Government of India

Ministry of Water Resources, River Development & Ganga Rejuvenation

Central Water Commission

Standard Operating Procedure

For

Flood Forecasting

April 2020

CONTENTS

List of Annexures

1.0 Introduction

1.1 Flood Forecasting Network of Central Water Commission(CWC)

1.1.1 Presently, a network of Hydrological and Hydro-meteorological sites is being operated by CWC across the country covering 20 river basins for gauge, discharge, sediment & water quality observations. The formulation of a forecast requires effective means of real time data communication network between the forecasting stations, the flood monitoring stations and flood control rooms. Annually, about 7,000 flood forecasts are beingissued by CWC during floods. Three day advisory is likely to be continued during 2020 also.

1.1.2 Presently, flood forecasts are issued by CWC at 325 stations (128 Inflow Forecast Stations + 197 Level Forecast Stations). The basin-wise and statewise details of flood forecasting stations are given in **Table-1** and **Table-2** respectively.

Table-1: Basin-wise Flood Forecasting Stations as on date

Sr. No	Major Interstate River Systems	FF stations as on Date		
		Level	Inflow	Total
1	Indus and its tributaries	3	0	**3**
2	Ganga & its tributaries	94	39	**133**
3	Brahmaputra & its tributaries	39	5	**44**
4	Barak System	6	0	**6**
5	Subarnarekha (including Burhabalang)	4	3	**7**
6	Brahmani & Baitarni	3	2	**5**
7	East Flowing(Mahanadi to Pennar)	4	4	**8**
8	Narmada	4	6	**10**
9	Tapi	1	2	**3**
10	Mahi	1	4	**5**
11	Sabarmati	1	1	**2**
12	Mahanadi	3	3	**6**
13	Godavari	18	22	**40**
14	Krishna	5	17	**22**
15	West Flowing Rivers(Kutch &Saurashtra)	1	1	**2**
16	West Flowing Rivers(Tapi to Tadri))	2	1	**3**
17	Cauvery and its tributaries	3	9	**12**
18	Pennar	1	1	**2**
19	East Flowing Rivers(Pennar to Kanyakumari)	1	6	**7**
20	West Flowing River (Tadri to Kanyakumari)	3	2	5
	Total	**197**	**128**	**325**

Table-2: State-wise Flood Forecasting Stations as on date

Sl. No.	Name of State/UT	Number of flood forecasting Stations		
		Level	**Inflow**	**Total**
1	Andhra Pradesh	10	9	19
2	Arunachal Pradesh	3	0	3
3	Assam	30	0	30
4	Bihar	40	3	43
5	Chhattisgarh	1	2	3
6	Gujarat	6	7	13
7	Haryana	1	1	2
8	Himachal Pradesh	1	0	1
9	Jharkhand	2	15	17
10	Karnataka	1	14	15
11	Kerela	3	2	5
12	Madhya Pradesh	2	10	12
13	Maharashtra	8	13	21
14	Odisha	12	7	19
15	Rajasthan	2	11	13
16	Sikkim	3	5	8
17	Tamil Nadu	4	11	15
18	Telangana	5	7	12
19	Tripura	2	0	2
20	Uttar Pradesh	39	5	44
21	Uttarakhand	4	2	6
22	West Bengal	12	4	16
23	Daman & Diu	1	0	1
24	NCT of Delhi	2	0	2
25	Jammu & Kashmir	3	0	3
	Total	**197**	**128**	**325**

List of Flood Forecasting Stations is at **Annex-1.1**

1.2 The flood shall be monitored through a network of hydrological stations across the country. Meteorological data collected from CWC owned telemetry network as well as Automatic Weather Station/ Automatic Rain Gauge of IMD shall provide necessary inputs in formulation of flood forecasts.The transmission of data is done with the help of wireless as well as the satellite based telemetry and VSAT systems apart from mobile/ phone as back-up/ supplementary mode of communication.

1.3 Flood Control Rooms of CWC

1.3.1 In order to monitor flood situation during every monsoon, CWC operates 29 Divisional Flood Control Rooms (DFCRs) located in various field Divisions of CWC and a Central Flood Control Room (CFCR) at CWC (HQ), New Delhi for providing flood related information to the local administration and user agencies. The contact details of nodal officers at the Headquarter level as well as of Executive Engineers (EE), Superintending Engineers (SE) and Chief Engineers (CE) in the field is given at **Annex 1.2.** This is also available in CWC website which is updated on quarterly basis.

1.3.2 The Central Flood Control Room (CFCR) of CWC is located in Ground Floor, West Block-II, Wing-II, R.K. Puram, New Delhi. The CFCR is headed by Director (Flood Forecast Monitoring).CFCR functions round the clock during every monsoon under the supervision of Chief Engineer (Flood Management), CWC and under control of Member (River Management), CWC, New Delhi. It monitors flood situation throughout the country. The CFCR issues various types of bulletins including daily flood bulletins to the user agencies to keep them informed about the flood situation in the country.

1.3.3 The flood control rooms become operational just before the onset of flood season (which varies from 1st May for NE region and Jammu & Kashmir of India to 1st June for rest of India) and remain operational till end of flood season (i.e. 31st October for regions experiencing SW monsoon spells and 31st December for regions experiencing NE monsoon spells). Sometimes control room operations may commence earlier than stipulated dates based on IMD's forecast for pre-monsoon rainfall and may remain operational ,if situations demands. The notification in this regard is given in **Annex-1.3** .

1.3.4 In order to provide effective flood forecasting, step-by-step specific Standard Operating Procedure for both Central and Divisional Flood Control Rooms of CWC is in place, which include timelines for forecast dissemination, particulars of nodal officers of central and State, and notification charts indicating flow of information. These notification charts identifies the hierarchy of flow of information in crisis

situation indicating who is to be informed, by whom and in what priority. A typical notification chart for dissemination of flood forecast by CWC is given at **Annex-1.4.**

1.4 Modernization of Flood Forecasting Network of CWC

1.4.1 A telemetry system has been installed at 941 stations in various basins for collection of flood data (water level and rainfall) through sensor based equipment. Besides, three Earth Receiving Stations (ERS) one each at Burla (Odisha), Jaipur (Rajasthan) and New Delhi and 26 Modelling Centres have been set up for transmission of flood data through Satellite and expeditious flood forecast formulation using rainfall based mathematical model. There are a total of 941 telemetry stationsare in operation and remaining 28 stations and 2 modelling stations are likely to be completed during 2020 season.

1.4.2 In view of requirement of comprehensive flood forecasting network in the country, CWC held consultations with the State Governments and concerned agencies for further extension and modernization of its flood forecasting network.

1.4.3 SOP for maintenance and upkeep of Telemetry Stations have also been circulated to all concerned and the same is given at **Annex-1.5**

2 Flood Forecasting Processes

2.1 The activity of flood forecasting comprises Level Forecasting and Inflow Forecasting. The forecasts are issued once the water level in a river touches pre-defined warning level (usually one meter below the danger level but dependent on threat perception of the particular location). The level forecasts help the local administration and other agencies in deciding mitigating measures like evacuation of people and their movable property to safer locations. The Inflow Forecasting is used by various reservoir/dam authorities in optimum operation of reservoirs for safe passage of flood downstream as well as to ensure adequate storage in the reservoirs for meeting the demand during the non-monsoon period.

2.2. The process of flood forecasting consists of following stages:

(i) **Data Collection** – Central Water Commission collects hydro-meteorological data at its sites round the year. During non-monsoon season, the gauge data

is collected thrice a day and discharge data is collected daily. However, during monsoon period, the river water levels (gauges) are collected hourly, manually as well as through sensor based equipment. The concerned Project authority shall be responsible for observation of reservoir related data.

(ii) **Transmission of Data to the Flood Forecasting Division / Flood Forecasting Centre** – The data collected from field stations is transmitted from the site to the concerned Flood Forecasting Centre/Modelling Centre also called as Divisional Flood Control Room (DFCR) of CWC through wireless and/or telephone/ mobile and satellite based telemetry system& VSAT. Under modernized network, the data is transmitted to the Earth Receiving Station through Satellite and then to various Modelling Centres through VSAT Systems. The nodal officer of the Dam/ reservoir shall share reservoir related data with CWC through uploading on WIMS (Water Information Management System) or sending through e-mail/SMS/Phone/Wireless etc.

(iii) **Data entry -** The hydro-meteorological data collected at the DFCR are entered on an hourly basis in the WIMS (Water Information Management System), data entry utility as and when received in the DFCR. The entry system has provision to check for primary validation of data entered.Primarily the dam/ reservoir data is expected to be updated by the Project specific nodal officer in WIMS.

(iv) **Formulation of Flood Forecasts** – Under the conventional set up, the flood data received at the DFCR is analysed and flood forecasts are formulated,if required for the flood forecasting Stations. The methodology used is generally either the basin persistence based mathematical techniques, co-axial graphs or mathematical models using rainfall data received from IMD or the rainfall data collected by CWC. The Level forecasts are issued whenever the water levels at CWC Flood Forecasting Station exceeds the Warning Level (which is usually 1.0 m below the Danger Level but depends on the threat perception of the location) specified for the Flood Forecasting Station. Besides, Inflow Forecasts are also formulated by CWC for 128 Dams / Reservoirs for regulation of outflows whenever the flows into the reservoir are above

threshold limit. Medium range forecast (upto 72 hours) on experimental basis shall be generated by Regional offices/ HQ using rainfall based hydraulic model taking hourly hydrological & meteorological observed data as well as rainfall forecast from IMD and other agencies. Based on such results and other conventional techniques, the flood forecasting centres shall formulate the short range forecast (upto 24 hours).

(v) **Dissemination of Flood Forecasts to the Local Administration / user Agency** – The flood forecasts formulated by DFCRis disseminated to all stake holders through updating of Flood Forecasting Website/ FAX/ E-mail/Telephone/ SMS / facebook / Twitter. Every care is taken for expeditious dissemination of flood forecasts to the local administration / user agencies. The flood forecast data are also uploaded in the Flood Forecasting Website http://india-water.gov.in/ffs. The link to this web site is also available in CWC website http://cwc.gov.in. This website has provisions for sending e-mails as well as SMS for flood alerts. CWC is using MTNL based Bulk SMS with Telecom Regulatory Authority of India approved user ID of MD-CWCFFS.

(vi) DFCR also issues Daily Flood Bulletins on a daily basis indicating the Water Level (0800 hrs) and Rainfall (0830 hrs) at all Hydrological Observation Stations and Water Level, Rainfall and Flood Forecasts (if issued) at Flood Forecast Stations on daily basis at around 1100 hours.

(vii) The Central Flood Control Room (CFCR) is located in CWC headquarter, R.K. Puram, New Delhi. The CFCR monitors the flood situation throughout the country by monitoring the data entry/FF formulation and issue of flood forecasts from all DFCRs through the WIMS. The CFCR also generates Daily Flood Bulletins and disseminates them to various stake holders including NDMA, MHA, Railway Board, IMD, NRSC and the organizations of MOWR, RD&GR etc. In addition, CFCR also generates special bulletins in case of Severe Flood Situation known as "Orange" bulletin and Extreme Flood Situation known as "Red" Bulletins.

(viii) Google Alert: CWC in collaboration with M/s Google Inc have started issuing alerts through Common Alerting Protocol (CAP) regarding flood situation in various categories of flood at all the existing flood forecast stations. The alert messages will be available on Google platform in the alert website of http://publicalerts.google.org. This alerts will also be visible in GPRS enabled smart phones when they approach the area of flooding. The Google alert will be uploaded from CFCR for all the FF stations whenever the flood forecasts are issued and updated.

(ix) CAP Alert through C-DOT in association with NDMA: CAP alerts are being planned to be generated through an application developed by Centre for Development of Telematics (C-Dot) in association with NDMA during the year 2019. These alerts will be initially dispatched through mobiles for the first beneficiary who will in turn make understandable warnings to warn the general public. CWC HQ will be uploading the alerts from CFCR to the concerned application for both level and inflow forecast stations through reports generated by WIMS in MS Excel format.

3 Standard Operating Procedure (SOP) for Flood Forecasting & Warning

3.1 The basic activity of flood forecasting activity involves preparedness, data collection, its transmission, flood forecast formulation and dissemination of flood forecasts. The activities are performed as per existing Flood Forecasting Manual which contains the following critical activities as the general SOPs.

3.2 Preparedness for Flood Forecasting Activity

3.2.1 Site Level preparedness includes upkeep and maintenance of instruments for observation of water level and rainfall, upkeep and maintenance of automatic telemetry systems including contact details of vendor for taking up repair works, upkeep and maintenance of communication equipment and updation of contact details to whom the data have to be passed.

3.2.2 Sub-Divisional/Divisional level preparedness includes updation of contact details with all stake holders, upkeep / maintenance of communication equipments, computers and other hardwares associated with flood forecasting activity, completion of inspection visits by vendors to all telemetry sites for keeping the equipments in working condition,attending coordination meetings called by DDMA/District Revenue authorities, coordinating with neighbouring countries from where hydrological data are being exchanged such as China, Nepal, Bhutan and Bangladesh including updated contact list and nodal officers.

3.2.3 Review of Warning and Danger Levels of Level Forecast Stations, threshold limits of inflow forecast stations with States, updating of reviewed values in WIMS alongwith updation of HFLs if exceeded in the previous years for all the stations including base stations/monitoring stations. New Stations have also to be created in WIMS before start of the flood season and should be ready for data feeding from the start of the season.

3.2.4 Circle and Regional Level preparedness includes provision of men and materials to all sites under their jurisdiction before start of activity, attending coordination meetings called by State Governments, updating of Contact Details and attending coordination meeting of Flood Crisis Management Teams (FCMT) for Integrated Reservoir Operation (IRO), coordinating with local Flood Meteorological Office (FMO)s for provision of rainfall forecasts and rainfall products during the season in addition to attending coordination meeting being called for from Headquarters,preparation and review of Decision Support System (DSS) for various systems of reservoirs for IRO for flood management. (Draft composition of FCMT being taken up is at **Annex. 3.1**)

3.2.5 Headquarter level preparedness include updation of all contact details of stake holders including the resident commissioners of State Governments based in New Delhi, coordinating with IMD Headquarters for seamless exchange of data and products, upkeep and maintenance of all hardware and software systems, providing men and material for smooth running of Control rooms,collecting reports regarding completion of preparedness activity from regional offices,appraising the representatives of various state governments regarding preparedness in the Annual

Relief Commissioners Conference called by MHA,keeping ready the models for run during flood season after required calibration.

3.3 Data Collection

3.3.1 Site Level Data Collection: CWC collects data from stations maintained by CWC, data from stations maintained by project authorities as well as data collected from other agencies. Further the observations are taken manually as well as automatically through sensors.

3.3.1.1Data Observation in CWC maintained Sites: Hourly Water Level Observation, Three-hourly rainfall observation and wherever discharge, sediment and water quality are observed it is to be followed as per prevailing practice of either once daily/once weekly/once fortnightly/ or once in a month, etc in case of manual observation. In case of automated observation, the upkeep / maintenance and general cleanliness of sensors, solar panel, Data Collection Unit (DCU) are done by the CWC site officials and major maintenance and repairs are carried out by the vendors who maintain the site.

