

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 2015 - 2020

1. Index

Section 1 - Index	2
Section 2 - Introduction	4
Section 3 - Review Process	6
3.1 Start and Finish of Review Process	6
3.2 Conduct of the 2015 Review	6
3.3 Peer Review	7
3.4 User Consultation	7
3.5 Transfers to LLAs and period of transfer	7
3.6 The Principles applied in determining the Navigational Requirement	8
3.7 Methodology	9
3.8 Forms	10
Section 4 - Background to Review & Factors relevant to the Review	11
4A Navigational Issues	11
4A.1 Modern Navigation	11
4A.2 e-Navigation	12
4A.3 Transition phase to e-Navigation	12
4A.4 Human Factors	13
4B Marine Traffic and Density	13
4B.1 Aquaculture	13
4B.2 Fishing	13
4B.3 Marine Leisure and Tourism	13
4B.4 Offshore Renewable Energy Installations (OREIs)	14
4B.5 Routing Measures and Traffic Separation Schemes (TSS)	14
4C Technology Issues	15
4C.1 Automatic Identification System (AIS)	15
4C.2 Virtual AIS AtoNs	15
4C.3 Light Emitting Diodes (LEDs)	16
4D Future Issues	16
4D.1 2025 & Beyond	16
Section 5 - Contacts	17
Section 6 - References	18
Section 7 - Abbreviations	19
Section 8 - List of Review Areas	20

Section 9 - Inter-GLA Diagrams covering Review Areas	21
a. Navigation Review Area with GLA Contiguous Zones	21
b. Integrated Differential GPS System - overlapping coverage to 50 nM off all coasts	22
c. GLA Racon Coverage - Range 10 nM	23
d. AIS Rollout as of 1 February 2015	24
e. Renewable Energy Sites as of 1 February 2015	25
Section 10 - Review of Northern Lighthouse Board Areas (1 - 8)	22
Area 1 - Isle of Man, North Channel and Clyde	26
Area 2 - Mull of Kintyre to Ardnamurchan	28
Area 3 - Ardnamurchan to Barra Head; Cape Wrath to the Flannan Isles	30
Area 4 - Scotland North Coast; Orkney Islands (excluding Pentland Firth)	32
Area 5 - Pentland Firth	34
Area 6 - Shetland Islands	36
Area 7 - Clythness to Rattray Head	38
Area 8 - Rattray Head to St Abb's Head	40
Section 11 - Review of Trinity House Areas (9 - 14)	42
Area 9 - Berwick to Sizewell	42
Area 10 - Sizewell to Shoreham	44
Area 11 - Shoreham to Lyme Regis	46
Area 12 - Lyme Regis to Bude	48
Area 13 - Bude to Cardigan	50
Area 14 - Cardigan to Silloth	52
Section 12- Review of Irish Lights Areas (15 -21)	54
Area 15 - Fastnet to Tuskar	54
Area 16 - Tuskar to Baily	56
Area 17 - Baily to St John's Point Down	58
Area 18 - St John's Point Down To Rathlin Island	60
Area 19 - Rathlin East to Tory Island	62
Area 20 - Tory Island to Loop Head	64
Area 21 - Loop Head to Fastnet	66
Section 13 - List of All Recommended Changes	68
Section 14 -Changes made outwith the AtoN Review Process 2010-2015	73
Section 15 - GLA - Navigational Risk Assessment	76
Section 16 - Flow Diagrams and Risk Assessment Forms	77
Section 17 - Definitive Lists of all Aids to Navigation	80

2. Introduction

The three General Lighthouse Authorities (GLAs); 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 (IALA) so as to meet the responsibilities of the British and Irish Governments under the International Maritime Organization (IMO) Safety of Life at Sea Convention (SOLAS).

The joint Mission Statement of the GLAs is to:

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

This is the fourth 5 yearly Review whereby a formal, simultaneous and coordinated assessment of all the Aids to Navigation (AtoN) under their responsibility is undertaken by the three GLA's. 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.

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 work with Government, shipping interests, and other stakeholders to minimise this cost.

The GLA Marine Aids to Navigation Strategy to 2025 (2025 & Beyond), forms the strategic foundation of this Review. However, as the strategy to 2030 will be published in 2015 account has also been taken of developments since the 2025 strategy was published. Various policy considerations are contained in the GLA's Joint Navigation Requirement Policies (JNRP-2012), Radio Navigation Plan (GRNP-2012) and Visual Aids to Navigation Plan (VANP-2012). 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 and Operational Plan (i.e. 5 year AtoN Review) caters for the short and longer and short term review requirements.

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

- Commensurate with the volume 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 review has been carried out based solely on the navigational requirements.



Trinity House



The Aids to Navigation Review 2015 - 2020 is a supporting document of the GLA's Strategy to 2030, which will be launched in 2015/16.

3. Review Process

3.1 Start and Finish of Review Process

The 2015 AtoN Review was formally announced at the Joint Users Consultative Group (JUCG) meeting in London on 15 May 2014.

The 2015 AtoN Review was formally published at the JUCG meeting in London on 6 May 2015.

Outcome of 2010 Review and Lessons Learned (As per DfT Internal Audit No. 09/02)

1. Whilst recognising the formal requirement for the 5 yearly AtoN review the importance of continual assessment should be emphasised.
2. Written procedures have been incorporated into JNRP (2012).
3. Commence the 2015 Review earlier with defined dates for progress meetings; peer reviews and final publication.
4. Where AIS data has been available it has been used to analyse traffic information.
5. A combination of both qualitative and quantitative assessments has been used to ensure that all aspects of requirements are considered. Quantitative data, such as that gained from AIS analysis as in 4 above, can only have a meaningful representation when considered alongside expert opinion on specific mariner requirements.
6. Comments received from stakeholders should be differentiated to take account of the stakeholder perspective, for example safety of navigation and those commenting on the preservation of historical lighthouses/buildings.

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.

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

Users were formally consulted during 2013/2014 both for input into the Review and comment on the draft proposals by distribution of Notice to Mariners, press release and targeted user consultation. 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 generally 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. In the case of recommendations on range reductions, unless there is a significant cost saving to be achieved, these will be completed as part of the normal Engineering Projects programme.

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. The 2010 Navigation Review established the principle that the primary means of navigation for the majority of users is GNSS, however Visual and Radio Aids to Navigation remain essential as complementary and back up to GNSS.

In this Review, the following principles are applied.

- Generally, Visual and Radio Aids to Navigation can be considered as complementary to an essential back-up system to GNSS.
- Physical aids are important for both offshore and inshore spatial awareness and hazard marking.
- Generally, having one AtoN in view is acceptable.
- A maximum nominal range of 18 miles is considered sufficient for most lighted Visual Aids to Navigation.
- Leading lights, sectorised lights and Precision Directional Lights (PDL) remain important.
- Fog signals are no longer considered to be AtoNs and will only be used as hazard warning signals.
- More use can be made of sequential and synchronised lights.

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 Northern Lighthouse Board. 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 and when carrying out risk assessments.
- Collisions & Groundings data provided by the MCA has been used to support risk assessment.
- 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 sources affecting the safety of the Mariner, including proposals for Renewable Energy and aquaculture developments.
- Each AtoN has been subject to a navigational assessment under the headings below. Where changes are recommended, a full written Risk Assessment (RA) is carried out.
- 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.

AIDS TO NAVIGATION 2015 - 2020

- 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 list of changes made outside of the five yearly review process is contained in Section 14.

The criteria used in the Navigational Assessment process are included in Section 15.

The Review Process flow chart, and a sample Risk Assessment form are included in Section 16.

A spreadsheet of all the AtoN provided by the GLAs is included in Section 17. In this spreadsheet, any AtoN where changes are recommended is highlighted in yellow.

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 as a result of the proliferation of good, reliable, mass-market GPS receivers with a nominal accuracy of 10 metres or better. 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, the Russian and European equivalents of GPS and other planned systems will only ameliorate concerns to a limited degree. The similarities of the GNSS space based signals 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 not to rely on a single source of navigation information when alternative sources are available. The IMO e-Navigation Strategy Implementation Plan (SIP) includes improved reliability, resilience and integrity of bridge equipment and navigation information as one of its prioritised solutions. A range of resilient PNT solutions are being considered. 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 over 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'. This strategy document will be reviewed in 2015 to update our longer term outlook.

4A.2 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 2019. Even then, it may not be delivered on a set date but rather it will be introduced gradually.

IMO MSC94 in November 2014 approved a Strategic Implementation Plan for e-Navigation. The main objective of the SIP is to implement five prioritized e-navigation solutions in the period 2015-2019 to provide industry with the harmonized information in order to start designing products and services to meet the e-navigation solutions.

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

4A.3 Transition phase to e-Navigation

The period covered by this review is 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. Therefore the GLA, through participation in IALA and other international organizations, will continue to contribute to the harmonization process.

4A.4 Human Factors

The IMO e-Navigation Strategic Implementation Plan includes provision for Guidelines on Human Centered Design, Usability Testing, Evaluation and Assessment and Software Quality Assurance. There is an identifiable increase in marine accidents resulting from misuse of and over reliance on electronic display systems and technology for navigation and passage planning. In a number of instances a series of clearly identifiable aids to navigation have been ignored in the run up to a serious incident. Increased attention needs to be paid to human factors issues relating to the use of aids to navigation by modern mariners. Consideration needs to be given to dissemination of information relating to AtoN as well as guidance on the expected performance and appropriate use of different types of AtoN and improving the presentation of information relating to the use of such AtoN in the context of effective bridge resource management. The GLA will work through IALA, IMO and other international bodies to develop appropriate guidance on these issues.

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, shellfish and sea weeds. The GLAs are consulted by the responsible Government Departments, 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. Effective Maritime Spatial Planning will need to be considered in a navigational context.

4B.2 Fishing

Although the traditional fishing industry has been subject to considerable change due to EU and governmental regulation, it remains an important industry throughout Britain and Ireland, both inshore and off shore. Fishing vessel traffic and its interaction with other users is an important consideration in determining AtoN provision.

4B.3 Marine Leisure and Tourism

In recent years the marine leisure industry has grown significantly. Satellite navigation systems, electronic chart systems and even integrated navigation systems are common but not always fully understood as to the degree of accuracy provided and the possible vulnerabilities. Furthermore, the widespread availability of GPS and DGPS receivers, including Smart Phone APPS, 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 continues to be a growth industry. Ports are actively encouraging calls by cruise liners, resulting in very significant growth in port tonnage in some areas.

AIDS TO NAVIGATION 2015 - 2020

Smaller 100/200 passenger, 100 metre length, specialist cruise ships are also a feature around the coast and increasingly at anchorages. 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 Installations (OREIs)

Since the last review there has been a proliferation of applications for offshore windfarm sites around our coasts, this trend is set to continue as the UK and ROI Governments set targets for power generation from renewable sources. Many more windfarms 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 experimental wave and tidal energy devices with numerous applications for such sites. 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 detect due to low freeboard.

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.

Submissions regarding route proposals or areas to be avoided are the responsibility of Government, i.e. The Department of Transport, Tourism and Sport (DTTAS) 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 10 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 Island), Fastnet, Tuskar and The Little Minch. Associated with TSSs there may also be Inshore Traffic Zones (ITZ).

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

There may be a requirement for additional formal routeing measures as OREI are considered and implemented.

4C Technology Issues

4C.1 Automatic Identification System (AIS)

AIS has been developed as an identification transponder system which can be used for monitoring ship movements. AIS has been mandatory on SOLAS vessels greater than 300grt since 2004.

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

It is also possible to use both shore based and floating aids to provide meteorological and hydrological information.

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 a appropriate display.

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

4C.2 Virtual AIS AtoNs

A Virtual AIS AtoN is transmitted from an AIS station to establish an aid to navigation that does not physically exist. In this case, a digital information object will appear on the navigational system (ECDIS, Radar or MKD) for a specified location, even though there is no physical AtoN. A nearby base station or AtoN station could broadcast this message. The AIS message will clearly identify this as a Virtual AIS AtoN.

Virtual AtoN are particularly useful in time-critical situations and in marking/delineating dynamic areas where navigational conditions change frequently or in applications where the use of physical aids is not practical or possible. For example, it may be appropriate to create a virtual AtoN to mark hazards to navigation on a temporary basis until a more permanent AtoN can be established. Alternatively, virtual aids to navigation may be established to mark areas where navigation conditions (for example; channel boundaries, overhead clearance, water levels) change frequently and would require dynamic marking.

There is however a growing recognition that AIS AtoN can be used on a longer term basis. IMO MSC.1/Circ.1473 (May 2014) notes that Virtual AIS AtoN should not be used for permanently marking an object for which Physical AtoN would be possible, but, may be considered for marking an object or feature where it is difficult or economically unreasonable to establish a Physical AtoN due to environmental constraints e.g. deep water, harsh sea conditions. Another case of the permanent application of Virtual AIS AtoN is for example marking a shoal that changes with time due to current or weather effects; and, where the object or feature is impossible to maintain as charted because of changes that occur over time.

4C.3 Light Emitting Diodes (LEDs)

LED technology is universal within 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.

It is however noted that where major lights with a rotating beam are replaced by an LED light, the flash character should be reviewed in each case, as the loss of the loom of the light reduces the users’ ability to retain spatial awareness and to take bearings of the light. This effect can be reduced by increasing the flash length and/or reducing the eclipse.

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 18nm. However, ongoing research and development in LED technology is constantly delivering improvements in light intensity, efficacy and optical technology. 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.

4D Future Issues

4D.1 2025 & Beyond

In 2010, the General Lighthouse Authorities published 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 Radio 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. In addition to providing an appropriate backup for determination of position, physical AtoN are essential in ensuring the Mariner maintains an appropriate level of spatial awareness to safely execute the voyage.

2015 and Beyond will be reviewed in 2015 to refresh the GLA long term strategic view.

5. Contacts

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

Comments in respect of Areas 1 - 8

Director of Marine Operations
Northern Lighthouse Board
84 George Street
Edinburgh
Scotland
EH2 3DA
Email: navigation@nlb.org.uk

Comments in respect of Areas 9 - 14

Director of Navigational Requirements
Trinity House Lighthouse Service
Trinity House
Tower Hill
London
EC3N 4DH
Email: navigation.directorate@thls.org

Comments in respect of Areas 15 - 21

Director of Operations and Navigation Services
Commissioners of Irish Lights
Harbour Road
Dun Laoghaire
Co. Dublin
Ireland
Email: navigation@cil.ie

6. References

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

- EU Integrated Maritime Policy (Dec 07).
- EU Directive for Maritime Spatial Planning (Aug 14).
- 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.
- 2025 and Beyond: Marine Aids to Navigation Strategy, GLAs, 2010.
- Joint Navigation Requirements Policy, GLAs, 2012.
- Visual Aids to Navigation Plan 2012.
- Radio Aids to Navigation Plan 2012.
- Corporate Plans of Irish Lights, Northern Lighthouse Board, Trinity House.
- Collisions & Groundings data, MCA 2007-2013,
- Port Freight Statistics, DfT, 2013,
- UK Sea Fisheries Statistics, MMO, 2013.
- IALA Recommendations and Guidelines
- IMO Circulars

7. Abbreviations

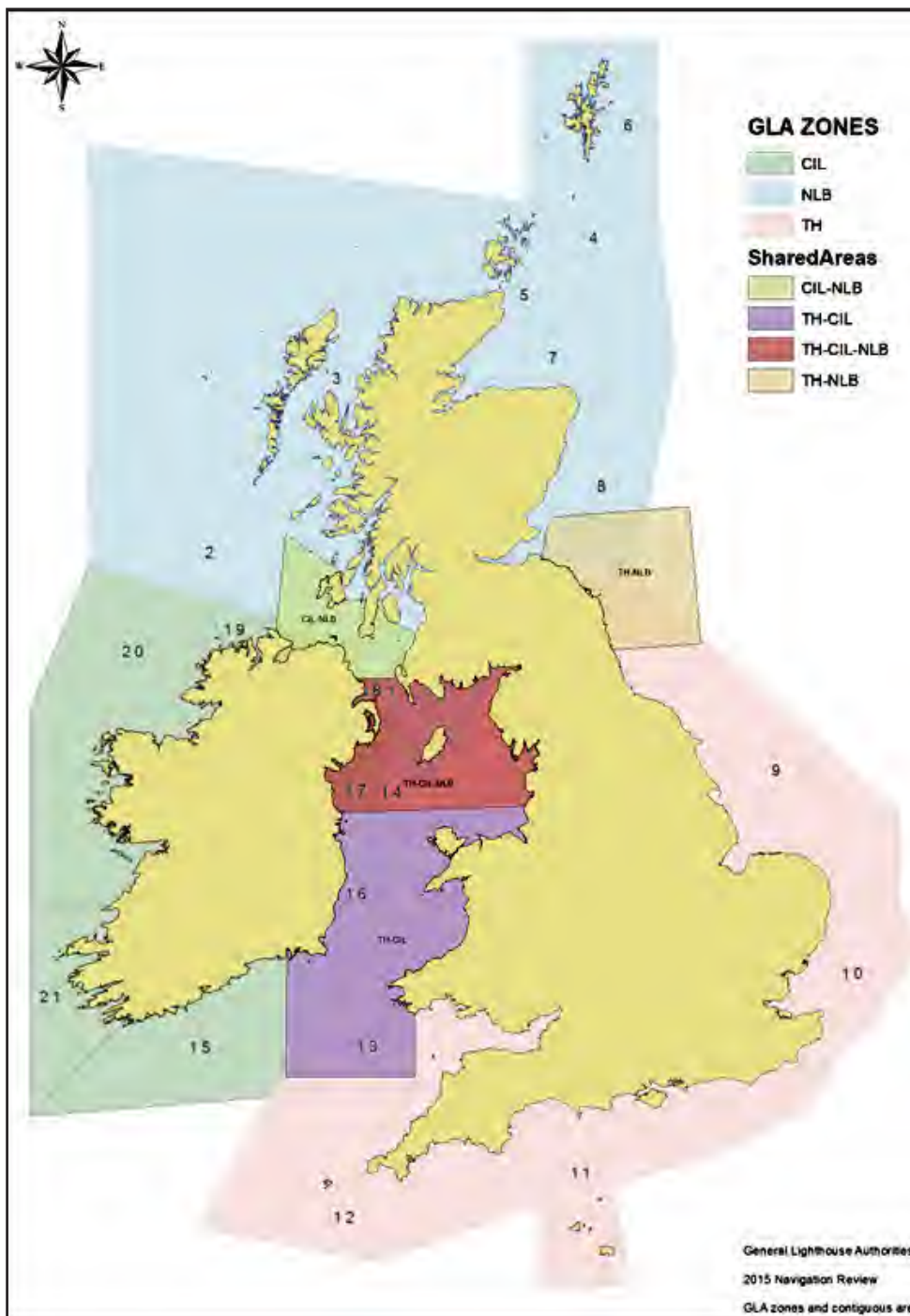
ALL	Admiralty List of Lights
AIS	Automatic Identification System
AtoN	Aid(s) to Navigation
BA	British Admiralty
CIL	Commissioners of Irish Lights
DGPS	Differential Global Positioning System
DfT	Department for Transport (UK)
DTTAS	Department of Transport, Tourism and Sport (ROI)
DR	Dead Reckoning
ECDIS	Electronic Chart Display and Information System
e-Loran	Enhanced Loran
e-Nav	e-Navigation
EPIRB	Emergency Position Indicating Radio 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 Organization
Iso	Isophase
ITZ	Inshore Traffic Zone
L Fl	Long Flash
Ldg Lts	Leading Lights
LED	Light Emitting Diode
MMO	Marine Management Organisation
MKD	Minimum Keyboard and Display (AIS)
nM	Nautical Mile
NLB	Northern Lighthouse Board
Occ	Occulting
OREIs	Offshore Renewable Energy Installations
PDL	Precision Directional Light
Q	Quick Flashing
R	Red
Racon	Radar Beacon
ROI	Republic of Ireland
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

8. List of Review Areas

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

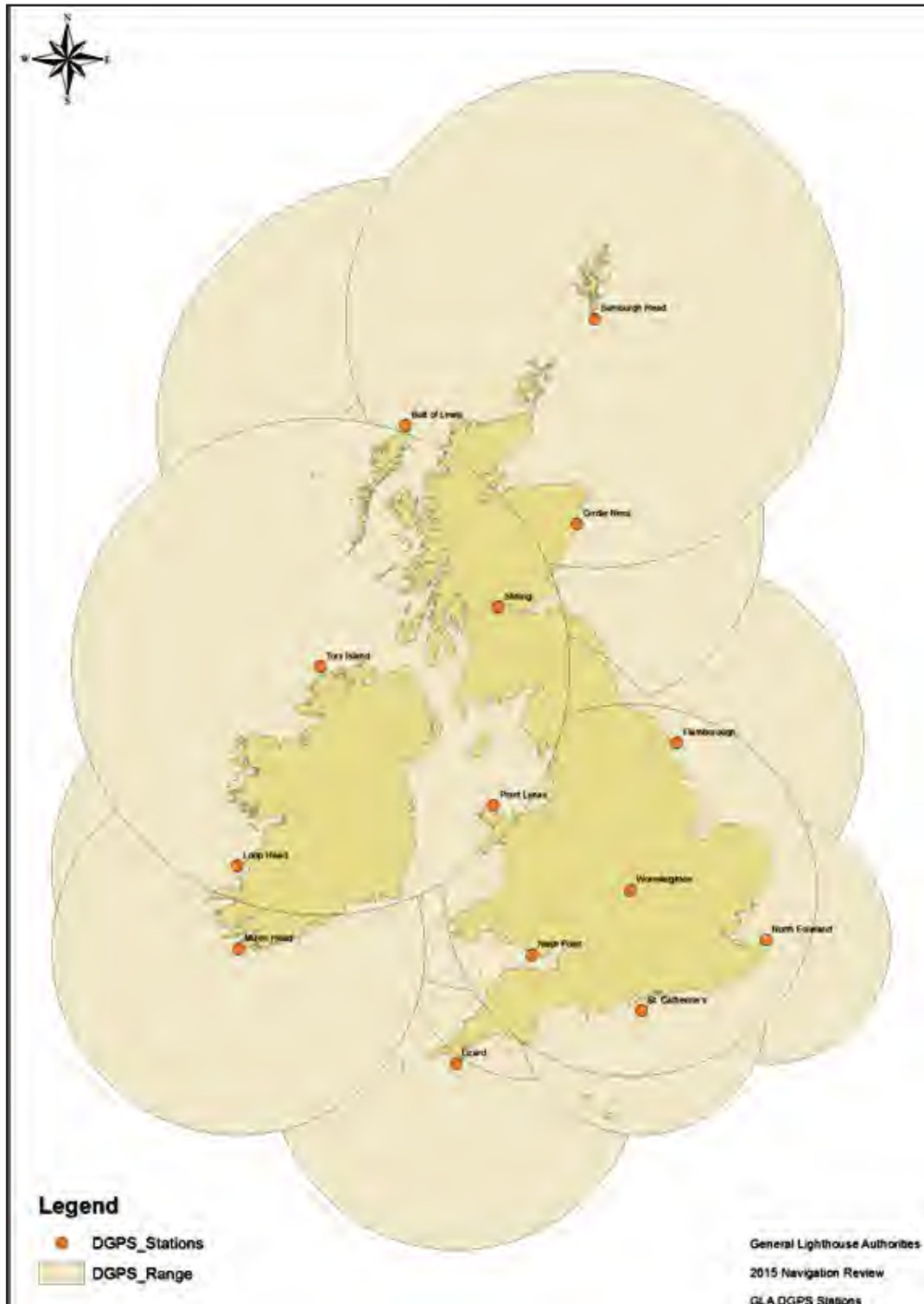
9. Inter-GLA Diagrams covering Review Areas

a. Navigation Review Area with GLA Contiguous Zones



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

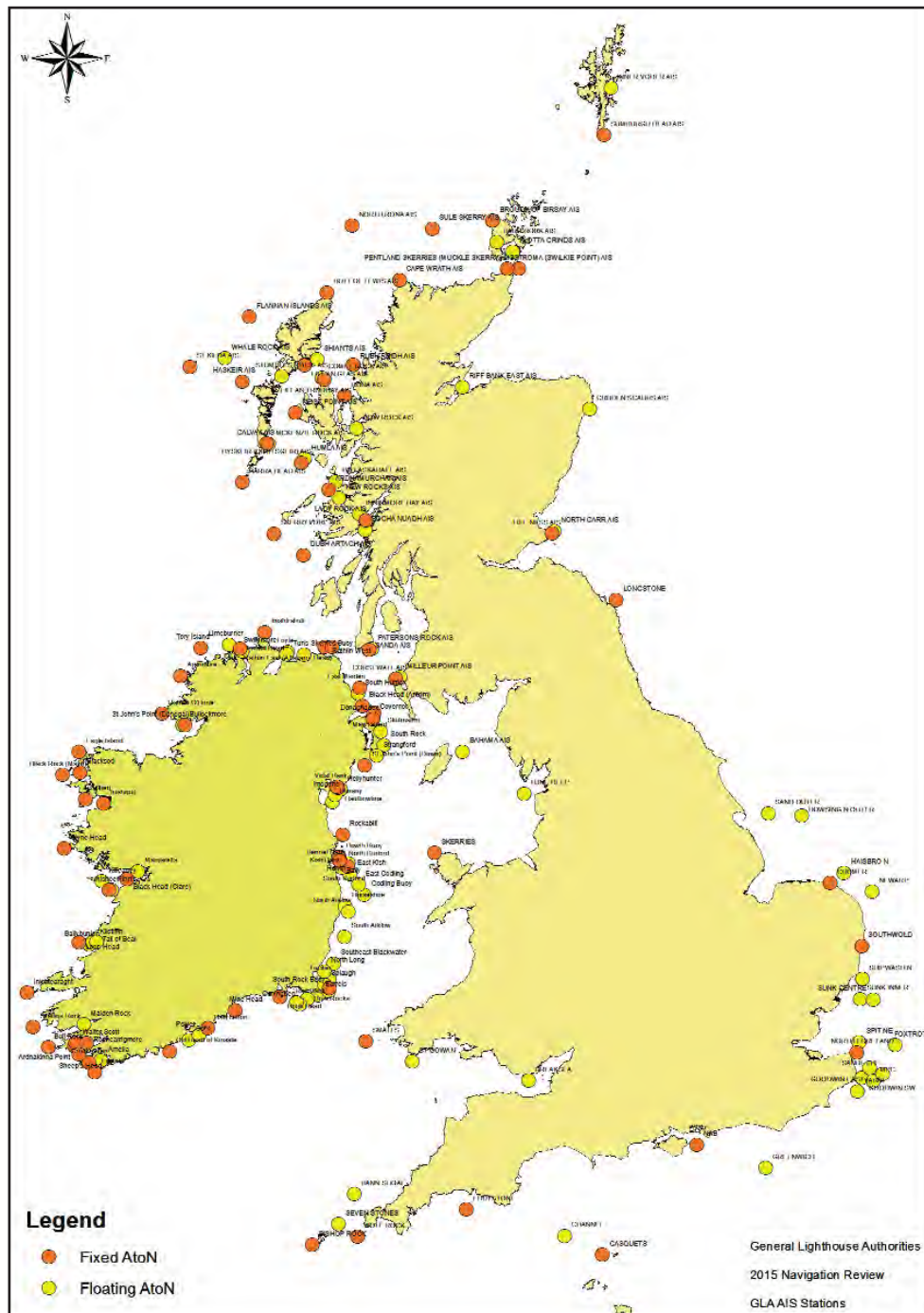


c. GLA Racon Coverage – Range 10 nM

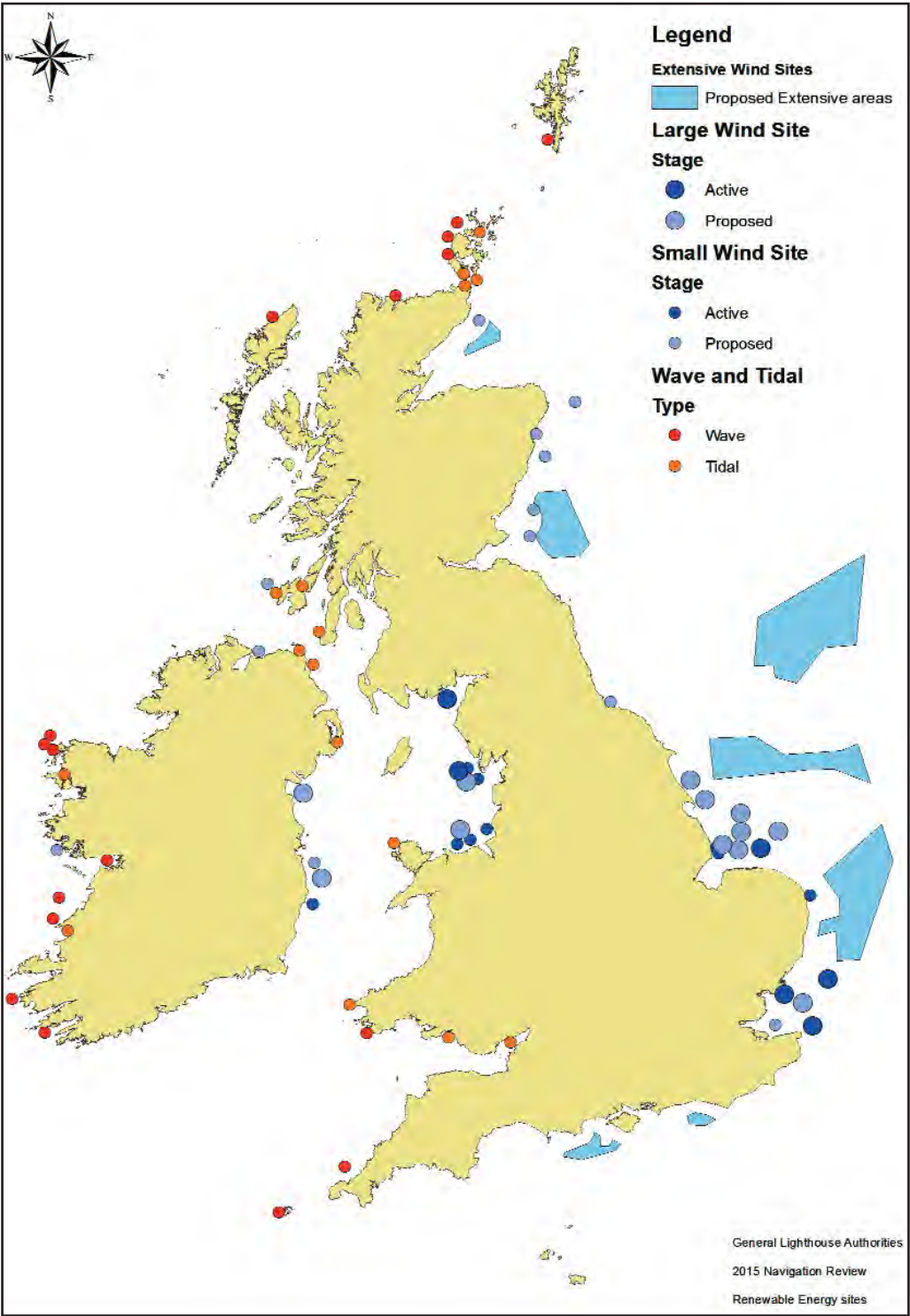


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d. AIS Rollout as of 1 February 2015



