Hyderabad Flash Flood, October 2020

The formation of a deep depression over the Bay of Bengal triggered extremely heavy rainfall in the last 48 hours over certain parts of southern India. The deep depression passed over the southern part of Odisha, Andhra Pradesh, Telangana, and eastern Karnataka. It is expected to weaken into a well-marked low-pressure area as it moves further west-north-westwards towards Maharashtra.

The impact of the deep depression is particularly grave in the states of Andhra Pradesh and Telangana. The rainfall resultant waterlogging and strong winds led to 30 casualties [1]across Telangana and Andhra Pradesh, of which 17 were in Hyderabad and its suburbs, many caused by wall and roof collapse. Many people were swept away by turbulent floodwaters, and some lost their lives due to electrocution.

The IT hub of Hyderabad and the adjoining districts bore the brunt of the downpour due to flash floods wreaking havoc in the Greater Hyderabad area. Incessant rainfall resulted in severe waterlogging in several areas, completely inundating low-lying areas, including a hospital[2] in the Somajiguda area of Hyderabad.

Several electricity poles as well as trees were uprooted, and transformers were washed away, causing widespread disruption of power supply across the city, with blackouts over 24 hours in several areas of the city. Traffic movement was disrupted in many parts of the city, with cars seen floating on floodwaters. The Hussain Sagar Lake started to overflow into the middle of the city.

National Disaster Response Force (NDRF) teams along with Greater Hyderabad Municipal Corporation (GHMC) personnel are engaged in rescue and evacuation efforts; over 80,000 people in the city have been evacuated to relief camps.

Indian Army helicopter was used to airlift people from submerged areas, while GHMC had to employ boats in several places.

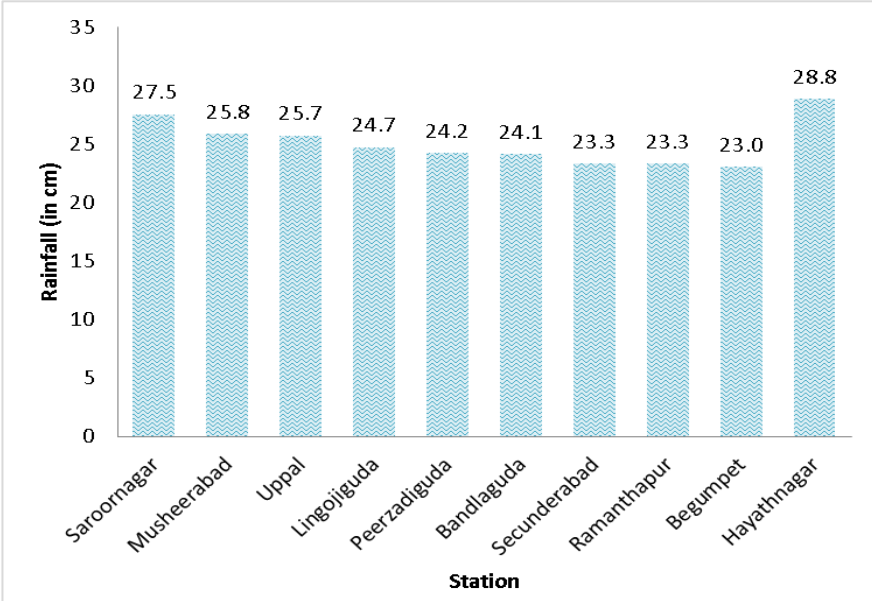

Figure 1: Rainfall in various areas of Hyderabad on 13th October

Hyderabad has seen its worst rainfall in 117 years, with 19.2 cm of average rainfall in October, the highest rainfall recorded in October since 1903. At least 14 districts in Telangana have been affected by extreme rainfall. Heavy rains in catchments led

[1] https://www.hindustantimes.com/telangana/30-killed-as-heavy-rain-triggers-flashfloods-in-andhra-and-telangana/story-DwO3QkmVA43Tm98Xx5UtQM.html

[2] TNIE Telangana

to heavy discharge into Karnataka rivers, causing dams in the Cauvery and Krishna basins to swell. The brimming water levels led to the opening of 13 gates of Himayath Sagar (artificial lake 20 km from Hyderabad) on 14th October.

ANALYSIS

RMSI has mapped the severely impacted areas in Greater Hyderabad Municipal Corporation (based on publicly available information) by an inundation modeling software (HEC-RAS). The affected waterlogged areas are represented in the following maps.