3.3.1.2Data from stations maintained by project authorities/other agencies such as Reservoir Level, Daily/Hourly Inflows and Outflows through spillway and canals, Daily rainfall etc are collected from project authorities/ other agencies as observed by them in such duration. Projects where telemetry is installed, the hourly data is taken from telemetry directly. In some cases project specific data is uploaded on project/State Government website.

3.3.1.3The site in charge is responsible for data collection from sites/projects.

3.3.2 Sub-Division/Division Level Data Collection: Data which are communicated by other means such as e-mail/website from various agencies are collected from Sub-Division/Division Offices. These include rainfall data/ reservoir details/ water level data from State Government operated Gauging Stations or rainfall or gridded rainfall products from IMD or Flood Meteorological Offices of IMD. Data is also collected using telemetry from sites wherever installed with redundancy of manual

observation in case of failure of telemetry. Collection of hydro-meteorological data from neighbouring countries like Nepal (MGD-1, Lucknow and LGD-1, Patna), Bhutan (LBD, Jalpaiguri) and China (UBD, Dibrugarh) through wireless/e-mail/website is also to be done.Transmission of Hydro-meteorological data to Bangladesh for Ganga (LGD-2, Patna) and Brahmaputra &Barak (LBD & MBD, Guwahati) as well as point to point wireless communication to Bangladesh by respective wireless stations is done.

3.3.3 Circle/ Regional level Data Collection: The additional data pertaining to IRO for functioning of FCMT for IRO have to be collected at Circle and Regional Office Level also.

3.3.4 Headquarter Level Data Collection: Gridded rainfall Products from IMD/ Downloading of Tropical Rainfall Measuring Mission (TRMM) /Global Precipitation Mission (GPM)/Hydro Estimator (HE) rainfall products as well as Rainfall forecast products through File Transfer Protocol (FTP) from respective download locations.

3.4 Data Transmission

3.4.1 Data Transmission from Site: HM data from site is transmitted to Sub-Division/ Division through wireless or mobile in case of manual readings and through Satellite/ GSM/GPRS in case of automated stations

3.4.2 Data Transmission from Sub-Division/Division: HM data collected from Sub-Division/Division is transmitted through e-mail or by updating in website. The automatic telemetry data is received through the modelling centres installed at many of these locations through VSAT or GSM/GPRS communication. Some of the data are also sent through SMS utility of CWC.

3.4.3 Data Transmission form Circle/Regional Offices: HM data is transmitted through e-mail/SMS/Website/FTP

3.4.4. Data Transmission fromHeadquarters: HM data is transmitted through updating of website/ SMS/e-mail/FTP

3.5 Flood Forecast Formulation: Flood Forecasts are formulated at Divisional/Sub-Divisional Level for short range forecasts varying from 6 to 24 hours and medium range forecast for 72 hours from headquarters.

3.5.1 Flood Forecast Formulation at Divisional/Sub-Divisional Level: Short Range forecast varying from 6 to 24 hours lead time are generated in Divisional/Sub-Divisional Level for which the statistical methods such as correlation curves and unit hydrographs are used. The 72 hour products generated by Headquarters are also consulted for preparing these short range forecast at the Divisional/ Sub-Divisional Level.

3.5.2 Flood Forecast formulation at National Level: CWC headquarters generates 72 hour lead time experimental flood forecast using rainfall runoff mathematical models and are disseminated to various CWC offices for their internal use as well as to some disaster managers/FCMT for IRO etc for taking quick decisions.

3.5.3 Decision Support Systems (DSS) for FCMTfor IRO: The flood forecast formulated by Divisional/Sub-Divisional/National Level is input for DSS for Flood Crisis management Team (FCMT) for IRO for flood management and based on these inputs, release advisories are to be issued to various stake holders by the FCMTs to system of reservoirs under their jurisdiction.

3.5.4 Dissemination of Forecast: The formulated forecast does not serve their purpose, if it is not disseminated immediately by the quickest possible means of communication to all stakeholders. This is also being done at various levels as detailed below:

3.5.4.1Dissemination at Flood Forecast Station Level: The formulated forecasts are sent to Flood Forecast Stations by Divisional/Sub-Divisional modelling centres through wireless/mobile/SMS and these are sent to local administration at the flood forecasting station level by the site –in-charges of these flood forecasting stations with due acknowledgements.

3.5.4.2Dissemination at Sub-Divisional/Divisional Level: The short range forecasts are sent to various stakeholders directly by uploading in CWC's flood forecasting

website (http://india-water.gov.in/ffs), by e-mail/fax/SMS to all stake holders including CWC headquarters. The flood forecast bulletins are also sent to various stakeholders, flood news bulletins are also generated and sent to various user agencies as well as to Radio and Television for wide publicity to flood affected populace.

3.5.4.3 Dissemination at Regional Level: Daily Flood Situation Report cum Advisory is to be prepared for basin as a whole and send to all stake holders. Copy of the same should also be enclosed to CFCR and sent by 1500 hrs everyday positively by email only.

3.5.4.4 Dissemination at National Level:The experimental medium range 72 hour forecasts are sent to CWC field units for consulting the same for generation of short range forecasts. Further the flood forecasts are also disseminated to certain specific users who will utilise the same for their specific purposes through FTP/email. The SOP for Communication of Flood Alerts to higher officers of Government of India has been reviewed and updated from the year 2018. The reviewed and updated SOP for floods are given as **Annex-3.2**. The Severe (Orange) and Extreme(Red) bulletins are to be issued every 3 hourly and hourly respectively by headquarters to all stake holders through e-mail/SMS. Daily consolidated Flood Bulletins are also issued by Headquarters for the country as a whole to various stakeholders for their utility. Daily Flood Situation Report cum Advisory is to be prepared on national level and upload in social media and sent by email to all stakeholders by 1800 hrs daily. Regional level Daily Flood Situation Report cum Advisory should also be uploaded in CFCR social media page.

3.5.5 Media Management: Information to Press/Electronic media about impending flood situation is one of the very important activities for taking the flood warnings to last mile connectivity. CWC's media management policy given in **Annex-3.3.**

4.0 Report: Reports regarding the activities covered under SOP have to be generated by various offices as detailed below and sent to higher authorities for their information and further onward transmission to all stake holders:

4.1 Divisional and Sub-Divisional Level: Activitywise compliance report on

a) Preparedness

b) Site maintenance and readiness

c) Working of telemetry sites.

d) Attending of coordination meeting in district level

e) Preparation of Daily Flood Bulletins and Weekly Flood Bulletins

f) Annual Flood Appraisal Reports

4.2 Circle/Organisational Level: Activitywise compliance report on

a) Meeting with Stakeholders

b) Meeting with State Governments

c) Meeting with Project Authorities

d) Meeting with Media

e) Meeting with IMD

f) Report on Severe events

4.3 National Level: Activitywise compliance report on

a) Coordination meeting with MHA, NDMA, IMD etc.

b) Monthly Country report on flood situation

c) Severe events and special reports

d) Preparation of Daily Flood Bulletins/Red/Orange Bulletins

e) Annual Appraisal Report for Country as a whole.

5.0 Responsibility Matrix: The responsibility matrix of various activities is given in **Annex 5.1.**

Annex-1.1

List of Flood Forecasting stations in India during Flood Season 2020 (Level Forecast)

Sl.No.	Name of the river	Name of FF site	Name of State	District	Warning Level (m)	Danger level (m)	Highest Flood Level		Concerned Nodal CWC Division
							Level (m)	Date/ Month/ Year	
1	2	3	4	5		6	7	8	9
1	Sabari	Chinturu	Andhra Pradesh	East Godavari	41.50	43.50	40.45	20-08-2018	LGD, Hyderabad
2	Godavari	Kunavaram	Andhra Pradesh	East Godavari	37.74	39.24	51.30	16-08-1986	LGD, Hyderabad
3	Godavari	Rajahmundry	Andhra Pradesh	East Godavari	17.68	19.51	20.48	16-08-1986	LGD, Hyderabad
4	Godavari	Dowlaiswaram	Andhra Pradesh	East Godavari	14.25	16.08	18.36	16-08-1986	LGD, Hyderabad
5	Tungabhadra	Mantralayam	Andhra Pradesh	Kurnool	310.00	312.00	318.77	02-10-2009	LKD, Hyderabad
6	Pennar	Nellore Anicut	Andhra Pradesh	Nellore	15.91	17.28	18.70	30-11-1882	HD, Chennai
7	Godavari	Atreyapuram	Andhra Pradesh	East Godavari	14.00	15.50	18.36	22-08-2018	LGD, Hyderabad
8	Tungabhadra	Kurnool	Andhra Pradesh	Kurnool	276.00	278.00	284.61	02-10-2009	LKD, Hyderabad
9	Krishna	Avanigadda	Andhra Pradesh	Krishna	9.00	11.00	11.87	05-10-2009	LKD, Hyderabad
10	Nagavali	Srikakulam	Andhra Pradesh	Srikakulam	10.17	10.80	14.53	12-05-1990	ERD, Bhubaneshwar
11	Noa-Dehing	Namsai	Arunachal Pradesh	Lohit	140.60	141.10	145.03	31-08-1974	UBD, Dibrugarh

12	Siang	Yingkiang	Arunachal Pradesh	Upper Siang	303.00	304.00			UBD, Dibrugarh
13	Siang	Passighat	Arunachal Pradesh	East Siang	152.96	153.96	157.54	11-06-2000	UBD, Dibrugarh
14	Brahmaputra	Dibrugarh	Assam	Dibrugarh	103.24	104.24	106.48	03-09-1998	UBD, Dibrugarh
15	Brahmaputra	Neamatighat	Assam	Jorhat	84.04	85.04	87.37	11-07-1991	UBD, Dibrugarh
16	Brahmaputra	Tezpur	Assam	Sonitpur	64.23	65.23	66.59	27-08-1988	UBD, Dibrugarh
17	Brahmaputra	Guwahati	Assam	Kamrup	48.68	49.68	51.46	21-07-2004	MBD, Guwahati
18	Brahmaputra	Goalpara	Assam	Goalpara	35.27	36.27	37.43	31-07-1954	MBD, Guwahati
19	Brahmaputra	Dhubri	Assam	Dhubri	27.62	28.62	30.36	28-08-1988	MBD, Guwahati
20	Buridehing	Naharkatia	Assam	Dibrugarh	119.40	120.40	122.69	17-06-1973	UBD, Dibrugarh
21	Buridehing	Khowang	Assam	Dibrugarh	101.11	102.11	104.16	02-09-2015	UBD, Dibrugarh
22	Desang	Nanglamoraghat	Assam	Shivsagar	93.46	94.46	96.49	06-09-1998	UBD, Dibrugarh
23	Dikhow	Shivsagar	Assam	Shivsagar	91.40	92.40	95.62	08-07-1974	UBD, Dibrugarh
24	Subansiri	Badatighat	Assam	Lakhimpur	81.53	82.53	86.84	28-06-1972	UBD, Dibrugarh
25	Dhansiri (S)	Golaghat	Assam	Golaghat	88.50	89.50	91.30	11-10-1986	UBD, Dibrugarh
26	Dhansiri (S)	Numaligarh	Assam	Golaghat	76.42	77.42	79.87	24-09-1985	UBD, Dibrugarh
27	Jiabharali	Jia-Bharali NT Road Crossing	Assam	Sonitpur	76.00	77.00	78.50	26-07-2007	UBD, Dibrugarh
28	Kopili	Kampur	Assam	Nagaon	59.50	60.50	61.86	16-06-1973	UBD, Dibrugarh
29	Kopili	Dharamtul	Assam	Morigaon	55.00	56.00	58.09	21-07-2004	UBD, Dibrugarh
30	Puthimari	Puthimari NH Crossing	Assam	Kamrup	50.81	51.81	55.08	31-08-2008	MBD, Guwahati
31	Pagladiya	Pagladiya NT Road Crossing	Assam	Nalbari	51.75	52.75	55.45	08-07-2004	MBD, Guwahati
32	Beki	Beki NH Crossing	Assam	Barpeta	44.10	45.10	46.20	04-08-2000	MBD, Guwahati
33	Manas	Manas NH Crossing	Assam	Barpeta	47.81	48.42	50.08	15-09-1984	MBD, Guwahati
34	Manas	Mathanguri	Assam	Baska	98.10	99.10	100.28	13-10-1973	MBD, Guwahati
35	Sankosh	Golokganj	Assam	Dhubri	28.94	29.94	30.95	08-09-2007	LBD, Jalpaiguri
36	Barak	AP Ghat	Assam	Cachar	18.83	19.83	21.84	01-08-1989	MBD, Guwahati
37	Katakhal	Matizuri	Assam	Hailakhandi	19.27	20.27	22.73	10-09-2007	MBD, Guwahati
38	Kushiyara	Karimganj	Assam	Karimgunj	13.94	14.94	16.57	10-06-2010	MBD, Guwahati
39	Barak	Badarpurghat	Assam	Cachar	15.85	16.85	18.48	11-09-2007	MBD, Guwahati
40	Subansiri	Choldhowaghat	Assam	Lakhimpur	99.02	100.02	101.31	27-07-1972	UBD, Dibrugarh
41	Ranganadi	N H Crossing Ranganadi	Assam	Lakhimpur	93.81	94.81	94.96	13-08-2009	UBD, Dibrugarh

