3	L2	Light	M	57° 42.672' N	007° 02.265' W	FI(2)R 10s	3				No change considered necessary
3	L4	Buoy	M	57° 42.700' N	007° 01.540' W	FI R 2s			3		No change considered necessary
3	L2a	Light	M	57° 42.882' N	007° 02.246' W	FI R 8s	2				No change considered necessary
3	Grocis North	Buoy	M	57° 44.374' N	007° 01.534' W	FI R 8s			3		No change considered necessary
3	Mile Sgeir	Buoy	M	57° 44.150' N	007° 01.377' W	FI G 5s			4		No change considered necessary
3	Cope Passage. No.9	Buoy	F L	57° 43.106' N	007° 05.738' W	FI G 5s			3		Discontinue on completion of Red Rocks light
3	Cope Passage West	Buoy	F L	57° 44.180' N	007° 08.050' W	FI R 5s			2		Discontinue on completion of Red Rocks light
3	Cope Passage. No.10	Buoy	F L	57° 43.444' N	007° 06.412' W	Q R			3		Discontinue on completion of Red Rocks light
3	Cope Passage. No.7	Buoy	F L	57° 42.752' N	007° 05.561' W	Q G			3		Discontinue on completion of Red Rocks light
3	Cope Passage. No.6	Buoy	F L	57° 42.530' N	007° 04.574' W	Q R			3		Discontinue on completion of Red Rocks light
3	Cope Passage. No.4	Buoy	M F L	57° 41.760' N	007° 03.632' W	FI R 5s			3		No change considered necessary
3	Cope Passage. No.3	Buoy	M F L	57° 41.863' N	007° 03.443' W	FI G 5s			3		No change considered necessary
3	Cope Passage. No.2	Buoy	M F L	57° 41.372' N	007° 03.008' W	Q R			3		No change considered necessary
3	Cope Passage. No.1	Buoy	M F L	57° 41.200' N	007° 02.673' W	Q G			2		No change considered necessary
3	Cope Passage. Fairway	Buoy	F L	57° 40.348' N	007° 02.148' W	LFI W 10s			2		Discontinue on completion of Red Rocks light
3	Colasgeir	Buoy	M F L	57° 47.281' N	007° 06.058' W	FI(2) R 8s			2		No change considered necessary
3	Red Rock	Beacon (Unlighted)	M F L	57° 46.955' N	007° 04.475' W						Establish Sector light
3	Sgeir Volinish	Beacon (Unlighted)	F L	57° 46.638' N	007° 03.573' W						No change considered necessary
3	Leverburgh Rear	Leading Light	F L	57° 46.265' N	007° 02.024' W	Oc W 3s	4				No change considered necessary
3	Leverburgh Front	Leading Light	F L	57° 46.236' N	007° 02.040' W	Q W	4				No change considered necessary
3	Heb Beacon	Beacon (Unlighted)	F L	57° 46.170' N	007° 01.899' W						No change considered necessary
3	Janes Tower	Light	M F L	57° 45.763' N	007° 02.117' W	Q(2)G 5s	4				No change considered necessary
3	Bodha Leathach Caolais	Buoy	M F L	57° 46.634' N	007° 04.204' W	FI R 3s			2		No change considered necessary
3	Bo Quidam	Buoy	M F L	57° 46.307' N	007° 03.745' W	FI G 3s			2		No change considered necessary
3	Horse Rock	Buoy	M F L	57° 46.005' N	007° 03.363' W	Q G			2		No change considered necessary
3	Bo Stainan	Buoy	M F L	57° 45.760' N	007° 02.400' W	VQ(6) +LFI W 10s			2		No change considered necessary
3	Dubh Sgeir (Leverburgh)	Light	M F L	57° 45.503' N	007° 02.620' W	Q(2)W 5s	6				No change considered necessary
3	Portain	Buoy	M F L	57° 41.715' N	007° 08.321' W	FI G 3s			4		No change considered necessary
3	Stumbles Rock	Buoy	M F L	57° 45.128' N	007° 01.794' W	FI(2)R 10s	4		2	AIS	No change considered necessary

Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
3	NW Rodel Rocks	Buoy	M	57° 43.202' N	007° 02.035' W	FI G 8s			3		No change considered necessary
3	Sgeir Griadach	Buoy	M L	57° 50.361' N	006° 41.366' W	Q(6)+LFI W 15s	5		2		No change considered necessary
3	Sgeir Inoe	Buoy	M F L	57° 50.944' N	006° 33.949' W	FI G 6s	2		2	Racon	No change considered necessary
3	Eilean Glas	Light	M F L	57° 51.413' N	006° 38.515' W	FI(3) W 20s	23			Racon	Reduce to 18NM
3	Shiants	Buoy	M F L	57° 54.580' N	006° 25.702' W	Q G			2	AIS	No change considered necessary
3	Rubh Uisenis	Light	M F L	57° 56.263' N	006° 28.344' W	FI W 5s	11				No change considered necessary
3	Milaid Point	Light	M F L	58° 01.091' N	006° 22.019' W	FI W 15s	10				No change considered necessary
3	Hen And Chickens	Beacon (Unlighted)	F	58° 10.647' N	006° 15.599' W						No change considered necessary
3	Sgeir Na Circe	Buoy	F	58° 10.599' N	006° 15.609' W	Q(6)+L.FI 15s			2		No change considered necessary
3	Tiumpan Head	Light	M F L	58° 15.677' N	006° 08.271' W	FI(2)W 15s	25				Reduce to 18NM
3	Butt Of Lewis	Light	M F	58° 30.940' N	006° 15.717' W	FI W 5s	25			DGPS, AIS	No change considered necessary
3	Sleat Point	Light	M F L	57° 01.094' N	006° 01.084' W	FI W 3s	9				No change considered necessary
3	Ornsay	Light	M F L	57° 08.602' N	005° 46.869' W	Oc W 8s	15				Reduce to 12NM
3	Ornsay Beacon	Light	M F L	57° 09.087' N	005° 46.944' W	FI R 6s	4				No change considered necessary
3	Sgeir Ulibhe	Beacon (Unlighted)	F L	57° 08.254' N	005° 40.580' W						Establish South Cardinal buoy
3	Sandaig	Light	M F L	57° 10.051' N	005° 42.288' W	FI W 6s	8				No change considered necessary
3	Kyle Rhea	Sector Light	M F L	57° 14.225' N	005° 39.929' W	FI WRG 3s	W8,R5,G5				No change considered necessary
3	Sgeir-Na-Cailleach	Light	M F L	57° 15.599' N	005° 38.891' W	FI(2) R 6s	4				No change considered necessary
3	Slioch	Buoy	M	57° 16.238' N	005° 34.696' W	FL(3)G 6S			3		No change considered necessary
3	Racoon Rock	Buoy	M L	57° 16.159' N	005° 35.308' W	FI G 5s			3		No change considered necessary
3	Eight Metre Rock	Light	M F L	57° 16.599' N	005° 42.689' W	FI G 6s	4				No change considered necessary
3	Eileanan Dubha	Light	M F L	57° 16.559' N	005° 42.321' W	FI(2)W 10s	8				No change considered necessary
3	String Rock	Buoy	M F L	57° 16.490' N	005° 42.888' W	FI R 6s	4		2		No change considered necessary
3	Fork Rocks	Buoy	MF L	57° 16.839' N	005° 44.940' W	FI G 6s	4		2		No change considered necessary
3	Black Eye	Buoy	M F	57° 16.708' N	005° 45.308' W	FI R 6s	4		2		No change considered necessary
3	Carrach Rock	Buoy	M F L	57° 17.181' N	005° 45.361' W	FI(2) G 12s	4		2	Racon	No change considered necessary
3	Bow Rock	Buoy	M F	57° 16.766' N	005° 45.923' W	FI(2)R 12s	4		2	AIS	No change considered necessary
3	Sgeir Gobhlach, Pabbay	Beacon (Unlighted)	M F L	57° 15.687' N	005° 52.255' W						Light
3	Bogha Dubh Sgeir	Beacon (Unlighted)	F L	57° 20.925' N	005° 37.854' W						Light
3	Sgeir Golach	Beacon (Unlighted)	F L	57° 21.196' N	005° 39.015' W						Light
3	Crowlin	Light	M F L	57° 21.216' N	005° 51.388' W	FI W 6s	6				No change considered necessary
3	Gulnare	Buoy	L	57° 19.151' N	005° 55.876' W	FI G 5s			3		No change considered necessary
3	Sgeir Thraid	Beacon (Unlighted)	M F L	57° 19.821' N	005° 56.501' W						Light or buoy whichever is most cost effective
3	Eyre Point	Sector Light	M F L	57° 20.010' N	006° 01.294' W	FI WR 3s	W9, R6				No change considered necessary
3	Jackal Rock	Buoy	M F	57° 20.342' N	006° 04.766' W	FI G 5s			2		No change considered necessary
3	Penfold Rock	Buoy	M F	57° 20.632' N	006° 05.536' W	FI R 5s			2		No change considered necessary
3	Macmillan Rock	Buoy	F L	57° 21.115' N	006° 06.303' W	FI(2) G 12s	4		2		No change considered necessary
3	Rona	Light	M F L	57° 34.684' N	005° 57.547' W	FI W 12s	19				No change considered necessary
3	Na Gamnachain	Buoy	M F	57° 35.890' N	005° 57.714' W	Q			2		No change considered necessary
3	Rubh Reidh	Light	M F L	57° 51.527' N	005° 48.713' W	FI(4) 15s	24			AIS	Reduce to 18NM
3	Cailleach Head	Light	M F L	57° 55.819' N	005° 24.224' W	FI(2) 12s	9				No change considered necessary
3	Bo Caolas	Beacon (Unlighted)	M F L	58° 08.787' N	005° 18.211' W						No change considered necessary
3	Stoer Head	Light	M F L	58° 14.409' N	005° 24.165' W	FI W 15s	24				Reduce to 18NM
3	Cape Wrath	Light	M F L	58° 37.538' N	004° 59.952' W	FI(4) 30s	22				No change considered necessary
4	Loch Eriboll	Sector Light	M F	58° 31.008' N	004° 38.907' W	FI WR 10s	W13, R12				No change considered necessary
4	Sula Sgeir	Light	M F	59° 05.614' N	006° 09.567' W	FI W 15s	11				No change considered necessary
4	North Rona	Light	M F	59° 07.276' N	005° 48.902' W	FI(3)W 20s	24			AIS	No change considered necessary
4	Sule Skerry	Light	M F	59° 05.099' N	004° 24.356' W	FI(2)W 15s	21			Racon, AIS	No change considered necessary

Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
4	Strathy Point	Light	M F L	58° 36.079' N	004° 01.123' W	FI 20s	26				Reduce to 18NM
4	North Shoal	AIS	M F	59° 13.450' N	003° 34.990' W						Trial Virtual AtoN
4	Noup Head	Light	M F	59° 19.865' N	003° 04.235' W	FI 30s	20				No change considered necessary
4	Eday Gruna	Buoy	M F L	59° 08.389' N	002° 43.849' W	Q			2		No change considered necessary
4	Calf Of Eday	Sector Light	M L	59° 14.214' N	002° 45.820' W	FI(3) WRG 10s	W8, R6, G6				No change considered necessary
4	North Ronaldsay	Light	M F L	59° 23.359' N	002° 22.890' W	FI W 10s	24			Racon	Reduce to 18NM
4	Riv Beacon	Beacon (Unlighted)	M	59° 19.217' N	002° 34.023' W						Light
4	Otterswick	Buoy	F L	59° 17.936' N	002° 30.030' W	FI G 5s			2		No change considered necessary
4	Start Point	Light	M F L	59° 16.638' N	002° 22.577' W	FI(2) 20s	19				No change considered necessary
4	Papa Stronsay	Light	F L	59° 09.349' N	002° 34.915' W	FI (4) 20s	9				No change considered necessary
4	Quai Bow	Buoy	L	59° 09.831' N	002° 36.309' W	FI(2) R 12s			2		No change considered necessary
4	Brough Of Birsay	Light	M F L	59° 08.214' N	003° 20.363' W	FI(3) W 25s	18				No change considered necessary
4	Egilsay Graand	Buoy	M F L	59° 06.878' N	002° 54.417' W	Q(6)+L.FI 15s			2		No change considered necessary
4	Galt Skerry	Buoy	M F L	59° 05.220' N	002° 54.195' W	Q			2		No change considered necessary
4	Skertours	Buoy	M F L	59° 04.124' N	002° 56.716' W	Q	5		2		No change considered necessary
4	Seal Skerry	Beacon (Unlighted)	L	59° 03.999' N	002° 59.289' W						Light as red light
4	Boray Skerries	Buoy	M F L	59° 03.663' N	002° 57.657' W	Q(6)+LFI 15s	5		2		No change considered necessary
4	Vasa Skerry	Beacon (Unlighted)	M F L	59° 02.993' N	002° 55.816' W						No change considered necessary
4	Linga Skerry	Buoy	M F L	59° 02.394' N	002° 57.560' W	Q(3)W 10s	5		2		No change considered necessary
4	Helliar Holm	Sector Light	M F L	59° 01.138' N	002° 54.066' W	FI WRG 10s	W14, R11, G11				Handover to Orkney Harbours
4	Auskerry	Light	M F L	59° 01.557' N	002° 34.367' W	FI W 20s	18				No change considered necessary
4	Copinsay	Light	M F L	58° 53.784' N	002° 40.349' W	FI(5)W 30s	21				No change considered necessary
4	Peter Skerry	Buoy	M F L	58° 55.259' N	003° 13.520' W	FI G 6s			2		No change considered necessary
4	Riddock Shoal	Buoy	M F L	58° 56.419' N	003° 15.003' W	FI(2)R 12s	4		2		No change considered necessary
4	Sand Eel	Buoy	M F L	58° 56.420' N	003° 15.530' W	Q(3) W 10s			2		No change considered necessary
4	Barr Rock	Buoy	M F L	58° 56.607' N	003° 17.003' W	Q	5		2		No change considered necessary
4	Skerry Of Ness	Sector Light	M F L	58° 56.960' N	003° 17.830' W	FI WG 4s	W7, G5				No change considered necessary
4	Hoy Sound (High)	Sector Light	M F L	58° 56.137' N	003° 16.399' W	Oc WR 8s	W20, R16				Assess long term future
4	Hoy Sound (Low)	Light	M F L	58° 56.421' N	003° 18.605' W	Iso W 3s	15				No change considered necessary
4	Cava	Sector Light	F L	58° 53.231' N	003° 10.683' W	FI WR 3s	W10, R8				No change considered necessary
4	Barrel Of Butter	Light	F L	58° 53.427' N	003° 07.596' W	FI(2) W 10s	7				No change considered necessary
4	Royal Oak Wreck	Buoy	M F L	58° 55.750' N	002° 59.200' W	FI(3) G 20s			2		No change considered necessary
4	Roseness	Light	M F L	58° 52.357' N	002° 49.932' W	FI W 6s	8				No change considered necessary
4	Flotta Grinds	Buoy	M F L	58° 50.973' N	003° 00.783' W	FI(2) R 10s			2		No change considered necessary
4	Noss Head	Sector Light	M F L	58° 28.788' N	003° 03.088' W	FI WR 20s	W25, R21				Consider range reduction post-windfarm development
5	Hoxa Head	Sector Light	M F L	58° 49.315' N	003° 02.085' W	FI WR 3s	W9, R6				No change considered necessary
5	Lother Rock	Light	M F L	58° 43.796' N	002° 58.692' W	FI W 2s	6			Racon	No change considered necessary
5	Swona	Light	M F L	58° 44.256' N	003° 04.235' W	FI 8s	9				No change considered necessary
5	Ruff Reef	Light	F L	58° 47.433' N	003° 07.805' W	FI W 10s	6				No change considered necessary
5	Cantick Head	Light	M F L	58° 47.229' N	003° 07.890' W	FI 20s	13				No change considered necessary
5	Tor Ness	Light	M F L	58° 46.704' N	003° 17.792' W	FI 5s	17				No change considered necessary
5	Dunnet Head	Light	M F L	58° 40.287' N	003° 22.594' W	FI(4) 30s	23				No change considered necessary
5	Stroma Skerries	Beacon (Unlighted)	F L	58° 39.842' N	003° 08.219' W						Light
5	Stroma	Light	M F L	58° 41.754' N	003° 07.014' W	FI(2) 20s	26				Reduce to 18NM
5	Pentland Skerries	Light	M F L	58° 41.408' N	002° 55.484' W	FI(3) 30s	23				No change considered necessary
5	Duncansby Head	Light	M F L	58° 38.641' N	003° 01.521' W	FI W 12s	22			Racon	No change considered necessary
6	Foula	Light	M F L	60° 06.757' N	002° 03.875' W	FI(3)W 15s	18				Establish red sector to east
6	Bullia Skerry	Light	M F L	60° 06.664' N	001° 21.569' W	FI W 5s	5				No change considered necessary



Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
6	Fugla Ness	Sector Light	F	60° 06.381' N	001° 20.845' W	FI(2)WRG 10s	W10, R7, G7				No change considered necessary
6	Hildasay	Buoy	M F	60° 09.044' N	001° 19.933' W	Q(6)+L.FI 15s			2		No change considered necessary
6	Vaila Sound	Sector Light	F	60° 11.957' N	001° 33.476' W	FI WRG 8s	W9, R6,G6				Handover to Shetland Islands Council
6	Ve Skerries	Light	M F L	60° 22.372' N	001° 48.799' W	FI(2)W 20s	11			Racon	No change considered necessary
6	Muckle Roe	Sector Light	F	60° 20.978' N	001° 27.061' W	FI WR 3s	W9, R6				No change considered necessary
6	Hillswick	Sector Light	F	60° 27.213' N	001° 29.797' W	FI(4)WR 15s	W9, R6				No change considered necessary
6	Esha Ness	Light	M F	60° 29.350' N	001° 37.680' W	FI W 12s	25				Assess long term future
6	Holm Of Skaw	Light	M F	60° 49.871' N	000° 46.317' W	FI 5s	8				No change considered necessary
6	Muckle Flugga	Light	M F	60° 51.326' N	000° 53.146' W	FI(2) 20s	22				No change considered necessary
6	Head Of Mula	Sector Light	M F L	60° 40.760' N	000° 57.580' W	FI WRG 5s	W10;R7;G7				No change considered necessary
6	Uyea Sound	Light	F	60° 41.149' N	000° 55.474' W	FI(2) 8s	7				No change considered necessary
6	Balta Sound	Sector Light	F	60° 44.452' N	000° 47.676' W	FI WR 10s	W10, R8				No change considered necessary
6	Whitehill	Sector Light	M F	60° 34.798' N	001° 00.223' W	FI WR 3s	W9, R6				No change considered necessary
6	Outer Skerry	Light	M F L	60° 33.034' N	001° 18.311' W	FI W 6s	8				No change considered necessary
6	Little Holm	Light	M F	60° 33.417' N	001° 15.885' W	Iso W 4s	6				No change considered necessary
6	Muckle Holm	Light	M F	60° 34.832' N	001° 16.006' W	FI(4)W 10s	10				No change considered necessary
6	Point Of Fethaland	Sector Light	M F	60° 38.054' N	001° 18.697' W	FI(3)WR 15s	W24, R20				Reduce to 18NM
6	Gruney	Sector Light	M F	60° 39.153' N	001° 18.175' W	FI WR 5s	W8, R6			Racon	No change considered necessary
6	Bagi Stack	Light	M F L	60° 43.521' N	001° 07.540' W	FI (4) 20s	10				No change considered necessary
6	Brother Isle	Directional Light	M F	60° 30.946' N	001° 14.109' W	Dir FI(4)WRG 8s	W10, R7, G7				No change considered necessary
6	Ness Of Sound	Sector Light	M F	60° 31.347' N	001° 11.278' W	FI(3)WRG 12s	W9, R6, G6				No change considered necessary
6	Rumble Rock	Light	M F	60° 28.171' N	001° 07.265' W	FI W 10s	4			Racon	No change considered necessary
6	Firths Voe	Sector Light	M F L	60° 27.215' N	001° 10.671' W	Oc WRG 8s	W15, R10, G10				No change considered necessary
6	Lunna Holm	Sector Light	M F L	60° 27.344' N	001° 02.512' W	FI(3) WRG 15s	W10, R7, G7				No change considered necessary
6	Muckle Skerry	Sector Light	M F L	60° 26.371' N	000° 51.827' W	FI(2)WRG 10s	W7, R5, G5				No change considered necessary
6	Out Skerries	Light	M F L	60° 25.469' N	000° 43.683' W	FI W 20s	20				No change considered necessary
6	Wether Holm	Light	F	60° 22.345' N	001° 01.334' W	FI W 5s	9				No change considered necessary
6	Suther Ness	Sector Light	M F L	60° 22.122' N	001° 00.202' W	FI WRG 3s	W10, R8, G8				No change considered necessary
6	Skate Of Marrister	Light	M F L	60° 21.358' N	001° 01.390' W	FI G 6s	4				No change considered necessary
6	Symbister Ness	Sector Light	M F L	60° 20.429' N	001° 02.286' W	FI(2)WG 12s	W8, G6				No change considered necessary
6	Inner Voder Beacon	Beacon (Unlighted)	nil	60° 16.459' N	001° 04.928' W						No change considered necessary
6	Inner Voder Buoy	Buoy	M F L	60° 16.435' N	001° 05.122' W	Q(9) 15s			2		No change considered necessary
6	Mull Of Eswick	Sector Light	M F L	60° 15.743' N	001° 05.900' W	FI WRG 3s	W9, R6, G6				No change considered necessary
6	Hoo Stack	Sector Light	M F L	60° 14.967' N	001° 05.370' W	FI(4)WRG 12s	W7,R5,G5				No change considered necessary
6	Unicorn Rock	Buoy	M F L	60° 13.515' N	001° 08.472' W	VQ(3)W 5s	5		2		No change considered necessary
6	Soldian Rock	Buoy	M F L	60° 12.508' N	001° 04.729' W	Q(6)+LFI W 15s	5		2		No change considered necessary
6	Rova Head	Sector Light	M F L	60° 11.458' N	001° 08.598' W	FI(3)WRG 18s	W12, R9, G9				No change considered necessary
6	Bressay	Light	M F L	60° 07.197' N	001° 07.293' W	FI (2) 20s	23				Scheduled for handover to Lerwick Port Authority
6	Mousa	Light	M F L	59° 59.854' N	001° 09.506' W	FI 3s	10				No change considered necessary
6	Sumburgh Head	Light	M F L	59° 51.231' N	001° 16.515' W	FI(3) 30s	23			DGPS, AIS	No change considered necessary
6	Fair Isle (North)	Light	M F L	59° 33.122' N	001° 36.531' W	FI(2) 30s	22				No change considered necessary
6	Fair Isle (South)	Light	M F L	59° 30.858' N	001° 39.206' W	FI(4) 30s	22				No change considered necessary
7	Clythness	Light	M F L	58° 18.659' N	003° 12.707' W	FI(2) W 30s	16				Discontinue
7	Tarbat Ness	Light	M F L	57° 51.908' N	003° 46.600' W	FI(4)W 30s	24			Racon	Reduce to 18NM
7	Three Kings	Buoy	M	57° 43.732' N	003° 54.256' W	Q(3) 10s			2		No change considered necessary
7	Craigton Point	Sector Light	L	57° 30.053' N	004° 14.086' W	FI WRG 4s	W11, R7, G7				No change considered necessary
7	Longman Point	Sector Light	M L	57° 29.995' N	004° 13.308' W	FI WR 2s	W5, R4				No change considered necessary
7	Meikle Mee	Buoy	M F L	57° 30.265' N	004° 12.020' W	FI G 3s	4		2		No change considered necessary

Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
7	Petty Bank	Buoy	M F L	57° 31.619' N	004° 08.949' W	FI R 5s			2		No change considered necessary
7	Munlochy Shoal	Buoy	M F L	57° 32.922' N	004° 07.653' W	L.FI 10s			2		No change considered necessary
7	Skate Bank North East	Buoy	M F L	57° 34.292' N	004° 06.080' W	FI R 5s			3		No change considered necessary
7	Skate Bank North West	Buoy	M F L	57° 34.414' N	004° 06.694' W	FI(4) R 10s			3		No change considered necessary
7	Chanonry	Light	M L	57° 34.441' N	004° 05.567' W	Oc W 6s	15				Reduce to 12NM
7	Craigmee	Buoy	M F L	57° 35.299' N	004° 04.991' W	FI R 6s	4		2		No change considered necessary
7	Riff Bank West	Buoy	M F L	57° 35.784' N	004° 04.057' W	FI Y 5s	5		2		No change considered necessary
7	Riff Bank South	Buoy	M F L	57° 36.729' N	004° 00.958' W	Q(6)+LFI W 15s	5		2		No change considered necessary
7	Riff Bank North	Buoy	M F L	57° 37.231' N	004° 02.746' W	FI(2)R 12s	4		2		No change considered necessary
7	Navity Bank	Buoy	M F	57° 38.168' N	004° 01.180' W	FI(3)G 15s	4		2		No change considered necessary
7	Riff Bank East	Buoy	M F L	57° 38.411' N	003° 58.323' W	FI Y 10s	5		2		No change considered necessary
7	Covesea Skerries	Sector Light	M F L	57° 43.447' N	003° 20.329' W	FI WR 20s	W24, R20				Remove red sector
7	Halliman Beacon	Beacon (Unlighted)	F L	57° 44.001' N	003° 19.307' W						Establish buoy or light
7	Kinnaird Head	Light	M F L	57° 41.105' N	002° 00.265' W	FI W 5s	22				No change considered necessary
7	Cairnbulg Briggs	Light	M F L	57° 41.105' N	001° 56.461' W	FI W 10s	10				No change considered necessary
8	Rattray Head	Light	M F L	57° 36.615' N	001° 49.006' W	FI(3)W 30s	24			Racon	Reduce to 18NM
8	Buchan Ness	Light	M F L	57° 28.227' N	001° 46.474' W	FI 5s	28			Racon	Reduce to 18NM
8	Cruden Scaurs	Buoy	F L	57° 23.173' N	001° 50.368' W	FI R 10s			2		No change considered necessary
8	Girdle Ness	Light	M F L	57° 08.339' N	002° 02.916' W	FI(2)W 20s	22			DGPS, Racon	No change considered necessary
8	Scurdie Ness	Light	M F L	56° 42.106' N	002° 26.236' W	FI(3)W 20s	23			Racon	No change considered necessary
8	Bell Rock	Light	M F L	56° 26.065' N	002° 23.230' W	FI W 5s	18			Racon	Reassess as windfarm developments occur
8	North Carr	Buoy	M	56° 18.064' N	002° 32.945' W	Q(3) 10s	5		2		No change considered necessary
8	North Carr Beacon	Beacon (Unlighted)	F L	56° 17.702' N	002° 34.352' W						No change considered necessary
8	Fife Ness	Sector Light	M F L	56° 16.747' N	002° 35.196' W	Iso WR 10s	W21, R20			AIS	Reduce to 15NM
8	Isle Of May	Light	M F L	56° 11.139' N	002° 33.457' W	FI(2)W 15s	22				No change considered necessary
8	Elie Ness	Light	M F L	56° 11.044' N	002° 48.763' W	FI W 6s	18				Scheduled for handover to Forth Ports plc
8	East Vows	Beacon (Unlighted)	L	56° 10.840' N	002° 50.154' W						No change considered necessary
8	Inchkeith	Light	M L	56° 02.013' N	003° 08.173' W	FI W 15s	22				Scheduled for handover to Forth Ports plc
8	Fidra	Light	M F L	56° 04.399' N	002° 47.125' W	FI(4) 30s	24				Scheduled for handover to Forth Ports plc
8	Bass Rock	Light	F L	56° 04.603' N	002° 38.463' W	FI (3) 20s	10				No change considered necessary
8	South Carr	Beacon (Unlighted)	L	56° 03.438' N	002° 37.690' W						Light as 3NM light or buoy
8	St Abb's Head	Light	M F L	55° 54.979' N	002° 08.286' W	FI 10s	26			Racon	Assess long term future
9	Bamburgh	Lighthouse	M F L	55° 36.993' N	001° 43.452' W	Oc (2) WRG 8s	14				No change considered necessary
9	Canada & Georgios	Buoy	F L	53° 42.347' N	000° 07.116' E	VQ (3) 5s	5		2		No change considered necessary
9	Coquet	Lighthouse	M F L	55° 20.033' N	001° 32.387' W	FI (3) WR 20s	19	Horn (1) 30s			No change considered necessary
9	Emmanuel Head	Beacon	F L	55° 41.148' N	001° 46.801' W						No change considered necessary
9	Farne Island	Lighthouse	M F L	55° 36.921' N	001° 39.346' W	FI (2) WR 15s	10				No change considered necessary
9	Filey Brig	Buoy	M F L	54° 12.743' N	000° 14.584' W	Q (3) 10s	5	Bell	2		No change considered necessary
9	Flamborough Head	Lighthouse	M F L	54° 06.980' N	000° 04.962' W	FI (4) 15s	24	Horn (2) 90s		DGPS	Reduce main light from 24NM to 18NM. Fog signal site threatened - may require move fog signal to Lighthouse and reduce range
9	Goldstone	Buoy	F L	55° 40.240' N	001° 43.950' W	QG	4		3		No change considered necessary
9	Guile Point	Lighthouse	F L	55° 39.493' N	001° 47.590' W	Oc WRG 6s	4				Synchronise with Heugh Lighthouse
9	Heugh	Lighthouse	F L	55° 40.093' N	001° 47.978' W	Oc WRG 6s	5				Synchronise with Guile Point Lighthouse
9	Inger Nielson	Buoy	M F L	54° 30.905' N	002° 36.325' E	VQ (3) 5s	5		2		No change considered necessary



Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
9	Longstone	Lighthouse	M F L	55° 38.623' N	001° 36.653' W	Fl 20s	24	Horn (2) 60s			Light to be reduced to 18NM, character altered to Fl.7.5s. Fog Signal to be discontinued after further consultation with local users
9	Newton	Buoy	F L	55° 32.171' N	001° 35.848' W	Fl R 5s	4		3		No change considered necessary
9	Plough Rock	Buoy	F L	55° 40.240' N	001° 45.996' W	Q (9) 15s	4		3		No change considered necessary
9	Plough Seat	Buoy	F L	55° 40.370' N	001° 44.967' W	QR	4		3		No change considered necessary
9	Ridge	Buoy	F L	55° 39.700' N	001° 45.966' W	Q (3) 10s	4		3		No change considered necessary
9	Saltscar	Buoy	M F L	54° 38.109' N	001° 00.099' W	VQ	5	Bell	2		No change considered necessary
9	Shoreston	Buoy	F L	55° 35.880' N	001° 39.317' W	QR	4		3		No change considered necessary
9	Smithic N	Buoy	M F L	54° 06.214' N	000° 03.905' W	VQ	5	Bell	2		No change considered necessary
9	Smithic Sw	Buoy	F L	54° 02.414' N	000° 09.204' W	Q (9) 15s	5		2		No change considered necessary
9	Sunderland N	Buoy	F L	55° 34.621' N	001° 37.117' W	Fl R 2.5s	4		3		No change considered necessary
9	Swedman	Buoy	F L	55° 37.650' N	001° 41.617' W	Fl G 2.5s	4		3		No change considered necessary
9	Triton	Buoy	F L	55° 39.585' N	001° 46.816' W	QG	4		3		No change considered necessary
9	Whitby	Lighthouse	M F L	54° 28.667' N	000° 34.094' W	Fl WR 5s	18				No change considered necessary
9	Blakeney Overfalls	Buoy	M F L	53° 03.021' N	001° 01.392' E	Fl (2) R 5s	4	Bell	2		No change considered necessary
9	Bridgirdle	Buoy	M F L	53° 01.742' N	000° 43.994' E	Fl R 2.5s	4		3		No change considered necessary
9	Burnham Flats	Buoy	M F L	53° 07.520' N	000° 34.894' E	Q (9) 15s	5	Bell	2		No change considered necessary
9	Docking E	Buoy	M F L	53° 09.820' N	000° 50.392' E	Fl R 2.5s	4		2		No change considered necessary
9	Docking N	Buoy	M F L	53° 14.819' N	000° 41.493' E	Q	5		2		No change considered necessary
9	Dowsing Inner	Buoy	M F L	53° 19.100' N	000° 34.800' E	Q (3) 10s	7		1	Racon	No change considered necessary
9	Dowsing Mid Outer	Buoy	M F L	53° 24.819' N	001° 07.790' E	Fl (3) G 10s	4		2		No change considered necessary
9	Dowsing N Outer	Buoy	M F L	53° 33.517' N	000° 59.590' E	Q	9		1	Racon	No change considered necessary
9	Dowsing S Inner	Buoy	M F L	53° 12.119' N	000° 33.694' E	Q (6) + LFI 15s	5	Bell	2		No change considered necessary
9	Dudgeon	Buoy	M F L	53° 16.620' N	001° 16.889' E	Q (9) 15s	7		1	Racon	No change considered necessary
9	Dudgeon E	Buoy	M F L	53° 19.719' N	000° 58.691' E	Q (3) 10s	5		2		No change considered necessary
9	Hjordis (Beacon)	Beacon	F L	52° 59.018' N	000° 58.144' E	Fl (2) 5s	5				No change considered necessary
9	Lynn Knock	Buoy	M F L	53° 04.422' N	000° 27.206' E	QG	4		2		No change considered necessary
9	Protector	Buoy	M F L	53° 24.848' N	000° 25.145' E	Fl R 2.5s	4		2		No change considered necessary
9	Race N	Buoy	M F L	53° 14.989' N	000° 43.893' E	Fl G 5s	4	Bell	2		No change considered necessary
9	Race S	Buoy	M F L	53° 07.810' N	000° 57.342' E	Q (6) + LFI 15s	5	Bell	2		No change considered necessary
9	Ridge W	Buoy	M F L	53° 19.069' N	000° 44.493' E	Q (9) 15s	5		2		No change considered necessary
9	Sand Outer	Buoy	M F L	53° 36.412' N	000° 29.394' E	Q (3) 10s	7		1	Racon	No change considered necessary
9	Sand S	Buoy	M F L	53° 34.620' N	000° 25.200' E	Q (6) + LFI 15s	5		1		No change considered necessary
9	Scott Patch	Buoy	M F L	53° 11.120' N	000° 36.394' E	VQ (3) 5s	5		2		No change considered necessary
9	Sheringham E	Buoy	M F L	53° 02.221' N	001° 14.890' E	Q (3) 10s	5		2		No change considered necessary
9	Sheringham W	Buoy	M F L	53° 02.951' N	001° 06.761' E	Q (9) 15s	5		2		No change considered necessary
9	Vina	Beacon	F L	52° 59.082' N	000° 39.235' E						No change considered necessary
9	Well N	Buoy	M F L	53° 03.022' N	000° 27.896' E	LFI 10s	5	Bell	1	Racon	No change considered necessary
9	Woolpack	Buoy	M F L	53° 02.672' N	000° 31.445' E	Fl R 10s	4		2		No change considered necessary
9	Barnard E	Buoy	M F L	52° 25.138' N	001° 46.390' E	Q (3) 10s	5		2		No change considered necessary
9	Caister Mid	Buoy	M F L	52° 38.986' N	001° 45.659' E	Fl (2) R 5s	4	Bell	2		No change considered necessary
9	Caister N	Buoy	M F L	52° 40.760' N	001° 45.650' E	Fl (3) R 10s	4		2		No change considered necessary
9	Cockle	Buoy	M F L	52° 44.026' N	001° 43.589' E	VQ (3) 5s	5		2		No change considered necessary
9	Corton	Buoy	M F L	52° 31.127' N	001° 51.389' E	Q (3) 10s	7	Whistle	1		Whistle to be discontinued
9	Corton S	Buoy	M F L	52° 32.700' N	001° 49.500' E	Q (6) + LFI 15s	5	Bell	2		No change considered necessary
9	Corton W	Buoy	M F L	52° 34.587' N	001° 46.619' E	Q (9) 15s	5		2		No change considered necessary
9	Cromer	Lighthouse	M F L	52° 55.482' N	001° 18.990' E	Fl 5s	21			Racon AIS	No change considered necessary
9	Cross Sand	Buoy	M F L	52° 37.025' N	001° 59.136' E	LFI 10s	5		1	Racon	No change considered necessary

Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
9	Cross Sand E	Buoy	M F L	52° 38.550' N	001° 53.550' E	FI (4) R 15s	4		2		No change considered necessary
9	Cross Sand NE	Buoy	M F L	52° 44.220' N	001° 53.800' E	VQ (3) 5s	5		1		No change considered necessary
9	Dr1	Buoy	M F L	53° 06.700' N	002° 40.700' E	LFI 10s	5		1		No change considered necessary
9	Haisbro Mid	Buoy	M F L	52° 54.223' N	001° 41.587' E	FI (2) G 5s	4		2		No change considered necessary
9	Haisbro N	Buoy	M F L	53° 00.222' N	001° 32.288' E	Q	5		1	Racon	No change considered necessary
9	Haisbro S	Buoy	M F L	52° 50.823' N	001° 48.287' E	Q (6) + LFI 15s	5	Bell	1		No change considered necessary
9	Hammond Knoll	Buoy	M F L	52° 49.744' N	001° 57.586' E	Q (9) 15s	5		2		No change considered necessary
9	Hammond Knoll E	Buoy	M F L	52° 52.323' N	001° 58.635' E	Q (3) 10s	5		2		No change considered necessary
9	Hemsby	Buoy	M F L	52° 41.800' N	001° 46.180' E	FI R 2.5s	4		2		No change considered necessary
9	Holm	Buoy	M F L	52° 33.527' N	001° 47.961' E	FI G 2.5s	4		2		No change considered necessary
9	Holm E	Buoy	M F L	52° 30.450' N	001° 50.000' E	FI (3) R 10s	4		2		No change considered necessary
9	Holm NE	Buoy	M F L	52° 32.297' N	001° 48.199' E	FI R 2.5s	4		2		No change considered necessary
9	Holm NW	Buoy	M F L	52° 31.927' N	001° 46.689' E	FI (4) G 15s	4		2		No change considered necessary
9	Holm S	Buoy	M F L	52° 27.020' N	001° 47.080' E	VQ (6) + LFI 10s	5		2		No change considered necessary
9	Holm Sand	Buoy	M F L	52° 33.360' N	001° 46.850' E	Q	5		2		No change considered necessary
9	Holm SW	Buoy	M F L	52° 27.870' N	001° 46.990' E	FI (2) G 5s	4		2		No change considered necessary
9	Holm W	Buoy	M F L	52° 29.797' N	001° 47.089' E	FI (3) G 10s	4		2		No change considered necessary
9	Jacoba Wreck East	Buoy	M F L	53° 03.830' N	002° 42.199' E	Q (3) 10s	5		2		No change considered necessary
9	Jacoba Wreck North	Buoy	M F L	53° 03.911' N	002° 42.065' E	Q	5		2		No change considered necessary
9	Jacoba Wreck South	Buoy	M F L	53° 03.749' N	002° 42.065' E	Q (6) + LFI 15s	5		2		No change considered necessary
9	Jacoba Wreck West	Buoy	M F L	53° 03.830' N	002° 41.930' E	Q (9) 15s	5		2	Racon	No change considered necessary
9	Lowestoft	Lighthouse	M F L	52° 29.223' N	001° 45.353' E	FI 15s	23				Reduce range to 18NM
9	Newarp	Buoy	M F L	52° 48.374' N	001° 55.686' E	LFI 10s	7		1	Racon	No change considered necessary
9	Newcome E	Buoy	M F L	52° 28.508' N	001° 49.209' E	FI (2) R 5s	4		2		No change considered necessary
9	Newcome N	Buoy	M F L	52° 28.390' N	001° 46.370' E	FI (4) R 15s	4		2		No change considered necessary
9	Newcome Sand	Buoy	M F L	52° 26.280' N	001° 46.970' E	QR	4		2		No change considered necessary
9	Scroby Elbow	Buoy	M F L	52° 37.350' N	001° 46.100' E	FI (2) G 5s	4	Bell	2		No change considered necessary
9	Scroby N	Buoy	M F L	52° 41.390' N	001° 46.470' E	VQ	5		2		No change considered necessary
9	Scroby Nw	Buoy	M F L	52° 40.376' N	001° 46.329' E	FI (3) G 10s	4		2		No change considered necessary
9	Scroby Sw	Buoy	M F L	52° 35.827' N	001° 46.259' E	FI G 2.5s	4	Bell	2		No change considered necessary
9	Smiths Knoll	Buoy	M F L	52° 43.525' N	002° 17.884' E	Q (6) + LFI 15s	7		1	Racon	No change considered necessary
9	Southwold	Lighthouse	M F L	52° 19.632' N	001° 40.886' E	FI (4) WR 20s	16				After further consultation with local users: Increase Main Light Range to 24NM Discontinue Red sectors W sectors to cover Red Sectors
9	Stanford	Buoy	M F L	52° 27.358' N	001° 46.670' E	FI R 2.5s	4		2		No change considered necessary
9	White Swan	Buoy	F L	52° 33.399' N	001° 44.237' E				4		No change considered necessary
9	Winterton	Beacon	M F L	52° 42.923' N	001° 41.209' E					Racon	Discontinue Racon
9	Winterton Ridge S	Buoy	M F L	52° 47.224' N	002° 03.485' E	Q (6) + LFI 15s	5		2		No change considered necessary
10	Aldeburgh Ridge	Buoy	M F L	52° 06.720' N	001° 36.950' E	QR	4		3		No change considered necessary
10	Bawdsey Mid	Buoy	M F L	51° 58.880' N	001° 33.593' E	FI (3) G 10s	4		2		No change considered necessary
10	Bawdsey Ne	Buoy	M F L	52° 01.730' N	001° 36.092' E	FI G 10s	4		2		No change considered necessary
10	Bawdsey S	Buoy	M F L	51° 57.226' N	001° 30.215' E	Q (6) + LFI 15s	5	Whistle	1		No change considered necessary
10	Bench Head	Buoy	M F L	51° 44.691' N	001° 01.097' E	FI (3) G 10s	4		3		No change considered necessary
10	Black Deep	Buoy	M F L	51° 47.597' N	001° 35.791' E	QR	4		2		No change considered necessary
10	Colne Bar	Buoy	M F L	51° 44.611' N	001° 02.567' E	FI (2) G 5s	4		3		No change considered necessary
10	Cork S	Buoy	M F L	51° 51.331' N	001° 24.094' E	Q (6) + LFI 15s	4		3		No change considered necessary
10	Cutler	Buoy	M F L	51° 58.530' N	001° 27.500' E	QG	4		3		No change considered necessary
10	Deben	Buoy	F L	51° 59.300' N	001° 23.534' E				4		No change considered necessary
10	Eagle	Buoy	M F L	51° 44.131' N	001° 03.817' E	QG	4		3		No change considered necessary

Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
10	Eagle N	Buoy	M F L	51° 44.711' N	001° 04.317' E	Q	4		3		No change considered necessary
10	Gabbard N Inner	Buoy	M F L	51° 59.129' N	001° 55.988' E	Q	5		2		No change considered necessary
10	Gabbard Outer	Buoy	M F L	51° 57.830' N	002° 04.187' E	Q (3) 10s	7		1	Racon	No change considered necessary
10	Gabbard S Inner	Buoy	M F L	51° 49.922' N	001° 51.892' E	Q (6) + LFI 15s	5		2		No change considered necessary
10	Gabbard W Inner	Buoy	M F L	51° 52.061' N	001° 49.368' E	FI (3) Y 10s	5		2		No change considered necessary
10	Galloper N	Buoy	M F L	51° 49.837' N	001° 59.993' E	Q	5		2		No change considered necessary
10	Galloper S	Buoy	M F L	51° 43.981' N	001° 56.389' E	Q (6) + LFI 15s	5		1	Racon	No change considered necessary
10	Gunfleet Ne	Buoy	M F L	51° 49.931' N	001° 27.794' E	Q (3) 10s	5		2		No change considered necessary
10	Gunfleet Spit	Buoy	M F L	51° 45.331' N	001° 21.695' E	Q (6) + LFI 15s	5	Bell	2		No change considered necessary
10	HA	Buoy	M F L	51° 56.756' N	001° 30.665' E	Iso 5s	5		1		No change considered necessary
10	Hook Middle W	Buoy	M F L	51° 39.181' N	001° 07.967' E	FI R 5s	4		4		No change considered necessary
10	Horse Sand	Buoy	F L	51° 59.850' N	001° 23.274' E				4		No change considered necessary
10	Kentish Knock	Buoy	M F L	51° 38.085' N	001° 40.429' E	Q (3) 10s	7	Whistle	1		No change considered necessary
10	Knoll	Buoy	M F L	51° 43.881' N	001° 05.067' E	Q	5		2		No change considered necessary
10	Knoll NW	Buoy	M F L	51° 44.351' N	001° 02.167' E	FI (2) R 5s	4		3		No change considered necessary
10	Knolls Mid	Buoy	F L	51° 58.690' N	001° 23.410' E				4		No change considered necessary
10	Knolls West	Buoy	F L	51° 58.446' N	001° 23.667' E				4		No change considered necessary
10	Longsand Head	Buoy	M F L	51° 47.900' N	001° 39.421' E	VQ	5	Whistle	1		No change considered necessary
10	Maplin Ne	Buoy	M F L	51° 37.461' N	001° 04.797' E	FI G 5s	4	Bell	2		No change considered necessary
10	Medusa	Buoy	M F L	51° 51.230' N	001° 20.355' E	FI G 5s	4		3		No change considered necessary
10	Middle N	Buoy	M F L	51° 41.347' N	001° 12.612' E	Q	4		3		No change considered necessary
10	Nhr-S	Buoy	M F L	51° 51.351' N	002° 28.709' E	FI Y 10s	5		2		No change considered necessary
10	Orford Haven	Buoy	F L	52° 01.620' N	001° 28.000' E	LFI 10s	1	Bell	2		No change considered necessary
10	Orfordness	Lighthouse	M F L	52° 05.033' N	001° 34.459' E	FI 5s	20			Racon AIs	Discontinue - after further consultation with local users
10	Rough	Buoy	M F L	51° 55.190' N	001° 31.003' E	VQ	5		2		No change considered necessary
10	Shipwash E	Buoy	M F L	51° 57.079' N	001° 37.890' E	VQ (3) 5s	5		2		No change considered necessary
10	Shipwash N	Buoy	M F L	52° 01.730' N	001° 38.272' E	Q	7	Whistle	1	Racon	No change considered necessary
10	Shipwash Nw	Buoy	M F L	51° 58.980' N	001° 37.012' E	FI R 5s	4		2		No change considered necessary
10	Shipwash S	Buoy	M F L	51° 52.713' N	001° 33.972' E	Q (6) + LFI 15s	5		2		No change considered necessary
10	Shipwash S Duplicate	Buoy	M F L	51° 52.760' N	001° 34.070' E	Q (6) + LFI 15s	1		2		No change considered necessary
10	Shipwash Sw	Buoy	M F L	51° 54.750' N	001° 34.213' E	Q (9) 15s	5		1		No change considered necessary
10	Storm	Buoy	M F L	51° 52.410' N	001° 38.225' E	VQ (6) + LFI 10s	5		2		No change considered necessary
10	Sunk Centre	Light Vessel	M F L	51° 50.100' N	001° 46.020' E	FI (2) 20s	16	Horn (2) 60s		Racon	No change considered necessary
10	Sunk E1	Buoy	M F L	51° 51.062' N	001° 59.993' E	Iso 5s	5		2		No change considered necessary
10	Sunk E2	Buoy	M F L	51° 48.686' N	001° 51.875' E	LFI 10s	5		2		No change considered necessary
10	Sunk Inner	Light Float	M F L	51° 51.030' N	001° 34.891' E	ISO 3S	12	Horn (1) 30s		Racon	No change considered necessary
10	Sunk N1	Buoy	M F L	51° 56.113' N	001° 46.927' E	Iso 5s	5		2		No change considered necessary
10	Sunk N2	Buoy	M F L	51° 54.289' N	001° 46.340' E	LFI 10s	5		2		No change considered necessary
10	Sunk S1	Buoy	M F L	51° 38.572' N	001° 47.363' E	Iso 5s	5		2		No change considered necessary
10	Sunk S2	Buoy	M F L	51° 42.403' N	001° 46.669' E	LFI 10s	5		2		No change considered necessary
10	Sunk Sw	Buoy	M F L	51° 38.318' N	001° 43.745' E	FL (2) Y 10S	4		2		No change considered necessary
10	Sunk W1	Buoy	M F L	51° 52.606' N	001° 41.119' E	FI (4) Y 10s	4		2		No change considered necessary
10	Sunk W2	Buoy	M F L	51° 49.275' N	001° 40.722' E	FI Y 2.5s	4		2		No change considered necessary
10	Swin Spitway	Buoy	M F L	51° 41.951' N	001° 08.347' E	Iso 10s	5	Bell	2		No change considered necessary
10	Trinity	Buoy	M F L	51° 49.030' N	001° 36.391' E	Q (6) + LFI 15s	5		1		No change considered necessary
10	Walker	Buoy	M F L	51° 53.791' N	001° 33.903' E	QR	4		2		No change considered necessary
10	Wallet 2	Buoy	M F L	51° 48.881' N	001° 22.994' E	FI R 5s	4		2		No change considered necessary
10	Wallet 3	Buoy	M F L	51° 45.031' N	001° 11.292' E	FI (3) G 15s	4		2		No change considered necessary



Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
10	Wallet 4	Buoy	M F L	51° 46.531' N	001° 17.225' E	Fl (4) R 10s	4		2		No change considered necessary
10	Wallet 6	Buoy	M F L	51° 44.431' N	001° 11.846' E	Fl (2) R 5s	4		2		No change considered necessary
10	Wallet Spitway	Buoy	M F L	51° 42.861' N	001° 07.317' E	LFl 10s	5	Bell	2		No change considered necessary
10	Whitaker	Buoy	M F L	51° 41.431' N	001° 10.506' E	Q (3) 10s	5	Bell	2		No change considered necessary
10	Whitaker S	Buoy	M F L	51° 40.166' N	001° 09.109' E	Fl (2) G 10s	4		3		No change considered necessary
10	Whiting Hook	Buoy	F L	52° 02.980' N	001° 31.823' E	Fl R 10s	4		3		No change considered necessary
10	Whiting NE	Buoy	F L	52° 03.610' N	001° 33.322' E	Q (3) 10s	4		3		No change considered necessary
10	Whiting SW	Buoy	M F L	52° 00.960' N	001° 30.693' E	Q (6) + LFl 15s	4		3		No change considered necessary
10	Woodbridge Haven	Buoy	M F L	51° 58.200' N	001° 23.850' E	Mo (A) 15s	1		2		No change considered necessary
10	Barrow 10	Buoy	M F L	51° 33.742' N	001° 07.867' E	Fl (3) R 10s	4		2		No change considered necessary
10	Barrow 11	Buoy	M F L	51° 34.082' N	001° 06.697' E	Fl (3) G 10s	4		2		No change considered necessary
10	Barrow 12	Buoy	M F L	51° 32.772' N	001° 04.127' E	Fl (2) R 5s	4		2		No change considered necessary
10	Barrow 13	Buoy	M F L	51° 32.822' N	001° 03.067' E	Fl (2) G 5s	4		2		No change considered necessary
10	Barrow 14	Buoy	M F L	51° 31.832' N	001° 00.428' E	Fl R 2.5s	4		2		No change considered necessary
10	Barrow 2	Buoy	M F L	51° 41.981' N	001° 22.893' E	Fl (2) R 5s	4		2		No change considered necessary
10	Barrow 3	Buoy	M F L	51° 42.021' N	001° 20.243' E	Q (3) 10s	5		2	Racon	No change considered necessary
10	Barrow 4	Buoy	M F L	51° 39.881' N	001° 17.494' E	VQ (9) 10s	5		2		No change considered necessary
10	Barrow 5	Buoy	M F L	51° 40.031' N	001° 16.206' E	Fl G 10s	4		2		No change considered necessary
10	Barrow 6	Buoy	M F L	51° 37.301' N	001° 14.684' E	Fl (4) R 15s	4		2		No change considered necessary
10	Barrow 7	Buoy	M F L	51° 37.487' N	001° 13.471' E	Fl G 2.5s	4		2		No change considered necessary
10	Barrow 8	Buoy	M F L	51° 35.032' N	001° 11.396' E	Fl (2) R 5s	4		2		No change considered necessary
10	Barrow 9	Buoy	M F L	51° 35.342' N	001° 10.297' E	VQ (3) 5s	5		2		No change considered necessary
10	Barrow SW	Buoy	M F L	51° 32.292' N	001° 00.308' E	Q (9) 15s	5		2		No change considered necessary
10	Black Deep 1	Buoy	M F L	51° 44.031' N	001° 28.092' E	Fl G 5s	4		2		No change considered necessary
10	Black Deep 10	Buoy	M F L	51° 34.732' N	001° 15.596' E	Fl (3) R 10s	4		2		No change considered necessary
10	Black Deep 11	Buoy	M F L	51° 34.332' N	001° 13.396' E	Fl (3) G 10s	4		2		No change considered necessary
10	Black Deep 12	Buoy	M F L	51° 33.832' N	001° 13.496' E	Fl (4) R 15s	4		2		No change considered necessary
10	Black Deep 2	Buoy	M F L	51° 45.631' N	001° 32.192' E	Fl (4) R 15s	4		2		No change considered necessary
10	Black Deep 3	Buoy	M F L	51° 42.412' N	001° 26.484' E	Fl (3) G 15s	4		2		No change considered necessary
10	Black Deep 4	Buoy	M F L	51° 41.421' N	001° 28.482' E	Fl (2) R 5s	4		2		No change considered necessary
10	Black Deep 5	Buoy	M F L	51° 39.531' N	001° 22.993' E	VQ (3) 5s	5		2		No change considered necessary
10	Black Deep 6	Buoy	M F L	51° 38.521' N	001° 24.403' E	Fl R 2.5s	4		2		No change considered necessary
10	Black Deep 7	Buoy	M F L	51° 37.081' N	001° 17.694' E	QG	4		2		No change considered necessary
10	Black Deep 8	Buoy	M F L	51° 36.358' N	001° 20.426' E	Q (9) 15s	5		2		No change considered necessary
10	Black Deep 9	Buoy	M F L	51° 35.131' N	001° 15.094' E	Q (6) + LFl 15s	5		2		No change considered necessary
10	Blacktail Spit	Buoy	M F L	51° 31.482' N	000° 56.748' E	Fl (3) G 10s	4		2		No change considered necessary
10	Cant E	Buoy	M F L	51° 28.532' N	000° 55.598' E	QR	4		2		No change considered necessary
10	Columbine	Buoy	F L	51° 24.263' N	001° 01.348' E	Fl G 2s	4		3		No change considered necessary
10	Columbine Spit	Buoy	F L	51° 23.863' N	001° 00.028' E	Fl (3) G 10s	4		3		No change considered necessary
10	Fisherman 1	Buoy	M F L	51° 34.527' N	001° 23.563' E	Fl G 2.5s	4		2		No change considered necessary
10	Fisherman 2	Buoy	M F L	51° 34.352' N	001° 23.003' E	Fl R 2.5s	4		2		No change considered necessary
10	Fisherman 3	Buoy	M F L	51° 34.721' N	001° 22.941' E	Fl G 5s	4		2		No change considered necessary
10	Fisherman 4	Buoy	M F L	51° 35.248' N	001° 21.356' E	Fl (2) R 5s	4		2		No change considered necessary
10	Fisherman 5	Buoy	M F L	51° 35.523' N	001° 21.746' E	Fl (2) G 5s	4		2		No change considered necessary
10	Fisherman Inner	Buoy	M F L	51° 36.066' N	001° 19.858' E	QR	4		2		No change considered necessary
10	Fisherman Outer	Buoy	M F L	51° 33.892' N	001° 25.003' E	Q (3) 10s	5		2		No change considered necessary
10	Ham Gat	Buoy	F L	51° 23.083' N	000° 58.318' E	QG	4		3		No change considered necessary
10	Hook Spit	Buoy	M F L	51° 24.083' N	001° 12.094' E	QG	4		3		No change considered necessary
10	Knob	Buoy	M F L	51° 30.692' N	001° 04.277' E	Iso 5s	5	Bell	1		No change considered necessary

Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
10	Knob NE	Buoy		51° 32.032' N	001° 09.997' E	QG	4		2		Discontinue
10	Knob SE	Buoy		51° 30.892' N	001° 06.407' E	FI G 5s	4		2		Discontinue
10	Knock John	Buoy	M F L	51° 33.608' N	001° 11.371' E	FI (2) R 5s	4		2		No change considered necessary
10	Knock John 1	Buoy	M F L	51° 33.752' N	001° 10.717' E	FI G 5s	4		2		No change considered necessary
10	Knock John 2	Buoy	M F L	51° 33.112' N	001° 09.847' E	FI (3) R 10s	4		2		No change considered necessary
10	Knock John 3	Buoy	M F L	51° 33.232' N	001° 09.697' E	Q (6) + LFI 15s	5		2		No change considered necessary
10	Knock John 4	Buoy	M F L	51° 32.330' N	001° 07.900' E	QR	4		2		No change considered necessary
10	Knock John 5	Buoy	M F L	51° 32.490' N	001° 07.750' E	FI (3) G 10s	4		2		No change considered necessary
10	Knock John 7	Buoy	M F L	51° 32.023' N	001° 06.397' E	FI (4) G 15s	4		2		No change considered necessary
10	Knock S	Buoy	M F L	51° 34.132' N	001° 34.292' E	Q (6) + LFI 15s	5	Bell	1		No change considered necessary
10	Last E	Buoy	M F L	51° 24.007' N	001° 12.050' E	QR	4		3		No change considered necessary
10	Long Sand Inner	Buoy	M F L	51° 38.800' N	001° 25.600' E	Mo (A) 15s	1		2		No change considered necessary
10	Long Sand Outer	Buoy	M F L	51° 35.900' N	001° 26.000' E	IFI 10s	1		2		No change considered necessary
10	Longnose	Buoy	M F L	51° 24.153' N	001° 26.075' E				4		No change considered necessary
10	Maplin	Buoy	M F L	51° 33.661' N	001° 01.593' E	QG	5	Bell	2		No change considered necessary
10	Maplin Bank	Buoy	M F L	51° 35.502' N	001° 04.697' E	FI (3) R 10s	4		3		No change considered necessary
10	Maplin Edge	Buoy	M F L	51° 35.332' N	001° 03.647' E	FI G 2.5s	4		4		No change considered necessary
10	Margate E	Buoy	M F L	51° 27.033' N	001° 26.395' E	FI R 2.5s	4		2		No change considered necessary
10	Margate S	Buoy	M F L	51° 23.833' N	001° 16.646' E	FI G 2.5s	4		3		No change considered necessary
10	Margate Se	Buoy	M F L	51° 24.053' N	001° 20.396' E	Q (3) 10s	4		3		No change considered necessary
10	Middle Sand	Beacon	F L	51° 26.982' N	001° 00.034' E						No change considered necessary
10	Mouse Se	Buoy	M F L	51° 31.190' N	001° 04.070' E	QG	4		2		No change considered necessary
10	Oaze	Buoy	M F L	51° 29.062' N	000° 56.928' E	FI (4) Y 10s	4		2		No change considered necessary
10	Oaze Bank	Buoy	M F L	51° 29.360' N	000° 56.950' E	QG	4		2		No change considered necessary
10	Oaze Deep	Buoy	M F L	51° 30.032' N	001° 00.698' E	FI (2) G 5s	4		2		No change considered necessary
10	Oaze N	Buoy	M F L	51° 30.032' N	000° 57.648' E	QR	4		2		No change considered necessary
10	Oaze W	Buoy	M F L	51° 29.062' N	000° 55.428' E	Iso 5s	5		2		No change considered necessary
10	Pollard Spit	Buoy	F L	51° 22.983' N	000° 58.568' E	QR	4		3		No change considered necessary
10	Princes 1	Buoy	M F L	51° 29.233' N	001° 16.016' E	FI (4) G 15s	4		2		No change considered necessary
10	Princes 2	Buoy	M F L	51° 28.813' N	001° 13.076' E	FI (2) R 5s	4		2		No change considered necessary
10	Princes 3	Buoy	M F L	51° 29.332' N	001° 13.096' E	FI (2) G 5s	4		2		No change considered necessary
10	Princes 4	Buoy	M F L	51° 28.832' N	001° 09.897' E	FI (3) R 10s	4		2		No change considered necessary
10	Princes 5	Buoy	M F L	51° 29.389' N	001° 10.000' E	FI (3) G 10s	4		2		No change considered necessary
10	Princes 6	Buoy	M F L	51° 29.180' N	001° 06.580' E	FI (4) R 15s	4		2		No change considered necessary
10	Princes 7	Buoy	M F L	51° 29.593' N	001° 07.110' E	Q (9) 15s	5	Bell	2		No change considered necessary
10	Princes 8	Buoy	M F L	51° 29.140' N	001° 03.000' E	FI (2) R 5s	4		2		No change considered necessary
10	Princes Inner	Buoy	M F L	51° 29.597' N	001° 03.470' E	FI Y 2.5s	4		2		No change considered necessary
10	Princes Mid	Buoy	M F L	51° 29.195' N	001° 09.000' E	FI Y 5s	4		2		No change considered necessary
10	Princes N	Buoy	M F L	51° 29.248' N	001° 18.346' E	QG	4		2		No change considered necessary
10	Princes Outer	Buoy	M F L	51° 28.895' N	001° 20.434' E	VQ (6) + LFI 10s	5		2		No change considered necessary
10	Princes S	Buoy	M F L	51° 28.740' N	001° 18.260' E	QR	4		2		No change considered necessary
10	Redsand Towers N	Buoy	M F L	51° 28.732' N	000° 59.318' E	FI (3) R 10s	4	Bell	2		No change considered necessary
10	Shingles Mid [Estuary]	Buoy		51° 31.962' N	001° 11.976' E	FI (2) R 5s	4		2		Discontinue
10	Shingles N	Buoy		51° 32.792' N	001° 14.246' E	FI R 2.5s	4		2		Discontinue
10	Shingles Nw	Buoy		51° 31.262' N	001° 09.727' E	VQ	5		2		Discontinue
10	Shingles Patch	Buoy		51° 33.012' N	001° 15.366' E	Q	5		2		Discontinue
10	Shivering Sand Twr N	Buoy	M F L	51° 30.012' N	001° 04.757' E	Q	5		2		No change considered necessary
10	Shivering Sand Twr S	Buoy	M F L	51° 29.751' N	001° 04.828' E	Q (6) + LFI 15s	5	Bell	2		No change considered necessary
10	Spaniard	Buoy	F L	51° 26.233' N	001° 03.997' E	Q (3) 10s	5		2		No change considered necessary



Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
10	Spile	Buoy	F L	51° 26.432' N	000° 55.698' E	FI G 2.5s	4		3		No change considered necessary
10	Spit Ne	Buoy	M F L	51° 27.933' N	001° 29.894' E	VQ (3) 5s	5		1	Racon	No change considered necessary
10	Sunk W	Buoy	M F L	51° 44.331' N	001° 25.792' E	Q (9) 15s	5		2		No change considered necessary
10	Swin W	Buoy	M F L	51° 33.402' N	001° 01.968' E	QR	4		3		No change considered necessary
10	Tizard	Buoy		51° 32.932' N	001° 12.896' E	Q (6) + LFI 15s	5		2		Discontinue
10	Whitstable Street	Buoy	F L	51° 24.000' N	001° 01.540' E	FI R 2s	4		3		No change considered necessary
10	Beachy Head	Lighthouse	M F L	50° 44.025' N	000° 14.488' E	FI (2) 20s	20	Horn (1) 30s			Reduce Range to 8nm. Reduce Fog Signal
10	Brake	Buoy	M F L	51° 16.984' N	001° 28.195' E	FI (4) R 15s	4	Bell	2		No change considered necessary
10	Brake S	Buoy	M F L	51° 15.794' N	001° 26.845' E	FI (3) R 10s	4		2		No change considered necessary
10	Broadstairs Knoll	Buoy	M F L	51° 20.884' N	001° 29.475' E	FI R 2.5s	4		2		No change considered necessary
10	Bullock Bank	Buoy	M F L	50° 46.937' N	001° 07.597' E	VQ	5		1		No change considered necessary
10	CS1	Buoy	M F L	50° 33.707' N	000° 03.925' W	FI Y 2.5s	4		1		No change considered necessary
10	CS2	Buoy	M F L	50° 39.137' N	000° 32.601' E	FI Y 5s	4		1		No change considered necessary
10	CS3	Buoy	M F L	50° 52.036' N	001° 02.200' E	FI Y 10s	4		2		No change considered necessary
10	CS4	Buoy	M F L	51° 08.668' N	001° 34.020' E	FI (4) Y 15s	4		1		No change considered necessary
10	CS5	Buoy	M F L	51° 27.350' N	001° 52.760' E	FI Y 2.5s	6		1		Discontinue
10	Deal Bank	Buoy	M F L	51° 12.935' N	001° 25.566' E	QR	4		2		No change considered necessary
10	Downs	Buoy	M F L	51° 14.505' N	001° 26.226' E	FI (2) R 5s	4	Bell	2		No change considered necessary
10	Drillstone	Buoy	M F L	51° 25.833' N	001° 42.891' E	Q (3) 10s	5		1		No change considered necessary
10	Dungeness	Lighthouse	M F L	50° 54.806' N	000° 58.560' E	FI 10s	21	Horn (3) 60s			No change considered necessary
10	Elbow	Buoy	M F L	51° 23.234' N	001° 31.594' E	Q	5		2		No change considered necessary
10	F1	Buoy	M F L	51° 11.235' N	001° 44.922' E	FI (4) Y 15s	4		1		No change considered necessary
10	F2	Buoy	M F L	51° 20.414' N	001° 56.190' E	FI (4) Y 15s	4		1		No change considered necessary
10	Falls Head	Buoy	M F L	51° 28.233' N	001° 49.890' E	Q	5		2		No change considered necessary
10	Falls Mid	Buoy	M F L	51° 18.634' N	001° 46.991' E	FI (3) R 10s	4		2		No change considered necessary
10	Falls S	Buoy	M F L	51° 13.834' N	001° 43.922' E	Q (6) + LFI 15s	5		1		No change considered necessary
10	Foxtrot 3	Light Vessel	M F L	51° 24.150' N	002° 00.377' E	FI 10s	15	Horn (1) 10s		Racon	No change considered necessary
10	Goodwin E	Buoy	M F L	51° 15.675' N	001° 35.695' E	Q (3) 10s	5		2		No change considered necessary
10	Goodwin East	Light Vessel	M F L	51° 13.264' N	001° 36.373' E	FI 15s	15	Horn (1) 30s		Racon	No change considered necessary
10	Goodwin Fork	Buoy	M F L	51° 14.335' N	001° 26.855' E	Q (6) + LFI 15s	5	Bell	2		No change considered necessary
10	Goodwin Knoll	Buoy	M F L	51° 19.584' N	001° 32.194' E	FI (2) G 5s	4		2		No change considered necessary
10	Goodwin N	Buoy	M F L	51° 17.914' N	001° 30.195' E	FI G 2.5s	4		2		No change considered necessary
10	Goodwin NE	Buoy	M F L	51° 20.314' N	001° 34.164' E	Q (3) 10s	7		1	Racon	No change considered necessary
10	Goodwin NW	Buoy	M F L	51° 16.650' N	001° 28.500' E	Q (9) 15s	5	Bell	2		No change considered necessary
10	Goodwin S	Buoy	M F L	51° 10.605' N	001° 32.265' E	FI (4) R 15s	4		2		No change considered necessary
10	Goodwin SE	Buoy	M F L	51° 12.985' N	001° 34.445' E	FI (3) R 10s	4		2		No change considered necessary
10	Goodwin SW	Buoy	M F L	51° 08.500' N	001° 28.880' E	Q (6) + LFI 15s	9		1		No change considered necessary
10	Goodwin W	Buoy	M F L	51° 15.614' N	001° 27.375' E	FI G 5s	4		2		No change considered necessary
10	Greenwich	Light Vessel	M F L	50° 24.538' N	000° 00.095' W	FI 5s	15	Horn (1) 30s		Racon	No change considered necessary
10	Gull	Buoy	M F L	51° 19.584' N	001° 31.295' E	VQ (3) 5s	5		2		No change considered necessary
10	Gull Stream	Buoy	M F L	51° 18.284' N	001° 29.695' E	QR	4		2		No change considered necessary
10	Inter Bank	Buoy	M F L	51° 16.484' N	001° 52.221' E	FI Y 5s	4		1	Racon	No change considered necessary
10	MPC	Buoy	M F L	51° 06.125' N	001° 38.253' E	FI Y 2.5s	4		1	Racon	No change considered necessary
10	North Foreland	Lighthouse	M F L	51° 22.494' N	001° 26.705' E	FI (5) WR 20s	19			DGPS / AIS	No change considered necessary
10	Royal Sovereign	Lighthouse	M F L	50° 43.454' N	000° 26.086' E	FI 20s	12	Horn (2) 30s			No change considered necessary
10	Royal Sovereign Buoy	Buoy	M F L	50° 44.216' N	000° 25.834' E	QR	4		2		No change considered necessary
10	Rye Fairway	Buoy	M F L	50° 54.020' N	000° 48.050' E	LFI 10s	5		2		No change considered necessary
10	Sandettie	Light Vessel	M F L	51° 09.355' N	001° 47.122' E	FI 5s	22	Horn (1) 30s		Racon	No change considered necessary
10	Sandettie Sw	Buoy	M F L	51° 09.775' N	001° 45.662' E	Q (9) 15s	5		2		No change considered necessary

Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
10	Sandettie Wsw	Buoy	M F L	51° 12.355' N	001° 51.121' E	FI G 5s	5		2		No change considered necessary
10	Varne	Light Vessel	M F L	51° 01.286' N	001° 23.897' E	FI R 5s	15	Horn (1) 30s		Racon	No change considered necessary
10	Varne E	Buoy	M F L	50° 58.236' N	001° 20.895' E	VQ (3) 5s	5		2		No change considered necessary
10	Varne Mid	Buoy	M F L	50° 58.936' N	001° 19.897' E	VQ (9) 10s	5		2		No change considered necessary
10	Varne S	Buoy	M F L	50° 55.636' N	001° 17.296' E	Q (6) + LFI 15s	5		1		No change considered necessary
11	Anvil Point	Lighthouse	M F L	50° 35.514' N	001° 57.600' W	FI 10s	19				Reduce Range to 9NM
11	Boulder	Buoy	F L	50° 41.565' N	000° 49.089' W	FI G 2.5s	4		NS		No change considered necessary
11	Bridge	Buoy	M F L	50° 39.625' N	001° 36.884' W	VQ (9) 10s	5		1	Racon	No change considered necessary
11	Eastborough Head	Buoy	M F L	50° 41.535' N	000° 39.090' W	Q (3) 10s	5	Bell	2		No change considered necessary
11	Fairway	Buoy	M F L	50° 38.235' N	001° 38.984' W	LFI 10s	5	Bell	1		No change considered necessary
11	Gurnard	Buoy	M F L	50° 46.200' N	001° 18.840' W	Q	5		2		No change considered necessary
11	Gurnard Ledge	Buoy	M F L	50° 45.514' N	001° 20.586' W	FI (4) G 15s	4		2		No change considered necessary
11	Hamstead Ledge	Buoy	M F L	50° 43.864' N	001° 26.185' W	FI (2) G 5s	4		2		No change considered necessary
11	Head N	Buoy	F L	50° 42.684' N	001° 35.514' W	FI (3) G 10s	4		4		No change considered necessary
11	Hurst Point	Lighthouse	M F L	50° 42.478' N	001° 33.023' W	FI (4) WRW (intens) 15s	13				No change considered necessary
11	Lepe E	Buoy	M F L	50° 45.930' N	001° 21.070' W	FI (2) R 5s	4	Bell	2		No change considered necessary
11	Lepe Spit	Buoy	M F L	50° 46.784' N	001° 20.636' W	Q (6) + LFI 15s	4		3		No change considered necessary
11	Lepe W	Buoy	M F L	50° 45.234' N	001° 24.085' W	FI R 5s	4		2		No change considered necessary
11	Lymington Bank	Buoy	M F L	50° 43.100' N	001° 30.850' W	FI (2) R 5s	4	Bell	2		No change considered necessary
11	Mixon Bcn	Beacon	F L	50° 42.382' N	000° 46.318' W	FI R 5s	1				No change considered necessary
11	N1	Buoy	M F L	50° 41.260' N	000° 56.520' W	FI (4) Y 10s	4		2		No change considered necessary
11	N2	Buoy	M F L	50° 41.030' N	000° 56.740' W	FI Y 2.5s	6		1		No change considered necessary
11	N3	Buoy	M F L	50° 41.628' N	000° 56.742' W	FI (3) Y 15s	4		2		No change considered necessary
11	N4	Buoy	M F L	50° 41.498' N	000° 57.016' W	FI Y 7.5s	4		2		No change considered necessary
11	N5	Buoy	M F L	50° 41.991' N	000° 56.969' W	FI Y 5s	4		2		No change considered necessary
11	N7	Buoy	M F L	50° 42.354' N	000° 57.196' W	FI Y 2.5s	4		2		No change considered necessary
11	Nab	Lighthouse	M F L	50° 40.075' N	000° 57.155' W	FI 10s	16	Horn (2) 30s		Racon	Reduce range to 12NM
11	Nab 1 Outer	Buoy	M F L	50° 38.180' N	000° 56.880' W	VQ (9) 10s	5		1		No change considered necessary
11	Nab 2 Outer	Buoy	M F L	50° 38.430' N	000° 57.700' W	VQ (3) 5s	5		1		No change considered necessary
11	Needles	Lighthouse	M F L	50° 39.734' N	001° 35.500' W	Oc (2) WRG 20s	17	Horn (2) 30s			No change considered necessary
11	New Grounds	Buoy	M F L	50° 41.841' N	000° 58.490' W	VQ (3) 5s	5		2		No change considered necessary
11	Owers	Buoy	M F L	50° 38.590' N	000° 41.090' W	Q (6) + LFI 15s	7	Bell	1	Racon	No change considered necessary
11	Peveril Ledge	Buoy	F L	50° 36.415' N	001° 56.102' W	QR	4		3		No change considered necessary
11	Prince Consort	Buoy	M F L	50° 46.414' N	001° 17.556' W	VQ	5		2		No change considered necessary
11	Pullar	Buoy	M F L	50° 40.485' N	000° 50.089' W	Q (9) 15s	4		3		No change considered necessary
11	Pullar S	Buoy	M F L	50° 38.835' N	000° 49.289' W	VQ (6) + LFI 10s	5		2		No change considered necessary
11	Salt Mead	Buoy	M F L	50° 44.514' N	001° 23.036' W	FI (3) G 10s	4		2		No change considered necessary
11	Sconce	Buoy	M F L	50° 42.534' N	001° 31.435' W	Q	5	Bell	2		No change considered necessary
11	Shambles E	Buoy	M F L	50° 30.785' N	002° 20.079' W	Q (3) 10s	5	Bell	2		No change considered necessary
11	Shambles W	Buoy	M F L	50° 29.785' N	002° 24.409' W	Q (9) 15s	5	Bell	2		No change considered necessary
11	Shingles Elbow	Buoy	M F L	50° 40.374' N	001° 36.054' W	FI (2) R 5s	4		2		No change considered necessary
11	Shingles Mid [Wight]	Buoy	M F L	50° 41.214' N	001° 34.664' W	FI (3) R 10s	4		2		No change considered necessary
11	Shingles NE	Buoy	M F L	50° 41.964' N	001° 33.404' W	Q (3) 10s	5		2		No change considered necessary
11	Shingles SW	Buoy	M F L	50° 39.355' N	001° 37.470' W	FI R 2.5s	4		2		No change considered necessary
11	Solent Bank	Buoy	M F L	50° 44.230' N	001° 27.370' W	FI (3) R 10s	4		2		No change considered necessary
11	St Catherines	Lighthouse	M F L	50° 34.539' N	001° 17.873' W	FI 5s	25			DGPS	No change considered necessary
11	Street	Buoy	F L	50° 41.685' N	000° 48.889' W	QR	4		3		No change considered necessary
11	Warden	Buoy	M F L	50° 41.484' N	001° 33.554' W	FI G 2.5s	4	Bell	2		No change considered necessary

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11	Alderney	Lighthouse	M F L	49° 43.748' N	002° 09.858' W	FI (4) 15s	23	Horn (1) 30s			Reduce Main Light Range to 12NM on re-engineering - Main Light - Night Time & Reduced vis only
11	Blanchard	Buoy	M F L	49° 25.373' N	002° 17.414' W	Q (3) 10s	5	Bell	2		No change considered necessary
11	Casquets	Lighthouse	M F L	49° 43.321' N	002° 22.622' W	FI (5) 30s	24	Horn (2) 60s		Racon	Light range to be reduced to 18NM and fog signal range to 2NM
11	Channel	Light Vessel	M F L	49° 54.459' N	002° 53.744' W	FI 15s	15	Horn (1) 20s		Racon	No change considered necessary
11	Channel E	Buoy	M F L	49° 58.709' N	002° 28.947' W	FI Y 5s	6		1	Racon	No change considered necessary
11	Hanois	Lighthouse	M F L	49° 26.100' N	002° 42.143' W	FI (2) 13 s	20	Horn (2) 60s			Reduce Main Light Range to 18NM
11	Minquiers Nw	Buoy	M F L	48° 59.642' N	002° 20.583' W	Q	5	Bell	1		No change considered necessary
11	Minquiers Sw	Buoy	M F L	48° 54.342' N	002° 19.382' W	Q (9) 15s	5	Bell	1		No change considered necessary
11	Portland Bill	Lighthouse	M F L	50° 30.848' N	002° 27.384' W	FI (4) 20s	25	Horn (1) 30s			Reduce fog signal from 3NM to 2NM
11	Sark	Lighthouse	M F L	49° 26.186' N	002° 20.735' W	FI 15s	20	Horn (2) 30s			Reduce Main Light Range to 18NM
12	Berry Head	Lighthouse	M F L	50° 23.974' N	003° 29.006' W	FI (2) 15s	19				Reduce Main Light Range from 19NM to 16NM
12	Cannis Rock	Buoy	M F L	50° 18.384' N	004° 39.945' W	Q (6) + LFI 15s	5	Bell	2		No change considered necessary
12	Cressar	Beacon	F L	50° 07.236' N	005° 31.130' W						No change considered necessary
12	Eddystone	Lighthouse	M F L	50° 10.843' N	004° 15.936' W	FI (2) 10s	17	Horn (1) 30s		Racon	No change considered necessary
											No change considered necessary
12	Europa Point	Lighthouse	M F L	36° 06.580' N	005° 20.690' W	Iso W & Occ R 10s	19	Horn (1) 20s			No change considered necessary
12	Gear Rock	Beacon	M F L	50° 06.620' N	005° 31.617' W	FI (2) 10s	1				No change considered necessary
12	Gwineas	Buoy	M F L	50° 14.505' N	004° 45.365' W	Q (3) 10s	5	Bell	2		No change considered necessary
12	Homestone	Buoy	F L	50° 19.615' N	003° 33.552' W	QR	4		3		No change considered necessary
12	James Eagan Layne	Buoy	F L	50° 19.550' N	004° 15.250' W	QR	4		3		No change considered necessary
12	Lizard	Lighthouse	M F L	49° 57.612' N	005° 12.128' W	FI 3s	26	Horn (1) 30s		DGPS	No change considered necessary
12	Low Lee	Buoy	F L	50° 05.556' N	005° 31.380' W	Q (3) 10s	5		2		No change considered necessary
12	Manacle	Buoy	M F L	50° 02.806' N	005° 01.913' W	Q (3) 10s	5	Bell	2		No change considered necessary
12	Mew Stone	Buoy	F L	50° 19.920' N	003° 31.890' W	VQ (6) + LFI 10s	5		2		No change considered necessary
12	Mountamopus	Buoy	M F L	50° 04.636' N	005° 26.261' W	Q (6) + LFI 15s	5		2		No change considered necessary
12	Ranneys	Buoy	F L	50° 19.860' N	004° 26.370' W	Q (6) + LFI 15s	5		2		No change considered necessary
12	Raymond	Beacon	F L	50° 07.236' N	005° 30.327' W						No change considered necessary
12	Runnelstone	Buoy	M F L	50° 01.186' N	005° 40.359' W	Q (6) + LFI 15s	5	Bell	1		No change considered necessary
12	Runnelstone High	Beacon	F L	50° 02.243' N	005° 40.605' W						No change considered necessary
12	Runnelstone Low	Beacon	F L	50° 02.208' N	005° 40.599' W						No change considered necessary
12	Skerries Bank	Buoy	M F L	50° 16.315' N	003° 33.771' W				2		No change considered necessary
12	St Anthony	Lighthouse	M F L	50° 08.469' N	005° 00.964' W	Iso WR 15s	16	Horn (1) 30s			Reduce Main Light Range from 16NM to 12NM. Reduce Red Sector Light Range from 14NM to 9NM
12	Start PointT	Lighthouse	M F L	50° 13.344' N	003° 38.539' W	FI (3) 10s	25	Horn (1) 60s			Reduce Red Sector Light Range from 12NM to 9nNM
12	Tater Du	Lighthouse	M F L	50° 03.143' N	005° 34.647' W	FI (3) 15s	20	Horn (2) 30s			Reduce Main Light Range from 20NM to 16NM. Reduce Sector Light Range from 13NM to 9NM
12	Udder Rock	Buoy	M F L	50° 18.934' N	004° 33.846' W	VQ (6) + LFI 10s	5	Bell	2		No change considered necessary
12	West Rock	Buoy	M F L	50° 19.860' N	003° 32.470' W	Q (6) + LFI 15s	5		2		No change considered necessary
12	Wolf Rock	Lighthouse	M F L	49° 56.719' N	005° 48.550' W	FI 15s	16	Horn (1) 30s		Racon	No change considered necessary
12	Bann Shoal	Buoy	M F L	50° 20.030' N	005° 51.110' W	FI G 2.5s	7		1	Racon	No change considered necessary
12	Bartholomew Ledges	Beacon	M F L	49° 54.364' N	006° 19.889' W	QR	1				No change considered necessary
12	Bartholomew N	Buoy	M F L	49° 54.496' N	006° 19.985' W	FI R 5s	4		2		No change considered necessary
12	Bishop Rock	Lighthouse	M F L	49° 52.371' N	006° 26.734' W	FI (2) 15s	20			Racon	No change considered necessary
12	Carn Base	Buoy	M F L	50° 01.480' N	005° 46.180' W	Q (9) 15s	5		1		No change considered necessary



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12	Crow Rock	Beacon	M F L	49° 56.263' N	006° 18.491' W	FI (2) 10s	1				No change considered necessary
12	Godrevy Island	Lighthouse	F L	50° 14.549' N	005° 24.015' W	FI WR 10s	12				Reduce range of Main Light to 8NM. Reduce range of Red Sector Light to 8NM
12	Gunner	Buoy	M F L	49° 53.636' N	006° 25.075' W				2		No change considered necessary
12	Hats	Buoy	M F L	49° 56.206' N	006° 17.136' W	VQ (6) + LFI 10s	4		3		No change considered necessary
12	Longships	Lighthouse	M F L	50° 04.012' N	005° 44.812' W	FI (2) WR 10s	15	Horn (1) 10s			No change considered necessary
12	Old Wreck	Buoy	M F L	49° 54.246' N	006° 22.806' W	VQ	5		2		No change considered necessary
12	Pendeen	Lighthouse	M F L	50° 09.899' N	005° 40.295' W	FI (4) 15s	16	Horn (1) 20s			No change considered necessary
12	Peninnis	Lighthouse	M F L	49° 54.273' N	006° 18.221' W	FI 20s	17				Reduce Main Light Range from 17NM to 9NM
12	Round Island	Lighthouse	M F L	49° 58.739' N	006° 19.387' W	FI 10s	18	Horn (4) 60s		Racon	No change considered necessary
12	Round Rock	Buoy	M F L	49° 53.096' N	006° 25.185' W				2		No change considered necessary
12	Seven Stones	Light Vessel	M F L	50° 03.616' N	006° 04.337' W	FI (3) 30s	15	Horn (3) 60s		Racon	No change considered necessary
12	Spanish Ledge	Buoy	M F L	49° 53.936' N	006° 18.856' W	Q (3) 10s	5	Bell	2		No change considered necessary
12	Spencers Ledge	Buoy	M F L	49° 54.780' N	006° 22.060' W	Q (6) + LFI 15s	5		2		No change considered necessary
12	St Agnes	Beacon	M F L	49° 53.562' N	006° 20.725' W						No change considered necessary
12	St Martins Daymark	Beacon	M F L	49° 57.990' N	006° 15.971' W						No change considered necessary
12	Steeple Rock	Buoy	M F L	49° 55.460' N	006° 24.240' W	Q (9) 15s	5		2		No change considered necessary
12	Stones	Buoy	M F L	50° 15.635' N	005° 25.461' W	Q	5	Bell	1		No change considered necessary
12	Tins Walbert	Beacon	M F L	49° 53.841' N	006° 21.323' W						No change considered necessary
12	Trevoze Head	Lighthouse	M F L	50° 32.954' N	005° 02.113' W	FI 7.5s	21	Horn (2) 30s			No change considered necessary
12	Woolpack Bcn	Beacon	M F L	49° 54.399' N	006° 19.371' W						No change considered necessary
13	Avon	Buoy	M F L	51° 27.929' N	002° 51.728' W	FI G 2.5s	4		2		No change considered necessary
13	Blacknore	Lighthouse	M F L	51° 29.084' N	002° 48.040' W	FI (2) 10s	17				Discontinue station
13	Breaksea	Buoy	M F L	51° 19.879' N	003° 19.075' W	LFI 10s	9		1	Racon	No change considered necessary
13	Cardiff N	Buoy	M F L	51° 26.529' N	003° 07.176' W	QG	4		2		No change considered necessary
13	Cardiff Spit	Buoy	M F L	51° 24.575' N	003° 07.125' W	QR	4		2		No change considered necessary
13	Clevedon	Buoy	M F L	51° 27.389' N	002° 54.917' W	VQ	5		2		No change considered necessary
13	Culver E	Buoy	M F L	51° 17.979' N	003° 15.395' W	Q (3) 10s	5		2		No change considered necessary
13	Culver W	Buoy	M F L	51° 17.470' N	003° 18.850' W	VQ (9) 10s	5		2		No change considered necessary
13	Elbow N	Buoy	M F L	51° 26.969' N	002° 58.647' W	QG	4	Bell	2		No change considered necessary
13	Elbow Nw	Buoy	M F L	51° 26.279' N	002° 59.927' W	VQ (9) 10s	5	Bell	2		No change considered necessary
13	English And Welsh Grounds	Buoy	M F L	51° 27.129' N	002° 59.937' W	LFI 10s	7	Bell	1	Racon	No change considered necessary
13	Flatholm	Lighthouse	M F L	51° 22.540' N	003° 07.122' W	FI (3) WR 10s	15				No change considered necessary
13	Gore	Buoy	M F L	51° 13.960' N	003° 09.776' W	Iso 5s	5	Bell	2		No change considered necessary
13	Ground E Mid	Buoy	M F L	51° 27.750' N	002° 54.985' W	FI R 5s	4		2		No change considered necessary
13	Ground S Mid	Buoy	M F L	51° 27.629' N	002° 58.677' W	VQ (6) + LFI 10s	5		2		No change considered necessary
13	Holm Middle	Buoy	M F L	51° 21.719' N	003° 06.716' W	FI G 2.5s	4		2		No change considered necessary
13	Hope	Buoy	M F L	51° 24.849' N	003° 02.677' W	Q (3) 10s	5		2		No change considered necessary
13	Lavernock Spit	Buoy	M F L	51° 23.019' N	003° 10.816' W	VQ (6) + LFI 10s	5		2		No change considered necessary
13	Mackenzie	Buoy	M F L	51° 21.749' N	003° 08.226' W	QR	4		2		No change considered necessary
13	Merkur	Buoy	M F L	51° 21.879' N	003° 15.945' W	QR	4	Bell	2		No change considered necessary
13	Monkstone	Lighthouse	M F L	51° 24.886' N	003° 06.008' W	FI 5s	12				No change considered necessary
13	Newcome	Buoy	M F L	51° 30.008' N	002° 46.708' W	FI (3) R 10s	4		2		No change considered necessary
13	Newport Deep	Buoy	M F L	51° 29.358' N	002° 59.107' W	FI (3) G 10s	4	Bell	2		No change considered necessary
13	One Fathom N	Buoy	M F L	51° 20.939' N	003° 12.156' W	Q	5		2		No change considered necessary
13	Tail Patch	Buoy	M F L	51° 23.529' N	003° 03.666' W	QG	4		2		No change considered necessary
13	Welsh Hook	Buoy	M F L	51° 28.518' N	002° 51.858' W	Q (6) + LFI 15s	5		2		No change considered necessary
13	Weston	Buoy	M F L	51° 22.609' N	003° 05.736' W	FI (2) R 5s	4		2		No change considered necessary

