BEFORE THE NATIONAL GREEN TRIBUNAL,

PRINCIPAL BENCH, NEW DELHI

I.A. No. OF 2024

IN

ORIGINAL APPLICATION NO. 515 OF 2023

(Writ Petition (PIL) No. 4003/2006)

IN THE MATTER OF:

Ganga Pollution ……Applicant

Versus

State of U.P. & others ……Respondents

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Applicant

Through

Gigi C. George, Advocate
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Date: 20.09.2025
Place: New Delhi

BEFORE THE NATIONAL GREEN TRIBUNAL,
PRINCIPAL BENCH, NEW DELHI

I.A. No.557 OF 2024

IN

ORIGINAL APPLICATION NO. 515 OF 2023

(Writ Petition (PIL) No. 4003/2006)

IN THE MATTER OF:

Ganga Pollution ……Applicant

Versus

State of U.P. & others ……Respondents

ADDITIONAL SUBMISSION ON BEHALF OF HARISH-CHANDRA RESEARCH INSTITUTE

1. That the present additional submission is filed by the Harish-Chandra Research Institute (HRI) through its authorised representative, Sh. Durgam Giri working as Registrar, Harish-Chandra Research Institute.

2. That vide IA No. 557/2024, HRI sought permission to complete limited construction of essential academic infrastructure, namely a hostel, lecture hall, and library, within its existing campus at Prayagraj.

3. That the Hon'ble Tribunal, in its order dated 19.05.2025 has referred to the report of Ld. Amicus Curiae Sri A. K. Gupta submitted to Hon'ble High Court of law on 05.07.2013 (Annexure L to the IA 557 of 2024) that the site lies within 500 meters of the highest flood level of the river

Ganga, and raised its concerns in view of the Hon'ble High Court of Allahabad in its interim order dated 22.04.2011.

A copy of the NGT order dated 19.05.2025 has been annexed as Annexure S/1.

4. That it is submitted to the Hon'ble Court that clause 3(1)(l) of the Ganga Rejuvenation Order, 2016 defines "floodplain" with reference to the 100-year return period flood, requiring regulation, not blanket prohibition.

5. That the present additional submission clarifies the legal, regulatory, and factual distinctions between HRI's bonafide academic activities and commercial real estate development, and demonstrates that HRI's proposed construction is permissible under applicable laws and guidelines, subject to robust environmental safeguards.

6. That the interim orders dated 22.04.2011 and 16.08.2012, passed by the Hon'ble High Court of Allahabad, was issued to restrain rampant private construction within 500m of HFL and flow of untreated sewerage to the Ganges. That was never intended to obstruct bona fide public institutions of learning.

Copies of the interim orders dated 22.04.2011 and 16.08.2012, passed by the Hon'ble High Court of Allahabad, has been annexed as Annexure S/2 and S/3.

7. That then ongoing construction at HRI was stopped in response to the verbal instruction from authorities of Allahabad Development Authority (presently known as Prayagraj Development Authority) in compliance to

the respective orders of Hon'ble High Court of Allahabad dated 16.08.2012.

8. That aggrieved by this ban on construction, HRI has submitted an application to Hon'ble High Court of Allahabad with a prayer for vacating the ban on construction in the institute premise through Ld. Counsel Sri G. K. Singh on March 15, 2013.

   Copy of the application submitted to Hon'ble High Court of Allahabad is annexed here as Annexure S/4.

9. That Hon'ble High Court of Allahabad has taken the cognisance of the same and included HRI in the list of respondents to PIL 4003 of 2006 and directed Ld. Amicus Curiae Sri A.K. Gupta to examine the same. The extract of Order of Hon'ble High Court of Allahabad dated March 21, 2013 for ready reference is as following

   Sri G.K. Singh, Advocate has also filed an application on behalf of Harish Chandra Research Institute (Department of Atomic Energy Government of India) for permission of the Court to complete the constructions, which were being raised pursuant to the order sanctioning the map dated 20th April, 2010 passed by the Allahabad Development Authority.

   Sri A.K. Gupta, learned Amicus Curiae has been served with a copy of the application. He may examine the same and file objections, if any, by the next date.

10. That Ld. Amicus Curiae Sri A.K. Gupta visited the HRI Campus for inspection and submitted his report to Hon'ble High Court of Allahabad which was then taken on record by Hon'ble High Court of Allahabad

during the hearing of PIL 4003 of 2006 on July 25, 2013. Copy of this report has already been submitted to Hon'ble Tribunal along with IA 557 of 2024 as annexure L. The relevant extract of the order of Hon'ble High Court of Allahabad dated July 25, 2013 is as following:

> *A report has been filed today by Sri A.K. Gupta, Amicus Curiae to the application of Harish Chandra Institute, Allahabad. The same is taken on record.*

11. That an IA was submitted in Aug. 2017 to Hon'ble High Court of Allahabad through Ld. Counsel Sri M.C. Chaturvedi wherein Hon'ble High Court of Allahabad was prayed to allow the applicant-institute to complete the construction project it began pursuant to the sanction order dated 20.04.2010 passed by the Prayagraj Development Authority (then known as Allahabad Development Authority). In the subsequent hearing dated 01.03.2019, Hon'ble High Court of Allahabad ordered the following:

> *Sri M.C. Chaturvedi, learned Senior Counsel appearing for Harish Chandra Research Institute, Allahabad has pressed his applicationseeking permission for finishing the building partly constructed.*
>
> *This application may be considered on the next date.*

Copy of the IA submitted to Hon'ble High Court of Allahabad is annexed here as Annexure S/5.

12. That by its last order related to PIL number 4003 of 2006 dated July 21, 2023 the Hon'ble High Court of Allahabad has transferred cases of all parties to Hon'ble NGT as per para 29 and 30.

29. In view of above, the transfer application moved by the State of Uttar Pradesh stands granted. The Public Interest Litigation No. 4003 of 2006 and other connected pending petitions and PIL petitions are transferred to National Green Tribunal, New Delhi.

30. Registrar General is to ensure that all the records are transmitted to the National Green Tribunal, within a fortnight while retaining a copy of the entire order-sheet and the leading PIL petition in one set. The respective parties are directed to appear before the National Green Tribunal, New Delhi and pursue their matter there.

13. That the Prayagraj Development Authority (earlier known as the Allahabad Development Authority) in their reply to the I.A. No. 372 of 2024 in O.A. No. 515 of 2023 also has mentioned about the construction at HRI in para 9 and submitted on record to Hon'ble NGT dated 07.11.2024 in para 10, 14 and 15 that

10. "....the issue of 500 Mtr comes from the confusion, which, most humbly being submitted was the mis-reading by the Ld. Amicus on the report presented before the Hon'ble High Court..... the Hon'ble High Court proceeded on the erroneous pretext of complete bar of 500 Mts from river tat/ river edge by ADA."

14. "....it is clear that the ultimate decision taken by the Authority on the issue relating to imposing of restrictions for raising constructions within a specified distance from the river itself was confined only to the extent of 200 meters from the bank (Nadi Tat) of the river itself."

15.That the Authority therefore, had no point of time ever to any decision to restrict raising of construction up to level of 500 meters

from the highest flood level in the final text Master Plan 2021 which is enforced and operative as on date. The contrary suggestion made by the learned Amicus Curiae was based on a complete misreading and misconstruction of the Master Plan document itself and therefore such stand is liable to be discarded.....”

Copy of the reply of Prayagraj Development Authority to the I.A. No. 372 of 2024 in O.A. No. 515 of 2023 submitted to Hon’ble High Court of Allahabad is annexed here as Annexure S/6.

14. That it is respectfully submitted that the Uttar Pradesh Building Byelaws, 2025, in Chapter XV (Special Provisions for Construction Along Riverbanks and Floodplain Areas), expressly envisage that certain categories of development may be permitted subject to regulation and safeguards. That in Clause 15.2.4 and Clause 15.2.5 specifically include *educational institutions, research centres, libraries and hostels* as permissible activities within regulated zones adjoining riverbanks, provided that such construction is undertaken in conformity with environmental safeguards, floodplain management norms, and subject to approval of the competent authority.

A copy of the UP-Building Byelaws, 2025, has been annexed as Annexure S/7.

15. That it is further submitted that the regulatory framework framed by the State itself draws a clear distinction between indiscriminate commercial development and bona fide public institutions of learning and research.

Therefore, it is submitted that the HRI's proposed limited construction of a hostel, lecture hall and library thus falls squarely within the category of permissible regulated activity contemplated by law.

16. That it is respectfully submitted that the Technical Guidelines on Floodplain Zoning, 2025, issued by the Central Water Commission (CWC), envisage a graded classification of floodplain areas into prohibited, restricted, and regulated zones. That the said guidelines further provide that, within the regulated zone, certain categories of development of public importance, including essential public utilities as well as academic and research institutions, may be permitted, subject always to strict compliance with environmental safeguards and floodplain management norms. That it is humbly submitted that the limited academic infrastructure proposed by HRI falls squarely within the scope of permissible regulated activity contemplated under the aforesaid Guidelines.

A copy of the CWC Guidelines 2025, has been annexed as Annexure S/8.

17. That it is respectfully submitted that the HRI is distinguishable from private real estate developers and stands on an entirely different footing:
    a. That HRI is an academic and research institution of national importance, functioning on a non-commercial basis and serving public interest.
    b. That the proposed construction is confined to essential academic facilities, namely a hostel, lecture hall, and library, within the existing campus.
    c. That the Institute has already adopted environmental safeguards, including a sewage treatment plant with zero discharge, rainwater

harvesting, and extensive tree plantation, ensuring minimal ecological impact.

d. That such limited institutional construction is expressly recognised as a permissible regulated activity under the Uttar Pradesh Building Byelaws, 2025 and the CWC Technical Guidelines on Floodplain Zoning, 2025.

e. That it is clear from the Google map images that the proposed construction sites are beyond the aerial distance of 300Mtr from the edge of the river. These images may kindly be considered in corroboration with (i) the approved master plan of HRI as submitted earlier as Annexure C to IA 557 of 2024 and (ii) the submission of Prayagraj Development Authority as reply to Hon'ble NGT dated 07.11.2024 (annexed as S/6 herewith) establishing through para 9 and 14 that the proposed approved construction at HRI is not within 200 Mtr from the river bank (Nadi Tat).

The Google Map images of the proposed construction sites are annexed as S/9.

f. That the floor level of all the buildings of the premise of HRI, earlier known as Mehta Research Institute (MRI), are located in the Chatnag area of Prayagraj (Allahabad) and are situated at a height ofabove 90 Mtr from the sea level as per the approved master plan of HRI, which is considerably high compared to the highest flood level of 88.03 Mtr reached by river Ganga during floods in the year 1978 at Chatnag in Prayagraj (Allahabad) as being reported on record by CWC in its periodic Flood Forecasting and Warning Network Performance Appraisal Report. It is mentioned at Sr. no. 54 of Annexure-II on page number 70 in the latest version of Flood

Forecasting and Warning Network Performance Appraisal Report 2024 published in May 2025.

Copy of the DAE, Govt. of India Office Order regarding change in name of the institute from MRI to HRI, portion of the Master Plan of HRI, and the Flood Forecasting and Warning Network Performance Appraisal Report 2024 (published in May 2025) by CWC is annexed as S/10, S/11 and S/12 respectively.

g. That it is humbly submitted that HRI's activities cannot be equated with large-scale commercial township projects, and merit distinct consideration by this Hon'ble Tribunal.

18. That it is further submitted that equating the HRI with that of private real estate developers would amount to an erroneous conflation of fundamentally different categories. That such an approach would unjustly impede the functioning of a premier academic research institution under the aegis of Department of Atomic Energywith significant national and international contribution in Mathematics and Theoretical Physics, thereby stifling higher education and scientific research, which are matters of vital public interest. That the object of floodplain protection is to prevent indiscriminate commercial exploitation of ecologically sensitive areas, and not to paralyse bona fide public institutions that operate under strict environmental safeguards.

19. That it humbly undertakes that all constructions within HRI's existing campus shall be carried out strictly in conformity with applicable

environmental norms and safeguards. That the Institute affirms that a sewage treatment plant has been installed and shall be maintained so as to ensure zero discharge; that rainwater harvesting and groundwater recharge structures have been provided and shall be duly operated; and that its existing lush green campus will be maintained by a sustained tree plantation and green campus programme to augment the ecological balance. It is further undertaken that no alteration of the natural drainage system shall be affected, nor shall there be any obstruction to the natural flow of the river, and that the proposed construction shall remain confined exclusively to essential academic infrastructure, namely hostel, lecture hall and library facilities, with no element of commercial exploitation.

20. That Clause 3(1)(l) of the Ganga Rejuvenation Order, 2016, together with the Uttar Pradesh Building Byelaws, 2025, and the CWC Technical Guidelines on Flood Plain Zoning, 2025, clearly contemplate regulation and not absolute prohibition of activities in the floodplain, and expressly recognise research centres, libraries, and hostels as permissible activities subject to safeguards.

21. That the applicant also relies on the RTI reply of NMCG in which it is well replied by the NMCG that " *However, active flood plain area of River Ganga or its tributaries where construction of any structure, whether permanent or temporary, for residential or commercial or industrial or any other purpose is prohibited, has to be identified and demarcated by the respective State Governments based on one in twenty five years cycle of highest flood level(HFL). Till the said identification is completed 100 meters from the edge of the river would be designated as no development/construction zone".*

22. That the HRI has undertaken robust and verifiable environmental safeguards, including installation of a zero-discharge Sewage Treatment Plant, rainwater harvesting, groundwater recharge structures, and extensive tree plantation, thereby ensuring minimal or negligible adverse impact on the river or the floodplain.

23. That equating the HRI with private real estate developers would result in an unjust and unreasonable outcome, stifling higher education and research in the national interest, and would run contrary to established principles of law and public policy that recognise the distinct status of institutions of national importance.

24. That it is also worth mentioning that HRI has its own drainage system connected to a dedicated fully functional sewage treatment plant (STP) with capacity of 200 KLD operated with NOC for operation from U.P. Pollution Control Board. The treated waste is utilised for horticulture and landscaping purposes within the institute campus only and nothing is discharged into river Ganges which has already been clarified as mentioned in the para 8 and 9 of the report of the Ld. Amicus Curiae Sri A.K. Gupta submitted to Hon'ble High Court of Allahabad on July 05, 2013.

25. That the balance of convenience, as well as the principles of equity, sustainable development, and larger public interest, clearly favour permitting the HRI's limited construction subject to safeguards, while ensuring that floodplain protection remains uncompromised.

PRAYER

It is therefore, Most respectfully prayed that this Hon'ble Tribunal may graciously be pleased to:

a) Permit HRI to construct within its existing campus, as per the approved plan by the Prayagraj Development Authority.

And/Or

b) Consider the applicant's prayer to hold that HRI's activities fall within regulated permissible uses under the UP Byelaws, 2025, and CWC Guidelines, 2025, and are distinct from private township developments.

And/Or

c) Vacate the interim order dt.22.04.2011 and 16.08.2012 passed by the Hon'ble Allahabad High Court prohibiting construction within 500 Mtr of the river as the construction of the applicant's institute is as per building byelaws approved by the Government of Uttar Pradesh and as per the Technical Guidelines issued by the CWC and for the larger public interest.

And/Or

d) Pass any other relief that the Hon'ble Tribunal deems just and appropriate, such other relief(s) as may be deemed just and proper in the facts and circumstances of the case.

(Durgam Giri)
Applicant

Durgam Giri
Registrar
Harish-Chandra Research Institute
Department of Atomic Energy, GoI
Prayagraj-211019

Through

Date:20-09-2025
Place: New Delhi

Gigi.C.George, Advocate
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Item Nos. 08 to 21 Court No. 1

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Original Application No. 515/2023
(IA No 557/2024, IA No 556/2024,
IA No 458/2024, IA No 372/2024)

Ganga Pollution Applicant

Versus

State of UP & Ors. Respondent(s)

WITH

Original Application No. 516/2023

M/s Sundrop Colonizers Pvt. Ltd. Applicant

Versus

State of U.P. & Ors. Respondent(s)

WITH

Original Application No. 517 /2023

Gokul Chandra Sharma &Ors. Applicant(s)

Versus

State of U.P. & Ors. Respondent(s)

WITH

Original Application No. 518 /2023
(I.A. No. 06/2024)

Sri Math (Jagatguru Ramanand
Acharya Peeth) & Anr. Applicant(s)

Versus

State of UP & Anr. Respondent(s)

WITH

Original Application No. 519 /2023

Smt. Meena Mishra Applicant

Versus

State of U.P. Respondent

WITH

Original Application No. 520 /2023

Smt. Vimla Devi Applicant

Versus

State of U.P. Respondent

WITH

Original Application No. 521 /2023

Sarvamangla Adhyatma Yog Vidya Peeth Applicant

Versus

Union of India & Ors. Respondent(s)

WITH

Original Application No. 522 /2023

Shri Shri Guruji Tapasthali Applicant

Versus

State of U.P. & Ors. Respondent(s)

WITH

Original Application No. 523 /2023

Vinod Kumar Pandey Applicant

Versus

State of U.P. & Ors. Respondent(s)

WITH

Original Application No. 524 /2023

Ram Rekha Jaiswal Applicant

Versus

State of U.P. & Ors. Respondent(s)

WITH

Original Application No. 525 /2023

Pt. Ram Chandra Sharma Applicant

Versus

State of U.P. & Ors. Respondent(s)

WITH

Original Application No. 526 /2023
(IA No. 288/2024)

Ganga Sewa Abhiyan & Ors. Applicant(s)

Versus

Union of India & Ors. Respondent(s)

WITH

Original Application No. 527 /2023
(IA No. 296/2024 & IA No. 297/2024)

Kautilya Society & Anr. Applicant(s)

Versus

Union of India & Ors. Respondent(s)

Date of hearing: 19.05.2025

CORAM: HON'BLE MR. JUSTICE PRAKASH SHRIVASTAVA, CHAIRPERSON
HON'BLE MR. JUSTICE ARUN KUMAR TYAGI, JUDICAL MEMBER
HON'BLE DR. AFROZ AHMAD, EXPERT MEMBER

Applicant: Mr. Shrish Chandra, Adv. for Applicant in OA 526/2023 (Through VC)

Respondents: Mr. Bhanwar Pal Singh Jadon, Mr. Harsh Vardhan Singh Rajawat, Ms. Gargi Chaturvedi & Ms. Anjali Sharma, Advs. for the State of UP
Mr. Sanjay Upadhyay, Senior Advocate with Mr. Sumeer Sodhi, Ms. Eisha Krishn, Mr. Surya Gupta & Ms. Vanshika Jhamb, Advs. for R - 26 in OA 515/2023
Mr. Pradeep Misra & Mr. Daleep Dhyani, Advs. for UPPCB
Mr. Vibhav Misha, Adv. for Prayagraj Development Authority (Through VC)
Mr. Vikrant Pachnanda, Adv. for MoEF & CC (Through VC)
Mr. Gigi. C. George, Adv. for NMCG & Harish Chandra Institute
Mr. Amit Tiwari & Mr. Chetanya Puri, Advs. for Varanasi Development Authority in OA 527/2023
Mr. Atif Suhrawardy, Adv. for CPCB in OA 515 & 526/2023 (Through VC)
Mr. Kunal Singh, Adv. for R - 11 (Through VC)
Mr. Mohd. Osama & Mr. Abdul Ahad, Advs in I.A No. 296-297/2024

ORDER

1. In these original applications, Tribunal at this stage is considering the issue of demarcation of flood plain zone of river Ganga and its tributaries.

2. Tribunal by order dated 23.04.2025 had considered the affidavit of Chief Engineer, Sone, Irrigation and Water Resource Department, State of UP dated 19.04.2025 disclosing the steps taken to demarcate the flood plain zone in reference to 1:100 years highest flood level with 01 meter contour and had found that no timebound programme in phase manner

for completion of this exercise was disclosed. Accordingly, matter was adjourned to place on record the said timebound plan.

3. Chief Engineer, Sone, Irrigation and Water Resource, State of UP has filed fresh affidavit dated 16.05.2025 disclosing as under:

> *"5. That the stretch of River Ganga traversing through the State of Uttar Pradesh, from the district of Unnao to the district of Ballia, covers an approximate distance of 700kilometres. The Physical demarcation of the floodplain zone along this stretch shall be carried out through the process of Pillar Fixation. It is submitted that this stretch of the river passes through a total of thirteen districts, namely: Kanpur, Unnao, Fatehpur, Raebareli, Kaushambi, Pratapgarh, Prayagraj, Mirzapur, Bhadohi, Varanasi, Chandauli, Ghazipur, and Ballia. The Pillar Fixation(7350 Pillars in words Seven Thousand Three Hundred Fifty) shall be undertaken along the entire course of River Ganga within the territorial limits of the of the State of Uttar Pradesh, in strict compliance with the directions issued by this Hon'ble Tribunal.*
>
> *6. It is respectfully submitted that a time-bound programme, structured in a phased manner, has been convenience of this Hon'ble Tribunal to facilitate the GOVTO EU completion of the proposed exercise. The said timeline has been presented in a tabular format titled "Work Programme of Pillar Fixation under O.A. No. 515/2023". As per the said time-bound programme. True copy of the "Work Programme of Pillar Fixation under O.A. No.-515/2023"has been annexed herein as ANNEXURE R1."*

4. Learned Counsel for State of UP submits that he will file further affidavit in respect of steps which have been taken for demarcation of flood plain zone of tributaries of river Ganga in the State of UP. In this regard, he has prayed for six weeks' time.

IA No. 556/2024 (OA No. 515/2023)

5. IA No. 556/2024 (OA No. 515/2023):-has been filed by the applicant-Harish-Chandra Research Institute (HRI) seeking impleadment. IA is not opposed by any of the respondents, hence, allowed. Let amended memo of parties be prepared.

IA No. 458/2024 (OA No. 515/2023)

6. IA No. 458/2024 (OA No. 515/2023): has been filed by one Swami Hari Chaitnya Brahmchari to bring on record illegal construction in the prohibited zone of river Ganga. Reply to the IA on behalf of Chief Engineer, Sone, Irrigation and Water Resource Department, State of UP (page 6097) has been filed disclosing that a copy of the gazette notification has been filed but in that reply no material in respect of the action taken has been disclosed. Learned Counsel for the State of UP seeks six weeks' time to file reply to the IA of the concerned District Magistrate.

IA No. 288/2024 (OA No. 526/2023)

7. IA No. 288/2024 (OA No. 526/2023): has been filed by Sh. Kanta Maheshwari for clarification. Learned Counsel appearing for Prayagraj Development Authority submits that he has received IA only two days back and seeks four weeks' time to file the reply to the IA.

IA No. 296/2024 & IA No.297/2024 (OA No. 527/2023)

8. IA No. 296/2024 & IA No.297/2024 (OA No. 527/2023): IA No. 296/2024 has been filed by some of the applicants seeking impleadment and IA No.297/2024 has also been filed by them seeking modification of the order dated 27.07.2012. Learned Counsel appearing for Varanasi Development Authority seeks six weeks' time to file reply to the IA.

IA No 372/2024 in OA No. 515/2023

9. This IA has been filed by the applicant seeking a direction to allow the applicant to continue the construction of the project being developed in compliance with the approvals granted by the competent authorities and further a direction to the Prayagraj Development Authority (PDA) to

decide the pending application no. 313/2011 for issuance of the completion certificate of Sector-1 project.

10. Applicant in this IA is a real estate developer. The housing schemes were being developed under Hi-Tech Townships to meet the housing requirements of the urban population in Allahabad.

11. The plea of the applicant is that in terms of the amended Hi-Tech Township Policy for the development of Hi-Tech Township through private investment in Uttar Pradesh, private developers were invited and after the proposals following were selected as the developers:-

"

S. No.	***Name of Company***	***District of Proposed Township***	***Proposed Township Area (in acres)***
1	*Garv Buildtech Private Limited*	*Lucknow*	*2700*
2	*Pancham Realcon Pvt Limited (**Applicant**)*	*Allahabad*	*1535.12*
3	*Riwaaz Infratech Pvt Limited*	*Bulandshahar*	*3601.19*

"

12. The Memorandum of Understanding (MoU) dated 05.09.2009 was executed between the applicant and Prayagraj Development Authority (PDA), and in compliance with the MoU, the applicant had submitted Detailed Project Report (DPR) pertaining to 1535.12 acres for providing residence to 2,06,773 people of Prayagraj. The DPR was approved by the competent authority on 24.10.2009, and the development agreement was executed between the applicant and the PDA on 03.12.2009. The applicant had obtained the Environmental Clearance (EC) dated 10.02.2010 by State Environment Impact Assessment Authority (SEIAA), UP and No Objection Certificate (NOC) dated 05.05.2010 by Uttar Pradesh Pollution Control Board (UPPCB). The Hi-Tech Township project was being developed by the applicant under the aegis of PDA and in compliance with the requisite environmental norms.

13. The applicant completed the Sector-1 project on 48.36 acres of land. The plea of the applicant is that he had set up a solid waste management system with door-to-door connectivity from the source, a comprehensive sewage system, and installed a Sewage Treatment Plant (STP) based on the zero-discharge principle by employing modern best practices and latest government-approved technologies. The applicant has disclosed the following steps which were taken in this regard:-

> *"(i) The Applicant had already setup a Solid Waste Management system in terms of which solid wastes is being collected from door to door and from the source i.e., multistoried complex, shops and commercial establishments and group housing units by the dedicated maintenance agency after segregating the waste into decomposable and non-decomposable categories.*
>
> *(ii)* ***Sewage System****: Applicant has provided for comprehensive effluent standards of the Minister of Environment and Forests under the Environment (Protection) Rules, 1986.*
>
> *(iii) STP has been installed which is based on a zero-discharge principle which means that no discharge from the project would be discharged into any drainage system, municipal sewage line or into the river.*
>
> *(iv) Zero discharge of the project is being achieved by employing the modern best practices and latest government approved technologies. The broad steps which have been undertaken for the ongoing project are as under:*

STEP-1	*Identifying Total Sewage Generation.*
STEP-2	*Sewage Collection.*
STEP-3	***Primary Sewage Treatment****: Its Objective is to remove settleable organic and inorganic solid by sedimentation and removal of materials.*
STEP-4	***Secondary Sewage Treatment****: Its Objective is with respect to treatment of effluent from primary treatment to remove the residual organics and suspended solids.*
STEP-5	*Treated Sewage Discharge.*

> *(v) For dealing with the scale of abovementioned sewage, DPR prepared by Applicant provides for internal sewage plant of the Hi-Tech Township."*

14. The applicant has also raised the plea that it had installed 150 KLD Plant at project site and had applied to PDA for issuing completion certificate regarding Phase-1 of the project on 31.03.2011.

15. The grievance of the applicant is that when the applicant had completed the Phase-1 of the project and had already applied for the completion certificate, at that stage the Hon'ble High Court of Allahabad had passed the interim order dated 22.04.2011 restraining any construction within 500 meters of Highest Flood Level of river Ganges in the city of Allahabad as well as part of river Yamuna adjoining the river Ganges. The PDA had issued notice to the applicant restraining construction activities in view of the interim order of the High Court.

16. The applicant thereafter had moved an application seeking impleadment in the pending Writ Petition before the High Court. It is the further plea of the applicant that the applicant was impleaded in the Writ Petition as Respondent No. 26. The High Court by order dated 21.07.2023 took the view that the issue relating to conserving and maintaining the Floodplain Zone of river Ganges and Yamuna in various districts of Uttar Pradesh fall within the subject matter of pending OA 200/2014 before the National Green Tribunal, therefore, the above writ petition along with the connected petitions were transferred to the Tribunal. While transferring the writ petition, it was left open to the applicant to move an appropriate application for early disposal of the miscellaneous recall application filed by him.

17. In the above background applicant has filed the present application being IA No. 372/2024 before the Tribunal.

18. The submission of learned Counsel for the applicant is that the High Court itself had granted liberty to the applicant to seek the

appropriate relief from the Tribunal and that under the building bye-laws there is prohibition of construction only up to 200 meters from the river bank and that as per the RTI information provided to the applicant, the active flood plain area is 100 meters from the edge of the river till the demarcation of flood plain by the respective State Government. Further submission of the learned counsel for the applicant is that the distance of the applicant's project is 800 meters from the river Ganges, therefore, the interim order passed by the High Court restraining construction up to 500 meters is not applicable to the applicant. Learned Counsel for the applicant has also submitted that subsequently even the construction plan has been revised and revised DPR/Layout Plan for 232.50 acres of land was submitted by the applicant with the development authority on 25.04.2022 which was approved on 09.06.2022 and in any case since the Phase-I of the project is already completed, therefore, the applicant is entitled to the completion certificate for Phase-I.

19. Ld. counsel for the applicant further submitted that the applicant should be allowed to complete the construction at its own risk because the stakes of third parties who have made the payment are also involved and despite Ganga Rejuvenation order 2016, the floodplain of river Ganges has not been demarcated till now and the applicant is continuously suffering for last so many years, and the completion certificate has been sought by the applicant from the PDA for the construction which is already complete. Further submission of the learned counsel for the applicant is that the applicant has all the consents, clearances and approvals which are not in dispute and the applicant wants to complete the construction in accordance with law.

20. Learned Counsel for the State of UP has stated that clause 4 (ix) of the Ganges Rejuvenation order dated 2016 is applicable, which prohibits

construction on the floodplain zone of the river Ganges. He has further submitted that SLP was filed by the Allahabad Development Authority against the interim order of the High Court but it was withdrawn on 08.08.2011. He submits that the distance of 800 meters mentioned in the response of the UPPCB dated 04.02.2025 is from the mainstream of the river.

21. Learned Counsel for the UPPCB has submitted that the floodplain is required to be demarcated and uploaded on the website of NMCG so that the correct picture comes on record.

22. The submission of the learned Counsel for the PDA is that the revised layout plan was submitted by the applicant in 2022, which has been approved, and the application for completion certificate is pending for Phase-I of the project, which is complete. He submits that before issuing the completion certificate, PDA wants to ascertain if the construction is complete.

23. Learned Counsel appearing for the NMCG has raised a plea that if the applicant submits an application for approval, then the NMCG will duly consider the said application in accordance with law and will examine the issue.

24. We have heard the learned Counsel for the parties and perused the records.

25. The High Court of Allahabad in Public Interest Litigation (PIL) No. 4003/2006 was considering the issue of discharge of untreated water, change in its colour and deteriorating water quality in the river Ganges, and inaction on the part of the regulatory body, such as, UPPCB. In the interim order dated 22.04.2011 the High Court had taken note of the

government order dated 31.07.2000 by which the state government had imposed restrictions on constructions within 200 meters from the riverbank with the object of saving river Ganges from pollution and decision of Allahabad Development Authority to restrict construction up to 200 meter and permit construction only in special circumstances for next 300 meters. The High Court of Allahabad had noted following circumstances for passing the interim order:

> *"xxx ……xxx……xxx*
> *Unabated and enormous construction on the river bank is also one of the source of increasing pollution in river water and a source for throwing untreated sewage dirt in the river with no mechanism to check. As noticed above, Allahabad Development Authority while rejecting the application of Sahara Commercial Corporation for permitting the change of land use as residential in villages mentioned therein, recorded that within 200 meters from highest flood level, construction is wholly prohibited and within next 300 meters permission be granted only in special circumstances. Restriction in making construction of housing colony within 500 meters of highest flood level of river is necessary and mandatory to check the further pollution which may be caused by such housing colonies. We have noticed that in spite of repeated directions, neither the Nagar Nigam nor the State of U.P. has been able to come with any measure to check release of untreated sewage in river Ganges. 134 MLD untreated sewage, according to own case of Nagar Nigam is being discharged in river Ganges daily and according to the respondent new sewage treatment plant of the capacity 60 MLD shall be commissioned by 2013. New sewage treatment plant which has been mentioned and proposed has yet not started and we have reasonable doubt as to whether it will be able to function by 2013. Stopping construction up to 500 meters from highest flood level on the banks of both the rivers Ganges and also on the part of river Yamuna adjoining Sangam has to be directed in the city of Allahabad. The earlier order dated 28.3.2011 however requires modification."*

26. In the above circumstances, the High Court of Allahabad on 22.04.2011 had issued the following interim direction:-

> *"We thus direct that no construction shall be undertaken by the Allahabad Development authority or by any private builders within 500 meters of highest flood level of river Ganges in city of Allahabad as well as part of river Yamuna adjoining the river Ganges (Sangam). The Allahabad Development Authority and the district administration shall ensure that no construction be made in the aforesaid area. We however, give liberty to any aggrieved*

person to make appropriate application in this petition with regard to above restrictions, if he feels so aggrieved."

27. By the above order, High Court of Allahabad has restricted construction within 500 meters of highest flood level of river Ganges in Allahabad.

28. When the above direction was issued in the year 2011, there was no statutory provision regulating the floodplain zone or the construction in the flood plain zone of river Ganges or its tributary.

29. Subsequently, the Central Government exercising the powers conferred under sections 1, 3, 4, 5, 9, 10, 11, 19, 20 and 23 of the Environmental (Protection) Act, 1986 has issued the river Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016 (for short, "Ganga Rejuvenation Order") by publishing it in the notification dated 07.10.2016. This order has statutory force and it has been issued to ensure measures for prevention, control and abatement of environmental pollution and adequate e-flow in the river Ganges and its tributaries. The floodplain has been defined in clause 3 (1) (l) of the Ganga Rejuvenation Order as under:-

*"3. **Definitions**.- (1). xxx .....xxx.....xxx*

(l). "flood plain" means such area of River Ganga or its tributaries which comes under water on either side of it due to floods corresponding to its greatest flow or with a flood of frequency once in hundred years;"

30. By this order, the State Ganga Committee, District Ganga Committee and NMCG authorities have been constituted at District, State and Central level for achieving the object of the order. The clause 6 of the order provides for the prevention, control and abatement of environmental pollution in the river Ganges and its tributaries. Sub-

clause 3 of clause 6 of the order provides for restrictions on the construction activities in the river Ganges, bank of river Ganges or the floodplain area of the river Ganges or its tributaries.

31. The powers of NMCG have been elaborated in clause 41 of Ganga Rejuvenation Order. Though clause 6(3) of the rejuvenation order restricts construction on the "active flood plain" area of river Ganges or its tributaries but the Order does not define the active floodplain area. The 2016 Order in clause 3(1)(l) only defines floodplain. The active floodplain area is yet to be defined by the Central Government.

32. It has been pointed out that at the time of passing of the interim order by the High Court of Allahabad on 22.04.2011, the project of the applicant with all requisite permissions was in progress. The applicant was not heard before being restrained from continuing with the construction. The applicant was subsequently impleaded as Respondent No. 26 in the PIL and he had filed application before the Allahabad High Court, for recall of the order and during the pendency of the said application, the High Court had transferred the proceedings before the Tribunal. The High Court, while transferring the proceedings, took note of the case of the applicant and observed as follows:

> *"xxx ……xxx……xxx*
> *28. We, therefore, do not see any prejudice going to be caused to the respondent no. 26 in the event matter is transferred to the National Green Tribunal, New Delhi. It will remain open for the respondent no. 26 to move appropriate application before the National Green Tribunal for early disposal of miscellaneous recall application, if so advised.*
>
> *29. In view of above, the transfer application moved by the State of Uttar Pradesh stands granted. The Public Interest Litigation No. 4003 of 2006 and other connected pending petitions and PIL petitions are transferred to National Green Tribunal, New Delhi."*

33. In the present case, the uncontroverted plea of the applicant is that he is one of the real estate developers selected under the amended Hi-Tech Township Policy notified by the Government of Uttar Pradesh to develop the housing scheme for fulfilling the housing requirement in Prayagraj and it has entered into an MoU dated 05.09.2009 with the PDA for this purpose. It is also not in dispute that the applicant had obtained the EC from SEIAA, UP on 10.02.2010 and NOC from the UPPCB on 05.05.2010. He had also completed the construction of the Sector-1 project of 48.36 acres of land and applied for completion certificate for phase-1 of the project on 31.03.2011, prior to the passing of the interim order by the High Court of Allahabad on 22.04.2011.

34. The PDA in its reply has disclosed that area of the project has been subsequently reduced. The plea of the PDA in this regard is as under:-

> *"xxx……xxx……xxx*
>
> *xvii. That out of the total 1535.12 acres of land, owing to reduction in area, revised DPR/ Layout for 232.50 acres of land was submitted by the OMAXE with the Deponent Authority on 25.04.2022, which was approved on 09.06.2022. The copy of the revised DPR is annexed herewith and marked as* ***ANNEXURE A-12****.*
>
> *xviii. That due to above-mentioned major changes/ modification in the project, a newly submitted DPR pertaining to 232.50 acres land was submitted by OMAXE with the Deponent Authority revising the earlier Layout Plan of the project on 26.07.2022. Since Phase-1 over the approx. 96 acres of land of the project was already completed (as CC was applied by OMAXE u/s 15A of the Act which is pending consideration by the Deponent Authority) and the allotments have already been made OMAXE, however due to interim direction passed by this Hon'ble Court, the Deponent Authority has not issued Completion Certificate under section 15A of the Act of 1973 for sector-1 project to OMAXE."*

35. The specific plea of the applicant is that he intends to carry out the further construction within the reduced area.

36. The reliance of learned Counsel for the applicant is also upon the spot inspection report of the RO, UPPCB dated 28.01.2025 which is filed as Annexure A along with the reply of the UPPCB dated 04.02.2025 (page 5568-5572) wherein the Assistant Environment Engineer, UPPCB on spot inspection had found that the boundary wall of the project of the applicant is 800 meters away from the mainstream of river Ganges. The relevant extract of this spot inspection report is as under:

> *"xxx .....xxx.....xxx*
> *15. मेसर्स पंचम रियलकॉन प्रा०लि०, प्रयागराज परिसर के पूरब-उत्तर दिशा में सटे लिंक रोड तत्पश्चात् गंगा नदी का किनारा स्थित है। निरीक्षण के समय मेसर्स पंचम रियलकॉन प्रा०लि०, प्रयागराज परिसर के बाउण्ड्रीवाल से गंगा नदी की मुख्य जलधारा लगभग 800 मी० की दूरी पर प्रवाहित हो रही थी। गंगा नदी के फ्लड प्लेन जोन के डिमार्केशन के सम्बन्ध में सूचना इस कार्यालय के पत्र संख्या जी 01412/एन०जी०टी० ओ०ए० नं० 515/2023/2025, दिनांक 01.02. 2025 के द्वारा अधिशासी अभियन्ता, बाढ़ कार्य खण्ड, सिंचाई विभाग, प्रयागराज से मांगी गयी है* ***(संलग्नक-14)****। उक्त सूचना सिंचाई विभाग से अपेक्षित है।"*

37. The applicant has also relied upon the building bye-law no. 30.1.10 (page 5042) of Allahabad Development Authority भवन निर्माण एवं विकास उपविधि 2008 (यथा संशोधित 2011, 2016 एवं 2018) as amended which restrict the construction up to 200 meters from the bank of river Ganges. The said bye-law is extracted below as under:-

> ***"3.1.10. गंगा नदी के किनारे 200 मीटर क्षेत्र में निर्माण अनुज्ञा:***
>
> *(I) गंगा नदी के किनारे बसे नगरों में नदी तट से 200 मीटर क्षेत्र में केवल विद्यमान भवनों की मरम्मत एवं जीर्णोद्धार तथा हेरिटेज भवनों के सम्बन्ध में इंटैक (INTACH) के परामर्श से संरक्षण कार्य अनुमन्य होंगे, शेष गतिविधियां निषिद्ध होंगी।*
>
> *(II) गंगा नदी के किनारे स्थित प्रमुख तीर्थ स्थलों पर नदी तट से 200 मीटर के क्षेत्र के अन्तर्गत मठ, आश्रम तथा मंदिर का निर्माण निम्नलिखित शर्तों के अधीन अनुमन्य होगा:*

(क) भू-आच्छादन 35 प्रतिशत तथा एफ.ए.आर. 1.5 अनुमन्य होगा।

(ख) प्रस्तावित निर्माण के साथ एक योजना प्रस्तुत की जाएगी जिसमें यह सुनिश्चित हो कि नदी में प्रदूषण नहीं होगा। योजना जल निगम / जल संस्थान अथवा विकास प्राधिकरण द्वारा स्वीकार पाये जाने पर नियमानुसार मानचित्र स्वीकृत किया जाएगा।

(ग) ड्रेनेज सीधे नदी में अवमुक्त नहीं किया जाएगा, बल्कि अन्य नालों, आदि में ले जाने की व्यवस्था की जाएगी।

(घ) यदि क्षेत्र में सीवरेज व्यवस्था नहीं है, तो निवास स्थान/धर्मशाला, आदि अनुमन्य नहीं होंगी।

***टिप्पणी**:- नदी तट का आशय सम्बन्धित विभाग (राजस्व / सिंचाई) के अभिलेखों में अंकित तट से है।"*

38. The applicant along with its reply has placed on record the response/reply of the NMCG in response to the RTI application, whereby the active floodplain area is disclosed as follows:-

> *"However, active flood plain area' of River Ganga or its tributaries where construction of any structure, whether permanent or temporary, for residential or commercial or industrial or any other purpose is prohibited, has to be identified and demarcated by the respective State Government(s), based on one in twenty-five years cycle of Highest Flood Level (HFL). Till the said identification is completed 100 meters from the edge of the river would be designated as 'no development/ construction Zone'."*

39. No other report by any of the competent authorities in respect of the distance of the applicant's project from the bank of the river Ganges or any report showing that the applicant is covered by the interim order of the High Court has been placed on record. The exercise of demarcation of the floodplain zone of river Ganges is going on and is likely to take time.

40. There is no authentic material on record to show what exactly the active floodplain area is. There is also no inspection report by any

competent authority on record to show that the project of the applicant is within the 500 meter of highest flood level of river Ganges. On the contrary, the plea of the applicant is that the boundary wall of the project is 800 meters away from the mid-stream of river Ganges. Thus, in the absence of any such positive material or report that the applicant is covered by the interim order of the High Court dated 22.04.2011 the PDA was not justified in preventing the applicant in proceeding with the construction.

41. In the IA the applicant has also disclosed that the units of the project were already allotted prior to passing of the interim order by the Allahabad High Court and public at large had made the deposits which is suffering because of the prohibition imposed by the PDA. The uncontroverted plea of the applicant in the IA in this regard is as under:-

> *"xxx .....xxx.....xxx*
> *35. In view of the units forming part of the aforesaid projects and the units allotted prior to the passing the Interim Order, it is evident that Interim Order has affected the rights of the public at large which have deposited their savings and hard-earned money with Applicant in order to seek allotment of unit in the Project being constructed by Applicant for their families and are being deprived the possession of their units as the Applicant has been restrained from completing the Project.*
>
> *36. As a consequence of the Interim Order passed by Hon'ble High Court, PDA by way of its letter dated 03.05.2011 intimated the Applicant of the Interim Order passed by Hon'ble High Court completely halted the construction activities on the project site, thus, the Projects which were to be completed by the Applicant within a period of 5 years as per the 2007 Policy could not be proceeded further and which directly affected the right of residence of the consumers who have booked their units in the Project.*
>
> *37. Therefore, considering the large-scale impact of the Interim Order on the Applicant and the allottees of the Project, it is imperative that in the event the Applicant is not allowed to complete the Projects and provide timely possession of units to the consumer at large then the consumers/allottees of the various projects developed/being developed at Allahabad would be deprived of the units which they have booked for the habitat of their family and would be constrained to continue to pay interest rate to the financial institutions.*

> *38. Thus, in the event, the Applicant is not allowed to complete the construction of its on-going projects then it will not safeguard the interest of the public and will take away their right of adequate housing for which they have been availed home loans from financial institutions."*

42. The reply of the NMCG dated 08.11.2024 also does not state that the project of the applicant is covered by the interim order of the High Court or it is within the 500 meters from the highest flood level of river Ganges in the city of Allahabad.

43. Thus, in view of the above analysis and stand of the applicant that before passing of the interim order dated 22.04.2011 by the High Court of Allahabad in the PIL, the applicant had already completed the construction of the phase-1 project with all the requisite permissions and complying with all the norms and its application for issuance of completion certificate is pending before the PDA and the PDA only wants to examine, if the construction was complete, we direct the PDA to take an appropriate decision on the application dated 31.03.2011 submitted by the applicant for the issuance of the completion certificate of the Sector-1 project in accordance with law as expeditiously as possible, preferably within eight weeks.

44. In respect of the prayer for further construction, we have noted that applicant has all the requisite permissions and the money has been received from the public in advance and after the interim order of the High Court area of the project has been reduced and there is no material on record to reach to the conclusion that the project is covered by the interim order of the High Court of Allahabad. In such circumstances if applicant wants to proceed with construction at its own risk, it can do so subject to compliance of requisite norms. Needless to say such

construction would be subject to the provisions of Rejuvenation Order 2016 including demarcation thereunder.

45. IA 372/2024 is accordingly disposed of.

IA No. 557/2024 in OA No. 515/2023

46. This IA is filed by the applicant, Harish Chandra Research Institute, seeking a direction to permit the applicant to continue the construction of the campus and complete the unfinished construction of the hostel building and the extension of establishment of the library building and computer centre. The prayer made in the IA is as under:-

> ***"****In view of the facts as mentioned in the instant Application, it is prayed that this Hon'ble Tribunal may please to:*
>
> *a. Allow the present Application and allow the Applicant i.e. Harish-Chandra Research Institute (HRI) to continue the construction of the Campus as per the Master Plan approved by the Authorities and being developed in compliance of the approvals granted by competent authorities including PDA and complete the unfinished construction the Hostel Building and the extension of the Library Building and Computer Center and/or;*
>
> *b. Allow the applicant to complete A Lecture Hall Complex and Conference Centre consisting of lecture halls and an auditorium for courses and conferences, An extension of the Institute's Guest House to house a larger number of academic visitors, especially long term visitors as per the approved Master Plan and approvals of authorities including PDA and/or;*
>
> *c. Pass any such further order (s) as the Hon'ble Tribunal may deem fit and proper in the facts and circumstances of the instant case.****"***

47. In this IA, the applicant has disclosed in para 51 that in compliance of the order dated 21.03.2013 passed by the Allahabad High Court in the PIL, Amicus Curiae had submitted the report dated 05.07.2013 (Annexure L to the IA) stating that the entire construction/premises of the institute's campus is within 500 meters of

the Highest Flood Level of the river Ganges in Chhatnag Side of Jhansi. The pleading of the applicant in the IA in this regard is as under:-

> **"***51. That it is necessary to point out that in compliance with the order dated 21.03.2013 passed by the Hon'ble High Court of Allahabad in the PIL., an Amicus Curiae, Shri Arun Kumar Gupta, Advocate, has submitted a Report dated 05.07.2013 before this Hon'ble High Court, after inspecting the campus of the Institute, wherein under Paragraph 7 of the report it is mentioned that the entire campus area is developed in an eco-friendly manner and covered by green trees, under Paragraph Nos. 8 & 9 it is mentioned that the discharge from the Institute's campus into the Ganga is zero, under Paragraph No. 11 it is mentioned that the learned Amicus Curiae has seen the half-built structures of the buildings and further in Paragraph No. 10 & 12, it has is mentioned that the entire construction/premises of the Institute's campus is within 500 meters of the Highest Flood Level of the River Ganga at Chhatnag Side of Jhunsi. A true copy of Objection/Report dated 05.07.2013 submitted by the learned Amicus Curiae before the Hon'ble Allahabad High Court, is annexed as Annexure L.***"***

48. The Allahabad High Court by order dated 22.04.2011 has restricted construction by Allahabad Development Authority or by any private builder within 500 meters of the highest flood level of river Ganges in the city of Allahabad as well as part of the river Yamuna adjoining the river Ganges, i.e., Sangam. There is no prayer in the IA for seeking vacation of the interim order passed by the division bench of the High Court of Allahabad.

49. In view of the admitted position in the IA that the proposed construction is within 500 meters of the Highest Flood Line, Counsel for the applicant is required to clarify how the prayer made in the IA can be granted.

50. Hence, the IA be listed for further hearing on the next date.

51. List all OAs and pending IAs for consideration on 24.09.2025.

Prakash Shrivastava, CP

Arun Kumar Tyagi, JM

Dr. Afroz Ahmad, EM

May 19, 2025
Original Application No. 515/2023
& other connected matters
JG+AVT

Court No. - 2
Case :- PUBLIC INTEREST LITIGATION (PIL) No. - 4003 of 2006
Petitioner :- Re: Ganga Pollution
Respondent :- State Of U.P. And Others
Petitioner Counsel :- Vijay Chandra Srivastava,A.K. Gupta,A.K. Srivastava,Anil Tiwari,Arun Kumar,Arvind Agarwal,Baij Nath Yadav,Baleshwar Chaturvedi,D.B. Mishra,D.S. Mishra,Jagdish Tewari,K.C. Pandey,P.N. Mishra,S.K. Srivastava,Shailesh Singh,Sharad Kr. Srivastava,Sunita Sharma,V.B. Singh,V.C. Mishra,Vivek Mishra
Respondent Counsel :- C.S.C.,A.K. Mishra,Ajay Bhanot,Anjani Kumar Mishra,C.L.Pandey,Chandan Sharma,Dr. H.N.Tripathi,H.N. Singh,Hem Pratap Singh,Iqbal Ahmad,M.C. Chaturvedi,N. Misra,P.S. Baghel,R.B. Shukla,Rajiv Lochan Shukla,S.A. Lari,S.M.A. Kazmi,S.P. Kesharwani,S.P. Singh,T.M.Khan,Vivek Birla,Vivek Verma,W.A. Hashmi

_____

Hon'ble Ashok Bhushan,J.
Hon'ble Arun Tandon,J.

Heard Dr. Ashok Nigam, learned Additional Solicitor General of India, assisted by Sri Ajay Bhanot for Union of India, Sri U.N. Sharma, learned Senior Advocate, special counsel for the State of U.P., Sri S.G. Husnain, learned Additional Advocate General assisted by Sri S.P. Kesharwani, learned Additional Chief Standing Counsel for the State, Dr. H.N. Tripathi, learned counsel for U.P. Pollution Control Board, Sri S.D. Kautilya, learned counsel for Municipal Corporation, Allahabad, Sri Rajeev Lochan Shukla, learned counsel for the Tanneries and Sri A.K. Gupta, learned amicus curiae as well as Sri Ashwani Kumar Misra, learned counsel appearing for newly impleaded respondent, Allahabad Development Authority.

Learned amicus curiae has filed an application for impleadment of the State Level Environment Impact Assessment authority, Uttar Pradesh, through its Member Secretary, Pickup Bhawan, Gomti, Nagar, Lucknow and Allahabad Development Authority though its Vice Chairman, Indira Bhawan, Civil Lines, Allahabad as respondents No. 18 and 19. The impleadment application is allowed.

An application for impleadment has also been filed on behalf of Allahabad Development Authority through Sri Ashwani Kumar Misra Advocate along with application for vacating the order dated 28.3.2011 supported by a detailed affidavit. The application and affidavit are taken on record. The impleadment of Allahabad Development Authority has already been allowed.

Learned Additional Solicitor General with regard to transfer of a Defence land area 1123.80 square meters at Mori Gate Fort, Cantt. Allahabad for the purpose of establishing the sewage pumping station, has submitted that the letter dated 28.1.2011 has been issued by the Government of India, Ministry of Defence informing the Principal Secretary, Government of U.P. that in principle approval for permitting State Government of Uttar Pradesh/Ganga Pollution Control Unit for construction of a sewage pumping station on the aforesaid land has been granted. The consent of the State Government as per current Standard Table of Rents (STR) and not as per the circle rate of the State Government has been sought. No appropriate reply has been given by the learned counsel appearing for the State as to why the aforesaid concurrence has not been yet been communicated to the Ministry of Defence, whereas establishing a sewage pumping station at Mori Gate is urgently required. However, in the affidavit dated 28.3.2011 sworn by Sri Anil Kumar Srivastava, Managing Director, U.P. Jal Nigam, Lucknow, a copy of the Government order dated 19.2.2011 has been filed as Annexure-6 by which order, the State Government has communicated the Commissioner, Allahabad Division and District Magistrate, Allahabad and Nagar Ayukt, Nagar Nigam, Allahabad to take appropriate action as per the letter of the Central Government dated 28.1.2011. The said letter clearly thus conveys the State Government's concurrence to the letter dated 28.1.2011

and the authorities aforesaid were directed to take appropriate action. Another letter dated 25.2.2011 written by Lt. Col. A.S. Dabholkar has been annexed by which the General Manager Ganga Pollution Control Unit was requested to work out the cost of the Defence Land as per current (effective) Standard Table of Rent (STR) and forward the same to DG, DE New Delhi. From the aforesaid correspondences, which have been brought on record along with the aforesaid affidavit, it is clear that although the Central Government has communicated its concurrence for transfer of the Defence land as per current (effective) Standard Table of Rent but due to not taking effective compliance by the authority concerned, the working permission for construction of sewage pumping station could not be issued by Ministry of Defence.

Sri S.G. Hasnain, learned Additional Advocate General sought to contend that the State Government has given its permission to transfer the land on circle rate which arguments has no leg to stand when the Ministry of Defence has already communicated their concurrence for transfer of the land on current Standard Table of Rent (STR) and the land belong to the Ministry of Defence, it is not open for the Additional Advocate General to contend that the cost of the land is to be made by circle rate. The above argument itself suggests that the State Government is not effectively taking consequential steps, which is failing the transfer of Defence land. We direct the State authorities including the District Magistrate, Allahabad to immediately communicate their approval for the transfer of land on the valuation as per Standard Table of Rents. All effective steps in this context be taken within two weeks and the Ministry of Defence shall accordingly issue working permission for construction of sewage pumping station within four weeks thereafter so that the construction of sewage pumping station be started.

Sri Ajay Bhanot, learned counsel appearing for the Union of India has also submitted that the issue of minimum flow of water in river is being considered by a sub committee constituted on October 4, 2010 the report of which is awaited. He has referred to affidavit of Sri Sudhir Garg, filed on behalf of Ministry of Water Resources, Government of India, New Delhi dated 27.3.2011. From the aforesaid counter affidavit, it is clear that Water Quality Assessment Authority, New Delhi was constituted by the Government of India in the year 2001. A decision was taken on 14.5.2003 by the said Authority to constitute a working group with the terms of reference which also included studies towards deciding minimum flows in the river and other related issues. The report is said to be submitted in July, 2007, recommending that legal and institutional implications of the report may be examined by a committee under the Chairmanship of Chief Engineer, CWC. A report in this regard has been submitted on October 27, 2009 which was discussed on 11.10.2010 by Water Quality Assessment Authority when it was agreed that a sub committee be constituted. As noticed in earlier orders of this Court two of the issues which need to be considered are as as follows:

(a) Can the State draw unlimited quantity of water from a river even to the extent of rendering its main stream a dry zone?

(b) Can the State because of drawl of water from upper portion of the river Ganges render its quantity or quality of water completely unfit for human use even for abthing purposes?

The aforesaid facts indicate that the issue of minimum flow of

water in a river is engaging attention of various authorities and Committees of Ministry of Government of India for long about a decade but no final recommendation in this regard could be made. Sri Ajay Bhanot appearing for the Union has submitted that a report in this regard shall be shortly submitted and brought before the Court. We notice that large number of issues are being considered by Water Quality Assessment Authority but for the purpose of this case, recommendation/ report is required on following two issues:

(i) Standards regarding quality of water in river Ganges which is fit for drinking and bathing purposes.

(ii) issues '(a)' and '(b)' as quoted above with regard to minimum flow of water in river Ganges.

In view of the aforesaid, we direct the Ministry of Water Resources as well as Ministry of Environment and Forest to take immediate steps in this regard so as the appropriate recommendation/report in that regard be submitted and brought before the Court within a period of three weeks from today.

Along with counter affidavit of Sri S.K. Sarcar filed on behalf of Ministry of Urban Development Government of India, New Delhi dated 25.1.2011, the Government of India has brought on record the inspection report of the expert committee which was constituted in pursuance of the order of this Court dated 6.12.2010 passed in this petition. The Committee was directed to inspect the laying down of the sewer line and if necessary by digging the sewer line to find out whether the sewer line work done, was in accordance with the approved DPR. U.P. Jal Nigam was also directed to take necessary steps in that regard. The expert committee constituted by the Ministry of Urban Development Government of India visited the

city of Allahabad on 29th and 30th December, 2010 and inspected the works and submitted its report which has been filed as Annexure-C.A- 1. The report brought on record indicates that there has been variation in actual work undertaken regarding laying down of the sewer line in accordance with the approved DPR. Several shortcomings and violations of D.P.R. have been pointed out in the inspection report.

An affidavit on behalf of U.P. Jal Nigam has been filed in this regard. The affidavit filed by U.P. Jal Nigam is sketchy and does not refer to any action taken by the U.P. Jal Nigam, which is the implementing agency for laying down sewer line in reference to the inspection report of the expert committee. Sri Ravi Kant, learned Senior Advocate appearing for U.P,. Jal Nigam has prayed for time to take effective steps and file a proper affidavit in this regard. As prayed three weeks' time is allowed. The appropriate direction in this context shall be issued after filing of the affidavit by U.P. Jal Nigam.

This Court vide order dated 19.1.2011 had issued following directions:

> *"It was pointed out by learned Amicus Curiae that the colour and quality of the water at Sangam and several other places has deteriorated and the colour has become red and brown which clearly suggests that the quality of the water has deteriorated due to unabated pollution of river water including the pollution at Kanpur Nagar and other cities.*
>
> *Dr. H.N. Tripathi, who is present for the U.P.*

Pollution Control Board, has filed affidavit bringing the report regarding analysis of the water which confirms that water quality has deteriorated. We fail to understand that the river water is continuously being polluted and the quality is going bad to worse but no appropriate action by the State Government and the Authorities of the U.P. Pollution Control Board is being taken in this regard who are statutorily obliged to check the pollution. We provide that by the next date all appropriate action shall be taken in this regard. Action taken be brought on record before the Court by means of an affidavit."

It has also been noticed in the earlier order that Chief Secretary of the State, who was present before the Court in earlier proceedings, have assured the Court that appropriate action in this regard be taken and brought on the record. As noticed above due to unabated pollution and discharge of untreated water in river Ganges, the colour and quality of the water is deteriorating which become visible at Sangam. No satisfactory compliance in this regard has been brought on record by the State of U.P. The State of U.P. who is to oversee that bodies and persons polluting the water to such great extent which has changed the colour of water be identified and action be taken, has failed to do any substantial work in this regard. An affidavit has been filed by Dr. H.N. Tripathi, learned Counsel appearing for the U.P. Pollution Control Board dated 22.4.2011 sworn by Dr. Rajeev Upadhyay, Chief Environmental Officer, annexing therewith the letters written by Dr. C.S. Bhatt, Member Secretary dated 13.4.2011 to the Director Indian Institute of Toxicological Research, M.G. Marg, Lucknow to carry on indepth study of the causes of occurrence of colour and

water quality. Another letter dated 18.4.2011 of Indian Institute of Toxicology Research has been brought on record indicating concurrence of the institute to carry on desired study. The letter written by the Member Secretary Dr. C.S. Bhatt according to us, is nothing but an act of the U.P. Pollution Control Board abdicating its main function to find out the polluters and take action against them. The U.P. Pollution Control Board, whose main function is to prevent water pollution and take appropriate action against the polluters, instead of taking appropriate action itself, which is a body of experts, is asking the other institution to know the causes of occurrence of colour and water quality. The U.P. Pollution Control Board which has been constituted to check the pollution is not taking any action itself rather it is asking from another institute to know the cause of pollution, whereas the water of river Ganges is decolouring due to unabated pollution, which is continuing from year after year. We are constrained to observe that U.P. Pollution Control Board is not performing its duties as entrusted by statutory provisions. We direct the Chairman of the U.P. Pollution Control Board to file his personal affidavit on the next date and be present in the Court to explain as to what action he has taken in this regard and in compliance of various directions issued by this Court in this petition.

In our order dated 28.3.2011, we have noticed that the State had acquired land for sewage farm in the year 1915 to the extent of 277 acres out of which 45 hectares land had been transferred to Allahabad Development Authority for the purpose of construction of housing colony on the river bank. The proceedings of public Interest Litigation (being PIL No. 54654 of 2009 Re: Sewage Farm) as well as Public Interest Litigation No. 1408 of 2011 were also noticed. This Court has noticed the acute problem of discharge of untreated sewage of Allahabad district directly in river Ganges, which is still

continuing. It was noticed that total capacity of sewage treatment plant functioning at Allahabad is only 93 MLD, whereas sewage generated is 232 MLD hence, 119 MLD untreated sewage is directly thrown in the river Ganges. It was also noticed that the land acquired for the sewage farm had been diverted for the other purpose, which stands admitted in the affidavit of Nagar Nigam, Allahabad. The Chief Secretary, State of U.P. who was present during the earlier proceedings before the Court, had assured the Court that the State shall review the entire issue at its level, with regard to the use of the land which was earlier acquired for the purpose of sewage farm. Today an affidavit of Surya Prakash Misra, Special Secretary, Urban Development sworn on 21.4.2011, has been brought on record annexing the report of the proceedings of the meeting dated 15.4.2011 in the aforesaid regard.

Sri Arun Kumar Gupta, learned amicus curiae has filed an affidavit giving details pertaining to the land of sewage farm which was acquired in 1915 and the diversion of the land for other purposes including transfer of 45 hectares of land by Nagar Nigam, Allahabad for construction of housing colony. Learned Amicus Curiae has also brought on record the Government order dated 31.7.2000 by which the State Government has imposed restriction on constructions within 200 meters from the river bank with the object of saving river Ganges from pollution. Decision was however, taken that relaxation can be granted to Math, Ashram and temple in certain condition. The decision of the Board meeting of the Allahabad Development Authority dated 3.4.2005 has also been brought on record in which a decision was taken that no permission shall be granted for any construction of house within 200 meters of highest flood level of river Ganges. The relaxation for Math etc. was continued. Learned Amicus Curiae has also brought on record the decision of the Committee of Allahabad Development Authority

deciding the objection on master plan 2021 specially the decision of the committee on item No. 45. From decision taken by the Committee at item No. 45, it appears that application was made by the Manager, Sahara India Commercial praying for land use as commercial in Mauja Mavaiya and Mavaiya Devrakh Uperhar Tahsil Karchana on total 133 acres of land. In the decision it has been resolved that upto 200 meters from the river bank, no construction of any kind would be permissible and for next 300 meters constructions can be permitted only in special circumstances. The Board refused permission to change the land use as residential. It is useful to quote the decision of the Committee:

> "प्राधिकरण बोर्ड के पूर्व बैठक के निर्णय के अनुसार हाइयेस्ट फल्र्ड लेवल को देखते हुए बंधा रोड का एलाइमेंट होगा। महायोजना में जो बंधा रोड का एलाइमेन्ट दिखाया गया है वो उसकी पुष्टि भी एरीगेशन विभाग से कर लिया जाये तथा शासन के आदेश के अनुसार बंधा रोड के साथ जा नदी तटीय विकास के लिए 200 मी0 तक कोई निर्माण नहीं होगा तथा अगले 300 मी0 में कोई विशेष भू–उपयोग अनुमन्य किए कये हैं। इसके अतिरिक्त पूर्व महायोजना सीवेज फार्म, ग्रीन बेल्ट एवं फल्र्ड इफक्टेड एरिया प्रदर्शित था तथा शासनादेश के अनुसार यहां ग्रीन बेल्ट यथावत नदी तटीय विकास के अन्तर्गत रखा गया है उनका अधिकतर स्थल इस क्षेत्र में आता है। उपरोक्त शासनादेशों के आधार पर इस क्षेत्र को आवासीय करना उपयुक्त नहीं होगा। प्राधिकरण बोर्ड इस पर विचार करना चाहे।"

Sri Ashwani Kumar Misra, learned Counsel appearing for the Allahabad Development Authority referring to affidavit filed in support of his application, has submitted that 45 hectares of land was got transferred by the Nagar Nigam, Allahabad in favour of

Allahabad Development Authority on 25.5.2005 for consideration of Rs. 11 crores. He submits that in Public Interest Litigation being writ petition No. 54654 of 2009 in Re: Sewage Farm, a Division Bench of this Court dismissed the Public Interest Litigation with the observation that the land acquired by one public purpose can be very well utilised for another public purpose. He further submits that another writ petition No. (PIL) 1408 of 2011 has been filed restraining the Allahabad Development Authority from constructing New Prayag Avas Yojna as well as the private company which is making construction near the banks of river Ganges, which Public Interest Litigation is pending and counter affidavit has been called. Learned counsel for the Allahabad Development Authority submits that sufficient land is available for construction of sewage treatment plant and transfer of land was rightly made in favour of Allahabad Development Authority. The judgment and order dated 26.5.2010 in writ petition No. 54654 of 2009 has been referred to and relied.

Learned Counsel for the Allahabad Development Authority has prayed that the order dated 28.3.2011 imposing restriction on construction within 500 meters from mid stream of the river be withdrawn and Allahabad Development Authority be permitted to proceed with its project of constructing a housing colony on the river bank of Yamuna near Sangam in city of Allahabad.

The pollution in the river water of Ganges has arisen to an alarming situation. The apex Court in in M.C. Mehta case reported in (1987) 4 Supreme Court Cases 463 had taken very serious note of the pollution in river Ganges. Following observations were made by the apex Court.

> *"It is the popular belief that the river Ganga is the purifier of all but we are now led to the situation*

that action has to be taken to prevent the pollution of the water of the river Ganga since we have reached a stage that any further pollution of the river water is likely to lead to a catastrophe. There are today large towns inhabited by millions of people on the banks of the river Ganga. There are also large industries on its banks. Sewage of the towns and cities on the banks of the river and the trade effluents of the factories and other industries are continuously being discharged into the river. It is the complaint of the petitioner that neither the government nor the people are giving adequate attention to stop the pollution of the river Ganga. Steps have, therefore, to be taken for the purpose of protecting the cleanliness of the stream in the river Ganga, which is in fact the life sustainer of a large part of the northern India."

In the affidavit filed by Allahabad Development Authority dated 21.4.2011, the Allahabad Development Authority itself has brought on record the affidavit of Nagar Nigam, Allahabad which gives the fact regarding the situation of river pollution in river Ganges. The affidavit of Nagar Nigam sworn by Shiv Lakhan Yadav, Legal Advisor, Nagar Nigam Allahabad filed in PIL No. 54654 of 2009 notices that there are 57 Nalas open drain which are discharging untreated water in river Ganges and Yamuna. It has also noticed that total capacity of treatment plant in Allahabad is only 89 MLD and total untreated discharge is 228 MLD. According to admission of Nagar Nigam itself 120 MLD untreated is being discharged in river Ganges and 108 MLD untreated is discharged in river Yamuna. Following was stated in paragraphs 6,7 and 8**:**

" 6. That as per detail Number of Nalas are 57 (44 are discharging in Ganga river and 13 are discharging in Yamuna river), total discharge of Untreated water is 228 MLD (120 MLD in Ganga river and 108 MLD in Yamuna river) and capacity of treatment plants is 89 MLD (60 MLD Naini and 29 MLD Salory).

7. That at present out of 228 MLD of untreated discharge water only 89 MLD is being treated as stated above. However schemes of 5 treatment plant has been sanctioned amounting to 355.98 Crores which will treat 60 MLD of untreated water. Under JAICA aided scheme Numayadahi capacity 50 MLD, Kodra capacity 25 MLD, Pongat capacity 10 MLD and Naini capacity 20 MLD amounting 336.07 Crores had been submitted to State Government for submission to Government of India.

8. That as it has ben demonstrated that the total untreated sewage discharge will be covered by different treatment plants to be commissioned at different places by 2013, the land transferred to Allahabad Development Authority is not required for sewage farming, as was previously done before 1985."

The said figures have been given on the basis of the report of the year 2009. No further sewage treatment plant or any other mechanism has been generated. Untreated water is constantly and regularly discharged in river Ganges and Yamuna. The apex Court

in **M.C. Mehta Vs. Union of India**, reported in (1988) 1 Supreme Court Cases 471 held that all municipal Boards which have jurisdiction over the areas through which the river Ganga flows have to take effective steps for undertaking different works in sewerage system. It is useful to quote the directions issued in the aforesaid case in paragraphs 17 and 26.

> " ***17.*** *It is no doubt true that the construction of certain works has been undertaken under the Ganga Action Plan at Kanpur in order to improve the sewerage system and to prevent pollution of the water in the river Ganga. But as we see from the affidavit filed on behalf of the authorities concerned in this case the works are going on at a snail's pace. We find from the affidavits filed on behalf of the Kanpur Nagar Mahapalika that certain target dates have been fixed for the completion of the works already undertaken. We expect the authorities concerned to complete those works within the target dates mentioned in the counter-affidavit and not to delay the completion of the works beyond those dates. It is, however, noticed that the Kanpur Nagar Mahapalika has not yet submitted its proposals for Sewage treatment works to the State Board constituted under the Water Act. The Kanpur Nagar Maha;alika should submit its proposals to the State Board within six months from today.*
>
> ***26.*** *What we have stated above applies mutatis mutandis to all other Mahapalikas and Municipalities which have jurisdiction over the*

areas through which the river Ganga flows. Copies of this judgment shall be sent to all such Nagar Mahapalikas and Municipalities."

277 acres of land was acquired in the year 1915 and 1941 for sewage farm. Nagar Nigam, Allahabad, which was under obligation to utilise the land for the purpose of treating the untreated water have failed to perform its duty. Nagar Nigam has very conveniently in 2005 transferred 45 hectares of land to Allahabad Development Authority and Allahabad Development Authority has decided to construct a housing colony on 45 hectares of land situated on the river bank of Yamuna near Sangam (Where Ganga and Yamuna meet). As noticed above in the PIL writ petition No. 54654 of 2009, this Court has passed the order dated 26.5.2010. In the aforesaid writ petition, the Division Bench noticed the issue involved to the following effect:

"The only question involved in this case is as to whether the land, which has been acquired for one public purpose, can be converted for another public purpose or not."

The Division Bench noticed that out of the total land only 45 hectares of land has been given for the purpose of housing colony, whereas the entire land was originally acquired for the purpose of sledge farm. The Division Bench made following observations:

"Factually, learned counsel for the Allahabad Development Authority has come forward with a case that out of the total land, only 45 hectare land has been given for the purpose of housing colony though the entire land was originally

acquired for the purpose of sledge farm. According to him, the mechanism between such period and the present period has changed. The modern equipments do not require so much land for the purpose, for which the same was acquired and, accordingly, the land in excess of 45 hectares can be utilised for the same. We do not find any logic standing in the way of process of public purpose if no hindrance is being caused to the original public purpose, particularly when we find that all the governmental authorities, being Allahabad Development Authority, Nagar Nigam, Jal Nigam and Environment Department are present before us and nobody is standing in the way but the Court suo motu has taken cognizance in the matter on the earlier occasion. The issue raised in the form of public interest litigation, on which suo motu cognizance has been taken, stands resolved."

From the above judgment of the Division Bench, it appears that Division Bench in the said judgment held that the land in excess of 45 hectares can be utilised for the purpose for which it was acquired. It was not brought before the Division Bench that prior to transfer of 45 hectares of land, the large portion of the area was already transferred for other purposes which has been detailed in the affidavit of Nagar Nigam. The Division Bench passed the order on the premise that rest of the land except 45 hectares, is still available for sewage farm. We however, in this petition cannot take any decision contrary to that which was taken by the Division Bench on 26.5.2010 nor in this writ petition we can entertain any issue regarding transfer of 45 hectares of land to the Allahabad Development Authority by Nagar Nigam. But the question as to

what measures should be taken for checking the pollution in river Ganges is the main subject of present writ petition. In that regard we can proceed to examine and take appropriate measures so that river Ganges may not be further polluted. It is also relevant to refer to the decision of the State Government taken in the meeting dated 15.4.2011 as referred above. From the aforesaid proceedings dated 15.4.2011, it appears that 13.88 hectares of land which was given for fish farm be asked to be returned from Fisheries Department. It was also observed that for extension capacity of sewage treatment plant, land is available.

Learned amicus curiae has also pointed out that another decision has been taken by administration to construct the housing colony in the locality Ganga Nagar on the bank of river Ganga.

Ganges plain in the northern India has been always treated to be most fertile area. Due to increase of population enormous and unregulated and unplanned constructions have begun on both sides of river Ganges, which is continuous and unabated process. It has been noticed that in highest flood of 1978, large number of villages on the bank of river Ganges had submerged. Learned Amicus Curiae has brought on the record a booklet issued by the District Administration Allahabad 'Badh Prabandh Yojna 2011-2012' in which flood affected villages have been mentioned and the villages Jahangirabad and Mavaiya, where the sewage farm land is situate have been included in the villages which are affected by Ganga flood.

Unabated and enormous construction on the river bank is also one of the source of increasing pollution in river water and a source for throwing untreated sewage dirt in the river with no mechanism to check. As noticed above, Allahabad Development Authority while rejecting the application of Sahara Commercial Corporation for permitting the change of land use as residential in

villages mentioned therein, recorded that within 200 meters from highest flood level, construction is wholly prohibited and within next 300 meters permission be granted only in special circumstances. Restriction in making construction of housing colony within 500 meters of highest flood level of river is necessary and mandatory to check the further pollution which may be caused by such housing colonies. We have noticed that in spite of repeated directions, neither the Nagar Nigam nor the State of U.P. has been able to come with any measure to check release of untreated sewage in river Ganges. 134 MLD untreated sewage, according to own case of Nagar Nigam is being discharged in river Ganges daily and according to the respondent new sewage treatment plant of the capacity 60 MLD shall be commissioned by 2013. New sewage treatment plant which has been mentioned and proposed has yet not started and we have reasonable doubt as to whether it will be able to function by 2013. Stopping construction up to 500 meters from highest flood level on the banks of both the rivers Ganges and also on the part of river Yamuna adjoining Sangam has to be directed in the city of Allahabad. The earlier order dated 28.3.2011 however requires modification.

We thus direct that no construction shall be undertaken by the Allahabad Development authority or by any private builders within 500 meters of highest flood level of river Ganges in city of Allahabad as well as part of river Yamuna adjoining the river Ganges (Sangam). The Allahabad Development Authority and the district administration shall ensure that no construction be made in the aforesaid area. We however, give liberty to any aggrieved person to make appropriate application in this petition with regard to above restrictions, if he feels so aggrieved.

Sri Rajeev Lochan Shukla, learned counsel appearing for the tanneries has submitted that a date be also fixed for considering

the tanneries matter. We fix 20.5.2011 for consideration of tanneries matter.

As agreed by learned counsel for the parties,next date in the present case is fixed as 13.5.2011 at 2 p.m.

Learned Special Counsel appearing for the State as well as learned Additional Advocate General referring to the affidavit has submitted that detail timetable is being given for repair of the roads which were dug during the laying down of the sewer line. Learned Amicus Curiae as well as other counsels have submitted that there is no proper repairing of the roads and pits are lying on the road unattended by the authorities. Although in earlier affidavit, it was stated that repairing of the road shall be completed by February, 2011 but according to the own case of the respondents, the repairing of the road has not yet been started. We are of the view that authorities of U.P. Jal Nigam, who is executing agency for laying down the sewer, and the P.W.D. are slack and are not making proper supervision which they are expected with regard to repairing of the road. We direct all the authorities including the authorities of U.P. Jal Nigam and P.W.D. to take appropriate steps regarding restoration of the roads in city of Allahabad, which were got dug during the laying of the sewer line. Appropriate affidavit in this regard be filed by U.P. Jal Nigam, P.W.D. as well as State of U.P. by the next date.

Order Date :- 22.4.2011

LA/-

Court No. - 37

Case :- PUBLIC INTEREST LITIGATION (PIL) No. - 4003 of 2006

Petitioner :- Re: Ganga Pollution
Respondent :- State Of U.P. And Others
Petitioner Counsel :- Vijay Chandra Srivastava,A.K. Gupta,A.K. Srivastava,Anil Tiwari,Arun Kumar,Arvind Agarwal,Baij Nath Yadav,Baleshwar Chaturvedi,D.B. Mishra,D.S. Mishra,Jagdish Tewari,K.C. Pandey,P.N. Mishra,S.K. Srivastava,S.K. Tyagi,Shailesh Singh,Sharad Kr. Srivastava,Sunita Sharma,V.B. Singh,V.C. Mishra,Vivek Mishra,Yogesh Krishna Mishra
Respondent Counsel :- C.S.C.,A.K. Mishra,Ajay Bhanot,Anjani Kumar Mishra,B.D. Shukla,C.L.Pandey,Chandan Sharma,Dr. H.N.Tripathi,H.N. Singh,H.P. Dubey,Hem Pratap Singh,Iqbal Ahmad,J.J.Munir,Jyotindra Misra, A.G.,Kashif Zaidi,M.C. Chaturvedi,M.C. Tripathi,M.K.Alam,Mohd.Khursheed Alam,Mridul Tripathi,N. Misra,Omprakash Yadav,P.S. Baghel,Pankaj Kumar Shukla,R.B. Shukla,Rajiv Lochan Shukla,Ravi Kant,S.A. Lari,S.G.Hasnain, Addl.A.G.,S.M.A. Kazmi,S.P. Kesharwani,S.P. Singh,Saumya Misra,Suneel Dubey,T.M.Khan,Tahir Hussain,Tanmay Agarwal,Udain Nandan,Umesh Narain Sharma,Vivek Birla,Vivek Verma,W.A. Hashmi

Hon'ble Ashok Bhushan,J.
Hon'ble Arun Tandon,J.

Heard Sri S.P. Gupta, learned Advocate General, assisted by Sri S.P. Kesarwani, Additional Chief Standing Counsel, for the State, Sri Ajay Bhanot for Union of India, Sri A.K. Mishra for Allahabad Development Authority and U.P. Jal Nigam, Sri S.D. Kautilya for Nagar Nigam, Allahabad, Sri Ravi Kant, Senior Advocate and Sri J. Nagar, Senior Advocate for Sam Higginbottom Educational and Charitable Society, who has filed an application, Sri L.P. Singh and Sri M.A. Haseen who have filed affidavits along with intervention applications.

In the application filed on behalf of Sam Higginbottom Education and Charitable Society (hereinafter referred to as the Society) prayer has been made to permit the Society to complete the existing construction work and carry out the repairs/

renovation/extension.

Sri L.P. Singh, who has filed an intervention application, has filed various photographs along with the affidavit showing the construction which are being proceeded with by the Society. It has been stated in the affidavit that on 15th August, 2012 the Society was laying slab.

Sri A.K. Mishra, learned counsel for the Allahabad Development Authority has submitted that Vice Chairman and Secretary of the Allahabad Development Authority visited the premises of the Society and has directed not to proceed with any construction. It has been stated that several notices were earlier issued to the Society asking to stop construction including the notice given on 25th July, 2012. Sri Mishra has submitted that inspection was made in August, 2012 by the authorities of the Allahabad Development Authority and it was found that constructions have proceeded with by the Society including the work of laying slab. Sri Mishra has also submitted that the constructions which are being made by the Society, have been undertaken without their being any sanction plan and the Society in spite of various directions and orders has proceeded with the construction in flagrant violation of various directions and orders of Allahabad Development Authority and the provisions of U.P. Urban Planning and Development Act, 1973. It has further been stated that this Court has already on 22nd April, 2011 has passed an order stopping all constructions within 500 meters of highest flood level of river Ganga and on either sides of the city across the Sangam. It is submitted that constructions are also being made in the teeth of the direction of this Court dated 22nd April, 2011.

The Society claims to be a deemed University and an institution which has been running since 1910 with large faculty. An affidavit has been filed on behalf of the Society which does not indicate that any sanction plan has been obtained by the Society from the Allahabad Development Authority for constructions which are being undertaken. Learned counsel appearing for the Society has not denied the allegation that no plan has yet been sanctioned. A plea has been taken that plan has been submitted several years ago.

Be that as it may, when plan has not yet been sanctioned, we fail to see how the institution of such repute is violating the provisions of the U.P. Urban Planning and Development Act, 1973 and direction issued by this Court. The Society which consists of eminent persons and has a place in the society is more expected to act in accordance with law and follow the provisions of U.P. Urban Planning and Development Act, 1973 moreso when it claims to be a society running an educational institution. The sequence of events and specially the conduct of the society in carrying on with the construction cannot be approved. Sri A.K. Mishra submits that notice has been issued on 16th August, 2012 to the Society asking to show cause as to why construction be not demolished.

We are of the view that Allahabad Development Authority may proceed with the demolition of unauthorised constructions and if necessary seal the construction so that no further unauthorised constructions be made. We further direct the Allahabad Development Authority to initiate proceedings for prosecution of the Society since it has proceeded with the construction work in flagrant violation of the 1973 Act. The appropriate steps be taken and in this regard an affidavit be filed by the Allahabad

Development Authority by the next date.

In view of the aforesaid, the application filed by the Society praying to permit it to complete the construction and carry on the repairs/renovation/extension work is **rejected**.

Sri M.A. Haseen has filed a supplementary affidavit along with the intervention application in which fixation of pillar at 500 meters from highest flood level by the District Magistrate as well as the Allahabad Development Authority has been challenged. It has been stated that pillars have bee fixed not at highest flood level, rather they have been fixed at sea level. Along with the affidavit several photographs have been enclosed from Annexure 4 to 19 which bring on record various relevant facts including the places where the pillars have been fixed alleging to be on highest flood level as well as various photographs showing the unabated construction at Jhunsi side of the Allahabad. The photographs of various constructions by Satyam Kriyayog have also been brought on the record and it is submitted that said constructions are being made within 500 meters from highest flood level in breach of the direction of this Court.

We have issued direction to the District Magistrate, Allahabad as well as the Vice Chairman of the Allahabad Development Authority for marking the highest flood level. From the affidavit which has been brought on the record as well as form the submission made by learned Amicus Curiae it appears that marking of highest flood level is not in accordance with the highest flood level of 1978 and consequently the pillars at 500 meters from highest flood level are also not correctly placed. In our earlier order, we have noted the objections raised against highest flood

level and marking of 500 meters from the said level and the said objections were to be considered subsequently. The District Magistrate as well as the Vice Chairman of the Allahabad Development Authority shall file reply to the supplementary affidavit filed by Sri M.A. Haseen, Advocate and the objection regarding highest flood level and marking at 500 metres shall be considered thereafter. We further direct the Allahabad Development Authority to ensure that no further constructions be made by any person, institute or society within 500 meters from highest flood level and the photographs which have been filed along with the affidavit be verified and if it is found that constructions are being made within the prohibited area, the same be stopped.

An affidavit has been filed on behalf of Sri Ashok Kumar Srivastava, Superintending Engineer, Irrigation Works Circle, Allahabad stating that for purchase of two dredging machine the tender process is already proceeded and Part-A of the tender has been opened on 13th August, 2012 and the technical bid has been opened on 16th August, 2012 and thereafter the financial bid is scheduled to be opened on 28th August, 2012. It is stated that after completion of bidding process, the dredging machine shall be shortly acquired and appropriate progress in this regard shall be brought on the record by the next date.

An affidavit has been filed on behalf of Sri Shree Prakash Singh, Special Secretary, Urban Development Department, Lucknow in which it has been stated that matter to prohibit use of polythene in the whole district of Allahabad for a specified period in view of Kumbh Mela–2013 is under consideration of the State Government. We have already noticed that notification has been issued prohibiting use of polythene within two kilometres radius of river

Ganga and in our earlier order it was observed that looking to the Kumbh Mela–2013, the State Government may consider to prohibit the use of polythene in the entire district of Allahabad. We are of the view that State Government instead of considering prohibition for use of polythene for a specified period, may consider prohibition of polythene for indefinite period.

An application has been filed by Learned Amicus Curiae along with the affidavit of Sri Rajesh Kumar Srivastava, Tahsildar in Allahabad Development Authority in which it has been pointed out that earlier the officer had taken certain actions in pursuance of the order of this Court dated 22nd April, 2011 as well as other orders of this Court, who is being victimised by the respondents despite the fact that matter is under consideration in this Court. We have directed the learned Additional Chief Standing Counsel to obtain instructions in this regard. He has stated that the said officer has been relieved on 16th August, 2012 as his deputation period was over. In view of serious allegation of taking action with intention to victimise the officer only due to action taken by him in compliance of the order of this Court, we are unhappy with the steps taken in this regard. We are of the view that such officers be not victimised. Learned Additional Chief Standing Counsel submits that officer was on deputation and after completion of his deputation period, he has been relieved. Learned Amicus Curiae in this regard submits that he will submit details of other officers who have not been relieved even after completion of their deputation period. We are of the view that since the matter regarding victimisation of the officer is under consideration before this Court, the officer be allowed to function at the place where he was functioning till yesterday i.e. 15th August, 2012. The learned Additional Chief Standing Counsel may file reply to the affidavit filed by Sri Rajesh Kumar Srivastava

and the matter will be further considered on the next date.

In pursuance of the order of this Court dated 13th July, 2012 the Managing Director, Ganga Pollution Control Unit, U.P. Jal Nigam, Allahabad has submitted a project report to the State Government for administrative and financial sanction and allotment of fund for installing CCTV cameras at CETP, STPs and Sewage Pumping Station at Kanpur. It has been stated that process for inviting tenders has already been initiated and shortly after receipt of administrative and financial sanction, the steps shall be taken for installation of CCTV cameras. By the next date progress report in this regard may be filed.

An affidavit has been filed by Municipal Commissioner, Nagar Nigam, Allahabad stating that in compliance of the order of this Court drains and Nalas from Ambedkar Crossing to Hanuman Mandir, Civil Lines have been restored. Certain photographs in this regard have also been brought on the record. Learned Amicus Curiae submits that entire drains and Nalas have not been restored and at several places drains have been left unattended. Learned Amicus Curiae further submits that in certain places encroachments have been made and there are several unauthorised constructions. We are of the view that learned Amicus Curiae may inspect the aforesaid places along with learned counsel for the Nagar Nigam and the Municipal Commissioner and submit a report by the next date. The Municipal Commissioner shall take appropriate steps for removal of encroachments and ensure that entire Nalas and drains have been restored.

Sri H.N. Tripathi, Advocate has filed an affidavit of Radhey Shyam, Regional Officer, U.P. Pollution Control Board, Kanpur. The

said affidavit be kept on the record and the same shall be considered on the next date.

Learned Amicus Curiae has also pointed out that in large number of roads in district Allahabad where roads are narrow and are of short width, the construction of divider has started further narrowing the road and causing great hardship to the traffic and the public in general. He further submits that several crossings in Allahabad City are being widened although there are no place in the crossing available and such widening shall hamper smooth functioning of the traffic. He submits that said work is being done in the name of beautification to utilise the fund received of Kumbh Mela-2013. We direct that no work in the name of beautification be undertaken unless the same is looked into and all technical aspects are considered. Learned Advocate General who is present in the Court, has assured the Court that he shall call all relevant officers in this regard and shall apprise the Court about the stand taken by the next date. We are of the view that till we consider the matter, no work regarding construction of divider and widening of crossings or any new crossing in Allahabad be undertaken until we consider the matter further.

Sri Pradeep Kumar, Advocate has pointed out that earlier this Court has made certain observations pertaining to low lying locality at Malviya Road and it was stated by the learned Standing Counsel that certain short term and long term plan are underway to tackle with the entry of sewage water in the low lying area. Learned Standing Counsel may obtain instructions and affidavit an affidavit as to what steps have been taken regarding the aforesaid plan.

Sri Ajay Bhanot , learned counsel for the Union of India,

submits that with regard to Kumbh Mela-2013, the Central Government has released fund under the head "STP" for carrying out the works at Allahabad to the extent of 70% and last of such instalments has been released on 31st March, 2012. Learned Amicus Curiae submits that State Government has not released its 30% share due to which the work progress is hampered. Learned Advocate General may obtain instructions and ensure that 30% share of the State is released and utilised in the project. Learned Additional Chief Standing Counsel shall also submit a status report regarding release of fund, construction of STPs and Pakka Ghats which are to be constructed at the banks of rivers Yamuna and Ganga.

List on 31st August, 2012 at 2 P.M.

Order Date :- 16.8.2012
Rakesh

O/e

Court No: 9 Group e (Hon. D.K.)
Nature of the Case
Admitted/Non Admitted
S.B./D.B.

IN THE HIGH COURT OF JUDICATURE AT ALLAHABAD

.....

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IN

Civil Misc. Application No. Of 2013
(Under Section 151 Civil Procedure Code)

On behalf of

Harish Chandra Research Institute
(Department of Atomic Energy)
Government of India, Chatnag Road,
Jhoosi Allahabd through its Registrar

Applicant

IN

PUBLIC INTEREST LITIGATION (PIL) 4003 Of 2006
(Under Article 226 of the Constitution of India)

DISTRICT ALLAHABAD

Re: Ganga Pollution

Petitioner

Versus

State of U.P. & others

Respondents

.....

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5.	Photostat copy of the order passed by Allahabad Development Authority	20.4.2012	3	45-46
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Dated: 15 March 2013

(G. K. SINGH) (V. K. SINGH)
Counsels for the Applicant
Chamber No. 89,
High Court Allahabad

IN THE HIGH COURT OF JUDICATURE AT ALLAHABAD

.....

Civil Misc. Application No. Of 2013
(Under Section 151 Civil Procedure Code)

On behalf of

Harish Chandra Research Institute
(Department of Atomic Energy)
Government of India, Chhatnag Road,
Jhunsi Allahabd through its Registrar

Applicant

IN

PUBLIC INTEREST LITIGATION (PIL) 4003 Of 2006
(Under Article 226 of the Constitution of India)

DISTRICT ALLAHABAD

Re: Ganga Pollution

Petitioner

Versus

1. State of U.P. through Secretary
Environment, Government of U.P.
Secretariat, Lucknow (U.P.)

2. The Commissioner, Allahabad Division
Allahabad

3. The Collector, Allahabad, District
Allahabad

4. The Mela Officer Incharge, Magh Mela
Allahabad

5. State Board for Prevention & Control of Water Pollution, through its Chairman

6. Union of India through the Ministry of Environment, New Delhi

7. Union of India through Ministry of Water Resources, New Delhi

8. Union of India through Secretary, Ministry of Environment, Government of India, New Delhi

9. State of Uttaranchal through Chief Secretary Civil Secretariat, Government of Uttaranchal Dehradun

10. Chairman, Central pollution Control Board Ministry of Environment, Government of India New Delhi

11. Tehri Hydro Development Corporation Limited, Registered Office at Bhageerath Bhawan (Top Terrace) Bhageerathi Puram District Tehri (Garhwal)-249001, through its Managing Director

12. State of U.P. through Chief Secretary, Government of U.P. Lucknow

13. Principal Secretary, Ministry of Irrigation Government of U.P. Luckow

14. Principal Secretary, Local Bodies, Jal Sansthan, Government of U.P. Lucknow

15. Nagar Nigam, Allahabad

16. Nagar Nigam, Kanpur

17. Union of India, through Ministry of Urban' Development, New Delhi

18. M/s IVRCL Infrastructures & Projects Ltd. Hyderabad

Respondents

.....

To

The Hon'ble the Chief Justice and his other Companion Judges of the aforesaid High Court.

The humble application on behalf of the applicant named above Most Respectfully showeth as under :

1. That all necessary facts for the purpose of this application have been mentioned in the accompanying affidavit, which forms part of this application.

2. That this application shall be filed today on 15/03/2013 before the Registry and shall be listed on 19/03/2013 Copy of this application along with documents appended thereto have been served upon the counsel for the petitioner.

3. That in view of the facts and circumstances narrated in the accompanying affidavit it is expedient in the interest of justice that the applicant-Institute be allowed to complete the constructions which had already began pursuant to the sanction order dated 20.4.2010 passed by Allahabad Development Authority so that justice be done.

4.

PRAYER

It is, therefore, most respectfully prayed that this Hon'ble Court may graciously be pleased to allow the applicant-Institute to complete the constructions which had already began pursuant to the sanction order dated 20.4.2010 passed by Allahabad Development Authority so that justice be done and/or be pleased to pass such other and further orders as this Hon'ble Court may deem fit and proper in the facts and circumstances of the case.

Dated: 15 March 2013

(G. K. SINGH) (V. K. SINGH)
Counsels for the Applicant
Chamber No. 89,
High Court Allahabad

Court No.: ____ Group
Nature of the Case: P.I.L.
Admitted/D.B.

IN THE HIGH COURT OF JUDICATURE AT ALLAHABAD

.....

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IN

Civil Misc. Application No. **Of 2017**

(Under Section 151 Civil Procedure Code)

On behalf of

Harish-Chandra Research Institute
(An Autonomous Institution under the
Department of Atomic Energy, Government of India),
Chhatnag Road,
Jhunsi, Allahabad through its Registrar
.....**Applicant**

IN

PUBLIC INTEREST LITIGATION (PIL) 4003 OF 2006

(Under Article 226 of the Constitution of India)

District-Allahabad

Re: Ganga Pollution .....**Petitioner**

Versus

State of U.P. & others .....**Respondents**

****

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Place: Allahabad
Dated: 22/08/2017

(Ravi P. Pandey)
Advocate
A.O.R No. A/R-1874/2013
Counsel for the Applicant
Chamber No. 139, New Building
High Court Allahabad
Mobile No. 9452003133

Note:- **Sri M.C. Chaturvedi, Senior Advocate,** has consented to appear in the aforesaid case on behalf of the Applicant-Institute.

(Ravi P. Pandey)
Advocate

IN THE HIGH COURT OF JUDICATURE AT ALLAHABAD

.....

Civil Misc. Application No. of 2017

(Under Section 151 Civil Procedure Code)

On behalf of

Harish-Chandra Research Institute
(An Autonomous Institution under the
Department of Atomic Energy, Government of India),
Chhatnag Road,
Jhunsi, Allahabad through its Registrar

.....**Applicant**

IN

PUBLIC INTEREST LITIGATION (PIL) 4003 OF 2006

(Under Article 226 of the Constitution of India)

District-Allahabad

Re: Ganga Pollution .....**Petitioner**

Versus

1. **State of U.P.** thorough the Secretary,
   Environment, Government of U.P.
   Secretariat, Lucknow (U.P.)
2. **The Commissioner,** Allahabad Division, Allahabad
3. **The Collector**, Allahabad, District Allahabad
4. **The Mela Officer Incharge**, Magh Mela Allahabad
5. **State Board for Prevention & Control of Water Pollution**, through its Chairman

6. **Union of India** through the Ministry of Environment, New Delhi

7. **Union of India** thorough Ministry of Water Resources, New Delhi

8. **Union of India** through Secretary, Ministry of Environment, Government of India, New Delhi

9. **State of Uttaranchal** through Chief Secretary, Civil Secretariat, Government of Uttaranchal Dehradun

10. **Chairman**, Central Pollution Control Board, Ministry of Environment, Government of India New Delhi

11. **Tehri Hydro Development Corporation Limited,** Registered Office at Bhageerathi Bhawan (Top Terrace) Bhageerathi Puram District Tehri (Garhwal)-249001, Thorough its Managing Director

12. **State of U.P**. through Chief Secretary, Government of U.P., Lucknow

13. **Principal Secretary**, Ministry of Irrigation Government of U.P., Lucknow

14. **Principal Secretary**, Local Bodies, Jal Sansthan, Government of U.P., Lucknow

15. **Nagar Nigam,** Allahabad

16. **Nagar Nigam**, Kanpur

17. **Union of India**, through Ministry of Urban Development, New Delhi

18. **M/s IVRCL Infrastructures & Projects Ltd.** Hyderabad

..... **Respondents**

3

To

The Hon'ble Chief Justice and his other Companion Judges of the aforesaid High Court.

The numble application on behalf of the applicant named above Most Respectfully Sheweth as under:-

1. That all necessary facts for the purpose of this application have been mentioned in the accompanying affidavit, which forms part of this application.

2. That this application shall be filed today on..... before the Registry and shall be listed on.....Copy of this application, along with documents appended thereto, have been served upon the counsel for the petitioner.

3. That in view of the facts and circumstances narrated in the accompanying affidavit it is expedient in the interests of justice that the Applicant-Institute be allowed to complete the construction project it began pursuant to the sanction order dated 20.4.2010 passed by the Allahabad Development Authority.

PRAYER

It is, therefore, most respectfully prayed that this Hon'ble Court may graciously be pleased to allow the Applicant-Institute to complete the construction project it began pursuant to the sanction order dated 20.04.2010 passed by the Allahabad Development Authority so that justice be done and/or be pleased to pass such other and further orders as this Hon'ble Court may deem fit and proper in the facts and circumstances of the case.

Place : Allahabad
Dated: 22/08/2017

(Ravi P. Pandey)
Advocate
A.O.R. No. A/R-1874/2013
Counsel for the Applicant
Chamber No. 139, New Building
High Court Allahabad
Mobile No. 9452003133

Note:- **Sri M.C. Chaturvedi, Senior Advocate,** has consented to appear in the aforesaid case on behalf of the Applicant-Institute.

(Ravi P. Pandey)
Advocate

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL

PRINCIPAL BENCH AT NEW DELHI

I.A. No. 372 OF 2024

IN

O.A. No. 515 OF 2023

IN THE MATTER OF:

Ganga Pollution …Applicant

Versus

State of UP & Ors. …Respondent(s)

REPLY OF THE PRAYAGRAJ DEVELOPMENT AUTHORITY TO THE I.A. NO. 372 OF 2024 IN O.A. NO. 515 OF 2023, FILEDBY RESPONDENT NO. 26 i.e. OMAXE PANCHAM REALCON PVT. LTD.

MOST RESPECTFULLY SHOWETH:

1. The present matter was listed on 19.09.2024 before this Hon'ble Tribunal and a period of 4 weeks were granted to parties to file reply to the Interlocutory Application No. 372 of 2024 filed by M/s Omaxe Pancham Realcon Pvt. Ltd. (**OMAXE**) and the matter is listed on 12.11.2024.

2. In compliance of the directions passed by this Hon'ble Tribunal, Prayagraj Development Authority (Deponent Authority) is filing the

instant reply.

3. In year 2007, OMAXE applied for development of Hi-Tech Township which was notified on 16.08.2007 by a policy notified by Government of Uttar Pradesh. OMAXE was selected for the development of Hi-Tech Township for an area of 1535.12 acres in Prayagraj which was notified to Deponent Authority by the Government of Uttar Pradesh.

4. That the brief history of the policy under which the Hi-Tech Township Project was being developed is as under:

i. On 29.07.1998, a National Housing and Habitat Policy was formulated by Ministry of Urban Development and Poverty Alleviation, Govt. of India. In the preamble of the policy, it was observed there is the housing shortage in the country which was estimated to be 13.66 million units, out of which 7.57 million units would be urban areas. More than 90% of this shortage is for the poor and low income category. It was estimated that an investment of Rs.151000 Crore would be required to bridge this deficit, but not more than 25 % of this will flow from banks, financial institution, Central and State Government. It was further estimated that Rs.2,50,000 Crore

shall be required for urban infrastructure during the 9th plan, but not more than 10% would be available from the Government resources. Therefore, no significant head way can be achieved without massive participation of the private sector. This called for the creation of enabling environment by way of legal and regulatory reform and fiscal concessions to encourage non- government sector to take up land assembly, housing construction and investment in infrastructure services. The copy of the National Housing and Habitat Policy, 1998 is annexed herewith and marked as **ANNEXURE A- 1.**

ii. That the Utter Pradesh Urban Planning and Development Act, 1973 was enacted to provide for the development of certain areas of Uttar Pradesh according to plan and for the matters ancillary thereto. One of the reason for the enactment was that relating to the problem of town planning and urban development, which needed to be tacked resolutely and therefore, the act was enacted. In pursuance of the above, Prayagraj Development Authority (formerly known as Allahabad Development Authority) was

constituted to promote and secure the development of the development area according to the plan and generally to do anything necessary or expedient for purposes of such development for the purpose incidental thereto.

iii. That in pursuance of the National Housing and Habitat Policy, 1998, the Government of Uttar Pradesh issued a policy dated 22.11.2003 in tune with the National Housing and Habitat Policy, 1998. The copy of the policy dated 22.11.2003 is annexed herewith and marked as **ANNEXURE A-2.**

iv. That in meantime the Government of Uttar Pradesh vide G.O. dated 23.09.1998 and 16.11.1988 in compliance of the direction issued in the WPIL No.2155/97 titled Rakesh Kumar Jaiswal Vs State of U.P. directed that no construction within 200 mtr from the edge of the river would be allowed and accordingly the map should be passed. Further the GO directed that it must be ensured that no flow of sewer or drainage to end up in river ganga without treatment of the same. This was reiterated vide GO dated 05.02.2000 and

31.07.2000, issued by Go UP. The copy of the GO dated 05.02.2000 & 31.07.2000 are annexed herewith and marked as **ANNEXUREA-3.**

v. In Board Meeting dated 27.12.2004, the Deponent Authority vide Resolution No. 1318 resolved that it would adopt G.O. dated 31.07.2000 and it was also resolved that from future no construction activity would be permitted *within 200 meters from the highest flood level* of the river Ganges and the same would be implemented in the Master Plan 2021 which is enforceable. The copy of the Resolution No. 1318 is annexed herewith and marked as **ANNEXURE A-4.**

vi. The Deponent Authority in its 83rd Board Meeting dated 03.04.2005 deliberated upon the Resolution No. 1318 dated 27.12.2004 and finally decided/ resolved, vide it's Resolution no. 1337 that the criteria regarding prohibition from construction activity would be the same as was notified by G.O. dated 31.07.2000. Therefore, in the said 83rd Board Meeting, the Deponent Authority had categorically and finally adopted the *G.O. dated 31.07.2000 in respect to the*

subject of construction activity within 200 meters from the river bankwith conditional exemption given to certain maths, temples and ashrams. That the aforesaid Resolution dated 03.04.2005 was adopted and implemented in the Master Plan for 2021 at Page 125 at Paragraph V of the said Master Plan. The development activity under the Master Plan 2021 therefore, has to be in accordance with the criteria laid down under the G.O. dated 31.07.2000 which categorically prohibits construction activity within 200 meters from the river bank. The copy of the Resolution No. 1337 dated 03.04.2005 is annexed herewith and marked as **ANNEXURE A-5.**

vii. That vide notification dated 17.09.2007, Hi-Tech Township Policy, 2007 for the development of Hi-Tech Township through private investment in Uttar Pradesh was promulgated and the same was communicated to the Housing Commissioner of Uttar Pradesh. Housing and Development Board, U.P. and all the Vice Chairman for all development authorities across State of Uttar Pradesh. The copy of the Hi-Tech Township Policy, 2007 is annexed

herewith and marked as **ANNEXURE** A-6.

viii. That on 03.07.2009, in view of the proposals submitted by the developers, Government of Uttar Pradesh informed the Lucknow Development Authority, the Deponent Authority (i.e. Prayagraj Development Authority) and Bulandshahar Development Authority that following developers were selected under the 2007 Policy:

S.No.	**Name of Company**	**Districtof Proposed Township**	**Proposed Township Area (in acres)**
1.	*GarvBuildtechPrivateLimited*	*Lucknow*	*2700*
2.	*PanchamRealcon Pvt Limited*	*Allahabad*	*1535.12*
3.	*RiwaazInfratechPvt Limited*	*Bulandshahar*	*3601.19*

ix. That in view of the aforesaid proposal thereby communicating that OMAXE has been selected for developing Hi-Tech Township in the District Prayagraj (erstwhile 'Allahabad'), the Memorandum of Understanding (MOU) dated 05.09.2009 was signed between the Deponent

Authority and OMAXE for 1535.12 acres of land. The copy of the Memorandum of Understanding (MOU) dated 05.09.2009 signed between the Deponent Authority and OMAXE for 1535.12acres of land is annexed herewith and marked as **ANNEXURE A-7.**

x. That in pursuance of the MOU as above, the Detailed Project Report of the project was prepared by OMAXE and was sent to the Deponent Authority for approval, which was approved by the Deponent Authority on 24.10.2009 in terms of the prevalent rules and regulations, i.e. in accordance with the GO of the State of U.P. thereby prohibiting the construction within 200 mtr from the edge of the river ganga and also in accordance with the newly enacted Building by Laws, 2008, in which under clause 3.1.10 it was provided that except in accordance with the consultation with INTACH, for repair and renovation and for heritage buildings, no activity will be allowed within 200 mtrs from the bank of river ganga. The copy of the C Approved DPR dated 24.10.2009 is annexed herewith and marked as **ANNEXURE A-8.**

xi. That the development authority sanctioned the DPR of the OMAXE in accordance with the above rules which were prevalent at the relevant period of time. Also the FAR was accordingly proposed and the land uses were sanctioned.

xii. This project was to be developed in three phases, supra, the details of which are as under:

S. No.	Phases	Area(Inacres)
1	Phase-I	726.60
2	Phase-II	477.18
3	Phase-III	333.34
	Total	1535.12

xiii. The Development Agreement between the parties i.e., OMAXE and Deponent Authority was signed on 03.12.2009 for 726.60 acres for land DA-1. The copy of the development agreement dated 03.12.2009 is annexed herewith and marked as **ANNEXURE A-9.**

xiv. That OMAXE applied for the completion certificate for Sector -1 (part of Hi-Tech Township) comprising in approx 96 acres of land under section 15A of the U.P. Urban Planning and Development Act, 1973 on 31.03.2011. The copy of the request letter dated 31.03.2011 by OMAXE for the issuance of Completion Certificate is annexed herewith and marked as **ANNEXURE A-10.**

xv. That in the meantime when the request letter for issuance of completion certificate under section 15A of the Act of 1973 was under consideration by the Deponent Authority, the Hon'ble High Court of judicature at Allahabad in Writ Petition No. 4003/2006 titled In RE: Ganga Pollution vs State of U.P. and Ors. passed the order dated 22.04.2011 whereby the Hon'ble High Court directed as under:

"… *Ganges plain in the northern India has been always treated to be most fertile area. Due to increase of population enormous and unregulated and unplanned constructions have begun on both sides of river Ganges, which is continuous and unabated process. It has been noticed that in highest flood of 1978, large number of villages on the bank of river Ganges had submerged. Learned Amicus Curiae has*

brought on the record a booklet issued by the District Administration Allahabad 'Badh Prabandh Yojna 2011-2012' in which flood affected villages have been mentioned and the villages Jahangirabad and Mavaiya, where the sewage farm land is situate have been included in the villages which are affected by Ganga flood.

Unabated and enormous construction on the river bank is also one of the source of increasing pollution in river water and a source for throwing untreated sewage dirt in the river with no mechanism to check. As noticed above, Allahabad Development Authority while rejecting the application of Sahara Commercial Corporation for permitting the change of land use as residential in villages mentioned therein, recorded that within 200 meters from highest flood level, construction is wholly prohibited and within next 300 meters permission be granted only in special circumstances. Restriction in making construction of housing colony within 500 meters of highest flood level of river is necessary and mandatory to check the further pollution which may be caused by such housing colonies. We have noticed that in spite of repeated directions, neither the Nagar Nigam nor the State of U.P. has been able to come with any measure to check release of untreated sewage in river Ganges. 134 MLD untreated sewage, according to own case of Nagar Nigam is being discharged in river Ganges daily and according to the respondent new sewage treatment plant of

the capacity 60 MLD shall be commissioned by 2013. New sewage treatment plant which has been mentioned and proposed has yet not started and we have reasonable doubt as to whether it will be able to function by 2013. Stopping construction up to 500 meters from highest flood level on the banks of both the rivers Ganges and also on the part of river Yamuna adjoining Sangam has to be directed in the city of Allahabad. The earlier order dated 28.3.2011 however requires modification.

We thus direct that no construction shall be undertaken by the Allahabad Development authority or by any private builders within 500 meters of highest flood level of river Ganges in city of Allahabad as well as part of river Yamuna adjoining the river Ganges (Sangam). The Allahabad Development Authority and the district administration shall ensure that no construction be made in the aforesaid area. We however, give liberty to any aggrieved person to make appropriate application in this petition with regard to above restrictions, if he feels so aggrieved."

The copy order dated 22.04.2011 passed by the Hon'ble High Court of Judicature at Allahabad is annexed herewith and marked as **ANNEXURE A-11.**

xvi. That interim order dated 22.04.2011 keeps continuing till date and continuation of this order, the process of

identification, demarcation and delineation of HFL was carried out. Nevertheless, after the promulgation of River Ganga (Rejuvenation, Protection & Management) Authorities Order, 2016, the task for identification of Flood Plain Zone (FPZ) isin progress.

xvii. That out of the total 1535.12 acres of land, owing to reduction in area, revised DPR/ Layout for 232.50 acres of land was submitted by the OMAXE with the Deponent Authority on 25.04.2022, which was approved on 09.06.2022. The copy of the revised DPR is annexed herewith and marked as **ANNEXURE A-12.**

xviii. That due to above-mentioned major changes/ modification in the project, a newly submitted DPR pertaining to 232.50 acres land was submitted by OMAXE with the Deponent Authority revising the earlier Layout Plan of the project on 26.07.2022. Since Phase-1 over the approx. 96 acres of land of the project was already completed (as CC was applied by OMAXE u/s 15A of the Act which is pending consideration by the Deponent Authority) and the allotments have already

been made OMAXE, however due to interim direction passed by this Hon'ble Court, the Deponent Authority has not issued Completion Certificate under section 15A of the Act of 1973 for sector-1 project to OMAXE.

xix. That no decision by the deponent authority has been taken on the correspondence by the M/s Pancham Realcon Pvt. Ltd. made to the deponent authority vide letter dated 31.03.2011 for the grant of completion certificate under section 15A of the Act, 1973 for Sector-1 project in letter and spirit compliance of the orders dated 22.04.2011 passed by the Hon'ble High Court of Judicature at Allahabad. The order dated 22.04.2011 of the Hon'ble High Court, which was communicated to M/s Pancham Realcon Pvt. Ltd. vide letter dated 03.05.2011 inter- alia calling upon M/s Pancham Realcon Pvt. Ltd. to stop works, if any and become party to the litigation before the Hon'ble High Court of Judicature at Allahabad by filing appropriate application/ Counter Affidavit to present their cause in the *lis*.

xx. That the completion certificate has yet not been issued to the

applicant OMAXE and is pending with the deponent Authority in compliance of the order dated 22.04.2011 of the Hon'ble High Court whereby the Hon'ble Court directed that no construction shall be undertaken by the Allahabad Development authority or by any private builders within 500 meters of highest flood level of river Ganges in city of Allahabad as well as part of river Yamuna adjoining the river Ganges (Sangam). The Allahabad Development Authority and the district administration shall ensure that no construction be made in the aforesaid area.

xxi. It is submitted that OMAXE/ applicant was developing the township in terms of the guidelines & rules relating to exclusion of constructions near river, as was made applicable by the Govt. of UP and prevalent at the relevant point of time.

5. That the Town And Country Planning Organisation, Ministry of Housing and Urban Affairs, Government of India issued River Centric Urban Planning Guidelines, 2021, whereby it has been circulated that RRZ draft policy defines

the area for protection from further encroachments as the “active flood plain”, which will be marked by the high flood line. This, in entrenched stretches will be the available space in the valley. In embanked stretches, this would be the area between two embankments or roads along a river acting as an embankment. In other stretches of the river, the active flood plain will be the 100-year flood line, the land which gets flooded during a 100- year storm. The idea was to establish a no-development zone not less (in area) than the active flood plain. Under the head of Lateral zonation of river banks “Active Flood Plain” is defined as High Flood Line (HFL) which in entrenched / embanked stretches of a river stretch shall be the available space (including the river channel/s) in the valley of entrenched stretch or between two embankments or between existingroads oneither side along a riveracting as anembankment. In other stretches of the river, HFL/ active flood plain shall be the 100- year flood line. The true copy of the River Centric Urban Planning Guidelines, 2021 issued by the Town and Country Planning Organisation, Ministry of Housing and Urban Affairs,

Government of India is annexed herewith and marked as **ANNEXURE A-13.**

6. That it is most respectfully submitted that the HFL demarcation has already been done for the District of Prayagraj. However, the Flood- plain zone demarcation in compliance of the River Ganga Rejuvenation Order of 2016 is in progress and being done by the competent authorities.

7. That the answering deponent, on 11.05.2011, filed the Counter- Affidavit vis-à-vis an Application for the Vacation of Stay order dated 22.04.2011 passed by the Hon'ble High Court of Judicature at Allahabad, which is available on record of the Hon'ble Tribunal on Page No. 3732, which was numbered as: IA/26/2006 (148387/2011). Prior to it, the answering deponent filed an application for the vacation of stay on 22.04.2011, which was numbered as IA/3/2006 (125684/2011), which was also not decided for vacating the stay order dated 28.03.2011.

8. That to get the vacation of stay, the Deponent Authority went to the Hon'ble Supreme Court vide SLP (C) No.

22780-2011 titled Allahabad Development Authority Tr. Vice Chairman Vs. RE. Ganga Pollution H.B. Ji Maharaj, which was disposed-off as withdrawn with the liberty that the Authority would like to move an application before the High Court for vacation of the orders impugned in these petitions. Accordingly, the Special Leave Petitions were dismissed as not pressed. The Hon'ble Supreme Court further clarified that they have not expressed any opinion on the merits of the contentions raised in these petitions as also on the application proposed to be filed before the High Court. The copy of the order dated 08.08.2011 passed by the Hon'ble Supreme Court in SLP (C) No. 22780-2011 titled Allahabad Devt. Auth. Tr. Vice Chairman Vs. Re. Ganga Pollution H.B. Ji Maharaj is annexed herewith and marked as **ANNEXURE A-14.**

9. That in addition to the project of the applicant, several important projects, i.e. part constructions in the Harish Chandra Research Institute (Deptt. of Atomic Energy, Govt. of India), housing projects of the deponent authority for all segments of the people under New Prayagam Scheme.

10. That it is worth mentioning that the issue of 500 Mtr comes from the confusion, which, most humbly being submitted was the mis-reading by the Ld. Amicus on a report presented before the Hon'ble High Court. It is most respectfully submitted that at the relevant point of time, Master Plan-2021 was being drafted. Sahara India applied for the change of land-usage as commercial in Mauja Mavaiya and Mavaiya Devrakh Uperhar, Tehsil- Karchana, Allahabad for the total land area 133 acres. This proposal was brought before the Board of Allahabad Development Authority, whereby resolution Item No. 45 was deliberated. Now the Hon'ble High Court proceeded on the erroneous pretext of complete bar of 500 Mts from river tat/ river edge by the ADA. That the answering respondent Authority submits that Item no. 45 appearing at page no. 200 of the Master Plan document is a part of the objections and suggestions tendered by the committee constituted to discuss the draft Master Plan 2021. A perusal of page 170 of the Master Plan itself to reveal that while column no. 1 relates to name and address of the person, column no. 3 relates to the objections

and suggestion of the person concerned upon which in the next column contains the departmental note and lastly the recommendations of the committee have been contained. A conjoint reading of page 170, 200 and 201 would therefore, leave no room of doubt that serial no. 45 was actually a suggestion submitted by Mr. S. Faizal, Manager, Sahara India Commercial Company Ltd., Lucknow wherein in the next column thefalse suggestion of Mr. S. Faizal has been mentioned. In the next column thereafter is contained the departmental note and in the last column the recommendations of the committee to examine the suggestions and objections has been mentioned.

11. That suggestions/objections of Mr. S. Faizal contained at serial no. 45 came to be considered in the 83rd meeting of the Authority itself dt. 3.4.2005. The agenda note placed before the Authority in the meeting dt. 3.4.2005 as well as the resolution no. 1337 resolved by the Authority in the said meeting are clearly mentioned at page 168 of the Master Plan document.

12. That perusal of page 168 would show that the recommendation made by the committee while dealing with the suggestions and objections of Mr. S. Faizal at serial No. 45 recommending restrictions in the raising of the construction upto level of 500 Mtr from the highest flood level was not accepted by the Authority and consequently the recommendation made by the committee was neither accepted nor it could be treated to be a decision by the competent authority for the said premises.

13. That the decision contained at page 168 is based upon the Government Order issued on 31.7.2000 of the State Government which has been annexed, at page 166 of the Master Plan document.

14. That from perusal of the above decision it is clear that the ultimate decision taken by the Authority on the issue relating to imposing of restrictions for raising constructions within a specified distance from the river itself was confined only to the extent of 200 meters from the bank (Nadi Tat) of the river itself.

15. That the Authority therefore, had no point of time ever to any decision to restrict raising of construction upto level of 500 meters from thehighest flood level in the final text Master Plan 2021 which is enforced and operative as on date. The contrary suggestion made by the learned Amicus Curiae was based on a complete misreading and misconstruction of the Master Plan document itself and therefore such stand is liable to be discarded. A true copy of the Master Plan-2021 is annexed herewith and marked as **ANNEXURE A-15.**

16. That the deponent Authority has already allotted plots to nearly 1000 plots holders in the New Prayagam Scheme and the development of High-Tec Township has also been permitted by the Authority as per law which specifically compliance with the provisions of Master Plan and also ensures that the holy river Ganga and Yamuna are not polluted by any means on account of development of the aforesaid two colonies. It is again reiterated that in the project of the New Prayagam Scheme no untreated water

beyond the permissible limit is to be discharged in the river and in the project of the High-Tech City no discharge whatsoever is to take place in river Ganga or Yamuna from the High-Tec City and the entire discharge of waste water would be treated and are cycled in the project area itself and consequently there would be no threat or damage to the sanctity and purity of the river itself.

17. That nothing material is concealed therefrom.

Prayagraj Development Authority
मुख्यनगर नियोजक / प्र०अधि० (त०स०)
प्रयागराज विकास प्राधिकरण
प्रयागराज

Through Counsel

(VIBHAV MISHRA)
Advocate-on-Record
Counsel for Prayagraj Development Authority

Place: New Delhi
Date:07.11.2024

Ministry of Urban Development and Puvarty Alleviation
Department of Urban Employment and Poverty Alleviation

NATIONAL HOUSING AND HABITAT POLICY, 1998

By 1997 the total housing shortages in the country was estimated to be 13.66 million units, out of which 7.57 million units would be in the urban areas. More than 90% of this shortage is for the poor and the low income category. It was estimated that an investment of Rs.1,51,000/- crores would be required to bridge this deficit, but not more than 25% of this will flow from banks, financial institutions, Central and State Governments. It was further estimated that Rs.2,50,000 crores shall be required for urban infrastructure during the Ninth Plan, but not more than 10% would be available from Government sources. Therefore no significant headway can be achieved without massive participation of the private sector. This called for creation of enabling environment by way of legal and regulatory reforms and fiscal concessions to encourage non-government sector to take up land assembly, housing construction and investment in infrastructure services.

The Government through a National Agenda declared HOUSING FOR ALL as a priority area and has set a target of construction of 2 million houses every year with emphasis on the poor and deprived, out of which 0.7 million houses shall be constructed in the urban areas.

With this backg round, the New National Housing and Habitat Policy (NHHP) was formulated in 1998. The Policy was laid before the Parliament on 29.07.1998.

Objectives

The Housing and Habitat Policy 1998 aims at:

- Creation of surpluses in housing stock either on rental or ownership basis
- Providing quality and cost effective shelter options, especially to the vulnerable groups and the poor
- Ensuring that housing, along with the supporting services, is treated as a priority and at par with infrastructure sector
- Removing legal, financial and administrative barriers for facilitating access to land, finance and technology
- Forging strong partnership between private, public and cooperative sectors to enhance the capacity of the construction industry to participate in every sphere of housing and habitat
- Using technology for modernising the housing sector to increase efficiency, productivity, energy efficiency and quality
- Empowering the Panchayat Raj institutions and village cooperatives to mobilise credit for adding to the housing stock

Role of all the Stake Holders

The NHHP 1998 lays down the role of all the stakeholders for achieving the goal of providing shelter to all.

The Central Government would

- take steps to bring in legal reforms including formulation of effective foreclosure laws.

www.[illegible].nic.in

Ministry of Urban Development and Poverty Alleviation
Department of Urban Employment and Poverty Alleviation

- devise macro economic policies to enable flow of resources to the housing and infrastructure sector.
- develop a debt market for housing and infrastructure fully integrated with the financial markets in the country
- set up a National Shelter Fund to meet the requirement of low cost funds for the housing needs of the poor
- promote research and development and transfer of technology for construction of houses
- evolve parameters for optimal use of available resources to promote development and growth in a sustained manner
- provide fiscal concessions for housing, infrastructure, innovative and energy saving construction materials and methods and also set up a regulatory mechanism to ensure that the concessions are correctly targeted and utilised.
- develop and enforce appropriate ecological standards to protect the environment and provide a better quality of life in human settlements.
- promote the creation of a secondary mortgage market.

The State Governments would

- liberalise the legal and regulatory regime to give a boost to housing and supporting infrastructure
- promote private sector and cooperatives in undertaking housing construction for all segments in urban and rural areas.
- undertake appropriate reforms for easy access to land
- facilitate training of construction workers by converging other development programmes through Building Centres and other agencies
- promote decentralised production and availability of building material
- empower the local bodies to discharge their responsibilities in regulatory and development functions.

The Local Authorities would

- identify specific housing shortages and prepare District Housing Action Plans for rural areas
- devise programmes to meet housing shortages and augment supply of land for housing, particularly for the vulnerable group
- plan expansion of both urban and rural infrastructure services
- enforce effectively regulatory measures for planned development.

The Public/Private Housing Finance Companies would

- redefine their role and move away from their traditional approach to housing finance.
- develop and expand their reach to meet the needs of people
- devise schemes to lend at affordable rates to those who are in dire need of housing finance support
- mobilise resources from provident funds, insurance funds, mutual funds etc. for house building activities.
- develop innovative instruments to mobilise domestic savings

Housing Boards/Corporations/Development Authorities and other public agencies would

- revamp their method of working and redefine their role for facilitating land assembly and development of infrastructure

Ministry of Urban Development and Poverty Alleviation
Department of Urban Empl[illegible] and Poverty Alleviation

- ? move away from [illegible] construction activity
- ? forge partnership[illegible] private sector and cooperatives for housing construction in a manner
- ? devise flexible s[illegible] eet the user's requirement

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Ministry of Urban Development and Poverty Alleviation
Department of Urban Employment and Poverty Alleviation

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Ministry of Urban Development and Poverty Alleviation
Department of Urban Employment and Poverty Alleviation

- ? move away from direct construction activity
- ? forge partnerships with the private sector and cooperatives for housing construction in an efficient manner
- ? devise flexible schemes to meet the user's requirement

The Corporate, Private and Cooperative Sectors would

- ? take the lead role in land assembly, construction of houses and development of amenities
- ? forge partnership with State Governments and local authorities for construction of houses
- ? collaborate with the State Governments to work out schemes for slum reconstruction on cross subsidization basis

Research, and Technology Transfer Organisations would

- ? direct research efforts to locally available raw materials
- ? reduce the use of scarce natural resources and replace them with renewable resources
- ? standardise the new technology for easy adoption by various public and private construction agencies
- ? promote energy efficiency in building materials and construction methods.
- ? promote use of renewable energy sources for the housing sector particularly, solar, bio-mass and waste based energy
- ? promote disaster mitigation techniques for new constructions as well as strengthening of existing houses to prevent continuing loss of housing stock and human lives from natural hazards like earthquakes, cyclones and floods
- ? disseminate information about new technologies and provide training to construction workers in the use of new technologies.

ANNEXURE A-2

संख्या: 6007 /9-आ-1-2003-31(9)/99

प्रेषक,

जे.एस. गिरा,
सचिव,
उत्तर प्रदेश शासन।

सेवा में,

1. आयुक्त,
आवास एवं विकास परिषद,
उत्तर प्रदेश।
2. समस्त उपाध्यक्ष,
विकास प्राधिकरण,
उत्तर प्रदेश।

आवास एवं शहरी नियोजन अनुभाग-1 लखनऊ: दिनांक 22 अक्टूबर, 2003

विषयः उत्तर प्रदेश में हाई-टेक टाउनशिप विकसित करने के लिए निजी पूंजी निवेश के प्रोत्साहन हेतु नीति निर्धारित किए जाने के सम्बन्ध में।

महोदय,

उपर्युक्त विषय पर मुझे यह कहने का निदेश हुआ है कि किसी राज्य के सर्वांगीण विकास के लिए शहरी विकास का ऐसा स्वरूप होना आवश्यक है जिसमें उच्च गुणवत्ता की जीवन पद्धति उपलब्ध हो। उत्तर प्रदेश सरकार द्वारा सम्पूर्णतया के विकास को आर्थिक प्रगति का एक मुख्य सेक्टर माना गया है, अतः प्रदेश में निवेशकों को आकर्षित करने के लिए जीवन की गुणवत्ता एक बुनियादी आवश्यकता है। इस हेतु प्रदेश के तीव्र गति से बढ़ रहे महानगरों में अत्याधुनिक सुविधाओंयुक्त टाउनशिप में बड़े पैमाने पर निजी पूंजी निवेश को प्राथमिकता के आधार पर प्रोत्साहित किया जाना आवश्यक है। जनगणना, 2001 के अनुसार प्रदेश की 28 प्रतिशत आबादी 10 लाख से अधिक जनसंख्या वाले 15 महानगरों यथा- कानपुर, लखनऊ, आगरा, वाराणसी, मेरठ व इलाहाबाद में केन्द्रित है तथा वर्ष 1991-2001 के दशक में इन महानगरों की जनसंख्या वृद्धि दर सर्वाधिक (48.10 प्रतिशत) रही है।

2. शहरी जनसंख्या में हो रही वृद्धि एवं तीव्र नगरीकरण के परिणाम से महानगरों में अवस्थापना सुविधाओं एवं आवास की सम्भावित आवश्यकताएं गम्भीर होती जा रही हैं। विकास प्राधिकरणों तथा अन्य शासकीय अभिकरणों के पास वित्तीय संसाधनों का अभाव एवं अन्य देनदारियों होने के कारण बड़े पैमाने पर भूमि का विकास कार्य भूमि के अनुरूप निजी क्षेत्र सम्पत्तियाँ सृजित किया जाना सम्भव नहीं है। ऐसी स्थिति में नगरीय क्षेत्र में नियोजित रूप से आवासीय सुविधाओं के प्रावधान हेतु निजी पूंजी निवेश को प्रोत्साहित किया जाना एक मात्र विकल्प प्रतीत होता है।

3. राज्य आवास नीति के अनुसार आवास सेक्टर में निजी पूंजी निवेश के प्रोत्साहन पर विशेष बल दिया गया है, परन्तु प्रदेश के नगरीय क्षेत्र में भूमि सम्पत्ति मात्रा में उपलब्ध न होने के कारण निजी क्षेत्र द्वारा अभी तक अधिकांश आवास [illegible]

जनकि निजी क्षेत्र में अन्तर्निहित प्रतिस्पर्धिता, व्यावसायिकता, पारिश्रमिकता, सक्षमता एवं हि[illegible] संसाधन जुटाने की अपरिमित क्षमता उपलब्ध है, जिसका उपयोग नहीं हो सका है। वर्तमान आर्थिक उदारीकरण एवं निजीकरण की नीति के परिप्रेक्ष्य में आवासीकरण के क्षेत्र में सरकार की भूमिका 'दाता' के स्थान पर 'सुविधादाता' के रूप में निर्धारित की गई है। अतः इस उद्देश्य की पूर्ति हेतु सरकार द्वारा एक सुविधापूर्ण एवं अनुकूल पर्यावरण का सृजन किया जाना अपरिहार्य है। उपर्युक्त उद्देश्य की पूर्ति हेतु सरकार द्वारा बड़े नगरों जैसे लखनऊ, कानपुर, गाजियाबाद, आगरा, बरेली, मुरादाबाद, सहारनपुर तथा अन्य प्रमुख कोरिडोर्स वाले नगरों में अन्तर्राष्ट्रीय मानकों के अनुरूप हाई-टेक टाउनशिप का विकास सम्भाव्यता के आधार पर प्रोत्साहित किया जाना आवश्यक है। ऐसे नगरों में पिकेटस, पर्यटन एवं सूचना प्रौद्योगिकी के प्रोत्साहन हेतु उच्च स्तरीय सिंगापुरी पर्यावरण उपलब्ध होना आवश्यक है।

4. प्रस्तावित प्रकरण के सम्बन्ध में उपर्युक्त नीति विन्दुओं के दृष्टिगत शासन स्तर पर सम्यक् विचारोपरान्त यह निर्णय लिया गया है कि निजी क्षेत्र में ऐसे हाई-टेक टाउनशिप का विकास किया जाय जिसमें न्यूनतम लगभग 750 करोड़ का निवेश और लगभग 1500 एकड़ भूमि का विकास 5 वर्ष की समयावधि में पूर्ण किए जाने का प्रस्ताव हो, निम्नानुसार नीतिगत पैकेज देकर निजी निवेशकों को प्रोत्साहित किया जाए:-

(1) टाउनशिप के विकास हेतु ख्याति प्राप्त एवं अनुभवी विकासकर्ता कम्पनियों (कम्पनी अधिनियम की धारा-3 में परिभाषित) को प्रस्ताव आमन्त्रित किए जाएंगे। विकासकर्ता कम्पनी का चयन वित्तीय क्षमता, तकनीकी योग्यता एवं अनुभव तथा कन्सेप्चुअल एवं 'प्री-फिजीबिलिटी रिपोर्ट' के आधार पर किया जाएगा। विकासकर्ता कम्पनी का विगत तीन वर्षों में औसतन वार्षिक टर्न ओवर रू. 100 करोड़ होना आवश्यक है।

(2) विकासकर्ता कम्पनियों के चयन हेतु राष्ट्रीय स्तर के समाचार पत्रों में प्रकाशित विज्ञापन के माध्यम से प्राप्त प्रस्तावों पर मुख्य सचिव की अध्यक्षता में गठित उच्च स्तरीय समिति द्वारा प्राप्त प्रस्तावों पर विचार किया जाएगा।

(3) टाउनशिप के निर्माण के लिए विकास प्राधिकरणों तथा उ. प्र. आवास एवं विकास परिषद् अथवा अन्य समिति अभिकरण द्वारा भूमि अधिग्रहण अधिनियम, 1894 अथवा उ. प्र. आवास एवं विकास परिषद अधिनियम, 1965 के अधीन भूमि का अर्जन राज्य सरकार के पक्ष में किया जाएगा और प्रतिकर का निर्धारण समझौता/भू-स्वामी से समझौते के आधार पर अथवा नियमावली के प्रावधानों के अन्तर्गत किया जाएगा। निगोशिएशन/समझौते में निजी विकासकर्ता को भी सम्मिलित किया जाएगा। विकासकर्ता कम्पनी द्वारा क्रय की सीधे भूमि क्रय की जा सकेगी। जिन प्रकरणों में समझौते के आधार पर प्रतिकर निर्धारित नहीं हो सकेगा उनमें भूमि अधिग्रहण अधिनियम, 1894 के प्रावधानों के अन्तर्गत जिलाधिकारी द्वारा नियमानुसार प्रतिकर की दर निर्धारित की जाएगी। भविष्य में भू-अर्जन की दर में किसी न्यायालय द्वारा वृद्धि किए जाने अथवा अर्जन सम्बन्धी किसी विवाद के परिणामस्वरूप उत्पन्न किसी भी देयता का वहन विकासकर्ता कम्पनी को होगा।

(4) विकासकर्ता कम्पनी द्वारा भू-अर्जन की समस्त लागत वहन की जाएगी परन्तु इस पैकेज हेतु जिलाधिकारी द्वारा निर्धारित 10 प्रतिशत अर्जन शुल्क से विकासकर्ता कम्पनी को छूट होगी।

(5) विकासकर्ता कम्पनी को भूमि के क्रय अथवा हस्तान्तरण, जो 90 वर्ष की लीज पर होगा, हेतु स्टैम्प ड्यूटी से छूट होगी, परन्तु भूमि विभाग के उपरान्त विक्रय की जाने वाली सम्पत्तियों पर स्टैम्प ड्यूटी एवं फ्री-होल्ड परिवर्तन शुल्क एवं भूमि मूल्य का 12 प्रतिशत अनुवर्ती विक्रय/फ्रीहोल्ड परिवर्तन के समय विकासकर्ता कम्पनी द्वारा अर्जनकर्ता अभिकरण को देय होगा।

(6) प्रस्तावित टाउनशिप का लैण्ड यूज स्ट्रक्चर जिसमें आवासीय, व्यवसायिक, संस्थागत, ग्रीन क्षेत्र तथा सामुदायिक सुविधाओं आदि हेतु प्रावधान शामिल होंगे प्रचलित महायोजना गाइड लाईन्स तथा बिल्डिंग बाईलाज के आधार पर किया जाएगा। प्रस्तावित टाउनशिप पर्यावरणीय दृष्टिकोण से 'सस्टेनेबल' होगा।

(7) विकासकर्ता कम्पनी द्वारा चयन के उपरान्त टाउनशिप का डिटेल प्रोजेक्ट रिपोर्ट (डी.पी.आर.) 180 दिन के अन्दर तैयार कर प्रस्तुत की जाएगी जिसमें प्रस्तावित टाउनशिप का ले-आउट प्लान, लैण्ड यूज प्लान, इन्फ्रास्ट्रक्चर एवं सर्विसेज प्लान, मानक एवं विशिष्टियां, कम्प्लीशन शेड्यूल, रिसोर्स मोबेलाईजेशन, सम्पत्ति प्रबन्धन तथा मार्केटिंग एवं प्रमोशनल आदि के प्रस्ताव शामिल होंगे।

(8) नियत प्राधिकारी द्वारा डी.पी.आर. पर 30 दिन के अन्दर अनुमोदन प्रदान किया जाएगा। विकासकर्ता कम्पनी को टाउनशिप के लैण्ड यूज में आवश्यक परिवर्तन की सुविधा इस शर्त सहित अनुपालन होगी कि किसी भी भू-उपयोग हेतु आरक्षित भूमि परियोजना प्रारम्भ होने के समय प्रचलित मानकों एवं गाइड लाईन्स के अन्तर्गत हो। प्रोजेक्ट रिपोर्ट का अनुमोदन ही टाउनशिप प्लान का अनुमोदन होगा जिसके अनुमोदन हेतु अलग से प्रक्रिया निर्धारित की जाएगी।

(9) विकासकर्ता कम्पनी द्वारा किसी किसी अतिरिक्त शुल्क का भुगतान किए जाने के सम्बन्धित समस्त आन्तरिक, बाह्य विकास कार्य डिटेल प्रोजेक्ट रिपोर्ट में निर्धारित मानकों एवं विशिष्टियों के अनुसार क्रियान्वित किए जायेंगे। प्रस्तावित टाउनशिप में कतिपय सुविधाएं जैसे-रोड फर्नीचर, स्ट्रीट लाईट, जलापूर्ति, ड्रेनेज, सीवरेज आदि की व्यवस्था हेतु विकासकर्ता कम्पनी द्वारा शासकीय अभिकरण को वास्तविक व्यय देय होगा। परन्तु प्रस्तावित टाउनशिप के निवासियों द्वारा विद्युत आपूर्ति की सामान्य सुविधाओं के उपयोग के लिए किसी प्रकार का बाह्य विकास शुल्क देय नहीं होगा।

(10) विकासकर्ता कम्पनी द्वारा सामुदायिक सुविधाओं यथा-पुलिस स्टेशन, फायर स्टेशन, पोस्ट आफिस, टेलीफोन एक्सचेन्ज, आदि के लिए भूमि निःशुल्क उपलब्ध कराई जाएगी। प्रस्तावित टाउनशिप के अन्तर्गत राज्य सरकार द्वारा उपयुक्त सुविधाओं की समयबद्ध स्थापना में सहायता दी जाएगी तथा पुलिस स्टेशन हेतु आरक्षित भूमि पर पुलिस स्टेशन निःशुल्क स्थापित किया जाएगा।

(11) भू-उपयोग नियोजन एवं निर्माण कार्यों में दैवी आपदाओं से प्रभावित हेतु शासन द्वारा निर्धारित नीतियों तथा बी.आई.एस. एवं आई.एस. के सुसंगत कोड का अनिवार्य-अनुपालन सुनिश्चित किया जाएगा।

(12) परियोजना का क्रियान्वयन डी.पी.आर. के अनुरूप, एवं समयों निर्धारित समय-सारिणी के अनुसार पूर्ण करने तथा आन्तरिक एवं बाह्य विकास कार्यों की गुणवत्ता सुनिश्चित करने के लिए शासन द्वारा विकास प्राधिकरण अथवा से प्र

आवास एवं विकास परिषद या किसी अन्य एजेन्सी को नामित किया जाएगा जो परियोजना क्रियान्वयन के कार्यों के पर्यवेक्षण हेतु विकासकर्ता कम्पनी के साथ अनुबन्ध निष्पादित करेगी।

(13) प्रोजेक्ट का क्रियान्वयन जी.पी.आर. के प्राविधानों के अनुरूप पूर्ण करने हेतु सरकार द्वारा नामित अभिकरण द्वारा परियोजना की 25 प्रतिशत पट्टाधृत भूमि के हस्तान्तरण का अधिकार अपने पास रखा जाएगा जिससे विकासकर्ता कम्पनी द्वारा यदि कोई कार्य अधूरा छोड़ा जाता है तो उसे पूर्ण कराया जा सके।

(14) स्थानीय निकाय की सेवाओं का हस्तान्तरण होने तक उनका रख-रखाव विकासकर्ता कम्पनी द्वारा स्वयं किया जाएगा जिसके लिए विकासकर्ता कम्पनी को रख-रखाव शुल्क वसूल करने का अधिकार होगा। टाउनशिप का जब तक स्थानीय निकाय को हस्तान्तरण नहीं हो जाता है, तब तक स्थानीय निकाय द्वारा टाउनशिप के अन्तर्गत गृहकर, जलकर, सीवरेज, वाटर, आदि की वसूली नहीं की जाएगी।

5. अतः अनुरोध है कि कृपया उपरोक्त व्यवस्थानुसार कार्यवाही सुनिश्चित कराने तथा वृत्त कार्यवाही से शासन को अवगत कराने का कष्ट करें।

भवदीय
ह०/-
जे.एस. मिश्र
सचिव

संख्या: 6007(1)/9-आ-1-2003-34वि/03 तद्दिनांक

1. प्रतिलिपि निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित
2. सम्बन्धित मण्डलायुक्त, उत्तर प्रदेश।
3. सम्बन्धित जिलाधिकारी, उत्तर प्रदेश।
4. सम्बन्धित भूमि अभ्याप्ति अधिकारी।
5. सम्बन्धित अध्यक्ष/जिलाधिकारी, विशेष क्षेत्र विकास प्राधिकरण।
6. आवास बन्धु।
7. गार्ड फाइल।

आज्ञा से,
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अमिताभ तिवारी
अनुसचिव

ANNEXURE A-3

संख्या–4503/9–आ–1–1998

प्रेषक,

श्री अतुल कुमार गुप्ता,
सचिव,
उत्तर प्रदेश शासन।

सेवा में,

1. आवास आयुक्त,
   उ.प्र. आवास एवं विकास प्राधिकरण, लखनऊ।
2. उपाध्यक्ष,
   समस्त विकास प्राधिकरण, उत्तर प्रदेश।
3. मुख्य नगर एवं ग्राम नियोजक
   नगर एवं ग्राम नियोजन विभाग, उ.प्र. लखनऊ।

आवास अनुभाग–1 लखनऊ : दिनांक : 16 नवम्बर, 1998

विषय : जनहित याचिका संख्या 2155/97 राकेश कुमार जैसवाल बनाम राज्य सरकार।

महोदय,

उपरोक्त विषय पर सम्यक विचारोपरान्त शासन द्वारा निर्णय लिया गया है कि :–

1. गंगा नदी पर किनारे बसे नगरीय क्षेत्र में विकसित होने वाली कालोनियों के तलपट मानचित्रों के अनुमोदन से पूर्व यह सुनिश्चित होना आवश्यक है कि कालोनी के सीवर तथा ड्रेनेज से नदी प्रदूषित न हो तथा ट्रीटमेन्ट के पश्चात ही से नदी में छोड़ा जाय।
2. ऐसे नगरों में नदी से 200 मीटर क्षेत्र में किसी भी प्रकार की कोई गतिविधि अनुमन्य न की जाए।
3. उक्त निर्णय निजी निर्माताओं के साथ–साथ आवास विकास परिषद तथा प्राधिकरणों पर भी शासन रूप से लागू होगा। अतः मुझे यह कहने का निर्देश हुआ है कि शासन के उक्त निर्णय का अनुपालन कड़ाई से सुनिश्चित किया जाये।

यह आदेश तत्काल प्रभावी होगा।

भवदीय,
अतुल कुमार गुप्ता
सचिव

कुमार गुप्ता,
प्रदेश शासन।

उपाध्यक्ष,
पर्यटन विकास प्राधिकरण,
उत्तर प्रदेश।

आयुक्त,
आवास एवं विकास परिषद,
लखनऊ।

मुख्य नगर एवं ग्राम नियोजक,
नगर एवं ग्राम नियोजन विभाग,
उत्तर प्रदेश, लखनऊ।

विषय-3

लखनऊ : दिनांक : 31 जुलाई, 2000

नदी तट पर बसे नगरों में किनारे से 200 मीटर तक किसी भी प्रकार की गतिविधियों अनुमन्य न किये जाने के प्रतिबन्ध को शिथिल किये जाने के सम्बन्ध में।

मुझे निदेशक शासनादेश संख्या-320/9-आ-3-2000-127 आच/99, दिनांक 5 फरवरी,2000 की ओर आपका ध्यान आकृष्ट करते हुये यह कहने का निदेश हुआ है कि गंगा नदी के तट के किनारे 200 मीटर तक लगाये जाने वाले प्रतिबन्धों की पुनर्भूमि को क्रियान्वित करने में है। दूसरी ओर यह भी तथ्य है कि वाराणसी व हरिद्वार जैसे प्रमुख तीर्थ स्थल गंगा के तट पर है और इन दोनों के तट पर धार्मिक मान्यताओं से जुड़े हुये घाट एवं आश्रम यहाँ की संस्कृति के अभिन्न अंग हैं। धार्मिक भावनाओं से जुड़े हुये स्थानों, जो सार्वजनिक सुविधाओं का ही एक भाग है, को पूर्णतः प्रतिबन्धित किया जाना उपयुक्त न होगा परन्तु गंगा नदी को बचाने के लिये भी समुचित व्यवस्था आवश्यक होगी।

उपरोक्त वर्णित स्थिति में शासनादेश दिनांक 5 फरवरी, 2000 द्वारा पूर्व में किये गये शिथिलीकरण के स्थान पर यह निर्णय लिया गया है कि गंगा नदी के किनारे ऐसे स्थानों का जो धार्मिक मान्यताओं से जुड़े हैं, जहाँ का स्वरूप प्रमुखतः तीर्थ है, वहाँ पर मठ, आश्रम, धर्मशाला निर्माण अतिपय शर्तों के अधीन अनुमन्य कर दिया जाय। यह शर्तें निम्नवत होंगी।

अधिकतम 35 प्रतिशत तथा तल क्षेत्र अनुपात (एफ०ए०आर०) 1.5 सार्वजनिक सुविधाओं के अतिरिक्त ही अनुमन्य हो।

प्रस्ताव को गंगा नदी अधिनियम के अन्तर्गत अनुमति के आवेदन के साथ एक योजना प्रस्तुत करनी होगी, जिसमें यह सुनिश्चित हो कि नदी का प्रदूषण न होगा।

किसी भी दशा में नदी में अपशिष्ट नहीं मिलाया जायेगा बल्कि अन्य नालों आदि में ले जाने की व्यवस्था करनी होगी।

2. ड्रेनेज सीधे गंगा नदी में नहीं अवमुक्त किया जायेगा वरन् अन्य नालों आदि में ले जाने की व्यवस्था की जानी होगी।
3. यदि क्षेत्र में सीवेज व्यवस्था नहीं है तो निवास स्थान/धर्मशाला आदि इन प्रयोजनों में अनुमन्य नहीं की जायेगी ताकि गंगा नदी में मल न जाने पाये।

उपर्युक्त वर्णित शासनादेश दिनांक 23–9–98 एवं दिनांक 16–11–98 को इस सीमा तक संशोधित समझा जाय।

भवदीय,

अतुल कुमार गुप्ता
सचिव।

संख्या–320/9–आ–3–2000–127 काम्प/99 तद्दिनांक।

प्रतिलिपि निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित :–
1. मुख्य अभियन्ता (गंगा) एवं नोडल अधिकारी, उत्तर प्रदेश जल निगम, लखनऊ।
2. सचिव, उत्तर प्रदेश शासन, नगर विकास विभाग।
3. उपाध्यक्ष, समस्त विशेष क्षेत्र विकास प्राधिकरण, उत्तर प्रदेश।

आज्ञा से
जावेद एहतशाम
उप सचिव।

संकल्प संख्या – 1165 दिनांक – 29.09.2000

विचारोपरान्त सर्वसम्मति प्रस्तुत प्रस्ताव की स्वीकृति प्रदान करते हुए गंगा, यमुना एवं संगम क्षेत्र में भवन निर्माण की गतिविधि को प्रतिबंधित किए जाने का निर्णय लिया गया। यह भी निर्णय लिया गया कि उपरोक्त नदियां के दोनों तरफ़ उच्चतम जल स्तर को किनारा मानते हुए उससे 200 मीटर की दूरी तक दोनों तरफ कोई निर्माण अनुमन्य नहीं होगा तथा उसके आगे 300 मीटर तक निर्माण प्राधिकरण बोर्ड की अनुमति से विशेष परियोजनाओं हेतु ही अनुमन्य किया जायेगा। यह परियोजनायें धार्मिक, सांस्कृतिक, पर्यटन से संबंधित शोध केन्द्र क्रीडा आदि की ही अनुमन्य होगी. तथा इसमें ग्राउण्ड कवरेज 10 प्रतिशत से अधिक नहीं होगी तथा निर्माण भी विशेष परिस्थितियों में प्राधिकरण बोर्ड के अनुमोदन के पश्चात ही किया जायेगा। यह भी निर्णय लिया गया है कि वर्तमान निर्माण को चिन्हित करने के लिये सर्वेक्षण कराया जाय तथा सम्पूर्ण क्षेत्र की वीडियोग्राफी, फोटोग्राफी करा ली जाये ताकि आज के निर्माण का स्तर भली प्रकार चिन्हित किया जा सके।

इलाहाबाद नगर के पौराणिक एवं सांस्कृतिक पहचान को सुरक्षित रखने के उद्देश्य से यह भी निर्णय लिया गया कि कुम्भ मेले के सम्पूर्ण क्षेत्र को भली प्रकार परिभाषित कर महायोजना में इसका सही अंकन कर दिया जाये तथा प्रत्येक वर्ष में दो बार उपरोक्त क्षेत्र में होने वाले अवैध निर्माण को चिन्हित कर व्यापक ध्वस्तीकरण अभियान चलाया जाये।

(सत्य प्रतिलिपि)

ANNEXURE A-4

मद संख्याः-5 अवैध भू-विभाजन तथा कालोनियों के विनियमितीकरण के अन्तर्गत भवन मानचित्रों की स्वीकृति में ओपेन स्पेस/उप विभाजन शुल्क निर्धारण हेतु सर्किल रेट के सम्बन्ध में ।

संकल्प संख्याः-1317 दिनॉकः 27.12.2004

सर्व सम्मति से प्रस्तुत प्रस्ताव की स्वीकृति प्रदान की गयी और यह भी निर्णय लिया गया कि ऐसे भवनों के मानचित्र की स्वीकृति के सम्बन्धित निर्माणकर्त्ता से इस आशय का शपथ पत्र अवश्य ले लिया जाये कि उसके द्वारा प्रस्तावित भवन का निर्माण स्वीकृत मानचित्र के अनुरूप ही किया जायेगा । ऐसे प्रकरणों में कम से 10 प्रतिशत की जाँच अवश्य करा लिया जाये ।

मद संख्याः-6 गंगा नदी से 200 मी0 दूरी तक किसी भी प्रकार के निर्माण की गतिविधियाँ अनुमन्य न किये जाने के सम्बन्ध में ।

संकल्प संख्याः-1318 दिनॉकः 27.12.2004

इस सम्बन्ध में निर्णय लिया गया कि भविष्य में गंगा नदी के बाढ़ तट के उच्चतम स्तर से 200 मी0 तक भवन निर्माण की अनुमति नहीं प्रदान की जायेगी ।

मद संख्याः-7 निरूपमा आवास योजना के अन्तर्गत मा0 राज्यमंत्री, उच्च शिक्षा श्री राम आसरे विश्वकर्मा को आवंटित भवन संख्या-36, सपना-II का ब्याज माफ करने एवं पुर्नमूल्यॉकन कराये जाने के सम्बन्ध में ।

संकल्प संख्याः-1319 दिनॉकः 27.12.2004

सर्व सम्मति से प्रस्तुत प्रस्ताय की स्वीकृति प्रदान की गयी और यह भी निर्णय लिया गया कि पक्ष द्वारा पुर्नमूल्यॉकन के अनुसार बकाया धनराशि एक माह के अन्दर जमा करा लिया जाये।

मद संख्याः-8 कसारी-मसारी-प्रथम कौशाम्बीकुंज आवास योजना के भवन संख्या-के0के0-I, एच0 आई0 जी0 के मद में आवंटी श्री राम प्रकाश के द्वारा जमा धनराशि की वापसी के सम्बन्ध में ।

संकल्प संख्याः-1320 दिनॉकः 27.12.2004

विचारोपरान्त सर्व सम्मति से निर्णय लिया गया कि आवंटी द्वारा जमा मूल धनराशि तत्काल वापस कर दिया जाये । एक वर्ष से कम अवधि तक जमा धनराशि को ब्याज सहित भुगतान किये जाने का कोई औचित्य नहीं है ।

सी0एम0-9-3-2000-127काम्प/99

दिनांक 31.07.2000 के अनुसार निर्माण अनुमन्य किये जाने के सम्बन्ध में।

गंगा नदी तट पर बसे नगरों से 200 मी0 तक किसी भी प्रकार की गतिविधियाँ अनुमन्य न किये जाने के प्रतिबन्ध को शिथिल किये जाने के सम्बन्ध में शासनादेश सं0 124/सी0एम0-9-3-2000-127काम्प/99 दिनांक 31.07.2000 द्वारा गंगा नदी के किनारे से ऐसे स्थानों को जो धार्मिक मान्यताओं से जुड़ी हैं; जहाँ का स्वरूप प्रमुखतः तीर्थ है, वहाँ पर मठ, आश्रम, मन्दिर का निर्माण कतिपय शर्तों के अधीन अनुमन्य किये जाने के निर्देश प्राप्त हुये थे।

प्राधिकरण की पूर्व बैठक दिनांक 29.09.2000 की मद संख्या-17 संकल्प संख्या- 1116 द्वारा गंगा/यमुना नदी के किनारे से 200मी0 की दूरी तक कोई निर्माण अनुमन्य न करने का तथा उसके आगे 300मी0 तक की दूरी तक निर्माण प्राधिकरण की अनुमति से विशेष परियोजनाओं हेतु अनुमन्य किये जाने का निर्णय लिया गया, जिसमें धार्मिक, सांस्कृतिक, पर्यटन से संबंधित शोध केन्द्र एवं क्रीड़ा केन्द्र की ही अनुमति दिये जाने का उल्लेख है। इसमें आच्छादन कवरेज 10 प्रतिशत से अधिक नहीं होगा।

प्राधिकरण से उपरोक्त निर्णय के अनुपालन में व्यावहारिक कठिनाईयों को देखते हुए प्राधिकरण की गत बैठक दिनांक 27.12.2004 की मद संख्या-6 में प्रकरण में पुनर्विचार करते हुए शासनादेश सं0 124/सी0एम0-9-3-2000-127काम्प/99 दिनांक 31.07.2000 में प्रावधानों के अंतर्गत गंगा/यमुना नदी के किनारे से 200 मी0 तक मठ, तीर्थ, मठ, आश्रम, केन्द्र आदि निर्माणों को कतिपय शर्तों के अंतर्गत निर्माण की अनुमति यथा स्वरूप पालन करते हुए वर्तमान महायोजना प्रारूप 2001 में भी प्रावधान करने का प्रस्ताव रखा गया था। प्राधिकरण की संकल्प संख्या- 1318 द्वारा निर्णय लिया गया कि भविष्य में गंगा नदी के बाढ़ तट के उच्चतम स्तर से 200 मी0 तक भवन निर्माण की अनुमति नहीं प्रदान की जायेगी।

प्राधिकरण के उपरोक्त निर्णय से नदी तट से 200 मी0 तक की उपरोक्त सीमा तक किसी भी प्रकार का निर्माण अनुमन्य नहीं होगा, जबकि उपरोक्त शासनादेश दिनांक 31.07.2000 द्वारा धार्मिक मान्यताओं से जुड़े भवनों को कतिपय शर्तों के अंतर्गत अनुमन्य किया गया है।

अतः शासनादेश सं0 124/सी0एम0-9-3-2000-127काम्प/99 दिनांक 31.07.2000 के अनुसार ही गंगा नदी के तट से 200 मी0 तक के क्षेत्र में उल्लिखित धार्मिक मान्यताओं से जुड़े भवनों को उन्हीं शर्तों के अधीन अनुमन्य किये जाने एवं वर्तमान महायोजना प्रारूप 2021 में भी प्रावधान किये जाने का प्रस्ताव प्राधिकरण के समक्ष विचारार्थ एवं अनुमोदनार्थ प्रस्तुत है।

संकल्प संख्या- 1337 दिनांक : 03.04.2005

शासनादेश सं0 124/सी0एम0-9-3-2000-127काम्प/99 दिनांक 31.07.2000 के अनुसार की कार्यवाही किये जाने की स्वीकृति प्रदान की गयी।

ANNEXURE A-6

Government Order

Assessment of Hi-tech township policy 2007 under private investment in U.P for the development of Hi-tech township

No-3672/8-1-07-34 vividh/03

Lucknow dt: 17th September 2007

No.: 3072/Aath-1-07-34Vividh/03

From,

Shri Mohinder Singh,
Principal Secretary,
Government of Uttar Pradesh.

To,

1. Housing Commissioner,
U.P. Housing and Development Board,
Uttar Pradesh.

2. Vice Chairmen,
All Development Authorities,
Uttar Pradesh.

Housing and Urban Planning Section-1, Lucknow: Dated : 17th September, 2007

Sub.: Hi-tech Township Policy-2007 for the development of Hi-tech Townships through private investment in Uttar Pradesh.

Sir,

Hi-tech Township Policy-2007 issued vide G.O. No. 3189/ Aath-1-07-34Vividh/03, dated 16th August,2007 for the development of Hi-tech Townships through private investment in Uttar Pradesh is hereby superceded in the public interest and the amended Hi-tech Township Policy-2007 is laid down as follows:-

(1) A High Level Committee shall be constituted under the Chairmanship of Chief Secretary, Government of Uttar Pradesh to ensure effective implementation of Hi-tech Township Policy-2007. The scope of work of this High Level Committee shall be as follows:-

(I) To specify and approve the formats for 'Consortium MoU', 'Financing Plan', 'Document for Submission of Applications/ Proposals, 'MoU', 'Revised MoU' and 'Development Agreement' to be executed between the Developer Company/Consortium and the Government Agency as per the provisions of Hi-tech Township Policy-2007.

(II). To take decision regarding invitation of proposals, etc. from private sector Developer Companies/Consortium for the development of Hi-tech Townships.

(III) To take decision regarding selection of Developer Companies/ Consortium on the basis of evaluation of proposals received for the development of Hi-tech Townships in accordance with the procedure laid down in the Document for Submission of Applications/ Proposals.

(IV) To grant approval on the proposals submitted by the Developer Companies/Consortium for extension of Township area in case of new or already approved Hi-tech Townships.

(V) To grant approval on the proposals submitted by the Developer Companies/Consortium for exemption to purchase land in excess of 12.5 acres as per the provisions of Uttar Pradesh Zamindari Abolition and land Reforms Act, 1950.

(VI) To grant approval for extension of project period (5 years) specified for completion of development works of the Hi-tech Township.

(VII) To grant approval for cost recovery of city-level new infrastructure facilities from the Developer Company/Consortium.

(VIII) To take other necessary action for effective implementation of Hi-tech Township Policy-2007 and provide Single Window solution to the problems arising in its implementation.

(IX) To take action against Developer Companies/Consortium in case of violation of Hi-tech Township Policy/take decision on cancellation of selection.

(X) To ensure remaining necessary action on issues mentioned in Para-(I) to (IX) above relating to proposals approved under the Hi-tech Township Policy-2003.

(XI) To provide guidance/take decision on other matters related to the subjects mentioned above.

(2) A Technical Evaluation Committee shall also be constituted under the chairmanship of Executive Director, Awas Bandhu, Housing and Urban Planning Department. The scope of work of this committee shall be as follows:-

(I) To open, examine and evaluate the proposals received from the Developer Companies/Consortium and submit its report/ recommendations for the decision of High Level Committee.

(II) To provide necessary assistance to the High Level Committee in discharging its other responsibilities.

(3) The Developer Company/Consortium may submit proposals for the development of Hi-tech Township in any city/area of Uttar Pradesh excluding the notified areas of NOIDA and Greater NOIDA.

(4) The proposals (Expression of Interest) shall be invited from reputed and experienced Developer Companies/Consortium from time to time by publishing advertisement in the national dailies with the approval of the High Level Committee.

(5) The Developer Company/Consortium shall fulfill the following qualifications for submission of proposals:-

(i) The Developer Company should be registered under the Companies Act, 1956. 'Company' means company as defined under section-3 of the said Act.

(ii) The Developer Company/Consortium should have an annual net worth of minimum Rs. 100 crore in the last three financial years and it should not have a declining trend. Moreover, the net profit in the last three years should also be positive.

(iii) The proposal for the development of Hi-tech Township may be submitted by a Developer Company individually or through the Consortium. In case the Developer Companies form a Consortium, they should execute an MoU on the prescribed format which should be registered in the office of the Sub-Registrar. The minimum share capital of all the members of the Developer Company promoted by the Consortium shall be 51 per cent. As per the provisions of the MoU, partnership between/among all the Consortium members shall be mandatory till the completion of the project and any modification/change in the terms and conditions of the MoU can be made only with the prior approval of the Government. The format for Consortium MoU shall be issued separately.

(6) The minimum area of the Hi-tech Township shall be 1500 acres. Keeping in view the development potential and requirement of a particular city/location, there shall be no restriction on the maximum area of the township.

(7) The minimum investment for the development of a Hi-tech Township of 1500 acres shall be Rs. 500 crore. However, the minimum investment shall be proportionately more if area of the township exceeds 1500 acres. The Developer Company/Consortium shall have to submit a reasonable Financing Plan on the prescribed format to illustrate as to how the financial requirements of the project shall be accomplished i.e. how much money would be mobilized each from self-resources, from debentures, loan from banks/financial institutions, etc. The Financing Plan shall include such components as Cash-inflow, Cash-outflow, Debt-Service Ratio, Break-Even-Point, Annual Profit and Loss during the project period, Balance-sheet, Annual Net Worth, Internal Rate of Return (I.R.R.), etc. The prescribed format for Financing Plan shall be issued separately. The Financing Plan submitted by the Developer Company/Consortium with the proposal, shall be examined by the Technical Evaluation Committee so as to ensure that the minimum required investment is actually being made by the Developer Company/Consortium from its own sources.

(8) The Developer Company/Consortium shall submit the proposal for development of new Hi-tech Township or extension of already approved Hi-tech Township area in accordance with the procedure laid down in the

Document for Submission of Applications/Proposals. The format for this document shall be issued separately.

(9) The High Level Committee shall curry out the selection of the Developer Company/Consortium for the development of Hi-tech Township on the basis of evaluation of its financial and technical capability, experience in real estate development, conceptual plan and vision and pre-feasibility report of the proposed township. The criteria for evaluation shall be as follows:-

S.No.	Evaluation Criteria	Maximum Marks
1.	Financial Capability (Based on networth of Developer Companies/Consortium)	25
2.	Company Profile and Technical Resource	15
3.	Real Estate Experience in last 10 years: (Evaluation of experience shall be curried out as given below):-	
	(a) Township Development	10
	(b) Disposal of Properties (Floor space constructed/No. of plots and units)	10
	(c) Cost of projects implemented	10
	(d) System for Operation and Maintenance of the projects completed	05
4.	Conceptual Plan and Vision for the township	10
5.	Pre-feasibility report of the proposed township.	15
	Total:	100

The Developer Company/Consortium shall have to secure minimum 40 per cent marks under each criterion and 50 per cent aggregate marks for selection on the basis of above criteria.

(10) The Technical Evaluation Committee will assist the High Level Committee in evaluation of proposals received from the Developer Companies/Consortium in accordance with the criteria laid down in para (9) above. The High Level Committee shall complete the selection process within maximum 90 days from the date of receipt of proposals and the respective Developer Company/Consortium shall be informed accordingly.

(11) In one city/location, maximum of two Hi-tech Townships shall be permitted, i.e. maximum of two Hi-tech Townships shall be permissible within a Development Area/ Notified Area and area adjoining it up to a distance of 10 kilometers.

(12) There shall be no limit on the number of Hi-tech Townships permissible to a Developer Company/Consortium throughout the State; however,

one township up to 3000 acres shall be permissible to a Developer Company either individually or as a Consortium for every Rs. 100 crore average annual networth of last three years. Similarly, calculation of total permissible area above 3000 acres to a Developer Company/ Consortium either in one Hi-tech Township or more-than one-Hi-tech Townships shall be made proportionately on the basis of total average net worth of last three years.

(13) Extension of township area shall be permissible to the Developer Companies/Consortium selected under the Hi-tech Township Policy-2003 as well as Hi-tech Township Policy-2007. The proposal for extension of township area shall be submitted in accordance with the Document for Submission of Applications/Proposal and approval for extension shall be granted by the High Level Committee. However, in such cities/ locations where only one Hi-tech Township proposal has been approved and new township proposal is received for the land adjoining its site, then first priority to extension shall be given to the Developer Company/ Consortium who has already been selected. Extension in the township area shall be permissible subject to compliance of the following terms and conditions:-

(I) The land proposed for extension should be contiguous to the site already approved as well as compact in shape so that an integrated lay-out plan could be ensured for the township as a whole.