e. Renewable Energy Sites as of 1 February 2015

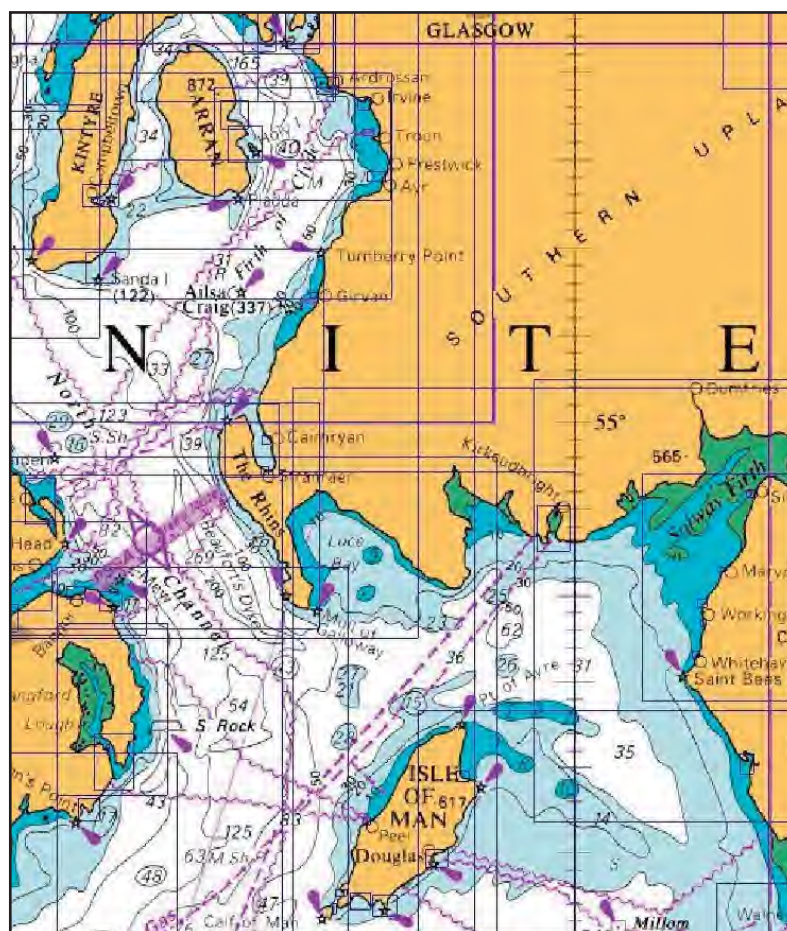


10. Review of Northern Lighthouse Board Areas (1 – 8)

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 (landing 5600 tonnes in 2013) and coastal bulk cargoes. Kirkcudbright remains an important fishing port for shell fish (landing 5400 tonnes in 2013). The new Loch Ryan Port and Cairnryan handle Ro Ro and HSC ferries for Northern Ireland (4.1 million tonnes /year) whilst the Clyde ports handle container traffic, coal imports, crude oil imports, petroleum product exports and bulk materials totalling 14.8 million tonnes per year along with Cruise and MOD vessels. Troon handles HSC ferries to and Larne, and Campbeltown supports timber exports,

fishing and approx 200 small general cargo vessels per year, in addition to a NATO fuel jetty and a ferry service to Ardrossan. Smaller ports in the area serve the leisure industry, smaller fishing vessels and occasional coastal trade.

There is significant vehicle ferry traffic, linking Arran, Bute and Cumbrae to the mainland, and connecting the heavily Upper Firth of Clyde. Passenger only ferries link Campbeltown to Ballycastle, and Gourock to Kilcreggan.

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, 3 Racons, 3 unlit Beacons, 5 AIS.

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

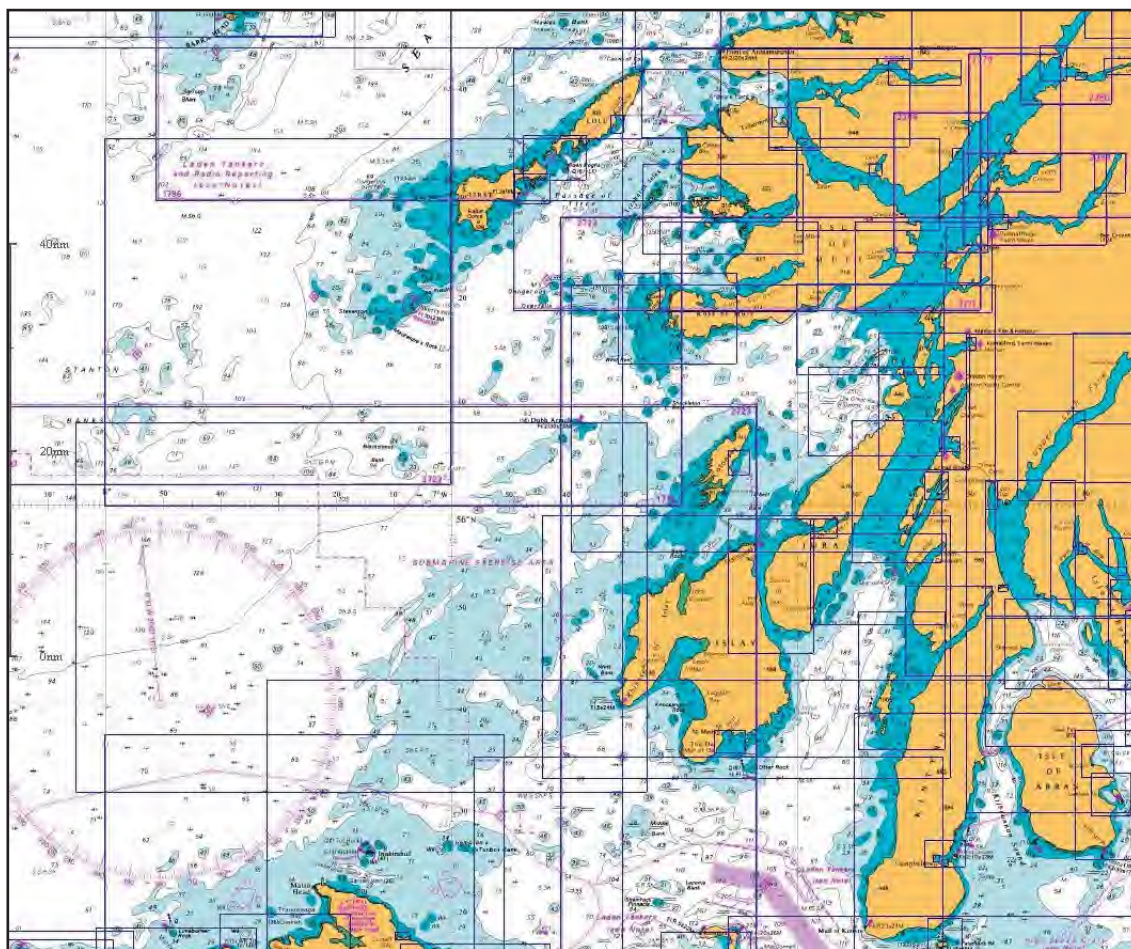
Future developments in the area that may affect AtoN provision post 2015 review are the potential siting of a windfarm in Wigtown Bay and a tidal energy development off the Mull of Galloway.

The proposed changes within this area are:

Maughold Head	Reduce to 15nM (minimum) range on re-engineering (b/f from 2010 Review)
Douglas Head	Reduce to 15-18nM range on re-engineering (b/f from 2010 Review)
Point of Ayre	Reduce to 18nM range on re-engineering
Corsewall	Re-engineer as a light of >18nM range
Mull of Galloway	Reduce to 18nM (minimum) range on re-engineering (b/f from 2010 Review)
Mull of Kintyre	Re-engineer as a light of >18nM range
Davaar	Reduce to 15nM range on re-engineering (b/f from 2010 Review)
Ballacash Bank	Establish West Cardinal buoy

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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 lifeline ferries operate Kennacraig to Port Ellen and Port Askaig; Oban to Colonsay, Port Askaig, Caignure, 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.

Traffic patterns have not substantially changed since 2010 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: 44 lights, 51 Buoys, 2 Racons, 1 unlit Beacon, 7 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 may affect AtoN provision include tidal energy sites in the Sound of Islay and to the SW of Islay which may restrict depths for some vessels which currently use the area.

The proposed changes within this area are:

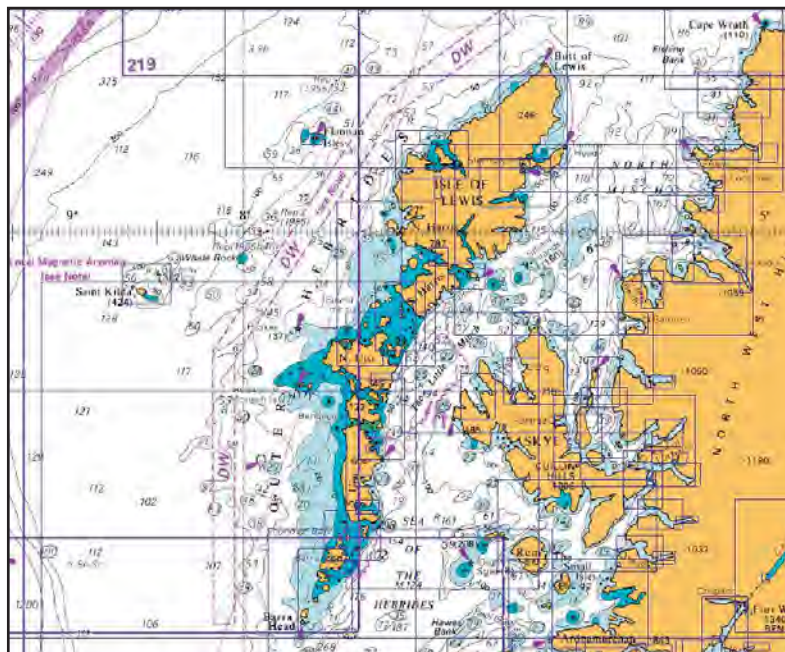
Skerryvore	Re-engineer as a light of >18nM range
Ardnamurchan	Reduce to 18nM range on re-engineering
Sgeir an Fheurain (Kerrera)	Establish Starboard Hand buoy
Ferry Rocks SE	Replace with East Cardinal
Kerrera	Establish Port Hand Buoy
Cleit Rock (Sound of Luining)	Establish unlit beacon
Rinns of Islay	Reduction to 18nM in hand

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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, with a winter service also linking Mallaig and Lochboisdale. There are also local ferries operating in Loch Nevis and between Glenelg and Kylerhea (Skye).

Traffic patterns have not substantially changed since 2010 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 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 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: 56 lights, 65 Buoys, 9 Racons, 13 unlit Beacons, 21 AIS.

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

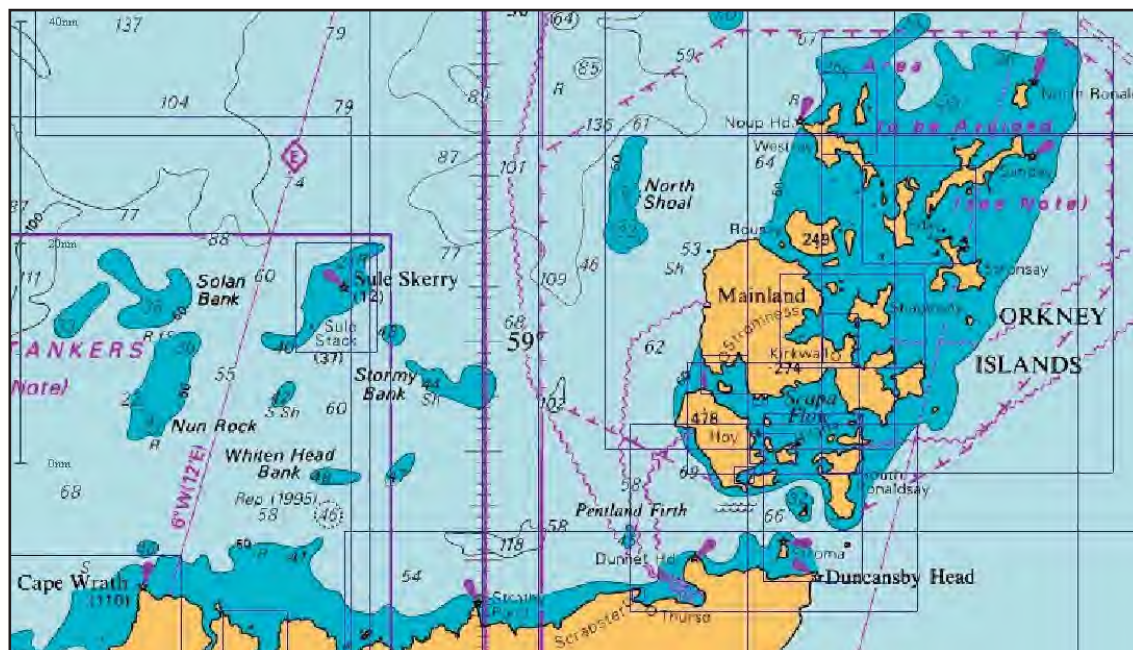
Future developments in the area that may affect AtoN provision include wave energy sites planned for the West coast of Lewis.

The proposed changes within this area are:

Dunvegan	Replace with more conspicuous (longer range) light
Eilean Glas	Reduce to 18nM (minimum) range on re-engineering (b/f from 2010 Review)
Rubha Reidh	Reduce to 18nM (minimum) range on re-engineering (b/f from 2010 Review)
Whale Rock South	Discontinue buoy station
Grocis Sgeir	Establish unlit beacon
Tiumpan Head	Reduce to 18nM (minimum) range on re-engineering (b/f from 2010 Review)
Stoer Head	Reduce to 18nM (minimum) range on re-engineering (b/f from 2010 Review)

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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 1.05 million tonnes of cargo per annum. This includes ship to ship crude oil transfers which 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 2010 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 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: 19 lights, 14 Buoys, 2 Racons, 2 unlit Beacons, 5 AIS (including one Virtual AtoN).

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

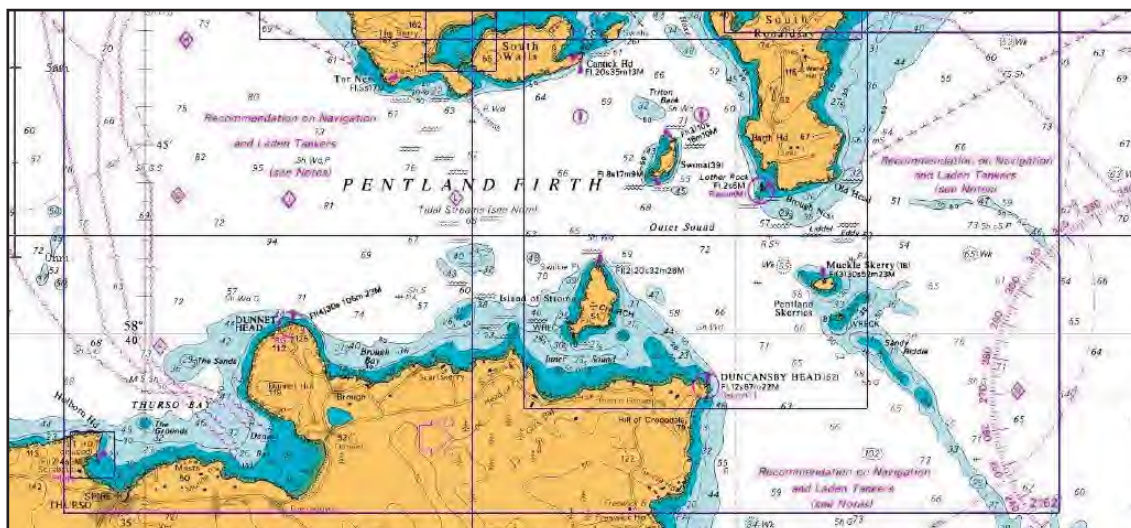
Future developments that will affect AtoN provision post 2015 review include:-
There are numerous small scale tidal and wave energy developments planned around Orkney. The potential for a container Hub port, often hinted at for the Orkneys, is unlikely to come to fruition in the medium term. Although 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:

Noss Head	Re-engineer as 18nM light without red sector
The Riv Beacon	Light (b/f from 2005 Review)
Nun Rock	Establish Virtual AtoN
Sule Stack	Establish Virtual AtoN

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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 the associated 10 mile long narrow bank substantially reducing depths and results in a 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 12,700 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. An HSC ferry operates between Gills Bay and St Margarets Hope, and in summer a passenger ferry operates between John O'Groats and South Ronaldsay. 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.

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.

Trawling 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: 10 lights, 0 Buoys, 2 Racons, 1 unlit Beacon, 3 AIS

DGPS: DGPS Coverage is provided for in this area by the Butt of Lewis, Girdlenness and Sumburgh Head 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:

Dunnet Head	Refurbish as 23nM light
Stroma	Reduce to 18nM (minimum) range on solarisation (b/f from 2010 Review)
Pentland Skerries	Reduce to 18nM (minimum) range on re-engineering
Stroma Skerries Beacon	Light (b/f from 2005 Review)

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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 7.4 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 48,900 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 changes since 2010 have seen a significant reduction in oil traffic and an 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, and growing, 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 remains substantial tanker traffic to/from Sullom Voe.

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: 38 lights, 4 Buoys, 3 Racons, 1 unlit Beacon, 2 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 2015:-

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:

Foula	Establish red sector to East (257° - 277°)(b/f from 2010)
Fair Isle South	Reduce to 18nM (minimum) range on solarisation
Muckle Flugga	Reduce to 18nM (minimum) range on solarisation
Rova Head	Alter character from FL(3) WRG 18s to FL WRG 4s
Hoo Stack	Discontinue Directional light

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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 3.4 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 25,000 tonnes in 2013. Some of these harbours support limited other mixed use and marinas.

Fishing occurs extensively throughout this area.

Traffic patterns have not substantially changed since 2010 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

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: 6 lights, 14 Buoys, 2 Racons, 1 unlit Beacon, 1 AIS.

DGPS: DGPS Coverage is provided for in this area by the Sumburgh Head and Girdleness transmitters

Future developments post 2015: There are consented wind farms planned for the Beatrice area (inside the 12 mile limit) and the Moray Offshore Round 3 wind farm (outside the 12 mile limit). There is also potential for floating wind farm sites in this area.

No changes are proposed within this area during the period of this review.

AIDS TO NAVIGATION 2015 - 2020

Area 8 – Rattray Head to St Abb's Head

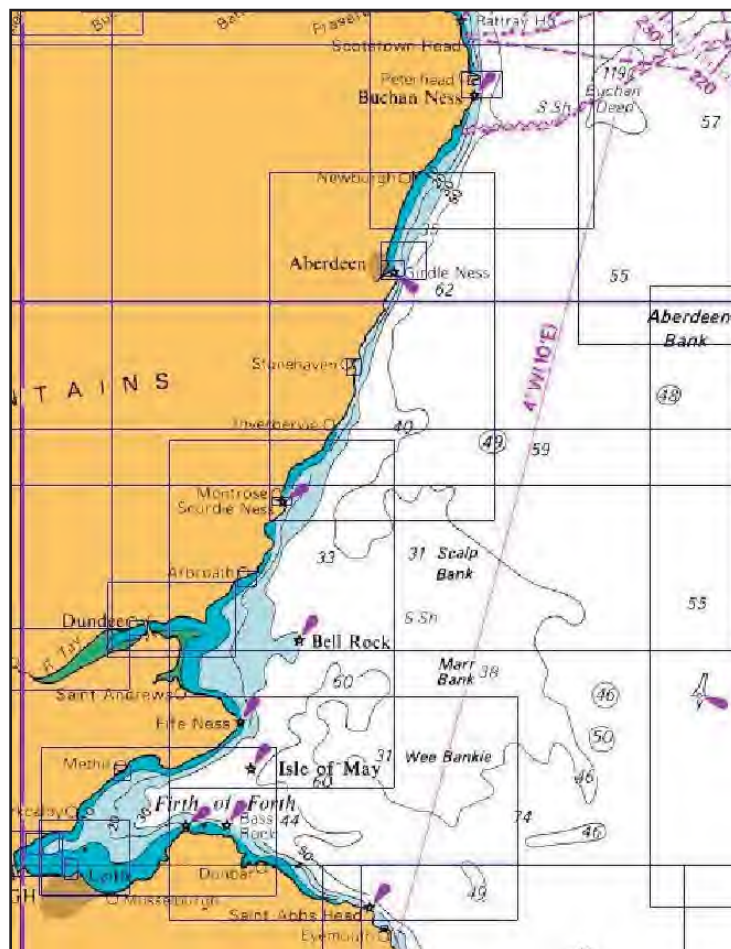
From Rattray Head the coast runs in a generally SSW direction to Fifeness. The Isle of May lies toward the centre of the approach to the Firth of Forth. The coast north of the Forth is mainly composed of rocky cliffs, fringed by drying reefs. There are several sandy stretches from Rattray Head to Peterhead, 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 2013, is a major oil industry support base and small marina. Aberdeen is the UK primary oil industry support facility, as well as a ferry port and general bulk cargo port handling 4.2 million tonnes per annum. 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 26 million 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 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 freight route 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: 10 lights, 2 Buoys, 6 Racons, 3 unlit Beacons, 3 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:

St Abbs Head	Reduce to 18nM (minimum) range on re-engineering
South Carr Beacon	Light as 3nM light (b/f from 2005 Review)

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 2015 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.

SECTION ELEVEN | REVIEW OF TRINITY HOUSE AREA 9

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. Traffic volumes partly due to wind farm construction vessels and work boats have increased in this area; the shallow waters with numerous sandbanks and mobile areas of the seabed require regular surveys and therefore subject to regular review. 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 sub-area offshore production platforms and drilling rigs are encountered.

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.

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

AtoNs provided: 11 Lights; 79 Buoys; 3 beacons; 11 Racons; and 7 AIS.

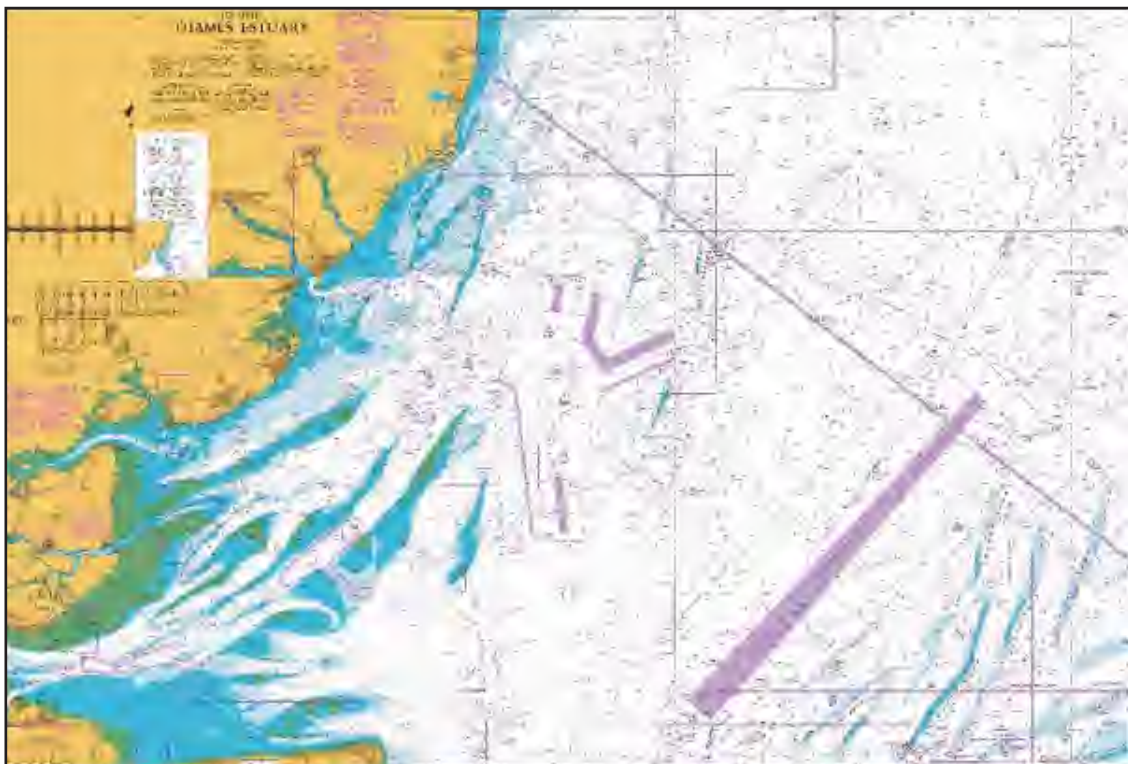
DGPS: DGPS Coverage is provided for in this area by the Stirling; Girdleness; Flamborough; Wormleighton & North Foreland transmitters.

The proposed changes within this area are:

Farne LH	Change to LED light to give R & W sectors Range of 8nm - when re-engineered
Longstone LH	Reduce Range to 18nm - when re-engineered
Flamborough Head LH	Reduce Range to 18nm - when re-engineered
Flamborough Head LH	Reduce Hazard Warning Signal- Range to 1nm - Required for local traffic
Coquet LH	Reduce Hazard Warning Signal- Range to 1nm - Required for local traffic
Lowestoft LH	Reduce Range to 18nm

AIDS TO NAVIGATION 2015 - 2020

Area 10 – Sizewell to Shoreham



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

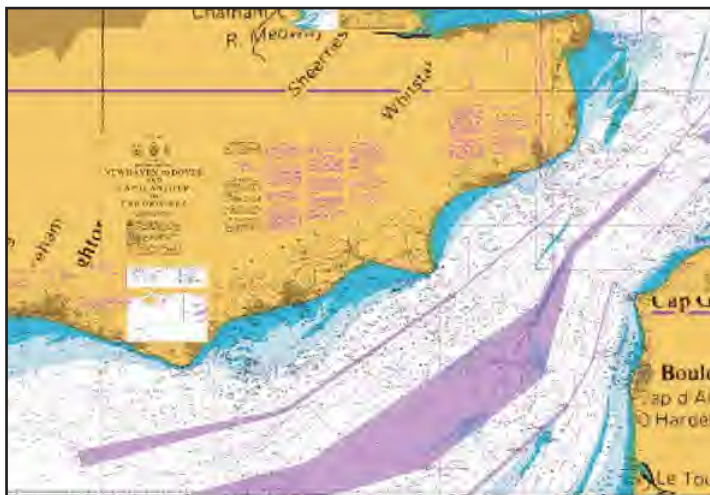
Throughout the area developments of Offshore Wind Farms for Rounds 1, 2, 3 and the possible proposed round 1 & 2 extensions may affect AtoN provision post the 2015 review. There may also be increased construction activity and traffic associated with offshore renewable energy sites.

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 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 streams 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.

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 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.

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: 4 Lights; 200 Buoys; 16 Racons; 1 beacon; 6 Lightvessels; 1 Lightfloat and 12 AIS.

