Executive Summary

1. 2010/11 PWS Milestone 6 asked for a review of services provided for leisure marine users. The milestone requires recommendations to be made to the Met Office by the end of February 2011.

2. The review began with desk research which identified the current services available. Consultation with the public, industry professionals and users of the service was conducted via the Met Office website, meetings, and surveys.

3. Recommendations drawn from the desk research and consultation include:
   - Marine forecasts and warnings should be more closely linked with weather warnings and be impact based, using clear language. This is in addition to maintaining existing SOLAS Maritime Safety Information services.
   - Improved communication through platforms used for weather forecasts and warnings
   - Increase forecast parameters – including sea breezes, swell, wave height, wind speed and direction, tide information and confidence information
   - The increased use of real time observations
   - The improved access to recent and historic weather information including charts
   - Improvements to mobile phone and mobile internet services

4. The next stage of the review, which will be led by the Met Office, is to provide fully costed proposals and timescales for an updated marine leisure service
Introduction and Assumptions

PWS Milestone 6 for 2010/11 asked for a review of services provided for leisure marine users and the consultation to inform this.

For the purposes of the review ‘leisure marine’ was taken to include any activities which take place on inshore waters such as surfing, wind surfing, water skiing, sailing, boating, kayaking and coasteering but not explicitly swimming which was included in the tourist consultation, exercise carried out during Summer 2010.

Inland waters, which are the responsibility of British Waterways (BW) and the Environment Agency (EA), were also not the main focus of the consultation.

This review did not consider NAVTEX or INMARSAT SafetyNET services, or any service provided as part of Safety of Life at Sea Maritime Safety Information, SOLAS MSI, which is the responsibility of the Maritime and Coastguard Agency. Please see Annex G for more details.

Following guidance provided by ROSPA and the RNLI, we categorised marine leisure users into three groups:

- Weekend Sailors. This group tends to encompass the more experienced or even professional users who are well provided for with services provided as part of SOLAS MSI.
- Day Boaters
- Beach Launched Activity Users.

The last 2 groups are currently provided with limited services and are therefore the main focus of this review.

Aims & Objectives

Approximately 220,740,000 people in the UK participate in leisure marine activities annually. In 2006 there were 71 fatalities, 860 major injuries and 193 minor injuries and in 2007 at least 245 people got into difficulty at the coast and in the sea because they were not experienced in their environment. 234 incidents were caused because people were unaware of weather conditions.

The main objectives of the consultation were to better understand the current and future Public Weather Service needs of leisure marine users and the industry and in particular:

- information required by leisure marine users
- sources of weather information
- the means of users receiving weather information when at home
- the means of users receiving weather information when away from home
- the leisure marine industry requirement for weather information
- the communication requirements of the leisure marine industry
- any industry safety issues and messages;
with the outcome that any new services contribute to the increased enjoyment and most importantly, safety of those engaged in leisure marine activities.

Methodology

Engagement with UK industry professionals and public was used to understand and identify their requirements. This took the form:

- Desk top research was carried out to identify the leisure marine information currently being produced
- 170 members of the public were consulted with at the Met Office Open Day held on the 23rd October 2010
- Face to face meetings were held with industry professionals from the RNLI, ROSPA, RYA, British Kite Surfing Association, Harbour Masters association and the Adventure Activities Licensing Authority
- The RNLI provided a report from 2009 detail quantitative beach safety research
- The MCA provided details of safety research that had been carried out in 2006
- From the 23rd November 2010 until the 14 February 2011 a leisure marine user’s on-line questionnaire was available to all members of the public on the Met Office web site

Results

Results of the consultation exercise are presented in seven sections addressing each of the questions posed by the study.

i) What information is required by leisure marine users?

A strong and clear message that came from this research was that people would like to see general weather information and severe weather warnings displayed beside inshore waters and other marine forecasts and warnings in order to gain greater understanding of ‘weather story’. Over 75% of people at the open day and who responded via the on line questionnaire expressed this requirement. However, in an equally clear message more than 88% of all of the participants thought it quite or very important to have a separate marine leisure area on the Met Office web site.