(II) The Developer Company/Consortium shall submit certificates as a proof of proportionate annual net worth keeping in view extension of Hi-tech Township area, and reasonable 'Financing Plan" on the prescribed format to substantiate the minimum investment against the proposed extension.

(III) The Developer Company/Consortium shall deposit proportionately higher processing fee and earnest money for the proposed extension.

(IV) The Developer Company/Consortium shall submit the revised Conceptual Plan and Detailed Project Report (DPR) for the township including the land proposed for extension.

(V) The Developer Company/Consortium shall complete all the development works of the township including the proposed extension within the prescribed project period.

(14) The Developer Company/Consortium shall execute an MoU on the prescribed format with the respective Government Agency within 30 days from the date of selection. The Developer Company/Consortium shall also execute revised MoU with the respective Government Agency in case extension of township area is permissible. If the Developer Company/Consortium fails to sign the MoU within 30 days of selection, the High Level Committee may cancel the selection without giving any notice. Similarly, during the implementation of MoU/Revised MoU or the project, if any such facts come to the notice which warrant action

against the Developer Company/Consortium, then necessary action shall be taken with the approval of the High Level Committee including cancellation of selection of the Developer Company/Consortium. The formats for MoU and Revised MoU shall be issued seperately.

(15) As far as possible, land for the development of the Hi-tech Township shall be acquired through negotiation with the land owners. For this purpose, the entire land proposed for the Hi-tech Township shall be notified under section-4 of the Land Acquisition Act, 1894 or section-28 of Uttar Pradesh Housing and Development Board Act, 1965. The Developer Company/Consortium may purchase the land through direct negotiation with the land owners and the concerned Government Agency shall provide necessary cooperation to the Developer Company/ Consortium for acquiring land under the provisions of "Karar Niyamawali". Acquisition of land under the Land Acquisition Act, 1894 or the Uttar Pradesh Housing and Development Board Act, 1965 shall be carried out in special circumstances only for such remaining pockets, which are necessary for the integrated development of the Hi-tech Township and fall within the land purchased through direct negotiation and land acquired under the "Karar Niyamawali". Provided that the land acquired under the Land Acquisition Act, 1894 or the Uttar Pradesh Housing and Development Board Act, 1965 shall not exceed 25 per cent of the total area of the Hi-tech Township. The land acquired under the provisions of "Karar Niyamawali" or the Land Acquisition Act, 1894 or the Uttar Pradesh Housing and Development Board Act, 1965 shall be made available to the Developer Company/Consortium on 90 years lease by the concerned Government Agency.

Initially, the Developer Company/Consortium shall deposit 10 per cent of the estimated acquisition cost of the total land to be notified under section-4 of Land Acquisition Act, 1894 and requisite acquisition charges in excess of first 1500 acres of land. However, the Developer Company/Consortium shall not pay the acquisition charges on the land to be purchased through direct negotiation but pay 100 per cent value of land directly to the land owners. Thus, the excess charges deposited by the Developer Company/Consortium against the land purchased directly from the landowners, shall be adjusted towards the land acquired under the "Karar Niyamawali" or the Land Acquisition Act, 1894 or the Uttar Pradesh Housing and Development Board Act, 1965, as the case may be. In case of any dispute relating to land acquisition or increase of compensation by any Court in future arises, all financial liabilities shall rest with the Developer Company/Consortium.

Exemption from Stamp Duty shall remain permissible to the Developer Companies/Consortium selected under the Hi-tech Township Policy-2003', in accordance with the provisions of notification No.: Ka.Ni.-5-915/11-2004-500 (87)-2001, dated 09.07.04 and revised notification no. Ka.Ni.-5-3497/11-2005-500 (83)-2005, dated 09.09.05 of Kar Evam Nibandhan Anubhag-5 for maximum 1500 acres of entire

area of the Hi-tech Township. Exemption from stamp duty shall not be permissible to the new townships to be approved under the Hi-tech Township Policy-2007.

(16) The land acquired by the Government Agencies or under the process of acquisition or notified for acquisition by the Government Agencies under section-4 of Land Acquisition Act, 1894 or under section-28 of Uttar Pradesh Housing and Development Board Act, 1965 for their own schemes, shall not be denotified/left in favour of the Developer Company/Consortium for the development of Hi-tech Township.

(17) To enable integrated development of the proposed Hi-tech Township, land which presently vests with the Gram Sabha or belongs to the Scheduled Castes; Scheduled Tribes/Backward Classes may be purchased/resumed/acquired in accordance with the prevailing rules with prior approval from the competent level.

(18) The notification to purchase land in excess of 12.5 acres for the development of the Hi-tech Township as per provisions of section-154 of the Uttar Pradesh Zamindari Abolition and Land Reforms Act, 1950, shall be issued separately for each township with the approval of the High Level Committee. This exemption shall be permissible subject to the condition that all development works are completed by the Developer Company/Consortium within the prescribed project period.

(19) After the development of land, the Developer Company/Consortium shall pay the stamp duty as per the rules applicable at the time of sale of properties and freehold conversion charges at the prevailing rate to the land acquiring agency.

(20) Land measuring 1500 acres or more required for the development of Hi-tech Township will generally be available in the agriculture land use outside the urbanizable area of the Master Plan for which land use conversion shall be permissible in accordance with law. If the site selected falls outside the limits of the Development Area/other Notified Area, it shall be brought under the statutory limits of the respective Development Area/ other Notified Area by following the due process of law. However, conversion of use of land reserved for infrastructure viz. roads, water-works, S.T.P., electric sub-station, garbage disposal sites, other community facilities, parks and open spaces/green belt, etc. proposed in the Regional Plan/Master Plan/ Zonal Development Plan, shall not be permissible and these facilities would be developed and constructed in accordance with the proposals of the above Plans. In case conversion of land use is permissible, the Developer Company/ Consortium shall pay conversion charges to the respective Government Agency.

(21) The proposals received for the development of Hi-tech Township in Uttar Pradesh sub-region of National Capital Region (NCR) shall be approved provided they are in conformity with the prevailing N.C.R. Plan.

(22) The Hi-tech Township shall be planned in accordance with the land use planning norms prescribed in the MoU/Revised MoU to be executed between the Developer Company/Consortium and the Government Agency. Land for Residential, Commercial, Industrial (non-polluting), Public and Semi- Public Facilities, Traffic and Transportation, Parks and Open Spaces/"Green Cover" and Recreation, etc. land uses shall be earmarked in the township layout plan. Besides, necessary provisions shall be made with regard to world-class infrastructure facilities e.g. Roads, Water Supply, Drainage, Sewerage, Electric-supply, Traffic and Transportation System, Integrated Solid Waste Management, Modern Communication System, etc.

(23) Developer Company/Consortium shall strictly adhere to the Government policies and the relevant codes of B.I.S./I.S. relating to disaster management in the land use planning, provision of important infrastructure facilities and development and construction works of the proposed Hi-tech Township.

(24) The Developer Company/Consortium shall prepare and submit a "Detailed Project Report" (DPR) of the proposed Hi-tech Township to the Government Agency within 180 days from the date of signing of the MoU. A committee constituted under the chairmanship of Housing Commissioner/Vice-Chairman of the respective Development Authority shall examine the DPR and submit its recommendations to the Board for approval. The Board of the respective Government Agency shall take decision regarding approval of the DPR within 30 days from the receipt of the recommendations of the above committee. However, keeping in view the difficulties in one-time availability of 1,500 acres or more land, the DPR shall be approved as a Conceptual Plan. The DPR shall comprise of layout plan, land use plan, infrastructure and services development plan, standards and specifications, resource mobilisation, property management, and operation and maintenance details, etc. Besides, the DPR shall contain phasing of development of the proposed township indicating time-schedule for commencement and completion of each phase.

(25) The Developer Company/Consortium shall neither be entitled to any legal right for the implementation of the project merely on the basis of approval of the conceptual DPR nor shall have the right to allot, sale or lease plots/buildings/flats/other properties or accept advance money. Launching, booking, etc. under the project shall be permissible to the Developer Company/Consortium only after availability of land and approval of the detailed lay out plan. However, the Developer Company/Consortium shall be free to accept public deposits and utilize the same in accordance with relevant regulations of the Reserve Bank of India. In case any Developer Company/Consortium selected under the provisions of Hi-tech Township Policy-2000, has received pre-launch booking money, the same shall be returned with appropriate interest if demanded by the investors in writing.

(26) The Developer Company/Consortium shall submit the detailed layout plan to the Government Agency for approval only after purchase/ acquisition of 60 percent land in every phase, subject to minimum of 300 acres, because it will be possible to develop a 'self-contained neighborhood/sector' with all facilities for 'about 25,000 population on 300 acres of land.. However, it will be necessary to purchase/acquire more than 300 acres of land for approval of detailed layout plan in every subsequent phase so as to ensure completion of all the development works of 1500 acres of township in maximum three phases. In case township area exceeds 1500 acres, the procedure for approval of detailed layout plan will be the same; however, development of the township may be completed in four phases if the township area is more than 1500 acres but up to 3000 acres, and maximum five phases if the township area is more then 3000 acres.

(27) The Developer Company/Consortium shall enter into a 'Development Agreement' with the Government Agency at the time of approval of the detailed layout plan. The Government Agency shall sanction the detailed lay out plans of subsequent phases only after remaining land has been purchased/assembled by the Developer Company/Consortium and separate Development Agreement shall be executed for each phase. The format for 'Development Agreement' shall be issued separately.

(28) The Project period of 05 years shall be reckoned from the date of signing of the first 'Development Agreement'. If there is unavoidable delay in completion of development works, extension in the project period shall be permissible on case-to-case basis with the approval of the High Level Committee. In case the development works of the township are not completed within five years or the extended project period and if the Developer Company/Consortium is responsible for this delay, then the Developer Company/Consortium shall be penalized in accordance with the provisions of the Development Agreement.

(29) It will be compulsory for the Developer Company/Consortium to ensure registration of transfer deeds of developed properties within three months from the date of handing over of the possession to the allottees, failing which the money equivalent to the stamp duty and registration fees amount shall be recovered by the Government Agency through forfeiture of the Bank Guarantee or sale of mortgaged land after giving notice to the Developer Company/Consortium.

To ensure timely completion of the project as per the provisions of the approved DPR and registration of transfer deeds of developed properties within three months from the date of handing over of possession to the allottees, the Developer Company/Consortium shall submit legal undertaking to mortgage 25 percent of the total saleable land in favour of the Government Agency. The mortgaged land shall be released in proportion according to the successful completion of various services to the functional stage and registration of transfer deeds of developed properties in favour of allottees. If the Developer Company/

Consortium leaves any development work incomplete, the same shall be completed by the Government Agency through sale of the land so mortgaged.

(30) The Developer Company/Consortium shall carry out the internal and external development works at its own expense as per the standards and specifications laid down in the approved DPR. However, connectivity to trunk services such as road, drainage and sewage disposal, water supply, electricity, solid waste management or any such other community facilities may be extended to the Developer Company/ Consortium by the respective Government Agency on payment of actual cost plus 15 per cent supervision charges thereon. If any major infrastructure such as embankment, ring road, flyover, metro, etc. is provided by the Government Agency during the project period consequent to which the proposed township would be directly benefited, the Developer Company/Consortium shall pay proportionate cost of such infrastructure to the Government Agency, for which prior approval of the High Level Committee would be necessary.

(31) Since infrastructure services of the main city will also be used by the population of the proposed Hi-tech Township, which would increase pressure on the existing services; therefore, Developer Company/ Consortium shall pay City Development Charge for augmentation/ strengthening of existing infrastructure at the rate of Rupees one lac fifty thousand per acre in municipal corporation towns and Rupees fifty thousand per acre in other towns. The money realized through City Development Charge shall be deposited in the Infrastructure Development Fund of concerned Government Agency and shall be utilized for development of city level infrastructure only.

(32) The Government Agency shall have the right to supervise the implementation of the project in accordance with and as per time-schedule prescribed in the approved DPR and to inspect the quality of external and internal development works of the Hi-tech Township to ensure that they are as per the provisions of approved DPR for which the Developer Company/Consortium shall pay the prescribed inspection charges to the Government Agency as per the relevant Government Orders.

(33) The Developer Company/Consortium shall provide land for community facilities such as electric sub-station, police-station, fire station, post-office, telephone exchange, etc. and construct these facilities as per the norms and make them available to the respective departments free-of-cost through the Government Agency.

(34) The Developer Company/Consortium shall construct 10 per cent of the total houses/plots for the Economically Weaker Section and another 10 per cent houses/plots for the Lower Income Group families as per the norms and cost ceiling prescribed by the Government Agency. Allotment of houses/plots for these categories shall be made by a committee

constituted by the Housing and Urban Planning Department, Government of Uttar Pradesh under the chairmanship of the Housing Commissioner/Vice-Chairman of the respective Government Agency.

(35) The Developer Company/Consortium shall provide Basic Infrastructure such as roads, drainage, water supply, sanitation and electricity, etc. free-of-cost to the village abadies falling within the proposed Hi-tech Township area. The beneficiaries will pay user charges to the concerned service providing agency/ Developer Company/Consortium. If the Developer Company/Consortium undertakes distribution of electricity, it will have to secure licence from the Uttar Pradesh Electricity Regulatory Commission for this purpose.

(36) The proposed Hi-tech Township shall be environmentally sustainable, i.e. the Developer Company/Consortium shall make appropriate provisions for conservation of water and power, pollution control and maintenance of green cover in the land use planning, development/construction works and operation and maintenance of the proposed Hi-tech Township. The Developer Company/Consortium shall obtain necessary environmental clearance as per law for the proposed Hi-tech Township project from the Ministry of Environment and Forest, Government of India.

(37) The permission for generation of power for the proposed Hi-tech Township, if required, shall be permissible in accordance with the prevailing Energy Policy of the Government of Uttar Pradesh read with Electricity Act, 2003 and Uttar Pradesh Electricity Regulatory Commission Rules.

(38) The Developer Company/Consortium shall maintain the various services of the Hi-tech Township for which it shall have the right to collect maintenance expenditure from the allottees till it is handed over to the Local Body. The Developer Company/Consortium shall declare the annual/one-time maintenance expenditure at the time of booking/allotment of properties along with details of services for which maintenance expenditure is being charged and the DPR will contain explicit provision regarding the same. The Local Body shall not collect house tax, water tax and sewerage tax, etc. from the residents or users of the Hi-tech Township till the township is handed over to it.

(39) The Developer Companies/Consortium who have already signed the MoU under Hi-tech Township Policy-2003, shall in continuation to this MoU have to sign an "Amendment to MoU dated.....", in which it will be clearly mentioned that the procedure for land assembly laid down under the Hi-tech Township Policy-2007 will also be applicable to 1500 acres of land covered under the Hi-tech Township Policy-2003. Any Developer Company/ Consortium selected under the Hi-tech Township Policy-2003 who intends to extend the township area beyond 1500 acres, shall have to submit an application as per para-13 of Hi-tech Township Policy-2007 and sign a new comprehensive Revised MoU for the total area incorporating original MoU signed under the

Hi-tech Township Policy-2003 and "Amendment to MoU dated..... which shall be based on the provisions of Hi-tech Township Policy-2007. The Developer Companies/Consortium, who had applied for the development of new Hi-tech Townships under the Hi-tech Township Policy-2006, will have to submit fresh applications as per the provisions of Hi-tech Township Policy-2007.

2. In the context of aforementioned policy, I am directed to say that further necessary action may be taken to implement the Hi-tech Township Policy-2007 for the development of Hi-tech Townships through private investment in Uttar Pradesh in accordance with the procedures and directions prescribed above.

Sd/-
(Mohinder Singh)
Principal Secretary

No...../Anth-1-06-45Vividh/06, dated as above.

Copy for information and necessary action to the following:-

1. Cabinet Secretary, Government of Uttar Pradesh.
2. Chief Secretary, Government of Uttar Pradesh.
3. Industrial Development Commissioner, Uttar Pradesh.
4. Principal Secretary, Tax & Registration, Government of Uttar Pradesh.
5. Principal Secretary, Law, Government of Uttar Pradesh.
6. Principal Secretary, Finance, Government of Uttar Pradesh.
7. Principal Secretary, Revenue, Government of Uttar Pradesh.
8. Principal Secretary, Urban Development, Government of Uttar Pradesh.
9. All Principal Secretaries/Secretaries, Government of Uttar Pradesh.
10. Commissioner and Secretary, Board of Revenue, Uttar Pradesh.
11. I.G., Registration and Stamp, Uttar Pradesh.
12. Managing Director, Awas Sangh, Uttar Pradesh.
13. All Commissioners, Uttar Pradesh.
14. All District Magistrates, Uttar Pradesh.
15. Chairmen, all Special Area Development Authorities, Uttar Pradesh.
16. Chairmen, Controlling Authorities, All Regulated Areas, Uttar Pradesh.
17. All Land Acquisition Officers, Uttar Pradesh.
18. Chief Town and Country Planner, Uttar Pradesh.
19. Executive Director, Awas Bandhu, Uttar Pradesh.
20. All Sections, Housing and Urban Planning Department.
21. Guard File.

By Order,
Sd/-
(R. K. Singh)
Special Secretary

ANNEXURE A-7

MEMORANDUM OF UNDERSTANDING FOR THE DEVELOPMENT OF

HI-TECH TOWNSHIP IN UTTAR PRADESH

This Memorandum of Understanding is made on this Friday of September Two Thousand Nine between Allahabad Development Authority Constituted under the provisions Uttar Pradesh Urban Planning and Development Act, 1973 through Shri ANIL KUMAR SINGH Its Commissioner/Vice Chairman (hereinafter referred to as the "First Party" which expression shall unless the context does not so admit, include its successor) of the One Part.

AND

M/s Omaxe Ltd. a Company registered under Companies Act,1956 having registered office at 7, L.S.C, Kalkaji, New Delhi – 110019 and, M/s Shamba Developers Private Limited a Company registered under Companies Act,1956 having registered office at 10, L.S.C, Kalkaji, New Delhi – 110019 and M/s Panchi Developers Private Limited a Company registered under Companies Act,1956 having registered office at 10, L.S.C, Kalkaji, New Delhi – 110019,forming CONSORTIUM under MoU dated 19/02/2009 registered in the office of sub-registrar in Additional Book Number 4 Vol. No.1399 Page No 176 to 180 at Serial No.113 on dated 19/02/2009 through M/s Pancham Realcon Pvt. Ltd. a SPV Company registered under Companies Act, 1956 having Registered Office at 10 L.S.C, Kalkaji, New Delhi – 110019 through Shri Sunil Malhotra (Chief Operating Officer) S/o Sh. Baldev Prakash Malhotra R/o 307, Bhora Enclave, Paschim Vihar, Delhi - 87 (hereinafter referred to as "Second Party") of the other part.

(Anil Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

For Pancham Realcon Pvt. Ltd.

Chief Operating Officer

WHEREAS on-going population growth and increasing urbanization are creating major development problems relating to provision of urban services and planned housing in urban areas of the State of Uttar Pradesh hereinafter referred to as "State".

AND WHEREAS resource constraints of the public sector agencies has made it imperative to promote private investment in the provision of urban housing and infrastructure, therefore, keeping in view the mandates of the National and State Housing Policies, the Government of Uttar Pradesh (hereinafter referred to as "GoUP") announced the Hi-tech Township Policy2007 to promote and facilitate private sector participation in the development of Hi-tech Townships in Uttar Pradesh having world-class infrastructure vide Government Order No. 3189/ Eight-1-07-34Vividh/03, dated 16th August, 2007 which was superseded by Government Order No.3872/ Eight-1-07-34Vividh/03, dated 17th September, 2007 read with Govt. Order No. 4910/Eight -1-07-34 Vividh/03 dated 27 August,2008, 5397/8-3-08-34 Vividh/03 dated 2nd December,2008 and 0481/8-3-2008-34 Vividh/2003 dated 5th January,2009 hereinafter collectively referred to as Hi-tech Township Policy-2007 to fulfill the following objectives:-

(I) to provide competitive Hi-tech marketable estates with an attractive environment for high quality living, working and recreation;

(II) to encourage high technology and knowledge-based industries, tourism and provide facilities for business organizations engaged in modern technologies,

(III) to facilitate and create an enabling environment for attracting maximum private investment in housing and infrastructure development,

(IV) to support and enable private investment in other sectors of the State economy;

AND WHEREAS as a follow up of the Hi-tech Township Policy-2007,the High Level Committee (hereinafter referred to as "HLC"), constituted by the GoUP after evaluation of the proposal has selected the Second Party for the development of Hi-tech Township at Allahabad on land measuring 1535.12 acres (hereinafter referred to as "Hi-tech Township");

AND WHEREAS the Second Party, i.e. M/s Panchsin Realcon Pvt. Ltd. is required to sign a Memorandum of Understanding (hereinafter referred to as "MoU") with the First Party to undertake further action for the development of Hi-tech Township.

NOW THIS DEED WITNESSES AS FOLLOWS:

1. That the Second Party shall select the site for the development of Hi-tech Township in consultation with the First Party.

For Panchsin Realcon Pvt. Ltd.

(Anil Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

Chief Operating Officer

2. That the Second Party shall submit the proposal for purchase/assembly of land along with key plan, site plan and Sajra plan with delineation of the site identified for the proposed Hi-tech Township to the First Party, within 45 days after signing of this MoU.

3. That the Second Party shall purchase 75% of the total land through direct negotiations with the land owners and the First Party shall not act as facilitator in the purchase/ assembly of land not exceeding 25% of the total area of Hi-tech Township.

4. That to enable integrated development of the proposed Hi-tech Township, the land which presently vests with the Gram Sabha or belongs to the Scheduled Castes, Scheduled Tribes/Backward Classes, will be resumed/purchased/ acquired in accordance with the Applicable Law. However an equal amount of land belonging to the people from Scheduled Castes/ Scheduled Tribes purchased by the Second Party situated within the Hi-tech Township area shall be purchased by the Second Party in the surrounding nearby areas and handed over to such Scheduled Castes/ Scheduled Tribe people.

5. That the "Second Party" may be Authorised by GoUP to purchase land in excess of 12.50 acres for the development of the Hi-tech Township as per provisions of section -154 of the Uttar Pradesh Zamindari Abolition and Land Reforms Act 1950. It is made clear that the GoUP shall give above permissions to "Second Party" on the condition that all the development works shall be completed by the Second Party within the prescribed project period. For this purpose, the Second Party shall furnish necessary information on the prescribed format to the concerned District Magistrate through the "First Party". The GoUP shall grant required approval on the recommendation of District Magistrate. This process shall be completed within 60 days from the date of submission of proposal by the Second Party to "First Party".

6. That the stamp duty chargeable on the instrument relating to Hi-tech Township executed by the "Second Party" shall be borne by the "Second Party" or transferee of "Second Party", as the case may be.

7. The free hold conversion charges shall be payable by the "Second Party" to the First Party as per the prevailing policy of the GoUP.

8. That if the site selected by the Second Party falls within the Development Area /Scheme Area/ Special Development Area/ Regulated Area or any other Area notified by the GoUP under any law and needs conversion of land use for the purposes of Hi-tech Township; the same shall be permitted by the State Government/Competent Authority in accordance with law. Similarly, if the site selected by the Second Party falls outside the limits of the Development Area/Scheme Area/Special Development Area/Regulated Area or any other Area notified by the GoUP under any law, it shall be brought under the statutory limits of the respective Development Area/Scheme Area/Special Development Area/Regulated Area or any other Area notified by the GoUP under any law by following the due process of law. Conversion of land use for the proposed site shall be completed according to law for which land use conversion charges as prescribed by the GoUP vide G.O.No. 3712/9-Aa-3-2000-28LUC/01dated 21.08.2001 shall be payable by the Second Party to the First Party. However, conversion of use of land reserved for infrastructure, viz. roads, waterworks, S.T.P., electric sub-station, solid waste disposal sites, other community facilities, parks and open

For Panchsheel Realcon Pvt. Ltd.

(Anil Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

Authorised Signatory

spaces/green belt, etc.etc.a proposed in the Regional Plan/Master Plan/ Zonal Development Plan, shall not be permissible and these would be developed and constructed in accordance with the proposals of the above Plans.

That the Second Party shall comply with the land use planning norms and regulations in the preparation of Conceptual Plan and Detailed Project Report (DPR) of the proposed Hi-tech Township as prescribed by the GoUP Vide G.O.No.5397/8-3-08-034 vividh/03 dated 02-12-08. Besides, provisions shall also be made for world –class infrastructural facilities, viz. roads, water supply, drainage, sewerage, electricity, traffic and transportation system integrated solid waste management, modern communication system et-cetera.

10. That the Government policies and the relevant codes of B.I.S./I.S. relating to disaster management shall be strictly adhered to by the Second Party in the land use planning, provision of important infrastructure facilities and development and construction works of the proposed Hi-tech Township.

11. That the Second Party shall prepare and submit a Conceptual DPR of the proposed Hi-tech Township to the First Party within 180 days from the date of signing of this MoU. The DPR shall comprise of broad layout plan, land use plan, infrastructure services development plan, standards and specifications, financial mobilization, property management and operation and maintenance details, et-cetera. Besides the DPR shall contain phasing of development of the proposed township including time-schedule for commencement and completion of each phase. A committee constituted under the chairmanship of Housing Commissioner/Vice Chairman of concerned Government Agency shall examine the DPR and submit its recommendations to the Board of concerned Government Agency for approval. The Board of the respective Government Agency shall take decision regarding approval of the DPR within 30 days from the receipt of the recommendations of the above committee. For the purpose of the this clause "Government Agency" means Uttar Pradesh Avas Evam Vikas Parishad or concerned Development Authority, as the case may be.

12. That the DPR shall be approved as a Conceptual Plan and the Second Party shall neither be entitled to any legal right for the implementation of the project merely on the basis of approval of the conceptual DPR nor shall have the right to allot, sale or lease plots/buildings/flats/other properties or accept advance money Launching, booking, et-cetera under the project shall be permissible to the Second Party only after availability of land and approval of the detailed layout plan. However, the Second Party shall be free to accept public deposits and utilize the same in accordance with relevant regulations of the Reserve Bank of India.

13. That the Second Party shall submit the detailed layout plan to the First Party for approval only after purchase/assembly of 60 percent land in every phase, subject to minimum of 300 acres in a compact form. However if the "Second Party" has purchased/ assembled 300 acre of land in the first phase for approval of detailed lay-out plan in the form of compact piece of land and the proposed land use of the same is residential as per the master plan or has been amended to residential the detailed lay –out plan can also be approved alongwith the conceptual DPR. It will be necessary to purchase more than 300 acres of land for approval of detailed layout plan in every subsequent phase so as to ensure completion of all the development works of 1500 acres of township in maximum three phases. In case township area exceeds 1500 acres, the procedure for approval of detailed layout

For Pancham Realcon Pvt. Ltd.

Chief Operating Officer

(Anil Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

plan will be the same; however, development of the township may be completed in four phases if the township area is more than 1500 acres but up to 3000 acres, and maximum five phase if the township area is more than 3000 acres.

14. That in case the Second Party has got a minimum of 300 acres of land in its possession in a compact form and the land use of the same as per Master Plan is also residential or has been converted to residential the detailed lay-out could also be approved simultaneously with the conceptual DPR.

15. That the Second Party shall enter into a 'Development Agreement' with the First Party at the time of approval of the detailed layout plan. The First Party shall sanction the detailed lay out plans of subsequent phases only after the required land for the concerned phase has been purchased/assembled by the Second Party, and separate Development Agreement shall be executed for each phase.

16. That the Second Party shall complete the project within a period of five years from the date of signing of the first 'Development Agreement'. If there is delay in completing the project due to unavoidable reason, extension in the project period shall be permissible with the approval of HLC on case to case basis. In case the development works of the township are not completed within five years or the extended project period and if the Second Party is held responsible for this delay, then the Second Party shall have to pay specified sum to the First Party for above said delay in accordance with the provisions of the Development Agreement.

17. That it will be compulsory for the Second Party to ensure registration of transfer deeds of developed properties before handing over of the possession to the allottees, failing which the money equivalent to the stamp duty and registration fees amount shall be recovered by the First Party through invocation of the Bank Guarantee or sale of mortgaged land after giving notice to the Second Party. Before handing over of properties to allottes, the Second Party shall mortgage 25 percent of the total saleable land in favour of the First Party in accordance with the applicable rules /acts. For this purpose a mortgage deed shall be executed in accordance with the provision of prevailing rules/acts and the mortgage deed shall be registered. Twenty percent of such mortgaged land shall be released after the successful completion of various services to the functional stage compliance of all conditions as per the provisions of the approved D.P.R especially with regard to the ground water recharging system ensuring 120 percent water recharging against total amount of ground water drawn and registration of transfer deeds of developed properties in favour of allottees. If the Second Party leaves any development work incomplete, the same shall be completed by the First Party through sale of the land so mortgaged. Remaining five percent of the mortgaged land shall be kept retained as performance guarantee to ensure the maintenance of services.

18. That the Second Party shall to carry out the internal and external development works at its own expense as per the standards and specifications laid down in the approved DPR. However, connectivity to trunk services such as road connection, drainage and sewage disposal, water supply, electricity supply, solid waste management or any such other community facilities may be extended to the Second Party by the respective Government Agency on payment of actual cost plus 15 percent supervision charges thereon. If any major infrastructure; such as embankment, ring road, flyover, metro, et-cetera, is provided by the First Party during the project period consequent to which the proposed township would be directly benefited, the Second Party shall pay proportionate cost of such infrastructure to the First Party for which prior approval of the HLC would be necessary.

For Pancham Realcon Pvt. Ltd.

Chief Operating Officer

10. That since infrastructure services of the main city will also be used by the population of the proposed Hi-tech Township, which would increase pressure on the existing services; therefore, Second Party shall pay City Development Charge for augmentation/strengthening of existing infrastructure at the rate of Rs. 1,50,000/- per acre,25% of City Development Charges shall be paid by "Second Party" at the time of approval of detailed lay-out plan of Hi-tech Township and remaining amount of City Development Charges shall be payable in six monthly instalmments together with interest at the rate12% per annum. Delay in payment of instalment will attract penal interest at the rate of 10% per annum.

20. That the First Party shall have the right to supervise the implemantation of the project in accordance with and as per time-schedule prescribed in the approved DPR and to inspect the quality of external and internal development works of the Hi-tech Township to ensure that they are as per the provisions of approved DPR. The Second Party shall pay the prescribed inspection charges to the First Party as per the prevailing policy /Government Order of the GoUP.

21. That the Second Party shall provide land for community facilities such as electric sub-station, police-station, fire station, post-office, telephone exchange, ol-colora and construct these facilities as per the norms and make them available to the respective departments free-of-cost through the first party.

22. That the second party shall construct 10 per cent of the total houses/plots for the Economically Weaker Section and another 10 percent houses/plots to the Lower Income Group families as per the norms and cost ceiling prescribed by the First Party. Allotment of houses/plots for these calegories shall be made by a committee constituted by the Housing and Urban Planning Department, GoUP under the Chairmanship of the Housing Commissioner/Vice-Chairman of the respective Government Agency. The Second Party shall sell the houses/plots to the persons to whom houses/plots have been allotted by above said committee. For the purpose of this clause the word " Government Agency" mean Uttar Pradesh Avas Evam Vikas Parishad or concerned Development Authority as the case may be.

23. That the Second Party shall provide basic infrastructure such as road, drainage, water supply, sanitation and electricity, at-colora free-of-cost to the village abadies falling within proposed Hi-Tech Township area. The beneficiaries will pay user charges to the service provider/Second Party. If the Second Party undertakes distribution of electricity, it will have to secure licence from the Uttar Pradesh Electricity Regulatory Commission for this purpose.

24. That the proposed Hi-tech Township shall be environmentally sustainable, i.e. the Second Party shall make appropriate provisions for conservation of water and power, pollution control and maintenance of green cover in the land use planning, development/construction works and operation and maintenance of the proposed Hi-tech Township. The Second Party shall obtain necessary environmental clearance for the proposed Hi-tech Township project from the Ministry of Environment and Forest, Government of India.

25. That the Second Party shall obtain all legal, statutory and other no objection certificates required under the rules for the proposed Hi-tech Township from the respective Competent Authorities of the GoUP and the Government of India.

(Anil Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

For Panchsheel Realcon Pvt. Ltd.

Chief Operating Officer

26. That if required the permission for generation of power for the proposed Hi-Tech Township, shall be permissible in accordance with the prevailing Energy Policy of the GoUP read with Electricity Act, 2003 and Uttar Pradesh Electricity Regulatory Commission Rules.

27. That the Second Party shall adhere to the concept and features of Hi-tech Township as outlined in the original proposal submitted by it to Awas Hundlu Uttar Pradesh at the time of selection.

28. That a 'Joint Venture' agreement shall be executed between the parties for proper and regular maintenance of the developed township/project. One time maintenance charges and annual user charges collected from allottee shall be deposited in an "Escrow Account". The Second Party shall carry out the maintenance works whereas Joint Venture shall supervise such works and ensure that the amount collected for maintenance is being utilized for the same purpose.

29. That any issue which is not covered under this MoU, shall be remedied as per the provision of the Hi-tech Township Policy-2007 as amended from time to time and the prevailing laws of the land.

30. That the First Party reserves the right to make such amendments, additions and alterations or modifications in the terms and conditions of this MoU as may be considered just and expedient in the public interest.

31. Force Majeure

(a) If at any time during the continuance of this MoU, the performance in whole or in part by either Party of any obligation under this MoU shall be prevented or delayed by reason of any war, or riot or natural calamities, the Second Party within 7 days of occurrence and cessation of each Force Majeure conditions shall intimate the first party by a registered letter, the beginning and end of the above causes of delay.

(b) The second party shall not claim extension of time mentioned in the preceding paragraphs beyond the period affected by the Force Majeure.

32. That in the event of any dispute with regard to terms and conditions of the MoU, the same shall be referred to the decision of sole arbitrator, to be appointed in writing by the parties, or if they can not agree upon a Sole arbitrator to the decision of three persons as arbitrators, one to be appointed by each party and they shall appoint the third arbitrator who shall act as the presiding arbitrator under the provisions of the Arbitration and Conciliation Act, 1996. Place of arbitration shall be Lucknow

33. That any notice, letter or communication to be given by one party to the other shall be in writing in Hindi or English language through registered post with due acknowledgement. In addition, such communication shall also be transmitted by fax.

For Pancham Realcon Pvt. Ltd.

Chief Operating Offic

(Anil Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

34. Memorandum of Understanding signed earlier on 9th July 2009 superceded by this Memorandum of Understanding dated 25.9.2009

IN WITNESS WHEREOF the parties hereto have set their hands on the day and in the year herein first above written.

In the presence of

(1) Witness.....

Address.....

FOR AND ON BEHALF OF FIRST PARTY
(Anil Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

FOR AND ON BEHALF OF SECOND PARTY

For Pincham Realcon Pvt. Ltd.

Chief Operating Officer

(2) Witness.....

Address.....

इलाहाबाद विकास प्राधिकरण, इलाहाबाद।

प्रेषक,

नगर नियोजक,
इलाहाबाद विकास प्राधिकरण,
इलाहाबाद।

सेवा में,

मेसर्स पंचम रियलकॉन प्रा0लि0
निवासी–10, लोकल शापिंग सेन्टर (एल0एस0सी0)
पोस्ट आफिस कालकाजी,
नई दिल्ली–110019

पत्रांक 598/हाईटेक टाउनशिप/नगर नियोजक/वि0प्रा0/2009 दिनांक 24/10/09

विषय:जनपद इलाहाबाद के अन्तर्गत ग्राम देवरख उपरहार, देवरख कला, चक विश्वनाथ, चकतेजक दीक्षित, मवैया उपरहार, मदनुवा उपरहार तथा लवायन खुर्द परगना अरैल तहसील–करछना, में हाईटेक टाउनशिप के विकास हेतु मेसर्स पंचम रियलकॉन प्रा0लि0 द्वारा प्रस्तुत संशोधित कन्सेप्चुयल डी0पी0आर के अनुमोदन के संबंध में।

महोदय,

कृपया उपरोक्त विषय के संबंध में मुझे यह कहने का निर्देश हुआ है कि शासन द्वारा गठित डी0पी0आर0 समिति की बैठक दिनांक 11.09.2009 में समिति द्वारा उठाये गये बिन्दुओं के परिप्रेक्ष्य में आप द्वारा उपलब्ध करायी गयी प्रस्तरवार आख्या का परीक्षण स्थानीय स्तर पर कराते हुए कमियां/सुझावों का एक तुलनात्मक विवरण के साथ, हाईटेक टाउनशिप के विकास हेतु आप द्वारा प्रस्तुत संशोधित कन्सेप्चुयल डी0पी0आर के अनुमोदन के संबंध में प्रस्ताव विकास प्राधिकरण बैठक दिनांक 08.10.2009 के मद संख्या–8 के अन्तर्गत विचारार्थ एवं स्वीकृतार्थ प्रस्तुत किया गया था, जिसमें प्राधिकरण बैठक के संकल्प संख्या–1516 के अन्तर्गत यह निर्णय लिया गया कि प्रस्तुत डी0पी0आर0 की स्वीकृति सर्वसम्मति से सशर्त की गयी, जिसके अनुसार समिति द्वारा दिये गये सुझावों के अनुक्रम में अवशेष शर्तो को निर्माण/विकास एग्रीमेंट के समय मेसर्स पंचम रियलकॉन प्रा0लि0 द्वारा आवश्यक रूप से पूर्ण किया जाये। जो शर्ते निर्धारित की गयी है वह बिन्दु क्रम संख्या 1.3, 2.2, 2.3, 2.4, 4.1, 4.2, 4.3, 5.1, 6.1, 6.5, 6.8, 6.9, 6.11, 6.12, 7.3, 7.5, 10.3 तथा 11.0 में कार्यवाही अपेक्षित है।

अतः उपरोक्त शर्तो के अधीन आप द्वारा संशोधित कन्सेप्चुअल डी0पी0आर0 की अनुमोदित प्रति इस पत्र के साथ संलग्न कर प्रेषित की जा रही है।

संलग्नक:यथोपरि।

भवदीय
24.10.09
(स्वराज गांगुली)
नगर नियोजक

ANNEXURE A-9

Development Agreement

(For Developer Companies/Consortium selected under the Hi-tech Township Policy-2003 and Hi-tech Township Policy-2007 as amended from time to time)

This Agreement is made on this 23 day of DECEMBER two thousand Nine between Allahabad Development Authority constituted under the provisions of Uttar Pradesh Urban Planning and Development Act 1973 through Sh. A.K. Singh its Vice Chairman (hereinafter referred to as the "First Party", which expression shall unless the context does not so admit, include its successor) of the One Part,

AND

M/s Pancham Realcon Pvt. Ltd. a company registered under Companies Act, 1956 Consortium registered on having its registered office at 10 Local Shopping Center (LSC), Post Office Kalkaji, New delhi-110019 through its Authorized Signatory Shri Dinesh Singala (Hereinafter referred to as the "Second Party", which expression shall, unless repugnant to the meaning or context thereof include its successor of the OTHER PART.

उपाध्यक्ष
इलाहाबाद

For Pancham Realcon Pvt. Ltd.
Auth. Signatory

WHEREAS the Government of Uttar Pradesh hereinafter referred to as "GoUP" has announced the Hi-tech Township Policy-2007 vide Government Order No. 3189/Eight-I-07-34Vividh/03, dated 16th August, 2007 which was superseded by Government Order No. 3872/ Eight-1-07-34Vividh/03, dated 17th September, 2007 and read with Gov. order Nos. 4916/Eight-1-07-34Vividh/03, Dated: 27th August, 2008, 5397/8-3-08-34Vividh/03 dated: 2nd December, 2008 and 8481/8-3-2008-24Vividh/2008 dated: 3rd January, 2009 to promote and facilitate private sector participation in the development of Hi-tech Townships with world-class infrastructure;

AND WHEREAS the High Level Committee (HLC) constituted by the Government of Uttar Pradesh has selected M/s Pancham Realcon Pvt Ltd for the development of Hi-tech Township at Allahabad;

AND WHEREAS the Second Party i.e. M/s Pancham Realcon Pvt Ltd has signed a Memorandum of Understanding on 5th of September 2009 with the First Party for the development of Hi-tech Township at Allahabad;

AND WHEREAS the total land area of the proposed Hi-tech Township is 1535.12 acres and its conceptual Detailed Project Report (hereinafter referred to as the "DPR") submitted by the Second Party has been approved on 24/Oct/2009 by the First Party;

AND WHEREAS the Second Party has applied for approval of Government of Uttar Pradesh for purchasing/holding land in excess of 12.5 acres under section-154 of Uttar Pradesh Zamindari Abolition and Land Reforms Act 1950;

AND, WHEREAS the land use of the proposed site conforms to the development of Hi-tech Township as per the Master Plan of Allahabad or the land use has been converted by the Government of Uttar Pradesh for the purposes of Hi-tech Township;

AND WHEREAS the land use of the proposed site has not been decided by the GoUP due to which the layout plan has not been approved. This Development Agreement shall be effective only after the layout plan of the Township has been approved;

AND WHEREAS the Detailed Layout Plan of the First phase of the proposed Hi-tech Township on 726.6 acres has been submitted by the Second Party to the First Party for approval;

AND WHEREAS the Second Party is required to sign a Development Agreement with the First Party at the time of approval of Detailed Layout Plan as provided in the MoU;

For Pancham Realcon Pvt. Ltd.

Authorised Signatory

(Anil Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

NOW THIS AGREEMENT WITNESSES AS FOLLOWS:

1.	Definitions	Unless the context otherwise requires the following terms shall have the meanings assigned herein when used in this Agreement:-	
		(a)	"Agreement" means this Development Agreement executed between M/s Pancham Realcon Pvt Ltd and Allahabad Development Authority.
		(b)	"Act" means Uttar Pradesh Urban Planning and Development Act, 1973 or the Uttar Pradesh Housing and Development Board Act, 1965.
		(c)	"First Party" means Development Authority constituted under Uttar Pradesh Urban Planning and Development Act, 1973 or the Uttar Pradesh Housing and Development Board constituted under Uttar Pradesh Housing and Development Board Act, 1965, as the case may be.
		(d)	"Second Party" means M/s Pancham Realcon Pvt Ltd a company registered under Companies Act, 1956/ Consortium registered on13th June 2008 having its registered office at 10 Local Shopping Center (LSC), Post Office .Kalkaji, New- delhi-110019.
		(e)	"DPR" means the Conceptual Detailed Project Report of the proposed Hi-tech Township at Allahabad.
		(f)	"Layout Plan" means the detailed plan showing the arrangement in which different uses or buildings, roads and open spaces are placed in relation to each other in accordance with prevailing Zoning Regulations and Building Bye-laws.
		(g)	GoUP means Government of Uttar Pradesh.
		(h)	MoU means Memorandum of Understanding between first Party and Second Party on 5th September 2009.
		(i)	"HLC" means High Level Committee constituted by Government of Uttar Pradesh for the purposes of Hi-Tech Township Policy-2007.

(Anil Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

For Pancham Realcon Pvt. Ltd.
Auth. Signatory

2.	Project Execution	The Second Party shall adhere to the following provisions for planned and time-bound execution of the Hi-tech Township project:-
(I)	Commencement	This agreement shall come into force immediately after the Second Party (A) obtains and produces before the First Party the statutory environmental clearance from the Ministry of Environment and Forest Government of India/U.P. (B) The deposits of the balance amount of city development charges amounting to Rs. 2,72,02,500.00 and (C) The deposits of Rs. 5,01,31,101.00 towards the price of ceiling land situated in village Mawaiya as communicated by the D.M. of Allahabad vide his letter No. ०७१/न.न.सी./स.अ./०७ dated 07 September 2009.
(II)	Start of Work	The Second Party shall commence the development and construction works immediately after this agreement comes into force.
(III)	Implementation Schedule	The Second Party shall adhere to the 'Implementation Schedule' of internal and external development works as given in the DPR and shall complete all the development works in respect of the proposed Hi-tech Township within a period of five years or extended period to the maximum total period of ten years as mentioned in the clause 16 of MoU from the date of signing of this agreement. or The Second party shall adhere to the 'Implementation Schedule' of internal and external development works as given in the DPR and shall complete all the development works in respect of the proposed Hi-tech Township within a period of five years subject to maximum ten years as mentioned in the clause 14 of the revised MoU from the date of signing of this agreement. If the Second Party fails to complete the development works within the above said period, it shall be liable to pay fine at the rate of one percent of the remaining cost of development works for every month.
(III)	Specifications and Standards	The development and construction works shall be in accordance with the standards and specifications provided in the approved DPR and the Layout Plan.

(Anil Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

For Pancham Realcon Pvt. Ltd.

Page 4 of 11

(iv)	Disaster Mandgement	(i)	The Second Party shall adhere to the Government Policies and the relevant BIS/IS codes, guidelines and practices relating to disaster management in the development and construction works of the proposed Hi-tech Township.
		(ii)	The Second Party shall submit a certificate to the First Party regarding earthquake resistant execution of development and construction works duly signed by the Structural Engineer, Supervisory Site Engineer and Licensed Architect having prescribed qualification and experience as per the prevailing Government Orders.
(v)	Development and Quality Control		The Second Party shall carry out the internal and external development and construction works in accordance with the standards and specifications laid down in the approved DPR and the Layout Plan. The execution, completion and certification of each development work of the project shall be carried out by a mutually agreed licensed Architect and authorized Engineer.
(vi)	Connectivity Charges	(i)	Connectivity to trunk services such as road connection, drainage and sewage disposal, water supply, electricity, solid waste management or any such other community facility if required, shall be extended to the Second Party by the respective Government Agency on payment of actual cost plus 15% supervision charges thereon.
		(ii)	If any major infrastructure such as embankment, ring road, flyover, metro, et-cetera, is provided by the First Party during the project period consequent to which the proposed township would be directly benefited, the Second Party shall pay proportionate cost of such infrastructure to the First Party, with prior approval of the High Level Committee constituted by GoUP.

(Anil Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

For Panchsheel Realcon Pvt. Ltd.

Authorised Signatory

(VII)	City Development Charges		Second Party shall pay City Development Charges for augmentation/ strengthening of existing infrastructure at the rate of Rs 3.0 Lakhs per acre; 25% of the City development charges shall be paid by Second Party at the time of approval of Detailed Layout Plan of Hi-Tech Township and remaining amount of City Development Charges shall be payable in six monthly installment together with interest at the rate 12% per annum. The delay in payment of installment will attract penal interest at the rate of 18% per annum.
3.	Supervision of Development and Construction Works		The First Party shall supervise the implementation of project in accordance with and as per the time-schedule prescribed in the approved DPR and inspect the quality of external and internal development and construction works to ensure that they are as per the provisions of approved DPR and Layout Plan. The Second Party shall pay the inspection charges to the First Party as per the prevailing GoUP Policy/government orders.
4.	Extension of Project Period		The Second Party shall complete the Hi-tech Township project within a period mentioned in clause-2 (II) of this Development Agreement. Extension in the project period shall be permissible with the approval of HLC as per provision of (clause-16 of MoU)/(Clause-14 of Revised MoU) on case to case basis.
5.	Provision of EWS and LIG Plots /Houses	(i)	The Second Party shall construct 10 per cent of the total houses/plots for Economically Weaker Section (EWS) and another 10 per cent houses/plots for the Lower Income Group (LIG) families as per the norms and cost ceiling laid down by the First Party.
		(ii)	Allotment of houses/plots for the above categories shall be made through a committee constituted by the Housing and Urban Planning Department, Government of Uttar Pradesh under the chairmanship of Housing Commissioner/Vice-Chairman of the respective Government Agency. The Second Party shall sell the houses/plots to the allottees.
		(iii)	The Second Party shall sell the houses/plots to the persons to whom houses/plots have been allotted by above committee.

(Anil Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

For Pioneer Urban Land & Infrastructure Pvt. Ltd.

Authorised Signatory

6.	Extension of Services to Village Abadies	The Second Party shall provide basic infrastructure such as road, drainage, water supply, sanitation and electricity, et-cetera free-of-cost to the village abadis falling within the Hi-tech Township area. The beneficiaries will pay user charges to the service provider/ Second Party.
7.	Electricity Distribution	In case the Second Party undertakes distribution of electricity, it shall have to secure licence from Uttar Pradesh Electricity Regulatory Commission for this purpose.
8.	Provision of Community Facilities	Second Party shall provide land for community facilities such as electric sub-station, police-station, fire station, post-office, telephone exchange, et-cetera and construct these facilities as per the norms and make them available to the respective department free-of-cost through the First Party.
9.	Performance Guarantee	To ensure timely completion of the project as per the provisions of the approved DPR and registration of transfer deeds of developed properties before handing over of properties to allottees, the Second Party shall mortgage 25 per cent of the total saleable land in favour of the First Party in accordance with the applicable rules/Acts. The mortgage deed shall be 'registered' and stamp duty as per the rules shall be payable on Mortgage Deed. Twenty percent of the mortgaged land shall be released after the successful completion of various services to the functional stage, compliance of all conditions as per the provisions of the approved DPR especially with regard to the ground water recharging system ensuring 120 percent water recharging against total amount of ground water drawn and registration of transfer deeds of developed properties in favour of allottees. If the Second Party leaves any development work incomplete, the same shall be completed by the First Party through sale of the land so mortgaged. Remaining five percent of the mortgaged land shall be kept retained as performance guaranties to ensure the maintenance of services.

(Anil Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

For Parsvnath Buildtech Pvt. Ltd.
Authorised Signatory

10.	Completion Certificate	(I)	The Second Party shall complete the development works within approved project period. It shall be compulsory for the Second Party to obtain a completion certificate regarding internal and external development works from the First Party in accordance with the procedure laid down in the Building Bye-laws applicable in the respective Development Area/Scheme Area/Special Development Area/ Regulated Area, et-cetera.
		(II)	The Second Party shall obtain a certificate regarding satisfactory completion of electric works from the Chief Electrical Inspector, Government of Uttar Pradesh and furnish the same to the First Party at his own expense.
11.	Registration of transfer deeds of properties		The Second Party shall ensure registration of transfer deeds of developed properties before handing over of the possession to the allottees, failing which the money equivalent to the stamp duty and registration fees amount shall be recovered by the First Party through invocation of the Bank Guarantee or sale of mortgaged land after giving notice to the Second Party.
12.	Stamp Duty and Freehold Conversion Charges		The stamp duty chargeable on the instrument relating to Hi-Tech Township executed by the Second Party shall be borne by the Second Party or Transferee of Second Party, as the case may be and freehold conversion charges shall be payable to the First Party as per the prevailing policy of the State Government.
13.	Maintenance of Services		That a 'Joint Venture' agreement shall be executed between the parties for proper and regular maintenance of the developed township/project. One time maintenance charges and annual user charges collected from the allottee shall be deposited in an 'Escrow Amount'. The Second Party shall carry out the maintenance works whereas Joint Venture shall supervise such works and ensure that the amount collected for maintenance is being utilized for the same purpose. The joint venture shall operate till the township is handed over to the local body.
14.	Restriction on Sub-letting		The Second Party shall not assign/transfer the said development permission or any permission or other benefit of this Agreement to any other person.

(Anil Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

15.	Regulations and Directions Under the Act		Without prejudice to anything contained in this Agreement, all the mandatory provisions of the Zoning Regulations, Building Bye-laws and other Regulations and Directions for the time being in force, shall be binding on the Second Party.
16.	Compliance with Labour and other Relevant Laws	(i)	During continuance of this Agreement, the Second Party shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and Bye-laws of the State or Central Government or Local Authority and any other Labour Law (including rules), regulations, Bye-laws that may be passed or notified or that may be issued under any Labour Law in future either by the State or Central Government or by the Local Authority.
		(ii)	During continuance of this Agreement, the Second Party shall abide at all times by all laws relating to development and other construction works.
17.	Conciliation and Arbitration		In the event of any dispute with regard to terms and conditions of this Agreement, the same shall be referred to the decision of an Arbitrator, to be appointed in writing by the Parties, or if they cannot agree upon a sole Arbitrator, to the decision of three persons as Arbitrators, one to be appointed by each party and they shall appoint the third Arbitrator who shall act as the presiding Arbitrator under the provisions of Arbitration and Conciliation Act, 1996. Place of arbitration shall be Lucknow.
18.	Litigation		In case of any litigation pertaining to the acquisition, maintenance, or the rights of the any individual or individual allottee, the First Party will not be liable and therefore, shall not be arraigned as a party. In other words, any cause of action emanating from any transaction between an individual/or group of individuals and the Second Party in the said land, will lie in the area of responsibility of the Second Party. First Party shall not be liable to any individual/or group of individuals with regard to properly acquired or developed by the Second Party.
19.	Indemnity		The Second Party shall indemnify the First Party against all loss, damages and liability that may arise or cause to First Party by any act, deed or omission of Second Party or any officer or employee or agent of the Second Party.

For Panchsheel Developers Pvt. Ltd.

Auth. Signatory

(Anil Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

20.	Force Majeure	(i)	If at any time during the continuance of this Agreement, the performance in whole or in part by either party of any obligation under this Agreement shall be prevented or delayed by reason of any war or riot or natural calamities, the Second Party within 7 days of occurrence and cessation of each Force Majeure conditions shall intimate the First Party by a registered letter, the beginning and end of the above causes of delay.
		(ii)	The Second Party shall not claim extension of time mentioned in the preceding paragraphs beyond the period affected by the Force Majeure.
21.	Communication		Any notice, letter or communication to be given by one party to the other shall be in writing in Hindi or English language through registered post with due acknowledgement. In addition, such communication shall also be transmitted by fax.
22.	Jurisdiction		For deciding all the matters concerning the work in question, jurisdiction would be exclusively to the local Courts or Allahabad /Lucknow High Court.

(Anil Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

For Panchsati Hyderabad Pvt. Ltd.

Auth. Signatory

IN WITNESS WHEREOF, SHRI A.K. Singh for and on behalf of the First Party and Shri [illegible] and on behalf of the Second Party, have signed this agreement on the day and year mentioned above. This Agreement consists of pages.

Signature of Authorized Signatory

3.12.2009.

on behalf of Allahabad Development Authority

(Ajai Kumar Singh)
Vice Chairman
Allahabad Development Authority
Allahabad

Signature of Authorized Signatory

For Pancham Realcon Pvt. Ltd.

Auth. Signatory

on behalf of M/s Pancham Realcon Pvt Ltd

WITNESSES:

1. Amrish Singh

2. A.K. Mahajan

WITNESSES:

1. S. Singh

2.

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OMAXE Hi-Tech City, Allahabad

पत्रांक संख्या : आर0ई0पी0एल0 / इला0 / हाई-टेक टा0 / 554

दिनांक : 31.03.2011

सेवा में,

उपाध्यक्ष,
इलाहाबाद विकास प्राधिकरण,
इलाहाबाद।

विषय- इलाहाबाद हाईटेक टाउनशिप के प्रथम चरण का कम्पलीशन सर्टिफिकेट निर्गत किये जाने के संबंध में।

महोदय,

उपरोक्त विषयक आपसे अनुरोध करना है कि मेसर्स पंचम रियलकॉन प्रा0लि0 द्वारा हाईटेक टाउनशिप इलाहाबाद के सेक्टर-1 के सभी विकास कार्य पूर्ण कर लिये गये है जो निर्धारित पत्र पर सूचनायें भरकर आपके समक्ष मानचित्रों के साथ प्रेषित की जा रही है। कृपया कम्पलीशन सर्टिफिकेट जारी करने का कष्ट करें।

1. ले-आउट मानचित्र (तीन प्रति) +।
2. इक्स्टरनल ड्रेनेज नेटवर्क मानचित्र (तीन प्रति) +।
3. इन्टरनल ड्रेनेज नेटवर्क मानचित्र (तीन प्रति) +।
4. ओ0एच0टी0, टी0डब्लू0, यू0जी0टी0 मानचित्र (तीन प्रति) +।
5. 9मी0 वाइड रोड सेक्शन मानचित्र (तीन प्रति) +।
6. 12मी0 वाइड रोड सेक्शन मानचित्र (तीन प्रति) +।
7. 18मी0 वाइड रोड सेक्शन मानचित्र (ए टू बी सी टू डी) (तीन प्रति) +।
8. रेन वाटर हार्वेस्टिंग डिटेल मानचित्र (तीन प्रति) +।
9. सीवरेज नेटवर्क मानचित्र (तीन प्रति) +।
10. लैण्ड स्केपिंग मानचित्र (तीन प्रति) +।
11. स्ट्रीट लाइटिंग मानचित्र (तीन प्रति) +।
12. वॉटर सप्लाई मानचित्र (तीन प्रति)

भवदीय

(अजय मिश्र)
अधि0 हस्ताक्षरी
मेसर्स पंचम रियलकॉन प्रा0 लि0

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ANNEXURE A-11

Court No. - 2

Case :- PUBLIC INTEREST LITIGATION (PIL) No. - 4003 of 2006
Petitioner :- Re: Ganga Pollution
Respondent :- State Of U.P. And Others
Petitioner Counsel :- Vijay Chandra Srivastava,A.K. Gupta,A.K. Srivastava,Anil Tiwari,Arun Kumar,Arvind Agarwal,Baij Nath Yadav,Baleshwar Chaturvedi,D.B. Mishra,D.S. Mishra,Jagdish Tewari,K.C. Pandey,P.N. Mishra,S.K. Srivastava,Shailesh Singh,Sharad Kr. Srivastava,Sunita Sharma,V.B. Singh,V.C. Mishra,Vivek Mishra
Respondent Counsel :- C.S.C.,A.K. Mishra,Ajay Bhanot,Anjani Kumar Mishra,C.L.Pandey,Chandan Sharma,Dr. H.N.Tripathi,H.N. Singh,Hem Pratap Singh,Iqbal Ahmad,M.C. Chaturvedi,N. Misra,P.S. Baghel,R.B. Shukla,Rajiv Lochan Shukla,S.A. Lari,S.M.A. Kazmi,S.P. Kesharwani,S.P. Singh,T.M.Khan,Vivek Birla,Vivek Verma,W.A. Hashmi

Hon'ble Ashok Bhushan,J.
Hon'ble Arun Tandon,J.

Heard Dr. Ashok Nigam, learned Additional Solicitor General of India, assisted by Sri Ajay Bhanot for Union of India, Sri U.N. Sharma, learned Senior Advocate, special counsel for the State of U.P., Sri S.G. Husnain, learned Additional Advocate General assisted by Sri S.P. Kesharwani, learned Additional Chief Standing Counsel for the State, Dr. H.N. Tripathi, learned counsel for U.P. Pollution Control Board, Sri S.D. Kautilya, learned counsel for Municipal Corporation, Allahabad, Sri Rajeev Lochan Shukla, learned counsel for the Tanneries and Sri A.K. Gupta, learned amicus curiae as well as Sri Ashwani Kumar Misra, learned counsel appearing for newly impleaded respondent, Allahabad Development Authority.

Learned amicus curiae has filed an application for impleadment of the State Level Environment Impact Assessment authority, Uttar Pradesh, through its Member Secretary, Pickup Bhawan, Gomti, Nagar, Lucknow and Allahabad Development Authority though its Vice Chairman, Indira Bhawan, Civil Lines, Allahabad as respondents No. 18 and 19. The impleadment application is allowed.

An application for impleadment has also been filed on behalf of Allahabad Development Authority through Sri Ashwani Kumar Misra Advocate along with application for vacating the order dated 28.3.2011 supported by a detailed affidavit. The application and affidavit are taken on record. The impleadment of Allahabad Development Authority has already been allowed.

Learned Additional Solicitor General with regard to transfer of a Defence land area 1123.80 square meters at Mori Gate Fort, Cantt. Allahabad for the purpose of establishing the sewage pumping station, has submitted that the letter dated 28.1.2011 has been issued by the Government of India; Ministry of Defence informing the Principal Secretary, Government of U.P. that in principle approval for permitting State Government of Uttar Pradesh/Ganga Pollution Control Unit for construction of a sewage pumping station on the aforesaid land has been granted. The consent of the State Government as per current Standard Table of Rents (STR) and not as per the circle rate of the State Government has been sought. No appropriate reply has been given by the learned counsel appearing for the State as to why the aforesaid concurrence has not been yet been communicated to the Ministry of Defence, whereas establishing a sewage pumping station at Mori Gate is urgently required. However, in the affidavit dated 28.3.2011 sworn by Sri Anil Kumar Srivastava, Managing Director, U.P. Jal Nigam, Lucknow, a copy of the Government order dated 19.2.2011 has been filed as Annexure-6 by which order, the State Government has communicated the Commissioner, Allahabad Division and District Magistrate, Allahabad and Nagar Ayukt, Nagar Nigam, Allahabad to take appropriate action as per the letter of the Central Government dated 28.1.2011. The said letter clearly thus conveys the State Government's concurrence to the letter dated 28.1.2011

and the authorities aforesaid were directed to take appropriate action. Another letter dated 25.2.2011 written by Lt. Col. A.S. Dabholkar has been annexed by which the General Manager Ganga Pollution Control Unit was requested to work out the cost of the Defence Land as per current (effective) Standard Table of Rent (STR) and forward the same to DG, DE New Delhi. From the aforesaid correspondences, which have been brought on record along with the aforesaid affidavit, it is clear that although the Central Government has communicated its concurrence for transfer of the Defence land as per current (effective) Standard Table of Rent but due to not taking effective compliance by the authority concerned, the working permission for construction of sewage pumping station could not be issued by Ministry of Defence.

Sri S.G. Hasnain, learned Additional Advocate General sought to contend that the State Government has given its permission to transfer the land on circle rate which arguments has no leg to stand when the Ministry of Defence has already communicated their concurrence for transfer of the land on current Standard Table of Rent (STR) and the land belong to the Ministry of Defence, it is not open for the Additional Advocate General to contend that the cost of the land is to be made by circle rate. The above argument itself suggests that the State Government is not effectively taking consequentia steps, which is failing the transfer of Defence land. We direct the State authorities including the District Magistrate, Allahabad to immediately communicate their approval for the transfer of land on the valuation as per Standard Table of Rents. All effective steps in this context be taken within two weeks and the Ministry of Defence shall accordingly issue working permission for construction of sewage pumping station within four weeks thereafter so that the construction of sewage pumping station be started.

Sri Ajay Bhanot, learned counsel appearing for the Union of India has also submitted that the issue of minimum flow of water in river is being considered by a sub committee constituted on October 4, 2010 the report of which is awaited. He has referred to affidavit of Sri Sudhir Garg, filed on behalf of Ministry of Water Resources, Government of India, New Delhi dated 27.3.2011. From the aforesaid counter affidavit, it is clear that Water Quality Assessment Authority, New Delhi was constituted by the Government of India in the year 2001. A decision was taken on 14.5.2003 by the said Authority to constitute a working group with the terms of reference which also included studies towards deciding minimum flows in the river and other related issues. The report is said to be submitted in July, 2007, recommending that legal and institutional implications of the report may be examined by a committee under the Chairmanship of Chief Engineer, CWC. A report in this regard has been submitted on October 27, 2009 which was discussed on 11.10.2010 by Water Quality Assessment Authority when it was agreed that a sub committee be constituted. As noticed in earlier orders of this Court two of the issues which need to be considered are as as follows:

(a) Can the State draw unlimited quantity of water from a river even to the extent of rendering its main stream a dry zone?

(b) Can the State because of drawl of water from upper portion of the river Ganges render its quantity or quality of water completely unfit for human use even for abthing purposes?

The aforesaid facts indicate that the issue of minimum flow of

water in a river is engaging attention of various authorities and Committees of Ministry of Government of India for long about a decade but no final recommendation in this regard could be made. Sri Ajay Bhanot appearing for the Union has submitted that a report in this regard shall be shortly submitted and brought before the Court. We notice that large number of issues are being considered by Water Quality Assessment Authority but for the purpose of this case, recommendation/ report is required on following two issues:

(i) Standards regarding quality of water in river Ganges which is fit for drinking and bathing purposes.

(ii) Issues '(a)' and '(b)' as quoted above with regard to minimum flow of water in river Ganges.

In view of the aforesaid, we direct the Ministry of Water Rescurces as well as Ministry of Environment and Forest to take immediate steps in this regard so as the appropriate recommendation/report in that regard be submitted and brought before the Court within a period of three weeks from today.

Along with counter affidavit of Sri S.K. Sarcar filed on behalf of Ministry of Urban Development Government of India, New Delhi dated 25.1.2011, the Government of India has brought on record the Inspection report of the expert committee which was constituted in pursuance of the order of this Court dated 6.12.2010 passed in this petition. The Committee was directed to inspect the laying down of the sewer line and if necessary by digging the sewer line to find out whether the sewer line work done, was in accordance with the approved DPR. U.P. Jal Nigam was also directed to take necessary steps in that regard. The expert committee constituted by the Ministry of Urban Development Government of India visited the

city of Allahabad on 29th and 30th December, 2010 and inspected the works and submitted its report which has been filed as Annexure-C.A- 1. The report brought on record indicates that there has been variation in actual work undertaken regarding laying down of the sewer line in accordance with the approved DPR. Several shortcomings and violations of D.P.R. have been pointed out in the inspection report.

An affidavit on behalf of U.P. Jal Nigam has been filed in this regard. The affidavit filed by U.P. Jal Nigam is sketchy and does not refer to any action taken by the U.P. Jal Nigam, which is the implementing agency for laying down sewer line in reference to the inspection report of the expert committee. Sri Ravi Kant, learned Senior Advocate appearing for U.P,. Jal Nigam has prayed for time to take effective steps and file a proper affidavit in this regard. As prayed three weeks' time is allowed. The appropriate direction in this context shall be issued after filing of the affidavit by U.P. Jal Nigam.

This Court vide order dated 19.1.2011 had issued following directions:

> *"It was pointed out by learned Amicus Curiae that the colour and quality of the water at Sangam and several other places has deteriorated and the colour has become red and brown which clearly suggests that the quality of the water has deteriorated due to unabated pollution of river water including the pollution at Kanpur Nagar and other cities.*
>
> *Dr. H.N. Tripathi, who is present for the U.P.*

Pollution Control Board, has filed affidavit bringing the report regarding analysis of the water which confirms that water quality has deteriorated. We fail to understand that the river water is continuously being polluted and the quality is going bad to worse but no appropriate action by the State Government and the Authorities of the U.P. Pollution Control Board is being taken in this regard who are statutorily obliged to check the pollution. We provide that by the next date all appropriate action shall be taken in this regard. Action taken be brought on record before the Court by means of an affidavit."

It has also been noticed in the earlier order that Chief Secretary of the State, who was present before the Court in earlier proceedings, have assured the Court that appropriate action in this regard be taken and brought on the record. As noticed above due to unabated pollution and discharge of untreated water in river Ganges, the colour and quality of the water is deteriorating which become visible at Sangam. No satisfactory compliance in this regard has been brought on record by the State of U.P. The State of U.P. who is to oversee that bodies and persons polluting the water to such great extent which has changed the colour of water be identified and action be taken, has failed to do any substantial work in this regard. An affidavit has been filed by Dr. H.N. Tripathi, learned Counsel appearing for the U.P. Pollution Control Board dated 22.4.2011 sworn by Dr. Rajeev Upadhyay, Chief Environmental Officer, annexing therewith the letters written by Dr. C.S. Bhatt, Member Secretary dated 13.4.2011 to the Director Indian Institute of Toxicological Research, M.G. Marg, Lucknow to carry on indepth study of the causes of occurrence of colour and

water quality. Another letter dated 18.4.2011 of Indian Institute of Toxicology Research has been brought on record indicating concurrence of the institute to carry on desired study. The letter written by the Member Secretary Dr. C.S. Bhatt according to us, is nothing but an act of the U.P. Pollution Control Board abdicating its main function to find out the polluters and take action against them. The U.P. Pollution Control Board, whose main function is to prevent water pollution and take appropriate action against the polluters, instead of taking appropriate action itself, which is a body of experts, is asking the other institution to know the causes of occurrence of colour and water quality. The U.P. Pollution Control Board which has been constituted to check the pollution is not taking any action itself rather it is asking from another institute to know the cause of pollution, whereas the water of river Ganges is decolouring due to unabated pollution, which is continuing from year after year. We are constrained to observe that U.P. Pollution Control Board is not performing its duties as entrusted by statutory provisions. We direct the Chairman of the U.P. Pollution Control Board to file his personal affidavit on the next date and be present in the Court to explain as to what action he has taken in this regard and in compliance of various directions issued by this Court in this petition.

In our order dated 28.3.2011, we have noticed that the State had acquired land for sewage farm in the year 1915 to the extent of 277 acres out of which 45 hectares land had been transferred to Allahabad Development Authority for the purpose of construction of housing colony on the river bank. The proceedings of public Interest Litigation (being PIL No. 54654 of 2009 Re: Sewage Farm) as well as Public Interest Litigation No. 1408 of 2011 were also noticed. This Court has noticed the acute problem of discharge of untreated sewage of Allahabad district directly in river Ganges, which is still

continuing. It was noticed that total capacity of sewage treatment plant functioning at Allahabad is only 93 MLD, whereas sewage generated is 232 MLD hence, 119 MLD untreated sewage is directly thrown in the river Ganges. It was also noticed that the land acquired for the sewage farm had been diverted for the other purpose, which stands admitted in the affidavit of Nagar Nigam, Allahabad. The Chief Secretary, State of U.P. who was present during the earlier proceedings before the Court, had assured the Court that the State shall review the entire issue at its level, with regard to the use of the land which was earlier acquired for the purpose of sewage farm. Today an affidavit of Surya Prakash Misra, Special Secretary, Urban Development sworn on 21.4.2011, has been brought on record annexing the report of the proceedings of the meeting dated 15.4.2011 in the aforesaid regard.

Sri Arun Kumar Gupta, learned amicus curiae has filed an affidavit giving details pertaining to the land of sewage farm which was acquired in 1915 and the diversion of the land for other purposes including transfer of 45 hectares of land by Nagar Nigam, Allahabad for construction of housing colony. Learned Amicus Curiae has also brought on record the Government order dated 31.7.2000 by which the State Government has imposed restriction on constructions within 200 meters from the river bank with the object of saving river Ganges from pollution. Decision was however, taken that relaxation can be granted to Math, Ashram and temple in certain condition. The decision of the Board meeting of the Allahabad Development Authority dated 3.4.2005 has also been brought on record in which a decision was taken that no permission shall be granted for any construction of house within 200 meters of highest flood level of river Ganges. The relaxation for Math etc. was continued. Learned Amicus Curiae has also brought on record the decision of the Committee of Allahabad Development Authority

deciding the objection on master plan 2021 specially the decision of the committee on item No. 45. From decision taken by the Committee at item No. 45, it appears that application was made by the Manager, Sahara India Commercial praying for land use as commercial in Mauja Mavaiya and Mavaiya Devrakh Uperhar Tahsil Karchana on total 133 acres of land. In the decision it has been resolved that upto 200 meters from the river bank, no construction of any kind would be permissible and for next 300 meters constructions can be permitted only in special circumstances. The Board refused permission to change the land use as residential. It is useful to quote the decision of the Committee:

> "प्राधिकरण बोर्ड के पूर्व बैठक के निर्णय के अनुसार हाइयेस्ट फ्लर्ड लेवल को देखते हुए बंधा रोड का एलाइमेंट होगा। महायोजना में जो बंधा रोड का एलाइमेन्ट दिखाया गया है वो उसकी पुष्टि भी एरीगेशन विभाग से कर लिया जाये तथा शासन के आदेश के अनुसार बंधा रोड के साथ जा नदी तटीय विकास के लिए 200 मी0 तक कोई निर्माण नहीं होगा तथा अगले 300 मी0 में कोई विशेष भू-उपयोग अनुमन्य किए कये हैं। इसके अतिरिक्त पूर्व महायोजना सीवेज फार्म, ग्रीन बेल्ट एवं फ्लर्ड इफक्टेड एरिया प्रदर्शित था तथा शासनादेश के अनुसार यहां ग्रीन बेल्ट यथावत नदी तटीय विकास के अन्तर्गत रखा गया है उनका अधिकतर स्थल इस क्षेत्र में आता है। उपरोक्त शासनादेशों के आधार पर इस क्षेत्र को आवासीय करना उपयुक्त नहीं होगा। प्राधिकरण बोर्ड इस पर विचार करना चाहे।"

Sri Ashwani Kumar Misra, learned Counsel appearing for the Allahabad Development Authority referring to affidavit filed in support of his application, has submitted that 45 hectares of land was got transferred by the Nagar Nigam, Allahabad in favour of

Allahabad Development Authority on 25.5.2005 for consideration of Rs. 11 crores. He submits that in Public Interest Litigation being writ petition No. 54654 of 2009 in Re: Sewage Farm, a Division Bench of this Court dismissed the Public Interest Litigation with the observation that the land acquired by one public purpose can be very well utilised for another public purpose. He further submits that another writ petition No. (PIL) 1408 of 2011 has been filed restraining the Allahabad Development Authority from constructing New Prayag Avas Yojna as well as the private company which is making construction near the banks of river Ganges, which Public Interest Litigation is pending and counter affidavit has been called. Learned counsel for the Allahabad Development Authority submits that sufficient land is available for construction of sewage treatment plant and transfer of land was rightly made in favour of Allahabad Development Authority. The judgment and order dated 26.5.2010 in writ petition No. 54654 of 2009 has been referred to and relied.

Learned Counsel for the Allahabad Development Authority has prayed that the order dated 28.3.2011 imposing restriction on construction within 500 meters from mid stream of the river be withdrawn and Allahabad Development Authority be permitted to proceed with its project of constructing a housing colony on the river bank of Yamuna near Sangam in city of Allahabad.

The pollution in the river water of Ganges has arisen to an alarming situation. The apex Court in in M.C. Mehta case reported in (1987) 4 Supreme Court Cases 463 had taken very serious note of the pollution in river Ganges. Following observations were made by the apex Court.

> *"It is the popular belief that the river Ganga is the purifier of all but we are now led to the situation*

that action has to be taken to prevent the pollution of the water of the river Ganga since we have reached a stage that any further pollution of the river water is likely to lead to a catastrophe. There are today large towns inhabited by millions of people on the banks of the river Ganga. There are also large industries on its banks. Sewage of the towns and cities on the banks of the river and the trade effluents of the factories and other industries are continuously being discharged into the river. It is the complaint of the petitioner that neither the government nor the people are giving adequate attention to stop the pollution of the river Ganga. Steps have, therefore, to be taken for the purpose of protecting the cleanliness of the stream in the river Ganga, which is in fact the life sustainer of a large part of the northern India."

In the affidavit filed by Allahabad Development Authority dated 21.4.2011, the Allahabad Development Authority itself has brought on record the affidavit of Nagar Nigam, Allahabad which gives the fact regarding the situation of river pollution in river Ganges. The affidavit of Nagar Nigam sworn by Shiv Lakhan Yadav, Legal Advisor, Nagar Nigam Allahabad filed in PIL No. 54654 of 2009 notices that there are 57 Nalas open drain which are discharging untreated water in river Ganges and Yamuna. It has also noticed that total capacity of treatment plant in Allahabad is only 89 MLD and total untreated discharge is 228 MLD. According to admission of Nagar Nigam itself 120 MLD untreated is being discharged in river Ganges and 108 MLD untreated is discharged in river Yamuna. Following was stated in paragraphs 6,7 and 8:

" 6. That as per detail Number of Nalas are 57 (44 are discharging in Ganga river and 13 are discharging in Yamuna river), total discharge of Untreated water is 228 MLD (120 MLD in Ganga river and 108 MLD in Yamuna river) and capacity of treatment plants is 89 MLD (60 MLD Naini and 29 MLD Salory).

7. That at present out of 228 MLD of untreated discharge water only 89 MLD is being treated as stated above. However schemes of 5 treatment plant has been sanctioned amounting to 355.98 Crores which will treat 60 MLD of untreated water. Under JAICA aided scheme Numayadahi capacity 50 MLD, Kodra capacity 25 MLD, Pongat capacity 10 MLD and Naini capacity 20 MLD amounting 336.07 Crores had been submitted to State Government for submission to Government of India.

8. That as it has ben demonstrated that the total untreated sewage discharge will be covered by different treatment plants to be commissioned at different places by 2013, the land transferred to Allahabad Development Authority is not required for sewage farming, as was previously done before 1985."

The said figures have been given on the basis of the report of the year 2009. No further sewage treatment plant or any other mechanism has been generated. Untreated water is constantly and regularly discharged in river Ganges and Yamuna. The apex Court

in **M.C. Mehta Vs. Union of India,** reported in (1988) 1 Supreme Court Cases 471 held that all municipal Boards which have jurisdiction over the areas through which the river Ganga flows have to take effective steps for undertaking different works in sewerage system. It is useful to quote the directions issued in the aforesaid case in paragraphs 17 and 26.

> *" 17. It is no doubt true that the construction of certain works has been undertaken under the Ganga Action Plan at Kanpur in order to improve the sewerage system and to prevent pollution of the water in the river Ganga. But as we see from the affidavit filed on behalf of the authorities concerned in this case the works are going on at a snail's pace. We find from the affidavits filed on behalf of the Kanpur Nagar Mahapalika that certain target dates have been fixed for the completion of the works already undertaken. We expect the authorities concerned to complete those works within the target dates mentioned in the counter-affidavit and not to delay the completion of the works beyond those dates. It is, however, noticed that the Kanpur Nagar Mahapalika has not yet submitted its proposals for Sewage treatment works to the State Board constituted under the Water Act. The Kanpur Nagar Mahapalika should submit its proposals to the State Board within six months from today.*
>
> *26. What we have stated above applies mutatis mutandis to all other Mahapalikas and Municipalities which have jurisdiction over the*

areas through which the river Ganga flows. Copies of this judgment shall be sent to all such Nagar Mahapalikas and Municipalities."

277 acres of land was acquired in the year 1915 and 1941 for sewage farm. Nagar Nigam, Allahabad, which was under obligation to utilise the land for the purpose of treating the untreated water have failed to perform its duty. Nagar Nigam has very conveniently in 2005 transferred 45 hectares of land to Allahabad Development Authority and Allahabad Development Authority has decided to construct a housing colony on 45 hectares of land situated on the river bank of Yamuna near Sangam (Where Ganga and Yamuna meet). As noticed above in the PIL writ petition No. 54654 of 2009, this Court has passed the order dated 26.5.2010. In the aforesaid writ petition, the Division Bench noticed the issue involved to the following effect:

"The only question involved in this case is as to whether the land, which has been acquired for one public purpose, can be converted for another public purpose or not."

The Division Bench noticed that out of the total land only 45 hectares of land has been given for the purpose of housing colony, whereas the entire land was originally acquired for the purpose of sledge farm. The Division Bench made following observations:

"Factually, learned counsel for the Allahabad Development Authority has come forward with a case that out of the total land, only 45 hectare land has been given for the purpose of housing colony though the entire land was originally

acquired for the purpose of sledge farm. According to him, the mechanism between such period and the present period has changed. The modern equipments do not require so much land for the purpose, for which the same was acquired and, accordingly, the land in excess of 45 hectares can be utilised for the same. We do not find any logic standing in the way of process of public purpose if no hindrance is being caused to the original public purpose, particularly when we find that all the governmental authorities, being Allahabad Development Authority, Nagar Nigam, Jal Nigam and Environment Department are present before us and nobody is standing in the way but the Court suo motu has taken cognizance in the matter on the earlier occasion. The issue raised in the form of public interest litigation, on which suo motu cognizance has been taken, stands resolved."

From the above judgment of the Division Bench, it appears that Division Bench in the said judgment held that the land in excess of 45 hectares can be utilised for the purpose for which it was acquired. It was not brought before the Division Bench that prior to transfer of 45 hectares of land, the large portion of the area was already transferred for other purposes which has been detailed in the affidavit of Nagar Nigam. The Division Bench passed the order on the premise that rest of the land except 45 hectares, is still available for sewage farm. We however, in this petition cannot take any decision contrary to that which was taken by the Division Bench on 26.5.2010 nor in this writ petition we can entertain any issue regarding transfer of 45 hectares of land to the Allahabad Development Authority by Nagar Nigam. But the question as to

what measures should be taken for checking the pollution in river Ganges is the main subject of present writ petition. In that regard we can proceed to examine and take appropriate measures so that river Ganges may not be further polluted. It is also relevant to refer to the decision of the State Government taken in the meeting dated 15.4.2011 as referred above. From the aforesaid proceedings dated 15.4.2011, it appears that 13.88 hectares of land which was given for fish farm be asked to be returned from Fisheries Department. It was also observed that for extension capacity of sewage treatment plant, land is available.

Learned amicus curiae has also pointed out that another decision has been taken by administration to construct the housing colony in the locality Ganga Nagar on the bank of river Ganga.

Ganges plain in the northern India has been always treated to be most fertile area. Due to increase of population enormous and unregulated and unplanned constructions have begun on both sides of river Ganges, which is continuous and unabated process. It has been noticed that in highest flood of 1978, large number of villages on the bank of river Ganges had submerged. Learned Amicus Curiae has brought on the record a booklet issued by the District Administration Allahabad 'Badh Prabandh Yojna 2011-2012' in which flood affected villages have been mentioned and the villages Jahangirabad and Mavaiya, where the sewage farm land is situate have been included in the villages which are affected by Ganga flood.

Unabated and enormous construction on the river bank is also one of the source of increasing pollution in river water and a source for throwing untreated sewage dirt in the river with no mechanism to check. As noticed above, Allahabad Development Authority while rejecting the application of Sahara Commercial Corporation for permitting the change of land use as residential in

villages mentioned therein, recorded that within 200 meters from highest flood level, construction is wholly prohibited and within next 300 meters permission be granted only in special circumstances. Restriction in making construction of housing colony within 500 meters of highest flood level of river is necessary and mandatory to check the further pollution which may be caused by such housing colonies. We have noticed that in spite of repeated directions, neither the Nagar Nigam nor the State of U.P. has been able to come with any measure to check release of untreated sewage in river Ganges. 134 MLD untreated sewage, according to own case of Nagar Nigam is being discharged in river Ganges daily and according to the respondent new sewage treatment plant of the capacity 60 MLD shall be commissioned by 2013. New sewage treatment plant which has been mentioned and proposed has yet not started and we have reasonable doubt as to whether it will be able to function by 2013. Stopping construction up to 500 meters from highest flood level on the banks of both the rivers Ganges and also on the part of river Yamuna adjoining Sangam has to be directed in the city of Allahabad. The earlier order dated 28.3.2011 however requires modification.

We thus direct that no construction shall be undertaken by the Allahabad Development authority or by any private builders within 500 meters of highest flood level of river Ganges in city of Allahabad as well as part of river Yamuna adjoining the river Ganges (Sangam). The Allahabad Development Authority and the district administration shall ensure that no construction be made in the aforesaid area. We however, give liberty to any aggrieved person to make appropriate application in this petition with regard to above restrictions, if he feels so aggrieved.

Sri Rajeev Lochan Shukla, learned counsel appearing for the tanneries has submitted that a date be also fixed for considering

the tanneries matter. We fix 20.5.2011 for consideration of tanneries matter.

As agreed by learned counsel for the parties,next date in the present case is fixed as 13.5.2011 at 2 p.m.

Learned Special Counsel appearing for the State as well as learned Additional Advocate General referring to the affidavit has submitted that detail timetable is being given for repair of the roads which were dug during the laying down of the sewer line. Learned Amicus Curiae as well as other counsels have submitted that there is no proper repairing of the roads and pits are lying on the road unattended by the authorities. Although in earlier affidavit, it was stated that repairing of the road shall be completed by February, 2011 but according to the own case of the respondents, the repairing of the road has not yet been started. We are of the view that authorities of U.P. Jal Nigam, who is executing agency for laying down the sewer, and the P.W.D. are slack and are not making proper supervision which they are expected with regard to repairing of the road. We direct all the authorities including the authorities of U.P. Jal Nigam and P.W.D. to take appropriate steps regarding restoration of the roads in city of Allahabad, which were got dug during the laying of the sewer line. Appropriate affidavit in this regard be filed by U.P. Jal Nigam, P.W.D. as well as State of U.P. by the next date.

Order Date :- 22.4.2011

LA/-

ANNEXURE A-12

प्रयागराज विकास प्राधिकरण, प्रयागराज

प्रेषक,

नगर नियोजक/प्र0अ0(त0स0)
प्रयागराज विकास प्राधिकरण,
प्रयागराज।

सेवा में,

मेसर्स पंचम रियलकॉन प्रा0लि0
पंजीकृत कार्यालय–56ए/56बी आदर्श स्क्वायर
सरदार पटेल मार्ग, सिविल लाइन्स
जनपद प्रयागराज।

पत्रांक : 268/प्र0अ0(त0स0)/जोन–4/Revi/हा0टे0/2022 दिनांक 09 जून, 2022

विषय :जनपद प्रयागराज के अन्तर्गत ग्राम देवरख उपरहार, देवरख कछार, मवैया उपरहार परगना अरैल, तहसील–करछना, जनपद प्रयागराज में हाईटेक टाउनशिप के विकास हेतु मेसर्स पंचम रियलकॉन प्रा0लि0 द्वारा प्रस्तुत संशोधित कन्सेप्चुयल डी0पी0आर0 के अनुमोदन के सम्बन्ध में।

महोदय,

कृपया उपरोक्त विषय के सम्बन्ध में अपने आवेदन पत्र दिनांक 28.09.2021 एवं 03.01.2022 का सन्दर्भ लेने का कष्ट करे, जिसके माध्यम से प्रयागराज विकास क्षेत्र के अन्तर्गत गतिमान हाईटेक टाउनशिप नीति के तहत संचालित परियोजना का क्षेत्रफल 1535.60 एकड़ के क्षेत्रफल को सीमित करते हुए 232.50 एकड़ तक किये जाने हेतु अनुरोध किया गया है।

उक्त के कम में गतिमान हाईटेक परियोजना के सम्बन्ध में उ0प्र0 शासन द्वारा गठित उच्च स्तरीय समिति की बैठक दिनांक 06.01.2022, 07.01.2022 एवं 08.01.2022 के दृष्टिगत प्रयागराज विकास क्षेत्र के अन्तर्गत परगना अरैल, तहसील–करछना प्रयागराज में विकसित की जा रही हाईटेक परियोजना प्रयागराज का क्षेत्रफल 232.50 एकड़ की प्रदत्त स्वीकृति के कम में आप द्वारा 232.50 एकड़ क्षेत्रफल पर प्रस्तुत संशोधित डी0पी0आर0 प्राधिकरण बोर्ड बैठक दिनांक 25.04.2022 के संकल्प सं0–1916 के द्वारा प्रदान किया गया है। उपरोक्त के कम में उपाध्यक्ष, प्र0वि0प्रा0 के अनुमोदनादेश दिनांक 04.06.2022 के दृष्टिगत संशोधित कन्सेप्चुअल डी0पी0आर0 की अनुमोदित प्रति इस पत्र के साथ संलग्न कर प्रेषित की जा रही है। तद्नुसार आपको संशोधित ले–आउट प्लान प्र0वि0प्रा0 से अनुमोदित कराना आवश्यक होगा।

उपरोक्त स्वीकृति मा0 उच्च न्यायालय इलाहाबाद में योजित रिट याचिका संख्या–4003/2006 रिवर गंगा पालूशन बनाम उ0प्र0 राज्य व अन्य में पारित होने वाले अन्तिम आदेश के अधीन होगी।

संलग्नक : यथोपरि।

भवदीय

(टी0पी0 सिंह)
नगर नियोजक/
प्रभारी अधिकारी(त0स0)

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Ministry of Housing and Urban Affairs
Government of India

स्वच्छ भारत
एक कदम स्वच्छता की ओर

ANNEXURE A-13

RIVER CENTRIC URBAN PLANNING GUIDELINES

TOWN AND COUNTRY PLANNING ORGANISATION

MINISTRY OF HOUSING AND URBAN AFFAIRS
GOVERNMENT OF INDIA

दुर्गा शंकर मिश्र
सचिव
Durga Shanker Mishra
Secretary

सत्यमेव जयते

भारत सरकार
आवासन और शहरी कार्य मंत्रालय
निर्माण भवन, नई दिल्ली–110011
Government of India
Ministry of Housing and Urban Affairs
Nirman Bhawan, New Delhi-110011

FOREWORD

The Indian subcontinent is blessed with numerous rivers and water bodies and these provide livelihood opportunities to millions of people across the country. The Government vision for 2030 envisages clean rivers, with safe drinking water for all Indians, sustaining and nourishing life and efficient use of water in irrigation using micro-irrigation techniques.

2. These River Centric Urban Planning Guidelines are prepared an Advisory for States/ UTs, especially their Town and Country Planning Department, Urban Development Authorities and Urban Local Bodies to ensure sustainability of rivers passing through cities and towns and to regulate the development along the river banks and flood plains. These guidelines suggest model River Zone Regulations, which can be adopted by States/ UTs in accordance with the riverine topography and local conditions.

3. I hope that these Guidelines will go a long way in preserving and conserving our rivers and States/ UTs will make an extensive use of these Guidelines for formulating their own river centric urban planning guidelines.

4. I complement the officers of Town and Country Planning Organisation, New Delhi who have contributed in preparing this Advisory diligently.

(Durga Shanker Mishra)

New Delhi
18 May, 2021

Office Address: Room No. 122 'C' Wing, Nirman Bhawan, New Delhi-110011

डी॰ तारा, आई.ए.स.
संयुक्त सचिव
D. Thara, I.A.S.
Joint Secretary

भारत सरकार
आवासन और शहरी कार्य मंत्रालय
GOVERNMENT OF INDIA
MINISTRY OF HOUSING AND URBAN AFFAIRS

PREFACE

Rivers are lifelines of cities and towns. Since the ancient times, several civilizations grew around rivers. Civilization of Harappa and Mohenjo-Daro came up along the Indus, Sutlej and ancient Saraswati. In southern part of the country also, civilization developed around the Krishna, Kaveri and Godavari rivers. Rivers have been revered as mothers for sustaining life of the population living alongside its banks. The Ganga Basin traversing a distance of 2525 km from its source houses almost 40% population of India.

In the present times, Indian cities are growing at unprecedented pace, sometimes causing harmful impact on the health of the rivers. Several programs for cleaning the rivers are being implemented by the government with focus on their rejuvenation and ecological conservation and, health and wellbeing of people dependent on these rivers. Ministry of Housing and Urban Affairs has prepared these guidelines as per the decision taken in the First Ganga Council Meeting held under the chairmanship of Hon'ble Prime Minister at Kanpur on 14 December, 2019.

I am hopeful that these guidelines will assist Urban Local Bodies, Urban Development Authorities and Municipal Corporations and State Town and Country Planning Departments for taking action to conserve and preserve their rivers, water bodies and flood plains.

I congratulate the team of Metropolitan and Union Territories Division of Town and Country Planning Organization for bringing out this advisory and hope that States and UTs will make full use of it and draw up action plans for protecting the rivers and their flood plains. The contribution of interns from Schools of Planning and Architecture, Delhi and Bhopal is also duly acknowledged.

(D. Thara)

May, 2021

Office: 144-C, Nirman Bhawan, New Delhi-110011, Phone: 011-23061444, 23061991

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1. Introduction

1. Rivers passing through the urban areas are their lifelines. However, due to unprecedented urbanization and manufacturing activities in the areas along the rivers, many of these have become polluted and in some cases, unfit even for bathing. Flood plains of the rivers in urban areas have witnessed the construction activities including the unauthorized residential development, a phenomenon which has severely degraded the overall natural environment and river ecology.

2. The pollution load in rivers has been increasing over the years due to disposal of human and industrial waste in the rivers. The situation is likely to be further aggravated due to impact of climate change on the water resources, including rivers. Central Pollution Control Board (CPCB) monitors the water quality of water bodies, including rivers across the country. According to the CPCB reports of the year 2009 and 2015, considering the Bio-Chemical Oxygen Demand (BOD), numbers of polluted river stretches have increased from 150 in year 2009 to 302 in year 2015.

3. As per another CPCB Report of 2009-10, the estimated sewage generation from Class-I & Class-II towns in the country was around 38,255 MLD (Million Litres per Day), against which sewage treatment capacity of only 11,787 MLD i.e 30% of the sewage generated was available. In the latest CPCB report of 2014-15, these figures changed to 61,948 MLD and 23,277 MLD (37% of the sewage generated). Thus, it can be seen that although installed treatment capacity has nearly doubled over the last 5 years, the gap between sewage generated and installed capacity has only slightly reduced because of increased urbanization and increase in urban population. Water crisis is particularly severe in highly populated urban areas and the condition is going to be further aggravated with increased urbanization. Due to the increased demand of the cities, water is being brought from distant points. Higher amount of waste water, mainly in the form of sewage and industrial effluents, is being generated resulting in additional challenge for urban planning.

2. Need for Urban River Water Conservation and Mainstreaming it with Urban Planning

4. Flow is the major driver of biodiversity in rivers. River flow regime, ranging from low flows to high flows, significantly affects the river ecosystem. For various water demands, water is stored and diverted through various structures built on rivers that changes the flow regime and reduces the flow in the downstream reaches, resulting in degradation of the services that society gets from rivers.

5. By definition an urban river is a stretch or section of a water resource located within a catchment that contains a town or a city, where the structure and function of that water resource is altered from its natural state. These river systems are not only used for irrigation, drainage and supply of potable water but they also have a close relationship with the social fabric.

6. Due to the pressure of urbanization and population growth, riverfront areas are getting degraded with poor water quality, limited access, formation of slums etc. and are often found functioning as open sewers or dumping grounds. Such problems are not confined to a particular geographic region of the world, but are common to all places subject to the level of urbanization, and India is no exception. One can see many examples across the world, where city authorities have made successful efforts to reconnect people to the rivers by reshaping their riverfronts such as in Portland, Boston, Seattle, San Francisco, and Tokyo. Major development projects in India such as Ganga action plan, Yamuna action plan and Sabarmati riverfront development have been initiated to improve the river environment.

7. Waterfronts have long been used for different purposes and are now being developed for thriving and layered public use. Waterfronts can be developed for different functions and activities such as parklands, recreational public spaces, retail or tourist centre. However, studies suggest that mixed use development along the waterfront is beneficial for the community and city authorities as it provides wide public access to the riverfront and contribute in the economic development of the city.

8. Realizing the significance of river water conservation as well as river front development, Ministry of Housing and Urban Affairs has been directed to prepare the guidelines on the same in the First Ganga Council Meeting held under the chairmanship of Hon'ble Prime Minister on 14 December, 2020. The relevant para of the minutes is reproduced:

"There is need for new thinking for 'river cities'. There is need for the residents of those cities to ask, 'What can we do for the rivers' Learning from experience of Namami Gange, there is need for a new

Figure 1: Two views of the same part of the River Don, fifty years apart. (a) The river as a drain behind industrial buildings. (b) The river as an attractive location in front of residential developments which have replaced the industrial buildings.
(Source: David N Lerner*, Alison Holt)

river centric thinking in planning for cities on the banks of rivers, the city master plan, at present, does not adequately address this. The river health needs to be mainstreamed into urban planning process by development of Urban River Management Plans. Cities should be responsible for rejuvenating their rivers. It has to be done not just with the regulatory mindset but also with development and facilitatory outlook."

3. Objectives of the Guidelines

9. The broad objectives of the guidelines are:

- Highlight the need for river centric master planning, and urban river management and planning, and provide guidance to cities and towns.

- Prepare a framework for river water conservation and development of river water front

- Devise development regulations /zoning for river front development.

- Recommend suitable planning strategies for river water management and river front development as a part of sustainable urban planning and development. Riverfront to be transformed as a place to live, work and use for recreational activities by means of improvements in public access, development of green spaces along river edges etc.

Figure 2: The number of polluted rivers stretches in India have increased in the last few years. (Photo by Abhishek727 /Wikimedia Commons)

4. Factors Responsible for Degradation of Floodplains in Urban Areas

10. In urban areas, rivers continued to be channelized to accommodate for development and flood prevention. As urban areas expanded, rivers at urban centers have come under more pressure and lost the ability to function naturally. Construction activities on the flood plains damage their natural setting. Damage to floodplains harms the riverine ecosystem, lessens groundwater recharge capacity and poses threats of flash floods. Unplanned construction and encroachment on riverbeds reduces the capacity of rivers to carry flood waters and may lead to floods.

11. Floodplains in Indian cities are very much exposed to unauthorized construction which has taken place without preparation and approval of layout plans. Built up paved areas on the flood plains are also responsible for reducing the absorption of water into the ground and increasing runoff. Reduced flow along the embankments has led to utilization of urban river plains for residential, commercial and recreational purpose thereby interfering with the ecological functions of the river. Flood plains are encroached upon by various means and are also used as landfill sites, leading to degradation of overall river ecology.

12. River Channelization is the practice of dredging and realigning the river to increase its flow rate and carrying capacity. Traditionally, channelization of the rivers flowing through the cities is done to check the flooding. However, channelization, through the elimination of riverine habitat and the creation of excessive flows, may not be desirable for "well-being" of streams and rivers. Rivers, which have undamaged floodplain, are considered to be in good health.

13. Water quality degradation, which happens due to indiscriminate discharge of waste water without any treatment through open drains, is also one of the important concerns. Industrial discharge further deteriorates the quality of water. Disposal of untreated waste causes severe pollution in urban and peri urban areas. During 2015, approximately 61,754 Million Litres per Day (MLD) sewage was generated in the country against the available sewage treatment capacity of 22,963 MLD. Because of the deficit in sewage treatment capacity, about 38,791 MLD of untreated sewage (62% of total sewage) is discharged directly into nearby water bodies (CPCB, 2016).

14. Use of such wastewater loaded surface water for irrigation has resulted in the significant built up of heavy metals in agricultural land near several cities and towns of India. In the cities around river Ganga, although untreated sewage is being used by farmers to grow crops on urban peripheral lands due to its high nutrient contents, its use for longer periods is a matter of great concern. Urban sewage carries high amounts of

heavy metals (Ni, Cr, Pb, Cd, and Zn) and salts, causing salinity and alkalinity hazards. It is projected that wastewater generation across the country will reach 1,22,000 MLD by the year 2050. The country generates ~50 million tonnes (Mt) of municipal solid wastes/year from its urban areas (CPCB, 2000). About 9%–10% of these wastes find its way into agricultural land in the form of compost, contaminating soil with heavy metals.

15. Reduction of vegetative coverage also adversely impacts the urban river flood plain. The increase of human population will further lead to degradation of riparian areas, intensification of the hydrological cycle and increase in the discharge of pollutants, leading to proliferation of species. This will disturb the river biodiversity and bio production river flood plains are indeed habitat for more species of plants and animals compared to any other landscape unit in most regions of the world. Since cities are hubs of global transportation networks, urban rivers are also vulnerable to invasion of non-native species which may outcompete the native species and degrade the natural environment.

16. Increased frequency of flood and reduced flow due to over-exploitation and increased surface run-off in urban areas reduces the flows within a river but increases the frequency of flood in case of heavy rainfall. Continuous encroachment over the floodplains of the country's rivers has resulted into the constriction of the most suitable recharge zone. The water level in the rivers prior to onset of monsoon remains usually low resulting in longer recharge period for the groundwater aquifers compared to the high pumping (discharge) rate.

5. River regulations

17. Efforts for regulating the development on floodplains can be traced to the River Conservancy Act of 1884 that directed for conducting surveys and defined limits for the river which was termed "river-bed"; any construction or plantation within the river-bed for the area covering the present States of Tamil Nadu and Andhra Pradesh was to be permitted by Conservators of Rivers.

18. The Central Water Commission (CWC), a part of the Ministry of Water Resources (MoWR) circulated a model bill in 1975 for flood plain zoning which proposed delineating the areas that are subject to flooding including classification of land with reference to relative risk of flood.

19. The National Water Policy, 2012 includes a section on conservation of rivers and 4 river corridors. It also mentions that encroachments and diversion of water bodies must not be allowed and restoration must be promoted to the extent feasible.

State Government Efforts

20. In 1989, Tamil Nadu Pollution Control Board passed an order stating that no industry causing serious water pollution will be permitted within 1 km of reservoirs, rivers and public drinking water sources. Maharashtra Pollution Control Board also framed a River Regulation Zone policy for the State in 2000 (revised in 2009) based on the designated best use as per water quality for rivers, high flood line and categorizing industry based on their pollution levels. However, this was later withdrawn based on a resolution passed by the state government dated 3 February, 2015. With floodplains, it is also important to look at relevant land use legislations which come under the ambit of States. State Town and Country Planning Acts were enacted by the States based on Model Town and Country Planning Laws in 1962 (later revised in 1985).

21. Ministry of Environment Forests and Climate Change (MoEFCC) released a "River Regulation Zone" (RRZ) notification draft under the Environment Protection Act (EPA), 1986.

22. Draft RRZ notification intended to regulate developmental and industrial activities upto 5 kms from the banks of the river stretches having floodplains and an equivalent area for mountain/ hill stretches under three River Conservation Zones (RCZ) demarcated with reference to the Highest Flood Level (HFL) with a 100 year return period. The Prohibited Activity Zone (RCZ-PA) in the immediate vicinity of the river is offered the highest protection since existing activities and constructions within the zone should adhere to the notification. Attention has been paid to regulating new developments within three zones.

23. The RRZ draft policy also defined the area for protection from further encroachments as the "active flood plain", which will be marked by the high

flood line. This, in entrenched stretches will be the available space in the valley. In embanked stretches, this would be the area between two embankments or roads along a river acting as an embankment. In other stretches of the river, the active flood plain will be the 100-year flood line, the land which gets flooded during a 100-year storm. The idea was to establish a no-development zone not less (in area) than the active floodplain.

24. In February 2016, Ministry of Environment, Forests and Climate Change (MOEF & CC) had come out with a draft notification for River Regulation Zones wherein it proposed to prohibit or regulate the developmental activities on riverfronts and floodplains. The draft notification has been circulated to all the States and UTs.

Key proposals in the draft notification:

- The proposed River Regulation Zones (RRZs) are to be set up on the lines of Coastal Regulation Zones (CRZ) and would fall under the Environment Protection Act,1986.

- The key objective of River Regulation Zones is to prevent encroachments along the rivers and floodplains. The notification proposes to declare river stretches and floodplain zones as River Conservation Zones and to regulate or prohibit developmental activities in these zones.

- There would be a National River Conservation Authority to be headed by the Secretary of the Ministry of Environment, Forests and Climate Change at the Central level, and a State River Conservation Authority headed either by the Chief Secretary or Additional Chief Secretary at the State level.

Under the proposal, the river stretches and their tributaries were classified into three categories namely floodplain rivers, seasonal rivers and mountain rivers/ hill streams. Also, the river regulation zones have been divided into three, depending upon the permission granted to carry out developmental activities:

- Prohibited activities zones: up to 500 meters from the highest flood level in past 50 years

- Restricted activities zone: Outer limit of prohibited zone to 1 kilometer

- Regulated activities zone: Outer limit of restricted zone to 3 kilometers

Prohibited activities zone:

This zone extends from the river bank to the outer edge of the floodplain and beyond. The limit will be extended up to 500 meters from the highest flood level in the past 50 years. These zones are the area which are subjected to frequent flooding and are most vulnerable to adverse impacts of human activities.
In case of the presence of embankments in the floodplain area, then this zone will extend form the river bank to the present outermost embankment and further a 100 m buffer is provided outside that embankment.

Alternatively, if the flood plain is marked by the presence of ecologically sensitive and fragile watersheds, heritage sites, areas

with outstanding beauty, areas which are genetically diverse and important for rare and endangered species, national parks, biosphere reserves, wildlife sanctuaries etc., then the whole area will be included under this zone irrespective of the above criteria.

Restricted activities zones:

Restricted activities zone includes the floodplain areas which are less frequently affected by the floods and lie farther from the river. It will have limits extended from the outer limits of the prohibited zone and up to 1 KM.

Regulated activities zone:

This zone extends up to 3 km from the outer limits of the restricted activities zone. Certain activities will be permitted in this zone.

Activities which are permitted
Traditional grazing by domestic animals, traditional capture fishing and organic farming, discharge of treated domestic waste waters, withdrawal of ground water using hand pump, recreational activities which will not require boat jetties etc.

Activities which are not permitted
Bunding, dumping of solid waste, construction of new embankment, land reclamation, storage of inflammable and toxic materials, and withdrawing water for commercial purposes other than hydro power and irrigation projects are prohibited.

Urban and Regional Plan Formulation and Implementation Guidelines (URDPFI), 2014

25. The URDPFI Guidelines, 2014 identify river flood plain as natural hazard zones. Buffer zones are areas created around the conservation area, often peripheral to it, inside or outside to enhance its protection. Buffer zones are identified on the basis of activities. Flood plain zoning is done to regulate the land use in the flood plains to restrict the damage caused by floods. Flood plain can be identified based on last 50 or 100 year flooded area of water bodies or river. There can be different considerations for regulations. For example, the area likely to be affected by floods up to a 10 year frequency should be kept reserved only for gardens, parks, playgrounds, etc. Residential or public buildings, or any commercial buildings, industries, and public utilities should be prohibited in this zone.

In area liable to flooding in a 25-year frequency flood, residential buildings could be permitted with certain stipulation of construction on stilts (columns), minimum plinth levels, prohibition for construction of basements and minimum levels of approach roads, etc. In urban areas there should be double storied buildings. Ground floors could be utilized for schools and other nonresidential purposes.

6. Strategies for Urban River Conservation

Planning and development of river bed

26. Three alternative approaches for planned development of cities and towns with objective of conserving the flood plains of the rivers passing through them are suggested.

A) River ecology conservation plan

This is purely an environmental approach to the river bed development and comprises of the following components.

a) Augmenting water recharge potential – through extended storage of water in the form of retention and detention ponds.

b) Reducing pollution of river water
(i) installation of sewerage treatment plants with detention facilities at the outfall points and (ii) effluent management of adjoining peripheral areas of cities.

c) Conservation of natural areas – through natural swamps, marshes and special aggregation of flora and fauna, with proper mechanism to inhibit misuse through protective barriers and sound management.

d) Hierarchy of green areas – to be developed depending on existing accessibility and viability of development of areas with varying use intensities such as remnant forests, landscaped parks, bio diversity parks and zoological gardens with significant emphasis on pollution control.

e) Recreation – to be limited to ecotourism as in development of near passive greens and water sports facilities where environmentally viable.

f) Continuation and renewal of existing areas be envisaged with special emphasis on improvement in the built environment. Agriculture and allied activities such as horticulture and floriculture are also proposed to be promoted in limited manner wherever
the possibilities exist.

B) Integrated Development Scenario

27. With proper use and integration of the river into the urban fabric, development is to be achieved through appropriate consideration of the local and transient requirements of facilities of adjoining areas and also through inclusion of such uses that would give citizens desirable proximity to the river. The various features of this scenario are:

a) Retention of essential features of the eco-based scenario such as augmentation of ground water recharge, pollution control and conservation of natural areas.

b) Assignment of uses, according to demand and suitability, mainly incorporating those uses which are either presently under consideration or are

derived to facilitate improvement of the perceived quality of life of other areas.

c) Modification of certain existing/ ongoing uses to improve their respective environmental qualities.

d) Integrated tourism development, through development of appropriate infrastructure networks and facilities.

e) Higher level of recreational activities is also proposed under the scenario. These will include, water sports and other recreational uses which are presently wanted in the city.

f) Inland water transportation in also envisaged for development, subject to feasibility.

g) Management of higher order is also identified as an essential requirement to ensure economic viability and sustenance of integrated development

C) Post channelization development scenario

28. It is essentially an extension of the integrated development scenario with partial/ limited channelization as a precondition. This scenario also requires:

a) Reduction of peak flood water release, as flow volumes are likely to increase on channelization.

b) Pumping regulation to prevent backflow of existing drains and consequent flooding in other areas of the city

c) Limited assignment of religious and other water bound facilities as channelization will restrict the stream width, will not permit stream bifurcation and will permit limited in stream uses.

Outline a Development Strategy

29. The Strategy that involves a substantial degree of alternative models of public – private partnerships, and proposes a stronger land management system with a project-based approach in development or master plan. Channelization, considering the enormous investments/ resource requirements, adverse impacts on the areas upstream and downstream and, major implementation constraints, may not yield any justifiable benefit. It may therefore be more appropriate to adopt the integrated development model, which foresees only partial channelization.

7. Objectives and Framework for the River Zonal Development Plan

30. Zonal development plan for river flowing through the city may be prepared to address the following objectives: -

a) Water supply augmentation
b) Pollution abatement
c) Land utilization/ management
d) Eco-friendly development.

Critical concerns for the development of the river areas are: -

a) Involvement of multiple agencies
b) High resource requirement
c) Special significance of the area and its linkage with the other States- upstream and downstream, development/re-development of the existing areas.

- Development should not increase the pollution within the river area, rather it should regenerate a healthy environment.
- Any kind of development should be safe from flood damage even at peak flood level.
- The resource requirement is partially recovered with the development of land in the river bed area without compromising the quality of the environment.
- Stretches which need to be developed on priority, do not require large financial resources or are prone to encroachments, should be identified.
- Mitigate the constraints of allotment of land for public and semi- public uses in the adjoining areas of river, more so on banks of the river.

Figure 3: Two views of the same part of the River Cheonggyecheon, S. Korea (a) 1949 (b) 2018
(Source: https://www.reddit.com/r/korea/comments/8jua0q/cheonggyecheon_in_1950s_vs_2018/)

8. Conservation of the River as a Natural Entity

31. As the river is a vibrant ecosystem which bestows numerous ecological functions such as recharge and discharge, erosion and deposition, storm water drainage etc. It is of critical importance to retain these natural functions and processes. This necessitates that the ecological value must be prioritized over the economic utility arising from the river. The proposed interventions must respond to this natural context sensitively, and not cause any major deviations to these functions.

32. Priority needs to be given for the restoration of the natural course of the river over a human-centric built designs. This would not only make the river conservation unique but also contribute to the ecological value accrued by the city.

9. Restoration of Natural Zones along the River

33. Ecological restoration is the process of returning an ecosystem as closely as possible to pre-disturbance conditions and functions. The restoration process includes rejuvenation of the structure, function and self-sustaining behavior of the ecosystem. Following restoration strategies may be applied in stages and considering the ecological status of each zone.

1. Substantial intervention for managed recovery

2. Partial intervention for assisted recovery

3. Non-intervention and undisturbed recovery

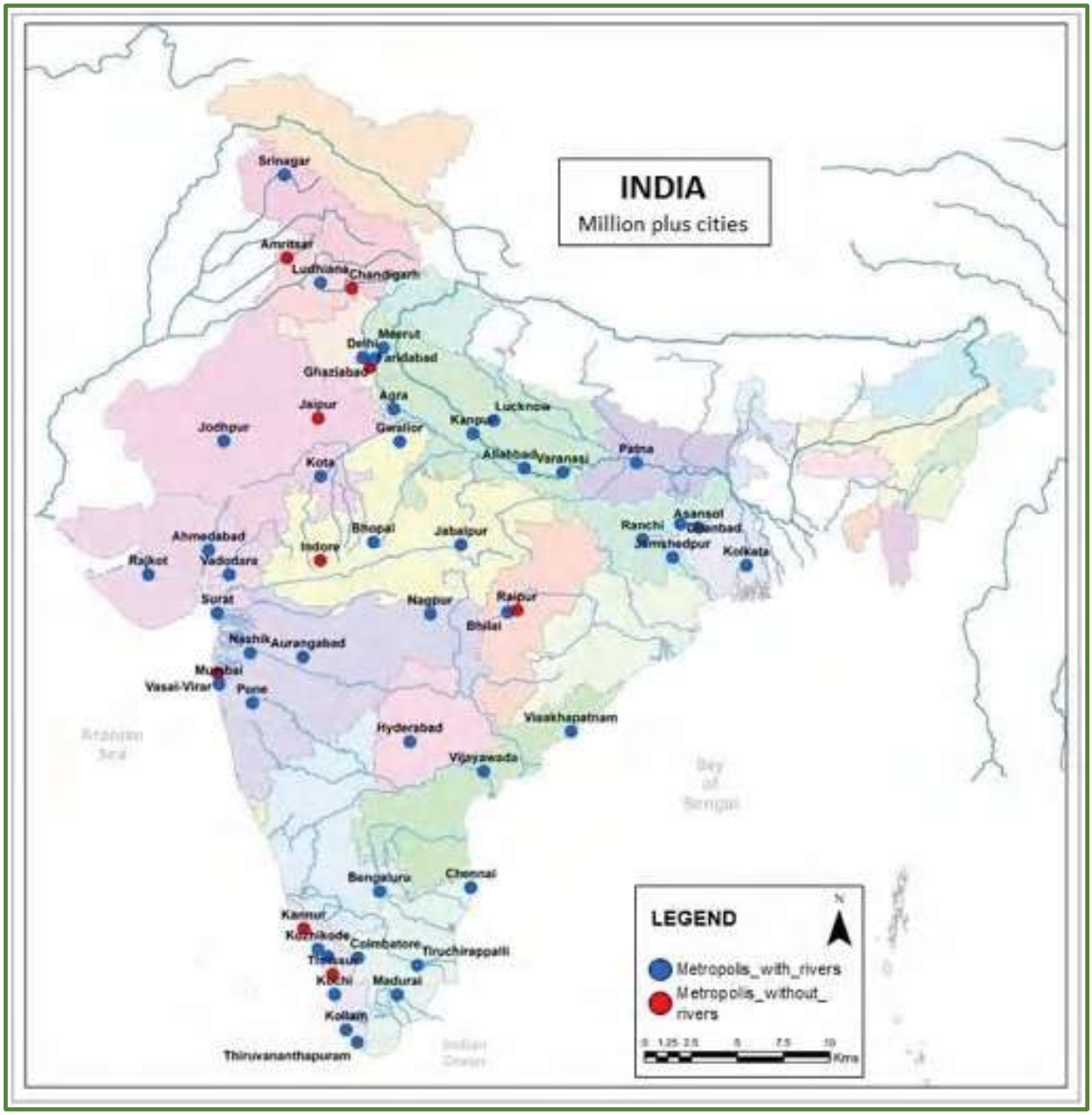
10. Maintaining Environmental Flow and Carrying Capacity

34. For a natural state and to protect the habitats, it is essential to maintain the minimum and maximum levels. Environmental flow is a system for managing the quantity, timing, and quality of water flows from a dam, with the goal of sustaining freshwater and estuarine ecosystems and the human livelihoods that depend on them. The most ecologically important aspects of a river's flow are extreme low flows, low flows, high flow pulses, small floods, and large floods. Environmental flows can be designed to restore any of these, with the goal of improving water quality, restoring sediment deposition, addressing the life- cycle needs of fish and wildlife, and restoring the livelihoods of river-based communities.

35. Pollution abatement measures through infrastructure development may be made effective for improving the health of the rivers if survival need of the river system is made an integral factor of our river planning. Thus, it is of prime importance to maintain the minimum requirement of environmental flow for sustenance of the river ecosystem along with its functions and services. In case of non- perennial rivers, the flow may be erratic and environmental flow is many times absent, causing the loss of habitat and biodiversity.

11. Decentralized Approach to River Rejuvenation

36. The tributaries of major rivers such as Ganga, Yamuna, Narmada have been encroached upon which resulted into limited recharge of groundwater aquifers, reduction in the natural flow and large contribution of sewage water through these streams to the main stream. Therefore, restoration of the tributary streams is essential in the planning. If issues such as those relating to dumping of debris, solid waste, sewage and others are addressed at the catchment level, they can lead to a sustainable solution.



12. Restoration for Utility and Aesthetic Value

37. Restoration of the river ecosystem will not only contribute to the ecological utility of the river, but also complement the beautification of the riverfront. Maintaining water quality is important for enhancing visual appeal of the riverfront. This will help the river to host macro and micro habitats for a wide biodiversity. Hence, there is an immense potential for research and scientific activities such as bird-watching, insect trails, herpetology studies along the river banks. Conservation of ghats, historical monuments and gardens is essential, and their design should be sustainable.

13. Urban River Zoning Regulations

38. United Nations has on 26 July, 2010 resolved unanimously to declare "right to safe and clean drinking water and sanitation as a human right". Healthy rivers are essential for realization of the said obligation by India as a Party to the UN. Further, statutory mandate from Section 3, 5 and 6 of the Environment (Protection) Act, 1986 seeks to regulate such activities that are found to be incompatible with maintaining the health of the river systems as dynamic and life sustaining entities. It is thus proposed to frame rules to regulate harmful activities in and around the rivers.

Categorization of urban river stretches

Category I Urbanized stretch shall include stretches of rivers (including their tributaries), with or without embankments, in designated urban areas where infrastructure facilities in the form of roads, buildings (residential, commercial, recreational), temples, ghats etc exist.

Category II Peri urban stretch shall include stretches of rivers (including their tributaries) in suburban and rural areas, with or without embankments, where infrastructure development if any is moderate and the land is primarily under natural vegetation, forestry, agriculture and grazing.

Lateral zonation of river banks

"Active Flood Plain" is defined as High Flood Line (HFL) which in entrenched / embanked stretches of a river stretch shall be the available space (including the river channel/s) in the valley of entrenched stretch or between two embankments or between existing roads on either side along a river acting as an embankment. In other stretches of the river, HFL/ active flood plain shall be the 100-year flood line.

No Development and Construction Zone (NDCZ): The competent authority shall determine a NDCZ on either bank for each river which shall not be less than the "Active Flood Plain" of the river.

High & medium impact zones: The competent authority shall identify and designate suitable distance/s from the NDCZ on either bank keeping local topographical conditions in mind, to be called as high impact and medium impact zones. In plains, where river topography is relatively flat, these distances shall not be less than 1 and 3 Km respectively from the NDCZ depending on the width of the urban river.

Following public facilities shall not be permitted in active flood plain/ NDCZ:

- Hospitals, nursing homes, and housing likely to have occupants who may not be sufficiently mobile to avoid injury or death during a flood,
- Police stations, fire stations, vehicle

and equipment storage facilities, and emergency operations centers that are needed for flood response activities before, during, and after the flood,

• Structures or facilities that produce, use, or store highly volatile, inflammable, explosive, toxic, and/or water-reactive materials,

• Public semi-public facilities like sewage and water treatment plants (STP/ WTP); power plants and stations; bus depot; metro stations/ depot etc which form the life line infrastructures for any city,

• Commercial extraction of ground water by non-government / private agencies shall not be permitted with in NDCZ in any category of the river.

The Urban Local Body/ Urban Development Authority shall act as per the directions of Ministry of Environment and Forests to designate the State Environment Impact Assessment Agency (SEIAA) or the State Pollution Control Board (SPCB) to act as the Competent Authority for implementation of these regulations for environmental conservation and preservation, including water bodies, forests and drains, parks, playgrounds, burial and crematoria.

Uses/Activities permitted

Parks/Gardens, playgrounds, sports facilities including stadium, swimming pools, burial cemeteries and crematoria may be permitted under this category. The Parking for these facilities shall be provided as per the provisions of the Master Plan and up to 2% of the total land area with FAR of 0.50 and G+1 structure may be permitted for ancillary uses required to support the main activity such as eating joints/ restaurants, stalls, sheds for storage etc.

Uses/Activities permissible under special circumstance by the Competent Authority

i. Open air theatres, indoor recreational uses, dwelling for watch and ward, sports clubs, water front tourism development projects, libraries, milk booths, Horticultural Producers' Cooperative Marketing and Processing Society (HOPCOMS), public toilets.

ii. The ground coverage for such use shall not exceed 5% of the total area with required parking facility and shall not be more than G+1 floor in any case.

14. Regulations for Eco-sensitive Zones and Water Bodies

i. Restrictions imposed by the competent authorities are to be maintained as buffers for various eco sensitive zones such as reserve forests/ protected forests etc. Permissions in sensitive areas earmarked on the land use plan shall be considered only by the planning authority.

ii. The buffer for water bodies such as lakes/ streams/ drains shall be governed as per the NGT Orders. In case of water bodies, a 75 meter buffer of No Development and Construction Zone is to be maintained around the lake as per the revenue record with exception of activities associated with lakes. This buffer may be taken into account for reservation of park while sanctioning plans.

iii. Similarly storm water drains that get discharged into the river may be categorized into 3 types namely Primary, Secondary and Tertiary. These drains may have a buffer of 50, 35 and 25 m (measured from the edge of the drains) respectively on either side. In case the buffer has not been marked due to cartographical error for any of the above types of drains, then based on the revenue records buffer and the existing ground situation may be considered by the Authority in all such cases without referring the land use plan while according approval for building/ development/ layout plan.

iv. In addition, any other notifications or directions and applicable buffers which may be issued by the Competent Authority from time to time for such eco-sensitive areas shall become applicable.

v. In case of any amendment in the existing regulations of the Competent Authority resulting in reduction of the extent of buffer, the land use of the adjoining parcel of land will be the land use for such exempted land parcels.

vi. Within the demarcated buffers for the valley systems excluding the requirements of buffer as per NGT judgment, the following uses are allowed:

(a) Sewerage treatment plants and water treatment plants

(b) Roads, pathways, formation of drains, culverts, bridges etc which will not obstruct the water course, run offs, channels.

vii. If the river portion is a part of the layout/ development plan, then that part of the river zone could be taken into account for reservation of parks and open spaces both in development plan and in sub-division regulations, as the case may be.

viii. Any land falling within the river zone for which permission was accorded by the Authority or Government prior to the date of notification, and then such permission shall be valid irrespective of the land use classification in the Development Plan or Master Plan of the city concerned.

39. While preparing/ revising the master plans, it would be appropriate to categorize the zones as per the environment sensitivity as given below.

Passive recreational zone: These zones are established to provide recreational and leisure facilities and activities in selected areas that have unique features (including visual corridors, environmentally sensitive areas, buffer areas, or are along significant routes). These parks can include recreational commercial or public facilities at the neighborhood, community, and regional level.

Active recreational zone: Are those zones established to provide parks that offer active recreational and sporting activities. While structures within the parks are allowed, the general character of the Active Recreational Zone should remain as green and recreational.

Protected area: These zones are established to conserve and protect the environmentally sensitive areas such as steep slopes and rivers which are rich in nature and biodiversity. These areas are non-developable for other strategic purposes. In the case of highly sensitive areas such as forests and rivers, the zoning for the protected areas shall supersede.

15. Way Forward

40. Co-operation between cities which share a common river is necessary not only to meet the evolving ambitions of the States in the shared basin, but also to face common challenges that might be stopping the States from achieving their maximum potential. It is high-time to prioritize our water resources sustainability and think for the environmental security; else our future might face a serious crisis on water. Life is important, but survival in 21st century should be equal for all, people should not suffer because of lack of basic amenity like water- whether it is for drinking, irrigation, industry, hygiene, recreation or even religious. Sustainable urban planning and development has to take into consideration that river flowing through the urban centers require prioritized attention to ensure that the rivers are clean, free of any untreated discharge of waste water and the flood plains are not only protected from the construction activities but also become the hub of recreational activities without compromising the overall natural environment.

41. State governments and UT administrations while preparing or revising the master plans/development plans need to ensure that protection of river flood plains get utmost attention and the entire river zone is designated as special zone.

References

1. Aude Zingraff-Hamed (2017): “Urban River Restoration: a socio-ecological approach”, Univerisite de Tours.

2. Central Pollution Control Board: Status of water quality in India – reports by Central Pollution Control Board for 2007, 2008 and 2009

3. Geoffrey E. Petts(1989) “Alternatives in regulated river management”, CRC Press

4. Henning Bjorland (2004): The Integrated Natural Resource Management Group for the South Australian Murray Darling Basin, “Integrated Natural Resource Management Plan for the South Australian Murray-Darling Basin

5. Ministry of Environment, Forests and Climate Change, “Draft river conservation zone (regulation of harmful activities) rules, 2012.

6. Mihir Shah (2014), “Urban Water Systems in India: A Way Forward, Indian Council for Research on International Economic Relations (ICRIER)”.

7. S. Barve & S. Sen Riverside restoration (2011), “City planner’s viewpoint: Case of Mutha riverfront, Pune, India WIT Transactions on Ecology and the Environment, Vol 145”, WIT Press.

8. Sharma, A, Gardner,T& Begbie, D(2019): Approaches to water sensitive urban design, Amsterdam: Elsevier

Illustrations

(Source: Robert Milhouset et al(2012): Modelling Environmental flow need for riparian vegetation)

River Morphology and Ecology: Components of River

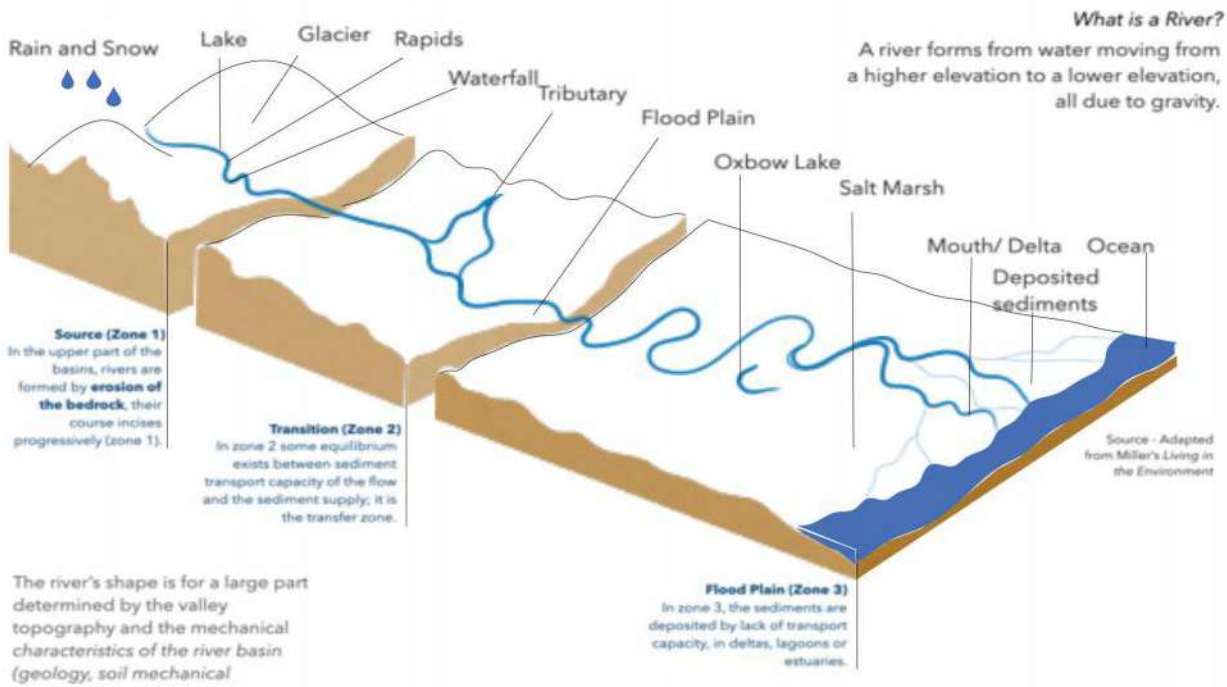
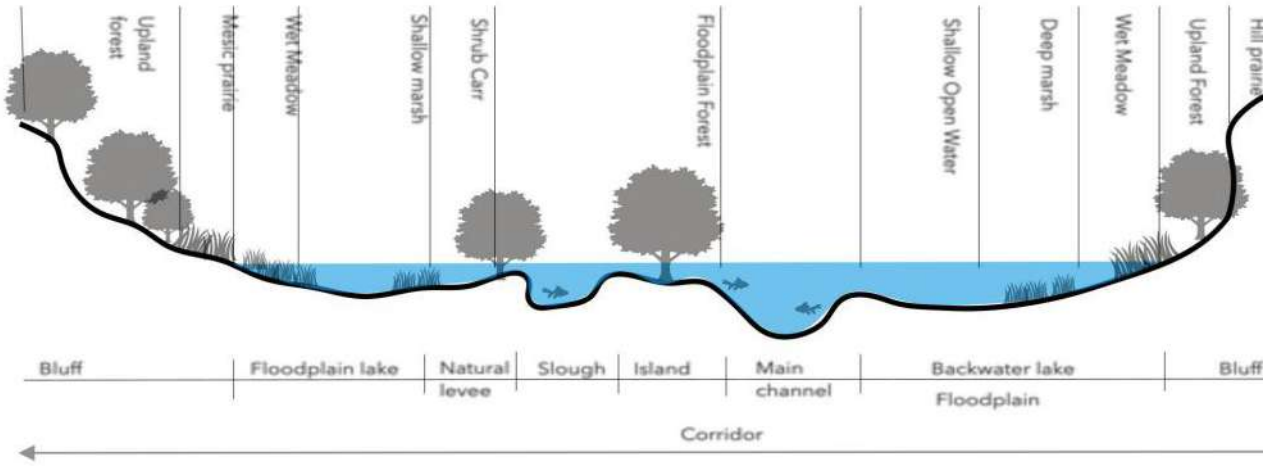


Figure 5: Components of a River

Figure 1

Figure 2: River cross-section (Source: Robert T Milhouse, et al, 2012)Figure3: Components of a River

River Cross Section



Notes

6331

Ministry of Housing and Urban Affairs

Government of India

ÒITEM NO. 15 COURT NO.5 SECTION XI

S U P R E M E C O U R T O F I N D I A
RECORD OF PROCEEDINGS

Petitions for Special Leave to Appeal (Civil)...../2011
CC 12501/2011
(From the judgements and orders dated 28/03/2011, 22/4/2011 and 27/5/2011 in PIL No. 4003/2006 of The HIGH COURT OF JUDICATURE AT ALLAHABAD)

ALLAHABAD DEVT.AUTH.TR.VICE CHAIRMAN Petitioner(s)
VERSUS
RE.GANGA POLLUTION H.B.JI MAHARAJ & ORS Respondent(s)
WITH I.A. No. 1(C/Delay in filing SLP and office report)

Date: 08/08/2011 These Petitions were called on for hearing today.

CORAM :
HON'BLE MR. JUSTICE D.K. JAIN
HON'BLE MR. JUSTICE ASOK KUMAR GANGULY

For Petitioner(s) Mr. Ajay Kumar Misra, Sr. Adv.
Mr. Ashwani Kumar Misra, Adv.
Ms. Anuradha Dubey Mishra, Adv.
Ms. Tulika Mukharjee, Adv.
for M/S Anuradha & Associates.

For Respondent(s)
Mr.Anish Kumar Gupta,Adv.

UPON hearing counsel the Court made the following

O R D E R

Learned Senior Counsel appearing for the petitioner seeks leave to withdraw the petitions, stating that the petitioner Authority would like to move an application before the High Court for vacation of the orders impugned in these petitions. Accordingly, the Special Leave Petitions are dismissed as not pressed. We may clarify that we have not expressed any opinion on the merits of the contentions raised in these petitions as also on the application proposed to be filed before the High Court.

(VINOD LAKHINA)
Court Master

(KUSUM GULATI)
Court Master

ANNEXURE A-14

इलाहाबाद महायोजना 2021

इलाहाबाद सम्भागीय नियोजन खण्ड
नगर एवं ग्राम नियोजन विभाग उत्तर प्रदेश
इलाहाबाद

6334

204

इलाहाबाद महायोजना

2021

निर्माता

इलाहाबाद सम्भागीय नियोजन खण्ड,
नगर एवं ग्राम नियोजन विभाग, उत्तर प्रदेश,
इलाहाबाद

प्रकाशक

इलाहाबाद विकास प्राधिकरण

इलाहाबाद

Rs 500/-
गनेश कुमार पाल
बिपीप प्रे० लि०

इलाहाबाद महायोजना प्रारूप वर्ष-२०२१ आपत्ति-सुझाव एवं गठित समिति की संस्तुति का विवरण

क्र० सं०	नाम व पता	आपत्ति एवं सुझाव	विभागीय टिप्पणी	समिति की संस्तुति
१.	(क) शारदा देवी २२३/६ ए लूकरगंज, इलाहाबाद। (ख) श्री देवदास श्रीवास्तव, २२३ ए लूकरगंज, इलाहाबाद।	करबला चौहराहे के पास से खुशरूबाग रोड तक जी०टी० रोड की चौड़ाई २४ मी० रखने के सम्बन्ध में।	पूर्व महायोजना में इस मार्ग की चौड़ाई ३० मीटर है। नयी महायोजना में प्रश्नगत मार्ग की चौड़ाई ३० मीटर रखी गयी है जिसका मुख्य कारण पुराने नगर को समुचित यातायात व्यवस्था को ध्यान में रखते हुए रखी गयी है। इसका मुख्य कारण इन मार्गों से महायोजना के अन्तर्गत प्रस्तावित बस स्टेशन, जो खुशरूबाग के सन्निकट है और रेलवे स्टेशन एवं पुरानी जी०टी०रोड, जो नगर के मध्य से होकर गुजरती है, में आने वाले वाहनों के भावी ट्रैफिक वैल्यूम के बढ़ जाने की दृष्टिकोण से इस मार्ग की चौड़ाई प्रस्तावित की गयी है, जिसे कम करना उचित नहीं है और सर्वेक्षण के दौरान यह भी पाया गया है कि इस मार्ग की चौड़ाई ३० मी० हो सकती है। स्थल खाली है और किसी भी प्रकार का निर्माण नहीं हुआ है।	प्रार्थी सुनवाई के समय उपस्थित नहीं था। ३० मी० रोड को २४ मी० रखने को कोई औचित्य प्रस्तुत नहीं हुआ। पूर्व महायोजना में रोड की ३० मी० चौड़ाई थी जिसे क्षेत्रीय आवश्यकता, जो विभागीय टिप्पणी में उल्लिखित है, को देखते हुए ३० मी० रहेगी। अतः यह आपत्ति निरस्त किये जाने की संस्तुति की जाती है।
२.	श्री संजय कुमार एवं अन्य	स्टैनली रोड से राजापुर ऊँचवागढ़ी को जोड़ने वाले सार्वजनिक मुख्य सम्पर्क मार्ग पर हुये अवैध अतिक्रमण को रोकने के सम्बन्ध में।	यह आपत्ति महायोजना से सम्बन्धित नहीं है। अवैध अतिक्रमण से सम्बन्धित है। अतः यह विकास प्राधिकरण का कार्य है।	यह आपत्ति महायोजना से सम्बन्धित नहीं है। इसलिये यह आपत्ति निरस्त किये जाने की संस्तुति की जाती है।
३.	श्री आलोक एवं अन्य	-तदैव-	-तदैव-	यह आपत्ति महायोजना से सम्बन्धित नहीं है। इसलिये यह आपत्ति निरस्त किये जाने की संस्तुति की जाती है।

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इलाहाबाद विकास प्राधिकरण
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(महावीर यादव)
जिलाधिकारी
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(गया प्रसाद)
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			एडीए द्वारा स्वीकृत कर दिया गया है। यदि यह तथ्य सही है तो उस क्षेत्र को आवासीय किये जाने पर विचार किया जा सकता है।	
४५.	श्री एस० फैजल, मैनेजर सहारा इन्डिया कामर्शियल का०लि० लखनऊ।	सहारा सिटी होम्स के लिए भू-प्रयोग परिवर्तन के सम्बन्ध में। मौजा मवैइया और मौजा देवरख उपरहार तहसील करछना में क्रमशः ७६ एकड़ एवं ५७ एकड़ लगभग कुल १३३ एकड़ भूमि का भू-प्रयाग आवासीय रखने हेतु।	प्रश्नगत स्थल का अधिकांश भाग रीवर फ्रंट डेवलपमेन्ट के अन्तर्गत निर्धारित हरित पट्टिटका में आता है जिसमें किसी प्रकार का कोई भी परिवर्तन/ परिवर्धन शासनादेश एवं विकास प्राधिकरण के निर्णयों के विपरीत होगा क्योंकि विकास प्राधिकरण एवं शासन के निणर्यों के अनुक्रम मे। गंगा-यमुना के तट से २०० मी० तक किसी प्रकार का निर्माण अनुमन्य नहीं है तथा अगले ३०० मी० तक मात्र विशेष निर्माण ही अनुमन्य है। जो महायोजना के अन्तर्गत भी सुनिश्चित किये गये हैं। प्रश्नगत प्रस्ताव का १/२ भाग ग्रीन बेल्ट में है जिसे परिवर्तित करना उचित नहीं है और शासन एवं ए०डी०ए० के निर्णय के विपरीत होगा।	प्राधिकरण बोर्ड के पूर्व बैठक के निर्णय के अनुसार हाइयेस्ट फ्लड लेवल को देखते हुए बंधा रोड का एलाइमेन्ट होगा। महायोजना में जो बंधा रोड का एलाइमेन्ट दिखाया गया है वो उसकी पुष्टि भी ऐरीगेशन विभाग से कर लिया जाये तथा शासन के आदेश के अनुसार बंधा रोड के साथ जो नदी तटीय विकास के लिये २०० मी० तक कोई निर्माण नहीं होगा तथा अगले ३०० मी० में कोई विशेष भू-उपयोग अनुमन्य किये गये हैं। इसके अतिरिक्त पूर्व महायोजना के अनुसार इस क्षेत्र का उपयोग सीवेज फार्म, ग्रीन वेल्ट एवं फ्लड इफक्टेड एरिया प्रदर्शित था तथा शासनादेश के अनुसार यहाँ ग्रीन वेल्ट यथावत नदी तटीय विकास के अन्तर्गत रखा गया है उनका अधिकतर स्थल इस क्षेत्र में आता हैं। उपरोक्त शासनादेशों के आधार पर इस क्षेत्र को आवासीय करना उपयुक्त नहीं होगा। प्राधिकरण बोर्ड इस पर विचार करना चाहे।
४६.	श्री संदीप कनौडिया, संचालक न्यूजस पेपर लिमिटेड, पोस्ट बाक्स नं० २५ लीडर बिल्डिंग ३, लीडर रोड, इला०।	भूखण्ड सं० १११ स्थित मौजा भावापुर मुस्तखार्जा परगना तहसील चायल के बस अड्डे के प्रस्ताव को हटाकर आवासीय किया जाये।	वर्तमान महायोजना २००१ में विकसित क्षेत्र (मुख्य नगर) के अन्तर्गत तीन वर्तमान बस अड्डों के अतिरिक्त प्रस्तावित किये गये थे जो गोल गड्ढा (कानपुर रोड), जवाहर लाल नेहरू मार्ग (जी०टी०रोड) तथा के०पी०कालेज के सन्निकट प्रस्तावित है। उल्लेखनीय है कि तीनों प्रस्तावित बस अड्डों के भू-प्रयोगों के विपरीत उन स्थलों पर निर्माण किया जा चुका है। गोल गड्ढा में आवासीय	आपत्तिकर्ता उपस्थित हुआ तथा उन्होंने प्रश्नगत स्थल से बस अड्डा के प्रस्ताव को हटाकर आवासीय प्रस्ताव रखने के लिए आपत्ति दर्ज की। आपत्तिकर्ता ने यह भी अवगत कराया कि प्रश्नगत स्थल सरकारी भूमि है जिसे कई वर्ष पूर्व न्यूज पेपर लि० को लीज पर दिया गया है। जिसके एक भूखण्ड में उनका कुछ निर्माण है तथा शेष

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इलाहाबाद।

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इलाहाबाद विकास प्राधिकरण
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Uttar Pradesh Building Construction and Development Byelaws 2025

Byelaws for Urban Development Authorities

Uttar Pradesh Building Construction and Development Byelaws 2025

Housing and Urban Planning Department
Government of Uttar Pradesh

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Explanatory Note

1 Short Title and Definitions

1.1 Short Title and extent

(i) These bye-laws will be called… (Name of Authority)… Development Authority Building Construction and Development Byelaws 2025.

(ii) These bye-laws will be applicable to the entire …(Name of development area)… development area.

1.2 Definitions

Sl.	Item	Definition
1	**Access**	**"Access" or "Means of Access" or "Approach Road"** means a clear approach to a plot or a building from a road/street. (This refers to any road, street, lane, passage giving access to the plot being a right of way, and includes such features as drain, median strip, shoulder or berm, bridge, culvert, burrow pit etc. between the two boundary walls of the premises on either sides of such right of way or, where a street alignment has been fixed and the area within such alignment has been acquired by authority or other agency/ institution and the alignment has been demarcated or is capable of being demarcated up to such alignment.)
2	**Act**	**"Act"** unless specified otherwise, means the Uttar Pradesh Urban Planning and Development Act, 1973.
3	**Affordable Housing Scheme**	**"Affordable Housing Scheme"** refers to government initiatives or programs designed to make housing accessible and affordable for low to middle-income individuals and families, often through subsidized housing, interest rate reductions, or other financial incentives. E.g. Pradhan Mantri Awas Yojana (PMAY) and similar programs.
4	**Ancillary Use**	**"Ancillary Use"** means any use of the premises subordinate to the principal use and incidental to the principal/ main use.
5	**Addition, Revision and/or Alteration**	**"Addition, Revision and/or Alteration"** means a change from one occupancy to another, or a structural change including an addition to the area or change in height or the removal of part of building, or any change to the structure, such as the construction or removal or cutting into of any wall or part of a wall, partition, column, beam, joist, floor including a mezzanine floor or other support, or a change to or closing of any required means of access ingress or egress as provided in these Bye-Laws.
6	**Air-conditioning**	**"Air-conditioning"** means the process of treating air so as to control simultaneously its temperature, humidity, purity, distribution and air movement and pressure to meet the requirements of the conditioned space.
7	**Amenity**	**"Amenity"** includes roads, water supply, street lighting, drainage, sewerage, development of public parks and open spaces, solid waste management and disposal, sewage treatment plant and other public works including utilities, services, and such other conveniences as the State Government may, by notification in the Gazette, specify to be an amenity for the purposes of UP Urban Planning and Development Act, 1973.
8	**Application**	**"Application"** means an application made in such form as may be prescribed by the Authority from time to time.
9	**Approved**	**"Approved"** means as approved/sanctioned by the Authority.
10	**Area**	**"Area"** in relation to a building means the superficies of a horizontal section thereof made at the plinth level inclusive of the external walls and of such portions of the party walls as belong to the building.

Sl.	Item	Definition
11	**Atrium**	**"Atrium"** means the internal court/ entrance hall of a building, which is sky lighted or covered with a transparent permanent structure on the terrace floor.
12	**Authority**	**"Authority"** means the Urban Development Authority which has been created under the provisions of Uttar Pradesh Urban Planning and Development Act, 1973 or the Uttar Pradesh Housing and Development Board established under the Uttar Pradesh Awas Evam Vikas Parishad Act, 1965.
13	**Balcony**	**"Balcony"** means a horizontal projection, cantilevered or otherwise including a parapet handrail, balustrade, to serve as a passage or sit out place.
14	**Basement or Cellar**	**"Basement or Cellar"** means the lower storey of a building, below or partly below ground level, with one or more than one levels. The maximum height of the building above ground level shall not be more than 1.20 meters.
15	**Bazaar Street**	**"Bazaar Street"** means a linear mixed-use construction along the road which is identified in the Master Plan/Zonal Plan.
16	**Building**	**"Building"** means a structure constructed with any materials whatsoever for any purpose, whether used for human habitation or not, and includes: (i) foundation, plinth, walls, floors, roofs, chimneys, plumbing and building services, fixed platforms etc., (ii) verandahs, balconies, cornices, projections etc., (iii) parts of a building or anything affixed thereto; (iv) any wall enclosing or intended to enclose any land or space, sign and outdoor display structures; etc., (v) tanks constructed or fixed for storage of chemicals or chemicals in liquid form and for storage of water, effluent, swimming pool, ponds etc., (vi) all types of buildings as defined under the 'use group or occupancy' or based on 'design, height or other features', except tents, shamianas and tarpaulin shelters erected temporarily for temporary purposes (for less than three months) and ceremonial occasions, shall be considered to be "buildings".
		Types of buildings based on use of premises or activity (Use group or Occupancy):
		(a) **"Residential building"** includes a building in which sleeping and living accommodation is provided for normal residential purposes, with cooking facilities and includes one or more family dwellings, apartment houses, boarding houses, flats, and private garages of such buildings.
		(b) **"Educational buildings"** includes a building exclusively used for a school or college or training institution recognized by appropriate board or university or any other competent authority, involving assembly for instruction, education or recreation incidental to educational use, and including a building for such other uses as research institution. It shall also include quarters for essential staff required to reside in the premises, and building used as a hostel captive to an educational institution whether situated in its campus or outside.
		(c) **"Institutional buildings"** includes a building used for such purposes as hospital, nursing home, health center or other treatment or care of persons suffering from physical or mental illness, handicap, disease or infirmity, care of orphans, abandoned women, children and infants, convalescents, destitute or aged persons and for penal or correctional detention with restricted liberty of inmates ordinarily providing sleeping accommodation and includes dharmshalas, hospitals, sanatoria, custodial and penal institutions such as jails, prisons, mental hospitals, reform homes, etc.

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		(d) **"Assembly Building"** includes a building or part thereof, where groups of people (not less than 50) congregate or gather for amusement, recreation, social, religious, patriotic, civil, travel and related purposes, and this includes buildings such as theatre, cinema hall, community hall, auditorium, exhibition hall, museum, skating rink, gymnasium, , eating or boarding houses, place of worship, dance hall, clubs, gymkhanas and passenger station/ terminals of air, land or other public transportation services, amusement park, etc.
		(e) **"Mercantile/Commercial Building"** includes a building or part thereof used for shops, stores, restaurants, markets for display and sale of wholesale or retail goods or merchandise including office, storage and service facilities incidental thereto and located in the same building.
		(f) **"Office/business building"** includes a building or part thereof used principally for transaction of business and/or keeping of accounts and records including offices, banks, professional establishments, court houses, etc., if their principal function is transaction of business and/or keeping of books and records.
		(g) **"Industrial building"** includes a building or part thereof wherein products or material are fabricated, assembled or processed, such as assembly plants, laboratories, power plants, refineries, gas plants, mills, dairies and factories, etc.
		(h) **"Storage building"** includes a building or part thereof used primarily for storage or shelter of goods, wares, merchandise and includes a building used as a warehouse, cold storage, freight depot, transit shed, store house, public garage, hanger, truck terminal, grain elevator, silos, barn and stables.
		(i) **"Hazardous building"** includes a building or part thereof used for –(a) storage, handling, manufacture or processing of radioactive substances or highly combustible or explosive materials or products which are liable to burn with extreme rapidity and/or producing poisonous fumes or explosive emanations, or (b) storage, handling, manufacture or processing of which involves highly corrosive, toxic or noxious alkalis, acids, or other liquids, gases or chemicals producing flame, fumes, and explosive mixtures, etc., or which result in division of matter into fine particles capable of spontaneous ignition.
		(j) **"Mixed Use Building"** means a building partly used for non-residential activities and partly for residential purpose or a mix of two non-residential activities.
		(k) **"Wholesale Establishment"** means an establishment wholly or partly engaged in wholesale trade and manufacture, wholesale outlets, including related storage facilities, warehouses and establishments engaged in truck transport, including truck transport booking agencies.
		Types of buildings based on design, height and other features:
		(l) "Detached Building" includes a building with walls and roofs independent of any other building and with open spaces (defined as per these byelaws) on all sides within the same plot.
		(m) "Multi-Storeyed Building or High-rise Building" means building above four storeys, and/or a building exceeding 15 meters or more in height (without stilt) and 17.5 meters (including stilt).
		(n) "Semi-detached Building" means building detached on three sides with open space as specified in these regulations.
		(o) "Group Housing" include group of residential buildings or multi-storey buildings having one or more independent residential units on each

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		floor and in which there is sharing and co-ownership of land and services, open space and transportation routes.
		(p) "Multiplex" means a building complex intended for the purpose of commercial, cultural and recreational activities with a minimum of two cinema halls.
		(q) "Special Building" includes all buildings like assembly, industrial, buildings used for wholesale establishments, hotels, hostels, hazardous, mixed occupancies with any of the aforesaid occupancies and centrally air-conditioned buildings having total built up area exceeding 500 sq m.
		(r) "Multi Level Car parking" means a building partly below ground level having two or more basements or above ground level, primarily to be used for parking of cars, scooters, or any other type of light motorized vehicle.
		(s) "Stand-alone factory" refers to a manufacturing unit that operates independently, with its own facilities and processes, rather than being part of a larger industrial complex or park. As per the Factories Act, 1948, means any premises where ten or more workers are working, or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on with the aid of power.
		(t) "Flatted factory" means a multi-story industrial building (non-polluting in nature) designed to accommodate several businesses, each occupying a separate unit, for activities like manufacturing, assembly, and storage. Flatted factories are developed to encourage industrial growth and make land usage more efficient.
		(u) "Single-Unit" refers to residential building having one independent residential unit on each floor or combination of floors with three or less storeys and height not exceeding 15-meters.
		(v) "Multi-Unit" refers to residential building having one or more independent residential units on each floor with four or less storeys and height not exceeding 17.5-meters (including mandatory stilts).
		(w) "Other Buildings" means any other building which is not covered in the above.
17	**Building Height**	**"Building Height" or "Height of building"** means the vertical distance measured (i) In the case of flat roofs above average level of the front road and continuance to the highest point of the building, (ii) In case of pitched roofs up to the point where the external surface of the outer wall intersects the finished surface of the sloping roof and (iii) In the case of gables facing the road midpoint between the eaves level and the ridge. Architectural features serving no other function except that of decoration shall be excluded for the purpose of measuring heights. The height of the building shall be taken up to the terrace level for the purpose of fire safety requirement.
18	**Building Envelope**	**"Building Envelope"** means the horizontal spatial limits up to which a building may be permitted to be constructed on a plot. It is the residual area after leaving the setbacks prescribed for a plot, within which construction is permissible as per rules.
19	**Building Line**	**"Building Line"** means the line up to which the plinth of building adjoining a street or an extension of a street or on a future street may lawfully extend and includes the lines prescribed, if any, in any scheme and/or layout plan. The building line may change from time-to-time as decided by the Authority.
20	**Built-up area (Master Plan)**	**"Built up area (Master Plan)"** in the context of Master Plan means such densely populated area situated within the development area, most of

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		which has been developed as commercial, industrial, residential, or other areas. Here, all the necessary facilities like roads, water supply, sewerage, electricity supply etc. are available and have been demarcated as built-up area by the authority under its master plan.
21	**Built-up area (Building)**	**"Built-up area (Building)"** in the context of building construction refers to the total covered area on all floors of an immovable property or building.
22	**Canopy**	**"Canopy"** shall mean a cantilevered projection from the face of the wall over an entry to the building at the lintel or slab level provided that: (i) It shall not project beyond the plot line, (ii) It shall not be lower than 2.3 meters when measured from the ground, and (iii) There shall be no structure on it and the top shall remain open to sky.
23	**Carpet Area**	**"Carpet Area"** means the net usable floor area of an apartment, excluding the area covered by the external walls, areas under services shafts, exclusive balcony or verandah area and exclusive open terrace area, but includes the area covered by the internal partition walls of the apartment.
24	**Construction**	**"Construction"** means any erection of a structure or a building, including any addition or extension thereto either vertically or horizontally, but does not include, any reconstruction, repair and renovation of an existing structure or building, or, construction, maintenance and cleansing of drains and drainage works and of public latrines, urinals and similar conveniences, or, the construction and maintenance of works meant for providing supply of water for public, or, the construction or maintenance, extension, management for supply and distribution of electricity to the public; or provision for similar facilities for publicity.
25	**Covered Area**	**"Covered area"** means the covered floor area above the plinth level over which a building is constructed. The following structures shall not be included under the covered area: (a) Garden, rockery, well and any structure related to a well, plant nursery, water pool, uncovered swimming pool, platform around a tree, tank, fountain, bench, open platform. (b) Drainage culvert, catch-pit, gully pit, chamber, gutter, etc. (c) Compound wall, entrance gate, floorless porch and portico canopy, slide, swing, uncovered stairs, uncovered ramp etc. (d) Watchman booth, pump-house, garbage shaft, electrical cabin/sub-station and such other utilities structures related to various services.
26	**Development**	**"Development"** - 'Development' with grammatical variations means the carrying out of building, engineering, mining or other operations, in, or over, or under land or water, on the making of any material change, in any building or land, or in the use of any building, land, and includes re-development and layout and subdivision of any land and 'to develop' shall be construed accordingly.
27	**Drain**	**"Drain"**- A conduit or channel for the carriage of storm water, sewage, wastewater or other waterborne wastes in a building drainage system.
28	**Drainage System**	**"Drainage system"** - A system or a line of pipes, with their fittings and accessories, such as manholes, inspection chambers, traps, gullies, floor traps used for drainage of building or yards appurtenant to the buildings within the same cartilage; and includes an open channel for conveying surface water or a system for the removal of any wastewater.
29	**Dwelling**	**"Dwelling"**- A building or a portion thereof which is designed or used wholly or principally for residential purposes for one family.
30	**Encroachment**	**"Encroachment"-** means an act to enter into the possession or rights either of permanent or temporary nature on a land or built-up property of local body/authority or state/ central Government.

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31	**Enclosed Staircase**	**"Enclosed Staircase"**- means a staircase separated by fire resistant walls and doors from the rest of the building.
32	**Existing Building**	**"Existing Building"-** A building or structure existing in authorized manner with the approval of the Authority before the commencement of these Byelaws.
33	**Existing Use**	**"Existing Use"-** Use of a building or structure existing in authorized manner with the approval of the Authority before the commencement of these Byelaws.
34	**Exit**	**"Exit"-** A passage channel or means of egress from the building, its storey or floor to a street or, other open space of safety; whether horizontal, outside and vertical exits meaning as under:- (i) Horizontal exit means an exit, which is a protected opening through or around a fire well or bridge connecting two or more buildings. (ii) Outside exit mean an exit from building to a public way to an open area leading to a public way or to an enclosed fire-resistant passage leading to a public way. (iii) Vertical exit means an exit used for ascending or descending between two or more levels including stairway, fire towers, ramps and fire escapes.
35	**External Wall**	**"External Wall"** means an outer wall of a building not being a party wall even though adjoining to a wall of another building and also means a wall abutting on an interior open space of any building.
36	**Floor**	**"Floor"** means the lower surface in a storey on which one normally walks in a building and does not include a mezzanine floor. The floor at ground level with direct access to a street or open space shall be called the ground floor; the floor above it shall be termed as floor-1, with the next higher floor being termed as floor- 2, and so on upwards.
37	**Floor Area**	**"Floor area"** means the area covered on any floor of a building.
38	**Floor Area Ratio**	**"Floor Area Ratio (FAR)"** means the quotient obtained by dividing the combined covered area (plinth area) of all floors, excepting areas specifically exempted under these regulations, by the total area of the plot, viz.: - Floor Area Ratio (FAR) = Total covered area on all floors/ Plot Area.
		(a) **"Compensatory FAR"** means the additional FAR allowed on the plot up to the specified limit to compensate for the land being transferred free of cost by the landowner from the private plot to the Authority for right-of-way/road expansion or public facilities. or The FAR received by the owner from the Authority as a compensation for surrender of land to the government body without any monetary compensation and free from encumbrances.
		(b) **"Purchasable FAR"** means the additional FAR permissible to the extent specified over the permissible FAR in the Master Plan / Regional Plan / Building Construction and Development Byelaws, which can be purchased by the applicant on payment of prescribed fee as per Chapter-9 of the byelaws.
		(c) "**Premium purchasable FAR**" means the additional FAR permissible to the extent specified over the purchasable FAR in the Master Plan/ Regional Plan/ Building Construction and Development Byelaws, as per Chapter-9 of the byelaws.
39	**Fire Lift**	**"Fire Lift"-** Means a special lift designed for the use of fire service personnel in the event of fire or other emergency.
40	**Footing**	**"Footing"-** A foundation unit constructed in brickwork, stone masonry or concrete under the base of a wall or column for the purpose of distributing the load over a larger area.

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41	**Foundation**	**"Foundation"-** A substructure supporting an arrangement of columns or walls in a row or rows transmitting the loads to the soil
42	**Gallery**	**"Gal1ery"**- An intermediate floor or platform projecting from a wall of an auditorium or a hall providing extra floor area, and/additional seating accommodation and includes the structures provided for seating in stadia.
43	**Green Building**	**"Green building"** means a building which has less water usage, proper energy efficiency, conservation of natural resources, minimum generation of waste and provides healthy environment to the occupants as compared to conventional building.
44	**Ground Floor**	**"Ground Floor"-** shall mean storey, which has its floor surface nearest to the ground around the building. A building may have more than one ground floor:
		"Upper Ground Floor" refers to a floor that is situated above the ground level but is not considered a full first floor or higher. It can be slightly elevated compared to the standard ground floor and is usually used in buildings where the terrain or design requires a split-level approach. **"Lower Ground Floor"** refers to a floor which has more than half of its height above the mean ground level and rest of the height below the mean ground level.
45	**Habitable Room**	**"Habitable Room"** means a room occupied or designed for occupancy by one or more persons for study, living, sleeping, eating, kitchen if it is used as a living room, but not including bathrooms, water-closet compartments, laundries, serving and store pantries, corridors, cellars, attics, and spaces that are not used frequently or during extended periods.
46	**Layout plan/ Sub-division plan**	**"Lay-out plan/sub-division plan"** means sub-dividing of any land or part thereof into more than one plot for sale or otherwise, in which the configuration of roads, measurement of plots along with set-back lines and method of development (e.g. row-housing, semi-detached detached group housing) should be shown and details of size, use, area of all the plots should be given."
47	**Licensed Technical Professional**	**"Licensed Technical Person (LTP)"** means a qualified professional (Architect/ Town Planner/ Engineer/ Supervisor) who is registered under the building construction and development byelaws or registered under any body constituted under any Act under which the said profession is governed. The qualifications and competence requirements for registration of professionals as 'Licensed Technical Person' or LTP, shall be as per Chapter-14 of the byelaws.
48	**Lift**	**"Lift"-** An appliance designed to transport persons or materials between two or more levels in a vertical or substantially vertical direction by means of a guided car or platform. The word 'elevator' is also synonymously used for 'lift'.
49	**Lobby**	**"Lobby"-** means a covered space in which all the adjoining rooms open.
50	**Loft**	**"Loft"** means an intermediate floor between two floors or a residual space in a pitched roof above normal level constructed for storage with maximum clear height of 1.5 meters.
51	**Master Plan**	**"Master Plan"** means a Master Plan formulated under the UP Urban Planning and Development Act, 1973 or the Uttar Pradesh Special Area Development Authorities Act, 1986 for any town, approved and notified by the State Government.
52	**Means of Escape**	**"Means of Escape"-** An escape route provided in a building for safe evacuation of occupants.

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53	**MCLR**	**"MCLR, or Marginal Cost of Funds-Based Lending Rate"**, is the minimum interest rate below which banks cannot lend, determined by the Reserve Bank of India (RBI) based on the bank's cost of funds and other factors.
54	**Mezzanine Floor**	**"Mezzanine Floor"** means an intermediate floor between two floors of any storey forming an integral part of floor below.
55	**Mumty or stair cover**	**"Mumty or Stair Cover"-** A structure with a covering roof over a staircase and its landing built to enclose only the stairs for the purpose of providing protection from weather and not used for human habitation.
56	**Non-Built-up area**	**"Non-Built-up area"** is the area other than Built-up area (Master Plan) defined above.
57	**Occupancy**	**"Occupancy or use"-** The principal occupancy/ use for which a building or a part of a building is intended to be used. For the purposes of classification of a building according to occupancy, an occupancy shall be deemed to include the subsidiary occupancies which are contingent upon it. **"Mixed occupancy"** buildings being those in which more than one occupancy is present in different portions of the buildings.
58	**Open to sky (OTS)**	**"Open to sky"** means an area forming an integral part of a building left open to the sky.
59	**Owner**	**"Owner"** means a person who has legal rights over any land or building or receives rent or is entitled to receive rent in case the premises are on rent and will also include the following: (1) Any agent or person who receives rent on behalf of the owner, (2) Any agent or person who receives rent or is entrusted with the management of any land or building for religious or charitable purposes, (3) Any receiver or manager appointed by a court of competent authority who has been given the charge/authority of exercising the rights of the owner in the premises.
60	**Parapet**	**"Parapet"-** A low wall or railing built along the edge of a roof or a floor.
61	**Park and Open space**	**"Park and open space"** means a space which is open and un-built or which has been laid out and developed as a public park or garden."
62	**Parking Space**	**"Parking space"-** An enclosed or unenclosed covered or open area sufficient in size to park vehicles. Parking spaces shall be served by a driveway connecting them with a street or alley and permitting ingress and egress of vehicles.
63	**Partition Wall**	**"Partition Wall"** includes (i) A wall forming part of a building and being used or constructed to be used in any part of the height or length of such wall for separation of adjoining buildings belonging to different owners or constructed or adopted to be occupied by different persons; or (ii) A wall forming part of a building and standing in any part of the length of such wall, to a greater extent than the projection of the footing on one side or ground of different owners.
64	**Permission or Permit**	**"Permission or Permit"-** A valid permission or authorization in writing by the competent Authority to carryout development or a work regulated by the Byelaws.
65	**Plinth**	**"Plinth"** means the portion of a structure between the surface of the surrounding ground surface of the floor immediately above the ground.
66	**Plinth Area**	**"Plinth Area"** means the built-up covered area measured at the floor level of the basement or of any storey.
67	**Plot/ Site**	**"Plot/ Site"** means a parcel or piece of land enclosed by definite boundaries.