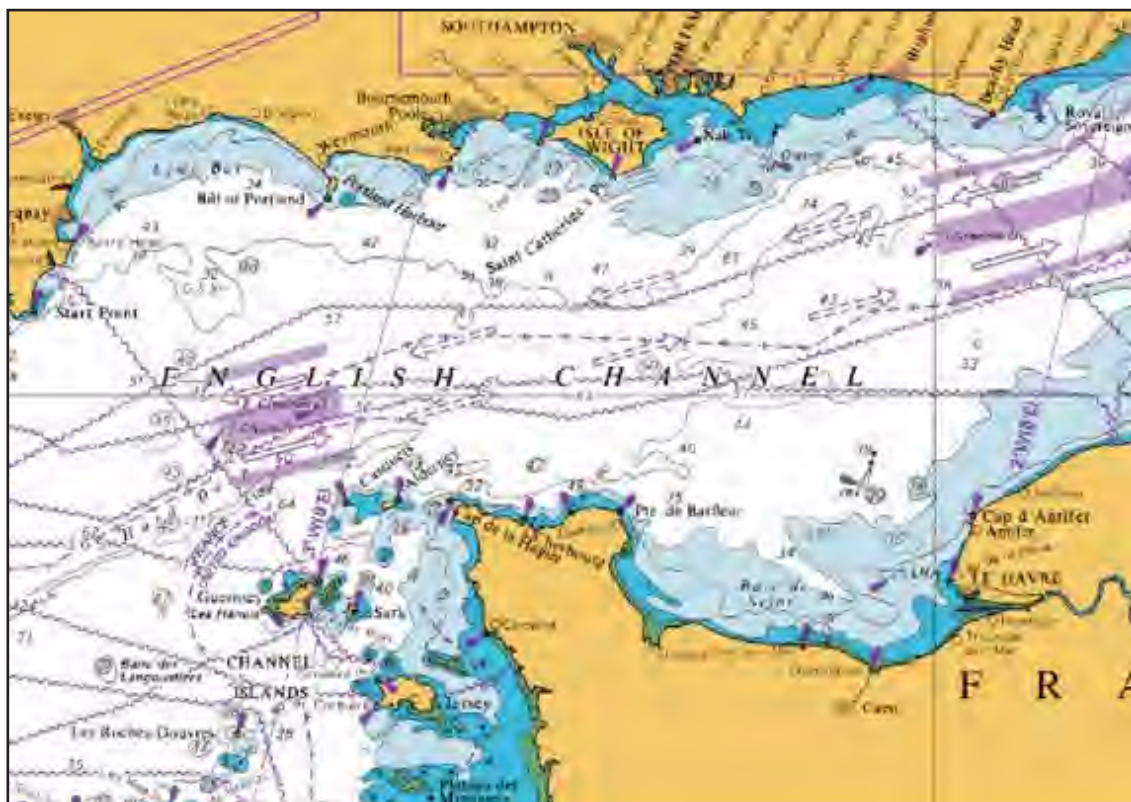
DGPS: DGPS Coverage is provided for in this area by the Flamborough; Wormleighton; North Foreland and St Catherine's transmitters.

The proposed changes within this area are:

Drillstone LB	Replace with a Type 2 Buoy (Focal Plane Height 3-5 metres)
Bawdsey South LB	Replace with a Type 2 Buoy (Focal Plane Height 3-5 metres)
Knob LB	Replace with a Type 2 Buoy (Focal Plane Height 3-5 metres)
Walker LB	Replace with a Type 2 Buoy (Focal Plane Height 3-5 metres)
Dungeness LH	Reduce Hazard Warning Signal- Range to 1nM - Required for local traffic

AIDS TO NAVIGATION 2015 - 2020

Area 11 – Shoreham to Lyme Regis



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

Within the area, Offshore Wind Farms for Round 3 may affect AtoN provision post the 2015 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.

SECTION ELEVEN | REVIEW OF TRINITY HOUSE

AREA 11

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.

TSS: There is an IMO recognized TSS off Casquets.

AtoNs provided: 10 Lights; 1 Light Vessel; 41 Buoys; 1 beacon; 6 Racons & 3 AIS

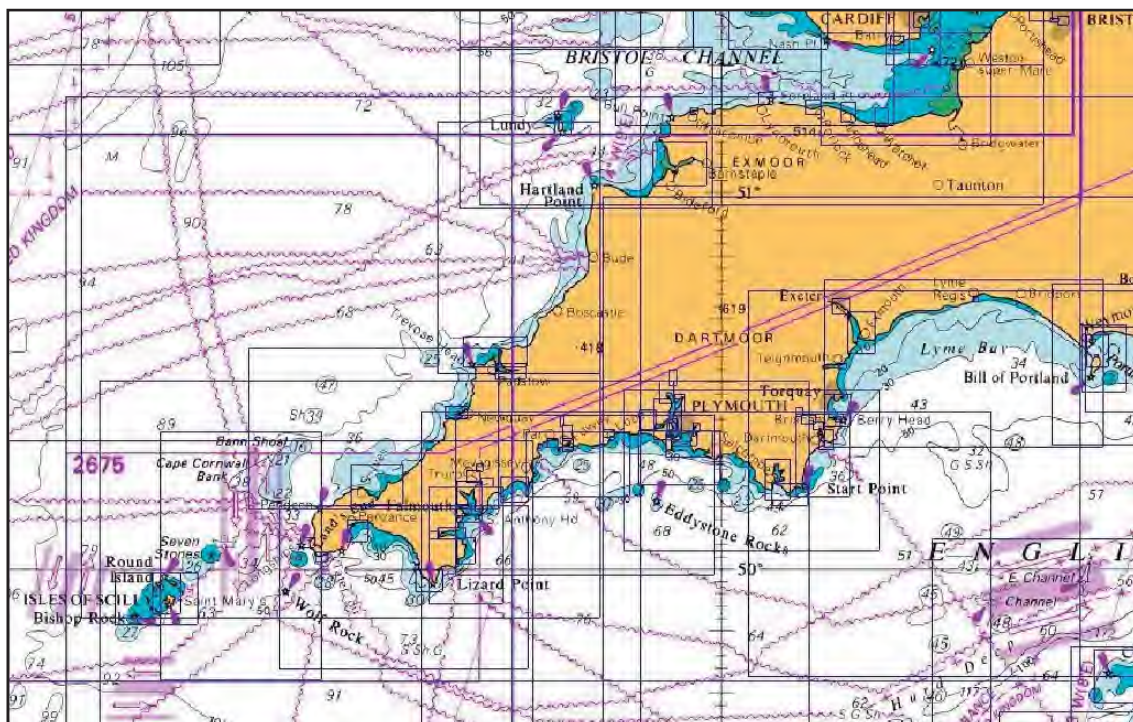
DGPS: DGPS Coverage is provided for in this area by the St Catherine's; Lizard and Nash transmitters.

The proposed changes within this area are:

Sark LH	Reduce Range to 18nM
Sark LH	Reduce Hazard Warning Signal- Range to 1nm - Required for local traffic
Hanois	Reduce Range to 18nM

AIDS TO NAVIGATION 2015 - 2020

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, there may be OREI suitable for wave and tidal energy that may affect AtoN provision post the 2015 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. Fishing and leisure craft activity is also encountered within the harbours to varying degrees.

SECTION ELEVEN | REVIEW OF TRINITY HOUSE

AREA 12

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.

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; 28 Buoys; 11 beacons; 6 Racons & 5 AIS

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:

Start Pt LH	Reduce Main Light to 18nM
Start Point LH	Review Hazard Warning Signal- Range to 1nM
Berry Head LH	Reduce to Main Light to 18nM
St Anthony LH	Reduce Main Light to 12nM
St Anthony LH	Review Hazard Warning Signal- Range to 1nM
Tater Du LH	Reduce Main Light Range to 12nM (W) 9nM (R)
Tater Du LH	Reduce Hazard Warning Signal- Range to 1nM- Required for local traffic

AIDS TO NAVIGATION 2015 - 2020

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.

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, reading 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.

SECTION ELEVEN | REVIEW OF TRINITY HOUSE

AREA 13

Within this area are the Ports of Bridgwater; Bristol; Gloucester and Sharpness; Newport; Cardiff; Barry; Port Talbot; Neath and Swansea. Vessel activity at Bridgwater may increase due to the construction 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.

TSS: There is an IMO recognized TSS off the Smalls

AtoNs provided: 18 Lights; 61 Buoys; 3 AIS & 8 Racons

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:

Bristol Channel Wreck 'S' LB	Discontinue - Sufficiently Promulgated and marked by 'N' Wreck Buoy
Scaerweather West LB	Replace with a Type 2 Buoy (Focal Plane Height 3-5 metres)
Mumbles LH	Reduce Hazard Warning Signal- Range to 1nM - Required for local traffic
St Ann's Head LH	Reduce Hazard Warning Signal- Range to 1nM - Required for local traffic

AIDS TO NAVIGATION 2015 - 2020

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, and the proposed round 1 & 2 extensions may affect AtoN provision post the 2015 review. In the future areas suitable for wave and tidal energy have also been identified.

The **Holyhead** area lies between Cardigan and the Isle of Anglesea, 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.

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.

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

AtoNs provided: 8 Lights; 1 light float; 41 Buoys; 3 beacons; 4 Racons & 2 AIS

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:

St Tudwals LH	Change light to 10nM Range LED Sector Light
Chwislen Beacon	Fit 2nmLight
Trwyn Du LH	Reduce Range to 9nM
Skerries LH Red Sector	Re-align & expand the Red Sector Light with a 10nM LED Light

12. Review of Irish Lights Areas (15 -21)

Area 15 - Fastnet to Tuskar



The Fastnet to Tuskar 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, Waterford and New Ross within the Waterford River estuary. The approaches to these ports are comparatively straightforward. However, the approaches to 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 craft 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 transatlantic traffic eastbound for the Irish Sea or Bristol Channel ports or for westbound traffic to North America.

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

SECTION TWELVE | REVIEW OF IRISH LIGHTS AREA 15

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 140nM taking vessels clear of all headlands and the Coningbeg Buoy.

OREIs: Offshore activity in the area includes the Kinsale Head Gasfields consisting of two lighted production platforms and a group of wells. There has also been an increase in navigation in the area with respect to research and supply vessels. While generally the waters are too deep for offshore renewable energy sites, an increase in renewable energies is expected.

AtoNs provided: 10 Lights, 20 Buoys, 4 Beacons, 4 Racons, 12 AIS.

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

The changes proposed for this area are as follows:

Fastnet Lighthouse	Reduce range to 18 nM (b/f from 2010 Review)
Bull Rock Beacon	Open negotiations to transfer to Cork County Council
Baltimore Beacon (Lots Wife)	Open negotiations to transfer to Baltimore Harbour Board
Galley Head Lighthouse	Reduce range to 18 nM
Old Head of Kinsale Lighthouse	Reduce range to 18 nM (b/f from 2010 Review)
Daunt Buoy	Reposition Buoy 0.1nM to the East
Roches Point Lighthouse	Reduce range to 18 nM (b/f from 2010 Review)
Pollock Buoy	Disestablish Buoy
Ballycotton Lighthouse	Reduce range to 18nM (b/f from 2010 Review)
Hook Head Lighthouse	Reduce range to 18nM (b/f from 2010 Review)

AIDS TO NAVIGATION 2015 - 2020

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 position.

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, Greystones, 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.

SECTION TWELVE | REVIEW OF IRISH LIGHTS AREA 16

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.

OREIs: Wind parks are planned for the Blackwater, Arklow, Codling, Bray and Kish banks. Oil/Gas exploration has taken place at the Codling Bank since the last review.

AtoNs provided: 4 lights, 34 Buoys, 5 Racons, 14 AIS.

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

The changes proposed for this area are as follows:

Tuskar Lighthouse	Reduce range to 18nM
Calmines, South Holdens Buoys	Sequence with Splaugh and South Long
Splaugh, South Long Buoys	Sequence with Calmines and South Holdens
North Arklow Buoy	Move the Buoy to the North pending survey results
Wicklow Head Lighthouse	Reduce range to 18nM (b/f from 2010 review)
Codling Buoy	Resurvey and reposition Buoy 2.5nM to the NE
Breaches Shoal Buoy	Resurvey Bank. Reposition Buoy pending results of survey
Moulditch Buoy	Reposition Buoy 0.2nM to the NE
Kish Lighthouse	Reduce range to 18nM

AIDS TO NAVIGATION 2015 - 2020

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 Superbuoy, 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 (Clogher Head), 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.



SECTION TWELVE | REVIEW OF IRISH LIGHTS AREA 17

With the exception of Carlingford Lough, there is virtually no safe anchorage for vessels seeking shelter from strong on-shore winds in this region.

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

OREIs: A proposal is in place for the re-activation of licences for Wind Park developments between Carlingford and St. Johns Point.

AtoNs provided: 5 lights, 7 Buoys, 2 Beacons, 1 Racon, 6 AIS.

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

The changes proposed for this area are as follows:

Taylor Rock Buoy	Reposition Buoy to the North pending results of survey
St. Johns Point Lighthouse	Reduce range to 18 nM (b/f from 2010 Review)

AIDS TO NAVIGATION 2015 - 2020

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

St. John's Point, Co. Down to Rathlin Island forms the west side of the North Channel, which carries 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 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 reefs and hazards. A new pinnacle depth of 8.0 metres has been discovered at the Rigg Bank approximately 2.2nM East of Donaghadee.

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 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 open to the East and 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.



SECTION TWELVE | REVIEW OF IRISH LIGHTS AREA 18

The main leisure ports are Ardglass, Strangford, Portaferry, Ballywalter, Portavogie, Donaghadee, Bangor and Carrickfergus.

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

OREIs: There are no OREIs in this region at this time, however there are planned developments for offshore wind parks between Strangford and Carlingford Lough.

AtoNs provided: 5 lights, 12 Buoys, 8 Beacons, 3 Racons, 10 AIS, 1 Virtual AtoN.

DGPS: DGPS coverage extends up to 50 miles off the coast from the Point Lynas and Earls Hill stations.

The changes proposed for this area are as follows:

Briggs Buoy	Change from Port hand Buoy to North Cardinal Buoy
Blackhead Antrim Lighthouse	Reduce range to 18 nM (b/f from 2010 Review)
Maidens Lighthouse	Reduce range to 18nM

AIDS TO NAVIGATION 2015 - 2020

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. There are plans to mark Cruise Ship anchorages off Rathlin Island.

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

SECTION TWELVE | REVIEW OF IRISH LIGHTS AREA 19

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.

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.

The principal commercial port in the area is Londonderry Port. The principal fishing harbours are Greencastle and Rathmullan. The principal leisure boat harbours are Rathlin Harbour, Ballycastle, Coleraine, Portrush, Portstewart, Foyle Marina, Lough Swilly and Mulroy Bay.

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

OREIs: Plans are currently in place for some exploratory drilling within this area.

AtoNs provided: 8 lights, 12 Buoys, 2 Beacons, 2 Racons, 8 AIS.

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

The changes proposed for this area are as follows:

Tuns Buoy	Survey extremity of Tuns Bank
Foyle Buoy	Establish RACON

AIDS TO NAVIGATION 2015 - 2020

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. Blacksod Bay, Clew Bay and Killary Harbour have limited protection 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 has adequate provision of Aids to Navigation but offers limited shelter.



The main commercial ports in the area are Sligo and Galway. The main fishing port in the area is Killybegs and the main leisure/tourist ports are Buncrana, Rossaveel and Killeany Bay.

SECTION TWELVE | REVIEW OF IRISH LIGHTS AREA 20

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

OREIs: There is an offshore renewable energy testsite located off Spiddal in Galway Bay. An experimental wave energy site is also in place off Eagle Island.

AtoNs provided: 19 lights, 17 Buoys, 4 Beacons, 4 Racons, 13 AIS, 1 DGPS.

DGPS: DGPS coverage extends up to 50 miles off the coast from Tory Island and Loop Head stations.

The changes proposed for this area are as follows:

Bloody Foreland Light	Open negotiations to transfer this AtoN from Donegal County Council to CIL
Aranmore Lighthouse	Reduce range to 18 nM (b/f from 2010 Review)
Rotten Island Lighthouse	Open negotiations to handover to Killybegs Harbour

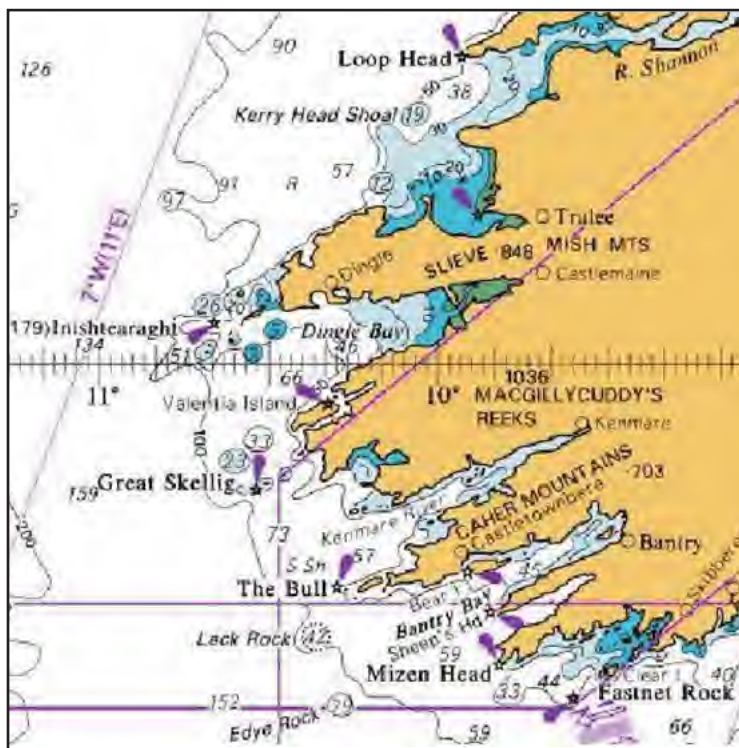
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Area 21 - Loop Head to Fastnet

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 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.

The principal commercial ports are Foynes, Limerick Docks, Aughinish and Bantry Terminal.

The principal fishing harbours are Fenit, Ventry, Dingle, Valentia and Castletownbearhaven.

The principal leisure boat harbours are Kilrush, Fenit, Ventry, Dingle Marina, Cahersiveen, Knightstown, Sneem and Bantry Bay.

SECTION TWELVE | REVIEW OF IRISH LIGHTS AREA 21

AtoNs provided: 14 lights, 15 Buoys, 4 Beacons, 3 Racons, 12 AIS, 2 DGPS.

DGPS: DGPS coverage extends up to 50 miles off the coast from the Loop Head and Mizen Head stations.

TSS: There is a TSS in operation at Fastnet.

OREIs: There are no OREIs in this region.

The changes proposed for this area are as follows:

Loop Head Lighthouse	Reduce range to 18 nM (b/f from 2010 Review)
Carrigavaddra Beacon	Disestablish Beacon and replace with East Cardinal Buoy approximately 2 Cables East of disestablished Beacon

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 (b/f from 2010 Review)
Douglas Head	Reduce to 15-18nM range on re-engineering (b/f from 2010 Review)
Point of Ayre	Reduce to 18nM range on re-engineering
Mull of Galloway	Reduce to 18nM (minimum) range on re-engineering (b/f from 2010 Review)
Corsewall	Re-engineer as a light of >18nM range
Mull of Kintyre	Re-engineer as a light of >18nM range
Davaar	Reduce to 15M range on re-engineering (b/f from 2010 Review)
Ballacash Bank	Establish West Cardinal buoy

Area 2 – Mull of Kintyre to Ardnamurchan

Skerryvore	Re-engineer as a light of >18nM range
Ardnamurchan	Reduce to 18nM range on re-engineering
Sgeir an Fheurain	Establish Starboard Hand buoy
Ferry Rocks	Replace Ferry Rocks SE buoy with East Cardinal; establish Port Hand Buoy opposite Ferry Rocks NW buoy
Cleit Rock (Luining)	Establish unlit beacon
Rinns of Islay	Reduction to 18nM in hand

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

Dunvegan	Replace with more conspicuous (longer range) light
Eilean Glas	Reduce to 18nM (minimum) range on re-engineering
Rubha Reidh	Reduce to 18M (minimum) range on re-engineering (b/f from 2010 Review)
Whale Rock South	Discontinue buoy station
Grocis Sgeir	Establish unlit beacon
Tiumpnan Head	Reduce to 18nM (minimum) range on re-engineering (b/f from 2010 Review)
Stoer Head	Reduce to 18nM (minimum) range on re-engineering (b/f from 2010 Review)

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

Noss Head	Re-engineer as 18nM light without red sector
The Riv Beacon	Light (b/f from 2005 Review).
Nun Rock	Establish Virtual AtoN
Sule Stack	Establish Virtual AtoN

Area 5 – Pentland Firth

Dunnet Head	Refurbish as 23nM light
Stroma	Reduce to 18nM (minimum) range on solarisation (b/f from 2010 Review)
Pentland Skerries	Reduce to 18nM (minimum) range on re-engineering
Stroma Skerries Beacon	Light (b/f from 2005 Review)

Area 6 – Shetland Islands

Foula	Establish red sector to East (257° - 277°)(b/f from 2010)
Fair Isle South	Reduce to 18nM (minimum) range on solarisation
Muckle Flugga	Reduce to 18nM (minimum) range on solarisation
Rova Head	Alter character from Fl(3) WRG 18s to Fl WRG 4s
Hoo Stack	Discontinue Directional light

Area 7 – Clythness to Rattray Head

No changes are proposed within this area during the period of this review.

Area 8 – Rattray Head to St Abb's Head

St Abbs Head	Reduce to 18nM (minimum) range on re-engineering
South Carr Beacon	Light as 3nM light (b/f from 2005 Review)

Area 9 - Berwick to Sizewell

Farne LH	Change to LED light to give R & W sectors Range of 8nm - when re-engineered
Longstone LH	Reduce Range to 18nm - when re-engineered
Flamborough Head	Reduce Range to 18nm - when re-engineered
Flamborough Head LH	Reduce Hazard Warning Signal- Range to 1nm - Required for local traffic
Coquet LH	Reduce Hazard Warning Signal- Range to 1nm - Required for local traffic
Lowestoft LH	Reduce Range to 18nm

AIDS TO NAVIGATION 2015 - 2020

Area 10 – Sizewell to Shoreham

Drillstone LB	Replace with a Type 2 Buoy (Focal Plane Height 3-5 metres)
Bawdsey S LB	Replace with a Type 2 Buoy (Focal Plane Height 3-5 metres)
Knob LB	Replace with a Type 2 Buoy (Focal Plane Height 3-5 metres)
Walker LB	Replace with a Type 2 Buoy (Focal Plane Height 3-5 metres)
Dungeness LH	Reduce Hazard Warning Signal- Range to 1nm - Required for local traffic

Area 11 - Shoreham to Lyme Regis

Sark LH	Reduce Range to 18nm
Sark LH	Reduce Hazard Warning Signal- Range to 1nm - Required for local traffic
Hanois	Reduce Range to 18nm

Area 12 – Lyme Regis to Bude

Start Pt Lh	Reduce Main Light to 18nm
Start Point LH	Review Hazard Warning Signal- Range to 1nm
Berry Head LH	Reduce to Main Light to 18nm
St Anthony LH	Reduce Main Light to 12nm
St Anthony LH	Review Hazard Warning Signal- Range to 1nm
Tater Du LH	Reduce Main Light Range to 12nm (W) 9nm (R)
Tater Du LH	Reduce Hazard Warning Signal- Range to 1nm - Required for local traffic

Area 13 – Bude to Cardigan

Bristol Channel Wk	
'S' LB	Discontinue - Sufficiently Promulgated and marked by 'N' Wreck Buoy
Scarweather W LB	Replace with a Type 2 Buoy (Focal Plane Height 3-5 metres)
Mumbles LH	Reduce Hazard Warning Signal- Range to 1nm - Required for local traffic
St Ann's Head LH	Reduce Hazard Warning Signal- Range to 1nm - Required for local traffic

Area 14 – Cardigan to Silloth

St Tudwals LH	Change light to 10nm Range LED Sector Light
Chwislen Beacon	Fit 2nmLight
Trwyn Du LH	Reduce Range to 9nm
Skerries LH Red Sector	Re-align & expand the Red Sector Light with a 10nm LED Light

Area 15 – Fastnet to Tuskar

Fastnet	Reduce Range to 18nM (b/f from 2010 Review)
Bull Rock	Open negotiations to transfer to Cork County Council
Baltimore Beacon (Lots Wife)	Open negotiations to transfer to Baltimore Harbour Board
Galley Head	Reduce range to 18nM
Old Head of Kinsale	
Lighthouse	Reduce range to 18nM (b/f from 2010 Review)
Daunt Buoy	Reposition Buoy 0.1nM to the East
Roches Point	Reduce range to 18nM (b/f from 2010 Review)
Pollock Buoy	Disestablish Buoy
Ballycotton	Reduce range to 18nM (b/f from 2010 Review)
Hook Head	Reduce range to 18nM (b/f from 2010 Review)

Area 16 – Tuskar to Baily

Tuskar	Reduce range to 18nM
Calmines/ South Holdens	Sequence with Splaugh and South Long
Splaugh/South Long	Sequence with Calmines/ South Holdens
North Arklow	Resurvey bank; consider moving the position of the Buoy to the North pending survey results
Wicklow Head	Reduce range to 18nM (b/f from 2010 Review)
Codling	Resurvey and reposition Buoy 2.5nM to the NE
Breaches Shoal	Resurvey Bank. Reposition Buoy pending results of survey
Moulditch	Resurvey Bank. Reposition Buoy 0.2nM to NE pending results of survey
Kish	Reduce range to 18nM

Area 17 – Baily to St Johns Point Down

Taylor Rock Buoy	Reposition Buoy to the North pending results of survey
St. John's Point	Reduce range to 18nM (b/f from 2010 Review)

Area 18 – St Johns Point Down to Rathlin Island

Briggs Buoy	Change from Port Hand Buoy to North Cardinal Buoy
Blackhead Antrim	Reduce range to 18 nM (b/f from 2010 Review)
Maidens	Reduce range to 18nM

AIDS TO NAVIGATION 2015 - 2020

Area 19 – Rathlin Island to Tory Island

Tuns Buoy	Re-survey Tuns Bank
Foyle Buoy	Establish RACON at station

Area 20 – Tory Island to Loophead

Bloody Foreland	Open negotiations to transfer this AtoN from Donegal County Council to CIL
Aranmore Lighthouse	Reduce range to 18 nM (b/f from 2010 Review)
Rotten Island	Open negotiations to transfer to Killybegs Harbour

Area 21 – Loophead to Fastnet

Loop Head Lighthouse	Reduce light to 18 nM if cost effective (b/f from 2010 Review)
Carrigavaddra Beacon	Disestablish Beacon and replace with East Cardinal Buoy approximately 2 Cables East of disestablished Beacon

14. Changes made outwith the AtoN Review Process 2010-2014

Area 1-8 Northern Lighthouse Board

2010:	McKenzie Rock buoy	Transmission of AIS as an AtoN
	Riff Bank West buoy	Reposition following survey
	Riff Bank NW buoy	Establishment of new buoy following survey
	Sgeir Volinish	Replacement of unlit beacon with lit buoy
	Barr Rock buoy	Transmission of AIS as an AtoN
	Humla buoy	Transmission of AIS as an AtoN
	North Carr buoy	Transmission of AIS as an AtoN
	Cruden Scaurs buoy	Transmission of AIS as an AtoN
2011:	Forbes Shoal buoy	Change of buoy for new ferry port
	NF2 perch	Replacement of perch with lit buoy following partial collapse
2012:	6 Harris perches	Discontinued and removed
	Brough of Birsay	Transmission of AIS as an AtoN & Virtual AtoN at North Shoal
	Flannan Isles Lt	Transmission of AIS as an AtoN
	Gearasden buoy	Establishment of new buoy following survey
2013:	Otter Gander buoy	Established at request of ferry operator
	Dubh Artach Lt	Transmission of AIS as an AtoN
	Eilean Trodday Lt	Transmission of AIS as an AtoN
	Lady Rock Lt	Transmission of AIS as an AtoN
	Inner Voder buoy	Transmission of AIS as an AtoN
	Barra Head Lt	Transmission of AIS as an AtoN
	Pentland Skerries Lt	Transmission of AIS as an AtoN
	Riff Bank East buoy	Transmission of AIS as an AtoN
	Sanda Lt	Transmission of AIS as an AtoN
	Hyskeir Lt	Transmission of AIS as an AtoN
	Bogha Nuadh buoy	Transmission of AIS as an AtoN
2014:	Skerryvore Lt	Transmission of AIS as an AtoN
	Calvay Lt	Transmission of AIS as an AtoN
	Haskeir Lt	Transmission of AIS as an AtoN
	Goat Rock buoy	Established at request of Community Council
	Flotta Grinds buoy	Transmission of AIS as an AtoN
	Rona Lt	Transmission of AIS as an AtoN
	Eilean Glas Lt	Transmission of AIS as an AtoN
	Copinsay Lt	Reduction in range
	Stroma Lt	Transmission of AIS as an AtoN
	Eilean Glas Lt	Transmission of AIS as an AtoN

Area 9-14 Trinity House Lighthouse Service

2010:	Bardsey LH	FS Discontinued
	Bristol Channel	Marked new wreck with 2 cardinal buoys
	Holm Channel	Following Surveys / Traffic analysis - 9 buoy moves/name changes/characteristic changes to better mark the channel for users