Information gathered during the Open Day and from the online questionnaire, and reinforced by the face-to-face interviews undertaken with industry professionals indicated that the most useful information to users is:

- Wind direction & speed
  “Changes in wind direction and force are very important.” – Met Office Open Day
- Tide times
“Tide times for local beaches would be good.” – Met Office Open Day

- Sea state
  “For sailing sea state is very important.” – Met Office Open Day

- Wave height
  “Provide swell height and wave (wind) difference.” – Met Office Open Day

- General weather
  “Need more weather information at sea.” – Met Office Open Day

- Probability of forecast stability and confidence
  “Please can you put percentage level of confidence on you site for the 3-5 day forecasts.” – Met Office Open Day

The participants of the Met Office Open Day were given the option to add free text comments to their consultation responses. Below are some of the other requirements asked for:

- “I would like a full set of synoptic charts and pressure diagrams”
- “It would be good to have general weather forecast for 10 and 14 days”
- “We would like local rainfall radar to be updated every 30 minutes”
- “Please combine local forecasts with latest beach/surf reports”
- “I would like surface analysis charts from current to 120 hours ahead”
- “Please introduce a confidence guide & update service where variations are occurring before next scheduled forecast due”
- “Please retain the ability to see present synoptic pressure charts as well as a simplified symbolic weather forecast”
- “Please providing an inshore forecast for the 3 miles from the coast area this is useful for divers, kayaks, climbers and dinghy sailors”
- “Can we have historic and forecast weather charts, so I can make my own interpretations”

The preferred units used to present marine weather parameters such as wind, temperature and wave height varies a great deal. When questioned during the Met Office open day, no consistent unit set was identified, and people expressed a preference for being able to choose units. For example, users would like to be able to choose to see wind strength expressed as wind force, MPH and knots. In addition, industry professionals felt that the particular language that is used for marine forecasts and warnings is only meaningful to expert users and that use of plain English and linking the forecasts and warnings to impacts would be extremely important.

ii) What are the most used (internet) sources of current marine weather information?
The BBC and Met Office are used to provide information for regular weather forecasts however people are more likely to use other providers for marine information, such as Wind guru, XC Weather, Met check, Wind finder and Magic seaweed. These other websites show information in a more graphical and visually appealing way and the use of maps with wind arrows was mentioned on numerous occasions.

“Information to the granularity provided on Wind guru would be useful.” “Will use wind finder which has much more detail.” – Met Office Open Day

“High resolution of forecast points along the coastline as inshore is a bit big for a day paddle, but used in conjunction with the higher resolution wind points on wind finder it works well.” – Met Office Open Day

iii) By which means are users receiving marine weather information when at home?

While at home and planning activities 86% of the people attending the Open Day and 80% of the online questionnaire respondents use the TV, Radio and Internet to plan activities.

69% of those attending the Open Day and 59% of those replying to the questionnaire start checking the weather at least 3-4 days before undertaking an activity. Over 35% of these people start checking at least 5 days ahead. However, 10% only check on the day and 29% 1-2 days ahead.

“Would like an extension of inshore forecasts to cover 4-5 days like inshore information.” – Met Office Open Day

There was a great deal of interest expressed in being able to customise your own front pages of the Met Office web site; 73% of the questionnaire respondents and 69% of the Open Day participants stated they would like to do this.

iv) By which means are users receiving weather information when away from home?

More experienced marine leisure participants tend currently use VHF Radio and Navtex for weather information when undertaking leisure marine activities and as the official dissemination methods under SOLAS, this must not be undermined by any changes to the PWS. However we found that more people used the internet and mobile phones to obtain marine weather information while undertaking marine leisure activities than VHF and Navtex. We also found a desire for greater access to marine leisure weather information via mobile phones and mobile internet services:

“A simplified mobile web browsing page suitable for outdoor/marine activities. This would be suitable for kayaking and other sports where we don’t carry too much technical equipment.” – Met Office Open Day

Whilst undertaking marine leisure activities, 89% of the Open Day attendees and 58% of questionnaire respondents said they check the weather at least daily.
v) **What are the leisure marine industry requirements for weather information?**

The industry professionals stated that for them and their users the most important marine weather and sea information requirements are:

- Impact-based forecasts
- Sea state, including swell with high temporal and spatial resolution
- Greater temporal and spatial resolution
- Probabilities including forecast confidence and stability information
- Wind speed and direction
- Tidal information
- Sea breezes, (this was mentioned by almost all industry professionals)
- Real time observations

It was also felt that more details of how the weather is likely to change throughout the day would also be useful.

Synoptic charts were also shown to be very popular, however it was stated that the current Met Office charts are too cluttered.

vi) **What are the communication requirements for the leisure marine industry?**

Industry professionals felt that communication of weather forecasts and beach conditions to people travelling to the coast and beaches was very important and that being able to communicate the impacts, benefits and risks of these conditions would enable visitors to make choices regarding their personal safety.

In addition, it was felt that the extension of the Met Office widget to include marine weather forecast information would be very useful and this information would also be useful in a format for mobile internet services.

We understand many Harbour Masters print off the weather forecasts and post on notice boards; however the information is not available in an easily printable format.