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68	**Corner Plot**	**"Corner plot"** means a plot which is situated on two or more intersecting/ meeting roads.
69	**Island Plot**	**"Island Plot"** means plot surrounded by roads on all four sides.
70	**Plotted Development**	**"Plotted Development"** – Type of layout wherein a stretch of developed land is divided into regular sized plots for uniform controlled building volumes.
71	**Podium Parking**	**"Podium Parking"** means the floor/floors from the floor above the ground level to the bottom surface of the beam for parking purposes under the building envelope line in which there should be provision of ramp for entry and exit of vehicles and in case of mechanized parking, there should be provision of entry and exit as per the actual design.
72	**Porch**	**"Porch"-** A covered surface supported on pillars or otherwise for the purpose of a pedestrian or vehicular approach to a building.
73	**Prohibited Area**	**"Prohibited area"** means any area specified or declared to be a prohibited area under section 20A of the Ancient Monuments and Archaeological Sites and Remains Act, 2010 (AMASR Act, 2010), and as defined under other relevant acts
74	**Protected Monument**	**"Protected monument"** means an ancient monument which is declared to be of national importance by or under the AMASR Act, 2010.
75	**Redevelopment**	**"Redevelopment"** refers to rehabilitating or constructing new infrastructure on a site by renovating or replacing existing uses with new development or construction, following an approved layout plan
76	**Regulated Area**	**"Regulated area"** means any area specified or declared under section 20B under the AMASR Act, 2010.
77	**Refuge Area**	**"Refuge Area"** means an unenclosed area within the building for a temporary use during egress. It generally serves as a staging area which is protected from the effect of fire and smoke.
78	**Road/ Street**	**"Road/Street"-** Any highway, street, lane, pathway, alley, stairway, passageway carriageway, footway, square, place or bridge whether a thorough-fare or over which the public have a right of passage or access or have passed and have access uninterruptedly for specified period, whether existing or proposed in any scheme and includes all bends, channels, ditches, storm water drains, culverts sidewalks, traffic islands, roadside trees and hedges, retaining walls fences, barriers and railing, street furniture within the street lines, which shall be a part of Right of Way
79	**Road/ Street Level or Grade**	**"Road/Street Level or Grade"** means the officially established elevation or grade of the centerline of street upon which a plot fronts, and if there is no officially established grade, the existing grade of street at its mid-point.
80	**Road/ Street Line**	**"Road/Street Line"** means the line defining the side limits of a road/ street.
81	**Road Width**	**"Road Width or Width of Road/Street"** means the overall width of the road or right-of-way or the whole extent of space within the boundaries of a road when applied to a new road/street as laid down in the city survey or development plan or prescribed road lines by any act of law and measured at right angles to the course or intended course of direction of such road.
82	**Row Housing**	**"Row Housing"** -A row of houses with only front, rear and interior open spaces.
83	**Room Height**	**"Room Height"-** The vertical distance measured from the finished floor surface to the finished ceiling surface. Where a finished ceiling is not provided, the underside of the joists or beams or tie beams shall determine the upper point of measurement for determining the head room.

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84	**Service Road/Lane**	**"Service Road/Lane"** means a road that runs parallel to a main road, providing access for local traffic to properties along the main road, minimizing disruption to through traffic.
85	**Service Floor**	**"Service floor"** means a floor up to a maximum height of 2.10 meters from floor to beam between any two floors which is used only for pipes, service ducts etc. related to the building.
86	**Service Apartment**	**"Service Apartment"** means a fully furnished & self-contained apartment having cooking facilities (cooking/kitchen) and used for short-term stay.
87	**Setback Line**	**"Set-back Line"** means a line usually parallel to the plot boundaries or center line of a road (as specified in building construction & development byelaws) and laid down in each case by the Authority or as per recommendations of Master/Zonal Plan, beyond which nothing can be constructed towards the plot boundaries excepting with the permission of the Authority.
88	**Shelter Fee**	**"Shelter Fee"** refers to charges levied on private developers for the construction of housing projects, particularly those undertaken by Development Authority, Uttar Pradesh Housing and Development Board or other government agencies.
89	**Special Amenity**	**"Special Amenity"** includes projects of vital importance such as mass rapid transit system (metro rail, light rail, regional rapid rail, bus rapid transit system, ropeway, etc.), freeways (elevated roads, etc.), urban revitalization projects (river front development, etc.) or any other major infrastructure project which may be notified to be as such by the State Government.
90	**Plot Depth**	**"Site Depth"** or "Plot Depth" means the mean horizontal distance between the front and rear site boundaries.
91	**Site Plan**	**"Site Plan" –** A detailed Plan showing the proposed placement of structures, parking areas, open space, landscaping, and other development features, on a parcel of land, as required by specific sections of the development code.
92	**Spiral Staircase**	**"Spiral Staircase"-** A staircase forming continuous winding curve round a central point or axis provided in an open space having tread without risers.
93	**Stilt Floor**	"**Stilt Floor**" means a structure built on a plinth on pillars which is intended for the purpose of parking.
94	**Storey**	**"Storey"-** The portion of a building included between the surface of any floor and the surface of the floor next above it, or if there be no floor above it, then the space between any floor and the ceiling next above it.
95	**Tot-lot**	**"Tot-lot"** means a park or playground situated in a residential area and planned for the use of small children.
96	**Unauthorised Construction**	**"Un-authorized Construction"** means erection or re-erection, addition or alternations which is not approved or sanctioned by the Authority or in violation of Uttar Pradesh Urban Planning and Development Act, 1973.
97	**Underground/ Overhead Tank**	**"Underground/Overhead Tank"-** An installation constructed or placed for storage of water.
98	**Ventilation**	**"Ventilation"-** Supply of outside air into, or the removal of inside air from an enclosed space. (a). Natural Ventilation - Supply of outside air into a building through window or other openings due to wind outside and convection effects arising from temperature or vapour pressure differences (or both) between inside and outside of the building. (b). Positive Ventilation - the supply of outside air by means of a mechanical device, such as a fan. (c). Mechanical Ventilation - Supply of outside air either by positive ventilation

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		or by infiltration by reduction of pressure inside due to exhaust of air, or by a combination of positive ventilation and exhaust of air.
99	**Verandah**	**"Verandah"** — A covered area with at least one side open to the outside with the exception of one-meter-high parapet on the upper floors to be provided on the open side.
100	**Water Closet**	**"Water Closet (W.C)"-** A water flushed plumbing fixture designed to receive human excrement directly from the user of the fixture. The term is used sometimes to designate the room or compartment in which the fixture is placed.
101	**Window**	**"Window"-** An opening to the outside other than a door, which provides all or part of the required natural light or ventilation or both to an interior space and not used as a means of egress/ingress.
102	**Zonal Development Plan**	**"Zonal Development Plan"** means a Plan formulated under Section 9 of the UP Urban Planning and Development Act, 1973 for development of zones which are part of the development area under the jurisdiction of Authority.

Note: Words or expressions used but not defined in these byelaws shall have the same meaning as assigned to them in the Master Plan/Zoning Regulations/Byelaws/Act/National Building Code.

1.3 Applicability of byelaws

(i) These building byelaws shall be applicable to all building activities and read in conjunction with the master plan/development plan/regional plan/any other statutory plan in force, if any, and notifications, if any, with regard to the same and as amended from time to time. Till such time the revised byelaws are notified, these building byelaws will continue to be in force.

(ii) These byelaws shall be applicable to the entire plot/building or the self-contained part, as the case may be, in case of development, redevelopment, sub-division or construction, reconstruction of building or alteration of a plot of land, to the remaining part after demolition and in case of land use change, to the entire part of the affected plot/building.

(iii) Regarding such requirements/provisions related to development and construction which are not contained herein, the provisions of National Building Code and IS/BIS Code, as applicable, may be followed.

1.4 Difficulty Removal

In case of any clarification regarding any term or omission or contradiction and difficulty removal, a committee shall be constituted under the chairmanship of Principal Secretary, Housing and Urban Planning Department, whose decision shall be final. The Committee shall include Housing Commissioner, Director, Awas Bandhu, Vice Chairmen of any two Development Authorities nominated by the Chairman, and Chief Town and Country Planner (CTCP), who shall be the Member Convenor.

In case of any discrepancy in interpretation of the Hindi and English versions of these byelaws, the provisions of the latter shall prevail.

1.5 Effect on relevant Government Orders, Policies

From the date of coming into force of these byelaws, relevant clauses of the government orders, policies, rules, byelaws, etc., listed in *Appendix-1* shall be considered to have been amended to that extent as per the provisions of these byelaws. In case of any discrepancy between the provisions of the government orders, policies, rules, byelaws, etc., listed in *Appendix-1* and these byelaws, the provisions of the latter shall prevail.

1.6 Sectoral Policies

Provisions of various sectoral policies notified by the State Government from time to time which are at variance with these Byelaws shall prevail. Specific provisions in sectoral policies in relation to parameters like FAR, building height, Ancillary/ Mixed uses, if prescribed beyond the permissible limits of these byelaws, shall be valid. An indicative list of these policies is given below:

- Uttar Pradesh Warehousing & Logistics Policy 2022
- IT & ITeS Policy of Uttar Pradesh, 2022
- Uttar Pradesh Data centre Policy 2021
- Uttar Pradesh Tourism Policy 2022 (incl. Homestay/ Heritage Hotels)
- Uttar Pradesh Micro Small and Medium Enterprises Policy 2022 & Pledge Park
- Uttar Pradesh State Bio-Energy Policy 2022
- Uttar Pradesh Solar Energy Policy 2022
- Uttar Pradesh Textile and Garmenting Policy 2022
- The Indian Telegraph Right-of-way (Amendment) Rules, 2022

2 Permission for Land Development and Building Construction

2.1 Land Development and Building Construction Permission

2.1.1 Development Permission

No person shall carry out any development or redevelopment on any plot or land (including sub-division) or cause to be done without obtaining a prior Development Permission of the Authority. No such permission shall be in contravention of the Master Plan/ Zonal Development Plan.

2.1.2 Building Permission

No person shall erect, re-erect or make addition/ alterations/ revisions in any plot/building or cause the same to be done without obtaining a prior building permission from the Authority.

(i) No piece of land shall be used as a site for the construction of a building, and no building shall be constructed or reconstructed, and no addition or alteration shall be made to an existing building without the self certification based declarations or the required approval in the manner specified herein, relating to the use of building sites or the construction or reconstruction of buildings.

(ii) For plots of size upto 100 square meters for residential purpose and plots of size up to 30 square meters for commercial purpose will not require any permission, except in the mela area declared under the Uttar Pradesh Melas Act, 1938 and plots in unauthoritized layouts/ colonies.

Provided the restriction shall be that all provisions of master plan, zonal plan and building byelaws, have been followed. The applicant however needs to register online with a token amount of Rs.1/- and duly self certifying his title, the size of the plot and floors, it shall also not require a completion certificate. Any plot bigger than 100 square meters cannot be split for this purpose or this provision cannot be misused for taking up constructions in government or prohibited or disputed land. An online mechanism shall be developed for submission of a self-declaration in a prescribed format and an affidavit. A certificate of acceptance shall be generated automatically on submission, which shall serve as a certification from the Authority. The onus to ensure authenticity of self-certification and compliance with the self-certification lies with the applicant, who shall be held personally accountable and liable in case of false declaration and action shall be initiated against the said person, as specified.

(iii) For Plots in layouts approved or developed by the Authority: For plots of size upto 500 square meters for residential purpose (except multi-unit) and plots of size up to 200 square meters for commercial purpose, where the plans are prepared by a licensed technical person and certified that the proposed construction/ reconstruction is as per the master plan and building bye-laws, the applicant upon furnishing all required information/details and payment of fees, shall get instant online approval. The onus to ensure authenticity of self-declaration and compliance with the Self-Certification lies on the Owner, Applicant and Licensed Technical Personnel, who shall all be held personally responsible and accountable in case of false declaration, and the Owner, Applicant and the Licensed Technical Personnel, will be liable for action as per law.

(iv) For categories of plots other than (ii) and (iii): For residential plots of size more than 100 square meters and commercial plots of size more than 30 square meters which are not part of approved layouts, residential plots of size over 500 square meters and commercial plots of size over 200 square meters which are part of approved layouts, all types of High Rise Buildings, Group Housing, Multiplexes, Community Facilties, Industrial buildings, and all other categories, etc., one common application form shall be submitted through web based online system as prescribed.

(v) The permission issued under (ii) and (iii) can be revoked by the Authority within 30 days from the date of approval if it is found that approval has been obtained by mis-representation of the facts or false statements, and/or against the building byelaws and Master Plan land use provisions.

(vi) Other exemptions from taking building permit are specified in paragraph 2.5.1. Provided that the Government may exempt certain buildings from taking building permission under this section,

as per section 53 of Uttar Pradesh Urban Planning and Development Act, 1973.

2.1.3 Pre-issued Permissions and provisions for plots allotted by Authority.

2.1.3.1 Where any development/building permit has been issued by the Authority prior to the commencement of these byelaws

(i) If land development/building construction is in progress and the work has not been completed within the validity or extended validity period of such permit, the said development/construction shall be governed by sanctioned map.

(ii) If the validity of the permit has expired and development/construction has not commenced, fresh permit shall be obtained as per the provisions of these building byelaws.

2.1.3.2 Where the plot/land has been allotted through allotment/ public auction with specific restrictions on ground coverage, FAR, setbacks, building height, lease/sale conditions, etc.

(i) In such plots where construction has not been done, any benefit accruing to the owner/developer due to relaxation in development/ construction parameters (which were restricted during auctioning) on application of these byelaws, shall be chargeable.

(ii) In such plots (except group housing) where construction has been done, but the owner/developer intends to take benefits accruing out of these byelaws, due to relaxation in development/ construction parameters (which were restricted during auctioning) on application of these byelaws, shall also be chargeable.

(iii) The benefit accruing out of the application of these byelaws shall not be applicable to those group housing projects where completion/ occupancy certificate has been issued. However, if any legal entity competent under the Uttar Pradesh Apartment Ownership Act, 2010, intends to take such benefits on chargeable basis, the Board of the Authority is competent to take a decision keeping in mind the adequacy of infrastructure provisions, subject to the compliance of relevant statutory provisions.

(iv) For calculation of charges, the allotment/auction price shall be enhanced in proportion to the increase in FAR and also enhanced according to the cost index basis, and differential amount shall be charged to the allottee.

(v) In plots where construction has been done beyond the permissible limits of previous byelaws, but is within permissible limits as per these byelaws, the variation of extra ground coverage, FAR or any other parameter, shall be charged as per compounding provisions in chatper-16. This shall be in addtion to the amount payable as per *paragraph (iv*) above.

(vi) On deposit of such charges by the owner/developer, consequential changes shall be made in the lease/sale deed by the authority.

Illustrative Example:

For example, for a plot size of 500 sqm (20m width x 25m depth), with reserved price Rs. 100/- auctioned in the year 2000 with ground coverage 45 percent and base FAR 1.25, at a price of Rs. 125/- the current byelaws permit a base FAR of 1.75 and maximum ground coverage after ensuring minimum setbacks. Supposing that the plot owner wants to construct up to the entire permissible ground coverage (i.e. 76 percent for the given plot dimensions), the calculation shall be as below:

(A) Differential amount due to increase in FAR = 125*(1.75 /1.25)*C

Where, CLI = Cost of Living Index; C = increased CLI from 2000 to 2025

(B) Differential amount due to increase in Ground Coverage = (76-45)*500*Current Residential Land Rate.

2.2 Procedure for obtaining Development and/or Building Permission

2.2.1 Application/Notice

(i) Every person who intends to carry out any development or redevelopment including sub-division on any plot or land or to erect, re-erect or make alternation in any place in a building or demolish any building shall give application/notice in writing to the Authority of his intention in the prescribed form (See *Appendix-2* of these bye-laws for development permission and See *Appendix-5* for building permission) as stipulated under section 15 of the Uttar Pradesh Urban Planning and Development Act, 1973 and other relevant Acts.

(ii) Such application/notice shall be submitted online through a portal that the Government of Uttar Pradesh may notify from time to time for this purpose, accompanied by relevant plans and statements. The formats for submission of such plans may be revised from time to time.

2.2.2 Details/Information Accompanying Application/Notice

(i) In case of development permission, the application/notice shall be accompanied by the key plan, location plan, site plan, layout/sub-division plan, indicating setback lines, and services plan/ infrastructure plan, landscape plan and specifications and other documents as prescribed by the Authority.

(ii) In case of building construction, the application/notice shall be accompanied by the location plan, site plan, subdivision / layout plan, building plan, services plan, specifications and certificate of supervision, ownership title and other documents as prescribed by the Authority.

2.2.3 Documents

(i) Application for development permit or building permit shall be accompanied by the following documents:

a. Ownership Documents-lease-deed/sale-deed etc. duly accompanied by a declaration along with the site plan; giving the details of the plot/property,

b. Copy of possession letter and deed, in case of land development in the schemes of Authority, and

c. No objection certificate from the Authority/lessor, in such cases where lease deed has not been executed.

d. Free-hold deed or no-objection certificate from the concerned department, in case the land belongs to Nazul or Improvement Trust,

e. An affidavit/ undertaking for handing over of the land required for road widening as in Appendix-X, in case land requirement for implementation of master plan roads.

f. In non-built-up area, approval of building plan shall also be considered if the approach road is of the required width and is built and maintained by any government department/ agency/ authority/ corporation, even if not marked in the master plan. Concerned department/ agency/ authority/ corporation shall certify such road-width.

(ii) In case of any deviation from the terms and conditions stipulated in the lease deed/ownership document, necessary clearance from the Authority/ competent Officer shall be obtained and submitted.

(iii) No objection certificates (NOCs) required to be attached:

The following departments from which NOCs are sought for, for the purpose of obtaining building plan permit, shall provide the NOC within the number of days mentioned against each of them in the table below, from the date of application of such NOC.

Sl.	Department	Applicability	Time (days)
1	Acquisition Section, Nazul, Improvement Trust, Property Section, Urban Ceiling, Tehsil - Development Authority	Acquisition (All buildings), Nazul - Only for notified villages listed under Nazul Registers (1862, 1886, 1907), Improvement Trust – Only for notified schemes/area, Property section – normally only for leasehold buildings, Urban Ceiling - only for notified villages, Tehsil - all buildings	10
5	Airport, Defence Authority	As per Colour-Coded Zoning Maps: (i) Buildings in Red Zone, and (ii) buildings with a desired height above the Permissible Top Elevation of relevant zone	10
6	Army	As per Ministry of Defence letter No.F.11026/2/2011/ D (Lands) dated 21.10.2016: (i) Any construction or repair activity within 10 metres of stations listed in Part A of letter's annexure; (ii) Any construction or repair activity within 100 metres of stations listed in Part B of letter's annexure	10
7	Fire Department	As per UP Fire & Emergency Services Act, 2022: (i) Multi-storied buildings above 15 meters height; (ii) special buildings like educational, institutional, assembly, business, mercantile, industrial, storage and hazardous buildings as defined in National Building Code; (iii) Mixed occupancies with any of the aforesaid occupancies having more than 500 square meter covered area	Conditional (15)
8	Irrigation / Ground Water Department	"Non-Notified Areas" under UP Ground Water Act 2019, OR 50 meters	15
9	Metro	For complete corridors: (i) Any building within 11m of either side from edge of underground structure, (ii) Any building within 5m of either side from edge of at-grade/elevated structure For under-implementation corridors: Any building within 50m of either side of centre line of Metro alignment	15
10	Forest Department	All buildings requiring tree felling	15
11	Railways	Buildings within 30m from railway track boundary	15
12	Power / Electricity	Only in respect of Electrical load	5
13	NHAI	Only buildings/ layouts proposing direct access from NHAI	10
14	PWD	Where applicable	10
15	ASI, NMA	300m from the precinct of the listed buildings (protected buildings) as per Act	10

(iv) Wherever feasible, system level validation based on GIS layering and PM Gati Shakti may be ensured by relevant departments concerned with issuance of NOC.

(v) If the application is in order with all the requisite particulars and if the concerned department has neither called for any additional details nor rejected it by an explicit order on substantial grounds with the reasons recorded in writing for such rejection, the NOC shall be deemed to have been given on the 30th day (or on expiry of days specified in the table above whichever is earlier) from the date of such application. The following procedures may be further stipulated for the

implementation of the deemed NOC system:

a. The first scrutiny of the application shall be done by the competent authority of the concerned department within 7 days from the date of receipt of the application and such status shall be updated online.

b. All the required additional particulars from the applicant shall be called for within 10 days from the date of receipt of application.

c. The applicant shall be given a time of 10 days to furnish the additional particulars called for.

d. If the particulars are not received within the stipulated time, the application shall be summarily rejected on the 30th day (or on the day specified in the table, whichever is earlier)

e. On the day of considering it as deemed NOC, the concerned Head of Department (HOD) shall be alerted by the system in his login and via SMS about the deemed NOC.

f. In all cases of deemed NOCs, accountability is to be fixed on the respective official responsible for issuing such NOC. The concerned HOD shall conduct periodical reviews with the officials to ensure timely processing of NOCs.

g. The competent authority of the department concerned shall cause inspection for such developments where Its risk assessment deems it fit for Inspection if need be within 7 days from the date of deemed NOC and raise objections, if any, to the planning authority concerned.

h. If no objection is raised by the concerned Departments within 7 days of deemed NOC, the deemed NOC shall be construed as confirmed, under intimation to the concerned department.

i. The Authority shall ensure that the intimation of deemed NOCs are sent to the respective departments on the date of granting planning permission based on this deemed NOC. This process shall be automated and such intimation should reach the login of the HOD concerned.

j. The permit shall include a clause to specifically mention that the Planning Permission is being granted based on the deemed NOC.

(vi) Further instructions with regard to certain departments are as follows:

a. The permit which involve the NOC of Defence, Indian Air Force, Airport Authority of India, shall be issued only after the NOC is received.

b. HT/LT Lines (lines on a pole) passing through the site shall be ascertained by Development Authority through inspection. Hence there is no need for a separate NOC from the UP-Power Transmission Corporation Limited.

(vii) If any authority wishes to take NOC from departments listed above, the same may be done in consultation with the committee constituted in paragraph 1.4 of these byelaws.

(viii) The NOC applications shall be made online on the relevant portal and the entire applications shall be shared with the departments to enable them to give NOC within prescribed time limits.

(ix) In case NOCs are received from the department, the authority shall approve/ reject the building plan according to the conditions laid down in the NOCs and these building byelaws. In case NOCs are not received from the departments within the prescribed time, the authority shall approve/ reject the building plan according to these building byelaws.

(x) After the plan is approved/rejected, the same shall be shared with the concerned departments for their comments through the online portal and the concerned department shall respond with their comments agreeing or disagreeing with the approved/rejected plan within a timeframe of 15 days

on the portal. In case such comments are not received in the prescribed time period, the building plan shall be considered to be approved with the NOCs of such department.

2.2.4 Colouring and Notations

The plans shall be coloured as specified in the table below. Further, prints of the plans shall be on one-side of paper only.

Sl.	Item	Site Plan		Building Plan	
	Document type	White Plan	Blueprint / Ammonia Print	White Plan	Blueprint / Ammonia Print
1	2	3	4	5	6
1	Boundaries Of Plot	Thick Black	Thick Black	Thick Black	Thick Black
2	Current Route	Green	Green		
3	Proposed Route If Any	Dotted Green	Dotted Green		
4	Permissible Building Lines	Thick Dotted Black	Thick Dotted Black		
5	Open Spaces	No Colour	No Colour	No Colour	No Colour
6	Existing work	Black (Outline)	Black (Outline)	Black (Outline)	Black (Outline)
7	Proposed compoundable work	Hatched Yellow	Hatched Yellow	Hatched Yellow	Hatched Yellow
8	Proposed demolition	Hatched Red	Hatched Red	Hatched Red	Hatched Red
9	Proposed work (see Note-1)	Red (Filled)	Red	Red	Red
10	Drainage and Sewerage	Dotted Red	Dotted Red	Dotted Red	Dotted Red
11	Water Supply works	Thin Black Dotted	Thin Black Dotted	Thin Black Dotted	Thin Black Dotted

Note:

(1) For entirely new construction this need not be done; for extension of an existing work this shall apply.
(2) For land development, sub-division, layout, suitable colouring notations shall be used which shall be indexed.
(3) The colouring and notation of plans shall be based on formats adopted in online portal, which may be revised from time to time.

2.3 All Plans

2.3.1 Key Plan

A 'Key Plan' drawn to a scale of not less than 1: 10,000 shall be submitted along with application/ notice for development permission or building permission, showing boundary and location of the site (along with north point indicator and scale) with respect of neighbourhood landmarks in areas where there are no approved layout plans.

2.3.2 Site Plan for Development Permission

(i) Plot number along with details of neighbouring land shall be given in the Site Plan.

(ii) If proposed land is contiguous with neighbouring land owned by same applicant, and whose subdivision is already approved, the details of public amenities provided in such land and all streets within it opening out in the site for which permission is being sought, shall include:

(iii) The means of access from existing street, distance from it, mentioning name and width of the street to the site proposed for development.

(iv) The position of all existing structures and features like high-tension lines, telegraph and electrical poles, underground pipe lines, trees, buildings and railway lines etc. within a distance of 30 meters from the boundary of the site.

(v) All major physical characteristics of the land proposed to be developed which include the approximate location and size of any water body, flood affected areas, and contours at an interval

of 0.3 meters in case of a site having a slope of more than 1:20.

(vi) Location of the site in Master Plan / Sector Plan.

(vii) North point and scale used.

2.3.3 Layout/ Sub-division Plan for Development Permission

The layout/sub-division plan to be submitted along with the application for development permit shall be drawn to a scale of 1:500 for plots up to 10 hectares, on a scale of 1:1000 for plots above 10 hectares but less than 50 hectares, and on a scale of 1:2000 for plots more than 50 hectares. The layout plan shall show the following details:

1	North Point and scale used.
2	The location of all proposed and existing roads with their width.
3	Plan showing dimension within plots/premises along with setback and method of plotted development like row-housing, semi-detached or detached. In case of group housing/ clustered development, the distance between blocks and corresponding height of blocks.
4	Services plan showing the location of drains, water supply and sewer networks, electric lines, solid waste disposal, and other public facilities and services along with their linkage with existing/proposed facilities.
5	Analysis indicating size, area and use of all the plots and different premises/uses proposed in the layout/sub-division plan.
6	A statement indicating the total area of the site, area utilized under roads, open spaces, residential, commercial, community facilities and other public uses, proposed in the layout/ sub-division plan along with their percentage with references to the total area of the site.
7	In case of proposed sub-division for plots situated in built-up area, in addition to the details mentioned above (1) to (6), the means of access to the proposed sub-division from existing street shall also be shown.
8	Landscape plan (with plantation).
9	Sustainability provisions outlined in Chapter-13 shall be ensured by competent authority for conservation and recharging of ground water.

2.3.4 Specifications for Sub-division of land

The following specifications and details shall be enclosed to obtain permission for the sub-division of land:

(i) Details of general specification for development works in the proposed area viz., general specification of roads drains (side drains) and streets along with their slope, and paving provision for water supply, management and disposal of sewerage and garbage, street lighting, playground park and community facilities.

(ii) Existing external infrastructure facilities near the site such as sewerage disposal site, drainage (Nallah etc.) main road, electric supply system, source of water supply etc.

(iii) In case of industrial units, type and quantities of effluents.

2.3.5 Site Plan for Building Permission

The site plan to be sent along with the application for building permit shall be drawn to a scale of 1:100 for plots up to 500 sqm in size, on a scale of 1:500 for plots above 500 sqm in size and on a scale of 1:1000 for plots above 10,000 sqm. The plan shall show the following details:

1.	The boundaries of the site and any contiguous land belonging to the owner thereof.
2.	The names of the streets on which the building is proposed to be situated, if any.
3.	All existing buildings standing on, over or under the site.
4.	The position of the site in relation to neighbouring street.
5.	The position of the building and of all other buildings, if any, which the applicant intends to erect upon his contiguous land referred to in (1) in relation to. a) The boundaries of the site and in case where the site has been partitioned, the boundaries of the portion; owned by the applicant and also of the portions owned by others. b) All adjacent streets / buildings and premises within a distance of 12 meters of the site and of the contiguous land, if any, referred to in (1); and c) If there is no street within a distance of 12 meters of the site, the nearest existing street.
6.	The means of access from the street to the building, and to all other buildings, if any which the applicant intends to erect upon his contiguous land, referred to in (1).
7.	Space to be left around the building to secure un-interrupted ventilation, admission of light and access, through setbacks (front, rear and sides of the building) and parking spaces.
8.	The width of the street, if any, in front, at the sides or rear of building.
9.	Any existing physical features such as well, drains, trees, overhead electric supply lines etc.
10.	Water supply lines, taps up to discharge point, drainage lines and roof top rainwater harvesting system.
11.	The direction of north point relative to the plan of the buildings.
12.	The ground area of the whole property and the breakup of covered area on each floor with the calculation for percentage covered in each floor in terms of the total area of the plot as required under the Byelaws governing the coverage of the area.
13.	Parking plans indicating the parking spaces wherever required.
14.	Building number or plot number of the property on which the building is intended to be erected.
15.	Landscape plan showing plantation of trees while keeping the circulation area free from obstructions as outlined in Chapter-13 of the byelaws.
16.	A copy of approved sub-division plan (if any) of the planning area, and
17.	Such other particulars as may be prescribed by the Authority

2.3.6 Building Plan

The plans of the building, elevations and sections accompanying the application/notice with dimensions shall be drawn to a scale of 1:50 for plots measuring up to 250 sq.m., for plots measuring above 250 sq.m. to a scale of 1:100, and for plots measuring 2000 sq.m. and above to a scale of 1:200 with following details:

a.	Include floor plans of all floors together with the covered area clearly indicating the size and spacing of all frame members and sizes of rooms and the position and width of staircases, ramps and other exit ways, lift ways, lift machine room and lift pit details.
b.	Show the use or occupancy of all parts of the building.
c.	Show exact location of essential services, for example toilet, water closet, sink, bath, water supply, drainage and connection to soak pit/septic tank or sewer line for sewage disposal.
d.	Include sectional drawing clearly showing the sizes of the footings, thickness of basement wall, wall construction, size and spacing of framing members, floor slabs and roof slabs with their materials. The section shall indicate the heights of building and rooms and also the heights of the parapet and drainage

	and the slope of the roof. At least one section shall be taken through the staircase, kitchen and toilet, bath and water closet.
e.	Show all elevations for abutting roads.
f.	Indicate details of service privy (running water toilets), if any.
g.	Give dimensions of the projected portions beyond the permissible building line.
h.	Include terrace plan indicating the drainage and the slope of the roof.
i.	Give indications of the north point relative to the plan.
j.	Details of parking spaces provided.
k.	Give indication of all doors, windows and other openings including ventilators
l.	Maps shall show the provisions for rainwater harvesting, solar water heating, wastewater recycling, and waste management as outlined in Chapter-13 of the byelaws.
m.	Such other particulars as may be required to explain the proposal clearly and as prescribed by the Authority.

2.3.7 Building Plans for Multi-storeyed/ Special Buildings

(i) For multi-storeyed buildings, which are above 4 storeyed and buildings above 15 meters in height and for special buildings like assembly, institutional, industrial storage and hazardous occupancies as defined under *paragraph 1.2. 16 (a to k)* the following additional information shall be furnished/ indicated in the building plans in addition to the item (a) to (l) of *Building Bye-Laws paragraph 2.3.6.*

a.	Access to fire appliances/ vehicles with details of vehicular turning circle/ and clear motorable access way around the building.
b.	Size (width) of main and alternate staircase along with balcony approach, corridor, ventilated lobby approach.
c.	Location and details of lift enclosures.
d.	Location and size of fire lift.
e.	Smoke-stop lobby/ door where provided.
f.	Refuse chutes & chamber, services duct (sanitation, electric & telecommunication), if required.
g.	Vehicular parking spaces.
h.	Refuge area if any.
i.	Details of building services-air conditioning system with position of dampers, mechanical ventilation system, electrical services, boilers, gas pipes etc.
j.	Details of exits including provision of ramps, etc. for hospitals and special risks.
k.	Location of generator, transformer, and switchgear room.
l.	Smoke exhaust system if any.
m.	Details of fire alarm system network.
n.	Location of centralized control, connecting all fire alarm systems, built-in fire protection arrangements and public address system, etc.
o.	Location and dimension of static water storage tank and pump room.
p.	Location and details of fixed fire protection installations such as sprinklers, wet risers, hose reels, drenchers, CO2 installation etc.
q.	Location and details of first aid firefighting equipment/installation.
r.	The proper signs/symbols and abbreviation of all fire-fighting systems shall be shown as per the relevant BIS Codes.

(ii) In addition to those buildings specified in (i), for construction approval of buildings such as waterworks and overhead tanks, bridges and culverts, power generation centres and power sub-stations, power towers, photo galleries, auditorium, meeting hall, educational institutions, bus

terminal whose ground coverage is more than 500 square meters (even if their height is less than 15 meters), the presented building plans shall have the full name, signature along with seal of the landowner/ builder, the registered/licensed technical personnel as well as the structural engineer who prepared the structural design, along with a certificate of earthquake resistant design as per format given in *Appendix-10*. Also, the relevant part of the details mentioned in *Appendix-8* "Building Information Schedule" (relating to this drawing) shall be marked on the map in the form of a table which shall be certified by the Structural Engineer.

2.3.8 Services Plan and Water Supply Provisions

(i) Plans, elevations and sections of private water supply, sewage disposal system and details of building services, where required by the Authority, shall be made available to a scale not less than 1: 100.

(ii) Besides the normal drawings, which are submitted for the sanction of any building, a proper landscape plan, a circulation plan indicating vehicular and pedestrian movement and parking and an urban design scheme where necessary, shall be submitted for sanction by the Authority.

(iii) Specifications: General specification of the proposed construction giving type and grade of material proposed to be used in the form given in *paragraph 11.1* duly signed by the engaged Competent Professional for building plan design (as per *Chapter-14* of the byelaws) may be shown accompanying the application/notice as the case may be.

2.4 Signing of Plans

2.4.1 Signing of Layout Plans

All layout plans before submission to the Authority shall be signed by the owner(s) and the Licensed Technical Person.

2.4.2 Signing of Building Plans

(i) All building plans before submission to the Authority shall be signed by the owner(s) and the Licensed Technical Person (except as given in *paragraph 2.5.1* of these byelaws).

(ii) This shall not apply in case of standard designs/ building plans as described in *paragraph 2.7.2.1*.

2.5 Application/Notice for alteration

When the application/notice is only for an alteration of the building only such plans and statement as may be necessary, shall accompany the application/notice.

2.5.1 Exemption from Building Permit

(i) No application/application and building permit, is necessary for the following alterations, which do not otherwise violate any provisions regarding general building requirements, structural stability and fire safety requirements (as part of National Building Code, 2016) of these Bye-Laws.

a.	Plastering and patch repairs;
b.	Re-roofing, or renewals of roof including roof of intermediate floors at the same height; construction of roof on previously approved covering;
c.	Flooring and re-flooring;
d.	Opening and closing of windows, ventilators and doors not opening towards other's properties and / or public road/property;
e.	Replacing fallen bricks, stones, pillars, beams etc.
f.	Construction or re-construction of sunshade not more than 75cms. in width within one's land and not overhanging over a public street; construction of portico/porch as per standards prescribed in building byelaws,

g.	Construction or re-construction of parapet or boundary wall as permissible under these Byelaws.
h.	White-washing, painting, etc. including erection of false ceiling in any floor at the permissible clear height provided the false ceiling in no way can be put to use as a loft etc;
i.	Reconstruction of portions of buildings damaged due to natural disaster, such as storm, rains, fire, earthquake or any other natural calamity to the same extent and specification as existing prior to the damage provided the use conforms to provisions of Master Plan/ Zonal Plan;
j.	Erection or re-erection of internal partitions provided the same are within the purview of the Byelaws.
k.	Construction work for the purpose of inspection or renovation and repair of sewers, main streets, pipes, cables or other plant for the implementation of any services by any Central/State Government or any local body.
l.	Construction of septic tank/soak pit.
m.	Installing hand pump
n.	Construction of temporary water tank for construction work.
o.	Construction of necessary structures (including underground water tanks) for collection, conservation and harvesting of rainwater, gardening
p.	Construction of necessary structures on rooftop to encourage alternative solar energy.
q.	Construction of temporary tents or tent cities for ceremonial/ religious purposes for a period of less than three months, provided that necessary statutory permissions have been obtained.
r.	Gardening

(ii) No approval shall be required for the construction/ reconstruction and renovation of residential buildings on plots up to 100 square meters for residential purposes and on plots up to 30 square meters for commercial purposes as specified in *paragraph 2.1.2*.

(iii) An online mechanism shall be developed on online portal developed for this purpose for submission of a self-declaration in a prescribed format and an affidavit. A certificate of acceptance shall be generated automatically on submission, which shall serve as a certification from the Authority after payment of a token amount of Re. 1/-.

(iv) No separate permission is required for Use of residential buildings (even in plots allotted by Development Authority) by service professionals up to 25 percent FAR such as architects, chartered accountants, doctors, lawyers, etc, provided that adequate parking requirements are provisioned.

(v) No separate permission is required for use of residential buildings (even in plots allotted by Development Authority) as home-stays, paying guest accomodation, provided that adequate parking requirements are provisioned.

2.6 Permit Fees

Fees for sanction of development/ building permit shall include plan submission fees, scrutiny fees, inspection fees, betterment charges, external development fees and other charges as determined by the Authority time to time. Details related to calculation of permit fees as amended from time to time shall be made available to the applicants of development/ building permit.

2.7 Permit Process

2.7.1 Sanction of development permit

2.7.1.1 Development Permit

Development permit shall be issued to the applicant as per formats given in the online portal.

2.7.1.2 Approval

The process for approval of building permit through online portal shall be notified by the Government from time to time.

2.7.2 Sanction of building permit

2.7.2.1 Residential Buildings

(i) The Authority shall endeavour to prepare standard building designs for all plot sizes and if the said building plan conforms to these standard designs provided by the authority (made available on authorized website, downloadable) the Authority shall automatically approve the plans on payment of fees. For residential buildings on plots up to 300 square meter can be built as per the standard designs provided by the Authority under the schemes/approved layout plans of the Authority and no separate building map approval shall be required for this. The applicant shall be able to make internal changes as per his convenience, however, no change shall be allowed in the set-back and open space.

(ii) The maps for the construction, reconstruction and renovation of all the residential buildings up to 500 square meters under the plotted development in the schemes of development authority and the plans/ layout plans approved by the Authority on payment of fees, shall be automatically considered approved when filed, in case the plans are prepared by a licensed technical person and a certificate is printed on it that the proposed construction/ reconstruction is as per the master plan/ zonal plan and building bye-laws.

(iii) If the submitted plan is not finalized within a period of 30 days, the same shall be considered automatically accepted, provided that a certificate is given by the licensed technical person that the map is as per the master plan/zonal plan and building byelaws and no objection certificate has been obtained from all the concerned departments as necessary like fire department, pollution control board, ASI etc.

2.7.2.2 Industrial Buildings

Building drawings of industrial areas/industrial sites, except highly polluting industries, certified by a licensed technical person shall be considered automatically approved if it is submitted along with all the necessary documents and prescribed fees to the development authority. Only the receipt for submitting such building map shall be considered as acceptance. These provisions shall be applicable subject to the following conditions and restrictions:

(i) This system shall be applicable only for plotted development.

(ii) The plot of the proposed unit/building should be located under industrial landuse and it should be permitted at the said site as per the master plan/zoning regulations.

(iii) The layout plan of the industrial area/location has been approved by the competent authority.

(iv) The proposed construction should be safe from structural safety, anti-seismic system, fire safety, pollution control and other hazardous aspects and all no-objection certificates in relation to the above should be attached with the map.

(v) In case the plot of the proposed industrial unit is located outside the industrial estate, industrial area, arrangements for water supply, drainage, roads, electricity supply, etc. should be available at the site as per the requirement of the proposed industrial unit.

2.7.2.3 Other Buildings

(i) The maps for the construction, reconstruction and renovation of commercial buildings up to 200 square meters in the schemes of development authority and the plans/ layout plans approved by the Authority on payment of fees, shall be automatically considered approved when filed, in case the plans are prepared by a licensed technical person and a certificate is printed on it that the proposed construction/ reconstruction is as per the master plan/ zonal plan and building bye-laws

(ii) Maps of business, office, group housing and others shall be submitted for construction permission, however, if the application is not disposed of within a period of 30 days, or if the applicant himself does not provide consent on extension of timeline, then the building map shall be considered automatically approved on the condition that the licensed technical person certifies

that the submitted map is as per the master plan/zonal plan and building bye-laws.

(iii) Even if no objection certificate is not received within the stipulated period, it shall be approved within 30 days with this condition that the builder can start construction after 10 days by giving written notice to the development authority and such departments from which no objection has not been received, but he shall have to obtain no objection certificate from the remaining departments. It shall be the responsibility of the builder to obtain the No Objection Certificate and carry out the construction work as per the conditions imposed in it.

(iv) Completion certificates shall be issued to such buildings only when no objection from all these departments has been obtained by the builder.

2.7.3 Grant of permit/ refusal

2.7.3.1 Auto-Rejection

(i) After issuance of any shortfall (related to map/ document), the applicant/ licensed technical personnel shall resolve the shortfall/correct the map and submit the revised map/document within 15 days. If the shortfall is not resolved within 15 days, the map will be automatically rejected.

(ii) After the fee demand is issued, all the fees shall be deposited by the applicant within 30 days, if the above is not complied with within 30 days, the map will be auto-rejected.

(iii) In respect of maps which have been auto-rejected as per sub-paragraph (ii), if the applicant applies within a period of 06 months from the date of cancellation, the auto-rejected application will be revived. The map will be issued after the fee applicable at the time of revival of the application is paid within a period of 30 days and if the above is not complied within 30 days, the map will be auto-rejected. The above facility of revival will be available only once.

(iv) After rejection of the application submitted for development/ building permit, if the applicant applies again within six months, then development/ building permit fee shall not be payable again. 20 percent of the amount of fee shall be payable on applying within a period of six months to one year and 50 percent fee shall be payable on applying after one year and 100 percent after two years.

2.7.3.2 Grant/refusal by Authority

(i) The Authority shall either sanction or refuse sanction to the plans and specifications or may sanction them with such modification or directions as it may deem necessary and thereupon shall communicate its decision to the person giving the application/notice in the prescribed format as given in the online portal, which may be revised from time to time.

(ii) The building plans for buildings identified in *paragraph 2.3.7* shall be subject to the scrutiny of the Fire Department and building permit shall be released by the Authority only after the clearance from the Fire Department is obtained.

(iii) If, within 15 days of the receipt of application/notice under *paragraph 2.2.1* of the Bye-Laws, the Authority fails to intimate in writing to the person who has given the application/notice, of its refusal or sanction to the application/notice with its plans and statements, the same shall be deemed to have been sanctioned provided the fact is immediately brought to the notice of the Authority in writing by the person who has given application/notice and having not received any intimation from the Authority within 15 days of giving such application/notice subject to the conditions mentioned in these Bye-Laws, nothing shall be construed to authorize any person to do anything in contravention or against the terms of the lease or title of the land or against any regulations, Bye-Laws or laws operating at the time of execution of the work at site.

(iv) Once the plan has been scrutinized and objections have been pointed out, the Owner who has given the application/notice under *paragraph 2.2.1* shall modify the plan to comply with the objections raised and resubmit the modified plans. The Authority shall scrutinize the resubmitted

plans and if, there are still some objections that shall be intimated to the applicant for compliance. Only thereafter the plans shall be sanctioned. It is further clarified that:

(v) The above provision of deemed sanction shall be applicable only in those cases where construction is to be carried on plot forming part of an approved layout plan of the Authority.

(vi) No application/notice under *paragraph 2.2.1* shall be valid unless the information required by the Authority under these Bye-Laws or any further information which may be required has been furnished to the satisfaction of the Authority.

(vii) The Owner/ LTP for building plan design (as per *Chapter-14*) and others shall be fully responsible for any violation of Master Plan/Zonal Plan/ Building Bye-Laws, architectural controls, lease deed conditions etc. In case of any default they shall be liable for action. Any construction so raised shall be deemed to be unauthorized and shall be liable for action.

2.7.4 Validity of permit

2.7.4.1 Validity of Development Permit

The development permit, once granted, shall be valid for a maximum of five years. During the said period, completion certificate shall be obtained by the applicant from the authority as per *paragraph 2.9* of the byelaws. After the said period, on the application of applicant, extension of time can be given for a maximum of three years by charging the renewal/plan fee specified by the authority.

2.7.4.2 Validity of Building Permit

Once a building permit is sanctioned, it shall remain valid for five years from the date of sanction. Additional time shall be allowed on proportionate basis for the proposed additional construction as per purchasable FAR. In normal cases, the building permit shall be got revalidated, on application by landowner, in the prescribed format as given in the online portal, before the expiry of this period for a maximum of 3 years by charging the renewal fee specified by the Authority. However, in case application is made after the expiry of validity, revalidation shall be given for the remainder of the period of 3 years. Revalidation shall be as per terms and conditions of the Authority and subject to the Master Plan/Zonal Plan and building Byelaws, as in force, for the area where construction has not started..

2.7.5 Revocation of permit

The Authority shall revoke any building permit issued under the provisions of the Byelaws, wherever there has been any false statement, mis-representation of material facts in the application on which the building permit was based. Or if during construction it is found that the Owner has violated any of the provisions of the building Byelaws or sanctioned plan or compoundable limits.

2.8 Procedures during Development and Construction Work

2.8.1 Notice of commencement

2.8.1.1 Commencement of Land Development

On starting of development as per Permit, the applicant shall furnish such information in the prescribed form (*Appendix-3*).

2.8.1.2 Commencement of Building Construction

On starting construction under the permit, its information shall be given in the prescribed form (Appendix-6).

Inspection of construction work

Towards ensuring construction work on site as per the map approved at the time of construction of the building, upon completion of construction work of all categories of buildings up to the plinth level (except all the residential plots under the plot development as per the plans of the development authority and the plans/layout plans approved by the Authority), the building owner/builder shall upload GPS coordinates of the site, digital photographs with date and time and submit them to the government agency.

Along with the above, an affidavit (*Appendix-12*) shall also have to be submitted to the effect that the construction has been done at existing site as per the photographs. If it is found that the building owner/builder has undertaken any construction other than construction work covered and permissible as per *paragraph 2.5.1* of the building construction and development byelaws and the construction work covered and permissible as per section-52 of the Uttar Pradesh Urban Planning and Development Act, 1973, then he shall not have any objection for the building to be sealed by government agency and he shall not claim compensation for any work done for the same.

On receiving the photographs, the Engineer-in-Charge shall immediately give notice to the building owner/builder if any deviation/error is found from the details submitted by the building owner/builder after site inspection within 48 office hours (*Appendix-13*). Along with this, the Engineer-in-Charge shall present his report before the Vice Chairman, Development Authority. The deviation/error at the site relative to the above report shall be determined by the Vice Chairman, Development Authority and if any deviation is found, the construction work shall be sealed. Such action shall be taken within maximum 07 working days.

2.8.2 Deviations during development and construction

2.8.2.1 Deviations during land development

During development, if there is any deviation from the approved plan or it is intended to be done, permission shall be obtained from the authority before executing the proposed deviation.

2.8.2.2 Deviation during building construction

During the construction work, if there is any deviation from the approved plan or it is intended to be deviated from, which is not under *paragraph 2.5.1* of the building byelaws, then before executing the proposed deviation, permission shall be obtained by submitting the revised map which is certified by a licensed technical person to the authority. In case of changes/deviations made at the time of construction of the building which are covered by *paragraph 2.5.1* of the byelaws, it shall not be necessary to submit the revised building map at the time of construction or to obtain construction permission for such changes. But in cases of group housing, commercial and other multi-storey buildings, it shall be mandatory to submit revised maps.

2.9 Notice of Completion

2.9.1 Completion Certificate for land development

After completion of the development work, the applicant and Licensed Technical Person shall give the information in the prescribed format (*Appendix-4*) and along with it shall submit a copy of the map/computerized drawing (in .dwg or equivalent format) in electronic format, on the basis of which, the completion certificate shall be issued by the authority. The entire process of completion certificate shall be as per detailed in *paragraph 2.9.3*.

2.9.2 Completion Certificate for Building Construction

(i) Every Owner shall submit a notice of completion of the building (prescribed in Appendix- '6') to the Authority regarding completion of the work described in the building permit. The notice of completion shall be submitted by the Owner through the engaged licensed technical person for

the building plan design (as per chapter-14 of the byelaws as the case may be, who has supervised the construction) except residential buildings constructed on plots up to 100 square meters. The notice of completion in Appendix-7 shall be accompanied by three copies of completion plan in a computerized drawing in .dwg or equivalent format (as in case of sanctioned plan) and the following documents along with the prescribed fee. Completion certificate shall be issued by the authority on the basis of these documents, and the entire process of completion certificate shall be as detailed in *paragraph 2.9.3*.

(ii) On completion of construction of buildings having more than three storeys or height of more than 15 meters including ground-floor and buildings related to important infrastructure facilities, the notice of completion shall be jointly signed by the concerned LTP, site engineer, and land owner/builder on *Appendix-11* of the bye-laws along with the application submitted by the land owner/builder to the competent authority for obtaining the completion certificate that the building has been constructed with the specifications, quality and structural design approved by the structural engineer based on the BIS code, National Building Code and relevant guidelines mentioned in *Chapter-11.1* of the byelaws as per the approved map and with all anti-earthquake provisions and the building is completely safe for use and the work of rain water harvesting and tree plantation has been completed.

2.9.3 Process for obtaining completion certificate under Section 15A of UPUPD Act, 1973

2.9.3.1 Classification of buildings

'Form-A' for Residential Building. Note: It shall not be necessary to obtain completion certificate for residential buildings on plots of area less than 500 square meters.

'Form-B' for group housing, commercial and multi-storey buildings.

'Form-C' for all types of buildings except residential buildings, group housing, commercial and multi-storey buildings.

'Form-D' for "Lay-out Plan".

2.9.3.2 Deposit of records

The authority shall be given the notice of completion in the prescribed form through a licensed technical person along with three copies of the completion map and the following records in duplicate:

(i) No-objection certificate from the competent authority from the point of view of fire safety for buildings more than four floors or 15-meters and more high and special buildings like educational, assembly, institutional, industrial, storage and buildings with hazardous use and buildings with mixed occupancies of the above mentioned uses whose ground coverage is more than 500 square meters,

(ii) Certificate from a person registered by the authority regarding structural stability and safety of buildings higher than three floors including the ground floor.

This process shall take place on any online portal defined by the Government in the prescribed format.

2.9.3.3 Testing and inspection

On receipt of application for completion certificate, Vice Chairman or an officer authorized by him shall, within a maximum of 07 working days, examine selected notices on "random basis" as per the procedure prescribed time to time for different categories of buildings, however, notices of all commercial, multi-storey and group housing buildings shall be checked/examined. Buildings other than commercial and group housing shall not be tested/inspected until the percentage determination and random selection process is determined by the authority.

2.9.3.4 Completion Certificate

If the development work is found as per the approved plan/map based on the report or investigation of the licensed technical person/architect, the completion certificate shall be issued by the Vice Chairman, or the officer authorized by him online within 01 working day at the place specified in the form.

2.9.3.5 Rejection of completion certificate

After checking/testing within a maximum of seven working days of receiving the application for completion certificate, in case the development/construction on the spot is not found as per the approved or compounded map, Vice Chairman or the officer authorized by him while rejecting the application for completion certificate online, shall inform the same to applicant online within 08 working days of receiving the application along with required amendments. In case of not doing so, the completion certificate shall be deemed approved by the authority.

2.9.3.6 Review of Rejection

In case the applicant is dissatisfied with the reasons for rejection, he can apply for revision along with the grounds and reasons for revision before the Vice Chairman or the officer authorized by him within 6 weeks from the date of notice of rejection. An online facility for this purpose shall be made available on online portal or any other portal defined by the Government.

2.9.3.7 Re-application for completion certificate

In case of rejection of the completion certificate, a new application form can be submitted again after resolving the reasons for rejection.

2.9.3.8 Appeal

The affected person can appeal before the Chairman within 30 days from the date of issue of the order of rejection on which, after giving adequate opportunity of hearing to the Appellant and if necessary, the representative of the Vice Chairman, can direct to cancel the appeal or issue a completion certificate with necessary amendments or restrictions.

2.10 Permission near protected monuments/heritage sites

(i) Development/Building permission shall not be granted inside the prohibited area of protected monuments/heritage sites declared by the Archaeological Survey of India (ASI). Further, permission for any construction in the regulated area shall be given on the basis of no-objection given by the Archaeology Department under the provisions of The Ancient Monuments and Archaeological Sites and Remains Act 1958 (as amended).

(ii) Apart from the protected monuments, the authority can set appropriate conditions and restrictions for granting permission for development/construction around important sites/buildings from the point of view of conservation of cultural, historical and architectural design heritage.

2.11 Permission along the riverbanks

(i) For development/building construction within 200-meters along the banks of river Ganga: In the cities situated on the banks of river Ganga, only repair and renovation of existing buildings and conservation work in relation to detritus buildings shall be permitted in the area 200 meters from the riverbank, the remaining activities shall be prohibited. However, construction of monastery, ashram and temple within the area of 200 meters from the riverbank at the major pilgrimage sites situated on the banks of river Ganga shall be permissible subject to the following conditions:

a. Ground coverage shall be 35% and FAR 1.5 shall be permissible.

b. A plan shall be submitted along with the proposed construction ensuring that there shall be no pollution of the river. If the plan is accepted by Jal Nigam/Jal Sansthan or

Development Authority, the map shall be approved as per rules.

c. Drainage shall not be released directly into the river, but arrangements shall be made to take it to other drains, etc.

d. If there is no sewerage system in the area, then residence/dharamshala etc., shall not be permitted.

(ii) Note: Riverbank means the bank mentioned in the records of concerned department (Revenue/Irrigation).

(iii) For construction along the banks of other rivers, in case any city/development authority has received NGT or other Court orders, relevant provisions of the same order shall be followed.

2.12 Architectural control

The architectural facade/elevation of buildings in a particular area or the architectural features of that identified area shall be in accordance with the conditions and restrictions prescribed for construction permission by the Development Authority. In architectural control, as per the circumstances, provision of all or any one of the following conditions/restrictions can be ensured:

(a)	Mandatory height of the building side facing the front or the street/road, up to which the building can be constructed,
(b)	Mandatory height of floors.
(c)	Mandatory height and design of cornice sill, sunshades on upper part of windows and projections on first and subsequent floors,
(d)	Mandatory building line along the building construction,
(e)	Mandatory type design of balcony,
(f)	Colour scheme.

For this, the concerned authority can formulate a draft scheme and notify it after approval of its board. After inviting objections/suggestions from stakeholders. Once a scheme is notified, deviation from the approved façade guidelines shall be considered as violation of Urban Planning and Development Act.

3 Standards for Land Development and Building Construction

3.1 General Land Development Requirements

3.1.1 Layout map:

A layout map shall be prepared and submitted to obtain development permit for development or redevelopment of any tract of land.

3.1.1.1 Contents of the proposed layout map:

Every layout map shall contain sub-plots being formed after sub-division, means of access thereto, parks and open spaces, if any, required under *paragraph 3.1.2* (including 3.1.2.4 landscape plan), spaces for community facilities, if any, required under *paragraph 3.1.4* (including services plan), along with other mandatory compliances required as per the Master Plan/ Zonal Development Plan/ byelaws.

3.1.1.2 Minimum plot sizes in a layout map:

The minimum plot sizes for different use categories shall be as given in paragraph 3.2 of this byelaws relating to minimum plot sizes for buildings across use categories.

3.1.1.3 Means of Access:

The means of access to the land proposed for a layout shall be from a public street/road as required in these byelaws. Such access road shall be free from encroachment, encumbrances, and obstructions. The minimum width of existing access road to the proposed layout shall be as follows.

Sl.	Layout – Use Type	Minimum Width of Access Road (Built-up)	Minimum Width of Access Road (Non-Built-up)
1	Residential	6m	9m up to 10 acres 12m from >10 to 25 acres 18m above 25 acres
2	Non-Residential (Commercial & Institutional)	12m	12m up to 10 acres 18m from >10 to 25 acres 24m above 25 acres

Note:

(a) For a residential layout comprising of group housing projects, the minimum width of access road shall be 12m. For plot sizes up to 1000 sqm in built-up area, this requirement shall be relaxed to 9m.

(b) For buildings permissible in agricultural land use, such as single factory unit, the minimum width of access road shall be 7.0 m.

3.1.1.4 Sub-division/amalgamation of plots in layouts approved/developed by the Authority

3.1.1.4.1 Sub-division

(i) Sub-division shall be permissible on minimum road width of 9-meters (for residential) and 12-meters (for non-residential).

(ii) The size of each plot after sub-division shall not be less than 100 square meters (for residential).

(iii) The use of the sub-divided plot shall be the same as of the original plot.

(iv) Ground Coverage, FAR and setback of the original plot shall be applicable to each sub-divided plot.

(v) The development fee and sub-division charges shall be applicable for sub-division of plots.

3.1.1.4.2 Amalgamation

(i) Amalgamation shall be permissible on minimum road width of 9-meters (for residential) and 12-meters (for non-residential).

(ii) Amalgamation of maximum four plots shall be allowed at one time.

(iii) Ground coverage, FAR and setback of the amalgamated plot shall be applicable as per amalgamated plot size.

(iv) The use of the amalgamated plot shall ~~generally~~ be the same as the original plot.

(v) In plots where construction has been done a revised map shall have to be submitted and charges shall also be applicable.

(vi) The development fee and amalgamation charges shall be applicable for amalagamation of plots.

3.1.2 Parks and Open Spaces

3.1.2.1 Open Spaces earmarked in Zonal Development Plan

To ensure environmental and ecological balance, a minimum of 5 percent land of the total area of the zone shall be reserved as park and open space/green area under the Zonal Development Plan.

3.1.2.2 Parks and Open Spaces in Residential and Non-Residential Land use

(i) Under the layout plan of area more than 3000 square meters, a minimum prescribed percent of land (as given in the table below) of the total area of the layout shall be reserved for parks and open spaces, which shall be developed as tot-lot, park and playground.

(ii) Parks and Open Spaces proposed in the Master Plan/ Zonal Plan falling within the layout shall be counted towards the above requirement up to a limit of 50 percent. Swapping of open spaces proposed in the Master Plan (except green areas along the roadside) with other land use within a layout area shall be permitted with the prior approval of the land use change by the Competent Authority. Above provision shall not be applicable to the already sanctioned DPRs, already developed colonies and colonies where construction has already commenced.

(iii) If land has been reserved for park and open space as per the standards in the layout plan of any scheme, then it will not be necessary to make separate provision for park and open space again in relation to the group housing plot in that scheme.

(iv) Calculation of the requirement of open spaces for layouts above 3000 sqm shall be done on telescopic basis. For example, for a layout of 6000 sqm, requirement shall be 15 percent of (6000 sqm minus 3000 sqm), i.e. 15 percent of 3000 sqm which is 450 sqm.

Layout Area	Mandatory open spaces (%) in Residential Layouts with ZDP	Mandatory open spaces (%) in Residential Layouts without ZDP	Mandatory open spaces (%) Non-residential Layouts with ZDP	Mandatory open spaces (%) in Non-residential Layouts without ZDP
Up to 3000 sqm.	Not Mandatory	Not Mandatory	Not Mandatory	Not Mandatory
More than 3000 sqm.	10%	15%	5%	10%

3.1.2.3 Parks and Open Space Standards

(i) The minimum average width of the open space shall be 6.0 metres, and the minimum area of open space shall be 200 square meters. Keeping in view the physical shape of the site, open spaces of different sizes may be permitted by the authority with the restriction that they ensure fulfillment of the needs of the community.

(ii) The limit of open space shall be valid up to the boundary of the plot/building line, as the case may be, provided that the space up to 3.0 meters from the boundary of the plot shall be kept as a pathway to enable physical separation of plots and parks. Such pathways shall necessarily be made of perforated blocks/material.

(iii) Parking shall be allowed beneath parks and open areas of group housing and non-residential plots up to a limit of 70 percent. The remaining 30 percent shall be planted with dense vegetation (Miyawaki) and shall allow seepage of rainwater for ground water recharge. However, the mandatory requirements for tree plantation shall be ensured in the remaining 30 percent land.

3.1.2.4 Landscape Plan

At the time of map approval by competent authority, the landscape plan shall be submitted, which shall comply with the following provisions. Prior to issuing the completion certificate, such compliance of landscape plan at the site shall also be confirmed:

(i) Trees shall be planted on one side of road of width 9-meters to 12-meters and shall be planted on both sides of roads of width over 12-meters at a maximum distance of 10-10 meters. Tree plantation shall be done on the vacant land within the right of way.

(ii) In industrial layouts, approval of landscape plan shall also be necessary in which trees shall be planted at the rate of 125 trees per hectare in the total open space portion.

(iii) Large polluting industries shall be separated from residential areas by dense plantation which shall be 15 percent of the industrial area.

(iv) Minimum 20 percent of the total open space in the commercial scheme shall have trees planted at the rate of minimum 50 trees per hectare.

(v) Minimum 20 percent of the institutional, community facilities, playgrounds/open areas and parks shall have trees planted at the rate of minimum 125 trees per hectare.

(vi) Under the Economically Weaker Section, Slum Improvement Scheme, trees shall be planted in groups on a site with a minimum area of 100 square meters per 50 families.

3.1.3 Internal roads and pathways

3.1.3.1 Internal Roads in layouts for residential and non-residential land use

In the development of layouts, the requirements of internal roads shall be done as follows:

Min. road width (m) – Built-up area	**Min. road width (m) – Non-built-up area**	**Length of internal roads in layouts for residential use (m)**	**Length of internal roads in layouts for non-residential use (m)**
4	7.5	Up to 150	-
6	9	>150 to 300	Up to 150
7.5	12	>300 to 600	>150 to 300
9	15	>600 to 900	>300 to 600

9	18	>900 to 1200	>600 to 1200
9	24	>1200 to 1500	>1200 to 1500
9	30	>1500	>1500

Note:

(i) The minimum width of 'Loop Street' shall be 7.5 meters and maximum length shall be 300 meters. For 'Loop Streets' of length up to 600 meters, the minimum width shall be 9 meters.

(ii) The minimum width of the road adjacent to the park/open space and the roads with abutting plots proposed only on one side shall be 6.0 meters up to 150-meter length and shall be 7.5 meters up to 300-meter length.

(iii) In a 9 m-wide-road which is straight and closed at one end (dead-end street), adequate area with minimum semi-diameter of 7.5 meters shall be provided for the node and the maximum length of such road shall be 100 meters. But cul-de-sac shall not be required in dead-end streets up to 25 meters long.

(iv) In case of EWS/LIG housing schemes, the internal roads (motorable) shall be a minimum 6-meter-wide. The maximum length of a 3-meter-wide road shall be 50 meters and the maximum length of a 4.5-meter-wide road shall be 80 meters. No residential unit shall be located farther than 150 meters from a 9-meter-wide access road.

(v) The width of other roads shall be as prescribed in the master plan/zonal plan.

3.1.3.2 Intersection of roads

(i) As far as possible, the roads shall be joined at right angles and the alignment of the center lines of all the roads at the junction shall be in a straight line.

(ii) Proposed roads at an angle of less than 30 degrees shall be permitted only when proper arrangement for traffic movement is ensured and the required weaving length is available.

(iii) Road junctions shall be as per Indian Road Congress /other applicable standards.

(iv) The minimum distance between two T-junctions on roads less than 18 meters wide shall be two and a half times the width of the wider road meeting at the junction.

(v) The minimum distance between two junctions on roads wider than 18 meters shall be as follows:

(vi) 150 meters for roads of width 18 to 24 meters,

(vii) 300 meters for roads wider than 24 meters.

3.1.3.3 Calculation of road length

The length of the road shall be calculated from the meeting point of the road which is wider than that road.

3.1.3.4 Block length

In plot development, the maximum length of the block shall be 300 meters.

3.1.3.5 Drainage system

For drainage system, drains shall be an integral part of the road and they shall have sufficient slope so that water can drain automatically.

3.1.3.6 Other requirements

The road margins shall be kept as unpaved as possible, or provision of pathways shall be made. Such pathways shall be made of perforated material or provision of 'brick-on-edge'/ 'loose-stone pavement' shall be made, to ensure maximum groundwater recharge.

3.1.3.7 Specifications/provisions of cycle track construction

In the layout of the schemes, provision for cycle tracks may be made on roads 18.0 meters wide and above to promote usage of sustainable modes of transport such as bicycles. The specifications/provisions of cycle track construction shall be as per IRC code (IRC-11-1962) as amended from time to time.

3.1.4 Standards for community and other uses/activities

3.1.4.1 Standards for community facilities

Sl.	Category	Standards	Minimum plot area
1.	**Education Facilities**		
(a)	Nursery School	Per 2500 population - 1	500 square meters
(b)	Primary school	Per 5000 population - 1	1000 square meters
(c)	Junior High School / High School	On 7500 population - 1	2000 square meters
(d)	Inter College	Per 10000 population - 1	2000 square meters
(e)	Degree College/Post Graduate College/ Technical Education	For population 80,000 to 1,00,000 - 1	Urban area – 5000 square meters;
(f)	Engineering College/ Universities	Per 10,00,000 population - 1	2.0 hectares.
(g)	Dental College	Per 10,00,000 population - 1	2.0 hectares
2.	**Medical Services**		
(a)	Non-Bedded Medical Establishments (Diagnostic Centre / OPD clinics / dispensary / Pathology Lab / Veterinary Clinics)	Per 15000 population - 1	100 square meters
(b)	Nursing Homes / Maternity Hospitals/ Small Hospitals/ (Up to 50 beds)/ Veterinary Hospitals	Per 45000 population - 1	300 square meters
(c)	Hospitals (>50 beds)	Per 100000 population - 1	3000 square meters
(d)	Medical College	Per 10,00,000 population - 1	As per MCI/ NMC norms
3	**Other services**		
(c)	Police Station (including staff accommodation)	Per 50,000 population - 1	4000 square meters of which 800 square meters shall be built up area.
(d)	Police post (including staff quarters)	Per 15000 population - 1	1500 square meters which shall have built up area as per requirement.
(e)	Fire station (including staff accommodation)		
	(i) Category-A cities	4 lakh population and 10 square km area.	12400 square meters of which there shall be 5600 square meters of built-up area.
	(ii) Category-B cities	2.5 lakh population and 10 square km area.	10000 sq.m. of which there shall be 4200 sq.m. built up area.
	(iii) Category-C cities	2 lakh population and 10 square km area.	8000 sq.m. of which 3500 sq.m. shall be built up area.

Sl.	Category	Standards	Minimum plot area
	(iv) Tehsil and other towns	For 1 lakh population and 3.00 square km area.	6000 square meters of which there shall be 2800 square meters of built-up area.
(g)	Electric Sub-station		11 KVA – Per 15000 population - 1 – 500 square meters 33 KVA – - – 1.0 acre 132 KVA – - – 5.0 acre 220 KVA – Per 500000 population - 1 – 10.0 acre
4.	**Social and cultural facilities**		
(a)	Marriage Hall/ Community centre	Per 25000 population – 1	750 square meters
5.	**Commercial**		
(a)	Commercial Use	For every 500 population – 1 shop For every 500 population – 1 informal sector kiosk/booth	Minimum 10 square meters per each shop Maximum 10% of total area (including office use) as per Chapter-5
6.	**Mixed Use**		Maximum 10% of total area may be used as mixed-use plots as per Chapter-8
7.	**Sports activities**		
(a)	Neighbourhood Sports Centre	For every 15000 population - 1	1.5 hectare
(b)	Sports centres in residential units	For every 5000 population - 1	5000 square meters
8.	**Waste segregation space**	**Per 500 persons - 1**	**15 square meters**
	Public Toilet - WC seat	Per 50 persons -1	0.675 square meters (0.75x0.90)
	Public Toilet - Urinal Unit	Per 200 to 300 persons -1	0.30 square meters (0,50x0.60)
	City Bus Stop	Per 800 to 1000 m distance -1	50.40 square meters (3.6 x 14)
	Foot Over Bridge	As per local requirement	
	Vending Zone	Per 10000 persons -1 (500-1000 m distance)	1000 square meters
	Solid Waste Transfer Station	Per 200000 persons - 1	5000 square meters
	Sanitary Landfill Site	Per 100000 persons -1	10000 square meters

Note 1: The minimum plot area for the above-mentioned community facilities are indicative and governed by the norms prescribed from time to time by the concerned department.

Note 2: Areas earmarked for other services (such as police station / fire station etc.) if not used for 20 years, then it shall be returned back and converted to any other public use.

Note 3: For non-residential layouts, 5 percent area to be provided as common parking provision.

Note 4: For Education facilities, the provision of primary and nursery school can be included under high school/inter college, in view of which it will not be necessary to reserve a separate plot for each level of school as per the population standards.

Note 5: For Electric Sub-stations, in cases where depending upon the technology type of the sub-station, the requirement of the land is less than the prescribed standards prior consent of the concerned department shall have to be obtained.

Note 6: For Sports activities, the provision for neighbourhood sports centre and sports centre in residential units can be made within the area of proposed parks/open spaces at the layout plan level.

3.1.4.2 Population Estimation

The population shall be estimated on the basis of the standard of 5 persons for one residential unit (including group-housing/multi-units). Under plot development, population shall be estimated on the basis of 1 unit on a plot up to 50 square meters, 2 units on a plot of more than 50 and up to 150 square meters, 4 units on plots of area more than 150 and up to 300 square meters, one unit per 100 square meters but maximum 15 units on plots of area more than 300 square meters and up to 1500 square meters. This is only for estimation of population and shall not determine the number of units allowed on a particular plot size.

3.2 Development Standards (Plot Size, FAR, Building Height, Setbacks)

3.2.1 Plot sizes and requirements

The plot size and requirements for various use occupancies shall be as follows.

Sl.	Use Occupancies	Min. Plot Size (sq.m.)	Min. Existing Road width (m)
I	**Residential**		See Chapter-4 for details
1	Plotted – Single/Multi Unit	40 (Row Housing – Single Unit) No minimum plot size in built-up area	7.5 (plots on one side) 9 (plots on both sides) 4.0 m (Built-up area)
		150 (Row Housing – Multi Unit)	9
		500 (Semi-detached)	9
		1200 (Detached)	9
2	Group Housing	1000 (Built-up) 1500 (Non-built-up)	9 (Built-up area) 12 (Non-Built-up area)
II	**Commercial/ Office Buildings**		See Chapter-5 for details
1a	Retail Shops	>10 to 100	6 (Built-up) 9 (Non-built-up)
1b	Convenient Shopping / Commercial Units	>100 - 300	12
2	Commercial Complex	>300 - 3000	12
3	Shopping mall	> 3000	18
4a	Hotels (<20 rooms)	Not defined	6 (Built-up) 9 (Non-built-up)
4b	Hotels (>20 rooms)	500	12
5a	Single Screen Cinema	500	12
5b	Miniplex	700	12
5c	Multiplex	3000	18
6a	Petrol Pump/ Filling Station without service station	224 (16 x 14) -2w/3w 510 (30 x 17)	12 (Built-up) 24 (Non-Built-up)

Sl.	Use Occupancies	Min. Plot Size (sq.m.)	Min. Existing Road width (m)
	(CNG/PNG/EV)		
6b	Petrol Pump/ Filling Station with service station (CNG/PNG/EV)	1080 (36 x 30)	12 (Built-up) 24 (Non-Built-up)
7	LPG / Gas Godown	520 (26 x20)	18
8	Service Apartment	Not defined	12
9	Cold Storage	1000	18
10	Warehousing/ Storage Godown	Not defined	12
11	Wholesale Market	Not defined	12
12	Office Buildings	Not defined	12
13	Other Commercial	Not defined	9m (Built-up area) 12m (Non-built-up area)
III	**Community Facilities/ PSP**		See Chapter-6 for details
A	**Healthcare Facilities**		
1	Non-Bedded Medical Establishments (Diagnostic Centre/ OPD clinics/ dispensary/ Pathology Lab/ Veterinary Clinics)	100	9
2	Nursing Homes / Veterinary Hospitals / Maternity Hospitals/ Small Hospitals (Up to 50 beds)	300	12
3	Hospitals (> 50 beds)	3000	18
4	Nursing Institutes	2000	18
5	Medical College	As per NMC/ MCI norms	24
B	**Education Facilities**		
1	Nursery	500	9
2	Primary	1000	9m (Built-up area) 12m (Non-built-up area)
3	Secondary/High School/Inter College	2000	12
4	Degree College/Technical Institution	5000	18
5	Universities	20000	24
C	**Public Amenity buildings**		
1		750 (Built-up area)	18

Sl.	Use Occupancies	Min. Plot Size (sq.m.)	Min. Existing Road width (m)
	Marriage Hall/ Banquet/ Multipurpose Hall	1000 - 3000 (Non-built up area)	18
		>3000	24
2	Auditorium / Convention Centre	1500	18
		2000	24
D	**Other Community Facilities**		
1	Religious Buildings	Not defined	12
2	Guest House	400	12
3	Utilities & Services	Not defined	12
4	Other institutional	Not defined	12
IV	**Agriculture**		
1	Farmhouse	4000	7
2	Dairy Farms	2000	7
V	**Industrial**		
1	Industrial Buildings	Not defined	9
2	Flatted factories	Not defined	12
3	Data Centers	Not defined	12
4	MSME	Not defined	9
VI	**Mixed Use**	Refer Chapter-8	24
VII	**Recreational**		
1	Stadium/ Sports Complex	Not defined	18
2	Amusement Park	Not defined	18
3	Memorial	Not defined	9
VIII	**Transportation**		
1	Multi-level Parking	800 for built-up area 1000 for non-built-up area	12
2	Bus Terminal	Not defined	12
3	Transportation Hub	Not defined	12

Note: For Petrol Pump/Filling Station, in case any amendment is issued by MoPNG or any competent authority, it shall automatically prevail.

3.2.2 Ground Coverage and Floor Area Ratio (FAR)

The calculation of floor area shall be conducted telescopically, beginning from one level below the area of the proposed plot.

Illustrative Example:

For example, for a plot size of 100 square meters, permissible FAR is 2.0 and for plot size 100 -300 sqm, the permissible FAR is 1.75.

Calculation of FAR for a plot size of 280 square meters, shall be done as below:

a. Plot area of 280 square meters to be divided into two parts, i.e. 100 sqm + 180 sqm
b. For 100 sqm, as per applicable FAR, allowable floor area shall be 100*2.0 = 200 sqm
c. For remaining 180 sqm, as per applicable FAR, allowable floor area shall be 180*1.75 = 315 sqm
d. Hence, total allowable floor area shall be 515 sqm

The ground coverage and FAR for various use occupancies shall be as follows.

3.2.2.1 Residential – Plotted Development including EWS/ LIG/ Affordable Housing

Sl.	**Use Types**	**Ground Coverage (%)**	**Plot Area (sq.m.)**	**Base FAR**	**Max. FAR**
1	Plotted Development – Single Unit/Multi-Unit *(Built-up/Non-Built-up)*	Max. coverage after ensuring setbacks	Up to 150	2.0	2.0
			>150 to 300	1.8	2.0
			>300 to 500	1.75	2.0
			>500 to 1200	1.5	2.0
			>1200	1.25	2.0

Note: Maximum Permissible FAR (MFAR) is calculated as per the provisions of purchasable FAR in Chapter-9.

3.2.2.2 Residential – Group Housing including EWS/ LIG/ Affordable Housing

Sl.	**Use Types**	**Ground Coverage (%)**	**Road Width (m)**	**Base FAR**	**Max. FAR**
2(a)	Group Housing *(Built up)*	Max. coverage after ensuring setbacks	9 – 12m	1.5	2.0
			>12 – 18m	1.5	3.0
			>18 – 24m	1.5	3.0
			>24 – 45m	1.5	5.25
			> 45m	1.5	Unrestricted
2(b)	Group Housing *(Non-Built up)*	Max. coverage after ensuring setbacks	>12 – 18m	2.5	5.0
			>18 – 24m	2.5	5.0
			>24 – 45m	2.5	8.75
			> 45m	2.5	Unrestricted

Note: Maximum Permissible FAR (MFAR) is calculated as per the provisions of purchasable FAR in Chapter-9

3.2.2.3 Commercial – Shops / Convenience Shopping / Other Commercial

Sl.	**Use Types**	**Ground Coverage (%)**	**Road Width (m)**	**Base FAR**	**Max. FAR**
3(a)	Shops / Convenience Shopping / Commercial Units (Built-up)	Max. coverage after ensuring setbacks	Up to 12m	1.5	2.1
			>12 – 24m	1.5	3
			>24 – 45m	1.5	5
			>45m	1.5	Unrestricted

Sl.	**Use Types**	**Ground Coverage (%)**	**Road Width (m)**	**Base FAR**	**Max. FAR**
3(b)	Shops / Convenience Shopping / Commercial Units (Non-Built up)	Max. coverage after ensuring setbacks	Up to 12m	1.75	2.45
			>12 – 24m	1.75	3.5
			>24 – 45m	1.75	6
			>45m	1.75	Unrestricted
4(a)	Commercial Complex *(Built up)*	Max. coverage after ensuring setbacks	=>12 – 24m	1.5	3
			>24 – 45m	1.5	5
			>45m	1.5	Unrestricted
4(b)	Commercial Complex (Non-Built up)	Max. coverage after ensuring setbacks	=>12 – 24m	1.75	3.5
			>24 – 45m	1.75	6
			> 45m	1.75	Unrestricted
5(a)	Shopping malls *(Built up)*	Max. coverage after ensuring setbacks	=>18 – 24m	2	4
			>24 – 45m	2	7
			> 45m	2	Unrestricted
5(b)	Shopping malls *(Non-Built up)*	Max. coverage after ensuring setbacks	=>18 – 24m	3	6
			>24 – 45m	3	9
			> 45m	3	Unrestricted
6(a)	Hotels *(Built up)*	Max. coverage after ensuring setbacks	=>12 – 24m	2	4
			>24 – 45m	2	7
			> 45m	2	Unrestricted
6(b)	Hotels *(Non-Built up)*	Max. coverage after ensuring setbacks	=>12 – 24m	2.5	5
			>24 – 45m	2.5	8.75
			> 45m	2.5	Unrestricted
7 (a)	Single Screen Cinema (Built-up/Non-built up)	Max. coverage after ensuring setbacks	=>12 – 24m	2	4
			>24 – 45m	2	7

Sl.	**Use Types**	**Ground Coverage (%)**	**Road Width (m)**	**Base FAR**	**Max. FAR**
			> 45m	2	Unrestricted
7 (b)	Miniplex (Built-up/Non-built up)	Max. coverage after ensuring setbacks	=>12 – 24m	2	4
			>24 – 45m	2	7
			> 45m	2	Unrestricted
7(c)	Multiplex *(Built up)*	Max. coverage after ensuring setbacks	=>18 – 24m	2	4
			>24 – 45m	2	7
			> 45m	2	Unrestricted
7(d)	Multiplex *(Non-Built up)*	Max. coverage after ensuring setbacks	=>18 – 24m	3	6
			>24 – 45m	3	9
			> 45m	3	Unrestricted
8(a)	Petrol Filling Station w/o service station *(Built up)*	10%	=>12m	0.1	-
8 (b)	Petrol Filling Station w/o service station *(Non Built up)*	10%	=>24m	0.15	
8(c)	Petrol Filling Station with service station *(Built up)*	20%	=>12m	0.2	-
8 (d)	Petrol Filling Station with service station *(Non-Built up)*	10%	=>24m	0.1	
9	LPG / Gas Go down	25%	=>18m	0.25	0.25
10 (a)	Service Apartment *(Built-up)*	Max. coverage after ensuring setbacks	=>12 – 24m	2	4
			>24 – 45m	2	7
			> 45m	2	Unrestricted
10 (b)	Service Apartment *(Non-Built up)*	Max. coverage after ensuring setbacks	=>12 – 24m	2.5	5
			>24 – 45m	2.5	8.75
			> 45m	2.5	Unrestricted
11	Cold Storage		18m		

Sl.	**Use Types**	**Ground Coverage (%)**	**Road Width (m)**	**Base FAR**	**Max. FAR**
12 (a)	Storage/Warehousing *(Built up)*	Max. coverage after ensuring setbacks	12m	0.8	0.8
12 (b)	Storage/Warehousing *(Non-Built up)*	Max. coverage after ensuring setbacks	12m	1.2	1.2
13	Fruit & Vegetable Market	Max. coverage after ensuring setbacks	12m	1	1
14 (a)	Wholesale Business *(Built)*	Max. coverage after ensuring setbacks	12m	1.2	1.2
14 (b)	Wholesale Business *(Non-Built)*	Max. coverage after ensuring setbacks	12m	1.5	1.5
15 (a)	Office Buildings *(Built up)*	Max. coverage after ensuring setbacks	=>18 – 24m	2	4
			>24 – 45m	2	7
			> 45m	2	Unrestricted
15 (b)	Office Buildings *(Non-Built up)*	Max. coverage after ensuring setbacks	=>18 – 24m	2.5	5
			>24 – 45m	2.5	8.75
			> 45m	2.5	Unrestricted
16 (a)	Other Commercial (Built up)	Max. coverage after ensuring setbacks	Up to 12m	1.5	2.1
			>12 – 24m	1.5	3.0
			>24 – 45m	1.5	5.0
			>45m	1.5	Unrestricted
16 (b)	Other Commercial (Non-Built)	Max. coverage after ensuring setbacks	=>12 -24m	1.75	3.5
			>24 -45m	1.75	6.0
			>45m	1.75	Unrestricted

Note: Maximum Permissible FAR (MFAR) is calculated as per the provisions of purchasable FAR in Chapter-9

3.2.2.4 Community Facilities – Healthcare Buildings

Sl.	Use Types	Ground Coverage (%)	Road Width (m)	Base FAR	Max. FAR
1	Non-Bedded Medical Establishments (Diagnostic Centre / OPD clinics / dispensary / Pathology Lab / Veterinary Clinics)	Max. coverage after ensuring setbacks	Up to 12m	1.5	2.1
			>12 – 24m	1.5	3.0
			>24 – 45m	1.5	5.25
			> 45m	1.5	Unrestricted
2(a)	Nursing Homes / Veterinary Hospitals / Maternity Hospitals / Small Hospitals (Up to 50 beds) *(Built up)*	Max. coverage after ensuring setbacks	=>12 – 24m	1.5	3.0
			>24 – 45m	1.5	5.25
			> 45m	1.5	Unrestricted
2(b)	Nursing Homes / Veterinary Hospitals / Maternity Hospitals / Small Hospitals (Up to 50 beds) *(Non-Built up)*	Max. coverage after ensuring setbacks	=>12 – 24m	2.0	4.0
			>24 – 45m	2.0	7.0
			> 45m	2.0	Unrestricted
3(a)	Hospital > 50 beds *(Built up)*	Max. coverage after ensuring setbacks	=>18 – 24m	1.5	3.0
			>24 – 45m	1.5	5.25
			> 45m	1.5	Unrestricted
4(b)	Hospital > 50 beds *(Non-Built up)*	Max. coverage after ensuring setbacks	=>18 – 24m	2.5	5.0
			>24 – 45m	2.5	8.75
			> 45m	2.5	Unrestricted
5(a)	Nursing college *(Built up)*	Max. coverage after ensuring setbacks	=>18 – 24m	1.5	3.0
			>24 – 45m	1.5	5.25
			> 45m	1.5	Unrestricted
5(b)	Nursing college *(Non-Built up)*	Max. coverage after ensuring setbacks	=>18 – 24m	2.0	4.0
			>24 – 45m	2.0	7.0
			> 45m	2.0	Unrestricted
6(a)	Medical College *(Built up)*	Max. coverage after ensuring setbacks	=>24 – 45m	1.5	5.25
			> 45m	1.5	Unrestricted
6(b)	Medical College *(Non-Built up)*	Max. coverage after ensuring setbacks	=>24 – 45m	2.5	8.75
			> 45m	2.5	Unrestricted

Note: Maximum Permissible FAR (MFAR) is calculated as per the provisions of purchasable FAR in Chapter-9

3.2.2.5 Community Facilities – Education Buildings

	Use Types	Ground Coverage (%)	Road Width (m)	Base FAR	Max. FAR
1(a)	Schools (Nursery/Primary) *(Built up)*	Max. coverage after ensuring setbacks	Up to 12m	1.0	1.4
			>12 - 24 m	1.0	2.0
			>24 - 45 m	1.0	3.0
			> 45 m	1.0	3.0
2(b)	Schools (Nursery/Primary) *(Non-Built up)*	Max. coverage after ensuring setbacks	Up to 12m	1.2	1.4
			>12 - 24 m	1.2	2.4
			>24 - 45 m	1.2	3.6
			> 45 m	1.2	3.6
3(a)	Secondary/Intercollege/Degree Colleges / Universities *(Built up)*	Max. coverage after ensuring setbacks	=>12 - 24 m	1.0	2.0
			>24 - 45 m	1.0	3.5
			> 45 m	1.0	Unrestricted
3(b)	Secondary/Intercollege/Degree Colleges / Universities *(Non-Built up)*	Max. coverage after ensuring setbacks	=>12 - 24 m	2.0	4.0
			>24 - 45 m	2.0	7.0
			> 45 m	2.0	Unrestricted

Note: Maximum Permissible FAR (MFAR) is calculated as per the provisions of purchasable FAR in Chapter-9

3.2.2.6 Community Facilities – Public Amenities

Sl.	Use Types	Ground Coverage (%)	Road Width (m)	Base FAR	Max. FAR
1(a)	Marriage Hall/ Banquet/ Multipurpose Hall/ Religious Building *(Built up)*	Max. coverage after ensuring setbacks	=>18 – 24m	2.0	4.0
			>24 – 45m	2.0	7.0
			More than 45m	2.0	Unrestricted
1(b)	Marriage Hall/ Banquet/ Multipurpose Hall/ Religious Building *(Non-Built up)*	Max. coverage after ensuring setbacks	=>18 – 24m	3.0	6.0
			=>24 – 45m	3.0	10.5
			More than 45m	3.0	Unrestricted
2 (a)	Auditorium / Convention Centre (Built-up)	Max. coverage after ensuring setbacks	=>18 – 24m	2.0	4.0
			>24 – 45m	2.0	7.0
			More than 45m	2.0	Unrestricted
2 (b)			=>24 – 45m	3.0	10.5

Sl.	Use Types	Ground Coverage (%)	Road Width (m)	Base FAR	Max. FAR
	Auditorium / Convention Centre (Non-built-up area)	Max. coverage after ensuring setbacks	More than 45m	3.0	Unrestricted
3	Guest House	Max. coverage after ensuring setbacks	=>12 – 24m	1.5	3.0
			>24 – 45m	1.5	5.25
			More than 45m	1.5	Unrestricted
4	Utilities & Services	10%		0.1	
5	Other institutional/ PSP		=>12 – 24m	2.0	4.0
			>24 – 45m	2.0	7.0
			More than 45m	2.0	Unrestricted

Note: Maximum Permissible FAR (MFAR) is calculated as per the provisions of purchasable FAR in Chapter-9

3.2.2.7 Other Uses

Sl.	Use Types	Ground Coverage (%)	Road width (m)	Base FAR	Max. FAR
	Agriculture				
1	Farmhouse	20% for non-farm activities	=>7	0.2	0.2
2	Dairy Farms	20%	=>7	0.2	0.2
	Industrial				
1	Industrial Buildings	Max. coverage after ensuring setbacks	Up to 12m	1.5	1.5
			>12 - 24 m	2.5	5.0
			>24 - 45 m	2.5	8.75
			> 45 m	2.5	Unrestricted
2	Flatted factories/ MSME	Max. coverage after ensuring setbacks	Up to 12m	3.0	3.0
			>12 - 24 m	3.0	6.0
			>24 - 45 m	3.0	9.0
			> 45 m	3.0	Unrestricted
3	Data Centers	Max. coverage after ensuring setbacks	Up to 12m	3.0	3.0
			>12 - 24 m	3.0	6.0
			>24 - 45 m	3.0	9.0
			> 45 m	3.0	Unrestricted
	Mixed Use	**As per 8.1**	**As per 8.1**	**As per 8.1**	**As per 8.1**
	Recreational				
1	Stadium/ Sports Complex	20%	12m	0.4	0.4
2	Amusement Park	20%	12m	1.0	1.0
	Transportation				

Sl.	Use Types	Ground Coverage (%)	Road width (m)	Base FAR	Max. FAR
1	Multi-level Parking/ Bus Terminal/ Transportation Hub	Max. coverage after ensuring setbacks	=>12 - 24 m	1.5	3.0
			>24 - 45 m	1.5	5.25
			> 45 m	1.5	Unrestricted
	Parks and Open Spaces				
	Open spaces (Built-up area)	5%		0.1*	
	Open spaces (Non-Built-up area)	5%		0.1*	

Note: Maximum Permissible FAR (MFAR) is calculated as per the provisions of purchasable FAR in Chapter-9
*Note: Only for ancillary use.

3.2.2.8 Exemptions from FAR calculations

Sl.	Q: Is the structure included in FAR calculation? Key: Y= Yes, included in calculation N = No, not included in calculation NA = Not permitted thus not applicable	Residential – Single/Multi-unit	Residential – Group Housing	Commercial/ Mixed Use	Office Buildings	Institutional	Industrial	Other
1	Mezzanine	Y	Y	Y	Y	Y	Y	Y
2	Pergola (if closed from three or more sides)	Y	Y	Y	Y	Y	Y	Y
3a	Lift Machine Room	N	N	N	N	N	N	N
3b	Lift Shafts (to be counted as covered area only once i.e. on ground floor)	Y	Y	Y	Y	Y	Y	Y
3c	Lift Lobby up to 10 square meters	N	N	N	N	N	N	N
4	Meter Room (as per electricity authority norms)	N	N	N	N	N	N	N
5	Cantilever projection at any level (in setbacks) 0.75m width (no construction of any type or any material shall be permitted over projections)	N	N	N	N	N	N	N
6	Porch/ Portico (Maximum 4-meter x 8 meter). It shall not interfere with Fire tender movement.	Y	Y	Y	Y	Y	Y	Y
7	**Basement(s) within the setback line, if used for:**							
7a	Parking lot and garages	N	N	N	N	N	N	N
7b	Air conditioning equipment and other machines	N	N	N	N	N	N	N
7c	DG set room, meter room and electric panel room, Effluent Treatment Plant, suction tank, pump room	N	N	N	N	N	N	N
7d	Storage of household goods or other goods or ordinarily non-combustible material incidental to principal use	N	N	N	N	N	N	N
7e	Storage not incidental to principal use.	Y	Y	Y	Y	Y	Y	Y
7f	Non-combustible storage rooms (stacking rooms) of libraries	Y	Y	Y	Y	Y	Y	Y
7g	Strong rooms, bank lockers, safe deposit vaults, laundry room, radio/laser therapy, post-mortem room, mortuary, medical shop and cold storage for hospital building etc.	Y	Y	Y	Y	Y	Y	Y
7h	Offices and commercial uses (if air-conditioned)	Y	Y	Y	Y	Y	Y	Y
7i	Commercial use in first basement in case of shopping center/ shopping malls.	Y	Y	Y	Y	Y	Y	Y

Sl.	Q: Is the structure included in FAR calculation? Key: Y= Yes, included in calculation N = No, not included in calculation NA = Not permitted thus not applicable	Residential – Single/Multi-unit	Residential – Group Housing	Commercial/ Mixed Use	Office Buildings	Institutional	Industrial	Other
7j	Nursing quarters as ancillary use to hospital in first basement, if proper ventilation is ensured.	Y	Y	Y	Y	Y	Y	Y
7k	Any other use related to ancillary use, e.g. toilets, if proper requirements of lighting, ventilation and fire safety are adhered to	Y	Y	Y	Y	Y	Y	Y
7l	In mixed use buildings, uses other than ancillary uses shall also be allowed after meeting lighting, ventilation and fire safety requirements.	Y	Y	Y	Y	Y	Y	Y
8a	Stilt floor used for parking	N	N	N	N	N	N	N
8b	Stilt Floor used for any purpose other than parking	Y	Y	Y	Y	Y	Y	Y
9	Podium Parking (with max. 10% of permissible land cover utilized for Driver Restroom, Store, Sanitary Block and other similar services)	N	N	N	N	N	N	N
10	Separate Parking Block for Plot Area above 4000 sqm.	N	N	N	N	N	N	N
11	Locked Garages in Rear Setback	N	Y	Y	Y	Y	Y	Y
12a	Balconies up to 2.0 metres	N	N	Y	Y	Y	Y	Y
12b	Balconies beyond 2.0 metres	Y	Y	Y	Y	Y	Y	Y
13a	Staircase	Y	Y	Y	Y	Y	Y	Y
13b	Fire Escape/ External Staircase	N	N	N	N	N	N	N
14	Planters and Sun Control Devices	N	N	N	N	N	N	N
15	Jali of any material to cover AC/cooler units	N	N	N	N	N	N	N
16	Rockery, well & well structures, water pool, uncovered swimming pool, tree platform, tank, fountain, bench, open-top & unenclosed chabutra, compound wall, gate, slide, swing, underground water tanks, overhead water tanks on top of buildings, open shafts, culverts on drain	N	N	N	N	N	N	N
17	Open ramps with no area enclosed below it of usable height. If used for approach to the entrance of the building, then the height as per requirement may be considered. The space under the ramp shall not be used for any commercial purpose, however it can be landscaped with approval of the Authority on case-to-case basis.	N	N	N	N	N	N	N
18	Open ramps for movement of vehicles in side setback only	N	N	N	N	N	N	N
19a	Atriums in Commercial/ Office & PSP above 3000 sqm Plot Area	NA	NA	N	N	N	NA	NA
19b	Temporary Counters maximum up to 20% of the area of Atrium	NA	NA	N	N	N	NA	NA
20	Service Floors (max. up to 3 floors), allowed on every 4th floor in a multistorey building	NA	NA	N	N	N	N	N
21	Any other feature purely ornamental in nature and not enclosing or covering space of commercial use may be permitted by Vice Chairman on case-to-case basis.	NA	N	N	N	N	N	N
22	Loft up to 30% of room area (max. 1.5 metre height)	N	N	N	N	N	N	N
23	Mumty	N	N	N	N	N	N	N
24	Bay Windows and Almirahs/ Niche	N	N	N	N	N	N	N
25	Refuge Area (As per fire norms)	N	N	N	N	N	N	N

Sl.	Q: Is the structure included in FAR calculation? Key: Y= Yes, included in calculation N = No, not included in calculation NA = Not permitted thus not applicable	Residential – Single/Multi-unit	Residential – Group Housing	Commercial/ Mixed Use	Office Buildings	Institutional	Industrial	Other
26	Service Duct	N	N	N	N	N	N	N
27	Services such as air conditioning equipment and other machines, DG set room, meter room and electric panel room, Effluent Treatment Plant, suction tank, pump room – maximum up to 5% of permissible FAR or 50sqm (incase of Plot Area <= 4000 sqm) / 100 sqm (in case of Plot Area > 4000 sqm)	N	N	N	N	N	N	N

Note: A maximum of 5.0 percent of the permissible FAR shall be availed for various types of services like air-conditioned plants, in front of the lift (except corridor outside the lift), up to10 square meters shall be allowed for lobby, machine room for lift, Mumty, shelves and windows (maximum 0.60-meter depth and 1.80-meters length), refuse area (as per NBC), service duct and community centre.

3.2.3 Building Height

The maximum building height for various use occupancies shall be as follows.

Sl.	Use Occupancies	Max. Building Height (m)
I	**Residential (Built-up/ Non-Built-up)**	
1	Plotted – Single-Unit	15
2	Plotted – Multi-unit	17.5
3	Group Housing	No Restriction
II	**Commercial**	
1	Shops / Convenient Shopping / Commercial Units	No Restriction
2	Commercial Complex	No Restriction
3	Shopping mall	No Restriction
4	Hotels	No Restriction
5	Single screen cinema/ Miniplex/ Multiplex	No Restriction
6	Petrol Pump / Filling Station	6
t7	LPG / Gas Go down	6
III	**Community Facilities**	
A	**Healthcare Buildings**	
1	Non-Bedded Medical Establishments (Diagnostic Centre / OPD clinics / dispensary / Pathology Lab / Veterinary Clinics)	No Restriction

2	Nursing Homes / Veterinary Hospitals / Maternity Hospitals / Small Hospitals (Up to 50 beds)	No Restriction
3	Hospitals (> 50 beds)	No Restriction
4	Nursing Institutes	No Restriction
5	Medical College	No Restriction
B	**Educational Buildings**	No Restriction
1	Nursery	No Restriction
2	Primary	No Restriction
3	High School	No Restriction
4	Technical Institution	No Restriction
5	Universities	No Restriction
C	**Public Amenity buildings**	
1	Marriage / Festival Hall	No Restriction
2	Auditorium / Convention Centre	No Restriction
IV	**Agriculture**	
1	Farmhouse	No restriction
2	Dairy Farms	No restriction
V	**Industrial**	
1	Industrial buildings	No Restriction
2	Flatted factories	No Restriction
3	Data Centers	No Restriction
VI	**Mixed Use**	No Restriction
VII	**Recreational**	
1	Stadium/ Sports Complex	No Restriction
2	Amusement Park	No Restriction
3	Memorial	No Restriction
VIII	**Transportation**	
1	Multi-level Parking	No Restriction
2	Bus Terminal	No Restriction
3	Transportation Hub	No Restriction

Note:

(i) The maximum height of buildings shall be measured above the surrounding average road level and following supporting structures shall not be included in the height of the building: -

(ii) Rooftop tanks and their supporting structures not exceeding 2.0 m in height, rooftop structures required to capture alternative solar energy, ventilation, air conditioning equipment, lift rooms not exceeding 4.5 m in height and such other service equipment, ladders covered by mumty slab and not exceeding 3.0 m in height. Chimney, parapet wall and structures for enhancing the aesthetics of the building which are not more than 1.5 m height provided the total area of such structures including the *'barsati'* do not exceed one third of the area of the roof of the building

on which it is constructed.

(iii) The height of buildings adjacent to the aerodrome/air-force stations shall be in accordance with the orders issued by the Government of India/ Ministry of Civil Aviation/ Ministry of Defence, Airport Authority of India, from time to time.

(iv) The maximum height of the building shall also be governed by the distance from the protected monument / heritage site, airport funnel zone and other statutory restrictions.

3.2.4 Building Setbacks

All occupancy buildings with height less than 15 meters

3.2.4.1 Residential – Plotted Development (Single/Multi-units up to 15-meter height)

Under plotted development, for all single/multi-units less than 300 square meters plot size, three floors with stilts up to 15 meter is allowed and on plots above 300 square meters, four storeys with stilts up to 17.5-meter height is allowed. The set-back shall be as follows:

Plot Area (sqm)	**Setback (meter)**			
	Front	**Rear**	**Side-1**	**Side-2**
(a) Row-housing				
Up to 150	1	0	0	0
>150 to 300	3	1.5	0	0
>300 to 500	3	3	0	0
(b) Semi-detached				
>500 to 1200	4.5	4.5	1.5	0
(c) Detached				
>1200	6	6	1.5	1.5

Note-1: Construction shall be permitted on 40 percent of the rear setback up to 7 meter height, in semi-detached buildings. But in corner plots the said covering shall be permissible only after leaving the side set back. In case of stilt floor, construction on 40 percent area of the rear setback shall not be allowed.

Note-2: The side setback in a corner plot in the new layouts shall be the same as the front setback of the concerned plot. In already approved layouts, if setback is not prescribed in the layout plan, the minimum side set-back in corner plots up to 500 square meters shall be 1.5 meters and in corner plots having area more than 500 square meters, the side set-back shall be as per the above table.

Note-3: If the number of plots in a block is odd, then in view of the need to leave a setback on both sides, in plots larger than 1200 square metres, the width of the corner plot shall be kept larger accordingly. The front and rear setbacks for corner plots shall be the same as prescribed for other plots in that scheme so that there is uniformity in the 'building block'.

Note-4: In case sub-division of any plot is permissible in a planned developed area/scheme, the set-back in the sub-divided plots shall be as per the original plot.

Note-5: The setbacks specified in the table at *paragraph 3.2.4.1* shall be applicable in the new sub-division/layout plan. But in non-built up areas, the residential plots within layouts in which set-back is not prescribed shall also have set-back as per the above *paragraph 3.2.4.1*.

3.2.4.2 Residential – Group Housing up to 15-meter height

Building Height (m)	**Setback (meter)**			
	Front	**Rear**	**Side-1**	**Side-2**
Group Housing up to 15-meters	5	5	5	5

3.2.4.3 Commercial – Shops/commercial units, Mixed use buildings up to 15-meter height

Plot Area (sqm)	Setback (meter)			
	Front	Rear	Side-1	Side-2
Up to 100	1.5	-	-	-
>100 - 300	3	-	-	-
>300 - 1000	4.5	3	1.5	1.5
>1000 - 3000	6	3	3	3
>3000	12	6	6	6

Note-1: In commercial building with covered area on ground floor up to 500 sqm, if lighting and ventilation requirements are ensured, then setbacks shall not be mandatory along the rear and the side edges, whereas in the corner plots, side setback equal to the front set-back shall be mandatory.

Note-2: Under plot development, sector / neighbourhood / local level shopping centres shall be allowed in the form of lined shops, in which provision of a maximum 3-meter-wide covered corridor (arcade) in the front shall be allowed.

Note-3: The permissible front setbacks for buildings on bazaar street shall be as follows (also defined in Chapter-5).

Proposed width of road (metres)	Minimum open space in front (metres)
12	3.0
18	4.5
24	6.0
30	6.0
36	7.5
45	7.5
76	9.0

Note-4: The side setback in a corner plot in the new layouts shall be the same as the front setback of the concerned plot. In already approved layouts, if setback is not prescribed in the layout plan, the minimum side set-back in corner plots up to 500 square meters shall be 1.5 meters and in corner plots having area more than 500 square meters, the side set-back shall be as per the above table.

3.2.4.4 Other Commercial – building height up to 15-meters

Building Height (m)	Setback (meter)			
	Front	Rear	Side-1	Side-2
Hotels/ Single screen cinema/ Miniplex	5	3	3	3
Multiplex/ Shopping Malls	9	6	6	6
Petrol filling station w/o Service Station	3	-	-	-
Petrol filling station with Service Station	6	-	-	-
LPG Gas Godown	6	3	3	3

3.2.4.5 Community Facilities – Healthcare buildings height up to 15-meters

Plot Area (sqm)	Setback (meter)			
	Front	Rear	Side-1	Side-2
=>100 – 300	3	1.5	0	0
>300 – 1000	4.5	3	3	0
>1000 – 2000	6	3	3	3

>2000 – 4000	7.5	4.5	4.5	4.5
> 4000	9	6	6	6

3.2.4.6 Community Facilities – Educational buildings height up to 15-meters

Plot Area (sqm)	**Setback (meter)**			
	Front	**Rear**	**Side-1**	**Side-2**
Up to 1000	6	3	3	-
>1000 – 2000	6	3	3	3
>2000 – 4000	9	3	3	3
>4000 – 30000	9	4.5	3	3
> 30000	15	6	6	6

3.2.4.7 Community Facilities – Public Amenity buildings height up to 15-meters

Plot Area (sqm)	**Setback (meter)**			
	Front	**Rear**	**Side-1**	**Side-2**
Marriage/ Banquet/ Multipurpose Hall				
1000 – 3000	12	4.5	4.5	3
More than 3000	12	5	5	5
Auditorium / Convention Centre				
1500 – 3000	12	4.5	4.5	3
More than 3000	12	6	6	6

3.2.4.8 Industrial Buildings – height up to 15-meters

Plot Area (sqm)	**Setback (meter)**			
	Front	**Rear**	**Side-1**	**Side-2**
Up to 150	3	0	0	0
>150 -300	3	3	0	0
>300 - 500	4.5	3	3	0
>500 - 2000	6	3	3	3
>2000 - 6000	7.5	6	4.5	4.5
>6000	9	6	6	6

3.2.4.9 All occupancy buildings with height more than 15 meters

For use occupancies with building height more than 15m (other than single/multi units), the minimum setback requirement shall be as follows.

Building Height (in meters)	**Front (m)**	**Rear (m)**	**Side-1 (m)**	**Side-2 (m)**
>15 – 17.5	5	5	5	5
>17.5 - 21	6	6	6	6
>21 - 27	7	7	7	7
>27 - 33	8	8	8	8
>33 - 39	9	9	9	9
>39 - 45	10	10	10	10

>45 - 51	11	11	11	11
>51	15	12	12	12

Note-1: For buildings situated on two or more roads of different road widths, then the side of the building towards the wider road shall be considered as the front.

Note-2: In alternative to the above-mentioned table of *paragraph 3.2.4.9*, following setbacks shall be allowed.

a. Up to height of 33m, with one setback on the subsequent floors, the minimum setback on all fours sides on ground floor shall be 6m.

b. For building height between 33m to 45m, with one setback on subsequent floors, the minimum setback on all four sides on ground floor shall be 8m.

c. For building height more than 45m to 51m, with two setbacks on subsequent floors, the minimum setback on all four sides on ground floor shall be 10m.

d. The shortfall of setbacks mentioned in the table of *paragraph 3.2.4.9* shall be compensated by the setback provided on the subsequent floors.

Note-3: The margin between two blocks shall be the required setback based on the height of the higher block or 6m whichever is higher. Here 'Block' means a building structure which is divided into different rooms, flats / apartments or offices are in continuity, wherein the block length shall be a maximum of 100 meter and shall also cover total length of built structures joined through expansion joint.

Note-4: In plots comprising of building block of varying heights, the setbacks to be left along the edges of the plots shall be based on the height of the higher building block along that edge.

3.2.4.10 Exemption in setback

Following relaxations in the setbacks are provided.

(i) In residential buildings, terrace / balcony of maximum width up to 2.0 meters can be constructed in the setback open space, which shall not be more than the half of the width of the setback open space, which shall not be counted in the FAR. Above mentioned terrace / balcony shall be permissible to a maximum extent of 10% of the area of the entire open space. No construction of any kind shall be allowed on the mentioned terrace / balcony.

(ii) Construction of maximum 6m length and 3m wide portico either projected or supported on pillars shall be permitted on the driveway near the entrance in the setback area. No construction shall be allowed above the portion covered by the Portico.

(iii) Pergola of maximum 6 sqm area and height 2.3m, with the minimum open space area of 40% shall be permitted.

(iv) In case of island plot, the front of the plot will be the side abutting the widest approach road. The setbacks shall be as applicable for normal plot. Entrance for such plot shall be allowed through widest approach road as defined above.

(v) In special circumstances, the side set-back of a corner plot may be relaxed by the Authority Board.

(vi) Fire escape shall be permissible in the set-back area provided the fire prevention norms are adhered to.

(vii) Construction of ramp in slope is allowed for basements and podium in setbacks provided that unhindered movement of fire tender is not blocked.

3.2.5 Distance from electric line

As per Indian Electricity Rules, minimum distance for permission for construction/reconstruction of building:

(i) On low and medium voltage lines and service lines, vertical distance of 2.5 meters and horizontal distance of 1.2 meters shall be provided.

(ii) High voltage lines such as 33,000 voltages shall be provided vertically at 3.7 meters and horizontally at 2.0 meters.

(iii) From 33,000 voltage lines, 0.3 meter for every additional 33,000 voltage or part thereof of 3.7 meter vertically and 0.3 meter for every additional 33,000 voltage or part thereof of 2.0-meter horizontal shall be allowed from the uninterrupted hard voltage line.

3.3 Requirements of Parts of Building

3.3.1 Room Sizes and Dimensions

3.3.1.1 Habitable rooms

(i) Minimum requirements of habitable rooms shall be as specified in table below.

Sl.	Room Types	Min. Floor Area (sqm)	Min. Width (m)	Min. Room Height (m)
(1)	(2)	(3)	(4)	(5)
i)	Only one room			
a)	Single room	9.5	2.4	2.75
b)	EWS/LIG unit with 1 multipurpose room	12.5	2.4	2.75
ii)	Two rooms			
a)	First room	9.5	2.4	2.75
b)	Second room	7.5	2.1	2.75
c)	EWS/LIG units			
1)	First room	9	2.4	2.75
2)	Second room	6.5	2.1	2.75
d)	Hostels			
1)	Single bedded room	7.5	2.4	2.75
2)	Double bedded room	12.5	3	2.75

(ii) Additional minimum requirements for habitable rooms shall be as follows:

a. The minimum clear head room under a beam, folded plates or eaves shall be 2.4 m. In the case of air-conditioned rooms, a height of not less than 2.4 m measured from the surface of the floor to soffit of air-conditioning duct or the false ceiling shall be provided.

b. Multipurpose habitable rooms in low income housing shall be provided with an alcove for cooking space.

c. A minimum door width of 900 mm shall be provided for all rooms in public buildings.

d. Maximum height of habitable room shall be according to the requirement and occupancy. The minimum height of habitable room in commercial, institutional and assembly buildings shall be 3.00 meters.

3.3.1.2 Kitchen

Minimum requirements of kitchen shall be as specified in Table below.

Sl.	Room Types	Min. Floor Area (sqm)	Min. Width (m)	Min. Height (m)
(1)	(2)	(3)	(4)	(5)
i)	Kitchen with dining	7.50	2.10	2.75
ii)	Kitchen without dining	5.00	1.80	2.75
iii)	Kitchen without a separate store	4.50	1.80	2.75
iv)	Kitchen in an EWS/LIG unit	3.30	1.80	2.75
v)	Pantry	3.00	1.40	2.40
vi)	Commercial kitchen	50 sqm or 25 percent of floor area whichever is minimum.	-	-

3.3.1.3 Bathrooms and Water Closet

(i) Minimum area of an independent bathroom shall be 1.5 square meters, and its minimum width shall be 1.0 meters

(ii) Minimum area of an independent water closet/powder room shall be 1.1 square meter, and its minimum width shall be 0.9 meters .

(iii) The height of a bathroom or water closet measured from floor surface to the bottom of ceiling shall not be less than 2.2 meter .

(iv) Minimum floor area of a combined bathroom and water closet shall be at least 2.8 square meters, and its minimum width shall be at least 1.2 meters.

3.3.1.4 Loft

Lofts may be provided over kitchen, habitable rooms, bathrooms, water closets, and corridor within a tenement in all buildings. Loft area shall not be counted in FAR, provided that the maximum coverage of loft in the room area shall be 30 percent subject to following restrictions.

(i) The maximum height of loft shall be1.5 metres.

(ii) The clear head room under the loft shall not be less than 2.0 metres.

(iii) Loft in commercial/industrial buildings shall be located 2.0 meters away from the entrance.

(iv) Loft shall not interfere with the ventilation of the room under any circumstances.

3.3.1.5 Mezzanine floor

(i) The minimum area of a mezzanine floor shall be 9.5 square meters.

(ii) The aggregate area of mezzanine floor shall be a maximum 33 percent of the plinth area of the building.

(iii) The head room under mezzanine floor shall not be less than 2.2 meters.

(iv) Mezzanine floor area shall be counted in the calculation of FAR.

(v) The lighting and ventilation system for the mezzanine floor shall be as per the standards.

3.3.1.6 Parapet

Parapet wall shall be provided on the edges of terraces, balconies, verandah or any opening at floor level to external open space. The height of the parapet wall shall be minimum 1.0 m and maximum 1.50 m from the finished floor level.

3.3.1.7 Roof

The roof of a building shall be designed and constructed with sloping gradient to effectively drain water by means of rainwater pipes of adequate size. This rainwater shall be carried away from the building without causing dampness in any part of the walls, roof or foundations of the building or an adjacent building. Rain-water pipes shall be affixed to the outside of the external walls of the building or in recesses or chases cut or formed in such external walls, with screens at rainwater pipe inlets. The rainwater pipes shall be connected to a drain or a road gutter or rainwater harvesting structure.

3.3.1.8 Balcony

(i) Depth of an unenclosed balcony shall be between 0.90 m to 2.0 m.

(ii) In residential buildings, balcony of maximum width up to 2.0 meters can be constructed in the setback open space, which shall not be more than the half of the width of the setback open space, which shall not be counted in the FAR. Above mentioned terrace / balcony shall be permissible to a maximum extent of 10% of the area of the entire open space. No construction of any kind shall be allowed on the mentioned balcony.

(iii) For group housing, balcony (is permitted above 6m height to enable fire tender movement), up to 2 meters balcony is free from FAR, and remaining 25 percent of additional area (beyond 2m) shall be counted in FAR. For distance between buildings less than 9m, 2 meters wide balcony shall not be allowed.

3.3.1.9 Porch/Portico

Porch/Porticos shall be permitted within the boundary line of the plot subject to the following minimum requirements: a) Porch/portico shall be minimum 3 m wide (and maximum dimension shall be 6m x 3m), b) Porch/porticos shall be used as open terrace only, c) Spaces under porch/portico shall be paved and channelled, and d) Porch/porticos in high rise buildings shall not interfere with the fire tender movement.

3.3.1.10 Verandah

Verandah in non-residential building shall have a parapet wall or railing of 1.20 m on the open side. It may be covered by grill, trellis or jolly works, without reducing the effect of natural lighting and ventilation.

3.3.1.11 Parking garage

(i) The minimum size of parking garage in individual residential building shall not be less than 2.5 meters x 5.5 meters and not more than 3.0 meters x 6.0 meters (per each ECS).

(ii) The minimum height of the parking garage shall be 2.40 metres and maximum height shall be 2.75 meters.

3.3.1.12 Atrium

(i) Definition - Atrium means the internal court / entrance hall of a building, which is sky lighted or covered with a transparent temporary structure on the terrace floor.

(ii) Applicability - The atrium shall be used for the purpose of natural lighting, internal circulation and landscaping in the building.

(iii) Permissibility - Atrium is allowed for commercial purposes (shopping mall, multiplex, hotel etc.). It shall be permissible in offices and public and semi-public establishments, mixed use whose minimum area is 3000 square meters.

(iv) Minimum width - The internal width of the atrium shall be half of its total height or 7.5 metres, whichever is greater.

(v) Other requirements - (a) The atrium can be covered with a transparent fibre sheet on the terrace floor to provide protection from rain, dust, heat, etc., and also to provide natural light during daytime to the area covered by the atrium.. (b) Construction of any kind of permanent structure shall not be allowed under the atrium, but a maximum of 20 percent of the total area of the atrium can be used as temporary counters for commercial activities. Temporary counters shall be installed at such places so that circulation is not disrupted.

3.3.1.13 Exit Requirements

For safe evacuation of buildings, the provisions of Section 4.5 of Part 4 of the National Building Code of India – 2016 as amended time to time shall be applicable.

3.3.1.14 Corridors and Passages

The provision of corridors and passages in buildings shall of minimum width 1.5 meters, and the provisions of Section 4.8 of Part 4 of the National Building Code of India – 2016 as amended time to time shall be applicable.

3.3.1.15 Staircase

(i) The internal staircase of all buildings except residential buildings up to three storeys high shall be made of non-combustible material.

(ii) No staircase shall be located around a lift unless the lift is surrounded by fire retardant material.

(iii) The minimum width of internal staircase shall be 1.0 meter in residential buildings with group housing (up to three floors), 1.5 meter in guest houses and 1.5 meter in non-residential buildings and other multi-storey buildings. The minimum width of staircase in group housing buildings more than three storeys high shall be 1.5 metres, but in single residential buildings up to two storeys, the minimum width of internal staircase can be kept at 75 centimetres.

(iv) Under the row housing system in plotted development, provision of a common staircase between two residential units shall be permitted.

(v) The minimum width of tread (without nosing) for an internal staircase in residential buildings

shall be 25 centimetres. In case of other buildings, the minimum tread of stairs shall be 30 centimetres.

(vi) The maximum height of the riser shall be 19 centimetres, in the case of residential buildings and 15 centimetres in case of other buildings.

(vii) In residential buildings, there shall be a maximum of 12 risers in one flight, and in other buildings there can be up to 15 risers per flight.

(viii) The minimum height of the handrail shall be 85 centimetres from the center of the tread.

(ix) The minimum width of staircase for different occupancy type shall be as given below:

Sl.	Occupancy Type	Width (m)
1	Residential (single units)	1.00
2	Residential (lodging houses, apartments up to 15m height)	1.25
3	Residential (hotels and starred hotels)	1.50
4	High-rise residential	1.50
5	Assembly (see note)	2.00
6	Educational	1.50
7	Institutional	2.00
8	All other occupancies	1.50

Note: The width of stairs may be accepted to be 1.50 m in case of assembly occupancy having less than 150 persons.

3.3.1.16 Fire escape or external staircase.

All buildings having height more than one storey shall have provision of at least one staircase. The special buildings shall have two staircases out of which one shall be fire escape staircase. Fire escape shall be on external walls of buildings and shall open directly in the external open space.

(i) Fire escape shall not be counted in ground coverage and FAR.

(ii) All fire escapes/ external stairs shall be directly connected to ground.

(iii) Entrance to the external stairs shall be separate and remote from the internal staircase.

(iv) Care shall be taken to ensure that no wall opening, or window opens on to or close to an external stair.

(v) The route to external stairs shall be free of obstructions at all times.

(vi) The external stairs shall be constructed of non-combustible materials, and any doorway leading to it shall have the required fire resistance.

(vii) Fire escape/ external stairs shall have straight flight not less than 125 centimetre wide with 28 centimetre treads and risers not more than 19 centimetres. The number of risers in a flight shall be limited to 16 per flight.

(viii) Handrails shall be of a height not less than 100 centimetres.

3.3.1.17 Ramp

Ramps shall comply with all the relevant provisions applicable to stairways.

(i) Ramps shall be normally provided with a slope of 1:10. In certain cases, steeper slopes may be permitted in special cases as applicable, but in no case greater than 1:8 shall be permitted.

(ii) If there is a need for a slope of more than 1:10, ramps shall be surfaced with approved non-slipping material. Provided that in the case of public offices, hospitals, assembly halls, etc., the slope of the ramp shall not be more than 1:12.

(iii) Minimum width of the ramps in hospitals shall be 2.40 meters.

(iv) Minimum width of parking ramps shall be 3.0 meters (single side/one way entry or exit) and 6.0 meters for (two sides/two-way entry-exit).

3.3.1.18 Lifts and Escalators

Provision of Lift: Lift shall be provided for buildings above 15 meters height in case of apartments, group housing, commercial, institutional and office buildings. The number and capacity of lift shall be provided as specified in the National Building Code. Notwithstanding anything contained in these byelaws, in case of building with 21 meters or more height, at least two lifts shall be provided.

Provision of Escalator: Escalators may be provided where large number of people move at a controlled rate in minimum space such as airports, railway stations, transportation hubs, shopping centres/malls. Horizontal moving walks may be provided where medium to long distance travel is involved such as airports, metro stations and exhibition halls. The number, type, capacity, planning, designing and specification for safety devices of escalators and moving walks shall be in accordance with the relevant provisions of Part 8 'Building Services', Section 5B 'Escalators and Moving Walks' of NBC 2016.

For the purpose of installation of lifts and/or escalators and the operation and maintenance of the same, the building owner shall adhere to the provisions of the Uttar Pradesh Lifts and Escalators Act, 2024 and corresponding rules.

3.3.1.19 Service Floor

(i) Service floor shall be allowed in group housing, commercial office, industrial, hotel, hospital and mixed-use multi-storey buildings for the use of pipes, service ducts, etc. related to the building, which shall not be counted in the FAR.

(ii) Maximum height of a service floor shall be 2.1 meters from floor surface to soffit of the beam, provided further that a service floor with height exceeding 2.1 meters may be allowed in a building of medical use or in building having height more than 70 meters with special permission of Authority with reasons recorded in writing.

(iii) In multi-storey buildings, one service floor shall be allowed on every four floors, but a maximum of 3 service floors shall be allowed in a building with the restriction that two service floors shall not be provided continuously in two subsequent floors.

3.3.1.20 Boundary wall

(i) The maximum height of the front compound wall shall be permitted up to 2.40 meters, provided a minimum 0.90 meters of the upper portion shall be mesh/grilled.

(ii) The maximum height of the rear and side compound walls shall be 2.40 meters.

(iii) In corner plots, the height of the compound wall on the roadside shall not exceed 1.65 metres.

(iv) Where any specific provision relating to the height of the boundary wall has been made for a category of buildings like jail, sanatorium, factories, etc., for safety and security purposes, those provisions shall prevail.

3.3.1.21 Plinth

(i) The plinth shall be so located with respected to surrounding ground level that adequate drainage of the site is assured. The minimum plinth height shall be 0.30 meters from the surrounding ground level.

(ii) Inner courtyard, covered parking at ground level and stilt floor shall have minimum plinth height of 0.15 meter from the surrounding ground level.

3.3.2 Lighting and ventilation

3.3.2.1 Lighting and ventilation of a room - Adequacy and manner of provision

(i) A habitable room shall have one or more openings in the form of windows, skylights etc., for light and ventilation, which shall open towards an open space or verandah with a minimum width of 3-meters.

(ii) The minimum aggregate area of openings of habitable rooms (eg. windows, skylights), excluding doors, shall not be less than 10 percent of the floor area of the room.

(iii) No portion of a room room shall be considered illuminated, if it is more than 7.5-meters away from the openings considered for light and ventilation. However, this restriction shall not be mandatory in case requisite provisions are made for air conditioning system.

(iv) In residential buildings, if light and ventilation of the habitable room is from internal open space, then the area of such open space shall be minimum 7.5 square meters and the minimum width shall be 2.5 meters for buildings up to 17.5 meters height. For buildings taller than 17.5 meters, the minimum width of the internal open space shall be 3-meters and the area of internal open space shall be equal to the multiplication of 1/5 times minimum width to 1/5 times of the height of the tallest wall adjacent to it, i.e. if the height of the tallest adjacent wall is 30 meters, then the area of internal open space shall be (30 x 1/5) x (3 x 1/5) = 36 sq.m.

(v) For rooms in residential buildings, if provision for light and ventilation is given from setbacks then the requirements of minimum area and minimum width for internal open space mentioned in the above-mentioned paragraph (iv) shall be exempted.

3.3.2.2 Kitchen, bathroom, water closet or storeroom

Kitchen shall have an opening (or window) of minimum area of 1.0 square meter or 10 percent of the floor area, whichever is higher, and which shall open directly towards the indoor or outdoor open space. A bathroom, water closet powder room or a storeroom shall have an opening of minimum 0.30 square meter with one dimension of 0.30 meter, for adequate lighting and ventilation.

3.3.2.3 Ventilation Shaft

For ventilating the spaces for bathrooms and water closets, if not opening on front, rear & side or interior open spaces (such as a verandah of less than 3-meter width) for ventilation, these shall open on the ventilation shaft, the size of which shall not be less than the values given in the table below:

Building Height (meter)	Size of ventilation shaft (square meter)	Minimum width of shaft (meter)
Up to 15	1.2	0.9
Up to 17.5	2.4	1.2
Up to 24	5.4	1.8
Up to 30	8.0	2.4
More than 30	9.0	3.0

Note:

(i) For buildings above 15 meters height, ventilation shafts shall be provided, and arrangements shall

be made to enter the shaft for cleaning and maintenance.

(ii) For buildings above 30 meters height, mechanical ventilation system shall also be installed besides the provisions of minimum ventilation shaft. These provisions shall be relaxed in buildings with fully air-conditioned systems, where ventilation shafts shall be as per design.

3.3.3 Basement

3.3.3.1 Structure/Purpose

(i) Basement shall generally be constructed within the prescribed setbacks with maximum up to three levels.

(ii) Construction of internal open space (courtyard) and basement below the shaft shall be permissible.

(iii) Construction of basement shall be permitted only after leaving a minimum of 2 meters from all boundaries of the plot while ensuring the structural safety of the adjacent properties.

(iv) Following uses shall be permissible and free of FAR.

a. Air conditioning equipment and other machines which are installed for the essential safety of the building.

b. Parking lots and garages.

c. DG set room, meter room and electric panel room (which shall conform to required safety requirements), Effluent Treatment Plant, suction tank, pump room.

d. Storage of household goods or other goods or ordinarily non-combustible material incidental to principal use.

(v) Following uses shall be permissible and counted in FAR:

a. Strong rooms, bank lockers, safe deposit vaults, laundry room, radio/laser therapy, post-mortem room, mortuary, medical shop and cold storage for hospital building etc.

b. Storage not incidental to principal use.

c. Commercial use in first basement in case of shopping centre/ shopping malls.

d. Non-combustible storage rooms (stacking rooms) of libraries.

e. Offices and commercial uses (if air-conditioned).

f. Nursing quarters as ancillary use to hospital in first basement, if proper ventilation is ensured.

(vi) Any other use related to ancillary use, e.g. toilets, if proper requirements of lighting, ventilation, waste disposal through pumping, and fire safety are adhered to. In mixed use buildings, uses other than ancillary uses shall also be allowed after meeting lighting, ventilation and fire safety requirements.

(vii) It is also clarified that disallowance of basement uses shall be limited to hazardous/combustible use.

3.3.3.2 Requirements for basement

(i) Every basement shall be in every part at least of 2.4 meters in height (and a maximum of 4.5 meters in height) from the floor surface to the soffit of beam, but in case mechanized parking is proposed in the basement, the height of the basement shall be based on the actual design.

(ii) Adequate ventilation shall be provided for the basement with a ventilation area not less than 2.5 percent of the area of the basement. Any deficiency shall be compensated by providing adequate

mechanical ventilation in the form of blowers, exhaust fans or air conditioning systems.

(iii) The minimum height of the ceiling of any basement shall be minimum 0.9 meters and maximum shall 1.2 meters above the adjacent road level. However, it does not apply to the mechanically ventilated basements. In such cases, basement may also be allowed flushing to the average ground level.

(iv) Adequate arrangements shall have to be made to ensure that surface water does not enter the basement.

(v) Keeping in mind the surrounding soil and moisture, arrangements for damp proofing treatment shall also have to be made.

(vi) Adequate number of doors shall have to be provisioned in the basement for office and commercial use so that one does not have to walk more than 15 meters.

(vii) If provision of basement for parking is made below the stilt floor or provision of extended basement is made for parking outside the building for the purposes mentioned in paragraph 3.3.3.1 (iv) and 3.3.3.1 (v), and the proposed basement flushes the ground floor level, then mechanical ventilation shall have to be arranged and the slab of the basement shall be designed to withstand the pressure of fire-fighting vehicle.

3.3.3.3 Basement provisions

(i) Construction of basement in buildings of different nature shall be permissible as per the following table:-

Sl.	Plot Area (Sq.M)	Nature of land use	Basement provisions
1	Up to 100	1.1 Residential/ other non-commercial	Not permitted
		1.2 Office and commercial	50 percent of building envelope
2	100 to 500	2.1 Residential	Equal to building envelope
		2.2 Non-residential	Equal to building envelope
3	500 to 1000	3.1 Residential	1 basement up to building envelope line
		3.2 Non-residential	2 basements up to building envelope line
4	More than 1000	4.1 Residential/ group housing, commercial, Office, community facilities and other multi-storey buildings	Permitted basements up to building envelope line. • 1000 -2000 sq.m. – 2 basements • >2000 sq.m. – 3 basements
		4.2 Industrial	3 basements up to building envelope line

(ii) Construction of basement for parking in plots of high-rise building with area of 1000 square meters in built-up area and 1500 square meters in non-built-up area and more shall be permitted in the residual area after leaving an area of 6.0 meters around the boundaries of the plot.

(iii) For the area reserved as park /open space area, basement for parking purposes may be constructed up to 70 percent of the area identified as open space area.

(iv) In group housing or other multi-storey buildings (with an area of 1500 square meters and more), the height of the basement between the ground cover and the boundary of the building envelope shall be at the ground level so that construction of a road or landscaping can be possible.

(v) Construction of ramp under the set-back to reach the basement shall be permissible provided that unhindered movement of fire tender is not blocked.

(vi) The above provisions shall be applicable in built-up areas also.

3.3.4 Parking places for vehicles

3.3.4.1 Equivalent Car Space (ECS)

Depending on the nature of parking, each "Equivalent Car Space (ECS)" shall have following standards including circulation area:

(a) Single/ Multi-units (Plotted)	13.75 square meters
(b) Parking in open area	23 square meters
(c) Covered parking	28 square meters
(d) Parking in basement	32 square meters
(e) Mechanized parking (double stacking)	16 square meters or based on actual design
(f) Mechanized parking (triple stacking)	8 square meters or based on actual design
(g) Two wheelers (including bicycles)	2.00 square meters

Note: Double and triple stacking shall be allowed in basement and other areas.

3.3.4.2 Parking Plan

Parking Plan shall be submitted separately for approval along with group housing, commercial institutional office and other multi-storey building maps, in which parking area for all types of vehicles along with proper circulation arrangements for their entry and exit shall be shown.

3.3.4.3 Parking standards

The standards of parking arrangement for buildings of different uses/occupancies shall be as follows:

(1) Residential – Plotted (Multi-family dwelling)/ Group Housing

	Residential Use Type	**Area of Dwelling Unit (sq.m.)**	**Parking Requirement in ECS/ DU**
1	Plotted Development (Single / multi-unit)	Up to 100	1.00
		>100 - 150	1.25
		>150	1.50
2	Group Housing	< =50	2.00 sqm
		>50 - 100	1.00
		>100 - 150	1.25
		> 150	1.50
3	EWS	-	2.0 sqm / DU
4	LIG	-	4.0 sqm / DU
5	Affordable	-	1 per DU + 10% Visitor Parking for DU > 60 sqm

Note: In group housing, additional 10% parking shall also be provided for visitors.

(2) Commercial

Sl.	**Commercial Use Type**	**Parking Requirements in ECS/ unit area**
1	Shops / Convenient Shopping / Commercial Units	1 / 100 sqm of floor area
2	Commercial Complex	2 / 100 sqm of floor area
3	Shopping mall	3 / 100 sqm of floor area

4	Hotels	1.5 / 100 sqm of floor area
5	Multiplex	2 / 100 sqm of covered area
6	Petrol Pump / Filling Station	Minimum 80 sqm (with service station)
7	LPG / Gas Go down	1 / 100 sqm of floor area
8	Bazaar Street	1.25 per 100 sqm (metros) and 1.00 per 100 sqm in other than metros.
9	Wholesale Market	2.5 per 100 sqm of floor area
10	Market	25 percent of market area
11	Freight Complex/ Cold Storage	2.0 per 100 sqm of floor area
12	Office Buildings	2.0 per 100 sqm (metros) and 1.50 per 100 sqm in other than metros.
13	Other Commercial	1.25 per 100 sqm (metros) and 1.00 per 100 sqm in other than metros.

(3) Community Facilities

Sl.	**Community Facility Use Type**	**Parking Requirements in ECS**
A	**Healthcare Buildings**	
1	Non-Bedded Medical Establishments (Diagnostic Centre/ OPD clinics/ dispensary/ Pathology Lab/ Veterinary Clinics)	1.5 / 125 sqm of floor area + 1 ambulance parking 10 m x 5 m (50 sqm or 2 ECS open parking) for hospitals up to 50 beds + one additional ambulance parking space for every 50 beds thereafter
2	Nursing Homes / Veterinary Hospitals / Maternity Hospitals/ Small Hospitals (Up to 50 beds)	
3	Hospitals (> 50 beds)	
4	Nursing Institutes	
5	Medical College	
B	**Educational Buildings**	**Parking Requirements in ECS**
1	Nursery	1 / 125 sqm of built-up area + 1 bus parking 10 m x 5 m (50 sqm or 2 ECS open parking) space for every 120 students
2	Primary	
3	High School	
4	Technical Institution	
5	Universities	
C	**Public Amenity Buildings**	
1	Marriage Hall/ Banquet/ Multipurpose Hall	2 / 100 sqm of permissible floor area or proposed FAR whichever is higher
2	Auditorium / Convention Centre	1 / 10 seats + 2 / 100 sqm of floor area (attached ancillary commercial activities)

Note:

(4) Industrial Buildings

Sl.	**Industrial Use Type**	**Parking Requirements in ECS**
1	Industrial Buildings	1 per 300 sqm
2	Flatted Factories	1 per 200 sqm
3	Data Centres	1 per 300 sqm

(5) Recreation Buildings

Sl.	**Recreation Use Type**	**Parking Requirements in ECS**
1	Stadium	1 per 20 seats
2	Amusement Park/ Other recreational areas	30 percent of plot area

3.3.4.4 Basement parking provisions

Refer paragraph 3.3.3.

3.3.4.5 Off-street parking

Arrangements shall be made to park vehicles separate from the road with provision for proper exit.

3.3.4.6 Locked garages

Locked garages for parking shall be included in the calculation of FAR. In a plotted development, if locked garages are proposed/constructed at the rear of the side set-back of the building, they shall not be included in the FAR.

3.3.4.7 Parking on building setbacks

(i) Parking shall be allowed in the front set back in non-residential plots up to 300 square meters, in which construction of maximum height of 15 meters is proposed.

(ii) 50 percent of the set-back area can be used as parking with the restriction that a minimum distance of 6.0 meters around the building shall be kept motorable and completely free from obstructions for firefighting purposes and construction of ramp shall not be allowed in this.

(iii) It shall be mandatory to submit the parking plan separately for approval along with the map, in which the parking area for all types of vehicles along with proper circulation arrangements for their entry and exit shall be shown.

3.3.4.8 Stilt Parking

Stilt Parking is mandatory for multi-units, while it is optional for single units. Construction of stilts for parking shall be permissible in all types of buildings, which shall not be calculated in the FAR, but shall be calculated in the height of the building.

In case covered parking on stilts is used for any purpose other than parking, the same shall be calculated in the FAR.

3.3.4.9 Podium Parking

Construction of podium for parking purpose shall be permissible up to the building envelope line subject to the following restrictions:

(i)	The minimum area of the plot shall be 1500 square meters.
(ii)	The minimum width of the road shall be 12 meters.

(iii)	Height of the podium shall be at least 2.4 meters from the floor to soffit of beam
(iv)	Construction of ramp for the use of podium parking shall not be permissible under set-back.
(v)	The area of parks & open areas/green areas should not be reduced due to podium construction.
(vi)	Recreational open space may be permitted on podium up to 50 percent in built-up areas.
(vii)	Requirements related to fire safety should be ensured.
(viii)	Podium shall be designed to take load of the fire engine, if required.
(ix)	Number of floors in the Podium Parking shall be as per design

Note: Driver restroom, store, sanitary block and other similar services shall be allowed within the maximum limit of 10 percent of the permissible land cover in podium parking.

3.3.4.10 Group Housing, Commercial/ Office Complexes and Institutional Buildings

In addition to provisions outlined in paragraphs 3.3.4.1 to 3.3.4.9 above, the following parking arrangements shall also be permissible in group housing, commercial and office complexes and institutional buildings:

i. Parking on subsequent floors with stilt floor shall be permitted subject to the following provisions: (a) Construction of ramp shall be permissible in the set-back area (except podium parking) provided ample space is provided for movement of fire tender, (b) The open side of the parking floors can be closed with a grill (grill) of maximum one meter high but shall not be closed with walls. Open parking on the terrace shall be permitted with the condition that a wall of maximum one meter high and a net of one meter high shall be installed on all four sides and shall not be closed by walls.

ii. For plots above 4000 sqm in area, a separate block for parking is permissible. Within the parking block, 10% of Ground Floor shall be utilized for ancillary purposes (free from FAR) incidental to the principal use.

iii. The height and area of the mechanized multi-level parking shall be based on the actual design, which shall have to be attached along with the map submitted for approval.

iv. Maximum 03 basements shall be allowed in multi-level parking and in case the parking block is above the ground, there shall be no restriction on the maximum height of the block, but proper distance shall have to be maintained from the main building as per rules.

3.3.4.11 Space for Common Parking

While planning and designing the city centre, zonal shopping centre and office complex, in addition to the required parking for individual plots, separate parking complexes shall have to be arranged on 05 percent of the total area of the scheme.

3.3.4.12 Multi-level parking

Under the parking spaces prescribed in the master plan / zonal plan / layout plan or under residential, commercial and office, public and semi-public facilities, traffic and transportation nodes, etc., Multilevel parking shall be developed as per the following parameters-

i. The minimum size of the plot for multi-level parking facility shall be 1000 square meters. In case of built-up area, the facility may be provided in 750 square meters.
ii. The place selected for parking shall be located on a minimum 9-meter-wide road in the built-up area and on a minimum 12-meter-wide road in the non-built-up area.
iii. FAR of 3.0 shall be allowed.
iv. If the height of the parking block is up to 15 meters, the minimum set-back shall be 3 meters and if it is more than this, the set-back shall be as per *paragraph 3.2.4.9* of the Building Construction and Development Byelaws.

v. In multi-level parking, a maximum of two basements shall be permitted subject to structural and safety conditions.
vi. To meet the cost/ensure feasibility of multi-level parking, a maximum of 25 percent of the total floor area can be used for commercial/office and entertainment purposes.

Note: Specific proposals requiring relaxation in the above parameters can be presented to the Authority Board for consideration and a decision can be taken.

3.3.5 Fire and life safety requirements.

Provisions for Fire and life safety requirements are detailed out in Chapter-10.

3.3.6 Requirements for earthquake resistant construction

Buildings more than 3 floors including the ground floor or more than 12 meters high and buildings related to important infrastructure facilities with more than 500 square meters of ground cover shall be planned, designed and constructed as per the requirements of Chapter-11 while ensuring earthquake-resistant arrangements.

3.3.7 Requirements for physically handicapped persons

Provisions shall be made as per the requirements given in Chapter-12 for creating barrier-free premises for the needs, safety and security of physically challenged persons in all public utility buildings and public facilities.

3.3.8 Environmental sustainability requirements

Provisions on various requirements highlighted below towards ensuring environmental sustainability are detailed out in Chapter-13.

i. **Rainwater Harvesting** - Except in the areas suffering from the problem of waterlogging, the rainwater received from the roofs and open spaces in the all-purpose plots of 300 square meters and more area and in all group housing schemes, in other areas, shall be diverted through suitable recharging structures. Necessary provision shall be made for ground water recharging and underground or above-ground storage as per local conditions. Additional requirements are given in *paragraph 13.1.2* of these byelaws.

ii. **Solar Water Heating Plant** - In any proposed building construction relating to (i) hospitals and nursing homes, (ii) hotels, (iii) guest houses, rest houses (iv) hostels, (v) colleges, universities, technical institutions, training centres, (vi) barracks of armed forces/paramilitary forces and police forces, (vii) community centres, banquet halls, wedding processions and other similar buildings, and (viii) residential buildings of area 500 square meters and more, installation of solar water heater plant for heating water shall be ensured as per the requirements given in *paragraph 13.2.3.2* of these byelaws.

iii. **Rooftop Solar Photovoltaic Plant** - In government institutions/ semi-government institutions/ government voluntary institutions/ aided institutions/ establishments and in office, housing and commercial complexes and other buildings with area of 5000 square meters and more, rooftop solar photovoltaic power plant shall be mandatorily established on a minimum of 25 percent rooftop area of the plinth area of the building. Additional requirements are given in *paragraph 13.2.3.1* of these byelaws.

Environmental Protection - In view of environmental protection, in buildings with built-up area of 5000 square meters to 150000 square meters, it shall be mandatory to comply with the environmental conditions mentioned in relevant sections under Chapter-13.

3.3.9 Other requirements

All other requirements of the building shall be ensured as per the National Building Code of Bureau of Indian Standards (BIS).

4 Residential Buildings

4.1 Plotted Development - Single/ Multi-units.

4.1.1 General Requirements

(i) Permission for residential plotted development (single/ multi-units) shall be given:

a. On all plots in residential areas proposed in the master plan/ zonal development plan.

b. In all layouts approved or developed by the Authority.

(ii) Single-unit refers to residential building having one independent residential unit on each floor or combination of floors with three or less storeys and height not exceeding 15-meters.

(iii) Multi-unit refers to residential building having one or more independent residential units on each floor with four or less storeys and height not exceeding 17.5-meters (including mandatory stilt).

4.1.2 Minimum Plot Size

(i) The minimum plot size for single units shall be 40 square meters for non-built-up area and there shall be no restriction on plot size for built-up area.

(ii) The minimum plot size for multi units shall be 150 square meters.

(iii) In case of a multi unit, the minimum carpet area of each independent residential unit shall be 60 square meters.

4.1.3 Means of Access

(i) For single units, the minimum width of the road shall be 4.0 meters in built-up areas and 9-meters in in non-built-up areas. However, for non-built-up area, 7.5-meter-wide access road is permissible in case plots are located only on one side of the road.

(ii) For multi-units, the minimum width of road shall be 9-meters.

4.1.4 Maximum height of building

The maximum height of the building shall be 15-m including stilt for single unit and 17.5 meters including mandatory stilt floor for multi-unit.

4.1.5 Minimum Setback

Minimum setbacks for residential buildings in plotted development for single/multi-units shall be as per paragraph 3.2.4 of the building byelaws.

4.1.6 Ground Coverage and FAR

The ground coverage and FAR of the buildings shall be as follows:

Plot Area (sqm)	Ground Coverage (%)	Base FAR	Max. Permissible FAR
≥40 to 150	Max. coverage after ensuring setbacks	2.00	2.0
>150 to 300	Max. coverage after ensuring setbacks	1.80	2.0
>300 to 500	Max. coverage after ensuring setbacks	1.75	2.0
>500 to1200	Max. coverage after ensuring setbacks	1.50	2.0
>1200	Max. coverage after ensuring setbacks	1.25	2.0

Note-1: For all housing projects having more than one unit, a 10% each of the total units shall be mandatorily reserved for Economically Weaker Section (EWS) and Lower Income Group (LIG) housing respectively. For plots less than 4 Ha, provision to deposit shelter fee shall be applicable. The mandatory EWS/LIG plots/units to be built as per the government policy shall be treated free of FAR and the corresponding incentive FAR (as calculated on carpet area of EWS/LIG units) shall also be permissible. For plots less than 4 Ha, in case EWS/LIG plots/units are not constructed and shelter fee is deposited, then in lieu of the same, the proportionate incentive FAR shall be allowed.

4.1.7 Parking Requirements

Parking requirements for residential plotted development shall be as per paragraph 3.3.4 of the building byelaws.

4.1.8 Other requirements

(i) Before multi- units are allowed on the above mentioned plots, development fee shall be deposited by the applicant as per the provisions of Uttar Pradesh Urban Planning and Development (Determination, Levy and Collection of Development Fee) Rules, 2014 as amended time to time.

(ii) The provisions of Uttar Pradesh Apartment (Promotion of Construction, Ownership and Maintenance) Act, 2010 and the rules and bye-laws made thereunder shall be effective in case of multi-units.

4.2 Group Housing

4.2.1 General Requirements

(i) The development of group housing shall be done as per the provisions of the master plan, zonal development plan and layout plan.

(ii) In group housing schemes of four hectares and more area, it shall be mandatory to get the layout approved, wherein the layout plan and building plan can be submitted together for approval.

(iii) In group housing schemes less than four hectares, only building plan approval shall be required with provision of proper circulation area.

4.2.2 Minimum Plot Size

The minimum area of the plot for group housing schemes in built-up area shall be 1000 square meters and 1500 square meters in non-built-up areas.

4.2.3 Means of access

The proposed plot for group housing shall be located on road of minimum 12-meter width in non-built-up areas and the minimum road width for group housing plots in built-up area shall be 9-meters. The specifications for internal roads and pathways shall be as per *paragraph 3.1.3* of these byelaws.

4.2.4 Maximum Building Height

There shall be no restriction on the maximum permissible building height for group housing schemes. The height of the building in group housing project shall be governed by its distance from the protected monument/heritage site, airport funnel zone and other statutory restrictions if any.

4.2.5 Parking Requirements

(i) Stilt Floor - Stilt floors shall be permissible for parking purposes in group housing buildings. Provisions for stilt parking shall be provided as per *paragraph 3.3.4.8* of the byelaws.

(ii) Podium Parking - Podium parking shall be permissible for parking purposes in group housing buildings. Provisions for podium parking shall be provided as per *paragraph 3.3.4.9* of the byelaws.

4.2.6 Parks and open areas and landscaping

In the plots of area of 3000 square meters or more which are part of zonal development plan, provision for parks and open areas shall be made at the rate of 10% of the total plot area. The plots where zonal development plan is not effective, provision of parks and open spaces shall be made at the rate of 15% of the net plot area. The provisions shall be as per *paragraph 3.1.2.2*.

4.2.7 Minimum Setback

Minimum setbacks for residential buildings in plotted development for group housing shall be as per *paragraph 3.2.4* of the building byelaw.

4.2.8 Ground Coverage and FAR

After ensuring minimum setback and mandatory open space requirements, maximum ground coverage shall be permissible on group housing plots.

Maximum permissible FAR for group housing project in built-up and in non-built-up areas based on the road width shall be as per *paragraph 3.2.2.2*, as follows:

FAR / G. Housing		Road Width (Upto 12m)			Road Width (>12 -24m)			Road Width (>24 - 45m)			Road Width (>45m)		
	BFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR
Built-up Area													
Group Housing	1.5	0.3	0.3	**2.1**	0.75	0.75	**3**	1.5	2.25	**5.25**	1.5	UR	**UR**
Non-Built-up Area													
Group Housing	2.5	0.5	0.5	**3.5**	1.25	1.25	**5**	2.5	3.75	**8.75**	2.5	UR	**UR**

Note-1: BFAR – Base FAR, PFAR – Purchasable FAR, PPFAR – Premium Purchasable FAR, MFAR – Maximum Permissible FAR including Base FAR, UR – Unrestricted

Note-2: In green building, additional FAR over and above maximum permissible FAR shall be provided as per *Chapter 9.3* of the building byelaws.

Note-3: A maximum of 5 percent of the availed FAR (which includes Purchasable and Premium Purchasable FAR) will be allowed for commercial purposes within a group housing project. *If the commercial use is situated in the same building as residential, the commercial use shall be limited to ground floor only.* Commercial space developed as a separated building within group housing project, shall have a separate entry and exit.

Note-4: A maximum of 5 percent of the permissible FAR shall be availed for various types of services like air-conditioned plants, in front of the lift (except corridor outside the lift), up to 10 square meters shall be allowed for lobby, machine room for lift, mumty, almirahs and bay-windows (maximum 0.60 m depth and 1.80 m length), refuse area (as per NBC), service duct and community centre.

Note-5: Provision of community facilities shall be made as per the standards prescribed in *paragraph 3.1.4* of the byelaws.

Note-6: Security room measuring 7.5 square meters shall be allowed at the entrance, but in any case, construction within the minimum setback required for firefighting shall not be allowed.

Note-7: Balconies up to 2-meter width shall not be included in FAR. Wherever the distance between two buildings is less than 9-meters, a balcony more than 2.0 meters wide shall not be allowed up to a height of 6-meters. Fire norms shall not be violated in this regard.

Note-8: For all housing projects (except affordable housing schemes) having more than one unit, a 10% each of the total units shall be mandatorily reserved for Economically Weaker Section (EWS) and Lower Income Group (LIG) housing respectively. For plots less than 4 Ha, provision to deposit shelter fee shall be applicable. The mandatory EWS/LIG plots/units to be built as per the government policy shall be treated free of FAR and the corresponding incentive FAR (as calculated on carpet area of EWS/LIG units) shall also be permissible. For plots less than 4 Ha, in case EWS/LIG plots/units are not constructed and shelter fee is deposited, then in lieu of the same, the proportionate incentive FAR shall be allowed.

4.2.9 Parking Requirements

Parking standards in group housing plots shall be as per *paragraph 3.3.4* of these byelaws.

Note: For plots above 4000 sqm in area, a separate block for parking is permissible. Within the parking block, 10% of Ground Floor shall be utilized for ancillary purposes (free from FAR) incidental to the principal use.

4.2.10 Basement

The permissibility of basement in group housing project shall be as per *paragraph 3.3.3* of the building byelaws.

4.2.11 Other requirements

(i) Telecom wiring arrangement in group housing, hotel and multi-storey commercial/office buildings as per the standards prescribed by the Department of Telecommunications.

(ii) Provision of duct for optical fibre as per the standards in all categories of newly constructed building complexes.

(iii) Provision of piped natural gas, wherever required.

(iv) Provisions for electrical vehicle charging stations shall be as per *Chapter-17*.

4.3 EWS and LIG housing requirements

4.3.1 Requirements

For all housing projects (except affordable housing schemes) having more than one unit, a 10% each of the total units shall be mandatorily reserved for Economically Weaker Section (EWS) and Lower Income Group (LIG) housing respectively. For plots less than 4 Ha, provision to deposit shelter fee shall be applicable.

4.3.2 Eligibility of EWS and LIG

Eligibility of EWS and LIG shall be determined based on annual income limit. For being eligible under EWS, the current limit is an annual income of rupees 3 lakhs and for being eligible under LIG, the current limit is an annual income of rupees 3-6 lakhs or as amended by State Government as per the guidelines issued from time to time.

4.3.3 Minimum Plot Size

The minimum plot size for EWS and LIG housing (in plotted development) and minimum carpet area (in group housing) shall be as follows.

	EWS	**LIG**
Plotted (Plot size in sqm)	=>35 – 40	>40 – 50
Group Housing (Carpet area in sqm)	=>30 – 35	>35 – 45

4.3.4 Means of Access

For EWS and LIG housing in plotted development, the minimum width of the access road shall be 4.0 meters in built-up areas and 6-meters in in non-built-up areas. For EWS and LIG housing in group housing, the minimum width of the access road shall be 9.0 meters.

4.3.5 Ground Coverage and FAR

(i) After ensuring minimum setback and mandatory open space requirements, maximum ground coverage shall be permissible on plotted development and group housing.

(ii) The maximum permissible FAR for EWS and LIG housing in plotted development shall be 2.0.

(iii) The maximum permissible FAR for EWS and LIG housing in group housing shall be the same as in *paragraph 4.2.8*. The FAR consumed in mandatory EWS/LIG units in group housing shall not be counted in the overall FAR which can be consumed in the rest of the scheme.

(iv) For plots less than 4 Ha, in case EWS/LIG plots/units are not constructed and shelter fee is deposited, then in lieu of the same, equivalent FAR in proportion to the number of units corresponding to which the shelter fee has been deposited can be consumed in the rest of the scheme.

4.3.6 Minimum Setback

The minimum setbacks for EWS and LIG housing in plotted development and group housing shall be as per *paragraph 3.2.4* of the building byelaws.

4.3.7 Maximum Building Height

(i) For plotted development, the maximum height of the building shall be 17.5 meters including stilt floor for multi-unit. Construction of stilts and three floors shall be permissible. Further, the height of a residential building in plotted development shall be governed by its distance from the protected monument/ heritage site, airport funnel zone and other statutory restrictions, if any.

(ii) For EWS and LIG in group housing scheme, there shall be no restriction on building height in non-built-up area, however, in built-up area the maximum building height shall be 17.5 meters. However, the height of the building in group housing project shall be governed by its distance from the protected monument/heritage site, airport funnel zone and other statutory restrictions if any.

4.3.8 Parking Requirements

(i) The parking requirements for EWS and LIG housing shall be as follows.

EWS	**LIG**
2.0 sqm / DU	4.0 sqm / DU

(ii) In both group housing and plotted development projects, stilts shall be permissible for parking arrangements as per *paragraph 3.3.4* of the building byelaws, which shall not be counted in FAR. Only open parking shall be allowed on stilts, if covered parking is made (covered on more than two sides), it shall be counted in FAR.

(iii) For plots of area above 4000 sqm, a separate block for parking is permissible, within the plot. Within the parking block, 10% of ground floor may be utilized for ancillary purposes (free from FAR) incidental to the principal use.

(iv) If separate parking block is built above the ground level, then the distance between the main building and seperate parking block shall be the minimum setback required as per the height of

the highest block or 6-meters whichever is higher.

4.3.9 Basement

The permissibility of basement for EWS and LIG in plotted development and group housing scheme shall be as per *paragraph 3.3.3* of the building byelaws.

4.3.10 Cost Ceiling of-Buildings

The ceiling cost of EWS and LIG units shall be as below:

Category	Ceiling Cost
EWS	Rs. 4,50,000/-
LIG	Rs. 9,00,000/-

For cities with more than 10 lakh population, the ceiling cost may be enhanced by 20 percent.

The above ceiling cost as amended by the state government from to time shall prevail.

4.3.11 Calculation of Shelter Fee

The shelter fee payable shall be calculated according to the following formula.

Shelter Fees =

10% of [(total number of dwelling units) X (minimum EWS dwelling unit carpet area + minimum LIG dwelling unit carpet area) X Circle Rate]

4.4 Affordable Housing standards

4.4.1 Minimum Scheme Area and Plot Size

(i) Minimum area of the scheme shall be 3000 square meters in case of plotted development. In case of Group Housing, the minimum area of the scheme in built-up area shall be 1000 square meters and 1500 square meters in non-built-up area.

(ii) The minimum plot size within the scheme (in plotted development) and minimum carpet area (in group housing) shall be as follows.

	EWS	**LIG**	**Others income groups**
Plotted (Plot size in sqm)	=>35 – 40	>40 – 50	>50 - 150
Group Housing (Carpet area in sqm)	=>30 – 35	>35 – 45	>45 - 90

Note-1: For any scheme to qualify as affordable housing, (a) in plotted development at least 50 percent of the total plots shall have plot area less than 90 square meters, and (b) in Group Housing, at least 50 percent of the total units shall have carpet area less than 60 square meters.

Note-2: In such affordable housing schemes, the provisions of *paragraph 4.3.1* shall not be applicable, i.e. mandatory EWS and LIG requirements or shelter fee requirements shall not be applicable.

Note-3: Any private developer may under this scheme, submit a report as per Note-2 above, if EWS and LIG houses are constructed as per the scheme, then the FAR of EWS and LIG houses shall not be included in the calculation of FAR of that scheme.

Note-4: Construction of multi-units shall be permitted as per the building byelaws.

4.4.2 Means of Access

For affordable housing, the minimum width of the access road shall be 9.0 meters in built-up areas and 12-meters in in non-built-up areas.

4.4.3 Ground Coverage and FAR

(i) After ensuring minimum setback and mandatory open space requirements, maximum ground coverage shall be permissible on group housing plots.

(ii) The maximum permissible FAR for Affordable housing in plotted development shall be 2.0

(iii) Purchasable and premium purchasable FAR shall be applicable as per the requirements of Chapter 9 of the building byelaws. Basis approach road width, the maximum permissible FAR (including Base FAR) for Affordable housing in group housing schemes in built-up and the non-built-up areas shall be as follows:

FAR / **Affordable Group Housing**	BFAR	Road Width (< 18m)			Road Width (≥18 -24m)			Road Width (>24 - 45m)			Road Width (>45m)		
		PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR
Group Housing *(Built-up Area)*	2.00 (<18m)	0.20	0.20	2.40	1.00	1.00	2.00	2.00	3.00	7.00	2.00	UR	UR
Group Housing *(Built-up Area)*	2.25 (≥18m)	0.23	0.23	2.71	1.125	1.125	4.50	2.25	3.38	7.88	2.25	UR	UR
Group Housing *(Non-Built-up Area)*	3.00	0.30	0.30	3.60	1.50	1.50	6.00	3.00	UR	UR	3.00	UR	UR

Note-1: BFAR – Base FAR, PFAR – Purchasable FAR, PPFAR – Premium Purchasable FAR, MFAR – Maximum Permissible FAR which includes Base FAR, UR – Unrestricted FAR.

(iv) In green building, additional FAR over and above maximum permissible FAR shall be provided as per *paragraph 9.3* of the building byelaws.

4.4.4 Minimum Setback

The minimum setbacks for Affordable housing in plotted development and affordable group housing shall be as per paragraph 3.2.4 of the building byelaws.

4.4.5 Maximum Building Height

(i) For plotted development, the maximum height of the building shall be 17.5 meters including stilt floor for multi-unit. Construction of stilts and three floors shall be permissible. Further, the height of a residential building in plotted development shall be governed by its distance from the protected monument/ heritage site, airport funnel zone and other statutory restrictions, if any.

(ii) For affordable housing in group housing scheme, there shall be no restriction on building height in non-built-up area, however, in built-up area the maximum building height shall be 17.5 meters. However, the height of the building in group housing project shall be governed by its distance from the protected monument/heritage site, airport funnel zone and other statutory restrictions if any.

4.4.6 Parking Requirements

(i) The parking requirements for affordable group housing shall be as follows.

EWS	**LIG**	**Other income groups**
2.0 sqm / DU	4.0 sqm / DU	1 ECS / DU +10% Visitor Parking for DU > 60 sqm

(ii) In both group housing and plotted development projects, stilts shall be permissible for parking arrangements as per *paragraph 3.3.4* of the building byelaws, which shall not be counted in FAR. Only open parking shall be allowed on stilts, if covered parking is made (covered on more than two sides), it shall be counted in FAR.

(iii) For plots of area above 4000 sqm, a separate block for parking is permissible, within the plot. Within the parking block, 10% of ground floor may be utilized for ancillary purposes (free from FAR) incidental to the principal use.

(iv) If seperate parking block is built above the ground level, then the distance between the main building and seperate parking block shall be the minimum setback required as per the height of the highest block or 6-meters whichever is higher.

4.4.7 Basement

The permissibility of basement for affordable housing in plotted development and group housing scheme shall be as per paragraph 3.3.3 of the building byelaws.

4.4.8 Cost of-Buildings

The provisions of paragraph 4.3.10 shall not be applicable in affordable housing projects.

4.4.9 Calculation of Development Fee

The development fee shall be calculated as per the provisions of Uttar Pradesh Urban Planning and Development (Assessment, Levy and Collection of Development Permit Fee, Building Permit Fee and Inspection Fee) Rules, 2024. There shall be exemption from density-based development fee calculation as provided in the said rules.

5 Commercial Buildings

5.1 Bazaar Street

5.1.1 Permissibility

Following provisions shall be applicable for the bazaar streets proposed in the master plan. In case a bazaar street notified in master plan falls within the layouts approved or developed by the Authority the provisions of this chapter shall automatically apply on payment of prescribed fee. No separate change of layout shall be required and only the relevant corrections in the lease/sale deed shall be done.

5.1.2 Means of Access

(i) The right-of-way of the bazaar street shall be minimum 12-meters, or the width proposed in the master plan.

(ii) Commercial use on a bazaar street will be allowed on the entire depth of the plot.

5.1.3 Maximum Building Height

(i) There shall be no restriction on building height for bazaar streets. However, the maximum height of the building shall be governed by distance from the protected monument/ heritage site, airport funnel zone and other statutory restrictions.

(ii) Commercial use shall be permitted on the ground and first floors only, while residential use shall be allowed on the subsequent floors. Residential use on ground and first floor may be permitted on the request of the plot owner.

5.1.4 Ground Coverage and FAR

(i) Maximum ground coverage after ensuring minimum setbacks and open space requirements, if any, shall be permissible on plots in the bazaar street.

(ii) Purchasable and premium purchasable FAR shall be applicable as per the requirements of Chapter-9. Basis approach road width, the maximum permissible FAR (including Base FAR) for bazaar streets in built-up areas and the non-built-up areas shall be as follows:

FAR / Commercial Buildings	BFAR	Road Width (Upto12m)			Road Width (>12 -24m)			Road Width (>24 - 45m)			Road Width (>45m)		
		PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR
Built-up Area													
Bazaar Street	1.5	NA	NA	**1.5**	0.75	0.75	**3.0**	1.5	2.25	**5.25**	1.5	UR	**UR**
Non-Built-up Area													
Bazaar Street	1.75	NA	NA	**1.75**	0.9	0.9	**3.6**	1.75	2.6	**6.1**	1.75	UR	**UR**

Note-1: BFAR – Base FAR, PFAR – Purchasable FAR, PPFAR – Premium Purchasable FAR, MFAR – Maximum Permissible FAR which includes Base FAR, UR – Unrestricted FAR.

Note-2: In green building, additional FAR over and above maximum permissible FAR shall be provided as per Chapter 9.3 of the building byelaws.

5.1.5 Minimum Setback

Based on the proposed road width, the minimum front setback for plots on the bazaar street shall be as follows:

Proposed width of road (metres)	Minimum open space in front (metres)
12	3.0
18	4.5
24	6.0
30	6.0
36	7.5
45	7.5
76	9.0

5.1.6 Parking Requirement

Parking requirements for bazaar street shall be as per *paragraph 3.3.4* of the building byelaws.

5.1.7 Basement

The permissibility of basement in bazaar street plots shall be as per *paragraph 3.3.3* of the building byelaws.

5.2 Shops, Commercial Complex and Shopping Malls

5.2.1 Permission

The construction of commercial establishments viz., shops, commercial complexes and shopping malls shall be permitted according to the masterplan/zoning regulations.

5.2.2 Minimum Plot Size

The minimum area of the plot for construction of commercial establishments viz., shops, commercial complexes and shopping malls shall be as follows.

	Commercial Establishments	Min. Plot Area (sqm)
1	Retails Shops	>10 to 100
2	Convenient Shopping / Commercial Units	=>100 to 300
2	Commercial Complex (including other commercial)	More than 300 - 3000
3	Shopping malls	More than 3000

5.2.3 Minimum Road Width

The minimum width of existing approach road to plots for construction of commercial establishments viz., shops, commercial complexes and shopping malls shall be as follows.

	Commercial Facilities	Min. Road Width (m)
1	Retail Shops	6 (built up) 9 (non-built up)
2	Convenience Shopping /Commercial Units	12

3	Commercial Complex	12
4	Shopping malls	18
5	Other Commercial (plot size >300 sqm)	12

5.2.4 Maximum Building Height

There shall be no restriction on building height for commercial buildings i.e. shops, commercial complex, shopping malls. However, the maximum height of the building shall be governed by distance from the protected monument/ heritage site, airport funnel zone and other statutory restrictions.

5.2.5 Ground Coverage and FAR

(i) Maximum ground coverage after ensuring minimum setbacks and open space requirements, if any, shall be permissible on plots for commercial establishments i.e. shops, commercial complex, shopping malls.