AIDS TO NAVIGATION 2015 - 2020

2011:	Round Island LH Southwold LH	Racon Discontinued Transmission of AIS as an AtoN
2012:	Northforeland LH Lizard LH Coquet LH Tater Du LH Trevoise Head LH Lundy South LH Spaniard LB Point Lynas LH Sunk East LB Sandettie LV Varne LV Greenwich LV East Goodwin LV Spit NE LB Shipwash North LB	Light Changed to NT only Light Changed to NT only Light Changed to NT and Reduced Visonly FS Discontinued FS Discontinued FS Discontinued Discontinued FS Discontinued Established New Station to mark extension to the Eastern Part of the Sunk TSS Transmission of AIS as an AtoN Transmission of AIS as an AtoN Transmission of AIS as an AtoN Transmission of AIS as an AtoN Transmission of AIS as an AtoN Transmission of AIS as an AtoN
2013:	Emsstrom Wreck Nab 1 & N2 Fishermans Gat Thames Estuary Lune Deep LB Wolf Rock LH Goodwin SW LB MPC LB Channel LV Newarp LB Outer Sand LB Sunk Centre LV Casquets LH	Marked New Wreck - Permanent Marking 4 Cardinal Buoys Synchronised & Improved Light Characteristics Following surveys; AIS traffic analysis; user consultation; and dialogue with Harbour Masters 7 Buoy Moves/1 New Buoy and Synchronised Fisherman's 1 & 2 Buoys In the Thames Estuary Marked a 16.5 metres Channel. Following surveys; AIS traffic analysis; user consultation; and dialogue with Harbour Masters: Established 5 New Stations & carried out 11 buoy moves Transmission of AIS as an AtoN Transmission of AIS as an AtoN Transmission of AIS as an AtoN Transmission of AIS as an AtoN Transmission of AIS as an AtoN Transmission of AIS as an AtoN Transmission of AIS as an AtoN Transmission of AIS as an AtoN Transmission of AIS as an AtoN
2014:	Europa Point LH Portland Bill LH Pendeen LH Foulgers Gat Woolpack Beacon Crow Rock Beacon Varne Bank Smalls LH Skerries LH Sunk Inner LV	FS Discontinued Increased red sector to 26 degrees & Moved the E Shambles buoy to the Northern edge of the Red Sector FS Discontinued Re-established Long Sand Inner & Outer buoys Established a South Cardinal 2nm Light Upgraded light to a 2nm range Established 2 Additional Type 2 Cardinal Buoys Transmission of AIS as an AtoN Transmission of AIS as an AtoN Transmission of AIS as an AtoN

SECTION FOURTEEN | CHANGES 2010 - 2014

Foxtrot 3 LV	Transmission of AIS as an AtoN
Seven Stones LV	Transmission of AIS as an AtoN
Bann Shoal LB	Transmission of AIS as an AtoN
Eddystone LH	Transmission of AIS as an AtoN
Bishop Rock LH	Transmission of AIS as an AtoN
Longstone LH	Transmission of AIS as an AtoN
St Gowan LV	Transmission of AIS as an AtoN
Breaksea LB	Transmission of AIS as an AtoN
Haisbro North LB	Transmission of AIS as an AtoN
Outer Dowsing North LB	Transmission of AIS as an AtoN
Nab LH	Transmission of AIS as an AtoN

Area 15-21 Commissioners of Irish Lights

2010:	East Maiden Lower Rosses	Alteration in character and reduction in range of light New Directional Light
2011:	Castletownbere Precision Directional Light Dundalk Pier Light Beal Bar/Doonaha Buoy	Adjustment of Sectors Reduction in range of light Changes to Buoyage
2012:	Angus Rock Lighthouse Skelligs Rock Tory Island Rathlin O’Birne Priority 1 AIS Killeany Buoy	Reduction in range of light Reduction in range of light Reduction in range of light with night time exhibition only Reduction in range of light 36x Buoys and 36x lights transmitting AIS as an Aid to Navigation as per CIL Notice to Mariners No. 10 of 2012 Repositioning of Killeany Buoy
2013:	Eagle	Dome replacement and reduction in range of navigational light
2014:	Priority 2 AIS AIS Met/Hydro Inisheer Rigg Bank Mew Island Sheep’s Head Straw Island	22x Buoys and 8x lights transmitting AIS as an Aid to Navigation as per CIL Notice to Mariners No. 05 of 2014 7x Buoys and 4x lights transmitting AIS Met/Hydro per CIL Notice to Mariners No. 05 of 2014 Reduction in range of navigational light Establishment of a Virtual Aid to Navigation Reduction in range of navigational light Reduction in range of navigational light Reduction in range of navigational light

15. 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

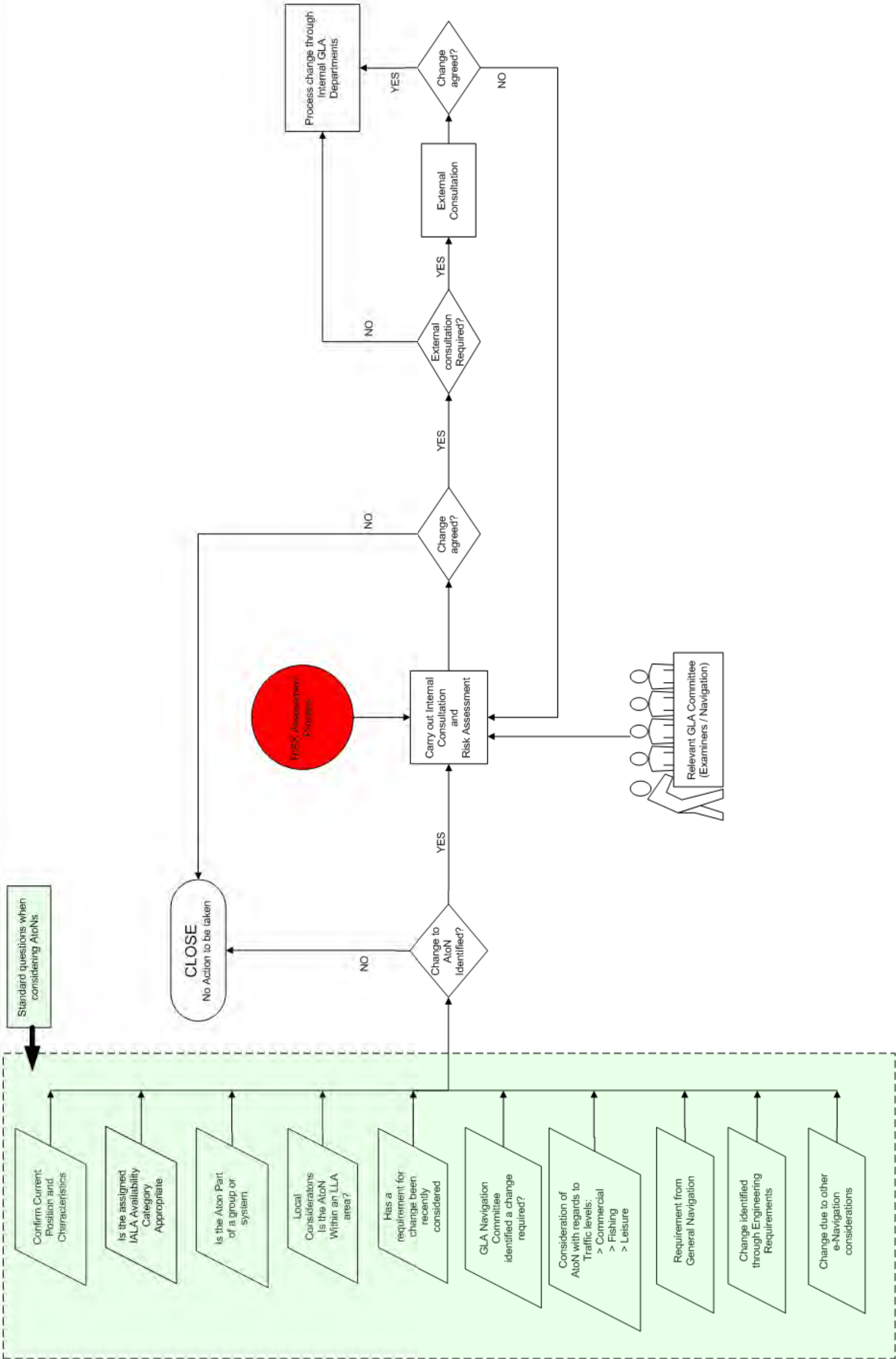
Definition of Likelihood levels

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 16 Flow Diagrams and Risk Assessment

GLAs Aid to Navigation Review Process

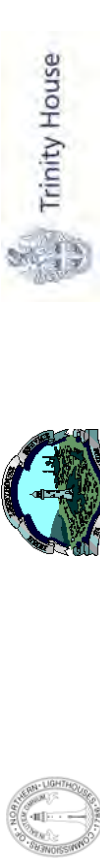


NAVIGATION RISK ASSESSMENT – To be completed for each Aid Changed		
Name of Aid to Navigation	Items Considered	
Location		
Date Considered		

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.



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

Overall Impact and Likelihood Assessment

Considerations will include but not be limited to the following:

		Considered		Record of amplifying comments against consideration number – if required
		Is the AtoN a significant part of a group of Aids which will be affected by the change?		
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		Frequeny and accuracy of hydrographic surveys		
4		Traffic Density, type, size, draft and speed.		
5		Traffic patterns to be considered in relation to conflict between routes 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 and Local Information Systems	VTS Information Service	
			Sailing Directions and Local notices to Mariners	
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		

Risk Assessment		Before Change	After Change	DECISION
IMPACT				
LIKELIHOOD				
ASSESSED RISK				