Many marine professional we talked to were keen to see more real-time observation information available and it was suggested that the National Coast Watch could help with this.

vii) **What are the industry safety issues and messages?**

The main industry safety issue is how to communicate safety messages to the people who need to see them in a timely way. The RNLI currently display safety information at motorway service stations which are on route to popular beaches. The main beach safety messages are about choosing the most appropriate beach for the proposed
activity, knowing about rip currents, tides, off shore winds and sea breezes and the use of inflatable’s.

It was also felt that linking weather forecasts and warnings with marine forecasts and warnings and making them impact based would help to get the important messages across to the public.

**Summary of Key Findings**

Both leisure marine users and the industry professionals value the current services provided by the Met Office. However it is felt that there are gaps in the current service provision, general weather and warnings and marine forecasts and warnings are not joined up, impacts of marine weather on non-expert users are not considered and consequently, there is safety information that is not being as clearly communicated as it could be.

The results of the consultation can be summarised in the following key findings:

- There is a strong and clear requirement to link weather forecasts and warnings with marine forecasts and warnings and to make them impact based in order to help communicate important safety messages to the public.

- The language used for marine forecasts and warnings should be clear, aligned to that currently used for general PWS weather forecasts and warnings; i.e. use plain English. People would like to be able to choose the units they use.

- Users also want to have a separate marine leisure area on the Met Office web site. Although the seems at first contradictory, it fits well with the need to maintain separately the provision of MSI under SOLAS, as well as provide information for less expert and casual users in a way that adds the maximum amount of value by combining weather and marine information.

- The industry felt that communication of weather forecasts and beach conditions to people travelling to the coast and beaches was very important and that being able to communicate the impacts, benefits and risks of these conditions would enable visitors to make choices regarding their personal safety.

- The industry felt that the extension of the Met Office widget to include marine weather forecast information would be very useful and this information would also be useful in a format for mobile internet services.

- People are more likely to use providers other than the Met Office for marine weather information. Websites such as Wind guru, XC Weather, Met check, Wind finder and Magic seaweed were often cited, because information is more visual and the use of maps with wind arrows was mentioned on numerous occasions.

- While at home and planning activities people mainly use the TV, Radio and Internet for general and marine weather information.
Most people start checking the weather information at least 3-4 days before undertaking an activity. However, a significant number of people only check on the day or 1-2 days ahead of any planned activity. For those planning several days ahead, probabilistic information about the stability for the forecast is particularly relevant.

There has been an increase in the use of and future desired use of mobile phones and mobile internet weather information services for beach launched activities and day boaters.

The high majority of people said they check the weather at least daily whilst undertaking activities.

The most useful information to users is wind direction & speed, tide times, sea state, wave height, general weather, probability of forecast stability and confidence, tidal streams/currents.

The participants of the Met Office Open Day were given the option to add free text comments to their consultation responses. Their responses included asking for more charts and diagrams, longer weather forecasts and inshore forecast for out to three miles at sea.

The industry professionals stated that for them and their users the most important marine weather and sea information requirements are sea state, including swell with high temporal and spatial resolution, greater temporal and spatial resolution, probabilities including forecast confidence and stability information, wind speed and direction, tidal information, sea breezes, real time observations, impact based forecasts.

It was also felt that more details of how the weather is likely to change throughout the day would also be useful.

Synoptic charts were also shown to be very popular, however it was stated that the current Met Office charts are too cluttered.

Many Harbour Masters print off the weather forecasts and post on notice boards, however the information is not available in an easily printable format from the Met Office web site.

Many of the professional talked to were keen to see more observation information and it was suggested that the National Coast Watch could help with this.

The main industry safety issue is how to get to message out to the people who need to see them. The RNLI currently display safety information at service stations en route to popular beaches. The main beach safety messages are about choosing the most appropriate beach for the proposed activity, knowing about rip currents, tides, off shore winds and sea breezes and the use of inflatable’s. Consideration of innovative ways to target communication of marine weather safety messages should be considered.
Next steps

This report captures a wide range of requirements from the public and marine leisure industry professionals. The PWSCG requests that the MET Office consider these requirements, particularly those relating most directly to public safety and produce and proposal for new and/or updated PWS outputs, including costs, timescales, feasibility and delivery, within the dates which will be confirmed in a milestone for FY11/12. The response is usually expected to be within 2 months of MET Office receipt of this report. Delivery of any new or changed outputs, following agreement from the PWSCG, is usually expected 4-6 months after agreement of the MET Office response.

In addition, the PWSCG acknowledges that the MET Office may request further consultation activity be undertaken to understand and develop marine leisure weather and warning impact information. This work could be carried out in partnership with the MCA and RNLI.

Finally, the PWSCG acknowledges that the MET Office may request them to contact the National Coast Watch to discuss the possibility of providing real-time marine observations.