(ii) Purchasable and premium purchasable FAR shall be applicable as per the requirements of Chapter 9. Basis approach road width, the maximum permissible FAR (including Base FAR) for bazaar streets in built-up areas and the non-built-up areas shall be as follows:

FAR / Commercial Buildings	BFAR	Road Width (Upto12m)			Road Width (>12 -24m)			Road Width (>24 - 45m)			Road Width (>45m)		
		PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR
Built-up Area													
Comm. Units up to100 sqm	1.5	0.3	0.3	**2.1**	0.75	0.75	**3.0**	1.5	2.25	**5.25**	1.5	UR	**UR**
Comm. Units >100 sqm	1.5	NA	NA	**1.5**	0.75	0.75	**3.0**	1.5	2.25	**5.25**	1.5	UR	**UR**
Shopping malls	2.0	NA	NA	**2.0**	1.0	1.0	**4.0**	2.0	3.0	**7.0**	2.0	UR	**UR**
Non-Built-up Area													
Commercial Units* up to100 sqm	1.75	0.35	0.35	**2.45**	0.9	0.9	**3.6**	1.75	2.6	**6.1**	1.75	UR	**UR**
Commercial Units* >100 sqm	1.75	NA	NA	**1.75**	0.9	0.9	**3.6**	1.75	2.6	**6.1**	1.75	UR	**UR**
Shopping malls	3.0	NA	NA	**3.0**	1.5	1.5	**6**	3.0	4.5	**10.5**	3.0	UR	**UR**

*Commercial Units include Shops / Convenience Shopping / other commercial complexes etc.

Note-1: BFAR – Base FAR, PFAR – Purchasable FAR, PPFAR – Premium Purchasable FAR, MFAR – Maximum Permissible FAR which includes Base FAR, UR – Unrestricted FAR.

Note-2: In green building, additional FAR over and above maximum permissible FAR shall be provided as per *paragraph 9.3* of the building byelaws.

(iii) Construction of skylighted Atrium shall be allowed in the shopping malls. Such atriums shall not be counted in FAR calculations. No permanent construction shall be allowed within the atrium space rather it shall be used for circulation. Temporary kiosks shall be permitted in maximum 20% of the

atrium area such that they do not hinder circulation area below atrium. area. The entry/ exits, passage areas within the shopping mall shall be free from any obstructions.

5.2.6 Minimum Setback

Minimum setbacks for commercial establishments viz., shops, commercial complexes, and shopping malls shall be per paragraph 3.2.4 of the building byelaws.

5.2.7 Parking Requirements

Parking requirements for commercial establishments viz., shops, commercial complexes and shopping malls shall be as per *paragraph 3.3.4* of the building byelaws.

5.2.8 Basement

The permissibility of basement in commercial establishments viz., shops, commercial complexes and shopping malls shall be as per *paragraph 3.3.3* of the building byelaws.

5.3 Hotels

5.3.1 Permissibility

Permission for construction of hotels shall be as per the provisions of Master Plan/ Zoning Regulations.

5.3.2 Minimum Plot Size

The minimum number of rooms in hotel building shall be six (6). Up to 20 rooms there shall be no restriction on the minimum plot area for construction of hotels. For construction of hotels with more than 20 rooms, the minimum plot area shall be 500 sqm.

5.3.3 Means of Access

In residential areas, the minimum width of the approach road for construction of hotels up to 20 rooms shall be 9 m. For hotels more than 20 rooms, the width of approach road shall be 12 m.

5.3.4 Maximum Building Height

There is no restriction on the maximum building height. However, the maximum height of the building shall be governed by distance from the protected monument/heritage site, airport funnel zone and other statutory restrictions.

5.3.5 Ground coverage and FAR.

(i) Maximum ground coverage after ensuring minimum setbacks and open space requirements, if any, shall be permissible.

(ii) Purchasable and premium purchasable FAR shall be applicable as per the requirements of Chapter 9. Basis approach road width, the maximum permissible FAR (including Base FAR) for hotels in built-up areas and the non-built-up areas shall be as follows:

FAR / Hotels	BFAR	Road Width (Upto12m)			Road Width (>12 -24m)			Road Width (>24 - 45m)			Road Width (>45m)		
		PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR
Built-up Area													
Hotels	2.0	NA	NA	**2.0**	1.0	1.0	**4.0**	2.0	3.0	**7.0**	2.0	UR	**UR**

FAR / Hotels	BFAR	Road Width (Upto12m)			Road Width (>12 -24m)			Road Width (>24 - 45m)			Road Width (>45m)		
		PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR
Non-Built-up Area													
Hotels	2.5	NA	NA	**2.5**	1.25	1.25	**5.0**	2.5	3.75	**8.75**	2.5	UR	**UR**

Note-1: BFAR – Base FAR, PFAR – Purchasable FAR, PPFAR – Premium Purchasable FAR, MFAR – Maximum Permissible FAR which includes Base FAR, UR – Unrestricted FAR.
Note-2: In green building, additional FAR over and above maximum permissible FAR shall be provided as per Chapter 9.3 of the building byelaws.

5.3.6 Minimum Setback

The minimum setback requirement for hotel buildings shall be as per *paragraph 3.2.4* of the building byelaw.

5.3.7 Parking Requirements

Parking requirements for hotel buildings shall be as per *paragraph 3.3.4* of the building byelaws.

5.3.8 Basement

The permissibility of basement in hotel buildings shall be as per *paragraph 3.3.3* of the building byelaws.

5.3.9 Provisions for Hotels in Heritage Buildings

(i) As per UP Tourism Policy 2022, Heritage hotels will be defined as per the Ministry of Tourism, Government of India guidelines according to which the heritage value old buildings/ forts/havelis/kothis/castles constructed prior to 1950, on being operated as hotels will be included in the category of heritage hotels. Heritage hotels can be of any size and dimension. Heritage Homestay refers to those units wherein the tourist resides with the owner or any of his/her family member in the usual place of residence which must be a heritage building.

(ii) In buildings declared as heritage buildings by Toursim Department, adaptive reuse of existing residential/ non-residential buildings as hotels shall be permitted by the Authority. The provisions related to means of access, ground coverage, FAR, setbacks, means of access, parking etc. may be relaxed by the Authority on the recommendation of the Heritage Conservation Committee.

(iii) FAR incentive – Subject to the approval of competent authority, FAR incentives may be provided for heritage building owners who undertake restoration and conservation work, promoting preservation of historic structures. Higher FAR for heritage buildings being adaptively reused for compatible purposes, such as hotels, restaurants, or museums, to encourage their economic viability. Heritage features such as ornate facades, balconies, or courtyards, may be exempt from FAR calculations, allowing owners to preserve these essential elements. Heritage building owners incorporating green building features such as solar panels, rainwater harvesting, or energy efficient systems shall be offered FAR bonus of 0.25 or 0.50 over and above base FAR.

(iv) Road Width - Heritage buildings, proposed to be used as heritage hotels, shall be permissible on existing road width of atleast 5 meters in areas which have traditionally considered to be religious and spriritual hotspots wherein most of the roads are narrow. In case of non-heritage areas, minimum width of existing approach road shall be 7.5 meters.

(v) Parking - Heritage buildings proposed to be used as heritage hotels, situated on narrow roads in

urban areas which arrange for dedicated alternative parking on wider roads (more than 12-m) and provide for park and ride system from Hotel to parking place shall be permitted.

(vi) Commercial Use -. All heritage buildings, those are residential/institutional, heritage tourism units can commercially convert a maximum 1000 square meters or 10 percent of plinth area of the existing heritage building, whichever is less for purposes such as retail shops or souvinier shops.

(vii) Setback relaxations - The development authority may consider relaxation in the norms related to setbacks in high density areas. Towards facilitating the restoration and reuse of heritage buildings, the development authority may provide relaxations in setback and parking requirements for heritage buildings on case to case basis, acknowledging the unique challenges posed by their location and design.

(viii) The composition of the Heritage Conservation Committee shall be as follows:

a. Chairman, Vice-Chairman, Development Authority
b. Member – Commissioner, Municipal Corporation
c. Member – District level officer, Tourism Department
d. Member – District level officer of Culture Department
e. Member – Representative, Fire Department
f. Member – Representative, O/o Chief Town and Country Planner
g. Member Secretary – Chief Town Planner/ In-charge, Planning, Dev. Authority.
h. Any other subject matter expert nominated by the Chairman.

5.4 Single Screen Cinema, Miniplex and Multiplex

5.4.1 Permissibility

Permissions for construction of Single Screen Cinema, Miniplex and Multiplex shall be permitted as per master plan zoning regulations. Under multiplex, cinema halls, commercial theatres and other entertainment facilities shall be allowed.

5.4.2 Minimum Plot Size

Minimum plot size for single screen cinema, miniplex, and multiplex shall be as follows.

Type of Building	Minimum Plot Size (sqm)
Single Screen Cinema	500
Miniplex (2 screens)	700
Multiplex	3000

The above-mentioned plot size for multiplex shall not apply if multiplexes are proposed on the same land after demolishing existing cinema halls or in the sites identified for multiplexes in the sector plan/lay-out plan which is approved by the competent level, i.e., the existing area of the plot shall be valid.

5.4.3 Means of Access

The minimum road width for proposed site/plot for construction of single screen cinema, miniplex and multiplex shall be as follows.

Type of Building	Minimum Road width (m)
Single Screen Cinema	12
Miniplex (2 screens)	12
Multiplex	18

The above restriction shall not apply if a multiplex is proposed on the same land after demolishing ~~their place by demolishing~~ existing cinema halls or in place of the sites marked for multiplex in the master plan/zonal plan/sector plan/lay-out plan which is approved by the competent authority.

5.4.4 Ground Coverage and FAR

The maximum ground coverage after ensuring the minimum setbacks may be utilized. The maximum permissible FAR (including additional FAR available on purchasable basis) for multiplexes in commercial areas shall be permissible as follows:

FAR / Cinema, Miniplex, Multiplex	BFAR	Road Width (Upto12m)			Road Width (>12 -24m)			Road Width (>24 - 45m)			Road Width (>45m)		
		PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR
Built-up Area													
Cinema, Miniplex, Multiplex	2.0	NA	NA	**NA**	1.0	1.0	**4.0**	2.0	3.0	**7.0**	2.0	UR	**UR**
Non-Built-up Area													
Cinema, Miniplex	2.0	NA	NA	**NA**	1.0	1.0	**4.0**	2.0	3.0	**7.0**	2.0	UR	**UR**
Multiplex	3.0	NA	NA	**NA**	1.5	1.5	**6.0**	3.0	4.5	**10.5**	3.0	UR	**UR**

Note-1: BFAR – Base FAR, PFAR – Purchasable FAR, PPFAR – Premium Purchasable FAR, MFAR – Maximum Permissible FAR which includes Base FAR, UR – Unrestricted FAR.

Note-2: In green building, additional FAR over and above maximum permissible FAR shall be provided as per Chapter 9.3 of the building byelaws.

5.4.5 Ratio of activities

(i) Provision for minimum two cinema screens under miniplex and multiplex shall be mandatory.

(ii) In case of construction of cinema and miniplex in non-commercial areas, 20 percent floor area shall be utilized for commercial and other entertainment facilities.

(iii) In case of construction of multiplex in non-commercial areas, construction of cinema hall shall be permitted on minimum of 30 percent of the total floor area and the remaining 70 percent shall be utilized for commercial and other entertainment facilities.

(iv) In case of construction of multiplex in commercial areas, then the above restriction shall not apply.

5.4.6 Minimum Setback

(i) Minimum setbacks for cinema, miniplex and multiplex shall be per *paragraph 3.2.4* of the building byelaws.

(ii) For multiplex buildings, provision of adequate "circulation space" for the vehicles to move from parking lot towards the 18-meters-and-wider access road shall be mandatory.

5.4.7 Parking Requirements

Parking requirements for cinema, miniplex and multiplex shall be as per *paragraph 3.3.4* of the building byelaws.

5.4.8 Basement

(i) The provisions for basement for cinema, miniplex and multiplex shall be as per *paragraph 3.3.3* of the building byelaws.

(ii) Construction of a screen in the basement shall not be permitted.

5.4.9 Other requirements

Planning, designing and firefighting arrangements of the cinema hall shall be ensured as per the relevant provisions of Uttar Pradesh Cinematograph Rules, 1951 and National Building Code. In a multiplex, essential services like drinking water system, toilets, canteen, etc. can be provisioned in common as per the prescribed standards.

5.4.10 Redevelopment of existing cinema halls

5.4.10.1. The land use of the cinema plot or existing cinema hall planned before the creation of the authority, which is part of the layout plan approved at the competent level, shall be considered as cinema hall (commercial), even if their land use is shown otherwise in the master plan.

5.4.10.2. In case the land use level of the plots/picture halls planned for the purpose of the cinema hall is not determined under the master plan, it shall be considered as commercial.

5.4.10.3. Under the layout plan approved by the competent authority, since the land use of the plot planned for the cinema hall/existing cinema hall is commercial, the action of land use change shall not be necessary, hence land use change fee shall not be payable.

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5.4.10.4. The ground coverage and FAR allowed for cinema hall/multiplex shall be as per the terms and conditions of allotment/lease. If there is no above provision in the lease, then as per the provisions of Multiplex as per these byelaws shall be permissible. Purchasable FAR shall be allowed as per rules over and above the permissible FAR as per the terms of allotment/lease or the permissible FAR as per building construction and development byelaws, as the case may be.

5.5 Petrol Pump/Filling Station (CNG/PNG/EV)

5.5.1 Permissibility

Petrol pump/filling station shall be permitted as per master plan zoning regulations.

5.5.2 Minimum Plot Size

The minimum size of the plot for petrol pump/filling station (covering CNG/PNG/EV) is 16m x 14m if it is exclusively for 2-wheelers and 3-wheeler vehicles and 30m x 17m for all vehicles. The minimum size of plot for petrol pump/filling station-cum-service station is 36m X 30 m.

Note: Any other plot size prescribed by the oil companies (in the letter of intent) shall prevail over the above provision.

5.5.3 Means of Access

Petrol pump/ filling station will be located on a minimum 12-meter-wide road in the built-up area and a minimum 18-meter-wide road in the non-built-up area. In case the petrol pump/filling station exclusively for 2-wheeler/ 3-wheeler vehicles, the approach shall be on a minimum of 9-meter-wide roads.

5.5.4 Maximum Building Height

The maximum permissible building height for petrol pump / filling station shall be 6 meters.

5.5.5 Ground Coverage, FAR and Setbacks

The maximum ground coverage and maximum permissible FAR shall be as follows:

Petrol Pump	Ground Coverage	FAR	Front setback
(a) Petrol Pump/ Filling Station (CNG/PNG/EV)	Built-up area: 10%	Built-up area: 0.1	3-m
	Non-Built-up area: 10%	Non-Built-up area: 0.15	
(b) Filling Station cum service station (CNG/PNG/EV)	Built-up area: 20%	Built-up area: 0.2	6-m
	Non-Built-up area: 10%	Non-Built-up area: 0.15	

5.5.6 Parking Requirements

Parking provision to the extent of 80 square meters shall be provided.

5.5.7 Kisan Seva Kendra

Depending upon the demand and preference of the local customers, Kisan Seva Kendras (KSKs) provide allied facilities like Micro ATM, Convenience Store, Fertilizers/Pesticides, farm equipment's etc., while also providing services of petrol filling stations.

Minimum plot size for retail outlet for the purpose of KSKs shall be 20m x 20m or plot size as prescribed by the related companies.

5.5.8 Other requirements

(i). The width of the entry and exit routes of each petrol filling station / petrol filling station-cum-service station shall be minimum 9 meters.

(ii). Provision of buffer strip is necessary between the main road and the petrol filling station/petrol filling station-cum-service station, which shall be at least 12 meters long and 3 meters wide and shall be in addition to the setback.

(iii). Firefighting provisions shall have to be ensured as per rules.

(iv). Other provisions of Petroleum and Explosives Act shall be applicable.

(v). Petrol pump/filling station shall be permissible at a distance of 30m from road intersection/ traffic junction after ensuring efficient movement of vehicles by obtaining requisite No-objection Certificate.

5.6 LPG Gas Godown

5.6.1 Permissibility

LPG gas godown shall be permitted as per the master plan zoning regulations. The final approval shall be given as per requirements of Petroleum and Explosives Safety Organization (PESO).

5.6.2 Minimum Plot Size

The minimum plot size for LPG storage / Gas Godown shall be 26mx20m (520 sqm).
Note: Any other plot size prescribed by the concerned PSUs shall prevail over the above provision.

5.6.3 Means of Access

Minimum width of existing access road to the LPG Gas Godown site shall be 18 meters.

5.6.4 Building height

Minimum height of the gas godown shall be 6-meters and no construction shall be allowed above the gas godown.

5.6.5 Ground Coverage and FAR

The maximum permissible FAR shall be 0.30, which can include construction of office for use of gas godown and a guard room of maximum area of 1.6 square meters.

5.6.6 Minimum Setback

Minimum front setback of 6-meter and 3-meter on other sides of the building shall be ensured for the gas godown building.

5.6.7 Parking Requirements

Parking requirement for LPG storage and Gas Godown shall be 1 ECS / 100 sqm of Built-up Area.

5.6.8 Ventilation

Minimum 10 percent of the floor area shall be in the form of windows and ventilators, etc., for ventilation.

5.6.9 Other requirements

(i) Gas godowns shall be constructed of non-inflammable materials.
(ii) For the construction of a gas godown, no objection certificate shall be obtained from the fire department and the Chief Controller of Explosives.

6 Institutional Buildings & Community Facilities

6.1 Hospitals and healthcare Buildings

6.1.1 Permissibility

Permission for construction of hospitals and healthcare buildings shall be provided as per the master plan/ zoning regulations.

6.1.2 Minimum Plot Size

The minimum plot area for construction of a hospital/healthcare buildings shall be as follows:

Sl.	Healthcare facility	Min. Plot area (sqm)
1	Non-Bedded Medical Establishments (Diagnostic Centre/ OPD clinics/ dispensary/ Pathology Lab/ Veterinary Clinics)	100
2	Nursing Homes / Veterinary Hospitals / Maternity Hospitals/ Small Hospitals (Up to 50 beds)	300
3	Hospitals (> 50 beds)	3000
4	Nursing Institutes	2000
5	Medical College	As per NMC / MCI norms

6.1.3 Means of Access

The minimum width of the existing approach road shall be as follows:

Sl.	Healthcare facility	Min. Road Width (m)
1	Non-Bedded Medical Establishments (Diagnostic Centre/ OPD clinics/ dispensary/ Pathology Lab/ Veterinary Clinics)	9
2	Nursing Homes / Veterinary Hospitals / Maternity Hospitals/ Small Hospitals (Up to 50 beds)	12
3	Hospitals (> 50 beds)	18
4	Nursing Institutes	18
5	Medical College	24

6.1.4 Ground Coverage and FAR

Maximum ground coverage after ensuring minimum setbacks and open space requirements, if any, shall be permissible on plots for healthcare buildings.

Purchasable and premium purchasable FAR shall be applicable as per the requirements of Chapter 9. Basis approach road width, the maximum permissible FAR (including Base FAR) for healthcare buildings in built-up areas and the non-built-up areas shall be as follows:

FAR / Healthcare Facilities	BFAR	Road Width (>12 -24m)			Road Width (>24 - 45m)			Road Width (>45m)		
		PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR
Built-up Area										
Non-Bedded Medical Establishments	1.50	0.75	0.75	**3.00**	1.50	2.25	**5.25**	1.50	UR	**UR**
Nursing Homes /Hospitals *(Up to 50 beds)*	1.50	0.75	0.75	**3.00**	1.50	2.25	**5.25**	1.50	UR	**UR**
Hospitals > 50 beds	1.50	0.75	0.75	**3.00**	1.50	2.25	**5.25**	1.50	UR	**UR**
Nursing college	1.50	0.75	0.75	**3.00**	1.50	2.25	**5.25**	1.50	UR	**UR**
Medical College	1.50	0.75	0.75	**3.00**	1.50	2.25	**5.25**	1.50	UR	**UR**
Non-Built-up Area										
Non-Bedded Medical Establishments	1.50	0.75	0.75	**3.00**	1.50	2.25	**5.25**	1.50	UR	**UR**
Nursing Homes /Hospitals *(Up to 50 beds)*	2.00	1.00	1.00	**4.00**	2.00	3.00	**7.00**	2.00	UR	**UR**
Hospitals > 50 beds	2.50	1.25	1.25	**5.00**	2.50	3.75	**8.75**	2.50	UR	**UR**
Nursing college	2.00	1.00	1.00	**4.00**	2.00	3.00	**7.00**	2.00	UR	**UR**
Medical College	2.50	1.25	1.25	**5.00**	2.50	3.75	**8.75**	2.50	UR	**UR**

Note-1: BFAR-Base FAR; PFAR-Purchasable FAR; PPFAR-Premium Purchasable FAR; MFAR-Maximum Permissible FAR (including BFAR); UR-Unrestricted FAR

Note-2: No purchasable or premium purchasable FAR shall be allowed for non-bedded medical establishments permissible on roads up to 12 meters. Base FAR shall be the maximum permissible FAR.
Note-3: Non-Bedded Medical Establishments include *Diagnostic Centre/ OPD clinics/ dispensary/ Pathology Lab/ Veterinary Clinics.*
Note-4*:* Hospitals up to 50 beds include *Nursing Homes, Maternity Hospitals, Veterinary Hospitals*
Note-5: In case green building, additional FAR shall be over and above permissible FAR shall be permissible as per paragraph 9.3 of the building byelaws.

6.1.5 Maximum Building height

There is no restriction on the maximum building height. However, the maximum height of the building shall be governed by its distance from the protected monument/heritage site, airport funnel zone and other statutory restrictions.

6.1.6 Minimum Setback

Minimum setbacks for hospital/ healthcare buildings shall be per paragraph 3.2.4.

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6.1.7 Parking Requirements

(i) Parking requirements shall be as per paragraph 3.3.4 of the building byelaws.

(ii) Standard parking spaces for hospitals and healthcare buildings shall be 1.5 ECS per 125 sqm of floor area and ‘one parking space’ for ambulance parking i.e., 10 m x 5 m (50 sqm or 2 ECS open parking) for hospitals up to 50 beds and ‘one additional ambulance parking space’ for every 50 beds thereafter shall be provided.

In case of hospitals constructed in plots of area more than 4000 sqm, a separate building block for parking is permissible. Within the block, 10% of the ground floor is permissible to be utilized for ancillary activities (free from FAR) incidental to hospital activities (principal use).

6.1.8 Basement

The permissibility of basement in hospital and healthcare building shall be as per paragraph 3.3.3 of the building byelaws.

6.2 Educational Institutions

6.2.1 Permissibility

Permission for construction of schools and educational institutions shall be as per the master plan zoning regulations.

6.2.2 Minimum Plot Size

The minimum plot area (in layouts or in cases where plot area norms are not specified) for construction of educational institutions such as schools, colleges, technical institutions and university buildings shall be as follows:

Sl.	Educational facility	Min. Plot area (sqm)
1	Nursery	500
2	Primary	1000
3	Secondary / High School / Intercollege	2000
4	Degree College / Technical Institution	5000
5	Universities	20000

However, in case of spatial norms (for minimum plot areas and land requirements based on student intake and specializations covered, minimum standards for play areas, playground and open spaces) for construction of schools, colleges and universities prescribed by Central Public Works Department (CPWD) or affiliated institutions like Uttar Pradesh State Education Board (UPSEB)/ Central Board for School Education (CBSE), Indian Certificate for Secondary Education (ICSE), All India Council for Technical Education (AICTE), University Grants Commission (UGC), etc., differ from the above norms as defined by regulatory/affiliated agencies shall prevail. *For example, minimum playground area (for Class 1-8 / 10 / 12) of 1000 sqm as prescribed by CBSE norms (amended time to time) shall prevail.*

6.2.3 Means of Access

The minimum width of the access road shall be as follows:

Sl.	Educational building	Min. Road Width (m)
1	Nursery	9
2	Primary School	9 – Built-up area 12 – Non-Built-up area
3	Secondary/ High School	12
4	Degree College/ Technical Institution	18
5	Universities	24

Note: Nursery/Creche shall be permissible within 25 percent FAR in residential buildings.

6.2.4 Ground Coverage and FAR

Maximum ground coverage after ensuring minimum setbacks and open space requirements, if any, shall be permissible on plots for educational buildings.

Purchasable and premium purchasable FAR shall be applicable as per the requirements of Chapter 9. Basis approach road width, the maximum permissible FAR (including Base FAR) for education buildings in built-up areas and the non-built-up areas shall be as follows:

FAR / Education Facilities	BFAR	Road Width (Upto 12m)			Road Width (12 -24m)			Road Width (24 - 45m)			Road Width (>45m)		
		PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR
Built-up Area													
Schools (primary / nursery)	1.00	0.20	0.20	1.40	0.50	0.50	2.00	1.00	1.00	3.00	1.00	1.00	3.00
Secondary / High School/ Intercollege/ Technical Institutes/ Degree Colleges / Universities	1.00	NA	NA	NA	0.50	0.50	2.00	1.00	1.50	3.50	1.00	UR	UR
Non-Built-up Area													
Schools (primary / nursery)	1.20	0.20	0.20	1.40	0.60	0.60	2.40	1.20	1.20	3.60	1.20	1.20	3.60
Secondary / High School/ Intercollege/ Technical Institutes/ Degree Colleges / Universities	2.00	NA	NA	NA	1.00	1.00	4.00	2.00	3.00	7.00	2.00	UR	UR

Note-1: BFAR-Base FAR; PFAR-Purchasable FAR; PPFAR-Premium Purchasable FAR; MFAR-Maximum Permissible FAR (including BFAR); UR-Unrestricted FAR.

Note-2: In green buildings, additional FAR over and above the maximum permissible FAR shall be provided as per paragraph 9.3 of the building byelaws.

6.2.5 Maximum Building height

There is no restriction on the maximum building height. However, the maximum height of the building shall be governed by its distance from the protected monument/heritage site, airport funnel zone and other statutory restrictions.

6.2.6 Minimum Setback

Minimum setbacks for educational buildings shall be as per paragraph 3.2.4 of the building byelaws.

6.2.7 Parking

(i) Parking arrangements shall be as per paragraph 3.3.4 of the building byelaws.

(ii) Standard parking provisions for education facilities shall be one ECS per 125 sqm of built-up area and 1 bus parking space i.e., 10 m x 5 m (50 sqm or 2 ECS open parking) for every 120 students. Further, a designated place shall be earmarked for pick-up and drop-zones for cars and buses within the campus plan.

For plots of area above 4000 sqm, a separate block for parking is permissible, within the campus. Within the parking block, 10% of ground floor may be utilized for ancillary purposes (free from FAR) incidental to principal use.

6.2.8 Basement

The permissibility of basement in educational buildings shall be as per paragraph 3.3.3 of the building byelaws.

6.3 Marriage Hall / Banquet/ Multi-purpose Hall

6.3.1 Permissibility

Construction of Marriage Hall/ Banquet/ Multi-purpose Hall shall be permitted as per the Master Plan Zoning Regulations.

6.3.2 Minimum Plot Size

Minimum plot size for the construction of marriage hall, banquet or a multi-purpose hall shall be 750 square meters for built-up area and 1000 square meters for non-built-up area.

6.3.3 Means of Access

Minimum width of existing approach road for the construction of a marriage hall, banquet, multi-purpose hall or a banquet hall shall be based on plot size as follows:

Plot Size (sqm)	**Min. Road Width (m)**
750 - 3000	18
> 3000	24

6.3.4 Ground Coverage and FAR

Maximum ground coverage after ensuring minimum setbacks and open space requirements, if any, shall be permissible on plots for educational buildings.

Purchasable and premium purchasable FAR shall be applicable as per the requirements of Chapter 9. Basis approach road width, the maximum permissible FAR (including Base FAR) for marriage hall/banquet/ multipurpose hall buildings in built-up areas and the non-built-up areas shall be as follows:

FAR / **Community Buildings**	BFAR	**Road Width (=>18 - 24m)**			**Road Width (>24 - 45m)**			**Road Width (>45m)**		
		PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR
Built-up Area										
Marriage hall/ Banquet Hall/ Multipurpose Hall	2.0	1.0	1.0	**4.0**	2.0	3.0	**7.0**	2.0	UR	**UR**
Non-Built-up Area										
Marriage hall/ Banquet Hall/ Multipurpose Hall	3.0	1.5	1.5	**6.0**	3.0	4.5	**10.5**	3.0	UR	**UR**

Note-1: (i) BFAR – Base FAR, PFAR – Purchasable FAR, PPFAR – Premium Purchasable FAR, MFAR – Maximum Permissible FAR including Base FAR, UR – Unrestricted

Note-2: Within the permissible FAR limit, construction of rooms shall be allowed.

Note-3: In green building, additional FAR over and above maximum permissible FAR shall be provided as per paragraph 9.3 of the building byelaws.

6.3.5 Maximum Building Height

There is no restriction on the maximum building height. However, the maximum height of the building shall be governed by its distance from the protected monument/heritage site, airport funnel zone and other statutory restrictions.

6.3.6 Minimum Setback

Minimum setbacks for of marriage hall/ banquet hall/ multipurpose hall up shall be as per paragraph 3.2.4 of the building byelaws.

6.3.7 Parking Requirements

(i) Parking requirements for marriage hall/ banquet hall/ multipurpose hall shall be as per paragraph 3.3.4 of the building byelaws.

(ii) The parking requirement for marriage hall/ banquet hall/ multipurpose hall shall be 2.0 Equivalent Car Space per 100 sqm of the floor area. Parking shall be calculated on the maximum permissible floor area of the plot.

6.3.8 Basement

The permissibility of basement shall be as per paragraph 3.3.3 of the building byelaws.

6.4 Auditorium and Convention Centre

6.4.1 Permissibility

Auditoriums and convention centres shall be permitted as per the master plan zoning regulations.

6.4.2 Means of Access

The proposed site for auditorium or a convention centre shall be located on a minimum 18-meter-wide existing road in the built-up area and on a minimum 24-meter-wide existing road in the non-built-up area.

6.4.3 Minimum Plot Area

Minimum plot area for the construction of auditorium or a convention centre shall be based on width of the approach road as follows:

Road Width (m)	**Min. Plot Area (sqm)**
18	1500
24	2000

6.4.4 Ground Coverage and FAR

(i) Maximum ground coverage after ensuring minimum setbacks and open space requirements, if any, shall be permissible on plots for auditorium and convention centre.

(ii) Purchasable and premium purchasable FAR shall be applicable as per the requirements of Chapter 9. Basis approach road width, the maximum permissible FAR (including Base FAR) for Auditorium and Convention centres in built-up areas and the non-built-up areas shall be as follows:

FAR / **Auditorium/ Convention Centre**	BFAR	Road Width (=>18 -24m)			Road Width (>24 - 45m)			Road Width (>45m)		
		PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR
Auditorium or a Convention Centre *(Built-up area)*	2.0	1.0	1.0	**4.0**	2.0	3.0	**7.0**	2.0	UR	**UR**

FAR / Auditorium/ Convention Centre	BFAR	Road Width (=>18 -24m)			Road Width (>24 - 45m)			Road Width (>45m)		
		PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR
Auditorium or a Convention Centre (*Non-built-up area)*	3.0	1.5	1.5	**6.0**	3.0	4.5	**10.5**	3.0	UR	**UR**

Note-1: BFAR – Base FAR, PFAR – Purchasable FAR, PPFAR – Premium Purchasable FAR, MFAR – Maximum Permissible FAR including Base FAR, UR – Unrestricted

Note-2: Other ancillary uses such as commercial, hotel, office, entertainment, training centre, community facilities, etc., are permissible.

Note-3: In green building, additional FAR over and above maximum permissible FAR shall be provided as per paragraph 9.3 of the building byelaws.

6.4.5 Minimum Setback

Minimum setbacks for auditorium or a convention centre shall be as per paragraph 3.2.4 of the building byelaws.

6.4.6 Parking Requirements

(i) Parking requirements for auditorium or a convention centre shall be as per paragraph 3.3.4 of the building byelaws.

(ii) The parking requirement for auditorium or convention centre shall be 1 ECS / 10 seat for the auditorium space and additional parking requirement for attached ancillary commercial activities shall be 2 ECS / 100 sqm of utilized floor area.

For plots of area above 4000 sqm, a separate block for parking is permissible, within the campus. Within the parking block, 10% of ground floor may be utilized for commercial purposes (free from FAR) incidental to principal use.

6.4.7 Basement

The permissibility of basement in auditorium or convention centre shall be as per paragraph 3.3.3 of the building byelaws.

7 Industrial and Agricultural Use Buildings

7.1 Industries

7.1.1 Permissibility

The permission for construction of industrial buildings, flatted factories, data centres and MSME units shall be as per paragraph 15.3.2 of Chapter 15 Zoning Regulations.

7.1.2 Minimum Plot Size

There is no restriction on the minimum plot size for industrial buildings, flatted factories, data centres and MSME units as per paragraph 3.2.1 of the building byelaws.

7.1.3 Means of Access

The minimum width of the access road for industrial buildings, flatted factories, data centres and MSME units shall be as follows:

	Industries	Minimum Road Width (m)
1	Industrial Buildings	7-meters (Agriculture Use Zone) 9-meters (Industrial Use Zones)
2	Flatted Factories	12-meters (Industrial Use Zone)
3	Data Centers	12
4	MSME units	9-meters (Industrial Use Zone) 7-meters (Agriculture Use Zones)

7.1.4 Maximum Building Height

There shall be no restriction on building height for industrial buildings, flatted factories, data centres and MSME units. However, the maximum height of the building shall be governed by distance from the protected monument/ heritage site, airport funnel zone and other statutory restrictions.

7.1.5 Ground Coverage and FAR

Maximum ground coverage after ensuring minimum setbacks and open space requirements, if any, shall be permissible on plots for industrial buildings, flatted factories, data centres and MSME units. To reduce the distance between work and home, address safety concerns (particularly for women) and help workers to increase their productivity, both in-situ and private development of hostels and dormitories in industrial areas shall be permitted, max. up to 20% of FAR.

Purchasable and premium purchasable FAR shall be applicable as per the requirements of Chapter 9. Basis approach road width, the maximum permissible FAR (including Base FAR) for industrial buildings, flatted factories in built-up areas and the non-built-up areas shall be as follows:

FAR / Industries	BFAR	Road Width (Upto 12m)			Road Width (>12 -24m)			Road Width (>24 - 45m)			Road Width (>45m)		
		PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR
Industrial Buildings	1.50 (≤12m) 2.50 (>12m)	NA	NA	1.50	1.25	1.25	5.00	2.50	3.75	8.75	2.50	UR	UR
MSME units	3.00	NA	NA	3.00	1.50	1.50	6.00	3.00	4.50	10.50	3.00	UR	UR

FAR / Industries	BFAR	Road Width (Upto 12m)			Road Width (>12 -24m)			Road Width (>24 - 45m)			Road Width (>45m)		
		PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR
Flatted Factories, Data Centres	3.00	NA	NA	NA	0.50	0.50	2.00	1.00	1.50	3.50	1.00	UR	UR

Note-1: BFAR – Base FAR, PFAR – Purchasable FAR, PPFAR – Premium Purchasable FAR, MFAR – Maximum Permissible FAR which includes Base FAR, UR – Unrestricted FAR.

Note-2: In green building, additional FAR over and above maximum permissible FAR shall be provided as per paragraph 9.3 of the building byelaws.

7.1.6 Minimum Setback

Minimum setbacks for industrial buildings, flatted factories, data centres and MSME units up to 15-meter height shall be per paragraph 3.2.4.8 of the building byelaws. Minimum setbacks for industrial buildings, flatted factories, data centres and MSME units above 15-meter height shall be as per paragraph 3.2.4.9 of the building byelaws.

7.1.7 Parking Requirements

Parking requirements shall be as per paragraph 3.3.4 of the building byelaws.

7.2 Farmhouse

7.2.1 Permissibility

The permission of the farmhouse shall be as per the master plan zoning regulations, constructed for the purpose of agriculture and horticulture, pig farming, fish farming, poultry, other animal husbandry etc.

7.2.2 Minimum Plot Size

The minimum plot area for the construction of farmhouse shall be 4000 sq.m.

7.2.3 Means of Access

The access to the farmhouse shall be from at least 7.0 m wide road.

7.2.4 Ground Coverage and FAR

The maximum permissible ground coverage shall be permissible after ensuring minimum setbacks, however non-farm activities shall be restricted to 20 percent of plot area. The maximum permissible FAR shall be 0.20.

7.2.5 Maximum Building Height

There shall be no height restriction.

7.2.6 Minimum Set back

I) The distance of the non-farm building from the boundary line of the plot shall be at least 9 meters on all sides except the guard room.

7.2.7 Tree plantation

Tree plantation shall be done on 50 percent of the plot in which at least 100 trees planted per hectare.

7.2.8 Electricity and other services

Arrangements for electricity, water supply and drainage shall be made by the landowner himself.

7.3 Dairy Farm

7.3.1 Permissibility

Dairy farm/ Gaushala will be permitted as per master plan zoning regulations.

7.3.2 Minimum Plot Size

The minimum plot size for dairy farm/ gaushala shall be 1000 square meters.

7.3.3 Means of Access

The minimum width of access road to the dairy farm/ gaushala shall be at least 7 meters wide.

7.3.4 Ground Coverage and FAR

The maximum permissible ground coverage for dairy farm/ gaushala shall be 20 percent of the total plot area and the maximum permissible FAR shall be 0.20.
Note: Within the covered area, construction of cattle shed, storage of animal fodder and straw, milk collection and preservation, milk selling centre, watch-post, and residential facility for essential employees for maintenance of animals, veterinary and breeding facilities and other ancillary activities shall be permissible.

7.3.5 Building height

There shall be no restriction on building height.

7.3.6 Minimum Setback

The minimum setback requirement for dairy farm/ gaushala in relation to the plot area shall be as follow.

Min. Plot Size (sqm)	Setbacks on all sides (m)
≥ 1000 – 4000	6
> 4000 up to 7000	9
> 7000 up to 15000	10
Above 15000	10

7.3.7 Tree plantation

Tree plantation shall be done on 50 percent of the plot in which at least 100 trees will be planted per hectare.

7.3.8 Drainage and dung and garbage disposal

Proper arrangement of drainage will be made from the dairy farm/ gaushala to the disposal site and the dung and effluent will be discharged after treatment through cow dung gas plant, septic tank, compost pit or other suitable technology.

7.3.9 Other requirements

Other requirements for dairy farms/ gaushalas, the size of cattle shed, fodder collection, milk collection/ preservation/ storage arrangements, management office, veterinary and breeding facilities, staff accommodation arrangements, pond, cow dung gas plant, etc. will be provisioned as per the standards of National Dairy Research Institute or State Government for Gaushalas.

8 Mixed-Use and Transit-Oriented Development

8.1 Mixed Use Development

8.1.1 Definition

Mixed use development/ buildings integrate multiple uses, such as residential, commercial, institutional, and recreational spaces, within a single structure, land parcel or a neighbourhood. Mixed use development is transitioning from land-based distribution to a built-space based approach, allowing for mixing and co-location of compatible uses within a single plot/ structure.

Mixed use development/ buildings offer required flexibility to improve availability and access to facilities within existing urban areas, thereby ensuring optimal utilisation of land. Such a development also leads to reduction in trip lengths, promotes sustainable urban transport, and enables creation of vibrant and safer public areas. Mixed use buildings need to be regulated to manage and mitigate the associated adverse impact related to congestion, increased traffic, and increased pressure on civic amenities.

8.1.2 Permissible locations for mixed-use development:

a) Mixed use zones earmarked under Master Plan.
b) Mixed use plots identified as part of approved layouts.
c) Notified bazaar streets (with specified conditions).
d) Along 24-meter and wider roads
e) Transit Oriented Development (TOD) Zones.

Development standards for 8.1.2 (c) regarding Bazaar Streets are covered in paragraph 5.1 of the byelaws while for 8.1.2 (e) i.e. TOD Zones, the standards are covered in paragraph 8.2 of the byelaws.

8.1.3 Development Standards for mixed-use development

Parameter/Development Standard	Mixed use zones earmarked under Master Plan	Mixed use plots as part of approved layouts	Notified bazaar streets	Along 24-meter and wider roads	TOD zones
Minimum Plot Size	No restriction	No restriction	No restriction	No restriction	No restriction
Means of Access	9m (plots upto 100 sqm); 12m (other plots)	24m	12m	24m	=>12m
Building Height	Not restricted	Not restricted	Not restricted	Not restricted	Not restricted
Minimum Setbacks	As applicable for higher use	As applicable for higher use	As per para 5.1.5	As applicable for higher use	As applicable for higher use
Floor Area Ratio	As per para 8.1.3.6	As per para 8.1.3.6	As per para 5.1.4	As per Use Zone	As per para 8.2.2.2
Mixing	0-100%	0-100%	Commercial (2 floors)	=>33% (principal use); =<67% (other uses) However, share of single other use shall not be more than principal use.	=>33% (principal use); =<67% (other uses) However, share of single other use shall not be more than principal use.

Parking	As per proposed higher use	As per proposed higher use	As per proposed higher use	As per 3.3.4	1ECS per 100 sqm.
Ground Coverage	Subject to adherence to prescribed setbacks	Subject to adherence to prescribed setbacks	Subject to adherence to prescribed setbacks	Subject to adherence to prescribed setbacks	Subject to adherence to prescribed setbacks

Note-1: Permissible occupancies in mixed-use development shall be as per paragraph 8.1.4. Permissibility of occupancies in mixed-use development shall be governed by the minimum standards prescribed in paragraph 3.2.1.

Note-2: The plot size shall be equal to or more than the minimum plot size requirements for higher use as defined in paragraph 3.2.1.

Note-3: For mixing in plots identified as single and multi-units, the height restrictions as defined under paragraph 4.1.4 shall prevail.

8.1.3.1 Floor Area Ratio (FAR):

Mixed-use buildings described in paragraph 8.1.2 (a) and (b) shall avail FAR as per table below:

FAR / Mixed Use Buildings	BFAR	Road Width (Upto12m)			Road Width (12 -24m)			Road Width (24 - 45m)			Road Width (>45m)		
		PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR	PFAR	PPFAR	MFAR
MU Built-up Area	2.0	NA	NA	**2.0**	1.0	1.0	**4.0**	1.0	1.5	**5.25**	1.5	UR	**UR**
MU non-built-up Area	2.5	NA	NA	**2.5**	1.25	1.25	**5.0**	2.5	3.75	**6.25**	2.5	UR	**UR**

Note-1: BFAR – Base FAR, PFAR – Purchasable FAR, PPFAR – Premium Purchasable FAR, MFAR – Maximum Permissible FAR, UR – Unrestricted

Note-2: The FAR of Bazaar Streets shall be as per *paragraph 5.1.4.*

Note-3: For 8.1.2 (d), base FAR of principal use shall be availed, and purchasable FAR and premium purchasable FAR conditions of the principal use shall prevail.

8.2 Transit Oriented Development (TOD)

In view of the continuous urbanization in the state and to meet the growing infrastructure needs, the Uttar Pradesh Mixed Use and Transit Oriented Development Policy was notified in 2015 and further revised in 2022 in line with the National TOD Policy 2017.

8.2.1 Applicability

These provisions shall be applicable in the TOD Zones included in the Master Plan or as notified by the Government.

8.2.2 TOD Plans, Permitted Uses and Building Byelaws

8.2.2.1 Land use mixing in TOD schemes.

Mixed land use shall be permissible in TOD plots, but not mandatory. If mixed use is proposed, it shall be as per the table below.

Land use as per MP/ZDP/layout	Changed land use	Minimum FAR in existing use	In other use FAR*
Residential	Residential Mixed-Use TOD	33 percent	67 percent
Commercial (including retail)	Commercial Mixed-Use TOD	33 percent	67 percent
Office/ Institutional	Office Mixed-Use TOD	33 percent	67 percent
Industrial (except heavy and polluting industries)	Industrial Mixed-Use TOD	33 percent	67 percent
Transportation	Transportation Mixed-Use TOD	Operation as required	Remaining FAR
Public semi public	Public semi public Mixed-Use TOD	33 percent	67 percent

Note* - Subject to restriction that MP/ZDP/layout land use shall remain pre-dominant land use.

8.2.2.2 Floor Area Ratio (FAR) for TOD zone

The building byelaws for TOD zone shall be as follows:

Minimum Right of Way	Base FAR	TOD FAR as % of Base FAR
12m	As per byelaws	150%
>12 - 24m	As per byelaws	250%
>24 - 45m	As per byelaws	350%
>45m	As per byelaws	Unrestricted

Note:

(1) Basic FAR for various land uses in the TOD zone shall be as per prevailing building byelaws, whereas the FAR above this shall be on purchasable basis.
(2) For availing maximum permissible FAR, charges of purchasable FAR only shall apply. That is to say, that the charges for purchasable FAR and premium purchasable FAR shall be the same.

8.2.2.3 Parking

Parking requirement – 1 ECS per 100 sqm of floor area.

8.3 Other requirements

8.3.1 Restrictions on mixing of activities in mixed-use development.

The owner/developer shall have the flexibility for horizontal and vertical mixed-use development, provided that –

1) Only non-manufacturing industries and service industries like Information Technology, Information Technology enabled services/ Business Process Outsourcing/ Knowledge Process Outsourcing, etc. (IT-ITES/ BPOs/ KPO) and pollution free MSME units may be mixed with other uses such as residential, commercial and institutional.

2) Educational Institutions, Anganwadi, crèches, old age homes, etc. should not be mixed with health care facilities or manufacturing and/or warehousing facilities. These facilities (educational institutions, Anganwadi, creches, old age homes, etc.) should necessarily be

developed on the lower floors and preference should be given to reach the open places of the TOD scheme.

3) Separate entry/exit and service shafts shall be provided as necessary in buildings with vertical mixed use.

4) Following activities shall not be mixed with other permissible uses in mixed-use development:

Industrial: Large scale industry, sugar mill, rice seller, flour mill, Pasteurizing plant/ Milk storage centre, Meat Processing Plant, Mining brick/ lime kiln, crusher, Oil depot/ LPG refilling plant, Bio Diesel Plant, Power generation plant, Hazardous/ dangerous/ polluting industries
Public-Semi Public: Prison/ Jail, Correction facilities/ Reform Homes, Sanatorium, Compost plant, Scientific Landfill Sites, MRF Facilities, Bio-Medical Waste Treatment Facility, Slaughterhouses
Traffic & Transportation: Airport/ Flying club
Recreational: Shooting Range
Agricultural: Farmhouse, Repair of agricultural equipment/ servicing workshop

Note-1: In case of layout plots along roads of width 24-meter-wide or more on availing mixed land use and consequent FAR conditions, development fees, impact fees and other charges shall be applicable on highest category use and the relevant changes shall also be incorporated in the lease deed.

9 Additional Floor Area Ratio

9.1 Compensatory Floor Area Ratio (FAR)

9.1.1 Permissibility and conditions

(i) Compensatory FAR may be provided by the Authority to the landowner in lieu of land parcel, which is required partly or fully for the following public purposes:

a. Development and construction of roads, drains, traffic and transport infrastructure.

b. Laying of service utilities such as water supply line, sewer lines, communication lines, electrical substations, electric lines, gas lines etc.

c. Development of greenbelts and public parks/playgrounds.

d. Any other infrastructure as decided by the Authority.

(ii) Compensatory FAR shall not be permitted by the authority in following circumstances:

a. For earlier land acquisition or development for which compensation has been already paid partly or fully. (a) Where award of land acquisition has been made unless lands are withdrawn from the award by the Appropriate Authority according to the provisions of the relevant Acts, and (b) If the compensation in the form of FAR has already been granted to the owner/applicant.

b. Where lawful possession by mutual agreement/or contract has been taken.

(iii) Compensatory FAR shall as far as possible be provided by the authority in the remaining part of the same plot. In case where it is not possible to use the Compensatory FAR on the same plot, the Authority may allow the owner to use compensatory FAR of the transferred plot on other receiving plot(s) in part or in full for the same land use.

(iv) The owner shall be allowed Compensatory FAR equal to the permissible FAR on the transferred land, subject to not exceeding the maximum permissible FAR (including purchasable FAR) on the transferred plot.

(v) If the land use of the remaining plot is earmarked for roads, transportation infrastructure, greenbelt, park and/or playground, where FAR is less than 1.0 or FAR and ground coverage is not permissible, then the Compensatory FAR shall be allowed to be used on any other plot.

(vi) In case the land use of the remaining plot is proposed for more than one multiple uses in the master/zonal plan, the Compnesatory FAR shall be divided proportionately.

(vii) Compensatory FAR is non-transferable.

(viii) The transfer of title of land foregone shall be done as per the procedures laid down by the government.

9.2 Purchasable & Premium Purchasable FAR

9.2.1 Permissibility

(i) In order to make FAR flexible as per market demand, purchasable and premium purchasable FAR in built-up and non-built-up areas shall be permissible to the Applicant only in the following cases:

a. On a vacant plot; or

b. On a plot where construction is yet to begin as per the sanctioned building plan; or

c. To construct a new additional building(s); or

d. To construct additional floors(s) in cases where building structure was originally designed for additional FAR, but permission was obtained for less FAR.

e. Occupied buildings only after ensuring structural safety certification and adequacy of infrastructure facilities.

(ii) Purchasable and premium purchasable FAR shall be allowed only on roads with ROW 12m and above in built-up and non-built-up areas. For group housing in built-up areas, this is allowed on roads with ROW 9m.

(iii) Before purchasing additional FAR especially in case of already sanctioned plans, the applicant shall comply with provisions of Real Estate (Regulation and Development) Act, 2016 and Uttar Pradesh Apartment (Promotion of Construction, Ownership and Maintenance) Act, 2010 and other relevant Acts as amended from time to time.

9.2.2 Eligibility for Purchasable & Premium Purchasable FAR

(i) For the approval of purchasable and premium purchasable FAR, following eligibility criteria shall be fulfilled:

a. Provision of setback according to the height of the building shall be made as per the standards prescribed in the building byelaws.

b. In the group housing scheme, residential units shall be permitted in relation to the purchasable Floor Area Ratio (FAR).

c. Structural safety provisions in the building shall be made as per the requirements mentioned in these building byelaws.

d. For the proposed building, a no objection certificate regarding fire safety shall be obtained from the fire department and submitted to the authority.

e. Parking arrangements shall be made as per the standards prescribed in these building byelaws for the total floor area proposed in the building (after FAR purchase).

9.2.3 Computation of Purchasable & Premium Purchasable FAR

The computation of purchasable FAR (PFAR) and premium purchasable FAR (PPFAR) for buildings across different occupancies in built-up as well as non-built-up areas is dependant on width of the approach road or existing right of way (ROW) and shall be as follows:

Road Width (m)	Base FAR (BFAR)	Purchasable FAR (PFAR)	Premium Purchasable FAR (PPFAR)	Maximum Permissible FAR (MFAR)
(1)	(2)	(3)	(4)	(5) = (2)+(3)+(4)
Up to 12m	B1	Up to 20% of B1	Up to 20% of B1	140% of B1
12 – 24m	B2	Up to 50% of B2	Up to 50% of B2	200% of B1
24 – 45m	B3	Up to 100% of B3	Up to 150% of B3	350% of B1
More than 45m	B4	Up to 100% of B4	Unrestricted*	Unrestricted*

*Note-1: Unrestricted FAR shall be availed in the increments of 0.25 times Base FAR.

Note-2: In case of any difference in the prescribed limits of maximum permissible FAR in chapter-3 to chapter-7 and the table above, the figures in respective chapters will prevail.

Note-3: In case of residential plotted development for both single and multi-units, the maximum permissible (purchasable) FAR is 2.0 irrespective of the width of the approach road, as follows:

Plot Area (sqm)	Base FAR	Max. Permissible FAR (including purchasable FAR)
≥40 - 150	2.00	2.0
>150 - 300	1.80	2.0
>300 - 500	1.75	2.0
>500 - 1200	1.50	2.0
>1200	1.25	2.0

Note 1: In case of residential plotted development, calculation of purchasable FAR is not dependent on the width of the approach road and will be allowed on minimum 9-m /7.5-m or 4.0-m road as the case may be.

For maximum permissible FAR in TOD zones, refer to paragraph 8.2.2.2.

9.2.4 Permission for Purchasable & Premium Purchasable FAR

(i) Permission for purchasable and premium purchasable FAR in built-up and non-built up areas shall be given on the basis of the recommendation of the technical committee constituted under the chairmanship of the Vice Chairman, Development Authority / Housing Commissioner, Uttar Pradesh Awas Vikas Parishad, in which representatives of Public Works Department, Jal Nigam, District Magistrate, Chief Town and Country Planner, Fire Department and representatives of planning and engineering departments of the concerned authority, are members.

(ii) The said committee shall examine maps and conduct site inspection of the proposed building based on the following parameters.

a. Setback,
b. Structural safety,
c. Fire safety,
d. Parking arrangement,
e. Infrastructure facilities, etc.

(iii) The committee shall submit its report / recommendation to the Vice Chairman / Housing Commissioner on whether purchasable and premium purchasable FAR shall be permitted or not. The Vice Chairman / Housing Commissioner based on the recommendation of the committee shall take decision regarding the approval of purchasable and premium purchasable FAR.

(iv) Purchasable FAR is an enabling provision and shall not be permitted to any applicant as a matter of right. However, application for purchasable FAR can be rejected by the authority by recording reasons for doing so.

9.2.5 Computation of Fees for Purchasable & Premium Purchasable FAR

Purchasable and Premium Purchasable FAR fee shall be calculated as per the following formula: -

C = Le x Rc x P

C = Charge

Le = Proportional land requirement for purchasable/ Premium Purchasable FAR (sq.m.);

i.e. FP ÷ FAR

FP = Permissible Additional Floor Area (sq.m.) as per PFAR/PPFAR, as the case may be

FAR = Permissible Floor Area Ratio as per Master Plan / Building Byelaws (Base FAR)

Rc = Current rate of land

Note: The current rate of land refers to the circle rate determined by the District Magistrate, where such rate is not available, the current residential rate determined by the Authority/Awas Vikas Parishad whichever is higher.

P = Factor Coefficient for various land use categories.

Factor coefficients as per land use shall be as follows: -

Sl.	**Land Use Category**	**Factor Coefficient (P) Purchasable FAR**	**Factor Coefficient (P) Premium Purchasable FAR**
1	Commercial	0.50	1.0
2	Mixed Use	0.45	0.9
3	Office Buildings / Institutional	0.45	0.9
4	Hotels	0.40	0.8
5	Residential (Plotted)	0.40	-
6	Residential (Group Housing)	0.40	0.8
7	Community Facilities and Infrastructure	0.20	0.4

Example:

In a group housing scheme of plot area of 2000 sq.m. in non-built-up area with approach road of width 30m. The calculation of fees for purchasable and premium purchasable FAR shall be as follows.

Group Housing	**FAR**		**FP**	**Le**	**Rc**	**P**	**C**
Area: Non-built-up Plot Area: 2000 sqm, Road Width: 30m	*Permissible*	*Availed*	*Add. FAR x Plot Area*	*FP ÷ Base FAR*	*Current Land Rate*	*Factor Coefficient*	*Charge = Le x Rc x P*
Base FAR	2.5	2.5	-	-		-	-
Purchasable FAR	2.5	2.5	5000sqm	2000sqm	35000 Rs/sqm	0.40	Rs 2,80,00,000
Premium Purchasable FAR	3.75	3.0	6000sqm	2400sqm	35000 Rs/sqm	0.80	Rs 6,72,00,000
Total Charge							Rs 9,52,00,000

9.3 Additional FAR on Green Buildings

The Authority shall strive to promote green building concepts and shall provide following incentive in the form of additional FAR, free of cost, for green rated buildings.

a) GRIHA Three star/ IGBC Silver / LEED silver or equivalent rating – 3% additional FAR on availed FAR.
b) GRIHA Four star/IGBC Gold/LEED Gold or equivalent rating – 5% additional FAR on availed FAR.

c) GRIHA Five star/ IGBC Platinum/ LEED Platinum or equivalent rating – 7% additional FAR on availed FAR.

Note:

I. Additional FAR mentioned above in point a), b) and c) shall be awarded after pre-certification from the empanelled agency. This incentive FAR on Green Buildings shall be over and above the MFAR.

II. In case that the developer fails to achieve committed rating as per pre-certification at the time of final occupancy, a penalty shall be imposed at the rate 2 times of the land cost as per the circle rates for the additional FAR for the rating not achieved.

III. The authority shall consider certification from any agency identified/ recognised by the State/ Central Government.

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10 Fire Prevention and Life Safety

All the buildings shall be planned, designed, and constructed to ensure fire prevention and life safety measures and this shall be done in accordance with relevant provisions of Uttar Pradesh Fire and Emergency Services Act, 2022 and Uttar Pradesh Fire and Emergency Services Rules, 2024.

10.1 Fire prevention and life safety measures.

10.1.1 Building owners to provide and maintain fire prevention and life safety measures.

As per Section 26 of Uttar Pradesh Fire and Emergency Services Act, 2022, liability to provide fire prevention and life safety measures shall remain with owner or the occupier who is either individually or jointly responsible of a building. The owner or the occupier shall:

i. Provide minimum firefighting and life safety installations as required by the fire-safety regulations or norms or guidelines made under NBC 2016, these building byelaws, Oil Industry Safety Directorate guidelines, Petroleum Act and Rules, Explosive Act and Rules of India relating to fire prevention, or any relevant guidelines by the State Government or local authority as amended from time to time.

ii. Maintain the fire prevention and life safety measures in operational condition at all times, in the manner and specifications specified in relevant fire-safety regulations or norms or guidelines.

10.1.2 Compliances for Occupancy Certificate

Occupancy certificate for a building shall not be issued, unless the development authority is satisfied that the owner or occupier, either individually or jointly, has complied with the provisions.

10.1.3 Fire Safety Certificate for Multi-storied buildings and Special Buildings as per Fire Act

Without prejudice to these building byelaws and enforcement of byelaws by the State, following buildings shall obtain 'Fire Safety Certificate' from Fire and Emergency Services;

a) Multi-storied buildings having more than 15 meters height.

b) Special buildings like educational, institutional, assembly, business, mercantile, industrial, storage and hazardous buildings as defined in National Building Code as amended from time to time.

c) Mixed occupancies with any of the aforesaid occupancies having more than 500 square meter covered area.

Owners of above categories of buildings shall ensure that such buildings are equipped with fire prevention, fire and life safety and fire protection system to prevent or extinguish fire as per the prescribed rules, i.e. Uttar Pradesh Fire and Emergency Services Rules 2024.

10.2 Minimum Standards for Fire prevention and Life Safety for permanent structures

10.2.1 Prescribed minimum standards for fire prevention and life safety in buildings.

In line with Uttar Pradesh Fire and Emergency Services Rules 2024 and the Uttar Pradesh Fire and Emergency Services Act of 2022, the minimum standards for fire prevention and fire safety shall be determined with respect to the building height, covered area, and occupancy of such building or premises as warranted in the byelaws and relevant code and standards as applicable to such building at the time of construction or approval of the map, thereof namely:

1. Access to building
2. Number, width, type and arrangement of exits.

3. Smoke management system in controlled environment building.
4. Fire extinguishers.
5. First-aid hose reels
6. Automatic fire detection and alarming system
7. Public address system
8. Automatic sprinkler system
9. Internal hydrants and yard hydrants
10. Pumping arrangements,
11. Captive water storage for fire fighting
12. Exit signage,
13. Fire Lifts
14. Standby power supply
15. Refuge area.
16. Special fire protection systems for protection of special risks, if applicable.
17. Manually Operated Electronic Fire Alarm system (MOEFA).
18. Electrical safety audit report issued by electrical safety department or contractor authorized by state government.
19. Certificate for installation of fire protection system by Qualified Agency as applicable.
20. Appointment letter of fire safety officer, if required.
21. Safety certificate of lift issued by the competent authority, if required.

Note: *Provided that these norms shall not be applicable to all type of buildings requiring fire safety certificate, rather the requirement shall be assessed purely based on covered area, building height and type of occupancy of the building as detailed in bye laws, national building code or relevant Act, rules and standards as applicable to such building.*

Access to the building shall mean the availability of means of approach to each floor of the building or to nearest point of the building in case of emergency-situation for firefighting and/or rescue operations at least from one side like-road or permanent open space etc.

10.3 Issuance of Fire Safety Certificate and its renewal

10.3.1 Existing Buildings

Existing Buildings refer to such buildings, which have their super structure completed prior to the commencement of Uttar Pradesh Fire and Emergency Services Rules, 2024 and the Uttar Pradesh Fire and Emergency Services Act, 2022. From the point of view of fire safety, the existing buildings shall be identified and classified as follows.

1) Buildings approved by the competent authority, and in which no objection certificate from the fire department was taken and approved as per the requirements related to fire safety.

For such buildings whenever an application is received for final or renewal fire NOC of the Uttar Pradesh Fire and Emergency Services Act, 2022 and Uttar Pradesh Fire and Emergency Services Rules, 2024, the inspecting officer shall evaluate the installed fire protection and life safety system on the basis of prevailing standards and executive instructions/ Government Order at the time when such NOC was issued thereunder and in accordance with the measures as detailed in Uttar Pradesh Fire Emergency and Services Rules, 2024.

The provisions relating to access, and exit requirements as given in Uttar Pradesh Fire Emergency and Services Rules, 2024 shall be complied as per the arrangements made in the approved map.

2) **Buildings approved by the competent authority which were constructed /regulated as per building byelaws prevalent at that time and in which fire safety certificate was not mandatory**.

For such buildings, structural changes shall not be mandatory for the qualification mentioned in Uttar Pradesh Fire Emergency and Services Rules, 2024, especially for access, and exit requirement but other requirements related to fire prevention and life safety shall be ensured on 'case to case basis'.

3) Old constructed buildings whose maps are not approved.

Provision of access road, setback and fire escape shall not be mandatory. However, all other requirements as mentioned in Uttar Pradesh Fire Emergency and Services Rules, 2024 shall be ensured on 'case to case basis'.

10.3.2 Building other than existing buildings

Whenever an application is received for Provisional, Final or Renewal Fire Safety Certificate as the case may be, under Uttar Pradesh Fire and Emergency Services Act, 2022 and Uttar Pradesh Fire and Emergency Services Rules, 2024, the fire officers shall issue such certificate in a prescribed format.

Such buildings shall be planned, designed and constructed ensuring fire safety as per requirements of National Building Code of India-2016 ensuring necessary provisions for fire prevention and life safety as per Uttar Pradesh Fire Emergency and Services Rules, 2024 are adhered to.

11 Structural Safety and Quality Control

11.1 Structural Design and Safety

For any building under the jurisdiction of these regulations, the structural design shall be carried out by registered/ licensed engineer/ structural engineer as specified in Chapter-14 of these regulations.

The structural design of different building elements shall conform to the relevant Indian Standards provided in Part 6 'Structural Design' of NBC 2016 comprising of the following sections:

a) Section 1- Loads, forces and effects
b) Section 2- Soils and foundations
c) Section 3- Timber and bamboo
d) Section 4- Masonry
e) Section 5- Concrete
f) Section 6- Steel
g) Section 7- Prefabrication systems, building and mixed/composite construction.
h) Section 8- Glass and glazing

Requirements specified in the following Indian Standards, Codes and guidelines and other documents needs to be observed for structural safety and natural hazard protection of buildings etc:

a) For General Structural Safety

1) IS: 456:2000 "Code of Practice for Plain and Reinforced Concrete.
2) IS: 800-2007 "Code of Practice for General Construction in Steel.
3) IS: 801-1975 "Code of Practice for Use of Cold Formal Light Gauge Steel Structural Members in General Building Construction.
4) IS 875 (Part 2):1987 Design loads (other than earthquake) for buildings and structures Part2 Imposed Loads.
5) (Reference to Table 4.1- "Occupant Load" may be considered for design load) 5) IS 875 (Part 3):1987 Design loads (other than earthquake) for buildings and structures Part 3 Wind Loads.
6) IS 875 (Part 4):1987 Design loads (other than earthquake) for buildings and structures Part 4 Snow Loads.
7) IS 875 (Part 5):1987 Design loads (other than earthquake) for buildings and structures Part 5 special loads and load combination.
8) IS: 883:1994 "Code of Practice for Design of Structural Timber in Building.
9) IS: 1904:1986 (R 2005) "Code of Practice for Structural Safety of Buildings: Foundation"
10) IS 1905:1987 "Code of Practice for Structural Safety of Buildings: Masonry Walls.
11) IS 2911(Part 1): Section 1: 2010 "Code of Practice for Design and Construction of Pile Foundation Section 1.

(b) For Cyclone/ Wind-storm Protection

12) IS 875 (3):1987 "Code of Practice for Design Loads (other than Earthquake) for Buildings and Structures, Part 3, Wind Loads"
13) Guidelines (Based on IS 875 (3)-1987) for improving the Cyclonic Resistance of Low-rise houses and other building.

(c) For Earthquake Protection

14) IS: 1893 (Part 1,2,3,4) "Criteria for Earthquake Resistant Design of Structures"

15) IS:13920-2016 "Ductile Detailing of Reinforced Concrete Structures subjected to Seismic Forces - Code of Practice"
16) IS:4326-2013 "Earthquake Resistant Design and Construction of Buildings - Code of Practice (Second Revision)"
17) IS:13828-1993 "Improving Earthquake Resistance of Low Strength Masonry Buildings - Guidelines"
18) IS:138271993 "Improving Earthquake Resistance of Earthen Buildings- Guidelines"
19) IS:13935-2009 "Seismic Evaluation, Repair and Seismic Strengthening of Buildings - Guidelines"

(d) For Protection of Landslide Hazard (for protection of earth at different levels)

20) IS 14458 (Part 1): 1998 Guidelines for retaining wall for hill area: Part 1 Selection of type of wall.
21) IS 14458 (Part 2): 1997 Guidelines for retaining wall for hill area: Part 2 Design of retaining/breast walls.
22) IS 14458 (Part 3): 1998 Guidelines for retaining wall for hill area: Part 3 Construction of dry stone walls.
23) IS 14496 (Part 2): 1998 Guidelines for preparation of landslide – Hazard zonation maps in mountainous terrains: Part 2 Macro-zonation.

Note:
Whenever an Indian Standard including those referred in the National Building Code, the latest revision of the same shall be followed except specific criteria, if any, mentioned above against the provisions of that code.

11.2 Structural Design Basis Report (SDBR)

The SDBR **(Appendix-14)** consists of basis for designing the building. It includes four parts as provided below:

a) Part 1: General information/data

b) Part 2: Load bearing masonry buildings

c) Part 3: Reinforced concrete buildings

d) Part 4: Steel buildings

In compliance of the design with the relevant Indian Standards mentioned in NBC 2016, the registered/ licensed engineer/ structural engineer/ principal design consultant shall submit a SDBR for structures of different complexities, as given in *paragraph 11.3 of this guidelines,* along with the drawings and documents to be submitted with the application. The SDBR shall include the parts as detailed below:

a) Part 1

b) Part 2, Part 3 or Part 4 (whichever is applicable)

SDBR shall be submitted to the LTP in accordance with **Chapter-14** of these byelaws.

11.3 Review of Structural Design

The Authority shall empanel structural engineers for peer reviewing/proof checking and certifying the design of buildings with height above 50 m, important service and community buildings or structures, lifeline and emergency buildings and/or large assembly buildings. The owner may also decide to carry

out proof checking of structural design for other buildings, provisions of IS 18299:2023 shall be adopted.

NOTE — Important service and community buildings or structures may include critical governance buildings, schools, signature buildings, monument buildings. Lifeline and emergency buildings may include hospitals, telecommunication buildings, bus stations, railway stations/buildings, airports, ports, food storage, power stations, fuel stations, fire stations, etc.

The peer reviewer/proof checker shall have the minimum qualification, experience, and competence as per IS 18299:2023:

The submission of the structural design by the structural engineer to the peer reviewer/proof checker shall be done in three stages as given below, and the succeeding stage submission shall be made only after obtaining concurrence for the preceding stage:

a) SDBR
b) Preliminary design, related drawings and documents
c) Detailed design, related drawings and documents

11.4 Quality Control and Safety during Construction

All material shall be of good quality conforming to relevant Indian Standards (BIS certified) as given in Part 5 'Building Materials' of NBC 2016. All workmanship shall also be of good quality conforming to relevant Indian Standards as given in Part 7 'Construction Management, Practices and Safety' of NBC 2016. Alternative building materials and construction technology may also be adopted with the approval of the authority in compliance with NBC 2016.

There should be a clearly defined competence requirement for the workers based on the work-related peculiarities. Workers in a project should be adequately qualified, trained, experienced and competent. A formal training or a certified course undertaken should be a preferred selection criterion for the workers. All efforts should also be made to impart on site skilling/training of construction workers for specific tasks. A periodic review of the performance may be made to establish the nature of training required and methods for imparting training.

Safety during construction shall be ensured in accordance with Part 7 'Construction Management, Practices and Safety' of NBC 2016.

11.5 Periodic Evaluation of Buildings

In case of high-rise buildings and special buildings, the owner of the building shall get the building structural audit/ inspection done by the registered/ licensed structural engineer/empanelled expert structural engineer first in the tenth year from the date of grant of occupancy permit, and thereafter in every 5 years. Findings shall be submitted to the Authority for record. In case the building shows signs of distress such as structural cracks, etc the owner may opt for conducting such evaluation immediately. For buildings of height more than 50 m and special structures, the evaluation shall be done by expert structural engineer only.

If any action for ensuring the structural safety and stability of the building is to be taken, as recommended by the registered/ licensed structural engineer/ empanelled expert structural engineer, it shall be completed within the time period as stipulated by the Authority to maintain the occupancy.

The owner on the advice of the Authority shall carry out such repair/restoration and strengthening/ retrofitting of the building found necessary as per *paragraph 11.6* (seismic strengthening/retrofitting) of these regulations, so as to comply with the safety standards.

In case, the owner does not carry out such action, the Authority or any agency authorized by the Authority may carry out such action at the cost of the owner.

11.6 Seismic Strengthening/Retrofitting

If as per periodic evaluation, the seismic resistance is assessed to be less than the specified minimum seismic resistance as given in the concerned Indian Standards listed in table below, action shall be initiated to carry out the upgrading of the seismic resistance and other structural requirements of the building as per the provisions of standards given in the table.

Table - Indian Standards for Seismic Evaluation and Strengthening of Buildings

Sl.	Type of Buildings	Indian Standards
1	Masonry Buildings	IS 13935 'Seismic evaluation, repair and strengthening of masonry buildings'
2	Concreter Buildings and Structures	IS 15988 'Seismic evaluation and strengthening of existing RCC buildings - Guidelines'
3	Low strength masonry buildings	IS 13828 'Improving earthquake resistance of low strength masonry buildings – Guidelines'
4	Earthen Buildings	IS 13827 'Improving earthquake resistance of earthen buildings – Guidelines'

Provisions in the Indian Standard, IS 18289 'Post - earthquake safety assessment of buildings – Guidelines' should be followed for the following building typologies to ascertain whether or not a building affected during an earthquake can be occupied immediately after the earthquake:

a) Unreinforced masonry load-bearing buildings; and

b) RC moment frame buildings with unreinforced masonry infill walls.

11.7 Format for Structural Design Basis Report (SDBR)

a) This report shall accompany the application for Building Permit.
b) In case information on items (iii), (x), (xviii), (xix) and (xx) of Part 1 of SDBR cannot be given at this time, it should be submitted at least one week before commencement of construction.
c) In case of reinforced concrete framed buildings, a certificate to the effect that the Part-3 of the report will be completed and submitted at least one month before commencement of construction, shall be submitted with the application for Building Permit. In addition to the completed report, the following additional information shall be submitted, at the latest, one month before the commencement of construction.
    1) Foundations
        i. In case raft foundation has been adopted, indicate K value used for analysis of the raft.
        ii. In case pile foundations have been used, give full particulars of the piles, type, diameter, length, capacity.
        iii. In case of high-water table, indicate system of countering water pressure, and indicate the existing water table, and that assumed to design foundations.
    2) Idealization for earthquake analysis
        i. In case of a composite system of shear walls and rigid frames, give distribution of base shear in the two systems on the basis of analysis, and that used for design of each system.
        ii. Indicate the idealization of frames and shear walls adopted in the analysis with the help of sketches.

3) Submit framing plans of each floor and in case of basements, indicate the system used to contain earth pressures.

d) The latest version of the Indian Standards with their amendments as indicated in the SDBR template given in *Appendix-14*, shall be referred for the preparation of the report.

11.8 Requirements for earthquake resistant construction

11.8.1 Applicability

(i) Earthquake-proof construction requirements will be applicable to buildings with more than 3 floors including ground floor or more than 12 meters in height and all infrastructure facilities with land cover of more than 500 square meters. (Such as water works and overhead tanks, telephone exchanges, bridges and culverts, power generation centres and power sub-stations and power towers, hospitals, photo galleries, auditoriums, assembly halls, educational institutions, bus terminals, etc.)

(ii) For the development of buildings and important infrastructure facilities mentioned in paragraph (I) above, it will be mandatory to adopt 100% of the provisions of Code of Practice of BIS, National Building Code, other relevant guidelines and records mentioned in Chapter-11.1 of the byelaws.

11.8.2 Certificate required for construction permit.

(i) To get the map approved for building construction, architectural plan as per the pre-determined procedure, along with which the relevant parts of the details (related to the drawing) mentioned in the "Building Information Schedule" will be marked on the map in the form of a table on the format given in Appendix-8 and a certificate to this effect will be submitted on the format given in *Appendix-9* with the joint signatures of the land owner/builder, the architect who prepared the map and the structural engineer who prepared the structural design of the foundation and superstructure of the building that in the building plan and design of foundation and superstructure, all the provisions related to earthquake resistance, the provisions of the above mentioned codes, guidelines and other relevant records have been 100 percent complied with. Apart from this, complete calculations and structural maps of the foundation and superstructure design of the building signed by the structural engineer will also be submitted along with the forms related to map approval. Also, the maps which will be sent to the authority appointed for the construction of the building, on all those plans, a certificate of earthquake resistant design will be submitted in the format mentioned in *Appendix-10* with the full name and sealed signature of the land owner/builder, registered/ licensed architect as well as the structural engineer doing the structural design and the service engineer preparing the service design.

(ii) If any changes/additions are made in the building map presented for approval after testing by the designated authority, then necessary changes in the anti-earthquake provisions in the structural and services design will be made again by the structural engineer and the map will be presented again for approval.
In which the relevant part of the certificate and building information schedule will be mentioned as per above and the execution of building construction works will be ensured as per the finally approved map.

11.8.3 Conditions for construction permission

Approval for building construction will be issued subject to the following conditions:

(a) The proposed construction will be as per the design certified by the Civil Engineer and Architect in accordance with the provisions of the relevant Indian Standards Institute and National Building Code.

(b) The supervision of the construction will also be done under the supervision and responsibility of the architect/engineer and the developer so that compliance with the following safety related arrangements can be ensured:-

I. A site civil engineer with prescribed experience will be assigned to supervise the construction of the building. During supervision, it will be specifically ensured that the building is being constructed as per the design approved by the structural engineer for making all the arrangements for structural safety and anti-earthquake.

II. To ensure the quality of the main construction materials cement, steel, stone grit, brick coarse sand and mortar and concrete mix, etc. that will be used in the construction of the building, it will be necessary to have the facility to test them at the work site itself. Also, by regularly sampling the construction materials, their quality should be physically and chemically tested by authorized laboratories/institutions and their test results should be available at the site itself, so that whenever an expert goes to the site to inspect the works, so can see these test results too.

III. Random technical inspection of the construction work will also be done by an independent expert. The construction work can also be inspected from time to time by experts appointed by the buyer/allottees. In this regard, action will be taken as per the instructions issued from time to time.

(c) If any of the conditions of approval are not followed or the report of the inspecting technical expert is not satisfactory, then further construction work will be stopped and the construction work will be considered unauthorized and may also be sealed. In such a case, completion certificate will not be issued, and the builder and his assistants will be considered guilty of criminal laxity and legal action will be taken accordingly.

(d) A board of size 4 feet x 3 feet shall be installed at a prominent place at the work place. On which the name of the builder and owner, the name of the architect, structural engineer, service design engineer and supervision engineer will be mentioned in such a way that it can be clearly read from the main road adjacent to the building. The following records will also be available at the work site related to construction work: -

(I) Signed and sealed copy of the map approved by the appointed authority.

(II) Complete report of soil testing done by the approved laboratory/institute and recommendations regarding provisions of the proposed foundation.

(III) Calculations of foundation, superstructure and all maps and structural details related to structural safety to make the building earthquake resistant, signed and sealed by an authorized structural engineer.

(IV) All working drawings including sections and elevations and services details etc. signed and sealed by the authorized architect.

(V) Details of all T&P required for the construction of the building.

(VI) Site Engineer Inspection Report Register.

(VII) Material testing report and related register.

(e) After completion of construction, no use of the building or its part will be made, nor will it be allowed, without obtaining the completion certificate.

Note:

In addition to the above, the appointed authority may prescribe other conditions as necessary.

11.8.4 Completion Certificate

(I) To obtain completion certificate from the land owner/builder, along with the application form to be submitted to the competent authority, a certificate to this effect will be given jointly by the concerned architect, site engineer, land owner/builder on *Appendix-11* that the building has been constructed with

the specifications, quality and structural design approved by the structural engineer based on the Indian Standards Institute code, National Building Code and relevant guidelines mentioned in Chapter-11.1 of the byelaws as per the approved map and with all anti-earthquake provisions and the building is safe for use in every way. The officer issuing the completion certificate will ensure that along with all other formalities related to issuing the completion certificate, the security related certificate is also available in the prescribed format. Only after this, completion certificate will be issued.

(II) If any building or any part thereof is put into unauthorized use or is likely to be used without obtaining completion certificate, such construction will be sealed and strict action will be taken against the building owner/builder as per rules.

11.8.5 Determination of qualifications

a) On the basis of construction work and earthquake resistant zone, the qualifications of Structural Engineers, Site Civil Engineers for site supervision and Expert Inspectional Civil Engineers for surprise inspection of work during construction work will be as per *paragraph 14.7 (Chapter-14)* of these regulations.
b) Post Graduate Structural Engineer mentioned in the said Appendices means, Graduate Degree in Civil Engineering from a recognized Technical Institute/University with Graduate Civil Engineer with Post Graduate Degree in Structural Engineer means Graduate Degree in Civil Engineering from a recognized technical institute/university or equivalent recognized technical qualification. And Diploma Civil Engineering means Diploma in Civil Engineering from a recognized technical institute/university.

12 Provisions for differently abled, elderly and children

12.1 Definitions

a. **Non-ambulatory Disabilities:** Impairments that, regardless of cause of manifestation, for all practical purposes, confine individuals to wheelchairs.

b. **Semi-ambulatory Disabilities:** Impairments that cause individuals to walk with difficulty or insecurity. Individuals using braces or crutches, amputees, arthritics, spastics, and those with pulmonary and cardiac ills may be semi-ambulatory.

c. **Hearing Disabilities:** Deafness or hearing handicaps that might make an individual insecure in public areas because he is unable to communicate or hear warning signals.

d. **Sight Disabilities:** Total blindness or impairments affecting sight to the extent that the individual, functioning in public areas, is insecure or exposed to danger.

e. **Wheelchair:** Chair used by disabled people for mobility. The standard size of wheelchair shall be taken as 1050 mm x 750 mm.

12.2 Scope

a. These regulations are applicable to all buildings and facilities used by the public such as educational, institutional, assembly, commercial, business, mercantile buildings, multi-units and group housing. It shall not apply to single unit residential dwellings.

b. For accessible buildings, at least one entrance and exit per facility should be accessible to a wheelchair user and persons with disabilities such as visually impaired, etc. For new buildings, the accessible entrance(s) should be the main entrance(s), and not side or back entry, intended for use of public.

c. Wherever waiting areas, coffee shops, display areas, merchandising departments, service areas, ticket counters, refreshment stands etc. are provided for public use, these facilities should be accessible to ‘all persons with disabilities’ and not just wheelchair user only.

d. In all buildings at least one unisex accessible washroom/toilet should be provided. In multi-level buildings, all floors should have one such facility near the general washrooms.

12.3 Site Development Specifications

Level of the roads, access paths and parking areas shall be described in the plan (in different colors) along with specification of the materials.

12.3.1 Access Path/ Walkway

Access path from plot entry and surface parking to Building entrance shall be minimum of 1800 mm. wide having even surface without any steps. Slope, if any, shall not have gradient greater than 5%. Selection of floor material shall be made suitably to attract floor material shall be made suitably to attract or to guide visually impaired persons (limited to coloured floor material whose colour and brightness is conspicuously different from that of the surrounding floor material or the material that emit different sound to guide visually impaired persons hereinafter referred to as "guiding floor material" (explained below). Finishes shall have a non-slip surface with a texture traversable by a wheelchair. Curbs wherever provided should blend to a common level.

Guiding/warning floor material - The floor material to guide or to warm the visually impaired persons with a change of colour or material with conspicuously different texture and easily distinguishable from the rest of the surrounding floor materials is called guiding or warning floor material. The material with different texture gives audible signals with sensory warning when a person moves on this surface with

walking stick. The guiding/warning floor material is meant to give the directional effect or warn a person at critical places. This floor material shall be provided in the following areas:

a. The access path to the building and to the parking area.

b. The landing lobby towards the information board, reception, lifts, stair-cases ad toilets.

c. Immediately at the beginning/end of walkway where there is a vehicular traffic.

d. At the location abruptly changing in level or beginning/end of a ramp.

e. Immediately in front of an entrance/exit and the landing.

Proper Signage - Appropriate identification of specific facilities within a building for the handicapped persons should be done with proper signages. Visually impaired persons make use of other senses such as hearing and touch to compensate for the lack of vision. Whereas visual signals benefit those with hearing disabilities. Signs should be designed and located so that they are easily legible by using suitable letter size (not less than 20 mm high). For visually impaired persons, information board in braille should be installed on the wall at a suitable height and it should be possible to approach them closely. To ensure safe walking there should not be any protruding sign which creates obstruction in walking. Public Address System may also be provided in busy public areas. The symbols/information should be in contrasting colour and properly illuminated because people with limited vision may be able to differentiate amongst primary colours. International symbol mark for wheelchair as shown below be installed at the lift, toilet, staircase, parking areas etc., that have been provided for the handicapped.

12.3.2 Parking

For parking of vehicles of disabled persons, following provisions shall be made:

a. Surface parking for at least two car-spaces shall be provided near the entrance of building/ premises with a maximum travel distance of 30.0 meter from building entrance. In case the access is through lift, the parking shall be located within 30.0 meter of the lift lobby.

b. The width and length of parking bay shall be minimum 3.6 m X 5.0m. where the minimum width includes transfer area beside the car with a minimum of 1200 mm. Where there are two accessible parking bays adjoining each other, then 1200mm side transfer bay shall be shared by two parking bays.

c. The information stating that the space is reserved for wheelchair users shall be conspicuously displayed (that is in big and clear letters).

d. Guiding floor materials shall be provided or a device which guides visually impaired persons with audible signals or other devices which serves the same purpose shall be provided.

e. Space should be provided for passenger drop-off / alighting points for taxis, public transport and for large vehicles such as vans, etc., as near as possible to the main accessible entrance. Vehicle drop-off areas should be a minimum of 9000 mm in length, have a minimum width of 3600 mm and be served by a kerb ramp.

f. At least one accessible route marked by tactile pavers leading to an accessible entrance of the building shall be provided from the alighting and boarding point of taxi stands and car park lots for people with disabilities.

12.4 Building Requirements

Specified facilities shall be provided in buildings for physically disabled persons with due regard to (a) access route to plinth level, (b) corridor connecting entry/exit for disabled, (c) stairway, (d) lift, (e) toilet, and (f) drinking water, as follows:

12.4.1 Approach to the plinth level.

Every building should have at least one entrance accessible to the handicapped and shall be indicated by proper signage. This entrance shall be approached through a ramp together with the stepped entry.

a) **Ramped approach:** Ramp shall be finished with non-slip material to enter the building. Minimum width of ramp shall be 1800 mm. with maximum gradient 1:12, length of ramp shall not exceed 9.0 meter having 800 mm high handrail on both sides extending 300 mm. beyond top and bottom of the ramp. Minimum gap from the adjacent wall to the handrail shall be 50 mm.
b) **Stepped approach:** For stepped approach size of tread shall not be less than 300 mm. and maximum riser shall be 150 mm. Provision of 800 mm. high handrail on both sides of the stepped approach similar to the ramped approach.
c) **Exit/ Entrance Door:** Minimum clear opening of the entrance door shall be 900 mm. and it shall not be provided with a step that obstructs the passage of a wheelchair user. Threshold shall not be raised more than 12 mm.
d) **Entrance Landing:** Entrance landing shall be provided adjacent to ramp with the minimum dimension 1800 mm x 2000 mm. The entrance landing that adjoins the top end of a slope shall be provided with floor materials to attract the attention of visually impaired persons (limited to coloured floor material whose colour and brightness is conspicuously different from that of the surrounding floor material or the material that emit different sound to guide visually impaired persons hereinafter referred to as 'guiding floor material" (*see paragraph 11.3.1*). Finishes shall have a non-slip surface with a texture traversable by a wheelchair. Curbs wherever provided should blend to a common level.

12.4.2 Corridor connecting exit/entrance for the disabled.

The corridor connecting the entrance/exit for handicapped leading directly outdoors to a place where information concerning the overall use of the specified building can be provided to visually impaired persons either by a person or by signs, shall be provided as follows:

a. Guiding floor material or devices that emit sound shall be provided, to guide visually impaired persons,
b. The minimum width shall be 1500 mm.
c. In case there is a difference of level slope ways shall be provided with a slope of 1:12.
d. Handrails shall be provided for ramps/slope ways.

12.4.3 Stairways

One of the stairways near the entrance/exit for the disabled shall have the following provisions:

a. The minimum width shall be 1350 mm.
b. Height of the riser shall not be more than 150 mm and width of the tread 300 mm. The steps shall not have abrupt (square) nosing (i.e. edges of the stairs shall be smooth and not pointed).
c. Maximum number of risers on a flight shall be limited to 12.
d. Handrails shall be provided on both sides and shall extend 300 mm on the top and bottom of each flight of steps.
e. Projected nosing and open stairs shall not be provided to minimize the risk of stumbling.
f. No appliances, fixtures or fittings shall project beyond 90 mm from the surface of any wall in a staircase below a level of 2100 mm, measured above the treads of the staircase. If such a projection is unavoidable, the same shall also be extended downwards to the level of the treads. However, in no case the width of the staircase shall be less than that prescribed in these byelaws.

12.4.4 Lift

Whenever lift is required as per byelaws, provision of at least one lift shall be made for the wheelchair user with the following cage dimensions of lift recommended for passenger lift of 13 persons capacity

by Bureau of Indian Standards. Clear internal depth 1100 mm, Clear internal width 2000 mm, and Entrance door width 900 mm.

a. A handrail not less than 600 mm. long at 1000 mm above floor level shall be fixed adjacent to the control panel.
b. The lift lobby shall be of an inside measurement of 1800 mm x 1800 mm. or more.
c. The time of an automatically closing door shall be minimum 5 seconds and the closing speed should not exceed 0.25 Meter/Sec.
d. The interior of the cage shall be provided with a device that audibly indicates the floor the cage has reached and indicates that the door of the cage for entrance/exit is either open or closed.

12.4.5 Toilet

One special Water Closet (WC) in a set of toilets shall be provided for the use of handicapped, with essential provision of wash basin near the entrance for the disabled/handicapped.

a. The minimum size shall be 1500 mm x 1750 m.
b. Minimum clear opening of the door shall be 900 mm. and the door shall swing out.
c. Suitable arrangement of vertical/horizontal handrails with 50 mm. clearance from wall shall be made in the toilet.
d. The seat of the Water Closet (Commode) shall be 500 mm from the door.

12.4.6 Drinking Water

Suitable provision of drinking water shall be made for the disabled/handicapped near the special toilet provided for them.

12.4.7 Building design for children

In the buildings meant for the pre-dominant use of the children, it shall be necessary to suitably alter the height of the handrail and other fitting & fixtures etc.

12.4.8 Refuge

An alternative to immediate evacuation of a building via staircases and/ or lifts for the movement of persons with disabilities to areas of safety within a building. If possible, they could remain there until the fire is controlled and extinguished or until rescued by the fire fighters.

a. It is useful to have the provisions of a refuge area, usually at the fire protected stair landing on each floor that can safely hold one or two wheelchairs.
b. Hand Doorways with clear opening width of 900mm ensuring regular compliance and
c. Have an alarm switch installed between 900mm and 1200mm from floor level.
d. All stairs next to the refuge shall be with a clear width of 1500mm between the handrails.

12.4.9 Proper Signage

a. Appropriate identification of specific facilities within a building for the persons with disabilities should be done with proper signals.
b. Signs should be designed and located so that they are easily legible by using suitable letter size (not less than 20 mm high).
c. For visually impaired persons, information board in Braille should be installed on the wall at a suitable height and it should be possible to approach them closely.
d. To ensure safe walking, there should not be any protruding sign which creates obstruction in walking.
e. Public Address System shall also be provided in busy public areas.
f. The symbols/information should be in contrasting colour and properly illuminated because people with limited vision shall be able to differentiate amongst primary colours.
g. International Symbol Mark for wheelchair be installed in a lift, toilet, staircase, parking areas, etc., that have been provided for the differently abled.

13 Environmental Sustainability

The general principles for sustainability in buildings shall be in accordance with Part 11- 'Approach to Sustainability' of NBC 2016.

13.1 Water Conservation

13.1.1 Water management during construction

Water from authorized sources shall be used for construction. Where ground water is used for construction, permission from the concerned ground water authority shall be taken. Less water intensive construction methods may be employed using prefabricated members, pre-mix concrete, curing agents, etc.

On construction sites, potable water shall be used only for drinking, human activities and concrete works. Use of potable water for any other construction activity may not be allowed. Treated wastewater from appropriate sources should be used in such construction activities after complying with all the required parameters for water use.

13.1.2 Rainwater Harvesting

Rainwater harvesting shall be achieved by adopting the techniques given below:

a) storage of rainwater on surface for future use; and

b) recharge to ground water

All public open spaces and recreational area shall make provisions for rainwater harvesting.

Requirements of Layout/Sub-division Plan for Development Permission

(a) Before making a new plan, geological /hydrological /hydrogeological survey of the area should be conducted and appropriate method should be adopted as per local requirement for recharging of ground water.

(b) In the layout plans of schemes having an area of more than 10 acres (>4 hectares), reservoir(s) shall be constructed at suitable places within the land proposed for parks and open areas, wherein such area shall be a minimum 01 percent of total scheme area. Prior to building such reservoir(s) in such scheme, while identifying natural rainwater catchment areas, the size and depth of such reservoir shall be determined, after study/assessment of envisaged volume of rainwater, hydrogeological, topography, lithology, soil properties of the area, possible retention and 'stagnation' of rainwater in the proposed reservoir and the feasibility thereof. However, the maximum depth of the reservoir should be kept at 02 meters. Apart from this, arrangements should be made to dispose only the 'surface-run-off' of that scheme in the reservoir; polluted water and effluent should not be mixed in it. Recharge pit/recharge shaft should be made in one corner of the park and open area as per the prescribed standards. Such recharge pits/recharge shafts and reservoirs should be constructed in the direction of the slope in accordance with the regional hydrogeology.

(c) Concrete construction in parks should not be more than 5 percent, including concrete pavement and footpaths and tracks, and should be made using 'permeable' or semi-permeable perforated blocks as much as possible. Maximum underground seepage of rainwater should be encouraged in parks and open areas.

(d) Such trees and plants shall be planted on roads, parks and open spaces which require minimum water and which can absorb less water and remain green even in summer.

(e) In the layout plans of new schemes, in addition to infrastructure facilities like water supply, drainage and sewerage network, other separate networks shall be provided for collective recharge of ground water through roof-top rainwater harvesting with an arrangement for recharging pits for individual plots/ buildings and recharging structures at other suitable places.

(f) In the layout plans of new schemes, for plots of areas from 100-300 square meters, it shall not be mandatory to establish rainwater harvesting system in individual buildings if the rainwater from group of buildings flows into the network of the collective recharge of the scheme. However, in relation to buildings constructed on plots of area more than 300 square meters, then it shall be mandatory for the building owner to install rainwater harvesting system himself.

Requirements of Building Plan submitted along with application for permission.

In case of no collective recharge network, roof top rainwater harvesting system in plots of all uses of 300 square meters and more area (including group housing) except waterlogged areas. Construction of rainwater harvesting structures shall be ensured as per standard technology and rainwater shall be allowed to penetrate the soil to the minimum required depth so that the problem of pollution of ground water sources does not arise. Ground water recharging system should not be adopted in areas with water logging problem, but arrangements can be made to collect rainwater received from the roofs of buildings.

Environmental Conditions required for buildings (amended from time to time):

Built-up area	Requirements
Category-A (5000-20000 sqm) Category-B (20000 -50000 sqm) Category-C (50000-150000 sqm)	• A rainwater harvesting plan needs to be designed where the recharge bores (minimum one per 5000 sqm of built-up area) shall be provided. The rainwater harvested should be stored in a tank for reuse in household through a provision of separate water tank and pipeline to avoid mixing with potable municipal water supply. The excess rainwater harvested be linked to the tube well bore in the premise through a pipeline after filtration in the installed filters. • The unpaved area shall be more than or equal to 20% of the recreational open spaces.
Additional Conditions Category-C (50000-150000 sqm)	• The ground water shall not be withdrawn without approval from the competent authority. • Use of potable water in construction should be minimized. • Low flow fixtures and sensors must be used to promote water conservation. • Separation of grey and black water should be done by the use of dual plumbing system.

13.2 Energy Conservation

For all public buildings or building complexes with a connected load of 100 kW or greater or having a contract demand of 120 KV or greater and intended to be used for commercial purpose, Energy Conservation Building Code (ECBC) standards, as amended from time to time, shall be applicable.

Occupancy sensors, movement sensors, lux level sensors, etc, may also be considered as switching options for lights, fans, TV, etc, for different closed spaces.

13.2.1 Energy Conservation through Efficient Lighting

A substantial portion of the energy consumed on lighting may be saved by utilization of daylight and rational design of supplementary artificial lights. In common areas, cost effective and energy saving LED/solar lights may be provided.

All exterior lighting may use solar-powered lighting and be fitted with automatic controls so that the lights do not operate during daylight hours.

13.2.2 Energy Conservation through Efficient HVAC

Maximum possible use shall be made of wind induced natural ventilation. An adequate number of circulating fans shall be installed to serve all the rooms during summer months in hot and warm regions and dry and humid conditions.

13.2.3 Solar Energy

All efforts shall be made towards optimum and efficient use of renewable energy in buildings and, thereby reduce the building's dependency on fuels derived from conventional sources. This may be achieved by installing solar water heater and Solar Photovoltaic (SPV) systems. To facilitate the installation of such a solar system, at least 25-50 percent of roof area may be utilized for installation of solar water heater and SPV system in new buildings.

13.2.3.1 Solar Photovoltaic Power Generation System

All plots having size 500 sqm and above shall install solar photovoltaic power generation system. This should also be encouraged for plots smaller than 500 sqm. The power generated may be used for in-house utilization or for transfer to the grid.

13.2.3.2 Solar Water Heating System

No new building in the following categories in which there is a system of installation for supplying hot water shall be built unless the system of the installation is also having an auxiliary solar assisted water heating system. Solar water heating systems shall be provided in the following buildings:

a) hotels, lodges, guest houses, service apartments;
b) institutional buildings (hospitals and nursing home);
c) schools, colleges, universities, technical institutions, training centres;
d) assembly buildings (auditorium, community halls, wedding/banquet halls, etc);
e) barracks of armed forces/paramilitary forces and police forces;
f) hostels for schools, colleges, and training centres with more than 100 students.

13.2.4 Energy Efficiency Compliance

Environmental Conditions required for buildings (amended from time to time):

Built-up area	Requirement
Category-A (5000-20000 sqm)	• In common areas, LED/ solar lights must be provided.
Category-B (20000 -50000 sqm) Category-C (50000-150000 sqm)	• In common areas, LED/ solar lights must be provided. • At least 1% of connected applied load generated from renewable energy source such as photovoltaic cells or windmills or hybrid should be provided. • As per the provisions of the Ministry of New and Renewable energy solar water heater of minimum capacity 10 litres/4 persons (2.5 litres per capita) shall be installed. • Use of fly ash bricks: Fly ash should be used as building material in the construction as per the provisions of Fly Ash Notification of September 1999 and as amended from time to time.
Category-C (50000-150000 sqm)	• Use of concept of passive solar design of buildings using architectural design approaches that minimize energy consumption in buildings by integrating conventional energy-efficient devices, such as mechanical and electric pumps, fans, lighting fixtures and other equipment, with the passive design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass. • Optimize use of energy systems in buildings that should maintain a specific indoor environment conducive to the functional requirements of the building by following mandatory compliance measures (for all applicable buildings) as recommended in the Energy Conservation Building Code (ECBC) 2007 of the Bureau of Energy Efficiency, Government of India.

13.3 Natural Drainage

Environmental Conditions required for buildings (amended from time to time):

Built-up area	Requirement
Category-A (5000-20000 sqm)	The inlet and outlet point of natural drain system should be maintained with adequate size of channel for ensuring unrestricted flow of water.
Category-B (20000 -50000 sqm)	
Category-C (50000-150000 sqm)	

13.4 Solid Waste Management

All buildings shall provide facilities for solid waste management with segregation of dry and wet waste at source. For waste management in residential buildings (including group housing) and all non-residential buildings with an area of more than 500 square meters, two types of dustbins (biodegradable and non-biodegradable) shall be provided on the ground floor near the entrance of the plot so that it becomes easy for the local body to collect garbage from dustbins every day, de-process it at ward or sector level and prepare fuel cake, fertilizer, paper etc.

Environmental Conditions required for buildings (amended from time to time):

Built-up area	Requirement
Category-A (5000-20000 sqm)	• Separate wet and dry bins must be provided at the ground level for facilitating segregation of waste.
Category-B (20000 -50000 sqm)	
Category-C (50000-150000 sqm)	
Category-C (50000-150000 sqm)	• All non-biodegradable waste shall be handed over to authorized recyclers for which a written tie-up must be done with the authorized recyclers. • Organic waste composter/vermiculture pit with a minimum capacity of 0.3 Kg/tenement/day must be installed wherein the STP sludge may be used to be converted to manure which could be used at the site or handed over to authorized recyclers for which a written tie-up must be done with the authorized recyclers.

13.5 Wastewater Recycling

Wastewater generated from residential, industrial, medical, commercial and wastewater generated from garbage shall be treated as per the guidelines given by the state pollution control board.

A wastewater recycling facility shall be installed wherever the minimum estimated water discharge from the building(s) on a plot exceeds 10,000 liters per day.

The applicant shall, along with their application for obtaining necessary development permit/ building permit, submit as part of the services plans, a plan showing the location of wastewater treatment plant, furnishing details of calculations, references, implementation, etc. This plan shall accompany the applicant's commitment to monitor the system periodically from the date of occupation of the respective building.

Provisions of recycling system

The applicant shall along with his application submit the designs, plans, calculations and the references used for the calculations etc. to provide the system to recycle the grey water. Such system shall include the provisions to facilitate the following:

(i) Treated grey water is pumped to a separate tank on the roof from where grey water will be supplied to water closets, garden taps, car washing taps etc.
(ii) Only water from water closets should be let in to sewerage system.

(iii) Wherever arrangements for reuse of recycled water is provided, additional arrangements for carrying the excess grey water to the sewerage system may also be provided.

(iv) The recycled water shall be used for non-potable, no contact purposes within premises and shall not be connected to sewage/wastewater system of local authority. However, the waste generated by the recycle plant can be connected to local authority sewer network if it is of the accepted quality as mentioned in the guidelines of competent authority.

(v) Separation of grey water:

(a) The wastes from toilets in the premises will be separated from grey water that is of bathroom and kitchen wastes by means of separate down take discharge system.

(b) The grey water shall be recycled by providing recycling plant and shall be reused for non-potable purposes after storing the same in distinctly separate tank by means of purple coloured down take pipes.

(c) The water quality shall conform to standards of non-potable water. The recycled water shall be tested once in six months and results shall be made available to competent authority whenever demanded.

(d) The make-up connection to the system will be done at the collection tank of the treated water, through a free fall if from Municipal water connection.

(e) Separate plumbing for grey water: Every developer/owner shall provide the newly constructed building with the provision of down take plumbing for grey water, recycling water plant, storage and reuse fitting before selling the building.

(vi) Reuse of water strictly for not potable non-contact use.

a. The reuse of water will be strictly for not potable use by means of providing a distinctly separate reuse system coloured in purple. The non-contact uses shall be restricted to toilet flushing, drip irrigation of trees/shrubs, sub surface irrigation of lawns and recharge of ground water.

b. There shall not be cross-connection of fitting of the potable and not potable water at any point. The recycled water system shall be maintained at a lower operating pressure that of the potable water system. Precautions should be taken to prevent cross contamination.

Quality of Water and Treatment

(i) The water generated after treatment should be safe for its use for flushing toilets, gardening etc.

(ii) The company or the agency engaged for installation of system for recycling of wastewater shall preferably confirm ISO:14000.

(iii) Provision may be made for checking the quality of recycled water with Water testing laboratory with Municipal Corporation or Jal Nigam.

(iv) The testing of wastes and the submission of the results shall be done in a manner in accordance with the terms and conditions prescribed by the Municipal Commissioner or Uttar Pradesh Pollution Control Board (UPPCB) / Competent authority.

13.6 Air Quality & Noise

Environmental Conditions required for buildings (amended from time to time):

Built-up area	Requirement
Category-A (5000-20000 sqm)	• Dust, smoke and debris prevention measures such as screens, barricading shall be installed at the site during construction. Plastic/ tarpaulin sheet covers must be used for trucks bringing in sand and material at the site.
Category-B (20000 -50000 sqm)	
Category-C (50000-150000 sqm)	

	• The exhaust pipe of the DG set, if installed, must be minimum 10m away from the building. In case it is less than 10m away, the exhaust pipe shall be taken up to 3m above the building.

13.7 Green Cover/ Tree Plantation

In alignment with National Mission for Sustainable Habitat, the Authority encourages augmentation of green cover in the city/plot by implementing relevant provisions of the Urban Greening Guidelines, 2014 circulated by Ministry of Housing and Urban Affairs, Government of India.

Landscape Plan submitted along with Site Plan for Building Permission

Landscape plan showing plantation of trees while keeping the circulation area free from obstructions.

(a) In residential plots
i. One tree on a plot of area less than 200 square meters.
ii. Two trees on a plot of 200 to 300 square meters area.
iii. Four trees on a plot of area 301 to 500 square meters.
iv. One tree per 100 square meter area or part thereof in a plot of area more than 500 square meter.
v. 50 trees per hectare in group housing scheme.

(b) In industrial plots
One tree per 80 square meter plot of land.

(c) In commercial plots
One tree per 100 square meter area.

(d) Institutional/community facilities, playgrounds, open areas and parks

There shall be greenery on a minimum of 20% of the total area where trees shall be planted at the rate of 125 trees per hectare.

Environmental Conditions required for buildings (amended from time to time):

Built-up area	Requirement
Category-A (5000-20000 sqm)	• A minimum of 1 tree for every 80 sqm of land shall be planted and maintained. The existing trees will be counted for this purpose. Preference should be given to planting native species. The Trees shall preferably be shade-giving. • Where the trees need to be cut, compensatory plantation in the ratio of 1:3 (i.e. planting of 3 trees for every 1 tree that is cut) shall be done with the obligation to provide continued maintenance for such plantations.
Category-B (20000 -50000 sqm)	
Category-C (50000-150000 sqm)	

(i) Trees shall be planted without causing obstruction to the easy movement of fire fighting vehicles in case of fire emergency.
(ii) The requirement of trees shall be reduced on the basis of the number of grown existing trees that are conserved and not affected by the proposed development.
(iii) A person applying for permission to carry out any development shall have to pay tree plantation deposit along with his application to the Competent Authority at the rates decided by the Competent Authority from time to time. This deposit shall be refundable after the period of five years with the condition that trees planted on the site shall be grown-up and maintained properly, otherwise the deposit shall be forfeited and shall be utilised only for tree plantation and maintenance by the Competent Authority.

(iv) Competent Authority may consult Forest and Environment Department for tree typology, plantation and maintenance, etc. if required.

13.8 Environment Impact Assessment

Environmental Conditions required for buildings (amended from time to time):

Built-up area	Requirement
Category-A (5000-20000 sqm)	-
Category-B (20000 -50000 sqm)	No development permission shall be given to the Building and Construction projects, until getting Environment Clearance from SEIAA (State Level Environment Impact Assessment Authority) as required under the Environmental Impact Assessment notification-2006 and amended from time to time. If the developer wishes to split the project into phases, developer has to produce Environment Clearance from SEIAA, prior to the approval of first phase of the project.
Category-C (50000-150000 sqm)	
Category-D (>150000 sqm or Site Area >50 Ha)	No development permission shall be given to the Townships and Area Development projects until getting Environment Clearance from SEIAA (State Level Environment Impact Assessment Authority) as required under the Environmental Impact Assessment notification-2006 and amended from time to time. If the developer wishes to split the project into phases, developer has to produce Environment Clearance from SEIAA, prior to the approval of first phase of the project.

13.9 Environment Management Plan

For all buildings above 50,000 sqm built up area:

Environmental Conditions required for buildings (amended from time to time):

Built-up area	Requirement
Category-A (5000-20000 sqm)	-
Category-B (20000 -50000 sqm)	-
Category-C (50000-150000 sqm)	The environment infrastructure like Sewage Treatment Plant, Landscaping, Rainwater Harvesting, Power backup for environment, Infrastructure, Environment Monitoring, Solid Waste Management and Solar and Energy conservation, should be kept operational through Environment Monitoring Committee with defined functions and responsibility

14 Qualifications and Competence of Licensed Technical Persons

14.1 Essential Requirements

Every building/ development work for which permission is sought under the Code shall be planned, designed, and supervised by licensed persons. The licensed persons for carrying out the various activities shall be a) architect, (b) engineer, (c) structural engineer, (d) supervisor, (e) town planner, (f) landscape architect, (g) urban designer, and (h) utility service engineer. Requirements of registration for various professionals by the Authority or by the body governing such profession and constituted under a statute, as applicable to practice within the local body's jurisdiction, are given in 14.2.1 to 14.2.5. The competence of such licensed personnel to carry out various activities is also indicated in 14.2.1.2 to 14.2.5.2.

14.2 Qualifications and Competence of Licensed Persons

14.2.1 Architect:

14.2.1.1 Qualifications: The minimum qualifications for an architect shall be the qualifications as provided for in the Architects Act, 1972 for registration with the Council of Architecture.

14.2.1.2 Competence: The licensed architect shall be competent to carry out the work related to the building/development permit as given below:
a) All plans and information connected with building permit except engineering services of multistoried/special buildings.

b) Issuing certificate of supervision and completion of all buildings pertaining to architectural aspects.

c) Preparation of sub-division/layout plans and related information connected with development permit of area up to 1 hectare for metro-cities and 2 hectares for other places.

d) Issuing certificate of supervision for development of land of area up to 1 hectare for metro-cities and 2 hectares for other places.

14.2.2 Engineer

14.2.2.1 Qualifications: The minimum qualifications for an engineer shall be graduate in civil engineering/architectural engineering of recognized Indian or foreign university, or the Member of Civil Engineering Division/Architectural Engineering Division of the Institution of Engineers (India) or the statutory body governing such profession, as and when established.

14.2.2.2 Competence: The licensed engineer shall be competent to carry out the work related to the building/development permit as given below:
a) All plans and information connected with building permit.

b) Structural details and calculations of buildings on plot up to 500 sq.m and up to 5 storeys or 16.0 m in height.

c) Issuing certificate of supervision and completion for all buildings.

d) Preparation of all service plans and related information connected with development permit; and

e) Issuing certificate of supervision for development of land for all area.

14.2.3 Structural Engineer

14.2.3.1 Qualifications: The minimum qualifications for a structural engineer shall be graduate in civil engineering of recognized Indian or foreign university, or Corporate Member of Civil Engineering

Division of Institution of Engineers (India), and with minimum 3 years' experience in structural engineering practice with designing and field work.

NOTE- The 3 years' experience shall be relaxed to 2 years in the case of post-graduate degree of recognized Indian or foreign university in the branch of structural engineering. In case of doctorate in structural engineering, the experience required would be one year.

14.2.3.2 Competence: The licensed structural engineer shall be competent to prepare the structural design, calculations and details for all buildings and supervision.

A-2.3.1.1 In case of buildings having special structural features, as decided by the Authority, which are within the horizontal areas and vertical limits specified in A-2.2.1(b) and A-2.4.1(a) shall be designed only by structural engineers.

14.2.4 Supervisor

14.2.4.1 Qualifications
The minimum qualifications for a supervisor shall be diploma in civil engineering or architectural assistantship, or the qualification in architecture or engineering equivalent to the minimum qualification prescribed for recruitment to non-gazetted service by the Government of India plus 5 years' experience in building design, construction and supervision.

14.2.4.2 Competence
The licensed supervisor shall be competent to carry out the work related to the building permit as given below:
a) All plans and related information connected with building permit for residential buildings on plot up to 100 m2 and up to two storeys or 7.5 m in height; and
b) Issuing certificate of supervision for buildings as per (a)

14.2.5 Town Planner

14.2.5.1 Qualifications
The minimum qualification for a town planner shall be graduate or post-graduate degree in town and country planning with Associate Membership of the Institute of Town Planners.

14.2.5.2 Competence
The licensed town planner shall be competent to carry out the work related to the development permit as given below.
a) Preparation of plans for land sub-division/layout and related information connected with development permit for all areas.
b) Issuing of certificate of supervision for development of land of all areas.

NOTE- However, for land layouts for development permit above 5 hectares in area, landscape architect shall also be associated, and for land development infrastructural services for roads, water supplies, sewerage/drainage, electrification, etc. the licensed engineers for utility services shall be associated.

14.2.6 Landscape Architect

14.2.6.1 Qualifications
The minimum qualification for a landscape architect shall be the bachelor's or master's degree in landscape architecture or equivalent from recognized Indian or foreign university.

14.2.6.2 Competence

The licensed landscape Architect shall be competent to carry out the work related to landscape design for building development permit for land areas 5 hectares and above. In case of metro cities, this limit of land area shall be 2 hectares and above.

Note: For smaller areas below the limits indicated above, association of landscape architect may also be considered from the point of view of desired landscape development.

14.2.7 Urban Designer

14.2.7.1 Competence
The minimum qualification for an urban designer shall be master's degree in urban design or equivalent from recognized Indian or foreign university.

14.2.7.2 Competence
The licensed urban designer shall be competent to carry out the work related to the building permit for urban design for land areas more than 5 hectares and campus area more than 2 hectares. He/She shall also be competent to carry out the work of urban renewal for all areas.

Note: For smaller areas below the limits indicated above, association of landscape architect may also be considered from the point of view of desired urban design.

14.2.8 Engineers for Utility Services

For multistoried/special buildings the work of building and plumbing services shall be executed under the planning, design and supervision of competent personnel. The qualification for licensed mechanical engineer (including HVAC), electrical engineer and plumbing engineers for carrying out the work of Air-conditioning, Heating and Mechanical Ventilation, Electrical Installations, Lifts and Escalators and Water Supply, Drainage. Sanitation and Gas Supply installation respectively shall be as given in Part 8 'Building Services' and Part 9 'Plumbing Services' of National Building Code, 2016 or as decided by the Authority taking into account practices of the National Professional bodies dealing with the specialist engineering services.

14.3 Builder/ Developer Entity

The minimum qualification and competence for the builder/developer entity for various categories of building and infrastructural development shall be as decided by the Authority to ensure compliance of quality, safety and construction practices as required under the National Building Code, 2016.

14.4 Qualifications of structural engineers in earthquake zone

Chartered Structural Engineer: Minimum experience (in years) to supervise the design and construction of multi-storey buildings and related infrastructure facilities.

<table>
<tr><th rowspan="2">For multi-storey buildings/ critical infrastructure facilities</th><th colspan="6">Building location in Earthquake Zone</th></tr>
<tr><th>Zone-1</th><th>Zone-2</th><th>Zone-3</th><th>Zone-4</th><th>Zone-5</th><th>Zone-6</th></tr>
<tr><td>up to a maximum 4-storeys or 12-meter height or 2500 sqm. floor area.</td><td colspan="3">Graduate SE: 3 years
P.Graduate SE: 1 year</td><td colspan="2">Graduate SE: 5 years
P.Graduate SE: 3 year</td><td></td></tr>
<tr><td>up to a maximum 8-storeys or 24-meter height or 5000 sqm. covered area.</td><td colspan="3">Graduate SE: 7 years
P.Graduate SE: 5 year</td><td colspan="2">Graduate SE: 9 years
P.Graduate SE: 7 year</td><td></td></tr>
<tr><td>with more than 8-storeys or height more than 24-meters or covered area more than 5000 sqm.</td><td colspan="6">Graduate SE: 10 years; Post-graduate SE: 8 years.

The structural design shall be countersigned by a Professor of Structural</td></tr>
</table>

	Engineering of IIT Roorkee University or any other specified technical institute.

Authorized Site Civil Engineer: Minimum experience (in years) to supervise the design and construction of multi-storey buildings and related infrastructure facilities

For multi-storey buildings/ critical infrastructure facilities	Building location in Earthquake Zone					
	Zone-1	Zone-2	Zone-3	Zone-4	Zone-5	Zone-6
up to a maximum 4 storeys or 12 meters height or 2500 sqm. floor area**	Diploma Civil Engr: 6 years Graduate Civil Engr: 3 years			Diploma Civil Engr: 10 years Graduate Civil Engr: 5 years		
up to a maximum 8 storeys or 24-meter height or 5000 sqm. covered area**	Diploma Civil Engr: NA* Graduate Civil Engr: 6 years			Diploma Civil Engr: NA* Graduate Civil Engr: 10 years		
with more than 8 storeys or height more than 24 meters or covered area more than 5000 sqm.**	Diploma Civil Engr: NA* Graduate Civil Engr: 15 years					

*NA – Not Authorized

**Note: One site engineer of specified qualification shall be deployed to supervise every 2500 sqm.

Inspecting Civil Engineer: Minimum experience (in years) to supervise the design and construction of multi-storey buildings and related infrastructure facilities

For multi-storey buildings/ critical infrastructure facilities	Building location in Earthquake Zone					
	Zone-1	Zone-2	Zone-3	Zone-4	Zone-5	Zone-6
up to a maximum 4 storeys or 12 meters height or 2500 sqm. floor area.	Graduate Civil Engr: 5 years			Graduate Civil Engr: 7 years		
up to a maximum 8 storeys or 24-meter height or 5000 sqm. covered area.	Graduate Civil Engr: 8 years			Graduate Civil Engr: 10 years		
with more than 8 storeys or height more than 24 meters or covered area more than 5000 sqm.	Graduate Civil Engr: 15 years. A joint panel of two serving/retired experts shall be deployed to inspect these construction works, in which one expert should at least be of the level of Chief Engineer/equivalent in any engineering department/undertaking of the State/Central Government, and the other expert, as far as possible, should be in a specified technical field. The experts shall be of the level of Professor of Civil Engineering Department of the Institute, in whose absence both the experts shall be of the level of Chief Engineer/equivalent.					

14.5 Licensed qualified third-party agency for fire and life safety systems

The minimum qualification and competence for the entities to act as 'licensed qualified third-party agencies for installation and maintenance of fire-prevention and life safety systems' shall be as decided by the Director General, Uttar Pradesh Fire and Emergency Services.

Licenses to act as qualified third-party agencies for fire-prevention and life safety systems shall be issued for Fire Department as per the provisions of Section-26 of the Uttar Pradesh Fire and Emergency Services Act, 2022 and corresponding rules.

15 Zoning Regulations

15.1 Objectives of Zoning

In general, only major land uses like residential, commercial, industrial, offices, public and semi-public facilities, parks and open spaces, agriculture, etc. are shown in the master plan. Permissible activities under major land uses, which are not possible to be shown separately on the master plan map, are permitted based on zoning regulations. The competent authority is expected to make provision for various ancillary activities/uses in the new plans as per the zoning regulations and effective building construction and development byelaws so that public health, welfare, and safety can be ensured.

15.1.1 Use Zone Definitions (16)

Sl.	Land Use Zones	Explanation
1	Built-up	Land/ Area marked as "Built-up Area" in the Master Plan.
2	Residential	Land allotted for housing purposes/ activities, including single/ family units, apartments, group housing etc.
3	Mixed Use	Land allotted for combination of residential, commercial, and other uses in both Built-up and Non-Built-up Area
4	Commercial 1 (Retail/ CBD/Sub CBD/ Bazaar Street)	Land allotted for commercial activities, such as retail stores, commercial complex, and bazaar streets, shopping malls etc.
5	Commercial 2 (Wholesale/ Godown / Storage)	Land allotted for commercial activities such as storage and distribution of goods, typically in bulk, for resale to retailers or other businesses.
6	Small Industries	Land allotted for construction of small-scale industries such as cottage industries, non-hazardous industrial establishment that produces products which create less environmental impact.
7	Large Industries	Land allotted for construction of large-scale industries accommodating industrial premises with huge infrastructure, raw material, high manpower requirements. It also includes hazardous industrial establishments.
8	Office Buildings	Land allotted for government, private, corporate offices, banks etc.
9	Public and Semi-public Facilities	Land allotted for institutions such as healthcare and education facilities, community facilities, public utilities, and other services.
10	Traffic and Transportation	Land allotted for roads, railways, airports, and other transportation infrastructure such as terminals, parking etc.
11	Forest	Land earmarked as forest in the development authority area and not predominantly used for agriculture or urban purposes.
12	Recreational (parks, regional parks, playgrounds)	Land allotted for leisure and recreational activities, including parks, playground, sports facilities, and open spaces.
13	Green Belt	Land earmarked to retain areas of largely undeveloped, wild, or agricultural land surrounding or neighboring urban areas.
14	Grameen Abaadi	Land earmarked as rural settlement in the master plan.
15	Agriculture	Land earmarked for agriculture and related activities such as farming, crop cultivation, dairy farms, and animal husbandry etc.

Sl.	Land Use Zones	Explanation
16	Highway Facilities	Land allotted along the highways primarily used for commercial and roadside services to cater to the traveling public, such as rest areas, food courts, retail spaces, and associated infrastructure.
17	Additional Land use	

15.1.2 Permission categories of various activities/appliances

There shall be the following permission categories for various activities under the major land use zones proposed in the master plan:

(i) **Permissible Activities:** Those activities which are incidental to the respective major land uses and are generally permissible.
(ii) **Prohibited Activities:** Those activities which are not permitted in the respective major land use zone.

For activities which are similar to those mentioned as part of paragraph 15.2 of the byelaws, the board of the authority may allow their permissibility accordingly. In case of any further clarification, the matter may be recommended to the committee constituted as part of paragraph 1.4 of the byelaws.

Permissibility of activities in the entire development area shall be governed by these zoning regulations including layouts approved/ developed by the authority.

15.1.3 Impact Fee

(i) Under the schemes approved/developed by the Authority or elsewhere in the development area, applications may be received for permission for other activities. Such applications shall be considered subject to the provisions contained in paragraph 15.3. For allowing higher use activities in lower land use zones, "impact fee" shall be payable by the applicant at the time of such permission as per paragraph 15.4.

(ii) The impact fee shall be collected as per the provisions contained in the Uttar Pradesh Urban Planning and Development (Impact Fee) Rules, 2025.

(iii) Impact fee shall not be payable in the following circumstances:

a) For generally permitted activities/uses in the built-up area,
b) For public and semi-public facilities/activities to be developed by government and semi-government agencies in mixed land use zones,
c) For activities/uses to be permitted temporarily (maximum time limit one week) in various major land use zones,
d) Impact fee shall not be payable for the activities/uses which have been permitted in certain land use zones as per government orders under various policies declared by the State Government - Tourism Policy, Information Technology Policy, Film Policy, etc.
e) Impact fee shall also not be payable for permission of hotels in all other land uses except parks and open spaces, gardens, green areas, forest areas, hazardous industries, flood affected areas, and for permission of information technology units/information technology parks up to five KVA capacity in residential areas.
f) Impact fee shall not be payable for permission of hotel for use other than hotel or commercial use.

(iv) Activities other than the master plan land use or land use as defined in the approved layouts, shall be permitted after inviting objections/suggestions from the public as per prescribed procedure.

15.2 Definitions of land use activities

15.2.1 Residential

1	Single unit	Premises consisting of independent residential units (plotted houses).
2	Multi-unit	Premises consisting of multiple residential units (in case of plotted houses).
3	Group Housing	Premises consisting of a building of two or more storeys with independent residential units on each floor and in which land and services, open spaces and conveyances are shared and co-owned.
4	Related Workers/ Employees/ Staff Accommodation	Premises in which residential units for the same use are provided as independent or group accommodation for employees employed in a principal use.
5	Watchman / Guard accommodation	The premises in which residential arrangements have been made for the people involved in the security and maintenance of the ancillary sub-use.
6	Homestay or Paying guest	Residential premises of local citizens (host) in tourism centric places/ business centric places offered or shared with visitors travelling to such places, in the form of hospitality and lodging.

15.2.2 Commercial

1	Retail Shops	Premises where essential commodities are sold directly to consumers. This includes grocery stores, vegetable stores
2	Showroom	The premises where the sale and storage of goods is done with arrangements for displaying them for consumer interest.
3	Flour Mill	The premises where wheat, spices, dry food items etc. are ground and prepared for daily use.
4	Wholesale Market/Trade	Premises where goods and commodities are sold and delivered to wholesalers. The premises also include storage and godowns and facilities for loading and unloading goods.
5	Auction Market	A place where various types of goods are brought only for buying and selling through auction. No kind of storage is allowed at such a place and this place is completely open in which there can be only one operating room.
6	Cold Storage	The premises where perishable goods are stored in a covered space using mechanical and electrical equipment to maintain the required temperature etc.
7	Hotel	Premises which are used for accommodation on payment with or without meals.
8	Motel	That premises, which is situated along the main road and where there are arrangements for the convenience of the passengers including accommodation, food and drinks and parking for vehicles.
9	Resort	A natural or artificially created place which is used recreationally for a short/short period of time. In such premises, apart from night rest, other public facilities are also available.

10	Canteen	Premises that are used to provide food, including cooking facilities, to the employees of an organization/customers. It may have a seating area.
11	Restaurant	Premises used for serving food on a commercial basis, including cooking facilities. The seating area may be covered or open or both. This includes cafes.
12	Cinema	A premises that provides movie projection facilities including seating areas for spectators.
13	Miniplex	"Miniplex" means a single screen cinema licensed for cinematograph exhibition or exhibition through digital projection system in a permanent building with seating capacity not exceeding 125.
14	Multiplex	"Multiplex" means a group or conglomeration of two or more than two cinema halls within same premises with commercial, cultural, and other entertainment related facilities.
15	PCO/ Cellular Mobile Service	That premises from where there is provision for local, interstate, country-foreign, etc. telephone or cellular conversation on payment of fee.
16	Petrol/ Deisel/ CNG filling station	Premises for selling petroleum products to consumers which may also include servicing of automobiles.
17	Gas Godown	The premises where cooking gas or gas cylinders are stored.
18	Emergency Stock	Premises where essential items such as food, water, and first-aid supplies are stored, in a readily accessible location for use during a crisis or disaster.
19	Junk yard	The premises where covered or semi-covered or open storage is carried out including sale and purchase of unusable goods, articles, and materials.
20	Store / Godown	The premises for holding goods, often used by businesses before they are sold.
21	Shops for sale of motor vehicle spare parts	These are normal sized shops selling parts (except car body accessories) for the repair of motor vehicles.
22	Automobile sales/ purchase, workshop, accessories centre	The premises in which buying and selling of vehicles, showroom of vehicles, servicing and repair of automobiles is done.
23	Service Apartments	Service apartments will be fully furnished and self-contained apartments with cooking facilities (Kitchen/Kitchen) and will be used for short term stays.

15.2.3 Industrial

1	Mining related industries	The premises in which digging and processing of stones and other underground minerals is undertaken.
2	Software/ Information Technology Park	The premises where computer software is used in information technology, other software of latest technology in this field etc.

3	Oil Depot	The premises where petroleum products are stored along with all related facilities.
4	Milk Collection Centre	Premises where milk is collected for a dairy from the concerned area.
5	Cottage Industries	It is a small-scale, non-hazardous industry carried on at home by family members using their own equipment, without the use of hired labour.
6	Small Scale Industries (non-polluting)	Small scale industries are non-hazardous industrial establishment that produces products which create less environmental impact than those associated with heavy industry. (Investment limit is ₹10 crore and the turnover limit is ₹50 crore)
7	Large Scale Industries	Large scale industries are industrial premises with huge infrastructure, raw material, high manpower requirements and large capital requirements such as Iron and Steel Industry, Automobile Industry, Textile Industry etc. (Investment limit exceeding ₹10 crore)
8	Hazardous / Polluting industry	It is a building or place, or part thereof used for storage, handling, manufacture, or processing of radio-active substances or of highly combustible or explosive materials or products which are liable to burn with extreme rapidity and/or producing poisonous gases/fumes.
9	Warehouse & Logistics Park	The premises which are used only for storage of goods and commodities as per the requirement of the respective goods. Such premises include facilities for loading and unloading of goods by road transport or rail transport, as the case may be.

15.2.4 Offices

1	Govt. Office	Premises which are used for central/state government offices.
2	Local Body Office	Premises which are used for the offices of local bodies.
3	Semi-Government Office	The premises which are used for the offices of the agency, body, council, etc. established under any act.
4	Private Office	The premises in which consultancy/servicing for business purposes is provided by an individual or a small group such as chartered accountant, advocate, doctor, architect, designer, computer programmer, tour, and travel agent, etc.
5	Cyber café	A place where citizens use internet facilities by paying fees.
6	Business Park	An area of the city where many office buildings are established, which are used only for business activities.
7	Data Processing Centre	A centre where information (data) related to computer technology is processed, analysed etc., computers, servers, internet servers are installed in such centres, and they are operated by software and hardware engineers.
8	Call Centre	A centre where personal information of various consumers, information related to business activities and guidance is given through e-communication.
9	Bank	The premises in which arrangements are made to carry out the work and operations of banks.

10	Commercial/ Business Office	Premises that are used for offices of business establishments.
11	Labour welfare Centre	Premises where facilities are provided to promote the welfare and development of workers.
12	Research and Development Centre/ Research Centre	The premises where there are facilities for research and development for the general public and special categories.
13	Weather Research Centre	The premises where facilities are available for study/research and development of weather and its related data.
14	Bio-tech Park	An industrial park where activities related to research and development of biotechnology are completely carried out.

15.2.5 Community Facilities, Uses and Services

1	Guest House/ Inspection House/ Circuit House	The premises where the staff of government/semi-government undertakings, companies and other persons are accommodated for short periods.
2	Dharamshala/ Ashram	A premises in which short-term temporary accommodation is provided on a non-profit basis.
3	Boarding/ Lodging House	Premises whose rooms are given on long-term rent for residential purposes.
4	Hostel/ Working women's hostel	A building in which students reside by paying fixed fees for the duration of their education. Apart from the residential rooms of the students, it may also include food facilities for the students, canteen, toilets, indoor games, warden house, etc.
5	Orphanage	The premises where facilities are provided for the living of orphan children. Educational facilities can also be arranged in it.
6	Night Shelter	A premises in which night accommodation is provided without any fee or at a nominal fee.
7	Reformatory	A premises where facilities are provided to keep criminals and reform them.
8	Differently abled children home	The premises where there are arrangements for the improvement and medical facilities of handicapped and mentally challenged children. It can be managed by a single person or organization on a commercial or non-commercial basis.
9	Creche and Day care Centre	Premises where nursery facilities are provided for infants during daytime. The management of the centre can be done by an individual or an organization on a commercial basis.
10	Senior Care Centre/ Old Age Home	Premises where there are commercial or non-commercial arrangements for short/long term living, usually for elderly people. There may also be arrangements for entertainment, general health, food, etc. for the elderly, which can be arranged by a single person or organization.
11	Higher Secondary/ Inter School	The premises where there are arrangements for educational and sports facilities for students up to class 10th/12th.

12	College	A campus where there are arrangements for teaching, sports and other related facilities for graduate/post-graduate courses under a university.
13	Polytechnic	A campus where training facilities are available for courses up to diploma level in a technical field. This will include technical schools, industrial training institutes.
14	Medical/ Dental College	That campus where teaching, dental, operation, etc. and treatment and research work is done for the treatment of diseases under human science.
15	Higher Technical Institution	A campus where education and training facilities up to graduation or post-graduation in technical fields are available.
16	Cottage/ Industry Training	The premises where training is imparted in domestic/small/service industries like tailoring, weaving, embroidery, painting, computer, tour, and travels, etc.
17	Management Institute	The premises where there are arrangements for teaching/training facilities in the field of management.
18	General Education Institute	The premises where non-technical education is imparted.
19	Post Office	Premises where facilities for receiving mail are available for public.
20	Post and Telegraph Office	The premises where postal and telecommunication facilities are available for public use.
21	Telephone Office/ Centre	The premises where facilities are available for central operation of the telephone system for the concerned area.
22	Radio and Television Centre	The premises where facilities are available to record and broadcast news and other programs through the concerned medium.
23	Prison	Premises where there are facilities for detaining, imprisoning and reforming criminals under the law.
24	Police Station	Premises where facilities for the local police office are provided.
25	Nursing Home	A premises which provides medical facilities for inpatients and out-patients with up to 50 beds and is managed on a commercial basis.
26	Hospital	The premises where general or specialized type of medical facilities, with more than 50 beds, are arranged for the treatment of indoor and outdoor patients.
27	Clinic/ Polyclinic/ Non-bedded medical establishments	A premises where facilities for the treatment of out-patients are provided by a doctor/group of doctors.
28	Health Centre/ Family Welfare Centre	A premises having facilities for the treatment of inpatients and out-patients. The health centre can be managed on a non-commercial basis by a public or charitable or other organization. This includes Family Welfare Centre.
29	Dispensary	The premises where medical consultation facilities and medicines are available, and which is managed by public or charitable or other institutions.

30	Clinical Laboratory/ Diagnostic centres	A premises where facilities are available for carrying out various types of tests to detect symptoms of disease.
31	Meeting Hall, Community Hall	The premises where there are arrangements for meetings, social and cultural activities.
32	Yoga, Meditation, Spiritual, Religious Discourse Centre/ Satsang Bhawan	The premises where there is provision of facilities related to self-realization, attainment of higher qualities of intellect and body, spiritual and religious pilgrimage etc.
33	Religious Centre	A premises that is used for worship and other religious programs.
34	Socio-cultural Institution / Building	Premises where facilities for socio-cultural programs are provided by the public or any voluntary person/organization mainly on a non-commercial basis.
35	Cultural Centre	The premises where facilities for cultural services for any institution, state and country are provided.
36	Marriage Hall/ Banquet Hall	A premises which is used for weddings and other social functions.
37	Auditorium	The premises where there is a stage and seating arrangements for the audience for various performances like concerts, plays, musical presentations, ceremonies etc.
38	Open Air Theatre	The premises where there are arrangements for seating of spectators in the open and stage facilities, etc. for performances.
39	Theatre	The premises where there are arrangements for seating of spectators and facilities etc. for performances.
40	Museum	A premises providing facilities for the collection and display of objects illustrative of antiquities, natural history, art, etc.
41	Art Gallery/ Exhibition Centre	Premises where facilities are provided for the exhibition and decoration of painting, photography, sculpture, murals, handicrafts, or products of any special category.
42	Music / Dance and Drama Arts Training Centre	The premises where there is arrangement for training and teaching of music, dance, and drama arts.
43	Library	A premises where there is arrangement for collection of books for reading and reference for the general public or a specific category.
44	Reading Room	The premises where there is arrangement for reading newspapers, magazines, etc. for the general public or a specific category.
45	Information Centre	The premises where information about various activities of the state and the country are provided.
46	Health Club/ Gymnasium	That building in which there is a system to strengthen the human body naturally or with the help of mechanical equipment.
47	Fire Station	The premises where fire extinguishing facilities are provided for the area concerned.
48	Community Welfare Centre	A premises where facilities are provided to promote the welfare and development of the community, and which is run by a public or charitable or other institution.

49	Electric Crematorium	The premises where facilities are available for burning dead bodies by electric incinerator.
50	Crematorium	The premises where facilities are available to complete the last religious rites by burning dead bodies
51	Cemetery/ Burial Ground	The premises where facilities for burial of dead bodies are provided.
52	Mela Sthal/ Fair	A premises which provides facilities for exhibition and decoration and other cultural/religious activities for a group of participants.
53	Microwave and wireless centre	Premises used for communications purposes, including towers.
54	Dumping Ground	The premises where garbage (solid waste) is collected from different areas of the city and stored until final treatment.
55	Sewage Treatment Plant	The premises where solid and liquid wastes are rendered harmless by technical chemical process.
56	Buildings/establishments related to public utilities and services	Those premises where there are overhead/underground tanks, pump-houses, etc., oxidation ponds related to sewerage, septic tanks, sewerage pumping stations, etc. for water storage and supply for public use. This also includes public toilets, urinals, and dustbins.
57	Compost Plant	The complex where solid waste and waste materials from different areas of the city are converted into fertilizer after treatment through mechanical process
58	Electric Sub-station	The premises where electrical installations, etc. are installed for distribution of electricity.
59	Water works	The premises in which there are arrangements for water supply like tube wells, overhead /underground reservoir, accommodation for related staff, maintenance of related equipment etc.
60	Garbage Collection Centre	A site where domestic waste is collected for a short period.
61	Community Guidance Centre	A centre where information related to the route (road condition & direction) and information regarding availability of infrastructure facilities is made available for the convenience of passengers.
62	Community Service Centre	Centre where the common people can request for the solution to their various types of problems and can take action to avail the facilities provided by various government agencies.
63	ATM Room	The place/room where ATMs are installed by banks for the convenience of citizens.
64	Public / Community Toilet	A toilet which is publicly available for use by the general public.

15.2.6 Traffic and Transport

1	Parking Lot	A premises which is used for parking of vehicles.
2	Bus Stop	A premises which is used by a public transport agency or any institution to park buses for short periods for public convenience and service.

3	Taxi/ Tempo Rickshaw stand	Premises which are used for parking of intermediate public transport vehicles running on commercial/non-commercial basis.
4	Motor Driving School	A premises where facilities are provided for training in driving automobiles.
5	Transport Nagar	Premises that are used for short- or long-term parking of trucks. It may also include offices of truck agencies, vehicle repair and servicing, dhabas, spare part shops and warehouses, etc.
6	Weighbridge/ Dharmkanta	The premises where loaded or empty trucks are weighed.
7	Bus Depot	Premises used by a public transport agency or any other similar agency for parking, maintenance, and repair of buses. It may also include a workshop.
8	Bus Terminal	The place from where public service buses starts and end for their predetermined route. Here passengers have the facility to board and deboard the bus. This place can range from just a bus platform to a fully equipped centre with passengers resting place, bus service office, ticket counter, food service, public toilet etc.
9	Motor Garage, Service garage/ Workshop	Places where servicing, repair work, denting, painting, etc. work of motor vehicles are done. In such places, vehicles are parked on the premises for the above-mentioned works.
10	Helipad	The place where landing and take-off is done by passenger helicopters. Only one control/inspection room can be built at a suitable distance from the edge of this place.

15.2.7 Parks, Play-grounds/ Open-spaces, Recreational.

1	Park	The premises which have suitable arrangements for recreational activities like lawns, open spaces, greenery etc. It may have provisions for landscaping, parking facility, public toilet, fencing, etc.
2	Club	Premises with all associated facilities which are used by a group of people for social and recreational purposes.
3	Playground/ Sports Ground	A complex used for outdoor sports with provision for parking facilities, public toilets, etc.
4	Amusement Park	Premises where there are parks or grounds for recreational purposes and other facilities related to recreation.
5	Stadium	The complex in which there is provision of pavilion, building and stadium for seating of spectators along with related facilities for players.
6	Traffic Park	A traffic park is a complex where facilities are provided to provide information and education to children regarding traffic and signalling.
7	Swimming Pool	The complex in which there is provision for swimming, seating for spectators and ancillary facilities like dressing-room, toilet, etc.
8	Picnic Site/ Camping site	Premises located within a tourist/recreational centre which are used for short-term accommodation for recreational or leisure purposes.
9	Flying Club	Premises used for training and fun-riding on gliders and other small aircraft.

10	Shooting Range	The premises which are used for training/practice of shooting, aiming, etc. of different types of pistols/guns.
11	Caravan Park	A place where people traveling in groups rest for short periods in the form of camping. Apart from being a group of pedestrians, such a group of passengers can also be a group of different types of vehicles. Apart from public toilets, essential facilities like tourist tents, eating places, etc. are completely temporary in the camping site.
12	Monument	A complex with all facilities for visitors where there are structures related to the past or a tomb, mausoleum or monument built in memory of an important person.
13	Zoo/ Museum	A premises which is used as a garden /park/aquarium with a collection of animals, fauna and birds for exhibition and study along with all related facilities.

15.2.8 Agricultural

1	Nursery	A premises where facilities are provided for growing and selling small plants.
2	Dairy Farm	The premises where there are facilities for making and preparing dairy products. It may contain a temporary structure for animal sheds.
3	Poultry Farm	The premises where facilities are available for trading in eggs, meat, etc. products of birds like chicken, duck etc. It may have bird sheds in it.
4	Farmhouse	A premises where there is a residential building on the same agricultural land for the use of the owner of the farm.
5	Garden	The premises which are used for planting trees and plants for flowering purposes
6	Forest	The area which contains natural or man-planted trees and plants. City forests will also be included in this.
7	Repair and servicing centre for agricultural equipment	The premises where mechanical /electrical equipment used in agriculture like tractors, trolleys, harvesters, etc. are serviced.
8	Dhobi Ghat	The premises which are used by washermen / *dhobis* for washing and drying clothes.
9	Cattle Colony	A premises where rearing of cattle, milk collection and treatment etc. is done. At such a place, cattle treatment centre, staff accommodation and other ancillary activities like daily use shops, community centres etc. can also be constructed.
10	Animal Breeding Centre	A place where animals are slaughtered for use only as non-vegetarian food.

15.3 Permissibility of various activities in major land use zones

15.3.1 Major Land use Zones and Notations

Standard Use Zones

The use zones of master plans have been standardized as below:

	Land Use Zone	Notation
1	Built up	BU
2	Residential	R
3	Mixed Use 1 & 2	MU
4	Commercial 1- Retail/CBD/Sub CBD/ Bazaar Street	C-1
5	Commercial 2- Wholesale/ Godown	C-2
6	Small Industries	SI
7	Large Industries	LI
8	Office Buildings	OB

	Land Use Zone	Notation
9	Public & Semi-public	PSP
10	Transport 1 & 2, Parking	TT
11	Forest	F
12	Recreational 1 & 2	RC
13	Green belt	GB
14	Rural Abadi	RA
15	Agriculture	A
16	Highway Facilities	HF

Symbol	Permissibility
	Permitted
0	Permitted with conditions
	Prohibited

Provisions relating to proposed land uses in master plans of development authorities:

Since the prevailing master plans of different development authorities have use zones other than the above list, for the sake of convenience such use zones are grouped under standardized use zones as given in *Appendix-15*. It is clarified that the zoning regulations pertaining to the standardized use zones shall be applicable to those use zones grouped under respective category.

15.3.2 Matrix for permissibility of Activities in major Land use Zones

	Zoning Regulations - Activities	RW (m)	BU	R	MU	C-1	C-2	SI	LI	OB	PSP	TT	F	RC	GB	RA	A	HF
1	**RESIDENTIAL**																	
1.1(a)	Single Dwelling / Multi-Dwelling *(Built-up area)*, Homestay, Paying Guest	4	9															
1.1(b)	Single Dwelling / Multi-Dwelling *(Non-Built-up area)*, Homestay, Paying Guest	9			7			5	5	5								

	Zoning Regulations - Activities	RW (m)	BU	R	MU	C-1	C-2	SI	LI	OB	PSP	TT	F	RC	GB	RA	A	HF
1.2(a)	Group Housing *(Built-up area)*	9																
1.2(b)	Group Housing *(Non-Built-up area)*	12			8	8	8	5	5	5								
1.3	Related Workers/ Employees/ Staff Accommodation, Watchmen/ Guard Accommodations	#				4	4	7	7	7	4	4	4	4	4a		4	5
2	**COMMERCIAL**																	
2.1	**Shops / Convenient Shopping / Commercial Units < 100 sqm PA:** Retail Shops, Daily Use Shops, PCO/ Cellular Mobile Service, Showroom (other than motor vehicle), Restaurants & Canteen	9																
2.2	**Shops / Convenient Shopping /Commercial Complex Commercial Units >100:** Motor Vehicle Showroom (Automobile Sales / Purchase, Workshop, Accessories Centre), Shops for sale of Motor Vehicles Spare Parts, Coal & Wood Stock	12	3	3												3		
2.3	Shopping Centre, Cinema/ Miniplex	12																
2.4	Shopping mall, Multiplex	18	2															
2.5	**Hotels up to 20 rooms:** Budget Hotel, Heritage Hotels, Permanent Tented Accommodation	9																
2.6	**Hotels above 20 rooms:** Hotel, Resort, Motel, Service Apartments, Wellness Centre/ Resort, Eco Tourism Resorts	12																
2.7	Wholesale Market / Trade/ Wholesale business, Auction Market, Wholesale centres for Agriculture produce	12			3													
2.8(a)	**Petrol Pump / Filling Stations:** Stations (Petrol/Diesel/CNG/ Bio-Diesel/ Biogas/ EV Charging Stations), Kisan Seva Kendra, Way-side Amenities/ Dhaba *(Built-up area)*	12																
2.8(b)	**Petrol Pump / Filling Stations:** Stations (Petrol/Diesel/CNG/ Bio-Diesel/ Biogas/ EV Charging Stations), Kisan Seva Kendra, Way-side Amenities/ Dhaba *(Non-Built-up area)*	18																
2.9	Gas Godown/ Combustion, Emergency Stock, Junkyard	18															2*	2*
2.10	Cold storage, Store / Godown	18															2	2

	Zoning Regulations - Activities	RW (m)	BU	R	MU	C-1	C-2	SI	LI	OB	PSP	TT	F	RC	GB	RA	A	HF
3	**INDUSTRIAL**																	
3.1	Small Scale Industry, Service / Cottage Industry, Flour Mill, Milk Collection Centre	# #															1	
3.2	Labourer/ Worker Housing / Dormitory	# #			7	7	7	7	7	7	7							
3.3	Warehouse / Logistic Park	18															2	2
3.4	Data Processing Centre, Software / Information Technology Park	# #																
3.5	Large Scale Industry, Sugar Mill, Rice Cellar, Pasteurizing Plant, Meat Processing Plant, Mining Related Industries, Brick / Lime Kiln, Crusher, Oil Depot, LPG Refilling plant, Bio Diesel Plant, Compressed Bio-Diesel Plant, Pasteurizing Plant, Power Generation Plant, Hazardous/ Dangerous / Polluting Industries	# #															2	
4	**OFFICE BUILDINGS**																	
4.1	Govt. / Local Body / Semi Government Office, Corporation office, Commercial / Business Office, Business Park, Bio-tech Park, Research & Development Centre / Research Centre, Labour Welfare Centre, PAC/Police lines, Weather Research Centre	12		3														
4.2	Private/ Agent Office, Bank, Cyber Café, Call Centre, BPO	12		6														
5	**PUBLIC & SEMI-PUBLIC FACILITIES**																	
5.1	**Education:** Primary Educational Institute, Sewing, Knitting, Embroidery, Painting, Computer Training, etc., Library, Reading Room, Creche and Day Care Centre and Other Skill Development Centres	9																
5.2	**Education:** Higher Secondary / Inter School, Music / Dance and Drama Arts Training Centre, Indoor Sports Training Centre, Arts Gallery / Exhibition Centre, Yoga, Meditation, Spiritual, Religious Discourse Centre / Satsang Bhawan, Religious Centre, Socio-Cultural Institution / Building, Cultural Centre	12															2	2
5.3	**Education:** College / Degree College	18																

	Zoning Regulations - Activities	RW (m)	BU	R	MU	C-1	C-2	SI	LI	OB	PSP	TT	F	RC	GB	RA	A	HF
5.4	**Education:** Polytechnic / Engineering, Higher Technical/ Management Institutes, General / Specialized Educational Institute, Nursing Institute, Cottage / Industry Training	18	3	3														
5.5	**Education:** University	24																
5.6	**Healthcare:** Non-Bedded Medical Establishments, Dispensary, Health Club / Gymnasium, Clinics / Polyclinics, Dental Clinic, Clinical Laboratory, Medical Store / Pharmacy, Senior Care Centre/ Old Age Home, Handicapped Children House	9																
5.7	**Healthcare:** Nursing Home, Primary / Community Health Centre, Small Hospital (Upto 50 beds), Night Shelter, Orphanage, Reformatory, Health Centre / Family Welfare Centre	12																
5.8	**Healthcare:** Hospital (> 50 beds), Trauma Centre, Nursing Institutes	18																
5.9	**Healthcare:** Medical College/ Dental College	24																
5.10	Marriage hall / Banquet Hall, Meeting Hall / Community Hall, Public Facilities Centre, Community Welfare Centre, Community Guidance Centre, Public Convenience Centre, Information Centre	18/24																
5.11	Auditorium, Theatre, Open Air Theatre, Convention Centre, Museum	18/24																
5.12(a)	Natural Therapy Centre, Dharamshala / Ashram, Boarding / Lodging House, Hostel, Working women's hostel, Dormitory, Guest Houses / Inspection House / Circuit House *(up to 20 rooms)*	9																
5.12(b)	Natural Therapy Centre, Dharamshala / Ashram, Boarding / Lodging House, Hostel, Working women's hostel, Dormitory, Guest Houses / Inspection House / Circuit House *(above 20 rooms)*	12																
5.13	**Public Utilities:** Post office, Post and Telegraph Office, Telephone Office / Centre, Radio and Television Centre, Police Station / Chowki, Fire Station, ATM Room	NA																
5.14	**Public Utilities:** Electric Crematorium / Crematorium, Cemetery / Burial Ground	NA																

	Zoning Regulations - Activities	RW (m)	BU	R	MU	C-1	C-2	SI	LI	OB	PSP	TT	F	RC	GB	RA	A	HF
5.15	Prison	NA																
5.16	**Public Utilities:** Tubewell, Overhead Reservoir, Electricity Station/ Substation, Water Works, Microwave and Wireless Centre, Sewage Treatment Plant, Dustbin / Garbage Collection Centre, Public / Community Toilets, Buildings / Establishments related to Public Utilities & Services	NA																
5.17	**Public Utilities:** Compost plant, Scientific Landfill Sites, Dumping Ground, MRF Facilities, Bio-Medical Waste Treatment Facility, Slaughterhouses	NA																
6	**TRAFFIC & TRANSPORTATION**																	
6.1	Parking Lot, Taxi / Tempo Rickshaw Stand, Bus Stop	NA																
6.2	Motor Garage, Service Garage / Workshop, Motor Driving School, Vehicle Scrapping Facility/ Automatic Testing Stations/ Driver Training Institutes	NA																
6.3	Transport Nagar, Bus Depot, Bus Terminal, Weighbridge / Dharmkanta, Loading-Unloading related Facility	NA																
6.4	Airport/ Flying club	NA																
7	**PARKS/ OPEN SPACES/ PLAYGROUNDS**																	
7.1	Park, Playground / Sports Ground, Multipurpose Open Spaces, Swimming Pool	NA																
8	**RECREATIONAL**																	
8.1	Shooting Range	NA																
8.2	Golf Course, Club	NA																
8.3	Helipad	NA																
8.4	Racecourse, Stadium, Sports College/ Training Centre, Caravan Park, Picnic Site / Camping Site, Traffic Park, Amusement Park, Aquarium, Zoo / Museum, Bird / Wildlife Sanctuary	NA																
9	**AGRICULTURE**																	
9.1	Farmhouse, Repair and Servicing Centre for Agricultural Equipment, Farm Stay	9																

	Zoning Regulations - Activities	RW (m)	BU	R	MU	C-1	C-2	SI	LI	OB	PSP	TT	F	RC	GB	RA	A	HF
9.2	**Farmhouse:** Horticulture, Nursery, Forest, Garden, Botanical Garden, Laundry Bay (Dhobi ghat)	9																
9.3	Dairy Farm, Pasture, Cattle Colony, Pig / Fish/ Poultry Farm/ Beekeeping, Animal Breeding Centre	9																

Note1: RW: Road Width, NA: Not Defined, PA: Plot Area, #: As per Principal Use, # #: As per Site Condition, (x) – as per *paragraph 15.3.3 of this byelaws.*

Note2: More than one activities which are permissible in a particular land use zone may be permitted.

15.3.3 Conditional permissibility for activities within Land Use Zones

No.	Condition	Remarks
1	Allowed on 7m wide roads	
2	Allowed on 18m wide roads	
3	Allowed on 24m wide roads	
4	Up to 5% of total permissible FAR	
5	Up to 10% of total permissible FAR	May be relaxed by board for Small Industries
6	Up to 25% of total permissible FAR	
7	Up to 30% of total permissible FAR	
8	Except Ground Floor	
*	Minimum 300 meters from Rural Abadi	

15.4 Order of land use zones from lowest to highest order and determination of Impact fee

Exemption from Impact Fee	
Non-Commercial and Charitable Activities/Uses	(1)
Service and cottage industries	(2)
Group housing for related use purposes	(3)

Symbol	
Impact fee not applicable	
Impact fee not payable	
Impact fee payable	

Land Use Zones (from lowest to highest) →

	Activities/Use category	BU	A/GB/RC/HF	PSP	TT	SI / LI	R/ RA	OB	MU/ C1/ C2
	(from lowest to highest)		1	2	3	4	5	6	7
1	Agriculture, Greenbelt, Park/ Playground								
2	Public & Semi-public Facilities		0.25 (1)				0.25 (1)		
3	Traffic & Transportation		0.3	0.1			0.30		
4	Industrial		0.4 (2)	0.25 (2)	0.25 (2)		0.40		
5	Residential, (Incl. rural)		0.5	0.4	0.4	0.25 (3)			
6	Office Buildings		1	0.75	0.75	0.75	0.5		
7	Commercial		1.5	1.25	1.25	1	1	0.5	

Note:

(i) The value of "Impact Fee Coefficient" determined for permitted activities/uses in different land use zones is given in the cells where impact fee is payable.

(ii) Impact fee shall be assessed based on the current circle rate. The current rate of land refers to the circle rate determined by the District Magistrate, where such rate is not available, the current residential rate determined by the Authority/Awas Vikas Parishad whichever is higher.

Example for calculating impact fee:

For permission of nursing home in Residential area:
Area of the Plot 350 square meters
The current residential rate of the authority is Rs 2000 per square meter.
Impact Fee payable: - (Area of the plot) x (Circle rate) x (Coefficient X 0.25)
That means 350 x 2000 x 0.25 x 0.25 = Rs 43,750/-

-**End of Chapter**-

16 Compounding of Building Construction and Development

16.1 Title and Commencement

After the coming in to force of these building byelaws, the provisions in this chapter shall supersede 'Compounding Byelaws 2009' issued by the Government vide notification number 4824/8-3-09-09 miscellaneous/09, dated 14 January 2010. Those applications for compounding which have not been decided before the commencement of these building byelaws, on application by the owner/developer, shall be dealt with according to the provisions of this chapter.

16.2 Compounding of Offences

The action for Compounding of any offence punishable under Uttar Pradesh Urban Planning and Development Act, 1973, before or during the institution of the action shall be taken by Vice-Chairman/s of relevant Development Authorities or by any officer authorized by him.

Compounding of offence shall be done with the restriction that the accused shall not further continue the offence in relation to the non- compoundable construction and shall remove the non-compoundable construction or development work within the period specified by the officer. The officer compounding the offence shall be free to re-prosecute and demolish the construction in contravention of the byelaws.

16.3 Compounding Process

16.3.1 Grant/ Refusal

The owner/developer may submit an application for compounding suo-moto or in response to the notice issued. Any notice issued to the owner/developer for unauthorized construction shall clearly delineate the exact nature of offence, the provisions of byelaws which have been contravened, nature and scope of construction which is compoundable.

While granting or refusing the compounding of construction or development work, Vice-Chairman, Development Authority, or any officer authorized by him, shall examine which provisions of these building byelaws have been violated, whether the unauthorized construction is within the compounding limits as prescribed and what impact the unauthorized construction has on surrounding buildings and infrastructure.

16.3.2 Following offences shall not be compoundable.

(i) Construction done on the land reserved for or related to public and semi-public amenities, services and utilities such as road, railway line, park, green verge/belt etc.

(ii) Construction done in contravention of land-use prescribed in Master Plan or Zonal Development Plan or Lay-out plan or lease.

(iii) Construction done on plots in illegal colonies.

(iv) Construction done on government or public land without permission of the concerned department.

(v) Construction done on disputed land.

(vi) Construction in the buildings where earthquake resistance measures are mandatory as per chapter 11.8.

(vii) Construction of buildings where firefighting requirements are mandatory or where No Objection Certificate (NOC) for construction/addition/alteration has not been obtained from fire authority (wherever mandatory), as per chapter 10.1.3.

(viii) Construction in violation of building height in heritage zones, protected monuments, and civil aviation areas or in restricted height areas.

(ix) Construction carried out where required parking arrangement is not feasible.

(x) Construction carried out on areas reserved for 'common areas and facilities' in group housing and other multi-storey buildings.

(xi) Construction done on land covered by ponds/reservoirs, river, drain, etc, identified in Master Plan/Zonal Plan/ Lay-out Plan or recorded in the revenue records.

(xii) Construction in the buildings where measures for access to differently abled persons are mandatory as per chapter 12.

(xiii) Construction undertaken in mixed use development, which violates the criteria of pre-dominant land use.

16.3.3 Compoundable Construction

Construction permissible as per building byelaws and unauthorized construction shall be shown separately in the plan submitted with the application for compounding. Unauthorized construction in setbacks, ground coverage and FAR ~~in front, side and rear setback~~ shall be compoundable only in contiguity of main building up to the limits prescribed as under:

Parameter	**All Buildings <=15-meter and multi-units upto 17.5 meter height except Group Housing**	**Buildings >15-meter height and Group Housing except multi-units.**
Front Setback	25% of front setback area up to a maximum of 1.0 meter	10 percent of setback area (maximum up to a width of 1-meter), subject to Fire NOC.
Rear Setback	**Residential:** (a) Plot Size up to 500 sqm- 100% compoundable in cases where proper provisions have been made for light and ventilation. (b) Plot Size > 500 sqm - construction up to maximum 10% of the area in rear setback (in addition to permissible 40%) **Others:** 10 percent of rear setback area	
Side Setback	Construction up to a maximum of 25% of width of side setback	
Ground Coverage & FAR	Construction up to a maximum of 10% of total permissible FAR, in addition to permissible ground coverage. Note: Construction in front, rear and side setbacks shall be counted while calculating the maximum permissible compoundable area.	Construction up to a maximum of 10% of total permissible FAR, in addition to permissible ground coverage. Note: Construction in front, rear and side setbacks shall be counted while calculating the maximum permissible compoundable area.
Building Height	Construction up to a maximum of 10% height from permissible limit without changing the number of floors	-
Maximum compoundable units	Maximum one unit in plotted development beyond permissible limit	In Group Housing: Proportionate units relative to percentage of compoundable additional FAR/Purchasable FAR
Others	Up to 10 percent of any dimension and area of the items indicated in 16.3.8	Up to 10 percent of any dimension and area of the items indicated in 16.3.8

Note-1: Compounding shall not allow for change of category of the building.

16.3.4 Schedule of Compounding Fee

The calculation of compounding fee for various kinds of illegal constructions and development works shall be in accordance with the rates given in the paragraph 16.3.8.

16.3.5 Calculation of Compounding Fee

i. If in any case compounding construction falls under illegal construction of more than one kind, the compounding fee of highest category use shall be realized as per charges applicable for compounding of FAR in 16.3.8. Besides, calculation of compounding fee for each floor shall be done separately, However, separate compoundable fee for compoundable ground-coverage shall not be payable.

ii. For Compounding of illegal construction, the builder shall deposit amount of compounding fee, as per the Schedule, in lump-sum or in instalments with interest rate (MCLR+1%), along with the compounding plan. Other fees prescribed by the Authority and an affidavit for demolition of the non-compoundable part shall also be deposited and subsequently the Authority shall take a decision on the application for compounding.

iii. Compounded plan shall be issued only after the calculated fee is deposited. The terms and conditions regarding approval shall compulsorily be recorded on the plan by the officer authorized for compounding.

16.3.6 Demolition

i. The building or any part thereof shown in the plan submitted for Compounding, which is within the limits of compounding shall not be demolished. However, post 30 days after the development authority identifies the non-compoundable portion in the compoundable map submitted by applicant, there shall be no restriction on demolition of such identified portion, in accordance with the law.

ii. Subsequent to approval of the plan, action under Section-27 of Uttar Pradesh Urban Planning and Development Act, 1973 shall cease; in case the order for demolition of compounded portion is passed, the same shall be deemed null and void.

iii. Remaining non-compoundable portion shall be removed by the builder on his own expense or else, the same shall be demolished by the Development Authority and the expenses incurred on the same shall be realized from the builder as per the rules.

16.3.7 Realization of Compounding Fee

a) In case the applicant fails to duly apply for availing of facility of Compounding, the Development Authority shall take action, as per rules, for demolition of illegal construction.

b) Where No Objection Certificate will be required from Fire department, Department of Archaeology, Airport Authority of India, National Highway Authority of India/ Public Works Department, Directorate of Environment, Pollution Control Board, etc, the compounding shall be considered only after receipt of the said No Objection.

c) The cost of land shall be assessed at the prevailing residential rate of the Authority, or the non-agriculture circle rate fixed by the District Collector, whichever is higher. For calculation of Compounding fee for all kinds of constructions only the residential rate of the land shall be taken into consideration.

d) Compounding fee for compoundable construction in mixed land use shall be payable on the highest category use basis.

e) In addition to charges payable as per rules for purchasable FAR, Compounding fee shall also be payable at the rates prescribed under Serial No.-2 of the Schedule. However, purchasable FAR charges for first 10% purchasable FAR shall not be payable.

f) It shall be compulsory to provide additional parking arrangement in accordance with the rules in relation to Compoundable FAR/ Purchasable FAR.

g) In case of use of illegal construction done in the basement being different from use permissible in building byelaws, the same shall be counted towards FAR and the illegal construction, on the basis of nature of old use, shall be Compoundable with the restriction that the arrangement for parking as per the standards is available inside the plot.

h) Projections such as balcony /chhajja etc. shall be compoundable only up to Compoundable limit in setback area.