42	Lohit	Dholla Bazaar	Assam	Tinsukia	127.27	128.27	130.07	22-09-2012	UBD, Dibrugarh
43	Gaurang	Kokrajhar	Assam	Kokrajhar	41.85	42.85	43.60	20-08-2015	MBD, Guwahati
44	Ganga	Buxar	Bihar	Buxar	59.32	60.32	62.09	1948	LGD-2, Patna
45	Ganga	Patna Dighaghat	Bihar	Patna	49.45	50.45	52.52	23-08-1975	LGD-2, Patna
46	Ganga	Patna Gandhighat	Bihar	Patna	47.60	48.60	50.52	20-08-2016	LGD-2, Patna
47	Ganga	Hathidah	Bihar	Patna	40.76	41.76	43.17	21-08-2016	LGD-2, Patna
48	Ganga	Munger	Bihar	Munger	38.33	39.33	40.99	19-09-1976	LGD-2, Patna
49	Ganga	Bhagalpur	Bihar	Bhagalpur	32.68	33.68	34.72	26-08-2016	LGD-2, Patna
50	Ganga	Kahalgaon	Bihar	Bhagalpur	30.09	31.09	32.87	17-09-2003	LGD-2, Patna
51	Ghaghra	Darauli	Bihar	Siwan	59.82	60.82	61.74	29-08-1998	LGD-2, Patna
52	Ghaghra	Gangpur Siswan	Bihar	Siwan	56.04	57.04	58.01	18-09-1983	LGD-2, Patna
53	Ghaghra	Chhappra	Bihar	Chhappra	52.68	53.68	54.59	03-09-1982	LGD-2, Patna
54	Gandak	Chatia	Bihar	West Champaran	68.15	69.15	70.04	26-07-2002	LGD-1, Patna
55	Gandak	Rewaghat	Bihar	Muzzafarpur	53.41	54.41	55.41	17-09-1986	LGD-2, Patna
56	Gandak	Hazipur	Bihar	Vaishali	49.32	50.32	50.93	1948	LGD-2, Patna
57	Burhi Gandak	Lalbeghiaghat	Bihar	Motihari	62.20	63.20	67.09	30-07-1975	LGD-1, Patna
58	Burhi Gandak	Muzzafarpur Sikandarpur	Bihar	Muzzafarpur	51.53	52.53	54.29	15-08-1987	LGD-1, Patna
59	Burhi Gandak	Samastipur	Bihar	Samastipur	45.02	46.02	49.38	15-08-1987	LGD-1, Patna
60	Burhi Gandak	Rosera	Bihar	Samastipur	41.63	42.63	46.35	16-08-1987	LGD-1, Patna
61	Burhi Gandak	Khagaria	Bihar	Khagaria	35.58	36.58	39.22	1976	LGD-1, Patna
62	Bagmati	Benibad	Bihar	Muzzafarpur	47.68	48.68	50.01	12-07-2004	LGD-1, Patna
63	Bagmati	Hayaghat	Bihar	Darbhanga	44.72	45.72	48.96	14-08-1987	LGD-1, Patna
64	Bagmati	Dheng Bridge	Bihar	Sitamarhi	69.10	70.10	73.00	13-08-2017	LGD-1, Patna
65	Adhwara Group	Kamtaul	Bihar	Darbhanga	49.00	50.00	52.99	12-08-1987	LGD-1, Patna
66	Adhwara Group	Ekmighat	Bihar	Darbhanga	45.94	46.94	49.52	12-07-2004	LGD-1, Patna
67	Adhwara	Sonebarsha	Bihar	Sitamarhi	80.85	81.85	83.00	11-09-2006	LGD-1, Patna
68	Kamla Balan	Jainagar	Bihar	Madhubani	66.75	67.75	71.35	1965	LGD-1, Patna
69	Bagmati	Runisaidpur	Bihar	Sitamarhi	52.73	53.73	58.15	14-08-2017	LGD-1, Patna
70	Parwan	Araria	Bihar	Araria	46.00	47.00	49.40	14-08-2017	LGD-1, Patna

71	Kamla Balan	Jhanjarpur	Bihar	Madhubani	49.00	50.00	53.01	10-07-2004	LGD-1, Patna
72	Kosi	Basua	Bihar	Supaul	46.75	47.75	49.17	25-08-2010	LGD-1, Patna
73	Kosi	Baltara	Bihar	Khagaria	32.85	33.85	36.40	15-08-1987	LGD-1, Patna
74	Kosi	Kursela	Bihar	Katihar	29.00	30.00	32.04	06-09-1998	LGD-1, Patna
75	Mahananda	Dhengraghat	Bihar	Purnea	34.65	35.65	38.09	1968	LGD-1, Patna
76	Mahananda	Jhawa	Bihar	Katihar	30.40	31.40	33.51	14-08-1987	LGD-1, Patna
77	Mahananda	Taibpur	Bihar	Kishanganj	65.00	66.00	67.22	1968	LGD-1, Patna
78	Gandak	Dumariaghat	Bihar	Gopalganj	61.22	62.22	63.60	18-08-2014	LGD-1, Patna
79	Burhigandak	Ahirwalia	Bihar	Muzzafarpur	58.62	59.62	61.17	1975	LGD-1, Patna
80	Sone	Inderpuri	Bihar	Rohtas	107.20	108.20	108.85	23-08-1975	LGD-2, Patna
81	Sone	Koelwar	Bihar	Bhojpur	54.52	55.52	58.88	20-07-1971	LGD-2, Patna
82	Sone	Maner	Bihar	Patna	51.00	52.00	53.79	10-09-1976	LGD-2, Patna
83	PunPun	Sripalpur	Bihar	Patna	49.60	50.60	53.91	18-09-1976	LGD-2, Patna
84	Indravathi	Jagdalpur	Chhattisgarh	Bastar	539.50	540.80	544.68	09-07-1973	LGD, Hyderabad
85	Damanganga	Daman	Daman & Diu	Daman	2.60	3.40	4.00	03-08-2004	TD, Surat
86	Sabarmati	Ahmedabad Shubhash Bridge	Gujarat	Ahmedabad	44.09	45.34	47.45	19-08-2006	MD, Gandhinagar
87	Mahi	Wanakbori	Gujarat	Kheda	71.00	72.54	76.10	12-08-2006	MD, Gandhinagar
88	Narmada	Garudeswar	Gujarat	Bharuch	30.48	31.09	41.65	06-09-1970	TD, Surat
89	Narmada	Bharuch	Gujarat	Bharuch	6.71	7.31	12.65	07-09-1970	TD, Surat
90	Tapi	Surat	Gujarat	Surat	8.50	9.50	12.50	09-08-2006	TD, Surat
91	Damanganga	Vapi Town	Gujarat	Valsad	18.20	19.20	23.76	03-08-2004	TD, Surat
92	Yamuna	Karnal Bridge	Haryana	Karnal	248.80	249.50	250.07	17-06-2013	UYD, New Delhi
93	Yamuna	Paonta Sahib	Himachal Pradesh	Sirmaur	383.50	384.50	384.60	05-09-1995	UYD, New Delhi
94	Jhelum	Rammunshibagh	Jammu & Kashmir	Srinagar	1584.96	1585.57	1589.65	08-09-2014	Chenab D, Jammu
95	Jhelum	Sangam	Jammu & Kashmir	Anantnag	1590.30	1592.00	1595.70	09-06-2014	Chenab D Jammu
96	Jhelum	Safapora	Jammu & Kashmir	Bandipora	1580.00	1580.80	1581.05	26-06-2015	Chenab D Jammu
97	Ganga	Sahibganj	Jharkhand	Sahibganj	26.25	27.25	30.91	1998	LGD-2, Patna
98	Subarnarekha	Jamshedpur	Jharkhand	Purba Singhbhum	122.50	123.50	129.82	12-10-1973	ERD, Bhubaneshwar

99	Bhima	Deongaon	Karnataka	Kalaburagi	402.00	404.50	407.34	13-08-2006	LKD, Hyderabad
100	Periyar	Neeleswaram	Kerala	Ernakulam	9.00	10.00	12.40	15-08-2018	SWRD, Kochi
101	Bharathapuzha	Kumbidi	Kerala	Palakkad	8.00	9.00	9.76	16-08-2018	SWRD, Kochi
102	Pamba	Malakkara	Kerala	Pathanamthitta	6.00	7.00	9.31	11-06-2018	SWRD, Kochi
103	Narmada	Mandla	Madhya Pradesh	Mandla	437.20	437.80	439.41	18-08-1974	ND, Bhopal
104	Narmada	Hoshangabad	Madhya Pradesh	Hoshangabad	292.83	293.83	300.90	30-08-1973	ND, Bhopal
105	Godavari	Kopergaon	Maharashtra	Ahmednagar	490.90	493.68	499.17	1969	UGD, Hyderabad
106	Godavari	Gangakhed	Maharashtra	Parbhani	374.00	375.00	377.57	1947	UGD, Hyderabad
107	Godavari	Nanded	Maharashtra	Nanded	353.00	354.00	357.10	06-08-2006	UGD, Hyderabad
108	Wainganga	Bhandara	Maharashtra	Bhandara	244.00	244.50	250.90	16-09-2005	WGD, Nagpur
109	Wainganga	Pauni	Maharashtra	Bhandara	226.73	227.73	232.35	07-09-1994	WGD, Nagpur
110	Wardha	Balharsha	Maharashtra	Chandrapur	171.50	174.00	176.00	15-08-1986	WGD, Nagpur
111	Krishna	Arjunwad	Maharashtra	Satara	542.07	543.29	543.69	05-08-2005	UKD, Pune
112	Godavari	Nasik	Maharashtra	Nasik	558.10	559.60	563.01	02-08-2016	UGD, Hyderabad
113	Yamuna	Delhi Rly Bridge	NCT Delhi	North	**204.50**	**205.33**	207.49	06-09-1978	UYD, New Delhi
114	Sahibi	Dhansa	NCT Delhi	South-West	211.44	212.44	213.58	06-08-1977	UYD, New Delhi
115	Subarnarekha	Rajghat	Odisha	Balasore	9.45	10.36	12.69	19-06-2008	ERD, Bhubaneshwar
116	Burhabalang	NH_5 _Road Bridge	Odisha	Balasore	7.21	8.13	9.50	12-10-1973	ERD, Bhubaneshwar
117	Baitarni	Anandpur	Odisha	Keonjar	37.44	38.36	41.35	23-09-2011	ERD, Bhubaneshwar
118	Baitarni	Akhuapada	Odisha	Bhadrak	17.33	17.83	21.95	16-08-1960	ERD, Bhubaneshwar
119	Brahmani	Jenapur	Odisha	Jajpur	22.00	23.00	24.78	20-08-1975	ERD, Bhubaneshwar
120	Rishikulya	Purushottampur	Odisha	Ganjam	15.83	16.83	19.65	04-11-1990	ERD, Bhubaneshwar
121	Vamsadhara	Gunupur	Odisha	Rayagada	83.00	84.00	88.75	17-09-1980	ERD, Bhubaneshwar
122	Vamsadhara	Kashinagar	Odisha	Gajapati	53.60	54.60	58.93	18-09-1980	ERD, Bhubaneshwar
123	Mahanadi	Naraj	Odisha	Cuttack	25.41	26.41	27.61	31-08-1982	Mahanadi D Burla

124	Mahanadi	Alipingal Devi	Odisha	Jagatsinghpur	10.85	11.76	13.11	11-09-2011	Mahanadi D Burla
125	Mahanadi	Nimapara	Odisha	Puri	9.85	10.76	11.60	31-08-1982	Mahanadi D Burla
126	Jalaka	Mathani Road Bridge	Odisha	Balasore	5.00	5.50	6.80		ERD, Bhubaneshwar
127	Banas	Abu Road	Rajasthan	Sirohi	258.00	259.00	265.40	31-08-1973	MD, Gandhinagar
128	Chambal	Kota City	Rajasthan	Kota	239.00	240.00			Chambal D Jaipur
129	Teesta	Malli Bazaar	Sikkim	South Sikkim	223.00	224.00	225.25		SID, Gangtok
130	Teesta	Joretahang(Rothak)	Sikkim	South Sikkim	350.60	351.60	353.20		SID, Gangtok
131	Teesta	Singtam	Sikkim	East Sikkim	377.07	377.57	379.17		SID, Gangtok
132	Cauvery	Musiri(Srirangam)	Tamilnadu	Tiruchirapalli	84.50	85.50	86.18	13-11-1977	SRD, Coimbatore
133	Cauvery	Kodumudi (Erode)	Tamilnadu	Erode	125.50	126.50	127.83	25-10-2005	SRD, Coimbatore
134	Bhavani	Savandapur(Bhavani)	Tamilnadu	Erode	184.50	185.50	186.88	11-02-1979	SRD, Coimbatore
135	Vaigai	Madurai	Tamilnadu	Madurai	131.50	132.50	134.76	17-11-1997	SRD, Coimbatore
136	Godavari	Kaleswaram	Telangana	Bhopalpalli	103.50	104.75	107.05	15-08-1986	LGD, Hyderabad
137	Godavari	Eturunagaram	Telangana	Bhopalpalli	73.29	75.82	77.66	24-08-1990	LGD, Hyderabad
138	Godavari	Dummagudem	Telangana	Kothagudem	53.00	55.00	60.25	15-08-1986	LGD, Hyderabad
139	Godavari	Bhadrachalam	Telangana	Kothagudem	45.72	48.77	55.66	16-08-1986	LGD, Hyderabad
140	Wardha	Sirpur Town	Telangana	Adilabad	159.95	160.95	161.34	18-08-2018	WGD, Nagpur
141	Manu	Kailashahar	Tripura	North Tripura	24.34	25.34	25.79	07-06-1993	MBD, Guwahati
142	Gumti	Sonamura	Tripura	West Tripura	11.50	12.50	14.42	23-07-1993	MBD, Guwahati
143	Ganga	Kannauj	Uttar Pradesh	Kannauj	124.97	125.97	126.78	27-09-2010	MGD-2, Lucknow
144	Ganga	Ankinghat	Uttar Pradesh	Kanpur	123.00	124.00	124.49	28-09-2010	MGD-2, Lucknow
145	Ganga	Kanpur	Uttar Pradesh	Kanpur	113.00	114.00	114.08	29-09-2010	MGD-2, Lucknow
146	Ganga	Dalmau	Uttar Pradesh	Rae-Bareilly	98.36	99.36	99.84	03-08-1973	MGD-2, Lucknow
147	Ganga	Phaphamau	Uttar Pradesh	Allahabad	83.73	84.73	87.98	08-09-1978	MGD-3, Varanasi
148	Ganga	Allahabad Chhatnag	Uttar Pradesh	Allahabad	83.73	84.73	88.03	08-09-1978	MGD-3, Varanasi
149	Ganga	Mirzapur	Uttar Pradesh	Mirzapur	76.72	77.72	80.34	09-09-1978	MGD-3, Varanasi
150	Ganga	Varanasi	Uttar Pradesh	Varanasi	70.26	71.26	73.90	09-09-1978	MGD-3, Varanasi
151	Ganga	Ghazipur	Uttar Pradesh	Ghazipur	62.11	63.11	65.22	09-09-1978	MGD-3, Varanasi
152	Ganga	Ballia	Uttar Pradesh	Ballia	56.62	57.62	60.39	25-08-2016	MGD-3, Varanasi

