

WELCOME



STANDARD OPERATION PROCEDURE FOR FLOOD CONTROL [SOP]

Presenter

**SUPERINTENDING ENGINEER,
PUNE IRRIGATION CIRCLE, PUNE**



Flood at Bundgarden, Pune



Flood situation at Shivaji Bridge, Pune



Flood situation in low lying area



Flood situation at Vithalwadi, Pune



Flood situation at newly constructed Bridge near PMC

Bhima Basin

Entire Bhima basin is divided in 4 sub-basins.

Name of Basin	Dams included
Mula Mutha Basin	Varasgaon, Panshet, Temghar, Khadakwasla, Mulshi, Pawana, Kasarsai.
Bhima Sub Basin	Chaskaman, Andhra, Bhama Askhed, Wadiwale, Ujjani
Kukadi (Ghod) Basin	Yedgaon, Manikdoh, Dimbhe, Pimpalgaon Joge, Dimbhe, Ghod, Vispaur
Nira Basin	Nira Deoghar, Gunjwani, Vir, Bhatghar, Nazare

OBJECTIVES OF SOP

This SOP aims at taking timely action, systematic co-ordination among department and public, streamlining communication and decision making.

Objectives are as follows:-

- i. Identify hazard potential on downstream of the dam.
- ii. Warning about probable floods in advance.
- iii. Taking preventive actions in advance.
- iv. Monitor flood situation.
- v. Protection of Human lives & infrastructure.
- vi. Restore damaged infrastructure due to floods.