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13	Wolves	Buoy	M F L	51° 23.129' N	003° 08.876' W	VQ	5		2		No change considered necessary
13	Baggy Leap	Buoy	M F L	51° 08.930' N	004° 16.969' W	FI (2) G 10s	4		2		No change considered necessary
13	Bideford Bar	Buoy	M F L	51° 04.890' N	004° 14.620' W	QG	3		3		No change considered necessary
13	Bideford Fairway	Buoy	M F L	51° 05.260' N	004° 16.239' W	LFI 10s	5	Bell	2		No change considered necessary
13	Bull Point	Lighthouse	M F L	51° 11.946' N	004° 12.074' W	FI (3) 10s	20				No change considered necessary
13	Copperas Rock	Buoy	M F L	51° 13.799' N	004° 00.570' W	FI G 2.5s	4		2		No change considered necessary
13	Crow Point	Lighthouse	M F L	51° 03.974' N	004° 11.382' W	FI WR 2.5s	6				No change considered necessary
13	Crow Point S	Buoy	M F L	51° 03.582' N	004° 11.566' W	FI (3) R 10s	1		4		No change considered necessary
13	Fairy	Buoy	M F L	51° 27.858' N	003° 42.073' W	Q (9) 15s	5	Bell	2		No change considered necessary
13	Grey Sand Hill	Buoy	M F L	51° 03.653' N	004° 12.156' W	QR	1		4		No change considered necessary
13	Grounds	Buoy	M F L	51° 32.780' N	003° 53.400' W	VQ (3) 5s	5		2		No change considered necessary
13	Hartland Point	Lighthouse	M F L	51° 01.298' N	004° 31.559' W	FI (6) 15s	22	Horn (1) 60s			Establish 8nm nominal range light and discontinue fog signal
13	Helwick E	Buoy	M F L	51° 31.797' N	004° 12.670' W	VQ (3) 5s	5	Bell	2		No change considered necessary
13	Horseshoe	Buoy	M F L	51° 15.029' N	004° 12.919' W	Q	5		2		No change considered necessary
13	Hugo	Buoy	M F L	51° 28.628' N	003° 48.072' W	QR	4		3		No change considered necessary
13	Inner Green Grounds SW	Buoy	M F L	51° 34.067' N	003° 57.021' W	Q (6) + LFI 15s	5	Bell	2		No change considered necessary
13	Instow Front	Lighthouse	M F L	51° 03.620' N	004° 10.664' W	Oc 6s	15				No change considered necessary
13	Instow Rear	Lighthouse	M F L	51° 03.518' N	004° 10.356' W	Oc 10s	15				No change considered necessary
13	Kenfig	Buoy	M F L	51° 29.440' N	003° 46.060' W	VQ (3) 5s	5		2		No change considered necessary
13	Ledge	Buoy	M F L	51° 29.928' N	003° 58.771' W	VQ (6) + LFI 10s	5		2		No change considered necessary
13	Lynmouth Foreland	Lighthouse	M F L	51° 14.731' N	003° 47.201' W	FI (4) 15s	18				No change considered necessary
13	Mixon	Buoy	M F L	51° 33.127' N	003° 58.771' W	FI (2) R 5s	4	Bell	2		No change considered necessary
13	Morte Stone	Buoy	M F L	51° 11.329' N	004° 14.919' W	FI G 5s	0		2		No change considered necessary
13	Mumbles	Lighthouse	M F L	51° 34.009' N	003° 58.268' W	FI (4) 20s	15	Horn (3) 60s			No change considered necessary
13	Nash E	Buoy	M F L	51° 24.059' N	003° 34.103' W	Q (3) 10s	5	Bell	2		No change considered necessary
13	Nash Mid	Buoy	M F L	51° 24.828' N	003° 39.413' W	Q (6) + LFI 15s	5	Bell	2		No change considered necessary
13	Nash Point	Lighthouse	M F L	51° 24.050' N	003° 33.131' W	FI (2) WR 15s	21			DGPS	No change considered necessary
13	Nash W	Buoy	M F L	51° 25.978' N	003° 45.952' W	VQ (9) 10s	5	Bell	2		No change considered necessary
13	Pulley	Buoy	M F L	51° 04.080' N	004° 12.700' W	FI G 10s	4		4		No change considered necessary
13	Pulley Outer	Buoy	M F L	51° 04.338' N	004° 12.920' W	FI G 2.5s	4		4		No change considered necessary
13	Ridge Mid	Buoy	M F L	51° 04.650' N	004° 13.800' W	FI G 5s	4		4		No change considered necessary
13	Rugby	Beacon		52° 22.009' N	001° 11.294' W					LORAN	No change considered necessary
13	Sand Ridge	Buoy	M F L	51° 15.009' N	003° 49.772' W	QG	4		3		No change considered necessary
13	Scarweather E	Buoy	M F L	51° 27.978' N	003° 46.770' W	Q (3) 10s	5	Bell	2		No change considered necessary
13	Scarweather S	Buoy	M F L	51° 27.608' N	003° 51.572' W	Q (6) + LFI 15s	5		2		No change considered necessary
13	Scarweather W	Buoy	M F L	51° 28.308' N	003° 55.571' W	Q (9) 15s	7	Bell	1	Racon	No change considered necessary
13	Tusker	Buoy	M F L	51° 26.848' N	003° 40.743' W	FI (2) R 5s	4	Bell	2		No change considered necessary
13	Wormleighton	Beacon	M F L	52° 11.890' N	001° 21.845' W					DGPS	No change considered necessary
13	Caldey Island	Lighthouse	M F L	51° 37.895' N	004° 41.058' W	FI (3) WR 20s	13				No change considered necessary
13	Eel Point	Buoy	F L	51° 38.856' N	004° 42.237' W	FI G 2.5s	4		3		No change considered necessary
13	Giltar	Buoy	F L	51° 39.026' N	004° 42.117' W	FI R 2.5s	4		4		No change considered necessary
13	Highcliff N	Buoy	F L	51° 39.376' N	004° 40.767' W	Q	4		3		No change considered necessary
13	Hwk W	Buoy	M F L	51° 31.397' N	004° 23.649' W	Q (9) 15s	7		1	Racon	No change considered necessary
13	Lundy North	Lighthouse	M F L	51° 12.104' N	004° 40.640' W	FI 15s	17				No change considered necessary
13	Lundy South	Lighthouse	M F L	51° 09.723' N	004° 39.351' W	FI 5s	15	Horn (1) 25s			No change considered necessary
13	Skokholm	Lighthouse	M F L	51° 41.634' N	005° 17.218' W	FI WR 10s	19				Establish new light with 8NM range. Retain Existing Sectors
13	Smalls	Lighthouse	M F L	51° 43.276' N	005° 40.192' W	FI (3) 15s	18	Horn (2) 60s		Racon	No change considered necessary
13	South Bishop	Lighthouse	M F L	51° 51.162' N	005° 24.718' W	FI 5s	16	Horn (3) 45s		Racon	No change considered necessary

Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
13	Spaniel	Buoy	F L	51° 38.057' N	004° 39.737' W	Q (3) 10s	3		3		No change considered necessary
13	St Anns Head	Lighthouse	M F L	51° 40.876' N	005° 10.422' W	FI WR 5s	18	Horn (2) 60s			No change considered necessary
13	St Gowan	Buoy	M F L	51° 31.927' N	004° 59.765' W	Q (6) + LFI 15s	7		1	Racon	No change considered necessary
13	Strumble Head	Lighthouse	M F L	52° 01.788' N	005° 04.424' W	FI (4) 15s	26				No change considered necessary
13	Woolhouse	Buoy	F L	51° 39.346' N	004° 39.687' W	Q (6) + LFI 15s	4		3		No change considered necessary
14	Archdeacon	Buoy	M F L	53° 26.714' N	004° 30.870' W	Q	5		2		No change considered necessary
14	Bardsey Island	Lighthouse	M F L	52° 44.997' N	004° 47.984' W	FI (5) 15s	26	Horn Mo (N) 45s			No change considered necessary
14	Bolivar	Buoy	M F L	53° 21.515' N	004° 35.299' W	FI G 2.5s	4		2		No change considered necessary
14	Bwch	Buoy	F L	52° 34.821' N	004° 13.571' W	VQ (9) 10s	5		2		No change considered necessary
14	Carreg-Y-Trai	Buoy	F L	52° 48.139' N	004° 26.700' W	FI R 2.5s	4		3		No change considered necessary
14	Causeway	Buoy	F L	52° 41.190' N	004° 25.320' W	Q (9) 15s	5	Bell	2		No change considered necessary
14	Chwislen Rock	Beacon	F L	52° 56.985' N	004° 33.504' W						No change considered necessary
14	Coal Rock	Buoy	M F L	53° 25.915' N	004° 32.790' W	Q (6) + LFI 15s	1		2		No change considered necessary
14	Ethel Rock	Buoy	M F L	53° 26.644' N	004° 33.670' W	VQ	5		2		No change considered necessary
14	Furlong	Buoy	M F L	53° 25.415' N	004° 30.470' W	FI G 2.5s	4		2		No change considered necessary
14	Kimya	Buoy	F L	53° 09.416' N	004° 27.270' W				3		No change considered necessary
14	Langdon	Buoy	M F L	53° 22.755' N	004° 38.649' W	Q (9) 15s	5		2		No change considered necessary
14	Mouse W	Beacon	M F L	53° 25.056' N	004° 33.267' W						No change considered necessary
14	Patches	Buoy	F L	52° 25.822' N	004° 16.370' W	Q (9) 15s	5		2		No change considered necessary
14	Point Lynas	Lighthouse	M F L	53° 24.976' N	004° 17.352' W	Oc 10s	18	Horn (1) 45s		DGPS	No change considered necessary
14	Skerries	Lighthouse	M F L	53° 25.274' N	004° 36.502' W	FI (2) 15s	20	Horn (2) 60s		Racon	No change considered necessary
14	South Stack	Lighthouse	M F L	53° 18.403' N	004° 41.973' W	FI 10s	24	Horn (1) 30s			Reduce FS Range from 3NM to 2NM
14	St Tudwals	Lighthouse	M F L	52° 47.912' N	004° 28.275' W	FI WR 15s	14				No change considered necessary
14	Victoria Bank	Buoy	M F L	53° 25.615' N	004° 31.370' W	VQ	5		2		No change considered necessary
14	Bar LF	Light Float	M F L	53° 32.015' N	003° 20.978' W	FI 5s	12			Racon	Enter negotiations to hand over to Port of Liverpool
14	Cheryl Louise	Buoy	M F L	54° 24.628' N	003° 33.689' W	Q (9) 15s	5		2		No change considered necessary
14	Constable N	Buoy	M F L	53° 23.760' N	003° 41.420' W	VQ	5		2		No change considered necessary
14	Constable W	Buoy	M F L	53° 23.145' N	003° 49.245' W	Q (9) 15s	5		2	Racon	No change considered necessary
14	Danger Patch	Buoy	M F L	53° 57.362' N	003° 05.681' W	FI (3) R 10s	4		2		No change considered necessary
14	Dinmor	Buoy	M F L	53° 19.346' N	004° 03.273' W	QG	4		3		No change considered necessary
14	Fisher Bank	Buoy	M F L	53° 56.210' N	003° 09.700' W	FI R 2.5s	4		2		No change considered necessary
14	Gut	Buoy	M F L	53° 41.764' N	003° 08.980' W	LFI 10s	5		2		No change considered necessary
14	HE1	Buoy	F L	53° 26.325' N	003° 18.079' W	Q (9) 15s	5		2		Enter negotiations to Hand over to Port of Liverpool
14	HE2	Buoy	F L	53° 24.899' N	003° 12.883' W	FI G 2.5s	4		3		Enter Negotiations to hand over to Port of Liverpool
14	HE3	Buoy	F L	53° 24.615' N	003° 12.783' W	QG	4		3		Enter negotiations to hand over to Port of Liverpool
14	Hilbre Island	Lighthouse	F L	53° 23.000' N	003° 13.710' W	FI R 3s	5				No change considered necessary
14	Hoyle	Buoy	M F L	53° 23.156' N	003° 21.378' W	QR	4		3		No change considered necessary
14	Hoyle Mid	Buoy	M F L	53° 22.916' N	003° 19.498' W	FI R 5s	4		3		No change considered necessary
14	Hoyle N	Buoy	M F L	53° 26.685' N	003° 30.577' W	VQ	5		2		Discontinue in line with construction of Gwynt-Y-Mor OREI
14	Hoyle NW	Buoy	M F L	53° 23.316' N	003° 23.878' W	FI R 2.5s	4		3		No change considered necessary
14	Hoyle Spit E	Buoy	M F L	53° 22.515' N	003° 18.837' W	FI G 5s	4		3		No change considered necessary
14	Jordans Spit	Buoy	M F L	53° 35.764' N	003° 19.279' W	Q (9) 15s	5		2		No change considered necessary
14	King Scar	Buoy	M F L	53° 56.962' N	003° 04.381' W	FI (2) G 5s	4		2		No change considered necessary
14	King William Bank	Buoy	M F L	54° 26.007' N	004° 00.075' W	Q (3) 10s	5		2		No change considered necessary
14	Lightning Knoll	Buoy	M F L	53° 59.841' N	003° 14.280' W	LFI 10s	5		2		No change considered necessary



Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
14	Lune Deep	Buoy	M F L	53° 56.070' N	003° 12.900' W	Q (6) + LFI 15s	5		1	Racon	No change considered necessary
14	Maryport	Lighthouse	M F L	54° 43.066' N	003° 30.640' W	FI 1.5s	6				Enter negotiations to hand over to Maryport Harbour Authority
14	Morecambe	Buoy	M F L	53° 52.012' N	003° 24.079' W	Q (9) 15s	5		1		No change considered necessary
14	Perch Rock	Beacon	M F L	53° 18.750' N	004° 02.155' W	FI R 5s	1				No change considered necessary
14	Rhosneigr	Buoy	F L	53° 19.066' N	003° 43.975' W				4		No change considered necessary
14	River Lune	Buoy	M F L	53° 58.631' N	003° 00.032' W	Q (9) 15s	5		2		No change considered necessary
14	Selker	Buoy	M F L	54° 16.139' N	003° 29.579' W	FI (3) G 10s	4	Bell	2		No change considered necessary
14	Shell Wharf	Buoy	M F L	53° 55.462' N	003° 08.960' W	FI G 2.5s	4		2		No change considered necessary
14	St Bees	Lighthouse	M F L	54° 30.818' N	003° 38.205' W	FI (2) 20s	18				No change considered necessary
14	Ten Feet Bank	Buoy	M F L	53° 19.466' N	004° 02.823' W	QR	4		3		No change considered necessary
14	Trwyn Du	Lighthouse	M F L	53° 18.777' N	004° 02.440' W	FI 5s	12	Bell (1) 30s			No change considered necessary
14	Workington N	Buoy	M F L	54° 40.106' N	003° 38.179' W	Q	5		2		No change considered necessary
14	Workington S	Buoy	M F L	54° 37.006' N	003° 38.579' W	VQ (6) + LFI 10s	5	Bell	2		No change considered necessary
14	Zealandia	Buoy	M F L	53° 40.014' N	003° 06.420' W	VQ (9) 10s	4		3		No change considered necessary
15	Fastnet	Lighthouse	M F L	51° 23.358' N	009° 36.178' W	FI 5s	27	Horn(4) 60s		Racon, AIS	Reduce to 18NM. Discontinue fog signal. Establish AIS
15	Little Goat Island	Beacon (Unlighted)	F L	51° 29.031' N	009° 36.169' W	Unlit					No change considered necessary
15	Cush	Buoy	F L	51° 30.304' N	009° 33.017' W	Q	4		3		Transfer to Cork County Council
15	Bull Rock Beacon	Beacon (Lighted)	F L	51° 30.758' N	009° 32.205' W	FI (2) R 6s	4				No change considered necessary
15	Copper Point	Lighthouse	F L	51° 30.250' N	009° 32.063' W	Q(3) 10s	8				No change considered necessary
15	Amelia	Buoy	F L	51° 29.979' N	009° 31.461' W	FI G 3s	5		3		No change considered necessary
15	Loo	Buoy	F L	51° 28.438' N	009° 23.458' W	FI G 3s	3		3		No change considered necessary
15	Lousy Rocks	Beacon (Unlighted)	F L	51° 28.947' N	009° 23.428' W	Unlit					Transfer to Baltimore Harbour Board
15	Baltimore	Beacon (Unlighted)	F L	51° 28.417' N	009° 23.272' W	Unlit					No change considered necessary
15	Wallis	Buoy	F L	51° 28.952' N	009° 23.022' W	Q R	3		3		Transfer to Baltimore Harbour Board
15	Kowloon Bridge	Buoy	M F L	51° 27.580' N	009° 13.761' W	Q (6) + LFI 15s	5		2		Resurvey wreck to determine need for buoyage
15	Sunk Rock	Buoy	F L	51° 33.460' N	009° 06.930' W	FI G 5s	4		3		Transfer to DOT/Cork County Council
15	Glandore North	Beacon (Unlighted)	F L	51° 33.387' N	009° 06.824' W	Unlit					Transfer to DOT/Cork County Council
15	Glandore Middle	Beacon (Unlighted)	F L	51° 33.317' N	009° 06.734' W	Unlit					Transfer to DOT/Cork County Council
15	Glandore South West	Beacon (Lighted)	F L	51° 33.150' N	009° 06.640' W	FI (2) G 10s	4				Transfer to DOT/Cork County Council
15	Galley Head	Lighthouse	M F L	51° 31.798' N	008° 57.210' W	FI (5) 20s	23				No change considered necessary
15	Wind Rock	Beacon (Unlighted)	F L	51° 35.677' N	008° 50.986' W	Unlit					Transfer to Cork County Council
15	Courtmacsherry	Buoy	F L	51° 38.287' N	008° 40.897' W	FI G 3s	5		3		Transfer to Courtmacsherry Dev Group or Cork County Council
15	Black Tom	Buoy	F L	51° 36.408' N	008° 37.959' W	FI G 5s	4		3		No change considered necessary
15	Old Head of Kinsale	Lighthouse	M F L	51° 36.287' N	008° 32.018' W	FI (2) 10s	20	Horn(3) 45s		AIS,	Reduce to 18NM. Disestablish fog signal. Establish AIS
15	Charlesfort	Lighthouse	M F L	51° 41.752' N	008° 29.984' W	FI WRG 5s	9/6/7				Transfer to Kinsale Harbour Commissioners
15	Bulman	Buoy	F L	51° 40.136' N	008° 29.739' W	Q (6) + LFI 15s	6		2		No change considered necessary
15	Daunt	Buoy	M F L	51° 43.531' N	008° 17.665' W	FI (2) R 6s	4		2		No change considered necessary
15	Cork	Buoy	M F L	51° 42.935' N	008° 15.601' W	LFI 10s	6		1	Racon, AIS	No change considered necessary
15	Roches Point	Lighthouse	M F L	51° 47.586' N	008° 15.287' W	FI WR 3s	20/16	Horn 30s			Reduce to 18NM. Discontinue fog signal
15	Pollock	Buoy	M F L	51° 46.239' N	008° 07.876' W	FI R 6s	4		2		No change considered necessary
15	Power	Buoy	M F	51° 45.595' N	008° 06.679' W	Q (6) + LFI 15s	6		2		No change considered necessary
15	Smiths	Buoy	M F L	51° 48.615' N	008° 00.726' W	FI (3) R 10s	4		2		No change considered necessary
15	Ballycotton	Lighthouse	M F L	51° 49.522' N	007° 59.169' W	FI WR 10s	21/17	Horn(4) 90s			Reduce to 18NM. Discontinue fog signal
15	Capel Island	Beacon (Unlighted)	F L	51° 52.927' N	007° 51.131' W	Unlit					No change considered necessary
15	Youghal	Lighthouse	F L	51° 56.571' N	007° 50.535' W	FI WR 2.5s	17/13				Transfer to Youghal Town Council

Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
15	Bar Rocks	Buoy	M F L	51° 54.855' N	007° 50.053' W	Q (6) + LFI 15s	4		3		No change considered necessary
15	Blackball	Buoy	M F L	51° 55.334' N	007° 48.529' W	Q (3) 10s	4		3		No change considered necessary
15	Mine Head	Lighthouse	F L	51° 59.556' N	007° 35.225' W	FI (4) 30s	20				Reduce to 10-12NM
15	Ballinacourty Point	Lighthouse	F L	52° 04.688' N	007° 33.182' W	FI (2) WRG 10s	10/8/8				No change considered necessary
15	Helvick	Buoy	F L	52° 03.611' N	007° 32.251' W	Q (3) 10s	6		3		No change considered necessary
15	Dunmore East	Lighthouse	M F L	52° 08.935' N	006° 59.337' W	FI WR 8s	17/13				Transfer to Waterford County Council or Waterford Harbour Company and/or DFHC or DAFF.
15	Hook Head	Lighthouse	M F L	52° 07.424' N	006° 55.770' W	FI 3s	23	Horn(2) 45s		Racon. AIS	Reduce to 18NM. Discontinue fog signal
15	Red Bank	Buoy	M F L	52° 04.499' N	006° 41.652' W	VQ(9) 10s	6		2	AIS	No change considered necessary
15	Coningbeg	Buoy	M F L	52° 03.198' N	006° 38.567' W	Q(6) + L fl 15s	9		1	Racon, AIS,	No change considered necessary
15	Bore Rocks	Buoy	M F L	52° 06.074' N	006° 31.871' W	Q(3) 10S	6		2	AIS	No change considered necessary
15	Blackrock XP (Temp)	Buoy	CIL	52° 08.219' N	006° 24.929' W	FI (4) Y 10s	4		1	AIS	No change considered necessary
15	Barrels	Buoy	M F L	52° 08.363' N	006° 22.108' W	Q (3) 10s	6		2	RTE	No change considered necessary
15	Fundale	Buoy	M F L	52° 11.044' N	006° 19.775' W	FI (2) R 10s	4		2		No change considered necessary
15	South Rock Super Buoy	Buoy	M F L	52° 10.810' N	006° 12.848' W	Q (6) + LFI 15s	6		2		No change considered necessary
15	Carrick Rock	Beacon (Unlighted)	F L	52° 14.543' N	006° 18.336' W	Unlit					Remove topmark and disestablish as AtoN
16	Tuskar	Lighthouse	M F L	52° 12.175' N	006° 12.445' W	Q(2) 7.5s	24	Horn(4) 45s		Racon	Discontinue fog signal. Establish AIS
16	Splaugh	Buoy	M F L	52° 14.432' N	006° 16.774' W	FI R 6s	6		2	RTE	Synchronise. Upgrade to BPNS. Fit AIS
16	South Long	Buoy	M F L	52° 14.835' N	006° 15.647' W	VQ (6) + LFI 10s	6		2		Alter to Starboard. Upgrade to BPNS. Fit AIS. Move 2 cables SW to maintain minimum gate of 7 cables.
16	Calmines	Buoy	M F L	52° 14.997' N	006° 17.781' W	FI R 2s	4		2		Sequence with South Holdens
16	South Holdens	Buoy	M F L	52° 15.146' N	006° 17.249' W	FI (2) G 6s	4		2	RTE	Sequence with Calmines
16	West Holdens	Buoy	M F L	52° 15.763' N	006° 18.747' W	FI (3) G 10s	5		2		Consider sequential with 2 above
16	Lucifer	Buoy	M F L	52° 17.035' N	006° 12.671' W	VQ (3) 5s	7		2		Fit AIS
16	West Long	Buoy	M F L	52° 18.174' N	006° 17.963' W	Q G	4		2		No change considered necessary
16	North Long	Buoy	M F L	52° 21.432' N	006° 16.967' W	Q	6		2		No change considered necessary
16	South Blackwater	Buoy	M F L	52° 22.757' N	006° 12.866' W	Q (6) + LFI 15s	5		2		No change considered necessary
16	Southeast Blackwater	Buoy	M F L	52° 25.644' N	006° 08.420' W	Q(3) 10S	6		1	Racon, AIS,	No change considered necessary
16	West Blackwater	Buoy	F L	52° 25.865' N	006° 13.572' W	FI G 6s	5		2		Resurvey banks
16	Rusk No. 1	Buoy	F L	52° 28.539' N	006° 11.799' W	FI (2) G 5s	5		3		No change considered necessary
16	Rusk No. 2	Buoy	F L	52° 28.638' N	006° 12.613' W	FI (2) R 5s	4		3		No change considered necessary
16	Rusk No. 4	Buoy	F L	52° 31.089' N	006° 10.841' W	FI (3) R 6s	4		3		No change considered necessary
16	North Blackwater	Buoy	M F L	52° 32.225' N	006° 09.520' W	Q	5		2		No change considered necessary
16	Rusk No. 6	Buoy	F L	52° 32.666' N	006° 10.425' W	FI R 3s	4		3		No change considered necessary
16	Courtown Outfall	Buoy	F L	52° 38.437' N	006° 12.975' W	FI Y 10s	3.5		3		No change considered necessary
16	Glassgorman No. 1	Buoy	M F L	52° 39.075' N	006° 07.441' W	FI (2) R 6s	5		2		Reposition 1.4NM south
16	South Arklow	Buoy	M F L	52° 40.196' N	005° 58.886' W	VQ (6) + LFI 10s	7		1	Racon, AIS	No change considered necessary
16	Glassgorman No. 2	Buoy	M F L	52° 44.514' N	006° 05.343' W	FI (4) R 10	4		2		Reposition 0.8NM north
16	North Arklow	Buoy	M F L	52° 53.862' N	005° 55.263' W	Q	6		2		Resurvey bank
16	Horseshoe	Buoy	M F L	52° 56.616' N	005° 59.404' W	FI R 3s	4		2		Reposition ENE 0.5m. Fit AIS
16	Wicklow Head	Lighthouse	M F L	52° 57.947' N	005° 59.889' W	FI (3) 15s	23				Reduce to 18NM
16	Wicklow Outfall	Buoy	M F L	52° 59.541' N	006° 01.295' W	FI (4) Y 10s	4		3		No change considered necessary
16	South India	Buoy	M F L	53° 00.349' N	005° 53.346' W	Q (6) + LFI 15s	6		2		No change considered necessary
16	Codling Lanby	Lanby	M F L	53° 03.020' N	005° 40.815' W	FI W 4s	15	Horn 20s		Racon, AIS	Replace with east cardinal superbuoy
16	North India	Buoy	M F L	53° 03.173' N	005° 53.473' W	VQ	6		2		No change considered necessary
16	South Codling	Buoy	M F L	53° 04.730' N	005° 49.784' W	VQ (6) + LFI 10s	6		2		No change considered necessary
16	Breaches	Buoy	M F L	53° 05.721' N	005° 59.856' W	FI (2) R 6s	4		2		No change considered necessary

Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
16	West Codling	Buoy	M F L	53° 06.962' N	005° 54.558' W	FI G 10s	5		2		No change considered necessary
16	Moulditch	Buoy	M F L	53° 08.430' N	006° 01.230' W	FI R 10s	6		2		No change considered necessary
16	Greystones Outfall	Buoy	F L	53° 08.441' N	006° 02.532' W	FI Y 5s	4		3		No change considered necessary
16	East Codling	Buoy	M F L	53° 08.517' N	005° 47.126' W	FI (4) R 10s	4		2		Upgrade to BPNS. Increase range to 6NM. Reposition 0.6NM east.
16	Bray Outfall	Buoy	F L	53° 13.254' N	006° 04.540' W	FI (4) Y 10s	4		3		No change considered necessary
16	East Kish	Buoy	M F L	53° 14.349' N	005° 53.618' W	FI (2) R 10s	4		2		No change considered necessary
16	Shanganagh Outfall	Buoy	F L	53° 14.892' N	006° 05.154' W	FI Y 3s	4		3		No change considered necessary
16	Muglins	Lighthouse	M F L	53° 16.524' N	006° 04.579' W	FI R 5s	11				No change considered necessary
16	South Burford	Buoy	M F L	53° 18.060' N	006° 01.298' W	VQ (6) + LFI 10s	6		2	AIS	AIS fitted
16	Dun Laoghaire East	Lighthouse	M F L	53° 18.151' N	006° 07.626' W	FI (2) R 8s & Sync	17	Horn 30s			Hand over to Dun Laoghaire Harbour
16	Dun Laoghaire West	Lighthouse	M F L	53° 18.200' N	006° 07.855' W	FI (2) G 8s & Sync	7				Hand over to Dun Laoghaire Harbour
16	Dun Laoghaire Outfall	Buoy	M F L	53° 18.409' N	006° 08.353' W	FI Y 5s	4		3		No change considered necessary
16	North Kish	Buoy	M F L	53° 18.549' N	005° 56.432' W	VQ	6		2		Survey bank
16	Kish	Lighthouse	M F L	53° 18.650' N	005° 55.542' W	FI (2) 20s	22	Horn(2) 30s		Racon, AIS (T)	Discontinue fog signal
16	Dublin Bay	Buoy	M F L	53° 19.912' N	006° 04.646' W	FI Mo (A) 10s	7		2	Racon	No change considered necessary
16	Bennet Bank	Buoy	M F L	53° 20.172' N	005° 55.130' W	Q (6) + LFI 15s	5		2	AIS	AIS fitted
16	North Burford	Buoy	M F L	53° 20.507' N	006° 01.493' W	Q	6		2	AIS	AIS fitted
16	East Rosbeg	Buoy	M F L	53° 21.007' N	006° 03.452' W	Q (3) 10s	6		2		Hand over to Dublin Port Company
16	Baily	Lighthouse	M F L	53° 21.691' N	006° 03.158' W	FI 15s	26			AIS (T)	Reduce to 18NM.
17	Howth	Lighthouse	M F L	53° 23.643' N	006° 04.020' W	FI (2) WR 7.5s	12/9				Hand over to HFHC or DAFF.
17	Howth Buoy	Buoy	F L	53° 23.727' N	006° 03.593' W	FI G 5s	4		3		No change considered necessary
17	South Rowan	Buoy	F L	53° 23.790' N	006° 03.941' W	Q G	4		3		No change considered necessary
17	Rowan Rocks	Buoy	F L	53° 23.877' N	006° 03.269' W	Q (3) 10s	4		3		No change considered necessary
17	Burren Rock	Beacon (Unlighted)	F L	53° 29.353' N	006° 02.460' W	Unlit					Light Beacon as a Starboard Lateral.
17	Taylor Rock	Buoy	F L	53° 30.222' N	006° 01.871' W	Q	4		3		No change considered necessary
17	Rockabill	Lighthouse	M F L	53° 35.811' N	006° 00.297' W	FI WR 12s	17/13				No change considered necessary
17	Cardy Rocks	Beacon (Unlighted)	F L	53° 37.912' N	006° 10.859' W	Unlit					Await Braemore Port developments
17	Dunany	Buoy	M F L	53° 53.530' N	006° 09.502' W	FI R 3s	4		2		No change considered necessary
17	Imogene	Buoy	M F L	53° 57.415' N	006° 07.042' W	FI (2) R 10s	4		2		No change considered necessary
17	Dundalk	Lighthouse	M F L	53° 58.560' N	006° 17.714' W	FI W 15s	21	Horn(3) 60s			Hand over to Dundalk Port
17	Hellyhunter	Buoy	M F L	54° 00.351' N	006° 02.052' W	Q (6) + LFI 15s	6		2	Racon, AIS (T)	No change considered necessary
17	Haulbowline	Lighthouse	M F L	54° 01.196' N	006° 04.740' W	FI (3) 10s	17	-			Reduce to 10NM
17	Vidal Bank	Leading Light	M F L	54° 01.799' N	006° 05.433' W	Oc 3s	11				No change considered necessary
17	Green Island	Leading Light	M F L	54° 01.959' N	006° 05.754' W	Oc 3s	11				No change considered necessary
17	DZ SW	Buoy	F L	54° 11.848' N	005° 50.828' W	FI Y 5s	3		3		No change considered necessary
17	DZ SE	Buoy	F L	54° 12.065' N	005° 45.023' W	FI (2) Y 10s	3		3		No change considered necessary
18	St John's Point (Down)	Lighthouse	M F L	54° 13.605' N	005° 39.611' W	Q(2) 7.5s	25	Horn(2) 60s		AIS (T)	Reduce to 18NM. Remove Aux light and incorporate sector into main light. Fit AIS
18	Water Rocks	Beacon (Unlighted)	F L	54° 14.441' N	005° 37.696' W	Unlit					No change considered necessary
18	Guns Island	Beacon (Unlighted)	F L	54° 17.499' N	005° 32.750' W	Unlit					No change considered necessary
18	St. Patrick's Rocks	Beacon (Unlighted)	F L	54° 18.584' N	005° 30.937' W	Unlit					No change considered necessary
18	Strangford	Buoy	M F L	54° 18.626' N	005° 28.689' W	LFI 10s	6		2	AIS (T)	No change considered necessary
18	Bar Pladdy	Buoy	M F L	54° 19.344' N	005° 30.501' W	Q (6) + LFI 15s	5		3		No change considered necessary
18	Pladdy Lug	Beacon (Unlighted)	F L	54° 19.826' N	005° 30.812' W	Unlit					Hand over to Ards Borough Council
18	Angus Rock	Lighthouse	M F L	54° 19.843' N	005° 31.520' W	FI R 5s	6				Hand over to Down District Council
18	Angus Rock Hauling Off	Buoy	CIL	54° 19.847' N	005° 31.585' W	UNLIT					Disestablish



Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
18	Butter Pladdy	Buoy	F L	54° 22.453' N	005° 25.741' W	Q (3) 10s	5		3		No change considered necessary
18	South Rock Beacon	Beacon (Unlighted)	F L	54° 23.948' N	005° 25.148' W	Unlit					No change considered necessary
18	South Rock	Buoy	M F L	54° 24.478' N	005° 21.993' W	FI(3)R 30s	9		1	Racon, AIS	No change considered necessary
18	North Rock	Beacon (Unlighted)	F L	54° 25.638' N	005° 24.970' W	Unlit					Establish red can topmark
18	Plough	Buoy	F L	54° 27.389' N	005° 25.104' W	FI R 3s	4		2		No change considered necessary
18	Skulmartin	Buoy	M F L	54° 31.848' N	005° 24.910' W	LFI 10s	7		2	AIS (T)	AIS fitted
18	Skulmartin Beacon	Beacon (Unlighted)	F L	54° 32.327' N	005° 27.154' W	Unlit					No change considered necessary
18	Donaghadee	Lighthouse	M F L	54° 38.707' N	005° 31.860' W	Iso WR 4s	18/14			AIS (T)	Special sub-Committee decided no change
18	Governor	Buoy	M F L	54° 39.360' N	005° 31.991' W	FI R 3s	4		3		Synchronise with Deputy Buoy
18	Foreland Rock	Beacon (Unlighted)	F L	54° 39.390' N	005° 32.393' W	Unlit					No change considered necessary
18	Carn Buoy	Buoy									Establish Starboard lateral buoy 2 cables N of Foreland buoy and synchronise
18	Deputy	Buoy	M F L	54° 39.513' N	005° 31.944' W	FI G 2s	4		3		Synchronise with Governor Buoy
18	Foreland	Buoy	M F L	54° 39.640' N	005° 32.307' W	FI R 6s	5		3		Synchronise with Carn Buoy
18	Mew Island	Lighthouse	M F L	54° 41.923' N	005° 30.824' W	FI (4) 30s	24			Racon	Exhibit 24 hrs. Establish AIS
18	South Briggs	Buoy	M F L	54° 41.182' N	005° 35.732' W	FI (2) R 10s	5		2		No change considered necessary
18	Cloghan Jetty	Buoy	M F L	54° 44.121' N	005° 41.599' W	Q G	4		2		No change considered necessary
18	Black Head (Antrim)	Lighthouse	M F L	54° 46.016' N	005° 41.338' W	FI 3s	27			AIS (T)	Reduce to 18NM
18	Larne No. 1	Buoy	M L	54° 51.683' N	005° 47.674' W	Q G	6		2		No change considered necessary
18	Larne No. 3	Buoy	M L	54° 51.274' N	005° 47.626' W	FI (2) G 6s	5		2	AIS	No change considered necessary
18	Chaine Tower	Lighthouse	M L	54° 51.270' N	005° 47.878' W	Iso WR 5s	16				Hand over to Larne Borough Council
18	Larne No. 2	Beacon (Lighted)	M L	54° 51.060' N	005° 47.533' W	FI R 3s	4				To be transferred to Larne Port Authority (Discussions Commenced)
18	Ferris Dock	Beacon (Unlighted)	F L	54° 51.033' N	005° 47.443' W	Unlit					No change considered necessary
18	Larne No. 4	Beacon (Lighted)	M L	54° 50.757' N	005° 47.563' W	FI (2) R 6s	4				To be transferred to Larne Port Authority (Discussions Commenced)
18	Larne No. 5	Buoy	M L	54° 50.482' N	005° 47.722' W	Q G	5		3		No change considered necessary
18	Larne No. 7	Buoy	M L	54° 50.464' N	005° 47.440' W	Q G	3		3		No change considered necessary
18	Ballylumford No 2	Buoy	M L	54° 50.427' N	005° 47.150' W	Q R	4		3		No change considered necessary
18	Ballylumford No 1	Buoy	M L	54° 50.374' N	005° 47.124' W	FI (2) G 4s	4		3		No change considered necessary
18	South Hunter	Buoy	M F L	54° 52.691' N	005° 45.284' W	VQ (6) + LFI 10s	6		2	AIS (T)	No change considered necessary
18	Waverider ODAS	Buoy	CIL	54° 52.800' N	005° 45.180' W	FI (5) Y 20s	3		2		No change considered necessary
18	North Hunter	Buoy	M F L	54° 53.046' N	005° 45.114' W	VQ	6		2		No change considered necessary
18	Maidens	Lighthouse	M F L	54° 55.748' N	005° 43.709' W	FI (3) 20s	24			Racon	Special sub-Committee decided no change
18	Highland Rock	Beacon (Unlighted)	F L	54° 57.286' N	005° 43.935' W	Unlit					No change considered necessary
19	Rathlin East (Altacarry Head)	Lighthouse	M F L	55° 18.111' N	006° 10.313' W	FI (4) 20s	26			Racon, AIS (T)	Special sub-Committee decided no change
19	Rue Point	Lighthouse	M F L	55° 15.533' N	006° 11.474' W	FI (2) 5s	14				No change considered necessary
19	Drake Wreck	Buoy	M L	55° 17.073' N	006° 12.438' W	Q (6) + LFI 15s	5		3		No change considered necessary
19	Rathlin West	Lighthouse	M F L	55° 18.052' N	006° 16.815' W	FI R 5s	22			AIS (T)	Change from red to white. Reduce to 18NM. Consider change of character
19	Stork Rocks	Beacon (Unlighted)	F L	55° 13.245' N	006° 35.408' W	Unlit					No change considered necessary
19	Skerries	Buoy									Establish buoy 0.5NM north of east end of Skerries.
19	Foyle	Buoy	M F L	55° 15.322' N	006° 52.616' W	LFI 10s	7		3	AIS (T)	No change considered necessary
19	Tuns	Buoy	M F L	55° 14.004' N	006° 53.440' W	FI R 3s	6		2		Upgrade to Type 2
19	Inishowen	Lighthouse	M F L	55° 13.556' N	006° 55.749' W	FI (2) WRG 10s	18/14/14				No change considered necessary
19	Bluick Rock	Beacon (Unlighted)	F L	55° 13.017' N	006° 56.322' W	Unlit					No change considered necessary
19	Inishtrahull	Lighthouse	M F L	55° 25.864' N	007° 14.628' W	FI (3) 15s	19			Racon	Reduce to 18NM
19	Dunree	Lighthouse	M F L	55° 11.888' N	007° 33.250' W	FI (2) WR 5s	12/9				No change considered necessary

Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
19	Colpagh	Buoy	F	55° 10.429' N	007° 31.546' W	FI R 6s	5		3		Move SW to 10 metre line
19	White Strand	Buoy	F	55° 09.059' N	007° 29.935' W	FI R 10s	3		3		No change considered necessary
19	Saltpans	Buoy	F	55° 07.717' N	007° 29.842' W	Q (3) 10s	5		2		No change considered necessary
19	Buncrana	Lighthouse	F	55° 07.604' N	007° 27.881' W	Iso WR 4s	13/10				No change considered necessary
19	Inch Spit	Buoy	F	55° 06.832' N	007° 29.616' W	FI R 3s	3		3		No change considered necessary
19	Kinnegar	Buoy	F	55° 06.743' N	007° 30.723' W	FI G 10s	3		3		No change considered necessary
19	Inch Flat	Buoy	F	55° 05.684' N	007° 30.758' W	FI (2 ) R 6s	4		3		No change considered necessary
19	Swillymore	Buoy	F	55° 15.116' N	007° 35.792' W	FI G 3s	5		2		No change considered necessary
19	Fanad Head	Lighthouse	M F L	55° 16.575' N	007° 37.921' W	FI (5) WR 20s	18/14			AIS (T)	No change considered necessary
19	Limeburner	Buoy	M F L	55° 18.551' N	007° 48.428' W	Q	6		2	AIS (T)	No change considered necessary
19	Bar Rock	Beacon (Unlighted)	F L	55° 09.994' N	007° 51.154' W	Unlit					Hand over to Donegal County Council
20	Tory Island	Lighthouse	M F L	55° 16.357' N	008° 14.964' W	FI (4) 30s	27			Racon, DGPS	Special sub-Committee decided no change
20	Gola Spit	Buoy	F L	55° 04.915' N	008° 20.396' W	FI R 3s	3		3		No change considered necessary
20	Middle Rock	Buoy	F L	55° 04.505' N	008° 21.029' W	FI (2) R 3s	3		3		No change considered necessary
20	Aranmore	Lighthouse	M F L	55° 00.903' N	008° 33.666' W	FI (2) 20s	27				Reduce to 18NM. Incorporate red sector into main light
20	Ballagh Rocks	Lighthouse	F L	54° 59.963' N	008° 28.839' W	FI 2.5s	5				No change considered necessary
20	Anchorage	Beacon (Unlighted)	F L	54° 59.552' N	008° 29.830' W	Unlit					Hand over to Donegal County Council
20	Carrickbealatroha	Beacon (Unlighted)	F L	54° 59.185' N	008° 28.744' W	Unlit					No change considered necessary
20	South Channel	Beacon (Unlighted)	F L	54° 58.947' N	008° 28.260' W	Unlit					Hand over to Donegal County Council
20	Lackmorris	Beacon (Unlighted)	F L	54° 58.946' N	008° 28.581' W	Unlit					No change considered necessary
20	Rathlin O'Birne	Lighthouse	M F L	54° 39.816' N	008° 49.951' W	FI WR 15s	18/14			Racon	No change considered necessary
20	Rotten Island	Lighthouse	M F L	54° 36.879' N	008° 26.435' W	FI WR 4s	15/11				No change considered necessary
20	Rotten Island Hauling Off	Buoy	CIL	54° 36.900' N	008° 26.444' W	UNLIT					No change considered necessary
20	Killybegs Outer	Buoy	M F L	54° 37.930' N	008° 26.130' W	VQ (6) + LFI 10s	5		3		Hand over to Killybegs Harbour (KFHC) or DAFF
20	Killybegs Inner	Buoy	F L	54° 38.027' N	008° 26.067' W	Q	4		3		Hand over to Killybegs Harbour (KFHC) or DAFF
20	Bullockmore	Buoy	M F L	54° 33.987' N	008° 30.145' W	Q (9) 15s	5		2	AIS	Upgrade to Type 2
20	St John's Point (Donegal)	Lighthouse	M F L	54° 34.162' N	008° 27.657' W	FI 6s	14			AIS (T)	No change considered necessary
20	Wheat Rock	Buoy	M F L	54° 18.843' N	008° 39.099' W	Q (6) + LFI 15s	6		2		No change considered necessary
20	Black Rock (Sligo)	Lighthouse	M F L	54° 18.460' N	008° 37.059' W	FI WR 5s	10/8				No change considered necessary
20	Metal Man Sligo	Lighthouse	M F L	54° 18.235' N	008° 34.545' W	FI (3) 6.1s	7				Hand over to Sligo County Council
20	Lower Rosses	Lighthouse	M F L	54° 19.726' N	008° 34.408' W	FI (2) WRG 10s	13/10/10				Hand over to Sligo County Council
20	Oyster Island	Lighthouse	M F L	54° 18.122' N	008° 34.273' W	FI (3) 6.1s	7				Hand over to Sligo County Council
20	Carrickpatrick	Buoy	F L	54° 15.557' N	009° 09.141' W	Q (3) 10s	6		2		No change considered necessary
20	Killala	Buoy	F L	54° 14.881' N	009° 09.725' W	FI G 6s	5		3		No change considered necessary
20	Broadhaven	Lighthouse	F L	54° 16.065' N	009° 53.330' W	Iso WR 4s	17/12				No change considered necessary
20	Eagle Island	Lighthouse	M F L	54° 17.022' N	010° 05.564' W	FI (3) 15s	19				No change considered necessary
20	Black Rock (Mayo)	Lighthouse	M F L	54° 04.055' N	010° 19.230' W	FI WR 12s	20/16				Reduce to 18NM
20	Blacksod	Lighthouse	M F L	54° 05.923' N	010° 03.628' W	FI (2) WR 7.5s	12/9				No change considered necessary
20	Blacksod Buoy	Buoy	M F L	54° 05.884' N	010° 02.977' W	Q (3) 10s	3		3		No change considered necessary
20	Achillbeg	Lighthouse	F L	53° 51.509' N	009° 56.835' W	FI WR 5s	18/18/15				No change considered necessary
20	Cloughcormick	Buoy	F L	53° 50.560' N	009° 43.184' W	Q (9) 15s	4		3		No change considered necessary
20	Inishgort	Lighthouse	F L	53° 49.594' N	009° 40.259' W	LFI 10s	10				No change considered necessary
20	Dorinish	Buoy	F L	53° 49.479' N	009° 40.483' W	FI G 3s	3		3		No change considered necessary
20	Dillisk Rocks	Buoy	F L	53° 48.330' N	009° 43.180' W	FI G 5s	4		2		No change considered necessary
20	Inishboffin North	Beacon (Unlighted)	F L	53° 36.851' N	010° 12.987' W	Unlit					Hand over to Galway County Council
20	Inishboffin South	Beacon (Unlighted)	F L	53° 36.811' N	010° 13.037' W	Unlit					Hand over to Galway County Council



Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
20	Gun Rock	Beacon (Unlighted)	F L	53° 36.591' N	010° 13.207' W	Unlit					Hand over to DOT
20	Fishing Point	Beacon (Unlighted)	F L	53° 29.342' N	010° 04.978' W	Unlit					No change considered necessary
20	Seal Rock	Beacon (Unlighted)	F L	53° 29.241' N	010° 09.481' W	Unlit					No change considered necessary
20	Slyne Head	Lighthouse	M F L	53° 23.997' N	010° 14.051' W	FI (2) 15s	19			Racon	Reduce to 18NM. Restrict white sector. Introduce red sector.
20	Cannon Rock	Buoy	M F L	53° 14.078' N	009° 34.352' W	FI G 5s	5		2		Hand over to Rossaveal Fishery Harbour Centre (RFHC) or DAFF.
20	Cashla Bay	Lighthouse	M F L	53° 15.834' N	009° 33.982' W	Dir Iso WRG 5s	8/6/6				Hand over to Rossaveal Fishery Harbour Centre
20	Blackrock Buoy	Buoy	M F L	53° 14.003' N	009° 06.562' W	FI R 3s	4		2		No change considered necessary
20	Blackrock	Beacon (Unlighted)	F L	53° 14.324' N	009° 06.386' W	Unlit					Disestablish in consultation with Galway Harbour Master
20	Margaretta	Buoy	M F L	53° 13.683' N	009° 05.996' W	FI G 3s	6		2		No change considered necessary
20	Tawin Shoals	Buoy	M F L	53° 14.287' N	009° 04.286' W	FI (3) G 10s	4		2		Hand over to Galway Harbour Company
20	Mutton Outfall	Buoy	M F L	53° 14.960' N	009° 03.310' W	FI Y.5s	5		3		No change considered necessary
20	Black Head (Clare)	Lighthouse	M F L	53° 09.253' N	009° 15.839' W	FI WR 5s	11/8				No change considered necessary
20	Eeragh	Lighthouse	M F L	53° 08.909' N	009° 51.402' W	FI 15s	18				No change considered necessary
20	Killeaney	Buoy	M F L	53° 07.259' N	009° 38.226' W	FI G 3s	3		3		No change considered necessary
20	Straw Island	Lighthouse	M F L	53° 07.065' N	009° 37.840' W	FI (2) 5s	17				No change considered necessary
20	Straw Island Hauling Off	Buoy	CIL	53° 07.006' N	009° 38.001' W	Unlit					No change considered necessary
20	Finnis	Buoy	M F L	53° 02.812' N	009° 29.126' W	Q (3) 10s	5		2		No change considered necessary
20	Inisheer	Lighthouse	M F L	53° 02.797' N	009° 31.613' W	Iso WR 12s	20/16			Racon	No change considered necessary
21	Loop Head	Lighthouse	M F L	52° 33.672' N	009° 55.938' W	FI (4) 20s	23			DGPS	Reduce to 18NM
21	Ballybunnion	Buoy	M F L	52° 32.528' N	009° 46.944' W	Q	6		2	Racon	Put Met hydro on this buoy
21	Kilstiffin	Buoy	M L	52° 33.801' N	009° 43.843' W	FI R 3s	6		2		No change considered necessary
21	Kilcredaun Head	Lighthouse	M F L	52° 34.809' N	009° 42.613' W	FI 6s	15				Disestablish
21	Kilcredaun	Buoy	M F L	52° 34.440' N	009° 41.196' W	FI (2+1) R 10s	4		2		Remove preferred channel nomination and change to Port Hand Lateral buoy. Synchronise with Tail of Beal
21	Tail of Beal	Buoy	M F L	52° 34.393' N	009° 40.746' W	Q (9) 15s	5		2		Change to Starboard Hand Lateral and synchronise with Kilcredaun Buoy
21	Carrigaholt	Buoy	M F L	52° 34.921' N	009° 40.504' W	FI (2) R 6s	4		2		Synchronise with Beal Spit Buoy
21	Beal Spit	Buoy	M F L	52° 34.820' N	009° 39.972' W	VQ (9) 10s	6		2		Change to Starboard Hand Lateral and synchronise with Carrigaholt Buoy
21	Beal Bar	Buoy	M F L	52° 35.181' N	009° 39.222' W	Q	5		2		No change considered necessary
21	Doonaha	Buoy	M F L	52° 35.460' N	009° 38.493' W	Q (3) R 5s	4		2		No change considered necessary
21	Corlis Point Front	Leading Light	M F L	52° 37.100' N	009° 36.363' W	Oc 5s	10				No change considered necessary
21	Corlis Point Rear (Querrin Quay)	Leading Light	M F L	52° 37.693' N	009° 35.336' W	Oc 5s	10				No change considered necessary
21	Letter Point	Buoy	M F L	52° 35.440' N	009° 35.884' W	FI R 7s	4		2		No change considered necessary
21	Asdee	Buoy	M F L	52° 35.093' N	009° 34.545' W	FI R 3s	4		2		No change considered necessary
21	Rineanna	Buoy	M F L	52° 35.593' N	009° 31.241' W	Q R	4		2		Hand over to Shannon Foynes Port Company
21	Scattery Island	Lighthouse	M F L	52° 36.347' N	009° 31.067' W	FI (2) 8s	10				Consider disestablishment or transfer to Shannon Foynes Port Company
21	Little Samphire Island	Lighthouse	M F L	52° 16.254' N	009° 52.909' W	FI WRG 5s	16/13/13				Hand over to Tralee and Fenit Harbour Commissioners
21	Inishtearaght	Lighthouse	M F L	52° 04.541' N	010° 39.677' W	FI (2) 20s	19			Racon	Reduce to 18NM
21	Castlemaine	Beacon (Unlighted)	F L	52° 05.423' N	009° 57.948' W	Unlit					Disestablish
21	Cromwell Point (Fort)	Lighthouse	F L	51° 56.022' N	010° 19.280' W	FI WR 2s	17/15				No change considered necessary
21	Harbour Rock	Beacon (Lighted)	F L	51° 55.813' N	010° 18.937' W	Q (3) W 10s	5				No change considered necessary
21	Valentia Front	Leading Light	F L	51° 55.514' N	010° 18.416' W	Oc WRG 4s	11/8/8				Replace with daylight sectorised PEL
21	Valentia Rear	Leading Light	F L	51° 55.464' N	010° 18.352' W	Oc 4s	5				Remove

Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
21	Foot	Buoy	F L	51° 55.718' N	010° 17.072' W	VQ (3) 5s	4		3		No change considered necessary
21	Portmagee East	Beacon (Unlighted)	F L	51° 53.345' N	010° 21.438' W	Unlit					Hand over to Kerry County Council
21	Portmagee West	Beacon (Unlighted)	F L	51° 53.329' N	010° 21.820' W	Unlit					Hand over to Kerry County Council
21	Skelligs Rock	Lighthouse	M F L	51° 46.108' N	010° 32.519' W	FI (3) 15s	19				
21	Maiden Rock	Buoy	F L	51° 49.023' N	009° 48.034' W	FI G 5s	3		3		No change considered necessary
21	Bull Rock	Lighthouse	M F L	51° 35.521' N	010° 18.073' W	FI 15s	21			Racon	Reduce to 18NM
21	Ardnakinna Point	Lighthouse	M F L	51° 37.104' N	009° 55.092' W	FI (2) WR 10s	17/14				Reduce to 12NM W, 9NM R
21	Colt Rock	Beacon (Lighted)	L	51° 38.068' N	009° 55.087' W	FI (2) R 10s					Lit under last review
21	Castletownbere Front	Lighthouse	F L	51° 38.792' N	009° 54.312' W	Dir Oc WRG 5s	14/11/11				Replace with daylight PEL
21	Castletownbere Rear	Beacon (Unlighted)	F L	51° 39.106' N	009° 54.079' W	Unlit					Disestablish
21	Walter Scott	Buoy	F L	51° 38.541' N	009° 54.234' W	Q (6) + LFI 15s	4		3		No change considered necessary
21	Hornet	Buoy	F L	51° 38.859' N	009° 52.171' W	VQ (6) + LFI 10s	4		3		No change considered necessary
21	Bardini Reefer	Buoy	F L	51° 38.821' N	009° 51.406' W	Q	5		3		Regularise arrangement with DOT/Castletownbere Fishery Harbour
21	George	Buoy	F L	51° 39.024' N	009° 49.695' W	FI (2) 10s	5		3		No change considered necessary
21	Carrigavaddra	Beacon (Unlighted)	F L	51° 38.670' N	009° 46.330' W	Unlit					Maintain south mark and fit light
21	Roancarrigmore	Lighthouse	M F L	51° 39.180' N	009° 44.820' W	FI WR 3s	18/14				Reduce to 12NM W, 9NM R.
21	Roancarrigmore Hauling Off	Buoy	CIL	51° 39.220' N	009° 44.800' W	UNLIT					No change considered necessary
21	Horse	Buoy	F L	51° 42.142' N	009° 27.795' W	FI G 6s	4		3		Hand over to Bantry Bay Harbour Commissioners
21	Gurteenroe	Buoy	F L	51° 41.841' N	009° 27.822' W	FI R 3s	3		3		Hand over to Bantry Bay Harbour Commissioners
21	Chapel	Buoy	F L	51° 41.663' N	009° 27.963' W	FI G 2s	3		3		Hand over to Bantry Bay Harbour Commissioners
21	Sheep's Head	Lighthouse	M F L	51° 32.591' N	009° 50.923' W	FI (3) WR 15s	18/15				No change considered necessary
21	Mizen Head	Lighthouse	M F L	51° 26.991' N	009° 49.225' W	Iso 4s	15			DGPS	Reduce to 12NM
21	Crookhaven	Lighthouse	M F L	51° 28.593' N	009° 42.273' W	LFI WR 8s	13/11				Reduce to 9NM
21	Blackhorse Rocks	Beacon (Lighted)	F L	51° 28.437' N	009° 41.683' W	Q FL	5				No change considered necessary

# Aids to Navigation

2010 - 2015

## REVIEW



The Aids to Navigation Review  
2010 - 2015

is a supporting document of the  
GLA's Strategy 2025 & Beyond.

& 2025  
beyond

## STRATEGY

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