

## Cyclone Winston, Fiji

### A preliminary Satellite Imagery Analysis of Navigation & Coastal Damage (Imagery available to 25<sup>th</sup> February 2016)

Following consultation within the UKHO, a brief comparison has been made against Fijian BA Charts and satellite imagery obtained in the immediate aftermath of 20<sup>th</sup> February Cyclone Winston incident.

Due to the geographical location of the Fijian islands cloud free satellite imagery was difficult to obtain after the cyclone which has yielded some sporadic imagery, some of which is captured at a high angle of obliquity making assessment more difficult.

Due to licensing restrictions, only publically accessible Google Earth images have been included on this report, post-cyclone satellite images have not been included.

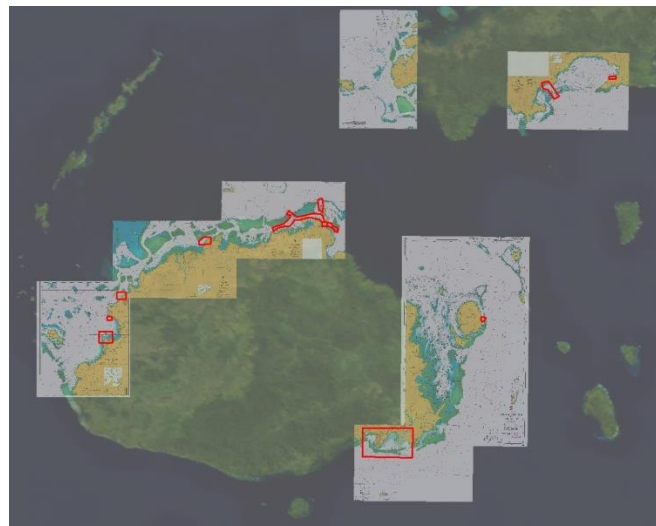
Further post-cyclone map data can be accessed from Map Action and from the European Union Copernicus Emergency Management Service:

<http://emergency.copernicus.eu/mapping/list-of-components/EMSR155>

<http://www.mapaction.org/more-news.html>

### Preliminary Assessment

Following UKHO consultation, areas of interest were chosen to concentrate imagery assessment as designated in red on the Figure below.



Assessment has been made for hazards to navigation and all jetties and harbours within these areas through comparison of before and after imagery against the BA charts. Views have been included below along with WGS84 coordinates and a brief description

It must be noted that the resolution of satellite imagery does not permit the identification of all features; therefore this report may be incomplete with regards to detail. Hazards may lie below the waterline. This report is for guidance only and must not be used for navigation.

**Vuda Point, centred on 17°41'4.75"S, 177°23'14.49"E**



Google Earth image dated 16 July 2015

Jetties, Tanks and marinas show no visible signs of damage. Note marina developments in this area not depicted on current BA chart.

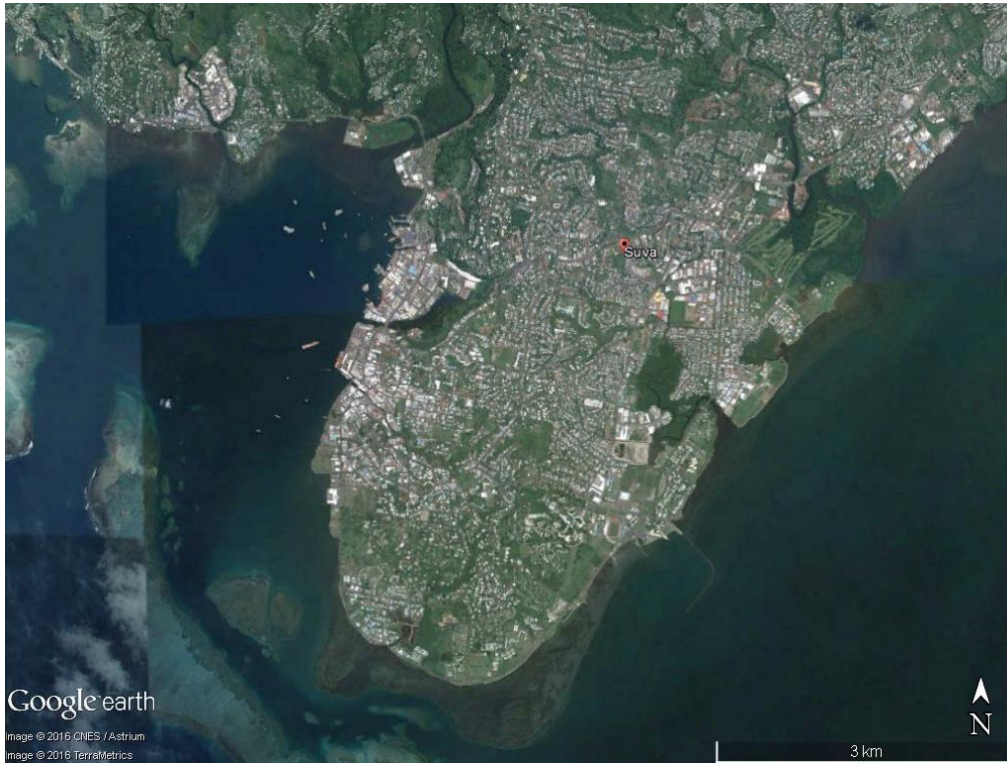
**Lautoka Harbour, centred on 17°36'18.79"S, 177°26'18.11"E**



Google Earth image dated 16 July 2015

Jetties in Harbour show no visible damage and buoys and nav aids appear intact.

**Suva, centred on 18° 9'28.25"S, 178°26'23.63"E**



Google Earth image dated March 2015

Dwellings, Jetties and other maritime infrastructure show no visible signs of damage.

**Nanunu-I-Cake island , centred on 17°19.25'S, 178°13.45'E**



Google Earth image dated 17 April 2014

**Jetty destroyed** on Nananu-I-Cake island at 17°19.25'S, 178°13.45'E

**Nananu-I-Ra island , centred on 17°17.78'S, 178°13.00'E**



Google Earth image dated 2014

**Two jetties destroyed** on Nananu-I-Cake island at 17°19.25'S, 178°13.45'E

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