16.3.8 Schedule of Compounding Fee (Rule No 4)

16.3.8.1 Rates of Compounding Fee for various Land uses

1.	**On construction without permission under permissible ground-coverage and Floor Area Ratio**				
Sl.	Residential	Commercial	Office	Industrial	Facilities/ Others
A	Rs. 25 per sqm for construction of all nature on plots up to 150 sq meter.	2.0 x Residential rate	1.5 x Residential rate	0.4 x Residential rate	0.5 x Residential rate
B	Rs. 38 per sqm for construction of all nature on plot sizes >150 – 300 sqm	2.0 x Residential rate	1.5 x Residential rate	0.4 x Residential rate	0.5 x Residential rate
C	Rs. 50 per sqm for construction of all nature on plot sizes >300 – 500 sqm	2.0 x Residential rate	1.5 x Residential rate	0.4 x Residential rate	0.5 x Residential rate
E	Rs. 62 per sqm for construction of all nature on plot sizes >500 sqm/ Group Housing plots	2.0 x Residential rate	1.5 x Residential rate	0.4 x Residential rate	0.5 x Residential rate
F	On Compoundable units in addition to permissible units- Rs. 122640 per unit.	-	-	-	-
2.	**On construction without permission beyond permissible ground-coverage (only on Ground Floor)**				
Sl.	Residential	Commercial	Office	Industrial	Facilities/ Others
A	**All Buildings <=15-meter and multi-units upto 17.5 meter height except Group Housing**				
a	In Front Setback				
	100 percent of price of land	200 percent of price of land	150 percent of price of land	40 percent of price of land	50 percent of price of land
b	In Side Setback				
	75 percent of price of land	150 percent of price of land	100 percent of price of land	40 percent of price of land	50 percent of price of land

c	In Rear Setback				
	50 percent of price of land	100 percent of price of land	75 percent of price of land	20 percent of price of land	25 percent of price of land
B	**On all sides of buildings >15-meter height and Group Housing except multi-units.**				
	100 percent of price of land	200 percent of price of land	150 percent of price of land	40 percent of price of land	50 percent of price of land
3.	**On construction within permissible ground coverage beyond permissible FAR**				
Sl.	Residential	Commercial	Office	Industrial	Facilities/ Others
	In construction of plotted development and Group Housing-Rs. 491 per sqm. and 50% of required land price for additional floor area.	Rs. 982 per sqm and 100 percent of required land price for additional floor area.	Rs.736 per sqm. and 75 percent of required land price for additional floor area.	Rs.196 per sqm. and 40 percent of required land price for additional floor area.	Rs. 246 per sqm. and 50 percent of required land price for additional floor area.
4.	**On construction of basement beyond permissible limit**				
Sl.	Residential	Commercial	Office	Industrial	Facilities/ Others
	50 percent of price of land	100 percent of price of land	75 percent of price of land	20 percent of price of land	25 percent of price of land
5.	**Internal height of room being less than the minimum prescribed height**				
Sl.	Residential	Commercial	Office	Industrial	Facilities/ Others
	Rs. 246 per sq meter on the area of the room	Rs. 491 per sq meter on the area of the room	Rs. 368 per sq meter on the area of the room	Rs. 123 per sq meter on the area of the room	Rs. 185 per sq meter on the area of the room
6.	**On width of room being less than minimum prescribed width.**				
Sl.	Residential	Commercial	Office	Industrial	Facilities/ Others
	Rs. 123 per sq meter on the area of the room	Rs. 246 per sq meter on the area of the room	Rs. 185 per sq meter on the area of the room	Rs. 50 per sq meter on the area of the room	Rs. 62 per sq meter on the area of the room
7.	**On area of the room being less than the prescribed area**				
Sl.	Residential	Commercial	Office	Industrial	Facilities/ Others
	Rs. 123 per sq meter on the area of the room	Rs. 246 per sq meter on the area of the room	Rs. 185 per sq meter on the area of the room	Rs. 50 per sq meter on the area of the room	Rs. 62 per sq meter on the area of the room
8.	**On arrangement of light and ventilation in the room being less than prescribed area**				
Sl.	Residential	Commercial	Office	Industrial	Facilities/ Others
	Rs. 123 per sq meter on the area of the room	Rs. 246 per sq meter on the area of the room	Rs. 185 per sq meter on the area of the room	Rs. 50 per sq meter on the area of the room	Rs. 62 per sq meter on the area of the room
9.	**On the height of Compound wall being more than the prescribed height**				

Sl.	Residential	Commercial	Office	Industrial	Facilities/ Others
	Rs. 123 per running meter but a minimum of Rs. 5000/-	Rs. 246 per running meter but a minimum of 10000/-	Rs. 383 per running meter but a minimum of Rs. 5000/-	Rs. 50 per running meter but a minimum of 1000/-	Rs. 62 per running meter but a minimum of Rs. 5000/
10.	**On construction beyond permissible building height**				
Sl.	Residential	Commercial	Office	Industrial	Facilities/ Others
	@Rs. 6132/- per running meter of height (measured as per periphery of existing building) per floor	2x	1.5x	0.4x	0.5x
11.	**Land-division/ Development work without approval, which is in conformity with Building byelaws**				
Sl.	Residential	Commercial	Office	Industrial	Facilities/ Others
	1.0 percent of price of land on saleable area	2.0 percent of price of land on saleable area	1.5 percent of price of land on saleable area	0.40 percent of price of land on saleable area	0.50 percent of price of land on saleable area
12.	**Land division/development work for layouts up to the size of 1 acre, whose approval is not permissible as per byelaws**				
S.N.	Residential	Commercial	Office	Industrial	Facilities/ Others
	Compounding fee at the rate of two times of price of land equivalent to decrease in the area required, as per byelaws, for roads, parks and open spaces and other community amenities.				
13.	**Land division, whose approval is not permissible as per byelaws, (for categories excluding S. No. 11 & 12 of this table)**				
S.N.	Residential	Commercial	Office	Industrial	Facilities/ Others
	In such matters, action shall be taken in accordance with the guidelines issued by the government for regularization of unauthorized colonies				

Note:

i. For any construction in contravention of the byelaws (other than those listed in the above schedule) such as – porch, balcony/chhajja etc., but are compoundable; a compounding fee @Rs. 491/- per square meter shall be charged. The rate of compounding fee for commercial shall be two times, for office 1.5 times, for industrial 0.40 times, for facilities and other usages 0.50 times.

ii. For compounding of "permitted" activities/uses in accordance with chapter-15 of these byelaws, a fee of @10 percent of the Impact fee shall also be payable, in addition to the Impact Fee payable as per rules.

iii. The rate of compounding fee for charitable institutions, which are exempted under Section-80(G) of Income Tax Act, 1961 and facilities and service provided by public Sector and educational institutions shall be 50 percent of the residential rate.

iv. The rates, which are not based on the price of the land, i.e. which are prescribed on the basis of per square meter, shall be updated by the authority every year on the basis of cost index, for the purpose of compounding of unauthorized construction.

v. The authority shall not permit or compound any construction beyond the limit of maximum permissible FAR. They shall ensure demolition and removal of extra construction beyond maximum permissible FAR, if any, before considering the permission of purchasable FAR.

vi. Purchasable and Premium Purchasable FAR shall be applicable in already constructed buildings submitted for compounding. Such provision shall be availed only after ensuring the requisite statutory approvals, structural stability, fire and life safety requirements, parking and other provisions of building byelaws.

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17 Provision of Electric Charging Infrastructure

17.1 Electric Vehicle Charging Infrastructure (EVCI)

Based on the occupancy pattern and the total parking provisions in the premises of the various building types, charging infrastructures shall be provided only for EVs, which is currently assumed to be 20% of all 'vehicle holding capacity'/'parking capacity' at the premise.

Additionally, the building premise will have to have an additional power load, equivalent to the power required for all charging points (in a PCS) to be operated simultaneously, with a safety factor of 1.25 (refer *Explanatory Note- Annexure E-1 as given in paragraph 17.2 of this chapter*)

17.1.1 Residential Buildings (plotted house)

17.1.1.1 Charging Infrastructure requirements for individual house/self-use:

Building Type	Plotted House
Ownership of station	Private (Owner)
Connection and Metering	Domestic meter
Type of Charger	Slow charger as per owner's specific requirements
Modes of Charger	AC (Single charging gun)
Norms of Provisions	Min.1 SC and additional provisions as per the owner individual

Note: -

The charging infrastructure installed by a homeowner shall be construed as a Private Cl meant for self-use (non-commercial basis) as per the note at clause no 4 of the explanatory notes at Annexure E-1 given in paragraph 17.2 of this chapter.

17.1.2 All other buildings (including Group Housing)

Any PCS installed at Public/Private areas or building premises of any category that caters to commercial mode of charging of EVs shall be deemed as a Public Charging Station and shall have to install the minimum requirements of chargers as specified in the Guidelines dated 14.12.2018 of Ministry of Power (refer *Annexure E-2 for MoP Guidelines*). However, in order to provide sufficient charging points for the EV share in all vehicles (refer *clause 3 of the Explanatory Note-Annexure E-1 given in paragraph 17.2 of this chapter*), ratio of types of chargers is recommended in the table below-

17.1.2.1 Charging Infrastructure requirements for PCS (commercial use):

Building Type	Any building type			
Ownership of Station	Service provider			
Connection and Metering	Commercial Metering and Payment			
Type of Charger	as per min requirements specified in MoP Guidelines (refer Annexure E-2 given in paragraph 17.8 of this chapter)			
Additional Chargers	PCS service providers shall install additional number of kiosk/chargers beyond the minimum specified requirements to meet the ratio of charging points as prescribed below (by the type of vehicles).			
Norms of Provisions for charging points	4Ws 1 SC-each 3 EVs 1 FC-each 10 EVs	3Ws 1 SC - each 2 EVs	2Ws 1 SC - each 2 EVs	PV (Buses) 1 FC- each 10 EVS

Note:

(i) Charging bays shall be planned currently at 20% capacity of all vehicles including 2Ws and PVs(cars)

(ii) Open metering and on-spot payment options to be available for all users.

(iii) Provision of FCB, CS and BS shall not be mandatory and will be at the discretion of the service provider.

Abbreviations used:

2Ws	Two wheelers
3Ws	Three wheelers
4Ws	Four wheelers/PV (cars)
PVs	Passenger Vehicles
EV	Electric Vehicle
SC	Slow Charger/Slow Charging (AC)
FC	Fast Charger/Fast Charging (DC and a few AC ones)
PCS	Public Charging Stations
FCBCS	Fluid Cooled Battery Charging Station
BS	Battery Swap

17.1.2.2 Space Norms for Electric Vehicle Charging Infrastructure:

Sl. No.	Category	Population served per unit	Land area requirement		Other controls
			Type of Facility	Area Required	
A.	Public Charging Stations	Every 25 Kms, both sides along the highways/ roads	PCS with charger ratio (min. requirements of PCS, as per MoP) 1 FC for every 10 EVs 1 SC for every 3 EVs	Additional area as per total parking capacity at the Restaurants/ Eateries	Equipped with CCE and LCC, as may be required for fast charging.
B.	Fast Charging facility/FCB CS (for long Distance & Heavy Duty EVs)	Every 100 Kms. both sides along the highways/ roads	At least 2 chargers 1 CCC type 1 CHAdeMO type (min. 100KW each)	Min. 15m x 7m	May be coupled with the PCS at item A above, with CCE and LCC.
C.	Battery Swapping Station	Optional provisions as per MoP Guidelines	Standalone	Min. 5.5m x 2.75m	May be coupled with PCS at item A or FCB CS at item B above.
			Provided along with FBC charging Stations		

Source: Urban & Regional Development Plans Formulation and Implementation Guidelines (URDPFI-2014)

17.2 Explanatory Note on Electric Vehicle Charging Infrastructure (Annexure E-1):

Abbreviations:

UNFCC	- United Nations Framework Convention on Climate Change
IPCC	- Intergovernmental Panel on Climate Change
GHG	- Green House Gases
2Ws	- Two wheelers
3Ws	- Three wheelers
4Ws	- Four wheelers/PV (cars)
PVs	- Passenger Vehicles
CVs	- Commercial Vehicles
EV	- Electric Vehicle
EVSE	- Electric Vehicle Supply Equipment
SC	- Slow Charger/Slow Charging (AC)
FC	- Fast Charger/Fast Charging (DC and a few AC ones)
BS	- Battery Swap
PCS	- Public Charging Stations
PCI	- Public Charging Infrastructure
Private CI	- Private Charging Infrastructure
NSP	- Network Service Provider (information network)
SP	- Service Provider

Contents:

1. Rationale for EVCI establishment

2. EV Charging Technology

3. Options for EV Charging

4. Charger Specifications and PCS Infrastructure

5. Location of PCS/FCB CS in local area/Building Precincts

17.3 Rationale for EVCI establishment

Rapid urbanization coupled with adoption of mechanized transportation modes has resulted in high emissions of Green House Gases that goes on to impact Global warming. Unless the global surface temperature rise is restricted to no more than 2°c compared with pre-industrial levels, the IPCC has warned that the world will see irreversible catastrophic climate change.

India being a signatory to the UNFCCC, has pledged for efforts to assess the Greenhouse Gas Emissions (GHG) of anthropogenic origin and removal by sinks. India's per capita emissions are still considered low at 1.9 tonnes (2013), but its total emissions are next only to China and the US and is likely to overtake those of the EU by 2019.

While comparing the Indian cities for their emission scores, Delhi is on top as the biggest emitter at over 38.38 million tonnes of carbon dioxide equivalent overall emissions, followed by Greater Mumbai at 22.7 million tonnes and Chennai at 22.1 million tonnes, Kolkata at 14.8 million tonnes, Bangalore at 19.8 million tonnes, Hyderabad at 13.7 million tonnes and Ahmedabad at 9 million tonnes were the other cities whose emissions for the year were calculated sector wise.

As per the statistics of Transport Department (GNCTD), total number of vehicles in Delhi is more than the combined total vehicles in Mumbai, Chennai, and Kolkata. Delhi has 85 private cars per 1000 population against the national average of 8 cars per 1000 population. In terms of CO2 emissions due to motor vehicles, Delhi emits about 12.4 million tonnes while the city of Bengaluru emits about 8.6 million tonnes.

Therefore, addressing the quantum of emissions from the "Transport" and "Domestic" sector emerges to be the high priority subjects under the overarching umbrella of "Climate change mitigation" as committed to the UNFCC.

Encouraging "Electric Vehicles" as a viable option for phased transportation in terms of short and long-distance trips with appropriate "Charging Infrastructure" is therefore, the pre-condition for this paradigm shift I phased migration to sustainable transportation.

For this, changes are required in Infrastructure provisions (at Regional and City levels) and in Development Control Regulations (in terms of provisions therein) to include the formulations of norms and standards for "Charging Infrastructure" in the said Master Plan Regulations and State Byelaws for adoption across the country suiting local conditions.

17.4 EV Charging Technology

17.4.1 Electric Vehicle Supply Equipment (EVSE)

An EVSE is a wall mounted box that supplies electric energy for recharging of electric vehicle batteries. Also, EVSEs have a safety lock-out feature that does not allow current to flow from the device until the plug is physically inserted into the car.

EVSEs can be customized with added features like:

(i) Authentication

(ii) Integrated payment gateways

(iii) Software for remote monitoring.

As electric vehicle charging technology continues to advance, several standards and guidelines have become widely accepted across the industry. This section gives a brief overview of charging infrastructure technology, standards, and terminology.

17.4.2 Different types of EVSE:

Charging speeds:

Charging power, which determines the time required to charge a vehicle, can vary by orders of magnitude across charge points, as shown in Table in 3.1.1. A small household outlet may charge as slowly as 1.2 KW, while the most advanced rapid charging stations can charge at up to 350 KW. Charging infrastructure is broadly broken into three categories based on speed: Level 1, Level 2, and direct current (DC) fast charging (sometimes referred to as Level 3).

(Source: Emerging Best Practices for Electric Vehicle Charging Infrastructure- Oct' 2017)

Private Charging:

Charging batteries of privately owned cars through domestic charging points. Billing is mostly part of home/domestic metering.

AC "Slow" Charging:

The home private chargers are generally used with 230V/15A single phase plug which can deliver a maximum of up to about 2.5 KW of power. The EVSE supplies AC current to the vehicle's onboard charger which in turn converts the AC power to DC allowing the battery to be charged.

Public Charging:

For charging outside the home premises, electric power needs to be billed and payment needs to be collected. The power drawn by these chargers may need to be managed from time to time.

DC "Fast" Charging:

DC current is sent to the electric car's battery directly via the charge port. Fe chargers (usually 50 KW or more) can supply 100 or more kilometres of range per hour of charging. The fast chargers would generally be used as a top-up, rather than fully charging vehicles. These are important for cab companies and corporate users who have a fleet of electric cars.

17.5 Options for EV Charging

There is an urgent need to offer flexible charging infrastructure for different vehicle segments to drive adoption of EVs. Charging infrastructure is the most crucial enabler in the entire EV value chain. The exploration of different charging models according to the local conditions shall enable faster deployment of electric vehicles in the country.

17.5.1 EV share in all vehicles

It has been broadly projected that by the current rate of adoption of EVs, about 15% of all vehicles in the country would be EVs by the year 2020. Therefore, while assuming percentage composition of all proposed capacities in public facilities of vehicle holding capacity, the Metropolitan and 'Tier I' cities will be assumed to have a higher percentage share of EVs, say 20% for now. The charging infrastructure prescriptions in all urban development guidelines shall, therefore, be in consonance with the said percentage.

Power Load sanction to premises -While adding these Charging Infrastructures to the proposed set of building types of the Indian cities, enhanced Power Load shall have to be had for each such building type by the Power DISCOMs, commensurate to the total additional power requirement of simultaneous operation of all the prescribed charging points in the premise. With further advancement of charging technologies and the enhanced capacity of chargers to draw more power, it is advised that *the load*

capacity assigned to each premise should be kept with a safety factor of 1.25 with a long-term vision of 30 years.

17.5.1.1 EVs charging " modes" and 'availability'

Vehicle type	Slow Charging	Fast Charging	Public Cl
2 Wheelers	Y	N	Yes/limited
3 Wheelers	Y	N	Yes/limited
PVs (Cars)	Y	Y	Yes
PVs (Buses)	N	Y	Yes

17.5.1.2 Charging options for EV types (by ownership)

Vehicle Type	Private Cl	Public CS	Predominant place of charging
2 Wheelers	SC/BS	SC	Point of residence I Work
3 Wheelers	SC/BS	SC/BS	Residence / Parking stations
PVs (Cars)	SC/BS	FC	Residence / Point of work / other public places
PVs (Buses)	-	FC/BS	Bus Terminals/Depots

Note:

(i) The option of Battery Swapping (BS) for privately owned 2Ws and PV(Cars) is limited to Private Cl.

(ii) For 3 Ws the BS is proposed to be made available in PCS, for faster recharge experience only.

(iii) For PV (Buses), Captive Fast charging infrastructure for 100% internal use for fleets may be adopted by privately owned Depots/Garages.

Based on the above stated EV charging technologies available and the current trend of evolving technologies of faster charging experience, the Ministry of Power has issued ***Guidelines and Standards for setting up Charging Infrastructure for Electric Vehicles***, *Ministry of Power (MoP) Guidelines dated 14.12.2018* for charging infrastructure to be installed at every Public Charging Station (PCS). 'Connectivity regulations and Safety norms' shall be defined by respective authorities such as Central Electric Authority/MoP for grid access to such PCS/ any other charging station/infrastructure.

17.6 Charger Specifications and PCS Infrastructure

Any installed PCS shall have one or more electric kiosk/boards with installation of all charger models as prescribed in the Guidelines and Standards notified by Ministry of Power, dated 14 December 2018 for "Charging Infrastructure for EVs" (at Annexure E-2), with other necessary arrangements as deemed necessary.

Public Charging Station service providers shall be free to create charging hubs and to install additional number of kiosk/chargers in addition to the minimum chargers prescribed vide the MoP Guidelines, including options for installation of additional chargers, if required.

Note:

1. Minimum infrastructure requirements do not apply to Private Charging Points meant for self-use of individual EV owners (non-commercial basis).

2. Captive charging infrastructure for 100% internal use for a company's own fleet will not be required to install all type of chargers and to have NSP tie ups.

17.7 Location of PCS / FCB CS in local area / building precincts

In accordance with the Guidelines issued by the Ministry of Power (MoP), following minimum standards with regard to density of/distance between PCS in local level facilities in building premise / urban precincts shall be followed:

(i) At the Local levels (within the urban area):

- At least 1 Public Charging Station is to be available within a grid of 3Km x 3Km.

(ii) At the Building premise levels (for various building types)

- Private charging infrastructure (non-commercial use) for individuals.
- For all commercial modes of charging EVs, at least 1PCS, as per minimum specifications laid under MoP guidelines.
- Standalone Battery Swapping Stations may be added with the PCs.

17.8 Public Charging Infrastructure (PCI) - Minimum Requirements (Annexure E-2)

1. Every Public Charging Infrastructure shall have the following minimum infrastructure.
   a) An exclusive transformer with all related substation equipment including safety appliances.
   b) 33/11 KV line/cables with associated equipment including as needed for line termination/metering etc.
   c) Appropriate civil works.
   d) Adequate space for Charging and entry/exit of vehicles.
   e) Current international standards that are prevalent and used by most vehicle manufacturers internationally are CCS and CHadeMO. Hence, Public Charging Stations shall have, one or more electric kiosk/boards with installation of all the charger models as follows:

Charger Type	Charger Connectors*	Rated Voltage (V)	No. of Charging Points/No. of Connector guns (CG)
Fast	CCS (min 50 kW)	200 – 1000	1/1 CG
	CHAdeMO (min 50 kW)	200 – 1000	1/1 CG
Slow / Moderate	Type-2 AC (min 22 kW)	380 - 480	1/1 CG
	Bharat DC-001 (15 kW)	72 - 200	1/1 CG
	Bharat AC-001 (10 kW)	230	3/3 CG of 3.3 kW each

Note: In addition, any other fast/slow/moderate charger as per approved BIS standards whenever notified.

   f) The kiosk/board may have options for installation or additional chargers if required.

   g) The Public Charging Station Providers are free to create Charging Hubs and to install additional number of Kiosk/Chargers in addition to the minimum number of chargers prescribed above.

   h) Tie up with at least one online Network Service Providers (NSPs) to enable advance remote/online booking of charging slots by EV owners. Such online information to EV owners should also include information regarding location, types and numbers of chargers installed/available etc.

   i) Share charging station data with appropriate DISCOM and to maintain appropriate protocols as prescribed by such DISCOM for this purpose. CEA shall have access to this database.

   j) Appropriate public amenities.

   k) Where, in addition to the above, fast charging facility is also planned to be provided at the PCS by the PCI provider, the following additional infrastructure must be provided:

      - Appropriate Liquid Cooled cables if High Speed Charging Facility for onboard charging of Fluid Cooled Batteries (FCBs) is also planned,
      - Appropriate Climate Control Equipment for Fast Charging of Batteries to be used for swapping (i.e., not onboard)

2. Every Public Charging Station (PCS) shall be operational only after inspection and clearance as communicated by a suitable clearance certificate, by the concerned electrical inspectors/technical

personnel designated specifically by the respective DISCOM for this purpose. DISCOMs may also empanel one or more third party authorized technical agencies for this purpose.

3. Electric Vehicle Service Equipment (EVSE) shall be type tested by an appropriate reputed authority.
4. The above minimum infrastructure requirements do not apply to Private Charging Points meant for self-use of individual EV owners (non-commercial basis).
5. Captive charging infrastructure for 100% internal use for a company's own/leased fleet for its own use will not be required to install all type of chargers and to have NSP tie ups.
6. Public Charging Station can also have the option to add Standalone battery swapping facilities in addition to the above mandatory facilities, provided space/other conditions permit.

17.8.1 Public charging Infrastructure (PCI) for long distance EVs and/or heavy day EVs

1. Public charging stations for long distance EVs and/or heavy duty EVs (like trucks, busses etc.) shall have the following minimum requirements:
   a) At least two chargers of minimum 100 kW (with 200-1000 VI each of different specification (CCS & Chademo) and with single connector gun each in addition to the minimum charging infrastructure requirements as mandated for Public Charging Stations in para 3.
   b) Appropriate Liquid Cooled Cables for high-speed charging facility for onboard charging of Fluid Cooled Batteries (currently available in some long range EVs).
   c) In addition to 4.1 (i) and (ii) above, the Fast-Charging Stations (FCS) for Long Distance EVs and/or Heavy Duty EVs may also have the option of swapping facilities for batteries for meeting the charging requirements as per para 3 and para 4.1(i)&(ii) above. It is notable that Fluid Cooled Batteries (FCBs) are generally necessary for Fast Charging / Long Distance use of EVs and/or for Heavy Duty Vehicles like buses/trucks etc. FCBs will have higher charging rate and longer life.
2. Such Fast-Charging Stations (FCS)which are meant only for 100% in house/captive utilisation, for example buses of a company, would be free to decide the charging specifications as per requirement for its in-house company EVs.

17.8.2 Location of Public Charging Stations:

1. In case of Public Charging Stations, the following minimum requirements are laid down with regard to density/distance between two charging points:
   a) At least one Charging Station should be available in a grid of 3 Km X 3 Km. Further, one Charging Station be set up at every 25 Km on both sides of highways/roads.
   b) For long range EVs (like long range SUVs) and heavy duty EVs like buses/trucks etc., there should be at least one Fast Charging Station with Charging Infrastructure Specifications as per para4. I at every 100 Kms, one on each side of the highways/road located preferably within/alongside the stations laid in para3 above. Within cities, such charging facilities for heavy duty EVs shall be located within Transport Nagar, bus depots. Moreover, swapping facilities are also not mandatory within cities for Buses/trucks.
2. Additional public charging stations shall be set up in any area only after meeting the above requirements.
3. The above density/distance requirements shall be used by the concerned state/UT Governments/their Agencies for the twin purposes of arrangement of land in any manner for public charging stations as well as for priority in installation of distribution network including transformers/feeders etc. This shall be done in all cases including where no central/state subsidy is provided.

4. The appropriate Governments (Central/State/UTs) may also give priority to existing retail outlets (ROs) of Oil Marketing Companies (OMCs) for installation of Public EV Charging Stations (in compliance with safety norms including 'firewalls' etc.) to meet the requirements as laid above. Further, within such ROs. Company Owned and Company Operated (COCO) ROs may be given higher preference.
5. Any deviation from above norms shall be admissible only after specific approval of State Nodal Agency in consultation with the Central Nodal Agency.

17.8.3 Database of Public EV Charging Stations

Central Electricity Authority (CEA) shall create and maintain a national online database of all the Public Charging Stations through DISCOMs. Appropriate protocols shall be notified by DISCOMs for this purpose which shall be mandatorily complied by the PCS/BCS. This database shall have restricted access as finalised between CEA and Ministry of Power.

17.8.4 Tariff for supply of electricity to EV Public Charging Stations

1. The tariff for supply of electricity to EV Public Charging Station shall be determined by the appropriate commission, provided however that the tariff shall not be more than the average cost of supply plus 15 (fifteen) percent.
2. The tariff applicable for domestic consumption shall be applicable for domestic charging.

17.8.5 Service charges at PCS/BCS

1. Charging of EVs is a service as already clarified by Ministry of Power vide letter No. 23/08/2018-R&R dated 13.04.2018.
2. The State Nodal Agency shall fix the ceiling of the Service Charges to be charged by the Public Charging Stations.

17.8.6 Priority for Rollout of EV Public Charging Infrastructure

After extensive consultations with State Governments and different Department/Agencies of Central Government, phasing as follows are laid down as national priority for rollout of EV Public Charging Infrastructure:

17.8.6.1 Phase 1 (1-3 Years)

All Mega Cities with population of 4 million plus as per census 2011, all existing expressways connected to these Mega Cities & important Highway's connected with each of these Mega Cities shall be taken up for coverage. A list of these Mega Cities and existing connected expressways is attached at Annexure 1.

17.8.6.2 Phase 11 (3-5 Years)

Big cities like State Capitals, UT headquarters shall be covered for distributed and demonstrative effect. Further, important Highways connected with each of these Mega Cities shall be taken up for coverage.

The above priorities for phasing of rollout shall be kept in mind by all concerned. including, different agencies of Central/State Governments while framing of further policies/guidelines for Public Charging Infrastructure of EVs, including for declaring further incentives/subsidies for such infrastructure and for such other purposes.

17.8.7 Implementation Mechanism for Rollout

1. Ministry of Power shall designate a Central Nodal Agency for the rollout. All relevant agencies including Central Electricity Authority (CEA) shall provide necessary support to this nodal agency.
2. Every State Government shall nominate a Nodal Agency for that State for setting up charging infrastructure. The State DISCOM shall generally be the Nodal Agency for such purposes.

However. State Government shall be free to select a Central/State Public Sector Undertaking (PSU) including Urban Local Bodies (ULBs), Urban/Area Development Authorities etc. as its Nodal Agency.

17.8.8 Selection of Implementation Agency for Rollout

1. The Central Nodal Agency shall finalize the cities and expressways/highways to be finally taken up from the above phasing. in consultation with the respective State Governments.
2. An Implementation Agency shall be selected by the respective State Nodal Agency and shall be entrusted with responsibility of installation, operation and maintenance of PCS/FCS/BCS/BSF for designated period as per parameters laid down in this document and as entrusted by the concerned Nodal Agency. The Implementation Agency can be an Aggregator as mutually decided between Central and State Nodal Agencies. However, they can also decide to choose different PCS/FCS providers for bundled packages or for individual locations as mutually decided. Further, whenever bundled packages are carved for bidding, such packages shall necessarily include at least one identified expressway/highway or part thereof prepare a cohesive regional package; the selected identified cities may be divided into one or more parts as necessary for such purposes.
3. Where Implementing Agency is selected by bidding, all bidding shall be conducted by the State Nodal Agency.
4. There shall be an upper cap on the Service Charges declared by the State Nodal Agency as per para 8.2 above. Subsidy, if admissible from Central/State governments, shall be suitably factored in such calculations of Upper Cap/Bid Variable.

18 In-Building Solutions for Common Telecom Infrastructure (CTI)

18.1 Introduction to Communication System

Data growth is exploding globally and in India as per Nokia MBiT 2021 Report, the average monthly data usage per user in India has increased almost 17 times over the past 5 years. Covid 19 has further pushed data consumption with people staying indoors. Government has facilitated Work from Home (WFH) guidelines with a Work from Anywhere (within India) permitted. Home consumption of data has therefore grown exponentially through 2020. According to the Tower and Infrastructure Providers Association, almost 85% data traffic and 70% voice traffic is now generated indoors.

The World Bank has clearly demonstrated that every 10% increase in broadband penetration leads to nearly 1.40% increase in GDP growth rate. While that is a global average, even the India specific study by the reputed quasi- Government research agency, ICRIER, has shown that every 10% increase in internet traffic delivers 3.1% increase in GDP per capita and a 10% increase in investment in Telecom Infrastructure will increase GDP by 3.3% The entire consumer pull today is focused on data and broadband now with the new digital services providing voice services free with the data services. Video and app-based services are driving the demand for broadband with Apps for e-commerce, e- healthcare etc. in everyday use. It is very clear that internet traffic and Apps are contributing to GDP growth and for this to grow even further, conventional connectivity needs to be replaced with duct-sharing and fibre especially, which is an essential requirement In-Building as much as it is for FTTx and Tower Fiberization.

Note: "Service Provider": an agency that provides any type of telecom I IT services in a building complex, as per scope denned by DOT i.e. TSP I ISP I IP1 etc.

A broad variety of Information Communication Technology (ICT) systems are expected to be installed in buildings. In order to facilitate proper cabling and installation /up gradation of ICT systems and their cost effectiveness and maintenance, adequate physical infrastructure is required within buildings. This infrastructure will include common ducts, cable riser systems, conduits, cable trays and utility closets etc. among other things. The same can also be retrofitted into existing buildings wherever possible and feasible and must be designed in all new, re-developed and renovated structures. This section describes the general and specific requirements of such an ICT infrastructure in Building specially in respect of cabling aspects.

Communication systems are general utility in much the same way as water, power, gas, cable TV & CCTV/Security. Unlike traditional communication systems which are constantly evolving, the recommended Digital infrastructure has to be designed to be flexible enough to accommodate a variety of ICT systems and emerging technologies and be future proof for the next 25-30 years. Space and power are required for installation of common ducts, optical fibre, small cells, antennas, smart sensors etc, space, power and earthing are required for electronic equipment installation for supporting the various digital technologies of now and the future. Most communication utilities can share the same space since the physical topology and wiring requirements are similar and no significant power is present in the cables. However, in some cases state-of-the - art communication cabling or equipment will involve new or more specific requirements for utility spaces such as

(i) Cable routing layout and cable length restrictions between Workspace and utility closet.
(ii) Bending radius and working clearance requirements for different cable types, e.g. Fiberoptic cables, Cat-6 Cables and co-axial cables.
(iii) Isolated power circuits for permanent communication equipment.
(iv) Protection, Safety, Grounding, and environmental requirements of communication equipment.

18.2 In- Building and Gated Buildings Solutions

It is important to ensure quality telecom services inside a building - in residential, multi-story building, commercial complex, hotel or airport, police/Government offices/buildings etc. It is also essential for Telecommunication Service Providers/IP-1s to work on sharing of telecom infrastructure which may be made mandatory as they extend the services in the buildings.

Telecom Service Providers/IP-1s require a non-discriminatory and unhindered access inside the building / along the premises to install the telecom infrastructure or lay their cables.

At present, mobile operators and the building owner or building developer or Resident Welfare Associations (RWA) enter into commercial agreements for in- building deployment. Building owners or building developers delay the negotiations or request exorbitant rents - slowing down the speed of deployment. The Urban Local Body /Urban Development Authority may intervene in this regard wherein commercial agreements are insisted upon. TSPs/IP-1s should be given legal rights and permissions to use the Common Telecom Infrastructure (CTI) within the premises of Building / Gated Society free of charge or for a standardized nominal charge just like other essential services like water electricity and/or gas. Provision of CTI in a building should not be deemed as a revenue source in any way, much as the water and electricity utilities are not. Sufficient space should be provided within the premises to install telecom services by MNOs/ network operators. The issue is not limited to sharing of IBS/ Distributed Antenna System (DAS) systems only, but TSP should get access to all telecom infrastructures including Fiber Cable and LAN cables for provision of wired and wireless network, other telecom/ ICT and IoT services.

It is important for telecom service providers to provide mobile coverage I network presence/high speed connectivity inside big residential / commercial complexes to improve QoS of their networks. It may not be practical to install individual in-building infrastructure by TSPs/IP-1s as this will result in not only duplication of network resources but will also entail huge avoidable cost. It may also be not advisable to lay down cables again and again on the same land / building by several TSPs/IP-1s.

18.3 Incorporation in State Building Bye Laws

The buildings are to be constructed in such a way that they are 'Digital Infrastructure deployment'/ 'Digital Connectivity' ready. There should be provision of telecom ducts / common pathways / runways (digital access paths) to reach to the accessible parts of the buildings. The common ducts /digital access paths to access buildings from outside should invariably be part of the CTI, which could be used by TSPs/IP-1s for laying/deploying digital infrastructure including cables. While approving the building plans, it has to be ensured that plan for creation of CTI including the common duct to access the common space used as telecom room inside the building is also prepared and separate set of drawings showing the inter/ intra connectivity access to the building with distribution network need to be furnished.

Occupancy-cum-Completion certificate to a building to be granted only after ensuring that the CTI as per the prescribed standards is in place and an undertaking by the Architect or Engineer to be insisted to certify that building has ensured common access to all digital infrastructure to all Service providers in accordance with plan of creation of CTI. Provision of visit from Department of Telecom (DoT) / TRAI officials along-with joint inspection with TSPs - who may suggest any relevant modification in the plan to be ensured.

As part of Building Byelaws, the builder/RWA should be mandated to ensure that:

(i) While preparing the building plans, there is a need to mandate to have properly demarcated sections within buildings and on rooftops for housing Broadband / digital connectivity

infrastructure/ antenna. These areas should have access to power supply for reliable, always-on services.

(ii) Access to building as well as CTI facilities inside the building should be available on a fair, transparent and non- discriminatory manner to all Service Providers /IP1's.

(iii) The Service Providers / IP1's should have unrestricted access for maintenance work.

(iv) The permission to in-building access and/or CTI facilities inside the building should not be seen as a source of revenue generation for builder(s)/RWA(s) but as a means for facilitating penetration of broadband access and thereby helping in socio-economic growth of all the residents.

(v) Charges (rentals/power rates etc.) levied to the TSPs/IP-1s should be fair, transparent, and non-discriminatory and should be on residential rates.

Suitable provision for the creation of Common Telecom Infrastructure (CTI) inside the newly constructed public places like Airports, commercial complexes, and residential complexes, be incorporated in State/UT Building Bye Laws.

18.4 At Layout Level

While developing Greenfield cities/towns, the layout plans should clearly indicate the telecom as Utility infrastructure lines. Standards followed for Utility planning shall be published and work shall be done by the respective department for bringing in the standardization of the utility coding and sequences. The placement and sequence of above- and below-ground utilities at the appropriate location in the right-of-way to be ensured for unconstrained movement as well as easy access for maintenance. Telecommunication cables should be placed in a duct that can be accessed at frequent service points with sufficient spare capacity to enable scaling and future expansion, and empty pipes (large size hume pipes/ HOPE pipes) should be laid before planting trees to accommodate additional infrastructure.

Digital Readiness Rating of Buildings / Society in line to the GREEN ratings shall be created where the existing and new buildings shall be rated on standardized parameters such as but not limited to; Digital Infrastructure access, provisions for Emerging Technologies, Maintenance and Operational ease to TSPs / IPv1, Quality of Wireless Services, Quality / Interchangeability ease of Wireline Services till each Unit Security, redundancy and Expandability of the digital infrastructure etc. A detailed rating parameters and calculation mechanism of Points / Stars shall be devised and benchmarked for all new/ retrofitting of buildings/ societies.

Digital Asset repository which will ensure Proper planning and mapping of utilities through GIS is necessary especially when the alignments of telecommunication cables are identified. Design criteria and standards Utilities should meet the following criteria:

(i) Telecommunication cables should ideally be placed below the parking area or service lane, which may be dug up easily without causing major inconvenience. Where this is not possible, the cables may be placed at the outer edge of the right-of-way.

(ii) There is a need to reduce conflicts with pedestrian movements is to place telecom boxes in easements just off the right-of-way. Where this is not possible, they should be placed within parking or landscaping areas. If cables have to be located in the pedestrian path, a space of at least 2m should be maintained for the through movement of pedestrians. Telecom boxes should never constrain the width of a cycle track.

(iii) In order to minimize disruptions, cables should be installed with proper maintenance infrastructure.

18.5 Other procedures for setting up In-Building Solution (IBS)/Fiber Networks

18.5.1 Installation of In-Building Solution (IBS) / Smart Connectivity infrastructure

There is a need to promote installation of In-Building Solution (IBS) / Smart Connectivity infrastructure, where there is a poor connectivity in terms of weak signal strength inside the office, shopping mall, hospitals, multi-story building, education institutions and the objective has to be to strengthen quality of service of the voice & data of mobile and Fiber broadband network and access to digital services being offered by TSP And IP1's.

18.5.1.1 Procedures of obtaining IBS-NOC during plan approval and completion

a) While submitting the proposed Building plan seeking approval from the relevant sanctioning Authority, applicant shall also submit:

   (i) A complete Service Plan for IBS-infrastructure along with required specifications (in consultation with, and certified by a credible Telecom Networking hardware-consultant)

   (ii) An undertaking that such IBS Infrastructure, when constructed shall be available for sharing by various TSPs/IP-ls.

   (iii) Such Service Plan (IBS) shall be forwarded by the concerned Local Authority to the Telecom Enforcement Resource and Monitoring (TERM) cell of the State (external NOC agency) - for approval NOC.

   (iv) During the Joint Site Inspection of the completed building structure the TERM cell shall undertake inspection of the constructed/installed IBS infrastructure - for issuance of NOC for OCC.

b) The Local Authority shall liaise with the TERM cell as per its relevant online/offline process of communication to seek the relevant NOCs within the specified time as per the Service Charter/ Service Guarantee Act and rules in place. Separate communication from the applicant shall be needed to secure the IBS NOC.

18.5.1.2 Provision of IBS components in building premises: (as per NBC 2016)

a) Entrance Facilities (EF) /Lead-in conduits: *(clause 3.1.4, of Part 8: Sec 6)*

b) Min. 1.2m x 1.83m space to be allocated for each TSP adjacent to the EF.

c) Underground conduits/pipes to MDF room: min 100mm diameter encased conduits.

d) Main Distribution Frame (MDF)/Equipment Room (ER): *(clause 3.1.2, Part 8: Sec 6)*

   (i) prescribed size with L:W ratio between 1:1 to 2:1

   (ii) appropriate ventilation of MDF room

   (iii) proper lighting for vision of equipment,

   (iv) located at a level above from the Natural Ground level to avoid incidence of flooding.

e) Electric distribution panels, isolators, sockets and earthing as per specific requirements w.r.t the area proposed for coverage (DUs/ service subscribers)

f) Telecommunications Room (TR) at each building block unless provided with MDF room: *(all provisions of space to be as per clause 3.1.3.2, Part 8: Sec 6)*

g) Appropriate nos. of Service/Telecom risers (vertical shafts) for all multi- storeyed buildings w.r.t the area proposed for coverage (DUs/ service subscribers):

(i) of appropriate nos. and size (width & depth) to accommodate cable trays

(ii) with of access door at each floor.

h) Telecommunications Enclosures (TE) at each floor of a block or TR *(clause 3.1.5, Part 8: Sec 6)*

i) Telecom Media and Connecting Hardware (TE): *(clause 3.2, Part 8: Sec6)*

j) Various cabling system and trays: *(clause 3.2.4, Part 8: Sec 6)*

k) Wireless systems: *(clause 3.2.5, Part 8: Sec6)*

l) Backbone Cabling Media Distribution and Bldg. pathways *(clause 3.3, Part 8: Sec 6)*

m) Horizontal Cabling Media Distribution and Bldg. pathways *(clause 3.4, Part 8: Sec 6)*

n) IBS installation spaces: area for rooms or systems (e.g. antennas, base stations, remote units, power distribution boxes etc.) to be provided as per requirements w.r.t the area proposed for coverage/ no. of proposed users (*as per clause 3.1.3.2, Part 8: Sec6*, table stated below).

Telecom room space norm for buildings with Built-up area >465 sqm

Sl.	Area to be covered by IBS	Size of Telecom Room (all dimension in m)
1	Upto 465 sqm	3.0 X 2.4
2	465.0 sqm to 930.0 sqm	3.0 X 3.4
3	More than 930.0 sqm	Additional TR required with same space norms

Space requirements for smaller buildings with Built-up area <465 sqm:

Sl.	Area to be covered by IBS	Space provisions (all dimensions in m)
1	Up to 93.0 sqm	Wall cabinets, self-contained enclosed cabinets
2	93.0 sqm to 465.0 sqm	Shallow Room (0.6 x 2.6) Walk-in Room (1.3 x 1.3)

Note:

IBS installation spaces, so provided, should be:

(i) not susceptible to flooding.

(ii) not exposed to water, moisture, fumes, gases, or dust.

(iii) able to withstand designed equipment load (to be specified in design)

(iv) located away from any vibrations to avoid dislocation/dislodgement.

For any other necessary detailing of building components and service installations with respect to common Telecom/Digital connectivity Infrastructure, architects/ developers and other service consultants involved in preparing building and service drawings may refer *Part 8 - Section 6: Information and Communication Enabled Installations of Volume 2 of the National Building Code, 2016.*

18.5.2 Mode of deployment of In-Building, FTTx/ IP Solution:

There shall be various mode of deployment of In Building solutions such as: the possible modes are deployment by a neutral host infrastructure provider or build and managed by mobile operator and sharing with other service providers on non-discriminatory basis. The In-Build Solutions (IBS), FTTx/IP Solutions can also be deployed by TSPs/ IPs. Moreover, if TSP/ IP1 requires to install optical fiber for connecting In-Building Solution (IBS)/ Distributed Antenna System (DAS) nodes/ FTTx solutions, RoW/ permissions should be granted by the road owning agency through online mode (if same is working seamlessly) or offline mode till online system is established. For deploying indoor solutions these companies should have deemed permissions from the premises owners for installation of Distribution Network within the utility shafts / common spaces with provisions for common I shared Points of Interconnect for Connectivity to individual units. Moreover, if the TSP/IP requires to install optical fiber for connecting In-Building Solution (IBS) / Distributed Antenna System (DAS) nodes, FTTx/IP Solutions for which RoW / permissions should be granted by the road owning agency through online mode.

18.5.3 Permissibility

The IBS, FTTx/IP component being small equipment can be installed on any type of land/building/utility pole and shall be exempted from obtaining the permission for installation of these components from the respective Urban Local Body/Urban Development Authority but should get permission from the Administrative Authority of the concerned premises.

18.5.4 Procedure for submitting application for obtaining clearance.

TSP/ IP-1 will apply to the administrative authority of the building/ head of the office with layout diagram for implementing IBS in the building as mentioned in the RoW Rules 2016 or State notified RoW Policy.

18.5.5 Fees

No fee will be charged for IBS/ FTTx Network. However, charges may be levied for power (as per Industry tariffs), fixtures, etc. provided by building owners to TSP/ IP-1s as per actuals.

18.5.6 Access and Distribution Fiber and IP/LAN networks

Access and Distribution Fiber and IP/LAN networks for connectivity for the shopping malls, Multi-Storey Residential Buildings, Cooperative Housing Societies, Residential Welfare Association and Commercial Buildings to be planned and deployed by TSP/IP-1s as per standard requirement of providing high bandwidth and adequate indoor coverage to each unit/apartment in these complexes.

xx-end of the chapters-xx

Appendix-1: List of Government Orders, Policies, Rules, Byelaws (B.1.6)

Government Orders to be fully amended

Sl.	Name of the order, rule, policy	Notification number
1	Building Byelaws 2008	2038/8-3-09-181/Vividh/2008 dated 12 May 2009
2	Compounding Byelaws 2009	4824/8-3-09-09/Vividh/09 dated 14 Jan 2010
3	GO on EWS/ LIG 2010	5899/8-3-09-214/Vividh/09 dated 14 Jan 2010
4	GO on EWS/ LIG 2011	338/Eight-1-11-80/Vividh/2010 dated 26 Sep 2011
5	GO on EWS/ LIG 2013	3188/8-1-13-80/Vividh/2010 dated 5 Dec 2013
6	GO on EWS/ LIG 2016	3267/Eight-1-16-80/Vividh/10 dated 24 Oct 2016
7	Building Byelaws 2008	4384/8-3-11-181/Vividh/2008, dated 27 Sep 2011
8	Building Byelaws 2008	3188/8-3-11-80/Vividh/2010, dated 5 Dec 2013
9	Building Byelaws 2008	462/8-3-16-34/Vividh/2008, dated 17 Jun 2016
10	Building Byelaws 2008	3267/8-3-16-80/Vividh/2010, dated 24 Oct 2016
11	Building Byelaws 2008	1311/8-3-16-297/Vividh/2016, dated 27 Dec 2016
12	Building Byelaws 2008	1241/8-3-17-34/Vividh/2008, dated 31 Oct 2017
13	Building Byelaws 2008	813/8-3-18-34/Vividh/2008, dated 8 Jun 2018
14	Building Byelaws 2008	1646/8-3-19-34/Vividh/2018, dated 5 Oct 2018
15	Building Byelaws 2008	55/8-3-19-160/Vividh/2018, dated 28 Jan 2019
16	Building Byelaws 2008	63/2021/1093/8-1-1-34/Bhaitak/2014, dated 23 Mar 2021
17	Building Byelaws 2008	2492/2023/8-3099/1710/2020, dated 30 Nov 2023
18	Building Byelaws 2008	I/681559/2024/8-3099/279/2024, dated 2 Jul 2024
19	Building Byelaws 2008	I/685078/2024/8-3099/2024, dated 5 Jul 2024
20	Building Byelaws 2008	I/768724/2024/8-3099/279/2024, dated 14 Oct 2024
21	Amendment in Chapter 5 (Expectation for Construction of Hotels) in Building Byelaws	8-3099/5/2024 dated 05/07/2024

GOs/Policies to be partly amended

Sl.	Name of the order, rule, policy	Notification number
1.	High-tech Township Policy 2003, 2005, 2007 as amended time to time	All related GOs
2.	Integrated Township Policy 2005	2711/Eight1-05-34 Vividh/03 dated 21 May 2005
3.	Integrated Township Policy 2014	520/8-3-14-37 Vividh/13 dated 4 Mar 2014
4.	Uttar Pradesh Transit Oriented Development Policy 2022	2120/8-3-22-198Vividh/14 dated 24 August 2022
5.	Uttar Pradesh Township Policy 2023	1559/Eight-3-23-172 Vividh/2016 dated 22 Jul 2023
6.	Uttar Pradesh Urban Planning and Development (Assessment, Levy and Collection of Impact Fee) Rules, 2024.	122/2025/8-3099/406/2023 dated 28/01/2025
7.	Purchasable FAR Rules, 2024	367/2025/8-3099/406/2023 part-2 dated 28/02/2025
8.	Zoning Regulations	

Appendix-2: Application form for development permit (B.2.2.1)

To,

Vice Chairman,
Development Authority,
……..

Sir,

I hereby submit this application (in duplicate) that I wish to undertake development/ redevelopment in Sajra No. …… Plot Number …… Colony/Road …… Mohalla/Market …… Nagar …… and apply as per relevant bye-law number 2.1.1 of the building byelaws and I also attach the plans and specifications (items 1 to 6) in quadruplicate, signed by me, and also by the Licensed Technical Person ……. (name in bold) Registration No. …….. who will supervise the development work and attach each statement/form (items 7 to 9).

1. Key Plan
2. Site Plan
3. Map of situation in the master plan
4. Draft Sub-division/Layout Map
5. Services Plan
6. Specifications
7. Ownership Certificate
8. Attested copy of application fee
9. Necessary information and documents

I request that the plan be approved, and permission be given to develop the land.

Date:

Owner's signature……

Owner name……
(in bold letters) ……...
Owner address…….

Appendix-3: Notice to start land development work (B.2.8.1.1)

To,
…….
Development Authority

Sir,

I hereby certify that the development work of land on Khasra Number …… situated on Plot Number ……... in Colony/Road …….. Mohalla/Market …….. City …….., will be started as per your approval letter dated …… and Map No. 6 dated ……... which shall be inspected by Licensed Technical Person (Name)…… Registration No. ……...

Date:

Place:

Owner's signature……
Owner name…….
(in bold letters) ……
Owner address…….

Appendix-4: Application Form-D for completion certificate of layout plan (B.2.9.1)

…… Development Authority

Form-D (Part A)

1. (I) Name of the applicant……. (II) Present address……..
2 Khasra / Plot number and Name of the scheme / Mohalla / Ward……
3 Area of the plot (in square metres)
4 Permissible land use……..

(I) Date of layout map approval,
(II) Permit number,
(III) If compounding of unauthorized development has been done, attach a copy of the compounding map giving details of receipt number and date of deposit of compounding fee. ……..……..

5 Land use details:

S. No.	Land Use Category	As per Approved Plan		Developed		Deviation	
		Area (Sq.M.)	Percentage	Area (Sq.M.)	Percentage	Area (Sq.M.)	Percentage
1	2	3	4	5	6	7	8
1	Residential						
2	Commercial						
3	Other						
4	Parks & Open Spaces						
5	Roads And Streets						

6 Features Status:

S.No.	Features	Provisions in Approved Plan		Provisions in Completed Map			
		No.	Area (Sq.M.)	No.	Area (Sq.M.)	No.	Area (Sq.M.)
(I)	Primary School						
(II)	Higher Secondary School						
(III)	Degree College						
(IV)	Dispensary						
(V)	Hospital						
(VI)	Post Office						
(VII)	Community Centre						
(VIII)	Police Station						
(IX)	Fire Station						
(X)	Telephone Exchange						
(XI)	Bus Station						
(XII)	Taxi Rank						
(XIII)	Public Facilities						

(XIV)	Other Facilities						

7. Mark the following development work configuration on the map:-

(I) Roads
(II) Roadside tree planting (arboriculture)
(III) Culvert
(IV) Street lighting system
(V) Drinking water distribution system in which sluice valves, air valves, fire hydrants are shown, and the diameter of underground water pipes is indicated.
(VI) Location of overhead tanks and underground reservoirs and their capacity, number of pumps and their capacity.
(VII) Sewer system including diameter of pipes, location of main holes, gully pits giving invert labels.
(VIII) Location of sewage, pumping station, its capacity and number and capacity of pumps (if the said development has been done by the developer).
(IX) Rainwater drainage system.
(X) Power supply system indicating the location of transformers and 11 KVA sub-stations and the capacity of transformers.
(XI) Final discharge of sewer--details of connection with trunk sewer lines of Development Authority/ Housing and Development Board/ Local Body etc.
(XII) Ground water recharging system.

8. Position/arrangement of connection with the city's infrastructure system:

(I) Roads
(II) Drainage (connection to trunk drain)
(III) Arrangement of drinking water (connection arrangement with Jal Sansthan/ Development Authority/ Local Body etc.)
(IV) Electrical system (connection status to 33 KVA/11 KVA line and status of transformer)
(V) Position of connection to sewer/ trunk sewer

9. Internal changes in configuration map

(I) Is / is not under the byelaws. - Yes / No
(II) If it is contrary to the byelaws, it has been mitigated. - Yes/No

Or
Revised map is accepted. - Yes/No
(If yes then attach certificate)

10. Information regarding standards and specifications of development works:

There has been no deviation in the standards and specifications of the development works approved along with the configuration map.
Or
There is deviation in the standards and specifications of the development works, approval of which has been obtained from the concerned department (certificate is attached). Now there is no such deviation which is not approved by the competent authority.

Applicant's Certificate

It is certified that the above details are true to the best of my/our personal knowledge. The land use distribution in the configuration map is as per the map approved by the authority. All facilities and

development work are as per the contract. Therefore, I/we may be issued a completion certificate of the above-mentioned layout plan.

Attachment Records:
1
2
3

Date:

Signature of the authorized applicant for the application

Note: The above information will be given only by the person authorized for the application. Certificate of authorization will be attached.

Form-D (Part B):
Certificate of Licensed Architect/Town Planner (For layout map) - (Page 4/5)

I inspected the Area/ Scheme …….. located in Ward …….. of Mr./Mrs. (Applicant's Name)……. on date …….. and all the information given above has been found to be correct after site investigation. My investigation report in this context is as follows:-

All development works are in accordance with the standards and specifications pre-determined and approved by the ……(name of the authority)……. development authority.
Or

The plan developed is in accordance with the layout map/applicable bye-laws approved by the development authority.
Or

There is a deviation from the approved configuration map in the developed plan which has been marked at serial no. 9 and the mitigable deviation has been rectified. In the above situation it is recommended to issue completion certificate.
Date……..

Signature: ……..
Licensed Architect/Town Planner Name/Address……..
Registration no.. ……..
Registration validity period……..

Form-D (Part C):
Certificate of licensed technical person regarding rainwater harvesting (For Layout map)

The provision of rainwater harvesting (ground water recharging system) in the developed plan is in accordance with the layout map/applicable byelaws approved by the development authority.
Date
Signature: ……..
Licensed Technical Person Name/Address……..
Registration number……..
Registration validity period……..

Form-D (Part D):

Development Authority's comments and completion certificate (To be issued on photocopy of Part 'A', 'B' and C of the application form)

Verification of the above certificate given in relation to the scheme developed on plot number …….. located in …….. Ward/plan/locality/sector.
Mr ……..(Designation)…… dated …… has been done by the Development Authority and has been found correct as per the layout map approved by the Authority. Therefore, completion certificate is issued as per Section 15 A (2) of Uttar Pradesh Urban Planning and Development Act 1973.
Signature……..
Designation……..
Seal of office……..
Date-……..

Appendix-5: Application Form for building permit (B.2.2.1)

To,
……..
……..

Sir,

I apply for construction or alteration in building number …… Mohalla/Market …… Colony/Road …….. City …….. on plot number ……., sajra number ……., under building construction bye-law number 3.1.2 and for this, the following map and specifications (item no. 1 to 4) in 4 copies which are signed by me and the licensed technical person ……..(name in bold letters)…….. registration no. …….. who will supervise this construction and other declarations and desired forms are attached. (Item no. 5 and 6).

1. Site Map
2. Building Map
3. Services Map
4. General Specifications
5. Land ownership certificate
6. Photocopy of receipt of application fee

Please approve the above-mentioned construction and grant permission to carry out the work.

Signature of the owner-……..
Owner name……..
Owner address……..
Date: ……..

Appendix-6: Form to intimate start of building construction (B.2.8.1.2)

To,
……..
……..
……..

Sir,

I certify that the work related to work of construction, reconstruction, alteration or demolition of my building number ……. located in Sajra number ……. Colony/Road-……. Mohalla/Market …… City …… will start on date …….. as per the map number …… approved by you under the supervision of licensed technical person registration number ……..name ……...

Signature of building owner……..
Name of building owner……..
Building owner's address……..

Date :- ……..

Appendix-7: Application Form-A for completion certificate of residential building (> 300 sqm.) – (B.2.9.2)

…….development Authority

Form-A (Part A)

1. (I) Name of the applicant…….
(II) Current address…….
2. Plot number and scheme name/locality/ward number…….
3. Area of the plot (in square meters) ……
4. Permissible use of the building ……
5. (I) Date of building map approval ……
(II) Permit number ……
(III) If it is automatically approved, then along with the details of that provision, also give other relevant details so that it can be proved that this case is covered by the automatically approved provision and the prescribed conditions have been fulfilled. ……
6. (I) If mitigation of unauthorized construction has been done, then mention the number and date of approval of the plan map. ……
(II) Date/dates of mitigation pulque payment and receipt number/numbers and attach certified copy of mitigation map. ……

Receipt number: ……
Date:
……

7. Construction status: (Give details as per builder approved map/ blast map as applicable)

Serial number	Provision	Permissible	Construct	Accepted/Mitigated
1	2	3	4	5

7.1 Set Bank (in Meters)
(a) in front
(b) behind
(c) right
(d) left
7.2 Basement (area in square metres)
7.3 Facilities (Yes/No)
(a) water supply (Yes/No)
(b) excretion
(Yes/No)
(c) drainage
(Yes/No)
(d) power supply
(Yes/No)
(e) Rooftop Rainwater Harvesting System (Yes/No)
(f) Solar water heating plant (in plots with area more than 500 sq.m.) (Yes/No)
7.4 Internal changes in the building-
(a) Under building byelaws
(b) if contrary to the byelaws
It has been extinguished.

8. Certified that the above details are true to the best of my/our personal knowledge. There is no unauthorized construction which has not been mitigated. Therefore, completion certificate should be issued for the construction done on the said building.

Attachment records

1.
2.
3.

Authorized applicant for application
Signature of Applicant
(With Certificate of authorization)

Form-A (Part-B)

Certificate of Licensed Architect/Engineer
(for residential building)

I inspected the building number……. (including address) …….. of Shri/Smt. (Applicant's name) ……. on date ……. The above has been found correct after investigation. The findings of my investigation are as follows.

(I) The constructed building is as per the map/approved mitigation map approved by the Development Authority.

Or

(II) Any deviation from the approved map or approved mitigation map in the constructed building is marked at number 7.

Or

(III) The part of the constructed building which was not suitable for mitigation has been demolished. The remaining construction is as per the approved map/mitigation map.

In the above situation, it is recommended to issue completion certificate.

Signature-
Licensed Architect/Engineer
Name/Address……
…..
……..
Council of Architecture
Registration
No.…….
Period of Registration
Validity

Date…… ……..

Form-A (Part-C)

Certificate of licensed technical person regarding rainwater harvesting
(For residential building)

Provision of rainwater harvesting system (Roof Top Rainwater Harvesting System) in the constructed building has been made as per the building map/applicable byelaws approved by the development authority.

Signature-…….
Licensed Technical
Person
Name/Address …..
……
…….
Registration
Number…….

Form-A (Part-D)
Development Authority's comments and completion certificate:
(To be issued on the photocopy of Part 'A', 'B' and 'C' of the application form)

Plot number…… located in Ward/Scheme/Mohalla/Sector……..The above certificate given in relation to the building constructed on, has been examined by Shri…….. (Designation)……. Development Authority and has been found correct as per the map approved by the authority.

Therefore, completion certificate is issued as per Section-15A (2) of Uttar Pradesh Urban Planning and Development Act-1973.

Or

Due to the following reasons, there is no need for site inspection/verification, hence the completion certificate is issued on the basis of the certificate submitted by the architect/engineer-

1. ……
2. ……

Signature……
……
Designation……
…...
Seal of
office…….

Date……
……

Appendix-7: Application Form-B for completion certificate of group housing, commercial and multi-storey building (B.2.9.2)

……development Authority
Form-B (Part-A)

1. (I) Name of the applicant ……..

   (II) Present address ……..

2. Plot number and plan ……..

   Name / Mohalla / Ward ……..

3. Area of the block (in square meters) ……..
4. Permissible use of the building ……..
5. (I) Date of building map approval ……..

   (II) Permit number ……

   (III) If automatically approved, details of the provision:

   If information about rejection of building map is not given within the prescribed period from the date of submission of building map - attach the date of submission of map, receipt number and certified copy of the receipt.

   ……..

6. (I) If mitigation of unauthorized construction has been done, attach a copy of the mitigation map.

   ……..

   (II) Attach the date of payment of mitigation fee, receipt number and certified copy of the receipt.

   ……..

7. Construction status

Serial number	Provision	Permissible	Construct	Accepted/Mitigated deviation
1	2	3	4	5

7.1 Soil cover (percentage)
7.2 F.A.R.
7.3 Set Bank (Distance in Meters)
   (a) Front
   (b) Behind
   (c) Left
   (d) Right

Serial number	Provision	Permissible	Construct	Accepted/Mitigated deviation
1	2	3	4	5

7.4 (a) Basement area in square meter)
   (b) use of basement
7.5 Stilt Floor
   (a) area
   (b) use
7.6 Parking (Area in cm)
7.7 Height of building (in metres)
7.8 Number of floors

8. Firefighting related work
(Enclose certificate of completeness of firefighting system from the Chief Fire Officer)

9. Features to be shown on map:

(a) water supply
(b) excretion
(c) Drainage
(d) Solar water plant
(e) Electricity supply
(f) Lift
(Enclose certificate of completion of lift from Chief Electrical Inspector, Uttar Pradesh)

10. Garbage Chute (Yes/No)
11. In case of being situated in aviation area

aviation lights (is/isn't)

12. Whether Rainwater harvesting system is installed or not (Attach certificate from licensed technical person) (Yes/No)
13. Internal change in Building-

(a) under the byelaws (is/isn't)
(b) If contrary to the byelaws, then yes/no (is/isn't)
It has been extinguished. Yes No

It is certified that the above details are true to the best of my/our personal knowledge. There is no unauthorized construction under the applicable building byelaws which has not been mitigated. Therefore, completion certificate should be issued for the construction done on the said plot.
Attachment Records:
1. Signature of the applicant authorized for application
2. (including certificate of authorisation)

Date……
Note: - 1. The said information will be given only by the person authorized for the application. Certificate of authorization will be attached.

3. Separate applications will have to be submitted for each block in the building complex.

Form-B (Part-B)

Certificate of Licensed Architect/Engineer
(for group housing/commercial and multi-storey buildings)

It is certified that the construction/reconstruction/alteration/addition work of the building number……. situated on the plot number….. Khasra number……. of Shri/Mrs. (Applicant's name) ……. was done under my supervision. All the information given above is correct. My statement in this context is as follows: -
The constructed building is as per applicable byelaws and approved map/approved mitigation map.
Or
The deviation in the constructed building from the approved map or approved mitigation map is marked at number 7.
The building is suitable for the purpose for which it is constructed/renovated/altered. Its quality is of high class, and it is safe on the basis of structure. The building is completely suitable for habitation and is safe.

Therefore, it is recommended to issue completion certificate.

Signature: Licensed
Architect/Engineer……..

Name/Address…….
Council of Architecture Registration/
Registration Number…….
Date……. Period of Registration Validity……

Form-B (Part-C)

Certificate of licensed technical person regarding rainwater harvesting (for group housing/commercial and multi-storey buildings)

Development of provision for rainwater harvesting (rooftop rainwater harvesting system) in the constructed building.

The building has been constructed as per the approved building plan/byelaws approved by the authority.

Signature……
……
licensed technical person……..
Name
Address…….
.
Registration number…….

Form-B (Part-D)

Development Authority's comments and completion certificate:

(To be issued on photocopy of parts 'A', 'B' and 'C' of the application form)

The plot number……. Shri ……. (designation)…… located in the Sambani Mejadar Mohalla sector of the Ward/Plan/Mohalla/constructed building …….. has been taken over by the Development Authority and the construction work has been found correct as per the map approved by the Authority. Therefore, Uttar Pradesh Nagar Completion certificate issued as per Section 15A (2) of the Planning and Development Act 1973.

Signature ……..
Designation ……..
Seal of Office ……

Date……..

Appendix-7 Application Form-C for completion certificate of buildings other than residential, group housing, commercial and multi-storey buildings (B.2.9.2)

……development Authority

Form-C (Part-A)

1. (I) Name of the applicant ……..

   (II) Present address ……..

2. Plot number and plan ……..

   Name / Mohalla / Ward ……..

3. Area of the block (in square meters) ……..
4. Permissible use of the building ……..
5. (I) Date of building map approval ……..

   (II) Permit number ……..

   (III) If automatically approved, details of the provision: If information about rejection of building map is not given within the prescribed period from the date of submission of building map - attach the date of submission of map, receipt number and certified copy of the receipt. ……..

6. (I) If mitigation of unauthorized construction has been done, attach a copy of the mitigation map. ……..

   (II) Attach the date of payment of mitigation fee, receipt number and certified copy of the receipt…… ……..

7. construction status

Serial number	Provision	Permissible	Construct	Accepted/Mitigated deviation
1	2	3	4	5

7.1 Soil cover (percentage)
7.2 F.A.R.
7.3 Set Bank (Distance in Meters)
   (a) Front
   (b) Behind
   (c) Left
   (d) Right
   (e) Basement area in square meter)
7.4 facilities
   (a) water supply Yes/No
   (b) excretion Yes/No
   (c) drainage Yes/No
   (d) power supply Yes/No

8. internal changes in the building
   (a) under the byelaws, Yes/No

(b) if it is contrary to the byelaws, its Yes/No

9. Certified that the above details are true to the best of my/our personal knowledge. There is no such unauthorized construction under the applicable building byelaws, hence completion certificate should be issued for the construction done on the said plot.

Attachment record
1.
2.
3.

Date …….

Signature of the applicant authorized for application
(with certificate)

Note - 1. The said information will be given only by the person authorized for the application, being authorized Certificate should be attached.

2. Separate applications will have to be submitted for each block in the building complex.

Form-C (Part-B)
Certificate of Licensed Architect/Engineer
(for buildings other than residential, group housing, commercial buildings, multi-storey buildings)

It is certified that the construction/reconstruction/alteration/addition work of Mr./Mrs. (Applicant's name……..… situated at plot no……..… All the information given above is correct. My statement in this context is as follows: -
The constructed building is as per the applicable byelaws and the map/approved mitigation map approved by the development authority.
Or
The deviation in the constructed building from the approved map or approved/mitigation map is marked at number-7.
The building is suitable for the purpose for which it is constructed/reconstructed/altered. Its quality is of high class and the structure is safe. The building is completely suitable and safe for habitation.
In the above situation it is recommended to issue completion certificate.

Signature ……..
Name/Address …….....
Council of Architecture
Registration Number ……
License Number ……
Period of License Validity ……

Date…….

<u>Form-C (Part-C)</u>
Certificate of licensed technical person regarding rainwater harvesting (for residential, group housing, commercial buildings, forest buildings other than multi-storey buildings)

Provision for rainwater harvesting (roof top rainwater harvesting system) in the constructed building has been made as per the building map/applicable byelaws approved by the development authority.

Signature:……
…

Licensed Technical Person
Name
Address……
Registration
Number.....

Date……..

Form-C (Part-D)

Appointment and completion certificate of the Development Authority: (To be issued on photocopy of Part 'A', 'B' and 'H' of the application form)

The above certificate given in relation to the building constructed on the plot number…… situated in the Ward/Plan/Mohalla/Sector…… has been tested by Mr…… designation……. Development Authority on Date…… as per the building map approved by the Authority and Development Authority The task has been found. Therefore, completion certificate is issued under Section 15A (2) of Uttar Pradesh Urban Planning and Development Act, 1973.

Signature ……
Designation ……
Seal of Office……..

Date……

Appendix-8: Building Information Schedule (B.11.8.2)

1. Building Address	Plot No.	Scheme/Colony Town	District	

2. Building function & Locations

2.1 Use	Institutional	Commercial	Industrial	*
2.2 Importance	Ordinary	Important	Hazardous *	IS:1893
2.3 Seismic Zone (Design Intensity Used	V(IX)	IV(VIII)	III(VII)	II(VI) IS:1893

3. Design EQ Factor	☐0=…...	I= …..	☐= ☐h	☐☐= IS:1893

4. Foundation
4.1 Soil type at site (Note 2) Rock/stiff Medium # Soft Liquefiable Expensive (B.C.) IS:1904
4.2 Type of Foundation Strip Indiv.Col. Fottings/Raft Bearing Piles Friction Piles IS:1893

5. Load Bearing Wall Buildings
5.1 Building Category A(☐ h☐<.05) B(☐h=.05 to .06) C(☐h.06 to <.08) D(☐h .08 to <0.12) E (☐h >0.12) IS:4326
5.2 Bearing Walls Brick Stone Solid Block Hollow Block Adobe
5.3 Mortar (note 4) C : S=1: … C:L:S =1: … L:S=1: … Clay Mud *
5.4 Floors R.C.slabs Stone slabs on joists Prefab flooring elements *
5.5 Roof structure Flat like floors/ pitched Trussed/ Raftered / A Frame/ Slopping R.C. Slab
5.6 Roof covering CGI Sheeting AC sheeting Clay tiles/Slate Wood shingle *
5.7 Opening in walls Control used on sizes? Control used on location? Strengthening around?IS:4326
Yes/No/NA ……Yes/No/NA ……..Yes/No/NA IS:13828
5.8 Bands Provided Plinth Band Lintel Band Roof/Eave Band Gable Band Ridge Band -do-
5.9 Vertical Bars At corners of rooms At jambs of openings -do-
5.10 Stiffening of Prefab R.C. screed & Band Peripheral band and Diagonal planks and IS:4326
Floors/Roofs connectors alround band

6. Steel / R.C. frame buildings
6.1 Building Shape Both axes near symmetrical One axis near symmetrical /Unsymmetrical (Torsion considered)
6.2 Infills / partitions Out of plane stability check? Yes/ No In Plane stiffness considered? Yes/ No IS:1893, IS:4326
6.3 Ductile Detailing of Beams ? Columns? Beam column Joint? Sheer Walls? IS:13920
RC Frames
YES / NO YES / NO YES / NO YES / NO
6.4 Ductile Detailing of Beams? Columns? Beam Column Joint? SP6(6)
Steel Frames YES / NO YES / NO YES / NO

Notes: -
1. Encircle the applicable Data point or insert information.
2. Stiff. N>30: Medium. N=10.3:Soft.N<10:Liquefiable,poorly graded
Sands with N<15 under Water Table (see Note 5 of Table 1 in IS:1893)
Where N=Standard Penetration (IS:2131-1981).
3. * Means any other, specify.
4. C= Cement, S= Sand, L= Lime

The above information is factually correct.

Signature of Owner with date **Signature of the Engineer who will Supervise the construction**

Name (Block)…… Name (Block)…… Address:
Legible Seal:
(with address)

Signature of the Architect who had Supervised the construction
Name (Block)……
COA Registration No…….
Legible Seal:
(with address)

Appendix-9: Structural Safety Certificate (B.11.8.2)

(The certificate to be submitted with the application for building permission along with the building drawings and Building Information Schedule).

1. Certified that the building plans submitted for approval also satisfy the safety requirements as stipulated in the Indian Standard, Codes, guidelines and documents specified in the Annexure-I of the Building Byelaws regarding earthquake safety awareness and the information given in the attached Building Information Schedule, is factually correct to the best of my knowledge and understanding.

2. It is also certified that the structural design including safety from natural hazards including Earthquake has been prepared by duly qualified graduate Civil Engineer along with Post Graduate Diploma or Degree in Structural Engineering from a recognized University.

3. **Location/Address of Building**
Plot No…….
Scheme/Colony……
Town……
District…….

4. Particulars of Building

1. Ground Coverage (sq mt)
2. Total covered area (sq. mt)
3. Maximum Numbers of Floors above ground.

Signature of Owner with date **Signature of the Structural Engineer who had prepared the design with date**

Name (Block)…… Name
(Block)……
Address: Legible Seal: (with address)
…….....……..
…….
……..

Signature of the Architect who had Prepared the design with date
Name (Block)……
COA Registration No…….
Legible Seal (with address)

Appendix-10: Structural and Foundation Design Certificate

It is hereby certified that the structural and foundation design of the building for which map and plans are submitted for approval satisfy the safety requirements as stipulated in the relevant India Standard Codes, National Building Code, guidelines and documents specified in Chapter-11.1 Building Byelaws.

Signature of Owner with date	Signature of the Structural Engineer who had prepared the Design with date	Signature of the Architect who had Prepared the design with date.
Name (Block)..... Address:.....	Name Block) ..... Legible Seal: (With address)	Name (Block)..... COA Registration No..... Legible Sell (with address)

Appendix-11: Structural Safety Certificate on Completion of Building (B.11.8.4)

(to be submitted with application for obtaining completion certificate)

1. It is certified that the building for which completion plan has been submitted for approval, conforms to the requirements of relevant Indian Standard Codes and National Building Code as referred in Chapter-11.1 of Building Byelaws in respect of Structural Safety in general and National hazards including earthquake in particular.

2. It is also certified that the building has been constructed as per approved foundation and structural designs provided by the Structural Engineer which are certified to be based on relevant Indian Standard Code and National Building Code as referred above and the building is safe for occupancy.

3. **Location/Address of Building**

Plot No…….
Scheme/Colony……
Town……
District…….

4. **Particulars of Building**

1. Ground Coverage (sq mt)
2. Total covered area (sq. mt)
3. Maximum Numbers of Floors above ground.

Signature of Owner with date

Name (Block)……
Address:
…….....……..
…….

Signature of the Engineer who had Supervised the construction.

Name (Block)……
Legible Seal: (with address)

Signature of the Architect who had Supervised the construction.

Name (Block)……

COA Registration No…….
Legible Seal
(with address)

Appendix-12: Affidavit for Development/Building Permission (B.2.2.1)

……. Vice Chairman, Development Authority

I……son of shri……age approx. ……. Year …….Designation ……. Name and Address of the Firm …….. I state on oath as follows:

1. That the affiant…… is ……..posted on duty in the firm……. and I am authorized to sign on behalf of the firm in respect of …….. (details of the plot and name of the scheme).
2. That the buildings under the scheme …….. (Details of Scheme Name) have been constructed upto the proof of which I am attaching GPS artifacts, digital photographs of the site with date and time which are signed by me.
3. That if it is found that the map approved by the building owner and the builder and the work covered by the permission mentioned under paragraph 2.2.1 and 2.5.1 of the Building Construction and Development Byelaws is different from the construction permitted under Section 62 of the Uttar Pradesh Town Planning and Development Act, 1973. If any construction has been done otherwise, then they will not have any objection in getting it sealed by the government agency and it will not claim compensation for any work done for the same.

It is true that the affiant declares that all the statements made as above are based on my personal knowledge and no fact has been hidden in it.

(Signature of affiant/declarant)
Name:
Address:

Verification

I, the affiant, verify that Section 1 to 3 of the affidavit are true to the best of my personal knowledge and information, nothing has been hidden in it and I confirm the same.

(Signature of affiant/declarant)
Name:
Address:

Appendix-13: Site Inspection Notice (B.2.8.1)

To,

…….developer name
…….Address

Subject: **Notice after site inspection of …….. (details of plot/name of scheme) on…… date.**

Sir,

We have matched the existing stage of construction at site with the construction related photographs taken at the site …….. and submitted along with the affidavit presented by you dated……..The construction related photographs taken at the site……. were matched with the affidavit presented at the site. The details presented by you were found to be correct / Following deviations/errors were found:-

1.
2.
3.

Faithfully

Attachment: As above.

(Engineer-in-charge)
(with seal)
…….
……....

Copy: Vice Chairman, …….. Development Authority, for necessary information/ with a request to please pass orders for sealing the construction at the site (strike out whichever is not applicable).

(Engineer-in-charge)
(with seal)
…….
……....

Appendix-14: Format for Structural Design Basis Report (SDBR) (B.11.7)

1. This report to accompany the application for Building Permit.
2. In case information on items 3, 10, 17, 18 and 19 cannot be given at this time, it should be submitted at least one week before commencement of construction.

Part 1: General Data

Sl No	Description	Information	Notes
1	Address of the building • Name of the building • Plot number • Subplot number • TPS scheme a. Name b. Number • Locality/Township • District		
2	Name of owner		
3	Name of Builder on record		
4	Name of Architect/Engineer on record		
5	Name of Structural engineer on record		
6	Use of the building		
7	Number of storeys above ground level (including storeys to be added later, if any)		
8	Number of basements below ground Level		
9	**Type of structure** • Load bearing walls • R.C.C frame • R.C.C frame and Shear walls • Steel frame		
10	**Soil data** • Type of soil • Design safe bearing capacity		IS: 1893 Cl. 6.3.5.2 IS: 1904

11	**Dead loads (unit weight adopted)** • Earth • Water • Brick masonry • Plain cement concrete • Reinforced cement concrete • Floor finish • Other fill materials • Piazza floor fill and landscape		IS: 875 Part 1
12	**Imposed (live) loads**		IS: 875 Part 2

	• Piazza floor accessible to Fire Tender • Piazza Floor not accessible to Fire Tender . 11Floor loads . 11Roof loads		
13	Cyclone / Wind • Speed • Design pressure intensity		IS: 875 Part 3
14	Seismic zone		IS:1893 2002
15	Importance factor		IS:1893 (2002) Table 6
16	Seismic zone factor(Z)		IS:1893 Table 2
17	Response reduction factor		IS: 1893 Table-7
18	Fundamental natural period - approximate		IS: 1893 Cl. 7.6
19	Design horizontal acceleration spectrum value (Ah)		IS: 1893 Cl. 6.4.2
20	Expansion / Separation Joints		

(a)

Part 2: Load bearing masonry buildings

Sl No	Description	Information	Notes
1	Building category		IS:4326 Cl. 7 read with IS: 1893 Bld/Zone II III IV V Ord. B C D E Important C D E E
2	Basement Provided		

3	Number of floors including Ground Floor (all floors including stepped floors in hill slopes)		
4	Type of wall masonry		
5	Type and mix of Mortar		IS:4326 Cl. 8.1.2
6	**Re: size and position of openings (See note No.1)** • Minimum distance (b5) • Ratio (b1+b2+b3)/l1 or (b6+b7)/l2 • Minimum pier width between consequent opening (b4) • Vertical distance (h3) • Ratio of wall height to thickness4 • Ratio of wall length between cross wall to thickness		IS:4326 Table 4, Fig.7
7	**Horizontal seismic band** • at plinth level	**P IP NA**	(see note no.2) IS:4326 Cl. 8.4.6

	• at window sill level • at lintel level • at ceiling level • at eave level of sloping roof • at top of gable walls • at top of ridge walls		IS:4326 Cl. 8.3 IS:4326 Cl. 8.4.2 IS:4326 Cl. 8.4.3 IS:4326 Cl. 8.4.3 IS:4326 Cl. 8.4.4
8	**Vertical reinforcing bar** • at corners and T junction of walls • at jambs of doors and window openings		IS:4326 Cl. 8.4.8 IS:4326 Cl. 8.4.9
9	Integration of prefab roofing/flooring elements through reinforced concrete screed		IS:4326 Cl. 9.1.4
10	**Horizontal bracings in pitched truss** • in horizontal plane at the level of ties • in the slopes of pitched Roofs		

(b)

Part 3: Reinforced concrete framed buildings

Sl No	Description	Information	Notes
1	**Type of Building** Regular frames Regular frames with Shear walls Irregular frames Irregular frames with shear walls Soft storey		IS: 1893 Cl. 7.1
2	Number of basements		
3	Number of floors including ground floor		
4	**Horizontal floor system** Beams and slabs Waffles Ribbed Floor Flat slab with drops Flat plate without drops		
5	**Soil data** Type of soil Recommended type of foundation - Independent footings - Raft - Piles Recommended bearing capacity of soil Recommended, type, length, diameter and		IS: 1498
	load capacity of piles Depth of water table Chemical analysis of ground water Chemical analysis of soil		
6	**Foundations** Depth below ground level Type • Independent • Interconnected • Raft • Piles		
7	**System of interconnecting foundations** Plinth beams		IS: 1893 Cl. 7.12.1

	Foundation beams		
8	Grades of concrete used in different parts of Building		
9	Method of analysis used		
10	Computer software used		IS: 1893 Cl. 7.9
11	Torsion included		
12	**Base shear** a. Based on approximate fundamental period b. Based on dynamic analysis c. Ratio of a/b		IS: 1893 Cl. 7.5.3
13	Distribution of seismic forces along the height of the building		IS:1893 Cl. 7.7 (provide sketch)
14	The column of soft ground storey specially Designed		IS:1893 Cl. 7.10
15	**Clear minimum cover provided in** • Footing • Column • Beams • Slabs • Walls		IS: 456 Cl. 26.4
16	**Ductile detailing of RC frame** • Type of reinforcement used • Minimum dimension of beams • Minimum dimension of columns • Minimum percentage of reinforcement of beams at any cross section • Maximum percentage of reinforcement at any section of beam • Spacing of transverse reinforcement in 2-d length of beams near the ends • Ratio of capacity of beams in shear to capacity of beams in flexure • Maximum percentage of reinforcement in column • Confining stirrups near ends of columns and in beam-column joints a. Diameter b. Spacing		IS: 456 Cl. 5.6 IS:13920 Cl. 6.1 IS:13920Cl. 7.1.2 IS: 456 Cl. 26.5.1.1(a) IS:13920 Cl. 6.2.1 IS: 456 Cl. 26.5.1.1(b) IS:13920 Cl. 6.2.2 IS: 13920 Cl. 6.3.5 IS: 456 Cl. 26.5.3.1 IS: 13920 Cl. 7.4

	• Ratio of shear capacity of columns to maximum seismic shear in the storey		

(c)

General Notes

1. A certificate to the effect that this report will be completed and submitted at least one month before commencement of Construction shall be submitted with the application for Building Development Permission.
2. In addition to the completed report following additional information shall be submitted, at the latest, one month before commencement of Construction.

2.1 Foundations

2.1.1 In case raft foundation has been adopted indicate K value used for analysis of the raft

2.1.2 In case pile foundations have been used give full particulars of the piles, type, diameter, length, capacity.

2.1.3 In case of high-water table indicate system of countering water pressure, and indicate the existing water table, and that assumed to design foundations.

2.2 Idealization for Earthquake analysis

2.2.1 In case of a composite system of shear walls and rigid frames, give distribution of base shear in the two systems on the basis of analysis, and that used for design of each system.

2.2.2 Indicate the idealization of frames and shear walls adopted in the analysis with the help of sketches.

2.3 Submit framing plans of each floor.

2.4 In case of basements, indicate the system used to contain earth pressures.

Part 4: Buildings in Structural Steel

1	Adopted method of Design	O Simple O Semi-rigid O Rigid	IS: 800; Cl. 3.4.4 IS: 800; Cl. 3.4.5 IS: 800; Cl. 3.4.6
2	Design based on	O Elastic analysis O Plastic analysis	IS: 800; Section-9 SP: 6 (6)
3	Floor Construction	O Composite O Non-composite O Boarded	

4	Roof Construction	O Composite O Non-composite O Metal O Any other	
5	Horizontal force resisting system adopted	O Frames O Braced frames O Frames & shear walls	*Note: Seismic force As per IS: 1893Would depend on system*
6	Slenderness ratios maintained	Members defined in Table 3.1, IS: 800	IS: 800; Cl. 3.7
7	Member deflection limited to	Beams, Rafters Crane Girders Purlins Top of Columns	IS: 800; Cl. 3.13
8	Structural members	O Encased in Concrete O Not encased	IS: 800; Section-10
9	Proposed material	O General weld-able O High strength O Cold formed O Tubular	IS: 2062 IS: 8500 IS: 801, 811 IS: 806
10	Minimum metal thickness Specified for corrosion protection	O Hot rolled sections O Cold formed sections O Tubes	IS: 800, Cl. 3.8 Cl. 3.8.1 to Cl. 3.8.4 Cl. 3.8.5 Cl. 3.8.5
11	Structural connections	O Rivets O C T Bolts O S H F G Bolts O Black Bolts O Welding- Field Shop (Specify welding type proposed) O Composite	IS: 800; Section-8 IS: 1929,2155,1149 IS: 6639, 1367 IS: 3757, 4000 IS: 1363, 1367 IS: 816, 814, 1395, 7280, 3613, 6419 6560, 813, 9595
	Minimum Fire rating Proposed, with method	O Rating ---------- hours O Method proposed- - In tumescent Painting - Spraying - Quilting Fire retardant boarding	IS: 1641, 1642, 1643

Appendix-15: Use zones across different master plans

	Sl. No.	1	2	3	4	5
#	Development Authority/ Use Zone	Ayodhya	Bareilly	Muzaffarnagar	Gorakhpur	Khurja
1	Built up	Built-up	Built-up	Built-up	Built-up	Built-up
2	Residential	Residential	Residential	Residential	Residential	Residential
3	Mixed Use 1&2	Mixed Use	NIL	NIL	NIL	NIL
4	Commercial 1-Retail /CBD /Sub-CBD /Bazaar Street	Commercial	C1- City Centre/ Sub- City Centre C3 -Bazaar Marg	Commercial Bazaar Marg	C1- Bazaar Marg/ Commercial Centre C2- City Centre/ Sub- City Centre	Commercial Bazaar Street
5	Commercial 2-Wholesale/ Godown	NIL	C2- Wholesale / Storage	NIL	C3- Wholesale / Storage/godown /Warehousing	Warehouse/Mandi
6	Small Industries	Industries	Small Industries	IT Park	Small Industries	NIL
7	Large Industries	NIL	Large Industries	Industries	Medium/Large Industries	Industries
8	Office Buildings	Offices	Offices	Offices	Offices	Offices
9	Public & Semi-public	Public & Semi-public Facilities Historical Places Religious Places	Community Facilities / Utilities Educational Institution Hospital Water works /Power Station Radio Station /Doordarshan Treatment Plant / Dumping Ground Sewage Farm	Public Facilities Public Utilities Ganna Shodh Kendra Medical/ Medicity Vidyut Kendra Landfill	1-Public & Semi-public Facilities (Educational, Healthcare Facilities, Hospital) 2-Social & Religious Institution-Community Facilities, Radio Station /Doordarshan 3-Public utilities & services-Sewage Farm, SWM, Electrical sub station	Public Semi-Public Facilities & Utilities
10	Transport 1&2, Parking	Transport Facility Bus Stand	T1 - Bus terminal/Truck terminal T2 - Marg Parking Areas	Bust Station Transport Nagar Railways	Transport centre/Bus terminal/ Truck terminal	Bus Terminal /Truck Terminal
11	Forest	NIL	Garden Forest	NIL	NIL	Forest
12	Recreational 1&2	Park and Open Spaces Fair Ground and Garden	P1 - Recreational Park / Zonal Park P2 - Park / District Park / Exhibition Park / Mela / Rally Ground	Park and Open Areas Baagh & Udyaan Regional Park Stadium	Park / Open Spaces/Recreational Area	Park & Open Spaces
13	Green belt	Green Belt	Green Belt	Green Belt	Green Belt	Green Belt
14	Rural Abadi	Rural Abadi	Rural Abadi	Rural Abadi	Rural Abadi	Rural Abadi; Future expansion
15	Agriculture	Agriculture	Agriculture	Agriculture	Agriculture	Agriculture
16	Highway Facilities	Highway Facility Zone	Highway Facility Zone	Highway Facility Zone	Highway Facility Zone	Highway Facility Zone
17	Additional Land use					

Appendix-15 (part-2)

	Sl. No.	6	7	8	9	10
#	Development Authority/ Use Zone	Bulandshahr	Basti	Meerut	Saharanpur	Moradabad
1	Built up	Built-up	Built-up	Built-up	Built-up	Built-up
2	Residential	Residential	Residential	Residential	Residential	Residential
3	Mixed Use 1&2	NIL	NIL	Mixed Use	NIL	NIL
4	Commercial 1-Retail /CBD /Sub-CBD /Bazaar Street	Commercial Bazaar Street	C1- Bazaar Marg/ Commercial Centre C2- City Centre/ Sub- City Centre	Commercial Bazaar Street Saghan Bazar	Bazaar Street/ Bazaar Area City Centre/ Sub- City Centre	(C-1)- City Centre/ Central Commercial (C-2)-Sub City Centre/Sub Central Commercial (C-4) -Bazaar Street
5	Commercial 2-Wholesale/ Godown	Warehouse/Wholesale	C3- Wholesale / Storage	Wholesale Mkt/Mandi Warehouse	Wholesale Other commercial	(C-3)- Wholesale / Storage
6	Small Industries	Small Industries	Small Industries	Small Industries	NIL	(M-1)-Small Industries (M-3)-Handicrafts/Cottage/Home Industries
7	Large Industries	Heavy Industries	Large Industries	Large Industries Industries (Light/Med/Heavy) Logistic Park	Industries	Large Industries
8	Office Buildings	Offices	Offices; Jail	Offices; CPRI	Offices	Govt Semi-govt and other Offices
9	Public & Semi-public	Public and Semi-Public Facility & Utilities	Community Facilities / Utilities Fire Station, Police station, Post office, Water works, Sewage Farm	Public Facility Public Utility	Public Facility Public Utility	(F1)-Community Facilities /Utilities and Services (F2)-electrical substation (F3)- Sewage Farm/Solid Waste Disposal Centre (F4)-Proposed Sewage Treatment Plant (F5)-Slaughter house; (F6)-STP; (F7)-SWM
10	Transport 1&2, Parking	Bus Terminal/Truck Terminal Railway Yard/Railway Line	Transport 1 - Bus terminal/Truck terminal Marg	Bus terminal Air Strip/ Airport Transport Nagar Cargo Centre RRTS Depot	Bus Terminal Truck Terminal Railway Area	(T-1) - Bus terminal (T-2)-Truck terminal (T-3)-Railway Notified Area (T-4)-Existing Road; (T-5)-Proposed Road (T-6)-Railway Line (T-9)-Proposed fly over
11	Forest	NIL	NIL	Forest	NIL	Garden; Forest
12	Recreational 1&2	Park & Open Spaces	Park/open spaces and playground	Park and Open Area/ Stadium Regional Park Amusement Park	Regional Park Park and Open Area	(P-1)-District Park (P-2)-Zonal Park; (P-3)-Park (P-4)-Riverfront Development (P-6)-non-conforming developed green area.
13	Green belt	Green Belt	Green Belt	Green Belt	Green Belt	Green Belt
14	Rural Abadi	Rural Abadi; Future expansion	Rural Abadi	Rural Abadi	Rural Abadi; Future expansion	Rural Abadi
15	Agriculture	Agriculture	Agriculture	Agriculture	Agriculture	Agriculture
16	Highway Facilities	Highway Facility Zone	Highway Facility Zone	Highway Facility Zone	Highway Facility Zone	Highway Facility Zone
17	Additional Land use					

Appendix-15 (part-3)

	Sl. No.	11	12	13	14	15
#	Development Authority/ Use Zone	Mathura-Vrindavan	Aligarh	Jhansi	Rampur	Firozabad-Shikohabad
1	Built up	Built-up	Built-up	Built-up	Built-up	Built-up
2	Residential	Residential	Residential	Residential	Residential	Residential
3	Mixed Use 1&2	NIL	NIL	NIL	NIL	NIL
4	Commercial 1-Retail /CBD /Sub-CBD /Bazaar Street	City Centre Sub- City Centre Bazaar Street	Commercial Bazaar Street	Bazar Street Commercial, Retail shops Sector/Neighbour Hood	(C-1) - City Centre (C-2) - Sub-City Centre (C-3) - Zonal Commercial (C-5) - Bazaar Street	Bazaar Street City Centre Sub city Centre
5	Commercial 2-Wholesale/ Godown	Wholesale	District Business Wholesale Business Centre	Wholesale/ Storage	(C-4) - Wholesale/ Storage	Wholesale Business
6	Small Industries	Small Industries IT industries	Small Industries	Small Industries	Small Industries	Small & Service Industries
7	Large Industries	Large Industries	Large Industries Defence Industrial Corridor	Large / Medium Industries Logistic Park, Technology park; Crusher Zone	Large Industries	Large Industries
8	Office Buildings	Offices, Police Lines	Offices	Offices	Govt Semi-govt and other Offices	Offices
9	Public & Semi-public	Public Semi-Public Facilities Amusement park Knowledge park Medical & Health Care Tourist Facilitation Centre	**Community Facilities** Inter college; Graduate / Post Graduate College; Pravidhik sansthan Aligarh Muslim university **Utilities & Services** Police Station/ Thana Fire Station, Phone Booth Post Office, Sewage Farm/Treatment Plant **Healthcare** District Hospital; Other Main Hospitals	Public Semi-Public Facilities Dumping Ground Sewage Farm/ STP Regional/ Historical Place Shamshan / Kabristan Flood Area	(F1) - Community Facilities /Utilities, Public Services and Utilities (F2) - Electrical Sub-station (F3) - Sewerage Treatment Plant (F4) - Solid Waste Disposal Centre (F5) -Sewage Farm	Inter College; Degree College Technical Institutes Hospital Police/Fire Station Post Office/ Telecom Centre Electric Station Water Works Sewage Treatment Plant Religious Place Knowledge Park
10	Transport 1&2, Parking	Transport Nagar Parking & Camping Area Bus Terminal	Transport 1 - (Bus terminal) Transport 2 - (Truck terminal) Parking Areas, Air Strip Existing roads, Proposed roads Railway lines/ Railway campus Dedicated Freight Corridor	T1 - (Bus terminal T2 - (Transport Nagar / Truck terminal)	(T-1) - Bus Terminal and Workshop (T-2) - Truck Terminal / Transport Nagar (T-3) - Existing Road, (T-4) - Proposed Road (T-5) - Railway Line (T-6) - Proposed Flyover (T-7) - Railway Notified Area	Truck Terminal Bus Terminal Railway Line/ Railway Compound Over Head Bridge
11	Forest	Forest	Garden	Forest	NIL	Forest
12	Recreational 1&2	Park/ Sector Park District Park Zonal Park Sanrakshit sthal	Park and Open spaces Regional Park, River Buffer Exhibition ground Shekha Lake Eco Sensitive Zone Lake Zone	Recreational 1 - Theme Park Recreational 2 - Regional Park/ Prakhandiy Park/Nagar Park and Playground Water bodies/Pond, Pahad	(P1) - Park (P2) - Zonal Park (P4) - River Front Development (P5) - Non-Conforming Developed Green	NIL
13	Green belt	Green Belt	Green Belt	Green Belt	Green Belt	Green Belt
14	Rural Abadi	Rural Abadi	Rural Abadi	Rural Abadi, Future expansion	Rural Abadi	Rural Abadi
15	Agriculture	Agriculture	Agriculture	Agriculture	Agriculture	Agriculture
16	Highway Facilities	Highway Facility Zone	Highway Facility Zone	Highway Facility Zone	Highway Facility Zone	NIL
17	Additional Land use					

Appendix-15 (part-4)

	Sl. No.	16	17	18	19
#	Development Authority/ Use Zone	Varanasi-1	Varanasi-2	Agra	Hapur
1	Built up	Built-up	Built-up	Built-up	Built-up
2	Residential	Residential	Residential	Residential	Residential
3	Mixed Use 1&2	Mixed Use	Mixed Use	NIL	NIL
4	Commercial 1-Retail /CBD /Sub-CBD /Bazaar Street	City Centre Sub- City Centre Bazaar Street Other Commercial	City Centre Sub- City Centre Bazaar Street	Bazaar Street City Centre/ CBD Sub-city centre/Sub-CBD Neighbourhood, Tourism	Commercial/ Leather Mandi/ Business Centre Bazaar Street
5	Commercial 2-Wholesale/ Godown	Wholesale/ Warehousing/ Mandi	Wholesale/ Warehousing/ Mandi	Wholesale Business	NIL
6	Small Industries	Small & Service Industries	Small & Service Industries	Non polluting industries	
7	Large Industries	Medium/Large Industries	Medium/Large Industries	Non polluting industries	NIL
8	Office Buildings	Govt Semi-govt and other Offices	Govt Semi-govt and other Offices	Offices	Offices
9	Public & Semi-public	Public Semi-Public Facilities Services and Utilities	Public Semi-Public Facilities and Services and Utilities	Community Facilities	
10	Transport 1&2, Parking	Transport Services Airport/ Water Transport Terminal Railway Yard/ Railway Land	Transport Services Airport/ Water Transport Terminal Railway Yard/ Railway Land	Transport Nagar Bus stand	Traffic and Transportation
11	Forest	Garden	Garden	Forest area	NIL
12	Recreational 1&2	Park	Park	Sector Park, Regional Park, District Park, Zonal Park, Amusement Park, National Park, Riverfront Development	Recreational area
13	Green belt	Green Belt	Green Belt	Green Belt	Green Belt
14	Rural Abadi	Rural Abadi	Rural Abadi	Rural Abadi	Rural Abadi
15	Agriculture	Agriculture	Agriculture	Agriculture	Agriculture
16	Highway Facilities	Highway Facility Zone	Highway Facility Zone	Highway Facility Zone	Highway Facility Zone
17	Additional Land use				

Appendix-15 (part-5)

	Sl. No.	20	21	22
#	Development Authority/ Use Zone	Kanpur	Mirzapur-Vindhyachal	Prayagraj
1	Built up	Built-up	Built-up	Built-up
2	Residential	Residential	Residential	Residential
3	Mixed Use 1&2	NIL	NIL	NIL
4	Commercial 1-Retail /CBD /Sub-CBD /Bazaar Street	City Centre/ CBD Sub-city centre Bazaar Street	Zonal Centre, City Centre Bazaar Street	District Centre, City Centre General Business, Bazaar Street
5	Commercial 2-Wholesale/ Godown	Warehousing/ Agricultural Produce Mandi	Wholesale/ Storage Godown/ Warehouse	Wholesale/ Storage
6	Small Industries	Small & Service Industries Cottage Industries	Small Industries	Small Industries/Cottage
7	Large Industries	Medium/Large Industries	NIL	Medium Industries Large Industries
8	Office Buildings	Offices	Govt Semi-Govt and Local Offices Private Offices/ Agent Offices Banks	Govt Semi-Govt and Local Offices Private Offices/ Agent Offices Banks
9	Public & Semi-public	1. Public Semi-Public Facilities and Services and Utilities 2. Educational Institution, Healthcare Services, Knowledge Park, Technical/Specialized institutes 3. Jalkal, Power house, HT Line, Dumping Ground, STP, Fire Station, Police Station, Telecom	School, College University, Technical, Hitech, General Hospital Medical College Jalkal, Power, Sewage Farm	School, College University, Technical, Hitech, General Hospital Medical College Jalkal, Power, Sewage Farm
10	Transport 1&2, Parking	Transport Services Airstrip/ Airport/ Water Transport/ ISBT Bus Terminal/ Railway Yard/ Railway land/ Truck Terminal/ Multi-modal logistic park	Transport Nagar Bus Terminal Truck Terminal Water Transport	Transport Nagar Bus Terminal ; Truck Terminal Water Transport
11	Forest	Reserved Forest, Afforestation Bird Sanctuary	Protected Forests	Afforestation Grassland and Dairy Farm
12	Recreational 1&2	1. Parks and Open Spaces 2. Stadium/ Playground/ District Park/ Regional Park/ Amusement Park, Ecological Park/ Mela ground 3. Riverfront Development	Park City level Park Exhibition Ground/ Tourism Socio-cultural and Religious area	Parks/Open spaces; District Park, Local Park Kumbh mela Umsam Riverfront Development Cultural and religious site
13	Green belt	Green Belt	Green Belt	Green Belt
14	Rural Abadi	Rural Abadi	Rural Abadi	Rural Abadi
15	Agriculture	Agriculture	Agriculture	Agriculture
16	Highway Facilities	Highway Facility Zone	Highway Facility Zone	Highway Facility Zone
17	Additional Land use			

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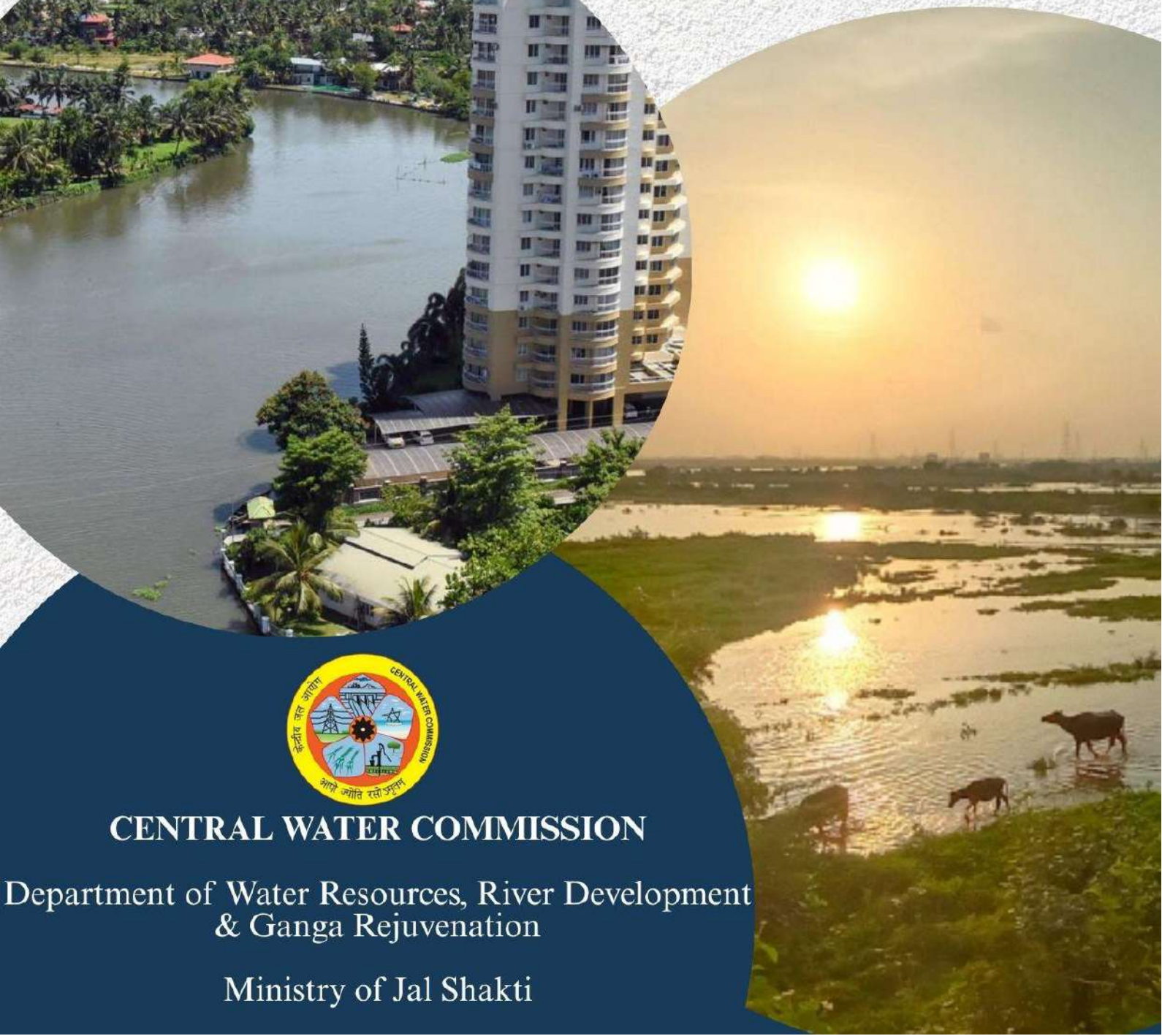
Development Authority
Building Construction and Development Byelaws 2025

सत्यमेव जयते

TECHNICAL GUIDELINES ON FLOOD PLAIN ZONING



CENTRAL WATER COMMISSION

Department of Water Resources, River Development & Ganga Rejuvenation

Ministry of Jal Shakti

सत्यमेव जयते

भारत सरकार

GOVERNMENT OF INDIA

जल शक्ति मंत्रालय

MINISTRY OF JAL SHAKTI

जल संसाधन, नदी विकास और गंगा संरक्षण विभाग

DEPARTMENT OF WATER RESOURCES RIVER DEVELOPMENT & GANGA REJUVENATION

बाढ़ मैदान परिक्षेत्रण पर तकनीकी दिशानिर्देश

TECHNICAL GUIDELINES ON FLOOD PLAIN ZONING

केंद्रीय जल आयोग

CENTRAL WATER COMMISSION

नई दिल्ली

NEW DELHI

जुलाई 2025

JULY 2025

देवश्री मुखर्जी
Debashree Mukherjee
सचिव
SECRETARY

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
GOVERNMENT OF INDIA
MINISTRY OF JAL SHAKTI
DEPARTMENT OF WATER RESOURCES,
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MESSAGE

Floods are among the most persistent and disruptive natural hazards confronting India, impacting millions and incurring immense socio-economic costs every year. As climate variability intensifies and urban expansion continues unbated, the limitations of purely structural flood mitigation are becoming increasingly evident. We must now embrace a paradigm that embodies ecological sensitivity with scientific precision.

This document, ***Technical Guidelines on Flood Plain Zoning***, is not merely a regulatory preposition-they represent a strategic reimagining of how we can coexist with our rivers. Prepared through robust consultations and grounded in national and international best practices, this document seeks to equip state governments, urban planners, and decision-makers with a standardized yet adaptable framework for delineating, regulating, and restoring the floodplain zones.

I extend my deepest appreciation to the central Ministries, national agencies and state governments whose invaluable technical insights and thoughtful contributions have been instrumental in shaping this foundational document.

I compliment the entire team of Central Water Commission for their tremendous efforts in bringing out this guideline document. Let these guidelines be the catalyst for a more integrated, inclusive, and resilient approach to water and land management across India's riverine landscapes.

(Debashree Mukherjee)

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अध्यक्ष
केंद्रीय जल आयोग
एवं पदेन सचिव
भारत सरकार

सत्यमेव जयते

Chairman
Central Water Commission
& Ex-officio Secretary to
Govt. of India

FOREWORD

Floods remain among the most devastating natural calamities facing India, recurrently disrupting lives, livelihoods and infrastructure across diverse geographies. While structural interventions have historically formed the backbone of flood management, it is now evident that sustainable flood resilience demands a more holistic, non-structural approach. Flood Plain Zoning (FPZ) has emerged globally as an effective tool-not only to mitigate flood damage, but to preserve ecological integrity and support climate adaptation.

This document, ***Technical Guidelines on Flood Plain Zoning***, represents a significant step forward in translating this policy aspirations into actionable frameworks. Developed under the aegis of the Ministry of Jal Shakti and the Central Water Commission, the guidelines present a comprehensive synthesis of the scientific principles, national experiences and international best practices. They aim to equip the State governments with a clear, implementable road map for floodplain delineation, regulation of activities and ecological restoration.

As India faces increasing urbanization, erratic rainfall patterns and intensifying climate events, the adoption of FPZ becomes not only desirable, but imperative as well. These guidelines invite all stakeholder, from planners and engineers to local communities and policy makers, to reimagine rivers as lifelines that must be protected, not constrained.

It is our hope that these guidelines will serve as a catalyst for informed decision-making, proactive planning, resilient development-paving the way for a safer, more sustainable future.

Atul Jain

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PREFACE

India's perennial vulnerability to floods presents a complex challenge- one that demands an integrated approach rooted in both scientific rigor and ecological sensitivity. Though traditional flood mitigation strategies have often emphasized structural interventions, global and national experiences reveal that long-term resilience lies equally in non-structural measures. Flood Plain Zoning (FPZ) stands out as a pivotal instrument in this regard.

This document has been meticulously designed by Central Water Commission to support State Governments and local authorities in scientifically delineating flood-prone areas and regulating the land use within them. It synthesizes insights from India's diverse river systems, international frameworks, and policy precedents to offer a detailed roadmap for FPZ implementation.

Structured across multiple chapters, these guidelines offer a comprehensive understanding of riverine dynamics, outline flood zone classifications based on recurrence intervals and delineate permissible land-use activities across rural and urban context. Crucially, the document underscores the ecological value of floodplains- an intrinsic system that facilitate aquifer recharge, sustain biodiversity, and regulate sediment transport- reaffirming their role as both natural safeguards and vital ecological corridors.

We anticipate that these guidelines will serve as a cornerstone for developing robust, climate-resilient frameworks across flood-prone regions of India, by empowering the States and National agencies to systematically mitigate flood risks while preserving the ecological integrity of our riverine systems, aligned with broader environmental restoration objectives and sustainable development goals.

Anupam Prasad

मुख्य अभियंता
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ACKNOWLEDGEMENT

The preparation of Technical Guidelines on Flood Plain Zoning is the outcome of rigorous consultations, interdisciplinary insights, and the collective efforts of domain experts, institutions and government bodies committed to advancing sustainable flood management to the next level in India.

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I also acknowledge the contributions and guidance rendered by my seniors and colleagues in the Flood Management Wing, DoWR, RD& GR whose relentless efforts have paved the way for timely release of this document.

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I hope that this document serves as a meaningful step toward attaining the target of ecological integrity and structured river management.

D.P. Mathuria

ABBREVIATIONS

FPZ	Flood Plain Zoning
ULBs	Urban Local Bodies
ZP	Zilla Parishads
DEM	Digital Elevation Model
NRSC	National Remote Sensing Centre
DoWR, RD & GR	Department of Water Resources, River Development and Ganga Rejuvenation
CWC	Central Water Commission
CGWB	Central Ground Water Board
NDMA	National Disaster Management Authority
HFL	Highest Flood level
EPA	Environment Protection Act, 1986
EIA	Environmental Impact Assessment
RBA	Rashtriya Barh Ayog
RCZ	River Conservation Zone
RRZ	River Regulation Zone
FEMA	Federal Emergency Management Agency
SFHA	Special Flood Hazard Area
AEP	Annual Exceedance Probability
NGT	National Green Tribunal
URDPFI	Urban Regional Development Plans Formulation & Implementation
MSW	Municipal Solid Waste
FIRM	Flood Insurance Rated Maps
MoHUA	Ministry of Housing & Urban Affairs
MoEF&CC	Ministry of Environment, Forest & Climate Change
MoJS	Ministry of Jal Shakti
STP/ETP	Sewage Treatment Plant/Effluent Treatment Plant
SDMA	State Disaster Management Authority

GLOSSARY

1.	Flood Plain	includes water channel, flood channel and that area of nearby low land susceptible to natural flood inundation during periods of maximum discharge
2.	Flood Plain Zoning	means regulating any human activity in the flood plains of a river where the plains are created by overflow of water from the channels of rivers and streams
3.	Alluvial plain	A plain formed by the deposition of sediment from the periodic flooding of a river
4.	Flood Insurance	Insurance covering loss or damage to property arising from a flood, flood tide etc.
5.	Bank Infiltration	Infiltration of surface water, mostly from a river system into a groundwater system induced by water abstraction close to the surface water
6.	Ecosystem	a geographic area where plants, animals, and other organisms, as well as weather and landscape, work together for life sustenance
7.	Encroachment	any entry into an area not previously occupied
8.	Aquifer	a layer of rock or soil that can take in and hold water
9.	Run-off	the part of the water cycle that flows over land as surface water instead of being absorbed into groundwater
10.	Water table	the level below which the ground is saturated with water
11.	Storm water drainage	the system of publicly or privately operated rivers, creeks, ditches, drainage channels, pipes, basins, street gutters, and lakes within the city through which or into which storm water runoff, surface water or subsurface water is conveyed or deposited
12.	Water logging	saturate with water
13.	Spawning ground	a place where animals (such as fish or frogs) go to lay eggs
14.	Return period	an average time or an estimated average time between events
15.	Active Flood plain	an area on either side of a stream/river which is regularly flooded on a periodic basis
16.	Embankment	a raised structure (as of earth or gravel) used specially to hold back the water
17.	1% chance of flooding	for every year, there is a 1% chance (a 1 in 100 chance) that the event will be equaled or exceeded
18.	1 in 500-year flood	A '1-in-500-year flood' refers to a flood height that has a long-term likelihood of occurring once in every 500 years
19.	Rating Curve	graph of discharge versus stage for a given point on a stream, usually at gauging stations, where the stream discharge is measured across the stream channel
20.	Wetland	areas where water covers the soil or is present either at or near the surface of the soil all year or for varying periods of time during the year

21.	Erosion	the geological process in which earthen materials are worn away and transported by natural forces such as wind or water
22.	Desilting	Process of removal of silt from a body of water
23.	Landfills	an area of land where large amounts of waste material are buried
24.	Volatile material	Substances which have the capability to go into the vapour phase with or without heating
25.	Highest Flood Level	the maximum level to which a river or stream could rise due to rainwater and runoff during a flooding event
26.	Urban Local Bodies	small local bodies that administer or govern a city or a town of specified population
27.	Zilla Parishad	the top tier of the Panchayati Raj system in a district
28.	Watersheds	an area of land in which all the incoming precipitation drains to the same place – toward the same body of water or the same topographic low area
29.	Biosphere reserve	protected areas meant for the conservation of plants and animals
30.	Endangered species	a species of animal or plant that is seriously at risk of extinction
31.	Organic Farming	An agricultural process that uses biological fertilizers and pest control acquired from animal or plant waste
32.	Hazardous waste	a waste with properties that make it dangerous or capable of having a harmful effect on human health
33.	Environmental Impact Assessment	assessment of the environmental consequences of a plan, policy, program, or actual projects prior to the decision to move forward with the proposed action

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Background

Floods constitute one of the major national calamities faced by India almost every year resulting in substantial loss of life, large scale damage to property, disruption of community lifelines besides entailing untold misery to the millions. Concerted efforts have been made over the years to reduce the damage due to floods and mitigate the sufferings of the people. Various structural flood control measures were taken up in the past including construction of reservoirs, embankments, drainage channels, etc. It is however, now realized that absolute and permanent protection to all flood prone areas and for all magnitudes of floods by structural measures alone may not be possible and nor economically viable.

The emphasis has therefore been rightly shifted to non-structural measures such as Flood Plain Zoning and regulation, flood forecasting etc. to effectively supplement the structural measures for providing sustainable protection to flood affected areas. Non-structural strategies are increasingly adopted by many countries including the United States of America, Canada, and the United Kingdom.

Natural floodplains provide flood risk reduction benefits by slowing runoff and storing flood water. They also provide other benefits of considerable economic, social, and environmental value that are often overlooked when local land-use decisions are made. Flood Plain Zoning has been recognized as an effective non-structural measure for flood management. Flood-plain zoning measures aim at demarcating zones or areas likely to be affected by floods of different magnitude or frequencies and probability levels and specify the types of permissible developments in these zones, so that whenever floods occur, the damage can be minimized. The action for demarcation of flood plain areas and regulating the activities therein, is to be undertaken by respective state governments/UTs.

Flood risk zoning regulates land-use or zoning policies which in turn regulates construction in high-risk areas. This reduces the economic exposure and its vulnerability to flood events.

Ministry of Jal Shakti has continuously impressed upon the States the need to adopt flood plain zoning approach. A model draft bill for flood plain zoning legislation was also circulated by Central Water Commission in 1975 to all the States. This bill envisages zoning of flood plain of a river according to flood frequencies and defines the type of use of flood plain. The States of Manipur, Rajasthan, Uttarakhand, erstwhile State of Jammu & Kashmir and Arunachal Pradesh have enacted the legislation.

However, delineation and demarcation of flood plains is yet to be undertaken. National Mission for Clean Ganga (NMCG) has also, from time to time, advised all states in Ganga basin for demarcation, delineation and notification of river flood plains and removal of encroachment from riverbed/floodplain of the river Ganga and its tributaries in adherence to the River Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016.

A literature review regarding Report and Guidelines on Flood Plain Zoning has been carried out based on which this document has been prepared. Chapters 1-5 present a report on the study carried out and Chapters 6-8 contain a list of guidelines which have been developed based on this review. These sections also classify the nature of activities and development regulations that would be needed to protect sensitive regions.

The guidelines, based on implementation by State Governments, will offer learning to Central/State governments. Accordingly, these guidelines shall be reviewed to account for emerging scenarios.

1. Introduction

A river is defined as a natural stream of flowing water. Rivers are found on every continent on Earth and on nearly every kind of land. The Indian sub-continent is also blessed with several large and small rivers, which are all distinct in terms of their hydrology and sediment transport.

A river shifts in its shape, size, flow pattern of water, silt, nutrients, and biota, in fact all its variables seem to change with time and space. The perceptions differ as one move from mountains to plains and to the deltas. The same stream displays a wide variance of characteristics that depend upon the land it flows through and the microclimate along its banks. Rivers, many a times, seem to mirror the local flavor of the land they flow through.
Usually, a river system is composed of the following parts:

1. Source/Origin (Mouth)
2. Tributaries
3. Confluences
4. Channels
5. Riverbanks
6. River/Flood Plains
7. Mouth (Outfall)

Indian rivers are deeply embedded into the economic, social, political as well as cultural fabric of the country. Ever since ancient times, most of the civilizations have developed on the banks of rivers. Rivers form the backbone of any economic activity.

They serve as a vital component not only for agriculture, industry, and transportation but also for forestry, recreation, and environment. Rivers also ‘contain’ many other embedded ecosystems (both terrestrial and aquatic) and most of the times play hosts to rare flora and fauna.

The below Map of India substantiates the vast network of rivers and tributaries flowing through the Indian sub-continent, covering majority of the geographical area.

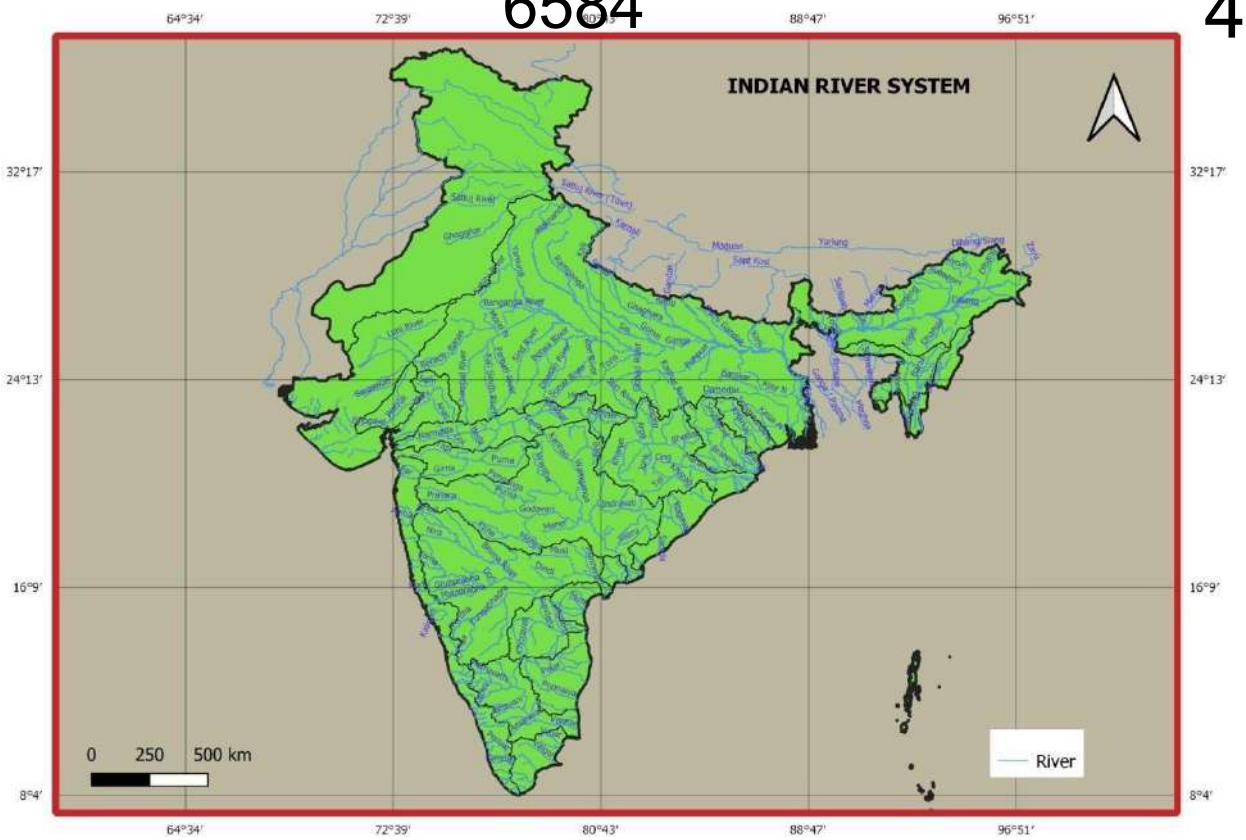


Figure 1: Indian River System (Source: India-WRIS)

However, due to rapid urbanization and development, the plains of rivers are being encroached upon in an unsustainable manner, negatively impacting the 'state' and 'health' of rivers, which are further aggravated by extreme climate change events. Despite its inevitable necessity for subsistence and varied uses, the water resources, particularly rivers are in woeful conditions.

1.1. Indian River System

The major river systems in the country can be broadly classified into two groups viz., Rivers of the Himalayan region and Rivers of Peninsular India. Himalayan rivers are fed by melting snows and glaciers of the great Himalayan range during spring and summer, and from rains during monsoon. They are often uncertain and capricious in their behavior. They carry significant flows during the dry weather due to snow melt and carry minimum flows, during winter. On the other hand, the peninsular rivers originate at much lower altitudes, flow through more stable areas and are more predictable in their behavior. Their flow is characterized by heavy discharges during monsoons followed by very low discharges during the rain-free months.

Box 1: Flood Plain Zoning Bill 1975

- ✓ A Model Flood Plain Zoning Bill, prepared by CWC in 1975, was circulated to States/UTs for enactment of legislation. So far, Manipur, Rajasthan, Uttarakhand, erstwhile State of Jammu & Kashmir and Arunachal Pradesh have enacted the bill. However, no efforts have been made by any of the states/UTs except Uttarakhand for demarcation of flood plain till date.
- ✓ Limited efforts made by any major flood prone state of the country.
- ✓ Thick population density, Lack of alternative settlement, Implementation difficulty etc. have been cited as major impediments in implementation of flood plain zone.

From the point of view of flood problem, rivers can also be grouped under the four regions as below:

- ✓ Central India & Deccan region
- ✓ Brahmaputra region
- ✓ Ganga region
- ✓ Northwest region

1.2. Types of River

A river is termed 'flashy' if floods in the river rise and fall in a very short period of time. Apart from North Eastern States & Hilly States, some rivers of Rajasthan, Gujarat etc. are flashy in nature.

A 'virgin' river is one which completely dries up before its outfall into the sea or another river. These are common in desert areas like the Kutch and Rajasthan where due to percolation and evaporation losses, the river disappears after flowing some distance from the source. Further, a river whose water resources potential has not been exploited at all is also termed as a virgin river.

A river is said to meander when it adopts a tortuous course, swinging from one side to another in alternating bends.

It is said to be braided when the bed becomes wide and shallow, with the flow composed of many interlaced channels, causing numerous islands and bars of silt deposits in the bed of the river. Generally, a river forms delta of various patterns, when it approaches the sea.

1.3. The River Course

A river typically flows through three distinct topographical zones: the upper reach in hilly terrain, the middle reach in the alluvial plains, and the deltaic or estuarine reach near its outflow into the sea.

1.3.1. The Upper Reaches

In the upper reaches, rivers can be broadly classified into two types: **incised rivers** and **boulder rivers**. The incised rivers have well-defined banks which are resistant to erosion. The bed of the river is also resistant to erosion despite the steepness of the slope and the swiftness of the current. The boulder rivers are also characterized by steep slopes, but the beds consist of a mixture of boulders, gravel, shingle, and sands.

The bouldery rivers tend to have straight courses with wide shallow beds. At the time of floods, the high velocity flow moves both boulders and gravels downstream. But when the floods subside and the flow slackens, bed materials pile up in heaps. The flow channels with reduced velocity are unable to move these heaps and so while trying to go around them, tend to wander in a new direction, attacking the banks and widening the bed thereby.

1.3.2. The Middle Reaches

Rivers in the middle reaches are usually in the alluvial plains. These have the characteristic of meandering freely from one bank to the other on account of the erodible nature of the beds and banks. These rivers are classified as aggrading, degrading or stable rivers. If it is building up its bed, it is called an aggrading river. If its bed is getting scoured, it is called a degrading river. If river carries down sediments which it receives without either depositing the silt or scouring the bed, it is called a stable river. It is pertinent to point out here that, depending on the silt load and the discharge, the same river may exhibit characteristics of an aggrading, degrading or stable river in different reaches.

1.3.3. Estuarine/Deltaic Reach

In its last reach, before its outfall into another river or sea, the river may be called estuarine. In the latter case, periodic changes in water levels occur due to tides and, therefore, in this reach, it is called a Tidal River. Here, sea water enters the river with the high tide and empties out along with the ebb tide. The distance up to which the tidal effect is felt depends upon the slope of the river, the tidal range, the flood discharge, configuration of the river, etc. Near its outfall to the sea, such a river is called a deltaic/ estuarine river. In this reach, it is distinguished by the many branches the parent river has thrown as it approaches the sea.

(Source: Rashtriya Barh Ayog, Volume-I, 1980)

1.4. Indian River Basin

India has been broadly divided into 20 hydrological basins by Central Water Commission (CWC) for the purpose of river management:

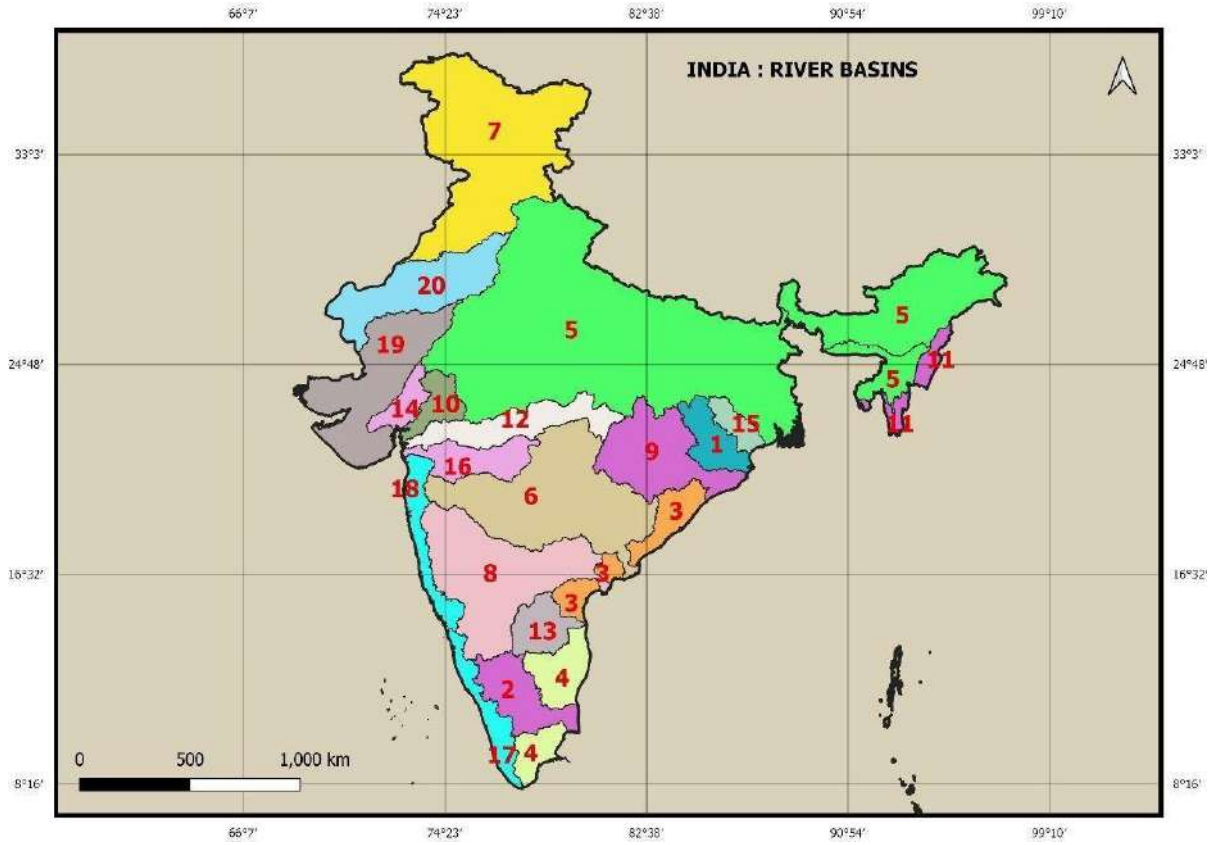


Figure 2: Indian River Basins (Source: River Basin Atlas of India, CWC (2012)

These basins are as below:

1. Brahmani-Baitarani
2. Cauvery
3. East Flowing rivers between Mahanadi and Pennar
4. East Flowing rivers between Pennar and Kanyakumari
5. Ganga/Brahmaputra/Meghna-Barak
6. Godavari
7. Indus
8. Krishna
9. Mahanadi
10. Mahi
11. Minor rivers draining into Myanmar and Bangladesh
12. Narmada
13. Pennar
14. Sabarmati
15. Subarnarekha
16. Tapi
17. West Flowing rivers from Tadri to Kanyakumari
18. West Flowing rivers from Tapi to Tadri
19. West Flowing rivers of Kutch and Saurashtra including Luni
20. Areas of Inland drainage in Rajasthan

2. Flood Plains

A river's floodplain is the low-lying land adjacent to a river and is usually prone to flooding when higher than normal discharges occur. These areas are typically flat stretches of land stretch all the way to the edge of the valley that contains the waterway. Hydrologically, a river's flood plain is defined as the landform subject to periodic flooding (based on return period). Though there are other definitions based on topography, geo-morphology and modelling purposes, the hydrological definition is used throughout this document for the purpose of flood plain zoning.

As per the Notifications of River Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016, Para 3 (l), a Flood plain means such area of River Ganga or its tributaries which comes under water on either side of it due to floods corresponding to its greatest flow or with a flood of frequency once in hundred years.

2.1. Importance of River Flood Plains

Flood plains are necessary for a healthy riverine system. It provides the opportunity for water to spread out and slow down, reducing erosion and flooding of other areas. Flood plains support biological diversity, and recharge ground water.

Flood plains provide a buffer space between a river and inhabited areas at risk of flood ie, when water rises above the banks, the speed of flow reduces as it spread out across the flood plain, and overall peak of the water is slower. This can limit the destructive impact of floods. The following are some of the other benefits of flood plains:

a) **Improving water quality**
Floodplains act as natural filters, absorbing harmful chemicals and other pollution, making rivers healthier for drinking and swimming, and for plants and animals.

b) **Creating fertile soil for crops**
Rivers deposit sediment and nutrients in floodplains, making them very productive areas for growing crops.

Box 2: National Green Tribunal Order 2017

- ✓ Identification and demarcation of floodplains of river Ganga in Segment B of Phase-I for one in twenty-five years' cycle.
- ✓ Till the said identification & demarcation of floodplain, 100 meters from the edge of the river to be designated as no development/ construction zone in Segment B of Phase-I i.e., Haridwar to Unnao, Kanpur.
- ✓ Identification of no development/ construction zone, regulatory zone and the activities that can be/ cannot be carried on in the regulatory zone of the floodplain.
- ✓ Complete prohibition on disposing of Municipal Solid Waste (MSW), E- waste or Bio-medical waste on the floodplain or in river Ganga or its tributaries.
- ✓ No dumping or landfill sites for any kind of waste irrespective of any technology for waste processing, within 500 meters from the edge of the river Ganga and/or its tributaries.

c) Nurturing biotic ecosystem

Floodplains are a productive environment for plants and wildlife and serve as nurseries for many species of fish. They provide vital habitat and are important for maintaining the web of life.

d) Providing recreation

Flood plains also provide ideal places for hiking, paddling, fishing, exercising, and connecting with the beauty of nature.

e) Recharging Ground water

The layered sediments of many floodplains can create important aquifers. Clay, sand, and gravel filter the water as it seeps downward. Water purification systems often take advantage of this natural phenomenon in a process called bank filtration. In bank filtration, water is deliberately filtered through the banks or floodplain of a river or lake. Nearby wells then collect the filtered water, which is then ready for more intense purification processes.

Box 3: Floods in the UT of Jammu & Kashmir (2014)

- ✓ During the initial week of September 2014, Jammu & Kashmir encountered one of its worst hit flood events in its north western part. Unprecedented rains that lasted for 5 days led to an increased runoff from the tributaries of river Jhelum. The flood affected nearly 2million people and caused huge damage to property and lives as well as economy of the state.
- ✓ Although heavy rainfall was the triggering factor for floods in the Kashmir valley, the impact of the disastrous event was aggravated by other factors, including the rapid urbanization in the valley, encroachment of waterbodies and land adjoining river banks, the disappearance of wetlands, etc. which has blocked the natural drainage patterns making the situation worse. Extremely urbanized and mismanaged flood plains gave an impetus to the situation which attained disastrous dimensions due to prolonged and extremely heavy rainfall.

3. Need of Flood Plain Zoning

In order to have a reasonable degree of protection, floods need to be managed through both structural & non-structural measures so as to reduce the losses. Non-structural measures are planned activities to modify susceptibility due to flood related damages. These are meant to keep people away from floods. Flood Plain Zoning is one of the main non-structural measures for management of floods worldwide. However, this is yet to be taken up in India as an effective measure to manage floods, though flood is one of the major natural calamities in India and almost every year, there is substantial loss of life, large scale damage to property apart from suffering of millions of people due to recurrence of flood in India.

Box 4: FPZ in Uttar Pradesh

- ✓ Notification issued by State of UP dated 4th September 2020 for identification & demarcation of flood plain on River Ganga from Haridwar to Unnao by way of Executive order.
- ✓ Demarcation completed on field.
- ✓ Demarcation pillar being installed all along the riverbank.
- ✓ Activities being regulated accordingly.
- ✓ Steps underway to identify FPZ beyond Unnao up to Ghazipur.
- ✓ Study completed for FPZ of river Yamuna from Asgarpur to Prayagraj. Demarcation under progress.

The concept of Flood Plain Zoning recognizes the basic fact that the flood plain of a river is essentially its domain and any intrusion into or developmental activity therein must recognize the river's 'right of way'. Flood plain zoning involves regulation of land use in flood plains of a river. It is considered as an effective non-structural means for flood management. It aims at demarcating zones or areas likely to be affected by floods of different magnitudes or frequencies and specify the types of permissible developments based on probabilistic analysis in these zones, so that whenever floods occur, the damage can be minimized, if not avoided.

Increased level of urbanization in the country is putting pressure on urban flood plains. Encroachment or unplanned development of such area may prove disastrous for people affected as well as for river in the long run. Flood Plain Zoning, therefore, envisages limitations on indiscriminate development and encroachment of flood plains of a river.

Flood plain zoning is not only necessary in the case of management of floods, but also useful in reducing the damage caused by drainage congestion, particularly in urban areas. It has acquired urgency in the context of increasing variability in rainfall as a result of climate change.

Over the years, the cascading rate of increasing population and the increasing urbanization and industrialization has put a toll upon the health of river systems in India as these anthropogenic pressures brings about changes in the river system

Box 5: Mumbai Floods (2005)

- ✓ On 26th July 2005, the Mumbai Suburban Area was stuck with a heavy storm. Indian Meteorological Department (IMD) reported a 944 mm of rain for the 24 hours. The incident caused extreme water logging in the city area. About 200 km of road length was submerged in flood waters and the traffic was standstill on all internal roads, major roads and corridors of traffic. The incident also caused widespread damage to property and life.
- ✓ The impacts of human activities and the developmental works involving physical, topographic changes etc. affecting the natural hydrological process was felt during the event. This led to a thinking that Infrastructure planning in urban areas should require careful attention to urban hydrological characteristics and how the urban conditions affect the rainfall-runoff relationships in this area.

and causes alterations in river morphology by changing flow patterns, sedimentation, and siltation properties of rivers. Floodplain development also impacts the riparian ecosystem.

This has further increased the probability of urban floods, showing an increasing trend as a phenomenon, and posing huge challenge to city administration and town planners. The lack of protection of river floodplains from damaging impacts like encroachment and diversion for 'developmental projects' is a tragedy that affects both the river as well as those who encroach it adversely. The river suffers as it is unable to occupy and transport flood waters downstream during high rainfall events (monsoon in particular).

The river is also to recharge aquifers, wet the lands along its banks or provide life-sustaining conditions to plant and animal habitats along the river margins and banks. Based upon flood plain zoning demarcation, Flood Insurance and other non-structural measures could also be promoted & initiated in India.

The various alterations susceptible in the river flood plains and its possible impacts are summarized in the table below:

Table 1: Alterations susceptible in the river flood plains and its possible impacts

Alterations	Impact
Increase in impervious surfaces	Decreases infiltration and increases run-off which leads to: • Decrease in lag time • Increase in peak discharge • Production of run-off from small storms • Reduction in flood plain recharge and decreased water table
Development on and near flood plains	• Disrupts migration and spawning cues for fish and marine biodiversity • Unplanned development leads to prolonged water logging • Constricts channel flow and capacity
Construction of storm water drainage systems	• Decreased lag time and increase in peak discharge owing to increased run-off entering the river
Filling up of water bodies	• Disrupts spawning grounds for fishes • Reduced space for flood waters
Construction of embankments and expansion of agriculture	• Change in soil moisture regime of flood plains • Water logging in flood plains due to reduced capacity of water to naturally flush outwards • Reduction in lateral movement of river channel

4. Early Efforts for Flood Plain Regulation in India

Efforts for regulating the development on floodplains can be traced to the Madras River Conservancy Act of 1884 that provided for appointment of 'River Conservators', directed for conducting surveys and defined limits for the river which was termed "river-bed." Any construction or plantation within the riverbed for the area covering the present States of Tamil Nadu and Andhra Pradesh was to be permitted by the Conservator of Rivers.

In 1989, Tamil Nadu Pollution Control Board passed an Order stating that no industry causing serious water pollution will be permitted within 1 km of reservoirs, rivers, and public drinking water sources. Maharashtra Pollution Control Board also framed a River Regulation Zone Policy for the State in the year 2000 (revised in 2009) based on the designated best use as per water quality for rivers, high flood line and categorizing industry based on their pollution levels.

However, this was later withdrawn based on a resolution passed by the Maharashtra Government dated 3rd February 2015.

With floodplains, it is also important to look at relevant land use legislations which come under the ambit of States. State Town and Country Planning Acts were enacted by the States based on Model Town and Country Planning Laws in 1962 (later revised in 1985).

The National Water Policy, 2012 includes a section on conservation of rivers and river corridors. It also prohibits encroachments and diversion of water bodies and advocates that restoration must be promoted to the extent feasible.

Central Water Commission (CWC) has continuously impressed upon the States the need to take action to implement the flood plain zoning approach in development. A model draft bill for Flood plain zoning legislation was circulated by the Union Government in 1975 to all the States. The States of Manipur, Rajasthan, Uttarakhand, erstwhile State of Jammu & Kashmir and Arunachal Pradesh have enacted the legislation.

However, delineation and demarcation of flood plains are yet to be undertaken. So far, limited action has been taken by any of the major flood prone States & others including Uttar Pradesh, Bihar, West Bengal, Assam etc. for enactment of legislation. Many States have expressed their reservations on implementing floodplain zoning due to reasons such as high population density, non-availability of sufficient land for relocating the people occupying flood plains, etc. Government of India has repeatedly advised State/ Union Territory Governments on the need for enactment of an appropriate legislation for delineation & demarcation of flood plain zones on the notified stretches of rivers of the State/UT and regulating the activities therein.

In February 2016, Ministry of Environment, Forests and Climate Change (MOEF & CC) had come out with a draft Notification for River Regulation Zones wherein it proposed to prohibit or regulate the developmental activities on riverfronts and floodplains. The draft Notification has been circulated to all the States and UTs. The draft Notification, under the Environment Protection Act (EPA), 1986, intended to regulate developmental and industrial activities upto 5 km from the banks of the river stretches having floodplains and an equivalent area for mountain/ hill stretches under River Conservation Zones (RCZ) demarcated with reference to the Highest Flood Level (HFL) with a 100-year return period.

The Prohibited Activity Zone (RCZ-PA) in the immediate vicinity of the river will be offered the highest protection since existing activities and constructions within the zone should adhere to the notification. Attention has been paid to regulate new developments within regulated zones. The RRZ draft policy also defined the area for protection from further encroachments as the

"active flood plain", which will be marked by the high flood line. This, in entrenched stretches will be the available space in the valley. In embanked stretches, this would be the area between two embankments or roads along a river acting as an embankment. In other stretches of the river, the active flood plain will be the 100-year flood line, the land which gets flooded during a 100- year storm. The idea was to establish a No-Development Zone not less (in area) than the active floodplain.

5. International Experiences in Flood Plain Management

5.1. Flood Plain Management in United States of America

Floodplain zones are geographic areas that the Federal Emergency Management Administration (FEMA) has determined to be at flood risk to nearby communities and property. FEMA rates these zones for their severity of risk and identifies them as low-to-moderate risks, high risks, coastal areas, and undetermined risks. Each zone designation reflects the seriousness of flooding most likely in the specified area.

On the Flood Insurance Rate Maps, the FEMA defines flood zones as geographic areas that have different levels of flooding. They are as under:

- ✓ **High-risk:** "Special Flood Hazard Area (SFHA)", - an area with a 1% or 1 in 100 chance of experiencing a flood during any given year.
- ✓ **Moderate risk:** 1 in 500 chances of flooding occurring each year
- ✓ **Least risk:** have less than a 1 in 500 chance of occurring in any given year

5.2. Flood Plain Management in United Kingdom

Flood zones have been created by the Environment Agency to be used within the planning process as a starting point in determining how likely somewhere is to flood. However, they only refer to flood risk from rivers or the sea, and not all rivers are included.

The following classification of flood zones are divided: -

- ✓ **Flood Zone 1- Low Probability:** Areas having less than 0.1% chance of flooding in any year
- ✓ **Flood Zone 2- Medium Probability:** Areas to have flooding risk between 0.1% – 1% chance from rivers in any year or between 0.1% – 0.5% chance of flooding from the sea in any year
- ✓ **Flood Zone 3a- High Probability:** Areas at 1% or greater probability of flooding from rivers or 0.5% or greater probability of flooding from the sea
- ✓ **Flood Zone 3b- The Functional Floodplain:** Flood zone 3b is classified as functional floodplain and is deemed to be the most at-risk land of flooding from rivers or the sea. Areas at significant risk of flooding are classified to be within flood zone 3b

5.3. Flood Plain Management in New Zealand

Flood Protection Engineers and Hydrologists in New Zealand describe floods using Annual Exceedance Probabilities (AEP) or Return Periods. For example, a 1% AEP or 1 in 100-year return period flood means that there is a 1% or 1 in 100 chance in any given year that a flood of this size or greater will occur. Accordingly, flood plain areas have been defined:

Table 2: Flood Plain classification based on Average Period of Return

Flood Awareness Likelihood Area	Average period between occurrences of a given flood event
High Likelihood Area	1 in 50 years
Medium Likelihood Area	1 in 100 years
Flood Sensitive Area	1 in 200 years
Low Likelihood Area	1 in 440 years

5.4. Flood Plain Management in Canada

The Department of Environment and Climate Change of the province of Newfoundland Labrador in Canada envisages the following classifications for their flood plains as mentioned in their provincial website as listed below:

i. **Floodway:** The portion of a flood plain where the most frequent flooding occurs. This area is determined based on the 1 in 20 years (1:20) return period flood.
ii. **Floodway Fringe:** The portion of a flood plain where less frequent flooding occurs. This area is where flooding occurs up to 1 in 100 years (1:100) on average.
iii. **Climate Change Flood Zone:** Based on extension of the floodway fringe, this is the area which is likely to be impacted due to the latest forecasted effects of climate change.
iv. **Other Flood Risk Area:** An area where flooding is known or has some probability to occur due to unique or unusual circumstances such as areas subject to shoreline recession, areas downstream of dams or areas adjacent to watercourses potentially prone to ice jams.

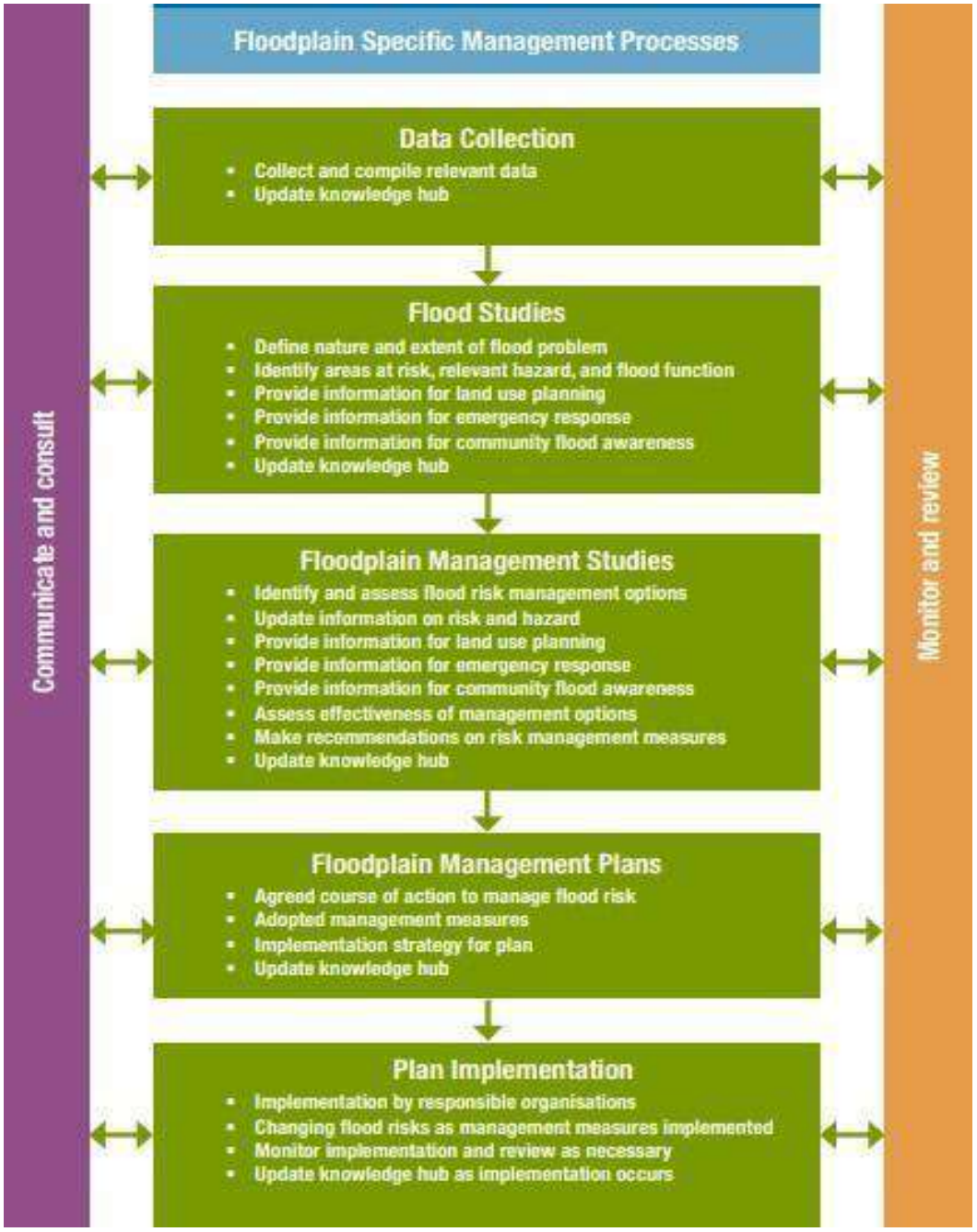
It has given the list of permitted and non-permitted activities in each of these flood plains.

5.5. Flood Plain Management in China

i. Construction of any building, infrastructure etc or any activity within the river channel management areas affecting flood discharge capacity in flood passage is prohibited.
ii. Relocation of people of these reclaimed areas and economic compensation and tax exemption for the settlers.

5.6. Flood plain management in Australia

The Flood plain management practices in Australia involves steps that support understanding and management of flood risks for a specific geographical area. This is generally part of all the floodplain of a single waterway or a combination of the floodplains of several waterways, where flood behavior may interact. This understanding begins with knowledge of the local flood history; evidence of the types and scales of storms that have previously caused problems and indications of what landforms or human-made structures may influence flooding.



5.7. Floodplain Management in Bangladesh

Owing to the fact that a majority of the country's landmass is covered by floodplains, Bangladesh have recently shifted its focus on framing government policies that have adopted using tactics such as discouraging settlements in the high-risk areas and promoting the type of housing and agriculture that can withstand floods.

6. Present Status of Flood Plain Zoning

India stands as the second most flood-impacted nation globally, after Bangladesh and accounts for one-fifth of the global death count due to floods. India's high risk and vulnerability for floods is highlighted by the fact that over 40 million hectares out of total geographical area of 329 million hectares is prone to floods. On an average every year, 75 lakh hectares of land gets affected. According to the Rashtriya Barh Ayog (RBA) an average of 18.6 million hectares of land gets affected annually.

Rastriya Barh Ayog (RBA) was set up by the then Ministry of Agriculture and Irrigation in 1976, to study India's flood-control measures after the projects launched under the National Flood Control Program of 1954 failed to achieve much success.

In 1980, the RBA made 207 recommendations and 4 broad observations.

Firstly, it said there was no increase in rainfall in India and, thus, the increase in floods was due to anthropogenic factors such as deforestation, drainage congestion and badly planned development works.

Secondly, it questioned the effectiveness of the methods adopted to control floods, such as embankments and reservoirs, and suggested that the construction of these structures be halted till their efficacy was assessed. However, it did say that embankments could be constructed in areas where they were effective.

Thirdly, it said there must be consolidated efforts among the states and UTs and the Centre to take up research and policy initiatives to control floods.

Fourthly, it recommended a dynamic strategy to cope with the changing nature of floods. An analysis of the report suggested that the problem began with the methods of estimating flood-prone areas of the country.

Box 6: Uttarakhand Journey to FPZ

- ✓ Enacted the bill in 2012
- ✓ Notification of limit of Flood Plain Area being done in phases:

I. Initial and Final notification done

1. **Bhagirathi** - Gangotri to Devprayag.
2. **Ganga** - Devprayag to Rishikesh.
3. **Ganga** - Rishikesh to Chandi Bridge.
4. **Ganga** - Chandi Bridge, Haridwar to Kalsia village in Laksar, Haridwar district
5. **Bhilaganga** river.
6. **Alaknanda** - Badrinath to Devprayag.
7. **Mandakini** - Kedarnath to Rudraprayag.

II. Study Completed

1. **Gola**-Near Ganrar to State border of
2. **Rispana**-Rajpur (source) upto confluence with Song
3. **Bindal**- Rajpur (source) upto Rispana (confluence)
4. **Song**- Pasani village up to confluence with Ganga.

III. Study in Progress

1. Kosi - Near Kantali to State border of UK
2. Asan and tributaries (Nimi, Nun, Swarna rivers and Sitla Rao)
3. Jhakhan up to Ranipokhri
4. Chandrabhaga
5. Yamuna
6. Pindar river
7. Dhauliganga
8. Nandakini
9. Solani
10. Malini
11. Ratmau
12. Nandhaur
13. Ladhiya
14. Ramganga W River.

In a 2011 meeting of the working group on flood management for the 12th Five-Year Plan, of Flood Management Program, Central Water Commission (CWC), acknowledged that scientific criteria needed to be adopted to assess flood-prone areas. It was recommended that there should be effective monitoring based on frequency of flooding and period of inundation as gauged by contour maps and satellite imagery.

As per NITI Ayog's Report of the Committee constituted for formulation of Strategy of Flood Management Works in Entire Country and River Management Activities and works related to Border Areas (2021-26), annually 7.17 Mha. of area is affected with floods in India, of which 3.94 Mha. is cropped area. On an average, floods claim 1,654 human and 6,18,248 cattle life annually. Reports further reiterate Flood Plain Zoning as an integral non-structural flood management measure. Under section 4 Major Flood Events: Case Studies and Lessons Learnt, it was mentioned that the severity of the floods in India, in most of the cases are enhanced manifold by anthropogenic activities. The major take- away in such cases is the strict implementation of Flood Plain Zoning Act and regulating construction within the flood plain of a river.

The RBA report also recognized the need for timely evaluation of flood management projects. It entrusted State Irrigation and Flood Control Departments, CWC, Ganga Flood Control Commission & Brahmaputra Board with the task of adopting or discarding them based on their performance.

Box 7: Floods in Kerala (2018)

- ✓ Unprecedented rains lashed parts of Kerala from 8th to 18th August, 2018 causing widespread damages to all major sectors of the state. Many human lives were lost, thousands of houses damaged, over a million and half people were moved to relief camps, large stretches of major roads got washed away and many bridges got damaged.
- ✓ Other than unprecedented rainfall in an ecologically sensitive zone such as Kerala, it was not just urbanization; it was the unscientific use of its land and water resources that added to the severity of damage. The other issue was management of river and its flood plain. The numerous dams across these rivers have reduced the flow into the rivers during most of the time. With passage of time, their floodplains have shrunk, and people have occupied these floodplains for cultivation and construction. Unchecked tourism and illegal constructions, mostly related to tourism was another triggering factor that was accentuated by incessant rains.

The 'Assessment of Areas affected due to Floods in India' published by Central Water Commission in June 2024 concludes that the total flood affected areas in India delineated from analyzing LandSAT and Sentinel -1&2 data on GEE and GIS during the period from 1986-2022 is 21.213 Mha. A map showing the pan -India aggregated extent of Flood Affected Areas in India (1986-2022) is given in Fig. 3.

Sl. No	Description	Fig (in Mha)
(i)	Total Area Affected	21.213
(ii)	Area Protected	20.538
(iii)	**Area liable to Floods =(i)+(ii)**	**41.751**

Table 3 : Details of Area liable to Floods as per CWC report on Assessment of Areas affected due to Floods in India', 2024.

Despite a series of disastrous floods in recent times such as in Kedarnath (2013), Srinagar (2014) and Kerala (2018) apart from regular flooding in Assam, Bihar, Uttar Pradesh & West Bengal resulting from constraints in river floodplains, the nation is still without a legally mandated prohibition on such ingress into and violation of the river's integrity.

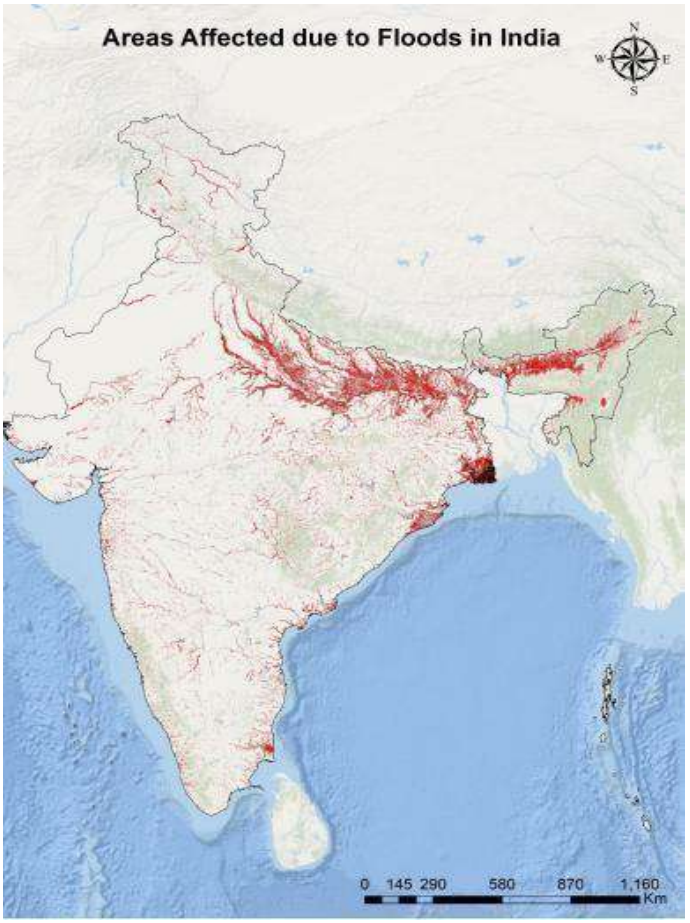
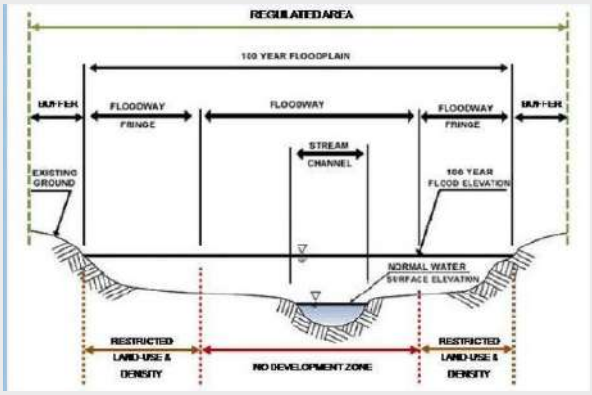


Figure 3 - Aggregated Extent of Flood Affected Areas in India (1986-2022)

Keeping in view the fact that the problem is becoming more and more severe, and with losses mounting every year, the subject of flooding has been recognized at the national level. Thereafter, action for demarcation of flood plain areas and regulating the activities therein, is to be undertaken by respective State Governments/UTs.

Box 8: Godavari Flood Plain

- ✓ Classification of flood plain of River Godavari into different zones by Nashik Mahanagar Palika. List of permissible and prohibited activities have been envisaged under Floodplain Planning & Development Guidelines for River Godavari, Nashik Region. A list of planning guidelines & developmental controls including permissible restorative activities and recommended approach is also given.



- ✓ The document also says about the design aspects to be taken care of while building structures such that they are built on stilts allowing free flow of water below around the structures, as per the flood protection guidelines.

National Green Tribunal (NGT) has also advised the State Governments/UTs to take necessary steps in this direction from time to time. NGT in its order dated 13.07.2017 in the matter of O.A. No. 200 of 2014 – M C Mehta Vs Union of India & Others had directed demarcation of flood plain for river Ganga from Haridwar in Uttarakhand up to Unnao in Uttar Pradesh. In the matter of restoration of river Yamuna in the matter of O.A No. 6/2012 Manoj Mishra Vs Union of India, Hon'ble NGT, vide its Order/Judgment dated 13.01.2015, had directed the State to adopt a precautionary principle by directing various steps which are required to be taken by the authorities, including prohibitory orders in relation to dumping and throwing of waste of any kind in the drains in the river Yamuna, which is lethal for the environment.

In this regard, there is a need for drafting a set of guidelines, to be followed by State Governments/UTs while taking up any developmental activities in the flood plain of any river.

7. Guidelines for Flood Plain Zoning

Based upon the draft Flood Plain Zoning Bill of DoWR, RD & GR, direction of Hon'ble NGT through its Order, draft RRZ by MoEF&CC, broad Guidelines for identifying the Flood Plain Zone in different types of rivers of India and activities to be considered in various zones of such flood plains are given below as a guiding principle to preserve and improve river health.

7.1. Broad Guidelines

7.1.1 Prioritization of Reaches

1. Considering implementation of Guidelines rests with respective State Governments/UTs , the States/UTs should first prioritize the rivers on which flood plain zoning is required. The States/UTs may further decide to implement these guidelines on tributaries & sub-tributaries of such rivers.

2. As a general principle, flood plain zoning may be first taken up for the main river and then its major tributaries. However, the States/UTs may take up the zoning activity on the main river as well as tributaries concomitantly as per their convenience, computing capacity and volume of data to be processed.

3. Zoning exercise may be taken up as a whole or reach-wise in rivers depending upon location and prioritization by respective State/UTs governments.

4. The draft Guidelines may also consider change in river depth due to siltation in the river while demarcating the flood plains. Accordingly, these guidelines shall be reviewed to account for emerging scenarios.

7.1.2 Declaration of Nodal Agency and its functions

1. State Governments/UTs may declare the Nodal Agency for implementation of FPZ Guidelines.

2. The land use in the floodplain should follow a collaborative approach involving urban/rural development authorities in consultation with the Nodal Agency.

3. The Nodal agency shall demarcate and mark the flood plain in the pristine location too.

4. Nodal agency in association with Municipal/ Panchayat bodies and SDMA shall frame guidelines for safety of existing structures and to increase the Flood Resilience within the identified flood plain and implement other existing guidelines such as National Framework for Sediment Management, 2022 of MoJS, Sustainable Sand Mining Guidelines, 2016 and 2020 of MoEF&CC.

5. A No-objection certificate from the Nodal agency of the respective State/UTs will be required for carrying out any activity in the Flood Plain.

- For all new construction (individual house or any infrastructure), permit system may be incorporated by the concerned Municipal/ Panchayat body in consultation with Flood Plain Zone Nodal Agency which will need to be enforced strictly.

- Further, in the case of Hydro-projects/Pumped Storage Projects, the agency shall also submit the NOC from the Flood Plain Zone Nodal Agency while seeking environmental clearance from MoEF&CC.

6. The Water Resources/Jal Shakti/Irrigation Department of the respective State Government/UTs shall work in close coordination with the Nodal Agency, if any other department/ organization is declared as Nodal agency, to ensure that the flood plains are managed as per the guidelines.

Box 9 : Uttarakhand Floods (2013)

- ✓ In the month of June 2013, the region suffered its worst disaster with huge loss of lives and widespread destruction. The disaster coincided with the peak tourist and pilgrimage season, considerably enhancing the number of the casualties with adverse impact on the immediate rescue and relief operations.
- ✓ The nature's fury was most pronounced in the Mandakini valley of the Rudraprayag district. Torrential rains coupled with the collapse of the Chorabari Lake led to flooding at the Kedarnath Shrine and the adjacent areas of Rambara, Agastyamuni, Tilwara, and Guptakashi.
- ✓ There were extensive damages to the housing, both in urban and rural areas, as settlements were mostly concentrated along the rivers i.e. flood plain of the rivers.

7. The flood plain areas which have already been urbanized/developed shall be identified and inventories of such areas would be maintained. This should be made a continuous activity, since some development in floodplain areas is inevitable even after implementation of floodplain zoning. The same may be carried out using satellite data. The nodal agency should ensure that future development takes place as per guidelines and proper convergence with the existing and proposed developmental plans should be done. Further, people settled in the river's active floodplain should be warned periodically to move to safer places in a phased manner. The concerned Government agency may initiate some schemes for relocation of such settlements.

7.1.3 Data Standards and Methodology

1. The basic requirements to be taken care of before implementing flood plain zoning are as follows:
   - ➢ Broad demarcation of areas vulnerable to floods.
   - ➢ Preparation of a large-scale map (1:10,000/1:15,000) of the area vulnerable to floods with contours at an interval of 0.3 m to 0.5 m.
   - ➢ Marking of reference river gauges with respect to which, the areas likely to be inundated for different magnitudes of floods will be determined.
   - ➢ Demarcation of areas liable to inundation by floods of different frequencies, e.g., 1 in 5-year, 1 in 25-year and 1 in 100-year appropriately involving mathematical modeling/ Artificial Intelligence and factoring in possible climate change scenarios (including changing rainfall pattern & intensity) in different region of country.

2. The following data are required to carry out Flood Plain Zoning:
    - Historical Discharge/ Rainfall data (as much as available). Minimum 30 years of historical data is recommended.
    - In case of lesser data availability, Peak-over-Threshold method may be used.
    - Digital Elevation Model (DEM) for the river stretches for which FPZ is intended. However, length of reach and capacity of computational power available are critical for DEM resolution suitability. Hence, a combination of freely available coarse DEM + LiDAR DEM is suggested. For reaches <50 km or city-specific study, high-resolution DEM is recommended. Base DEM should not be coarser than 30 m horizontal resolution. Existing embankment details be merged with topography details, if coarse DEM is being used.
    - Close-interval Cross section of the river deduced from DEM as well as collected from the survey conducted in the river reach for carrying out hydrodynamic study.
    - Water Level and River Flow Discharge Data/ Rating Curve at gauging sites to estimate water level corresponding to given flood magnitude.
    - Satellite image for superimposing layers for different flood plain zones.