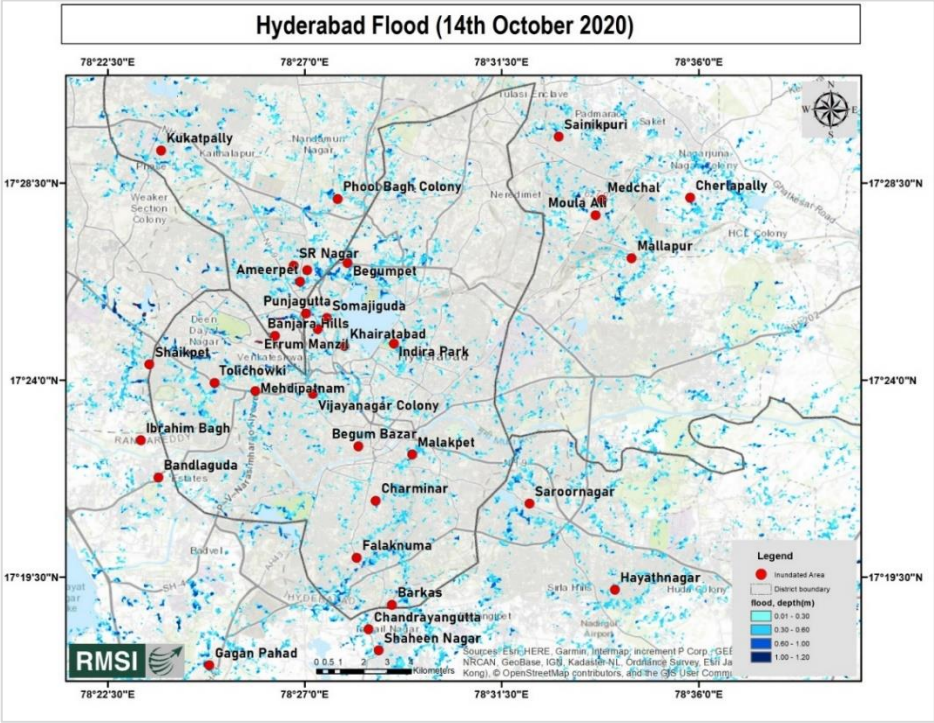

Figure 2: Inundation extent in Greater Hyderabad due to rainfall on 14th October 2020

The areas worst affected by waterlogging were Tolichowki, Falaknuma, Al Jubail Colony, Barkas, Chandrayangutta, Karwan, Hyderguda and low-lying areas of the Old City (along the Musi River), estimated to be submerged under 0.6 m - 1.2 m of floodwater, as represented in the below map. RMSI has used various visuals of the flood from public sources and on-ground information to validate the flood depth from the model, which has been found to be in good correlation.

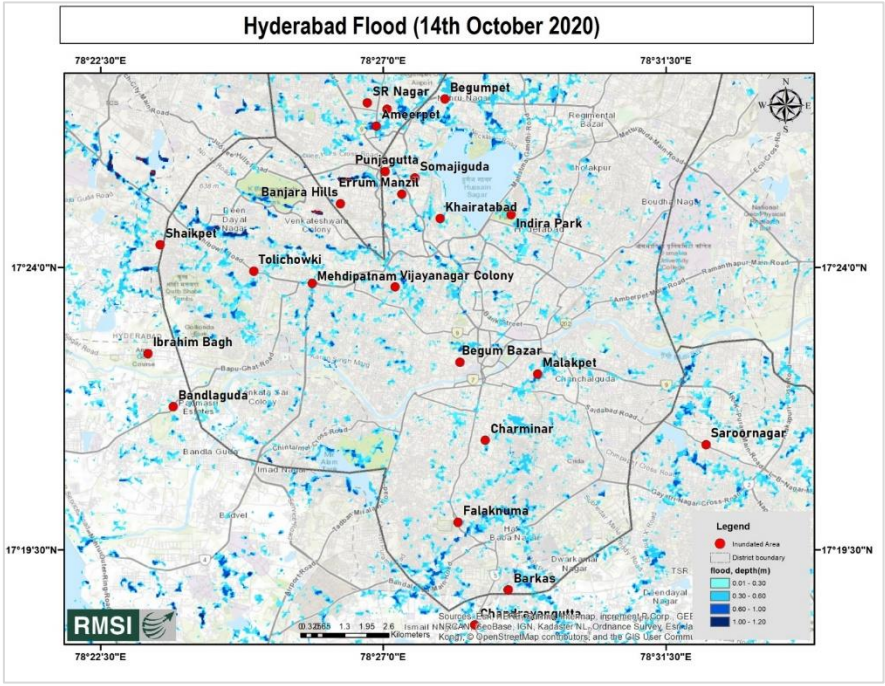

Figure 3: Inundation extent in Hyderabad due to rainfall on 14th October 2020

In October, heavy rainfall is an anomalous phenomenon in Hyderabad and can be attributed to the prevailing wind pattern and cyclonic activity in the Bay of Bengal.

The flooding led to widespread disruption in the IT sector as large parts of the city were plunged into darkness without access to broadband internet. The prevailing COVID-19 situation has been a blessing in disguise as a significant percentage of the IT companies' employees are working from home, hence, saving them from being stranded due to the waterlogging.