DEFINITIVE LISTS OF ALL AIDS TO NAVIGATION

Section 17 – 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	Fl(3) 30s	21				Reduce to 15nM
1	Bahama	Buoy	M F	54° 20.029' N	004° 08.585' W	VQ(6)+L.Fl 10s			2	AIS	No change considered necessary
1	Douglas Head	Light	M F	54° 08.599' N	004° 27.947' W	Fl 10s	24				Reduce to 15/18nM
1	Langness	Light	M F	54° 03.294' N	004° 37.509' W	Fl(2) 30s	12				No change considered necessary
1	Chicken Rock	Light	M F	54° 02.271' N	004° 50.315' W	Fl 5s	21			Racon	No change considered necessary
1	Thousla Rock	Light	L	54° 03.728' N	004° 48.042' W	Fl R 3s	4				No change considered necessary
1	Point of Ayre	Light	M F L	54° 24.959' N	004° 22.111' W	Fl(4)W 20s	19			Racon	Reduce to 18nM
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	Ballacash Bank	Buoy	M						2		Establish buoy
1	Hestan Island	Light	F L	54° 49.973' N	003° 48.581' W	Fl(2) 10s	9				No change considered necessary
1	Little Ross	Light	F L	54° 45.944' N	004° 05.096' W	Fl 5s	12				No change considered necessary
1	Little Ross Beacon	Leading Light	F L	54° 46.064' N	004° 05.020' W	Fl(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	Fl 20s	28				Reduce to 18NM
1	Crammag Head	Light	M L	54° 39.910' N	004° 57.903' W	Fl 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	Fl(5) 30s	22			AIS	Re-engineer as >18nM
1	Spit of Scaur	Buoy	M F L	54° 57.102' N	005° 01.472' W	Fl G 6s	4		2		No change considered necessary
1	Lock Ryan	Light	M L	54° 58.467' N	005° 01.845' W	Fl(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° 59.539' N	005° 02.960' W	Fl(2) 5s			2		No change considered necessary
1	Millieur 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	Fl W 4s	17				No change considered necessary
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	Fl W 15s	12				No change considered necessary
1	Lady Isle	Light	M F L	55° 31.632' N	004° 44.047' W	Fl 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	Fl R 6s			2		No change considered necessary
1	Fullarton Rock	Buoy	M F L	55° 30.647' N	005° 04.576' W	Fl(2) R 12s			3		No change considered necessary
1	Holy Island (Inner)	Light	M L	55° 30.736' N	005° 04.211' W	Fl G 3s	6				No change considered necessary
1	Holy Island (Outer)	Light	M L	55° 31.042' N	005° 03.653' W	Fl(2) 20s	18				No change considered necessary
1	Pladda	Light	M F L	55° 25.512' N	005° 07.113' W	Fl(3) 30s	17				No change considered necessary
1	Iron Rock Ledges	Buoy	M F L	55° 26.839' N	005° 18.854' W	Fl G 6s			2		No change considered necessary
1	Crubon Rock	Buoy	F	55° 34.476' N	005° 27.092' W	Fl(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	Davaar	Light	M F L	55° 25.688' N	005° 32.428' W	Fl(2) 10s	23				Reduce to 15nM
1	Arranman's Barrels	Buoy	M F L	55° 19.415' N	005° 32.877' W	Fl(2) R 12s			2		No change considered necessary
1	Macosh Rock	Buoy	M F L	55° 17.947' N	005° 36.993' W	Fl 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	AIS	No change considered necessary
1	Sanda	Light	M F L	55° 16.508' N	005° 34.980' W	Fl 10s	15			AIS	No change considered necessary
1	Mull of Kintyre	Light	M F L	55° 18.626' N	005° 48.208' W	Fl(2) 20s	24				Re-engineer as >18nM
2	Gigalum Rocks	Buoy	M F L	55° 39.202' N	005° 43.698' W	Q(9) 15s			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
2	Sgeir Gigalum	Buoy	M F L	55° 39.973' N	005° 42.669' W	Fl G 6s	4		2		No change considered necessary
2	Sgeir Nuadh	Buoy	M F L	55° 41.781' N	005° 42.059' W	Fl R 6s			2		No change considered necessary
2	Badh Rock	Buoy	M F L	55° 42.301' N	005° 41.224' W	Fl(2) G 12s			2		No change considered necessary
2	Gamhna Gigha	Light	M L	55° 43.778' N	005° 41.075' W	Fl(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	Rinn of Islay	Light	M L	55° 40.390' N	006° 30.812' W	Fl W 5s	24				Reduce to 18nM
2	Loch Indaal	Sector Light	M L	55° 44.690' N	006° 22.344' W	Fl(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.Fl 15s			2		No change considered necessary
2	Otter Gander	Buoy	M F L	55° 36.600' N	006° 12.340' W	VQ(3) 5s			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 Light	M L	55° 37.218' N	006° 12.707' W	Fl WRG 3s	W8, R6, G6				No change considered necessary
2	Eileana Chuirn	Light	M L	55° 40.129' N	006° 01.210' W	Fl(3) 18s	8				No change considered necessary
2	McArthur's head	Sector Light	M L	55° 45.831' N	006° 02.865' W	Fl(2) WR 10s	W13, R10				No change considered necessary
2	Black Rocks	Buoy	M F L	55° 47.504' N	006° 04.093' W	Fl G 6s			2		No change considered necessary
2	Carragh Mhor	Sector Light	M L	55° 50.423' N	006° 06.109' W	Fl(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	Fl 3s	W9				No change considered necessary
2	Ruvaal (Rubh' A'Mhail)	Sector Light	M L	55° 56.181' N	006° 07.409' W	Fl(3)W 15s	19				No change considered necessary
2	Na Cuiltean	Light	M L	55° 48.642' N	005° 54.891' W	Fl W 10s	9				No change considered necessary
2	Goat Rock	Buoy	M L	55° 50.126' N	005° 55.670' W	VQ(3) 5s					No change considered necessary
2	Small Isles	Light	L	55° 49.977' N	005° 56.428' W	Fl R 6s	5				No change considered necessary
2	Eilean Nan Gabhar	Light	M L	55° 50.039' N	005° 56.242' W	Fl 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	Fl 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	Fl W 6s	8				No change considered necessary
2	Reisa An T-Sruith	Light	M L	56° 07.776' N	005° 38.907' W	Fl(2)W 12s	7				No change considered necessary
2	Ardluing	Buoy	L	56° 11.017' N	005° 38.481' W	Fl(2) G 6s			3		No change considered necessary
2	Scalasaig	Sector Light	M L	56° 04.007' N	006° 10.897' W	Fl(2)WR 10s	W8, R6				No change considered necessary
2	The Garvellachs	Light	M L	56° 13.040' N	005° 49.056' W	Fl 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	Fl WRG 6s	W6, R4, G4			Racon	No change considered necessary
2	Fladda	Sector Light	M L	56° 14.897' N	005° 40.830' W	Fl(2)WRG 9s	W11, R9, G9				No change considered necessary
2	Cleit Rock	Beacon (Unlighted)	F L	56° 15.774' N	005° 37.426' W						Re-establish unlit beacon
2	Bogha Ghair	Buoy	M L	56° 16.490' N	005° 40.500' W	Fl (4) R 12s			2		No change considered necessary
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.Fl 15s			2	AIS	No change considered necessary
2	Dubh Sgeir (Kerrera)	Light	M L	56° 22.814' N	005° 32.264' W	Fl(2)W 12s	5				No change considered necessary
2	Sgeir an Fheurain	Buoy	M F L								Establish Starboard Hand buoy
2	Little Horseshoe	Buoy	M L	56° 23.221' N	005° 31.829' W	Fl(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	Kerrera	Buoy	M F L								Establish Port Hand buoy
2	Ferry Rocks SE	Buoy	L	56° 23.996' N	005° 30.529' W	Fl R 5s			3		Change to East Cardinal
2	Ardbhan	Buoy	M L	56° 24.185' N	005° 30.388' W	Fl 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					No change considered necessary
2	Sgeir Rathaid South	Buoy	M F L	56° 24.747' N	005° 29.367' W	Q(6)+L.Fl 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				No change considered necessary
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	Fl(2)WRG 6s	W8, R6, G6				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	North Spit Of Kerrera	Light	MFL	56° 25.489' N	005° 29.561' W	Fl R 3s	5				No change considered necessary
2	Duart Point	Sector Light	MFL	56° 26.835' N	005° 38.767' W	Fl(3)WR 18s	W5, R3				No change considered necessary
2	Lady Rock	Light	MFL	56° 26.908' N	005° 37.040' W	Fl 6s	5			AIS	No change considered necessary
2	Lismore	Light	MFL	56° 27.333' N	005° 36.449' W	Fl 10s	17				No change considered necessary
2	Branra Rock	Light	ML	56° 32.028' N	005° 26.603' W	Fl(2) 10s	5				No change considered necessary
2	Appin Point	Buoy	MFL	56° 32.690' N	005° 25.968' W	Fl G 6s			2		No change considered necessary
2	Sgeir Bhuidhe	Sector Light	ML	56° 33.646' N	005° 24.648' W	Fl(2) WR 7s	9				No change considered necessary
2	Culchenna Spit	Buoy	MFL	56° 41.171' N	005° 15.724' W	Fl G 6s			2		No change considered necessary
2	Eilean Na Creiche	Buoy	MFL	56° 50.396' N	005° 07.380' W	Fl R 3s	4		2		No change considered necessary
2	Corpach	Buoy	M	56° 50.293' N	005° 07.011' W	Fl R 6s			2		No change considered necessary
2	Gearasden	Buoy	M	56° 50.250' N	005° 07.021' W	Fl(2) 5s			2		No change considered necessary
2	Maclean Rock	Buoy	MFL	56° 49.804' N	005° 07.038' W	Fl(2) R 12s	4		2		No change considered necessary
2	Lochy Flat South	Buoy	MFL	56° 49.538' N	005° 07.023' W	Q G			2		No change considered necessary
2	Corran Narrows NE	Light	ML	56° 43.616' N	005° 13.900' W	Fl W 5s	4				No change considered necessary
2	Corran Shoal	Buoy	MFL	56° 43.690' N	005° 14.390' W	Q R			2		No change considered necessary
2	Corran Point	Sector Light	ML	56° 43.253' N	005° 14.539' W	Iso WRG 4s	W10, R7,G7				No change considered necessary
2	Corran Flat	Buoy	ML	56° 42.859' N	005° 14.933' W	Fl(4) R 10s			3		No change considered necessary
2	Clovulin Spit	Buoy	MFL	56° 42.290' N	005° 15.558' W	Fl(2) R 15s			2		No change considered necessary
2	Sallachan Point	Beacon (Unlighted)	ML	56° 42.047' N	005° 17.007' W						No change considered necessary
2	Grey Rocks	Light	ML	56° 29.790' N	005° 42.828' W	Fl W 3s	6				No change considered necessary
2	Inninmore Bay	Buoy	M	56° 30.363' N	005° 43.465' W	Q			2	AIS	No change considered necessary
2	Yule Rock	Buoy	L	56° 30.016' N	005° 43.958' W	Fl R 15s			3		No change considered necessary
2	Ardtornish	Sector Light	MFL	56° 31.092' N	005° 45.214' W	Fl (2)WRG 10s	W8, R6, G6				No change considered necessary
2	Avon Rock	Buoy	ML	56° 30.790' N	005° 46.798' W	Fl(4) R 10s			3		No change considered necessary
2	Fuinary Spit	Buoy	MFL	56° 32.661' N	005° 53.162' W	Fl G 6s			2		No change considered necessary
2	Green Island	Light	ML	56° 32.261' N	005° 54.790' W	Fl W 6s	8				No change considered necessary
2	Hispania Wreck	Buoy	MFL	56° 34.958' N	005° 59.120' W	Fl(2) R 10s			2		No change considered necessary
2	Bogha Bhuilg	Buoy	ML	56° 36.131' N	005° 59.134' W	Fl G 5s			2		No change considered necessary
2	Little Stirk	Buoy	ML	56° 38.515' N	006° 01.517' W	Q(6) + LFl 15s			2		No change considered necessary
2	Rubha Nan Gall	Light	ML	56° 38.232' N	006° 03.969' W	Fl W 3s	15				No change considered necessary
2	New Rocks	Buoy	MFL	56° 39.053' N	006° 03.299' W	Fl G 6s	4		2	AIS	No change considered necessary
2	Ardmore	Light	ML	56° 39.370' N	006° 07.698' W	Fl(2) 10s	13				No change considered necessary
2	Bunessan	Sector Light	L	56° 20.566' N	006° 16.377' W	Fl WR 6s	W8, R6				No change considered necessary
2	Bogha Hun A Chuhoil	Buoy	ML	56° 16.630' N	006° 24.970' W	Q(6) + LFl 15s			2		No change considered necessary
2	Iona Bank South	Buoy	MFL	56° 19.448' N	006° 23.120' W	Q(6)+L.Fl 15			2		No change considered necessary
2	Bo Na Sliganach	Buoy	L	56° 19.343' N	006° 22.955' W	Fl(2) G 6s			2		No change considered necessary
2	Bogha Cholita	Buoy	L	56° 18.586' N	006° 23.429' W	Fl G 5s			2		No change considered necessary
2	Bogha Nan Ramfhear	Buoy	ML	56° 15.700' N	006° 20.370' W	Q			2		No change considered necessary
2	Dubh Artach	Light	ML	56° 07.946' N	006° 38.079' W	Fl(2) 30s	20			AIS	No change considered necessary
2	Skerryvore	Light	ML	56° 19.381' N	007° 06.865' W	Fl W 10s	23			Racon, AIS	Re-engineer as >18nM
2	Scarinish	Light	ML	56° 30.015' N	006° 48.266' W	Fl W 3s	12				No change considered necessary
2	Plocaid Bo	Buoy	MFL	56° 33.232' N	006° 43.998' W	Fl G 4s			2		No change considered necessary
2	Roan Bogha	Buoy	MFL	56° 32.256' N	006° 40.164' W	Q(6)+LFl W 15s	5		2		No change considered necessary
2	Cairn Na Burgh More	Light	ML	56° 31.046' N	006° 22.956' W	Fl(3) W 15s	8				No change considered necessary
2	Chieftain Rock	Buoy	MFL	56° 36.650' N	006° 30.900' W	Fl G 6s			2		No change considered necessary
2	Cairn Of Coll	Light	ML	56° 42.264' N	006° 26.729' W	Fl 12s	10				No change considered necessary
2	Ardnamurchan	Light	MFL	56° 43.630' N	006° 13.567' W	Fl(2) 20s	24			AIS	Reduce to 18nM
3	Bo Faskadale	Buoy	MFL	56° 48.177' N	006° 06.370' W	Fl(3)G 18s	4		2	AIS	No change considered necessary
3	Eigg	Light	ML	56° 52.261' N	006° 07.289' W	Fl W 6s	8				No change considered necessary
3	Hyskeir	Light	MFL	56° 58.139' N	006° 40.851' W	Fl(3) 30s	24			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
3	Humla	Buoy	MFL	57° 00.439' N	006° 37.338' W	Fl G 6s	4		2	AIS	No change considered necessary
3	Canna	Light	ML	57° 02.819' N	006° 28.002' W	Fl 10s	9				No change considered necessary
3	Ardtreck	Light	ML	57° 20.384' N	006° 25.859' W	Fl 6s	9				No change considered necessary
3	Neist Point	Light	MFL	57° 25.401' N	006° 47.337' W	Fl 5s	16			AIS	No change considered necessary
3	Bo Na Famachd	Buoy	L	57° 26.796' N	006° 35.859' W	Fl G 5s			2		No change considered necessary
3	Dunvegan	Sector Light	ML	57° 26.826' N	006° 36.594' W	Fl WRG 3s	W7, R5, G5				Improve Sector light conspicuity by increasing nominal range
3	Vaternish	Light	MFL	57° 36.484' N	006° 38.049' W	Fl 20s	8				No change considered necessary
3	Eilean Trodday	Sector Light	MF	57° 43.627' N	006° 17.919' W	Fl(2) WRG 10s	W12, R9, G9			AIS	No change considered necessary
3	Comet Rock	Buoy	MFL	57° 44.575' N	006° 20.586' W	Fl R 6s	4		2	AIS	No change considered necessary
3	Eugenie Rock	Buoy	MFL	57° 46.489' N	006° 27.324' W	Q(6)+L.Fl 15s			2		No change considered necessary
3	Sgeir Nam Maol	Beacon (Unlighted)	MFL	57° 44.863' N	006° 22.760' W						No change considered necessary
3	An T-Iasgair	Light	MFL	57° 41.112' N	006° 26.009' W	Fl W 6s	9				No change considered necessary
3	St. Kilda	AIS	MFL	56° 39.053' N	006° 03.299' W						No change considered necessary
3	Gasker	Light	MFL	57° 59.053' N	007° 17.224' W	Fl(3)10s	10				No change considered necessary
3	Whale Rock South	Buoy	nil	57° 54.243' N	008° 00.673' W	Q(6)lFl 15s	5		2		Discontinue
3	Whale Rock	Buoy	MF	57° 54.378' N	007° 59.968' W	Q(3)10s	5		1	Racon, AIS	No change considered necessary
3	Flannan Islands	Light	MFL	58° 17.294' N	007° 35.394' W	Fl(2)30s	20			AIS	No change considered necessary
3	Monach Isles	Light	MFL	57° 31.549' N	007° 41.763' W	Fl(2)15s	18				No change considered necessary
3	Haskeir	Light	MFL	57° 41.983' N	007° 41.738' W	Fl 20s	23			Racon	No change considered necessary
3	Fiaray Beacon (W)	Beacon (Unlighted)	FL	57° 04.036' N	007° 26.571' W						No change considered necessary
3	Fiaray Beacon (E)	Beacon (Unlighted)	FL	57° 04.029' N	007° 26.339' W						No change considered necessary
3	Barra Head	Light	MFL	56° 47.128' N	007° 39.220' W	Fl 15s	18			AIS	No change considered necessary
3	Sgeir Na Treanne	Buoy	MFL	56° 56.501' N	007° 29.677' W	Fl R 3s			2		No change considered necessary
3	Castlebay Inner	Buoy	MFL	56° 56.528' N	007° 29.352' W	Fl G 3s	4		2		No change considered necessary
3	Sgeir A Scape	Buoy	MFL	56° 56.264' N	007° 27.269' W	Fl(2) G 8s			2		No change considered necessary
3	Castlebay South	Buoy	MFL	56° 56.091' N	007° 27.210' W	Fl(2)R 8s	4		2	Racon	No change considered necessary
3	Bo-Vich-Chuan	Buoy	MFL	56° 56.157' N	007° 23.306' W	Q(6)+L.Fl 15s	4		2	Racon	No change considered necessary
3	Rubh Glas Rear	Light	MFL	56° 56.875' N	007° 31.048' W	F Bu	6				No change considered necessary
3	Rubh Glas Front	Light	MFL	56° 56.770' N	007° 30.636' W	F Bu	6				No change considered necessary
3	Sgeir Liath	Beacon (Unlighted)	MFL	56° 56.638' N	007° 30.769' W						No change considered necessary
3	Channel Rock	Sector Light	MFL	56° 56.238' N	007° 28.925' W	Fl WR 6s	W6, R4				No change considered necessary
3	Dubh Sgeir (Castlebay)	Light	MFL	56° 56.409' N	007° 28.920' W	Q(3)G 6s	5				No change considered necessary
3	Curachan	Buoy	MFL	56° 58.587' N	007° 20.485' W	Q(3) 10s			2		No change considered necessary
3	Grianaumul	Buoy	MFL	57° 01.567' N	007° 23.347' W	Q(9) 15s			3		No change considered necessary
3	Sgeir Meal Na Hoe	Buoy	MFL	57° 02.029' N	007° 22.119' W	VQ(3) 5s			3		No change considered necessary
3	Bo Tanna	Buoy	MFL	57° 03.077' N	007° 20.043' W	Q(3) 10s			2		No change considered necessary
3	Drover Rock	Buoy	FL	57° 04.100' N	007° 23.600' W	Q(6)&L.Fl 15s			2		No change considered necessary
3	Binch Rock	Buoy	ML	57° 01.721' N	007° 17.163' W	Q(6)+L.Fl 15s			2		No change considered necessary
3	Sgor Rock	Buoy	MFL	57° 09.087' N	007° 17.759' W	Fl G 3s	4		2		No change considered necessary
3	Gasay Island	Sector Light	MFL	57° 08.929' N	007° 17.387' W	Fl WR 5s	W7, R4				No change considered necessary
3	Calvay	Sector Light	MFL	57° 08.530' N	007° 15.377' W	Fl(2)WRG 10s	W7, R4, G4				No change considered necessary
3	Mckenzie Rock	Buoy	MFL	57° 08.246' N	007° 13.715' W	Fl(3) R 15s	4		2	AIS	No change considered necessary
3	Ushenish	Sector Light	MFL	57° 17.895' N	007° 11.580' W	Fl WR 20s	W19, R15				No change considered necessary
3	Weavers Point	Light	MFL	57° 36.493' N	007° 06.001' W	Fl 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	Fl R 3s			3		No change considered necessary
3	Drowning Rock	Light	FL	57° 42.490' N	007° 09.325' W	Fl(2) G 8s	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
3	McCaskill Rock	Buoy	F L	57° 42.299' N	007° 09.388' W	Fl 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
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	Fl G 3s			4		No change considered necessary
3	NF6	Buoy	M F L	57° 41.552' N	007° 07.866' W	Fl R 5s			3		No change considered necessary
3	NF5	Buoy	M F L	57° 41.520' N	007° 07.591' W	Fl(2)G 8s			3		No change considered necessary
3	NF1	Buoy	M F L	57° 41.600' N	007° 04.514' W	Fl(2)G 4s			3		No change considered necessary
3	NF2	Buoy	M F L	57° 41.430' N	007° 06.819' W	Fl R 10s					No change considered necessary
3	Bhrusda	Buoy	M F L	57° 41.460' N	007° 05.570' W	Fl R 2s			3		No change considered necessary
3	Sgeir An Iaruin	Buoy	M F L	57° 41.478' N	007° 05.000' W	Fl G 5s			3		No change considered necessary
3	Narstay	Light	M F L	57° 41.370' N	007° 04.779' W	Fl(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	Fl R 3s	2				No change considered necessary
3	Cabbage North	Light	M F L	57° 41.996' N	007° 04.317' W	Fl W 5s	3				No change considered necessary
3	Cabbage	Buoy	M F L	57° 42.130' N	007° 03.960' W	Fl(2)R 6s			2	Racon	No change considered necessary
3	L1	Buoy	M	57° 42.604' N	007° 03.205' W	Fl(2)G 5s			3		No change considered necessary
3	Sgeir Chruaidh	Light	M	57° 42.709' N	007° 02.873' W	Fl R 5s	2				No change considered necessary
3	L2	Light	M	57° 42.672' N	007° 02.265' W	Fl(2)R 10s	3				No change considered necessary
3	L4	Buoy	M	57° 42.700' N	007° 01.540' W	Fl R 2s			3		No change considered necessary
3	L2a	Light	M	57° 42.882' N	007° 02.246' W	Fl R 8s	2				No change considered necessary
3	Grocis Sgeir	Beacon (Unlighted)	M	57° 44.187' N	007° 01.638' W						Establish unlit beacon
3	Grocis North	Buoy	M	57° 44.374' N	007° 01.534' W	Fl R 8s			3		No change considered necessary
3	Mile Sgeir	Buoy	M	57° 44.150' N	007° 01.377' W	Fl G 5s			4		No change considered necessary
3	Cope Passage. No.4	Buoy	M F L	57° 41.760' N	007° 03.632' W	Fl R 5s			3		No change considered necessary
3	Cope Passage. No.3	Buoy	M F L	57° 41.863' N	007° 03.443' W	Fl 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	Colasgeir	Buoy	M F L	57° 47.281' N	007° 06.058' W	Fl(2) R 8s			2		No change considered necessary
3	Red Rock	Light	M F L	57° 46.955' N	007° 04.475' W	Fl WRG 6s	6				No change considered necessary
3	Sgeir Volinish	Buoy	F L	57° 46.680' N	007° 03.584' W	Q					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	Fl R 3s			2		No change considered necessary
3	Bo Quidam	Buoy	M F L	57° 46.307' N	007° 03.745' W	Fl 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)+LFl 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	Fl G 3s			4		No change considered necessary
3	Stumbles Rock	Buoy	M F L	57° 45.128' N	007° 01.794' W	Fl(2)R 10s	4		2	AIS	No change considered necessary
3	NW Rodel Rocks	Buoy	M	57° 43.202' N	007° 02.035' W	Fl G 8s			3		No change considered necessary
3	Sgeir Griadach	Buoy	M L	57° 50.361' N	006° 41.366' W	Q(6)+LFl W 15s	5		2		No change considered necessary
3	Sgeir Inoe	Buoy	M F L	57° 50.944' N	006° 33.949' W	Fl G 6s	2		2	Racon	No change considered necessary
3	Eilean Glas	Light	M F L	57° 51.413' N	006° 38.515' W	Fl(3) W 20s	23			Racon, AIS	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	Fl W 5s	11				No change considered necessary
3	Milaid Point	Light	M F L	58° 01.091' N	006° 22.019' W	Fl 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.Fl 15s			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
3	Tiumpán Head	Light	M F L	58° 15.677' N	006° 08.271' W	Fl(2)W 15s	25				Reduce to 18nM
3	Butt Of Lewis	Light	M F	58° 30.940' N	006° 15.717' W	Fl W 5s	25			DGPS, AIS	No change considered necessary
3	Sleat Point	Light	M F L	57° 01.094' N	006° 01.084' W	Fl W 3s	9				No change considered necessary
3	Ornsay	Light	M F L	57° 08.602' N	005° 46.869' W	Oc W 8s	12				No change considered necessary
3	Ornsay Beacon	Light	M F L	57° 09.087' N	005° 46.944' W	Fl R 6s	4				No change considered necessary
3	Sgeir Ulìbhe	Beacon (Unlighted)	F L	57° 08.254' N	005° 40.580' W						No change considered necessary
3	Sandaig	Light	M F L	57° 10.051' N	005° 42.288' W	Fl W 6s	8				No change considered necessary
3	Kyle Rhea	Sector Light	M F L	57° 14.225' N	005° 39.929' W	Fl 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	Fl(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	Raconon Rock	Buoy	M L	57° 16.159' N	005° 35.308' W	Fl G 5s			3		No change considered necessary
3	Eight Metre Rock	Light	M F L	57° 16.599' N	005° 42.689' W	Fl G 6s	4				No change considered necessary
3	Eileanan Dubha	Light	M F L	57° 16.559' N	005° 42.321' W	Fl(2)W 10s	8				No change considered necessary
3	String Rock	Buoy	M F L	57° 16.490' N	005° 42.888' W	Fl R 6s	4		2		No change considered necessary
3	Fork Rocks	Buoy	M F L	57° 16.839' N	005° 44.940' W	Fl G 6s	4		2		No change considered necessary
3	Black Eye	Buoy	M F	57° 16.708' N	005° 45.308' W	Fl R 6s	4		2		No change considered necessary
3	Carrach Rock	Buoy	M F L	57° 17.181' N	005° 45.361' W	Fl(2) G 12s	4		2	Racon	No change considered necessary
3	Bow Rock	Buoy	M F	57° 16.766' N	005° 45.923' W	Fl(2)R 12s	4		2	AIS	No change considered necessary
3	Sgeir Gobhlach, Pabbay	Light	M F L	57° 15.687' N	005° 52.255' W	Fl(3) 10s	3				No change considered necessary
3	Bogha Dubh Sgeir	Light	F L	57° 20.925' N	005° 37.854' W	Fl(2) R 6s	2				No change considered necessary
3	Sgeir Golach	Light	F L	57° 21.196' N	005° 39.015' W	Fl 10s	3				No change considered necessary
3	Crowlin	Light	M F L	57° 21.216' N	005° 51.388' W	Fl W 6s	6				No change considered necessary
3	Gulnare	Buoy	L	57° 19.151' N	005° 55.876' W	Fl G 5s			3		No change considered necessary
3	Sgeir Thraid	Light	M F L	57° 19.821' N	005° 56.501' W	Q					No change considered necessary
3	Eyre Point	Sector Light	M F L	57° 20.010' N	006° 01.294' W	Fl WR 3s	W9, R6				No change considered necessary
3	Jackal Rock	Buoy	M F	57° 20.342' N	006° 04.766' W	Fl G 5s			2		No change considered necessary
3	Penfold Rock	Buoy	M F	57° 20.632' N	006° 05.536' W	Fl R 5s			2		No change considered necessary
3	Macmillan Rock	Buoy	F L	57° 21.115' N	006° 06.303' W	Fl(2) G 12s	4		2		No change considered necessary
3	Rona	Light	M F L	57° 34.684' N	005° 57.547' W	Fl W 12s	19				No change considered necessary
3	Na Gannachain	Buoy	M F	57° 35.890' N	005° 57.714' W	Q			2		No change considered necessary
3	Rubha Reidh	Light	M F L	57° 51.527' N	005° 48.713' W	Fl(4) 15s	24			AIS	Reduce to 18NM
3	Cailleach Head	Light	M F L	57° 55.819' N	005° 24.224' W	Fl(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	Fl W 15s	24				Reduce to 18nM
3	Cape Wrath	Light	M F L	58° 37.538' N	004° 59.952' W	Fl(4) 30s	22			AIS	No change considered necessary
4	Nun Rock	AIS (Virtual)	M F								Establish Virtual AIS
4	Loch Eriboll	Sector Light	M F	58° 31.008' N	004° 38.907' W	Fl WR 10s	W13, R12				No change considered necessary
4	Sula Sgeir	Light	M F	59° 05.614' N	006° 09.567' W	Fl W 15s	11				No change considered necessary
4	North Rona	Light	M F	59° 07.276' N	005° 48.902' W	Fl(3)W 20s	22			AIS	No change considered necessary
4	Sule Skerry	Light	M F	59° 05.099' N	004° 24.356' W	Fl(2)W 15s	21			Racon, AIS	No change considered necessary
4	Sule Stack	AIS (Virtual)	M F								Establish Virtual AIS
4	North Shoal	AIS (Virtual)	M F	59° 13.450' N	003° 34.990' W						No change considered necessary
4	Noup Head	Light	M F	59° 19.865' N	003° 04.235' W	Fl 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	Calif Of Eday	Sector Light	M L	59° 14.214' N	002° 45.820' W	Fl(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	Fl W 10s	24			Racon	No change considered necessary
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	Fl G 5s			2		No change considered necessary
4	Start Point	Light	M F L	59° 16.638' N	002° 22.577' W	Fl(2) 20s	19				No change considered necessary
4	Papa Stronsay	Light	F L	59° 09.349' N	002° 34.915' W	Fl(4) 20s	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
4	Quai Bow	Buoy	L	59° 09.831' N	002° 36.309' W	Fl(2) R 12s			2		No change considered necessary
4	Brough Of Birsay	Light	M FL	59° 08.214' N	003° 20.363' W	Fl(3) W 25s	18			AIS	No change considered necessary
4	Egilsay Graand	Buoy	M FL	59° 06.878' N	002° 54.417' W	Q(6)+L.Fl 15s			2		No change considered necessary
4	Galt Skerry	Buoy	M FL	59° 05.220' N	002° 54.195' W	Q			2		No change considered necessary
4	Skertours	Buoy	M FL	59° 04.124' N	002° 56.716' W	Q	5		2		No change considered necessary
4	Seal Skerry	Light	L	59° 03.999' N	002° 59.289' W	Fl R 3s	3				No change considered necessary
4	Boray Skerries	Buoy	M FL	59° 03.663' N	002° 57.657' W	Q(6)+LFl 15s	5		2		No change considered necessary
4	Vasa Skerry	Beacon (Unlighted)	M FL	59° 02.993' N	002° 55.816' W						No change considered necessary
4	Linga Skerry	Buoy	M FL	59° 02.394' N	002° 57.560' W	Q(3)W 10s	5		2		No change considered necessary
4	Auskerry	Light	M FL	59° 01.557' N	002° 34.367' W	Fl W 20s	18				No change considered necessary
4	Copinsay	Light	M FL	58° 53.784' N	002° 40.349' W	Fl(5)W 30s	14				No change considered necessary
4	Peter Skerry	Buoy	M FL	58° 55.259' N	003° 13.520' W	Fl G 6s			2		No change considered necessary
4	Riddock Shoal	Buoy	M FL	58° 56.419' N	003° 15.003' W	Fl(2)R 12s	4		2		No change considered necessary
4	Sand Eel	Buoy	M FL	58° 56.420' N	003° 15.530' W	Q(3) W 10s			2		No change considered necessary
4	Barr Rock	Buoy	M FL	58° 56.607' N	003° 17.003' W	Q	5		2	AIS	No change considered necessary
4	Skerry Of Ness	Sector Light	M FL	58° 56.960' N	003° 17.830' W	Fl WG 4s	W7, G5				No change considered necessary
4	Hoy Sound (High)	Sector Light	M FL	58° 56.137' N	003° 16.399' W	Oc WR 8s	W20, R16				No change considered necessary
4	Hoy Sound (Low)	Light	M FL	58° 56.421' N	003° 18.605' W	Iso W 3s	15				No change considered necessary
4	Cava	Sector Light	FL	58° 53.231' N	003° 10.683' W	Fl WR 3s	W10, R8				No change considered necessary
4	Barrel Of Butter	Light	FL	58° 53.427' N	003° 07.596' W	Fl(2) W 10s	7				No change considered necessary
4	Royal Oak Wreck	Buoy	M FL	58° 55.750' N	002° 59.200' W	Fl(3) G 20s			2		No change considered necessary
4	Roseness	Light	M FL	58° 52.357' N	002° 49.932' W	Fl W 6s	8				No change considered necessary
4	Flotta Grinds	Buoy	M FL	58° 50.973' N	003° 00.783' W	Fl(2) R 10s			2		No change considered necessary
4	Noss Head	Sector Light	M FL	58° 28.788' N	003° 03.088' W	Fl WR 20s	W25, R21				Reduce to 18nM without red sector
5	Hoxa Head	Sector Light	M FL	58° 49.315' N	003° 02.085' W	Fl WR 3s	W9, R6				No change considered necessary
5	Lother Rock	Light	M FL	58° 43.796' N	002° 58.692' W	Fl W 2s	6			Racon	No change considered necessary
5	Swona	Light	M FL	58° 44.256' N	003° 04.235' W	Fl 8s	9				No change considered necessary
5	Ruff Reef	Light	FL	58° 47.433' N	003° 07.805' W	Fl W 10s	6				No change considered necessary
5	Cantick Head	Light	M FL	58° 47.229' N	003° 07.890' W	Fl 20s	13				No change considered necessary
5	Tor Ness	Light	M FL	58° 46.704' N	003° 17.792' W	Fl 5s	17				No change considered necessary
5	Dunnet Head	Light	M FL	58° 40.287' N	003° 22.594' W	Fl(4) 30s	23				Refurbish as 23nM light
5	Stroma Skerries	Beacon (Unlighted)	FL	58° 39.842' N	003° 08.219' W						Light
5	Stroma	Light	M FL	58° 41.754' N	003° 07.014' W	Fl(2) 20s	26				Reduce to 18NM
5	Pentland Skerries	Light	M FL	58° 41.408' N	002° 55.484' W	Fl(3) 30s	23				Reduce to 18NM
5	Duncansby Head	Light	M FL	58° 38.641' N	003° 01.521' W	Fl W 12s	22			Racon	No change considered necessary
6	Foula	Light	M FL	60° 06.757' N	002° 03.875' W	Fl(3)W 15s	17				Establish red sector to east
6	Bullia Skerry	Light	M FL	60° 06.664' N	001° 21.569' W	Fl W 5s	5				No change considered necessary
6	Fugla Ness	Sector Light	F	60° 06.381' N	001° 20.845' W	Fl(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.Fl 15s			2		No change considered necessary
6	Ve Skerries	Light	M FL	60° 22.372' N	001° 48.799' W	Fl(2)W 20s	11			Racon	No change considered necessary
6	Muckle Roe	Sector Light	F	60° 20.978' N	001° 27.061' W	Fl WR 3s	W9, R6				No change considered necessary
6	Hillswick	Sector Light	F	60° 27.213' N	001° 29.797' W	Fl(4)WR 15s	W9, R6				No change considered necessary
6	Esha Ness	Light	M F	60° 29.350' N	001° 37.680' W	Fl W 12s	25				No change considered necessary
6	Holm Of Skaw	Light	M F	60° 49.871' N	000° 46.317' W	Fl 5s	8				No change considered necessary
6	Muckle Flugga	Light	M F	60° 51.326' N	000° 53.146' W	Fl(2) 20s	22				Reduce to 18nM
6	Head Of Mula	Sector Light	M FL	60° 40.760' N	000° 57.580' W	Fl WRG 5s	W10;R7;G7				No change considered necessary
6	Uyea Sound	Light	F	60° 41.149' N	000° 55.474' W	Fl(2) 8s	7				No change considered necessary
6	Balta Sound	Sector Light	F	60° 44.452' N	000° 47.676' W	Fl WR 10s	W10, R8				No change considered necessary
6	Whitehill	Sector Light	M F	60° 34.798' N	001° 00.223' W	Fl WR 3s	W9, R6				No change considered necessary
6	Outer Skerry	Light	M FL	60° 33.034' N	001° 18.311' W	Fl W 6s	8				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	Little Holm	Light	M F	60° 33.417' N	001° 15.885' W	Iso W 4s	6				No change considered necessary
6	Muckie Holm	Light	M F	60° 34.832' N	001° 16.006' W	Fl(4)W 10s	10				No change considered necessary
6	Point Of Fethaland	Sector Light	M F	60° 38.054' N	001° 18.697' W	Fl(3)WR 15s	W18, R15				No change considered necessary
6	Grunev	Sector Light	M F	60° 39.153' N	001° 18.175' W	FlWR 5s	W8, R6			Racon	No change considered necessary
6	Bagi Stack	Light	M F L	60° 43.521' N	001° 07.540' W	Fl(4) 20s	10				No change considered necessary
6	Brother Isle	Directional Light	M F	60° 30.946' N	001° 14.109' W	Dir Fl(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	Fl(3)WRG 12s	W9, R6, G6				No change considered necessary
6	Rumble Rock	Light	M F	60° 28.171' N	001° 07.265' W	Fl 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	Fl(3) WRG 15s	W10, R7, G7				No change considered necessary
6	Muckie Skerry	Sector Light	M F L	60° 26.371' N	000° 51.827' W	Fl(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	Fl W 20s	20				No change considered necessary
6	Wether Holm	Light	F	60° 22.345' N	001° 01.334' W	Fl W 5s	9				No change considered necessary
6	Suther Ness	Sector Light	M F L	60° 22.122' N	001° 00.202' W	FlWRG 3s	W10, R8, G8				No change considered necessary
6	Skate Of Marrister	Light	M F L	60° 21.358' N	001° 01.390' W	Fl G 6s	4				No change considered necessary
6	Symbister Ness	Sector Light	M F L	60° 20.429' N	001° 02.286' W	Fl(2)WG 12s	W8, G6				No change considered necessary
6	Inner Voder Beacon	Beacon (Unlighted)	M F L	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	FlWRG 3s	W9, R6, G6				No change considered necessary
6	Hoo Stack	Sector Light	M F L	60° 14.967' N	001° 05.370' W	Fl(4)WRG 12s	W7, R5, G5				Discontinue Directional light
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)+LFl W 15s	5		2		No change considered necessary
6	Rova Head	Sector Light	M F L	60° 11.458' N	001° 08.598' W	Fl(3)WRG 18s	W12, R9, G9				Alter character to Fl WRG 4s
6	Mousa	Light	M F L	59° 59.854' N	001° 09.506' W	Fl 3s	10				No change considered necessary
6	Sumburgh Head	Light	M F L	59° 51.231' N	001° 16.515' W	Fl(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	Fl(2) 30s	22				No change considered necessary
6	Fair Isle (South)	Light	M F L	59° 30.858' N	001° 39.206' W	Fl(4) 30s	22				Reduce to 18nM (minimum) range on solarisation
7	Tarbat Ness	Light	M F L	57° 51.908' N	003° 46.600' W	Fl(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	FlWRG 4s	W11, R7, G7				No change considered necessary
7	Longman Point	Sector Light	M L	57° 29.995' N	004° 13.308' W	Fl WR 2s	W5, R4				No change considered necessary
7	Meikle Mee	Buoy	M F L	57° 30.265' N	004° 12.020' W	Fl G 3s	4		2		No change considered necessary
7	Petty Bank	Buoy	M F L	57° 31.619' N	004° 08.949' W	Fl R 5s			2		No change considered necessary
7	Munlochy Shoal	Buoy	M F L	57° 32.922' N	004° 07.653' W	LFl 10s			2		No change considered necessary
7	Skate Bank North East	Buoy	M F L	57° 34.292' N	004° 06.080' W	Fl R 5s			3		No change considered necessary
7	Skate Bank North West	Buoy	M F L	57° 34.414' N	004° 06.694' W	Fl(4) R 10s			3		No change considered necessary
7	Chanonry	Light	M L	57° 34.441' N	004° 05.567' W	Oc W 6s	12				No change considered necessary
7	Craigmee	Buoy	M F L	57° 35.299' N	004° 04.991' W	Fl R 6s	4		2		No change considered necessary
7	Riff Bank West	Buoy	M F L	57° 35.691' N	004° 04.402' W	Fl 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)+LFl W 15s	5		2		No change considered necessary
7	Riff Bank North West	Buoy	M F L	57° 36.583' N	004° 03.592' W	Fl R 3s			2		No change considered necessary
7	Riff Bank North	Buoy	M F L	57° 37.231' N	004° 02.746' W	Fl(2)R 12s	4		2		No change considered necessary
7	Navity Bank	Buoy	M F	57° 38.168' N	004° 01.180' W	Fl(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	Fl Y 10s	5		2	AIS	No change considered necessary
7	Halliman	Buoy	M F L	57° 44.350' N	003° 18.582' W	Q				Racon	No change considered necessary
7	Halliman Beacon	Beacon (Unlighted)	F L	57° 44.001' N	003° 19.307' W						No change considered necessary
7	Kinnaird Head	Light	M F L	57° 41.105' N	002° 00.265' W	Fl W 5s	22				No change considered necessary
7	Cairnbulg Briggs	Light	M F L	57° 41.105' N	001° 56.461' W	Fl W 10s	10				No change considered necessary
8	Rattray Head	Light	M F L	57° 36.615' N	001° 49.006' W	Fl(3)W 30s	18			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
8	Buchan Ness	Light	MFL	57° 28.227' N	001° 46.474' W	Fl 5s	18			Racon	No change considered necessary
8	Cruden Scaurs	Buoy	FL	57° 23.173' N	001° 50.368' W	Fl R 10s			2		No change considered necessary
8	Girdle Ness	Light	MFL	57° 08.339' N	002° 02.916' W	Fl(2)W 20s	22			DGPS, Racon	No change considered necessary
8	Scurdie Ness	Light	MFL	56° 42.106' N	002° 26.236' W	Fl(3)W 20s	23			Racon	No change considered necessary
8	Bell Rock	Light	MFL	56° 26.065' N	002° 23.230' W	Fl W 5s	18			Racon	No change considered necessary
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)	FL	56° 17.702' N	002° 34.352' W						No change considered necessary
8	Fife Ness	Sector Light	MFL	56° 16.747' N	002° 35.196' W	Iso WR 10s	W15, R12			AIS	No change considered necessary
8	Isle Of May	Light	MFL	56° 11.139' N	002° 33.457' W	Fl(2)W 15s	22				No change considered necessary
8	East Vows	Beacon (Unlighted)	L	56° 10.840' N	002° 50.154' W						No change considered necessary
8	Bass Rock	Light	FL	56° 04.603' N	002° 38.463' W	Fl (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
8	St Abbs Head	Light	MFL	55° 54.979' N	002° 08.286' W	Fl 10s	26			Racon	Reduce to 18nM
9	Bamburgh	Lighthouse	MFL	55 36.993 N	001 43.452 W	Oc (2) WRG 8s	14				No change considered necessary
9	Canada & Georgios	Buoy	FL	53° 42.347' N	000° 07.116' E	VQ(3) 5s	5		2		No change considered necessary
9	Coquet	Lighthouse	MFL	55° 20.033' N	001° 32.387' W	Fl (3) WR 20s	19	Horn (1) 30s			Reduce Hazard Warning Signal- Range to 1nm
9	Emmanuel Head	Beacon	FL	55° 41.148' N	001° 46.801' W						No change considered necessary
9	Farne Island	Lighthouse	MFL	55° 36.921' N	001° 39.346' W	Fl (2) WR 15s	10				Change to LED light to give R & W sectors Range of 8nm - when re-engineered
9	Filey Brig	Buoy	MFL	54° 12.743' N	000° 14.584' W	Q (3) 10s	5	Bell	2		No change considered necessary
9	Flamborough Head	Lighthouse	MFL	54° 06.980' N	000° 04.962' W	Fl (4) 15s	24	Horn (2) 90s		DGPS	Reduce Range to 18nm - when re-engineered. Reduce Hazard Warning Signal- Range to 1nm
9	Goldstone	Buoy	FL	55° 40.240' N	001° 43.950' W	QG	4		3		No change considered necessary
9	Guile Point	Lighthouse	FL	55° 39.493' N	001° 47.590' W	Oc WRG 6s	4				No change considered necessary
9	Heugh	Lighthouse	FL	55° 40.093' N	001° 47.978' W	Oc WRG 6s	5				No change considered necessary
9	Inger Nielson	Buoy	MFL	54° 30.905' N	002° 36.325' E	VQ(3) 5s	5		2		No change considered necessary
9	Longstone	Lighthouse	MFL	55° 38.623' N	001° 36.653' W	Fl 20s	24			AIS	Reduce Range to 18nm - when re-engineered
9	Newton	Buoy	FL	55° 32.171' N	001° 35.848' W	Fl R 5s	4		3		No change considered necessary
9	Plough Rock	Buoy	FL	55° 40.240' N	001° 45.996' W	Q (9) 15s	4		3		No change considered necessary
9	Plough Seat	Buoy	FL	55° 40.370' N	001° 44.967' W	QR	4		3		No change considered necessary
9	Ridge	Buoy	FL	55° 39.700' N	001° 45.966' W	Q (3) 10s	4		3		No change considered necessary
9	Saltscar	Buoy	MFL	54° 38.109' N	001° 00.099' W	VQ	5	Bell	2		No change considered necessary
9	Shoreston	Buoy	FL	55° 35.880' N	001° 39.317' W	QR	4		3		No change considered necessary
9	Smithic N	Buoy	MFL	54° 06.214' N	000° 03.905' W	VQ	5	Bell	2		No change considered necessary
9	Smithic SW	Buoy	FL	54° 02.414' N	000° 09.204' W	Q (9) 15s	5		2		No change considered necessary
9	Sunderland N	Buoy	FL	55° 34.621' N	001° 37.117' W	Fl R 2.5s	4		3		No change considered necessary
9	Swedman	Buoy	FL	55° 37.650' N	001° 41.617' W	Fl G 2.5s	4		3		No change considered necessary
9	Triton	Buoy	FL	55° 39.585' N	001° 46.816' W	QG	4		3		No change considered necessary
9	Whitby	Lighthouse	MFL	54° 28.667' N	000° 34.094' W	Fl WR 5s	18				No change considered necessary
9	Blakeney Overfalls	Buoy	MFL	53° 03.021' N	001° 01.392' E	Fl (2) R 5s	4	Bell	2		No change considered necessary
9	Bridgirdle	Buoy	MFL	53° 01.742' N	000° 43.994' E	Fl R 2.5s	4		3		No change considered necessary
9	Burnham Flats	Buoy	MFL	53° 07.520' N	000° 34.894' E	Q (9) 15s	5	Bell	2		No change considered necessary
9	Docking E	Buoy	MFL	53° 09.820' N	000° 50.392' E	Fl R 2.5s	4		2		No change considered necessary
9	Docking N	Buoy	MFL	53° 14.819' N	000° 41.493' E	Q	5		2		No change considered necessary
9	Dowsing Inner	Buoy	MFL	53° 19.100' N	000° 34.800' E	Q (3) 10s	7		1	Racon	No change considered necessary
9	Dowsing Mid Outer	Buoy	MFL	53° 24.819' N	001° 07.790' E	Fl (3) G 10s	4		2		No change considered necessary
9	Dowsing N Outer	Buoy	MFL	53° 33.517' N	000° 59.590' E	Q	9		1	Racon /AIS	No change considered necessary
9	Dowsing S Inner	Buoy	MFL	53° 12.119' N	000° 33.694' E	Q (6) + LFl 15s	5	Bell	2		No change considered necessary
9	Dudgeon	Buoy	MFL	53° 16.620' N	001° 16.889' E	Q (9) 15s	7		1	Racon	No change considered necessary
9	Dudgeon E	Buoy	MFL	53° 19.719' N	000° 58.691' 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
9	Hjordis (Beacon)	Beacon	FL	52° 59.018' N	000° 58.144' E	Fl (2) 5s	5				No change considered necessary
9	Lynn Knock	Buoy	MFL	53° 04.422' N	000° 27.206' E	QG	4		2		No change considered necessary
9	Protector	Buoy	MFL	53° 24.848' N	000° 25.145' E	Fl R 2.5s	4		2		No change considered necessary
9	Race N	Buoy	MFL	53° 14.989' N	000° 43.893' E	Fl G 5s	4	Bell	2		No change considered necessary
9	Race S	Buoy	MFL	53° 07.810' N	000° 57.342' E	Q (6) + LFl 15s	5	Bell	2		No change considered necessary
9	Ridge W	Buoy	MFL	53° 19.069' N	000° 44.493' E	Q (9) 15s	5		2		No change considered necessary
9	Sand Outer	Buoy	MFL	53° 36.412' N	000° 29.394' E	Q (3) 10s	7		1	Racon /AIS	No change considered necessary
9	Sand S	Buoy	MFL	53° 34.620' N	000° 25.200' E	Q (6) + LFl 15s	5		1		No change considered necessary
9	Scott Patch	Buoy	MFL	53° 11.120' N	000° 36.394' E	VQ (3) 5s	5		2		No change considered necessary
9	Sheringham E	Buoy	MFL	53° 02.221' N	001° 14.890' E	Q (3) 10s	5		2		No change considered necessary
9	Sheringham W	Buoy	MFL	53° 02.951' N	001° 06.761' E	Q (9) 15s	5		2		No change considered necessary
9	Vina	Beacon	FL	52° 59.082' N	000° 39.235' E						No change considered necessary
9	Well N	Buoy	MFL	53° 03.022' N	000° 27.896' E	LFl 10s	5	Bell	1	Racon	No change considered necessary
9	Woolpack	Buoy	MFL	53° 02.672' N	000° 31.445' E	Fl R 10s	4		2		No change considered necessary
9	Barnard E	Buoy	MFL	52° 25.138' N	001° 46.390' E	Q (3) 10s	5		2		No change considered necessary
9	Caister Mid	Buoy	MFL	52° 38.986' N	001° 45.659' E	Fl (2) R 5s	4	Bell	2		No change considered necessary
9	Caister N	Buoy	MFL	52° 40.760' N	001° 45.650' E	Fl (3) R 10s	4		2		No change considered necessary
9	Cockle	Buoy	MFL	52° 44.026' N	001° 43.589' E	VQ (3) 5s	5		2		No change considered necessary
9	Corton Mid	Buoy	MFL	52° 33.624' N	001° 48.013' E	Fl G 2.5s	4		2		No change considered necessary
9	Corton S	Buoy	MFL	52° 32.945' N	001° 49.125' E	Q (6) + LFl 15s	5	Bell	2		No change considered necessary
9	Corton W	Buoy	MFL	52° 34.118' N	001° 47.504' E	Fl (3) G 10s	4		2		No change considered necessary
9	Cromer	Lighthouse	MFL	52° 55.482' N	001° 18.990' E	Fl 5s	21			Racon /AIS	No change considered necessary
9	Cross Sand	Buoy	MFL	52° 37.025' N	001° 59.136' E	LFl 10s	5		1	Racon	No change considered necessary
9	Cross Sand E	Buoy	MFL	52° 38.550' N	001° 53.550' E	Fl (4) R 15s	5		2		No change considered necessary
9	Cross Sand NE	Buoy	MFL	52° 44.220' N	001° 53.800' E	VQ (3) 5s	5		1		No change considered necessary
9	DR1	Buoy	MFL	53° 06.700' N	002° 40.700' E	LFl 10s	5		1		No change considered necessary
9	Haisbro Mid	Buoy	MFL	52° 54.223' N	001° 41.587' E	Fl (2) G 5s	4		2		No change considered necessary
9	Haisbro N	Buoy	MFL	53° 00.222' N	001° 32.288' E	Q	5		1	Racon /AIS	No change considered necessary
9	Haisbro S	Buoy	MFL	52° 50.823' N	001° 48.287' E	Q (6) + LFl 15s	5	Whistle	1		No change considered necessary
9	Hammond Knoll	Buoy	MFL	52° 49.744' N	001° 57.586' E	Q (9) 15s	5		2		No change considered necessary
9	Hammond Knoll E	Buoy	MFL	52° 52.323' N	001° 58.635' E	Q (3) 10s	5		2		No change considered necessary
9	Hemsby	Buoy	MFL	52° 41.800' N	001° 46.180' E	Fl R 2.5s	4		2		No change considered necessary
9	Holm Approach	Buoy	MFL	52° 30.880' N	001° 50.220' E	Q (3) 10s	5		1		No change considered necessary
9	Holm N	Buoy	MFL	52° 33.927' N	001° 47.226' E	Q	5		2		No change considered necessary
9	Holm NE	Buoy	MFL	52° 32.689' N	001° 48.485' E	Fl R 2.5s	5		2		No change considered necessary
9	Holm NW	Buoy	MFL	52° 31.927' N	001° 46.689' E	Fl (4) G 15s	4		2		No change considered necessary
9	Holm S	Buoy	MFL	52° 26.850' N	001° 47.150' E	VQ (6) + LFl 10s	5		2		No change considered necessary
9	Holm Sand	Buoy	MFL	52° 33.180' N	001° 46.545' E	Q (9) 15s	5		2		No change considered necessary
9	Holm SW	Buoy	MFL	52° 27.870' N	001° 46.990' E	Fl (2) G 5s	5		2		No change considered necessary
9	Holm W	Buoy	MFL	52° 29.797' N	001° 47.089' E	Fl (3) G 10s	4		2		No change considered necessary
9	Jacoba Wreck East	Buoy	MFL	53° 03.830' N	002° 42.199' E	Q (3) 10s	5		2		No change considered necessary
9	Jacoba Wreck North	Buoy	MFL	53° 03.965' N	002° 42.065' E	Q	5		2		No change considered necessary
9	Jacoba Wreck South	Buoy	MFL	53° 03.749' N	002° 42.065' E	Q (6) + LFl 15s	5		2		No change considered necessary
9	Jacoba Wreck West	Buoy	MFL	53° 03.830' N	002° 41.930' E	Q (9) 15s	5		2	Racon	No change considered necessary
9	Lowestoft	Lighthouse	MFL	52° 29.223' N	001° 45.353' E	Fl 15s	23				Reduce Range to 18nm
9	Newarp	Buoy	MFL	52° 48.374' N	001° 55.686' E	LFl 10s	7		1	Racon /AIS	No change considered necessary
9	Newcome E	Buoy	MFL	52° 28.508' N	001° 49.209' E	Fl (2) R 5s	4		2		No change considered necessary
9	Newcome N	Buoy	MFL	52° 28.390' N	001° 46.370' E	Fl (4) R 15s	5		2		No change considered necessary
9	Newcome Sand	Buoy	MFL	52° 26.282' N	001° 47.033' E	QR	5		2		No change considered necessary
9	Scroby Elbow	Buoy	MFL	52° 36.555' N	001° 46.260' E	Fl (2) G 5s	5	Bell	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	Scroby N	Buoy	MFL	52° 41.390' N	001° 46.470' E	VQ	5		2		No change considered necessary
9	Scroby NW	Buoy	MFL	52° 40.376' N	001° 46.329' E	Fl (3) G 10s	5		2		No change considered necessary
9	Scroby SW	Buoy	MFL	52° 35.135' N	001° 46.695' E	Fl G 2.5s	5	Bell	2		No change considered necessary
9	Smiths Knoll	Buoy	MFL	52° 43.525' N	002° 17.884' E	Q (6) + LFl 15s	7		1	Racon	No change considered necessary
9	Southwold	Lighthouse	MFL	52° 19.632' N	001° 40.886' E	Fl W 10s	24			AlS	No change considered necessary
9	Stanford	Buoy	MFL	52° 27.358' N	001° 46.670' E	Fl R 2.5s	4		2		No change considered necessary
9	White Swan	Buoy	FL	52° 33.399' N	001° 44.237' E				4		No change considered necessary
9	Winterton Ridge S	Buoy	MFL	52° 47.224' N	002° 03.485' E	Q (6) + LFl 15s	5		2		No change considered necessary
10	Aldeburgh Ridge	Buoy	MFL	52° 06.490' N	001° 36.950' E	QR	4		3		No change considered necessary
10	Bawdsey Mid	Buoy	MFL	51° 58.880' N	001° 33.593' E	Fl (3) G 10s	4		2		No change considered necessary
10	Bawdsey NE	Buoy	MFL	52° 01.730' N	001° 36.092' E	Fl G 10s	4		2		No change considered necessary
10	Bawdsey S	Buoy	MFL	51° 57.226' N	001° 30.215' E	Q (6) + LFl 15s	5	Whistle	1		Replace with a Type 2 Buoy
10	Bench Head	Buoy	MFL	51° 44.691' N	001° 01.097' E	Fl (3) G 10s	3		3		No change considered necessary
10	Black Deep	Buoy	MFL	51° 48.100' N	001° 36.000' E	QR	4		2		No change considered necessary
10	Colne Bar	Buoy	MFL	51° 44.611' N	001° 02.567' E	Fl (2) G 5s	4		3		No change considered necessary
10	Cork S	Buoy	MFL	51° 51.331' N	001° 24.094' E	Q (6) + LFl 15s	4		3		No change considered necessary
10	Cutler	Buoy	MFL	51° 58.530' N	001° 27.500' E	QG	4		3		No change considered necessary
10	Deben	Buoy	FL	51° 59.327' N	001° 23.557' E				4		No change considered necessary
10	Eagle	Buoy	MFL	51° 44.131' N	001° 03.817' E	QG	4		3		No change considered necessary
10	Eagle N	Buoy	MFL	51° 44.711' N	001° 04.317' E	Q	4		3		No change considered necessary
10	Gabbard N Inner	Buoy	MFL	51° 59.129' N	001° 55.988' E	Q	5		2		No change considered necessary
10	Gabbard Outer	Buoy	MFL	51° 57.830' N	002° 04.187' E	Q (3) 10s	7		1	Racon	No change considered necessary
10	Gabbard S Inner	Buoy	MFL	51° 49.922' N	001° 51.892' E	Q (6) + LFl 15s	5		2		No change considered necessary
10	Gabbard W Inner	Buoy	MFL	51° 52.061' N	001° 49.368' E	Fl (3) Y 10s	5		2		No change considered necessary
10	Galloper N	Buoy	MFL	51° 49.837' N	001° 59.993' E	Q	5		2		No change considered necessary
10	Galloper S	Buoy	MFL	51° 43.981' N	001° 56.389' E	Q (6) + LFl 15s	5		1	Racon	No change considered necessary
10	Gunfleet NE	Buoy	MFL	51° 49.931' N	001° 27.794' E	Q (3) 10s	5		2		No change considered necessary
10	Gunfleet Spit	Buoy	MFL	51° 45.331' N	001° 21.695' E	Q (6) + LFl 15s	5	Bell	2		No change considered necessary
10	HA	Buoy	MFL	51° 56.756' N	001° 30.665' E	Iso 5s	5		1		No change considered necessary
10	Hook Middle W	Buoy	MFL	51° 39.181' N	001° 07.967' E	Fl R 5s	4		4		No change considered necessary
10	Horse Sand	Buoy	FL	51° 59.850' N	001° 23.274' E				4		No change considered necessary
10	Kentish Knock	Buoy	MFL	51° 38.085' N	001° 40.429' E	Q (3) 10s	7		1		No change considered necessary
10	Knoll	Buoy	MFL	51° 43.881' N	001° 05.067' E	Q	5		2		No change considered necessary
10	Knoll NW	Buoy	MFL	51° 44.351' N	001° 02.167' E	Fl (2) R 5s	4		3		No change considered necessary
10	Knolls Mid	Buoy	FL	51° 58.677' N	001° 23.383' E				4		No change considered necessary
10	Knolls West	Buoy	FL	51° 58.285' N	001° 23.417' E				4		No change considered necessary
10	Longsand Head	Buoy	MFL	51° 47.900' N	001° 39.421' E	VQ	5	Whistle	1		No change considered necessary
10	Maplin NE	Buoy	MFL	51° 37.461' N	001° 04.797' E	Fl G 5s	4	Bell	2		No change considered necessary
10	Medusa	Buoy	MFL	51° 51.230' N	001° 20.355' E	Fl G 5s	4		3		No change considered necessary
10	Middle N	Buoy	MFL	51° 41.347' N	001° 12.612' E	Q	4		3		No change considered necessary
10	NHR-S	Buoy	MFL	51° 51.351' N	002° 28.709' E	Fl Y 10s	5		2		No change considered necessary
10	Orford Haven	Buoy	FL	52° 02.040' N	001° 28.383' E	LFl 10s	1	Bell	2		No change considered necessary
10	Oxley	Buoy	FL	52° 02.200' N	001° 27.945' E				4		No change considered necessary
10	Rough	Buoy	MFL	51° 55.190' N	001° 31.003' E	VQ	5		2		No change considered necessary
10	Shipwash E	Buoy	MFL	51° 57.079' N	001° 37.890' E	VQ (3) 5s	5		2		No change considered necessary
10	Shipwash N	Buoy	MFL	52° 01.730' N	001° 38.272' E	Q	7	Whistle	1	Racon /AlS	No change considered necessary
10	Shipwash NW	Buoy	MFL	51° 58.980' N	001° 37.012' E	Fl R 5s	4		2		No change considered necessary
10	Shipwash S	Buoy	MFL	51° 52.713' N	001° 33.972' E	Q (6) + LFl 15s	5		2		No change considered necessary
10	Shipwash S Duplicate	Buoy	MFL	51° 52.760' N	001° 34.070' E	Q (6) + LFl 15s	1		2		No change considered necessary
10	Shipwash SW	Buoy	MFL	51° 54.750' N	001° 34.213' E	Q (9) 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	Storm	Buoy	MFL	51° 52.410' N	001° 38.225' E	VQ (6) + LFI 10s	5		2		No change considered necessary
10	Sunk Centre	Light Vessel	MFL	51° 50.100' N	001° 46.020' E	Fl (2) 20s	16	Horn (2) 60s		Racon /AIS	No change considered necessary
10	Sunk E1	Buoy	MFL	51° 51.062' N	001° 59.993' E	Iso 5s	5		2		No change considered necessary
10	Sunk E2	Buoy	MFL	51° 48.686' N	001° 51.875' E	LFI 10s	5		2		No change considered necessary
10	Sunk Inner	Light Float	MFL	51° 51.170' N	001° 34.000' E	ISO 3S	12	Horn (1) 30s		Racon /AIS	No change considered necessary
10	Sunk N1	Buoy	MFL	51° 56.113' N	001° 46.927' E	Iso 5s	5		2		No change considered necessary
10	Sunk N2	Buoy	MFL	51° 54.289' N	001° 46.340' E	LFI 10s	5		2		No change considered necessary
10	Sunk S1	Buoy	MFL	51° 38.572' N	001° 47.363' E	Iso 5s	5		2		No change considered necessary
10	Sunk S2	Buoy	MFL	51° 42.403' N	001° 46.669' E	LFI 10s	5		2		No change considered necessary
10	Sunk SW	Buoy	MFL	51° 38.318' N	001° 43.745' E	FL (2) Y 10S	5		2		No change considered necessary
10	Sunk W1	Buoy	MFL	51° 52.606' N	001° 41.119' E	Fl (4) Y 10s	5		2		No change considered necessary
10	Sunk W2	Buoy	MFL	51° 49.275' N	001° 40.722' E	Fl Y 2.5s	5		2		No change considered necessary
10	Sunk East	Buoy	MFL	51° 53.230' N	002° 07.506' E	ISO 2.5s	9		1		No change considered necessary
10	Swin Spitway	Buoy	MFL	51° 41.951' N	001° 08.347' E	Iso 10s	5	Bell	2		No change considered necessary
10	Trinity	Buoy	MFL	51° 49.030' N	001° 36.391' E	Q (6) + LFI 15s	5		1		No change considered necessary
10	Walker	Buoy	MFL	51° 53.791 N	001° 33.903' E	Q (9) 15s	7		1		Replace with a Type 2 Buoy
10	Wallet 2	Buoy	MFL	51° 48.881' N	001° 22.994' E	Fl R 5s	5		2		No change considered necessary
10	Wallet 3	Buoy	MFL	51° 45.031' N	001° 11.292' E	Fl (3) G 15s	5		2		No change considered necessary
10	Wallet 4	Buoy	MFL	51° 46.531' N	001° 17.225' E	Fl (4) R 10s	5		2		No change considered necessary
10	Wallet 6	Buoy	MFL	51° 44.431' N	001° 11.846' E	Fl (2) R 5s	5		2		No change considered necessary
10	Wallet Spitway	Buoy	MFL	51° 42.861' N	001° 07.317' E	LFI 10s	5	Bell	2		No change considered necessary
10	Weir	Buoy	FL	52° 02.317' N	001° 27.638' E						No change considered necessary
10	Whitaker	Buoy	MFL	51° 41.431' N	001° 10.506' E	Q (3) 10s	5	Bell	2		No change considered necessary
10	Whitaker S	Buoy	MFL	51° 40.166' N	001° 09.109' E	Fl (2) G 10s	4		3		No change considered necessary
10	Whiting Hook	Buoy	FL	52° 02.980' N	001° 31.823' E	Fl R 10s	4		3		No change considered necessary
10	Whiting NE	Buoy	FL	52° 03.610' N	001° 33.322' E	Q (3) 10s	4		3		No change considered necessary
10	Whiting SW	Buoy	MFL	52° 00.960' N	001° 30.693' E	Q (6) + LFI 15s	4		3		No change considered necessary
10	Woodbridge Haven	Buoy	MFL	51° 58.105' N	001° 23.696' E	Mo (A) 15s	1		2		No change considered necessary
10	Argus	Buoy	MFL	51° 29.297' N	000° 58.715' E	Fl Y 2.5s	5		2		No change considered necessary
10	Barrow 10	Buoy	MFL	51° 33.742' N	001° 07.867' E	Fl (3) R 10s	4		2		No change considered necessary
10	Barrow 11	Buoy	MFL	51° 34.082' N	001° 06.697' E	Fl (3) G 10s	4		2		No change considered necessary
10	Barrow 12	Buoy	MFL	51° 32.772' N	001° 04.127' E	Fl (2) R 5s	4		2		No change considered necessary
10	Barrow 13	Buoy	MFL	51° 32.822' N	001° 03.067' E	Fl (2) G 5s	4		2		No change considered necessary
10	Barrow 14	Buoy	MFL	51° 31.832' N	001° 00.428' E	Fl R 2.5s	4		2		No change considered necessary
10	Barrow 2	Buoy	MFL	51° 41.981' N	001° 22.893' E	Fl (2) R 5s	5		2		No change considered necessary
10	Barrow 3	Buoy	MFL	51° 42.021' N	001° 20.243' E	Q (3) 10s	5		2	Racon	No change considered necessary
10	Barrow 4	Buoy	MFL	51° 39.881' N	001° 17.494' E	VQ (9) 10s	5		2		No change considered necessary
10	Barrow 5	Buoy	MFL	51° 40.031' N	001° 16.206' E	Fl G 10s	5		2		No change considered necessary
10	Barrow 6	Buoy	MFL	51° 37.301' N	001° 14.684' E	Fl (4) R 15s	4		2		No change considered necessary
10	Barrow 7	Buoy	MFL	51° 37.487' N	001° 13.471' E	Fl G 2.5s	4		2		No change considered necessary
10	Barrow 8	Buoy	MFL	51° 35.032' N	001° 11.396' E	Fl (2) R 5s	5		2		No change considered necessary
10	Barrow 9	Buoy	MFL	51° 35.342' N	001° 10.297' E	VQ (3) 5s	5		2		No change considered necessary
10	Barrow SW	Buoy	MFL	51° 32.292' N	001° 00.308' E	Q (9) 15s	5		2		No change considered necessary
10	BDM 1	Buoy	MFL	51° 41.960' N	001° 27.590' E	Fl Y 2.5s	5		2		No change considered necessary
10	BDM 2	Buoy	MFL	51° 37.370' N	001° 20.040' E	Fl Y 2.5s	5		2		No change considered necessary
10	Black Deep 1	Buoy	MFL	51° 44.031' N	001° 28.092' E	Fl G 5s	4		2		No change considered necessary
10	Black Deep 10	Buoy	MFL	51° 34.732' N	001° 15.596' E	Fl (3) R 10s	5		2		No change considered necessary
10	Black Deep 11	Buoy	MFL	51° 34.250' N	001° 13.475' E	Fl (3) G 10s	4		2		No change considered necessary
10	Black Deep 12	Buoy	MFL	51° 33.931' N	001° 13.511' E	Fl (4) R 15s	5		2		No change considered necessary
10	Black Deep 2	Buoy	MFL	51° 45.631' N	001° 32.192' E	Fl (4) R 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	Black Deep 3	Buoy	MFL	51° 42.393' N	001° 26.655' E	Fl (3) G 15s	4		2		No change considered necessary
10	Black Deep 4	Buoy	MFL	51° 41.421' N	001° 28.482' E	Fl (2) R 5s	5		2		No change considered necessary
10	Black Deep 5	Buoy	MFL	51° 39.531' N	001° 22.993' E	VQ (3) 5s	5		2		No change considered necessary
10	Black Deep 6	Buoy	MFL	51° 38.521' N	001° 24.403' E	Fl R 2.5s	4		2		No change considered necessary
10	Black Deep 7	Buoy	MFL	51° 37.081' N	001° 17.694' E	QG	4		2		No change considered necessary
10	Black Deep 8	Buoy	MFL	51° 36.358' N	001° 20.426' E	Q (9) 15s	5		2		No change considered necessary
10	Black Deep 9	Buoy	MFL	51° 35.131' N	001° 15.094' E	Q (6) + LFl 15s	5		2		No change considered necessary
10	Blacktail Spit	Buoy	MFL	51° 31.482' N	000° 56.748' E	Fl (3) G 10s	5		2		No change considered necessary
10	Cant E	Buoy	MFL	51° 28.532' N	000° 55.598' E	QR	4		2		No change considered necessary
10	Columbine	Buoy	FL	51° 24.263' N	001° 01.348' E	Fl G 2s	4		3		No change considered necessary
10	Columbine Spit	Buoy	FL	51° 23.863' N	001° 00.028' E	Fl (3) G 10s	4		3		No change considered necessary
10	Copperas	Buoy	MFL	51° 23.810' N	001° 11.180' E	QG	4		3		No change considered necessary
10	Dynamo	Buoy	MFL	51° 50.060' N	001° 33.880' E	Fl Y 2.5s	5		2		No change considered necessary
10	Fisherman 1	Buoy	MFL	51° 34.500' N	001° 23.520' E	Fl G 2.5s	4		2		No change considered necessary
10	Fisherman 2	Buoy	MFL	51° 34.296' N	001° 23.500' E	Fl R 2.5s	5		2		No change considered necessary
10	Fisherman 3	Buoy	MFL	51° 34.780' N	001° 22.650' E	Fl G 5s	4		2		No change considered necessary
10	Fisherman 4	Buoy	MFL	51° 34.770' N	001° 22.080' E	Fl (2) R 5s	4		2		No change considered necessary
10	Fisherman 5	Buoy	MFL	51° 35.250' N	001° 21.840' E	Fl (2) G 5s	4		2		No change considered necessary
10	Fisherman 6	Buoy	MFL	51° 35.080' N	001° 21.560' E	Fl (3) R 10s	5		2		No change considered necessary
10	Fisherman Inner	Buoy	MFL	51° 36.100' N	001° 19.970' E	QR	5		2		No change considered necessary
10	Fisherman Outer	Buoy	MFL	51° 34.020' N	001° 25.100' E	Q (3) 10s	5		2		No change considered necessary
10	Ham Gat	Buoy	FL	51° 23.083' N	000° 58.318' E	QG	3		3		No change considered necessary
10	Knob	Buoy	MFL	51° 30.692' N	001° 04.277' E	Iso 5s	5	Whistle	1		Replace with a Type 2 Buoy
10	Knob SE	Buoy	MFL	51° 30.892' N	001° 06.407' E	Fl G 5s	4		2		No change considered necessary
10	Knock John	Buoy	MFL	51° 33.661' N	001° 11.357' E	Fl (2) R 5s	5		2		No change considered necessary
10	Knock John 1	Buoy	MFL	51° 33.717' N	001° 10.833' E	Q (6) +LFl 15s	5		2		No change considered necessary
10	Knock John 2	Buoy	MFL	51° 33.112' N	001° 09.847' E	Fl R 5s	4		2		No change considered necessary
10	Knock John 3	Buoy	MFL	51° 33.278' N	001° 09.692' E	Fl G 5s	4		2		No change considered necessary
10	Knock John 4	Buoy	MFL	51° 32.323' N	001° 07.906' E	Fl (3) R 10s	5		2		No change considered necessary
10	Knock John 5	Buoy	MFL	51° 32.490' N	001° 07.750' E	Fl (3) G 10s	5		2		No change considered necessary
10	Knock John 7	Buoy	MFL	51° 31.956' N	001° 06.406' E	Fl (4) G 15s	4		2		No change considered necessary
10	Knock S	Buoy	MFL	51° 34.132' N	001° 34.292' E	Q (6) + LFl 15s	5	Whistle	1		No change considered necessary
10	Long Sand Inner	Buoy	MFL	51° 38.775' N	001° 25. 435' E	Mo (A) 15s	1		2		No change considered necessary
10	Long Sand Outer	Buoy	MFL	51° 34.610' N	001° 28.338' E	LFl 10s	1		2		No change considered necessary
10	Longnose	Buoy	MFL	51° 24.153' N	001° 26.075' E				4		No change considered necessary
10	Maplin	Buoy	MFL	51° 33.661' N	001° 01.593' E	QG	5	Bell	2		No change considered necessary
10	Maplin Bank	Buoy	MFL	51° 35.502' N	001° 04.697' E	Fl (3) R 10s	3		3		No change considered necessary
10	Maplin Edge	Buoy	MFL	51° 35.332' N	001° 03.647' E	Fl G 2.5s	4		4		No change considered necessary
10	Margate E	Buoy	MFL	51° 27.033' N	001° 26.395' E	Fl R 2.5s	4		2		No change considered necessary
10	Margate S	Buoy	MFL	51° 23.833' N	001° 16.646' E	Fl G 2.5s	4		3		No change considered necessary
10	Margate Se	Buoy	MFL	51° 24.053' N	001° 20.396' E	Q (3) 10s	4		3		No change considered necessary
10	Middle Sand	Beacon	FL	51° 26.982' N	001° 00.034' E						No change considered necessary
10	Mouse SE	Buoy	MFL	51° 31.190' N	001° 04.070' E	QG	4		2		No change considered necessary
10	Oaze	Buoy	MFL	51° 28.977' N	000° 56.917' E	Fl (4) Y 10s	4		2		No change considered necessary
10	Oaze Bank	Buoy	MFL	51° 29.360' N	000° 56.950' E	QG	4		2		No change considered necessary
10	Oaze Deep	Buoy	MFL	51° 30.000' N	001° 00.000' E	Fl (2) G 5s	4		2		No change considered necessary
10	Oaze N	Buoy	MFL	51° 30.032' N	000° 57.648' E	QR	5		2		No change considered necessary
10	Oaze W	Buoy	MFL	51° 28.975' N	000° 55.413' E	Iso 5s	5		2		No change considered necessary
10	Pollard Spit	Buoy	FL	51° 22.983' N	000° 58.568' E	QR	4		3		No change considered necessary
10	Princes 1	Buoy	MFL	51° 29.233' N	001° 16.016' E	Fl (4) 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	Princes 2	Buoy	MFL	51° 28.813' N	001° 13.076' E	Fl(2) R 5s	4		2		No change considered necessary
10	Princes 3	Buoy	MFL	51° 29.332' N	001° 13.096' E	Fl(2) G 5s	5		2		No change considered necessary
10	Princes 4	Buoy	MFL	51° 28.832' N	001° 09.897' E	Fl(3) R 10s	4		2		No change considered necessary
10	Princes 5	Buoy	MFL	51° 29.389' N	001° 10.000' E	Fl(3) G 10s	4		2		No change considered necessary
10	Princes 6	Buoy	MFL	51° 29.180' N	001° 06.580' E	Fl(4) R 15s	4		2		No change considered necessary
10	Princes 7	Buoy	MFL	51° 29.593' N	001° 07.110' E	Q (9) 15s	5	Bell	2		No change considered necessary
10	Princes 8	Buoy	MFL	51° 29.140' N	001° 03.000' E	Fl(2) R 5s	4		2		No change considered necessary
10	Princes Inner	Buoy	MFL	51° 29.597' N	001° 03.470' E	Fl Y 2.5s	4		2		No change considered necessary
10	Princes Mid	Buoy	MFL	51° 29.195' N	001° 09.000' E	Fl Y 5s	4		2		No change considered necessary
10	Princes N	Buoy	MFL	51° 29.248' N	001° 18.346' E	QG	4		2		No change considered necessary
10	Princes Outer	Buoy	MFL	51° 28.895' N	001° 20.434' E	VQ (6) + LFl 10s	5		2		No change considered necessary
10	Princes S	Buoy	MFL	51° 28.740' N	001° 18.260' E	QR	5		2		No change considered necessary
10	Reculver	Buoy	MFL	51° 23.630' N	001° 12.560' E	QR	4		3		No change considered necessary
10	Redsand Towers N	Buoy	MFL	51° 28.732' N	000° 59.318' E	Fl(3) R 10s	4	Bell	2		No change considered necessary
10	Shivering Sand Twr N	Buoy	MFL	51° 30.012' N	001° 04.757' E	Q	5		2		No change considered necessary
10	Shivering Sand Twr S	Buoy	MFL	51° 29.751' N	001° 04.828' E	Q (6) + LFl 15s	5	Bell	2		No change considered necessary
10	SHM	Buoy	MFL	51° 46.050' N	001° 31.540' E	Fl Y 2.5s	5		3		No change considered necessary
10	Spile	Buoy	FL	51° 26.432' N	000° 55.698' E	Fl G 2.5s	4		3		No change considered necessary
10	Spit NE	Buoy	MFL	51° 27.933' N	001° 29.894' E	VQ (3) 5s	5		1	Racon /AIS	No change considered necessary
10	Sunk W	Buoy	MFL	51° 44.331' N	001° 25.792' E	Q (9) 15s	5		2		No change considered necessary
10	Swin W	Buoy	MFL	51° 33.402' N	001° 01.968' E	QR	4		3		No change considered necessary
10	Whitstable Street	Buoy	FL	51° 24.000' N	001° 01.540' E	Fl R 2s	4		3		No change considered necessary
10	Beachy Head	Lighthouse	MFL	50° 44.025' N	000° 14.488' E	Fl (2) 20s	8				No change considered necessary
10	Brake	Buoy	MFL	51° 16.984' N	001° 28.195' E	Fl (4) R 15s	4		2		No change considered necessary
10	Brake S	Buoy	MFL	51° 15.794' N	001° 26.845' E	Fl (3) R 10s	5		2		No change considered necessary
10	Broadstairs Knoll	Buoy	MFL	51° 20.884' N	001° 29.475' E	Fl R 2.5s	4		2		No change considered necessary
10	Bullock Bank	Buoy	MFL	50° 46.937' N	001° 07.597' E	VQ	5		1		No change considered necessary
10	CS1	Buoy	MFL	50° 33.707' N	000° 03.925' W	Fl Y 2.5s	4		1		No change considered necessary
10	CS2	Buoy	MFL	50° 39.137' N	000° 32.601' E	Fl Y 5s	4		1		No change considered necessary
10	CS3	Buoy	MFL	50° 52.036' N	001° 02.200' E	Fl Y 10s	4		2		No change considered necessary
10	CS4	Buoy	MFL	51° 08.668' N	001° 34.020' E	Fl (4) Y 15s	5		1		No change considered necessary
10	Deal Bank	Buoy	MFL	51° 12.935' N	001° 25.566' E	QR	5		2		No change considered necessary
10	Downs	Buoy	MFL	51° 14.505' N	001° 26.226' E	Fl (2) R 5s	4	Bell	2		No change considered necessary
10	Drillstone	Buoy	MFL	51° 25.833' N	001° 42.891' E	Q (3) 10s	5		1		Replace with a Type 2 Buoy
10	Dungeness	Lighthouse	MFL	50° 54.806' N	000° 58.560' E	Fl 10s	21	Horn (3) 60s			Reduce Hazard Warning Signal- Range to 1nm - Required for local traffic
10	Elbow	Buoy	MFL	51° 23.234' N	001° 31.594' E	Q	5		2		No change considered necessary
10	F1	Buoy	MFL	51° 11.235' N	001° 44.922' E	Fl (4) Y 15s	4		1		No change considered necessary
10	F2	Buoy	MFL	51° 20.414' N	001° 56.190' E	Fl (4) Y 15s	5		1		No change considered necessary
10	Falls Head	Buoy	MFL	51° 28.233' N	001° 49.890' E	Q	5		2		No change considered necessary
10	Falls Mid	Buoy	MFL	51° 18.634' N	001° 46.991' E	Fl (3) R 10s	4		2		No change considered necessary
10	Falls S	Buoy	MFL	51° 13.834' N	001° 43.922' E	Q (6) + LFl 15s	5		1		No change considered necessary
10	Foxtrot 3	Light Vessel	MFL	51° 24.150' N	002° 00.377' E	Fl 10s	15	Horn (1) 10s		Racon /AIS	No change considered necessary
10	Goodwin E	Buoy	MFL	51° 15.675' N	001° 35.695' E	Q (3) 10s	5		2		No change considered necessary
10	Goodwin East	Light Vessel	MFL	51° 13.264' N	001° 36.373' E	Fl 15s	15	Horn (1) 30s		Racon /AIS	No change considered necessary
10	Goodwin Fork	Buoy	MFL	51° 14.335' N	001° 26.855' E	Q (6) + LFl 15s	5	Bell	2		No change considered necessary
10	Goodwin Knoll	Buoy	MFL	51° 19.584' N	001° 32.194' E	Fl (2) G 5s	4		2		No change considered necessary
10	Goodwin N	Buoy	MFL	51° 18.120' N	001° 30.350' E	Fl G 2.5s	4		2		No change considered necessary
10	Goodwin NE	Buoy	MFL	51° 20.314' N	001° 34.164' E	Q (3) 10s	7		1	Racon	No change considered necessary
10	Goodwin NW	Buoy	MFL	51° 16.731' N	001° 28.600' E	Q (9) 15s	5		2		No change considered necessary