153	Ramganga	Moradabad	Uttar Pradesh	Moradabad	189.60	190.60	192.88	21-09-2010	MGD-2, Lucknow
154	Ramganga	Bareilly	Uttar Pradesh	Bareilly	162.70	163.70	162.88	06-08-1978	MGD-2, Lucknow
155	Yamuna	Mawi	Uttar Pradesh	Muzzafarnagar	230.00	230.85	232.45	26-09-1988	UYD, New Delhi
156	Yamuna	Mathura	Uttar Pradesh	Mathura	164.20	165.20	169.73	08-09-1978	UYD, New Delhi
157	Yamuna	Agra	Uttar Pradesh	Agra	151.40	152.40	154.76	09-09-1978	LYD, Agra
158	Yamuna	Etawah	Uttar Pradesh	Etawah	120.92	121.92	126.13	11-09-1978	LYD, Agra
159	Yamuna	Auraiya	Uttar Pradesh	Auraiya	112.00	113.00	118.19	25-08-1996	LYD, Agra
160	Yamuna	Kalpi	Uttar Pradesh	Jalaun	107.00	108.00	112.98	25-08-1996	LYD, Agra
161	Yamuna	Hamirpur	Uttar Pradesh	Hamirpur	102.63	103.63	108.59	12-09-1983	LYD, Agra
162	Yamuna	Chillaghat	Uttar Pradesh	Banda	99.00	100.00	105.16	06-09-1978	LYD, Agra
163	Yamuna	Naini	Uttar Pradesh	Allahabad	83.74	84.74	87.99	08-09-1978	LYD, Agra
164	Betwa	Mohana	Uttar Pradesh	Jhansi	121.66	122.66	133.69	11-09-1983	LYD, Agra
165	Ken	Banda	Uttar Pradesh	Banda	103.00	104.00	113.29	07/0720/05	LYD, Agra
166	Gomati	Lucknow HanumanSetu	Uttar Pradesh	Lucknow	108.50	109.50	110.85	10-09-1971	MGD-2, Lucknow
167	Gomati	Jaunpur	Uttar Pradesh	Jaunpur	73.07	74.07	77.74	22-09-1971	MGD-3, Varanasi
168	SAI	Rae-Bareli	Uttar Pradesh	Rae-Bareli	100.00	101.00	104.81	17-09-1982	MGD-2, Lucknow
169	Ghaghra	Elgin Bridge	Uttar Pradesh	Barabanki	105.07	106.07	107.56	10-10-2009	MGD-1, Lucknow
170	Ghaghra	Ayodhya	Uttar Pradesh	Faizabad	91.73	92.73	94.01	11-10-2009	MGD-1, Lucknow
171	Ghaghra	Turtipar	Uttar Pradesh	Ballia	63.01	64.01	66.00	28-08-1998	MGD-1, Lucknow
172	Rapti	Balrampur	Uttar Pradesh	Balrampur	103.62	104.62	105.51	16-08-2014	MGD-1, Lucknow
173	Rapti	Bansi	Uttar Pradesh	Siddarthnagar	83.90	84.90	85.82	21-08-1998	MGD-1, Lucknow
174	Rapti	Gorakhpur Birdghat	Uttar Pradesh	Gorakhpur	73.98	74.98	77.54	23-08-1998	MGD-1, Lucknow
175	Rapti	Kakardhari	Uttar Pradesh	Bahraich	130.00	131.00	132.37	15-08-2014	MGD-1, Lucknow
176	Gandak	Khadda	Uttar Pradesh	Kushinagar	95.00	96.00	97.50	23-07-2002	LGD-1, Patna
177	Ganga	Fathegarh	Uttar Pradesh	Farukkabad	136.60	137.60	138.14	26-09-2010	MGD-2, Lucknow
178	Ganga	Dabri	Uttar Pradesh	Shahjahanpur	136.30	137.30	139.70	28-09-1983	MGD-2, Lucknow
179	Ganga	Garhmuktheswar	Uttar Pradesh	Ghaziabad	198.33	199.33	199.90	23-09-2010	MGD-2, Lucknow
180	Ganga	Kachla Bridge	Uttar Pradesh	Badaun	161.00	162.00	162.79	24-09-2010	MGD-2, Lucknow
181	Betwa	Shahjina	Uttar Pradesh	Hamirpur	103.54	104.54	108.67	12-09-1983	LYD, Agra
182	Mandakini	Ganganagar	Uttarakhand	Rudraprayag	803.00	804.00	801.92	2015	HGD, Dehradun
183	Alaknanda	Srinagar	Uttarakhand	Pauri Garhwal	535.00	536.00	537.90	17-06-2013	HGD, Dehradun
184	Ganga	Rishikesh	Uttarakhand	Dehradun	339.50	340.50	341.72	05-09-1995	HGD, Dehradun

185	Ganga	Haridwar	Uttarakhand	Haridwar	293.00	294.00	296.30	19-09-2010	HGD, Dehradun
186	Ganga	Farakka	West Bengal	Murshidabad	21.25	22.25	25.14	07-09-1998	LGD-2, Patna
187	Mayurakshi	Narayanpur	West Bengal	Murshidabad	26.99	27.99	29.69	27-09-1995	DD, Asansol
188	Ajoy	Gheropara	West Bengal	Birbhum	38.42	39.42	43.94	27-09-1978	DD, Asansol
189	Mundeswari	Harinkhola	West Bengal	Hooghly	11.80	12.80	14.58	29-09-1978	DD, Asansol
190	Kangsabati	Mohanpur	West Bengal	Medhinipur	24.73	25.73	29.87	02-09-1978	DD, Asansol
191	Raidak-I	Tufanganj	West Bengal	Coochbehar	34.22	35.30	36.36	21-07-1993	LBD, Jalpaiguri
192	Torsa	Hasimara	West Bengal	Coochbehar	116.30	116.90	118.50	13-07-1996	LBD, Jalpaiguri
193	Torsa	Ghugumari	West Bengal	Coochbehar	39.80	40.41	41.46	03-08-2000	LBD, Jalpaiguri
194	Jaldhaka	NH-31	West Bengal	Jalpaiguri	80.00	80.90	81.33	28-08-1972	LBD, Jalpaiguri
195	Jaldhaka	Mathabanga	West Bengal	Coochbehar	47.70	48.20	49.85	07-09-2007	LBD, Jalpaiguri
196	Tista	Domohani	West Bengal	Jalpaiguri	85.65	85.95	89.30	14-10-1968	LBD, Jalpaiguri
197	Tista	Mekhliganj	West Bengal	Coochbehar	65.45	65.95	66.45	13-07-1996	LBD, Jalpaiguri
	Total								

S. No	**River**	**Site**	**State**	**District**	**FRL/PL in metre**	**MWL in metre**			**Concerned nodal CWC division**
1	Vamsadhara	Gotta Barrage	Andhra Pradesh	Srikakulam	34.84				ERD, Bhubaneshwar
2	Krishna	Srisailam Dam	Andhra Pradesh	Kurnool	269.75				LKD, Hyderabad
3	Krishna	Prakasam Barrage (Vijayawada)	Andhra Pradesh	Krishna	18.30				LKD, Hyderabad
4	North Pennar	Somasila Dam	Andhra Pradesh	Nellore	100.58				HD, Chennai
5	Krishna	Dr K L R S Pulichintala Dam	Andhra Pradesh	Guntur	53.34				LKD, Hyderabad
6	Tungabhadra	Sunkesula Barrage	Andhra	Kurnool	292.00				LKD, Hyderabad

			Pradesh						
7	Nagavali	Thottapalli Reservoir Scheme	Andhra Pradesh	Vizianagaram	105.00				ERD, Bhubaneshwar
8	Nagavali	Narayanapuram Anicut	Andhra Pradesh	Srikakulam	32.77				ERD, Bhubaneshwar
9	Suwarnamukhi	Madduvalasa Reservoir	Andhra Pradesh	Srikakulam	65.00				ERD, Bhubaneshwar
10	Sone	Indrapuri Barrage	Bihar	Garhwa	173.00				LGD-II Patna
11	Gandak	Gandak Barrage	Bihar	West Champaran	113.08				LGD-I Patna
12	Kosi	Kosi Barrage	Bihar	Bhimnagar	77.74 (PL)				LGD-I Patna
13	Mahanadi	Ravishankar Dam	Chattisgarh	Dhamtari	248.70				MD, Burla
14	Hasdeo	Bango Dam	Chattisgarh	Korba	359.66				MD, Burla
15	Banas	Dantiwada Dam	Gujarat	Banaskanta	182.88	185.06			Mahi D Gandhinagar
16	Sabarmati	Dharoi Dam	Gujarat	Mehsana	187.45	192.25			Mahi D Gandhinagar
17	Mahi	Kadana Dam	Gujarat	Mahisagar	126.19	127.71			Mahi D Gandhinagar
18	Tapi	Ukai Dam	Gujarat	Tapi	102.41	105.16			TD, Surat
19	Damanganga	Madhuban Dam	Gujarat	Valsad	79.86	82.4			TD, Surat
20	Panam	Panam Dam	Gujarat	Panchmahal	121.41				Mahi D Gandhinagar
21	Narmada	Sardar Sarovar Dam	Gujarat	Ahmedabad	138.38				TD, Surat
22	Yamuna	Tajewala Weir (Hathnikund)	Haryana	Yamunanagar	323.70				UYD, New Delhi
23	Mayurakshi	Massanjore Dam	Jharkhand	Dumka	121.31				DD, Asansol
24	Damodar	Tenughat Dam	Jharkhand	Bokaro	268.83				DD, Asansol
25	Damodar	Panchet Dam	Jharkhand	Dhanbad	132.59				DD, Asansol
26	Barakar	Maithon Dam	Jharkhand	Dhanbad	150.88				DD, Asansol
27	Subarnarekha	Chandil Dam	Jharkhand	Seraikela Kharswan	192.00				ERD, Bhubaneshwar
28	Barakar	Tilaiya Dam	Jharkhand	Koderma	372.46				DD, Asansol
29	Anjanwa	Sundar Dam	Jharkhand	Hazaribagh	110.68				DD, Asansol
30	Baranadi	Amanat Barage	Jharkhand	Dumka	274.39				LGD-II Patna
31	Khoranadi	Annaraj Dam	Jharkhand	Hazaribagh	252.44				LGD-II Patna

32	Goda Nala	Bhairwa Dam	Jharkhand	Hazaribagh	356.70				DD, Asansol
33	Jamunia	Batane Dam	Jharkhand	Giridih	232.85				LGD-II Patna
34	Ashra nadi	Sikatia Barrage	Jharkhand	Dumka	170.10				DD, Asansol
35	Konar	Konar Dam	Jharkhand	Hazaribagh	427.93				DD, Asansol
36	Subarnarekha	Galudih Barrage	Jharkhand	Saraikela Kharaswan	94.50				ERD, Bhubaneshwar
37	Subarnarekha	Getlasud Dam	Jharkhand	Ranchi	590.24				ERD, Bhubaneshwar
38	Krishna	Almatti Dam	Karnataka	Vijayapura	519.60				LKD, Hyderabad
39	Krishna	Narayanpur Dam	Karnataka	Vijayapura	492.25				LKD, Hyderabad
40	Tungabhadra	Tungabhadra Dam	Karnataka	Ballari	497.74				LKD, Hyderabad
41	Harangi	Harangi Dam	Karnataka	Coorg	871.42				Cauvery D Bengaluru
42	Hemavathy	Hemavathy Dam	Karnataka	Hassan	890.63				Cauvery D Bengaluru
43	Cauvery	Krishnarajasagar	Karnataka	Mandya	752.49				Cauvery D Bengaluru
44	Kabini	Kabini Dam	Karnataka	Mysore	696.16				Cauvery D Bengaluru
45	Tunga	Upper Tunga	Karnataka	Shimoga	588.24				Cauvery D Bengaluru
46	Bhadra	Bhadra Dam	Karnataka	Chikmagaluru	657.75				Cauvery D Bengaluru
47	Karanja	Karanja Dam	Karnataka	Bidar	584.15				UGD, Hyderabad
48	Malaprabha	Malaprabha Dam	Karnataka	Belgaum	633.83				Cauvery D Bengaluru
49	Krishna	Hippargi Dam	Karnataka	Bagalkot	531.40				UKD, Pune
50	Ghataprabha	Hidkal Dam	Karnataka	Belagavi	662.94				Cauvery D Bengaluru
51	Krishna	Singatalur Barrage	Karnataka	Gadag	507.00				LKD, Hyderabad
52	Periyar	Idduki Dam	Kerala	Idduki	732.62				SWRD Kochi
53	Edamalayar	Idamalayar	Kerala	Ernakulam	169.00				SWRD Kochi
54	Chambal	Gandhisagar Dam	Madhya Pradesh	Mandsaur	399.90	401			Chambal D Jaipur
55	Sone	Bansagar Dam	Madhya Pradesh	Shahdol	341.65				MGD-III, Varanasi

56	Betwa	Rajghat Dam	Madhya Pradesh	Lalitpur	380.80				LYD,Agra
57	Narmada	Tawa Dam	Madhya Pradesh	Hoshangabad	355.39				ND, Bhopal
58	Narmada	Bargi Dam	Madhya Pradesh	Jabalpur	422.76				ND, Bhopal
59	Narmada	Barna Dam	Madhya Pradesh	Raisen	348.55				ND, Bhopal
60	Narmada	Indira Sagar Dam	Madhya Pradesh	Khandwa	262.13				ND, Bhopal
61	Narmada	Omkareshwar Dam	Madhya Pradesh	Khandwa	201.16				ND, Bhopal
62	Pench	Totladoh Project	Madhya Pradesh	Nagpur	490.00				WGD, Nagpur
63	Wainganga	Upper Wainganga Project	Madhya Pradesh	Balaghat	519.38				WGD, Nagpur
64	Godavari	Jaikwadi Dam	Maharashtra	Aurangabad	463.91	465.58	464.59	1990	UGD, Hyderabad
65	Tapi	Hathnur Dam	Maharashtra	Jalgaon	212.02	214			TD, Surat
66	Wainganga	Gosikhurd Dam	Maharashtra	Bhandara	245.50				WGD, Nagpur
67	Wardha	Upper Wardha Project	Maharashtra	Amaravati	342.50				WGD, Nagpur
68	Mula	Mula Dam	Maharashtra	Ahmednagar	552.30				UGD, Hyderabad
69	Penganga	Issapur/Upper Penganga Project	Maharashtra	Hingoli	441.00				WGD, Nagpur
70	Godavari	N M D Weir	Maharashtra	Nasik	533.50				UGD, Hyderabad
71	Puma	Yeldari Dam	Maharashtra	Parbhani	461.77				UGD, Hyderabad
72	Koyna	Koyna Dam	Maharashtra	Satara	659.43				UKD, Pune
73	Warana	Warana Dam	Maharashtra	Kolhapur	626.90				UKD, Pune
74	Bhima	Ujjani Dam	Maharashtra	Solapur	497.33				UKD, Pune
75	Nira	Veer Dam	Maharashtra	Satara	579.85				UKD, Pune
76	Sindhpana	Manjlegaon	Maharashtra	Beed	431.80				UGD, Hyderabad
77	Salandi	Salandi Dam	Odisha	Bhadrak	82.30				ERD, Bhubaneshwar
78	Indravathi	Upper Indravathi Project	Odisha	Kalahandi	642.00				LGD, Hyderabad
79	Kolab	Kolab Project	Odisha	Koraput	858.00				LGD, Hyderabad
80	Machhkund	Machhkund Project	Odisha	Koraput	838.20				LGD, Hyderabad
81	Balimela	Balimela Project	Odisha	Malkangiri	462.07				LGD, Hyderabad