3. The process of demarcation of flood plain zones is data intensive exercise requiring river flow, river morphology & cross-section, details of embankments, bridges & similar structures. The study primarily involves the determination of 5, 25 & 100-year return period floods at different discharge observation locations of the reach.
    - Annual maximum discharge for each location is utilized for estimation of quantiles of different return periods by fitting into suitable probability distribution viz., e.g. Gumbel, Log Normal, Log Pearson Type-II etc.
    - In case the river is ungauged, i.e. no discharge observation is available, then the rainfall may be used for estimation of discharges. This method involves formulation of Synthetic Unit Hydrograph of sub-catchments, estimation of design storm based on Probable Maximum Precipitation (PMP) atlas of the sub-region and estimation of quantiles of different return periods using calculation of requisite return period rainfall, which is further converted into runoff discharges. These calculated discharges are then utilized in 2D inundation models to calculate the spread of the water for each return period.
    - The output of the study, i.e. return period maps may be validated with the past water levels and past inundations from satellite images, wherever possible.

7.1.4 Data Dissemination and Monitoring

1. The maps prepared shall be placed on a centralized portal for information of public.

2. Joint Regular monitoring of demarcated flood plain zone shall be done by the Nodal agency in association with Municipal/ Panchayat bodies and State/UTs Disaster Management Authority (SDMA) to prevent any further encroachment in the flood plain.

3. Central Government, through an appropriate Agency/Organization, will monitor the implementation of flood plain zoning activities by the States/UTs using the advance and state of the art technologies.

4. Till the said identification and demarcation of floodplain is completed, no further activity is to be allowed within 100 meters from the edge of the river, designated as No

Development/Construction zone. However, if any State Government/UTs has already notified the No Development/Construction zone which may be contravening to this provision, the concerned State Government/UTs shall be encouraged to move towards this provision in a phased manner. However, State Government/UTs may amend or relax this clause for construction of Railway lines, Bridges and essential infrastructure construction or public service etc.

Note: For defining the river's edge, maximum of extent defined by dry seasons water line or flood line in the last five (5) years may be adopted.

7.1.5 Environmental Safeguards in the Floodplain Zones

1. There shall be prohibition on direct disposing of Municipal Solid Waste (MSW), E- waste or Bio-medical waste on the floodplain or in the river. In addition, the monitoring of the effluents emanating from treatment facilities, as envisaged in Section 21 of the Water (Prevention and Control of Pollution) Act of 1974 should be mandatory.

2. There shall be no dumping or landfill sites for any kind of waste irrespective of any technology for waste processing, within 500 meters from the edge of the river or as defined by the existing Municipal guidelines/State Bye-laws in urban area, whichever is more. The nodal agency in consultation with Municipal/ Panchayat body may seek removal of existing dump fills areas, if any, from the river's active floodplain.

3. Appropriate precautionary measures in respect of safety of nuclear plants, aerodrome etc., lying in the designated flood plain zones shall be taken by the respective department depending upon the zone where those are lying.

4. Demarcation of flood plain zones, downstream of dam/ barrages, shall be done as per Para 7.2.3 (III) of these Guidelines. Mapping of existing encroachment in the downstream area vis-à-vis demarcated flood zones shall be done by the Nodal agency. Action Plan shall be prepared for removal of such encroachment in a phased manner in consultation with District Administration/ SDMA. Regular interaction and awareness program among the residents of such areas shall be carried out by the Nodal agency. Government, if desirable, may declare itself free of any responsibility for any flooding and subsequent loss to life & property to encourage people to move towards safer places.

Box 10: West Bengal Floods: 2013 & 2015

- ✓ In 2013, heavy rainfall in the catchment of Damodar Valley led to flooding in the floodplains of districts of Paschim & Purba Medinipur, Howrah, Hooghly, Bardhaman and Bankura causing widespread damage of life and properties.
- ✓ In 2015, the unprecedented rainfall due to the effect of cyclone 'Komen' caused flood in West Bengal. Suitable precautionary measures in the form of advance flood forecasting based reservoir operating system, along with Flood Plain Zoning is the need of the hour in such areas.

5. The revenue department of the state/UTs maintains its own record of river courses. Once Flood Plain zoning work is completed, the same may be updated in the revenue records for future reference.

7.2. Implementation Guidelines

As per definition, a river's floodplain is the low-lying land adjacent to a river and is prone to flooding and generally conforms to a flood of frequency of one in a hundred years. To minimize the damages due to floods and to protect the pristine nature of the river, there is a need to regulate the activities in the flood plain of the river. However, the entire zone corresponding to flood of 1 in 100-year return period can't be declared as protected zone. Instead, the area needs to be divided in different zones depending upon the nature of settlement in the area i.e., rural, or urban. Based on the availability of satellite data, studies will be carried out by the States/UTs on such areas.

Irrespective of zoning, as prescribed below, the following are pre-requisite to be undertaken by the Nodal Agency for effective implementation of regulation of flood plain zoning:

a) Mapping of vulnerability risk of structures to keep flood hazards at minimal
b) Development of a robust warning system

Box 11: Surat, Gujarat Floods: 2006

In Aug 2006, heavy rainfall in the catchment was responsible for heavy inflow in the Ukai reservoir and 3 Lakh to 9 Lakh Cusecs were released from Ukai Dam. The flood situation in Surat city worsened due to such large spill over from Ukai dam. Almost the whole of Surat was submerged and almost all communication channels failed. The people of Surat were badly affected by this flood.

7.2.1. Rural Areas

There will be three zones of the identified flood plains in the urban areas and two zones in the rural areas. The same is listed below for reference:

I. **Protected Zone:** It may also be called Active Flood Zone and will be vulnerable to most frequent flooding events. This area may correspond to floods of 1 in 5-year return period. No activities/ construction will be allowed in this zone except those specified under Section 8.1.

II. **Regulatory Zone:** The activities in this zone are regulated. This area termed as regulatory zone may correspond to the area covered by floods ranging from 1 in 5-year to 1 in 25-year return period.

7.2.2 Urban Areas

In urban areas, flood plains may have specialized functions as public open spaces and entertainment areas. Sometimes these floodplains are encroached and slums develop on them, which is a major issue. The Nodal Agency needs to ensure that such areas are free from encroachment.

Box 12: Chennai Floods, 2015

The city of Chennai has seen a very rapid increase in urbanization and unplanned construction in the floodplains after the 1960s. Many marshlands and rivers have disappeared in the spite of the development of the IT corridor in the city.

Residential colonies in Velachery, Madipakkam, Perugundi, Perumbakkam etc. have all come up in the marshes or their vicinity. These rapid encroachments reduce the water retention capacity of the marshes ultimately leading to the scenario of floods. The CAG Report of 2017, following the floods of 2015 indicated that around 30 km length of river Adyar has been illegally encroached upon that had contributed majorly towards the havoc from the floods in Chennai.

The three zones of floodplains for urban areas are listed below:

I. **Protected Zone:** This is the active flood zone and subjected to most frequent flooding. This corresponds to the area covered by floods with 1 in 5-year return period. No activities/ construction will be allowed in this zone except those specified under Section 8.1.

II. **Regulatory Zone:** The area of flood plain covered by floods between 1 in 5-year return period and 1 in 25-year return period will be termed as Regulatory Zone. The activities in this zone will be regulated. The severity of flood in this area will be lesser than that of the Protected zone.

III. **Warning Zone:** It is the outermost zone in which most of the activities can be permitted by mapping their vulnerability so that that risk flooding hazards remain minimal. This part of flood plain corresponds to the area covered by floods between 1 in 25-year return period and 1 in 100-year return period.

Table 4: Demarcation Areas and associated Flood Frequency Intervals

S. No.	Demarcation of area	Flood Frequency Interval
1	Protected Zone (both rural and urban areas)	Up to 1 in 5-yr
2	Regulatory Zone (both rural and urban areas)	Between 1 in 5-yr and 1 in 25-yr
3	Warning Zone (only in urban areas)	Between 1 in 25-yr and 1 in 100-yr

Note: Demarcation of floodplain corresponding to 100-year return period flood shall necessarily be done for both urban and rural areas.

7.2.3 Other developmental regulations

I. For reaches where embankments exist within a protected or regulated zone, the outer boundary of the active flood plain will be up to the embankment, or the line corresponding to 1 in 5-year return period flood, whichever is more.

Figure 4- River plain with embankments

Figure 5 - River plain without embankments

Box 13: Joshi math Land Subsidence

On account of the events that happened at Joshi math, Uttarakhand, due to land subsidence and sinking at various parts of the area, it is imperative that utmost priority be accorded to, on reducing infrastructure development in ecologically sensitive areas, and where necessary, then building sustainable, climate-change-adapted, disaster-resilient housing and infrastructure that specifically recognizes environmental concerns.

II. In case the Flood Plain Zone of one river overlaps with that of another river within a region, the entire area between the two rivers should be considered for regulation of various activities.

III. In case of existing storage structures on the river such as dams and barrages, the demarcation of flood plains is to be done carefully, after taking into consideration factors such as maximum discharging capacity of the spillway, maximum release after construction that may be routed in the channel downstream of the reservoir etc. The maximum flood level at different locations downstream may also be considered and flood plains may be marked suitably.

Mountain Rivers and Hill Streams: For the Hilly and mountainous region, Flood Plain Zoning requires extra effort and attention. The Himalayan region is significant due to the region's susceptibility to both monsoonal and glacial lake outburst floods. Floodplain zoning in the Hilly region should be adaptive, flexible, and supported by scientific research and local knowledge. It is crucial to consider the unique challenges posed by the region's complex topography and climate, as well as the potential impact of cloudburst, glacial melt and climate change on flood patterns. Regular updates to regulations and collaborative efforts at the local, state, and national levels are key to effective floodplain management in the mountainous region.

Protected Zone

In case of hilly areas, the floodplains may be demarcated as per the slope characteristics of the hill/ mountain relative to the river as mentioned in Table 5. This approach ensures that natural topography/elevation features are also appropriately factored while identifying zones in such terrain as velocity of flows and consequential slope stability is an important consideration in hilly terrain as against terrain in plains. However, where difficulties may arise in determining/ identifying the Highest Flood Level (HFL) of a river along its course, Flood Plain Zoning shall be done as per the Flood Frequency Analysis methodology. Accordingly, either of above two approaches may be adopted for demarcation of flood plains in hilly areas.

Table 5: Extent of Protected Zone along the slope of hills

Sl. No	Slope of the hill towards the river	Extent of Protected Zone
1.	> 30 degrees	Shall be up to 5m from the highest recorded flood level in the valley along the slope
2.	> 10 degrees and < 30 degrees	Shall extend up to 15m from the HFL along the slope
3.	< 10 degrees*	Shall extend up to 50 m from the HFL along the slope

Regulatory Zone: This zone should extend up to 100 m along the slope or the crest of the hill, whichever is less, beyond the boundary of Protected Zone. There will be no warning zone.

8. Regulation of Activities

8.1. List of prohibited activities

The list of prohibited activities in the demarcated flood pains is tabulated below:

Table 6 : List of Prohibited Activities

Sl. No	Zone		Prohibited Activities
1	Protected Zone	(i)	All kinds of permanent construction including addition of floor area/elevation of any existing structure except Civil and Railways Infrastructures (Embankments/Bridges specifically for railway infrastructure with adequate safety measures, Flood/Bank protection works, but the construction of new embankments remain prohibited activity)
		(iii)	Any construction disturbing the natural course of the river channel except Essential Services and Infrastructure (gas/petroleum lines, power line transmission pylons, pipelines for water supply, bridges and barrages/construction of ghats, green-riverfronts, and jetties for navigation) and Temporary Structures (Defence establishments, disaster management activities due to natural calamities, religious and socio-cultural activities, recreational activities not requiring the erection of any permanent structures)
		(iv)	Dumping of solid waste/creation of landfills
		(v)	Storage of highly volatile, inflammable, explosive, toxic materials
		(vi)	Establishment of large-scale commercial or industrial facilities except Sustainable Activities such as groundwater withdrawal by handpumps for non-commercial uses, traditional organic farming, traditional fisheries, grazing by animals and eco-friendly tourism and Permanent Utilities such as Parks, Playgrounds, Gardens, discharge of domestic wastewater after treatment.
2.	Regulatory Zone	(i)	Residential settlement except Public Institutions, Government offices, Universities and Educational Institutions without residential facilities, public libraries, sewage treatment plants, community halls, subject to the condition that the Minimum plinth level of the building should be above the level corresponding to the 1 in 100 -year flood and subject to earthquake safety and the ground floors of such facilities can be utilized for non -residential purposes and controlled afforestation and conservation projects to enhance green cover without disrupting the natural flood flow of the river.
		(ii)	Critical Defence Installations
		(iii)	Construction of basements
3.	Warning Zone	(i)	Hazardous Waste producing chemical industries except other industries, public utilities like hospitals, power installations, water supply, telephone exchanges, railway stations, airports, commercial centers, etc. subject to the condition that the minimum plinth levels of structures should correspond to 1 in 100-year flood.
		(ii)	Nuclear Plants

Note: 1. The Prohibited Activities mentioned above are for illustration purpose from functional consideration of notification by the state governments/UTs, notwithstanding the terminology that has to been used here.

2. Activities that can be permitted under each zone has been identified for the state governments/UTs and the same has been described as an illustrative list along with the list of Prohibited Activities.

ANNEXURE

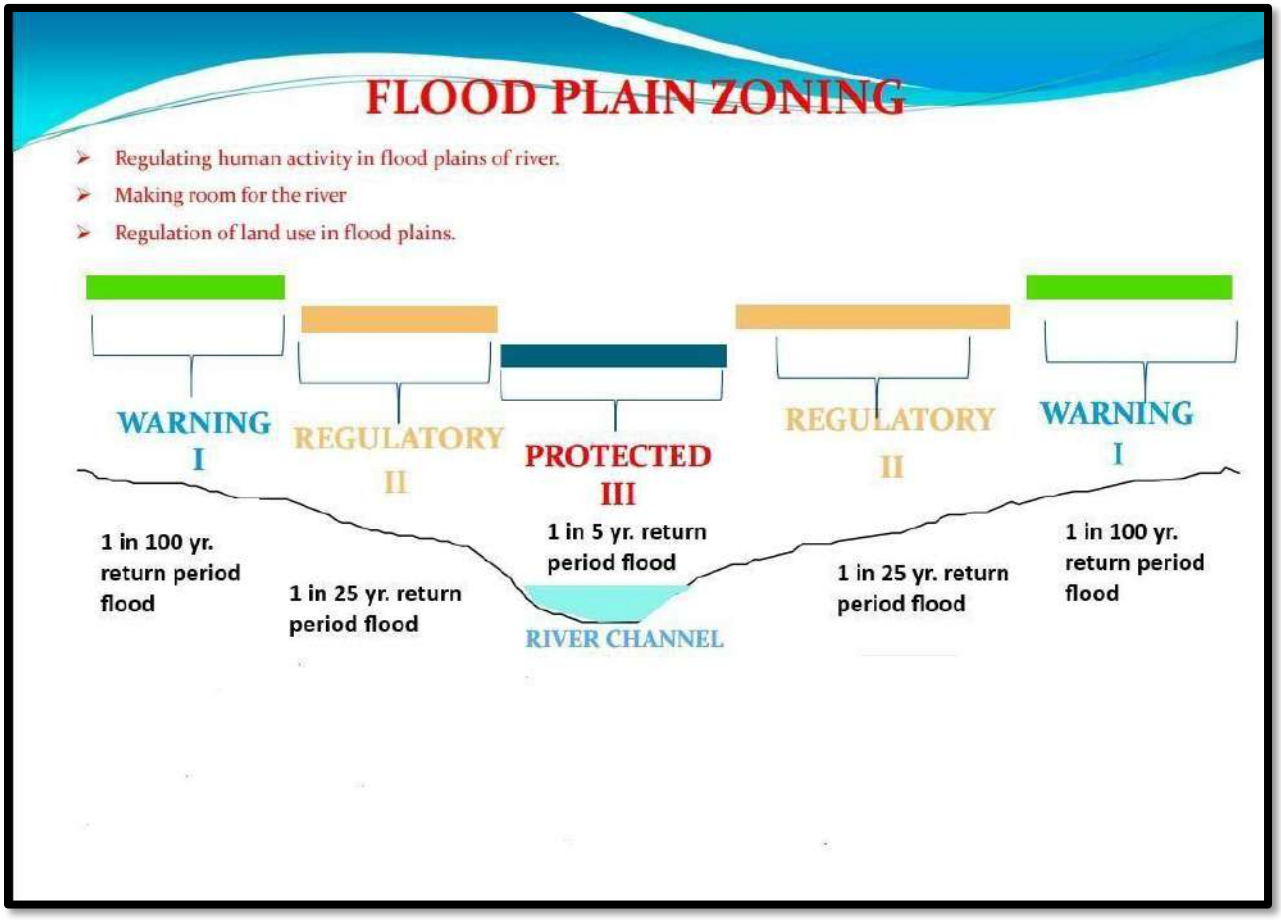


Figure 6- Flood Plain Zoning

9. References

1. Draft Flood Plain Zoning bill CWC, 1975
2. Rashtriya Barh Ayog, Volume-I, 1980 (*https://indianculture.gov.in/reports-proceedings/rashtriya-barh-ayog-national-commission-floods-vol-i*)
3. Environmental Protection Act, 1986 (*https://www.indiacode.nic.in/bitstream/123456789/4316/1/ep_act_1986.pdf*)
4. NDMA Guidelines on "Management of Flood" 2008 (*https://nidm.gov.in/PDF/pubs/NDMA/3.pdf*)
5. National Water Policy, 2012 of DoWR, RD & GR (*https://jalshakti-dowr.gov.in/sites/default/files/NWP2012Eng6495132651_1.pdf*)
6. Urban Regional Development Plans Formulation and Implementation guidelines, 2015 of MoHUA(*https://mohua.gov.in/upload/uploadfiles/files/URDPFI%20Guidelines%20Vol%20I(2).pdf)*
7. River Conservation Zone draft notification, 2015 of MoEF&CC
8. NGT order dated 10th December2015 on River Ganga (*https://nmcg.nic.in/writereaddata/fileupload/46_NGT%20Judgement%2010%20dec%202015.pdf*)
9. NMCG Notification for River Ganga dated 2016 (*https://jalshakti-dowr.gov.in/sites/default/files/NMCGAuthorityNotification_0_0.pdf*)
10. Sustainable sand mining guidelines, 2016 of MoEF& CC (*https://dste.py.gov.in/SEIAA/pdf/RSM1.pdf*)
11. Enforcement & Monitoring Guidelines for Sand Mining, 2020of MoEF& CC *(https://dste.py.gov.in/SEIAA/pdf/RSM2.pdf*)
12. Flood Atlases prepared by NRSC, 2020(*https://ndem.nrsc.gov.in/hydrological_fhz.php*, *https://bhuvan.nrsc.gov.in/pdf/Flood-Hazard-Atlas-Bihar.pdf*)
13. River Centric Urban Planning guidelines,2021 of MoUD (*https://www.mohua.gov.in/upload/uploadfiles/files/RCUP%20Guidelines.pdf*)
14. Report on Water Quality Hot-Spots in Rivers of India, 2021 (*https://cwc.gov.in/sites/default/files/volume-2.pdf*)
15. Niti Ayog's Report (2021) of the Committee constituted for formulation of Strategy for Flood Management Works in Entire Country and River Management Activities and works related to Border Areas (2021-26) (*https://www.niti.gov.in/sites/default/files/2021-03/Flood-Report.pdf*)
16. National Framework for Sediment Management 2022 (*https://jalshakti-dowr.gov.in/sites/default/files/Draft_Policy_on_Sediment_Mgmt-June2017.pdf*) 'Environmental Status of Godavari' by Nashik Mahanagar Palika (*https://nmc.gov.in/assets/admin/upload/download/13_Ch10_Floodplain_Planning_Nov20.pdf*)
17. FEMA guidelines for management of flood (*https://www.fema.gov/pdf/floodplain/nfip_sg_unit_1.pdf*)
18. Strategic guidelines for making River Sensitive Master Plan prepared by the Government of India in the year 2021 (*https://nmcg.nic.in/writereaddata/fileupload/59_Mainstreaming%20Urban%20River%20report%20-%20compressed.pdf)*
19. Handbook for Flood Protection, Anti Erosion & River Training Works published by CWC in 2012 *(https://cwc.gov.in/sites/default/files/Handbook-05-Jun-12_0.pdf)*
20. Assessment of Area Affected due to Floods in India (*https://cwc.gov.in/sites/default/files/assessment-area-affected-due-floods-india.pdf)*

10. Bill on Flood Plain Zoning (Sample)

Uttarakhand FPZ Bill, 2012

क्रम संख्या– 10

पंजीकृत संख्या–यू0ए0/डी0ओ0–30/2012–14
(लाइसेन्स टू पोस्ट विदाउट प्रीपेमेन्ट)

सरकारी गजट, उत्तराखण्ड

उत्तराखण्ड सरकार द्वारा प्रकाशित

असाधारण

विधायी परिशिष्ट

भाग–1, खण्ड (क)

(उत्तराखण्ड अधिनियम)

देहरादून, सोमवार, 28 जनवरी, 2013 ई0

माघ 08, 1934 शक सम्वत

उत्तराखण्ड शासन

विधायी एवं संसदीय कार्य विभाग

संख्या 31/विधायी एवं संसदीय कार्य/2012

देहरादून, 28 जनवरी, 2013

अधिसूचना

विविध

"भारत का संविधान" के अनुच्छेद 200 के अधीन राज्यपाल महोदय ने उत्तरांचल विधान सभा द्वारा पारित उत्तराखण्ड बाढ़ मैदान परिक्षेत्रण विधेयक, 2012 को दिनांक 24 जनवरी, 2013 को अनुमति प्रदान की और वह उत्तरांचल अधिनियम संख्या 07, सन 2013 के रूप में सर्व–साधारण की सूचनार्थ इस अधिसूचना द्वारा प्रकाशित किया जाता है।

उत्तराखण्ड बाढ़ मैदान परिक्षेत्रण अधिनियम, 2012
(उत्तराखण्ड अधिनियम संख्या 07 वर्ष 2013)

THE UTTARAKHAND FLOOD PLAIN ZONING ACT, 2012
[UTTARAKHAND ACT NO. 07 OF 2013]

उत्तराखण्ड बाढ़ मैदान परिक्षेत्रण अधिनियम, 2012
{उत्तराखण्ड अधिनियम सं0 07 वर्ष 2013}

अनुक्रमणिका

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1	2	3
	अध्याय–एक **प्रारम्भिक**	
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2.	परिभाषाएं	
	अध्याय–दो **बाढ़ परिक्षेत्रण प्राधिकारी तथा उसकी शक्तियाँ**	
3.	बाढ़ मैदान परिक्षेत्रण की घोषणा	
4.	बाढ़ परिक्षेत्रण अधिकारी की शक्तियाँ और कृत्य	
	अध्याय–तीन **बाढ़ मैदान परिक्षेत्रण के सर्वेक्षण एवं चित्रण**	
5.	सर्वेक्षण	
6.	सर्वेक्षण की शक्ति	
7.	नुकसानी का संदाय	
	अध्याय–चार **बाढ़ मैदानों की परिसीमाओं की अधिसूचना**	
8.	बाढ़ मैदानों क्षेत्रों को चिन्हित करने के राज्य सरकार के आशय की घोषणा	
9.	सार्वजनिक सूचनाएं	
10.	आक्षेप	
11.	राज्य सरकार का विनिश्चय	
	अध्याय– पाँच **बाढ़ मैदान के उपयोग का प्रतिषेध एवं निर्बन्धन**	
12.	बाढ़ मैदान में बाधा आदि के प्रतिषेध की शक्ति	
13.	शास्ति	
14.	अपराध शमन करने की शक्ति	
15.	अपील	
16.	पुनरीक्षण	

अध्याय– छः

प्रतिकर

17. प्रतिकर का संदाय

18. सहमति से प्रतिकर और प्रभाजन का अवधारण

19. प्रतिकर का ग्राह्य नहीं होना

20. अधिनिर्णय (अवार्ड) के विरूद्ध आवेदन

21. धारा 20 के अधीन आवेदन पत्रों पर निर्णय लेने की प्रकिया और प्राधिकारियों की शक्तियाँ

22. विनिश्चय का सिविल न्यायालय की डिक्री के रूप पर प्रवर्तनीय होना

23. अधिनिर्णय के अधीन संदाय

अध्याय– सात

प्रतिषेद्ध के पश्चात् बाधाएं हटाने की शक्ति

24. प्रतिषेद्ध के पश्चात् बाधाएं हटाने की शक्ति

अध्याय– आठ

विविध

25. बाढ़ परिक्षेत्रण प्राधिकारी को कोई कार्य करने से रोकना अपराध होगा

26. बाढ़ परिक्षेत्रण प्राधिकारी, अन्य अधिकारियों का लोक सेवक होना

27. सद्भाव से कार्यवाही का संरक्षण

28. जुर्माने की वसूली

29. न्यायालय की शक्ति

30. नियम बनाने की शक्ति

31. निरसन और अपवाद

उत्तराखण्ड बाढ़ मैदान परिक्षेत्रण अधिनियम, 2012
{उत्तराखण्ड अधिनियम सं0 07 वर्ष 2013}

उत्तराखण्ड राज्य में नदियों के बाढ़ मैदान परिक्षेत्रण की व्यवस्था के लिए

अधिनियम

भारत गणराज्य के तिरसठवें वर्ष में उत्तराखण्ड विधान सभा द्वारा निम्नवत् रूप में अधिनियमित हो :–

अध्याय–एक
प्रारम्भिक

संक्षिप्त नाम, विस्तार और प्रारम्भ	**1.**	**(1)** इस अधिनियम का संक्षिप्त नाम उत्तराखण्ड बाढ़ मैदान परिक्षेत्रण अधिनियम, 2012 है। **(2)** इसका विस्तार सम्पूर्ण उत्तराखण्ड राज्य में होगा। **(3)** यह धारा तुरन्त प्रवृत्त होगी और इस अधिनियम के शेष उपबन्ध उस तारीख से प्रवृत्त होंगे, जो राज्य सरकार, राजपत्र में, अधिसूचना द्वारा नियत करे : परन्तु यह कि विभिन्न नदियों और विभिन्न क्षेत्रों के लिए इस अधिनियम के विभिन्न उपबन्धों हेतु भिन्न–भिन्न तारीखें नियत की जा सकेंगी।
परिभाषाएं	**2.**	इस अधिनियम में, जब तक कि संदर्भ से अन्यथा अपेक्षित न हो :– **(क) "बाढ़ मैदान"** में जल सरणी, बाढ़ सरणी और लगभग जब तक कि प्रसंग या संदर्भ से अन्यथा अपेक्षित न हो, इस अधिनियम में नीची भूमि का वह क्षेत्र सम्मिलित है, जो जलप्लावन के कारण आने वाली बाढ़ के लिए सुग्राही हों; **(ख) 'बाढ़ मैदान परिक्षेत्रण'** से किस नदी के बाढ़ मैदानों में जहाँ नदियों और जलधाराओं से जल के अधिप्लावन के कारण मैदान बन जाते हैं, मानव गतिविधियों पर प्रतिबन्ध अभिप्रेत है; **(ग) 'बाढ़ क्षेत्र'** से ऐसा क्षेत्र अभिप्रेत है, जिससे अधिकतम सम्भावित बाढ़ प्रवाह बहा ले जाना अपेक्षित है; **(घ) 'बाढ़ परिक्षेत्रण प्राधिकारी** से नदी के सम्बन्ध में धारा 3 के अधीन राज्य सरकार द्वारा नियुक्त प्राधिकारी अभिप्रेत है; **(ङ) 'भूमि'** में भूमि के हित, भूमि से उत्पन्न फायदे या भूमि से संलग्न या भूमि से संलग्न किसी भी चीज के साथ स्थायी रूप से जकड़ी चीजों का समावेश है; **(च) 'अधिभोगी'** किसी भूमि के सम्बन्ध में ऐसा व्यक्ति अभिप्रेत है, जिसका किसी भूमि में हित है और वह उस भूमि पर स्वयं खेती करता है, अपने सेवक या भाड़े के मजदूर से खेती करवाता है। इसमें काश्तकार भी शामिल है; **(छ) 'स्वामी'** से किसी भूमि के सम्बन्ध में ऐसा व्यक्ति अभिप्रेत है, जिसका ऐसी भूमि में हित है; **(ज) 'विहित'** से राज्य सरकार द्वारा इस अधिनियम के अधीन बनाये गये नियमों द्वारा विहित अभिप्रेत है; **(झ) 'नदी'** में उसकी सहायक नदियों का समावेश है; **(ञ) 'जल सरणी'** से ऐसी सरणी अभिप्रेत है, जिसमें साधारणतः नदी का प्रवाह परिरूद्ध रहता है।

		अध्याय–दो **बाढ़ परिक्षेत्रण प्राधिकारी तथा उसकी शक्तियाँ**
बाढ़ मैदान परिक्षेत्रण की घोषणा	**3.**	**(1)** जहाँ राज्य सरकार ऐसा करना आवश्यक या समीचीन समझती है तो वह सरकारी राजपत्र में, अधिसूचना द्वारा यह घोषित कर सकेगी कि ऐसी रीति से जो इस अधिनियम में आगे विनिर्दिष्ट की गई है, बाढ़ मैदान परिक्षेत्रण किया जायेगा। **(2)** राज्य सरकार निदेश दे सकेगी कि जिन सीमाओं के निर्धारण हेतु नदी का सर्वेक्षण किया जाय, उनके अन्तर्गत इस अधिनियम के उपबन्ध चार्ट और पंजियां (रजिस्टर) तैयार किये जायं, जिनमें समस्त सीमाएं, भूमि–चिन्ह और ऐसी सीमाएं अभिनिश्चित करने के प्रयोजन हेतु आवश्यक कोई अन्य विषय विनिर्दिष्ट किया जाय। **(3)** राज्य सरकार, राजपत्र में अधिसूचना द्वारा जिले में जिलाधिकारी या सरकार के ऐसे अन्य प्राधिकारी को उपधारा (2) के अधीन अपेक्षित क्षेत्र का सर्वेक्षण करने के प्रयोजनों के लिए बाढ़ परिक्षेत्रण अधिकारी नियुक्त कर सकती है, जिसे वह आवश्यक समझे, और ऐसी अधिसूचना में वह उक्त प्राधिकारी द्वारा निर्वहन किये जाने वाले कर्त्तव्य विनिर्दिष्ट कर सकेगी।
बाढ़ परिक्षेत्रण अधिकारी की शक्तियाँ और कृत्य	**4.**	बाढ़ परिक्षेत्रण प्राधिकारी, इस अधिनियम के उपबन्धों के अनुसार शक्तियों का प्रयोग और कर्त्तव्यों का निर्वहन धारा 3 की उपधारा (3) के अधीन अधिसूचना में विनिर्दिष्ट शर्तों और निबन्धनों के अनुसार करेगा।
		अध्याय–तीन **बाढ़ मैदान परिक्षेत्रण के सर्वेक्षण एवं चित्रण**
सर्वेक्षण	**5.**	**(1)** बाढ़ परिक्षेत्रण प्राधिकारी, नदियों के बाढ़ मैदानों का सर्वेक्षण करेगा और नदियों के बाढ़ मैदानों के स्वरूप और सीमा का अवधारण करेगा। **(2)** बाढ़ परिक्षेत्रण प्राधिकारी, उपधारा (1) के अधीन किये गये सर्वेक्षण के आधार पर बाढ़ मैदान परिक्षेत्रों की स्थापना करेगा और उन क्षेत्रों का आंकलन करेगा, जिसमें जनसाधारण के स्वास्थ्य, सुरक्षा और सम्पत्ति की अभिरक्षा के आशय से बाढ़ मैदान के उपयोग के आपेक्षिक जोखिम के सन्दर्भ में भूमि के वर्गीकरण का भी समावेश होगा। **(3)** बाढ़ परिक्षेत्रण प्राधिकारी, उपधारा (2) के अधीन वर्णित क्षेत्र दर्शाते हुए चार्ट और पंजिकाएं तैयार करेगा।
सर्वेक्षण की शक्ति	**6.**	बाढ़ परिक्षेत्रण प्राधिकारी अथवा अन्य इस निमित्त सामान्य या विशेष रूप से प्राधिकृत किसी अन्य अधिकारी के लिये यह विधि पूर्ण होगा कि वह– **(क)** अपनी अधिकारिता के अन्तर्गत किसी भी भूमि पर प्रवेश करे और उसका सर्वेक्षण कर और उसका स्तर नापे; **(ख)** ऐसे स्तरों, सीमाओं और सीमा रेखाओं को चिन्ह अथवा सीमा पत्थर लगाकर चिन्हित करना;

		(ग) भूमि नापना; **(घ)** धारा 3 की उपधारा (2) में निर्दिष्ट सीमाएं अभिनिश्चित करने के प्रयोजनों के लिये समस्त अन्य आवश्यक कार्य करना; **(ङ)** जहाँ सर्वेक्षण और स्तर नापना अन्यथा पूर्ण नहीं किया जा सकता और किसी खड़ी फसल, बाड़ या जंगल को काटना या उसके किसी भाग को साफ करना विधि सम्मत होगा : परन्तु यह कि भूमि के ऐसे अधिभोगी को कम से कम इस आशय का सात दिन का नोटिस दिए बगैर (अधिभोगी की इसके लिए सहमति के बिना) कोई बाढ़ परिक्षेत्रण प्राधिकारी अथवा कोई अन्य अधिकारी या किसी निवास गृह से संलग्न किसी भवन, किसी बगीचे या खुले या बन्द प्रांगण में प्रवेश नहीं करेगा।
नुकसानी का संदाय	**7.**	**(1)** बाढ़ परिक्षेत्रण प्राधिकारी अथवा इस निमित्त सामान्य अथवा विशेष रूप से प्राधिकृत कोई अन्य अधिकारी, जिसने धारा 5 के अधीन किसी भूमि पर प्रवेश किया है, उसे छोड़ने के पूर्व ऐसे किसी भी नुकसान के लिये जो कि भारित हुआ हो, ऐसी भूमि के स्वामी अथवा अधिभोगी को प्रतिकर देगा और इस प्रकार दी गयी राशि की पर्याप्तता के बारे में कोई विवाद होने की स्थिति में बाढ़ परिक्षेत्र प्राधिकारी या इस निमित्त प्राधिकृत अधिकारी द्वारा मामला विनिश्चय हेतु राज्य सरकार को निर्दिष्ट किया जायेगा। **(2)** उपधारा (1) के अधीन अधिकारी का विनिश्चय अन्तिम होगा और उसे अपास्त या उपान्तरित कराने के लिये किसी सिविल न्यायालय में कोई भी वाद नहीं लाया जा सकेगा।
		अध्याय–चार **बाढ़ मैदानों की परिसीमाओं की अधिसूचना**
बाढ़ मैदानों क्षेत्रों को चिन्हित करने के राज्य सरकार के आशय की घोषणा	**8.**	राज्य सरकार, बाढ़ परिक्षेत्रण प्राधिकारी की रिपोर्ट के आधार पर या अन्यथा, राजपत्र में अधिसूचना द्वारा बाढ़ मैदान क्षेत्रों को चिन्हित करने और उनमें भूमि के उपयोग को प्रतिषिद्ध या निर्बन्धित करने के अपने आशय की घोषणा कर सकेगी।
सार्वजनिक सूचनाएं	**9.**	**(1)** बाढ़ परिक्षेत्रण प्राधिकारी, धारा 8 के अधीन अधिसूचना जारी करने पर क्षेत्र के सुविधाजनक स्थानों पर ऐसी अधिसूचना का सारांश सार्वजनिक रूप से सूचित करेगा। **(2)** बाढ़ परिक्षेत्रण प्राधिकारी, क्षेत्र में स्थित भूमियों के स्वामियों को सूचनायें व्यष्टितः भी देगा। **(3)** बाढ़ परिक्षेत्रण प्राधिकारी, अभिलेख, चार्ट, नक्शे, पंजिकायें और अन्य दस्तावेज, नदी सरणी/बाढ सरणी और बाढ़ मैदान दर्शाते हुए क्षेत्र का स्वरूप और जिस सीमा तक उसका उपयोग प्रतिषिद्ध अथवा प्रतिबन्धित है, विनिर्दिष्ट करते हुए विनिर्दिष्ट समयों पर आम जनता की जानकारी हेतु कार्यालय में प्रदर्शित करेगा।

आक्षेप	**10.**	**(1)** कोई व्यक्ति, जो धारा 9 में निर्दिष्ट सार्वजनिक सूचना में विनिर्दिष्ट परिसीमाओं के प्रतिबन्धों या निर्बन्धनों के प्रति आक्षेप करना चाहता हो, राजपत्र में अधिसूचना के प्रकाशन की तारीख से साठ दिन की कालावधि के भीतर अपने आक्षेप उपवर्णित करते हुए एक लिखित विवरण बाढ़ परिक्षेत्रण अधिकारी को अग्रेषित कर सकेगा।
		(2) उपरोक्त कालावधि की समाप्ति के पश्चात् बाढ़ परिक्षेत्रण अधिकारी विहित रीति से नोटिस जारी करेगा और सम्बन्धित पक्ष को मामले की सुनवाई का युक्तियुक्त अवसर प्रदान कर देने के पश्चात् आक्षेपों पर विचार करेगा। **(3)** बाढ़ परिक्षेत्रण प्राधिकारी, धारा 9 की उपधारा (3) में निर्दिष्ट अभिलेखों के साथ उसके और अपने प्रस्ताव राज्य सरकार को अग्रेषित करेगा।
राज्य सरकार का विनिश्चय	**11.**	**(1)** राज्य सरकार, बाढ़ परिक्षेत्रण प्राधिकारी की रिपोर्ट पर विचार करने के पश्चात् क्षेत्र की परिसीमाओं में ऐसे परिवर्तन करने का आदेश देगी, जैसा वह आवश्यक समझे। **(2)** राज्य सरकार का विनिश्चय अन्तिम होगा। **(3)** राज्य सरकार, राजपत्र में अधिसूचना द्वारा, यह घोषित करेगी कि इस अधिनियम के उपबन्ध विनिर्दिष्ट सीमाओं परिसीमाओं सहित उक्त नदी पर लागू होंगे : परन्तु यह कि नदी के भराव क्षेत्र में पूर्व से अवस्थित मानवीय बस्तियों को पुनर्वासित किए जाने की व्यवस्था भी राज्य सरकार द्वारा की जायेगी। **(4)** राज्य सरकार द्वारा अंकित और अनुमोदित क्षेत्र बाढ़ मैदान समझे जायेंगे और सीमाएं, जहाँ आवश्यक हो, सीमा के पत्थरों या अन्य उपयुक्त चिन्हों द्वारा चिन्हित की जायेंगी। **(5)** बाढ़ परिक्षेत्रण प्राधिकारी, इस प्रकार वर्णित ऐसे क्षेत्रों के मानचित्र और पंजिकाएं रखेगा और ऐसे मानचित्र तथा पंजिकाएं कार्यालय के स्थायी अभिलेखों का भाग समझी जायेगी। **(6)** उपधारा (5) के अधीन रखे गये मानचित्र और पंजिकाएं उस जिले के जिलाधिकारी को प्रस्तुत की जायेगी, जिसमें नदी का कोई भाग स्थित है और ऐसे समय पर आम जनता के निरीक्षण के लिए उपलब्ध होंगे, जैसा विहित किया जाये।
		अध्याय– पाँच **बाढ़ मैदान के उपयोग का प्रतिषेध एवं निर्बन्धन**
बाढ़ मैदान में बाधा आदि के प्रतिषेध की शक्ति	**12.**	**(1)** जहां राज्य सरकार का यह समाधान हो जाय कि सार्वजनिक स्वास्थ्य, सुरक्षा या सम्पत्ति के हित में या आम जनता की असुविधा को कम करने के हित में बाढ़ मैदानों में गतिविधियाँ प्रतिषिद्ध या निर्बन्धित करना आवश्यक है, वहाँ सरकार राजपत्र में, अधिसूचना द्वारा वह क्षेत्र, जिसमें प्रतिषेद्ध या निर्बन्धन प्रवृत्त किया जाना है और ऐसे प्रतिषेध या निर्बन्धन का स्वरूप और सीमा विनिर्दिष्ट कर सकेगी :

		परन्तु यह कि इस उपधारा के अधीन कोई भी अधिसूचना, धारा 8 के अधीन जारी अधिसूचना के प्रकाशन की तारीख से [1][अठारह मास] की समाप्ति के पश्चात् जारी नहीं की जायेगी। **(2)** तत्समय प्रवृत्त किसी विधि, रूढ़ि, करार अथवा लिखत में किसी बात के होते हुए भी उपधारा (1) के अधीन अधिसूचना के प्रकाशन पर ऐसी अधिसूचना में विनिर्दिष्ट प्रतिषेद्ध अथवा निर्बन्धन अभिभावी रहेगा। **(3)** कोई भी व्यक्ति बाढ़ परिक्षेत्रण प्राधिकारी की पूर्वानुमति के बिना निर्बन्धित अथवा प्रतिषिद्ध क्षेत्र में कोई गतिविधि आरम्भ नहीं करेगा : परन्तु यह कि जब कोई व्यक्ति बाढ़ परिक्षेत्रण प्राधिकारी को इस धारा के अधीन कोई गतिविधि आरम्भ करने के लिए अनुज्ञा के लिए आवेदन करता है और बाढ़ परिक्षेत्रण प्राधिकारी ऐसा आवेदन प्राप्त होने की तारीख से 90 दिन की कालावधि के भीतर उक्त व्यक्ति को संसूचित नहीं करता है कि आवेदित अनुज्ञा अस्वीकृत कर दी गई है, वहाँ यह उपधारित किया जायेगा कि बाढ़ परिक्षेत्रण प्राधिकारी ने उक्त अनुज्ञा दे दी है।
शास्ति	**13.**	यदि कोई व्यक्ति धारा 12 की उपधारा (1) के अधीन की अधिसूचना में विनिर्दिष्ट क्षेत्र में उक्त अधिसूचना में विनिर्दिष्ट निर्बन्धनों और शर्तों के प्रतिकूल कोई गतिविधि प्रारम्भ या कार्यान्वित करता है या करने का प्रयत्न करता है तो वह :— **(क)** जुर्माने से, जो पाँच सौ रूपये तक का हो सकेगा, या जुर्माने के संदाय में व्यतिक्रम होने पर साधारण कारावास से, जो दो मास तक हो सकेगा; और **(ख)** खण्ड (क) के अधीन दोष सिद्ध के पश्चात उस प्रत्येक दिन के लिए, जिसके दौरान अपराध जारी रहता है, एक सौ रूपये तक का हो सकेगा।
अपराध शमन करने की शक्ति	**14.**	**(1)** राज्य सरकार द्वारा किसी सामान्य या विशेष आदेश द्वारा इस निमित्त प्राधिकृत कोई भी अधिकारी ऐसी शर्तों के, जो कि विहित की जाये, अध्यधीन रहते हुए इस अधिनियम के अधीन कार्यवाहियाँ संस्थित होने के पूर्व या पश्चात् उस व्यक्ति से, जिसने अपराध किया है या जिस पर कोई अपराध करने का युक्तियुक्त सन्देह है, एक हजार रूपये से अनधिक धनराशि स्वीकार कर सकेगा। **(2)** ऐसी धनराशि का संदाय कर दिये जाने पर ऐसे व्यक्ति को अपराध से उन्मोचित कर दिया जाएगा और ऐसे अपराध के संबंध में उसके विरूद्ध कोई कार्यवाही नहीं की जायेगी।
अपील	**15.**	**(1)** बाढ़ परिक्षेत्रण प्राधिकारी के विनिश्चय से व्यथित कोई भी व्यक्ति उस तारीख से, जिसको उसे उक्त विनिश्चय की संसूचना दी गई थी, नब्बे दिन की कालावधि के भीतर उस प्राधिकारी को अपील कर सकेगा, जिसे राज्य सरकार द्वारा इस निमित्त विहित किया जाये : परन्तु यह कि यदि विहित प्राधिकारी को इस बात का समाधान हो जाये कि अपीलार्थी ससमय किसी कारणवश नहीं कर पाया था, अपील दाखिल तो वह 90 दिन की कालावधि की समाप्ति पर भी अपील पर विचार कर सकेगा।

1-उत्तराखण्ड अधिनियम संख्या 22 वर्ष 2018 की धारा 2 द्वारा प्रतिस्थापित।

		(2) विहित प्राधिकारी, अपीलार्थी को सुनवाई का युक्तियुक्त अवसर प्रदान करने के पश्चात् ऐसे आदेश पारित कर सकेगा, जो वह उचित समझे और उसका विनिश्चय अन्तिम होगा।
पुनरीक्षण	16.	(1) जहां धारा 15 के अधीन कोई अपील नहीं की गयी है, वहां राज्य सरकार, बाढ़ परिक्षेत्रण प्राधिकारी के किसी आदेश, जाँच या कार्यवाहियों की वैधता, औचित्य या शुद्धता के परीक्षण करने के प्रयोजनार्थ बाढ़ परिक्षेत्रण प्राधिकारी की जाँच या कार्यवाहियों का अभिलेख मंगा सकेगी और मामले में ऐसा आदेश पारित कर सकेगी, जो वह उचित समझे : परन्तु यह कि ऐसे आदेश की तारीख से छः मास समाप्त हो जाने के पश्चात् ऐसा कोई अभिलेख नहीं मंगाया जायेगा। (2) राज्य सरकार, बाढ़ परिक्षेत्रण प्राधिकारी के किसी भी आदेश में किसी भी व्यक्ति को मामले में सुनवाई का उचित अवसर दिये बिना ऐसा कोई परिवर्तन नहीं किया जायेगा, जिससे किसी व्यक्ति पर प्रतिकूल प्रभाव पड़ता हो।
		अध्याय– छः **प्रतिकर**
प्रतिकर का संदाय	17.	(1) जहाँ किसी भी व्यक्ति को बाढ़ मैदान में कोई कार्यकलाप हाथ में लेने की अनुज्ञा देने से इन्कार कर दिया गया हो या जहाँ इस अधिनियम के अधीन किसी व्यक्ति पर अधिरोपित, प्रतिषेद्ध या निर्बन्धन के परिणाम स्वरूप किसी व्यक्ति को कोई नुकसान होता हो तो वहाँ वह ऐसे प्रतिकर के संदाय का हकदार होगा, जो भूमि अर्जन अधिनियम, 1894 (केन्द्रीय अधिनियम सं0 01 वर्ष 1894) की धारा 23 एवं 24 के अधीन अवधारित भूमि के मूल्य और उस मूल्य के बीच के अन्तर से अधिक नहीं होगा, जो कि उसे उस तिथि में मिलता कि जब किसी कार्यकलाप के क्रियान्वयन की अनुज्ञा मिल गई होती या जब निर्बन्धन अथवा प्रतिषेद्ध अधिरोपित नहीं किया गया होता। (2) उपधारा (1) के अधीन प्रतिकर की धनराशि का अवधारण करने में ऐसे किसी भी निर्बन्धन पर विचार किया जायेगा, जिसके कि अध्यधीन वह भूमि, प्रतिकर का दावा करने वाले व्यक्ति के, उस भूमि पर कोई भी कार्य करने या उस भूमि के अन्यथा उपयोग के, अधिकार के सम्बन्ध में, तत्समय प्रवृत्त किसी भी अन्य विधि के अधीन है।
सहमति से प्रतिकर और प्रभाजन का अवधारण	18.	(1) जिस व्यक्ति को धारा 17 के अधीन प्रतिकर संदत्त किया जाना है तथा ऐसी धनराशि का प्रभाजन, जिसमें व्यक्ति हितबद्ध है, उसका निर्धारण प्रतिकर में हितबद्धता का दावा करने वाले व्यक्ति या व्यक्तियों के बीच बाढ़ परिक्षेत्रण प्राधिकारी द्वारा, करार द्वारा अवधारित किया जायेगा। (2) ऐसे किसी करार के अभाव में, बाढ़ परिक्षेत्रण प्राधिकारी, ऐसी जाँच जो वह आवश्यक समझे :— **(क)** धारा 17 के अधीन दिये जाने वाले प्रतिकर की राशि; **(ख)** प्रतिकर का ऐसे व्यक्तियों में, जिनका उसमें हितलाभ होने की जानकारी अथवा विश्वास किया जाता है, प्रभाजन अवधारण कर, अधिनिर्णय (अवार्ड) देगा : परन्तु यह कि जहाँ प्रतिकर की राशि दस हजार रूपये से अधिक हो, वहाँ राज्य सरकार या इस निमित्त राज्य सरकार द्वारा प्राधिकृत अधिकारी की पूर्वानुमति के बिना कोई अवार्ड नहीं किया जायेगा।

प्रतिकर का ग्राह्य नहीं होना	**19.**	**(1)** कोई प्रतिकर नहीं दिया जायेगा, यदि :– **(क)** जहाँ तक भूमि उस तारीख को जिस दिन इस अधिनियम द्वारा या उसके अधीन निर्बन्धन अधिरोपित किये गये थे, प्रवृत्त किसी अन्य विधि के अधीन प्रवृत्त सारतः वैसे ही निर्बन्धनों के अध्यधीन है; या **(ख)** यदि इस अधिनियम द्वारा या उसके अधीन या प्रवृत्त किसी अन्य विधि के अधीन पूर्णतः समान निर्बन्धनों के सम्बन्ध में दावेदार या उसके पूर्वाधिकारी, जिसका दावे में हितबद्धता है, भूमि के सम्बन्ध में प्रतिकर का पहले ही संदाय कर दिया गया है; **(ग)** किसी भी अतिक्रमण को हटाने के लिए। **(2)** यदि किसी व्यक्ति ने अनधिकृत रूप से कोई गतिविधि आरम्भ की गयी है तो ऐसी गतिविधि से भूमि के मूल्य में वृद्धि पर भूमि के मूल्य का आंकलन करते समय विचार नहीं किया जायेगा।
अधिनिर्णय (अवार्ड) के विरूद्ध आवेदन	**20.**	**(1)** धारा 18 की उपधारा (2) के अधीन बाढ़ परिक्षेत्रण प्राधिकारी के अवार्ड से व्यथित कोई भी व्यक्ति, लिखित आवेदन द्वारा राज्य सरकार अथवा इस निमित्त प्राधिकृत ऐसे अधिकारी को जिसे राज्य सरकार, इस निमित्त प्राधिकृत करे, आवेदन कर सकेगा। **(2)** उपधारा (1) के अधीन आवेदन ऐसे प्ररूप में और रीति से, जो विहित की जाये और अवार्ड की संसूचना प्राप्त होने की तारीख से पैंतालीस दिन के अन्दर किया जायेगा। **(3)** इस धारा के अधीन किये गये आवेदन का निपटारा ऐसी रीति से किया जायेगा, जो विहित की जाये।
धारा 20 के अधीन आवेदन पत्रों पर निर्णय लेने की प्रक्रिया और प्राधिकारियों की शक्तियाँ	**21.**	**(1)** धारा 20 के अधीन आवेदन को सिविल प्रक्रिया संहिता, 1908 (केन्द्रीय अधिनियम सं0 05 वर्ष 1908) की धारा 141 के अर्थान्तर्गत कार्यवाहियाँ समझा जायेगा और उसका विधारण करने में निर्देश विनिश्चय करने के लिये सशक्त प्राधिकारी सिविल न्यायालय की शक्तियों का प्रयोग कर सकेंगे। **(2)** जाँच का क्षेत्र राज्य सरकार अथवा इस निमित्त प्राधिकृत किसी अन्य ऐसे अधिकारी को विनिर्दिष्ट मामले पर विचार करने तक ही सीमित रहेगा।
विनिश्चय का सिविल न्यायालय की डिक्री के रूप पर प्रवर्तनीय होना	**22.**	धारा 21 के अधीन निर्णय सिविल न्यायालय की डिक्री के रूप में प्रवर्तनीय होगा।
अधिनिर्णय के अधीन संदाय	**23.**	धारा 18 की उपधारा (1) के अधीन अवधारित प्रतिकर अथवा धारा 18 की उपधारा (2) के अधीन अभिनिर्णय दे दिये जाने पर या ऐसे अभिनिर्णय के विरूद्ध धारा 20 के अधीन कोई आवेदन किया जाता है तो प्राधिकारी के विनिश्चय के पश्चात् बाढ़ परिक्षेत्रण प्राधिकारी द्वारा प्रतिकर का संदाय किया जायेगा और ऐसे संदाय पर भूमि अर्जन अधिनियम, 1894 (केन्द्रीय अधिनियम सं0 01, वर्ष 1894) की धारा 31 से 35 के उपबन्ध लागू होंगे।

		अध्याय– सात **प्रतिषेद्ध के पश्चात् बाधाएं हटाने की शक्ति**
प्रतिषेद्ध के पश्चात् बाधाएं हटाने की शक्ति	**24.**	**(1)** बाढ़ परिक्षेत्रण प्राधिकारी, इस अधिनियम के उपबन्धों के अधीन भूमि के किसी स्वामी अथवा अधिभोगी को कोई कार्य करने या अनधिकृत अवरोध हटाने का ऐसे समय के अन्दर जैसे विनिर्दिष्ट किया जाय, निदेश दे सकता है और भूमि का स्वामी अथवा अधिभोगी ऐसा कार्य करेगा और अवरोध हटायेगा। **(2)** यदि स्वामी या अधिभोगी, उपधारा (1) के अधीन विनिर्दिष्ट समय के अन्दर बाढ़ परिक्षेत्रण प्राधिकारी के आदेश का पालन करने में विफल रहता है तो बाढ़ परिक्षेत्रण प्राधिकारी वह कार्य करवा सकेगा और अवरोध हटवा सकेगा। **(3)** बाढ़ परिक्षेत्रण प्राधिकारी द्वारा इस धारा के अधीन किया गया समस्त व्यय ऐसे स्वामी अथवा अधिभोगी से भू–राजस्व के बकाया के रूप में वसूल किया जा जायेगा।
		अध्याय– आठ **विविध**
बाढ़ परिक्षेत्रण प्राधिकारी को कोई कार्य करने से रोकना अपराध होगा	**25.**	कोई भी व्यक्ति बाढ़ परिक्षेत्रण प्राधिकारी का इस अधिनियम के द्वारा या इसके अधीन ऐसे प्राधिकारी पर अधिरोपित किसी कार्य का निर्वहन करने से रोकता है, उसके लिये यह समझा जायेगा कि उसने भारतीय दण्ड संहिता, 1860 (केन्द्रीय अधिनियम सं0 45 वर्ष 1860) की धारा 186 के अधीन अपराध किया है।
बाढ़ परिक्षेत्रण प्राधिकारी, अन्य अधिकारियों का लोक सेवक होना	**26.**	बाढ़ परिक्षेत्रण प्राधिकारी और इस अधिनियम के अधीन प्राधिकारी, अन्य अधिकारी एवं कर्मचारी भारतीय दण्ड संहिता, 1860 (केन्द्रीय अधिनियम सं0 45 वर्ष 1860) की धारा 21 के अर्थान्तर्गत लोक सेवक समझे जायेंगे।
सद्भाव से कार्यवाही का संरक्षण	**27.**	**(1)** कोई भी वाद, अभियोजन या अन्य विधिक कार्यवाही, जो ऐसे किसी भी बात के लिए इस अधिनियम या इसके अधीन बनाये गये नियम अथवा आदेश के अनुश्रवण में सद्भावपूर्वक की गयी हो, या की जानी आशयित हो, राज्य सरकार ऐसे किसी प्राधिकारी अथवा व्यक्ति के विरूद्ध नहीं हो सकेगी, जो इस अधिनियम के अधीन किसी भी शक्ति का प्रयोग या किसी भी कर्तव्य का पालन कर रहा हो। **(2)** कोई भी वाद या अन्य विधिक कार्यवाही ऐसी किसी वाद के लिए कारित या कारित होने के लिए सम्भाव्य किसी नुकसान के कारण राज्य सरकार के विरूद्ध नहीं हो सकेगी, जो इस अधिनियम या इसके अधीन बनाये गये किसी भी नियम या आदेश के अनुश्रवण में सद्भावपूर्वक की गयी हो, या की जानी आशयित हो।
जुर्माने की वसूली	**28.**	इस अधिनियम के अधीन अधिरोपित सभी जुर्माने दण्ड प्रक्रिया संहिता, 1973 (केन्द्रीय अधिनियम सं0 2 वर्ष 1974) में उपबंधित रीति से वसूल किये जायेंगे।
न्यायालय की शक्ति	**29.**	सिविल न्यायालय को किसी प्रश्न के निस्तारण, विनिश्चित करने या उस पर कार्यवाही करने की अधिकारिता होगी, जिसे इस अधिनियम द्वारा या इसके अधीन बाढ़ परिक्षेत्रण प्राधिकारी अथवा ऐसे अन्य अधिकारी द्वारा जिसे राज्य सरकार द्वारा इस निमित्त प्राधिकृत किया गया है, निस्तारित, विनिश्चित किया जाना या

		जिस पर कार्यवाही किया जाना अपेक्षित है।

{उत्तराखण्ड बाढ़ मैदान परिक्षेत्रण अधिनियम, 2012}

नियम बनाने की शक्ति	**30.**	**(1)** राज्य सरकार, इस अधिनियम के प्रयोजनों के कार्यान्वयन हेतु राजपत्र में अधिसूचना द्वारा नियम बना सकेगी। **(2)** विशेष रूप से पूर्वोक्त उपबन्धों की व्यापकता पर प्रतिकूल प्रभाव डाले बिना ऐसे नियमों में निम्नलिखित उपबंध किए जा सकेंगे :– **(क)** वह रीति, जिससे चार्ट और अभिलेख रखे जायेंगे; **(ख)** वह प्ररूप और रीति जिससे धारा 20 के अधीन आवेदन किया जायेगा और वह रीति, जिससे ऐसे आवेदनों का निस्तारण किया जायेगा; तथा **(ग)** कोई अन्य विषय, जिसे विहित किया जाना हो या किया जाए।
		(3) इस अधिनियम के अधीन बनाया जाने वाला प्रत्येक नियम बनाये जाने के बाद यथाशीघ्र 14 दिन की कुल अवधि के एक या दो या अनुवर्ती सत्रों में हो, प्रस्तुत किया जायेगा तथा उपरोक्त सत्र या अनुवर्ती सत्र के तुरन्त कि नियम न बनाया जाय तो तत्पश्चात् यथास्थिति नियम ऐसे उपांतरित रूप में प्रभावी होगा या निष्प्रभावित हो जायेगा तथापि ऐसे किसी उपान्तरण या बातिलकरण का इस नियम के अधीन पूर्व में की गयी किसी बात की विधिमान्यता पर प्रतिकूल प्रभाव डाले बिना हो। बाद के सत्रों के अवसान से पूर्व यदि सदन उक्त नियम में कोई उपान्तरण के लिये सहमत हो जाता है तथा सदन सहमत हो जाता है।
निरसन और अपवाद	**31.**	**(1)** उत्तराखण्ड बाढ़ मैदान परिक्षेत्रण अध्यादेश, 2012 इसके द्वारा निरसित किया जाता है। **(2)** ऐसे निरसन के होते हुए भी, उक्त अध्यादेश के अधीन की गई कोई बात या कार्रवाई इस अधिनियम के तत्स्थानी उपबन्धों के अधीन की गई समझी जायेगी।

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THE UTTARAKHAND FLOOD PLAIN ZONING ACT, 2012

[UTTARAKHAND ACT NO. 07 OF 2013]

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THE UTTARAKHAND FLOOD PLAIN ZONING ACT, 2012
[UTTARAKHAND ACT NO. 07 OF 2013]

An
Act

to provide for the zoning of flood plains of rivers in the State of Uttarakhand.

Be it enacted by the Uttarakhand State Legislative Assembly in the Sixty-third Year of the Republic of India, as follows :--

CHAPTER-I
PRELIMINARY

Short title, extent and commencement	**1.**	**(1)** This Act may be called the Uttarakhand Flood Plain Zoning Act, 2012. **(2)** It extends to the whole of the State of Uttarakhand. **(3)** This section shall come into force at once and the remaining provisions of this Act shall come into force on such date as the State Government may, by notification in the official Gazette, appoint: Provided that different dates may be appointed for different provisions of this Act, and for different areas of different rivers.
Definitions	**2.**	In this Act, unless the context otherwise requires:- **(a) "Flood Plain"** includes water channel, flood channel and that area of nearly low and which is susceptible to flood by inundation; **(b) "Flood Plain Zoning"** means restricting any human activity in the flood plains of a river where the plains are created by overflow of water from the channels of rivers and streams; **(c) "Flood Zone"** means the area which is required to carry the flow of the maximum probable floods; **(d) "Flood Zoning Authority"** in relation to river, means the authority appointed by the State Government under section 3; **(e) "Land"** includes interest in lands, benefits arising out of lands and things attached to the earth or permanently fastened to anything attached to the earth; **(f) "Occupier"** in respect of any land, means any person who has an interest in the land and cultivates the land himself or by his servants or by hired labour and includes a tenant; **(g) "Owner"** in relation to any land includes any person having interest in such land; **(h) "Prescribed"** means prescribed by rules made by the State Government under this Act;
		(i) "River" includes its tributaries; and **(j) "Water Channel"** means the channel in which the flows of a river are generally confined.

		CHAPTER-II **FLOOD ZONING AUTHORITY AND IT'S POWERS**
Declaration of flood plain zoning	**3.**	**(1)** Where the State Government considers it necessary or expedient so to do, it may, by notification in the Official Gazette declare that flood plain zoning shall be made in the manner hereinafter specified. **(2)** The State Government may direct that a survey be made of a river for the purpose of determining the limits within which the provisions of this Act are to be applied and that proper charts and registers be prepared specifying all boundaries and landmarks and any other matter necessary for the purpose of ascertaining such limits. **(3)** The State Government may by notification in the Official Gazette appoint the Collector of the District or such other authority as the Government considers necessary, as the Flood Zoning Authority for the purposes of making a survey of the area as required under sub-section (2) and may specify in such notification, the duties to be discharged by such authority.
Powers and functions of the Flood Zoning Authority	**4.**	The Flood Zoning Authority shall exercise the powers and discharge the duties in accordance with the provisions of this Act and the terms and conditions specified in the notification under sub-section (3) of section 3.
		CHAPTER - III **SURVEYS AND DELINEATION OF FLOOD PLAIN AREA**
Survey	**5.**	**(1)** The Flood Zoning Authority shall carry out surveys of flood plains of the rivers and determine the nature and the extent of flood plains of the rivers. **(2)** The Flood Zoning Authority shall, on the basis of the survey carried out under sub-section (1) establish flood plain zones and delineate the areas which are subject to flooding including classification of land with reference to relative risk of flood plain use intended to safeguard the health, safety and property of the general public. **(3)** The Flood Zoning Authority shall prepare charts and registers indicating the areas delineated under sub-section (2).
Power to take up survey	**6.**	It shall be lawful for the Flood Zoning Authority or any of the officers generally or specially authorized by it in this behalf- **(a)** to enter upon and survey and take levels of any land within its or his jurisdiction; **(b)** to mark such levels, boundaries and lines by placing marks or boundary stones;

		(c) to measure the land; **(d)** to do all other acts necessary for the purposes of ascertaining the limits referred to in sub-section (2) of section 3; and **(e)** Where otherwise the survey cannot be completed and the levels taken, to cut down and clear away any part of standing crop, fence or jungle : Provided that no Flood Zoning Authority or any other officer shall enter into any building or open any enclosed court or garden attached to a dwelling-house (unless with the consent of the occupier thereof) without previously giving such occupier at least seven days notice in writing of its or his intention to do so.
Payment of damages	**7.**	**(1)** The Flood Zoning Authority or any other officer generally or specially authorized by it in this behalf, who has entered upon any land under section 5 shall, before leaving, tender compensation to the owner or occupier of such land for any damage which may have been caused and in case of dispute as to the sufficiency of the amount so tendered, the Flood Zoning Authority or such officer shall refer the matter to the State Government for its decision. **(2)** The decision of the officer under sub-section (1) shall be final and no suit shall lie in a civil court to have it set aside or modified.
		CHAPTER-IV **NOTIFICATION OF LIMITS OF FLOOD PLAINS**
Declaration of intention of State Government to demarcate flood plains areas	**8.**	The State Government may on the basis of a report from the Flood Zoning Authority or otherwise, by notification in the Official Gazette, declare its intention to demarcate the flood plain areas and either prohibit or restrict the use of land therein.
Public Notices	**9.**	**(1)** The Flood Zoning Authority shall, on the issue of notification under section 8, cause public notice of the substance of such notification to be given at convenient places in the area. **(2)** The Flood Zoning Authority shall also give notices individually to the owners of the lands situated in the area. **(3)** The Flood Zoning Authority shall exhibit records, charts, maps, registers and such other document showing the river channel, flood channel and the flood plain area, specifying the nature and extent to which the use of limits of the area is either prohibited or restricted, in the office for inspection by the General public at the timing specified therein.

Objections	**10.**	**(1)** Any person, who desires to raise any objection to the limits and either the prohibitions or restrictions specified in the public notice referred to in section 9, may within a period of sixty days from the date of publication of the notification in the Official Gazette, forward to the Flood Zoning Authority a statement in the writing setting forth his objections.
		(2) After the expiry of the period aforesaid, the Flood Zoning Authority shall issue a notice in a manner prescribed and consider the objections after giving the party concerned a reasonable opportunity of being heard in the matter. **(3)** The Flood Zoning Authority shall forward to the State Government its or his proposals together with the records referred to in sub-section (3) of section 9.
Decision of State Government	**11.**	**(1)** The State Government shall after considering the report of the Flood Zoning Authority, order such alteration in the limits of the area as it considers necessary. **(2)** The decisions of the State Government shall be final. **(3)** The State Government shall by notification in the Official Gazette, declare that the provisions of this Act shall apply to the said river with boundaries and limits as specified : Provided that the State Government shall also make arrangement for rehabilitation of Colonies already existing in the flood plain. **(4)** The areas delineated and approved by the State Government shall be deemed to be the flood plain and the limits shall, where necessary be marked either by boundary stones or other suitable marks. **(5)** The Flood Zoning Authority shall maintain the charts and registers of such areas so delineated and such charts and registers shall form part of the permanent records of the office. **(6)** The charts and registers maintained under sub-section (5) shall be furnished to the Collector of the District in which any part of the river is situated and shall be opened for inspection by the general public at such times as may be prescribed.
		CHAPTER-V **PROHIBITION OR RESTRICTION OF THE USE OF THE FLOOD PLAINS**
Power to prohibit obstruction etc. in flood plain	**12.**	**(1)** Where the State Government is satisfied that it is necessary to do so in the interest of public health, safety or property or reducing the inconvenience to the general public to prohibit or restrict the activities in the flood plain, the Government may, by notification in the Official Gazette, specify the area where such prohibition or restriction is to be enforced and the nature and extent of such prohibition or restriction :

[*The Uttarakhand Flood Plain Zoning Act, 2012*]

		Provided that no notification under this sub-section shall be issued after the expiry of [1][eighteen months] from the date of publication of notification under section 8. **(2)** Upon the publication of a notification under sub-section (1), notwithstanding anything contained in any law, custom, agreement of instrument, for the time being in force, the prohibition or restriction specified in such notification shall prevail. **(3)** No person shall undertake any activity within the prohibited area or restricted area except with the previous permission of Flood Zoning Authority: Provided that where a person makes an application to the Flood Zoning Authority for permission under this sub-section to undertake any activity and the Flood Zoning Authority does not within a period of ninety days from the date of receipt of such application, communicate to the said person that permission applied for has been refused, it shall be presumed that he Flood Zoning Authority has granted such permission.
Penalty	**13.**	If any person commences or carries on or attempts to carry on any activity in the areas specified in the notification under sub-section (1) of section 12 contrary to the terms and conditions specified in such notifications, he shall be punishable- **(a)** with fine which may extend to five hundred rupees and in default of payment of fine, with simple imprisonment for the term which may extend to two months; and **(b)** with further fine which may extend to one hundred for each day during which the offence continues after the conviction under clause (a).
Power to Compound	**14.**	**(1)** Subject to such conditions as may be prescribed, any officer authorized by the State Government by a general or special order in this behalf may, either before or after the institution of proceedings under this Act, accept from the person who has committed or is reasonably suspected of having committed and offence, a sum of money not exceeding one thousand rupees. **(2)** On the payment of such sum of money, such person shall be discharged and no further proceedings shall be taken against him in respect of such offence.
Appeal	**15.**	**(1)** Any person aggrieved by any decision of the Flood Zoning Authority may prefer an appeal to an authority prescribed by the State Government in this behalf, within a period of ninety days from the date on which such decision was communicated to him: Provided that the prescribed authority may entertain the appeal after the expiry of the said period of ninety days if it is satisfied that the appellant was prevented by sufficient cause from filing the appeal in time.

1-Subs. by section 2 of UK Act no 22 of 2018.

		(2) The prescribed authority may, after giving a reasonable opportunity to the appellant of being heard, pass such orders as it thinks fit and the decision thereof shall be final.
Revision	**16.**	**(1)** Where no appeal has been preferred under section 15, the State Government may, for the purpose of examining the legality propriety or correctness of any order, inquiry or proceedings of the Flood Zoning Authority, call for the records of any enquiry or proceedings of the Flood Zoning Authority and make such order in the case as it think fit : Provided that no such record shall be called after the expiry of six months form the date of such order. **(2)** No order of the Flood Zoning Authority shall be varied by the State Government so as to prejudicially effect any person without giving such person a reasonable opportunity of being heard in the matter.
		CHAPTER-VI **COMPENSATION**
Payment of compensation	**17.**	**(1)** Where any permission to undertake any activity in the flood plain has been refused to any person or where as a result of prohibition or restriction imposed on any person under this Act, such person suffers any damage, he shall be entitled to the payment of compensation not exceeding the difference between the value of the land as determined under section 23 or section 24 of the Land Acquisition Act, 1894 (Central Act No. 01 of 1894) and the value which it would have, had the permission for carrying on any activity had been granted or the prohibition or restriction had not been imposed. **(2)** In determining the amount of compensation under sub-section (1) any restriction to which the land is subjected to under any other law for the time being in force in regard to the right of the person claiming compensation to carry on any activity on the land or otherwise to the use of the land shall be taken into consideration.
Determining the compensation and apportion-ment by consent	**18.**	**(1)** The person to whom the compensation under section 17 is to be paid and the apportionment of such amount among the persons interested therein shall be determined by agreement between the Flood Zoning Authority and the person or persons claiming interest therein. **(2)** In default of any such agreement, the Flood Zoning Authority shall, after holding such enquiry as it considers necessary, make an award determining :- **(a)** the amount of compensation to be paid under section 17; and **(b)** the apportionment, if any, of such compensation among persons known or believed to be interested therein; Provided that where the amount of compensation exceeds ten thousands rupees, no award shall be made without the previous approval of the State Government or such other officer as the State Government may authorized in this behalf.

Compensation not admissible	**19.**	**(1)** No compensation shall be awarded -- **(a)** if and in so far as the land is subject to substantially similar restriction in force under some other law in force on the date on which the restrictions were imposed by or under this Act; or **(b)** if compensation in respect of the same restrictions imposed by or under this Act or substantially similar restrictions in force under some other law has already been paid in respect of the land to the claimant or any predecessor in interest of the claim; or **(c)** for removal of any encroachment. **(2)** If any person has unauthorized undertaken any activity, then any increase in the land value from such activity shall not be taken into account in estimating the value of land.
Application against award	**20.**	**(1)** Any person aggrieved by the Award of the Flood Zoning Authority under sub-section (2) of section 18 may, by an application in writing, apply to the State Government or such other officer as the State Government may authorize in this behalf. **(2)** Any application under sub-section(1) shall be made in such form and in such manner as may be prescribed and shall be made within forty five days from the date of communication of the award. **(3)** The application under this section shall be disposed of in such manner as may be prescribed.
Procedure and powers of authorities in deciding applications under section 20	**21.**	**(1)** An application under section 20 shall be deemed be proceedings within the meaning of section 141 of the Code of Civil Procedure, 1908 (Central Act No. 05 of 1908) and in the trial thereof, the authorities empowered to decide a reference may exercise the powers of a civil court. **(2)** The scope of inquiry shall be restricted to the consideration of the matter referred to the State Government or such other officer as the State Government may authorize in this behalf.
Decision enforceable as decree of civil court	**22.**	The decision under section 21 shall be enforceable as a decree of a civil court.
Payment under award	**23.**	On the determination of the compensation under sub-section (1) of section 18, or on the making of an award under sub-section (2) of Section 18 or, if an application is made under section 20 against such award, after decision of the authority, the compensation shall be paid by Flood Zoning Authority and the provisions of section 31 to 35 of the Land Acquisition Act, 1894 (Central Act No. 01 of 1894), shall apply to such payment.

		CHAPTER-VII **POWER TO REMOVE OBSTRUCTIONS AFTER PROHIBITION**
Power to remove obstructions	**24.**	**(1)** The Flood zoning Authority may, in accordance with the provisions of this Act, direct any owner or occupier of land to do any act or to remove any un-authorized obstructions within such time as may be specified by it and such owner or occupier shall do such act or remove the obstructions. **(2)** If owner or occupier fails to comply with the order of the Flood Zoning Authority within the time specified under sub-section (1), the Flood Zoning Authority may cause the act to be performed or cause the obstructions to be removed. **(3)** All expenses incurred by the Flood Zoning Authority under this section shall be recovered from such owner or occupier as arrears of land revenue.
		CHAPTER-VIII **MISCELLANEOUS**
Preventing Flood Zoning Authority from doing any act to be an offence	**25.**	Any person who prevents the Flood Zoning Authority in discharging any act imposed on such Authority by or under this Act, shall be deemed to have committed an offence under section 186 of the Indian Penal Code, 1860 (Central Act No. 45 of 1860).
Flood zoning Authority other officers to be public servants	**26.**	The Flood zoning Authority and other officers and employees authorized under this Act shall be deemed to be public servants within the meaning of section 21 of the Indian Penal Code, 1860 (Central Act No. 45 of 1860).
Protection of action taken in good faith	**27.**	**(1)** No suit, Prosecution or other legal proceeding shall lie against the State Government or any authority or person exercising any power or performing any duty under this Act for anything which is in good faith done or intended to be done in pursuance of this Act or an order made thereunder. **(2)** No suit, or other legal proceeding shall lie against the State Government for any damage caused or likely to be caused for any thing which is in good faith done or intended to be done in pursuance of this Act or any rule or order made thereunder.
Recovery of fine	**28.**	All fines imposed under this Act shall be recovered in the manner provided in the Code of Criminal Procedure, 1973 (Central Act No. 02 of 1974).
Power of Court	**29.**	A Civil Court shall have jurisdiction to settle, decider or deal with any question which is by or under this Act required to be settled, decided or deal with by the Flood Zoning Authority or such other officer as is authorized by the State Government in this behalf.

Power to make rules	**30.**	**(1)** The State Government may, by notification in the Official Gazette make rules to carry out the purposes of this Act. **(2)** In particular and without prejudice to the generality of the foregoing provisions, such rules may provide for --- **(a)** the manner in which charts and records shall be maintained; **(b)** the form and manner in which application under section 20 shall be made and the manner in which such application shall be disposed of; and **(c)** any other matter which has to be, or may be, prescribed.
		(3) Every rule made under this Act shall by laid, as soon as may be after it is made, before the House of the State Legislature while it is in session for a total period of 14 days which may be comprised in one session or two or successive sessions and if before the expiry of the session immediately following the session or the successive session aforesaid the House agrees in making any modification in the rule, or the House agrees that the rule should not be made, the rule shall, thereafter, have effect only in such modified form or be of no effect, as the case may be, so, however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that rule.
Repeal and Saving	**31.**	**(1)** The Uttarakhand Flood Plain Zoning Ordinance, 2012 is hereby repealed. **(2)** Notwithstanding such repeal anything done or any action taken under the said Ordinance shall be deemed to have been done or taken under the corresponding provisions of this Act.

****

क्रम संख्या–34 पंजीकरण संख्या–UA/DO/DDN/30/2024-2026

सरकारी गजट, उत्तराखण्ड

उत्तराखण्ड सरकार द्वारा प्रकाशित

असाधारण

विधायी परिशिष्ट

भाग–1, खण्ड (क)

(उत्तराखण्ड अधिनियम)

देहरादून, शनिवार, 16 मार्च, 2024 ई0

फाल्गुन 26, 1945 शक सम्वत्

उत्तराखण्ड शासन

विधायी एवं संसदीय कार्य विभाग

संख्या 118/XXXVI (3)/2024/02(1)/2024

देहरादून, 16 मार्च, 2024

अधिसूचना

विविध

"भारत का संविधान" के अनुच्छेद 200 के अधीन मा0 राज्यपाल ने उत्तराखण्ड विधान सभा द्वारा पारित 'उत्तराखण्ड बाढ़ मैदान परिक्षेत्रण (संशोधन) विधेयक, 2024 ' पर दिनांक 16 मार्च, 2024 को अनुमति प्रदान की और वह उत्तराखण्ड राज्य का अधिनियम संख्याः 08, वर्ष–2024 के रूप में सर्व–साधारण के सूचनार्थ इस अधिसूचना द्वारा प्रकाशित किया जाता है।

उत्तराखण्ड बाढ़ मैदान परिक्षेत्रण (संशोधन) अधिनियम, 2024

(उत्तराखण्ड अधिनियम संख्या 08, वर्ष 2024)

उत्तराखण्ड बाढ़ मैदान परिक्षेत्रण अधिनियम, 2012 (उत्तराखण्ड अधिनियम संख्या–07, 2013 समय–समय पर यथासंशोधित अधिनियम) में अग्रेत्तर संशोधन करने के लिये

अधिनियम

भारत गणराज्य के 75वें वर्ष में उत्तराखण्ड विधान सभा द्वारा निम्नलिखित रूप में यह अधिनियमित हो–

संक्षिप्त नाम, विस्तार और प्रारम्भ

1. (1) इस अधिनियम का संक्षिप्त नाम उत्तराखण्ड बाढ मैदान परिक्षेत्रण (संशोधन) अधिनियम 2024 है।

(2) इसका विस्तार सम्पूर्ण उत्तराखण्ड राज्य में होगा।

(3) यह तुरन्त प्रवृत्त होगा।

धारा 12 का संशोधन

2. उत्तराखण्ड बाढ़ मैदान परिक्षेत्रण अधिनियम, 2012 की धारा 12 की उपधारा (1) में–

(i) परन्तुक में "अठारहः मास" शब्दों के स्थान पर "चौबीस मास" शब्द प्रतिस्थापित कर दिये जायेगें,

(ii) परन्तुक के पश्चात् निम्नलिखित परन्तुक अंतः स्थापित कर दिया जायेगा, अर्थात्

परन्तु यह और कि, यदि राज्य सरकार जनहित में निर्णय लेती है, नदी क्षेत्र के तटीय विकास कार्य एवं सुरक्षात्मक कार्य करने से इस क्षेत्र में प्रभावित होने वाली भू–सम्पदा तथा मौजूदा भवन संरचनाओं को सुरक्षित किया जा सकता है तो निर्गत अन्तिम अधिसूचना में, धारा 8, 9, 10 तथा 11 में विनिर्दिष्ट प्रक्रिया का अनुपालन करते हुये आवश्यकता अनुसार संशोधन कर सकेगी।

आज्ञा से,
नितिन शर्मा,
प्रमुख सचिव।

No. 118/XXXVI(3)/2024/02(1)/2024
Dated Dehradun, March 16, 2024

NOTIFICATION

Miscellaneous

In pursuance of the provisions of Clause (3) of Article 348 of the Constitution of India, the Governor is pleased to order the publication of the following English translation of **'The Uttarakhand Flood Plain Zoning (Amendment) Act, 2024' (Act No. 08 of 2024).**

As passed by the Uttarakhand Legislative Assembly and assented to by the Governor on 16th March, 2024.

The Uttarakhand Flood Plain Zoning (Amendment) Act, 2024

(Uttarakhand Act No. 08 of 2024)

An

Act

further to amend The Uttarakhand Flood Plain Zoning Act, 2012(Uttarakhand Act. 07 of 2013) (as amended from time to time)

Be it enacted by the Uttarakhand State Assembly in the 75th Year of the Republic of the India as follows-

Short title, extent and commencement

1. (1) This Act may be called the Uttarakhand Flood Plain Zoning (Amendment) Act, 2024

(2) It extends to the whole of the State of Uttarakhand.

(3) It shall come into force at once.

Amendment of Section 12

2. In subsection (1) of section 12 of the Uttarakhand Flood Plain Zoning Act, 2012-

(i) In proviso, for the words "eighteen months" the words "twenty four months" shall be substituted

(ii) After the proviso, the following proviso shall be inserted namely ;-

Provided further that, if State Government take decision in public interest, that affected land and existing buildings can be protected by executing river bank development, the final notification issued, may be amended as per the requirement by following the procedure prescribed under sections 8,9,10 and 11"

By Order,

NITIN SHARMA,
Principal Secretary.

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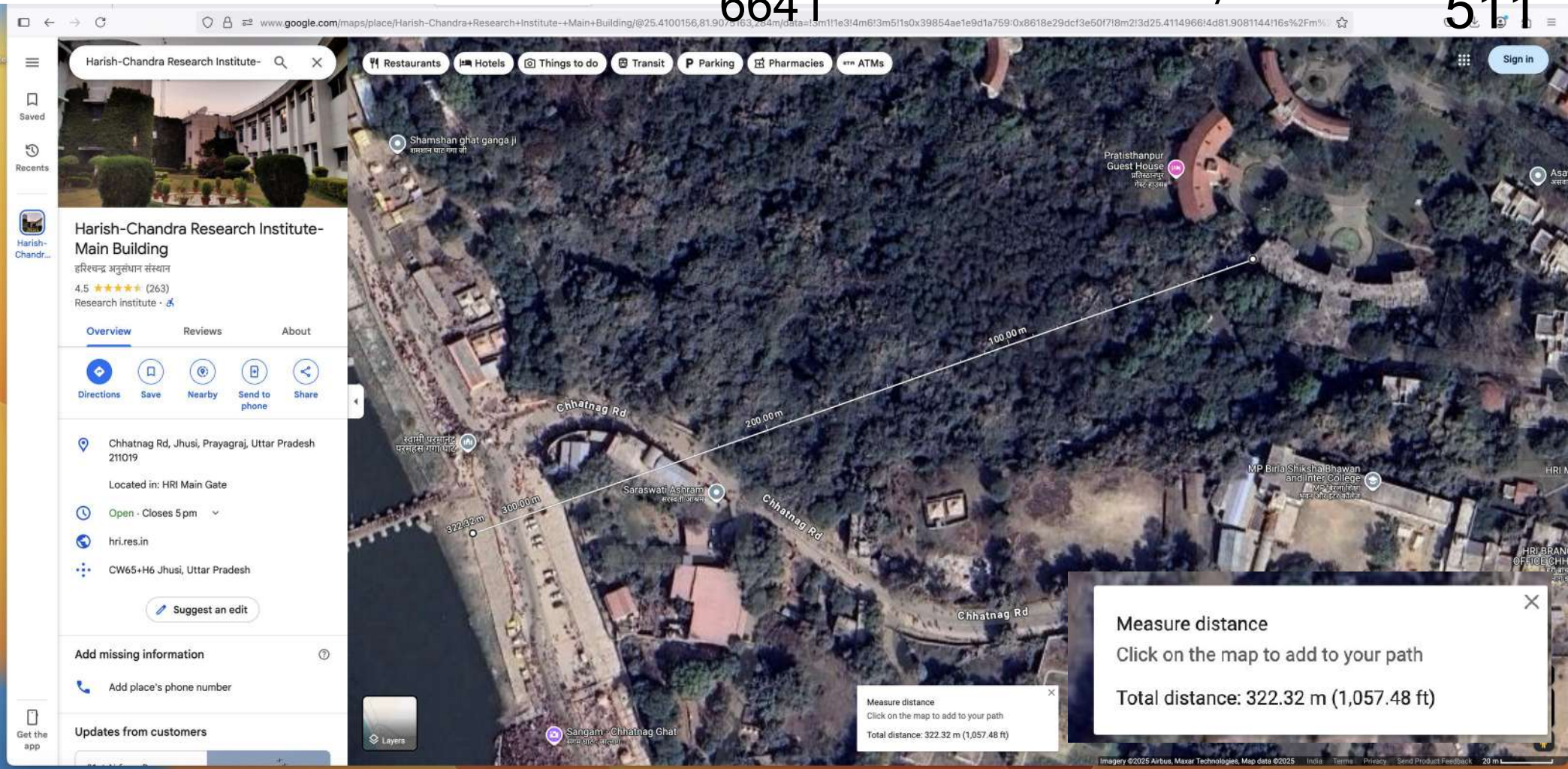
CENTRAL WATER COMMISSION

Department of Water Resources, River Development & Ganga Rejuvenation

Ministry of Jal Shakti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Harish-Chandra Research Institute-Main Building
हरिश्चन्द्र अनुसंधान संस्थान
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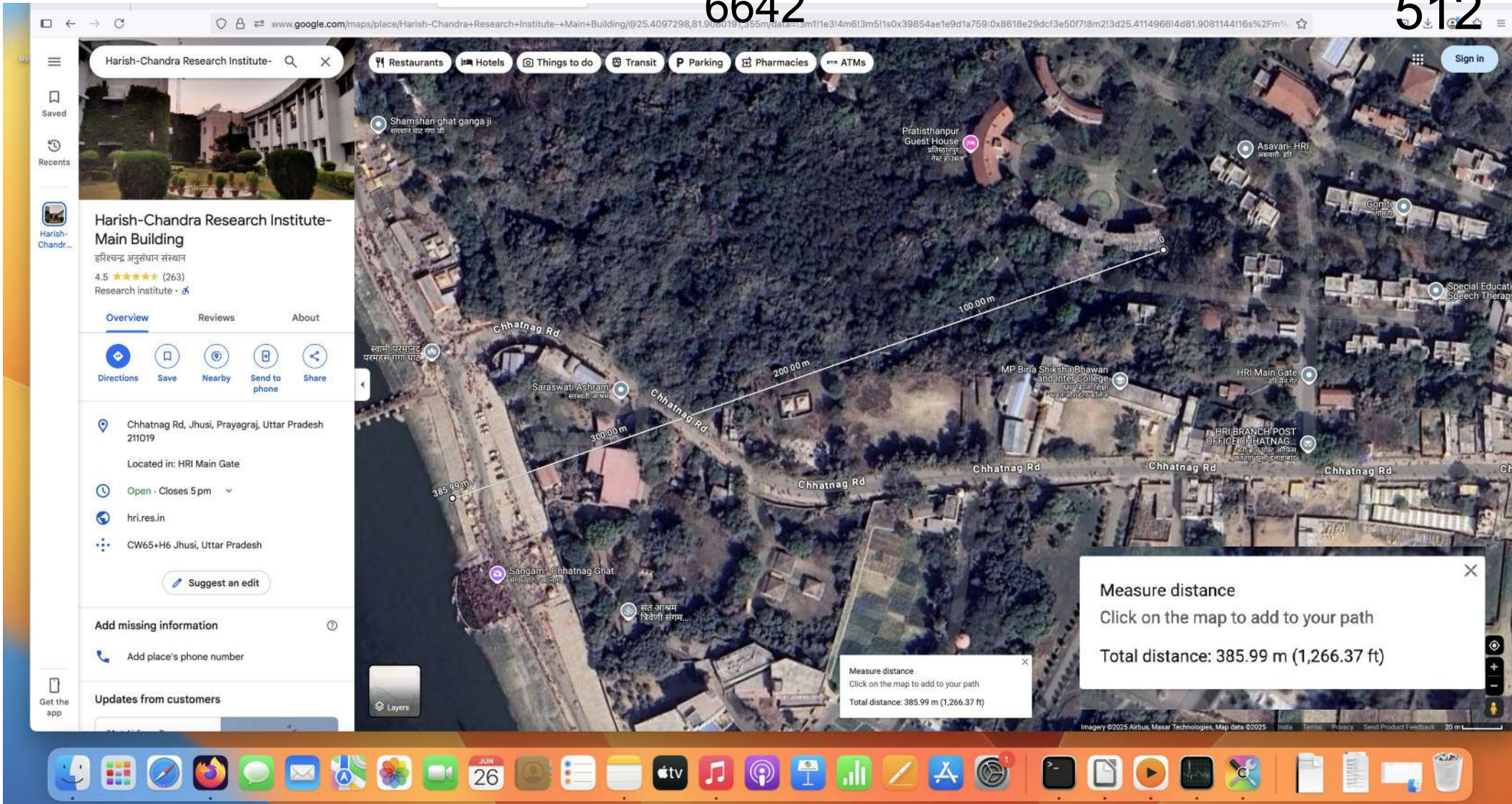
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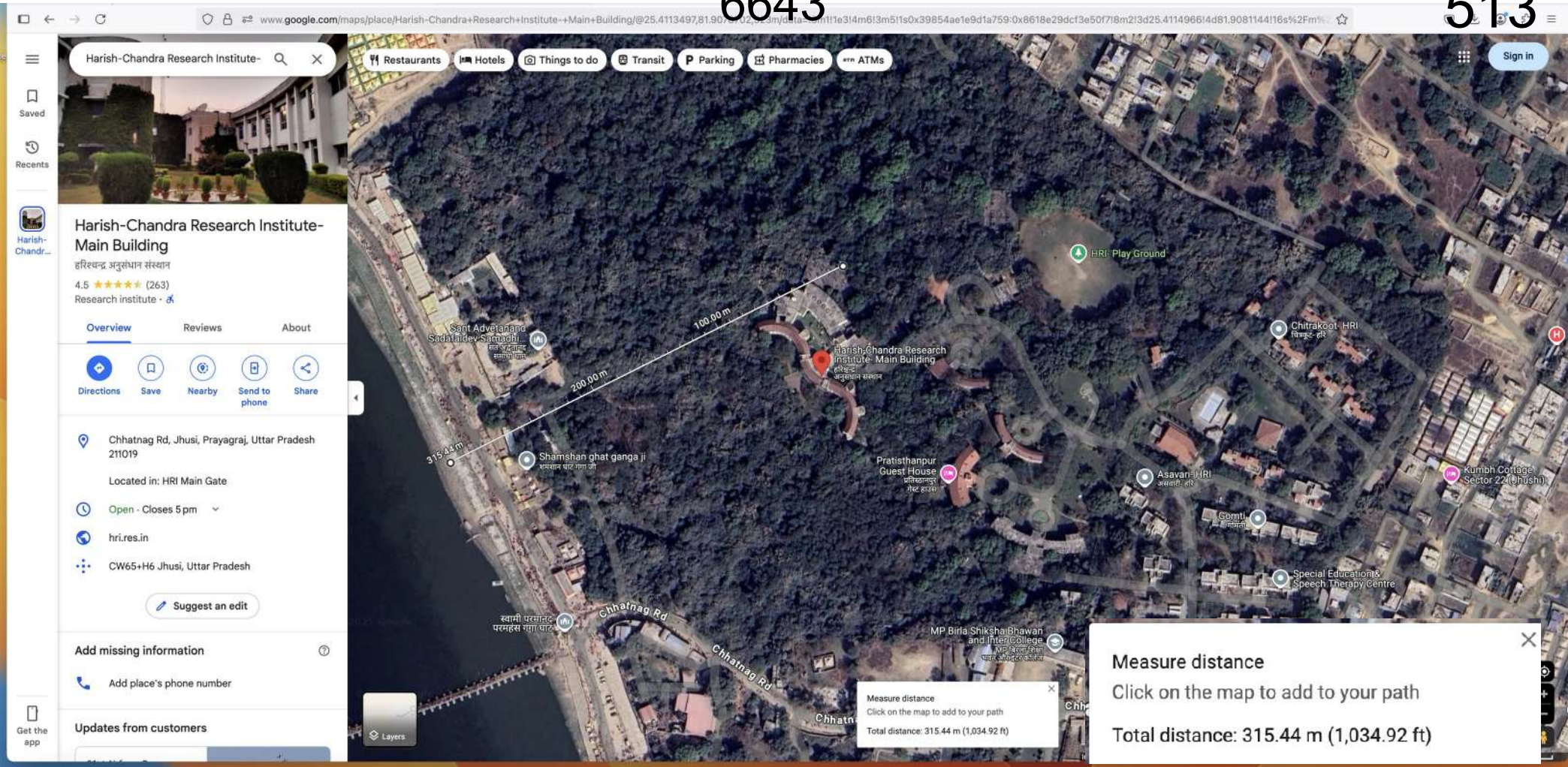
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Pratisthanpur Guest House
Asavari- HRI
Kumbh Cottage Sector 22 (Jhushi)
Gomti
Special Education & Speech Therapy Centre
MP Birla Shiksha Bhawan and Inter College
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Government of India
Department of Atomic Energy

Anushakti Bhavan,
C.S.M. Marg,
Mumbai - 400 001.

No.23/8/99-R&D-II/1491

January 19, 2001.

OFFICE ORDER

The Mehta Research Institute of Mathematics & Mathematical Physics, Allahabad will be known as **"Harish-Chandra Research Institute (HRI), Allahabad"** w.e.f. 11th October, 2000.

The Budget provision/allocations made for MRI for the year 2000-01 shall however continue to be operated under the existing head.

This issues with the approval of the competent authority.

(USHA MEHRA)
UNDER SECRETARY(R&D)

(1) All Heads of Units/PSUs/Aided Institutions of DAE.
(2) CCA, DAE, Mumbai.
(3) Director of Audit, Scientific Department, OYC, DAE, Mumbai.
(4) All Offices/Sections in DAE.
(5) US, DAE Br. Sectt., New Delhi.

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17/1

RESOLUTION PASSED IN ITS MEETING HELD ON 6TH SEPTEMBER, 2000 BY THE GOVERNING COUNCIL REGARDING CHANGE IN THE NAME OF THE INSTITUTION.

RESOLUTION NO. 14 OF 2000

The minutes of the last meeting of the Governing Council were confirmed. It was further decided that the name of the Institute be changed to **HARISH-CHANDRA RESEARCH INSTITUTE** with effect from 7th October, 2000 or the Birthday of late Prof. Harish - Chandra, which may be decided by the Director and the same be intimated to the Registrar of Societies, Allahabad. Upon receipt of acknowledgement from Registrar of Societies, other bodies and institutions, wherever necessary, be also intimated of the change of the name of the Institute.

S. S. Kashalkar

(SANJEEV KASHALKAR)
REGISTRAR

Sanjeev Kashalkar
Registrar
Harish-Chandra Research Institute
Allahabad

DIRECTOR

SPACE FOR COMMUNITY CENTRE

HOSTEL

GUEST HOUSE

APPTS

APPTS

HEALTH CENTRE

SECURITY

INFOR / MAINT. OFFICE

BANK

CO-OP. STORES / SHOPS

POST OFFICE

BORE WELL

MP BIRLA'S SCHOOL

NALA

NALA-II

ADDITIONAL FENCING

EXECUTIVE ENGINEER
MEHTA RESEARCH INSTITUTE
ALLAHABAD

ARAZI No.

NALA-00-07, 09, 90, 93, 94/1,2, 95/1,2,3, 96-100, 101/1,2
102-106, 107/1,2,3, 108, 110-113/1,2, 114-121, 122-185,
186-191, 232-235, 237, 238/1,2, 239, 240, 241/1,2,3
236, 242, 243/1,2, 244, 245, 248, 249, 251, 253
293+295, 335, 337, 339, 340, 106

Building Plans Technically Approved
(G. B. SINGH)
Chief Architect & Town Planner, A.D.A.

स्वीकृत
इलाहाबाद विकास प्राधिकरण
इलाहाबाद

सहायक अभियन्ता
इलाहाबाद विकास प्राधिकरण
इलाहाबाद

इलाहाबाद विकास प्राधिकरण
परमिट सं० 26 दिनांक 23/4/97

3	RELEASED FOR TENDER	15.3.93	
2	REVISED AND RELEASED AFTER SITE SURVEY	11.3.93	
NO.	DESCRIPTION	DATE	APP'D BY

PROJECT: MRI - ALLAHABAD

MASTER PLAN

DRG. NO. MRI/1012/1001 AL REV. 3 SCALE 1:1000

DATE: 2.3.93

NUCLEAR CONSTRUCTION CORPORATION
ARCHITECTURE GROUP

Mehta Research Institute,
10, Kasturba Gandhi Marg,
(Old Kutchery Road,)
ALLAHABAD-211002

GOVERNMENT OF INDIA
CENTRAL WATER COMMISSION

Photo 1: River Muhuri at Belonia in Tripura on 20.08.2024

Photo 2: River Varahanadhi at Kumarapalayam in Tamilnadu on 02.12.2024

FLOOD FORECASTING AND WARNING NETWORK
PERFORMANCE APPRAISAL REPORT 2024

NEW DELHI - 110066

May 2025

Member(RM)
Central Water Commission
Sewa Bhawan
R.K.Puram
NewDelhi-110066

PREFACE

Central Water Commission had started Flood Forecasting & Warning services in India in November, 1958 by setting up one forecasting station at Old Delhi Bridge, for the national capital, on the river Yamuna. Its network of Flood Forecasting and Warning Stations gradually extended throughout the country covering almost all the major inter-state flood prone river basins.

During 2024, the flood forecasting services are expanded to 340 stations which comprised of 200 level and 140 inflow forecast stations in 20 major river basins. It covered 22 States besides Union Territories of NCT Delhi, Jammu & Kashmir and Daman & Diu. The flood forecasting activities of the Commission are being performed every year from May to December through its 36 field Divisions which issue flood forecasts and warnings to the civil authorities of the states as well as to other organizations of the Central & State Governments, as and when the river water level touches or is expected to cross the warning level at the level flood forecasting stations and also monitors the flood situation and enters data in **http://india-water.gov.in/wims** website. During Flood Season 2024, level forecasts were issued for 142 stations out of 200 stations and inflow forecasts were issued for 83 reservoir/ dam/barrages out of 140 inflow stations. The inflow forecasts are formulated whenever the inflow into the reservoirs exceeds the threshold value fixed by the respective project authorities for reservoir regulation as well as flood moderation.

During the year 2024 flood season, 6 Flood Forecast stations flowed in Extreme Flood situation. Severe Flood situation was witnessed in 91 Flood Forecasting Stations and 50 Flood forecast stations witnessed Above Normal Flood Situation. The major flood events this year was the Extreme Floods witnessed in Assam and Bihar state.

During the year 2024, 10442 forecasts were issued out of which 9967 forecasts (95.45%) were found to be within the limits of accuracy. The number of level forecasts issued during the year 2024 were 7086 out of which 6790 (95.82%) was within the limit of accuracy of ± 0.15 m. The number of inflow forecasts issued were 3356 out of which 3177 (94.67%) was within limits of accuracy of ±20%. Daily Flood Situation Reports cum Advisories (DFSITREPcA) based on 7-day rainfall warning of IMD were issued on daily basis. Advisories about Extreme floods in Andhra Pradesh, Tamilnadu, Puducherry and Kerala were issued in DFSITREPcA for taking up relief and rescue operations in advance which were well appreciated by the beneficiaries at both National and State Levels.

Rainfall-Runoff advisories based on the satellite estimates of rainfall, AWS/ARG data of IMD/CWC as well as the rainfall forecast products of Weather Research and Forecast (WRF) model at a resolution of 0.25mx0.25m was continued in 2021 flood season and was put in Uniform Resource Locator(URL)http://120.57.32.251/. CWC wishes to place its acknowledgements for the services provided by IMD through its Hydromel & Numerical Weather Prediction and AWS Lab units in the Headquarters, Pune as well as various FMOs of IMD.

The level of performance achieved, has been possible as a result of the dedicated team work of the officers and staff manning the various activities of hydro-meteorological observations & flood forecasting and monitoring of the field offices.

Flood Forecast Monitoring (FFM) Directorate under FMO plays an important role in compiling the information received from various field offices at Headquarters and issues daily bulletins which are sent to all stakeholders. I wish to place on record my deep appreciations of the efforts put in by the officers and staff of FFM, FCA - 1 and FCA - 2 Directorates in carrying out the flood forecasting work with utmost devotion & dedication. The staff of FFM Directorate, along with other supporting staff from other Directorates/Wings during flood duties in the flood season of 2024 also deserves all appreciation in keeping the control room fully functional on all the weekdays, including holidays, Saturdays & Sundays. The control room was kept operational round the clock throughout the flood season.

It is hoped that the momentum gained in expanding the flood forecasting network, improving performance of the forecast and adopting various modernization including in the field of dissemination techniques will be further accelerated to achieve greater effectiveness of each and every forecast with the help of mathematical modelling supported by real-time data from telemetry.

Suggestions/ comments of the users of this report with a view to further enhance its usefulness are welcomed and will be incorporate in the next edition.

अनुपम प्रसाद 9/5/2025

New Delhi
May ,2025

(Anupam Prasad)
Member (RM)

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EXECUTIVE SUMMARY

0.1 METEOROLOGICAL SITUATION

During 2024, the performance of southwest monsoon is given as below.

- The southwest monsoon season rainfall over the country as a whole during 2024 was normal (108% of the Long Period Average (LPA)).

- The monthly rainfall over the country as a whole was less than LPA during the month of June (89% of LPA) and more than LPA during July (109% of LPA), August (115% of LPA) and September (112% of LPA).

- The homogeneous regions of Northwest India (107% of LPA) received normal monsoon rainfall, whereas Central India (119% of LPA), and South Peninsula (114% of LPA) received above normal monsoon rainfall. However, East & Northeast India (86% of LPA) received below-normal rainfall.

- Out of the total 36 meteorological sub-divisions, 2 sub-divisions (West Rajasthan and Saurashtra & Kutch) covering 9% of the total area of the country received large excess seasonal monsoon rainfall, 10 sub-divisions constituting 26% of the total area received excess rainfall, 21 sub-divisions covering 54% of the total area of the country received normal rainfall, and 3 sub-divisions (Arunachal Pradesh, Punjab, J & K and Ladakh) constituting 11% of the total area received deficient seasonal rainfall.

- During the season, 14 Low Pressure Systems including 7 Low Pressure Areas, 3 Depressions, 3 Deep Depressions and 1 Cyclonic Storm (ASNA) developed over the Indian region. During the season, the region witnessed formation of LPS on 62.6 days against the normal of about 57 days.

0.2 FLOOD SITUATION

Extreme flood situation was witnessed in 6 Flood Forecasting stations, Severe Flood situation was witnessed in 91 Flood Forecasting Stations and 50 Flood forecast stations witnessed Above Normal Flood Situation. No flood forecasts were issued for 115 flood forecasting stations which include 58 level forecasting stations and 57 inflow forecasting stations. Out of the 140 reservoirs in the network, inflow forecasts were issued at 83 reservoirs and in 57 reservoirs the inflows did not exceed the criteria for issuing inflow forecasts. The significant flood event of this year was the Extreme Floods witnessed in Assam and Bihar state.

0.3 FLOOD FORECASTING PERFORMANCE

10442 forecasts were issued during the year 2024, out of which 9967 forecasts (95.45%) were found to be within the limits of accuracy. 7086 level forecasts were issued during the year 2024 out of which 6790 (95.82%) were within the limit of accuracy of ±0.15 m. 3356 inflow forecasts were issued out of which 3177 (94.67%) were within limits of accuracy of ±20%. CWC

issued Daily Flood Situation Report cum Advisories (DFSITREPcA) during the monsoon season This contains the usual daily rainfall situation, rainfall forecast for the next 7 days, daily flood bulletin for the day and the flood situation and advisories for the next few days, GIS based Map indicating the districts alerted/affected by flood and reservoirs having inflow forecasts. Further, the reports were sent to all beneficiaries including State Governments through e-mail on a daily basis. In addition, long term i.e. 7 day advisory forecast was also disseminated through online portal in automated mode using IMD rainfall forecast and global GPM rainfall data.

SALIENT FEATURES OF FLOOD FORECASTING SYSTEM

The 'Salient Features' of Flood Forecasting and Warning System of the Central Water Commission are given in the table shown below:

1.	Establishment of 'First Scientific Flood Forecasting Unit' (F.F.U.) at Delhi in India	November, 1958
2.	Date of issue of first scientific flood forecast	25th July, 1959
3.	Name of first forecasting site and river	Delhi Railway Bridge (old) on River Yamuna
4.	Year of commencement of flood forecasting system on the inter-state rivers i.e. first national level expansion	1969
5.	No. of Chief Engineers' offices (including one CE, Flood Management, at CWC headquarters)	15
6.	No. of Superintending Engineers' offices (including one Flood Forecast Monitoring Directorate at CWC headquarter)	20
7.	No. of Flood Forecasting Divisions (As of 2024)	36
8.	No. of states including union territories covered under Flood Forecasting Programme	25
9.	No. of forecasting sites	338
10.	No. of gauge and gauge & discharge sites	1522+21(Under Review)
11.	No. of Telemetry Stations installed	1121
13.	No. of forecasts issued in flood season 2019	9754
14.	No. of forecasts issued in flood season 2020	11721
15.	No. of forecasts issued in flood season 2021	10617
16.	No. of forecasts issued in flood season 2022	11558
17.	No. of forecasts issued in flood season 2023	6339
18.	No. of forecasts issued in flood season 2024	10442

CHAPTER - 1

NATIONAL FLOOD FORECASTING NETWORK

1.1 FLOOD FORECASTING SERVICES

Flood causes considerable damage to human lives and property almost every year. About one third of total flood prone area (40 Mha assessed by the RBA) of the country has been provided with reasonable protection against flood of a low magnitude due to technological and economical constraints but there is no protection from floods of higher magnitude. Since the adoption of National Flood Policy by Government of India in 1954, it was realized that a total protection against flood by structural means alone is not possible and that optimum solution would consist of a mixture of structural and non-structural measures. Therefore, stress has been laid on non-structural measures like flood forecasting and warning, which is most important among such means to minimize the damage potential from floods. Accurate and timely flood forecasts and advance warning have, therefore, to be aimed for providing valuable time to the people and to civil authorities in taking preventive measures like evacuation, relief and rehabilitation measures, preparedness for flood fighting by engineering authorities, etc. and thus mitigating such loses from floods.

1.2 FLOOD FORECASTING NETWORK IN INDIA

Flood Forecasting has been recognized as the most important and cost effective non-structural measure for flood management. Recognizing this, flood forecasting of river Yamuna at Delhi was suggested by the Reddy Committee set up by the then Hon'ble Prime Minister, Govt. of India to manage floods in Delhi. Accordingly in the year 1958, CWC commenced the flood forecasting services in a small way by establishing a flood forecasting unit for issuing water level forecasts of the Yamuna for the National Capital, Delhi. On the recommendation of various committees/panels, a "Flood Forecast & Warning Organisation" was set up in CWC in 1969 to establish forecasting sites on inter-state rivers at various flood prone places in the country. 41 forecasting sites were added in 1969, with this, total number of forecasting sites aggregating to 43. Extension of the services followed from time to time. The year-wise positions of the number of flood forecasting sites till the flood season 2024 in the network of Central Water Commission are shown in the **Table -1.1** and **Fig 1.1.** The details of year wise expansion of Flood Forecasting Stations are shown in **Annex –I** (2017-2024).

Table - 1.1: Year-wise expansion of forecasting sites in CWC

Year	Cumulative No. of Flood Forecasting Sites
1958	01
1965	02
1969	43
1977	77
1980	84
1985	145
1987	147
1990	157
2001	159
2002	161
2003	166
2004	172

2005	173
2006	175
2015	176
2016	199
2017	226
2018	249
2019	325
2020	328
2021	331
2022	333
2023	338
2024	340

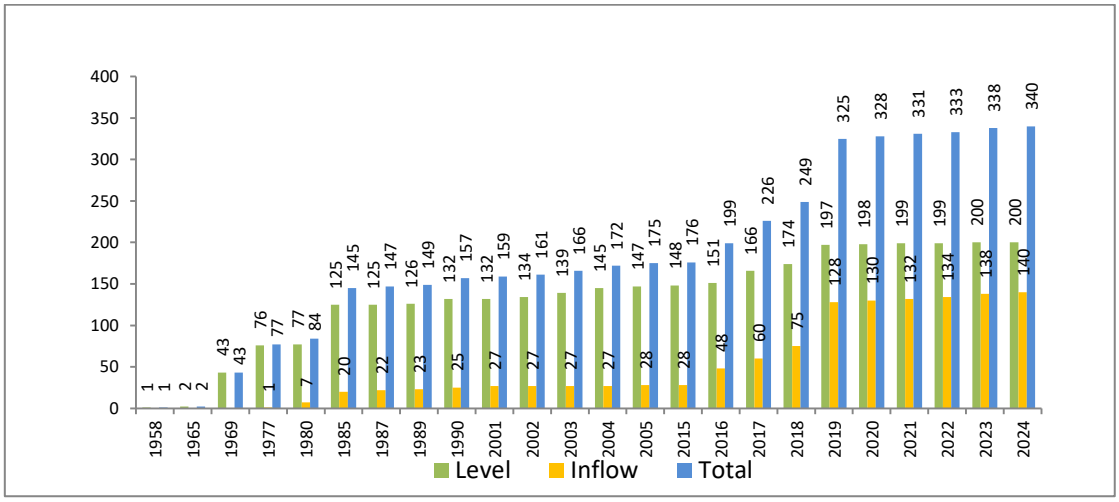
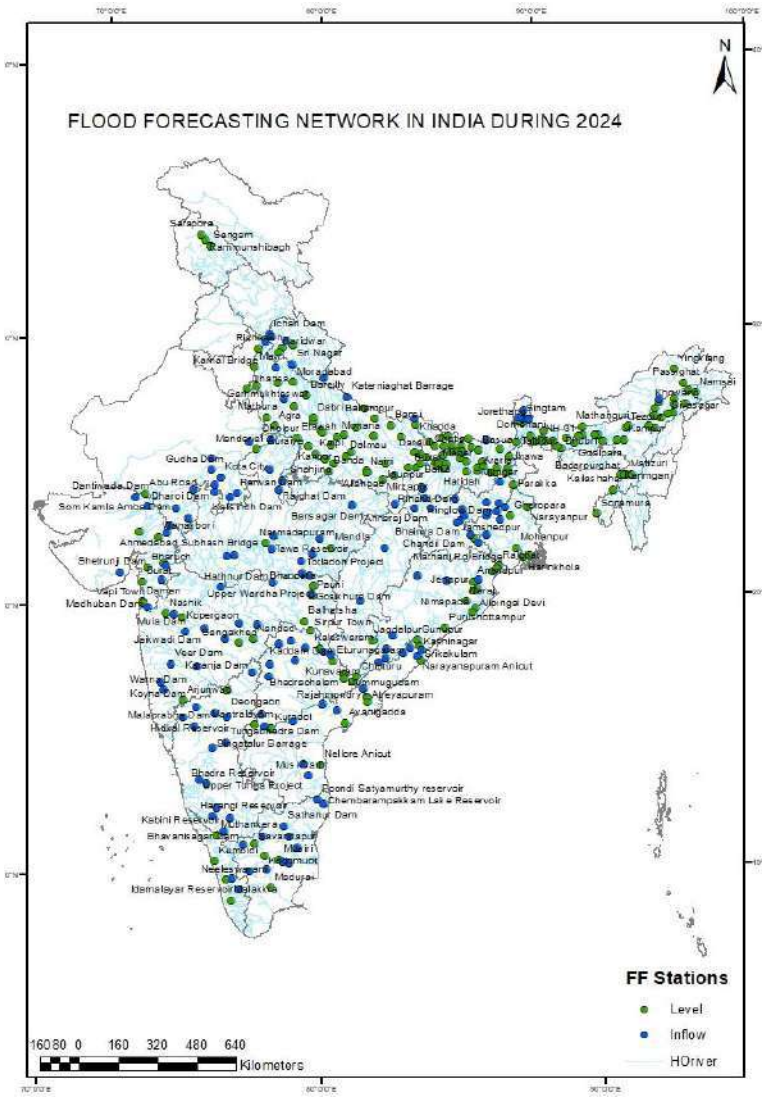


Fig 1.1: Year wise expansion of Flood Forecasting stations

The 'National Flood Forecasting and Warning Network' of Central Water Commission, which comprised of 340 flood forecasting sites including 140 inflow forecasting sites in flood season 2024 is shown in **Map - 1.** The number of flood forecasting sites on each of the major inter-state river systems is in the **Table - 1.2**.



Map - 1: Flood Forecasting Network in India

Table - 1.2: Flood forecasting sites in inter-state river systems

Sr. No.	Major Interstate River Systems	No. of FF stations		
		Level	Inflow	Total
1	Indus and its tributaries	3	0	**3**
2	Ganga & its tributaries	96	43	**139**
3	Brahmaputra & its tributaries	39	6	**45**
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	26	**44**
14	Krishna	5	19	**24**
15	West Flowing Rivers (Kutch & Saurashtra)	1	2	**3**
16	West Flowing Rivers (Tapi to Tadri)	2	1	**3**
17	Cauvery and its tributaries	4	9	**13**
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		**200**	**140**	**340**

The above flood forecasting network covers the following 22 states & 3 Union Territories (UTs). State/ UT wise distribution of flood forecasting stations is shown in **Table - 1.3.**

Table - 1.3: State/ UT wise Flood Forecasting Network in CWC

Sl. No.	Name of State/UT	Number of flood Forecasting Stations		
		Level	Inflow	Total
1	Andhra Pradesh	10	10	20
2	Arunachal Pradesh	3	1	4
3	Assam	30	0	30
4	Bihar	40	3	43
5	Chhattisgarh	1	2	3
6	Gujarat	6	8	14
7	Haryana	1	1	2
8	Himachal Pradesh	1	0	1
9	Jharkhand	2	15	17
10	Karnataka	1	14	15
11	Kerela	4	2	6
12	Madhya Pradesh	2	12	14
13	Maharashtra	8	14	22
14	Odisha	12	7	19
15	Rajasthan	4	11	15
16	Sikkim	3	5	8
17	Tamil Nadu	4	11	15
18	Telangana	5	10	15
19	Tripura	2	0	2
20	Uttar Pradesh	39	5	44
21	Uttarakhand	4	5	9
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		**200**	**140**	**340**

Central Water Commission through its 29 flood forecasting Divisions issued forecasts to the various user agencies, which includes various civil/ engineering agencies of the States/Central Governments such as Irrigation/ Revenue/ Railways/public undertakings and Dam/Barrage Authorities/District Magistrates/Sub Divisional Officers besides the Defence Authorities involved in

the flood loss mitigation work. During the flood season, the Hon'ble Minister of Jal Shakti, Government of India, the Chairman and the Member (River Management) of Central Water Commission were also being apprised of the latest flood situations in the above river basins in the country.

1.3 CLASSIFICATIONS OF VARIOUS FLOOD SITUATIONS

The Central Water Commission has categorized various flood situations, for monitoring the floods in the country through its level flood forecasting network, into the following 3 different categories, depending upon the severity of floods i.e. based on floods magnitudes.

(i) ABOVE NORMAL FLOOD

The river stage is said to be in **'ABOVE NORMAL'** situation at any Hydrological Observation station when the water level of the river touches or crosses the warning level, but remains below the danger level of the forecasting site.

(ii) SEVERE FLOOD

If the water level of the river touches or crosses its danger level, but remains below the Highest Flood Level of the site (commonly known as 'HFL'), then the river is in a '**SEVERE FLOOD'** situation.

(iii) EXTREME FLOOD

The flood situation is said to be **'EXTREME FLOOD'** when the water level of the river touches or crosses the '**HIGHEST FLOOD LEVEL'** recorded so far at any water level station.

1.4 STANDARD OPERATING PROCEDURE (SOP) FOR FLOOD FORECASTING & WARNING

The basic activity of data collection, its transmission and dissemination of flood forecasts to the local administration is carried out by the field divisions of CWC. The modeling centres and Divisional Flood Control Rooms (DFCR) are located in the premises of the field divisions. The field divisions perform these activities as per existing Manual on Flood Forecasting which contains the following critical activities as the general SOPs:

1. Nomination of Nodal Officers of CWC for interaction with the Nodal Officers of concerned State Governments before monsoon every year.
2. Gearing up of flood forecasting network before monsoon every year.
3. Operation of Divisional Flood Control Room (DFCR) during monsoon every year.
4. Operation of Central Flood Control Room (CFCR) during monsoon every year.
5. Issue of flood forecasts to designated officers of concerned State and transmission thereof through FAX/ Telephone/ E-mail/ Special Messengers during monsoon every year.
6. Sending flood alerts through SMS/Whatsapp on Mobile Phones to the concerned officers of State/ Central Government during severe (6 hourly updates) and extreme (3 hourly updates) flood situations and uploading of Flood Forecasts and hourly water level data in CWC's Flood Forecasting Website as per Standard Operating procedure (SOP).

For the purpose of dissemination of alerts to PMO/Cabinet Secretariat, a uniform system has been devised by categorizing each type of alert in stages- Yellow, Orange and Red.

Categories of alerts for flood in respect of level forecasts is as indicated below.

Category	Description	Stage
III	Above Normal Flood (Water level between Warning level and Danger level)	Yellow
II	Severe Flood (Water level below HFL and above Danger Level)	Orange
I	Extreme Flood (Water Level equal and above Highest Flood Level - HFL)	Red

1.4.1 CAP ALERT THROUGH C-DOT IN ASSOCIATION WITH NDMA:

Common Alert Protocol (CAP) alerts are generated through an application developed by Centre for Development of Telematics (C-DoT) in association with NDMA. CAP alerts was first implemented during 2021 for Tamilnadu as a pilot project. In 2022 CAP alerts were issued pan India level through dedicated website https://platform.sachetdashboard.ndma.gov.in/. These alerts will be initially dispatched to the first beneficiary viz. SDMAs, who will in turn make understandable warnings to warn the general public. CWC (HQ) uploaded the alerts related to the level forecast to the dedicated website. In 2024, CWC disseminated 5740 CAP alerts to concerned SDMA's.

1.5 INFLOW FORECAST

Inflow Forecasts are issued for dams/reservoirs/barrages in various river basins in the country. The project authorities have identified the threshold inflow limits for issue of forecast considering various factors such as safety of the dam, status of reservoir, downstream channel/ canal requirements. The inflow in volume during the given duration indirectly indicates the possibility of accommodating the given volume, or otherwise, in the reservoir. The outflow pattern is decided keeping in view of the safety measures at the reservoir and the likely impact of the outflow from the reservoir to cause damages/ difficulties in the downstream areas giving due attention to the Emergency Action Plan (EAP) of the project. There is need for EAP for all reservoirs covering normal operational releases and high releases during floods.

The salient features of all Flood Forecasting Sites **is shown in Annex – II**. The basin-wise as well as state-wise details of level and inflow sites during the flood season 2024, is shown at**, Annex – III (A & B)** and **Annex – IV (A & B)** respectively.

1.6 DATA COMMUNICATION SYSTEM

Central Water Commission maintains Wireless Stations for near real–time data communication. These wireless sets work on pre-fixed schedules for receiving the vital hydro-meteorological data immediately after its observation. In addition, telephone/ mobile phone and internet are also used for dissemination of flood forecasts to user agencies.

Now under modernization program, satellite based Telemetry System has been installed at various stations for sensor based automatic data collection and satellite based communication.

The installation of Telemetry System for automatic sensor based data collection and satellite based data communication was initiated during IX Plan. At present, 1121 telemetry stations have been installed.

The telemetry data received was mainly used by the divisions for formulating flood forecast. The telemetry data is also directly transferred to WIMS as central repository. Expansion of telemetry network is shown in **Fig 1.2** and **Table - 1.4.**

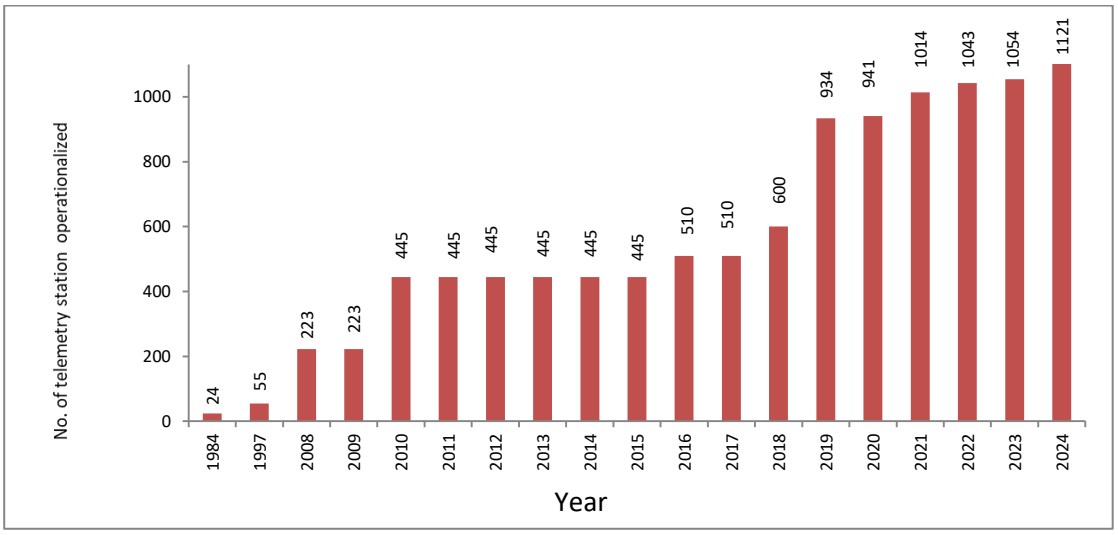


Fig. 1.2: Expansion of Telemetry Network

Table 1.4: TELEMETRY STATUS

Plan	No. of Stations with telemetry	Basins	No.
IX	55	Chambal	
		Upper Mahanadi Basin	
X	168	Godavari	63
		Krishna	41
		Brahmaputra	21
		Damodar	20
		Yamuna	15
		Mahanadi	8
XI	222	Indus	4
		Ganga	63
		Yamuna	25
		Narmada & Tapi	76
		Mahanadi	36
		Brahmaputra	14
		Godavari	4
XII	515	Brahmaputra	67
		Yamuna	51
		Godavari	25
		Pennar	5
		Krishna	15
		Eastern River	30
		Teesta	50
		Narmada	12
		Ganga	153
		Chenab	4
		Mahi Tapi	24
		Southern River	38

		Cauvery	32
		Wainganga	9
XIV	83 (Under 125)	Ganga	42
		Krishna	12
Earth Receiving Centre		: **3** (New Delhi, Jaipur, Burla)	
Modelling Centre		: **27** (Agra, Asansol, Bengaluru, Bhubaneshwar, Burla, Bhopal, Chennai, Haridwar, Dibrugarh, Gandhinagar, Gangtok, Guwahati, Hyderabad (2 Nos.- one each for Krishna and Godavari basins), Jaipur, Jalpaiguri, Nagpur, Two at Lucknow, Bhusawal, Maithon, New Delhi (2 Nos.- One each at headquarter and Yamuna basin), Patna, Shimla, Surat and Varanasi.	

1.7 DAMAGE DUE TO FLOODS/ HEAVY RAINS BETWEEN 1953 TO 2022

The damage due to floods for the entire country was Rs. 49618 Crore during the flood season 2021. The average annual damages to crops, houses and public utilities from the year 1953 to 2021 as reported by the States/ UTs are of the order of Rs. 7055 Crore. The maximum annual damage reported is Rs. 57291 Crore during 2015.

A comparative details showing the details of damages occurred during the flood season 2020 to 2022 on different accounts, received from the revenue authorities of the State Governments is given in the **Table - 1.5**.

Table 1.5: Damages occurred during flood season 2020 to 2021

Sl. No	Items	Flood Damages				Flood Damages (1953 - 2021)	
		2020	2021	2022* (updated till 13.06.2023)	Average (1953-2021)	Maximum	
						Year	Damage
1	Area affected (mha)	6.90	16.75	1.60	7.38	1978	17.50
2	Population affected (millions)	27.43	38.57	14.31	32.34	1978	70.45
3	Damage to Crops (mha)	6.55	7.79	5.47	4.11	2005	12.30
4	Damage to crops (Rs. Crore)	5626.02	22809.18	5954.74	2235.82	2021	22809.18
5	Damage to houses	237196	461205	270327	1202701	2015	3959191

	(numbers)						
6	Damage to houses (Rs. Crore)	272.10	3960.07	1685.33	883.74	2009	10809.80
7	Cattle lost (number)	47463	64880	60742	90548	1979	618248
8	Human lives lost (numbers)	1815	1371	668	1671	1977	11316
9	Damage to public Utilities (Rs. Crores)	5458.01	25243.61	5955.01	3759.32	2013	38937.84
10	Total damages to crops, houses & public utilities (Rs. crores)	21189.17	49617.62	25116.43	7054.74	2015	57291.10

* Flood damage statistics available for States included are Andhra Pradesh, Assam, Jharkhand, Kerala, Maharashtra, Odisha, and Meghalaya.

1.8 ANALYSIS OF PERFORMANCE OF FLOOD FORECASTING NETWORK

CWC carried out analysis and appraisal of the forecasting work, at the end of monsoon season. Based on this, measures for improvements are identified. A summary of the performance of the work carried out by the field divisions during the flood season 2024 has been presented in **Chapter - 4**. While the performance of the flood forecasting system is satisfactory, yet there is constant endeavor for improving the performance; especially for additional warning time as new technology and more data are becoming available.

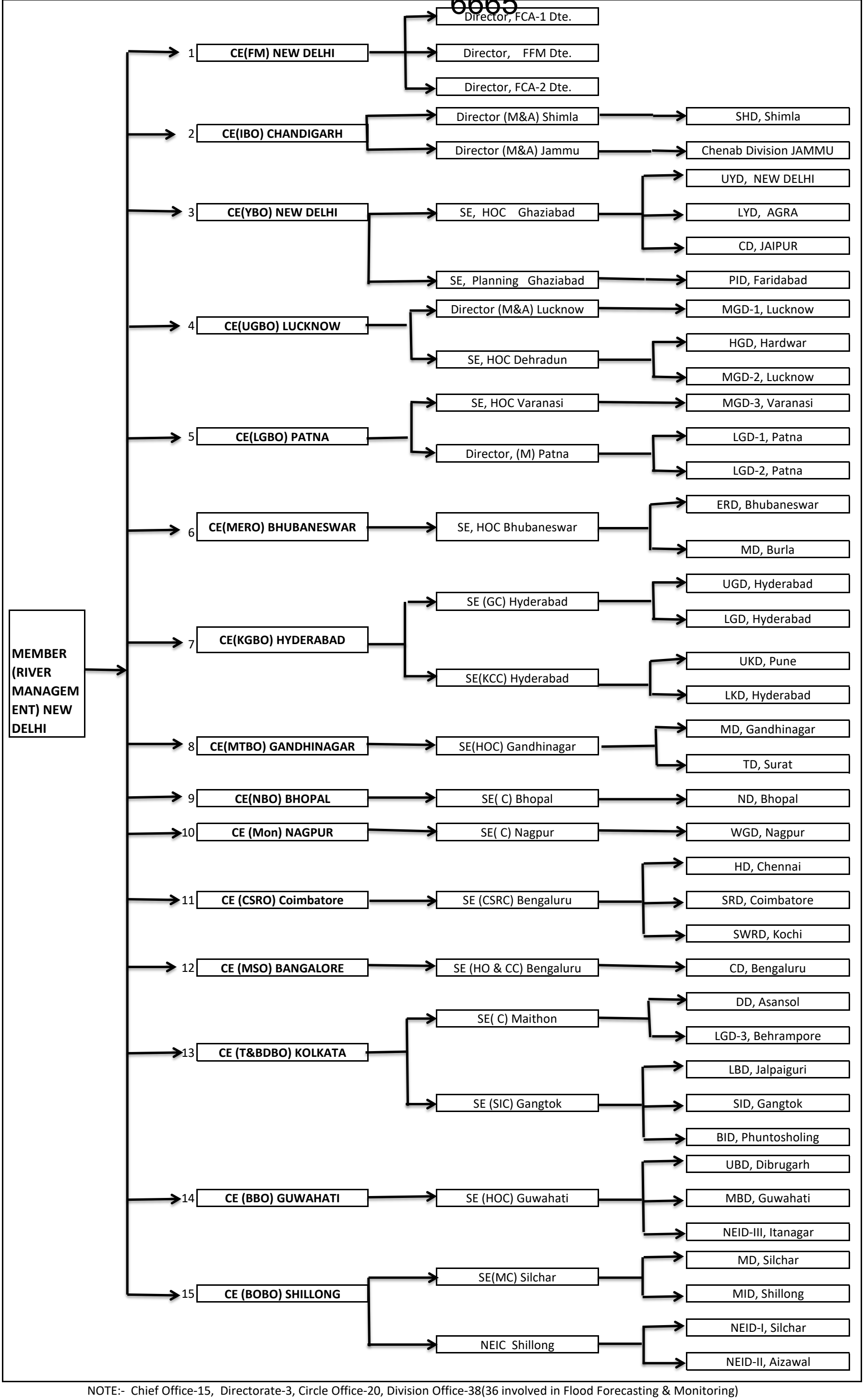
1.9 ORGANISATIONAL SET-UP OF FLOOD FORECASTING NETWORK

The present organizational set-up of Flood-forecasting & Warning Establishment of Central Water Commission under the Member (River Management) is spread over regional offices of CWC each headed by a Chief Engineer. 20 Circle Offices and 36 Divisions in its field formations carry out flood forecasting activities. Chief Engineer (Flood Management) and Flood Forecast Monitoring Directorate monitor the Flood Forecasting activities at headquarters. CWC also issues flood bulletins at national level.

The organizational chart of Flood Forecasting and Warning set up of the Central Water Commission is given at **Fig. 1.3.** List of flood forecasting stations are in **Table - 1.6.**

ORGANISATIONAL CHART OF FLOOD FORECASTING AND WARNING SET UP OF CENTRAL WATER COMMISSION

Fig-1.3



NOTE:- Chief Office-15, Directorate-3, Circle Office-20, Division Office-38(36 involved in Flood Forecasting & Monitoring)

Table 1.6: List of Flood Forecast Stations											
1	Sangam	60	Varanasi	119	Baltara	178	Teesta III HEP	237	Sardar Sarovar Dam	296	Malaprabha Dam
2	Rammunshibagh	61	Lucknow (Hanuman Setu)	120	Kursela	179	Rangit-III HEP Dam	238	Garudeswar	297	Narayanpur Dam
3	Safapora	62	Rae Bareilly	121	Sahibganj	180	Teesta V HEP	239	Bharuch	298	Vir Dam
4	Tehri Dam	63	Jaunpur	122	Taibpur	181	Singtam	240	Hathnur Dam	299	Ujni Dam
5	Srinagar	64	Ghazipur	123	Dhengraghat	182	Rongpo Dam	241	Ukai Dam	300	Deongaon Bridge
6	Ganganagar	65	Buxar	124	Jhawa	183	Rongli Dam	242	Surat	301	PD Jurala Project
7	Rishikesh	66	Ballia	125	Araria	184	Melli Bazar	243	Madhuban Dam	302	Upper Tunga
8	Haridwar	67	Banbasa Barrage	126	Farakka	185	Jorethang	244	Vapi	303	Bhadra Dam
9	Chaudhury Charan Singh Madhya Ganga Barrage	68	Katarniaghat Barrage	127	Massanjore Dam	186	Domohani Bridge	245	Daman	304	Tungabhadra Dam
10	Garhmukhteshwar	69	Elginbridge	128	Tilpara Barrage	187	Mekhliganj	246	Nasik	305	Singatlur Barrage
11	Narora Barrage	70	Ayodhya	129	Narayanpur	188	AP Ghat (Silchar)	247	N M D Weir	306	Mantralayam
12	Kachlabridge	71	Kakardhari	130	Sikatia Barrage	189	Matizuri	248	Kopergaon	307	Sunkesula Barrage
13	Fatehgarh	72	Balrampur	131	Gheropara	190	Badarpurghat	249	Mula Dam	308	Kurnool
14	Kalagarh Dam	73	Bansi	132	Tenughat Dam	191	Karimganj	250	Jaikwadi Dam	309	Srisailam Dam
15	Moradabad	74	Birdghat (Gorakhpur)	133	Tilaiya Dam	192	Kailashahar	251	Manjlegaon Dam	310	Musi Dam
16	Bareilly	75	Turtipar	134	Konar Dam	193	Sonamura	252	Gangakhed	311	Dr KLRS Pulichintala Dam
17	Dabri	76	Darauli	135	Panchet Dam	194	Getlasud Dam	253	Yeldari Barrage	312	Prakasam Barrage
18	Kannauj	77	Gangpur Siswan	136	Maithon Dam	195	Chandil Dam	254	Nanded	313	Avanigadda
19	Ankinghat	78	Chhappra	137	Durgapur Barrage	196	Galudih Barrage	255	Karanja Dam	314	Somasila Dam
20	Kanpur	79	Bansagar Dam	138	Sundar Dam	197	Jamshedpur	256	Singur Dam	315	Nellore
21	Dalmau	80	Rihand Dam	139	Harinkhola	198	Rajghat	257	Nizamsagar Dam	316	Poondi Reservoir
22	Phaphamau	81	Annaraj Dam	140	Hinglow Dam	199	Mathani Rd Bridge	258	Sriramsagar Dam	317	Chembarampakkam Lake
23	Juddo Dam	82	Bhirawa Dam	141	Kangsabati Dam	200	Govindpur (NH5 Road Bridge)	259	Kaddam Project	318	Sathanur Dam
24	Ichari Dam	83	Inderpuri Barrage	142	Mohanpur	201	Salandi Dam	260	Sripada Yellampally Project	319	Gomukhi Dam
25	Paonta Sahib	84	Inderpuri	143	Yingkiong	202	Anandpur	261	Upper Wainganga Project	320	Wellington Dam
26	Hathnikund Barrage	85	Koelwar	144	Pasighat	203	Akhuapada	262	Chaurai/Machchagora Rsvr	321	Harangi Dam
27	Karnal Bridge	86	Maner	145	Dholla Bazar	204	Rengali Dam	263	Bawanthadi Reservoir	322	Hemavathy Dam
28	Mawi	87	Patna (Dighaghat)	146	Dibrugarh	205	Jenapur	264	Totladoh Project	323	Muthankera
29	Dhansa	88	Gandak Barrage	147	Namsai	206	Ravi Shankar Dam	265	Bhandara	324	Kabini Dam
30	Delhi Railway Bridge	89	Khadda	148	Naharkatia	207	Bango Dam	266	Gosikhurd Dam	325	K R Sagar Dam
31	Mathura	90	Chatia	149	Chenimari (Khowang)	208	Hirakud Dam	267	Pauni	326	Mettur Dam

Table 1.6: List of Flood Forecast Stations											
32	Agra	91	Dumariaghat	150	Nanglamoraghat	209	Naraj	268	Upper Wardha Prjoject	327	Bhavanisagar Dam
33	Etawah	92	Rewaghat	151	Sivsagar	210	Alipingal	269	Issapur/Upper Penganga	328	Savandapur
34	Gandhisagar Dam	93	Hajipur	152	Neamatighat	211	Nimapara	270	Balharsha	329	Kodumudi
35	Rana Pratap Sagar Dam	94	Patna Gandhighat	153	Subansiri Lower Dam	212	Purushottampur	271	Sirpur Town	330	Kodaganar Dam
36	Kota Barrage	95	Amanat Dam	154	Chouldhuaghat	213	Gunupur	272	Mid Manair Dam	331	Musiri
37	Kota City	96	Batane Dam	155	NH Xing Ranganadi	214	Kashinagar	273	Kaleswaram	332	Upper Anicut
38	Bisalpur Dam	97	Sripalpur	156	Badatighat	215	Gotta Barrage	274	Laxmi Barrage	333	Grand Anicut
39	Kalisindh Dam	98	Hathidah	157	Golaghat	216	Thottapalli reservoir	275	U Indravati Project	334	Vaigai Dam
40	Parwan Dam	99	Munger	158	Numaligarh	217	Madduvalasa Rsvr	276	Jagdalpur	335	Madurai
41	Gambhiri Dam	100	Lalbeghiaghat	159	Jiabharali NT Road Crossing	218	Narayanpuram Anicut	277	PVN Rao Kanthapally Projct	336	Kumbidi
42	Panchana Dam	101	Ahirwalia	160	Tezpur	219	Srikakulam	278	Eturunagaram	337	Idduki Dam
43	Gudha Dam	102	Sikandarpur (Muzzafarpur)	161	Kampur	220	Dantiwada Dam	279	Dummagudem	338	Idamalayar Dam
44	Parwati Dam	103	Samastipur	162	Dharamtul	221	Abu Road	280	Bhadrachalam	339	Neeleswaram
45	Dholpur	104	Rosera	163	Guwahati	222	Dharoi Dam	281	Kolab Project	340	Malakkara
46	Manderial	105	Khagaria	164	Puthimari NH Crossing	223	Shetrunji Dam	282	Machkund Project		
47	Auraiya	106	Bhagalpur	165	Pagladiya NT Rd Crossing	224	Shubhash Bridge (Ahmedabad)	283	Balimela Project		
48	Kalpi	107	Kahalgaon	166	Mathanguri	225	Mahi Bajajsagar Dam	284	Chinturu		
49	Hamirpur	108	Kosi Barrage	167	Beki Road Bridge	226	Som Kamla Amba Dam	285	Kunavaram		
50	Rajghat Dam	109	Basua	168	Manas NH Crossing	227	Kadana Dam	286	Indirasagar		
51	Madikhera	110	Dheng Bridge	169	Goalpara	228	Panam Dam	287	Rajahmundry (Rly Bridge)		
52	Matatila Dam	111	Runisaidpur	170	Kokrajhar	229	Wanakbori Weir	288	Dowlaiswaram Barrage		
53	Mohana	112	Benibad	171	Dhubri	230	Mandla	289	Atreyapuram		
54	Shahjina	113	Kamtaul	172	Golokganj	231	Barna Dam	290	Koyna Dam		
55	Banda	114	Ekmighat	173	Tufanganj	232	Bargi Dam	291	Warna Dam		
56	Chillaghat	115	Hayaghat	174	NH 31 (Jaldhaka)	233	Tawa Dam	292	Arjunwad		
57	Naini	116	Jainagar	175	Hasimara	234	Hoshangabad	293	Hippargi Barrage		
58	Chhatnag (Allahabad)	117	Jhanjarpur	176	Ghugumari	235	Indira Sagar Dam	294	Hidkal Dam		
59	Mirzapur	118	Sonebarsa	177	Mathabanga	236	Omkareswar Dam	295	Almatti Dam		

CHAPTER – 2

ROLE OF INDIA METEOROLOGICAL DEPARTMENT IN FLOOD FORECAST ACTIVITIES

2.1 ROLE OF INDIA METEOROLOGICAL DEPARTMENT

India Meteorological Department (IMD) is the nodal agency for issuing river sub-basin-wise Quantitative Precipitation Forecast (QPF). Central Water Commission (CWC) is the nodal agency for issuing Flood Forecast in the country. Flood forecasting, therefore, is the joint responsibility of IMD & CWC and there is a close coordination between the two departments in this activity (fig. -2.1). Flood Meteorological Offices (FMOs) of IMD provide hydrometeorological support mainly in terms of river sub-basin-wise 'Quantitative Precipitation Forecast (QPF)' through QPF & Hydro-met Bulletins. QPF bulletins and Hydromet Bulletins are issued at 0930hrs IST and at 1230hrs IST respectively. This special river sub-basin-wise forecast for a lead time of 7-days (forecast for 5 days and outlook for subsequent 2 days) are issued daily during flood season. QPF bulletins are further modified in the evening, if situation demands. These Bulletins are also issued by concerned FMOs during cyclone period or when there is a chance of heavy rainfall which may lead to flood in non-flood season.

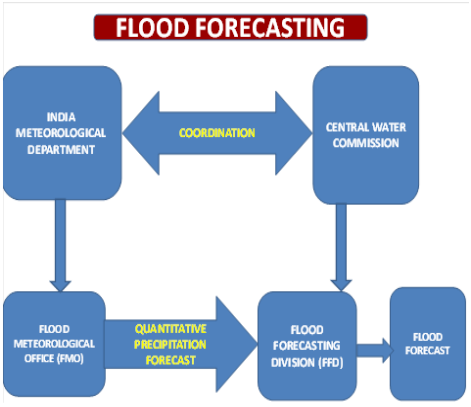


Fig.: 2.1 Coordination in Flood Forecast

The input of Hydro-met Bulletin are as follows;

a. Prevailing synoptic situations
b. River sub-basin wise QPF and probabilistic QPF for day-1, day-2, day-3, day-4 and day-5 for the categories as follows:
   i) 0 mm (ii) 0.1-10mm (iii) 11-25mm (iv) 26-50mm (v) 51-100mm (vi) >100mm
c. River sub-basin-wise outlook for the subsequent two days
d. River sub-basin-wise Heavy rainfall warnings
e. River sub-basin-wise Intensity and Spatial distribution of rainfall
f. Station-wise recorded significant rainfall
g. River sub-basin-wise past 24hrs realized rainfall

IMD has established 15 Flood Meteorological Offices (FMOs) at different parts of flood prone areas of the country which are located at Agra, Ahmedabad, Asansol, Bhubaneswar, DVC, Guwahati, Hyderabad, Jalpaiguri, Lucknow, New Delhi, Srinagar, Chennai, Bengaluru, Patna and Thiruvananthapuram (fig. 2.2). They cater to the river catchments of Yamuna, Narmada, Tapi, Ajoy, Mayurakshi and Kangsabati, Mahanadi, Brahmani and Subernarekha, Brahmaputra, Dhansiri and Barak, Godavari and Krishna, Cauvery, Teesta, Ganga and

Sharada, and Sahibi, Kosi, Baghmati, Gandak, etc. IMD also provides similar support to Damodar Valley Corporation (DVC) for the river basins viz., Barakar and Damodar. Flood Meteorological Offices of IMD provide hydrometeorological support to Flood Forecasting Divisions (FFDs) of Central Water Commission (CWC) to help them issue 'Flood warnings/Flood alerts'.

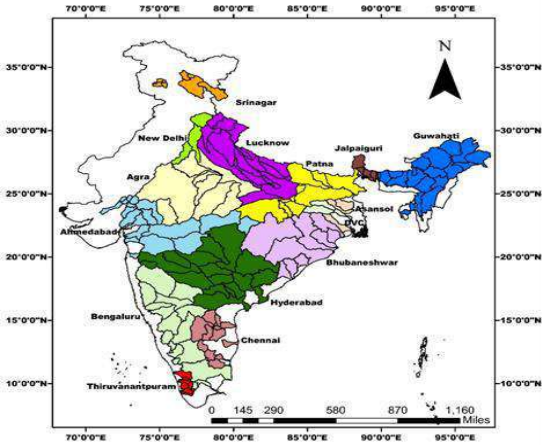


Fig.: 2.2 Flood Meteorological Offices

2.2 District-wise Rainfall Monitoring Scheme (DRMS)

The performance of monsoon rainfall over the country is monitored by evaluating the departures of area weighted total rainfall from the normal rainfall in respect of meteorological districts, sub-divisions, State and Country as a whole. IMD has categorized the rainfall as Large excess, Excess, Normal, Deficient and Large deficient according to the following criteria along with the color codes for graphical representation;

CATEGORY	% DEPARTURES OF RAINFALL	COLOUR CODE
Large Excess (LE or L. Excess)	> = 60%	
Excess (E)	>= 20% and <= 59%	
Normal (N)	>= - 19% and <= + 19%	
Deficient (D)	>= - 59% and <= - 20%	
Large Deficient (LD or L. Deficient)	>= - 99% and <= - 60%	
No Rain (NR)	= - 100%	
No Data (*)	Data Not Available	

2.3 SOUTH WEST MONSOON

India receives about 75% of its Annual rainfall during the Southwest monsoon season from June to September except over some portions of southeastern parts of Peninsular India where the main rains occur during the period of Northeast monsoon from October to

December, which overlap with the receding stage of the Southwest monsoon in October. Occasionally, cyclonic storms develop in the South Bay and move into the Peninsula producing heavy rains during Northeast monsoon season.

Southwest monsoon onsets over Kerala in the beginning of June and then advances further. During the season, spells of heavy, very heavy and extremely heavy rainfall occur across the country especially along the west coast of the Peninsula and on the southern slopes of Khasi and Jaintia hills in Northeast India.

In association with Depressions which occasionally form in the North Bay of Bengal and move west-northwestwards, heavy rains occur in the central parts of the country, Orissa, Gangetic West Bengal, Bihar, East and West Madhya Pradesh, East Rajasthan and Gujarat region.

A very important characteristic of southwest monsoon is the occurrence of "break". The break situations arise when the monsoon trough shifts to the foothills of Himalayas and are very important as these cause floods in the rivers rising from the Eastern Himalayas. Sometimes, the phenomenon of break sets in immediately after a monsoon depression and occurrence of associated intense rainfall activity takes place. These two causes occurring in succession serve to intensify the floods.

The whole of India has been divided into 36 meteorological subdivisions by India Meteorological Department (IMD) for the purpose of description of rainfall/monsoon activities and for forecasting purpose.

2.4 HIGHLIGHTS OF SOUTH-WEST MONSOON 2024

- The southwest monsoon season rainfall over the country as a whole during 2024 was normal (108% of the Long Period Average (LPA)).

- The monthly rainfall over the country as a whole was less than LPA during the month of June (89% of LPA) and more than LPA during July (109% of LPA), August (115% of LPA) and September (112% of LPA).

- The homogeneous regions of Northwest India (107% of LPA) received normal monsoon rainfall, whereas Central India (119% of LPA), and South Peninsula (114% of LPA) received above normal monsoon rainfall. However, East & Northeast India (86% of LPA) received below- normal rainfall.

- Out of the total 36 meteorological sub-divisions, 2 sub-divisions (West Rajasthan and Saurashtra & Kutch) covering 9% of the total area of the country received large excess seasonal monsoon rainfall, 10 sub-divisions constituting 26% of the total area received excess rainfall, 21 sub-divisions covering 54% of the total area of the country received normal rainfall, and 3 sub-divisions (Arunachal Pradesh, Punjab, J & K and Ladakh) constituting 11% of the total area received deficient seasonal rainfall.

- During the season, 14 Low Pressure Systems including 7 Low Pressure Areas, 3 Depressions, 3 Deep Depressions and 1 Cyclonic Storm (ASNA) developed over the Indian region. During the season, the region witnessed formation of LPS on 62.6 days against the normal of about 57 days.

Fig.2. 3 Sub-divisional rainfall map of 2024 monsoon season.

2.5 ONSET AND ADVANCE OF SOUTHWEST MONSOON 2024

Southwest monsoon current advanced to the south Andaman Sea and Nicobar Islands on 19th May, 3 days ahead of its normal date. It set in over Kerala on 30th May, 2 days earlier than its normal date. It covered the entire country by 2nd July, 6 days earlier than its normal date of 8th July. The onset and advance of the monsoon 2024 over the Indian subcontinent are depicted in Figure 2.4.

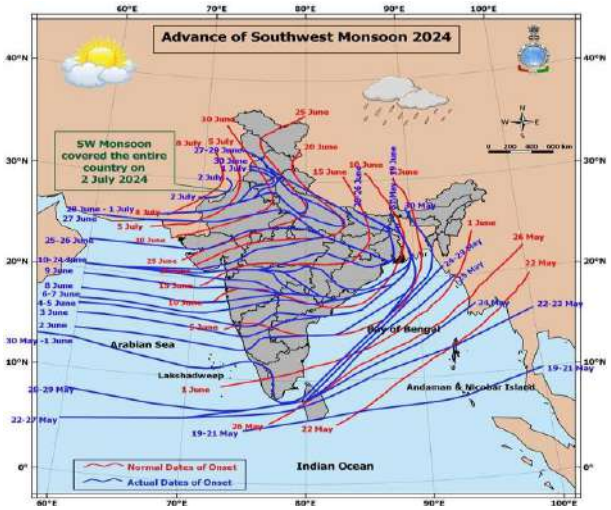


Fig.2.4 : Isochrones of the advance of southwest monsoon 2024

2.6 Synoptic Disturbances during SWM 2024

One cyclonic storm, three deep depression, three depressions, two well-marked low-pressure area, five low pressure areas formed during the monsoon season 2024.

Number of low pressure systems formed during SWM 2024

Month	L	WML	D	DD	CS	Total
June	1	0	0	0	0	1

July	1	1	1	0	0	3
August	2	1	1	1	1	6
September	1	0	1	2	0	3
Monsoon 2024	5	2	3	3	1	14

2.7 Withdrawal of the Southwest Monsoon

With reduction in the rainfall and formation of the anti-cyclonic circulation in lower troposphere, withdrawal of the SW-monsoon 2024 from northwest Indian region began on 23rd September against the normal date of 17th September. The SWM initially withdrew from parts of West Rajasthan and Kutch. However, further withdrawal was delayed by a week due to the north-westward movement of a low-pressure system that had developed over the Bay of Bengal. As moisture levels and rainfall activity reduced, the monsoon retreated from parts of Punjab, eastern Rajasthan, and Gujarat on 1st October 2024. With a continued reduction in rainfall activity across central and northern India, it withdrew from the entire western Himalayan region, parts of West Uttar Pradesh, and West Madhya Pradesh by 4th October. However, due to ongoing rainfall in the Gujarat region, the withdrawal was temporarily stalled there. Finally, as moisture levels decreased, monsoonal flow weakened, and rainfall activity subsided, the southwest monsoon retreated further from most parts of the Indo- Gangetic plains, central India, the majority of Gujarat, and the North Arabian Sea by 08th October. The SWM withdrew from the entire country on 15th October (Fig. 2.5).

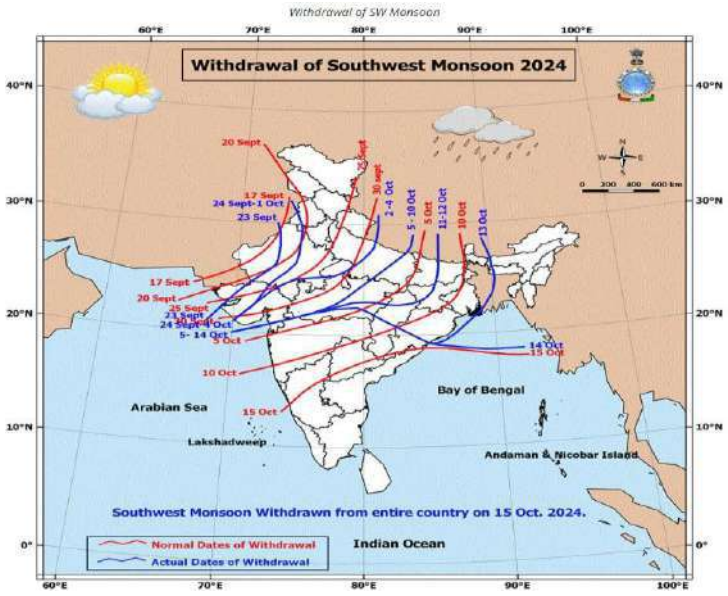


Fig. 2.5: Isochrones for withdrawal of Southwest Monsoon 2024

2.8 Conclusion

The southwest monsoon 2024 rainfall over the country as a whole during season was 108% of its long period average (LPA). Monthly rainfall over the country as a whole was 89% of LPA in June, 109% of LPA in July, 115% of LPA in August, and 112% of

LPA in September. The variations of the semi-permanent features of the SWM 2024 are in concurrence with the rainfall departures during the season.

The southwest monsoon advanced over the South Andaman Sea and Nicobar Islands on 19th May 2024, two days ahead of its normal onset date. It reached Kerala by 30th May 2024, 2 days earlier than the normal date of 1st June, and covered the entire country by 2nd July 2024, six days ahead of the normal date of 8th July. The withdrawal of the monsoon began from West Rajasthan on 23rd September, marking a delay of six days from the normal date. The SWM 2024 witnessed the one cyclonic storm, three deep depressions, three depressions, two well-marked low-pressure areas and five low pressure areas.

Monsoon withdrawal commenced from west Rajasthan on 23rd September (with a delay of 6 days). With establishment of an anti-cyclonic circulation over the central Indian region and by satisfying all the conditions necessary for withdrawal of the monsoon from the country, SWM was withdrawn from entire Rajasthan, western Himalayan region, Punjab, Haryana, Delhi, Most part of the Gujarat and some parts of the Uttar Pradesh, Madhya Pradesh, and Maharashtra as on 08th October 2024. The SWM withdrew from the entire country on 15th October.

2.9 Significant weather events during the season

The resultant weather which affected normal life and damage to property, excluding those from the lack of timely rains, are depicted in Fig. 2.6. High impact weather manifested as extremely heavy rainfall (rainfall amount ≥ 21cm during 24 hours) is also marked over the affected sub-divisions in the figure. A detailed analysis of some of these events is made in the subsequent chapters.

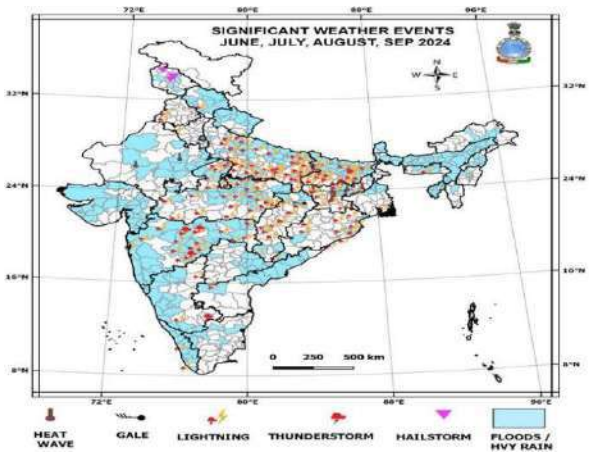


Fig. 2.6: Significant weather events during SWM season 2024 causing disastrous situations

2.9 RAINFALL DISTRIBUTION

The southwest monsoon season rainfall over the country as a whole during 2024 was 108% of LPA. Rainfall distribution was generally well-distributed over major parts of the country, except Arunachal Pradesh, Jammu and Kashmir & Ladakh and Punjab meteorological sub-divisions. The country as a whole, rainfall during the month

of July (109% of LPA), August (115% of LPA) & September (112% of LPA) was above normal, whereas rainfall during the month of June (89% of LPA) was below normal.

During the monsoon season, homogeneous regions of Central India (119% of LPA) and South Peninsula (114% of LPA) received above normal rainfall, Northwest India (107% of LPA) received normal rainfall, while East & Northeast India (86% of LPA) received below normal rainfall.

General Features (Rainfall):

For the country as a whole, seasonal rainfall at the end of the southwest monsoon season (June to September) was 934.8 mm, which is 108% of Long Period Average (LPA; 1971-2020) of 868.6 mm.

The four homogeneous regions received seasonal rainfall as follows:

i. East & Northeast India : 86% of LPA
ii. Northwest India : 107% of LPA
iii. Central India : 119% of LPA
iv. South Peninsula : 114% of LPA
v.

The country received monthly rainfall during the season as follows:

i. June : 89% of LPA
ii. July : 109% of LPA
iii. August: 115% of LPA
iv. September: 112% of LPA

2.11 INDIAN NORTHEAST MONSOON

The Indian southwest monsoon (SWM) season of June to September is the chief rainy season for India and about 75% of the country's annual rainfall is realised during this season. Subsequent to the withdrawal of SWM, the North East monsoon (NEM), a small scale monsoon confined to parts of southern peninsular India comprising of the meteorological sub-divisions of Tamil Nadu, Puducherry & Karaikal (TN), Kerala & Mahe (KER), Coastal Andhra Pradesh & Yanam (CAP), Rayalaseema (RYS) and South Interior Karnataka (SIK) occurs. For the subdivision of TN, the normal SWM seasonal rainfall realised is only about 36% (336.1 mm) of its annual rainfall (939.3 mm) as this subdivision comes under the rain-shadow region during the SWM. The northeast monsoon (NEM) season of October to December (OND) is the chief rainy season for this subdivision with 48% (443.3 mm) of its annual rainfall realised during this season and hence its performance is a key factor for this regional agricultural activity.

Further, the NEM season is also the primary cyclone season for the North Indian Ocean (NIO) basin comprising of the Bay of Bengal (BOB) and the Arabian Sea (AS) and cyclonic disturbances (CDs; low pressure systems (LPS) with maximum sustained surface wind speed (MSW) of 17 knots or more) forming over BOB and moving west/northwest-wards affect the coastal areas of southeastern peninsular India and also contribute significantly to NEM rainfall. As such, the NEM season assumes importance from the agricultural as well as cyclone disaster management perspectives.

Prior to the commencement of NEM rains, after the withdrawal of SWM upto 15°N, reversal of low level winds from southwesterly to northeasterly occurs. The normal date of setting in of easterlies over the southeastern peninsular India is 14th October. The normal date of onset of NEM over Coastal TN (CTN) and south CAP is 20th October.

The NEM rainfall is influenced by global climate parameters such as ENSO (El Nino/La Nina & Southern Oscillation Index), Indian Ocean Dipole (IOD) and Madden-Julian Oscillation (MJO). El Nino, positive IOD and MJO in phase 2-4 with amplitude greater than one are generally associated with good NEM rainfall.

2.12 Salient Features of NE Monsoon Season 2024

- Northeast Monsoon (October to December (OND)) season rainfall over the south Peninsular India consisting of five meteorological subdivisions (Tamil Nadu (Puducherry & Karaikkal), Coastal Andhra Pradesh & Yanam , Rayalaseema, Kerala & Mahe and South Interior Karnataka) was observed to be above normal (>112% of Long Period Average (LPA)).
- Out of the total 5 meteorological subdivisions, 3 subdivision received above normal seasonal rainfall ,1 subdivision received below normal rainfall and 1 subdivision received normal rainfall.
- October 2024 experienced heavy rainfall events primarily over Tamil Nadu and South Interior Karnataka. In November 2024, below-normal rainfall was recorded across all five subdivisions. In December 2024, extremely heavy rainfall events were observed across all five subdivisions.
- In the month of October, total of four Low Pressure Systems formed during the month. Out of which, two became depression, one Severe Cyclonic Storm and one Low Pressure Area. A total of 19 LPS days was observed during the month. During the month, it was back to back depressions over Arabian Sea (13-15 Oct) and Bay of Bengal (15-17 Oct) and formed and moved during the withdrawal phase of southwest monsoon. During November, there were two Low Pressure Systems (LPS) formed over Bay of Bengal (BoB): during November and one system intensified in to cyclonic storm “FENJAL” A feeble LPS for 2 days over Southwest Bay of Bengal off the Tamil Nadu coast during 12-13 November 2024 and the Cyclonic storm “FENGAL” (pronounced as FEINJAL) formed over Southwest Bay of Bengal - 25 Nov to 2 Dec 2024.During December one depression formed over Bay of Bengal during 20 -21 December (16 dec 2024 to 26 dec 2024 total low pressure days of this system). Besides this depression a well-marked low pressure area formed over Bay of Bengal during 7- 15 December.

Chapter -3

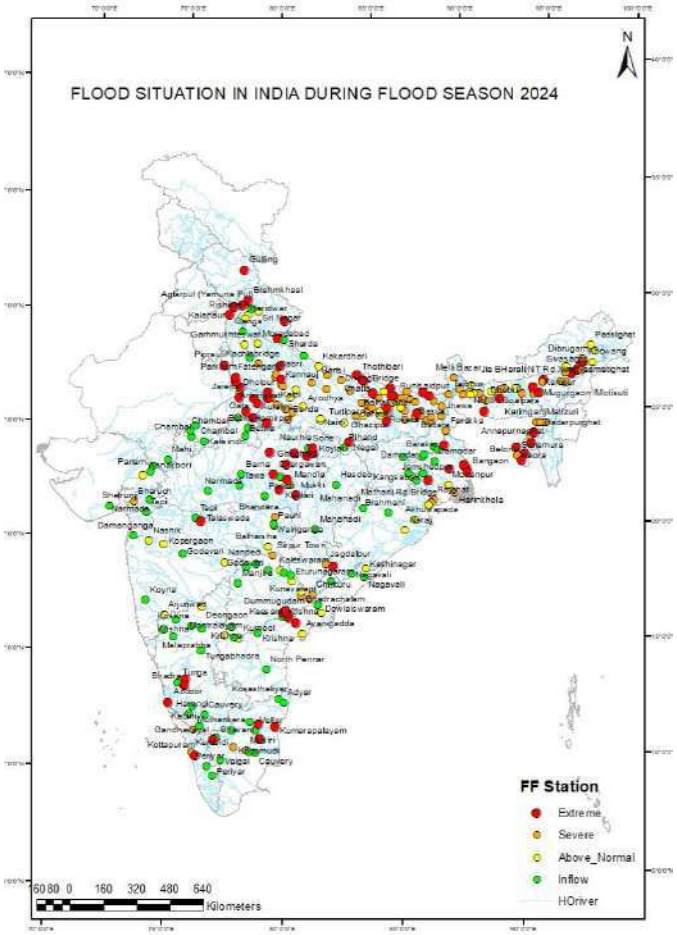
SIGNIFICANT FLOOD EVENTS

3.1 GENERAL

The Flood Forecasting Activity was expanded to 340 locations which includes 140 inflow forecasting sites. Desired hydro-meteorological data was observed/collected, during the flood season 2024 for these stations. Flood situation is monitored with respect to Warning Level (WL), Danger Level (DL) & previous Highest Flood Level (HFL).