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10	Goodwin S	Buoy	MFL	51° 10.605' N	001° 32.265' E	Fl (4) R 15s	4		2		No change considered necessary
10	Goodwin SE	Buoy	MFL	51° 12.985' N	001° 34.445' E	Fl (3) R 10s	4		2		No change considered necessary
10	Goodwin SW	Buoy	MFL	51° 08.500' N	001° 28.880' E	Q (6) + LFl 15s	9		1	Racon /AIS	No change considered necessary
10	Goodwin W	Buoy	MFL	51° 15.614' N	001° 27.375' E	Fl G 5s	4		2		No change considered necessary
10	Greenwich	Light Vessel	MFL	50° 24.538' N	000° 00.095' W	Fl 5s	15	Horn (1) 30s		Racon /AIS	No change considered necessary
10	Gull	Buoy	MFL	51° 19.584' N	001° 31.295' E	VQ (3) 5s	5		2		No change considered necessary
10	Gull Stream	Buoy	MFL	51° 18.284' N	001° 29.695' E	QR	5		2		No change considered necessary
10	Inter Bank	Buoy	MFL	51° 16.484' N	001° 52.221' E	Fl Y 5s	4		1	Racon	No change considered necessary
10	MPC	Buoy	MFL	51° 06.125' N	001° 38.253' E	Fl Y 2.5s	4		1	Racon /AIS	No change considered necessary
10	North Foreland	Lighthouse	MFL	51° 22.494' N	001° 26.705' E	Fl (5) WR 20s	19			DGPS / AIS	No change considered necessary
10	Royal Sovereign	Lighthouse	MFL	50° 43.454' N	000° 26.086' E	Fl 20s	12	Horn (2) 30s			No change considered necessary
10	Royal Sovereign Buoy	Buoy	MFL	50° 44.216' N	000° 25.834' E	QR	4		2		No change considered necessary
10	Rye Fairway	Buoy	MFL	50° 54.020' N	000° 48.050' E	LFl 10s	5		2		No change considered necessary
10	Sandettie	Light Vessel	MFL	51° 09.355' N	001° 47.122' E	Fl 5s	15	Horn (1) 30s		Racon /AIS	No change considered necessary
10	Sandettie Sw	Buoy	MFL	51° 09.775' N	001° 45.662' E	Q (9) 15s	5		2		No change considered necessary
10	Sandettie Wsw	Buoy	MFL	51° 12.355' N	001° 51.121' E	Fl G 5s	5		2		No change considered necessary
10	Varne	Light Vessel	MFL	51° 01.286' N	001° 23.897' E	Fl R 5s	15	Horn (1) 30s		Racon /AIS	No change considered necessary
10	Varne E	Buoy	MFL	50° 58.236' N	001° 20.895' E	VQ (3) 5s	5		2		No change considered necessary
10	Varne Mid	Buoy	MFL	50° 58.936' N	001° 19.897' E	VQ (9) 10s	5		2		No change considered necessary
10	Varne NE	Buoy	MFL	50° 59.800' N	001° 22.700' E	Q (3) 10s	5		2		No change considered necessary
10	Varne NW	Buoy	MFL	50° 00.800' N	001° 22.700' E	Q	5		2		No change considered necessary
10	Varne S	Buoy	MFL	50° 55.636' N	001° 17.296' E	Q (6) + LFl 15s	5		1		No change considered necessary
11	Anvil Point	Lighthouse	MFL	50° 35.514' N	001° 57.600' W	Fl 10s	9				No change considered necessary
11	Boulder	Buoy	FL	50° 41.565' N	000° 49.089' W	Fl G 2.5s	5		2		No change considered necessary
11	Bridge	Buoy	MFL	50° 39.625' N	001° 36.884' W	VQ (9) 10s	5		1	Racon	No change considered necessary
11	Eastborough Head	Buoy	MFL	50° 41.535' N	000° 39.090' W	Q (3) 10s	5	Bell	2		No change considered necessary
11	Fairway	Buoy	MFL	50° 38.235' N	001° 38.984' W	LFl 10s	5	Whistle	1		No change considered necessary
11	Gurnard	Buoy	MFL	50° 46.200' N	001° 18.840' W	Q	5		2		No change considered necessary
11	Gurnard Ledge	Buoy	MFL	50° 45.514' N	001° 20.586' W	Fl (4) G 15s	5		2		No change considered necessary
11	Hamstead Ledge	Buoy	MFL	50° 43.864' N	001° 26.185' W	Fl (2) G 5s	4		2		No change considered necessary
11	Head N	Buoy	FL	50° 42.684' N	001° 35.514' W	Fl (3) G 10s	4		4		No change considered necessary
11	Hurst Point	Lighthouse	MFL	50° 42.478' N	001° 33.023' W	Fl (4) WRW (intens) 15s	13				No change considered necessary
11	Lepe E	Buoy	MFL	50° 45.930' N	001° 21.070' W	Fl (2) R 5s	5	Bell	2		No change considered necessary
11	Lepe Spit	Buoy	MFL	50° 46.784' N	001° 20.636' W	Q (6) + LFl 15s	4		3		No change considered necessary
11	Lepe W	Buoy	MFL	50° 45.234' N	001° 24.085' W	Fl R 5s	4		2		No change considered necessary
11	Lymington Bank	Buoy	MFL	50° 43.100' N	001° 30.850' W	Fl (2) R 5s	5	Bell	2		No change considered necessary
11	Mixon Bcn	Beacon	FL	50° 42.382' N	000° 46.318' W	Fl R 5s	1				No change considered necessary
11	N1	Buoy	MFL	50° 41.260' N	000° 56.520' W	Fl (2+1) Y 6s	7		1		No change considered necessary
11	N2	Buoy	MFL	50° 41.030' N	000° 56.740' W	Fl (2+1) Y 6s	7		1		No change considered necessary
11	N3	Buoy	MFL	50° 41.628' N	000° 56.742' W	Fl (3) Y 15s	4		2		No change considered necessary
11	N4	Buoy	MFL	50° 41.498' N	000° 57.016' W	Fl Y 7.5s	4		2		No change considered necessary
11	N5	Buoy	MFL	50° 41.991' N	000° 56.969' W	Fl Y 5s	4		2		No change considered necessary
11	N7	Buoy	MFL	50° 42.354' N	000° 57.196' W	Fl Y 2.5s	4		2		No change considered necessary
11	Nab	Lighthouse	MFL	50° 40.075' N	000° 57.155' W	Fl 10s	12	Horn (2) 30s		Racon /AIS	No change considered necessary
11	Nab 1 Outer	Buoy	MFL	50° 38.180' N	000° 56.880' W	VQ (9) 10s	5		1		No change considered necessary
11	Nab 2 Outer	Buoy	MFL	50° 38.430' N	000° 57.700' W	VQ (3) 5s	5		1		No change considered necessary
11	Needles	Lighthouse	MFL	50° 39.734' N	001° 35.500' W	Oc (2) WRG 20s	17	Horn (2) 30s			No change considered necessary
11	New Grounds	Buoy	MFL	50° 41.841' N	000° 58.490' W	VQ (3) 5s	5		2		No change considered necessary
11	Owers	Buoy	MFL	50° 38.590' N	000° 41.090' W	Q (6) + LFl 15s	7	Bell	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
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	5		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° 31.260' N	002° 20.080' 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° 39.293' N	001° 37.522' 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 Catherine's	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	5	Bell	2		No change considered necessary
11	Alderney	Lighthouse	M F L	49° 43.748' N	002° 09.858' W	FI (4) 15s	12				No change considered necessary
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	18			Racon /AIS	No change considered necessary
11	Channel	Light Vessel	M F L	49° 54.459' N	002° 53.744' W	FI 15s	15	Horn (1) 20s		Racon /AIS	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 Range to 18nm
11	Minquiers NW	Buoy	M F L	48° 59.642' N	002° 20.583' W	Q	5	Whistle	1		No change considered necessary
11	Minquiers SW	Buoy	M F L	48° 54.342' N	002° 19.382' W	Q (9) 15s	5	Whistle	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			No change considered necessary
11	Sark	Lighthouse	M F L	49° 26.186' N	002° 20.735' W	FI 15s	20	Horn (2) 30s			Reduce Range to 18nm; Reduce Hazard Warning Signal- Range to 1nm
12	Berry Head	Lighthouse	M F L	50° 23.974' N	003° 29.006' W	FI (2) 15s	19				Reduce to Main Light to 18nm
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 /AIS	No change considered necessary
12	Emsstrom Wreck N	Buoy	M F L	50° 28.167' N	003° 24.860' W	Q	5		2		No change considered necessary
	Emsstrom Wreck E	Buoy	M F L	50° 28.100' N	003° 24.755' W	Q (3) 10s	5		2	Racon	No change considered necessary
	Emsstrom Wreck S	Buoy	M F L	50° 28.033' N	003° 24.860' W	Q (6) + LFI 15s	5		2		No change considered necessary
	Emsstrom Wreck W	Buoy	M F L	50° 28.100' N	003° 24.966' W	Q (9) 15s	5		2		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				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 Egan Layne	Buoy	F L	50° 19.550' N	004° 15.250' W	QR	3		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	Whistle	1		No change considered necessary
12	Runnelstone High	Beacon	F L	50° 02.243' N	005° 40.605' W						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
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 to 12nm; Reduce Hazard Warning Signal- Range to 1nn
12	Start Point	Lighthouse	M F L	50° 13.344' N	003° 38.539' W	Fl (3) 10s	25	Horn (1) 60s			Reduce Main Light to 18nm; Reduce Hazard Warning Signal- Range to 1nm
12	Tater Du	Lighthouse	M F L	50° 03.143' N	005° 34.647' W	Fl (3) 15s	20	Horn (2) 30s			Reduce Main Light Range to 12nm (W) 9nm (R); Reduce Hazard Warning Signal- Range to 1nm
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	Fl 15s	16	Horn (1) 30s		Racon /AIS	No change considered necessary
12	Bann Shoal	Buoy	M F L	50° 20.030' N	005° 51.110' W	Fl G 2.5s	7		1	Racon /AIS	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	Fl R 5s	4		2		No change considered necessary
12	Bishop Rock	Lighthouse	M F L	49° 52.371' N	006° 26.734' W	Fl (2) 15s	20			Racon /AIS	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
12	Crow Rock	Beacon	M F L	49° 56.263' N	006° 18.491' W	Fl (2) 10s	2				No change considered necessary
12	Godrevy Island	Lighthouse	F L	50° 14.549' N	005° 24.015' W	Fl WR 10s	8				No change considered necessary
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	Fl (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	Fl (4) 15s	16				No change considered necessary
12	Peninnis	Lighthouse	M F L	49° 54.273' N	006° 18.221' W	Fl 20s	9				No change considered necessary
12	Round Island	Lighthouse	M F L	49° 58.739' N	006° 19.387' W	Fl 10s	18	Horn (4) 60s			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	Fl (3) 30s	15	Horn (3) 60s		Racon /AIS	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	Whistle	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	Fl 7.5s	21				No change considered necessary
12	Woolpack Bcn	Beacon	M F L	49° 54.399' N	006° 19.371' W		2				No change considered necessary
13	Avon	Buoy	M F L	51° 27.929' N	002° 51.728' W	Fl G 2.5s	4		2		No change considered necessary
13	Breaksea	Buoy	M F L	51° 19.879' N	003° 19.075' W	LFI 10s	9		1	Racon /AIS	No change considered necessary
13	Cardliff N	Buoy	M F L	51° 26.529' N	003° 07.176' W	QG	5		2		No change considered necessary
13	Cardliff 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	Fl (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	Fl 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

Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
13	Holm Middle	Buoy	MFL	51° 21.719' N	003° 06.716' W	Fl G 2.5s	4		2		No change considered necessary
13	Hope	Buoy	MFL	51° 24.849' N	003° 02.677' W	Q (3) 10s	5		2		No change considered necessary
13	Lavernock Spit	Buoy	MFL	51° 23.019' N	003° 10.816' W	VQ (6) + LFI 10s	5		2		No change considered necessary
13	Mackenzie	Buoy	MFL	51° 21.749' N	003° 08.226' W	QR	5		2		No change considered necessary
13	Merkur	Buoy	MFL	51° 21.879' N	003° 15.945' W	QR	4	Bell	2		No change considered necessary
13	Monkstone	Lighthouse	MFL	51° 24.886' N	003° 06.008' W	Fl 5s	12				No change considered necessary
13	Newcome	Buoy	MFL	51° 30.008' N	002° 46.708' W	Fl (3) R 10s	4		2		No change considered necessary
13	Newport Deep	Buoy	MFL	51° 29.358' N	002° 59.107' W	Fl (3) G 10s	4	Bell	2		No change considered necessary
13	One Fathom N	Buoy	MFL	51° 20.939' N	003° 12.156' W	Q	5		2		No change considered necessary
13	Tail Patch	Buoy	MFL	51° 23.529' N	003° 03.666' W	QG	4		2		No change considered necessary
13	Welsh Hook	Buoy	MFL	51° 28.518' N	002° 51.858' W	Q (6) + LFI 15s	5		2		No change considered necessary
13	Weston	Buoy	MFL	51° 22.609' N	003° 05.736' W	Fl (2) R 5s	4		2		No change considered necessary
13	Wolves	Buoy	MFL	51° 23.129' N	003° 08.876' W	VQ	5		2		No change considered necessary
13	Baggy Leap	Buoy	MFL	51° 08.930' N	004° 16.969' W	Fl (2) G 10s	4		2		No change considered necessary
13	Bideford Bar	Buoy	MFL	51° 04.890' N	004° 14.620' W	QG	1		NS		No change considered necessary
13	Bideford Fairway	Buoy	MFL	51° 05.260' N	004° 16.239' W	LFI 10s	5	Bell	2		No change considered necessary
13	Bristol Channel Wk N	Buoy	MFL	51° 19.688' N	003° 29.913' W	Q	5		2	Racon	No change considered necessary
13	Bristol Channel Wk S	Buoy	MFL	51° 19.526' N	003° 29.913' W	Q (6) + LFI 15s	5		2		Discontinue – Wk Sufficiently Promulgated
13	Bull Point	Lighthouse	MFL	51° 11.946' N	004° 12.074' W	Fl (3) 10s	20				No change considered necessary
13	Copperas Rock	Buoy	MFL	51° 13.799' N	004° 00.570' W	Fl G 2.5s	4		2		No change considered necessary
13	Crow Point	Lighthouse	MFL	51° 03.974' N	004° 11.382' W	Fl WR 2.5s	6				No change considered necessary
13	Crow Point S	Buoy	MFL	51° 03.582' N	004° 11.566' W	Fl (3) R 10s	1		4		No change considered necessary
13	Fairy	Buoy	MFL	51° 27.858' N	003° 42.073' W	Q (9) 15s	5	Bell	2		No change considered necessary
13	Grey Sand Hill	Buoy	MFL	51° 03.653' N	004° 12.156' W	QR	1		4		No change considered necessary
13	Grounds	Buoy	MFL	51° 32.780' N	003° 53.400' W	VQ (3) 5s	5		2		No change considered necessary
13	Hartland Point	Lighthouse	MFL	51° 01.326' N	004° 31.530' W	Fl (6) 15s	8				No change considered necessary
13	Helwick E	Buoy	MFL	51° 31.797' N	004° 12.670' W	VQ (3) 5s	5	Bell	2		No change considered necessary
13	Horseshoe	Buoy	MFL	51° 15.029' N	004° 12.919' W	Q	5		2		No change considered necessary
13	Hugo	Buoy	MFL	51° 28.550' N	003° 48.030' W	QR	4		3		No change considered necessary
13	Inner Green Grounds SW	Buoy	MFL	51° 34.067' N	003° 57.021' W	Q (6) + LFI 15s	5	Bell	2		No change considered necessary
13	Instow Front	Lighthouse	MFL	51° 03.620' N	004° 10.664' W	Oc 6s	15				No change considered necessary
13	Instow Rear	Lighthouse	MFL	51° 03.518' N	004° 10.356' W	Oc 10s	15				No change considered necessary
13	Kenfig	Buoy	MFL	51° 29.440' N	003° 46.060' W	VQ (3) 5s	5		2		No change considered necessary
13	Ledge	Buoy	MFL	51° 29.928' N	003° 58.771' W	VQ (6) + LFI 10s	5		2		No change considered necessary
13	Lynmouth Foreland	Lighthouse	MFL	51° 14.731' N	003° 47.201' W	Fl (4) 15s	18				No change considered necessary
13	Mixon	Buoy	MFL	51° 33.127' N	003° 58.771' W	Fl (2) R 5s	4	Bell	2		No change considered necessary
13	Morte Stone	Buoy	MFL	51° 11.329' N	004° 14.919' W	Fl G 5s	4		2		No change considered necessary
13	Mumbles	Lighthouse	MFL	51° 34.009' N	003° 58.268' W	Fl (4) 20s	15	Horn (3) 60s			Reduce Hazard Warning Signal- Range to 1nm
13	Nash E	Buoy	MFL	51° 24.059' N	003° 34.103' W	Q (3) 10s	5	Bell	2		No change considered necessary
13	Nash Mid	Buoy	MFL	51° 24.828' N	003° 39.413' W	Q (6) + LFI 15s	5	Bell	2		No change considered necessary
13	Nash Point	Lighthouse	MFL	51° 24.050' N	003° 33.131' W	Fl (2) WR 15s	21			DGPS	No change considered necessary
13	Nash W	Buoy	MFL	51° 25.978' N	003° 45.952' W	VQ (9) 10s	5	Bell	2		No change considered necessary
13	Pulley	Buoy	MFL	51° 04.080' N	004° 12.700' W	Fl G 10s	4		4		No change considered necessary
13	Pulley Outer	Buoy	MFL	51° 04.338' N	004° 12.920' W	Fl G 2.5s	4		4		No change considered necessary
13	Ridge Mid	Buoy	MFL	51° 04.640' N	004° 13.787' W	Fl G 5s	4		4		No change considered necessary
13	Sand Ridge	Buoy	MFL	51° 15.009' N	003° 49.772' W	QG	4		3		No change considered necessary
13	Scarweather E	Buoy	MFL	51° 27.978' N	003° 46.770' W	Q (3) 10s	5	Bell	2		No change considered necessary
13	Scarweather S	Buoy	MFL	51° 27.608' N	003° 51.572' W	Q (6) + LFI 15s	5		2		No change considered necessary
13	Scarweather W	Buoy	MFL	51° 28.308' N	003° 55.571' W	Q (9) 15s	7	Bell	1	Racon	Replace with a Type 2 Buoy
13	Tusker	Buoy	MFL	51° 26.848' N	003° 40.743' W	Fl (2) R 5s	4	Bell	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
13	Caldey Island	Lighthouse	MFL	51° 37.895' N	004° 41.058' W	Fl (3) WR 20s	13				No change considered necessary
13	Eel Point	Buoy	FL	51° 38.856' N	004° 42.237' W	Fl G 2.5s	4		3		No change considered necessary
13	Giltar	Buoy	FL	51° 39.026' N	004° 42.117' W	Fl R 2.5s	4		4		No change considered necessary
13	Highcliff N	Buoy	FL	51° 39.376' N	004° 40.767' W	Q	4		3		No change considered necessary
13	Hwk W	Buoy	MFL	51° 31.397' N	004° 23.649' W	Q (9) 15s	7		1	Racon	No change considered necessary
13	Lundy North	Lighthouse	MFL	51° 12.104' N	004° 40.640' W	Fl 15s	17				No change considered necessary
13	Lundy South	Lighthouse	MFL	51° 09.723' N	004° 39.351' W	Fl 5s	15	Horn (1) 25s			No change considered necessary
13	Skokholm	Lighthouse	MFL	51° 41.634' N	005° 17.218' W	Fl WR 10s	8				No change considered necessary
13	Smalls	Lighthouse	MFL	51° 43.276' N	005° 40.192' W	Fl (3) 15s	18	Horn (2) 60s		Racon /AIS	No change considered necessary
13	South Bishop	Lighthouse	MFL	51° 51.162' N	005° 24.718' W	Fl 5s	16	Horn (3) 45s		Racon	No change considered necessary
13	Spaniel	Buoy	FL	51° 38.057' N	004° 39.737' W	Q (3) 10s	3		3		No change considered necessary
13	St Anns Head	Lighthouse	MFL	51° 40.876' N	005° 10.422' W	Fl WR 5s	18	Horn (2) 60s			Reduce Hazard Warning Signal- Range to 1nm
13	St Gowan	Buoy	MFL	51° 31.927' N	004° 59.765' W	Q (6) + LFl 15s	7		1	Racon/AIS	No change considered necessary
13	Strumble Head	Lighthouse	MFL	52° 01.788' N	005° 04.424' W	Fl (4) 15s	26				No change considered necessary
13	Woolhouse	Buoy	FL	51° 39.346' N	004° 39.687' W	Q (6) + LFl 15s	4		3		No change considered necessary
14	Archdeacon	Buoy	MFL	53° 26.714' N	004° 30.870' W	Q	5		2		No change considered necessary
14	Bardsey Island	Lighthouse	MFL	52° 44.997' N	004° 47.984' W	Fl R 10s	18				No change considered necessary
14	Bolivar	Buoy	MFL	53° 21.515' N	004° 35.299' W	Fl G 2.5s	4		2		No change considered necessary
14	Bwch	Buoy	FL	52° 34.821' N	004° 13.571' W	VQ (9) 10s	5		2		No change considered necessary
14	Carreg-Y-Trai	Buoy	FL	52° 48.139' N	004° 26.700' W	Fl R 2.5s	4		3		No change considered necessary
14	Causeway	Buoy	FL	52° 41.190' N	004° 25.320' W	Q (9) 15s	5	Bell	2		Fit 2nmLight
14	Chwilsen Rock	Beacon	FL	52° 56.985' N	004° 33.504' W						No change considered necessary
14	Coal Rock	Buoy	MFL	53° 25.915' N	004° 32.790' W	Q (6) + LFl 15s	1		2		No change considered necessary
14	Ethel Rock	Buoy	MFL	53° 26.644' N	004° 33.670' W	VQ	5		2		No change considered necessary
14	Furlong	Buoy	MFL	53° 25.415' N	004° 30.470' W	Fl G 2.5s	4		2		No change considered necessary
14	Kimya	Buoy	FL	53° 09.416' N	004° 27.270' W				3		No change considered necessary
14	Langdon	Buoy	MFL	53° 22.755' N	004° 38.649' W	Q (9) 15s	5		2		No change considered necessary
14	Mouse W	Beacon	MFL	53° 25.056' N	004° 33.267' W						No change considered necessary
14	Patches	Buoy	FL	52° 25.822' N	004° 16.370' W	Q (9) 15s	5		2		No change considered necessary
14	Point Lynas	Lighthouse	MFL	53° 24.976' N	004° 17.352' W	Oc 10s	18			DGPS	No change considered necessary
14	Skerries	Lighthouse	MFL	53° 25.274' N	004° 36.502' W	Fl (2) 15s	20	Horn (2) 60s		Racon, AIS	Re-align & expand the Red Sector Light with a 10nm LED Light
14	South Stack	Lighthouse	MFL	53° 18.403' N	004° 41.973' W	Fl 10s	24	Horn (1) 30s			No change considered necessary
14	St Tudwals	Lighthouse	MFL	52° 47.912' N	004° 28.275' W	Fl WR 15s	14				Change light to 10nm Range LED Sectorred Light
14	Victoria Bank	Buoy	MFL	53° 25.615' N	004° 31.370' W	VQ	5		2		No change considered necessary
14	Bar Buoy (Temp)	Buoy	MFL	53° 32.015' N	003° 20.978' W	LFl10s	9			Racon	Ongoing Discussions with LLA (See 2010)
14	Cheryl Louise	Buoy	MFL	54° 24.628' N	003° 33.689' W	Q (9) 15s	5		2		No change considered necessary
14	Constable N	Buoy	MFL	53° 23.760' N	003° 41.420' W	VQ	5		2		No change considered necessary
14	Constable W	Buoy	MFL	53° 23.145' N	003° 49.245' W	Q (9) 15s	5		2		No change considered necessary
14	Danger Patch	Buoy	MFL	53° 57.362' N	003° 05.681' W	Fl (3) R 10s	4		2	Racon	No change considered necessary
14	Dinmor	Buoy	MFL	53° 19.346' N	004° 03.273' W	QG	3		3		No change considered necessary
14	Fisher Bank	Buoy	MFL	53° 56.210' N	003° 09.700' W	Fl R 2.5s	4		2		No change considered necessary
14	Gut	Buoy	MFL	53° 41.764' N	003° 08.980' W	LFl 10s	5		2		No change considered necessary
14	HE1	Buoy	FL	53° 26.325' N	003° 18.079' W	Q (9) 15s	5		2		Ongoing Discussions with LLA (See 2010)
14	HE2	Buoy	FL	53° 24.899' N	003° 12.883' W	Fl G 2.5s	4		3		Ongoing Discussions with LLA (See 2010)
14	HE3	Buoy	FL	53° 24.615' N	003° 12.783' W	QG	4		3		Ongoing Discussions with LLA (See 2010)
14	Hilbre Island	Lighthouse	FL	53° 23.000' N	003° 13.710' W	Fl R 3s	5				No change considered necessary
14	Hoyle	Buoy	MFL	53° 23.156' N	003° 21.378' W	QR	4		3		No change considered necessary
14	Hoyle Mid	Buoy	MFL	53° 22.916' N	003° 19.498' W	Fl R 5s	4		3		No change considered necessary
14	Hoyle NW	Buoy	MFL	53° 23.316' N	003° 23.878' W	Fl R 2.5s	3		3		No change considered necessary

