

Concept Note

For

Webinar

On

**RISK MITIGATION AND  
MANAGEMENT OF URBAN FLOODS**

Dated: 13<sup>th</sup> August, 2021 & 20<sup>th</sup>

August, 2021

15:00-17:00 Hours



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## **1. INTRODUCTION**

In the past, any strategy on flood disaster management largely focused on riverine floods affecting large extents of rural areas. Mumbai floods of July 2005 turned out to be an eye-opener. Realizing that the causes of urban flooding are different and so also are the strategies to deal with them, NDMA has for the first time decided to address urban flooding as a separate risk, delinking it from floods. NDMA commenced its efforts to formulate the Flood Guidelines in 2006 and released them in 2008. Even while the Flood Guidelines were under preparation, efforts commenced to formulate these Urban Flood Guidelines in August 2007.

Urban flooding is significantly different from rural flooding as urbanization leads to developed catchments which increases the flood peaks from 1.8 to 8 times and flood volumes by up to 6 times. Consequently, flooding occurs very quickly due to faster flow times, sometimes in a matter of minutes. Urban areas are centers of economic activities with vital infrastructure which needs to be protected 24x7. In most of the cities, damage to vital infrastructure has a bearing not only locally but could even have global implications. They are also densely populated and people living in vulnerable areas, both rich and poor, suffer due to flooding. It has sometimes resulted in loss of life, damage to property and disruptions in transport and power, bringing life to a grinding halt, causing untold misery and hardships. Even the secondary effects of possible epidemics and exposure to infection takes further toll in terms of loss of livelihood, human suffering, and, in extreme cases, loss of life. Therefore, management of urban flooding has to be accorded top priority. Increasing trend of urban flooding is a universal phenomenon and poses a great challenge to urban planners the world over. Problems associated with urban floods range from relatively localized incidents to major incidents, resulting in cities being inundated from a few hours to several days. Therefore, the impact can also be widespread, including temporary relocation of people, damage to civic amenities, deterioration of water quality and risk of epidemics.

Attention should be given at all levels of governance to ensure that efforts to mitigate urban flooding reach areas that have the highest risk of flooding and cross all economic and social levels and that locally supported steps are taken to incentivize individual homeowner mitigation efforts.

These mitigation efforts should include improved transparency, better risk communication, and more support for flood-weary residents who want to move out of harm's way. And if 2018 was the year of talking about climate change.

It is high time that public open spaces in Indian cities are analyzed and designed to give space for runoff to avoid flooding in cities. This can be in the form of waterbodies/ponds, parks and other green areas, which can be used for recreational activities for the rest of the year as well.

There is a need to include public open spaces within urban fabric in the form of storm management infrastructure, which could help our cities transform into water-sensitive cities.

## **2. AIM & OBJECTIVES**

The webinar is designed with the following objectives in the field of Risk Identification, Mitigation and Management of Urban Floods: -

- To minimize the loss of life and damages to property and to ensure restoration and rehabilitation.
- To illustrate a concise chart, listing major executive actions required in response to urban flooding
- To list necessary tasks for preparedness, response relief and restoration required to be undertaken by the line agencies and departments involved.
- To ensure effective integration of tasks/events of each department at every stage of the disaster management process and enable continuous coordination of all actions.
- To enable reporting of actions taken by each agency / department for further review and updating of the existing SOP from past learnings.

The main aim of this webinar is to enhance synergy between the engineers and scientists in order to inculcate the culture of imbibing technologies for better preparedness and reduce losses.

### **3. CASE STUDIES**

#### **a. Vadodra Urban Flooding, 2019**

Due to heavy rain in July–August 2019, the city of Vadodara and its administrative district in the Indian state of Gujarat were affected by severe flooding. On 31 July 2019, nearly 50 cm of rain fell on Vadodara within 12 hours, with 424mm recorded in one 6 hour period. As a result, the nearby Vishwamitri River rose to 1 metre below the danger line and the Ajwa dam overflowed, flooding the city.

The rain has stopped in Vadodara and water started receding now. Heavy rain has impacted most parts of South and central Gujarat during the last 24 hours. Rain recorded in more than 140 Taluks. The water level had surged in Ambika and Purna rivers due to heavy rains. Vadodara city has recorded more than 2 inches of rain. Alert had been announced in low lying areas following warning of heavy to very heavy rainfall.

The flood caused 8 deaths and the evacuation of more than 6000 people by the NDRF and SDRF. Train services were cancelled owing to water-logging, and the electricity supply was interrupted. On 1 August, Vadodara Airport was closed, GSRTC buses were cancelled and 69 trains passing through Vadodara Junction railway station were either cancelled or rerouted.

As water in the Vadodara receded, Crocodiles were seen on Vadodara roads causing harassment to people and stray dogs. 22 crocodiles were rescued from the residential areas of Vadodara within a week after flood.

#### **b. Mumbai Urban Floods of 2005**

On July 26, 2005, it reached 196 mm/hour." He adds that BRIMSTOWAD, the storm water drain project of BMC, that was conceived in 1993 and was one of the top recommendations of the Chitale Committee report, suggested that drains with a carrying capacity of 50 mm/hour during heavy rainfall be built.

When Navi Mumbai was planned, drains were designed for 168 mm/hour of rainfall, and a large number of holding ponds were also created. Which is why it is coping better than Mumbai.

#### **4. METHODOLOGY**

- Power point presentation on Google Meet platform
- Language to be used: Hindi/ Gujarati
- Question/ Answer
- Interaction and experience sharing
- Reading material (Soft Copy only)
- Presentations (Soft copy only)
- Flip charts

#### **5. Expected Participants**

First webinar in this series is proposed on 13<sup>th</sup> August, 2021 and second Webinar in this series is planned on 20<sup>th</sup> August, 2021 for following target audience

Sr. No.	Name of Departments/ Authorities/ Boards/ Corporations	Officials/ Engineers	Level of officials
1.	Municipal Corporations	Deputy Engineer, Assistant Engineer, Executive Engineer	L1 and L2
2.	Town Planning and valuation Department	Town Planner, Junior Town Planner, Deputy Engineer, Assistant Engineer, Executive Engineer	L1 and L2
3.	Gujarat Urban Development Authority	Deputy Engineer, Assistant Engineer, Executive Engineer	L1 and L2
4.	Roads and Building Department	Deputy Engineer, Assistant Engineer, Executive Engineer	L1 and L2
5.	Narmada Water Resources, Water Supply and Kalpsar Department	Deputy Engineer, Assistant Engineer, Executive Engineer	L1 and L2
6.	District Administration	District Mamlatdars	