

# HIGH impact Weather LAke SYstem (HIGHWAY) Kenya Meteorological Department Nairobi High Resolution BUFR Radiosonde Data Set

## 1.0 Contacts:

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### Original Data Source:

Kenya Meteorological Department via GTS

## 2.0 Dataset Overview

The Kenya Meteorological Department started transmitting the high vertical resolution BUFR format radiosonde data from the Nairobi, Kenya (Fig 1) station on the GTS (Global Telecommunications System) with the 00 UTC 10 August 2019 release. Releases continued at 00 and 12 UTC through 30 November 2019. From 1 December 2019 through the end of the HIGHWAY period on 29 February 2020, there were daily releases at 00 UTC. The final data set contains 254 2-second vertical soundings.



Figure 1. Location of the Nairobi, Kenya radiosonde site (yellow circle).

### 3.0 Project Overview

The HIGH impact Weather LAke SYstem (HIGHWAY) Project was a three-year project that aimed to increase the use of weather information to reduce the loss of life and damage to property in the Lake Victoria Basin region of East Africa. This project was planned to address the lack of much needed in-situ observations and data availability both for research and meteorological operational purposes. Enhanced observations were used to increase the scientific knowledge of storm initiation, evolution and development of severe weather over the lake and provide additional guidance to operational forecasters in providing regular weather forecasts and severe weather warnings for fishing boats and small transport vessels on Lake Victoria. Innovative nowcasting and forecasting products were developed, validated and implemented to improve early warnings of high impact weather in the region, with dissemination of these bulletins distributed widely through the East African region via local radio and mobile phones. This project was sponsored by the United Kingdom's Weather and Climate for Information Services (WISER) for Africa program under UK Department for International Development (DFID), providing funding to the National Meteorological and Hydrological Services (NMHSs) in the region, to the World Meteorological Organization (WMO), the UK Meteorological Office (UKMO) and to NCAR. Further information on is available at the HIGHWAY web site at NCAR/EOL: [https://www.eol.ucar.edu/field\\_projects/highway](https://www.eol.ucar.edu/field_projects/highway) and the HIGHWAY Field Catalog: <http://catalog.eol.ucar.edu/highway>.

### 4.0 BUFR Format

These data are in BUFR (Binary Universal Form for data Representation) format. BUFR is a binary data format maintained by the World Meteorological Organization (WMO). Information on BUFR is available in the WMO Manual on Codes (WMO No 306): <https://community.wmo.int/activity-areas/wmo-codes/manual-codes#Codes>. There are many resources for working with BUFR data, one example being the ECMWF ecCodes software package: <https://confluence.ecmwf.int/display/ECC>.

### 4.3 Data Specifics

The files contain individual soundings at two-second vertical intervals.

The file naming convention is:

HKNC\_YYYYMMDDHHmm.ius\_sounding.bufr where:

YYYYMMDDHHmm is the nominal UTC data and time of the sounding.

During the HIGHWAY period, Nairobi utilized Modem GPSonde M10 (France) radiosondes and the Eoscan 1.2.1 ground station.

Site ID	WMO ID	Site Name	Country	Latitude	Longitude	Elev (m)
HKNC	63741	Nairobi	KE	1.30175S	36.7591E	1795

## **5.0 Data Quality Control Procedures**

No data quality checks were conducted by NCAR/EOL.