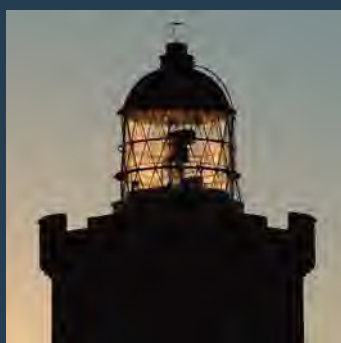
Area	Name	Type	Principle User	Latitude N (WGS84)	Longitude W (WGS84)	Character	Range	Fog signal	Inter-GLA Buoy Type	Radio Aids	Comment
14	Hoyle Spit E	Buoy	MFL	53° 22.515' N	003° 18.837' W	Fl G 5s	4		3		No change considered necessary
14	Jordans Spit	Buoy	MFL	53° 35.764' N	003° 19.279' W	Q (9) 15s	5		2		No change considered necessary
14	King Scar	Buoy	MFL	53° 56.962' N	003° 04.381' W	Fl (2) G 5s	4		2		No change considered necessary
14	King William Bank	Buoy	MFL	54° 26.007' N	004° 00.075' W	Q (3) 10s	5		2		No change considered necessary
14	Lightning Knoll	Buoy	MFL	53° 59.841' N	003° 14.280' W	LFl 10s	5		2		No change considered necessary
14	Lune Deep	Buoy	MFL	53° 56.070' N	003° 12.900' W	Q (6) + LFl 15s	5		1	Racon , AIS	No change considered necessary
14	Morecambe	Buoy	MFL	53° 52.000' N	003° 22.000' W	Q (9) 15s	5		1		No change considered necessary
14	Perch Rock	Beacon	MFL	53° 18.750' N	004° 02.155' W	Fl R 5s	1				No change considered necessary
14	Rhosneigr	Buoy	FL	53° 19.066' N	003° 43.975' W				4		No change considered necessary
14	River Lune	Buoy	MFL	53° 58.631' N	003° 00.032' W	Q (9) 15s	5		2		No change considered necessary
14	Selker	Buoy	MFL	54° 16.139' N	003° 29.579' W	Fl (3) G 10s	4	Bell	2		No change considered necessary
14	Shell Wharf	Buoy	MFL	53° 55.462' N	003° 08.960' W	Fl G 2.5s	4		2		No change considered necessary
14	St Bees	Lighthouse	MFL	54° 30.818' N	003° 38.205' W	Fl (2) 20s	18				No change considered necessary
14	Ten Feet Bank	Buoy	MFL	53° 19.466' N	004° 02.823' W	QR	3		3		No change considered necessary
14	Trwyn Du	Lighthouse	MFL	53° 18.777' N	004° 02.440' W	Fl 5s	12	Bell (1) 30s			Reduce Range to 9nm
14	Workington N	Buoy	MFL	54° 40.106' N	003° 38.179' W	Q	5		2		No change considered necessary
14	Workington S	Buoy	MFL	54° 37.006' N	003° 38.579' W	VQ (6) + LFl 10s	5	Bell	2		No change considered necessary
14	Zealandia	Buoy	MFL	53° 40.014' N	003° 06.420' W	VQ (9) 10s	4		3		No change considered necessary
15	Fastnet	Lighthouse	MFL	51° 23.358' N	009° 36.178' W	Fl 5s	27			Racon, AIS	Reduce range to 18nM
15	Little Goat Island	Beacon (Unlighted)	FL	51° 29.031' N	009° 36.169' W	Unlit					No change considered necessary
15	Bull Rock Beacon	Beacon (Lighted)	FL	51° 30.758' N	009° 32.205' W	Fl (2) R 6s	4				Open negotiations to handover to Cork County Council
15	Copper Point	Lighthouse	FL	51° 30.250' N	009° 32.063' W	Q(3) 10s	8				No change considered necessary
15	Amelia	Buoy	FL	51° 29.979' N	009° 31.461' W	Fl G 3s	5		3	AIS	No change considered necessary
15	Loo	Buoy	FL	51° 28.438' N	009° 23.458' W	Fl G 3s	3		3		No change considered necessary
15	Baltimore (Lot's Wife)	Beacon (Unlighted)	FL	51° 28.417' N	009° 23.272' W	Unlit					Open negotiations to handover to Baltimore Harbour Board
15	Kowloon Bridge	Buoy	MFL	51° 27.580' N	009° 13.761' W	Q (6) + LFl 15s	5		2		No change considered necessary
15	Galley Head	Lighthouse	MFL	51° 31.798' N	008° 57.210' W	Fl (5) 20s	23				Reduce Range to 18nM
15	Courtmacsherry	Buoy	FL	51° 38.287' N	008° 40.897' W	Fl G 3s	5		3		No change considered necessary
15	Black Tom	Buoy	FL	51° 36.408' N	008° 37.959' W	Fl G 5s	4		3		No change considered necessary
15	Old Head of Kinsale	Lighthouse	MFL	51° 36.287' N	008° 32.018' W	Fl (2) 10s	20			AIS	Reduce range to 18nM
15	Bulman	Buoy	FL	51° 40.136' N	008° 29.739' W	Q (6) + LFl 15s	6		2		No change considered necessary
15	Daunt	Buoy	MFL	51° 43.531' N	008° 17.665' W	Fl (2) R 6s	4		2		Reposition Buoy 0.1nM to the East
15	Cork Buoy	Buoy	MFL	51° 42.935' N	008° 15.601' W	LFl 10s	6		1	Racon, AIS	No change considered necessary
15	Roches Point	Lighthouse	MFL	51° 47.586' N	008° 15.287' W	FlWR 3s	20/16				Reduce to 18nM
15	Pollock	Buoy	MFL	51° 46.239' N	008° 07.876' W	Fl R 6s	4		2		Disestablish Buoy
15	Power	Buoy	MF	51° 45.595' N	008° 06.679' W	Q (6) + LFl 15s	6		2		No change considered necessary
15	Smiths	Buoy	MFL	51° 48.615' N	008° 00.726' W	Fl (3) R 10s	4		2		No change considered necessary
15	Ballycotton	Lighthouse	MFL	51° 49.522' N	007° 59.169' W	FlWR 10s	21/17			AIS	Reduce range to 18nM
15	Capel Island	Beacon (Unlighted)	FL	51° 52.927' N	007° 51.131' W	Unlit					No change considered necessary
15	Bar Rocks	Buoy	MFL	51° 54.855' N	007° 50.053' W	Q (6) + LFl 15s	4		3		No change considered necessary
15	Blackball	Buoy	MFL	51° 55.334' N	007° 48.529' W	Q (3) 10s	4		3		No change considered necessary
15	Mine Head	Lighthouse	FL	51° 59.556' N	007° 35.225' W	Fl (4) 30s	12			AIS	No change considered necessary
15	Ballinacourty Point	Lighthouse	FL	52° 04.688' N	007° 33.182' W	Fl (2) WRG 10s	10/8/8				No change considered necessary
15	Helvick	Buoy	FL	52° 03.611' N	007° 32.251' W	Q (3) 10s	6		3		No change considered necessary
15	Dunmore East	Lighthouse	MFL	52° 08.935' N	006° 59.337' W	FlWR 8s	16/13				No change considered necessary
15	Hook Head	Lighthouse	MFL	52° 07.424' N	006° 55.770' W	Fl 3s	23			Racon, AIS	Reduce range to 18nM
15	Red Bank	Buoy	MFL	52° 04.499' N	006° 41.652' W	VQ(9) 10s	6		2	AIS	No change considered necessary
15	Coningbeg	Buoy	MFL	52° 03.198' N	006° 38.567' W	Q(6) + L fl 15s	9		1	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
15	Bore Rocks	Buoy	MFL	52° 06.074' N	006° 31.871' W	Q(3) 10S	6		2	AIS	No change considered necessary
15	Barrels	Buoy	MFL	52° 08.363' N	006° 22.108' W	Q(3) 10s	6		2	AIS	No change considered necessary
15	Fundale	Buoy	MFL	52° 11.044' N	006° 19.775' W	Fl (2) R 10s	4		2		No change considered necessary
15	South Rock	Buoy	MFL	52° 10.810' N	006° 12.848' W	Q (6) + LFI 15s	6		2	AIS	No change considered necessary
16	Tuskar	Lighthouse	MFL	52° 12.175' N	006° 12.445' W	Q(2) 7.5s	24				Reduce range to 18nM
16	Splough	Buoy	MFL	52° 14.432' N	006° 16.774' W	Fl (2) R 6s (sync)	6		2	Racon, AIS	Sequence with Calmines/South Holdens
16	South Long	Buoy	MFL	52° 14.740' N	006° 15.800' W	Fl (2) G 6s (sync)	6		2	AIS	Sequence with Calmines/South Holdens
16	Calmines	Buoy	MFL	52° 14.997' N	006° 17.781' W	Fl R 3s (sync)	4		2		Sequence with South Long/Splough Holdens
16	South Holdens	Buoy	MFL	52° 15.146' N	006° 17.249' W	Fl G 3s (sync)	4		2		Sequence with South Long/Splough
16	West Holdens	Buoy	MFL	52° 15.763' N	006° 18.747' W	Fl (3) G 10s	5		2		No change considered necessary
16	Lucifer	Buoy	MFL	52° 17.035' N	006° 12.671' W	VQ(3) 5s	7		2	AIS	No change considered necessary
16	West Long	Buoy	MFL	52° 18.174' N	006° 17.963' W	Q G	4		2		No change considered necessary
16	North Long	Buoy	MFL	52° 21.432' N	006° 16.967' W	Q	6		2		No change considered necessary
16	South Blackwater	Buoy	MFL	52° 22.757' N	006° 12.866' W	Q (6) + LFI 15s	5		2		No change considered necessary
16	Southeast Blackwater	Buoy	MFL	52° 25.644' N	006° 08.420' W	Q(3) 10S	6		1	Racon, AIS	No change considered necessary
16	West Blackwater	Buoy	FL	52° 25.865' N	006° 13.572' W	Fl G 6s	5		2		No change considered necessary
16	Rusk No. 1	Buoy	FL	52° 28.539' N	006° 11.799' W	Fl (2) G 5s	5		3		No change considered necessary
16	Rusk No. 2	Buoy	FL	52° 28.638' N	006° 12.613' W	Fl (2) R 5s	4		3		No change considered necessary
16	Rusk No. 4	Buoy	FL	52° 31.089' N	006° 10.841' W	Fl (3) R 6s	4		3		No change considered necessary
16	North Blackwater	Buoy	MFL	52° 32.225' N	006° 09.520' W	Q	5		2		No change considered necessary
16	Rusk No. 6	Buoy	FL	52° 32.666' N	006° 10.425' W	Fl R 3s	4		3		No change considered necessary
16	Glassgorman No. 1	Buoy	MFL	52° '37.689 N	006° 07.459' W	Fl (2) R 6s	5		2		No change considered necessary
16	South Arklow	Buoy	MFL	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	MFL	52° 45.348' N	006° 05.343' W	Fl (4) R 10	4		2		No change considered necessary
16	North Arklow	Buoy	MFL	52° 53.862' N	005° 55.263' W	Q	6		2	AIS	Resurvey bank consider moving the position of the buoy to the North
16	Horseshoe	Buoy	MFL	52° 56.835' N	005° 58.466' W	Fl R 3s	4		2	AIS	No change considered necessary
16	Wicklow Head	Lighthouse	MFL	52° 57.947' N	005° 59.889' W	Fl (3) 15s	23				Reduce range to 18nM (b/f from 2010 Review)
16	South India	Buoy	MFL	53° 00.349' N	005° 53.346' W	Q (6) + LFI 15s	6		2		No change considered necessary
16	Codling	Buoy	MFL	53° 03.020' N	005° 40.815' W	Q(3) 10s	15			Racon, AIS	Resurvey and Reposition Buoy 2.5nM to the NE
16	North India	Buoy	MFL	53° 03.173' N	005° 53.473' W	VQ	6		2		No change considered necessary
16	South Codling	Buoy	MFL	53° 04.730' N	005° 49.784' W	VQ (6) + LFI 10s	6		2		No change considered necessary
16	Breaches Shoal	Buoy	MFL	53° 05.721' N	005° 59.856' W	Fl (2) R 6s	4		2		Resurvey banks. Reposition Buoy pending results of survey
16	West Codling	Buoy	MFL	53° 06.962' N	005° 54.558' W	Fl G 10s	5		2		No change considered necessary
16	Moulditch	Buoy	MFL	53° 08.430' N	006° 01.230' W	Fl R 10s	6		2		Resurvey bank. Reposition Buoy 0.2nM to the NE
16	East Codling	Buoy	MFL	53° 08.560' N	005° 46.130' W	Fl (4) R 10s	6		2	AIS	No Change considered necessary
16	East Kish	Buoy	MFL	53° 14.349' N	005° 53.618' W	Fl (2) R 10s	4		2	AIS	No change considered necessary
16	Muglins	Lighthouse	MFL	53° 16.524' N	006° 04.579' W	Fl R 5s	11				No change considered necessary
16	South Burford	Buoy	MFL	53° 18.060' N	006° 01.298' W	VQ (6) + LFI 10s	6		2	AIS	No change considered necessary
16	North Kish	Buoy	MFL	53° 18.549' N	005° 56.432' W	VQ	6		2		No change considered necessary
16	Kish	Lighthouse	MFL	53° 18.650' N	005° 55.542' W	Fl (2) 20s	21			Racon, AIS	Reduce range to 18nM
16	Bennet Bank	Buoy	MFL	53° 20.172' N	005° 55.130' W	Q (6) + LFI 15s	5		2	AIS	No change considered necessary
16	North Burford	Buoy	MFL	53° 20.507' N	006° 01.493' W	Q	6		2	AIS	No change considered necessary
16	Baily	Lighthouse	MFL	53° 21.691' N	006° 03.158' W	Fl 15s	20			AIS	No change considered necessary
17	Howth Buoy	Buoy	FL	53° 23.727' N	006° 03.593' W	Fl G 5s	4		3	AIS	No change considered necessary
17	South Rowan	Buoy	FL	53° 23.790' N	006° 03.941' W	Q G	4		3		No change considered necessary
17	Rowan Rocks	Buoy	FL	53° 23.877' N	006° 03.269' W	Q (3) 10s	4		3		No change considered necessary
17	Burren Rock	Beacon (Lit)	FL	53° 29.353' N	006° 02.460' W	Fl G 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
17	Taylor Rock	Buoy	F L	53° 30.222' N	006° 01.871' W	Q	4		3		Survey and reposition Buoy to the North
17	Rockabill	Lighthouse	M F L	53° 35.811' N	006° 00.297' W	Fl WR 12s	17/13			AIS	No change considered necessary
17	Cardy Rocks	Beacon (Unlighted)	F L	53° 37.912' N	006° 10.859' W	Unlit					No change considered necessary
17	Dunany	Buoy	M F L	53° 53.530' N	006° 09.502' W	Fl R 3s	4		2		No change considered necessary
17	Imogene	Buoy	M F L	53° 57.415' N	006° 07.042' W	Fl (2) R 10s	4		2		No change considered necessary
17	Hellyhunter	Buoy	M F L	54° 00.351' N	006° 02.052' W	Q (6) + LFI 15s	6		2	Racon, AIS	No change considered necessary
17	Haulbowline	Lighthouse	M F L	54° 01.196' N	006° 04.740' W	Fl (3) 10s	10	-		AIS	No change considered necessary
17	Vidal Bank	Leading Light	M F L	54° 01.799' N	006° 05.433' W	Oc 3s	11			AIS	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
18	St John's Point (Down)	Lighthouse	M F L	54° 13.605' N	005° 39.611' W	Q(2) 7.5s	25			AIS	Reduce range to 18nM
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	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	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	Fl (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					No change considered necessary
18	Skulmartin	Buoy	M F L	54° 31.848' N	005° 24.910' W	LFI 10s	7		2	AIS	No change considered necessary
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	No change considered necessary
18	Governor	Buoy	M F L	54° 39.360' N	005° 31.991' W	Fl R 3s (sync)	4		3	AIS	No change considered necessary.
18	Foreland Rock	Beacon (Unlighted)	F L	54° 39.390' N	005° 32.393' W	Unlit					No change considered necessary
18	Carn Buoy	Buoy	MFL	54° 39.845' N	005° 32.240' W	Fl (2) G 6s (sync)	5		3		No change considered necessary
18	Deputy	Buoy	M F L	54° 39.513' N	005° 31.944' W	Fl G 3s (sync)	4		3		No change considered necessary
18	Foreland	Buoy	M F L	54° 39.640' N	005° 32.307' W	Fl (2) R 6s (sync)	5		3		No change considered necessary
18	Rigg Bank	Port Hand Virtual AtoN	M	54° 38.630' N	005° 27.100' W	N/A	N/A		N/A	Virtual AIS AtoN	No change considered necessary
18	Mew Island	Lighthouse	M F L	54° 41.923' N	005° 30.824' W	Fl (4) 30s	18			Racon, AIS	No change considered necessary
18	Briggs	Buoy	M F L	54° 41.182' N	005° 35.732' W	Fl (2) R 10s	5		2		Change from Port hand Buoy to North Cardinal Buoy
18	Black Head (Antrim)	Lighthouse	M F L	54° 46.016' N	005° 41.338' W	Fl 3s	27			AIS	Reduce to 18nM (b/f from 2010 review)
18	South Hunter	Buoy	M F L	54° 52.691' N	005° 45.284' W	VQ (6) + LFI 10s	6		2	AIS	No change considered necessary
18	North Hunter	Buoy	M F L	54° 53.046' N	005° 45.114' W	Q	6		2		No change considered necessary
18	Maidens	Lighthouse	M F L	54° 55.748' N	005° 43.709' W	Fl (3) 15s	23			Racon, AIS	Reduce range to 18nM
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	Fl (4) 20s	26			Racon	No change considered necessary
19	Rue Point	Lighthouse	M F L	55° 15.533' N	006° 11.474' W	Fl (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	Fl R 5s	22			AIS	No change considered necessary
19	Stork Rocks	Beacon (Unlighted)	F L	55° 13.245' N	006° 35.408' W	Unlit					No change considered necessary
19	Skerries	Buoy	MFL	55° 13.900' N	006° 36.900' W	Fl R 5s	5		2	AIS	No change considered necessary
19	Foyle	Buoy	M F L	55° 15.322' N	006° 52.616' W	LFI 10s	7		3	AIS	Establish RACON
19	Tuns	Buoy	M F L	55° 14.004' N	006° 53.440' W	Fl R 3s	6		2	AIS	Resurvey bank
19	Inishowen	Lighthouse	M F L	55° 13.556' N	006° 55.749' W	Fl (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	Fl (3) 15s	19			Racon, AIS	No change considered necessary
19	Dunree	Lighthouse	M F L	55° 11.888' N	007° 33.250' W	Fl (2) WR 5s	12/9				Planned maintenance project perhaps reduce 12/8

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	Fl R 6s	5		3		No change considered necessary
19	White Strand	Buoy	F	55° 09.059' N	007° 29.935' W	Fl 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	Fl R 3s	3		3		No change considered necessary
19	Kinnegar	Buoy	F	55° 06.743' N	007° 30.723' W	Fl G 10s	3		3		No change considered necessary
19	Inch Flat	Buoy	F	55° 05.684' N	007° 30.758' W	Fl (2) R 6s	4		3		No change considered necessary
19	Swillymore	Buoy	F	55° 15.116' N	007° 35.792' W	Fl G 3s	5		2	AIS	No change considered necessary
19	Fanad Head	Lighthouse	M F L	55° 16.575' N	007° 37.921' W	Fl (5) WR 20s	18/14			AIS	No change considered necessary
19	Limeburner	Buoy	M F L	55° 18.551' N	007° 48.428' W	Q	6		2	AIS	No change considered necessary
20	Tory Island	Lighthouse	M F L	55° 16.357' N	008° 14.964' W	Fl (4) 30s	18			Racon, DGPS	No change considered necessary
20	Bloody Foreland	Light	M F L	55° 09.510' N	008° 17.020' W	Fl WG 7.5s	W6 G4				Open negotiations to transfer from Donegal County Council to CIL
20	Gola Spit	Buoy	F L	55° 04.915' N	008° 20.396' W	Fl R 3s	3		3		No change considered necessary
20	Middle Rock	Buoy	F L	55° 04.505' N	008° 21.029' W	Fl (2) R 6s	3		3		No change considered necessary
20	Aranmore	Lighthouse	M F L	55° 00.903' N	008° 33.666' W	Fl (2) 20s	27			AIS	Reduce to 18nM (b/f from 2010 review)
20	Ballagh Rocks	Lighthouse	F L	54° 59.963' N	008° 28.839' W	Fl 2.5s	5				No change considered necessary
20	Carrickbealatroha	Beacon (Unlighted)	F L	54° 59.185' N	008° 28.744' W	Unlit					No change considered necessary
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	Fl WR 15s	12/10			Racon, AIS	No change considered necessary
20	Rotten Island	Lighthouse	M F L	54° 36.879' N	008° 26.435' W	Fl WR 4s	15/11				Open negotiations to transfer to Killybegs Harbour
20	Rotten Island Hauling Off	Buoy	CIL	54° 36.900' N	008° 26.444' W	UNLIT					No change considered necessary
20	Bullockmore	Buoy	M F L	54° 33.987' N	008° 30.145' W	Q (9) 15s	5		2	AIS	No change considered necessary
20	St John's Point (Donegal)	Lighthouse	M F L	54° 34.162' N	008° 27.657' W	Fl 6s	14			AIS	No change considered necessary
20	Wheat Rock	Buoy	M F L	54° 18.843' N	008° 39.099' W	Q (6) + LFl 15s	6		2		No change considered necessary
20	Black Rock (Sligo)	Lighthouse	M F L	54° 18.460' N	008° 37.059' W	Fl WR 5s	10/8				No change considered necessary
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	Fl 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	Fl (3) 20s	18			AIS	No change considered necessary
20	Black Rock (Mayo)	Lighthouse	M F L	54° 04.055' N	010° 19.230' W	Fl WR 12s	19/14			AIS	No change considered necessary
20	Blacksod	Lighthouse	M F L	54° 05.923' N	010° 03.628' W	Fl (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	Fl WR 5s	14/16/9			AIS	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	LFl 10s	10			AIS	No change considered necessary
20	Dorinish	Buoy	F L	53° 49.479' N	009° 40.483' W	Fl G 3s	3		3		No change considered necessary
20	Dillisk Rocks	Buoy	F L	53° 48.330' N	009° 43.180' W	Fl G 5s	4		2		No change considered necessary
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	Fl (2) 15s	19			Racon	No change considered necessary
20	Cannon Rock	Buoy	M F L	53° 14.078' N	009° 34.352' W	Fl G 5s	5		2		No change considered necessary
20	Blackrock Buoy	Buoy	M F L	53° 14.003' N	009° 06.562' W	Fl R 3s (sync)	4		2		No change considered necessary
20	Margaretta	Buoy	M F L	53° 13.683' N	009° 05.996' W	Fl G 3s (sync)	6		2	AIS	No change considered necessary
20	Black Head (Clare)	Lighthouse	M F L	53° 09.253' N	009° 15.839' W	Fl WR 5s	11/8			AIS	No change considered necessary
20	Eeragh	Lighthouse	M F L	53° 08.909' N	009° 51.402' W	Fl 15s	18				No change considered necessary
20	Killeaney	Buoy	M F L	53° 07.259' N	009° 38.226' W	Fl G 3s	3		3	AIS	No change considered necessary
20	Straw Island	Lighthouse	M F L	53° 07.065' N	009° 37.840' W	Fl (2) 5s	12				No change considered necessary
20	Straw Island Hauling Off	Buoy	CIL	53° 07.006' N	009° 38.001' W	Unlit					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
20	Finnis	Buoy	MFL	53° 02.812' N	009° 29.126' W	Q (3) 10s	5		2	AIS	No change considered necessary
20	Inisheer	Lighthouse	MFL	53° 02.797' N	009° 31.613' W	Iso WR 12s	18/11			Racon, AIS	No change considered necessary
21	Loop Head	Lighthouse	MFL	52° 33.672' N	009° 55.938' W	Fl (4) 20s	23			DGPS	Reduce to 18nM (b/f from 2010 Review)
21	Ballybunnion	Buoy	MFL	52° 32.528' N	009° 46.944' W	Q	6		2	Racon, AIS	No change considered necessary
21	Kilstiffin	Buoy	ML	52° 33.801' N	009° 43.843' W	Fl R 3s	6		2	AIS	No change considered necessary
21	Kilcredaun	Buoy	MFL	52° 34.440' N	009° 41.196' W	Q.R (sync)	4		2		No change considered necessary
21	Tail of Beal	Buoy	MFL	52° 34.393' N	009° 40.746' W	Q.G (sync)	5		2	AIS	No change considered necessary
21	Carrigaholt	Buoy	MFL	52° 34.921' N	009° 40.504' W	Fl (2) R 6s (sync)	4		2		No change considered necessary
21	Beal Spit	Buoy	MFL	52° 34.820' N	009° 39.972' W	Fl (2)G6s (sync)	6		2		No change considered necessary
21	Beal Bar	Buoy	MFL	52° 35.181' N	009° 39.222' W	Fl. G. 3s (sync)	5		2		No change considered necessary
21	Doonaha	Buoy	MFL	52° 35.460' N	009° 38.493' W	Fl. R.3s (sync)	4		2		No change considered necessary
21	Corlis Point Front	Leading Light	MFL	52° 37.100' N	009° 36.363' W	Oc 5s	10				No change considered necessary
21	Corlis Point Rear (Querrin Quay)	Leading Light	MFL	52° 37.693' N	009° 35.336' W	Oc 5s	10				No change considered necessary
21	Letter Point	Buoy	MFL	52° 35.440' N	009° 35.884' W	Fl R 7s	4		2		No change considered necessary
21	Asdee	Buoy	MFL	52° 35.093' N	009° 34.545' W	Fl R 3s	4		2		No change considered necessary
21	Inishtearaht	Lighthouse	MFL	52° 04.541' N	010° 39.677' W	Fl (2) 20s	18			Racon, AIS	No change considered necessary
21	Cromwell Point (Fort)	Lighthouse	FL	51° 56.022' N	010° 19.280' W	Fl WR 2s	17/15				No change considered necessary
21	Harbour Rock	Beacon (Lighted)	FL	51° 55.813' N	010° 18.937' W	Q (3) W 10s	5				No change considered necessary
21	Valentia Front	Leading Light	FL	51° 55.514' N	010° 18.416' W	Oc WRG 4s	11/8/8				No change considered necessary
21	Foot	Buoy	FL	51° 55.718' N	010° 17.072' W	VQ (3) 5s	4		3		No change considered necessary
21	Skelligs Rock	Lighthouse	MFL	51° 46.108' N	010° 32.519' W	Fl (3) 15s	12			AIS	No change considered necessary
21	Maiden Rock	Buoy	FL	51° 49.023' N	009° 48.034' W	Fl G 5s	3		3		No change considered necessary
21	Bull Rock	Lighthouse	MFL	51° 35.521' N	010° 18.073' W	Fl 15s	18			Racon, AIS	No change considered necessary
21	Ardhakinna Point	Lighthouse	MFL	51° 37.104' N	009° 55.092' W	Fl (2) WR 10s	14/9			AIS	No change considered necessary
21	Colt Rock	Beacon (Lighted)	L	51° 38.068' N	009° 55.087' W	Fl (2) R 10s	5				No change considered necessary
21	Dinish Island Dir. Lt. Castletownbere	Lighthouse	FL	51° 38.792' N	009° 54.312' W	Dir Oc WRG 5s	15/12/12			AIS	No change considered necessary
21	Walter Scott	Buoy	FL	51° 38.541' N	009° 54.234' W	Q (6) + LFl 15s	4		3	AIS	No change considered necessary
21	Hornet	Buoy	FL	51° 38.859' N	009° 52.171' W	VQ (6) + LFl 10s	4		3		No change considered necessary
21	George	Buoy	FL	51° 39.024' N	009° 49.695' W	Fl (2) 10s	5		3		No change considered necessary
21	Carrigavaddra	Beacon (Unlighted)	FL	51° 38.670' N	009° 46.330' W	Unlit					Disestablish Beacon and replace with East Cardinal Buoy 2 Cables East of disestablished Beacon
21	Roancarrigmore	Lighthouse	MFL	51° 39.180' N	009° 44.820' W	Fl WR 5s	11/9			AIS	No change considered necessary
21	Sheep's Head	Lighthouse	MFL	51° 32.591' N	009° 50.923' W	Fl (3) WR 15s	15/9			AIS	No change considered necessary
21	Mizen Head	Lighthouse	MFL	51° 26.991' N	009° 49.225' W	Iso 4s	12			DGPS	No change considered necessary
21	Rock Island Crookhaven	Lighthouse	MFL	51° 28.593' N	009° 42.273' W	LFl WR 8s	13/11			AIS	No change considered necessary
21	Blackhorse Rocks	Beacon (Lighted)	FL	51° 28.437' N	009° 41.683' W	Q FL	5				No change considered necessary



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