82	Brahmani	Rengali Dam	Odisha	Angul	123.50				ERD, Bhubaneshwar
83	Mahanadi	Hirakud Dam	Odisha	Sambalpur	192.02				Mahanadi D Burla
84	Banas	Bisalpur Dam	Rajasthan	Tonk	315.50				Chambal D Jaipur
85	Mahi	Mahi Bajajsagar Dam	Rajasthan	Banswara	281.50				Mahi D Gandhinagar
86	Som Kamla	Som Kamla Amba Dam	Rajasthan	Udaipur	212.50				Mahi D Gandhinagar
87	Kalisindh	Kalisindh Dam	Rajasthan	Jhalawar	316.00				Chambal D Jaipur
88	Parwan	Parwan Dam	Rajasthan	Baran	288.34				Chambal D Jaipur
89	Gambhiri	Gambhiri Dam	Rajasthan	Chittorgarh	431.90				Chambal D Jaipur
90	Gambhiri	Panchana Dam	Rajasthan	Karauli	258.62				Chambal D Jaipur
91	Mej	Gudha Dam	Rajasthan	Bundi	305.87				Chambal D Jaipur
92	Parwati	Parwati Dam	Rajasthan	Dholpur					Chambal D Jaipur
93	Chambal	Kota Barrage	Rajasthan	Kota	260.30				Chambal D Jaipur
94	Chambal	Rana Pratap Sagar	Rajasthan	Chittorgarh	352.80				Chambal D Jaipur
95	Teesta	Teesta-III HEP Dam Chungtang	Sikkim	North Sikkim	1585.00				SID, Gangtok
96	Teesta	Teesta V HEP Dam Singtam	Sikkim	North Sikkim	579.00				SID, Gangtok
97	Rongpo	Rongpo Dam	Sikkim	East Sikkim	909.00				SID, Gangtok
98	Rongli	Rongli Dam	Sikkim	East Sikkim	909.00				SID, Gangtok
99	Rangit	Rangit-III HEP Dam	Sikkim	South Sikkim	639.00				SID, Gangtok
100	Cauvery	Mettur Dam	Tamilnadu	Salem	240.79				SRD, Coimbatore
101	Bhavani	Bhavanisagar Dam	Tamilnadu	Erode	280.42				SRD, Coimbatore
102	Cauvery	Grand Anicut	Tamilnadu	Thanjavur	59.21				SRD, Coimbatore
103	Cauvery	Upper Anicut	Tamilnadu	Tiruchirapalli	75.05				SRD, Coimbatore

104	Vaigai	Vaigai Dam	Tamilnadu	Theni	279.20				SRD, Coimbatore
105	Kosasthaliyar	Poondi Satyamurthy reservoir	Tamilnadu	Thiruvallur	42.67				HD, Chennai
106	Kodaganar	Kodaganar Dam	Tamilnadu	Dindugul	200.25				SRD, Coimbatore
107	Gomukanadi	Gomukhi Dam	Tamilnadu	Villupuram	183.18				HD, Chennai
108	Periyar Odai	Wellington Dam	Tamilnadu	Cuddalore	72.54				HD, Chennai
109	South Pennar	Sathanur Dam	Tamilnadu	Thiruvannamalai	222.20				HD, Chennai
110	Adyar	Chembarampakkam Lake	Tamilnadu	Kanchipuram	26.03				HD, Chennai
111	Godavari	Sriramasagar	Telangana	Nizamabad	332.54	333.15	332.72	1990	UGD, Hyderabad
112	Manjira	Singur Dam	Telangana	Medak	523.60	523.6	523.6	1999	UGD, Hyderabad
113	Manjira	Nizamsagar Dam	Telangana	Nizamabad	428.24	428.24	428.24	1999	UGD, Hyderabad
114	Krishna	Priyadarshini Jurala Project	Telangana	Wanaparthy	318.51				LKD, Hyderabad
115	Kaddamvagu	Kaddam Dam	Telangana	Adilabad	213.36				UGD, Hyderabad
116	Godavari	Sripada Yellampally Dam	Telangana	Karimnagar	148.00	154			UGD, Hyderabad
117	Musi	Musi Project	Telangana	Nalgonda	196.60				LKD, Hyderabad
118	Ganga	Narora Barrage (U/S)	Uttar Pradesh	Bulandshahar	180.61	23/09/2010			MGD-2, Lucknow
119	Rihand	Rihand Dam	Uttar Pradesh	Sonebhadra	268.22				MGD-III, Varanasi
120	Ganga	Dharmanagri Barrage	Uttar Pradesh	Bijnor	221.80				HGD, Dehradun
121	Betwa	Matatilia Dam	Uttar Pradesh	Lalitpur	308.46	310.04			LYD,Agra
122	Ghaghra	Katerniaghat Dam	Uttar Pradesh	Bahraich	138.00	136.8			MGD-1, Lucknow
123	Ramganga	Kalagarh Dam	Uttarakhand	Pauri Garhwal	366.20	365.3			MGD-2, Lucknow
124	Sharda	Banbasa	Uttarakhand	Champawat	222.96	225			MGD-1, Lucknow
125	Mayurakshi	Tilpara Barrage	West Bengal	Birbhum	62.79				DD, Asansol
126	Damodar	Durgapur Barrage	West Bengal	Burdwan	64.47				DD, Asansol
127	Kangsabati	Kangsabati Dam	West Bengal	Bankura	134.11				DD, Asansol
128	Kangsabati	Hinglow Dam	West Bengal	Bankura	97.84				DD, Asansol

LIST OF CWC FLOOD FORECASTING CONTROL ROOMS & NODAL OFFICERS

Sr. No.	River Basin Jursidiction	Nodal Officer (Designation-wise) Name & Contact Details		
		Executive Engineer/ Deputy Director	**Superintending Engineer/ Director**	**Chief Engineer**
A	**Central Flood Control Room**			
	All over India	Sh S. Lakshminarayanan Deputy Director, Flood Forecast Monitoring Dte. & Central Flood Control Room (CFCR), CWC, Ground Floor,West Block-II,Wing II, R K Puram, New Delhi 110066 Tele-(011)26105274, (011)29583666 Fax-(011)26106523 Mobile- 8800677536 Email-slakshminarayanan8162@gmail.com	Sh Sharad Chandra Director, Flood Forecast Monitoring Dte. 2nd Floor, West Block-II, Wing- II CWC, R K Puram, New Delhi 110066 Tele-(011)26182836 Fax-(011)26106523 Mobile-9868232398 Email-fmdte@nic.in	Sh B K Karjee CE, Flood Management Organisation, VI Floor CWC, Sewa Bhawan, R K Puram, New Delhi 110066 Tele-(011)26102112 Fax-(011)26102112 Mobile-9971099673 Email-cefmgmt@nic.in
		Sh VasanthaKumar V Deputy Director, Flood Control Application –I Directorate, CWC, West Block –II, Wing -2, 2nd floor, R K Puram, New Delhi - 110066 Tel: 011-29583499 Mob: 8373977185 Email- pnd-cwc@nic.in	Sh Sharad Chandra(A/C) Director Flood Control Application –I Directorate, CWC, West Block –II, Wing -2, 2nd floor, R K Puram, New Delhi -110066 Tel: 011-29583499 Mob. 9868232398 E-mail: dirfca-	

			cwc@nic.in	
		Sh Syed Faiz Ahmed Deputy Director Flood Control Application –II Directorate, CWC, West Block –II, Wing -7, I floor, R K Puram, New Delhi -110066 Tel: 29583497 Mob: 8506006693 Email-dirfca-cwc@nic.in	Sh Sharad Chandra(A/C) Director Flood Control Application –II Directorate, CWC, West Block –II, Wing -2, 2nd floor, R K Puram, New Delhi -110066 Tel: 29583497 Mob: 9868232398 E-mail: dirfca- cwc@nic.in	
B	**Divisional Flood Control Room**			
1	Alaknanda, Pinder, Mandakini, Bhagirathi, Nayar, Ganga (Deoprayag to Dharamnagari)	Sh. Ashish K Singhal Executive Engineer, Himalayan Ganga Division, CWC, 7-B, SewakAsram Road, Dehradun – 248001 Mobile -9555986777 Tele- (0135)2745882 Fax – (0135)2742148 Email –hgdcwc@gmail.com	ShSudhir Kumar SE (HOC), CWC, VasantVihar, 156, Dehradun Tele- (0135)2761562 Fax-(0135)2760631 Mobile-9412054507 Email-sehocdehradun- cwc@nic.in	Sh Anupam Prasad, Chief Engineer, UGBO, CWC, Lucknow Tele- (0522)2715832 Fax-(0522)2719834 Mobile- 9935954764 Email- ceugbolucknow@yahoo .com
2	Ganga (Garhmukteshwar to Dalmau), Ramganga, Gangan, Kali, Gomati (Neemsar to Lucknow), Sai (Bani&Raebareli)	Sh S F H Abidi Executive Engineer, Middle Ganga Division No-2, CWC, Kendriya Bhawan, 2nd Floor, Aliganj, Lucknow – 226024 Tele – (0522)2332524 Fax- (0522)2325526 Mobile – 9650957004 Email- eemgd2lko@yahoo.co.in		
3	Sarju, Sharda, Suheli, Dhauliganga, Gauriganga,	Sh. R.K.Gautam Executive Engineer, Middle Ganga Division No-1, CWC, Jaltarang Bhawan, PratapBagh, Aliganj,	Sh Bhal Ch Viswakarma Director (M & A) Tel-(0542)2282302 Fax- (0542)2282309	Sh Anupam Prasad, Chief Engineer, UGBO, CWC, Lucknow Tele-

	Ghaghra (Upto Turtipar), Rapti,BurhiRapti, Rohin,Kunhra, Kwano	Lucknow – 226024 Office-(0522)2322181/2334935 Fax – (0522)2325028 Mobile – 8004930461 Email – mgdlko2005@yahoo.co.in	Mob-9717832440 Email-hoc_cwc_varanasi@yahoo.co.in	(0522)2715832 Fax-(0522)2719834 Mobile-9935954764 Email-ceugbolucknow@yahoo.com
4	Ganga (Shahzadpur to Ballia), Yamuna (Naini), Tons,Kanhar, Sai (Pratapgarh&Jalapur), Gomti (Sultanpur to Maighat), ChhotiSarju, Karamnasa, Sone (GovardheyGhat to Chopan), Gopad,Rihand	Sh Shashwat Rai Executive Engineer, Middle Ganga Division No-3, CWC, Akashdeep,2nd Floor, PannaLal Park, Varanasi – 221002 Tele – (0542)2282303 Fax – (0542)2282303 Mobile – 8826838308 Email - mgd3cwcvaranasi@yahoo.co.in	Sh Mukesh Kr Singh Superintending Engineer (HOC), CWC, Varanasi Tel-(0542)2282302 Fax-(0542)2282309 Mob-9471193011 Email-hoc_cwc_varanasi@yahoo.co.in	Sh Anupam Prasad Chief Engineer, LGBO, CWC, Patna Tele-(0612)2541087 Fax-(0612)2541865 Mobile-9935954764 Email-celgbo-cwc@nic.in
5	Gandak (Triveni-Dumariaghat), Burhi Gandak, Bagmati, Adhwara, KamlaBalan, Kosi,Parwan, West Kankai, Mechi, Mahananda	Sh. Mahesh Kr Raman Executive Engineer, Lower Ganga Division No-1, CWC, Rajendra Nagar, Patna – 800016 Tele- (0612)2671541 Fax- (0612)2686952 Mobile – 8210846371 Email - mgd4cwcpat@gmail.com	Sh Shashi Rakesh, Dir (M&A) LGBO, CWC, Patna Tele-(0612)2541065 Fax – (0612)2541865 Mobile-9711999234 Email-celgbo-cwc@nic.in	Sh Anupam Prasad Chief Engineer, LGBO, CWC, Patna Tele-(0612)2541087 Fax-(0612)2541865 Mobile- Email-celgbo-cwc@nic.in
6	Ganga (Buxar-Sahebganj), Gahghra(Darauli-Chhapra), Gandak (Rewaghat-Hazipur),Sone (Japla-Maner), North	Sh. NarendraNath Shankar Executive Engineer, Lower Ganga Division No-2, CWC, 148-Anandpuri, West Boring Canal Road, Patna – 800001 Tele – (0612)2558249 Fax – (0612)2557084 Mobile – 9431069299		

	Koel,Punpun,Sakri, Kiul,Harohar, PhalguBaya	Email - mgd5cwcpatna@gmail.com		
8	Yamuna, Kamal, Pabar, Tons, Bata, Giri, Somb, Hondon, Sahibi	Shobit Ch Mishra Executive Engineer, Upper Yamuna Division, B-5 Tara Crescent Road, Qutab Institutional Area, New Delhi 110 016Tele-01126858452 Fax-01126565579 Mobile- 9958676527 Email- uydybo.cwc@gmail.com	Sh R.P.S.Verma SE (HOC), H.No. 285,Sector-1, VaishaliGhaziabad 201010 UP Tele- (0120)4574224 Fax-(0120)4571224 Mobile-9968681205 Email- sehoc_noidacwc@rediffmail.com	Sh Ashok Goel, CE, YBO, Kalindi Bhawan, New Delhi Tele-(011)26526865 Fax-(011)26526857 Mobile-8130988322 Email- ceybo-cwc@nic.in
9	Yamuna(Delhi-Naini), Chambal (Dholpur d/s), Khari, Sengar, Betwa, Sind, Sonar, Bearma,, Ken, Urmil, Shyamri, Sonar, Chandrawal, Dhasan, Kunwari	Sh Manoj Kumar, Executive Engineer, Lower Yamuna Division, CWC, Sector 12, Qtr No C - 404-409, AwasVikash colony, Agra – 282007 Tele – (0562)2604424 Fax- (0562)2604424 Mobile- 07065191888 Email- lyd_agra@rediffmail.com		
10	Chambal (Before Dholpur), Shipra, Chhoti Kali Sindh, Siwana, Retam, Parwati, Banas, Kali Sindh	Sh R D Meena Executive Engineer, Chambal Division, CWC, Sector-86/93-96, Ajay Marg, Pratap Nagar Housing Board Colony, Sanganer, Jaipur – 303906 Tele-(0141)2790065 Fax- (0141)2791826 Mobile- 9313832009 Email -		

		chambalcwc@yahoo.co.in		
11	Brahmaputra (upto Tezpur), Siang, Lohit, Subansiri, Buridehing, Noa-Dehing, Dikhow, Dhansiri (S), Kopili, Kameng, Siyum, Desang, Jia-bhareli, Ranganadi, Debang, Jiadhal	Sh B P Sonowal Executive Engineer, Upper Brahmaputra Division, CWC, Jiban Phukan Nagar, PO-CR Building, Dibrugarh – 786003 Tele-(0373)2314398/905 Fax – (0373)2314398 Mobile-8826788504 Email- ubd-cwc-asm@nic.in ubddbrcwc@gmail.com	Sh V D Roy SE (HOC), Guwahati Tele-(0361)2674191/297 Fax-(0361)2674268 Mobile-9650804451 Email-hocguwahati@yahoo.com	Sh P.M. Scott CE, B&BBO, Shillong Tele-(0364)2220489 Fax- (0364)2220644 Mobile- 9436165176 Email- cebbo-cwc@nic.in
12	Brahmaputra (upto Dhubri), Pagladiya, Puthimari, Matunga, Suklai,Sonai, Rukani, Katakhal, Manu, Gumti, Kushiyara ,Gaurang , Aie, Burisuti,	Sh Dipankar Das Executive Engineer, Middle Brahmaputra Division, CWC, CWC Complex, Behind Adabari Bus Stand, PO-Guwahati University, Guwahati – 781014 Tele-(0361)2972105 Fax- (0361)2674267 Mobile- 7002938894 Email- mbdcwc@gmail.com		
13	Teesta, Rangit, Ghish, Chel, Neora, Jaldhaka, Diana, Murti, Torsa, Raidak-I, Raidak-II, Sankosh, Mahananda,	Sh Sudipta Sarkar Executive Engineer, Lower Brahmaputra Division, CWC, Hakimpara, Jalpaiguri – 735101 Tele- (03561)230677 Fax- (03561)230677 Mobile- 9474844647 Email- cwcjal@gmail.com	Sh Shiv Prakash SE (Sikkim Investigation Circle), CWC, Tadong, Gangtok, Sikkim – 737 102 Tele-(03592)227061 Fax-	Sh S Biswas CE , T&BDBO, Kolkata Tel: 033-23589181 Fax 033-40047023 Mob: 9818811841 Email: cetbo-cwc@nic.in