3.2 AN OVERVIEW OF FLOOD EVENTS

Extreme flood situation (water level at or above previous HFL) were witnessed in 6 Flood Forecasting Stations in the State of Assam and Bihar. Severe flood events (water level at or above DL and below HFL) were witnessed in 91 stations and above normal floods (water level at or above WL and below DL) were witnessed at 50 stations and inflow forecasts were issued in 83 Stations. **Map 2** below shows the flood situation in the country during the year 2024.



Map 2: Flood situation in India during 2024

The number of stations flowed in Extreme, Severe, Above Normal Flood situation and the inflow Forecast issued during flood season 2024 are shown in **Fig 3.1.**

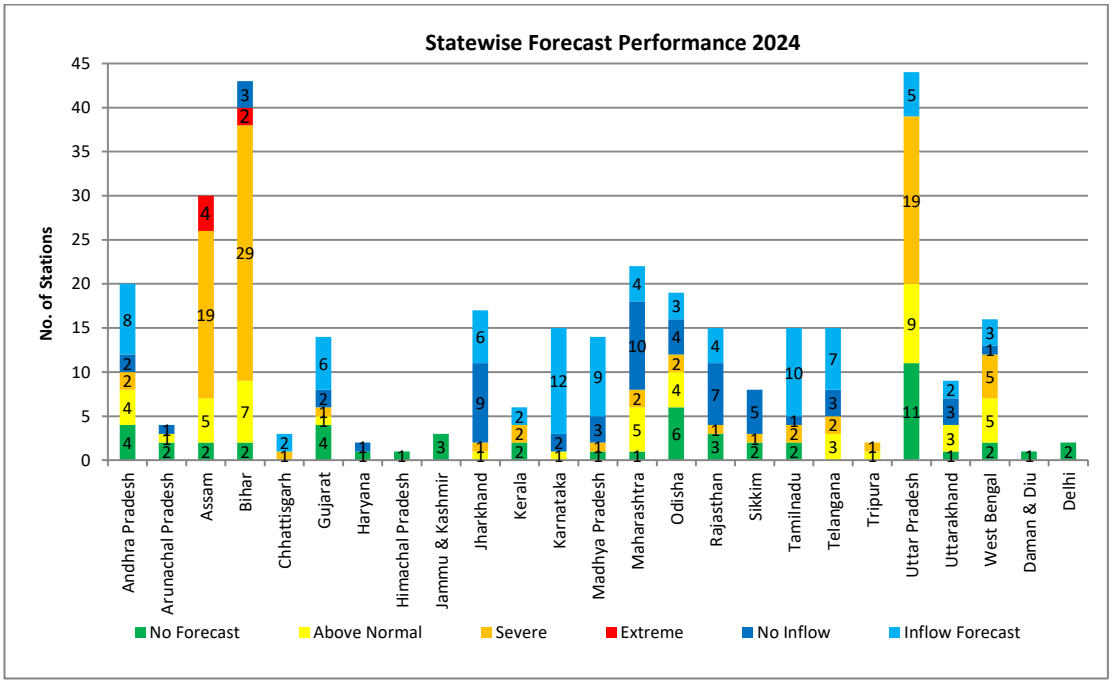


Fig 3.1 : Figure showing number of stations flowing in Extreme, Severe, Above Normal Flood situation and the inflow Forecast during flood season 2024.

State-wise flood situation, in terms of number of stations exceeding WL, DL, HFL and inflow exceeding threshold value at dams/barrages, has been tabulated in the following **Table 3.1**

Table 3.1

State/UT	Levels Exceeded				Inflow Exceeded	
	Below Warning Level	Above Normal	Severe Flood	Extreme Flood	No Inflow	Inflow Forecast
1	2	3	4	5	6	7
Andhra Pradesh	4	4	2	0	2	8
Arunachal Pradesh	2	1	0	0	1	0
Assam	2	5	19	4	0	0
Bihar	2	7	29	2	3	0
Chhattisgarh	0	0	1	0	0	2
Gujarat	4	1	1	0	2	6
Haryana	1	0	0	0	1	0
Himachal Pradesh	1	0	0	0	0	0
Jammu & Kashmir	3	0	0	0	0	0
Jharkhand	0	1	1	0	9	6
Kerala	2	0	2	0	0	2
Karnataka	0	1	0	0	2	12
Madhya Pradesh	1	0	1	0	3	9
Maharashtra	1	5	2	0	10	4

Odisha	6	4	2	0	4	3
Rajasthan	3	0	1	0	7	4
Sikkim	2	0	1	0	5	0
Tamilnadu	2	0	2	0	1	10
Telangana	0	3	2	0	3	7
Tripura	0	1	1	0	0	0
Uttar Pradesh	11	9	19	0	0	5
Uttarakhand	1	3	0	0	3	2
West Bengal	2	5	5	0	1	3
Daman & Diu	1	0	0	0	0	0
Delhi	2	0	0	0	0	0
Total	**53**	**50**	**91**	**6**	**57**	**83**

Basin wise information in terms of number of stations flowed in Extreme, Severe, Above Normal Flood situation and the inflow Forecast issued during flood season 2024 are shown in **Fig. 3.2.**

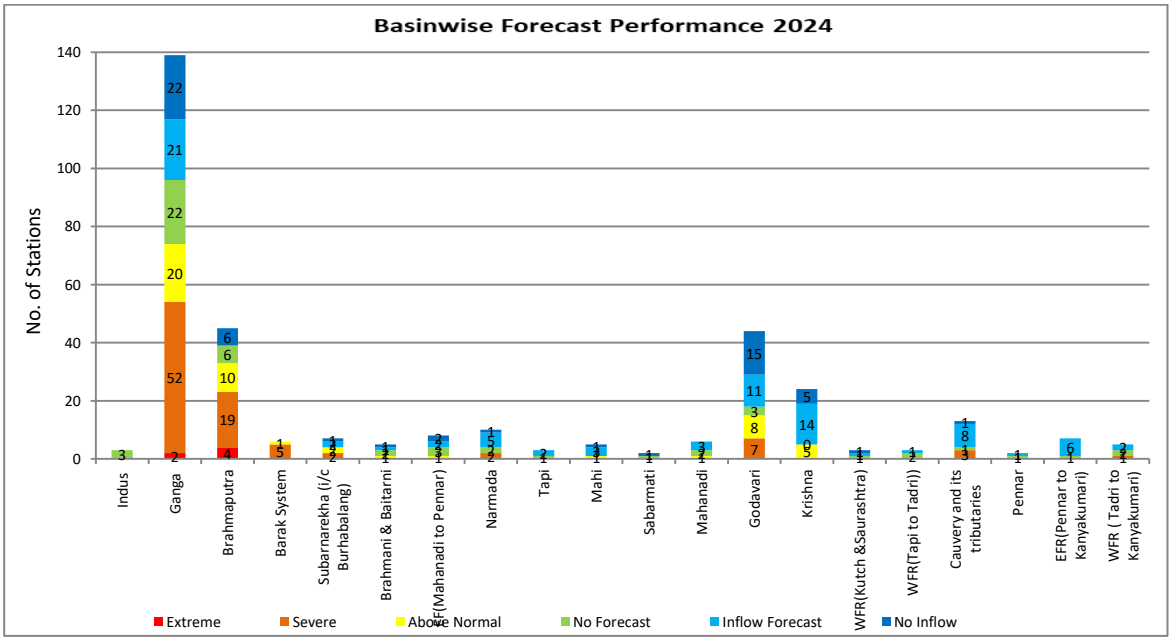


Fig 3.2 : Figure showing number of stations flowing in Extreme, Severe, Above Normal Flood situation and the inflow Forecast during flood season 2024 in different Basins

Basin-wise flood situation, in terms of number of stations in extreme, severe, above normal flood situation and inflow exceeding threshold value at dams/barrages, has been tabulated in the following **Table 3.2**

Table 3.2

Basin	Level				Inflow	
	Extreme Flood	Severe Flood	Above Normal	Below WL	Inflow Forecast	No Inflow
Indus	0	0	0	3	0	0
Ganga	2	52	20	22	21	22

Brahmaputra	4	19	10	6	0	6
Barak System	0	5	1	0	0	0
Subarnarekha (i/c Burhabalang)	0	2	2	0	2	1
Brahmani & Baitarni	0	0	1	2	1	1
EF(Mahanadi to Pennar)	0	0	1	3	2	2
Narmada	0	2	0	2	5	1
Tapi	0	0	0	1	2	0
Mahi	0	0	1	0	3	1
Sabarmati	0	0	0	1	0	1
Mahanadi	0	0	1	2	3	0
Godavari	0	7	8	3	11	15
Krishna	0	0	5	0	14	5
WFR(Kutch &Saurashtra)	0	0	0	1	1	1
WFR(Tapi to Tadri))	0	0	0	2	1	0
Cauvery and its tributaries	0	3	0	1	8	1
Pennar	0	0	0	1	1	0
EFR(Pennar to Kanyakumari)	0	0	0	1	6	0
WFR (Tadri to Kanyakumari)	0	1	0	2	2	0
	6	91	50	53	83	57

Details of flooding situation indicating districts affected and duration of different category of flood at a forecasting station during 2024 can be seen at **Annex – V**.

3.2.1 EXTREME FLOOD SITUATION

Extreme floods, exceeding previous highest flood levels (HFL), were observed in six sites namely **Sivsagar** in Sivasagar district, **Neamatighat** in Jorhat district, **Khowang** in Dibrugarh district and **Jia Bharali NT Road Crossing** in Sopnitpur district of Assam, **Dheng Bridge** in Sitamarhi district and **Runisaidpur** in Muzzafarpur district of Bihar during the year 2024.

73 Flood Monitoring Stations flowed in Extreme Flood Situation in Himachal Pradesh, Assam, Bihar, Kerala, Karnataka, Andhra Pradesh, Haryana, Maharashtra, Madhya Pradesh, Odisha, Rajasthan, Tamil Nadu, Tripura, Puducherry, Uttarakhand , Uttar Pradesh and West Bengal state.

Month wise number of flood forecast and monitoring stations witnessed Extreme Flood is shown in **Fig. 3.3**.

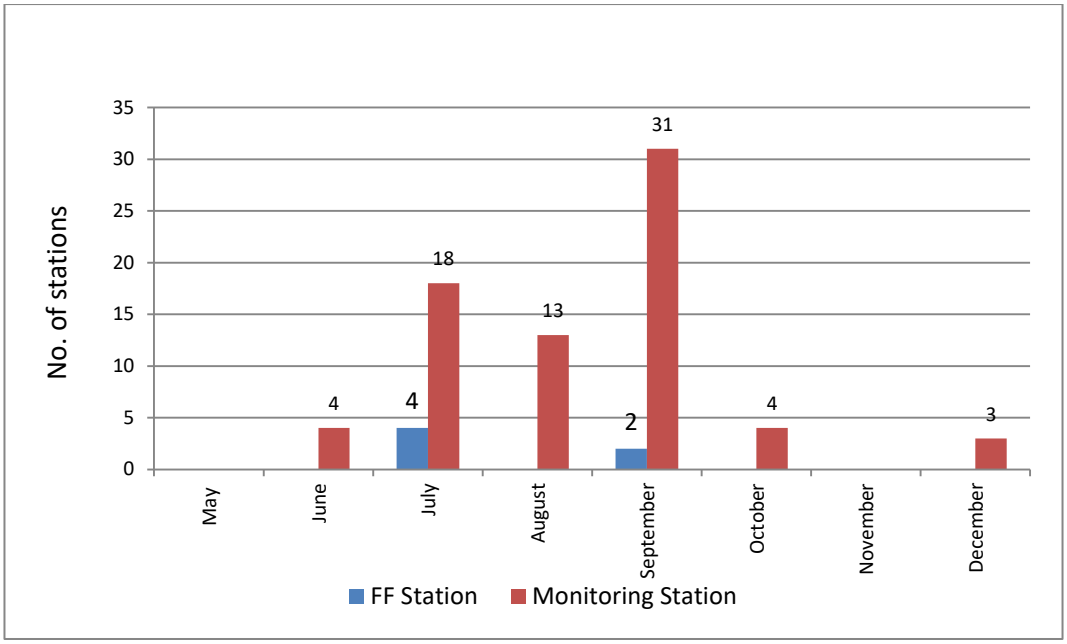


Fig. 3.3: Month wise number of flood forecasting/monitoring stations witnessed extreme floods during 2024

3.3 EXTREME FLOOD SITUATION (2019-2024)

It is observed that during the last 6 years extreme floods were witnessed in non-flood prone states such as Karnataka, Kerala, Maharashtra, Madhya Pradesh, Tamil Nadu in addition to existing flood prone states like Assam, Bihar, Odisha and Uttar Pradesh. **Fig 3.4** shows graph showing state wise extreme flood situation during the year 2019 to 2024.

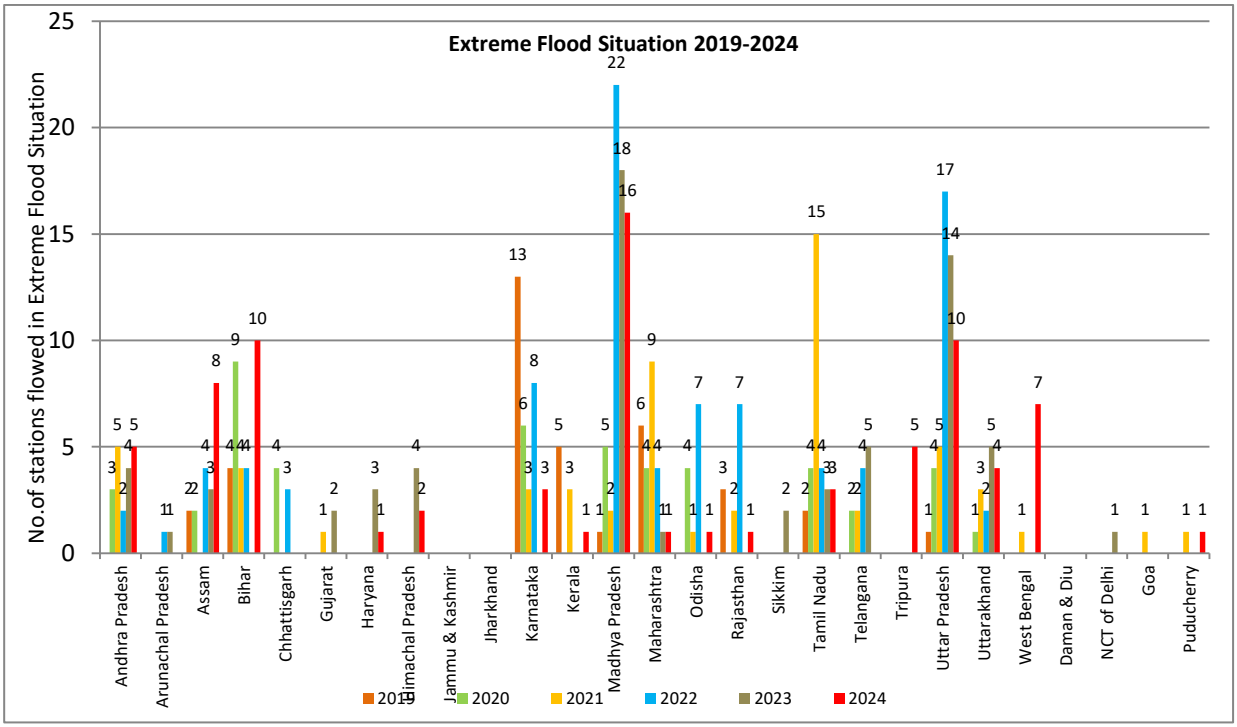


Fig. 3.4: State wise extreme flood situation during the years 2019 to 2024

3.4 MAJOR FLOOD EVENTS DURING LAST FEW YEARS

Year	States	Remarks
2011	**Odisha**	During the month of September Hirakud Dam received very heavy inflow and released huge quantum of water to downstream which causes unprecedented floods in delta area of Mahanadi.
2013	**Uttarakhand**	Very heavy to exceptionally very heavy rainfall recorded during the period 14th to 18th June 2013 in Uttarakhand due to cloudbursts which caused devastating floods and landslides. Due to this heavy rainfall, the glacier melts and Chorabari lake received large amount of water. This sudden increase of pressure broke the moraine embankment and the lake emptied in a few minutes, taking a large amount of debris and huge boulders along with water which led to heavy flood in Uttarakhand.
2014	**Jammu & Kashmir**	During the month of September extremely heavy rainfall occurred in Jhelum, Chenab and Tawi basin which causes the devastating flood.
2015	**Chennai**	During November heavy to very heavy rainfall occurred by NE monsoon system in Chennai due to which the lakes and reservoirs in Chennai got filled up and water was released from these reservoirs which leads to flood in Chennai.
2018	**Kerala**	During the Second and third week of August Kerala received extremely heavy rainfall. Due to back to back extremely heavy rainfall extreme flood situation occurred in Kerala.
2019	**Karnataka**	On first week of August Karnataka received 5 times more rainfall than the normal rainfall which causes intensified flood in Karnataka.
2020	**Assam**	During the month of July, Assam and Meghalaya received 30% more rainfall compared to normal rainfall. This excess rainfall causes flood in Assam.
2021	**Tamil Nadu , Andhra Pradesh**	Due to low pressure in Bay of Bengal occurred in November heavy to very heavy rainfall occurred in Andhra Pradesh. Due to this heavy rainfall Annamaya Dam receives high inflow and has breached. Overtopping and breach of Annamaya Dam leads to flood in the downstream areas.
2022	**Silchar(Assam)**	In the month of May 2022, parts of Silchar namely Rongpur and its adjacent areas were flooded due to heavy rainfall in the catchment area. Due to this river water overflowed the banks at many places and also overtopped some of the dykes of the Barak dyke system and flood water entered in some of the areas of Silchar. The dyke at Bethukandi which is located upstream of Annapurnaghat site was damaged and river water entered Silchar Town.
2023	**NCT Delhi, Sikkim Flood**	Very heavy rainfall occurred in Himalayan region upstream of Hathnikund Barrage during 9-11 July, 2023. The flow reached the Hathnikund Barrage on 11.07.2023 and Hathnikund Barrage passes peak discharge of 3.59 Lakh The high discharge downstream of Hathnikund Barrage created Flood situation in the river Yamuna. On 4 October 2023, due to heavy rains a Glacial Lake Outburst Flood (GLOF) occurred due to the breach of 'South Lhonak Lake' in the far north-western part of state of Sikkim and caused a devastating flood in river Teesta.
2024	**Tripura**	Due to Persistence of a Low Pressure Area over South Bangladesh and neighborhood from 18 to 22nd August and its intensification over the area led to incessant rains over Tripura and neighborhood resulting in flood situations in Gomti, Muhari rivers and other rivers in North and West Tripura.

CHAPTER - 4

FLOOD FORECAST PERFORMANCE

4.1 INTRODUCTION

A number of techniques are being utilised for formulation of river stage and inflow forecasts by Central Water Commission. While inflow forecast is being provided for assisting project authorities in reservoir regulation, the stage forecast is done for warning the civil and engineering authorities about the predicted water level well ahead of its occurrence. An accurate forecast is one where the forecast level and corresponding actual observed level exactly synchronize or have such a small difference that it can be taken as reasonably accurate. In an ideal situation, not only the forecast and the corresponding observed value of river stage/inflow should be the same but also the time of such occurrence should be the same as that predicted.

4.2 EVALUATION CRITERIA FOR STAGE/INFLOW FORECASTING

As per present practice, all the level and inflow forecasts are being judged by the single criteria of accuracy i.e. the actual level attained is within ±15cm of forecasted value for stage forecasts and the actual inflow/volume received in the dam/barrage is within ±20% of the forecasted value for inflow forecast.

The forecast of incoming flood gives the water level or inflow and 'time' of occurrences. It is also observed that in many cases the levels attained were found within permissible limit of accuracy but the time of occurrence was not the same.

4.3 FLOOD FORECASTING ACTIVITIES AND ITS ACCURACY

The flood forecasting activities like data collection, forecast formulation and its dissemination during 2024 covered various river basins and States. A total of 10442 forecast were issued during 2024. The performance of flood forecasting Division wise, Major Basin wise, State wise are given in **Annex -VI to VIII** and Flood forecasting performance for the period from 2000 to 2024 are given in **Annex -IX.**

4.3.1 RIVER BASIN-WISE DETAILS OF FLOOD FORECASTING ACTIVITES & ACCURACY OF FORECAST

The Basin-wise details of flood forecasting activity and accuracy of forecast was given in the **Table 4.1** and fig 4.1.

Table 4.1

Performance of Flood Forecasting Stations (Major Basinwise) in India during Flood Season 2024																
Sl. No	**Name of the Major River basin**	**Total no.of FF sites**			**No.of FF sites where no forecast was issued**			**Level Forecasts**			**Inflow Forecasts**			**Overall Forecasts**		
		Total no	**Level FF sites**	**Inflow FF sites**	**Total no**	**Level FF sites**	**Inflow FF sites**	**Total No.**	**Within limits**	**% of Accu-racy**	**Total No.**	**Within limits**	**% of Accu-racy**	**Total No.**	**Within limits**	**% of Accu-racy**
1	Indus and its tributaries	3	3	0	3	3	0	0	0	-	0	0	-	**0**	**0**	-
2	Ganga & tributaries	139	96	43	45	23	22	3938	3818	96.95	717	667	93.03	**4655**	**4485**	96.35
3	Brahmaputra	45	39	6	12	6	6	2316	2168	93.61	0	0	-	**2316**	**2168**	93.61
4	Barak and others	6	6	0	0	0	0	430	423	98.37	0	0	-	**430**	**423**	98.37

5	Subarnarekha including Burhabalang	7	4	3	1	0	1	54	51	94.44	16	16	100.00	**70**	**67**	95.71
6	Brahmani & Baitarni	5	3	2	3	2	1	3	3	100.00	30	27	90.00	**33**	**30**	90.91
7	East flowing rivers between Mahanadi and Pennar	8	4	4	5	3	2	2	1	50.00	3	3	100.00	**5**	**4**	80.00
8	Narmada	10	4	6	3	2	1	36	35	97.22	257	255	99.22	**293**	**290**	98.98
9	Tapi	3	1	2	1	1	0	0	0	-	200	198	99.00	**200**	**198**	99.00
10	Mahi	5	1	4	1	0	1	3	1	33.33	56	55	98.21	**59**	**56**	94.92
11	Sabarmati	2	1	1	2	1	1	0	0	-	0	0	-	**0**	**0**	-
12	Mahanadi	6	3	3	2	2	0	3	3	100.00	73	71	97.26	**76**	**74**	97.37
13	Godavari	44	18	26	20	5	15	208	203	97.60	286	282	98.60	**494**	**485**	98.18
14	Krishna	24	5	19	6	1	5	71	67	94.37	947	920	97.15	**1018**	**987**	96.95
15	West flowing rivers of Kutc and saurashtr including Lun	3	1	2	2	1	1	0	0	-	4	3	75.00	**4**	**3**	75.00
16	West Flowing rivers from Tapi to Tadri	3	2	1	2	2	0	0	0	-	23	23	100.00	**23**	**23**	100.00
17	Cauvery and tributaries	13	4	9	3	2	1	20	16	80.00	671	606	90.31	**691**	**622**	90.01
18	Pennr	2	1	1	1	1	0	0	0	-	31	23	74.19	**31**	**23**	74.19
19	East flowing rivers between Pennar and Kanyakumar	7	1	6	1	1	0	0	0	-	31	24	77.42	**31**	**24**	77.42
20	West Flowing river Tadri to Kanyakumar	5	3	2	2	2	0	2	1	50.00	11	4	36.36	**13**	**5**	38.46
Total		**340**	**200**	**140**	**115**	**58**	**57**	**7086**	**6790**	**95.82**	**3356**	**3177**	**94.67**	**10442**	**9967**	**95.45**

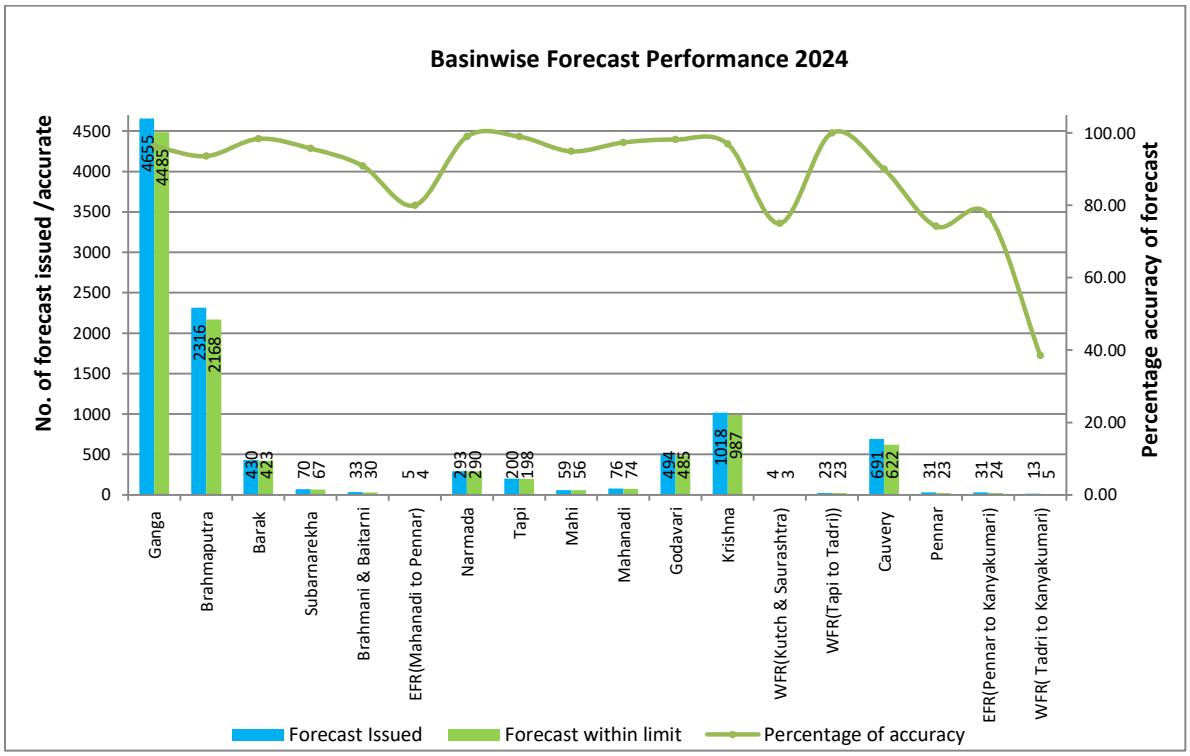


Fig 4.1: Basinwise Forecast performance during 2024

4.3.2 STATEWISE FLOOD FORECASTING PERFORMANCE

There are 22 states and 3 Union Territories of the Daman and Diu, Jammu & Kashmir and National Capital Territory of Delhi so far covered under the Flood Forecast and Warning Network of the Central Water Commission. The State-wise details of flood forecasting activity and accuracy of forecast was given in the **Table 4.2** and fig 4.2.

Performance of Flood Forecasting Stations (Statewise) in India during Flood Season 2024

Sl. No	Name of the Major River basin	Total no.of FF sites			No.of FF sites where no forecast was issued			Level Forecasts			Inflow Forecasts			Overall Forecasts		
		Total no	Level FF sites	Inflow FF sites	Total no	Level FF sites	Inflow FF sites	Total No.	Within limits	Accuracy (%)	Total No.	Within limits	Accuracy (%)	Total No.	Within limits	Accuracy (%)
1	Andhra Pradesh	20	10	10	7	5	2	159	152	95.60	465	456	98.06	624	608	97.44
2	Arunachal Pradesh	4	3	1	3	2	1	3	3	100.00	0	0	-	3	3	100.00
3	Assam	30	30	0	2	2	0	1798	1776	98.78	0	0	-	1798	1776	98.78
4	Bihar	43	40	3	5	2	3	2339	2241	95.81	0	0	-	2339	2241	95.81
5	Chattisgarh	3	1	2	0	0	0	8	8	100.00	8	7	87.50	16	15	93.75
6	Gujarat	14	6	8	6	4	2	12	9	75.00	348	343	98.56	360	352	97.78
7	Haryana	2	1	1	2	1	1	0	0	-	0	0	-	0	0	-
8	Himachal Pradesh	1	1	0	1	1	0	0	0	-	0	0	-	0	0	-
9	Jammu & Kashmir	3	3	0	3	3	0	0	0	-	0	0	-	0	0	-
10	Jharkhand	17	2	15	9	0	9	84	78	92.86	192	183	95.31	276	261	94.57
11	Karnataka	15	1	14	2	0	2	3	3	100.00	861	820	95.24	864	823	95.25
12	Kerala	6	4	2	3	3	0	2	1	50.00	11	4	36.36	13	5	38.46
13	Madhya Pradesh	14	2	12	4	1	3	27	27	100.00	146	134	91.78	173	161	93.06
14	Maharashtra	22	8	14	13	3	10	41	41	100.00	95	94	98.95	136	135	99.26
15	Odisha	19	12	7	10	6	4	59	58	98.31	97	93	95.88	156	151	96.79
16	Rajasthan	15	4	11	10	3	7	11	10	90.91	18	18	100.00	29	28	96.55
17	Sikkim	8	3	5	7	2	5	362	288	79.56	0	0	-	362	288	79.56
18	Tamilnadu	15	4	11	3	2	1	20	16	80.00	378	322	85.19	398	338	84.92
19	Telangana	15	5	10	3	0	3	68	66	97.06	243	239	98.35	311	305	98.07
20	Tripura	2	2	0	0	0	0	28	25	89.29	0	0	-	28	25	89.29
21	Uttar Pradesh	44	39	5	11	11	0	1343	1334	99.33	289	268	92.73	1632	1602	98.16
22	Uttarakhand	9	4	5	4	1	3	13	12	92.31	94	87	92.55	107	99	92.52
23	West Bengal	16	12	4	4	3	1	706	642	90.93	111	109	98.20	817	751	91.92
24	Daman n Diu	1	1	0	1	1	0	0	0	-	0	0	-	0	0	-
25	NCT, DELHI	2	2	0	2	2	0	0	0	-	0	0	-	0	0	-
Total		**340**	**200**	**140**	**115**	**58**	**57**	**7086**	**6790**	**95.82**	**3356**	**3177**	**94.67**	**10442**	**9967**	**95.45**

Table 4.2

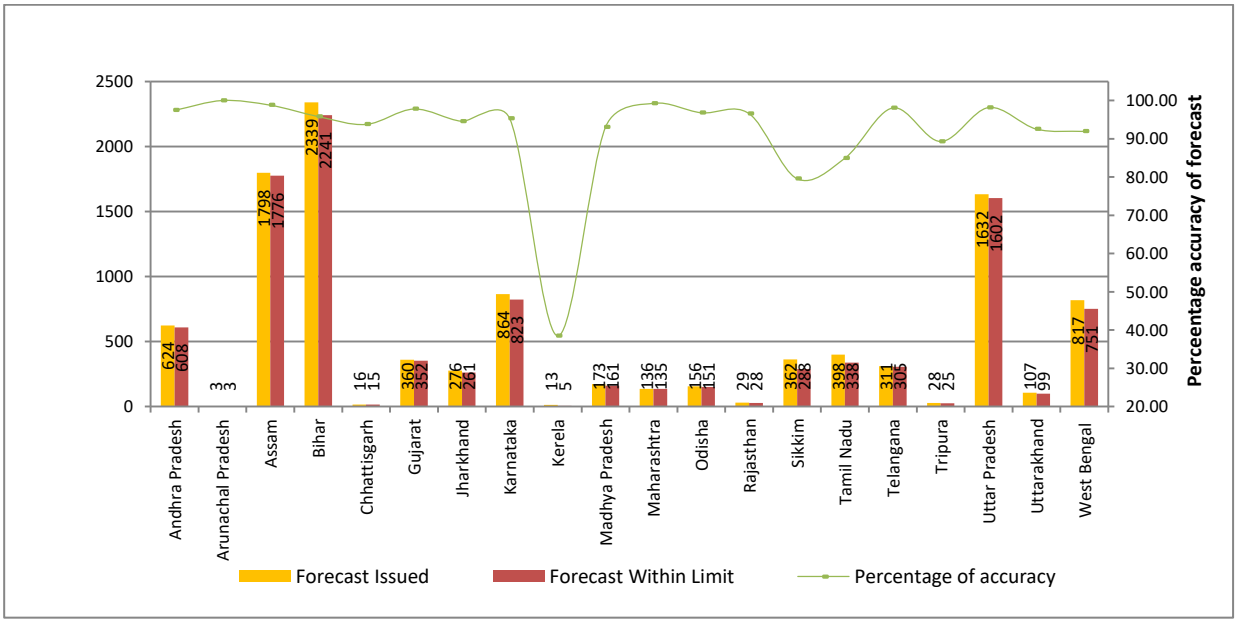


Fig. 4.2: State-wise Flood Forecast Performance during 2024

Details of Extreme flood events in the various river systems covered under the Flood Forecasting & Warning Network are given in **Annex–X** for the year 2024**.** Severe and Above Normal flood events are given at **Annex - XI to XIII,** for the year 2024.

4.4 AN OVERVIEW OF FLOOD FORECASTING PERFORMANCE

Central Water Commission has a flood forecasting network distributed over 20 major river systems The overall forecast performance was 95.45% for the country as a whole. Out of 340 sites, at 108 sites forecast performance was 100% accurate. The flood forecasting performance of the level forecasting as well as inflow forecasting sites from 2011 to 2024 is given in **Fig. 4.3.** Also, performance accuracy during 2024 of the sites where flood forecast was issued is attached as **Table 4.3**

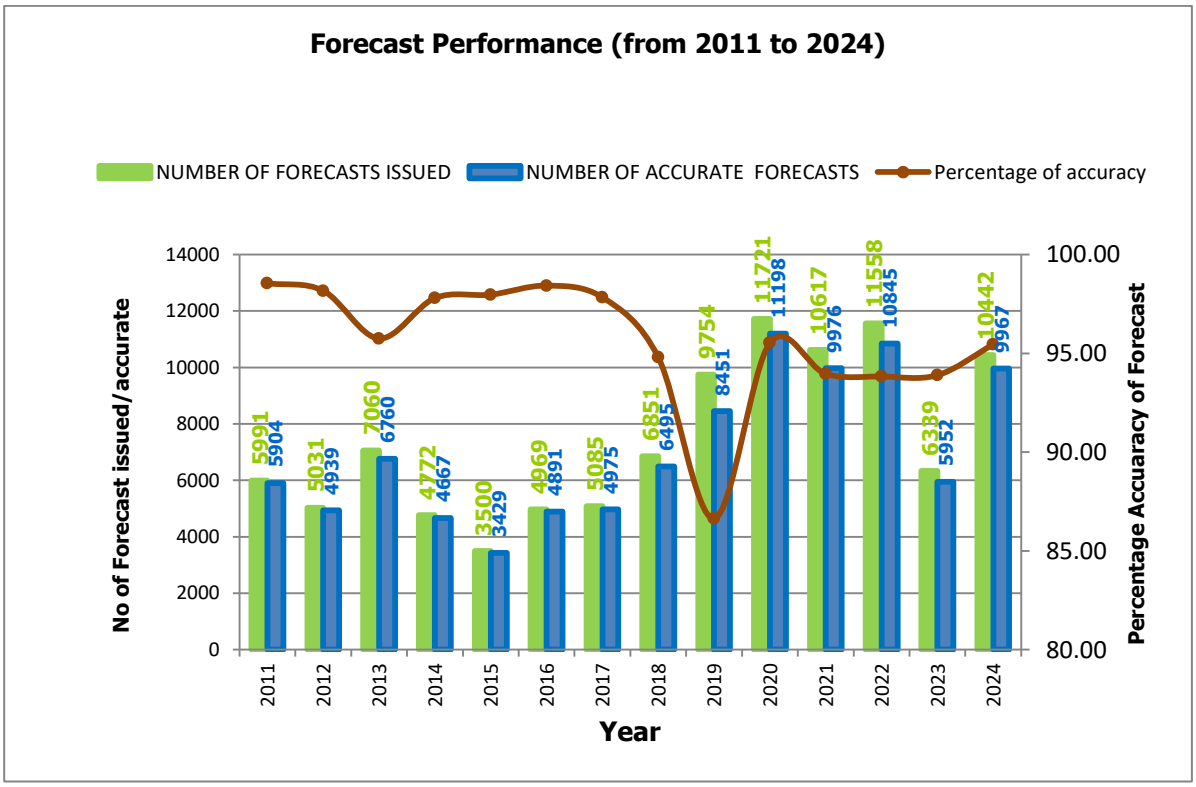


Fig. 4.3: Flood Forecast Performance from 2011 to 2024

Table 4.3: Performance accuracy during 2024 at flood forecasting sites of CWC

Sl. No.	Details	No. of Sites	%
1	Sites with performance accuracy between 0.0% to 25%	7	3.11%
2	Sites with performance accuracy between 25.1% to 50%	7	3.11%
3	Sites with performance accuracy between 50.1% to 75%	9	4.00%
4	Sites with performance accuracy between 75.1% to 99.99%	94	41.78%
5	Sites with 100% performance accuracy	108	48%
6	Total sites where forecasts were issued	**225**	**100%**

4.5 ACCURACY ANALYSIS REPORT:

Central Water Commission (CWC) through its field divisions collects hydrological and hydro-meteorological data on real–time basis during the flood season every year. Using these data, flood/inflow forecasts are formulated for 340 locations (200 Level and 140 Inflow Forecast Stations) and disseminated to various user agencies through Fax/e-mail/SMS and Website. In addition to the data collected from the network of CWC stations, the meteorological data and Quantitative Precipitation Forecast (QPF) received from India Meteorological Department are also utilised in formulation of flood forecast.

Under the conventional set up, the methodology used is generally either the basin persistence based mathematical/statistical techniques, co-axial graphs or mathematical models using rainfall data received from Indian Meteorological Department (IMD) or the rainfall data collected by CWC. The Level forecasts are issued whenever the water levels at CWC Flood Forecasting Station exceeds or expected to exceed 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.

As per present practice, all the level and inflow forecasts are being judged by the single criteria of accuracy i.e. the actual level attained is within ±15cm of forecasted value for stage forecasts and the actual inflow/volume received in the dam/barrage is within ±20% of the forecasted value for inflow forecast.

Depending upon the above criteria the statewise last few years (2018-2024) accuracy performance report in tabular form is given below.

Table 4.4

Forecast Performance (2018-2024)

Sl.N	State/Year	Overall Forecast																					
		2018			2019			2020			2021			2022			2023			2024			
		Total No.	Within lim	Accuracy (	Total No.	Within lim	Accuracy (	Total No.	Within lim	Accuracy (	Total No.	Within lim	Accuracy (	Total No.	Within lim	Accuracy	Total No	Within lim	Accuracy (	Total N	Within	Accuracy
1	Andhra Prades	226	195	86.28319	717	429	59.83	756	689	91.14	734	678	92.37	1253	1168	93.22	140	132	94.29	624	608	97.44
2	Arunachal Prad	73	72	98.63014	30	30	100	130	129	99.23	49	49	100	0	0	-	7	7	100.00	3	3	100.00
3	Assam	2170	2156	99.35484	2183	2168	99.31	3094	3081	99.58	1419	1415	99.72	1831	1820	99.4	1664	1651	99.22	1798	1776	98.78
4	Bihar	1225	1213	99.02041	2186	2155	98.58	3223	3192	99.04	3317	3248	97.92	2429	2384	98.15	1180	1119	94.83	2339	2241	95.81
5	Chattisgarh	13	10	76.92308	43	34	79.07	17	14	82.35	0	0	-	28	23	82.14	1	0	0.00	16	15	93.75
6	Daman n Diu	0	0	-	1	1	100	0	0	-	0	0	-	0	0	-	0			0	0	-
7	Gujarat	19	17	89.47368	317	308	97.16	184	180	97.83	86	84	97.67	375	367	97.87	190	166	87.37	360	352	97.78
8	Haryana	1	1	100	2	2	100	0	0	-	0	0	-	1	0	0	2	2	100.00	0	0	-
9	Himachal Prad	0	0	-	4	2	50	0	0	-	0	0	-	1	0	0	2	0	0.00	0	0	-
10	Jammu & Kash	15	15	100	2	2	100	0	0	-	1	0	-	14	7	50	46	37	80.43	0	0	-
11	Jharkhand	153	152	99.34641	140	131	93.57	364	339	93.13	625	565	90.4	235	227	96.6	125	124	99.20	276	261	94.57
12	Karnataka	760	664	87.36842	1162	954	82.1	883	793	89.81	1012	933	92.19	1234	1154	93.52	356	336	94.38	864	823	95.25
13	Kerala		-	-	30	24	80	34	26	76.47	4	2	50	14	9	64.29	1	1	100.00	13	5	38.46
14	Madhya Prade	29	12	41.37931	356	91	25.56	235	190	80.85	55	44	80	181	153	84.53	85	69	81.18	173	161	93.06
15	Maharashtra	31	30	96.77419	277	198	71.48	153	136	88.89	147	122	82.99	303	261	86.14	105	76	72.38	136	135	99.26
16	NCT, DELHI	35	33	94.28571	7	6	85.71	0	0	-	27	19	70.37	43	29	67.44	57	39	68.42	0	0	-
17	Odisha	203	199	98.02956	233	216	92.7	266	239	89.85	200	170	85	280	252	90	133	116	87.22	156	151	96.79
18	Rajasthan	0	0	-	146	59	40.41	59	32	54.24	91	60	65.93	83	35	42.17	33	23	69.70	29	28	96.55
19	Sikkim	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	3	0	-	362	288	79.56
20	Tamilnadu	581	488	83.99312	571	538	94.22	445	370	83.15	634	486	76.66	905	777	85.86	324	282	87.04	398	338	84.92
21	Telangana	86	63	73.25581	219	113	51.6	335	310	92.54	323	302	93.5	700	655	93.57	228	215	94.30	311	305	98.07
22	Tripura	12	11	91.66667	0	0	-	0	0	-	0	0	-	4	4	100	2	1	50.00	28	25	89.29
23	Uttar Pradesh	866	840	96.99769	812	696	85.71	911	880	96.6	1370	1308	95.47	1261	1166	92.47	1060	1021	96.32	1632	1602	98.16
24	Uttarakhand	45	37	82.22222	11	6	54.55	22	21	95.45	35	25	71.43	14	9	64.29	85	74	87.06	107	99	92.52
25	West Bengal	308	287	93.18182	305	288	94.43	610	577	94.59	488	466	95.49	369	345	93.5	510	461	90.39	817	751	91.92
Total		6851	6495	94.80368	9754	8451	86.64	11721	11198	95.54	10617	9976	93.96	11558	10845	93.83	6339	5952	93.89	10442	9967	95.45

Reasons for Low accuracy:

1. There are mainly two types of sites :-
   (i) Located on flashy rivers. In flashy rivers, the rate of change in river level is sudden/abrupt and sharp in magnitude.
   (ii) Located on unflashy rivers. Here the rate of change in river level is not so sudden or sharp.

Applying the same criteria of accuracy to all the forecasting sites on main stream Ganga in Bihar and to the forecasting sites at Haridwar on Ganga in Uttarakhand is not logically correct. It is observed that in Bihar the rate of rise and fall in the level of river Ganga is very gentle and even and within 15cm only which is the permissible limit of deviation (Table 4.5). Whereas the rate of rise and fall at Haridwar is more than 15 cm. (Table 4.6) Similarly it is observed that the rate of rise and fall of Water Level at Anandpur on the river Baitarni in Odisha is more than 15 cm during forecast time (Table 4.7).

Rate of Rise and fall of Water Level at Dighaghat in Bihar

Table 4.5

Date and time	Water Level in m	Rate of Rise/Fall (cm/hr)
Event 1		
07/08/2023 01:00:00.00	48.42	0
07/08/2023 02:00:00.00	48.42	2
07/08/2023 03:00:00.00	48.44	0
07/08/2023 04:00:00.00	48.44	0
07/08/2023 05:00:00.00	48.44	1
07/08/2023 06:00:00.00	48.45	1
07/08/2023 07:00:00.00	48.46	1
07/08/2023 08:00:00.00	48.47	1
Event 2		
04/10/2023 00:00:00.00	47.27	-1
04/10/2023 01:00:00.00	47.26	0
04/10/2023 02:00:00.00	47.26	-1
04/10/2023 03:00:00.00	47.25	0
04/10/2023 04:00:00.00	47.25	-1
04/10/2023 05:00:00.00	47.24	0
04/10/2023 06:00:00.00	47.24	0
04/10/2023 07:00:00.00	47.24	-1
04/10/2023 08:00:00.00	47.23	0
04/10/2023 09:00:00.00	47.23	-1

Rate of Rise and fall of Water Level at Haridwar in Uttarakhand

Table 4.6

Date and time	Water Level in m	Rate of Rise/Fall (cm/hr)
Event 1		
13/08/2023 23:00:00.00	292.88	32
14/08/2023 00:00:00.00	293.2	42
14/08/2023 01:00:00.00	293.62	78

14/08/2023 02:00:00.00	294.4	24
14/08/2023 03:00:00.00	294.64	31
Event 2		
14/08/2023 16:00:00.00	295.32	-29
14/08/2023 17:00:00.00	295.03	-43
14/08/2023 18:00:00.00	294.6	-10
14/08/2023 19:00:00.00	294.5	-33
14/08/2023 20:00:00.00	294.17	-17
14/08/2023 21:00:00.00	294	-19

Rate of Rise and fall of Water Level at Anandpur in Odisha

Table 4.7

Date and time	Water Level in m	Rate of Rise/Fall (cm/hr)
Event 1		
03/08/2023 16:00:00.00	38.22	-27
03/08/2023 17:00:00.00	37.95	-23
03/08/2023 18:00:00.00	37.72	-17
03/08/2023 19:00:00.00	37.55	-15
03/08/2023 20:00:00.00	37.4	-14

Thus applying the same criteria (±15cm) on both types of sites is technically incorrect.

2. It is not appropriate to compare the forecast performance accuracy of statistically insignificant number of forecasts. For example, Chambal Division, Jaipur issued 11 no. of forecast and all is within permissible limit with 100% accuracy whereas in Lower Ganga Division-1, 1923 no. of forecast were issued for various sites under its jurisdiction in 2024 with 1849 no. within permissible limit with 96.15 % which is less than 100%. This indicates that where the no. of forecasts issued are statistically insignificant in such cases the concerned division is likely to gain or lose in accuracy with a large swing. Therefore, the accuracy percentage must be seen together with related no. of forecast.

3. Actual and forecasted rainfall received from by IMD is not so accurate, sometimes it varies largely, that resulted into the inaccurate level and inflow forecast. In addition, spatial and temporal distribution of rainfall of rainfall is not so sufficient to predict accurate catchment rainfall representation.

4. The absence of Rain gauge station in the intervening catchment between Base station and Forecast station due to which accounting accurate runoff from intervening catchment is very difficult.

5. Forecast at the sites located downstream of reservoir, also affected by the release from the dam. Mostly estimated release is not matching with the actual release from the dam.

CHAPTER – 5

Advisory Flood Forecast

5.1 BACKGROUND

CWC currently provides a 7-day advisory flood forecast on its web portal https://aff.india-water.gov.in/ using mathematical model on pan-India for 20 major river basins of the country, covering 200 water level and 138 reservoir inflow forecast stations. This marks a significant paradigm shift from the conventional Gauge-to-Gauge correlation to a more scientific modelling technique for flood forecasting. The system uses regularly calibrated basin models developed using MIKE-11 modelling software, while its real time operation is done in automatic manner by scheduling scripts written in Python and then using JavaScript for publishing the model outputs in web portal. The entire system is updated every three hours for all stations simultaneously.

The system utilizes both hydrologic (Rainfall-Runoff module) and hydrodynamic modelling (HD module techniques) in integrated manner in MIKE11 for real-time water level and inflow prediction in major rivers and reservoirs, respectively. The hydrological module is primarily used for hydrologic prediction i.e. various runoff components. The major inputs into this model are near real time satellite rainfall estimate, IMD daily real time gridded rainfall , which is used to do correction of satellite rainfall estimate on daily basis and IMD rainfall forecast from numerical model for next seven days from time of forecast. The hydrological models are instrumental in performing Rainfall-Runoff conversion at sub basin level, while the hydrodynamic model is used to simulate river flow/level along with structural operations to provide flood forecast for all Forecasting stations in real-time. This has resulted in substantially increasing the lead time to 7 days for all stations.

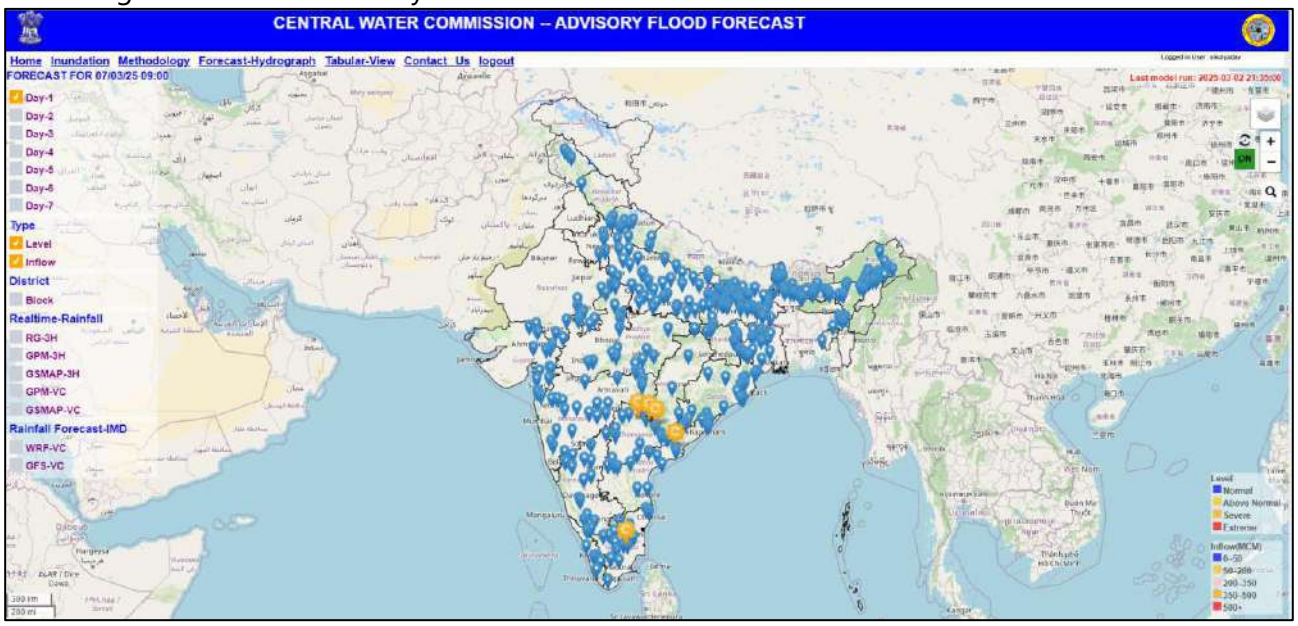


Fig 5.1 : Five day advisory flood forecast portal

5.2 Inputs for model

The 7 day advance advisory flood forecast is generated using reliable rainfall data products from various sources:

1. Near Real Time Rainfall data/ Satellite Estimates
    a. GsMaP (Global Satellite Mapping of Precipitation- JAXA product) at 10KM*10KM resolution at interval of 1 hour
    b. GPM (Global Precipitation Measurement- NASA & JAXA product) at 10KM*10KM resolution at interval of 30 minutes
    c. Daily Gridded Rainfall Dataset of all over India at 25KM*25KM resolution (past 24 hours accumulated rainfall based on observation stations)
2. Forecast data from IMD (Indian Meteorological Department):
    a. GFS (Global Forecast System) at 12.5KM*12.5KM degree resolution for next 10 days forecast period at interval of 3 hours
    b. WRF (Weather Research and Forecasting) at 3KM*3KM for next 3 days forecast period at interval of 1 hour

The process flow of various activities involved in forecast formulation is governed by various scripts that are scheduled to execute the required tasks seamlessly. These scripts are maintained & updated in house by CWC for smooth running of system. The datasets mentioned above are the major inputs to the system for real-time operation, and these datasets are received through API/FTP/SFTP mode, downloaded using Python, and processed into the required file formats for injection into the developed basin/sub-basin models. The hydrological data such as real-time water level and inflow/outflow are received from Water Information Management System (WIMS) through NWIC. Subsequently, all the river models run sequentially and generate results, which are then automatically displayed on the web portal

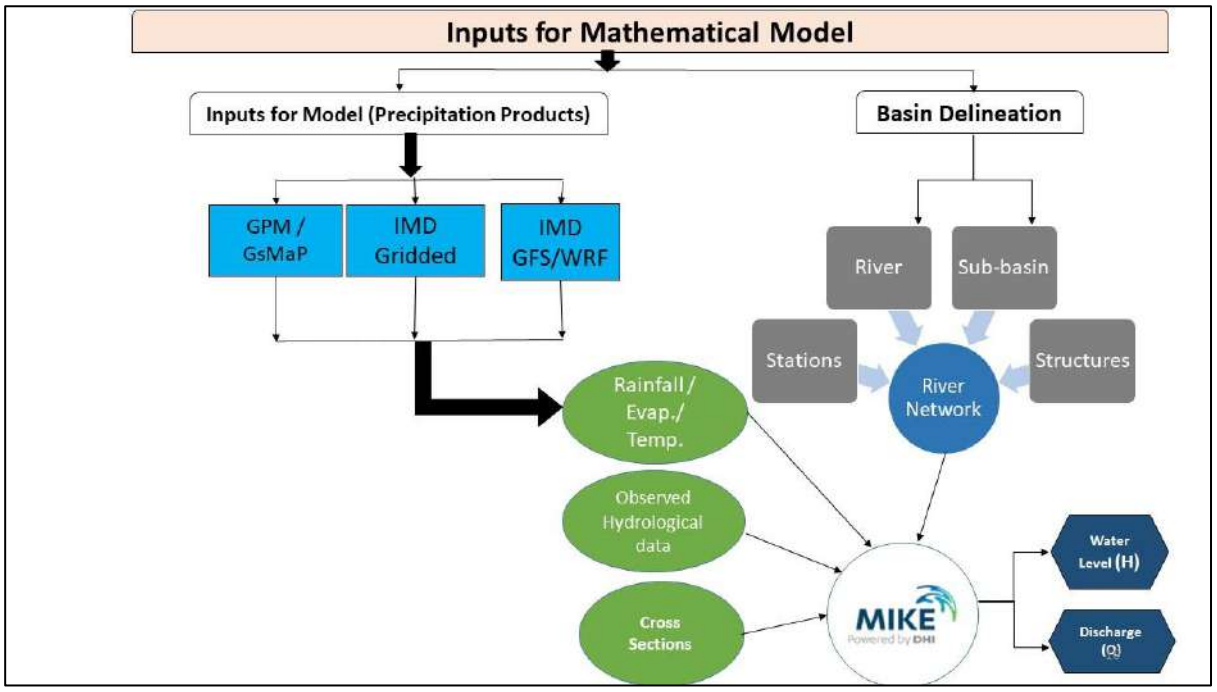


Fig 5.2 Inputs for Model

5.3 PERFORMANCE OF Advisory Flood Forecast System:

1. The Advisory Flood Forecast (AFF) System successfully provided 7-day flood forecasts for 200 water level stations and 140 reservoir inflow stations across 20 major river basins. The integration of hydrological and hydrodynamic models, along with satellite-based rainfall data and IMD forecasts, has significantly enhanced the system's ability to predict flood conditions in advance.
2. The forecast accuracy for each day of the 7-day forecast for all stations. For example, Day 1 accuracy was generally higher across most stations, while accuracy decreased progressively towards Day 7.
3. For Day 1 forecasts, many stations showed recall and precision values above 0.8, indicating that the system was able to predict the majority of critical flood conditions accurately.
4. The root mean square error values indicated the level of deviation between the predicted and observed values. Some of the stations had relatively low RMSE values, while some stations showed higher deviations.
5. The accuracy metrics for short-term forecasts (Day 1 to Day 3) were high, especially for critical flood categories such as Danger Level (DL) and Warning Level (WL).
6. Despite the overall success, the evaluation has identified several areas for improvement in the forecasting process:
7. The accuracy of the 7-day flood forecasts declines significantly beyond Day 3 based on the obtained values of the Root Mean Square Error (RMSE) and Mean Absolute Error (MAE) evaluations. For some stations, the Nash-Sutcliffe Efficiency (NSE) also showed lower values for long-term predictions.
8. The accuracy of the forecasts is heavily dependent on the quality of the input data, especially satellite-based rainfall estimates and ground observations. In cases where data was missing or inaccurate, the forecasts tended to have higher errors. This points to the need for improving data acquisition systems and ensuring the consistency and accuracy of real-time data inputs.
9. The model accuracy is being improved continuously by adopting techniques like bias correction i.e. being applied on both rainfall products & model output as well. Scientifically calibrating the model parameters, integrating the available additional hydrological & hydro-metrological data and enhancing the control strategies of the reservoir in the model is being implemented. The more advance techniques such as Data Assimilation and Flood Forecast module will also be explored.
10. Necessary steps will be taken to integrate the Nowcast product (very short range forecast i.e. upto 2-3 hours) of IMD will be integrated for further improvement of Day 1 forecast.
11. The system’s real-time automation, where models are updated every three hours and results are published on the AFF web portal, ensures that stakeholders have access to updated flood forecasts.

CHAPTER – 6

ANALYSIS OF FLOOD EVENTS IN INDIA

6.1 INTRODUCTION

In India about 80% of the annual rainfall occurs during the period of South- West monsoon from June to September except some portion of the south eastern part of peninsular India where the main rain occurs during the period of North East Monsoon from October to December.

The variation in rainfall pattern in India from one region to another is very vast. Generally, the normal annual rainfall in North Eastern region is very high compared to Western part of India. Main Flood prone basins are Ganga and Brahmaputra and the states affected are Assam, Bihar, Uttar Pradesh and West Bengal.

However, it is observed that during the last few years extreme floods were witnessed in non-flood prone states such as Karnataka, Kerala, Maharashtra, Madhya Pradesh, Tamilnadu in addition to existing flood prone states like Assam, Bihar, West Bengal and Uttar Pradesh. **Fig 6.1** and **Fig 6.2** shows graph showing state wise extreme and Severe flood situation during the year 2019 to 2024.

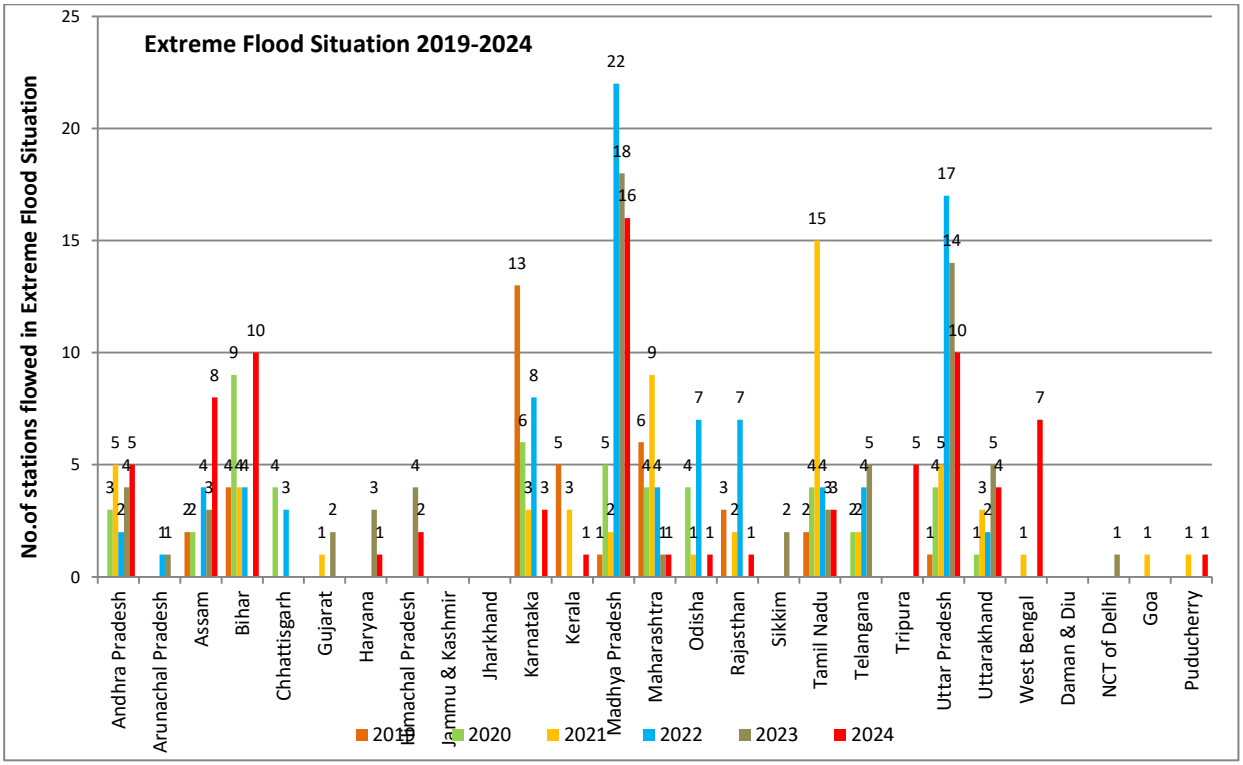


Fig. 6.1: State wise extreme flood situation during the years 2019 to 2024

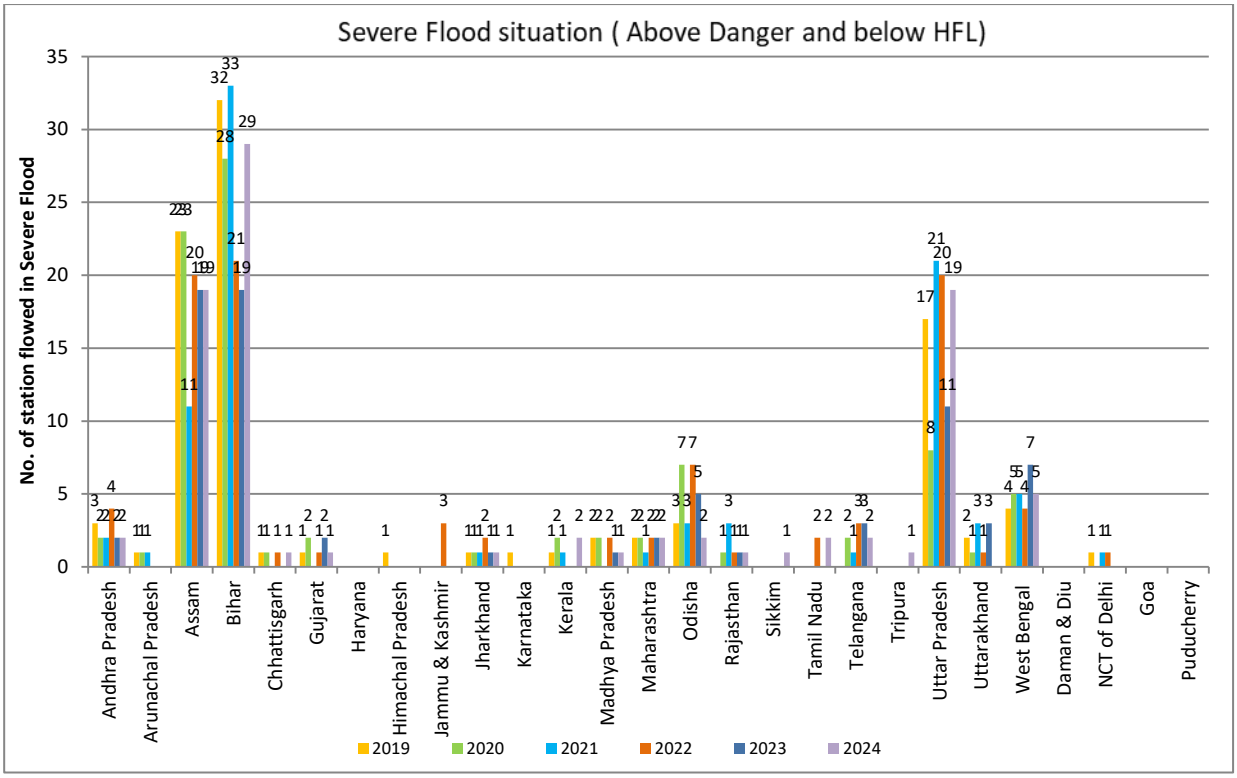


Fig. 6.2: State wise Severe flood situation during the years 2019 to 2024

6.2 STATE WISE FLOOD SITUATION IN INDIA DURING LAST FEW YEARS (2018-2024)

Under this section state-wise, no. of days on which river flowed in severe and extreme flood situation over various flood forecasting sites are presented.

6.2.1 ANDHRA PRADESH

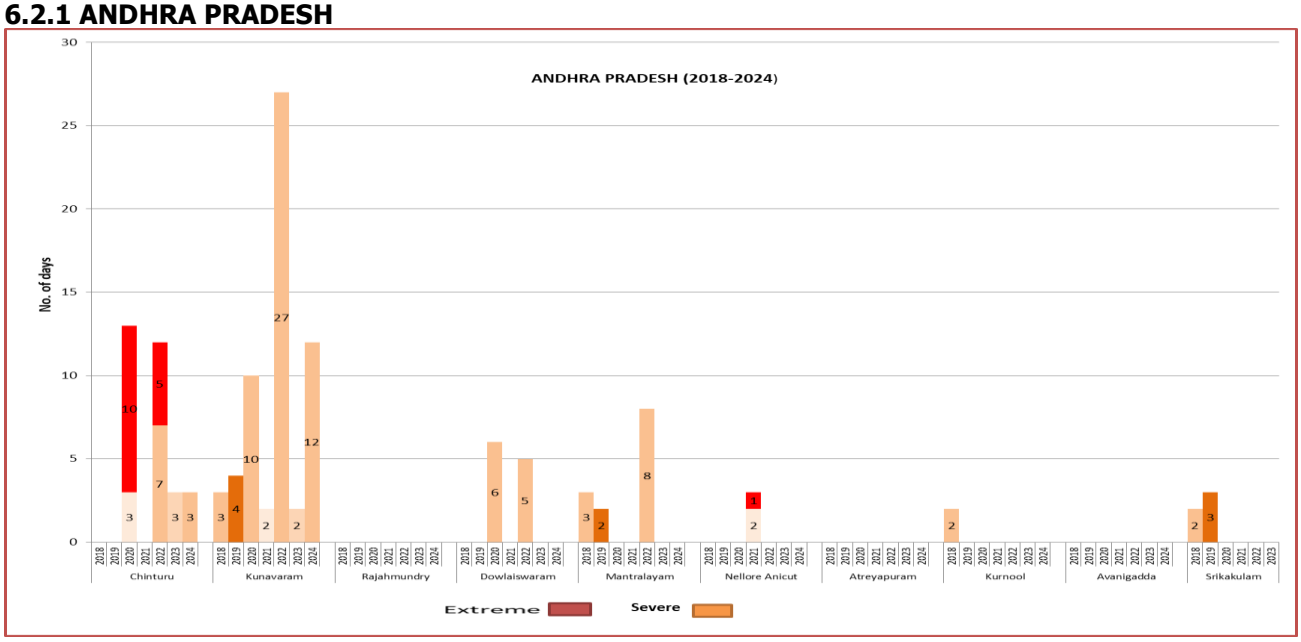
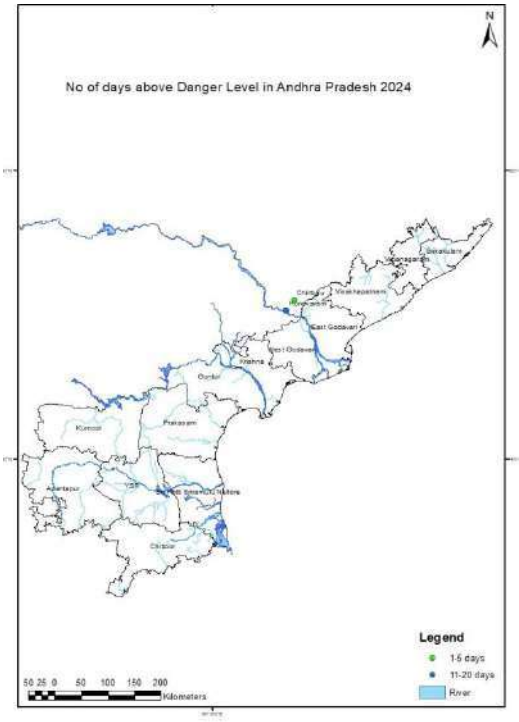


Fig 6.3

On analysis of 7 year extreme and severe situations it is observed that more no.of flood situations existed on Chinturu (on Sabari river) and Kunavaram sites over Godavari basin.

Flood situation in Andhra Pradesh during 2024 is shown in the **Map 6.1** given below.



Map 6.1

6.2.2 ARUNACHAL PRADESH

No CWC sites flowed in severe and extreme flood situations during last 5 years.

6.2.3 ASSAM

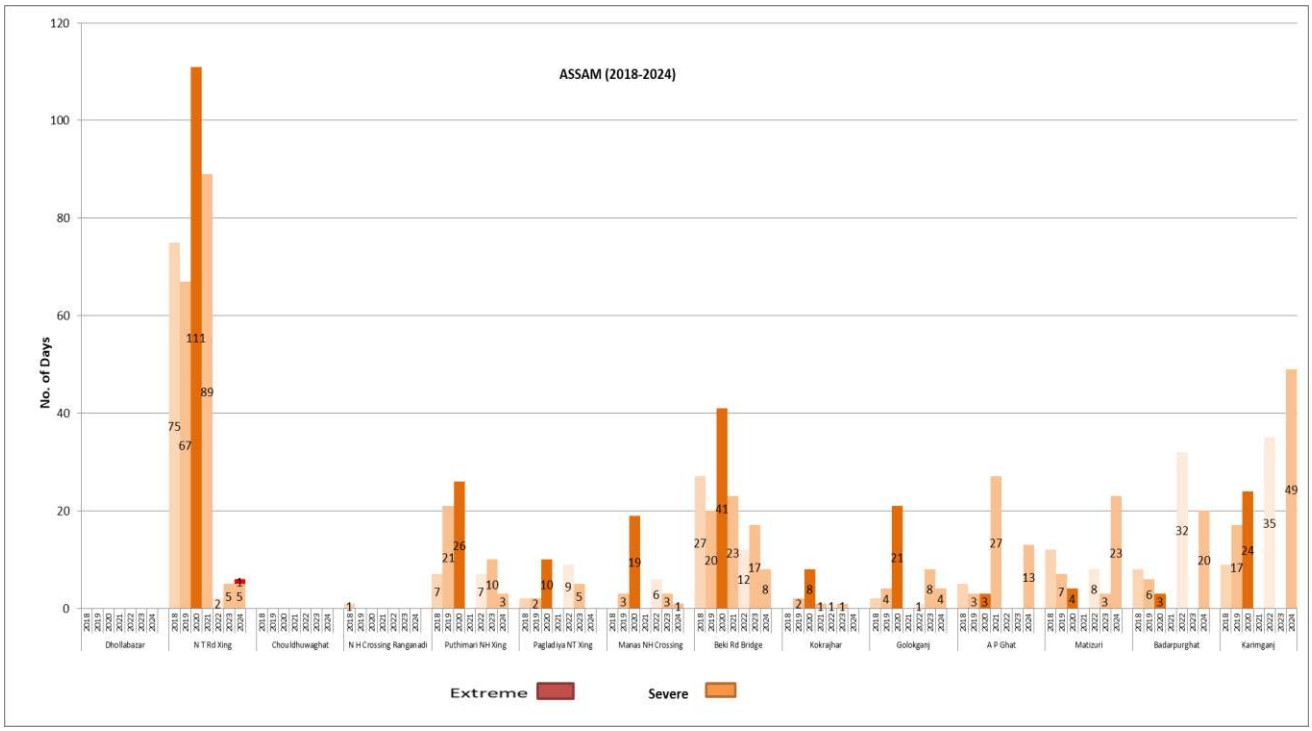


Fig 6.4(i)

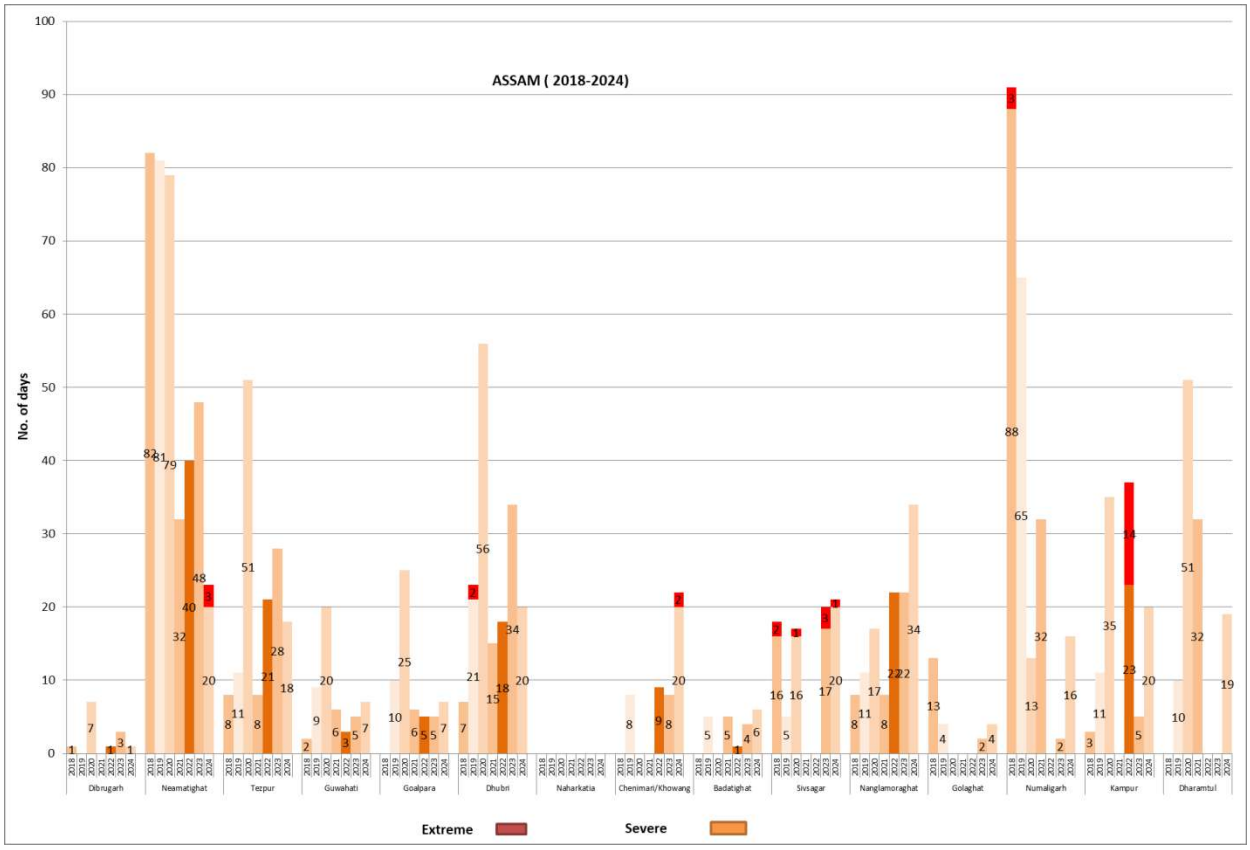
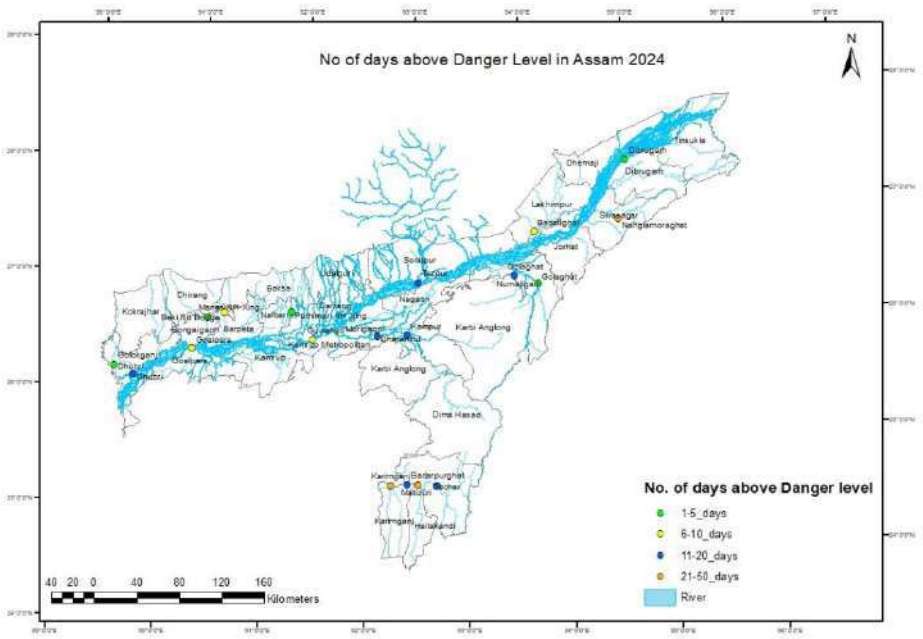


Fig 6.4(ii)

As per the plots more no.of severe and extreme flood situations occurred at sites

(1) NT Rd crossing Jiabharali over Jiabharali river, northern tributary of Brahamputra in Sonitpur district.
(2) Numaligh on Dhansiri river southern tributary of Brahamputra in Golaghat dist.
(3) Kampur and Dharamtul on Kopili river, southern tributary of Brahamputra in Nagaon and Marigaon districts respectively.
On Brahamputra main stem more no.of flood situations existed at sites Neamatighat (Jorhat dist.), Tezpur (Sonitpur dist.) and Dhubri (Dhubri dist.) in last few years.

Flood situation in Assam during 2024 is shown in the **Map 6.2** given below.



Map 6.2

6.2.4 BIHAR

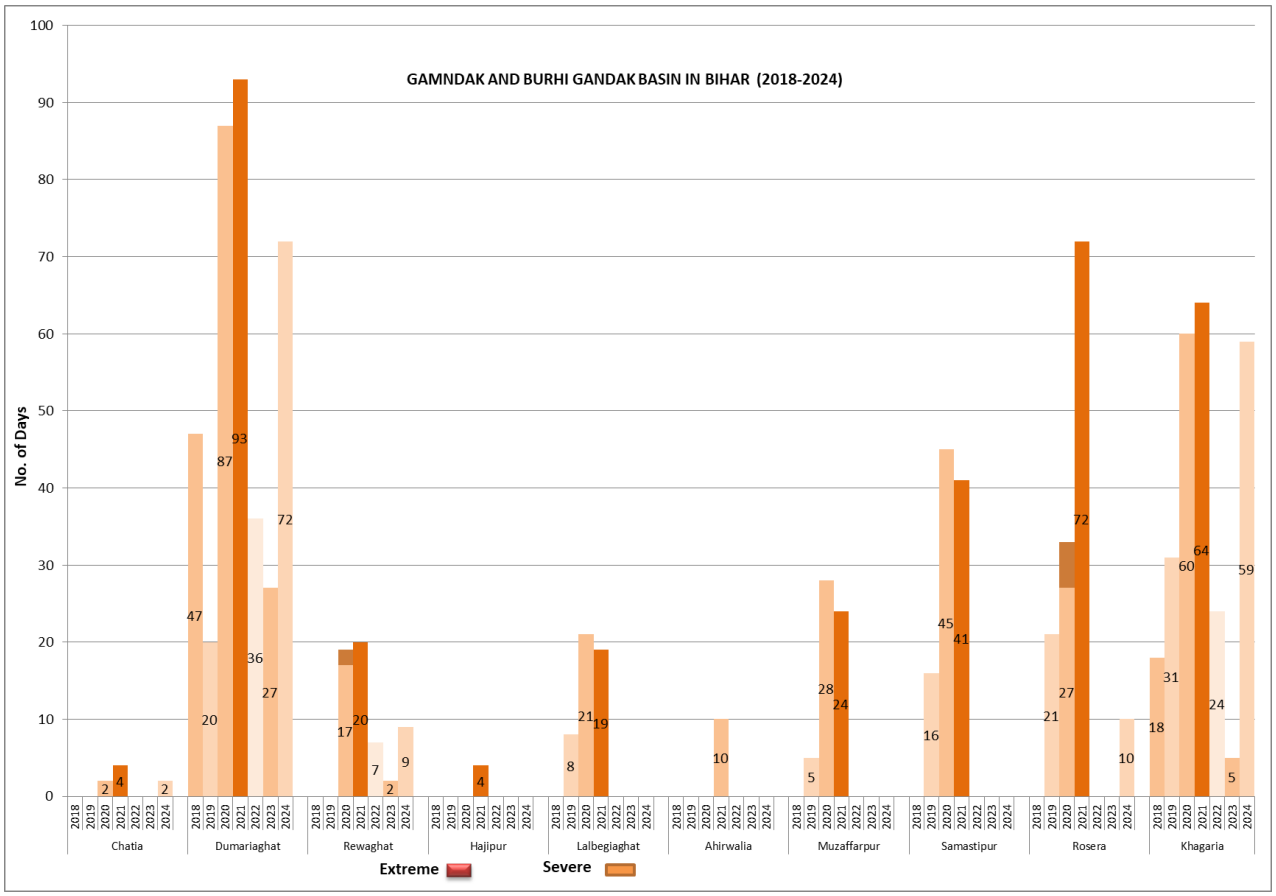


Fig 6.5(i)

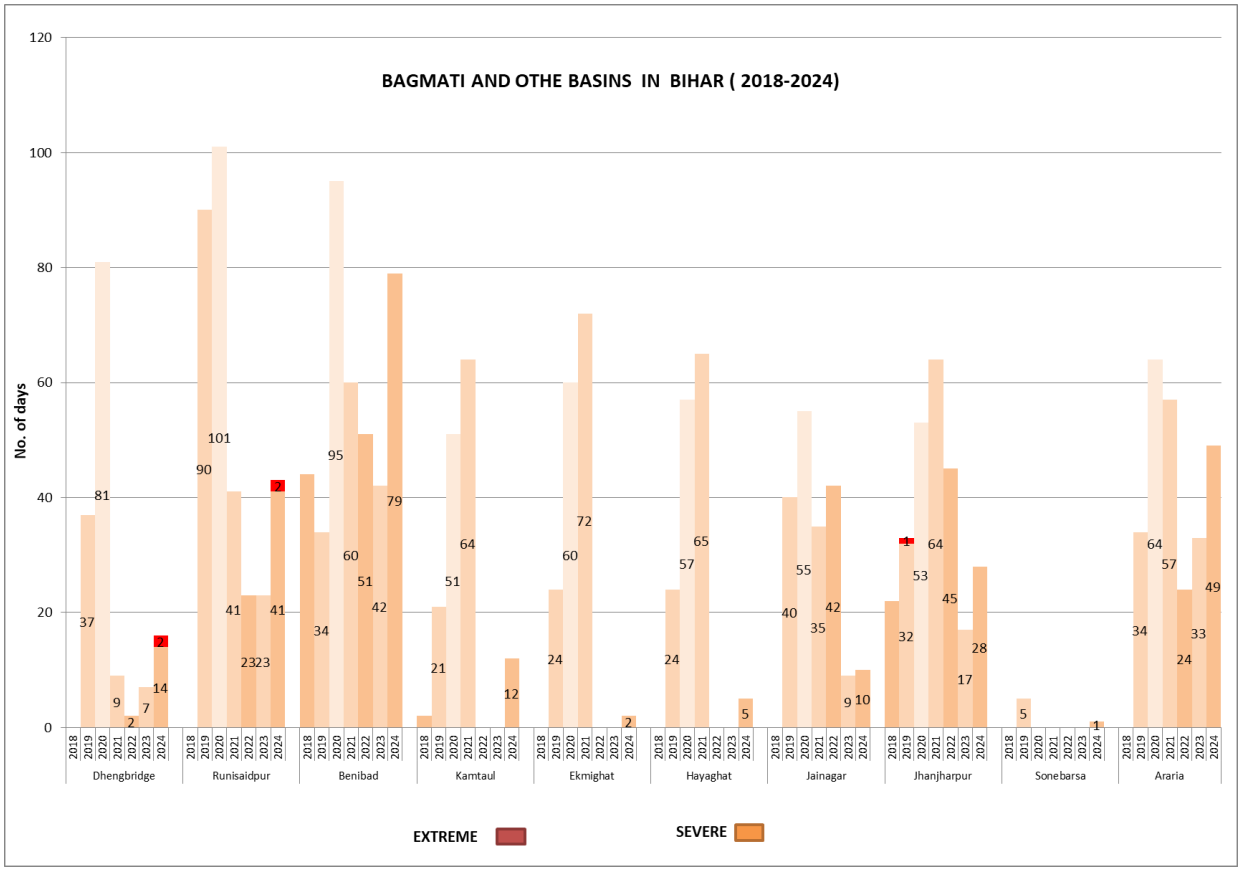


Fig 6.5(ii)

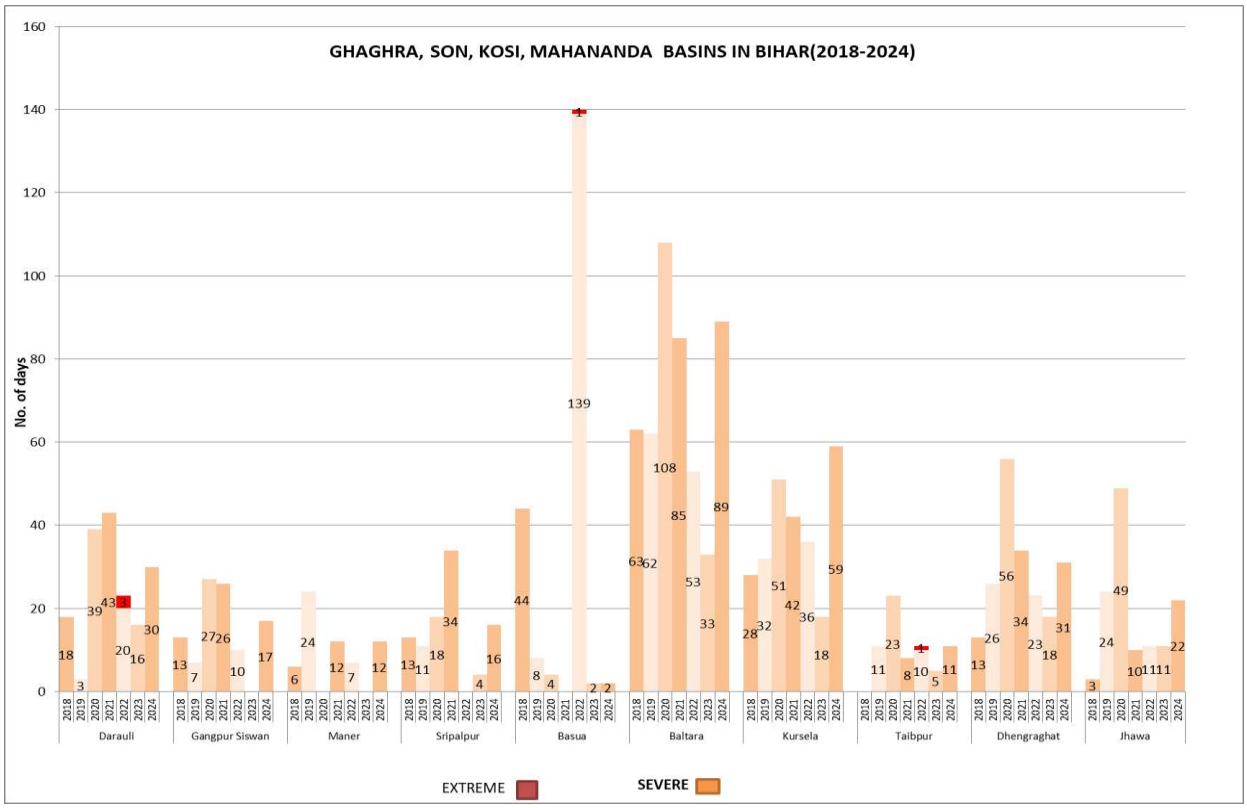


Fig 6.5(iii)

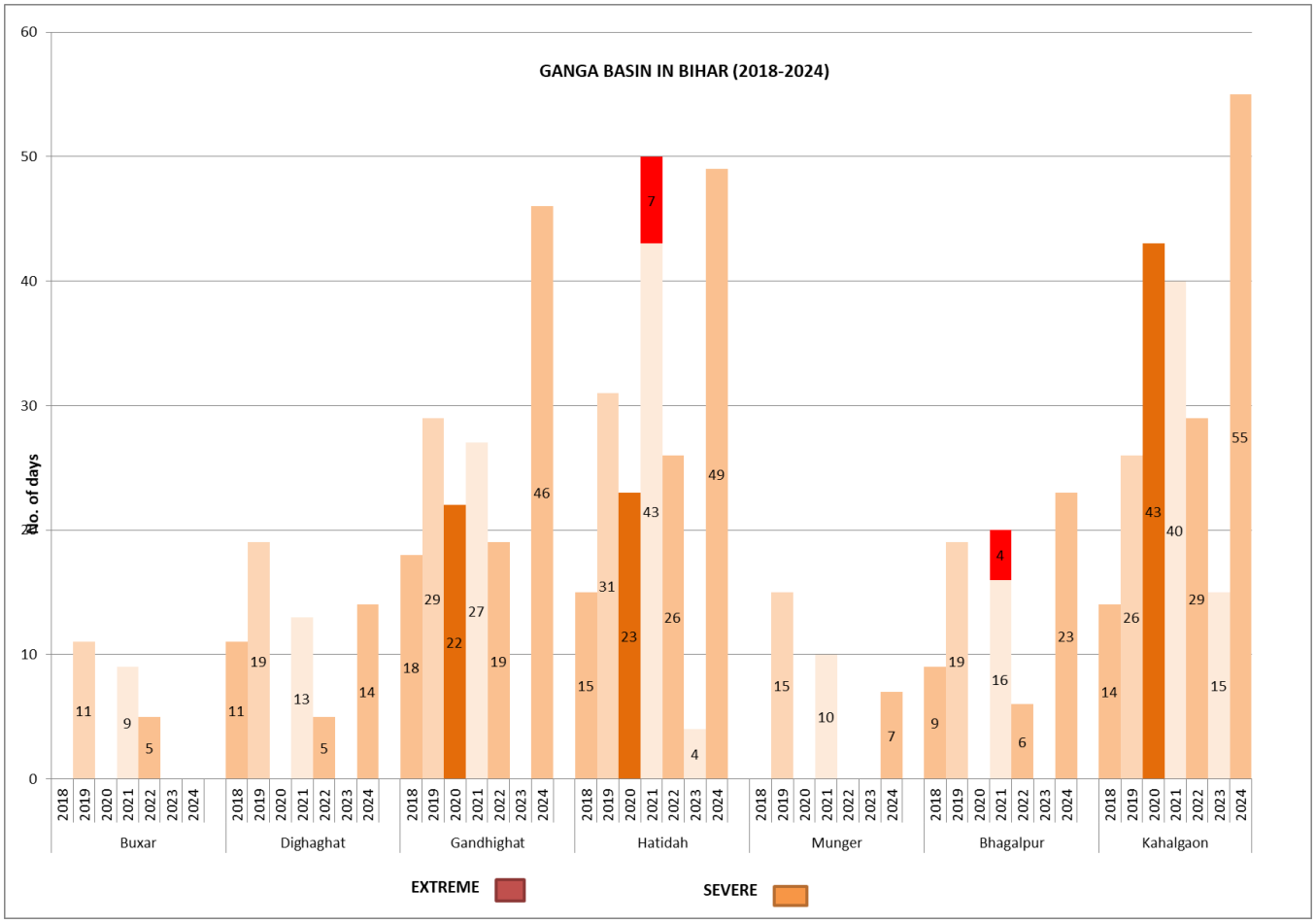
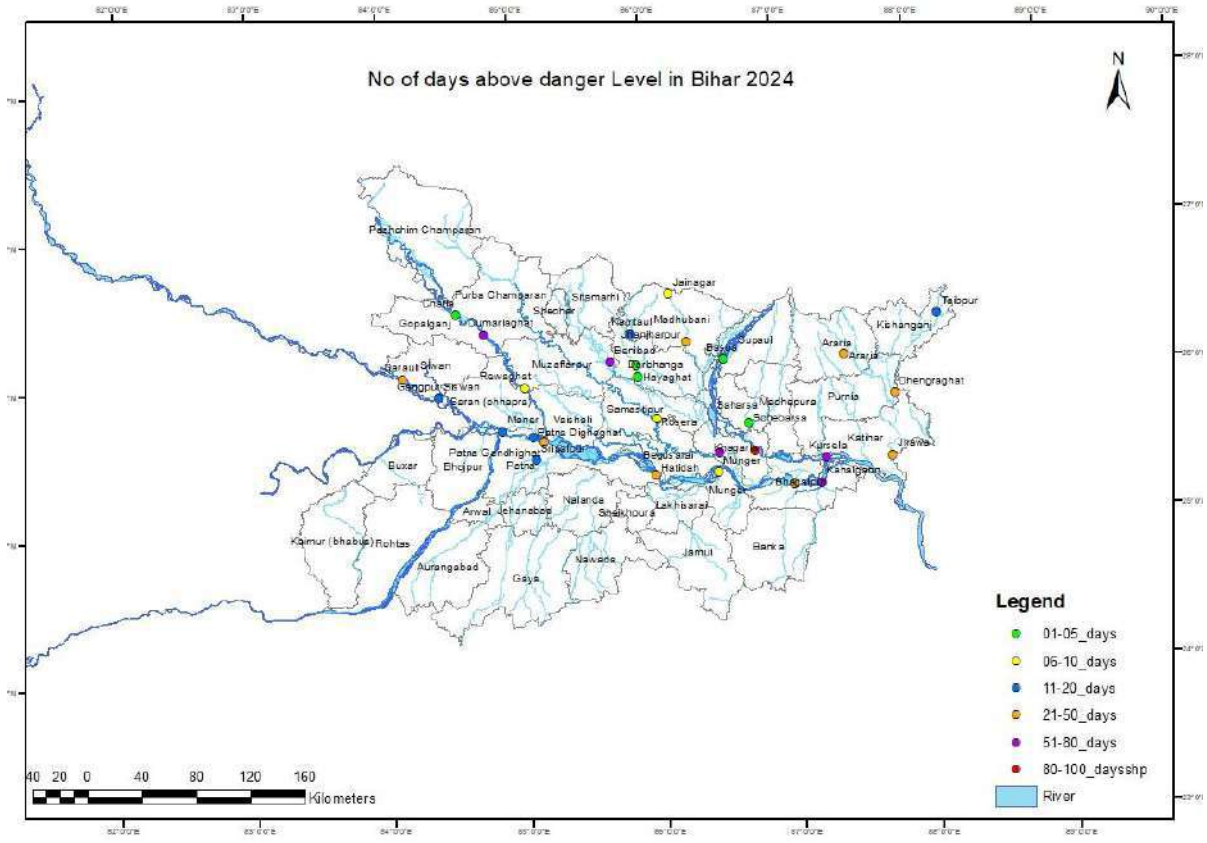


Fig 6.5(iv)

From the above given plots it is evident that more no.of flood situations occurs in northern tributaries of Ganga such as (1) Bagmati (sites Dhenbridge, Hayaghat, Runisaidpur, Benibad) in Sitamarhi, Dharbanga & Muzaffarpur districts; (2) river Adhwara (sites Sonebarsa, Kamtaul, Ekimghat) in Sitamarhi & Dharbanga districts; (3) rivers Kamala-balan (sites Jainagar & Jhanjharpur) in Madhubani district. Next frequent flooding's are found to occur in (1) main Kosi river (sites Basua & Baltara) in Supaul & Khagaria districts; (2) river Mahananda and its tributary Parman (sites Dhengraghat, Jhawa, Araria) in Purnea, Kathihar and Araria districts; (3) river Gandak (site Dumariaghat) in Gopalganj district; (4) river Burhi Gandak (sites Samastipur, Rosera, Khagaria) in Samastipur & Khagaria districts.

On main Ganga stem the state flood situations are comparatively less and more cases are found at sites Hatidah and Kahalgaon in Patna and Bhagalpur districts respectively.

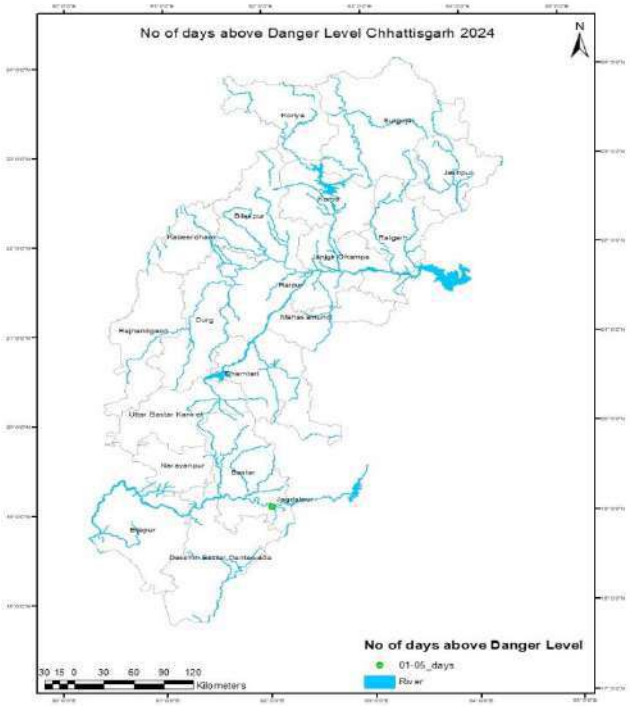
Flood situation in Bihar during 2024 is shown in the **Map 6.3** given below.



Map 6.3

6.2.5 CHHATTISGARH

CWC sites Jagdalpur on river Indravati flowed in severe flood situations for 2 days during 2024 only. No Extreme and Severe Flood witnessed during 2018-2023. Flood situation in Chhattisgarh during 2024 is shown in the **Map 6.4** given below.



Map 6.4

6.2.6 GUJARAT

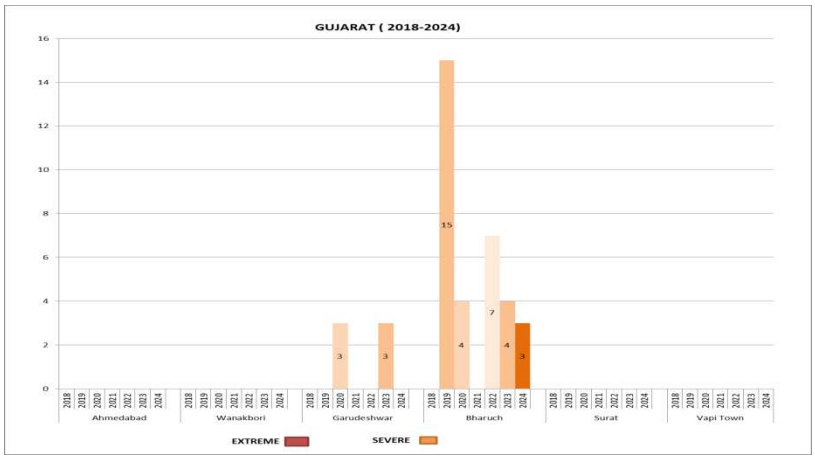
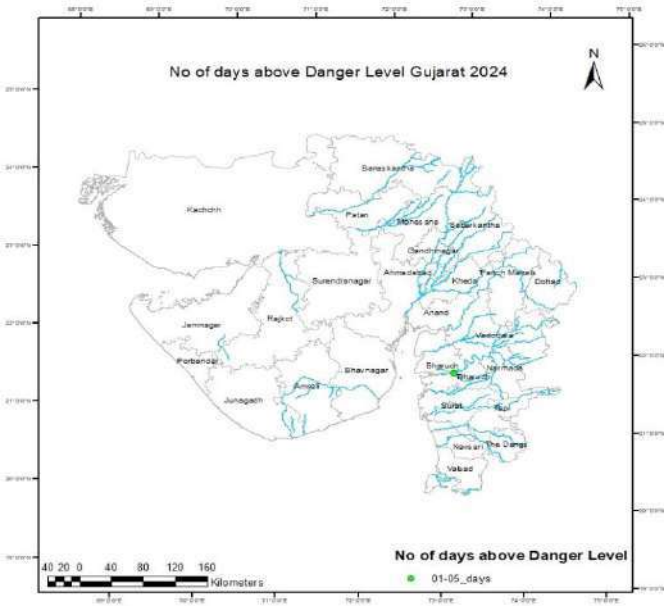


Fig 6.6

Flood situations in Gujarat are mainly confined to site Bharuch in Narmada basin situated downstream of Sardar Sarovar dam. The causative factors for floods are mainly releases from Sardar Sarovar and topography of the region.

Flood situation in Gujarat during 2024 is shown in the **Map 6.5** given below.



Map 6.5

6.2.7 JHARKHAND

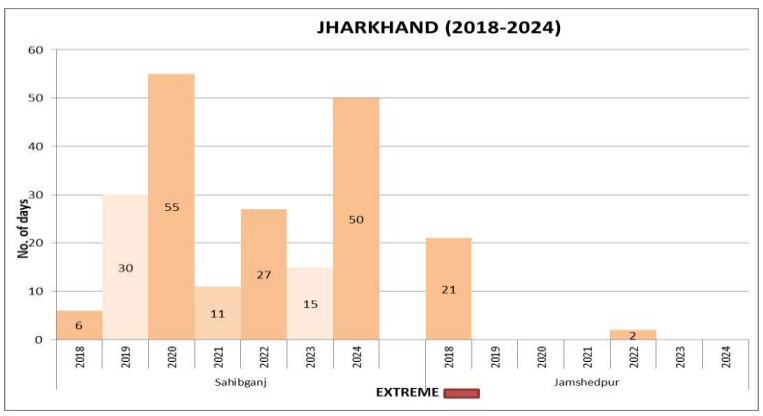
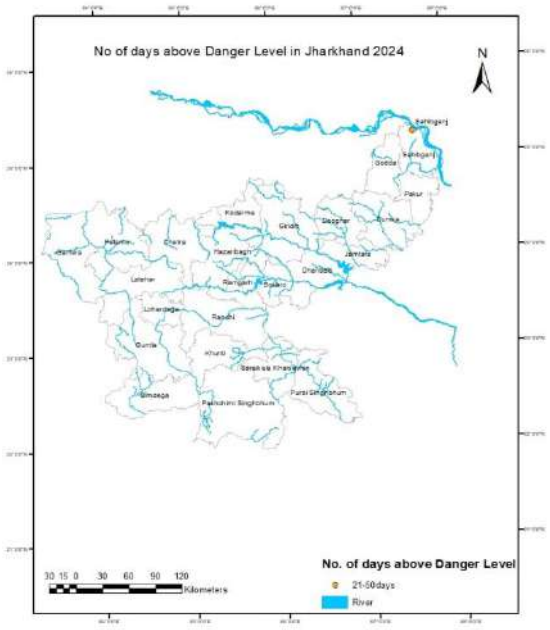


Fig 6.7

Main flood situations are reported on site Sahibganj in Sahibganj district on main Ganga. Flood situation in Jharkhand during 2024 is shown in the **Map 6.6** given below.



Map 6.6

6.2.8 KARNATAKA

Adequate flood levels forecasting sites are needed in Karnataka for depicting flood situations in Karnataka.

6.2.9 KERALA

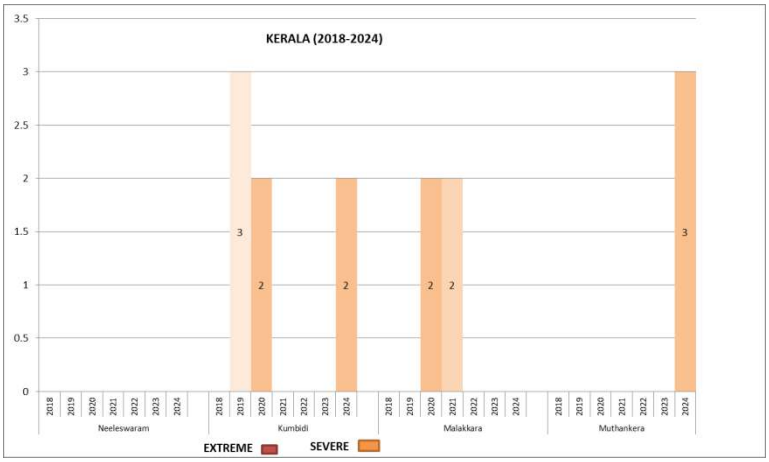
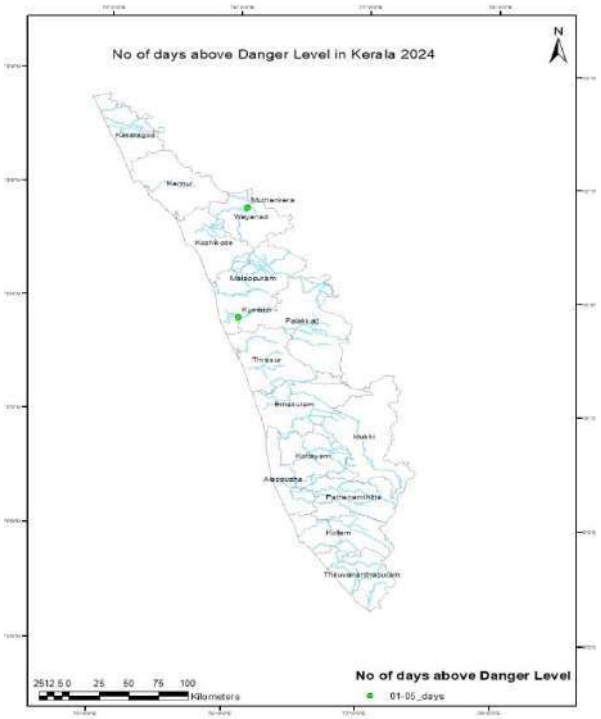


Fig 6.8

Kerala state flood forecasting sites were initialized after the devastating floods of 2018. As per observed scenario, flood situations occurred more in Kumbidi site on Bharathapuzha river and site Malakkara on Pamba river.

Flood situation in Kerala during 2024 is shown in the **Map 6.7** given below.



Map 6.7

6.2.10 MADHYA PRADESH

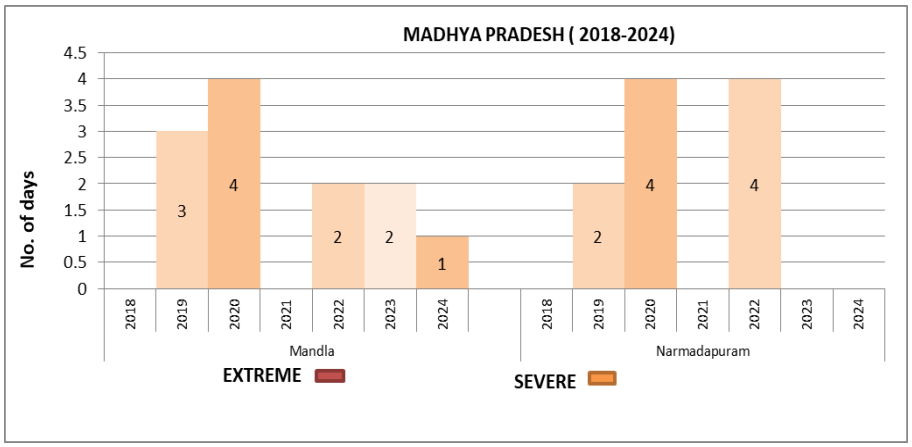
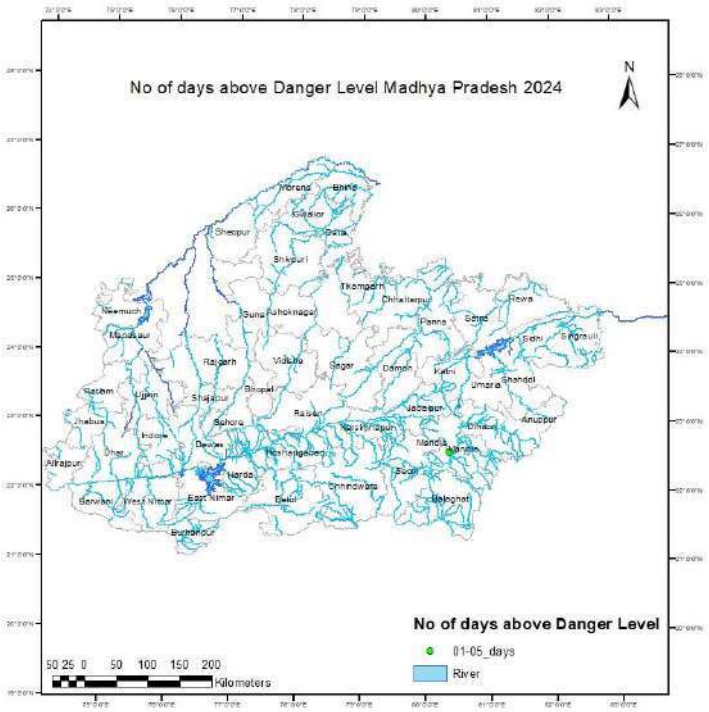


Fig 6.9

In Madhya Pradesh CWC has two level forecasting sites Mandla and Narmadapuram on main Narmada stem both the sites depicts more or less same flood situations in last few years.

Flood situation in Madhya Pradesh during 2024 is shown in the **Map 6.8** given below.



Map 6.8

6.2.11 MAHARASHTRA

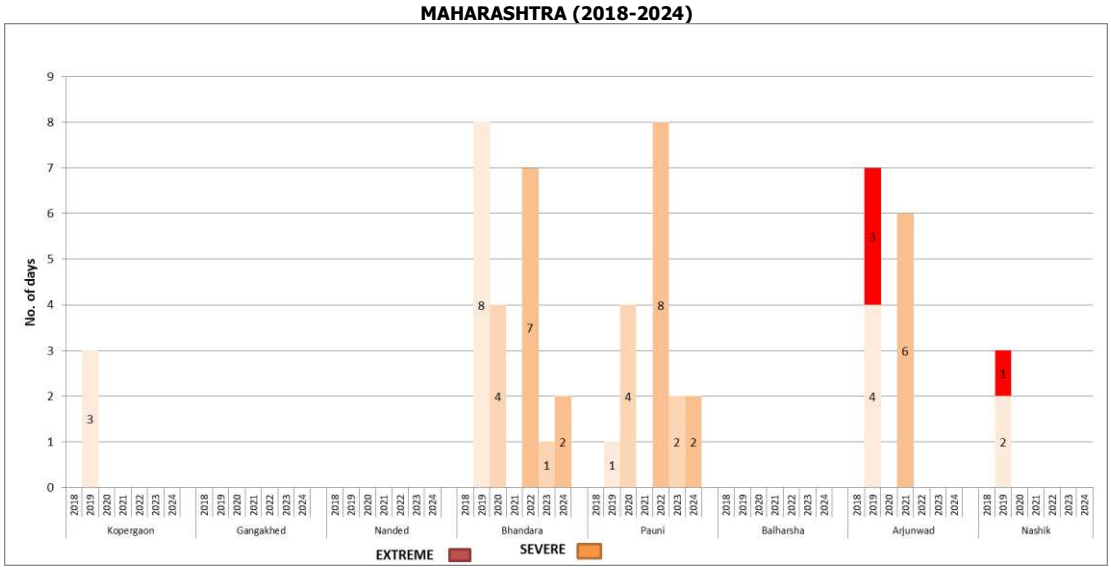
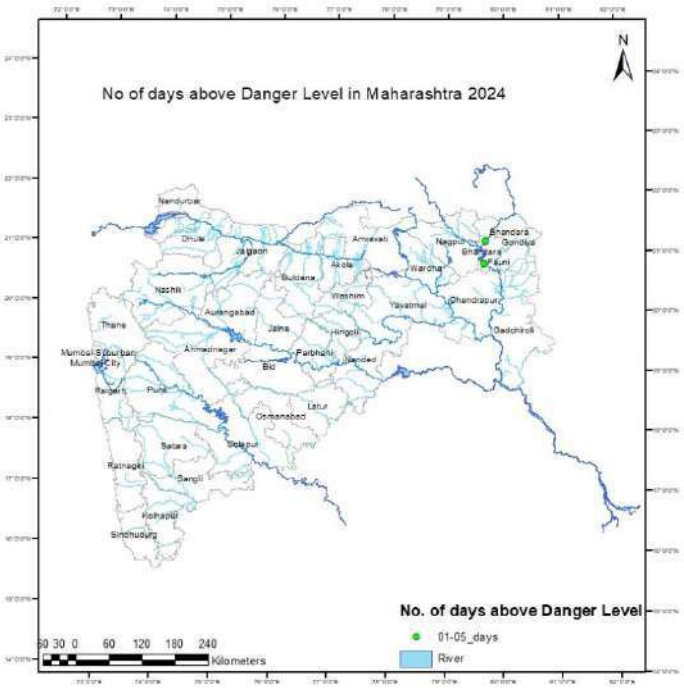


Fig 6.10

Floods situations are more frequent in Wainganga tributary of Godavari basin at sites Bhandara & Pauni in Bhandara district . In Krishna basin more flooding's occurred at Arjunwad site in Kolhapur district.

Flood situation in Maharashtra during 2024 is shown in the **Map 6.9** given below.



Map 6.9

6.2.12 ODISHA

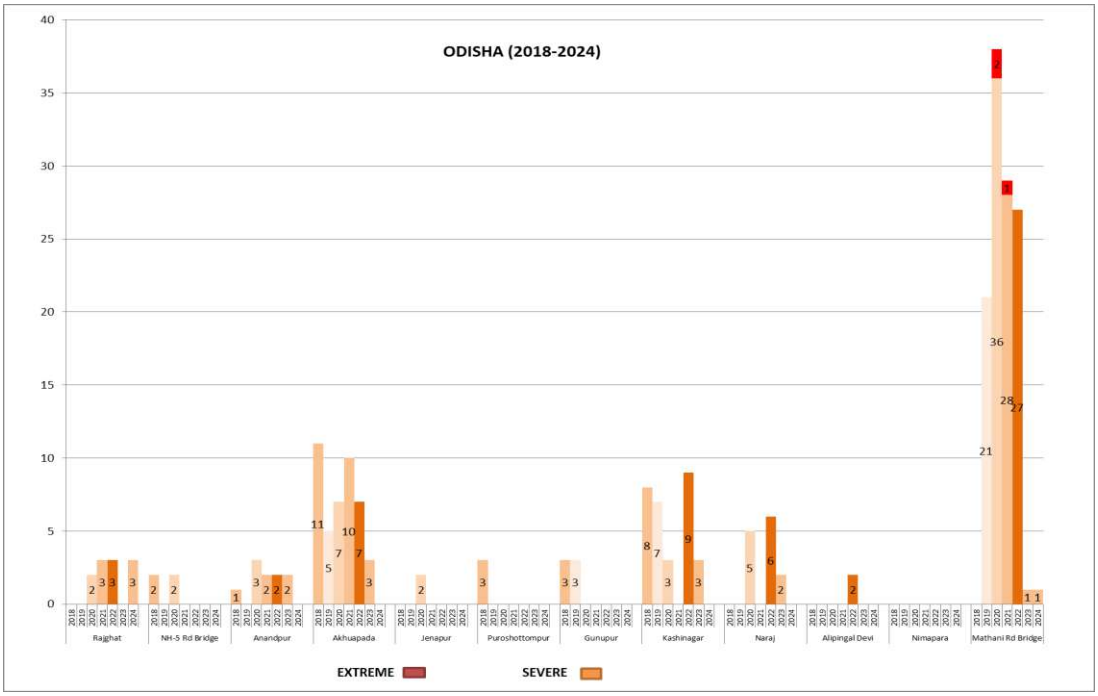
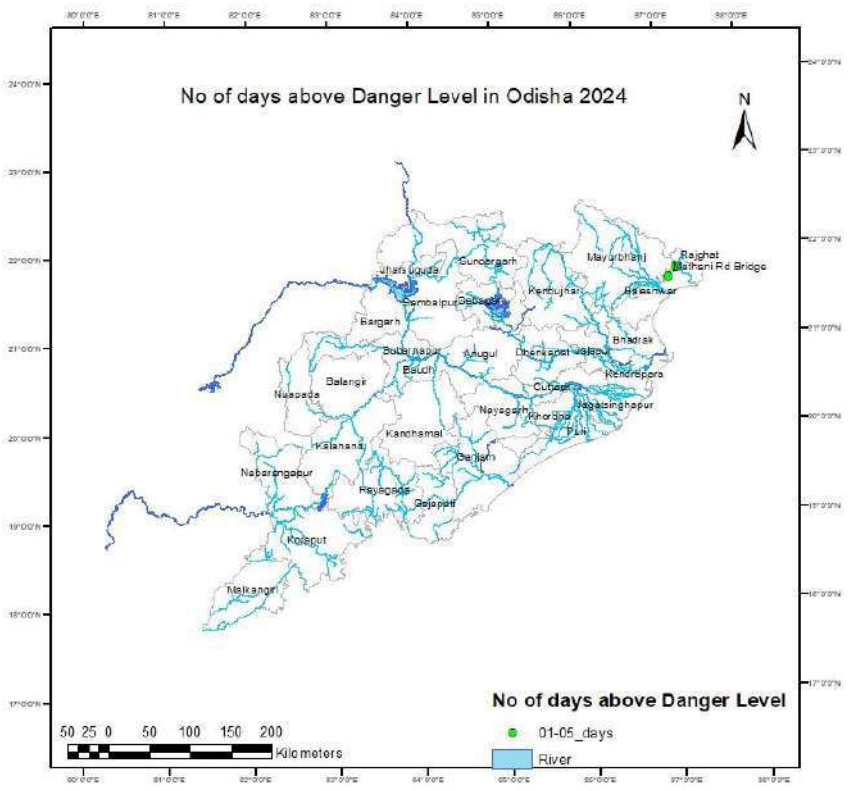


Fig 6.11

From the plots it is summarized that in Odisha most frequent flooding are reported from site Mathani Rd Bridge on Jalka river of Subarnarekha basin in Baleshwar district. Comparatively more cases also occur at sites Akhuapada (Bhadrak dist.) and Kashinagar (Gajapati dist.) in Baitarni and Vamsadhara rivers respectively.

Flood situation in Odisha during 2024 is shown in the **Map 6.10** given below.



Map 6.10

6.2.13 RAJASTHAN

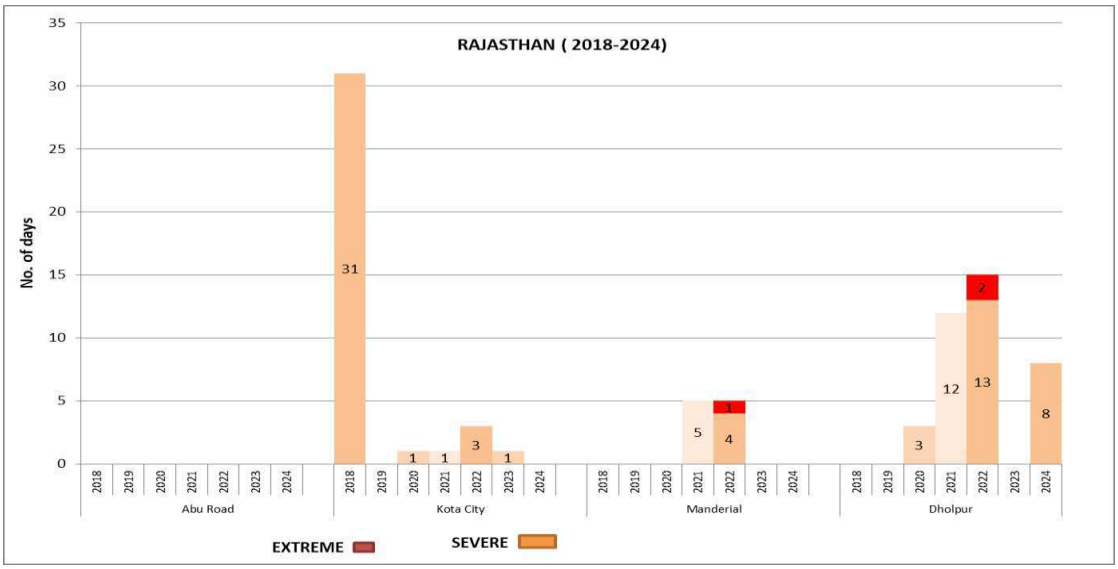
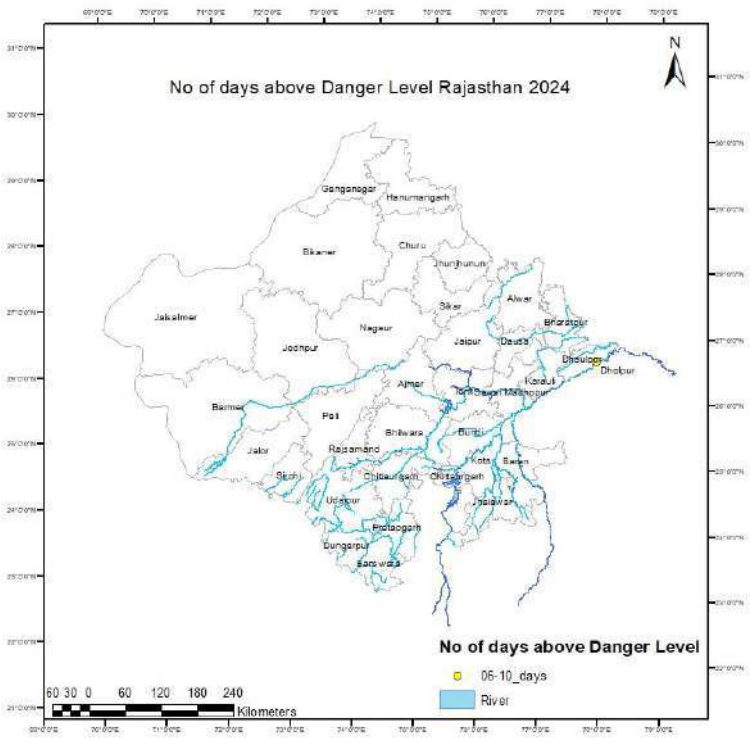


Fig 6.12

More frequent floods are found to occur on Chambal river at site Kota city (Kota district) and at Dholpur (Dholpur dist.). Manderial (Karauli dist.) site situated on Chambal River was initiated in 2021.

Flood situation in Rajasthan during 2024 is shown in the **Map 6.11** given below.

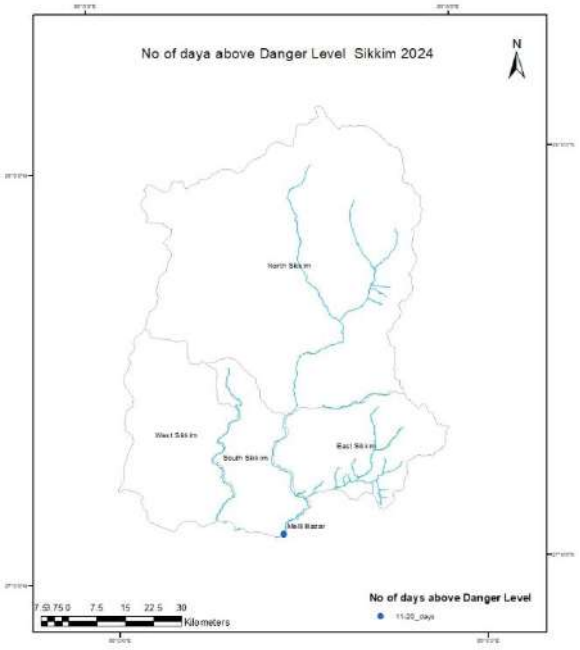


Map 6.11

6.2.14 SIKKIM

No significant flood occurred in Sikkim for the period from 2018 to 2022. During 2023 monsoon, on 4 October 2023, due to heavy rains a Glacial Lake Outburst Flood (GLOF) occurred due to the breach of 'South Lhonak Lake' in the far north-western part of state of Sikkim and caused a devastating flood in river Teesta. The Forecasting site Melli flowed above Danger Level for 12 days during 2024.

Flood situation in Sikkim during 2024 is shown in the **Map 6.12** given below.



Map 6.12

6.2.15 TAMILNADU

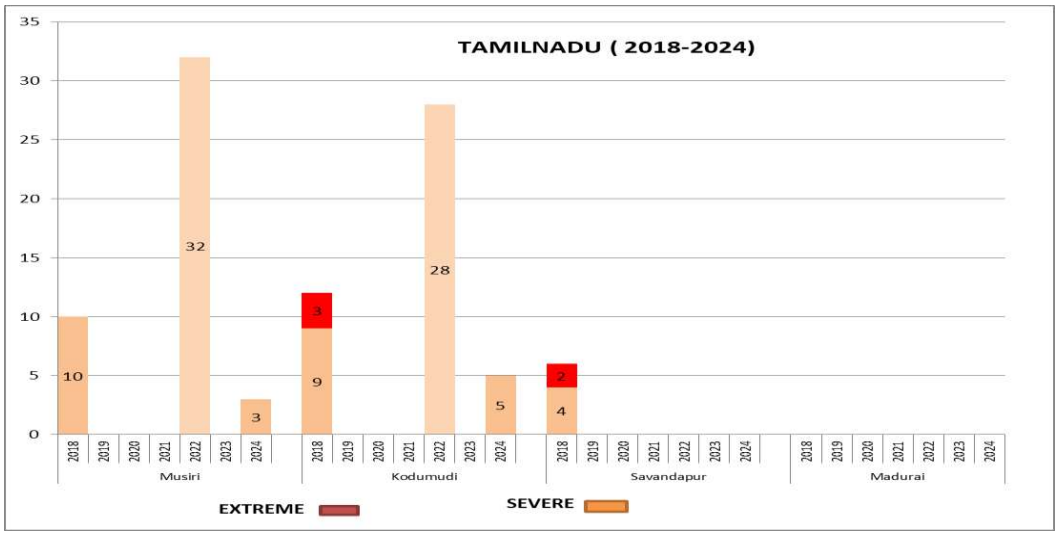
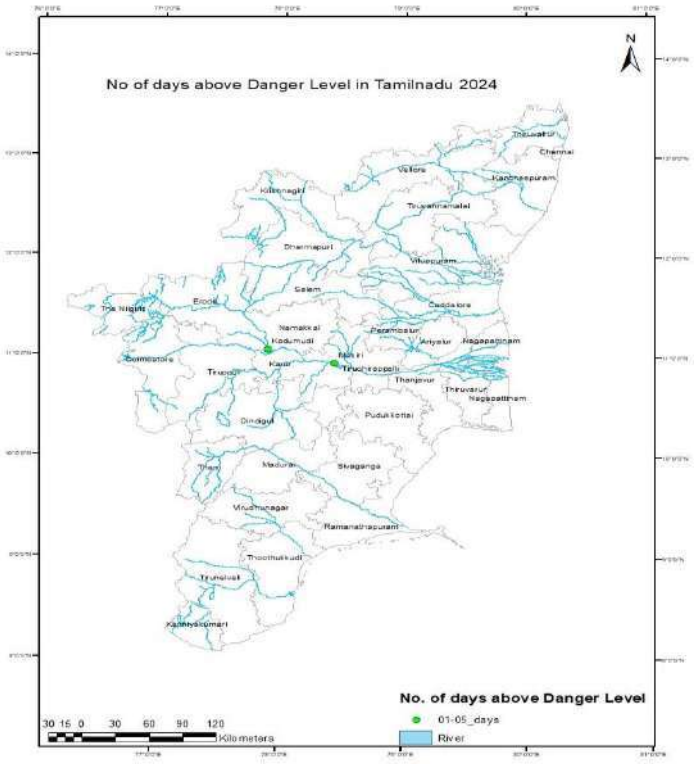


Fig 6.13

Figure reveals that more flood situations occur at two successive sites located on Cauvery river, Kodumudi (Erode dist.) and Musiri (Thiruchirapally dist.).

Flood situation in Tamilnadu during 2024 is shown in the **Map 6.13** given below.



Map 6.13

6.2.16 TELANGANA

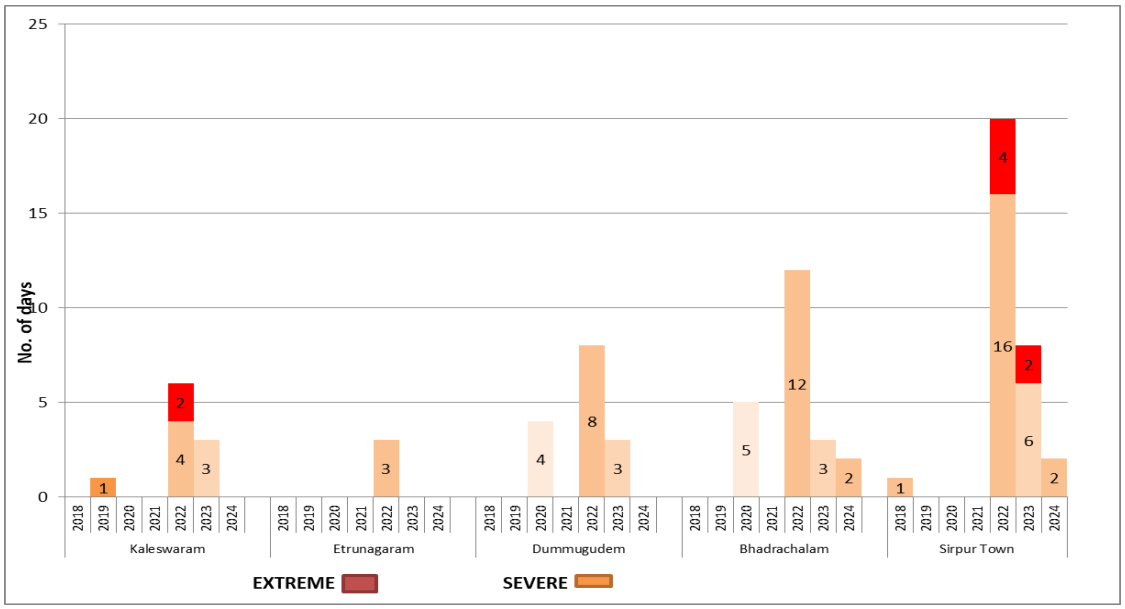
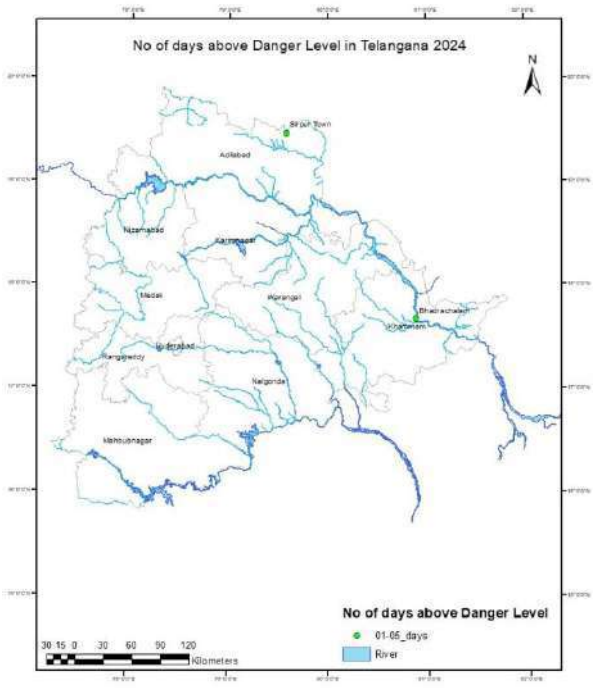


Fig 6.14

Figure shows that floods in Godavari are more frequent than in Krishna. Most flood situations occur on Wardha river (Godavari basin) at site Sirpur Town in Kumaram Bheem district. Flooding is also more in successive sites in Godavari main stem such as Dummagudem and Bhadrachalam both located in Bhadradri district.

Flood situation in Telangana during 2024 is shown in the **Map 6.14** given below.



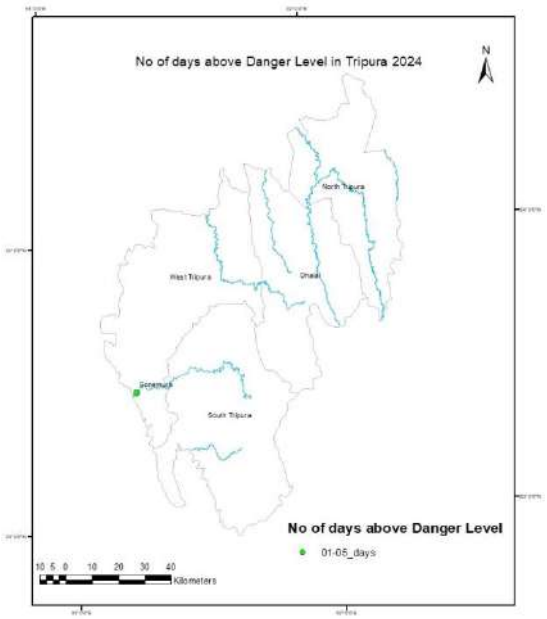
Map 6.14

6.2.17 TRIPURA

No significant flood occurred in Tripura during 2018-2023. During 2024 in the month of August Tripura has experienced a heavy rainfall due to a Low Pressure Area over South Bangladesh and neighborhood resulting in rising river water levels. 1 flood forecasting station Sonamura on the river

Gumti flowed in Severe Flood for 4 days.

Flood situation in Tripura during 2024 is shown in the **Map 6.15** is given below.



Map 6.15

6.2.18 UTTAR PRADESH

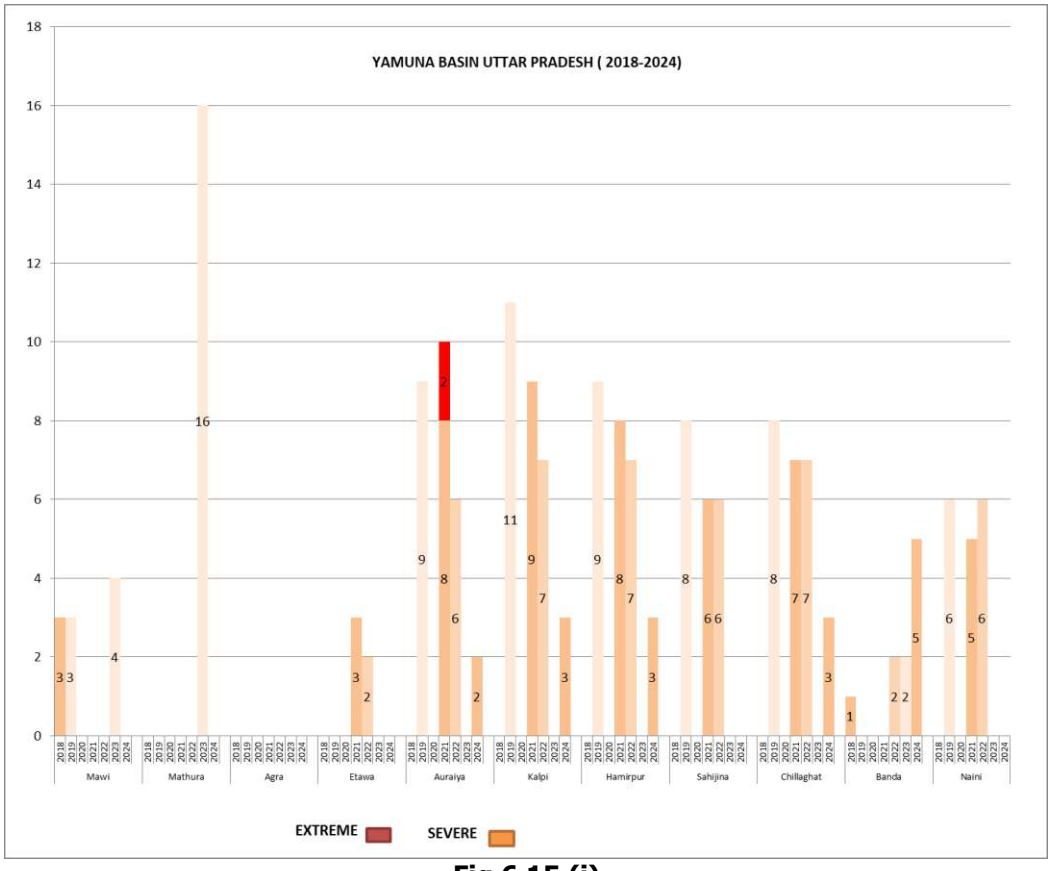


Fig 6.15 (i)

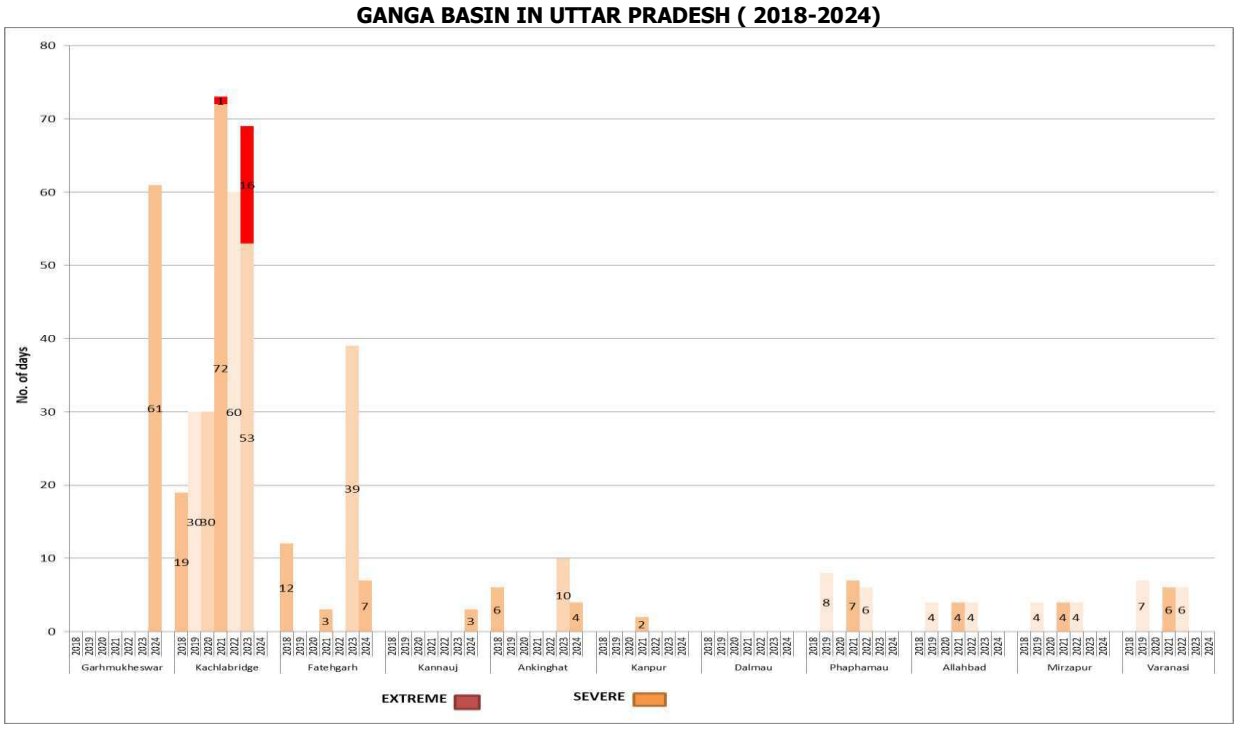


Fig 6.15 (ii)

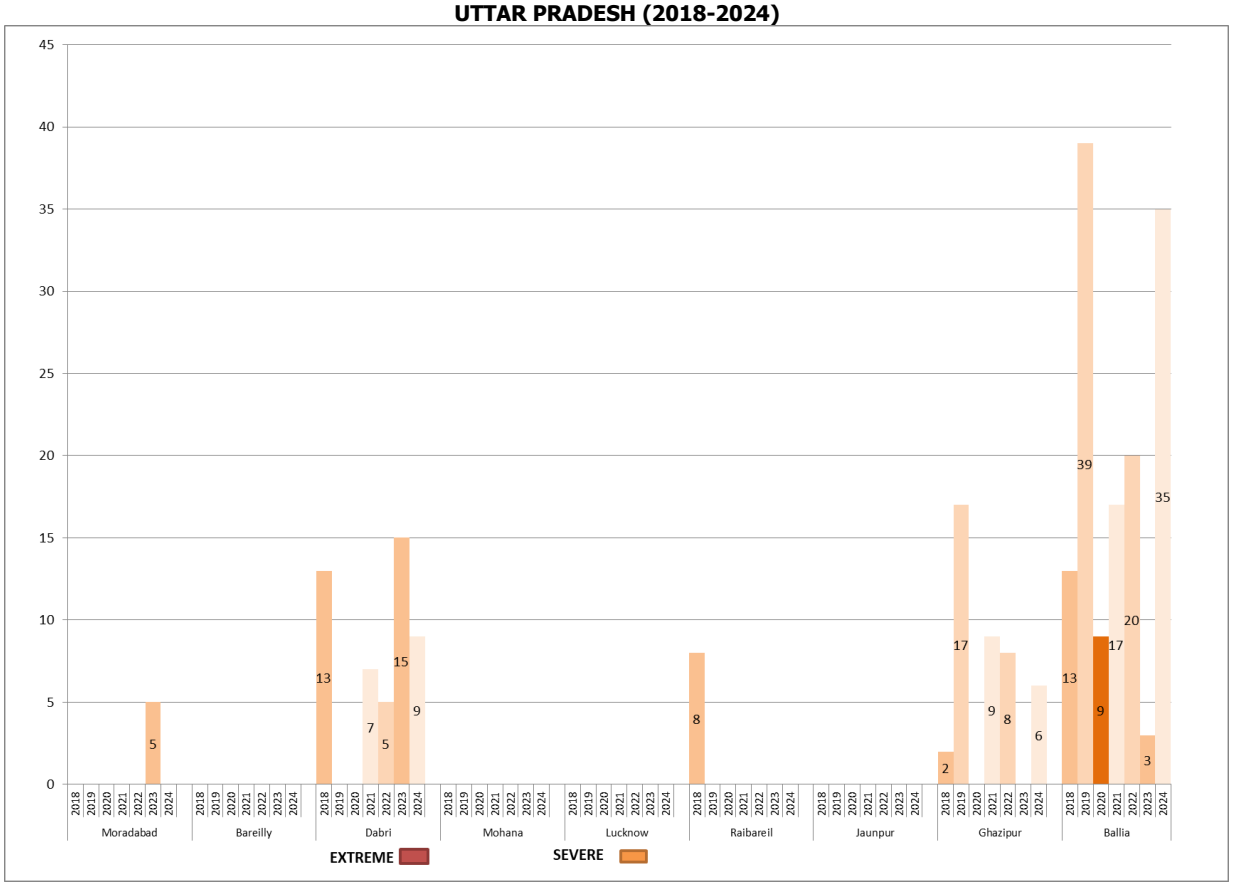


Fig 6.15 (iii)

UTTAR PRADESH (2018-2024)

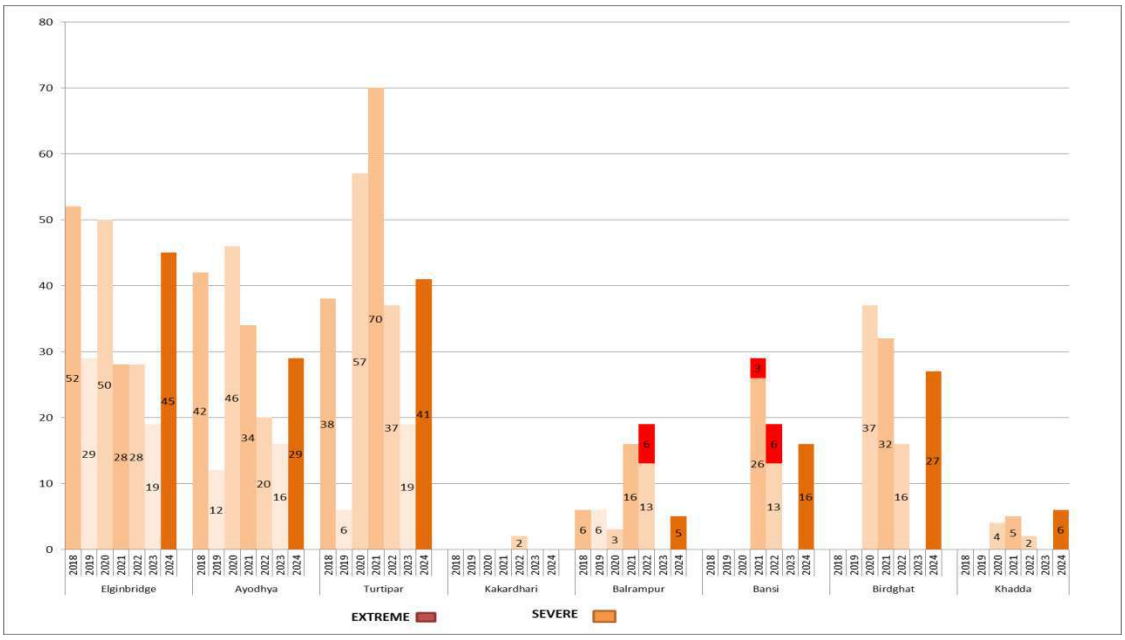
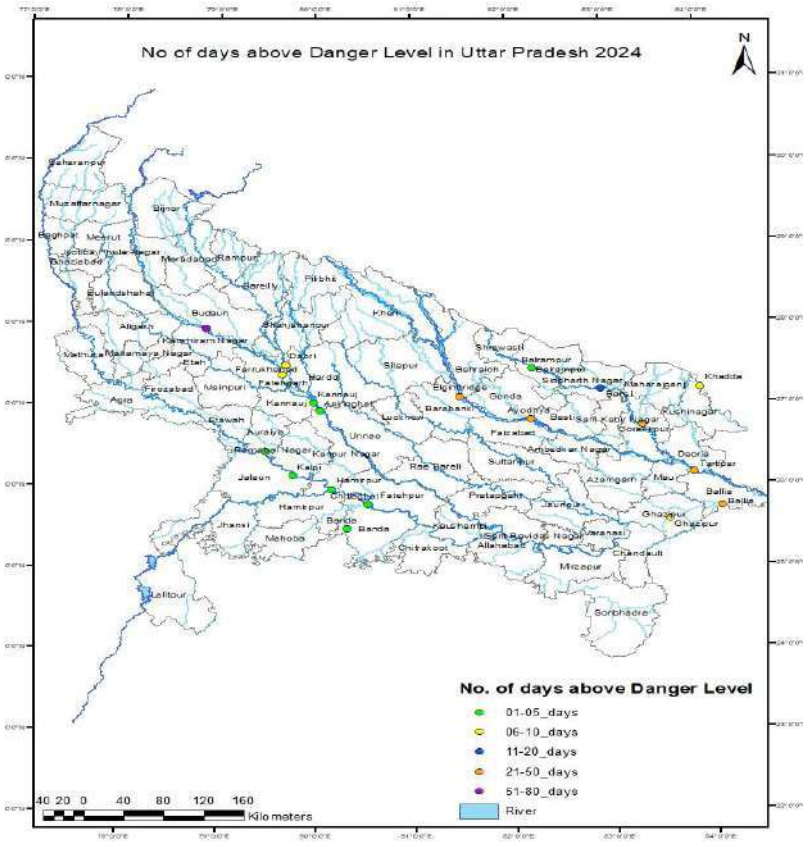


Fig 6.15 (iv)

Analysis show that more flooding happens in Ghagra river at sites Elginbridge (Barabanki dist.), Ayodhya (Ayodhya dist.) & Turtipar (Ballia dist.). In main Ganga stem, more flood situations are reported from sites Kachlabridge (Budaun dist.) & Ballia (Ballia dist.)

Flood situation in Uttar Pradesh during 2024 is shown in the **Map 6.16** given below.



Map 6.16

6.2.19 UTTARAKHAND

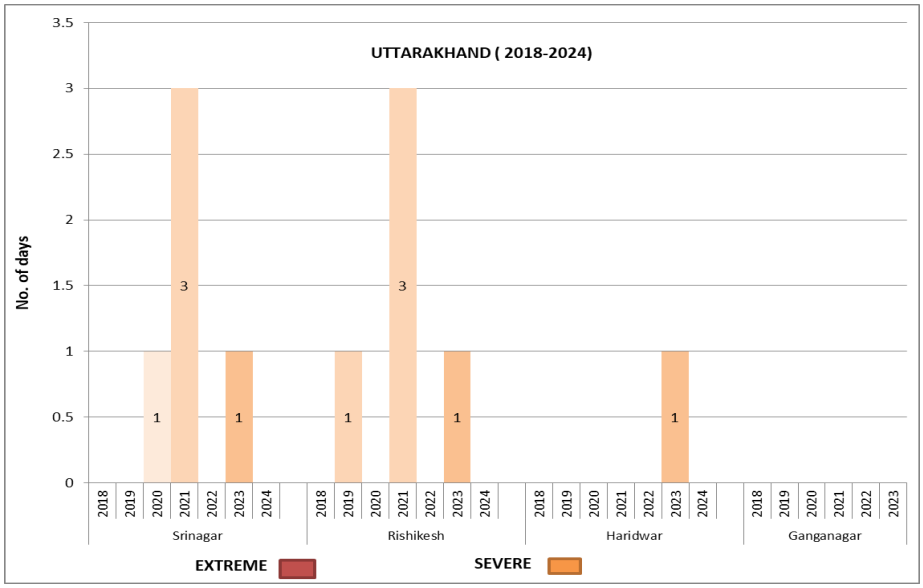


Fig 6.16

As per the analysis more no.of flood situations occur in upper Ganga and its tributary Alaknanda. Site Srinager on Alaknanda river (Pauri Garhwal dist.); Rishikesh (Dehradun dist.) and Haridwar (Haridwar dist.) on Upper Ganga are located sequentially in the basin and hence propagation of flood is clearly visible.

No Flood Forecasting station flowed in severe flood in Uttarakhand during 2024.

6.2.20 WEST BENGAL

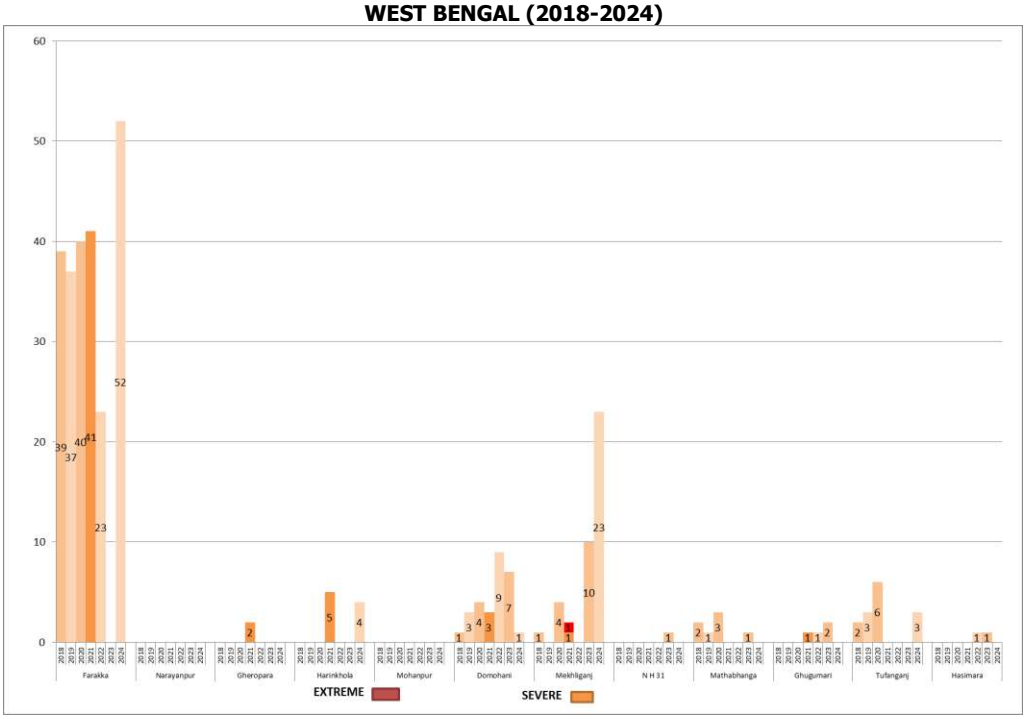
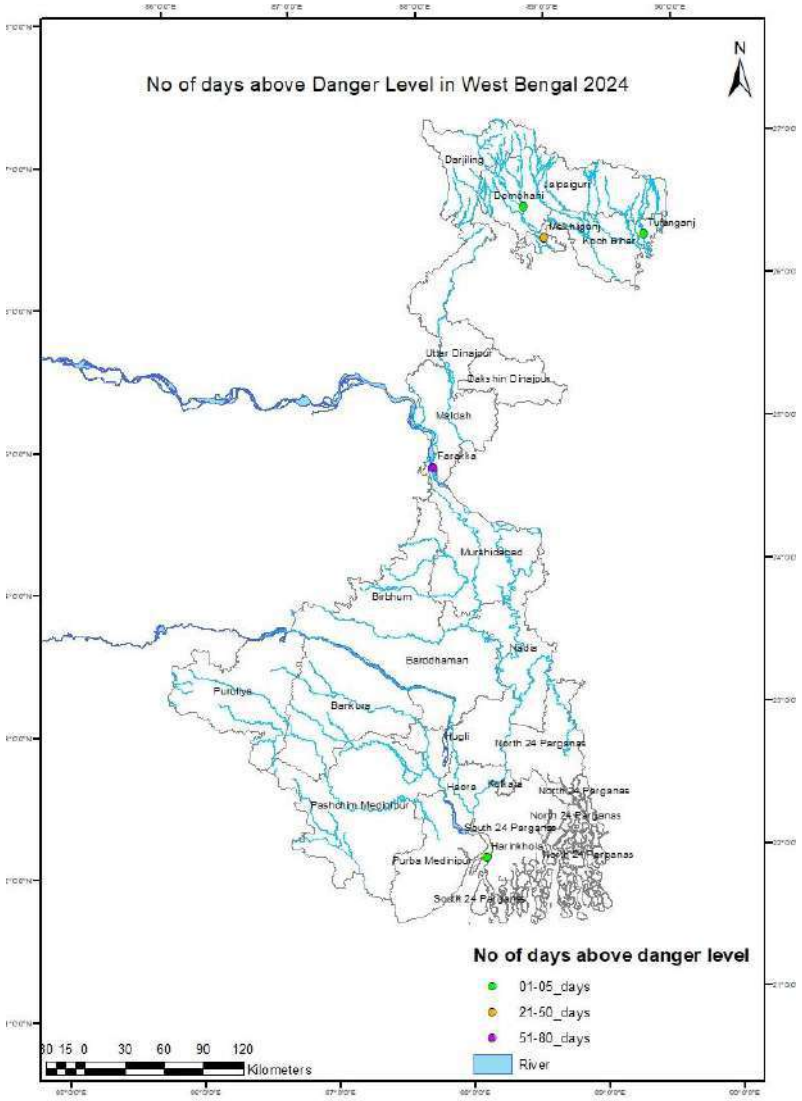


Fig 6.17

In West Bengal flooding is mainly confined to the tale end FF site Farkka (Murshidabad dist.)on river Ganga before the river enters Bangladesh.

Flood situation in West Bengal during 2024 is shown in the **Map 6.17** given below.



Map 6.17

6.2.21 NCT Delhi

No flood occurred in NCT Delhi for the period from 2018 to 2022. During monsoon season 2023 very heavy rainfall occurred in Himalayan region upstream of Hathnikund Barrage. The high discharge passed from Hathnikund Barrage created Flood situation in the downstream region of the Barrage in the river Yamuna. The site Delhi Railway Bridge was above Danger level for 23 days.

No Flood Forecasting station flowed in severe flood in NCT Delhi during 2024.

On viewing all the plots of various states in India it is summarized that

- Flood situation for more no.of days occured in Bihar, Uttar Pradesh and Assam.
- CWC flood level forecasting network is less representative of the flood situation in Peninsular India as the network is not wide compared to northern and eastern India. For that CWC is in a process of widening its network in the country.
- Analysis throws light to more frequent flooding rivers in various states but needs more critical analysis to conclude and comment on flooding pattern in the country.

CHAPTER - 7

RESPONSE FROM USER AGENCIES

7.1 GENERAL

Central Water Commission performs the Flood Forecasting and Warning job on flood prone interstate river basins in the country. It issues the forecast to the users such as various civil and engineering departments of the state and central governments including, railway, defense, revenues authorities, public sector undertakings besides National Disaster Management Cell in the Ministry of Home Affairs, who are responsible for taking timely flood fighting measures, rescue operations including shifting of flood affected people to safer places etc.

Though the various state government agencies in-charge of the flood management and relief operations generally do not give their views in writing on usefulness of the flood forecasting activities of CWC, yet some of them do write to the Central Water Commission conveying their views on the usefulness of the flood forecasts received by them.

7.2 APPRECIATION LETTERS RECEIVED DURING FLOOD SEASON 2024

Abstract of some of the messages received by our field unit during the flood season 2024 are given below:

7.2.1 Office of the Assistant Secretary, Tungabhadra Board, Tungabhadra Dam, Karnataka. (lr.No1818/SO(V)/2024-25 dt. 27.02.2025)

The Inflow Forecasts received from CWC during 2024 Flood season are very useful as inflow forecasts received are fairly accurate with the actual inflows at TB Dam. It is requested to continue issue inflow forecasts upto 30th November instead of stopping by 31st October

7.2.2 Office of the Superintending Engineer, Irrigation Circle, Kurnool, WRD Dept. Govt of Andhra Pradesh (Lr No. SE/IC/KNL/CWC Flood Forecast 2024-25/827M dated 13.12.2024).

The utility of forecast bulletins of Mantralayam CWC, is much benefitted to Water Resources Department in advance preparation of water control and water management and in depletion of water from Reservoirs early so that, the inflow water can be accommodated in the reservoirs/barrage. The forecast bulletin of Mantralayam helped a lot in gate operation of Sunkesula Barrage.

7.2.3 Office of the Engineer –in –Chief, Water Resoursces, Odisha, Bhubaneshwar. (No. CE, HH,GIS & CEM-FFFM-138/2024-34144 dated 21.11.2024).

The Flood Forecasts issued by CWC has been extremely useful for making decision regarding reservoir operation & effective Flood Management during monsoon 2024.

7.2.4 Office of the Chief Engineer, HPC & Hydel Projects, APGENCO, Vijayawada

(Lr No. CE(HPC& HP)/DEE(T)/F.Extt/D.No. 1392 dt. 10.12.2024)

The Service rendered by the Central Water Commission with regard to the Krishna Basin Flood Forecasting during monsoon 2024 is extraordinary and exemplary. The timely

forecast issued by the commission was very much useful in planning the remedial measures and generation through the units. The service was very commendable and appreciable for which APGENCO is always thankful.

7.2.5 Office of the Assistant Executive Engineer, Krishna Bhagya Jala Nigam Ltd. Vijaypura, Karnataka (Lr No. KBJNL/DSD-2/ PB-I/CWC Flood Feedback/2024-25 dt. 17.01.2025)

The Inflow Forecast received at Almatti Dam from CWC during monsoon 2024 are very much useful and is fairly accurate with respect to actual inflow.

Further it is requested to issue inflow forecast in future also for smooth flood regulation at Almatti Dam.

7.2.6 Office of the Assistant Engineer, WRD Department, Dam Section, Bhavanisagar, Tamilnadu (Lr No. F.9/Dam Section/2025 dt. 14.02.2025)

During the monsoon season 2024-25, the discharge and Warning data provided for Bhavanisagar Dam & Bhavani Basin was very useful for advance preparation in view of managing the flood effectively. The forecast data provided by CWC was found similar to the record. Therefore we look forward to receive data in future.

7.2.7 Office of the Executive Engineer, WRD Department, Mettur Dam Division, Tamilnadu (Lr No. DBvol-I/F-214/2025 dt. 28.01.2025)

During the monsoon season 2024-25, the Inflow Forecast data provided for Mettur Dam was a valuable tool for advance preparation in view of decision making managing the water effectively. The forecast data provided by CWC was found similar to the record. Therefore we look forward to receive data in future.

7.2.8 Office of the Assistant Engineer, WRD Department, Left Flank Section, Vaigai Dam, Tamilnadu (Lr No. F.15/AE/LF Section/2025 dt. 13.02.2025)

During the monsoon season 2024-25, the discharge and Warning data provided for Vaigai Dam & Vaigai Basin was very useful for advance preparation in view of managing the flood effectively. The forecast data provided by CWC was found similar to the record. Therefore we look forward to receive data in future.

7.2.9 Office of the Assistant Engineer, WRD Department, R C Section, Upper Anicut, Tamilnadu (Lr No. F.1/2024/AE(UA)/ dt. 15.02.2025)

I would like to extend our sincere appreciation for timely and accurate forecast data provided by Central Water Commission during the monsoon season for the year 2024-25.

The forecast you have shared have been have been invaluable in ensuring the safety and preparedness of our operation helping us make informed decisions that mitigate risks and optimize resources. We further look forward to receive data in future for better flood management.

7.2.10 Office of the Assistant Engineer, WRD Department, Grand Anicut Section, Kallanai (Lr No. F.34/2024/(GA)/Kallanai dt. 17.01.2025)

During the monsoon season 2024-25, the discharge and Warning data provided for Grand Anicut & Cauvery Basin was very useful for advance preparation in view of managing the flood effectively. The forecast data provided by CWC was found similar to the record. Therefore we look forward to receive data in future.