PRE-MONSOON ACTIVITIES

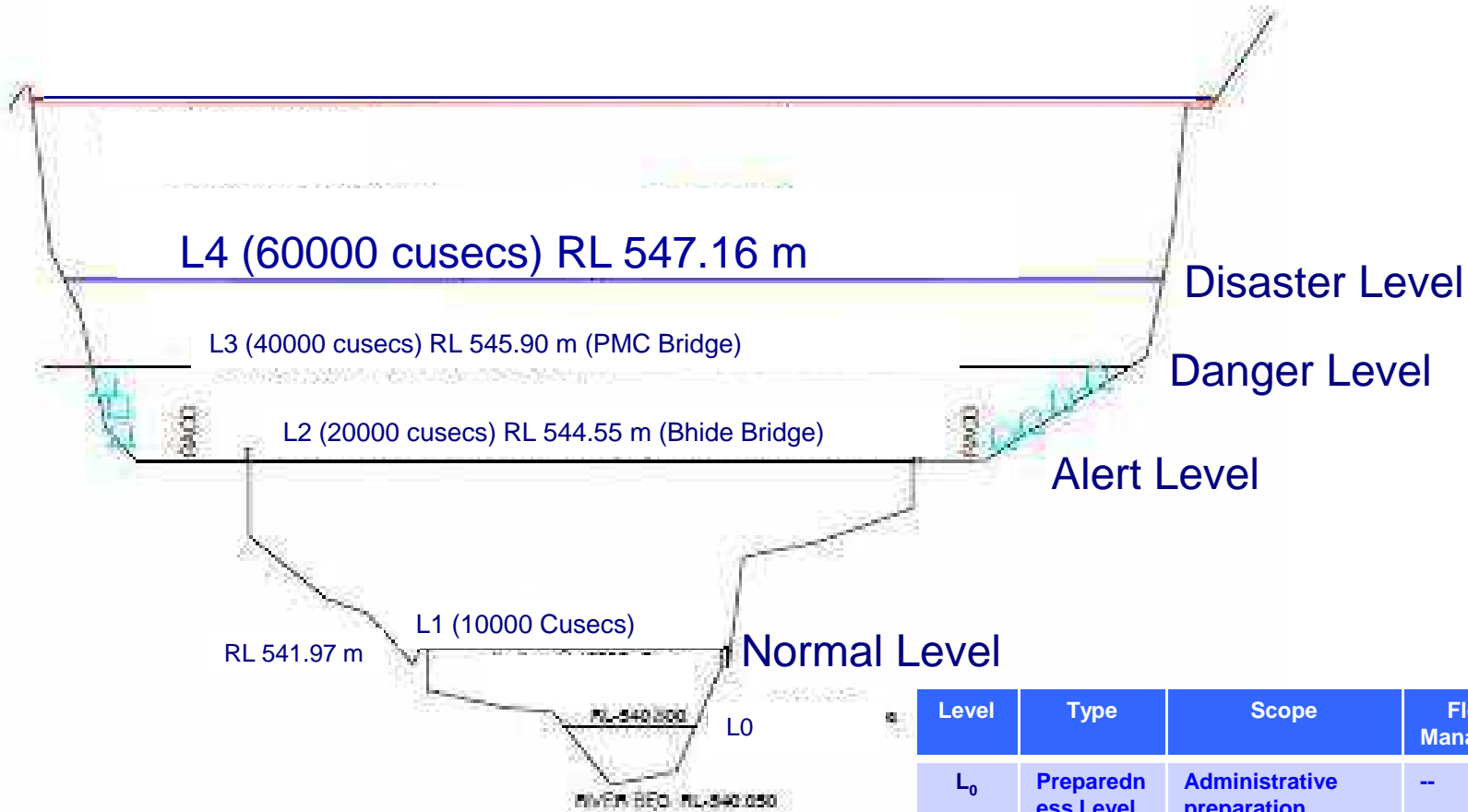
❖ Administrative preparation

- In Co-ordination meeting the updated list of officers & their phone numbers, e-mail address along with previous experiences regarding flood shall be shared.
- Identify hazard potential downstream of Dam.
- Establishing Flood control cell at district headquarters & regional headquarters by different departments.

❖ Trigger Mechanism :

The plan of action is to be prepared taking into consideration the **situation at a given point of time. The Plan is to indicate the level of disaster, the type of response, communication sequence and actions of officers / State. For this, it is necessary to develop a concept of (L) and define the different levels of disasters/ situations/ events in order to facilitate the responses and immediate assistances at district level, Regional level and state level.**

Typical C/S of Mutha River Pune City



Discharge figures for Mutha River in Pune city.

Response Time (RT) 2 hours

Level	Type	Scope	Floods Manageable	Discharge (cusecs)
L ₀	Preparedness Level	Administrative preparation	--	Upto 4000
L ₁	Normal Level	River flowing within banks	Upto Tahsil Level	Upto 10000
L ₂	Alert Level	flowing with maximum discharge carrying capacities	Upto District Level	Upto 20000
L ₃	Danger level	Inundation beyond River boundaries.	Upto Regional Level	Upto 40000
L ₄	Disaster level	Large scale flood situation	Upto State Level	Upto 60000

The scale and intensity of disaster shall be determined by Revenue authorities with the assistance of Technical Agencies like Water Resources Department, IMD. **The District Collector is authorized to decide on the level of disaster, in consultation with the District Flood Coordinating Officer, i.e. Superintending Engineer of Water Resources Department.**

i. District Flood Co-ordination Committee (DFCC) to be setup by Collector.

- a) District Collector - **Chairman.**
- b) Municipal Commissioner
- c) Chief Executive Officer, Zilla Parishad.
- d) Superintending Engineer of Irrigation Management Circle in District.
- e) Superintendent of Police of the District/ DCP.
- f) Executive Engineer of Public Works & Housing Department.
- g) Representative of Post & Telegraph Department.
- h) Representative of the India Meteorological Department.
- i) Representative of the Railway, if any railway works are involved.
- j) Representative of the Road Transport.
- k) Representative of the Regional Transport.
- l) Representative of the civil supplies.
- m) Representative of the Police Wireless.
- n) District Health Officer.
- o) District Commandant of Home Guards.
- p) A representative of All India Radio & Television.
- q) or any other person / officer as per requirement.
- r) Executive Engineer of Irrigation – **Member Secretary.**

Contd....

- **DFCC should take all the precautions for flood mitigation during the flood and necessary measures after the floods.**
Flood forecasting, flood control & mitigation are indispensable in efficient and safe operation of large reservoirs and protection of flood-prone populated areas and installations on the banks of major rivers or on the downstream of important dams.
- **Declaration of Response Mechanism of concerned line departments along with the role & responsibilities.**

ii. Flood committees at towns and village level.