14	Teesta	Sh Shashank Bhushan Executive Engineer, Sikkim investigation Division, CWC, Tadong, Gangtok, Sikkim – 737 102 Tele- (03592)231887/271059 Fax- (03592)231887 Mobile – 9968445805 Email – sidgangtok_cwc@yahoo.in	(03592)231128 Mobile-8005498787 Email- seicgangtok-cwc@nic.in		
	Damodar, Konar, Barakar,Mundeswari,Ajoy, Tepra, Mayurakshi, Siddheswari, Kangsabati,Kimari ,Pheni,Totka&Jumani,Bhairabanki&Tara	Sh Sudipto Mandal Executive Engineer, Damodar Division, CWC, Apcar Garden(West), G.T. Road, Asansol – 713304 Tele- (0341)2254265 Fax-(0341)2254265 Mobile- 09810783036 Email - eecwcasansol@gmail.com	Sh Amitabh Prabhakar SE (HOC) , Maithon. Tel: 06540-274263 06540-252812 Fax-06540-276525/274214 Mob: 09973049058 Email: sehocmaithon-cwc@nic.in		
15	Subarnarekha, Burhabalang, Baitarani, Brahmani, Rushikulya, Vamsadhara, Nagavali, Sarda	Dr D R Mohanty Executive Engineer, Eastern Rivers Division, CWC, Plot No A-13 & 14, Bhoi Nagar, Bhubaneshwar – 751022 Tele-(0674)2540086 Fax-(0674)2540316 Mobile-8851548274 Email- eeerdcwc@yahoo.co.in	Sh S K Samal SE (HOC), Bhubaneswar Tele- (0674)2545708 Fax- (0674)2545537 Mobile-9937166235 Email- hocbbsr@yahoo.com	Sh. A K Nayak CE, MERO, Plot No A-13/14, Bhoinagar, CWC, Bhubaneswar Tele- (0674)2545536 Fax- (0674)2545537 Mobile- 9437483984 Email- cemero-cwc@nic.in	
16	Mahanadi, Seonath, Tandula, Hamp, Apra, Pairi, Jonk, Hasdeo, Mand, Ib, Kelo, Bheden, Tel, Ong, Sridhijar, Kusumi, Daya, Vargabi,	Sh N Srinivas Rao Executive Engineer, Mahanadi Division, Burla, CWC, Qtr No SD-7/1&2 , Officers Colony, Burla, District – Sambalpur – 768017 Tele- (0633)2430238 Fax- (0633)2431809			

	Kushabhadra, Kaukhai, Kathajori, Devi	Mobile – 9618694218 Email -eemdcwcburla@yahoo.co.in		
17	Godavari (upto Sriramsagar), Dharna, Pravara, Shiv, Dudhna, Manjira , Lendi, Siddhavagu,	Sh V Gangadhar Executive Engineer, Upper Godavari Division, CWC, Krishna Godavari Bhawan, H No-11-4-648, AC Guards, Hyderabad – 500004 Tele-(040)29704541 Fax-(040)29704542 Mobile-9494428780 Email- eeugdhyd@gmail.com	Sh M Raghuram SE, Godavari Circle, CWC, Hyderabad Tele- (040)29700116 Fax- (040)29700117 Mobile- 8373987620 Email- segchyderbad-cwc@nic.in	Sh M K Srinivas CE, KGBO, CWC, Krishna Godavari Bhawan, Hyderbad Tele-(040)29808740 Fax-(040)29808742 Mobile- 9908196363 Email- cekgbo-cwc@nic.in, hyd_cecwc@yahoo.com
18	Godavari (From Kunavaram till mouth), Indravati, Pranhita, Bhaskal, Dantewada, Kinnersani, Sabari	Sh K V K Kuchel Executive Engineer, Lower Godavari Division, CWC, Krishna Godavari Bhawan, H No-11-4-648, AC Guards, Hyderabad – 500004 Tele- (040)29808749 Fax-(040)29808752 Mobile- 8099443653 Email- eelgd@yahoo.com		
19	Krishna (Before Almatti Dam), Koyana, Warna, Panchganga, Dudhganga, Ghatprabha, Agrini, Don, Malprabha	Sh Abhishek Gaurav Executive Engineer, Upper Krishna Division, CWC, National Water Academy Complex, Sinhagad Road, Khadakwasla, Pune – 411024 Tele-(020)24380073 Fax-(020)24381086 Mobile- 9717657375 Email- eeukdcwc@yahoo.com	Sh M Raghuram SE, Godavari Circle, CWC, Hyderabad Tele- (040)29700116 Fax- (040)29700117 Mobile- 8373987620 Email- segchyderbad-cwc@nic.in	
20	Krishna (From Almatti upto mouth), Ujani, Nira,	Smt M N R Mehervani Executive Engineer, Lower Krishna Division, CWC, Krishna Godavari Bhawan,		

	Bhima, Borinala, Kagna, Haridra, Hagari, Vedavathi, Halia, Musi, Palleru, Munneru	H No-11-4-648, AC Guards, Hyderabad – 500004 Tele- (040)29809650 Fax-(040)29809647 Mobile-9866239563 Email- eelkd2010@yahoo.in		
21	Penganga, Peddavagu, Wardha, Pranhita, Wainganga, Bagh, Bawanthadi, Kanhan	Sh K.K.Lakhe Wainganga Division, CWC, 2nd Floor, Block-C, CGO Complex, Seminary Hills, Nagpur-440 006 Tele-(0712)2510156 Fax-(0712)2510756 Mobile-9405140152/9028465733 Email-wgdivision@yahoo.co.in	M Swaparani SE(C), Monitoring (C), CWC, Seminary Hills, Nagpur-440 006 Tele- (0712)2510475 Fax- Mobile-9652787345 Email-semc_cwc2010@rediffmail.com	Sh D K Tiwari CE, Monitoring (C), CWC, Seminary Hills, Nagpur-440 006 Tele- (0712)2510464 Fax-(0712)2510475 Mobile-08826173692 Email-cemonc-cwc@nic.in, cecwcnagpur@yahoo.com
22	Mahi, Som, Anas, Jakham, Panam, Erau, Sabamati, Sei, Wakal, Harnav, Hathmati, Watrak, Meshow, Banas, Balram, Sipu, Luni, Shetrunji, Bhadar, Machu, Rupen,Machhundri	Sh Shreyas Gune Executive Engineer, Mahi Division, CWC, 3rdFloor , Narmada Tapi Bhawan, Sector-10 A, Gandhinagar Tele-(079)23239509 Fax-(079)23239509 Mobile- 9958337125 Email-mahi_cwc@yahoo.co.in eemdgnt-cwc@gov.in	Sh. D S Chaskar SE (HOC), Mahi Tapi Bhawan, 2nd Floor, Room No 202, Sector-10A, Gandhinagar Tele- (079)23245194 Fax-(079)23245194 Mobile-09422309043 Email-hoc_gandhinagar@yahoo.co.in	Sh M. P. Singh CE, NTBO, CWC, Narmada Tapi Bhawan, 1st Floor, Room No 103, Sector-10A, Gandhinagar Tele-(079)23245427 Fax-(079)23246115 Mobile- 9868211191 Email-centbo-cwc@nic.in, cwc_ntbo@rediffmail.com
23	Tapi, Narmada (From Garudeswar), Purna, Girna, Damanganga, Wagh	Ashish Kumar Executive Engineer, Tapi Division, CWC, Opp Kshetrapal Health Centre, Sagrampura, Surat – 395002 Tele- (0261)2478569 Fax- (0261)2478569 Mobile-9625388113/9711660940 Email-tapi_exern@yahoo.com ee.tapi-cwc@gov.in		

24	Narmada (upto Hoshangabad), Banjar, Burhner, Tawa	Sh Sanjay Kr Malviya Executive Engineer, Narmada Division, CWC, Block-3, Paryawas Bhawan, Mother Teresa Marg, Arera hills, Bhopal – 462011 Tele-(0755)2573630 Fax-(0755)2552217 Mobile- 8889900620	Sh Manoj Tiwari SE(C) CWC Block-3, Ground Floor, Paryawas Bhawan, Mother Teresa Marg, Arera hills, Bhopal – 462011 Tele- (0755)2558264 Fax- (0755)2550253 Mobile- 9425608846 Email: secobhopal-cwc@nic.in	Sh Aditya Sharma CE, NBO, CWC, Block-3, Ground Floor, Paryawas Bhawan, Mother Teresa Marg, Arera hills, Bhopal – 462011 Tele- (0755)2574513 Fax- (0755)2550253 Mobile- 9717200563 Email- cenbo-cwc@nic.in
25	Pennar (From Tadipatri till mouth), Chitravathi, Papagni, Kunderu, Cheyyuru, Sagileru, Kosasthaliyar, Adyar, Cooum, Vellar	Sh R Giridhar Executive Engineer, Hydrology Division, CWC, "NEERVALAM" No.81, TNHB Colony, West Velachery Chennai – 600042 Tele- (044)22554250 Fax- (044)22554250 Mobile- 8130277739 Email- eecwcchennai@yahoo.co.in	Sh V Mohan Murali SE , CSRC,Bengaluru – 560 031 Tele- (080)29723050 Fax- (080)29723060 Mobile- 08447131041 Email- csrccwc@yahoo.co.in	Sh N.M. Krishnanunni CE (CSRO), Sangamam, Gandhimanagar, Coimbatore – 641 004 Tele-(0422)2512242 Fax-(0422)2512243 Mobile- 9482592113 Email- cecsro-cwc@nic.in
26	Cauvery, Bhavani, Ponnaiyar, Vaigai	Sh S Rajendran Executive Engineer, Southern Rivers Div, Coimbatore Tele-(0422)2512250 Fax-(0422)2512250 Mobile-8800242327 Email-srdcwc@rediffmail.com		
27	West flowing Rivers	Sh M S Saravana Kumar Executive Engineer, South Wstern Rivers Division, CWC, Jaldhara, D No 27/1927 A, Kasturba Nagar, Kadavanthra, Kochi – 682020 Tele-(0484)2314229 Fax-(0484)2314229		

		Mobile- 9942736685 Email- eeswrd@yahoo.com		
28	Harangi, Hemavathi, Kabini, Cauvery, Tungabhadra	Sh Srihari Shekhar Executive Engineer Cauvery Division, CWC, Bengaluru Tele- (080)29724010 Fax-(080)29724010 Mobile- 9449339615 Email- eecdcwcblore@rediffmail.com	Sh Jitendra Panwar SE (C),Bengaluru –560031 Tele- (080)29724081 Fax- (080)29723060 Mobile- 9868280104 Email- secobangalore-cwc@nic.in	Sh Sushil Kumar CE, MSO, CWC, Banglore. Tel: 080-29724080 Mob: 8830099728 Email: cemso-cwc@nic.in
29	Jhelum (upto Rammunshibagh)	Sh Satish Jain Executive Engineer, Chenab Division, CWC, Rajinder Nagar Housing Colony, Phase-1, Bantalab, Jammu Tele- (0191)2597688 Fax-(0191)2597668 Mobile-9999192444/9499189244 Email- exenjammu@gmail.com	Sh. S K Sharma Director , M & A , Jammu Tele-(0191)-2597669, Mobile- 092108991320 Email- dirmajammu-cwc@nic.in,	Sh Shiv Nandan Kumar CE, IBO, CWC, Kendriya Sadan, Chandigarh- 160017 Tele-(0172)2746794 Fax-(0172)2741766 Mobile-9868918952 Email-ceibo-cwc@nic.in

3/120/2019-FFM/

भारत सरकार

Government of India
केन्द्रीय जल आयोग

Central Water Commission
बाढ पूर्वानुमान प्रबोधन निदेशालय

Flood Forecast Monitoring Directorate

दूरभाष /Telephone: 011-26106523
फैक्स/ Fax: 011-26106523
ईमेल /e-mail: fmdte@nic.in

कमरा संख्या–208 (द) सेवा भवन
Room No. 208(S), Sewa Bhawan,
रामकृष्ण पुरम् नई दिल्ली–110066
R.K. Puram, New Delhi-110066.

Dated 22nd April 2019

NOTIFICATION

In partial modification of Notification No. 3/120/2013-FFM/2638-2717 dated 3rd December 2013, Competent Authority has approved the revised designated flood period for various river basins of the country as given under:

S. No.	Basin	Modified Period
1.	Brahmaputra & Barak (including Teesta, Rivers flowing in States of Tripura, Manipur, Mizoram, Nagaland, Meghalaya, North Bengal, Sikkim) Basins and Jhelum Sub-Basin of Indus Basin	1st May to 31st October
2.	All other Basins upto Krishna Basin	1st June to 31st October
3.	Basins South of Krishna Basin (Pennar,	1st June to 31st December

	Cauvery and Southern Rivers)	

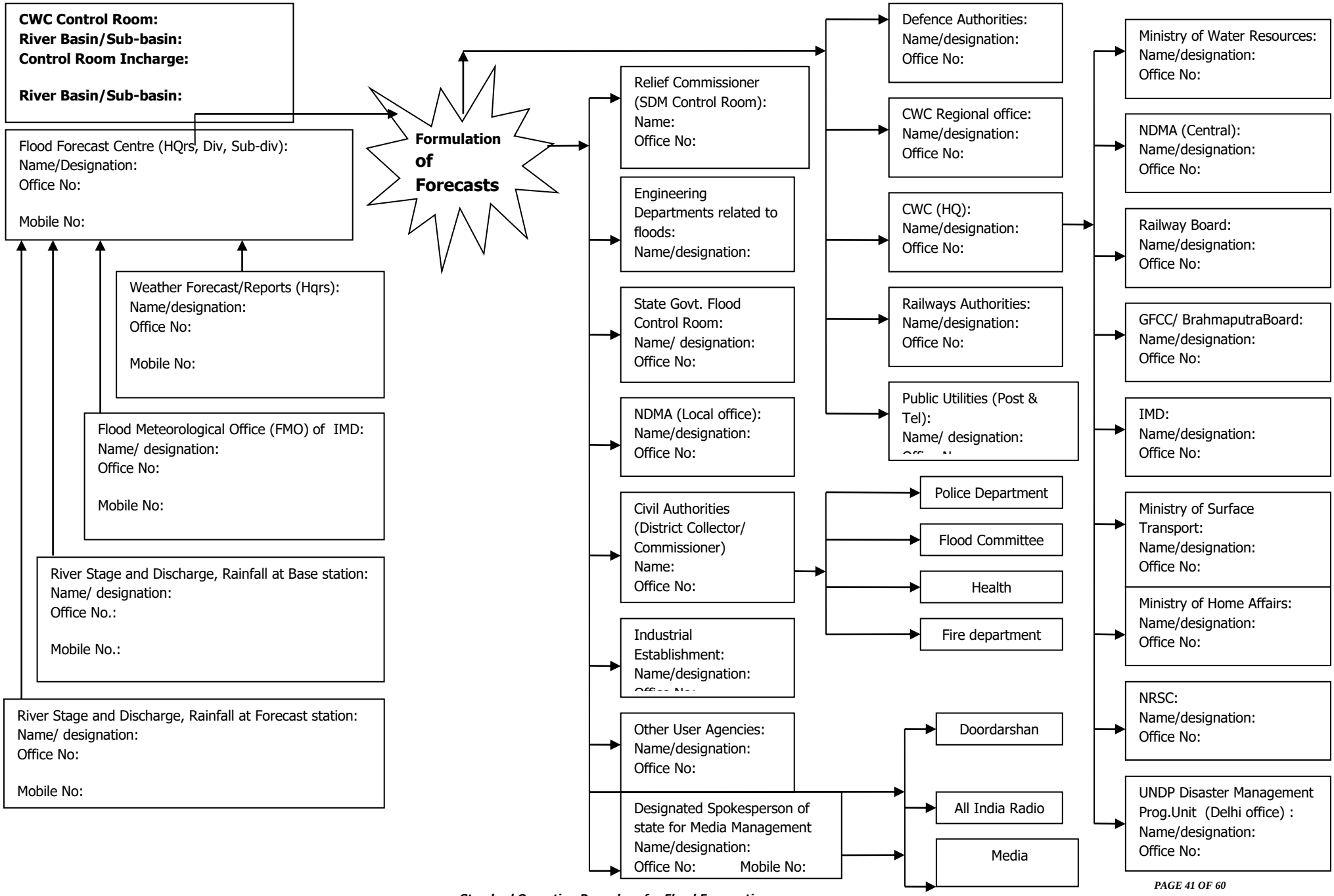
In case of floods in any basin beyond the above designated flood period due to unexpected rain/releases from dams or other reasons, the flood forecasting activity shall be resumed in affected basins by the concerned organisation/division till the water level falls below warning level/inflow falls below threshold limit at all FF/IF stations and necessary bulletins shall be disseminated as usual to all users as well as CFCR.

