3.4.4 Urban Flooding

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 upto 6 times. Consequently, flooding occurs very quickly due to faster flow times (in a matter of minutes). Urban areas are densely populated and people living in vulnerable areas suffer due to flooding, sometimes resulting in loss of life. It is not only the event of flooding but the secondary effect of exposure to infection also has its toll in terms of human suffering, loss of livelihood and, in extreme cases, loss of life.

Urban areas are also centres of economic activities with vital infrastructure which needs to be protected 24x7. 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. Problems associated with urban floods range from relatively localized incidents to major incidents, resulting in cities being inundated from 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.

The Department of Urban Development & Housing and Town Planning should plan & prepare and mitigate urban flooding alongwith District Administration and othe line Deptt. like PWD, PHED etc

Table 13: Urban Flooding

S. No.	Task	Activities	Responsibility
		Structural Measures	
1	Urban Design	1. All future roads and rail bridges in cities crossing drains to be designed such that they do not block the flows resulting in backwater effect 2. All road re-leveling works or strengthening/ overlay works to be carried out by milling the existing layers of the road so that the road levels will not be allowed to increase Ensure 3. protecting of Water Bodies and its restoration/ revival 4. Remove encroachments and take strict action against the encroachers as per the bye-laws/ regulations	◆ SDMA ◆ Dept. of UD & Housing ◆ Dept. of Town Planning ◆ PRIs/ ULBs ◆ District Admn.

2	Establishment of Emergency Operation Centre	1. Ensure round the clock operations of EOCs during the flood season with adequate manpower/ resources to respond urban flood	◆ SDMA/SEC ◆ Dept. of UD & Housing ◆ PRIs/ ULBs ◆ DDMA/District Admn.
3	Hazard resistant construction, strengthening, and retro-fitting of all lifeline structures and critical infrastructure	1. Collaboration with technical agencies and implementation	◆ Dept.of UD & Housing ◆ PRIs/ ULBs ◆ All Line Deptt/ Agencies Room ◆ District Admn. ◆ Dept. of Town Planning

Non Structural Measures			
1	Preparation of comprehensive Urban Storm Drainage Desing Mannual (USDDM)	1. Take initiatives and collaborate with central agencies	◆ SDMA/SEC ◆ Dept. of UD & Housing ◆ PRIs/ ULBs ◆ Dept. of Town Planning
2	Preparation of Storm Water Drainage System Inventory	1. Coordinate with MoUD in preparing the inventory through ULBs	◆ SDMA/ DDMA ◆ Dept. of UD & Housing ◆ PRIs/ ULBs ◆ Dept. of Town Planning ◆ District Admn.
3	Operation and Maintenance of Drainage Systems	1. Adequate budget to be provided to take care of the men, material, equipment and machinery for operation and maintenance of drainage systems on a periodic basis	◆ Deptt. of Finance/ Planning ◆ Dept. of UD & Housing ◆ PRIs/ ULBs ◆ Dept. of Town Planning

4	Environment Impact Assessment	1. To ensure strict compliance with the guidelines	◆ Dept. of UD & Housing ◆ PRIs/ ULBs ◆ Dept. of Town Planning
5	Compliance of Techno-Legal Regime	1. To ensure strict compliance of Techno-Legal Regime through ULBs	◆ Dept. of UD & Housing ◆ PRIs/ ULBs ◆ Dept. of Town Planning
6	Constitution of Urban Flooding Cell for Integrated UFDM	1. Nodal Department to constitute Urban Flooding Cell at State level and a DM Cell to be constituted at ULB level for managing urban flooding at local level	◆ Dept. of UD & Housing ◆ PRIs/ ULBs ◆ Dept. of Town Planning
7	Public Private Partnerships	1. Promote Public Private Partnership in disaster management facilities	◆ Dept. of UD & Housing ◆ PRIs/ ULBs ◆ Dept. of Town Planning