- a) SDO/Tahsildar/Village Sarpanch – Chairman**
- b) BDO / Chief Officer of Nagar Palika/Nagar Parishad**
- c) Local Police Station in-charge or the Police Patil**
- d) Talathi / Gramsevak**
- e) Chairman of the village farmers Co-operative society**
- f) Head Master of the Village School.**
- g) Deputy Engineer PWD**
- h) or any other person as per requirement.**
- i) Deputy Engineer, WRD/Sectional Engineer – Member Secretary.**

❖ **Demarcation of Alert, Danger & Disaster levels.**

This will be the primary responsibility of local bodies, namely the Executive Engineer of the Zilla Parishad for rural area and in case of urban area the Executive Engineer of Municipal Corporation/ Council. These markings to be done in consultation with Executive Engineer WRD on visible important structures & places.

Last date 31st May 2016.

❖ Selection of Safe places for shifting of people.

The District Revenue Authorities and Zillha Parishad shall select safe places for rehabilitation during flood. These shall be conveyed/informed to people by radio, & notices at public places or by proper announcements by Revenue Department.

COMMUNICATION PROTOCOL

1. Preparedness Level (L₀ Level)

Sr. No.	Trigger Level	Who will communicate	To Whom	How & what
1	Lo Preparedness Level	Sectional Engineer	Flood control Cell & Circle Officer	Phone/SMS Storage

2. Normal Level (L₁ Level)

Sr. No.	Trigger Level	Who will communicate	To Whom	How & what
1	L1 Normal level.	Sub Divisional Engineer (WR)	Tahasildar / S.D.O. / B.D.O.	E-mail /Phone/ SMS/Wireless Rainfall & outflows of dams/Rivers

3. Alert Level (L2 Level)

Sr. No.	Trigger Level	Who will communicate	To Whom	How & what
1	L2 Alert level.	Ex .Engineer	Superintending Engineer / District Collector / Municipal Commissioner	E-mail /Phone/SMS/ Wireless every 3 hours Rainfall & outflows of dams/Rivers

4. Danger Level (L₃ Level)

Sr. No.	Trigger Level	Who will communicate	To Whom	How & what
1	L3 Danger level.	Ex .Engineer	Superintending Engineer / District Collector / Municipal Commissioner	E-mail / SMS /Phone @ every 3 hours or @ closer intervals Rainfall & outflow discharge of dams/Rivers
		Superintending Engineer	Chief Engineer / District Collector / Municipal Commissioner / Press Note	
		Chief Engineer	Commissioner Pune / Principal Secy.W.R.D./ Hon.Minister W.R.D.	
		Principal Secy. (CAD)	Hon.Chief Minister & Chief Secretary, GoM	

5. Disaster Level (L₄ Level)

Sr. No.	Trigger Level	Who will communicate	To Whom	How & what
1	L4 Disaster level.	State Level Officers, Disaster Management Cell, R & FD (R&R)	Central Govt, Army, Navy, Air Force	Hot Line outflow discharge of dams/Rivers

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Dams affecting flood for Pune city

1. Khadakwasla
2. Panshet
3. Warasgaon
4. Temghar
5. Mulshi dam
6. Pawana dam
7. Kasarsai dam.

Pune City

Level	Type	Floods Manageable	Discharge (cusecs)
L ₀	Preparedness Level	--	Upto 4000
L ₁	Normal Level	Upto Tahsil Level	Upto 10000
L ₂	Alert Level	Upto District Level	Upto 20000
L ₃	Danger level	Upto Regional Level	Upto 40000
L ₄	Disaster level	Upto State Level	Upto 60000

Discharge figures for Mutha River in Pune city.

Response Time (RT) 2 hours

Pimpri Chinchwad city.

Preparedness Level	Discharge in Pawana River
L0	Upto 5000 cusecs
L1 (Normal)	Upto 10900 cusecs
L2 (Alert)	Upto 16200 cusecs
L3 (Danger)	Upto 35000 cusecs
L4 (Disaster)	Upto 55800 cusecs

Discharge figures for Pawana River in Pimpri Chinchwad city.