The modifications will come into force from the date of issue of this notification.

sd/-

(शरद चन्द्र / Sharad Chandra)

निदेशक **(**एफ एफ एम**) /** Director (FFM)



Typical notification chart for dissemination of flood forecast by CWC Control Rooms

ANNEX-1.4

Annex-1.5

Standard Operating Procedure for upkeep of Telemetry System of Central Water Commission and keeping them functional

Stations In-Charge	Name:			Contact Number:	
	Activity	Person concerned	Periodicity	Return to be sent to Divn/Modelling Centre/Cirlce/ Organisation/Headquarter	Remarks
Telemetry Sites with Regular Staff	Physical inspection reagrding security arrangements, cleaniness, connectivity among components, data display, etc	JE/AE/AEE concerned	Monthly or date of site visit or disruption in data tansmission to Div which ever is earlier.	Monthly to Division	
	Cleaning of Solar Panels, Tipping Bucket Raingauge, battery leads, debris/silt from Termination blocks, ensuring connectivity, etc.	Site staff under supervision of JE/AE/AEE	Monthly or after every heavy rainfall or dust storm or cyclonic storm or flood or disruption in data transmission.	Monthly to Division	
	Verification of data from DCP/DCU display on test check basis using gauge installed along the water level sensor and measured volume of water for raifall sensors for few hours say 3 to 5 hours.	JE/AE/AEE concerned	Monthly or date of site visit or disruption in data tansmission to Div which ever is earlier.	Monthly to Division	
	Registering complaint with the vendor for correcting the fault beyond the control of site staff/in charge under intimation to Division office and duly recorded in the site register.	JE/AE/AEE concerned	Immediately after disruption of data as first information under intimation to Divisional Office. Immediately after nature of complaints has been identified after field inspection under intimation to Divisional office.	Monthly to Division	
Telemetry Sites without Regular Staff	Physical inspection reagrding security arrangements, cleaniness, connectivity among components, data display, etc	JE/AE/AEE concerned	Monthly or date of site visit or disruption in data tansmission to Div which ever is earlier.	Monthly to Division	
	Cleaning of Solar Panels, Tipping Bucket Raingauge, battery leads, debris/silt from Termination blocks, ensuring connectivity, etc.	Local labour or site staff on tour from othe site under the supervision of JE/AE/AEE	Monthly or after every heavy rainfall or dust storm or cyclonic storm or flood or disruption of data.	Monthly to Division	
	Verification of data on test check basis using gause installed along the water level sensor and measured volume of water for raifall sensors for few hours say 3 to 5 hours.	JE/AE/AEE concerned	Monthly or date of site visit or disruption in data tansmission to Div which ever is earlier.	Monthly to Division	
	Registering complaint with the vendor for correcting the fault beyond the control of site staff/in charge under intimation to Division office and duly recorded in the site register.	JE/AE/AEE concerned	Immediately after disruption of data as first information under intimation to Divisional Office. Immediately after nature of complaints has been identified after field inspection under intimation to Divisional office.	Monthly to Division	

Division Office/Modelling Centre	Monitoring of Data Reception from site throiugh GPRS/GSM directly and Satellite through ERS/VSAT and data from other agencies as agreed in advance.	Duty Officer	Daily during non-monsoon and three hourly during monsoon	Fortnightly to Circles/ Organisation/ CWC HQ (FMO)	
	Physical verification of equipments installed like Server/ UPS/ VSAT/Earthing, etc and working of data management software installed in the server.	AE/AEE/EE	Weekly or disruption.	Fortnightly to Circles/ Organisation	
	Registering complaint with the vendor for correcting the fault beyond the control of site staff/in charge/Duty officer of control room under intimation to the Executive/ Superintending Engineer and duly recorded in the register. Ensuring availability of responsible officer/staff during complaint redessal visit of service engineer	Duty Officer	Immediately after disruption of data or receipt of similar information from site as first information as second line of monitoring. Immediately after nature of complaints has been identified after field inspection or receipt of similar information from site as second line of complaint redressal.	Fortnightly to Division Concerned in case of one MC for more divisions as well as to Circle , Organisations Concerned	
	Review of licences and payment of fees to MOCIT	EE	Annual	Annual to CWC HQ(FMO)	
	Usage of data/sharing data with other as agreed in advance.	Duty Officer	Daily during non-monsoon and three hourly during monsoon	Fortnightly to CWC HQ (FMO)	
Earth Receiving Station	Verification of Raw Data Reception at DDRGS	Officer in Charge through service	Daily during non-monsoon and three hourly during monsoon		
	Physical verification of equipments installed like Server/ UPS/ VSAT/Earthing, etc and working of data management software installed in the server.	Officer in Charge through service engineer of vendor	Weekly or disruption.		
	Registering complaint with the vendor for correcting the fault. Ensuring availability of responsible officer/staff during complaint redessal visit of service engineer	Officer in Charge	Immediately after disruption of data as first information. Immediately after nature of complaints has been identified after field inspection.		

SOP for Telemetry Data Backup and validation					
	Activity	Person concerned	Periodicity	Return to be sent to Divn/Modelling Centre/Cirlce/ Organisation/Headquarter	Remarks
Site Level	The data backed up using Pendrive should be sent to concerned MC/Division for filling the gap due to transmission losses in their system and then deleted from the Pendrive to keep ready for future use	JE/AE/AEE concerned	Monthly or during site visit		
Division/ MC Level	Use mirror server for data back up. Primary and secondary data validation similar to manually observed data. Storage of validated data alonwith raw data in separate folders. Uploading of the validated telemetry data in eSWIS after creation of facility for the same.	AE/AEE/EE	Monthly	Monthly to Circles/ Organisation/CWC(HQ(FMO)	

Annex-3.1

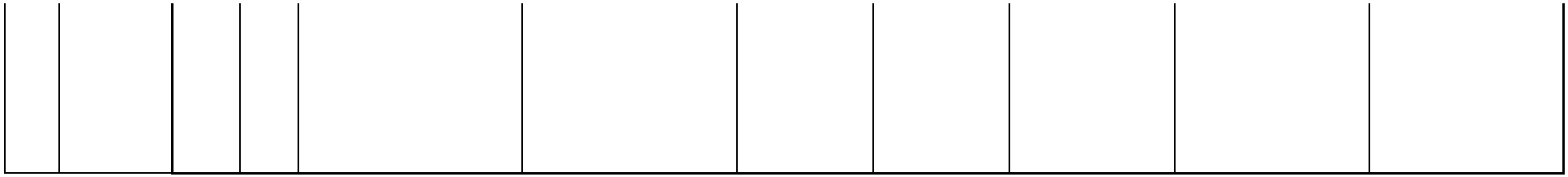
Basinwise System of Reservoirs for Integrated Operation through Flood Crisis Management Teams (FCMT)for Flood Moderation										
Sl. No.	Basin	System	Name of Reservoirs		Location(State)	Details of FCMT				
						Name	Headquarter	Chairman	Member Secretary	Members
1	Ganga	System 1	1.1	Tehri	Uttarakhand	Upper Ganga & Ramganga	Dehradun	CE,UGBO, CWC, Lucknow	SE (HOC), CWC, Dehradun	Representatives of Govt of Uttarakhand, THDC, UP Irrigation
			1.2	Kalagarh	Uttarakhand					
		System 2	2.1	Gandhisagar	Madhya Pradesh	Chambal	Jaipur	CE (YBO), CWC, New Delhi	SE (HOC), CWC, Noida	Representatives of Govt of Madhya Pradesh & Rajsthan(including Electricity Board)
			2.2	Rana Pratap Sagar	Rajasthan					
			2.3	Kota Barrage	Rajasthan					
			2.4	Bisalpur Dam	Rajasthan					
		System 3	3.1	Rajghat	Madhya Pradesh	Ken Betwa	Agra	CE (YBO), CWC, New Delhi	SE (HOC), CWC, Noida	Representatives of Govt of Madhya Pradesh, Uttar Pradesh, Betwa Board
			3.2	Matatila	Uttar Pradesh					
		System 4	4.1	Bansagar dam	Madhya Pradesh	Sone	Varanasi	CE,UGBO, CWC, Lucknow	SE (HOC), CWC, Varanasi	Representatives of Govt of Madhya Pradesh, Chhatisgarh, Bihar and Bansagar Control Board
			4.2	Rihand Dam	Uttar Pradesh					
			4.3	Indrapuri Barrage	Bihar					
		System 5		Whole Ganga	Uttarakhand	Ganga	Patna	Chairman, GFCC, Patna	CE(LGBO), CWC, Patna	Representatives of Ganga Basin States, Chairmans of System 1 to 4.
					Uttar Pradesh					
					Madhya Pradesh					
					Chattisgarh					
					Rajasthan					
					Haryana & Delhi					
					Bihar					
					Jharkhand					
					West Bengal					

2	**Godavari**	**System1**	**1.1**	**N M Weir**	Maharashtra	Upper Godavari	Hyderabad	Chief Engineer (KGBO), CWC, Hyderabad	SE(Godavari), CWC, Hyderabad	Representative of Govt of Maharashtra
			1.2	**Mula Dam**						
			1.3	**Jaikwadi Dam**						
			1.4	**Manjlegaon**						
			1.5	**Yeldari**						
		System2	**2.1**	**Karanja**	Karnataka	Middle Godavari	Hyderabad	Chief Engineer (KGBO), CWC, Hyderabad	SE(Godavari), CWC, Hyderabad	Representatives of Govt of Karnataka & Telangana
			2.2	**Singur**	Telangana					
			2.3	**Nizamsagar**	Telangana					
			2.4	**Sriramasagar Dam**	Telangana					
			2.5	**Kaddam Dam**	Telangana					
			2.6	**Sripada Yellampalli Dam**	Telangana					
		System3	**3.1**	**Upper Wardha**	Maharashtra	Wardha	Nagpur	Chief Engineer (MCO), CWC, Nagpur	SE(Coord), MCO, CWC, Nagpur	Representative Govt of Madhya Pradesh & Maharashtra
			3.2	**Issapur/Upper Penganga Dam**	Maharashtra					
			3.3	**Upper Wainganga Project**	Madhya Pradesh	Wainganaga	Nagpur			
			3.4	**Totladoh**	Madhya Pradesh					
			3.5	**Gosikhurd Dam**	Maharashtra					
		System 4	**4.1**	**Upper Indravathy Project**	Odisha	Indravathy Sabari	Hyderabad	Chief Engineer (KGBO), CWC, Hyderabad	SE(Godavari), CWC, Hyderabad	Representative of Govt of Odisha, Chhatisgarh, Telangana & Andhra Pradesh
			4.2	**Kolab**						
			4.3	**Machkund**						
			4.4	**Balimela**						
		System 5	**5.1**	**P V Narasimha Rao Kanthapally project**	Telangana	Lower Godavari	Hyderabad	Chief Engineer (KGBO), CWC, Hyderabad	SE(Godavari), CWC, Hyderabad	Representatives of Govt of Telangana & Andhra Pradesh
			5.2	**Polavaram**	Andhra Pradesh					
			5.3	**Dowlaiswaram Barrage**	Andhra Pradesh					
		System 6		**Whole Godavari**	Maharashtra, Karnataka, Madhya Pradesh, Chhattisgarh, Odisha, Telangana and Andhra Pradesh	Godavari	Hyderabad	Chairman, GRMB as Chairman	Chief Engineer (KGBO), CWC, Hyderabad	Representative of Basin States

3	Krishna	System 1	1.1	**Koyna Dam**	Maharashtra	Upper Krishna	Pune	Chief Engineer (KGBO), CWC, Hyderabad	SE(KCC), CWC, Hyderabad	Representatives of Maharashtra & Karnataka
			1.2	**Varna Dam**	Maharashtra					
			1.3	**Hippargi Barrage**	Karnataka					
			1.4	**Almatti Dam**	Karnataka					
			1.5	**Hidkal Dam**	Karnataka					
			1.6	**Malaprabha Dam**	Karnataka					
			1.7	**Narayanpur Dam**	Karnataka					
		System 2	2.1	**Ujni Dam**	Maharashtra	Upper Bhima	Pune	Chief Engineer (KGBO), CWC, Hyderabad	SE(KCC), CWC, Hyderabad	Representative of Maharashtra & Karnataka
			2.2	**Nira Dam**	Maharashtra					
		System 3	3.1	**Upper Tunga**	Karnataka	Middle Krishna	Hyderabad	Chief Engineer (KGBO), CWC, Hyderabad	SE(KCC), CWC, Hyderabad	Representative of Karnataka, Telangana and Andhra Pradesh
			3.2	**Bhadra Dam**	Karnataka					
			3.3	**Tungabhadra Dam**	Karnataka					
			3.4	**Sunkesula Barrage**	Andhra Pradesh					
			3.5	**P D Jurala Project**	Telangana					
			3.6	**Srisailam Dam**	Andhra Pradesh					
			3.7	**Nagarjunasagar Dam**	Telangana					
		System 4	4.1	**Musi Project**	Telangana	Lower Krishna	Hyderabad	Chief Engineer (KGBO), CWC, Hyderabad	SE(KCC), CWC, Hyderabad	Representative of Govt of Andhra Pradesh
			4.2	**Dr K L R S Pulichintala Project**	Andhra Pradesh					
			4.3	**Prakasham Barrage**	Andhra Pradesh					
		System 5		**Whole Krishna**	Maharashtra, Karnataka, Telangana and Andhra	Krishna	Hyderabad	Chairman, KRMB	Chief Engineer (KGB), CWC, Hyderabad	Representative of Basin States