Response Time (RT) 3 hours

Communication Protocol for Government Projects (Trigger Mechanism)

Sr. No.	Name of Project	River	City/ Village	Preparedness (L0) @ Discharge Cusecs	Normal level (L1) @ Discharge cusecs	Alert level (L2) @ Discharge cusecs	Danger level (L3) @ Discharge cusecs	Disaster level (L4) @ Discharge cusecs
1	Khadakwasla	Mutha	Pune	4000	10000	20000	40000	60000
2	Pawana	Pawana	PCMC Area	5000	10000	16200	35000	57000
3	Veer	Nira	15 villages	10000	20000	40000	60000	80000
4	Nira Deoghar	Nira	Bhor	4000	5000	10000	24000	45000
5	Bhatghar	Nira	--	5000	8000	15000	26000	40000
6	Chaskaman	Bhima	Khed	10000	20000	30000	55000	80000
7	Bhama Askhed	Bhama	8 Villages	2000	3000	4500	12000	20000
8	Mulashi	Mula		10000	15000	20000	30000	45000
9	Wadiwale	Indrayani		7500	10000	15000	23000	35000
10	Kasarsai	Pawana	Kasarsai	3000	5000	8000	12000	20000

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Communication Protocol for Government Projects (Trigger Mechanism)

Sr. No.	Name of Project	River	City/ Village	Preparedness (L0) @ Discharge Cusecs	Normal level (L1) @ Discharge cusecs	Alert level (L2) @ Discharge cusecs	Danger level (L3) @ Discharge cusecs	Disaster level (L4) @ Discharge cusecs
11	Kukadi Project- Manikdoh Dam	Kukadi	3 villages	3000	6000	10000	15000	30000
12	Yedgaon	Kukadi	3 villages 17 villages	5000 5000	15000 15000	35000 70000	40000 90000	70000 100000
13	Wadaj	Meena	12 villages	2000	5000	13000	20000	25000
14	Pimpalgaon Joge	'R' River	3 villages	3000	7500	15000	20000	30000
15	Dimbhe	Ghod River	8 villages	7000	15000	30000	50000	75000
16	Chilhewadi	Mandavi	3 villages	3500	10000	15000	20000	35000

Standard Operation Procedure for other Department

- **Other Departments like Revenue, Police, Corporation, Zilla Parishad etc. shall set their Standard Operation Procedure to mitigate flood situation.**
- **These line department shall act according to their SOP after receipt of information from Water Resources Department.**

Flood Control Cell at Sinchan Bhavan, Pune

- **First information is collected at Flood Control Cell, Sinchan Bhavan, Pune. This cell is operative 24 x 7.**
- **Information are collected by Wireless, Telephone, Real Time Data Acquisition System and Email.**
- **Representatives of Police, Revenue, PMC and PCMC are appointed 24 x 7 during monsoon period.**
- **Web site : www.punefloodcontrol.com**
- **Telephone : 020-26127309 & 020-26127062**

Real Time Data Acquisition System (RTDAS)

- Water Resources Department has started Hydrology Project Stage-II with help of World Bank.
- Under this project Real Time Data Acquisition Centers for Rainfall & River Discharge measurement are established.
- These stations gives data after every 15 minutes.
- website : <http://www.rtsfros.com/mahakrishna>

Provisions in Disaster Management Act-2005

Provisions under Chapter-X : Offences & Penalties –

- Refuse to comply directions given by authority.
- Contravention of any order regarding requisitioning.
- Failure of Officer in duty who ceases or refuses to perform or withdraws himself from the duties of his office.
- Head of the Department shall be deemed to be guilty of the offence.
- Punishable with imprisonment or with fine or with both.

Formation of Whatsapp Group

Disaster Management Cells of Collector Office shall form a Whatsapp Group of Water Resources Dept./ Revenue Dept./ PMC / PCMC / Corporations / Police Dept. / Zillha Parishad Officers.

Group-I : Mutha River Pune city

Group-II : Mula & Pawana River for PMC & PCMC

In general, floods do not occur after 15th October. However, in the context of climatic changes it is necessary that preparedness shall be continued till 30th November.

Normally, most of the dams reach at their full storage capacity upto 15th Oct. After 15th Oct. all the inflow which reaches in to the dam is required to be discharged over the spillway in to the river. Hence more alertness is required even after 15th Oct. upto 30th November.

A blue-tinted image of a rose splashing in water. The rose is the central focus, surrounded by numerous water droplets and splashes. The background is a light blue gradient. The word "Thanks!" is written in a blue, serif font in the lower-left quadrant of the image.

Thanks !