					Pradesh					
4	Cauvery	System1	1.1	**Harangi Dam**	Karnataka	Upper Cauvery	Bengaluru	Chief Engineer (CSRO), CWC, Coimbatore	SE(CSRC), CWC, Bengaluru	Representatives from Karnataka & Kerala
			1.2	**Hemavathy Dam**	Karnataka					
			1.3	**Krishnarajasagar**	Karnataka					
			1.4	**Kabini Dam**	Karnataka and Kerala					
		System2	2.1	**Mettur Dam**	Tamilnadu	Middle Cauvery	Coimabtore	Chief Engineer (CSRO), CWC, Coimbatore	SE(CSRC), CWC, Bengaluru	Representative from Tamilnadu and Tamilnadu Electricity Board/UT of Puducherry
			2.2	**Bhavanisagar Dam**	Tamilnadu					
			2.3	**Kodaganar Dam**	Tamilnadu					
		System 3	3.1	**Upper Anicut**	Tamilnadu	Lower Cauvery	Coimbatore	Chief Engineer (CSRO), CWC, Coimbatore	SE(CSRC), CWC, Bengaluru	Representative from Tamilnadu /UT of Puducherry
			3.2	**Grand Anicut**	Tamilnadu and Puducherry					
		System 4		**Whole Cauvery**	Karnataka, Kerala, Tamilnadu, UT of Puducherry	Cauvery	Coimbatore	Member (RM), CWC, New Delhi	Chief Engineer (CSRO), CWC, Coimbatore	Representative of Cauvery Basin State
5	Mahanadi	System1	1.1	**Ravi Shankar dam**	Chhattisgarh	Upper Mahanadi	Burla	Chief Engineer (MERO), CWC, Bhubaneshwar	SE (HOC), CWC, Bhubaneshwar	Representatives of Govt of Chhattisgarh
			1.2	**Bango Dam**	Chhattisgarh					

		System 2	**2.1**	**Hirakud**	Odisha	Lower Mahanadi	Burla	Chief Engineer (MERO), CWC, Bhubaneshwar	SE (HOC), CWC, Bhubaneshwar	Representative of Govt of Odisha
		System 3		**Whole Mahanadi**	Chhattisgarh Odisha	Mahanadi	Bhubaneshwar	Member (RM), CWC, New Delhi	Chief Engineer (MERO), CWC, Bhubaneshwar	Representatives of Basin States, i e, Chhattisgarh& Odisha
6	**Tapi**	**System 1**	**1.1** **1.2**	**Hatnur Dam** **Ukai Dam**	Maharashtra Gujarat	Tapi	Surat	Chief Engineer (NTBO), CWC, Gandhinagar	SE(HOC), CWC, Gandhinagar	Representatives of Maharashtra and Gujarat
7	**Mahi**	**System 1**	**1.1** **1.2** **1.3** **1.4**	**Mahi Bajaj Sagar Dam** **Som Kamla Amba Dam** **Kadana Dam** **Panam Dam**	Rajasthan Rajasthan Gujarat Gujarat	Mahi	Gandhinagar	Chief Engineer (NTBO), CWC, Gandhinagar	SE(HOC), CWC, Gandhinagar	Representatives of Government of Rajasthan & Gujarat
8	**Subarnarekha**	**System 1**	**1.1** **1.2** **1.3**	**Getsuld Dam** **Chandil Dam** **Galudih Barrage**	Jharkhand Jharkhand Jharkhand	Subarnarekha	Bhubaneshwar	Chief Engineer (MERO), CWC, Bhubaneshwar	SE (HOC), CWC, Bhubaneshwar	Representatives of Government of Jharkhand, West Bengal & Odisha



Annex-3.2

40-3/2015-DM-I (A)
Government of India
Ministry of Home Affairs (Disaster Management Division)
New Delhi

Dated the 15th December, 2017

Subject: Revision of Standard operating procedure (sop) for issuing alerts and electronic messaging in the event of Disaster Situation.

The undersigned is directed to refer to the subject mentioned above and to forward a copy of revised SOP for issuing alerts and electronic messaging in the event of Disaster Management for your information, please

Encl: As above

(Pradeep Kumar)
Deputy Secretary (DM-t)
Telefax: 23438154

1. Shri R.K Jain, Member, NDMA, NDMA Bhawan, A-1, Safdarjung Enclave, New Delhi. ,
2. Secretary, National Centre for Seismology, Ministry of Earth Sciences, Room-No. 108, Prithvi Bhawan, Opp. Indian Habitat-Centre, Lodi Road, New Delhi.
3. Secretary, Ministry of Environment & Forest, Paryavaran Bhawan, Jorbagh Road, New Delhi.
4. Director General, India Meteorological Department, Mausam Bhawan, Lodi Road, New Delhi.
5. Director General, NDRF, 9th floor, Paryavaran Bhawan, B-2 Wing, CGO Compete, Lodi Road. New Delhi
6. Directorate General, Geological Survey of India, Jawaharlal Nehru Road, Kolkata.
7. Chairman, Railway Board, Ministry of Railway, Rail Bhawan, New Delhi
8. Chairman, Central Water Commission, Sewa-Bhawan, R.K. Puram , New Delhi.
9. Director, Indian National centre for ocean Information services, Pragarthi Nagar, (BO) Nizempet (SO) Hyderabad_ 500090.
10. Director, Snow & Avalanche study Establishment, Him parisar, Near Bhaskar Chowk, Sector 37A, Chandigarh. 160036.
11. Integrated Operation Centre, North Block, MHA, New Delhi.
12. National Emergency Response centre (NERC), 8th Floor, NDCC-ll Building, Jai Singh Road, Connaught place, New Delhi.

Flood

Early Warning and Forecasting Department: Central Water Commission

Alert Categorisation
Above Normal: Yellow
Severe: Orange
Extreme: Red

Category	Description	Stage	Alerts to be transmitted to
Above Normal	Water Level between Warning and Danger Level	Yellow	1. JS(DM) & AS (DM) 2. Nodal officers of NDMA & NDRF 3. On instruction of JS (DM) be transmitted to HS
Severe	Water Level between Danger Level to HFL attained at that location	Orange	1. HS/AS (DM)/JS(DM)/PS to HM/PS to MOS 2. Nodal officers of NDMA & NDRF 3. All designated officers in PMO/Cabinet Secretariat 4. Concerned State/Union Territory Governments
Extreme	Water Level higher than the HFL at that location	Red	1. HS/AS (DM)/JS(DM)/PS to HM/PS to MOS 2. Nodal officers of NDMA & NDRF 3. All designated officers in PMO/Cabinet Secretariat 4. ESF ministries 5. Concerned State/Union Territory Governments

Highest Flood level- The highest flood level of the river ever recorded at the place.
Alert messages will be followed by Situation Reports (SITREP) to be sent twice a day or more frequently depending on unfolding events
Alerts falling in Orange stage will be communicated with 3 hourly updates.
Alerts falling in Red Stage will be communicated with 1 hourly updates or at more frequent intervals as warranted by the situation.

Annex-3.3

3/66/2017-FFM/1198-1277

भारत सरकार

Government of India

केन्द्रीय जल आयोग

Central Water Commission

बाढ पूर्वानुमान प्रबोधन निदेशालय

Flood Forecast Monitoring Directorate

दूरभाष/Telephone: 011-26106523

फैक्स/Fax: 011-26106523

ईमेल/e-mail: fmdte@nic.in

कमरा संख्या-208 (द) सेवा भवन

Room No. 208(S), Sewa Bhawan,

रामकृष्ण पुरम् नई दिल्ली–110066

R.K. Puram, New Delhi-110066.

Dated 17 May 2018

MEMORANDUM

Flood Forecasts formulated by Central Water Commission is a very important non-structural flood management strategy for minimising the loss due to floods in various parts of the country. Press/Electronic media plays a very vital role in taking the flood forecast to last mile connectivity to the affected populace. In order to make an effective media management, Chairman, CWC hereby notifies the following media management policy from Divisional Control Room to Headquarter Level for taking the flood forecasts to flood affected populace through Press/Electronic Media.

S. No.	CWC Location	Items to be given for reporting/publishing	Responsible Officer	Remarks
1.	Divisional Control Room	1. Flood News report whenever flood forecasts are issued related to their jurisdiction alongwith current situation	Executive Engineer	No additional briefing
2.	Circle/ Regional Level	1. Special Flood Reports for Severe/Extreme Flood Situation	Chief Engineer(CE)/ Superintending Engineer(SE)	CE/SE can call press conference and brief the press regarding the impending severe/extreme flood situation in various rivers. A copy of the Press brief may be provided to Member RM and Chairman, CWC before addressing the press conference.
3.	Headquarter Level	1. Special Flood Reports for Severe/Extreme Flood Situation	Chairman/Member(RM)/ Chief Engineer(FM)/ Director (FFM)	Chairman/Member (RM)/ Chief Engineer (FM)/ Director FFM can call press conference and brief the press regarding the impending severe/ extreme flood situation in various rivers

The approval is valid from the date of this memorandum and accordingly the interaction with Press/Electronic media can be initiated as indicated above. This approval will be reviewed/ modified every five years before commencement of flood season.

Sd/

(Sharad Chandra)

निदेशक (एफ एफ एम) / Director (FFM)

Annex-5.1

Responsibility Matrix

S. No.	Activity	Frequency/Time Frame	Responsible Officer	Remarks
1.	**Preparedness**			
1.1	**Site Level**			
	Site Maintenance, Telemetry Maintenance, Equipment maintenance, Men and Material	By 30th April or 31st May	Site-in-Charge/ Sub Divisional Engineer/ Executive Engineer/ Vendors of systems and equipments	
1.2	**Sub-Divisional/Divisional Level**			
	Attending Coordination meetings at District Level	As required	Executive Engineer	
	Readiness of all infrastructural facility for DFCR	By 30th April or 31st May		
	Updation of Contact list			
1.3	**Regional Office**			
	Updation of Contact List of FCMT	By 30th April or 31st May	Designated Officers for the purpose	
	Attending Coordination meeting States/ Stake Holders/IMD	As required	Chief Engineer/ Superintending Engineer	
	Report on Coordination meetings and preparedness	By 30th April or 31st May	Designated Officers for the purpose	
1.4	**Headquarter Level**			
	Updation of Contact Details	By 30th April	Designated Officers for the purpose	
	Attending Coordination meetings with Stakeholders/MHA/NDMA/IMD	As required	Member (RM)/Chief Engineer (FM)	
	Report on Coordination meetings and preparedness	By 30th April or 31st May	Designated Officers for the purpose	

S.No.	Activity	Frequency/Time Frame	Responsible Officer	Remarks
1.	**Data Collection**			
1.1	**Site Level**			
	Water Level	Hourly	Site-in-Charge	
	Rainfall	Three Hourly		
	Discharge/Sediment /Water Quality	As per Protocol		
	Collection of Data from other agency	Hourly		
1.2	**Sub-Divisional/Divisional Level**			
	Data Collection through Modelling Centre for telemetered data	Hourly	Sub Divisional Engineer/ Executive Engineer/ Designated Duty Officers	
	Data Collection through e-mail/Website/FTP/Telemetry	As frequently as possible		
	International Data Collection	As per protocol		
1.3	**Regional Office**			
	Additional Data Collection through e-mail/Website/FTP	As frequently as possible	Designated Officers for the purpose	
1.4	**Headquarter Level**			
	Data Collection through Modelling Centre for telemetered data	Hourly	Designated Officers for the purpose	
	Data Collection through e-mail/Website/FTP	As frequently as possible		

S. No.	Activity	Frequency/Time Frame	Responsible Officer	Remarks
1.	**Data Transmission/Data Entry**			
1.1	**Site Level**			
	Water Level	Within 20 min of Observation through Wireless/Mobile	Site-in-Charge	
	Rainfall			
	Discharge/Sediment /Water Quality			
	Collection of Data from other agency			
1.2	**Sub-Divisional/Divisional Level**			
	Data Collection through Modelling Centre for telemetered data	At the earliest within an hour of reception of data	Sub Divisional Engineer/ Executive Engineer/ Designated Duty Officers	
	Data Collection through e-mail/Website/FTP/Telemetry			
	International Data Collection			
1.3	**Regional Office**			
	Additional Data Collection through e-mail/Website/FTP	At the earliest within an hour of reception of data	Designated Officers for the purpose	
1.4	**Headquarter Level**			
	Data Collection through Modelling Centre for telemetered data	At the earliest within an hour of reception of data	Designated Officers for the purpose	
	Data Collection through e-mail/Website/FTP			

S. No.	Activity	Frequency/Time Frame	Responsible Officer	Remarks
1.	**Flood Forecast Formulation**			
1.2	**Sub-Divisional/Divisional Level**			
	Flood Forecast Formulation	As and when level is expected to rise and touch warning level and as frequently as possible depending and travel time within 1 hour of receipt of all data and medium range forecast from HQ	Sub Divisional Engineer/ Executive Engineer/ Designated Duty Officers	
1.4	**Headquarter Level**			
	Flood Forecast Formulation	To be run on schedule timings through automated system after downloading all input data from FTP/Website/e-mail etc within 1 hour from receipt of data	Designated Officers for the purpose	

S. No.	Activity	Frequency/Time Frame	Responsible Officer	Remarks
1.	**Flood Forecast Dissemination**			
1.1	**Site Level**			
	Dissemination to local authorities	Immediately after receipt of Flood Forecast	Site-in-Charge	
1.2	**Sub-Divisional/Divisional Level**			
	Dissemination to District/ State Authorities/ Updation in website	Immediately after formulation by e-mail/Fax/Mobile/SMS	Sub Divisional Engineer/ Executive Engineer/ Designated Duty Officers	
1.4	**Headquarter Level**			
	Dissemination to Field Offices and Designated Beneficiaries	Immediately after formulation by FTP	Designated Duty Officers for the purpose	

S. No.	Activity	Frequency/Time Frame	Responsible Officer	Remarks
1.	**Preparation of Reports**			
1.1	**Divisional Level/Circle/Regional**			
	Daily Flood Report (Daily)/ Weekly Flood Report (1st, 8th, 15th and 22nd)	Daily Weekly	Executive Engineer/ Designated Duty Officers	
	Annual Appraisal Report (31st January)	Annual		
	Preparedness Report after meeting all stake holders (25th April or 20th May)	Annual		
1.2	**Headquarter Level**			
	Daily Flood Bulletin (Daily) Flood Situation Summary Country	Daily Monthly	Designated Duty Officers for the purpose	
	Annual Appraisal report (31st March)	Annual		
	Preparedness Report (31st May)	Annual		