7.2.11 Office of the Executive Engineer, Irrigation Division No. 1, Govt of Telangana (Lr. no: EE/Div-1/IC Pochampad/DB/TOI/1277 dt 04/12/2024)

The Flood Forecasting service provided by Central Water Commission was enormously useful throughout the monsoon 2024. CWC's work is highly appreciated for communicating the timely forests for the effective flood management of Sri Ram Sagar Project.

With the help of CWC's daily flood bulletins, this office is timely alerting the downstream areas of the project and protecting the precious lives and property of the people.

7.2.12 Office of the District Collector,Bastar,Jagdalpur. (No. 1/Rev dt. 30.12.2024)

CWC have had communication and coordination with the District Flood Control Room by giving updates and forcasts on flood water level during the monsoon season 2024-25 of Indravati River and its tributaries.

7.2.13 Office of the Revenue Divisional Officer,Bhadrachalam, Telangana. (No. E/493/2024 dt. 12.12.2024)

Central Water Commission is providing us Flood Forecasting service to Bhadrachalam and Dummugudem town on river Godavari. Due to which this office is able to take timely action in evacuating the valunerable areas and able to save the lives of people and animals and also damages to property.

ANNEXURES - I to XIII

Details of New Flood Forecasting Stations included in last Five Years (2017-2024)

Year	New Station	Total No. of Station	Name of Station	State	District
1	2	3	4	5	6
2017	27	199 + 27=226	Kurnool Town	Andhra Pradesh	Kurnool
			Srikakulam	Andhra Pradesh	Srikakulam
			Namsai	Arunachal Pradesh	Lohit
			Choldhowaghat	Assam	Lakhimpur
			N H Crossing Ranganadi	Assam	Lakhimpur
			Dholla Bazaar	Assam	Tinsukia
			Kokrajhar	Assam	Kokrajhar
			Dumariaghat	Bihar	Gopalganj
			Ahirwalia	Bihar	Muzzafarpur
			Sangam	Jammu & Kashmir	Anantnag
			Safapora	Jammu & Kashmir	Bandipora
			Fathegarh	Uttar Pradesh	Farukkabad
			Dabri	Uttar Pradesh	Shahjahanpur
			Garhmuktheswar	Uttar Pradesh	Ghaziabad
			Kachla Bridge	Uttar Pradesh	Badaun
			Panam Dam	Gujarat	Panchmahal
			Upper Tunga	Karnataka	Shimoga
			Bhadra Dam	Karnataka	Chikmagaluru
			Rengali Dam	Odisha	Angul
			Mahi Bajajsagar Dam	Rajasthan	Banswara
			Som Kamla Amba Dam	Rajasthan	Udaipur
			Upper Anicut	Tamilnadu	Tiruchirapalli
			Gomukhi Dam	Tamilnadu	Villupuram
			Wellington Dam	Tamilnadu	Cuddalore
			Sathanur Dam	Tamilnadu	Thiruvannamalai
			Chembarampakkam Lake	Tamilnadu	Kanchipuram
			Banbasa	Uttarakhand	Champawat
2018	23	226+ 23 =249	Atreyapuram	Andhra Pradesh	East Godavari
			Karnal Bridge	Haryana	Karnal
			Paonta Sahib	Himachal Pradesh	Sirmaur
			Musiri(Srirangam)	Tamilnadu	Tiruchirapalli
			Kodumudi (Erode)	Tamilnadu	Erode
			Savandapur(Bhavani)	Tamilnadu	Erode
			Sirpur Town	Telangana	Adilabad
			Ganganagar	Uttarakhand	Rudraprayag
			Narayanapuram Anicut	Andhra Pradesh	Srikakulam
			Madduvalasa Reservoir	Andhra Pradesh	Srikakulam
			Tilaiya Dam	Jharkhand	Koderma
			Sikatia Barrage	Jharkhand	Dumka
			Konar Dam	Jharkhand	Hazaribagh
			Kalisindh Dam	Rajasthan	Jhalawar
			Parwan Dam	Rajasthan	Baran
			Gambhiri Dam	Rajasthan	Chittorgarh
			Panchana Dam	Rajasthan	Karauli
			Gudha Dam	Rajasthan	Bundi
			Parwati Dam	Rajasthan	Dholpur
			Kota Barrage	Rajasthan	Kota
			Rangit-III HEP Dam	Sikkim	South Sikkim
			Dharmanagri Barrage	Uttar Pradesh	Bijnor
			Kalagarh Dam	Uttarakhand	Pauri Garhwal
			Chinturu	Andhra Pradesh	East Godavari
			Avanigadda	Andhra Pradesh	Krishna

			Yingkiang	Arunachal Pradesh	Upper Siang
			Mathanguri	Assam	Baska
			Dheng Bridge	Bihar	Sitamarhi
			Sonebarsha	Bihar	Sitamarhi
			Jainagar	Bihar	Madhubani
			Runisaidpur	Bihar	Sitamarhi
			Araria	Bihar	Araria
			Taibpur	Bihar	Kishanganj
			Neeleswaram	Kerala	Ernakulam
			Kumbidi	Kerala	Palakkad
			Malakkara	Kerala	Pathanamthitta
			Nasik	Maharashtra	Nasik
			Mathani Road Bridge	Odisha	Balasore
			Abu Road	Rajasthan	Sirohi
			Kota City	Rajasthan	Kota
			Malli Bazaar	Sikkim	South Sikkim
			Joretahang(Rothak)	Sikkim	South Sikkim
			Singtam	Sikkim	East Sikkim
			Madurai	Tamilnadu	Madurai
			Kakardhari	Uttar Pradesh	Bahraich
			Hasimara	West Bengal	Coochbehar
			Indrapuri Barrage	Bihar	Garhwa
			Gandak Barrage	Bihar	West Champaran
			Kosi Barrage	Bihar	Bhimnagar
			Ravishankar Dam	Chattisgarh	Dhamtari
			Bango Dam	Chattisgarh	Korba
			Sardar Sarovar Dam	Gujarat	Ahmedabad
			Sundar Dam	Jharkhand	Hazaribagh
			Amanat Barage	Jharkhand	Dumka
			Annaraj Dam	Jharkhand	Hazaribagh
			Bhairwa Dam	Jharkhand	Hazaribagh
			Batane Dam	Jharkhand	Giridih
			Galudih Barrage	Jharkhand	Saraikela Kharaswan
			Getlasud Dam	Jharkhand	Ranchi
			Karanja Dam	Karnataka	Bidar
2019	76	249+76=325	Malaprabha Dam	Karnataka	Belgaum
			Hippargi Dam	Karnataka	Bagalkot
			Hidkal Dam	Karnataka	Belagavi
			Singatalur Barrage	Karnataka	Gadag
			Idduki Dam	Kerala	Idduki
			Idamalayar	Kerala	Ernakulam
			Rajghat Dam	Madhya Pradesh	Lalitpur
			Tawa Dam	Madhya Pradesh	Hoshangabad
			Bargi Dam	Madhya Pradesh	Jabalpur
			Barna Dam	Madhya Pradesh	Raisen
			Indira Sagar Dam	Madhya Pradesh	Khandwa
			Omkareshwar Dam	Madhya Pradesh	Khandwa
			Totladoh Project	Maharashtra	Nagpur
			Upper Wainganga Project	Madhya Pradesh	Balaghat
			Upper Wardha Project	Maharashtra	Amaravati
			Mula Dam	Maharashtra	Ahmednagar
			Issapur/Upper Penganga P	Maharashtra	Hingoli
			N M D Weir	Maharashtra	Nasik
			Yeldari Dam	Maharashtra	Parbhani
			Koyna Dam	Maharashtra	Satara
			Warana Dam	Maharashtra	Kolhapur
			Ujjani Dam	Maharashtra	Solapur
			Veer Dam	Maharashtra	Satara

			Manjlegaon	Maharashtra	Beed
			Salandi Dam	Odisha	Bhadrak
			Upper Indravathi Project	Odisha	Kalahandi
			Kolab Project	Odisha	Koraput
			Machhkund Project	Odisha	Koraput
			Balimela Project	Odisha	Malkangiri
			Rana Pratap Sagar	Rajasthan	Chittorgarh
			Teesta-III HEP Dam Chung	Sikkim	North Sikkim
			Teesta V HEP Dam Singta	Sikkim	North Sikkim
			Rongpo Dam	Sikkim	East Sikkim
			Rongli Dam	Sikkim	East Sikkim
			Kodaganar Dam	Tamilnadu	Dindugul
			Musi Project	Telangana	Nalgonda
			Matatilia Dam	Uttar Pradesh	Lalitpur
			Katerniaghat Dam	Uttar Pradesh	Bahraich
			Hinglow Dam	West Bengal	Bankura
2020	3	325+3=328	Dholpur	Rajasthan	Dholpur
			Indirasagar(Polavaram)	Andhra Pradesh	West Godavari
			Laxmi Barrage	Telangana	Bhupalpally
2021	3	328+3=331	Manderial	Rajasthan	Karauli
			Bawanthadi Reservoir	Madhya Pradesh	Balaghat
			Pench Reservoir/Chaurai/M	Madhya Pradesh	Chindwara
2022	2	331+2=333	Madikhera(Atal Sagar)	Madhya Pradesh	Shivpuri
			PVNR Kanthapally Project	Telangana	Warangal
2023	5	333+5=338	Muthankera	Kerala	Wayanad
			Subansiri Lower Dam	Arunachal Pradesh	Lower Subansiri
			Shetrunji Dam	Gujarat	Bhavnagar
			Ichari Dam	Uttarakhand	Dehradun
			Tehri Dam	Uttarakhand	Garhwal
2024	2	338+2=340	Mid Manair Dam	Telangana	Rajanna Sircilla
			Juddo Dam	Uttarakhand	Dehradun

Salient Features of Flood Forecasting Stations maintained by Central Water Commission

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S.No	Name of FF Station/Type	River/Basin	Nearest Town/Vill/District/State	Lat (N)	Long (E)	Base Station (TT in hrs)	DM Circle/ Orgn	Met Sub Division as per IMD	WL (m)	DL (m)	HFL		Mode of Data Collection	Methodology/ Model used for FF Formulation	Remarks
											(m)	Year			
1	Sangam	Jhelum/ Indus	Anantnag/Jammu and Kashmir	33.84	75.08		CD, Jammu / Dir (M), Jammu/ IBO	Jammu & Kashmir	1590.3	1592	1595	2014			
2	Rammunshibagh (Srinagar)	Jhelum/ Indus	Srinagar/Jammu and Kashmir	34.06	74.86	Sangam Khanabal Nunwan	CD, Jammu / Dir (M), Jammu/ IBO	Jammu & Kashmir	1585.53	1586.45	1588.99	2014	Telephone/ Mobile/ Telemtry	Rainfall Runoff Model	
3	Safapura	Jhelum/ Indus	Baramulla/Jammu and Kashmir	34.29	74.63		CD, Jammu / Dir (M), Jammu/ IBO	Jammu & Kashmir	1580	1580.8	1582.1	2014			
4	Srinagar	Alaknanda/Ganga	Srinagar/Pauri Garhwal/Uttrakhand	30.22	78.78	Rudrapryag(02) Joshimath(07) Nandkeshri(07) Karanparyag(04) Ganganagar(03)	HGD/HOC/UGBO	Uttarakhand	535.00	536.00	537.90	2013	Phone/Wireless/ Telemetry	Conventional	Lavel ff station
5	Ganganagar	Mandakini/Ganga	Ganganagar/Rudraparyag/Uttrakha nd	30.4	79.04	Ukhimath Gaurikund Gaundhar	HGD/HOC/UGBO	Uttarakhand	803.00	804.00	801.92	2015	Phone/Telemetry	Conventional	Rainfall based (Mathmatical Modelling)
6	Rishikesh	Ganga/Ganga	Rishikesh/Dehradun/Uttrakhand	30.11	78.31	Deoparyag(05) Marora(02)	HGD/HOC/UGBO	Uttarakhand	339.50	340.50	341.72	1995	Phone/Wireless/ Telemetry	Conventional	Lavel ff station
7	Hardwar	Ganga/Ganga	Haridwar/Uttrakhand	29.98	78.19	Deoparyag(05) Marora(03) Rishikesh(01)	HGD/HOC/UGBO	Uttarakhand	293.00	294.00	296.30	2010	Phone/Wireless/ Telemetry	Conventional	Lavel ff station
8	Dharmanagari Barrage	Ganga/Ganga	Bijnor/Uttar Pardesh	29.37	78.03	Haridwar (06)	HGD/HOC/UGBO	Uttar Pradesh	2000	3000	15855	2010	Phone/Telemetry	Conventional	Inflow FF Station
9	Garhmuktheswar	Ganga/Ganga	Gaziabad/UP	28.77	78.14	Daramnagri (36 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	198.33	199.33	199.9	2010	By Phone	-	
10	Narora Barrage	Ganga/Ganga	Narora/ Bulanshahar/ Uttar Pradesh	28.19	78.40	Haridwar (40 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	-	-	180.61	2010	Wireless/Mobile	Correlation Graph	
11	Kachlabridge	Ganga/Ganga	Budaun/UP	27.93	78.86	Garhmukteshwar (16 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	161.00	162.00	162.79	2010	By Phone	-	
12	Fatehgarh	Ganga/Ganga	Farrukhabad/UP	27.39	79.62	Kachlabridge (24 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	136.60	137.60	138.14	2010	Wireless/Mobile	Correlation Graph	
13	Kalagarh Dam	Ramganga/Ganga	Pauri/Garhwal/Uttarakhand	29.49	78.76	Bhikiasen Marchula	MGD2/HOCD/UGBO	IMD Lucknow	-	-	263.67	2010	Wireless/Mobile	Correlation Graph	
14	Moradabad	Ramganga/Ganga	Moradabad/Moradabad/Uttar Pradesh	28.83	78.80	Kalagarh (36 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	189.60	190.60	192.88	2010	Wireless/Mobile	Correlation Graph	
15	Bareilly	Ramganga/Ganga	Bareilly/Bareilly/ Uttar pradesh	28.30	79.37	Moradabad (36 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	162.07	163.07	162.88	1978	Wireless/Mobile	Correlation Graph	
16	Dabri	Ramganga/Ganga	Jalalabar/Shahjahanpur/UP	27.49	79.69	Bareilly (24 Hrs.)	MGD2/HOCD/UGBO	IMD Lucknow	136.30	137.30	139.70	1983	Wireless/Mobile	Correlation Graph	
17	Kannauj	Ganga/Ganga	Kannauj/Kannauj/ Uttar Pradesh	27.01	79.98	Narora (D/s) (48)	MGD2/HOCD/UGBO	IMD Lucknow	124.97	125.97	126.78	2010	Wireless	Conventional	
18	Ankinghat	Ganga/Ganga	Ankinghat/Kanpur/ Uttar Pradesh	26.93	80.03	Narora (D/s) (48) Bareilly (48) Fathegarh (12) Dabri (12)	MGD2/HOCD/UGBO	IMD Lucknow	123.00	124.00	124.49	2010	Wireless/ Telemetry	Conventional	
19	Kanpur	Ganga/Ganga	Kanpur/Kanpur/ Uttar Pradesh	26.47	80.38	Fathegarh (24) Dabri (24) Ankinghat (12)	MGD2/HOCD/UGBO	IMD Lucknow	112.00	113.00	114.08	2010	Wireless/ Telemetry	Conventional	
20	Dalmau	Ganga/Ganga	Rae-barerilly/ Rae-barerilly/ Uttar Pradesh	26.06	81.03	Ankninghat (28) Kanpur (16)	MGD2/HOCD/UGBO	IMD Lucknow	98.36	99.36	99.84	1973	Wireless/ Telemetry	Conventional	
21	Phaphamau	Ganga/Ganga	Allahabad/ Allahabad/ Uttar Pradesh	25.50	81.86	Kanpur (30) Chillaghat (24)	MGD3/HOCV/UGBO	East Uttar Prasdesh	83.73	84.73	87.98	1978	Wireless/ Telemetry	Conventional	

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											(m)	Year			
22	Paonta Sahib	Yamuna/Ganga	Poanta/Sirmaur/ Himachal Pradesh	30.43	77.59	Naugaon (03-08) Jateon Barrage(giri) (03-08) Haripur(02-07) Dakpathar Barrage (1-1.5)	UYD/HOC/YBO	Himachal Pradesh	383.5	384.5	384.6	1995		3 days advisory Forecast (CWC BETA Model)	
23	Tajewala Barrage (Hathnikund Barrage)	Yamuna/Ganga	Yamunanagar/ Yamunanagar/ Haryana	30.31	77.58	Paonta (06)	UYD/HOCN/ YBO	Haryana Chandigarh& Delhi	1982.00				Wireless		Inflow Forecast Not in Operation
24	Karnal	Yamuna/Ganga	Shergarh Tapu/ Karnal/ Haryana	30.06	77.14	Kalanaur (07-28) hrs	UYD/HOC/YBO	Haryana	248.8	249.5	250.07	2013		Conventional	
25	Mawi	Yamuna/Ganga	Panipat/ Muzzafarpur/ Uttar Pradesh	29.38	77.15	Kalanur (06-36)	UYD/HOCN/ YBO	West Uttar Pradesh	231.00	231.50	232.75	2013	Wireless/ Telemetry	Conventional	
26	Dhansa Regulator	Sahibi/Yamuna/ Ganga	Delhi/Delhi/ NCT Delhi	28.53	76.87	Dadri (03-05) Masani (31-40)	UYD/HOCN/ YBO	Haryana Chandigarh& Delhi	211.44	212.44	213.58	1977	Wireless	Conventional	
27	Delhi Railway Bridge	Yamuna/Ganga	Delhi/Delhi/ NCT Delhi	28.66	77.25	Mawi (09-41)	UYD/HOCN/ YBO	Haryana Chandigarh& Delhi	204.50	205.33	207.49	1978	Wireless/ Telemetry	Conventional	
28	Mathura	Yamuna/Ganga	Mathura/Mathura/ Uttar Pradesh	27.51	77.69	Mohana (12-65)	UYD/HOCN/ YBO	West Uttar Pradesh	165.20	166.00	169.73	1978	Wireless/ Telemetry	Conventional	
29	Agra	Yamuna/Ganga	Agra/Agra/ Uttar Pradesh	27.19	78.03	Mathura (16-28)	LYD/HOCN/ YBO	West Uttar Pradesh	151.40	152.40	154.76	1978	Wireless/ Telemetry	Conventional	
30	Etawah	Yamuna/Ganga	Etawah/Etawah/ Uttar Pradesh	26.75	78.99	Agra (18-51)	LYD/HOCN/ YBO	West Uttar Pradesh	120.92	121.92	126.13	1978	Wireless/ Telemetry	Conventional	
31	Gandhisagar Dam	Chambal/Ganga	Gandhisagar Dam/Mandasur/ Madhya Pradesh	24.65	75.61	Tal (8)	CD/HOCN/ YBO	West Madhya Pradesh	399.90	399.90	399.90	2011	Telemetry	Mathematical	
32	Rana Pratap Sagar Dam	Chambal/Ganga	Chittorgarh/Rajasthan	24.91	75.58	Gandhisagar Dam (1)	CD Jaipur/HOC Noida/YBO ND							Mathematical	
33	Kota Barrage	Chambal/Ganga	Kota/Rajasthan	25.17	75.82	Rana Pratap Sagar Dam(1-1.25)	CD Jaipur/HOC Noida/YBO ND							Mathematical	
34	Kota City	Chambal/Ganga	Kota/Rajasthan	25.19	75.84	Immediate D/S of Kota Barrage	CD Jaipur/HOC Noida/YBO ND		239	242	248.68	2019		Mathematical	
35	Bisalpur Dam	Banas/Ganga	Deoli/Tonk/Rajasthan	25.92	75.45	Bigod(09-10)	CD Jaipur/HOC Noida/YBO ND	East Rajasthan	FRL-315.5					Rainfall Runoff Model	
36	Kalisindh Dam	Kalisindh/Ganga	Khanpur/Jhalawar/Rajasthan	24.48	76.22	Sarangpur(10-12)	CD Jaipur/HOC Noida/YBO ND		FRL-316						
37	Parwan Dam	Parwan/Ganga	Baran/Jhalawar//Rajasthan	24.62	76.51		CD Jaipur/HOC Noida/YBO ND		308.8						
38	Gambhiri Dam	Gambhiri/Ganga	Chittorgarh/Rajasthan	24.7	74.73		CD Jaipur/HOC Noida/YBO ND							Rainfall Runoff Model	
39	Panchana Dam	Chambal/Ganga	Mandrail/Karauli/Rajasthan	26.55	77.00		CD Jaipur/HOC Noida/YBO ND		258.62					Rainfall Runoff Model	
40	Gudha Dam	Mej/Ganga	Bundi/Rajasthan	25.48	75.46		CD Jaipur/HOC Noida/YBO ND		FRL-305.86					Rainfall Runoff Model	
41	Parwati Dam	Parwati/Ganga	Dholpur / Rajasthan	26.65	77.9		CD Jaipur/HOC Noida/YBO ND		FRL-308.15						
42	Auraiya	Yamuna/Ganga	Auraiya/Auraiya/ Uttar Pradesh	26.42	79.48	Etawah (21-24) Dhaulpur (15-36)	LYD/HOCN/ YBO	West Uttar Pradesh	112.00	113.00	118.51	2021	Wireless/ Telemetry	Conventional	
43	Kalpi	Yamuna/Ganga	Kalpi/Jalaun/ Uttar Pradesh	26.13	79.76	Etawah (21-27) Dhaulpur (15-42)	LYD/HOCN/ YBO	West Uttar Pradesh	107.00	108.00	112.98	1996	Wireless/ Telemetry	Conventional	
44	Hamirpur	Yamuna/Ganga	Hamirpur/Hamirpur/ Uttar Pradesh	25.96	80.16	Auraiya (15) Mohana (18-24)	LYD/HOCN/ YBO	East Uttar Prasdesh	102.63	103.63	108.59	1983	Wireless/ Telemetry	Conventional	
45	Rajghat Dam	Betwa/Yamuna/ Ganga	Chanderi/ Madhya Pradesh	24.76	78.23		LYD/HOCN/ YBO		FRL-371					Mathematical Model	
46	Matatila Dam	Betwa/Yamuna/ Ganga	Lalitpur/UttarPradesh	25.10	78.36		LYD/HOCN/ YBO	East Uttar Prasdesh	308.46	310.04				Mathematical Model	
47	Mohana	Betwa/Yamuna/ Ganga	Jhansi/Jhansi/ Uttar Pradesh	25.65	78.99	Garrouli (15-21) Nautghat (12-21)	LYD/HOCN/ YBO	East Uttar Prasdesh	121.66	122.66	133.35	1983	Wireless/ Telemetry	Conventional	

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											(m)	Year			
48	Sahjiana	Betwa/Yamuna/ Ganga	Hamirpur/Hamirpur/ Uttar Pradesh	25.95	80.15	Mohana (18-26)	LYD/HOCN/ YBO	East Uttar Prasdesh	103.54	104.54	108.67	1983	Wireless/ Telemetry	Conventional	
49	Banda	Ken/Yamuna/ Ganga	Banda/Banda/ Uttar Pradesh	25.48	80.31	Madla (12-30) Kaimaha (9-15)	LYD/HOCN/ YBO	East Uttar Prasdesh	103.00	104.00	113.29	2005	Wireless/ Telemetry	Conventional	
50	Chillaghat	Yamuna/Ganga	Banda/Banda/ Uttar Pradesh	25.77	80.53	Hamirpur (12) Banda (12) Sahijina(12)	LYD/HOCN/ YBO	East Uttar Prasdesh	99.00	100.00	105.16	1978	Wireless/ Telemetry	Conventional	
51	Naini	Yamuna/Ganga	Allahabad/ Allahabad/ Uttar Pradesh	25.42	81.84	Chillaghat (18-24)	LYD/HOCN/ YBO	East Uttar Prasdesh	83.74	84.74	87.99	1978	Wireless/ Telemetry	Conventional	
52	Dholpur	Chambal/Ganga	Dholpur / Rajasthan	26.65	77.9	Pali (18-24) Manderial(06-12)	LYD Agra/YBO		129.79	130.79	145.54	1996	Wireless/ Telemetry	Conventional	
53	Manderial	Chambal/Ganga	Karauli/Rajasthan	26.28	77.28	Pali (08)	CD Jaipur/HOC Noida/YBO ND		164.00	165	169.96	1996			
54	Allahabad (Chatnag)	Ganga/Ganga	Allahabad/ Allahabad/ Uttar Pradesh	25.40	81.91	Kanpur (30) Chillaghat (24)	MGD3/HOCV/UGBO	East Uttar Prasdesh	83.73	84.73	88.03	1978	Wireless/ Telemetry	Conventional	
55	Mirzapur	Ganga/Ganga	Mirzapur/Mirzapur/ Uttar Pradesh	25.15	82.53	Dalmau (28) Chillaghat (34)	MGD3/HOCV/UGBO	East Uttar Prasdesh	76.72	77.72	80.34	1978	Wireless/ Telemetry	Conventional	
56	Varanasi	Ganga/Ganga	Varanasi/Varanasi/ Uttar Pradesh	25.33	83.04	Kanpur (48) Hamirpur(48)	MGD3/HOCV/UGBO	East Uttar Prasdesh	70.26	71.26	73.90	1978	Wireless/ Telemetry	Conventional	
57	Hanuman Setu	Gomti/Ganga	Lucknow/Lucknow/ Uttar Pradesh	26.86	80.95	Bhatpurwaghat (48 hrs.)	M.G.Divn.-2 Lucknow/H.O.C.Dehradun/UGBO Lucknow	IMD Lucknow	108.50	109.50	110.85	1971	Wireless/Mobile	Correlation Graph	
58	Rae-Bareilly	Sai/Gomti/Ganga	Rae-bareilly/Rae-bareilly/Uttar Pradesh	26.20	81.25	Bani (48 hrs.)	M.G.Divn.-2 Lucknow/H.O.C.Dehradun/UGBO Lucknow	IMD Lucknow	100.00	101.00	104.81	1982	Wireless/Mobile	Correlation Graph	
59	Jaunpur	Gomti/Ganga	Jaunpur/Jaunpur/ Uttar Pradesh	25.75	82.67	Sultanpur (24)	MGD3/HOCV/UGBO	East Uttar Prasdesh	73.06	74.06	77.74	1971	Wireless/ Telemetry	Conventional	
60	Ghazipur	Ganga/Ganga	Ghazipur/ Ghazipur/ Uttar Pradesh	25.58	83.60	Allahabad (28) Sultanpur (30)	MGD3/HOCV/UGBO	East Uttar Prasdesh	62.10	63.10	65.22	1978	Wireless/ Telemetry	Conventional	
61	Buxar	Ganga/Ganga	Buxar/Buxar/Bihar	25.58	83.97	Allahabad (30)	LGD-II/HOCP/LGBO	Bihar	59.32	60.32	62.09	1948	Wireless/ Telemetry	Conventional	
62	Ballia	Ganga/Ganga	Ballia/ Ballia/ Uttar Pradesh	25.77	84.37	Varanasi (28) Jaunpur (28)	MGD3/HOCV/UGBO	East Uttar Prasdesh	56.62	57.62	60.39	2016	Wireless/ Telemetry	Conventional	
63	Banbasa Barrage	Ghaghra/Ganga	Champawat/Uttarakhand	28..99	80.1	Pancheshwar(18-24)	MGD-I/HOC Varanasi/UGBO Lucknow	West UP	FRL 222.96		223.3	2013		3 days advisory Forecast (CWC BETA Model)	
64	Katarniaghat Barrage	Ghaghra/Ganga	Bahraich / UttarPradesh	28.27	81.09		MGD-I/HOC Varanasi/UGBO Lucknow	West UP	FRL-136.8						
65	Elgin Bridge	Ghaghra/Ganga	Barabanki/Barabanki/ Uttar Pradesh	27.09	81.49	B K Ghat (30-36) Shardanagar (30-36)	MGD1/HOCV/UGBO	East Uttar Prasdesh	105.07	106.07	107.62	2014	Wireless/ Telemetry	Conventional	
66	Ayodhya	Ghaghra/Ganga	Ayodhya/Faizbad/ Uttara Pradesh	26.81	82.21	Elgin Bridge (18-24)	MGD1/HOCV/UGBO	East Uttar Prasdesh	91.73	92.73	94.01	2009	Wireless/ Telemetry	Conventional	
67	Kakardhari	Rapti/Ghaghra/ Ganga	Bahraich / UttarPradesh	27.89	81.77		MGD1/HOCV/UGBO	East Uttar Prasdesh	130.00	131.00	132.37	2014			
68	Balrampur	Rapti/Ghaghra/ Ganga	Balrampur/ Balrampur/ Uttar Pradesh	27.44	82.23	Kakardhari (18-24)	MGD1/HOCV/UGBO	East Uttar Prasdesh	103.62	104.62	105.54	2017	Wireless/ Telemetry	Conventional	
69	Bansi	Rapti/Ghaghra/ Ganga	Bansi/ Siddarthnagar/ Uttar Pradesh	27.18	82.94	Balrampur (18-24)	MGD1/HOCV/UGBO	East Uttar Prasdesh	83.90	84.90	85.95	2021	Wireless/ Telemetry	Conventional	
70	Gorakhpur (Birdghat)	Rapti/Ghaghra/ Ganga	Gorahpur/ Gorakhpur/ Uttar Pradesh	26.73	83.35	Bansi (18-24) Kakardhari (18-24)	MGD1/HOCV/UGBO	East Uttar Prasdesh	73.98	74.98	77.54	1998	Wireless/ Telemetry	Conventional	

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											(m)	Year			
71	Turtipar	Ghaghra/Ganga	Balthra/Ballia/ Uttar Pradesh	26.14	83.88	Ayodhya (30-36) Gorakhpur (Birdghat) (30-36)	MGD1/HOCV/UGBO	East Uttar Prasdesh	63.01	64.01	66.00	1998	Wireless/ Telemetry	Conventional	
72	Darauli	Ghaghra/Ganga	Darauli/Siwan/Bihar	26.07	84.13	Elgin Bridge (54) Gorakhpur (Birdghat) (28)	LGDII/HOCP/LGBO	Bihar	59.82	60.82	61.74	1998	Wireless	Conventional	
73	Gangpur Siswan	Ghaghra/Ganga	Siwan/Siwan/Bihar	25.91	84.39	Turtipar (20)	LGDII/HOCP/LGBO	Bihar	56.04	57.04	58.01	1983	Wireless	Conventional	
74	Chhapra	Ghaghra/Ganga	Chhapra/Saran/Bihar	25.76	84.79	Gangpur Siswan (16)	LGDII/HOCP/LGBO	Bihar	52.68	53.68	54.59	1982	Wireless	Conventional	
75	Bansagar Dam	Ganga/Ganga	Beohari/Shahdol/Madhya Pradesh	24.19	81.8		MGDIII/HOC Varanashi/UGBO	East Madhya Pradesh	FRL-341.65					Rainfall Runoff Model	
76	Rihand Dam	Rihand/ Ganga	Robertsganj/Sonbhadra/ Uttar Pradesh	24.21	83.02		MGDIII/HOC Varanashi/UGBO	East Uttar Pradesh	FRL-265.18					Rainfall Runoff Model	
77	Annaraj Dam	Khoranadi/Ganga	Bhadua / Hazaribagh/Jharkhand	24.06	83.8		LGDII/HOCP/LGBO		FRL-252.44						
78	Bhairawa Dam	Goda Nala /Ganga	Hazaribagh/Jharkhand	23.51	85.67		DD/HOCM/ LGBO		FRL-356.70						
79	Inderpuri Barrage	Sone/Ganga	Inderpuri/Garhwa/ Bihar	24.75	84.16		LGDII/HOCP/LGBO	Bihar	FRL-173.00						
80	Inderpuri	Sone/Ganga	Inderpuri/Rohtas/ Bihar	24.84	84.13	Chopan (12) Daltonganj (12)	LGDII/HOCP/LGBO	Bihar	107.20	108.20	108.85	1975	Wireless	Conventional	
81	Koelwar	Sone/Ganga	Koelwar/Bhojpur/ Bihar	25.57	84.79	Inderpuri (10-15) Japla	LGDII/HOCP/LGBO	Bihar	54.52	55.52	58.88	1971	Wireless	Conventional	
82	Maner	Sone/Ganga	Maner/Patna/Bihar	25.70	84.86	Gandhighat (6-8)	LGDII/HOCP/LGBO	Bihar	51.00	52.00	53.79	1976	Wireless	Conventional	
83	Patna (Dighaghat)	Ganga/Ganga	Patna/ Patna/ Bihar	25.64	85.10	Patna (Gandhighat) (04)	LGDII/HOCP/LGBO	Bihar	49.45	50.45	52.52	1975	Wireless	Conventional	
84	Gandak Barrage	Gandak/Ganga	West Champaran/Bihar	27.43	83.90		LGDI/HOCP/LGBO	Bihar	FRL-110.3						
85	Khadda	Gandak/Ganga	Deoria/Kushinagar/ Uttar Pradesh	27.23	83.87	Triveni (07)	LGD-I/MC/LGBO Patna	Bihar	95.00	96.00	97.50	2002	Wireless	Conventional	
86	Chatia	Gandak/Ganga	Ariraj West Champaran/ Motihari/ Bihar	26.50	84.54	Triveni (24)	LGD-I/MC/LGBO Patna	Bihar	68.15	69.15	70.04	2002	Wireless	Conventional	
87	Dumariaghat	Gandak/Ganga	Gopalganj/Bihar	26.35	84.76	Chatia(24)	LGD-I/MC/LGBO Patna	Bihar	61.22	62.22	64.36	2020	Wireless	Conventional	
88	Rewaghat	Gandak/Ganga	Muzzafarpur/Muzzafarpur/Bihar	25.99	85.05	Chatia (20)	LGDII/HOCP/LGBO	Bihar	53.41	54.41	55.46	2020	Wireless	Conventional	
89	Hazipur	Gandak/Ganga	Hazipur/Vaishali/ Bihar	25.69	85.20	Rewaghat (16)	LGDII/HOCP/LGBO	Bihar	49.32	50.32	50.93	1948	Wireless	Conventional	
90	Patna (Gandhighat)	Ganga/Ganga	Patna/ Patna/ Bihar	25.62	85.17	Buxar (24) Darauli (24) Rewaghat (24) Japla (24)	LGDII/HOCP/LGBO	Bihar	47.60	48.60	50.52	2016	Wireless/ Telemetry	Conventional	
91	Amanat Dam	Baranadi/Ganga	Hazaribagh/Jharkhand	24.01	84.47		LGDII/HOCP/LGBO		274.39						
92	Batane Dam	Punpun/Ganga	Chhatarpur/Palamu/Jharkhand	24.42	84.26		LGDII/HOCP/LGBO		FRL-232.85						
93	Sripalpur	Punpun/Ganga	Sripalpur/Patna/Bihar	25.50	85.11	Kinjer (24)	LGDII/HOCP/LGBO	Bihar	49.60	50.60	53.91	1976	Wireless	Conventional	

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											(m)	Year			
94	Hathidah	Ganga/Ganga	Hathidah/Patna/Bihar	25.37	85.99	Gandhighat (16)	LGDII/HOCP/LGBO	Bihar	40.76	41.76	43.52	2021	Wireless/ Telemetry	Conventional	
95	Munger	Ganga/Ganga	Munger/Munger/ Bihar	25.38	86.46	Gandhighat (24)	LGDII/HOCP/LGBO	Bihar	38.33	39.33	40.99	1976	Wireless/ Telemetry	Conventional	
96	Lalbeghiaghat	Burhi Gandak/ Ganga	Dhaka/Motihari/Bihar	26.65	85.03	Chainpatia (24)	LGDI/HOCP/LGBO	Bihar	62.20	63.20	67.09	1975	Wireless	Conventional	
97	Ahirwalia	Burhi Gandak/ Ganga	Chakia/Purba Champaren/Bihar	26.41	85.14	Lalbegiaghat(24)	LGD-I/MC/LGBO Patna	Bihar	58.62	59.62	61.17	2014			
98	Muzzafarpur (Sikandarpur)	Burhi Gandak/ Ganga	Sikandarpur/Muzzafarpur/Bihar	26.14	85.39	Ahirwala(S) (24)	LGDI/HOCP/LGBO	Bihar	51.53	52.53	54.29	1987	Wireless	Conventional	
99	Samastipur	Burhi Gandak/ Ganga	Samastipur/Samastipur/Bihar	25.86	85.79	Sikandarpur (20)	LGDI/HOCP/LGBO	Bihar	45.02	46.02	49.38	1987	Wireless	Conventional	
100	Rosera	Burhi Gandak/ Ganga	Rosera/Samastipur/ Bihar	25.74	86.02	Sikandarpur (28)	LGDI/HOCP/LGBO	Bihar	41.63	42.63	46.56	2020	Wireless	Conventional	
101	Khagaria	Burhi Gandak/ Ganga	Khagaria/Khagaria/ Bihar	25.75	86.48	Sikandarpur (24) Gandhighat (24)	LGDI/HOCP/LGBO	Bihar	35.58	36.58	39.22	1976	Wireless	Conventional	
102	Bhagalpur	Ganga/Ganga	Bhagalpur/Bhagalpur/Bihar	25.27	87.02	Gandhighat (32)	LGDII/HOCP/LGBO	Bihar	32.68	33.68	34.86	2021	Wireless/ Telemetry	Conventional	
103	Colgong/Kahalgaon	Ganga/Ganga	Colgong/Bhagalpur/ Bihar	25.27	87.23	Gandhighat (38)	LGDII/HOCP/LGBO	Bihar	30.09	31.09	32.87	2003	Wireless/ Telemetry	Conventional	
104	Kosi Barrage	Kosi/Ganga	Supaul/Supaul/Bihar	26.52	86.92		LGDI/HOCP/LGBO		FRL-74.69						
105	Basua	Kosi/Ganga	Supaul/Supaul/Bihar	26.10	86.58	Birpur (16)	LGDI/HOCP/LGBO	Bihar	46.75	47.75	49.24	2017	Wireless	Conventional	
106	Dheng Bridge	Bagmati/Ganga	Sitamarhi/Bihar	26.72	85.32	Karmaiya(Nepal) (24)	LGDI/HOCP/LGBO		70.00	71.00	73.00	2017			
107	Runisaidpur	Bagmati/Ganga	Sitamarhi/Bihar	26.34	85.49	Dheng Bridge(24)	LGDI/HOCP/LGBO		54.00	55.00	58.15	2017			
108	Benibad	Bagmati/Ganga	Benibad/Muzzafarpur/ Bihar	26.20	85.67	Runisaidpur (24)	LGDI/HOCP/LGBO	Bihar	47.68	48.68	50.01	2004	Wireless/ Telemetry	Conventional	
109	Kamtaul	Adhwara Group/Ganga	Kamtaul Market/Darbhanga/ Bihar	26.33	85.80	Sonebarsa (24)	LGDI/HOCP/LGBO	Bihar	49.00	50.00	52.99	1987	Wireless/ Telemetry	Conventional	
110	Ekmighat	Adhwara Group/Ganga	Laheria Seria/Darbhanga/ Bihar	26.12	85.88	Saulighat (24) Kamtaul(24)	LGDI/HOCP/LGBO	Bihar	45.94	46.94	49.52	2004	Wireless/ Telemetry	Conventional	
111	Hayaghat	Bagmati/Ganga	Hayaghat Papermill/Darbhanga/ Bihar	26.03	85.89	Benibad (24) Ekmighat (24)	LGDI/HOCP/LGBO	Bihar	44.72	45.72	48.96	1987	Wireless/ Telemetry	Conventional	
112	Jainagar	Kamlabalan/ Ganga	Madhubani/ Bihar	26.59	86.13	Sindhuli(Nepal) (08-28)	LGDI/HOCP/LGBO	Bihar	66.75	67.75	71.35	2016			
113	Jhanjharpur	Kamlabalan/ Ganga	Jhanjharpur/Madhubani/ Bihar	26.27	86.27	Jainagar (8-28)	LGDI/HOCP/LGBO	Bihar	49.00	50.00	53.11	2019	Wireless	Conventional	
114	Sonebarsa	Adhwara Group/Ganga	Sitamarhi/Bihar	26.85	85.85	Patharkot(Nepal) (24)	LGDI/HOCP/LGBO		80.85	81.85	83.20	1999			
115	Baltara	Kosi/Ganga	Choutham/Khagaria/ Bihar	25.54	86.72	Basua (24) Hayaghat (24)	LGDI/HOCP/LGBO	Bihar	32.85	33.85	36.40	1987	Wireless	Conventional	

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											(m)	Year			
116	Kursela	Kosi/Ganga	Kusela/Katihar/Bihar	25.42	87.23	Basua (24) Hathidah (24)	LGDI/HOCP/LGBO	Bihar	29.00	30.00	32.10	1982	Wireless	Conventional	
117	Sahibganj	Ganga/Ganga	Sahibganj/Sahibganj/Jharkhand	25.25	87.64	Munger (22)	LGDII/HOCP/LGBO	Jharkhand	26.25	27.25	30.91	1998	Wireless	Conventional	
118	Taibpur	Mahananda/ Ganga	Kishanganj/Bihar	26.36	88.17	Sonapur(16)	LGDI/HOCP/LGBO	Bihar	65.00	66.00	67.22	2016			
119	Dengraghat	Mahananda/ Ganga	Bayasi/Purnes/Bihar	25.85	87.81	Taibpur (24) Chargharia (24)	LGDI/HOCP/LGBO	Bihar	34.65	35.65	38.20	2017	Wireless	Conventional	
120	Jhawa	Mahananda/ Ganga	Jhawa/Katihar/Bihar	25.61	87.76	Dhengraghat (16) Araria (16)	LGDI/HOCP/LGBO	Bihar	30.40	31.40	34.07	2017	Wireless	Conventional	
121	Arraria	Parwan/Ganga	Arraria/Bihar	26.12	87.54	Bathnaha(16)	LGDI/HOCP/LGBO	Bihar	46.00	47.00	49.40	2017			
122	Farakka	Ganga/Ganga	Farakka/Murshidabad/ West Bengal	24.80	87.92	Munger (38) Baltara (30)	LGDI/HOCP/LGBO	Gangetic West Bengal	21.25	22.25	25.14	1998	Wireless	Conventional	
123	Massanjore Dam	Mayurakshi/Ganga	Massanjore Dam/ Santhal Parganas/ Jharkhand	24.11	87.31	Maharo (12-14)	DD/HOCM/ LGBO	Jharkhand	121.31		122.87	1999	Wireless/ Telemetry	Conventional	
124	Tilpara Barrage	Mayurakshi/Ganga	Tilpara Dam/Suri/ Birbhum/ West Bengal	23.95	87.53	Massanjore Dam (10-12) Tantoloi (10-12)	DD/HOCM/ LGBO	Gangetic West Bengal	62.79		67.05	1978	Wireless/ Telemetry	Conventional	
125	Narayanpur	Mayurakshi/ Ganga	Kandi/Murshidabad/ West Bengal	23.88	87.91	Tilpara Barrage (16-21)	DD/HOCM/ LGBO	Gangetic West Bengal	26.86	27.86	29.69	1995	Wireless	Conventional	
126	Sikatia Barrage	Ajoy/Ganga	Ausgram/Deoghar/Jharkhand	24.15	86.25		DD/HOCM/ LGBO								
127	Gheropara	Ajoy/Ganga	Khairasol/ Bhirbum/ West Bengal	23.62	87.70	Sikata Barrage (16-18)	DD/HOCM/ LGBO	Gangetic West Bengal	38.42	39.42	43.94	1978	Wireless	Conventional	
128	Tenughat Dam	Damodar/Ganga	Bokaro/Jharkhand	23.72	85.84	Hendgir (12-14)	DD/HOCM/ LGBO	Jharkhand	268.83				Wireless/ Telemetry	Conventional	
129	Tilaya Dam	Barakar/ Ganga	Koderma/Jharkhand	24.32	85.52		DD/HOCM/ LGBO								
130	Konar Dam	Konar/Ganga	Hazaribag/Jharkhand	23.93	85.76		DD/HOCM/ LGBO								
131	Panchet Dam	Damodar/Ganga	Panchet Dam/ Dhanbad/ Jharkhand	23.68	86.75	Tenughat Dam (12-14)	DD/HOCM/ LGBO	Jharkhand	132.59				Wireless/ Telemetry	Conventional	
132	Maithon Dam	Barakar/ Damodar	Maithon Dam/ Dhanbad/ Jharkhand	23.78	86.81	Barkisaraia (14-18)	DD/HOCM/ LGBO	Jharkhand	150.88				Wireless/ Telemetry	Conventional	
133	Durgapur Barrage	Damodar/Ganga	Durgapur/ Burdwan/ West Bengal	23.48	87.31	Panchet Dam (18-24) Maithon Dam (18-24)	DD/HOCM/ LGBO	Gangetic West Bengal	64.47				Wireless/ Telemetry	Conventional	
134	Sundar Dam	Anjanwa/ Ganga	Godda/Jharkhand	24.93	87.38		DD/HOCM/ LGBO		110.79						
135	Harinkhola	Mundeshwari/ West Benagl	Arambagh/Hooghly/ West Bengal	22.83	87.90	Durgapur Barrage (18-24)	DD/HOCM/ LGBO	Gangetic West Bengal	11.80	12.80	14.60	2017	Wireless/ Telemetry	Conventional	
136	Hinglow Dam	Kangsabati	Bankura/West Bengal	23.82	87.18		DD/HOCM/ LGBO	Gangetic West Bengal	97.84						
137	Kangsabati Dam	Kangsabati	Kangsabati Dam/Bankura West Bengal	22.96	86.75	Simulia (14-16)	DD/HOCM/ LGBO	Gangetic West Bengal	134.11		134.71	1978	Wireless	Conventional	
138	Mohanpur	Kangsabati/ Ganga	Medhinipur/ Medhinipur/ West Bengal	22.40	87.34	Kangsabati Dam (12-14)	DD/HOCM/ LGBO	Gangetic West Bengal	24.73	25.73	29.87	1978	Wireless	Conventional	
139	Yingkiang	Siang/ Brahmaputra	Upper Siang/Arunachal Pradesh	28.62	95.03	Tuting (06)	UBD/HOCG/ BBO	Assam and Meghalaya	303.00	304.00					
140	Passighat	Siang/ Brahmaputra	Passighat/ East Siang/ Arunachal Pradesh	28.06	95.33	Tuting (9)	UBD/HOCG/ BBO	Assam and Meghalaya	152.96	153.96	157.54	2000	Wireless	Conventional	
141	Dhollabazar	Lohit/Brahmaputra	Tinsukia/Assam	27.75	95.6	Tezu(09)	UBD/HOCG/ BBO	Assam & Meghalaya	127.27	128.27	130.07	2012			
142	Dibrugarh	Brahmaputra/ Brahmaputra	Dibrugarh/Dibrugarh/Assam	27.49	94.85	Passighat (12) Tezu (12)	UBD/HOCG/ BBO	Assam and Meghalaya	104.70	105.70	106.48	1998	Wireless/ Telemetry	Conventional	
143	Namsai	Nao Dehing/Brahmaput	Namsai/Lohit/Arunachal Pradesh	27.66	95.83	Miao(09) Motipur(09)	UBD/HOCG/ BBO	Arunachal Pradesh	144.8	145.8	146.6	1979			
144	Naharkatia	Buridehing/ Brahmaputra	Naharkatia/ Dibrugarh/ Assam	27.29	95.33	Margherita (12)	UBD/HOCG/ BBO	Assam and Meghalaya	119.40	120.40	122.69	1973	Wireless	Conventional	
145	Chenimari (Khowang)	Buridehing/ Brahmaputra	Khowang/ Dibrugarh/ Assam	27.31	94.88	Naharkatia (24)	UBD/HOCG/ BBO	Assam and Meghalaya	101.11	102.11	104.16	2015	Wireless	Conventional	

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146	Nanglamoraghat	Desang/ Brahmaputra	Sibsagar/Sibsagar/ Assam	26.99	94.78	Dillighat (18)	UBD/HOCG/ BBO	Assam and Meghalaya	93.46	94.46	96.49	1998	Wireless	Conventional	
147	Sibsagar	Dikhow/ Brahmaputra	Sibsagar/Sibsagar/ Assam	26.98	94.58	Bihubar (09)	UBD/HOCG/ BBO	Assam and Meghalaya	91.40	92.40	94.24	2020	Wireless	Conventional	
148	Neamatighat	Brahmaputra/ Brahmaputra	Neamatighat/ Jorhat/ Assam	26.86	94.25	Dibrugarh (24) Chenimari (24)	UBD/HOCG/ BBO	Assam and Meghalaya	84.54	85.54	87.37	1991	Wireless/ Telemetry	Conventional	
149	Choldhowaghat	Subansiri/ Brahmaputra	Dhakuakhana/Lakhimpur/Assam	27.44	94.25	Daporizo(09)	UBD/HOCG/ BBO	Assam & Meghalaya	99.43	100.43	101.31	1972			
150	N.H.Xing Ranganadi	Ranganadi/Brahmaputra	Bihuparia/ Lakhimpur/ Assam	27.2	94.05	Yazali(09)	UBD/HOCG/ BBO	Assam & Meghalaya	93.81	94.81	95.92	1979			
151	Badatighat	Subansiri/ Brahmaputra	Bihuparia/ Lakhimpur/ Assam	26.95	93.96	Chouldhowaghat (18)	UBD/HOCG/ BBO	Assam and Meghalaya	81.53	82.53	86.21	1972	Wireless	Conventional	
152	Golaghat	Dhansisri (S)/ Brahmaputra	Golaghat/ Golaghat Assam	26.50	93.95	Bokajan (15) Gelabil (15)	UBD/HOCG/ BBO	Assam and Meghalaya	88.50	89.50	92.45	1986	Wireless	Conventional	
153	Numaligarh	Dhansisri (S)/ Brahmaputra	Numaligarh/ Golaghat/ Assam	26.63	93.73	Golaghat (12)	UBD/HOCG/ BBO	Assam and Meghalaya	77.42	78.42	80.16	2018	Wireless	Conventional	
154	N T Road Crossing	Jia- Bharali/ Brahmaputra	Balipara/Sonitpur/ Assam	26.81	92.88	Seppa (9)	UBD/HOCG/ BBO	Assam and Meghalaya	76.00	77.00	78.50	2007	Wireless	Conventional	
155	Tezpur	Brahmaputra/ Brahmaputra	Tezpur/ Sonitpur/ Assam	26.62	92.80	Neamatighat (24)	UBD/HOCG/ BBO	Assam and Meghalaya	64.23	65.23	66.59	1988	Wireless/ Telemetry	Conventional	
156	Kampur	Kopili/ Brahmaputra	Kampur/ Nagaon/ Assam	26.15	92.65	Kheronighat (24)	UBD/HOCG/ BBO	Assam and Meghalaya	59.50	60.50	61.79	2004	Wireless	Conventional	
157	Dharamtul	Kopili/ Brahmaputra	Dharamtul/Morigaon/Assam	26.17	92.36	Kampur (15)	UBD/HOCG/ BBO	Assam and Meghalaya	55.00	56.00	58.09	2004	Wireless	Conventional	
158	Guwahati D C Court	Brahmaputra/ Brahmaputra	Guwahati/Kamrup/ Assam	26.19	91.74	Tezpur (24)	MBD/HOCG/BBO	Assam and Meghalaya	48.68	49.68	51.46	2004	Wireless/ Telemetry	Conventional	
159	N H Crossing	Puthimari/ Brahmaputra	Rangia/ kamrup/ Assam	26.33	91.65	DRF (13)	MBD/HOCG/BBO	Assam and Meghalaya	50.81	51.81	55.08	2008	Wireless/ Telemetry	Conventional	
160	N T Road Crossing	Pagladiya/ Brahmaputra	Nalbari/Nalbari/ Assam	26.45	91.46	Melabazar (12)	MBD/HOCG/BBO	Assam and Meghalaya	51.75	52.75	55.45	2004	Wireless/ Telemetry	Conventional	
161	Mathanguri	Manas/ Brahmaputra	Baska/Assam	26.78	90.95		MBD/HOCG/BBO	Assam and Meghalaya	98.10	99.10	100.28	1973			
162	Road Bridge	Beki/ Brahmaputra	Sorbhog/ Barpeta/ Assam	26.49	90.91	Mathanguri (6) Kurijampa (12) (Bhutan)	MBD/HOCG/BBO	Assam and Meghalaya	44.10	45.10	46.20	2000	Wireless	Conventional	
163	N H Crossing	Manas/ Brahmaputra	Bijni/ Bongaigaon/ Assam	26.46	90.75	Panbari (6)	MBD/HOCG/BBO	Assam and Meghalaya	47.81	48.42	50.08	1984	Wireless	Conventional	
164	Goalpara	Brahmaputra/ Brahmaputra	Goalpara/ Goalpara/ Assam	26.20	90.65	Guwahati (24)	MBD/HOCG/BBO	Assam and Meghalaya	35.27	36.27	37.43	1954	Wireless/ Telemetry	Conventional	
165	Kokrajhar	Gaurang/ Brahmaputra	Kokrajhar/ Assam	26.61	90.25		MBD/HOCG/BBO	Assam & Meghalaya	41.85	42.85	43.6	2015			
166	Dhubri	Brahmaputra/ Brahmaputra	Dhubri/Dhubri/ Assam	26.01	89.99	Goalpara (12)	MBD/HOCG/BBO	Assam and Meghalaya	27.62	28.62	30.37	2019	Wireless/ Telemetry	Conventional	
167	Golokganj	Sankosh/ Brahmaputra	Golokganj/Dhubri/ Assam	26.11	89.82	Sankosh LRP (12) Barabisa (12)	LBD/SICG/T&BDBO	Assam and Meghalaya	28.94	29.94	30.95	2007	Wireless/ Telemetry	Conventional	
168	Tufangunj	Raidak -I	Tufangunj/ Coochbehar/ west Bengal	26.31	89.68	Chepan (12)	LBD/SICG/T&BDBO	Sub Himalayan West Bengal & Sikkim	34.22	35.30	36.50	2017	Wireless	Conventional	
169	N H 31	Jaldhaka/ Brahmaputra	Dhupguri/ Jalpaiguri/ West Bengal	26.57	88.94	Nagarakata (6) Diana (6) Murti (6)	LBD/SICG/T&BDBO	Sub Himalayan West Bengal & Sikkim	80.00	80.90	81.33	1972	Wireless	Conventional	
170	Hasimara	Torsa	Hasimara/Coochbehar/West Bengal	26.72	89.32	Dorokha (06)	LBD/SICG/T&BDBO	Sub Himalayan West Bengal & Sikkim	116.30	116.90	118.50	1996			
171	Ghughumari	Torsa	Coochbehar/Coochbehar/West Bengal	26.29	89.46	Hasimara (8)	LBD/SICG/T&BDBO	Sub Himalayan West Bengal & Sikkim	39.80	40.41	41.46	2000	Wireless	Conventional	

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172	Mathabhanga	Jaldhaka/ Brahmaputra	Mathabhanga/ Coochbehar/ West Bengal	26.32	89.23	N H 31 (6)	LBD/SICG/T&BDBO	Sub Himalayan West Bengal & Sikkim	47.70	48.20	49.85	2007	Wireless	Conventional	
173	Domohani Road Bridge	Teesta/Brahmaputra	Jalpaiguri/ Jalpaiguri/ West Bengal	26.56	88.76	Khanitar (10) Majhitar (10) Coronation (6) Gazoldoba (04) Chel (06) Neora (6)	LBD/SICG/T&BDBO	Sub Himalayan West Bengal & Sikkim	85.65	85.95	89.30	1968	Wireless	Conventional	
174	Mekhligunj	Teesta/Brahmaputra	Mekhligunj/ Coochbehar/ West Bengal	26.33	88.85	Domohani Rd Brdige (6)	LBD/SICG/T&BDBO	Sub Himalayan West Bengal & Sikkim	65.45	65.95	66.45	1996	Wireless	Conventional	
175	Teesta III HEP	Teesta/Brahmaputra	North Sikkim/Sikkim	27.59	88.64	Lachen (01-02)	SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	1585.00					Rainfall Runoff Model	
176	Rangit-III HEP Dam	Teesta/Brahmaputra	Gyalshing/West Sikkim/Sikkim	27.29	88.29		SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	640					Rainfall Runoff Model	
177	Teesta V HEP	Teesta/Brahmaputra	North Sikkim/Sikkim	27.38	88.5	Sankalan(01-02)	SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	579					Rainfall Runoff Model	
178	Singtam	Teesta/Brahmaputra	East Sikkim/ Sikkim	27.23	88.49	Ranipool(1)	SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	377.07	377.57	379.17			Rainfall Runoff Model	
179	Rangpo Dam	Rongpo/Teesta/Brahmaputra	East Sikkim/ Sikkim	27.23	88.7		SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	913.8					Rainfall Runoff Model	
180	Rongli Dam	Rongli/Teesta/Brahmaputra	East Sikkim/ Sikkim	27.2	88.71		SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	913.8					Rainfall Runoff Model	
181	Melli Bazar	Teesta/Brahmaputra	South Sikkim/Sikkim	27.09	88.45	Teesta V Dam(02)	SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	223	224	225.25			Rainfall Runoff Model	
182	Rothak	Teesta/Brahmaputra	West Sikkim/Sikkim	27.17	88.29	Sagbari (01)	SID/IC Gangtak/T&BDBO	Sub Himalayan West Bengal & Sikkim	350.6	351.6	353.2			Rainfall Runoff Model	
183	Annapurnaghat (Silchar)	Barak/ Barak	Silchar/Silchar/ Assam	24.83	92.80	Chottabekra (18) Amraghat(18) Dhalai(18)	MID/MC/ BOBO	Assam and Meghalaya	18.83	19.83	21.84	1989	Wireless	Conventional	
184	Matizuri	Katakhal/Barak	Hailakhandi/ Hailakhandi/ Assam	24.85	92.61	Gharmura (12)	MID/MC/ BOBO	Assam and Meghalaya	19.27	20.27	22.73	2007	Wireless	Conventional	
185	Badarpurghat	Barak/Barak	Silchar/Cachar/ Assam	24.86	92.52	Annapurnaghat (9)	MID/MC/ BOBO	Assam and Meghalaya	15.85	16.85	18.48	2007	Wireless	Conventional	
186	Karimgunj	Kushiyara/Barak	Karimgunj/Karimgunj/Assam	24.87	92.36	Annapurnaghat (12)	MID/MC/ BOBO	Assam and Meghalaya	13.94	14.94	16.57	2010	Wireless	Conventional	
187	Kailashshar	Manu	Kailashshar/ North Tripura Tripura	24.32	91.99	Manughat (18-24)	MD/MC/ BOBO	NMMT	24.34	25.34	25.95	2018	Wirless	Conventional	
188	Sonamura	Gumti	Sonamura/ West Tripura/ Tripura	23.47	91.27	Amarpur (15-21)	MD/MC/ BOBO	NMMT	11.50	12.50	14.42	1993	Wireless	Conventional	
189	Getlasud Dam	Subarnarekha/ Subarnarekha	Ranchi/Jharkhand	23.45	85.55	Kanke Road Bridge/Bada Ghagara	ERD/HOCB/ MERO		590.06						
190	Chandil Dam	Subarnarekha/ Subarnarekha	Musabani/Purba singbhum/ Jharkhand	22.97	86.05	Muri(10-12)	ERD/HOCB/ MERO	Jharkhand		FRL-189				Rainfall Runoff Model	

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											(m)	Year			
191	Galudih Barrage	Subarnarekha/ Subarnarekha	SaraikelaKhara/Jharkhand	22.64	86.39	Jamshedpur	ERD/HOCB/ MERO		FRL-94.50						
192	Jamshedpur	Subarnarekha/ East Flowing Rivers	Chakulia/Purba singbhum/ Jharkhand	22.82	86.21	Adtiyapur/Chandil Dam (6-8)	ERD/HOCB/ MERO	Jharkhand	122.50	123.50	129.82	1973	Wireless/ Telemetry	Conventional	
193	Rajghat	Subarnarekha/ East Flowing Rivers	Jaleswar/Balasore/ Odisha	21.77	87.16	Jamsaloghat (16-24) Fekoghat (16-24)	ERD/HOCB/ MERO	Odisha	9.45	10.36	12.69	2008	Wireless/ Telemetry	Conventional	
194	Mathani Road Bridge	Subarnarekha/ East Flowing	Baleshwar/Odisha	21.66	87.06	Jalaka Rd Bridge at Sansa (06-08)	ERD/HOCB/ MERO	Odisha	5.50	5.50	7.31	2021			
195	N H 5 Road Bridge	Burhabalang/ East Flowing Rivers	Govindpur/ Balasore/ Odisha	21.55	86.92	Baripada (13-15)	ERD/HOCB/ MERO	Odisha	7.21	8.13	9.50	1973	Wireless	Conventional	
196	Salandi Dam	Baitarani/Brahmani-Baitarani	Kendujhar/Odisha	21.28	86.30	Bhejdihi	ERD/HOCB/ MERO		82.30						
197	Anandpur	Baitrani/East Flowing Rivers	Anandpur/ Keonjargarh/ Odisha	21.22	86.11	Swampatna (6-8)	ERD/HOCB/ MERO	Odisha	37.44	38.36	41.35	2011	Wireless/ Telemetry	Conventional/ Mathematical	
198	Akhuapada	Baitrani/East Flowing Rivers	Akhuapada/ Bhadrak/ Odisha	20.92	86.28	Swampatna(12-15) Anandpur (12-15)	ERD/HOCB/ MERO	Odisha	17.83	17.83	21.95	1960	Wireless/ Telemetry	Conventional	
199	Rengali Dam	Brahmani/Brahmani-Baitarani	Angul/Odisha	21.28	85.03	Panposh (10-12)	ERD/HOC/MERO Bhubaneshwar		FRL-123.5						
200	Jenapur Expressway	Brahmani/East Flowing Rivers	Jenapur/Jajpur/ odisha	20.88	86.01	Talcher (15-16) Altuma)15-16)	ERD/HOCB/ MERO	Odisha	22.00	23.00	24.78	1975	Wireless/ Telemetry	Conventional	
201	Ravi Shankar Dam	Mahanadi/ Mahanadi	Dhamtari/Chattisgarh	20.61	81.56		MD/HOCB/MERO		FRL-348.70						
202	Bango Dam	Hasdeo/ Mahanadi	Korba/Chattisgarh	22.59	82.57		MD/HOCB/MERO		FRL-359.66						
203	Hirakud	Mahanadi/ Mahanadi	Burla/ Sambalpur/ Odisha	21.52	83.85	Basantpur (24) Kurubata (24) Sundergarh (24) Kelo (6-18)	MahanadiDiv/HOCB/MERO	Odisha	192.02				Wireless/ Telemetry	Conventional/ Mathematical	
204	Naraj	Mahanadi/ Mahanadi	Cuttack/ Cuttack/Odisha	20.47	85.77	Tikarapara (18-20)	MahanadiDiv/HOCB/MERO	Odisha	25.41	26.41	27.61	1982	Wireless	Conventional/ Mathematical	
205	Alipingal	Devi/Mahanadi	Alipingal/Jagitsinghpur/ Odisha	20.07	86.17	Naraj (12)	MahanadiDiv/HOCB/MERO	Odisha	10.85	11.76	13.11	2011	Wireless/ Telemetry	Conventional	
206	Nimapara	Kushbhadra/ Mahanadi	Nimapara/Puri/ Odisha	20.06	86.01	Naraj (12)	MahanadiDiv/HOCB/MERO	Odisha	9.85	10.76	11.60	1982	Wireless/ Telemetry	Conventional	
207	Purushottampur	Rishikulya/ East Flowing Rivers	Purushottampur/ Ganjam/ Odisha	19.50	84.87	Sorada (14-20)	ERD/HOCB/ MERO	Odisha	15.83	16.83	19.65	1990	Wireless/ Telemetry	Conventional	
208	Gunupur	Vamshadara/East Flowing Rivers	Gunupur/Koraput/ Odisha	19.08	83.81	Gudari (03-05)	ERD/HOCB/ MERO	Odisha	83.00	84.00	88.75	1980	Wireless/ Telemetry	Conventional	
209	Kashinagar	Vamshadara/East Flowing Rivers	Kashinagar/Ganjam/ Odisha	18.85	83.87	Gunupur (04-07)	ERD/HOCB/ MERO	Odisha	54.10	54.60	58.93	1980	Wireless/ Telemetry	Conventional/ Mathematical	
210	Gotta Barrage	Vamsadhara/ East Flowing Rivers	Gotta Barrage/ Srikakulam/ Andhra Pradesh	18.69	83.96	Kashinagar(06-08)	ERD/HOCB/ MERO	Coastal Andhra Pradesh	34.84				Wireless/ Telemetry	Conventional	
211	Thotapalli Resvr system	Nagavali/ East Flowing River Basin	Parvathipuram/Vizianagaram/ Andhra Pradesh	18.78	83.49	Jaggaguda/Brahmnihalua	ERD/HOCB/ MERO		FRL-105.00					Rainfall Runoff Model	
212	Madduvalasa Reservoir	Nagavali/ East Flowing River Basin	Vizianagaram/Andhra Pradesh	18.63	83.22	Seethanagaram/Paradi Rd Bridge	ERD/HOC/MERO Bhubaneshwar	Coastal Andhra Pradesh	FRL-65.00						
213	Narayanpuram Anicut	Nagavali/ East Flowing River Basin	Srikakulam/ Andhra Pradesh	18.48	83.8	Thottapalli Barrage Madduvalasa Dam	ERD/HOC/MERO Bhubaneshwar	Coastal Andhra Pradesh	FRL - 32.77						
214	Srikakulam	Nagavali/ East Flowing River Basin	Srikakulam/ Andhra Pradesh	18.31	83.88	Narayanpuram Anicut(06-08)	ERD/HOCB/ MERO	Coastal Andhra Pradesh	10.17	10.8	14.53	12-05-1990			
215	Dantiwada Dam	Banas/ West Flowing Rivers	Dantiwada dam/Palanpur/ Banaskanta/ Gujarat	24.34	72.34	Sarotry (3-5) Chitrasani (2-5)	MD/HOCG/ MTBO	Gujarat	184.10				Wireless/ Telemetry	Conventional	
216	Abu Road	Banas/West Flowing River	Sirohi/Rajasthan	24.49	72.79	Swaroopganj Moras(RF) Mount Abu(RF)	MD Gandhinagar/HOC/MTBO Gandhinagar		258.00	259.00	265.40	1973	Wireless/ Telemetry	Conventional	

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											(m)	Year			
217	Dharoi Dam	Sabarmati/ West Flowing Rivers	Dharoi Dam/ Mehsana/ Gujarat	24.00	72.86	Kheroj (3-5) Harnav Weir (2-4)	MD/HOCG/ MTBO	Gujarat	189.59				Wireless/ Telemetry	Conventional	
218	Subash Bridge (Ahmedabad)	Sabarmati/ West Flowing Rivers	Ahmedabad/Ahmedabad/ Gujarat	23.06	72.59	Derol Bridge (04-06) Hatmati Weir (04-06)	MD/HOCG/ MTBO	Gujarat	44.09	45.34	47.45	2006	Wireless/ Telemetry	Conventional	
219	Mahi Bajajsagar Dam	Mahi/Mahi	Banswara/Rajasthan	23.62	74.54	Mataji (02-06) Borwa(03-07) Sohagpura(02-06)	MD/HOCG/ MTBO	Rajasthan	FRL-281.5				Wireless/ Telemetry	Conventional	
220	Som Kamla Amba Dam	Som/Mahi	Dungarpur/Rajasthan	23.97	74.03	Khandiovri(02-06) Amarpura(02-06)	MD/HOCG/ MTBO	Rajasthan	FRL-213.5				Wireless/ Telemetry	Conventional	
221	Kadana Dam	Mahi/ West Flowing Rivers	Kadana Dam/ Panchmahal/ Gujarat	23.31	73.83	Paderdibadi (05-06) Anas PH -II (03-06)	MD/HOCG/ MTBO	Gujarat		127.71	127.74	1989	Wireless/ Telemetry	Conventional	
222	Panam Dam	Panam/Mahi	Kalol/Panchmahal/Gujrat	23.05	73.71	Sant Road(02-06) Hadaf Dam(02-06)	MD/HOCG/ MTBO		FRL-127.41						
223	Wanakbori Weir	Mahi/ West Flowing River	Wanakbori/Kheda	22.94	73.42	Kadana Dam (04-09) Panam Dam (03-09)	MD/HOCG/ MTBO	Gujarat	71.93	74.98	76.10	2006	Wireless/ Telemetry	Conventional	
224	Mandla	Narmada/ Narmada	Mandla/Mandla/ Madhya Pradesh	22.59	80.37	Dindori (11) Mukki (12) Manot (03) Mohgaon (04)	ND/SECB/ NBO	East Madhya Pradesh	437.20	437.80	439.41	1974	Wireless	Conventional	
225	Barna Dam	Narmada/ Narmada	Raisen/Madhya Pradesh	23.05	78.06		ND/SECB/ NBO		348.55					Mathematical Model	
226	Bargi Dam	Narmada/ Narmada	Jabalpur/Madhya Pradesh	22.94	79.92	Mandla (06)	ND/SECB/ NBO		422.76					Mathematical Model	
227	Tawa Dam	Narmada/ Narmada	Hoshangabad/ Madhya Pradesh	22.56	77.97	Pachmarhi (06-08)	ND/SECB/ NBO		355.39					Mathematical Model	
228	Hoshangabad	Narmada/ Narmada	Hoshangabad/ Hoshangabad/ Madhya Pradesh	22.76	77.69	Bargi Dam (38) Barmanghat(22) Sandia (10-12) Tawa Dam (08)	ND/SECB/ NBO	West Madhya Pradesh	292.80	293.80	301.33	1972	Wireless	Conventional	
229	Indirasagar Dam	Narmada/ Narmada	Khandwa/Madhya Pradesh	22.28	76.47	Hoshangabad (12-14)	ND/SECB/ NBO		262.13					Mathematical Model	
230	Omkareshwar Dam	Narmada/ Narmada	Khandwa/Madhya Pradesh	22.24	76.16	Indirasagar Dam (06-08)	ND/SECB/ NBO		196.60					Mathematical Model	
231	Sardar Sarovar Dam	Narmada/ Narmada	Ahmedabad/ Gujarat	21.82	73.74		TD/HOCG/ MTBO		138.38						
232	Garudeshwar	Narmada/ Narmada	Garudeshwar/ Bharuch/Gujarat	21.89	73.65	Sardar sarovar dam (02)	TD/HOCG/ MTBO	Gujarat	30.48	31.09	41.65	1970	Wireless/ Telemetry	Conventional	
233	Bharuch	Narmada/ Narmada	Bharuch/Bharuch/ Gujarat	21.70	73.00	Sardar Sarovar Dam(08-12)	TD/HOCG/ MTBO	Gujarat	6.71	7.31	12.65	1970	Wireless/ Telemetry	Conventional	
234	Hathnur Dam	Tapi/ Tapi	Hathnur Dam/ Jalgaon/ Maharashtra	21.07	75.95	Burhanpur (05-06) Yerli (05-06)	TD/HOCG/ MTBO	Marathwada	212.02	214.00	214.00	1989	Wireless/ Telemetry	Conventional	
235	Ukai Dam	Tapi/ Tapi	Ukai Dam/ Surat/ Gujarat	21.25	73.59	Gidadhe (10-12) Sarangkheda (6-7)	TD/HOCG/ MTBO	Gujarat	105.16	105.16	105.51	1990	Wireless/ Telemetry	Conventional	
236	Surat	Tapi/ Tapi	Surat/Surat/Gujarat	21.20	72.82	Ukai Dam (06-08)	TD/HOCG/ MTBO	Gujarat	8.50	9.50	12.50	2006	Wireless/ Telemetry	Conventional	
237	Madhuban Dam	Damanganga/ West Flowing	Madhuban Dam/ Valsad/ Gujarat	20.19	73.06	Ozarkheda (2-3) Nanipalsan (2-3)	TD/HOCG/ MTBO	Gujarat	79.86	82.40	80.60	1993	Wireless/ Telemetry	Conventional	
238	Vapi Town	Damanganga/ West Flowing Rivers	Vapi Town/ Valsad/Gujarat	20.37	72.88	Madhuban Dam (02-03)	TD/HOCG/ MTBO	Gujarat	18.20	19.20	23.76	2004	Wireless/ Telemetry	Conventional	
239	Daman	Damanganga/ West Flowing	Daman/Daman/Diu	20.41	72.84	Madhuban Dam (03)	TD/HOCG/ MTBO	Gujarat	2.60	3.40	4.00	2004	Wireless/ Telemetry	Conventional	
240	Nasik	Godavari/ Godavari	Nasik/Maharashtra	20.00	73.80		UGD/GC/KGBO		558.10	559.60	563.51	2019			
241	NMD Weir	Godavari/ Godavari	Nasik/Maharashtra	19.45	74.33		UGD/GC/KGBO		533.50						
242	Kopergaon	Godavari/ Godavari	Kopergaon/Ahmednagar/Maharashtra	19.89	74.49	N M Weir (18)	LGD/GC/ KGBO	Marathwada	490.90	493.68	499.17	1969	Wireless/ Telemetry	Conventional	
243	Mula Dam	Mula/Godavari	Ahmadnagar/Maharashtra	19.35	74.60		UGD/GC/KGBO		552.30						
244	Jaikwadi Dam	Godavari/Godavari	Paithan/ Aurangabad/ Maharashtra	19.48	75.37	N M Weir (24) Pachegaon(24)	LGD/GC/ KGBO	Marathwada	463.91	465.58	464.69	1990	Wireless	Conventional	

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245	Manjlegaon Dam	Sindhpana/ Godavari	Beed / Maharashtra	19.15	76.18		UGD/GC/KGBO								
246	Gangakhed	Godavari/ Godavari	Gangakhed/Parbhani/Maharashtra	18.98	76.75	Dhalegaon (18)	LGD/GC/ KGBO	Marathwada	374.00	375.00	377.57	1947	Wireless/ Telemetry	Conventional	
247	Yeldari Barrage	Puma/Godavari	Patbhani/Maharashtra	19.71	76.75		UGD/GC/KGBO		461.77						
248	Nanded	Godavari/ Godavari	Nanded/Nanded/ Maharastra	19.15	77.31	Gangakhed (12) Purna (12)	LGD/GC/ KGBO	Marathwada	353.00	354.00	357.10	2006	Wireless/ Telemetry	Conventional	
249	Karanja Dam	Karanja/Godavari	Bidar/Karnataka	17.88	77.31		UGD/GC/KGBO								
250	Singur Dam	Manjira/ Godavari	Singur Dam/ Medak/ Andhra Pradesh	17.75	77.93	Saigaon (24) Karanja(24)	LGD/GC/ KGBO	Telangana	523.60				Wireless	Conventional	
251	Nizamsagar Dam	Manjira/ Godavari	Nizamsagar dam/ Nizamabad/ Andhra Pradesh	18.22	77.96	Singur Dam (24)	LGD/GC/ KGBO	Telangana	428.24				Wireless	Conventional	
252	Sriramsagar	Godavari/Godavari	Pochampad/ Nizamabad/ Andhra Pradesh	18.97	78.34	Nanded (24) Nizamsagar (24) Degloor (24) Bhainsa(24)	LGD/GC/ KGBO	Telangana	332.54	333.15	332.72	1990	Wireless	Conventional	
253	Kaddam Dam	Godavari/Godavari	Kaddam/Adilabad/Telengana	19.1	78.79		UGD/GC/KGBO		FRL-213.21					Rainfall Runoff Model	
254	Sripada Yellampalli project.	Godavari/Godavari	Karimnagar/ Telengana	18.84	79.36		UGD/GC/KGBO		FRL-148					Rainfall Runoff Model	
255	Upper Wainganga Project	Wainganga/ Godavari	Balaghat/Madhya Pradesh	22.37	79.66	Bakhari (05-30)	WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-519.38						
256	Totladoh Project	Pench	Nagpur/Madhya Pradesh	21.65	79.23	Kokiwada(06-31)	WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-490.00						
257	Bawanthadi Reservoir	Bawanthri	Balaghat/Madhya Pradesh	21.54	79.54		WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-344.4						
258	Pench Reservoir/Chaurai Dam	Pench	Chindwara	21.65	79.23		WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-625.75						
259	Bhandara	Wainganga/ Godavari	Bhandara/Bhandara/Maharashtra	21.15	79.66	Balaghat (158) Rajegaon (18)	WD Nagpur/CC Nagpur/ MCO Nagpur	Vidharbha	245.50	245.70	250.90	2005	Wireless/ Telemetry	Conventional	
260	Gosikhurd Dam	Godavari/Godavari	Pauni/Bhandara/ Maharashtra	20.87	79.6	Kumhari(22-60) Rajegaon(22-60) Satrapur(11-40)	WD Nagpur/CC Nagpur/ MCO Nagpur	Vidharbha	FRL-245.50					Rainfall Runoff Model	
261	Pauni	Wainganga/ Godavari	Pauni/Bhandara/ Maharashtra	20.79	79.65	Bhandara (03-06)	WD Nagpur/CC Nagpur/ MCO Nagpur	Vidharbha	226.73	227.73	237.12	1994	Wireless/ Telemetry	Conventional	
262	Upper Wardha Project	Wardha/Godavari	Amaravati/Maharashtra	21.27	78.05		WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-342.50					Rainfall Runoff Model	
263	Issapur/Upper Penganga/SSP	Penganga	Hingoli/Maharashtra	19.71	77.45	Kanhargaon(11-40)	WD Nagpur/CC Nagpur/ MCO Nagpur		FRL-441.00						
264	Balharsha	Wardha/Godavari	Balharsha/Chandrapur/ Maharashtra	19.82	79.37	Ghugus (12) P G Bridge (18)	WD Nagpur/CC Nagpur/ MCO Nagpur	Vidharbha	171.50	174.00	176.45	1986	Wireless/ Telemetry	Conventional	
265	Sirpur Town	Wardha/Godavari	Chandrapur/Maharashtra	19.56	79.61	Ghugus (15) P.G.Bridge(21)	WD Nagpur/CC Nagpur/ MCO Nagpur		159.95	160.95	161.34	2018			
266	Kaleswaram	Godavari/ Godavari	Bhopalpally/Telangana	18.82	79.91	Mancherial (18) Tekra (18)	LGD/GC/ KGBO	Telangana	103.50	104.75	107.05	1986	Wireless/ Telemetry	Conventional	
267	Upper Indravati Project	Indravathi/ Godavari	Kalahandi/Odisha	19.27	82.82		LGD/GC/ KGBO		FRL-642.00						
268	Jagdalpur	Indravathi/ Godavari	Jagdalpur/ Bastar/ Chhatisgarh	19.09	82.03	Nowrangpur (15-18) Kosagumda (15-18)	LGD/GC/ KGBO	Chhatisgarh	539.50	540.80	544.68	1973	Wireless/ Telemetry	Conventional	

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269	Eturunagaram	Godavari/ Godavari	Eturunagaram/ Warangal/ Andhra Pradesh	18.32	80.46	Kaleswaram (12-18) Pathagudem (12-18)	LGD/GC/ KGBO	Telangana	73.32	75.82	77.66	1990	Wireless/ Telemetry	Conventional	
270	Dummagudem	Godavari/ Godavari	Dummagudem/ Khammam/ Andhra Pradesh	17.85	80.88	Perur (12-15)	LGD/GC/ KGBO	Telangana	53.00	55.00	60.25	1986	Wireless/ Telemetry	Conventional	
271	Bhadrachalam	Godavari/ Godavari	Bhadrachalam/ Khammam/ Andhra Pradesh	17.67	80.88	Perur (15-18)	LGD/GC/ KGBO	Telangana	45.72	48.77	55.66	1986	Wireless/ Telemetry	Conventional	
272	Kolab Project	Kolab/Godavari	Koraput/Odisha	18.78	82.60		LGD/GC/ KGBO		FRL-858.00						
273	Machkund Project	Machkund	Koraput/Odisha	18.45	82.54		LGD/GC/ KGBO		FRL-838.20						
274	Balimela Project	Balimela	Malkangiri/Odisha	18.30	82.25		LGD/GC/ KGBO		FRL-462.07						
275	Chinturu	Sabri/Godavari	East Godavari/Andhra Pradesh	17.82	81.39	Sukma(06)	LGD/GC/ KGBO		41.50	43.00	44.91	18-08-2018		3 days advisory Forecast (CWC BETA Model)	
276	Kunavaram	Godavari/ Godavari	Kunavaram/ Khammam/ Andhra Pradesh	17.57	81.25	Perur (12-18)	LGD/GC/ KGBO	Telangana	37.74	39.24	51.30	1986	Wireless	Conventional	
277	Rajahmundry GNV Railway Bridge	Godavari/ Godavari	Rajahmundry/ East Godavari/ Andhra Pradesh	17.01	81.77	Koida (15-18)	LGD/GC/ KGBO	Coastal Andhra Pradesh	17.68	19.51	20.48	1986	Wireless/ Telemetry	Conventional	
278	Dowlaiswaram	Godavari/ Godavari	Dowlaiswaram/ East Godavari/ Andhra Pradesh	16.94	81.78	Koida (15-21)	LGD/GC/ KGBO	Coastal Andhra Pradesh	14.25	16.08	18.36	1986	Wireless/ Telemetry	Conventional	
279	Atreyapuram	Godavari/Godavari	Atreyapuram/East Godavari/Andhra Pradesh	16.81	81.81	Dowlaisweram(3)	LGD Hyd/GC/KGBO	Coastal Andhra Pradesh	13.5	15	14.16	2020		3 days advisory Forecast (CWC BETA Model)	
280	Koyna Dam	Koyna	Satara/Maharashtra	17.4	73.75	Mahabaleshwar(12) Nawaja(01-05) Koyna (01-05)	UKD/KCC/KGBO		FRL-659.43				Phone	Rainfall Runoff Model/Correlation/3 day Advisory	
281	Warana Dam	Warana	Kolhapur/Maharashtra	17.13	73.85	Warana (01-05)	UKD/KCC/KGBO		FRL-626.90				Phone	Rainfall Runoff Model/Correlation/3 day Advisory	
282	Arjunwad	Krishna/Krishna	Arjunwad/ Kolhapur/ Maharashtra	16.78	74.63	Kowad (24) Samdoli (12)	UKD/KCC/ KGBO		539.20	540.70	544.35	2019	Phone	Conventional	
283	Hippargi Barrage	Krishna/Krishna	Bagalkot/Karnataka	16.55	75.16	Kurunwad(16-27) Sadalga(16-27)	UKD/KCC/KGBO		FRL-531.40				Phone	Conventional	
284	Hidkal Dam	Ghatprabha/Krishna	Belagavi/Karnataka	16.14	74.64		CD Bang/MSO		FRL-662.94						
285	Almatti Dam	Krishna/ krishna	Almatti Dam/**Bagalkot**/ Karnataka	16.33	75.88	Kurundwad (33-54) Sadalga (33-54) Gokak (21-30)	LKD/KCC/ KGBO	North Interior Karnataka	519.60				Wireless	Conventional	
286	Malaprabha Dam	Malaprabha	Belgum/Karnataka	15.82	75.09		CD Bang/MSO		FRL-633.83						
287	Narayanpur Dam	Krishna/ krishna	Narayanpur Dam/ Yadgir/ Karnataka	16.20	76.36	Almatti Dam (09-18) Cholachguda(12-24)	LKD/KCC/ KGBO	North Interior Karnataka	492.25				Wireless	Conventional	
288	Veer Dam	Nira/Krishna	Satara/Maharashtra	18.12	74.09	Niradeoghar(12) Bhatgar(12)	UKD/KCC/KGBO		FRL-579.85				Phone	Rainfall Runoff Model/Correlation/3 day Advisory	
289	Ujjani Dam	Bhima/ Krishna	Solapur/Maharashtra	18.07	75.12	Phulgaon(24) Dhond(12)	UKD/KCC/KGBO		FRL-496.83				Phone	Rainfall Runoff Model/Correlation/3 day Advisory	
290	Deongaon Bridge	Bhima/ Krishna	Afzalpur/ Gulbarga/ Karnataka	17.17	76.33	Takli (12-27) Wadakbal (15-27)	LKD/KCC/ KGBO	North Interior Karnataka	402.00	404.50	409.00	2020	Wireless/ Telemetry	Conventional	
291	Priyadharshini Jurala Project	Krishna/ krishna	Mahbubnagar/ Telangana	16.33	77.70	Huvinhedgi (12-30) Yadgir (09-30) Deosugur (03-06)	LKD/KCC/ KGBO	Telangana	318.52				Wireless	Conventional	

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											(m)	Year			
292	Upper Tunga	Tungabhadra/ Krishna	Shimoga/Krishna	13.84	75.52		CD Bangluru/C&SRC/ C&SRO Coimbtore	South interior Karnataka, Shimoga	FRL-588.24						
293	Bhadra Dam	Tungabhadra/ Krishna	Tarikere/Chikmagalur/Karnataka	13.7	75.63		CD Bangluru/C&SRC/ C&SRO Coimbtore	Coastal Karnataka, Lakkavalli	FRL-657.75						
294	Tungabhadra Dam	Tungabhadra/ Krishna	Hospet/ Bellary/ Karnataka	15.26	76.34	Harlahalli (12-27) Marol (12-27)	LKD/KCC/ KGBO	South Interior Karnataka	497.74				Wireless	Conventional	
295	Singatlur Barrage	Tungabhadra/Krishna	Gadag/Karnataka	15.03	75.83	Harlahalli(10-20) Marol(02-08)	LKD/KCC/ KGBO		FRL-507.00				Phone	Conventional	
296	Mantralayam	Tungabhadra	Mantralayam/ Kurnool/ Andhra Pradesh	15.95	77.43	Ollenur (18-30) T Ramapuram (09-18)	LKD/KCC/ KGBO	Rayalaseema	310.00	312.00	318.77	2009	Wireless/ Telemetry	Conventional	
297	Sunkesula Barrage	Tungabhadra/Krishna	C.Belagal/Kurnool/ Andhra Pradesh	15.88	77.83	Mantralayam (06-09)	LKD/KCC/ KGBO	Rayalaseema	FRL-292.00					Conventional	
298	Kurnool	Tungabhadra/ Krishna	Kurnool/Kurnool/ Andhra Pradesh	15.82	78.03	Mantralayam(06-15) Sunkesula Barrage (03-12)	LKD/KCC/ KGBO	Rayalaseema	273	274	281.23	02.10.09	Wireless	Conventional	
299	Srisailam Dam	Krishna/ krishna	Srisailam/ Kurnool/ Andhra Pradesh	16.08	78.90	Mantralayam (12-30) Krishna Agraharam (09-24)	LKD/KCC/ KGBO	Coastal Andhra Pradesh	269.75				Wireless	Conventional	
300	Musi Dam	Musi/Krishna	Nalgonda/Telengana	17.23	79.52	Valigonda(10-18) Anantaram(06-12)	LKD/KCC/ KGBO		FRL-196.60				Phone	Conventional	
301	Dr KLRS Pulichintala Dam	Krishna/Krishna	Bellamkonda/Guntur/Andhra Pradesh	16.75	80.05	NS Dam Release(09-24) Halia(03-06) Dhmercherla(06-12)	LKD/KCC/ KGBO	Coastal Andhra Pradesh	FRL-53.34					Conventional	
302	Prakasam Barrage	Krishna/ krishna	Vijayawada/ Krishna/ Andhra Pradesh	16.53	80.61	Wadenapalli (09-21) Madhira (09-15) Polampally (06-18) Paleru Bridge (09-18)	LKD/KCC/ KGBO	Coastal Andhra Pradesh	17.31				Wireless	Conventional	
303	Avanigadda	Krishna/ krishna	Krishna/Andhra Pradesh	16.02	80.91	Prakasam Barrage (03-09) Vijayawada	LKD/KCC/ KGBO	Coastal Andhra Pradesh	9.00	11.00	11.57	2009	Telemetry	Conventional	
304	Somasila Dam	Pennar/Pennar	Ozili//Nellore/ Andhra Pradesh	14.48	79.3		HD/ C&SRC Bangalore/ C & SRO Coimbtore.	Coastal Andhra Pradesh	FRL-100.58					Rainfall Runoff Model	
305	Nellore Anicut	North Pennar	Nellore/ Nellore/ Andhra Pradesh	14.47	79.99	Chennur (18) Nandipally (18) Somasila Project (09)	HD/SR	Coastal Andhra Pradesh	15.91	17.28	19.57	2021	Wireless	Conventional	
306	Poondi Satyamurthy Dam	Kosasthalaiyar/ EFRB Pennar-Cauvery	Thiruvallur/ Tamilnadu	13.18	79.86		HD / C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-42.67					Rainfall Runoff Model	
307	Chembarampakkam	Adyar/EFRB Pennar Cauvery	Chenglepet/Kancheepuram/ Tamilnadu	13.01	80.08		HD Chennai/C&SRC Bangaluru/C & SRO Coimbtore	Tamilnadu & Puducherry	26.03						
308	Sathnur Dam	Ponnaiyar/ EFRB Pennar-Cauvery	Chengam/Thiruvannamalai/ Tamilnadu	12.2	78.59		HD Chennai/C&SRC Bangaluru/C & SRO Coimbtore	Tamilnadu & Puducherry	FRL-222.2						
309	Gomukhi	Vellar/EFRB Pennar Cauvery	Kallakurichi/Villupuram/Tamilnadu	11.8	78.81		HD Chennai/C&SRC Bangaluru/C & SRO Coimbtore		FRL-183.18						
310	Wellington Dam	Vellar/EFRB Pennar Cauvery	Thittakudi/Cuddalore/Tamilnadu	11.4	79.09		HD Chennai/C&SRC Bangaluru/C & SRO Coimbtore		FRL-72.54						
311	Harangi Dam	Cauvery/Cauvery	Somwarpet/ Kodagu/ Karnataka	12.49	75.9		CD Banglore / C&SRC Bangalore/ C & SRO Coimbtore.	Coastal Andhra Pradesh	FRL-871.42					Rainfall Runoff Model	

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											(m)	Year			
312	Hemavathy Dam	Cauvery/Cauvery	Channaryapatra/Hassan/Karnataka	12.82	76.05		CD Banglore / C&SRC Bangalore/ C & SRO Coimbtore.	Coastal Andhra Pradesh	FRL-890.63					Rainfall Runoff Model	
313	Kabini Dam	Cauvery/Cauvery	Heggadevanakote/Mysore/Karnataka	11.84	76.33		CD Banglore / C&SRC Bangalore/ C & SRO Coimbtore.	South Interior Karnataka	FRL-696.16					Rainfall Runoff Model	
314	Krishnaraj sagar	Cauvery/Cauvery	Srirangapatna/Mandya/Karnataka	12.45	76.57		CD Banglore / C&SRC Bangalore/ C & SRO Coimbtore.	South Interior Karnataka	FRL-752.49					Rainfall Runoff Model	
315	Mettur Dam	Cauvery/Cauvery	Mettur/Salem/Tamilnadu	11.8	77.8		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-240.79					Rainfall Runoff Model	
316	Bhawanisagar Dam	Bhavani/Cauvery	Sathyamangalam/Erode/Tamilnadu	11.47	77.1		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-280.42					Rainfall Runoff Model	
317	Savandapur	Bhavani/Cauvery	Gobichettipalayam/Tamilnadu	11.52	77.51		SRD Coim/C&SRC Bang/C & SRO Coimb		184.5	185.5	187.75	2018			
318	Kodumudi	Cauvery/Cauvery	Erode/Erode/Tamilnadu	11.08	77.89		SRD Coim/C&SRC Bang/C & SRO Coimb	Tamilnadu and Puducherry	125.5	126.5	128.14	2018			
319	Kodaganar Dam	Kodaganar/Cauvery	Dindugul/Tamilnadu	10.59	77.97		SRD Coim/C&SRC Bang/C & SRO Coimb	Tamilnadu and Puducherry	FRL-200.25						
320	Musiri	Cauvery/Cauvery	Musiri/Tiruchirapalli/Tamilnadu	10.93	78.43		SRD Coim/C&SRC Bang/C & SRO Coimb	Tamilnadu and Puducherry	82.12	83.12	86.98	2005			
321	Upper Anicut	Cauvery/Cauvery	Thiruchirapalli/ Tamilnadu	10.88	78.57		SRD Coim/C&SRC Bang/C & SRO Coimb		FRL-74.40						
322	Grand Annicut	Cauvery/Cauvery	Thanjavur/ Tamilnadu	10.83	78.81		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-59.21					Rainfall Runoff Model	
323	Vaigai Dam	Vaigai/EFR South of Cauvery	Andipatti/ Theni/ Tamilnadu	10.5	77.33		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	FRL-279.2					Rainfall Runoff Model	
324	Madurai	Vaigai/EFR South of Cauvery	Madurai/Tamilnadu	9.93	78.11		SRD/C & SRC / C & SRO	Tamilnadu & Puducherry	131.5	132.5	134.76	1997			
325	Kumbidi	Bharathapuzha/WFR Tapi to Tadri	Palakkad/Kerala	10.85	76.02		SWRD/CSRO		8.2	9.2	11.27	2018			
326	Idduki Dam	Periyar/WFR Tadri to Kanyakumari	Idduki/Kerala	9.84	76.97		SWRD/CSRO		FRL-732.62						
327	Edamalayar Dam	Edamalayar/WFR Tadri to Kanyakumari	Ernakulam/Kerala	10.22	76.7		SWRD/CSRO		FRL-169.00						
328	Neeleswaram	Periyar/WFR Tadri to Kanyakumari	Ernakulam/Kerala	10.18	76.49		SWRD/CSRO		9	10	12.4	2018			
329	Malakkara	Pamba/WFR Tadri to Kanyakumari	Pathanamthitta	9.32	76.66		SWRD/CSRO		6	7	9.58	2018			
330	Polavaram	Godavari/Godavari	West Godavari/ Andhra Pradesh	17.29	81.64		LGD Hyd/GC/KGBO								
331	Laxmi Barrage	Godavari/Godavari	Bhupalpally/Telangana	18.7	80.08		UGD/GC/KGBO		100						
332	PVNR Kanthapally Project	Godavari/Godavari	Warangal/Telangana	18.58	80.39		UGD/GC/KGBO		FRL-83.00						
333	Madikhera(Atal Sagar)	Sindh/Ganga	Shivpuri/Madhya Pradesh	25.55	77.85		LYD/HOCN/ YBO		FRL-346.25						

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											(m)	Year			
334	Muthankera	Kabini/Cauvery	Waynad/Kerala	11.8	76.08		CD Banglore / C&SRC Bangalore/ C & SRO Coimbtore.		710.3	711.25	713.89	11-07-1905			
335	Subansiri Lower Dam	Subansiri/ Brahmaputra	Lower Subansiri/Arunachal Pradesh	27.55	94.26		UBD/HOCG/ BBO								
336	Shetrunji Dam	Shetrunji/WFR (Kutch & Saurashtra)	Bhavnagar/Gujarat	21.47	71.88		MD Gandhinagar/HOC /MTBO Gandhinagar		FRL-55.53						
337	Ichari Dam	Tons/Ganga	Dehradun/Uttarakhand	30.61	77.79		UYD/HOCN/ YBO		FRL-644.75						
338	Tehri Dam	Bhagirathi/Ganga	Garhwal/Uttarakhand	30.37	78.48		HGD/HOC/UGBO		FRL-830						
339	Judddo Dam	Yamuna/Ganga	Dehradun/Uttarakhand	30.51	77.88		UYD/HOCN/ YBO		FRL-631.5						
340	Mid Manair Dam	Maner/Godavari	Rajanna Sircilla/Telangana	18.39	78.96		UGD/GC/KGBO		FRL-318						

Basinwise -Riverwise- Flood Forecasting Information in India during Flood Season 2024												
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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12	13.00
	1. Indus Basin											
1	Jhelum	Sangam	Jammu & Kashmir	1591.20	1592.42	1595.37	07-09-2014	1589.27	01/05/2024 00	0	0	-
2	Jhelum	Rammunshibagh	Jammu & Kashmir	1585.48	1586.40	1589.00	08-09-2014	1585.15	01/05/2024 00	0	0	-
3	Jhelum	Safapora	Jammu & Kashmir	1580.52	1581.28	1582.15	1996	1580.03	01/05/2024 00	0	0	-
	2 a. Ganga Basin											
4	Alaknanda	Srinagar	Uttarakhand	535.00	536.00	537.90	17-06-2013	535.30	01/08/2024 02	1	1	100.00
5	Mandakini	Ganganagar	Uttarakhand	803.00	804.00	808.00	17/06/2013	801.5	31/07/2024 23	0	0	-
6	Ganga	Rishikesh	Uttarakhand	339.50	340.50	341.72	05-09-1995	340.06	23/08/2024 13	6	6	100.00
7	Ganga	Haridwar	Uttarakhand	293.00	294.00	296.30	19-09-2010	293.70	23/08/2024 13	6	5	83.33
8	Ganga	Garhmuktheswar	Uttar Pradesh	198.33	199.33	199.90	23-09-2010	198.76	04/09/2024 19	71	71	100.00
9	Ganga	Kachla Bridge	Uttar Pradesh	161.00	162.00	162.91	20/07/2023	162.63	17/09/2024 07	229	227	99.13
10	Ganga	Fathegarh	Uttar Pradesh	136.60	137.60	138.14	26-09-2010	137.73	18/09/2024 04	67	66	98.51
11	Ramganga	Moradabad	Uttar Pradesh	189.60	190.60	192.88	21-09-2010	190.24	16/09/2024 05	17	17	100.00
12	Ramganga	Bareilly	Uttar Pradesh	162.07	163.07	162.82	22-09-2010	161.75	17/09/2024 05	0	0	-
13	Ganga	Dabri	Uttar Pradesh	136.30	137.30	139.70	28-09-1983	138.09	20/09/2024 05	42	42	100.00
14	Ganga	Kannauj	Uttar Pradesh	124.97	125.97	126.78	27-09-2010	126	20/09/2024 05	11	11	100.00
15	Ganga	Ankinghat	Uttar Pradesh	123.00	124.00	124.49	28-09-2010	124.09	20/09/2024 02	31	31	100.00
16	Ganga	Kanpur	Uttar Pradesh	113.00	114.00	114.08	29-09-2010	113.15	21/09/2024 05	20	20	100.00
17	Ganga	Dalmau	Uttar Pradesh	98.36	99.36	99.84	03-08-1973	99.15	23/09/2024 06	9	9	100.00
18	Ganga	Phaphamau	Uttar Pradesh	83.73	84.73	87.98	08-09-1978	84.07	16/09/2024 08	4	4	100.00
19	Yamuna	Paonta Sahib	Himachal Pradesh	383.50	384.50	384.60	05-09-1995	381.3	02/09/2024 11	0	0	-
20	Yamuna	Karnal Bridge	Haryana	248.80	249.50	250.07	17-06-2013	247.66	12/08/2024 02	0	0	-
21	Yamuna	Mawi	Uttar Pradesh	231.00	231.50	232.75	18-06-2013	229.81	12/08/2024 15	0	0	-
22	Sahibi	Dhansa	NCT Delhi	211.44	212.44	213.58	06-08-1977	210.65	15/09/2024 08	0	0	-
23	Yamuna	Delhi Rly Bridge	NCT Delhi	204.50	205.33	208.66	13/08/2023	204.38	13/08/2024 03	0	0	-
24	Yamuna	Mathura	Uttar Pradesh	165.20	166.00	169.73	08-09-1978	165.17	18/09/2024 19	0	0	-
25	Yamuna	Agra	Uttar Pradesh	151.40	152.40	154.76	09-09-1978	149.74	12/09/2024 14	0	0	-
26	Yamuna	Etawa	Uttar Pradesh	120.92	121.92	126.13	11-09-1978	120.79	15/09/2024 14	0	0	-
27	Chambal	Manderial	Rajasthan	164.00	165.00	170.05	25/08/2022	161.05	13/09/2024 06	0	0	-
28	Chambal	Dholpur	Rajasthan	129.79	130.79	146.57	25/08/2022	134.67	13/09/2024 12	11	10	90.91
29	Chambal	Kota City	Rajasthan	239.00	242.00	248.68	16-09-2019	237.8	29/09/2024 19	0	0	-
30	Yamuna	Auraiya	Uttar Pradesh	112.00	113.00	118.51	06-08-2021	113.6	15/09/2024 01	4	4	100.00
31	Yamuna	Kalpi	Uttar Pradesh	107.00	108.00	112.98	25-08-1996	108.89	15/09/2024 01	3	3	100.00
32	Yamuna	Hamirpur	Uttar Pradesh	102.63	103.63	108.59	12-09-1983	104	14/09/2024 05	4	4	100.00
33	Betwa	Mohana	Uttar Pradesh	121.66	122.66	132.16	05-09-1978	122.3	12/09/2024 18	1	1	100.00
34	Betwa	Sahjina	Uttar Pradesh	103.54	104.54	108.95	06-09-1978	103.45	13/09/2024 22	0	0	-
35	Ken	Banda	Uttar Pradesh	103.00	104.00	113.29	07-07-2005	106.75	06/08/2024 08	5	5	100.00
36	Yamuna	Chilaghat	Uttar Pradesh	99.00	100.00	105.16	06-09-1978	100.07	14/09/2024 11	5	5	100.00

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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6	7	8	9	10	11	12	13.00
37	Yamuna	Naini	Uttar Pradesh	83.74	84.74	87.99	08-09-1978	83.91	16/09/2024 12	3	3	100.00
38	Ganga	Allahabad Chhatnag	Uttar Pradesh	83.73	84.73	88.03	08-09-1978	83.41	16/09/2024 11	0	0	-
39	Ganga	Mirzapur	Uttar Pradesh	76.72	77.72	80.34	09-09-1978	76.54	16/09/2024 21	0	0	-
40	Ganga	Varanasi	Uttar Pradesh	70.26	71.26	73.90	09-09-1978	70.83	17/09/2024 07	5	5	-
41	Gomati	Lucknow	Uttar Pradesh	108.50	109.50	110.85	10-09-1971	105.87	07/08/2024 04	0	0	-
42	SAI	Raibareli	Uttar Pradesh	100.00	101.00	104.81	17-09-1982	98.65	29/08/2024 20	0	0	-
43	Gomati	Jaunpur	Uttar Pradesh	73.07	74.07	77.74	22-09-1971	71.3	28/09/2024 06	0	0	-
44	Ganga	Ghazipur	Uttar Pradesh	62.10	63.10	65.22	09-09-1978	63.67	17/09/2024 23	12	12	100.00
45	Ganga	Buxar	Bihar	59.32	60.32	62.09	01-08-1948	60.3	17/09/2024 21	12	10	83.33
46	Ganga	Ballia	Uttar Pradesh	56.62	57.62	60.39	25-08-2016	59.81	19/09/2024 08	52	52	100.00
47	Ghaghra	Elgin Bridge	Uttar Pradesh	105.07	106.07	107.62	18-08-2014	107.01	16/09/2024 01	110	109	99.09
48	Ghaghra	Ayodhya	Uttar Pradesh	91.73	92.73	94.01	11-10-2009	93.32	16/09/2024 12	101	101	100.00
49	Rapti	Kakardhari	Uttar Pradesh	130.00	131.00	132.37	15-08-2014	130.36	07/07/2024 16	2	2	100.00
50	Rapti	Balrampur	Uttar Pradesh	103.62	104.62	106.07	10-10-2022	105.26	09/07/2024 12	42	41	97.62
51	Rapti	Bansi	Uttar Pradesh	83.90	84.90	86.27	16/10/2022	85.39	13/07/2024 15	68	68	100.00
52	Rapti	Gorakpur_Birdghat	Uttar Pradesh	73.98	74.98	77.54	23-08-1998	75.99	16/07/2024 04	68	68	100.00
53	Ghaghra	Turtipar	Uttar Pradesh	63.01	64.01	66.00	28-08-1998	64.81	26/08/2024 11	111	110	99.10
54	Ghaghra	Darauli	Bihar	59.82	60.82	61.82	15/10/2022	61.41	26/08/2024 15	93	92	98.92
55	Ghaghra	Gangpur Siswan	Bihar	56.04	57.04	58.26	17-08-1980	57.67	20/09/2024 01	55	54	98.18
56	Ghaghra	Chhapra	Bihar	52.68	53.68	54.59	03-09-1982	53.45	19/09/2024 18	5	5	100.00
57	Sone	Inderpuri	Bihar	107.20	108.20	108.85	23-08-1975	105.35	18/09/2024 17	0	0	-
58	Sone	Koelwar	Bihar	54.52	55.52	58.88	20-07-1971	55	19/09/2024 06	4	4	100.00
59	Sone	Maner	Bihar	51.00	52.00	53.79	10-09-1976	53.29	20/09/2024 06	42	39	92.86
60	Ganga	Patna Dighaghat	Bihar	49.45	50.45	52.52	23-08-1975	51.76	20/09/2024 06	50	47	94.00
61	Gandak	Khadda	Uttar Pradesh	95.00	96.00	97.50	23-07-2002	96.54	29/09/2024 06	246	243	98.78
62	Gandak	Chatia	Bihar	68.15	69.15	70.04	26-07-2002	69.3	01/10/2024 06	5	4	80.00
63	Gandak	Dumariaghat	Bihar	61.22	62.22	64.36	24-07-2020	64	01/10/2024 04	117	111	94.87
64	Gandak	Rewaghat	Bihar	53.41	54.41	55.46	24-07-2020	55.38	02/10/2024 04	37	37	100.00
65	Gandak	Hazipur	Bihar	49.32	50.32	50.93	18/08/1948	50.21	20/09/2024 05	15	15	100.00
66	Ganga	Patna Gandhighat	Bihar	47.60	48.60	50.52	20-08-2016	50.28	20/09/2024 05	69	66	95.65
67	PunPun	Sripalpur	Bihar	49.60	50.60	53.91	18-09-1976	51.92	20/09/2024 03	28	23	82.14
68	Ganga	Hathidah	Bihar	40.76	41.76	43.52	16-08-2021	43.41	21/09/2024 09	69	66	95.65
69	Ganga	Munger	Bihar	38.33	39.33	40.99	19-09-1976	39.95	22/09/2024 01	45	44	97.78
70	Burhi Gandak	Lalbeghiaghat	Bihar	62.20	63.20	67.09	30-07-1975	62.8	05/10/2024 14	10	9	90.00
71	Burhigandak	Ahirwalia	Bihar	58.62	59.62	61.17	02-06-2014	57.99	06/10/2024 10	0	0	-
72	Burhi Gandak	Muzaffarpur	Bihar	51.53	52.53	54.29	15-08-1987	51.97	09/10/2024 15	9	8	88.89
73	Burhi Gandak	Samastipur	Bihar	45.02	46.02	49.38	15-08-1987	45.46	10/10/2024 23	8	8	100.00
74	Burhi Gandak	Rosera	Bihar	41.63	42.63	46.56	02-08-2020	43.27	11/10/2024 16	17	15	88.24
75	Burhi Gandak	Khagaria	Bihar	35.58	36.58	39.22	16/08/1976	38.82	22/09/2024 15	76	76	100.00
76	Ganga	Bhagalpur	Bihar	32.68	33.68	34.86	18-08-2021	34.66	22/09/2024 19	56	54	96.43

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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12	13.00
77	Ganga	Kahalgaon	Bihar	30.09	31.09	32.87	17-09-2003	32.58	23/09/2024 15	82	79	96.34
78	Kosi	Basua	Bihar	46.75	47.75	49.24	08-02-2022	48.57	29/09/2024 15	177	172	97.18
79	Bagmati	Dheng Bridge	Bihar	70.00	71.00	73.00	13-08-2017	**73.47**	**29/09/2024 00**	132	115	87.12
80	Bagmati	Runisaidpur	Bihar	54.00	55.00	58.15	14-08-2017	**58.34**	**29/09/2024 23**	123	103	83.74
81	Bagmati	Benibad	Bihar	47.68	48.68	50.01	12-07-2004	49.99	02/10/2024 17	108	107	99.07
82	Adhwara Group	Kamtaul	Bihar	49.00	50.00	52.99	12-08-1987	50.82	06/10/2024 08	23	23	100.00
83	Adhwara Group	Ekmighat	Bihar	45.94	46.94	49.52	12-07-2004	46.95	08/10/2024 05	15	15	100.00
84	Bagmati	Hayaghat	Bihar	44.72	45.72	48.96	14-08-1987	45.78	06/10/2024 16	13	13	100.00
85	Kamla Balan	Jainagar	Bihar	67.50	68.50	71.35	01-08-1965	69.7	29/09/2024 02	105	104	99.05
86	Kamla Balan	Jhanjharpur	Bihar	49.50	50.50	53.11	14-07-2019	52.28	29/09/2024 19	209	208	99.52
87	Adhwara	Sonebarsha	Bihar	80.85	81.85	83.20	03-07-1999	82.25	29/09/2024 13	4	3	75.00
88	Kosi	Baltara	Bihar	32.85	33.85	36.40	15-08-1987	35.79	01/10/2024 12	119	108	90.76
89	Kosi	Kursela	Bihar	29.00	30.00	32.10	07-09-1982	31.25	24/09/2024 09	91	89	97.80
90	Ganga	Sahibgunj	Jharkhand	26.25	27.25	30.91	20/08/1998	28.42	24/09/2024 16	81	78	96.30
91	Mahananda	Taibpur	Bihar	65.00	66.00	67.26	29/06/2022	66.81	29/09/2024 05	44	44	100.00
92	Mahananda	Dhengraghat	Bihar	34.65	35.65	38.20	14-08-2017	37.22	29/09/2024 06	51	51	100.00
93	Mahananda	Jhawa	Bihar	30.40	31.40	34.07	14-08-2017	32.59	30/09/2024 23	90	89	98.89
94	Parwan	Araria	Bihar	46.00	47.00	49.40	14-08-2017	48.34	30/09/2024 18	131	131	100.00
95	Ganga	Farakka	West Bengal	21.25	22.25	25.14	07-09-1998	23.53	24/09/2024 06	143	135	94.41
96	Mayurakshi	Narayanpur	West Bengal	26.99	27.99	29.69	27-09-1995	25.27	03/08/2024 21	0	0	-
97	Ajoy	Gheropara	West Bengal	38.42	39.42	43.94	27-09-1978	37.60	17/09/2024 16	0	0	-
98	Mundeshwari	Harinkhola	West Bengal	11.80	12.80	14.60	28-07-2017	14.44	18/09/2024 15	8	8	100.00
99	Kangsabati	Mohanpur	West Bengal	24.73	25.73	29.62	02-09-1978	25.4	18/09/2024 01	0	0	-
	2 b Brahmaputra Basin											
100	Siang	Yingkiang	Arunachal Pradesh	303.00	304.00	274.48		271.75	29/06/2024 03	0	0	-
101	siang	Passighat	Arunachal Pradesh	152.96	153.96	157.54	11-06-2000	153.1	29/06/2024 04	3	3	100.00
102	Lohit	Dholla Bazaar	Assam	127.27	128.27	130.07	22-09-2012	127.43	30/06/2024 03	1	0	0.00
103	Brahmaputra	Dibrugrah	Assam	104.70	105.70	106.48	03-09-1998	105.8	30/06/2024 19	122	121	99.18
104	Noa-Dehing	Namsai	Arunachal Pradesh	144.80	145.80	146.60	07-10-1979	144.75	01/05/2024 20	0	0	-
105	Burhidihing	Naharkatia	Assam	119.40	120.40	122.69	17-06-1973	119.89	02/07/2024 07	4	4	-
106	Burhidihing	Khwong	Assam	101.11	102.11	104.16	02-09-2015	104.23	03/07/2024 02	39	39	100.00
107	Desang	Nanglamoraghat	Assam	93.46	94.46	96.49	06-09-1998	96.19	04/07/2024 09	89	88	98.88
108	Dikhow	Shivsagar	Assam	91.40	92.40	94.34	11-08-2023	94.35	02/07/2024 16	98	98	100.00
109	Brahmaputra	Neamatighat	Assam	84.54	85.54	87.37	11-07-1991	87.47	01/07/2024 02	86	86	100.00
110	Subansiri	Choldhowaghat	Assam	99.43	100.43	101.31	27-07-1972	97.13	01/07/2024 09	0	0	-

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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12	13.00
111	Ranganadi	N H Crossing Ranganad	Assam	93.81	94.81	95.92	02-07-1979	94.55	02/07/2024 01	13	10	76.92
112	Subansiri	Badatighat	Assam	81.53	82.53	86.21	28-07-1972	83.35	02/07/2024 00	36	36	100.00
113	Dhansiri (S)	Golaghat	Assam	88.50	89.50	92.45	11-10-1986	89.94	31/07/2024 21	25	25	100.00
114	Dhansiri (S)	Numaligarh	Assam	77.42	78.42	80.16	02-08-2018	78.95	01/08/2024 13	119	119	100.00
115	Jiabharali	Jiabharali_NTX	Assam	77.00	78.00	78.50	26-07-2007	78.5	01/07/2024 06	159	156	98.11
116	Brahmaputra	Tezpur	Assam	64.23	65.23	66.59	27-08-1988	66.23	02/07/2024 15	51	50	98.04
117	Kopilli	Kampur	Assam	59.50	60.50	62.20	18/06/2022	62.1	31/05/2024 12	49	49	100.00
118	Kopilli	Dharmatul	Assam	55.00	56.00	58.09	21-07-2004	56.6	04/07/2024 17	73	73	100.00
119	Brahmaputra	Guwahati	Assam	48.68	49.68	51.46	21-07-2004	50.84	03/07/2024 15	24	24	100.00
120	Puthimari	Puthimari _NHX	Assam	51.31	52.31	55.08	31-08-2008	52.53	01/07/2024 14	13	12	92.31
121	Pagladiya	Pagladia_NTX	Assam	51.75	52.75	55.45	08-07-2004	52.55	01/07/2024 09	17	17	100.00
122	Manas	Mathanguri	Assam	98.10	99.10	100.28	13-10-1973	95.93	30/06/2024 07	0	0	-
123	Beki	Beki NHX	Assam	44.10	45.10	46.20	04-08-2000	45.50	06/07/20245 18	108	108	100.00
124	Manas	Manas NHX	Assam	47.81	48.42	50.08	15-09-1984	48.57	16/06/2024 17	17	16	94.12
125	Brahmaputra	Goalpara	Assam	35.27	36.27	37.43	31-07-1954	36.93	04/07/2024 06	28	28	100.00
126	Gaurang	Kokrajhar	Assam	41.85	42.85	43.60	20-08-2015	42.74	02/07/2024 07	28	28	100.00
127	Brahmaputra	Dhubri	Assam	27.62	28.62	30.37	18-07-2019	29.95	04/07/2024 13	111	111	100.00
128	Sankosh	Golakganj	Assam	28.94	29.94	30.95	08-09-2007	30.42	07/07/2024 09	86	80	93.02
129	Raidak-I	Tufanganj	West Bengal	34.22	35.30	36.50	12-08-2017	35.81	07/07/2024 15	30	20	66.67
130	Jaldhaka	NH-31	West Bengal	80.00	80.90	81.33	28-08-1972	80.84	09/07/2024 15	133	117	87.97
131	Torsa	Hasimara	West Bengal	116.30	116.90	118.50	13-07-1996	116.4	30/06/2024 08	1	0	0.00
132	Torsa	Ghughumari	West Bengal	39.80	40.41	41.46	03-08-2000	40.14	13/07/2024 00	25	20	80.00
133	Jaldhaka	Mathabhanga	West Bengal	47.70	48.20	49.85	07-09-2007	47.9	06/07/2024 05	5	4	80.00
134	Tista	Domohani	West Bengal	85.65	85.95	89.30	14-10-1968	86.13	28/09/2024 18	21	17	80.95
135	Tista	Mekhliganj	West Bengal	65.45	65.95	66.62	20-10-2021	66.28	06/07/2024 13	340	321	94.41
136	Teesta	Malli Bazaar	Sikkim	226.00	227.00	280.00	10-04-2023	227.72	20/06/2024 13	362	288	79.56
137	Teesta	Joretahang(Rothak)	Sikkim	363.98	364.98	365.98		361.95	28/09/2024 08	0	0	-
138	Teesta	Singtam	Sikkim	354.59	355.09	356.09		353.45	11/06/2024 06	0	0	-
	2 c Barak & Others											
139	Barak	APGhat	Assam	18.83	19.83	21.84	01-08-1989	21.54	31/05/2024 01	62	61	98.39
140	Katakhal	Matizuri	Assam	19.27	20.27	22.73	10-09-2007	22.69	30/05/2024 09	58	56	96.55
141	Kushiyara	Karimganj	Assam	13.94	14.94	16.57	10-06-2010	16.51	30/05/2024 17	169	168	99.41
142	Barak	Badarpurghat	Assam	15.85	16.85	18.48	11-09-2007	18.15	31/08/2024 05	113	113	100.00
143	Manu	Kailashar	Tripura	24.34	25.34	25.65	13-06-2018	25.05	21/08/2024 18	5	4	80.00
144	Gumti	Sonamura	Tripura	11.50	13.50	14.47	24-07-1993	14.27	23/08/2024 08	23	21	91.30
	3. Godavari Basin											
145	Godavari	Nasik	Maharashtra	558.10	559.60	563.51	04-08-2019	558.11	24/08/2024 22	1	1	100.00
146	Godavari	Kopergaon	Maharashtra	490.90	493.68	499.17	01-08-1969	492.1	26/08/2024 17	12	12	100.00
147	Godavari	Gangakhed	Maharashtra	374.00	375.00	377.57	01-08-1947	373.74	03/09/2024 05	0	0	-

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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12	13.00
148	Godavari	Nanded	Maharashtra	351.00	354.00	357.10	06-08-2006	353.64	03/09/2024 05	5	5	100.00
149	Wainganga	Bhandara	Maharashtra	245.50	245.70	250.90	16-09-2005	248.1	12/09/2024 11	0	0	-
150	Wainganga	Pauni	Maharashtra	226.73	227.73	237.12	07-09-1994	228.40	12/09/2024 06	0	0	-
151	Wardha	Balharsha	Maharashtra	171.50	174.00	176.45	14-08-1986	172.12	02/09/2024 20	2	2	100.00
152	Wardha	Sirpur Town	Telangana	159.95	160.95	162.74	29/07/2023	161.16	03/09/2024 08	4	4	100.00
153	Godavari	Kaleswaram	Telangana	103.50	104.75	108.19	15/07/2022	103.68	22/07/2024 15	2	2	100.00
154	Indravati	Jagdalpur	Chhatisgarh	539.50	540.80	544.68	09-07-1973	541.04	10/09/2024 22	8	8	100.00
155	Godavari	Eturunagaram	Telangana	73.33	75.83	77.66	24-08-1990	74.63	27/07/2024 03	15	15	100.00
156	Godavari	Dummagudam	Telangana	53.00	55.00	60.25	15-08-1986	54.63	27/07/2024 20	15	14	93.33
157	Godavari	Bhadrachalam	Telangana	45.72	48.77	55.66	16-08-1986	49.04	28/07/2024 00	32	31	96.88
158	Sabari	Chinturu	Andhra Pradesh	40.50	42.00	50.42	16/08/1986	42.95	28/07/2024 15	22	21	95.45
159	Godavari	Kunavaram	Andhra Pradesh	36.74	38.24	51.30	16-08-1986	42.68	28/07/2024 13	52	51	98.08
160	Godavari	Rajamundry	Andhra Pradesh	17.68	19.51	20.48	16-08-1986	17.46	29/07/2024 03	0	0	-
161	Godavari	Dowalaiswaram	Andhra Pradesh	14.25	16.08	18.36	16-08-1986	15.49	28/07/2024 20	38	37	97.37
162	Godavari	Atreyapuram	Andhra Pradesh	13.50	15.00	15.86	16/08/1986	12.33	29/07/2024 04	0	0	-
	4. Krishna Basin											
163	Krishna	Arjunwad	Maharashtra	539.20	540.70	544.35	09-08-2019	539.78	01/08/2024 14	21	21	100.00
164	Bhima	Deongaon	Karnataka	402.00	404.50	409.00	18-10-2020	402.2	08/08/2024 05	3	3	100.00
165	Tungabhadra	Mantralayam	Andhra Pradesh	310.00	312.00	318.77	02-10-2009	311.88	03/08/2024 02	41	37	90.24
166	Tungabhadra	Kurnool	Andhra Pradesh	273.00	274.00	281.23	02-10-2009	273.1	03/08/2024 23	0	0	-
167	Krishna	Avanigadda	Andhra Pradesh	9.00	11.00	11.87	05-10-2009	10.3	02/09/2024 21	6	6	100.00
	5. Cauvery Basin											
168	Cauvery	Musiri	Tamilnadu	82.11	83.11	86.98	25-11-2005	84.10	02/08/2024 07	12	11	91.67
169	Cauvery	Kodumudi	Tamilnadu	125.50	126.50	128.14	17-08-2018	127.24	02/08/2024 12	8	5	62.50
170	Bhavani	Savandapur	Tamilnadu	184.50	185.50	187.75	17-08-2018	184	18/10/2024 23	0	0	-
171	Kabini	Muthankera	Kerala	710.3	711.25	713.89	09-08-2019	711.73	19/07/2024 02	0	0	-
	6. Subarnarekha											
172	Subernarekna	Jamshedpur	Jharkhand	122.50	123.50	129.82	12-10-1973	123.08	17/09/2024 12	3	0	0.00
173	Subernarekna	Rajghat	Odisha	9.45	10.36	12.69	19-06-2008	11.61	18/09/2024 11	5	5	100.00
174	Jalaka	Mathani Road Bridge	Odisha	6.00	6.50	7.31	22-09-2021	6.83	17/09/2024 06	39	39	100.00
175	Burhabalang	NH_5 _Road Bridge	Odisha	7.21	8.13	9.50	12-10-1973	7.84	26/10/2024 14	7	7	100.00
	7. Brahmani and Baitarani											
176	Baitarni	Anandpur	Odisha	37.44	38.36	41.35	23-09-2011	37.4	16/09/2024 23	0	0	-
177	Baitarni	Akhuapada	Odisha	17.83	18.33	21.95	16-08-1960	18.26	17/09/2024 06	3	3	100.00
178	Brahmani	Jenapur	Odisha	22.00	23.00	24.78	20-08-1975	20.88	30/09/2024 07	0	0	-
	8. Mahanadi Basin											
179	Mahanadi	Naraj	Odisha	25.41	26.41	27.61	31-08-1982	25.75	09/08/2024 00	3	3	100.00
180	Mahanadi	Alipingal Devi	Odisha	10.85	11.76	13.11	11-09-2011	8.27	09/08/2024 08	0	0	-
181	Mahanadi	Nimapara	Odisha	9.85	10.76	11.60	31-08-1982	5.3	10/08/2024 09	0	0	-
	9. Pennar Basin											

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						Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12	13.00
182	Pennar	Nellore	Andhra Pradesh	15.91	17.28	18.70	20-11-2021	10.33	24/11/2024 00	0	0	-
	10. Mahi Basin											
183	Mahi	Wanakbori	Gujarat	71.93	74.98	76.10	12-08-2006	72.54	27/08/2024 05	3	1	33.33
	11. Sabarmati Basin											
184	Sabarmati	Ahmedabad	Gujarat	44.09	45.34	47.45	19-08-2006	41.84	30/12/2024 13	0	0	-
	12. Narmada Basin											
185	Naramada	Mandla	Madhya Pradesh	437.00	437.80	439.40	15-07-1974	438.74	11/09/2024 10	27	27	100.00
186	Naramada	Narmadapuram	Madhya Pradesh	292.83	293.83	301.33	27-08-1972	291.95	13/09/2024 19	0	0	-
187	Naramada	Garudeswar	Gujarat	30.48	31.09	41.65	06-09-1970	22.65	27/08/2024 09	0	0	-
188	Naramada	Bharuch	Gujarat	6.71	7.31	12.65	07-09-1970	8.12	27/08/2024 13	9	8	88.89
	13. Tapi Basin											
189	Tapi	Surat	Gujarat	8.50	9.50	12.50	09-08-2006	7.5	26/08/2024 13	0	0	-
	14. West Flowing rivers from Tapi to Tadri											
190	Damanganga	Vapi Town	Gujarat	18.20	19.20	23.76	03-08-2004	16.6	05/08/2024 01	0	0	-
191	Damanganga	Daman	Daman & Diu	2.60	3.40	4.00	03-08-2004	2.10	23/07/2024 16	0	0	-
	16. East flowing rivers between Mahanadi and Pennar											
192	Rushikuluya	Purushottampur	Odisha	15.83	16.83	19.65	04-11-1990	13.60	10/09/2024 09	0	0	-
193	Vamsadhara	Gunupur	Odisha	83.00	84.00	88.75	17-09-1980	82.63	10/09/2024 05	0	0	-
194	Vamsadhara	Kashinagar	Odisha	54.10	54.60	58.93	18-09-1980	54.50	10/09/2024 11	2	1	50.00
195	Nagavali	Srikakulam	Andhra Pradesh	10.17	10.80	14.53	12-05-1990	10.15	08/09/2024 20	0	0	-
	17 East flowing rivers between Pennar and Kanyakumari											
196	Vaigai	Madurai	Tamilnadu	131.50	132.50	134.76	17-11-1997	131.29	15/12/2024 17	0	0	-
	18. West flowing rivers of Kutch and Saurashtra including Luni											
197	Banas	Abu Road	Rajasthan	258.00	259.00	265.40	31-08-1973	255.40	27/08/2024 19	0	0	-
	19. West Flowing River Tadri to Kanyakumari											
198	Periyar	Neeleswaram	Kerala	9.00	10.00	12.40	15-08-2018	8.03	30/07/2024 10	0	0	-
199	Bharathapuzha	Kumbidi	Kerala	8.20	9.20	11.27	17-08-2018	10.37	31/07/2024 01	2	1	50.00
200	Pamba	Malakkara	Kerala	6.00	7.00	9.58	16-08-2018	5.46	16/07/2024 10	0	0	-
								Total Level Forecasts		***7086***	***6790***	95.82
								Total Inflow Forecasts		**3356**	**3177**	94.67
								Total Forecasts		**10442**	**9967**	95.45

Basinwise -Riverwise- Flood Forecasting Information in India during Flood Season 2024									
Sl.No.	Name of the river	Name of FF site	Name of State	FRL/PL (m)	Maximum Level 2024				
					Level (m)	Date and Time DD/MM/YY)	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6		7	8	9
	1. Indus Basin								
	2 a. Ganga Basin								
1	Ganga	Choudhury CharanSingh Madhya Ganga Barrage	Uttar Pradesh	220.45	**219.9**	**14/09/2024 18**	151	142	94.04
2	Ganga	Narora Barrage	Uttar Pradesh	179.07	**179.07**	**01/05/2024 08**	39	39	100.00
3	Tons	Ichari Dam	Uttarakhand	644.75	**644.75**	**06/07/2024 02**	0	0	-
4	Bhagirathi	Tehri Dam	Uttarakhand	830	**829.88**	**05/10/2024 15**	77	70	90.91
5	Yamuna	Juddo Dam	Uttarakhand	631.5	**643.38**	**22/11/2024 18**	0	0	-
6	Ramganga	Kalagarh Dam	Uttarakhand	365.3	**360.62**	**02/12/2024 08**	0	0	-
7	Yamuna	Tajewala Weir	Haryana	334	**335.02**	**26/09/2024 06**	0	0	-
8	Chambal	Gandhisagar Dam	Madhya Pradesh	399.9	**399.9**	**19/10/2024 08**	4	4	100.00
9	Chambal	Rana Pratap Sagar	Rajasthan	352.81	**352.82**	**07/10/2024 08**	1	1	100.00
10	Chambal	Kota Barrage	Rajasthan	260.3	**260.48**	**28/05/2024 08**	1	1	100.00
11	Banas	Bisalpur Dam	Rajasthan	315.50	**315.5**	**07/09/2024 08**	0	0	-
12	Kalisindh	Kalisindh Dam	Rajasthan	316	**315.92**	**25/09/2024 08**	5	5	100.00
13	Parwan	Parwan Dam	Rajasthan	308.8	-	-	0	0	-
14	Gambhiri	Gambhiri Dam	Rajasthan	431.90	**432.21**	**05/09/2024 08**	0	0	-
15	Gambhiri	Panchana Dam	Rajasthan	258.62	**258.45**	**30/09/2024 08**	0	0	-
16	Mej	Gudha Dam	Rajasthan	305.87	**306.09**	**07/09/2024 08**	0	0	-
17	Parwati	Parwati Dam	Rajasthan	308.15	-	-	0	0	-
18	Betwa	Rajghat Dam	Madhya Pradesh	371	**371**	**16/09/2024 06**	16	14	87.50
19	Betwa	Matatilia Dam	Uttar Pradesh	308.46	**308.45**	**16/09/2024 08**	13	10	76.92
20	Sharda	Banbasa	Uttarakhand	222.96	**222.80**	**29/07/2024 03**	17	17	100.00
21	Ghaghra	Katerniaghat Dam	Uttar Pradesh	136.8	**137.90**	**06/10/2024 06**	69	68	98.55
22	Sone	Bansagar Dam	Madhya Pradesh	341.65	**341.64**	**19/09/2024 08**	18	10	55.56
23	Sindh	Madikhera(Atal Sagar)	Madhya Pradesh	346.25	346.25	15/09/2024 08	2	1	50.00
24	Rihand	Rihand Dam	Uttar Pradesh	265.18	**265.75**	**18/09/2024 08**	17	9	52.94

25	Khoranadi	Annaraj Dam	Jharkhand	252.44	-	-	0	0	-
26	Goda Nala	Bhairwa Dam	Jharkhand	356.70	-	-	0	0	-
27	Sone	Indrapuri Barrage	Bihar	173	-	-	0	0	-
28	Gandak	Gandak Barrage	Bihar	110.3	110.61	29/09/2024 08	0	0	-
29	Baranadi	Amanat Barage	Jharkhand	274.39	-	-	0	0	-
30	Jamunia	Batane Dam	Jharkhand	232.85	-	-	0	0	-
31	Kosi	Kosi Barrage	Bihar	74.69	76.08	29/09/2024 08	0	0	-
32	Mayurakshi	Massanjore Dam	Jharkhand	121.31	119.42	30/09/2024 13	7	7	100.00
33	Mayurakshi	Tilpara Barrage	West Bengal	62.79	62.667	28/08/2024 17	4	4	100.00
34	Ashra nadi	Sikatia Barrage	Jharkhand	165.22	161.62	17/09/2024 03	0	0	-
35	Damodar	Tenughat Dam	Jharkhand	268.83	262.8	03/08/2024 16	43	38	88.37
36	Barakar	Tilaiya Dam	Jharkhand	372.46	369.85	13/10/2024 06	0	0	-
37	Konar	Konar Dam	Jharkhand	427.93	427.421	17/09/2024 06	0	0	-
38	Damodar	Panchet Dam	Jharkhand	132.59	129.61	17/09/2024 17	78	77	98.72
39	Barakar	Maithon Dam	Jharkhand	150.88	150.7	17/09/2024 07	48	45	93.75
40	Damodar	Durgapur Barrage	West Bengal	64.47	64.64	03/12/2024 21	77	77	100.00
41	Anjanwa	Sundar Dam	Jharkhand	110.795	-	-	0	0	-
42	Kangsabati	Hinglow Dam	West Bengal	97.84	96.44	23/09/2024 06	0	0	-
43	Kangsabati	Kangsabati Dam	West Bengal	134.11	133.65	20/09/2024 12	30	28	93.33
	2 b Brahmaputra Basin								
44	Subansiri	Subansiri Lower	Arunachal Pradesh	-	-	-			-
45	Teesta	Teesta-III HEP Dam Cl	Sikkim	1585	-	-	0	0	-
46	Teesta	Teesta V HEP Dam Si	Sikkim	579	-	-	0	0	-
47	Rongpo	Rongpo Dam	Sikkim	913.8	911.38	18/05/2024 19	0	0	-
48	Rongli	Rongli Dam	Sikkim	913.8	910.25	03/09/2024 16	0	0	-
49	Rangit	Rangit-III HEP Dam	Sikkim	640	639.92	21/12/2024 09	0	0	-
	2 c Barak & Others								
	3. Godavari Basin								
50	Godavari	N M D Weir	Maharashtra	533.50	535.51	19/07/2024 21	0	0	-
51	Mula	Mula Dam	Maharashtra	552.3	563.52	08/06/2024 06	0	0	-
52	Godavari	Jaikwadi Dam	Maharashtra	463.91	463.906	13/10/2024 23	8	8	100.00
53	Sindhpana	Manjlegaon	Maharashtra	431.80	431.16	31/10/2024 06	0	0	-
54	Puma	Yeldari Dam	Maharashtra	461.77	545.5	13/07/2024 06	0	0	-
55	Karanja	Karanja Dam	Karnataka	584.15	584.13	07/09/2024 08	0	0	-

56	Manjira	Singur Dam	Telangana	523.6	532.59	15/10/2024 15	0	0	-
57	Manjira	Nizamsagar Dam	Telangana	428.24	429.74	25/10/2024 23	1	0	0.00
58	Godavari	Sriram Sagar	Telangana	332.54	332.537	11/09/2024 06	13	13	100.00
59	Kaddamvagu	Kaddam Dam	Telangana	213.21	213.42	26/09/2024 00	1	1	100.00
60	Godavari	Sripada Yellampally Da	Telangana	148.00	148	13/09/2024 06	15	13	86.67
61	Wainganga	Upper Wainganga Proj	Madhya Pradesh	519.38	519.4	10/10/2024 08	0	0	-
62	Pench	Totladoh Project	Maharashtra	490	490	11/09/2024 08	0	0	-
63	Wainganga	Goshikhurd Dam	Maharashtra	245.5	244.9	11/11/2024 08	10	10	100.00
64	Wardha	Upper Wardha Project	Maharashtra	342.5	342.5	21/09/2024 08	0	0	-
65	Penganga	Issapur/Upper Pengan	Maharashtra	441	441	15/09/2024 20	0	0	-
66	Godavari	Laxmi Barrage	Telangana	100.00	97.2	27/07/2024 00	72	72	100.00
67	Maner	Mid Manair Dam	Telangana	318.00	317.72	11/10/2024 06	0	0	
68	Indravathi	Upper Indravathi Proje	Odisha	642	637.12	27/09/2024 10	0	0	-
69	Kolab	Kolab Project	Odisha	858	857.16	14/09/2024 14	0	0	-
70	Machhkund	Machhkund Project	Odisha	838.2	838.078	09/09/2024 11	0	0	-
71	Sileru	Balimela Project	Odisha	462.07	837.18	30/11/2024 18	2	2	-
72	Godavari	Indirasagar(Polavaram	Andhra Pradesh	-	24.817	28/07/2024 17	85	85	100.00
73	Pench	Pench Reservoir/Chau	Madhya Pradesh	625.75	625.75	24/09/2024 08	1	0	-
74	Bawanthri	Bawanthadi Reservoir	Madhya Pradesh	344.4	344.3	28/09/2024 14	0	0	-
75	Godavari	PVNR Kanthapally Pro	Telangana	83	84.2	27/07/2024 06	78	78	100.00
	4. Krishna Basin								
76	Krishna	Hippargi Dam	Karnataka	524.87	527.87	06/11/2024 08	37	37	100.00
77	Ghataprabha	Hidkal Dam	Karnataka	662.94	662.94	15/08/2024 06	62	57	91.94
78	Krishna	Alamati Dam	Karnataka	519.6	519.60	17/08/2024 01	40	40	100.00
79	Malaprabha	Malaprabha Dam	Karnataka	633.83	633.91	05/12/2024 06	40	33	82.50
80	Krishna	Narayanpur Dam	Karnataka	492.25	492.41	16/12/2024 18	84	84	100.00
81	Nira	Veer Dam	Maharashtra	579.85	579.85	10/08/2024 08	0	0	-
82	Bhima	Ujjani Dam	Maharashtra	496.83	497.33	14/10/2024 08	0	0	-
83	Krishna	Priyadarshini	Telangana	318.51	318.51	20/09/2024 17	63	62	98.41
84	Tunga	Upper Tunga	Karnataka	588.24	588.24	26/06/2024 06	121	114	94.21
85	Bhadra	Bhadra Dam	Karnataka	657.75	657.76	15/10/2024 06	68	63	92.65
86	Tungabhadra	Tungabhadra Dam	Karnataka	497.74	497.74	09/08/2024 20	85	84	98.82
87	Krishna	Singatalur Barrage	Karnataka	507	507.55	04/12/2024 08	0	0	-
88	Tungabhadra	Sunkesula Barrage	Andhra Pradesh	292	292.00	24/06/2024 08	97	97	100.00

89	Krishna	Srisailam Dam	Andhra Pradesh	269.75	269.75	28/08/2024 06	73	73	100.00
90	Musi	Musi Project	Telangana	196.60	196.54	28/11/2024 08	0	0	-
91	Krishna	Dr K L R S Pulichintala	Andhra Pradesh	53.34	53.34	19/08/2024 08	91	90	98.90
92	Koyna	Koyna Dam	Maharashtra	659.43	659.43	04/09/2024 08	1	1	100.00
93	Warana	Warana Dam	Maharashtra	626.9	626.9	25/09/2024 08	0	0	-
94	Krishna	Prakasham Barrage	Andhra Pradesh	17.39	21.19	02/09/2024 12	85	85	100.00
	5. Cauvery Basin								
95	Harangi	Harangi Dam	Karnataka	871.42	871.35	10/09/2024 08	26	23	88.46
96	Hemavathy	Hemavathy Dam	Karnataka	890.63	890.63	13/10/2024 08	86	81	94.19
97	Kabini	Kabini Dam	Karnataka	696.16	696.16	30/07/2024 06	69	68	95.10
98	Cauvery	Krishnarajasagar	Karnataka	752.49	752.49	25/07/2024 08	143	136	88.78
99	Cauvery	Mettur Dam	Tamilnadu	240.79	240.92	13/08/2024 08	98	87	88.78
100	Bhavani	Bhavanisagar Dam	Tamilnadu	280.42	278.78	15/12/2024 08	33	28	84.85
101	Kodaganar	Kodaganar Dam	Tamilnadu	200.25	200.02	13/12/2024 06	0	0	-
102	Cauvery	Grand Anicut	Tamilnadu	59.21	59.21	01/05/2024 06	106	91	85.85
103	Cauvery	Upper Anicut	Tamilnadu	74.40	75.98	02/08/2024 06	110	92	83.64
	6. Subarnarekha								
104	Subarnarekha	Getlasud Dam	Jharkhand	590.06	590.24	17/09/2024 08	0	0	-
105	Subernarekna	Chandil Dam	Jharkhand	189	183.56	18/09/2024 08	6	6	100.00
106	Subarnarekha	Galudih Barrage	Jharkhand	94.5	92.9	05/10/2024 08	10	10	100.00
	7. Brahmani and Baitarani								
107	Salandi	Salandi Dam	Odisha	82.3	76.1	31/10/2024 08	0	0	-
108	Brahmani	Rengali Dam	Odisha	123.5	123.84	28/09/2024 08	30	27	90.00
	8. Mahanadi Basin								
109	Mahanadi	Ravishankar Dam	Chattisgarh	348.7	348.65	10/09/2024 18	5	5	100.00
110	Hasdeo	Bango Dam	Chattisgarh	359.66	358.43	25/08/2024 08	3	2	66.67
111	Mahanadi	Hirakud Dam	Odisha	192.02	192.02	21/09/2024 09	65	64	98.46
	9. Pennar Basin								
112	North Pennar	Somasila Dam	Andhra Pradesh	100.58	99.94	02/12/2024 06	31	23	74.19
	10. Mahi Basin								
113	Mahi	Mahi Bajajsagar Dam	Rajasthan	281.5	281.5	26/10/2024 08	11	11	100.00
114	Som Kamla	Som Kamla Amba Dan	Rajasthan	213.5	213.8	22/11/2024 08	0	0	-
115	Mahi	Kadana Dam	Gujarat	127.71	127.71	20/09/2024 15	25	24	96.00
116	Panam	Panam Dam	Gujarat	127.41	133.84	13/11/2024 18	20	20	100.00

	11. Sabarmati Basin								
117	Sabarmati	Dharoi Dam	Gujarat	189.59	**189.07**	**28/10/2024 22**	0	0	-
	12. Narmada Basin								
118	Narmada	Barna Dam	Madhya Pradesh	348.55	**348.66**	**28/09/2024 08**	7	7	100.00
119	Narmada	Bargi Dam	Madhya Pradesh	422.76	**423.50**	**11/09/2024 17**	22	22	100.00
120	Narmada	Tawa Dam	Madhya Pradesh	355.39	**355.55**	**21/10/2024 07**	11	11	100.00
121	Narmada	Indira Sagar Dam	Madhya Pradesh	262.13	**262.13**	**12/09/2024 04**	65	65	100.00
122	Narmada	Omkareshwar Dam	Madhya Pradesh	196.6	**196.6**	**30/07/2024 00**	0	0	-
123	Narmada	Sardar Sarovar Dam	Gujarat	138.38	**138.68**	**01/10/2024 08**	152	150	98.68
	13. Tapi Basin								
124	Tapi	Hatnur Dam	Maharashtra	212.02	**214.14**	**12/10/2024 12**	76	75	98.68
125	Tapi	Ukai Dam	Gujarat	105.16	**105.16**	**01/10/2024 08**	124	123	99.19
	14. West Flowing rivers from Tapi to Tadri								
126	Damanganga	Madhuban Dam	Gujarat	79.86	**79.89**	**27/10/2024 04**	23	23	100.00
	16. East flowing rivers between Mahanadi and Pennar								
127	Vamsadhara	Gotta Barrage	Andhra Pradesh	34.84	**38.1**	**04/07/2024 08**	0	0	-
128	Nagavali	Thottapalli Reservoir S	Andhra Pradesh	105	**104.6**	**27/06/2024 08**	0	0	-
129	Suwarnamukhi	Madduvalasa Reservoi	Andhra Pradesh	65	**64.86**	**20/10/2024 08**	1	1	100.00
130	Nagavali	Narayanapuram Anicut	Andhra Pradesh	32.77	**29.50**	**09/09/2024 08**	2	2	100.00
	17 East flowing rivers between Pennar and Kanyakumari								
131	Kosasthaliyar	Poondi Satyamurthy re	Tamilnadu	42.67	**42.66**	**13/12/2024 06**	4	2	50.00
132	Adyar	Chembarampakkam	Tamilnadu	26.03	**25.81**	**13/12/2024 06**	1	1	100.00
133	South Pennar	Sathnur Dam	Tamilnadu	222.2	**280.43**	**20/09/2024 06**	4	3	75.00
134	Gomukhinadi	Gomukhi Dam	Tamilnadu	183.18	**189.16**	**20/09/2024 06**	1	0	0.00
135	Periyar Odai	Wellington Dam	Tamilnadu	72.54	**71.86**	**14/12/2024 06**	1	0	0.00
136	Vaigai	Vaigai Dam	Tamilnadu	279.20	**277.42**	**31/12/2024 06**	20	18	90.00
	18. West flowing rivers of Kutch and Saurashtra including Luni								
137	Shetrunji	Shetrunji Dam	Gujarat	55.54	**55.53**	**30/09/2024 05**	4	3	75.00
138	Banas	Dantiwada Dam	Gujarat	184.1	**185.54**	**28/11/2024 13**	0	0	-
	19. West Flowing River Tadri to Kanyakumari								
139	Periyar	Idduki Dam	Kerala	732.43	**725.14**	**10/11/2024 16**	5	2	40.00
140	Edamalayar	Idamalayar	Kerala	169	**163.31**	**23/11/2024 13**	6	2	33.33
				Total Inflow Forecasts			***3356***	***3177***	**94.67**
				Total Level Forecasts			**7086**	**6790**	**95.82**
				Total Forecasts			**10442**	**9967**	**95.45**

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Annex IV(A)

Statewise Flood Forecasting Information In India during Flood Season 2024

Sl. No.	Name of the river	Name of FF site	Warning Level (m)	Danger level (m)	Highest Flood Level		Maximum Level -2024		No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12
	Andhra Pradesh										
1	Sabari	Chinturu	40.50	42.00	50.42	16/08/1986	42.95	28/07/2024 15	22	21	95.45
2	Godavari	Kunavaram	36.74	38.24	51.30	16-08-1986	42.68	28/07/2024 13	52	51	98.08
3	Godavari	Rajahmundry	17.68	19.51	20.48	16-08-1986	17.46	29/07/2024 03	0	0	-
4	Godavari	Dowlaiswaram	14.25	16.08	18.36	16-08-1986	15.49	28/07/2024 20	38	37	97.37
5	Tungabhadra	Mantralayam	310.00	312.00	318.77	02-10-2009	311.88	03/08/2024 02	41	37	90.24
6	Pennar	Nellore Anicut	15.91	17.28	18.70	20-11-2021	10.33	24/11/2024 00	0	0	-
7	Godavari	Atreyapuram	13.50	15.00	15.86	16/08/1986	12.33	29/07/2024 04	0	0	-
8	Tungabhadra	Kurnool Town	273.00	274.00	281.23	02-10-2009	273.1	03/08/2024 23	0	0	-
9	Krishna	Avanigadda	9.00	11.00	11.87	05-10-2009	10.3	02/09/2024 21	6	6	100.00
10	Nagavali	Srikakulam	10.17	10.80	14.53	12-05-1990	10.15	08/09/2024 20	0	0	-
	Assam										
11	Brahmaputra	Dibrugarh	104.70	105.70	106.48	03-09-1998	105.8	30/06/2024 19	122	121	99.18
12	Brahmaputra	Neamatighat	84.54	85.54	87.37	11-07-1991	87.47	01/07/2024 02	86	86	100.00
13	Brahmaputra	Tezpur	64.23	65.23	66.59	27-08-1988	66.23	02/07/2024 15	51	50	98.04
14	Brahmaputra	Guwahati	48.68	49.68	51.46	21-07-2004	50.84	03/07/2024 15	24	24	100.00
15	Brahmaputra	Goalpara	35.27	36.27	37.43	31-07-1954	36.93	04/07/2024 06	28	28	100.00
16	Brahmaputra	Dhubri	27.62	28.62	30.37	18-07-2019	29.95	04/07/2024 13	111	111	100.00
17	Buridehing	Naharkatia	119.40	120.40	122.69	17-06-1973	119.89	02/07/2024 07	4	4	-
18	Buridehing	Khowang	101.11	102.11	104.16	02-09-2015	104.23	03/07/2024 02	39	39	100.00
19	Desang	Nanglamoraghat	93.46	94.46	96.49	06-09-1998	96.19	04/07/2024 09	89	88	98.88
20	Dikhow	Shivsagar	91.40	92.40	94.34	11-08-2023	94.35	02/07/2024 16	98	98	100.00
21	Subansiri	Badatighat	81.53	82.53	86.21	28-07-1972	83.35	02/07/2024 00	36	36	100.00
22	Dhansiri (S)	Golaghat	88.50	89.50	92.45	11-10-1986	89.94	31/07/2024 21	25	25	100.00
23	Dhansiri (S)	Numaligarh	77.42	78.42	80.16	02-08-2018	78.95	01/08/2024 13	119	119	100.00
24	Jiabharali	Jia-Bharali NT Road Crossing	77.00	78.00	78.50	26-07-2007	78.5	01/07/2024 06	159	156	98.11
25	Kopili	Kampur	59.50	60.50	62.20	18/06/2022	62.1	31/05/2024 12	49	49	100.00
26	Kopili	Dharamtul	55.00	56.00	58.09	21-07-2004	56.6	04/07/2024 17	73	73	100.00
27	Puthimari	Puthimari NH Crossing	51.31	52.31	55.08	31-08-2008	52.53	01/07/2024 14	13	12	92.31
28	Pagladiya	Pagladiya NT Road Crossing	51.75	52.75	55.45	08-07-2004	52.55	01/07/2024 09	17	17	100.00
29	Beki	Beki NH Crossing	44.10	45.10	46.20	04-08-2000	45.50	06/07/20245 18	108	108	100.00
30	Manas	Manas NH Crossing	47.81	48.42	50.08	15-09-1984	48.57	16/06/2024 17	17	16	94.12
31	Manas	Mathanguri	98.10	99.10	100.28	13-10-1973	95.93	30/06/2024 07	0	0	-
32	Sankosh	Golokganj	28.94	29.94	30.95	08-09-2007	30.42	07/07/2024 09	86	80	93.02
33	Barak	AP Ghat	18.83	19.83	21.84	01-08-1989	21.54	31/05/2024 01	62	61	98.39
34	Katakhal	Matizuri	19.27	20.27	22.73	10-09-2007	22.69	30/05/2024 09	58	56	96.55
35	Kushiyara	Karimganj	13.94	14.94	16.57	10-06-2010	16.51	30/05/2024 17	169	168	99.41
36	Barak	Badarpurghat	15.85	16.85	18.48	11-09-2007	18.15	31/08/2024 05	113	113	100.00
37	Subansiri	Choldhowaghat	99.43	100.43	101.31	27-07-1972	97.13	01/07/2024 09	0	0	-
38	Ranganadi	N H Crossing Ranganadi	93.81	94.81	95.92	02-07-1979	94.55	02/07/2024 01	13	10	76.92
39	Lohit	Dholla Bazaar	127.27	128.27	130.07	22-09-2012	127.43	30/06/2024 03	1	0	0.00

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Statewise Flood Forecasting Information In India during Flood Season 2024

Sl. No.	Name of the river	Name of FF site	Warning Level (m)	Danger level (m)	Highest Flood Level		Maximum Level -2024		No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12
40	Gaurang	Kokrajhar	41.85	42.85	43.60	20-08-2015	42.74	02/07/2024 07	28	28	100.00
	Arunachal Pradesh										
41	Noa-Dehing	Namsai	144.80	145.80	146.60	07-10-1979	144.75	01/05/2024 20	0	0	-
42	Siang	Yingkiang	303.00	304.00	274.48		271.75	29/06/2024 03	0	0	-
43	Siang	Passighat	152.96	153.96	157.54	11-06-2000	153.1	29/06/2024 04	3	3	100.00
	Bihar										
44	Ganga	Buxar	59.32	60.32	62.09	01-08-1948	60.3	17/09/2024 21	12	10	83.33
45	Ganga	Patna Dighaghat	49.45	50.45	52.52	23-08-1975	51.76	20/09/2024 06	50	47	94.00
46	Ganga	Patna Gandhighat	47.60	48.60	50.52	20-08-2016	50.28	20/09/2024 05	69	66	95.65
47	Ganga	Hathidah	40.76	41.76	43.52	16-08-2021	43.41	21/09/2024 09	69	66	95.65
48	Ganga	Munger	38.33	39.33	40.99	19-09-1976	39.95	22/09/2024 01	45	44	97.78
49	Ganga	Bhagalpur	32.68	33.68	34.86	18-08-2021	34.66	22/09/2024 19	56	54	96.43
50	Ganga	Kahalgaon	30.09	31.09	32.87	17-09-2003	32.58	23/09/2024 15	82	79	96.34
51	Ghaghra	Darauli	59.82	60.82	61.82	15/10/2022	61.41	26/08/2024 15	93	92	98.92
52	Ghaghra	Gangpur Siswan	56.04	57.04	58.26	17-08-1980	57.67	20/09/2024 01	55	54	98.18
53	Ghaghra	Chhappra	52.68	53.68	54.59	03-09-1982	53.45	19/09/2024 18	5	5	100.00
54	Gandak	Chatia	68.15	69.15	70.04	26-07-2002	69.3	01/10/2024 06	5	4	80.00
55	Gandak	Rewaghat	53.41	54.41	55.46	24-07-2020	55.38	02/10/2024 04	37	37	100.00
56	Gandak	Hazipur	49.32	50.32	50.93	18/08/1948	50.21	20/09/2024 05	15	15	100.00
57	Burhi Gandak	Lalbeghiaghat	62.20	63.20	67.09	30-07-1975	62.8	05/10/2024 14	10	9	90.00
58	Burhi Gandak	Muzzafarpur Sikandarpur	51.53	52.53	54.29	15-08-1987	51.97	09/10/2024 15	9	8	88.89
59	Burhi Gandak	Samastipur	45.02	46.02	49.38	15-08-1987	45.46	10/10/2024 23	8	8	100.00
60	Burhi Gandak	Rosera	41.63	42.63	46.56	02-08-2020	43.27	11/10/2024 16	17	15	88.24
61	Burhi Gandak	Khagaria	35.58	36.58	39.22	16/08/1976	38.82	22/09/2024 15	76	76	100.00
62	Bagmati	Benibad	47.68	48.68	50.01	12-07-2004	49.99	02/10/2024 17	108	107	99.07
63	Bagmati	Hayaghat	44.72	45.72	48.96	14-08-1987	45.78	06/10/2024 16	13	13	100.00
64	Bagmati	Dheng Bridge	70.00	71.00	73.00	13-08-2017	**73.47**	**29/09/2024 00**	132	115	87.12
65	Adhwara Group	Kamtaul	49.00	50.00	52.99	12-08-1987	50.82	06/10/2024 08	23	23	100.00
66	Adhwara Group	Ekmighat	45.94	46.94	49.52	12-07-2004	46.95	08/10/2024 05	15	15	100.00
67	Adhwara	Sonebarsha	80.85	81.85	83.20	03-07-1999	82.25	29/09/2024 13	4	3	75.00
68	Kamla Balan	Jainagar	67.50	68.50	71.35	01-08-1965	69.7	29/09/2024 02	105	104	99.05
69	Bagmati	Runisaidpur	54.00	55.00	58.15	14-08-2017	**58.34**	**29/09/2024 23**	123	103	83.74
70	Parwan	Araria	46.00	47.00	49.40	14-08-2017	48.34	30/09/2024 18	131	131	100.00
71	Kamla Balan	Jhanjarpur	49.50	50.50	53.11	14-07-2019	52.28	29/09/2024 19	209	208	99.52
72	Kosi	Basua	46.75	47.75	49.24	08-02-2022	48.57	29/09/2024 15	177	172	97.18
73	Kosi	Baltara	32.85	33.85	36.40	15-08-1987	35.79	01/10/2024 12	119	108	90.76
74	Kosi	Kursela	29.00	30.00	32.10	07-09-1982	31.25	24/09/2024 09	91	89	97.80
75	Mahananda	Dhengraghat	34.65	35.65	38.20	14-08-2017	37.22	29/09/2024 06	51	51	100.00
76	Mahananda	Jhawa	30.40	31.40	34.07	14-08-2017	32.59	30/09/2024 23	90	89	98.89

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Sl. No.	Name of the river	Name of FF site	Warning Level (m)	Danger level (m)	Highest Flood Level		Maximum Level -2024		No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12
77	Mahananda	Taibpur	65.00	66.00	67.26	29/06/2022	66.81	29/09/2024 05	44	44	100.00
78	Gandak	Dumariaghat	61.22	62.22	64.36	24-07-2020	64	01/10/2024 04	117	111	94.87
79	Burhigandak	Ahirwalia	58.62	59.62	61.17	02-06-2014	57.99	06/10/2024 10	0	0	-
80	Sone	Inderpuri	107.20	108.20	108.85	23-08-1975	105.35	18/09/2024 17	0	0	-
81	Sone	Koelwar	54.52	55.52	58.88	20-07-1971	55	19/09/2024 06	4	4	100.00
82	Sone	Maner	51.00	52.00	53.79	10-09-1976	53.29	20/09/2024 06	42	39	92.86
83	PunPun	Sripalpur	49.60	50.60	53.91	18-09-1976	51.92	20/09/2024 03	28	23	82.14
	Chhattisgarh										
84	Indravathi	Jagdalpur	539.50	540.80	544.68	09-07-1973	541.04	10/09/2024 22	8	8	100.00
	Daman & Diu										
85	Damanganga	Daman	2.60	3.40	4.00	03-08-2004	2.10	23/07/2024 16	0	0	-
	Gujarat										
86	Sabarmati	Ahmedabad Shubhash	44.09	45.34	47.45	19-08-2006	41.84	30/12/2024 13	0	0	-
87	Mahi	Wanakbori	71.93	74.98	76.10	12-08-2006	72.54	27/08/2024 05	3	1	33.33
88	Narmada	Garudeswar	30.48	31.09	41.65	06-09-1970	22.65	27/08/2024 09	0	0	-
89	Narmada	Bharuch	6.71	7.31	12.65	07-09-1970	8.12	27/08/2024 13	9	8	88.89
90	Tapi	Surat	8.50	9.50	12.50	09-08-2006	7.5	26/08/2024 13	0	0	-
91	Damanganga	Vapi Town	18.20	19.20	23.76	03-08-2004	16.6	05/08/2024 01	0	0	-
	Haryana										
92	Yamuna	Karnal Bridge	248.80	249.50	250.07	17-06-2013	247.66	12/08/2024 02	0	0	-
	Himachal Pradesh										
93	Yamuna	Paonta Sahib	383.50	384.50	384.60	05-09-1995	381.3	02/09/2024 11	0	0	-
	Jammu & Kashmir										
94	Jhelum	Rammunshibagh	1585.48	1586.40	1589.00	08-09-2014	1585.15	01/05/2024 00	0	0	-
95	Jhelum	Sangam	1591.20	1592.42	1595.37	07-09-2014	1589.27	01/05/2024 00	0	0	-
96	Jhelum	Safapora	1580.52	1581.28	1582.15	1996	1580.03	01/05/2024 00	0	0	-
	Jharkhand										-
97	Ganga	Sahibganj	26.25	27.25	30.91	20/08/1998	28.42	24/09/2024 16	81	78	96.30
98	Subarnarekha	Jamshedpur	122.50	123.50	129.82	12-10-1973	123.08	17/09/2024 12	3	0	0.00
	Karnataka										
99	Bhima	Deongaon	402.00	404.50	409.00	18-10-2020	402.2	08/08/2024 05	3	3	100.00
	Kerala										
100	Periyar	Neeleswaram	9.00	10.00	12.40	15-08-2018	8.03	30/07/2024 10	0	0	-
101	Bharathapuzha	Kumbidi	8.20	9.20	11.27	17-08-2018	10.37	31/07/2024 01	2	1	50.00

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Sl. No.	Name of the river	Name of FF site	Warning Level (m)	Danger level (m)	Highest Flood Level		Maximum Level -2024		No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12
102	Pamba	Malakkara	6.00	7.00	9.58	16-08-2018	5.46	16/07/2024 10	0	0	-
103	Kabini	Muthankera	710.3	711.25	713.89	09-08-2019	711.73	19/07/2024 02	0	0	-
	Madhya Pradesh										
104	Naramada	Mandla	437.00	437.80	439.40	15-07-1974	438.74	11/09/2024 10	27	27	100.00
105	Naramada	Narmadapuram	292.83	293.83	301.33	27-08-1972	291.95	13/09/2024 19	0	0	-
	Maharashtra										
106	Godavari	Kopergaon	490.90	493.68	499.17	01-08-1969	492.1	26/08/2024 17	12	12	100.00
107	Godavari	Gangakhed	374.00	375.00	377.57	01-08-1947	373.74	03/09/2024 05	0	0	-
108	Godavari	Nanded	351.00	354.00	357.10	06-08-2006	353.64	03/09/2024 05	5	5	100.00
109	Wainganga	Bhandara	245.50	245.70	250.90	16-09-2005	248.1	12/09/2024 11	0	0	-
110	Wainganga	Pauni	226.73	227.73	237.12	07-09-1994	228.40	12/09/2024 06	0	0	-
111	Wardha	Balharsha	171.50	174.00	176.45	14-08-1986	172.12	02/09/2024 20	2	2	100.00
112	Krishna	Arjunwad	539.20	540.70	544.35	09-08-2019	539.78	01/08/2024 14	21	21	100.00
113	Godavari	Nasik	558.10	559.60	563.51	04-08-2019	558.11	24/08/2024 22	1	1	100.00
	NCT Delhi										
114	Yamuna	Delhi Rly Bridge	204.50	205.33	208.66	13/08/2023	204.38	13/08/2024 03	0	0	-
115	Sahibi	Dhansa	211.44	212.44	213.58	06-08-1977	210.65	15/09/2024 08	0	0	-
	Odisha										
116	Subarnarekha	Rajghat	9.45	10.36	12.69	19-06-2008	11.61	18/09/2024 11	5	5	100.00
117	Burhabalang	NH_5 _Road Bridge	7.21	8.13	9.50	12-10-1973	7.84	26/10/2024 14	7	7	100.00
118	Baitarni	Anandpur	37.44	38.36	41.35	23-09-2011	37.4	16/09/2024 23	0	0	-
119	Baitarni	Akhuapada	17.83	18.33	21.95	16-08-1960	18.26	17/09/2024 06	3	3	100.00
120	Brahmani	Jenapur	22.00	23.00	24.78	20-08-1975	20.88	30/09/2024 07	0	0	-
121	Rishikulya	Purushottampur	15.83	16.83	19.65	04-11-1990	13.60	10/09/2024 09	0	0	-
122	Vamsadhara	Gunupur	83.00	84.00	88.75	17-09-1980	82.63	10/09/2024 05	0	0	-
123	Vamsadhara	Kashinagar	54.10	54.60	58.93	18-09-1980	54.50	10/09/2024 11	2	1	50.00
124	Mahanadi	Naraj	25.41	26.41	27.61	31-08-1982	25.75	09/08/2024 00	3	3	100.00
125	Mahanadi	Alipingal Devi	10.85	11.76	13.11	11-09-2011	8.27	09/08/2024 08	0	0	-
126	Mahanadi	Nimapara	9.85	10.76	11.60	31-08-1982	5.3	10/08/2024 09	0	0	-
127	Jalaka	Mathani Road Bridge	6.00	6.50	7.31	22-09-2021	6.83	17/09/2024 06	39	39	100.00
	Rajasthan										
128	Chambal	Manderial	164.00	165.00	170.05	25/08/2022	161.05	13/09/2024 06	0	0	-
129	Chambal	Dholpur	129.79	130.79	146.57	25/08/2022	134.67	13/09/2024 12	11	10	90.91
130	Chambal	Kota City	239.00	242.00	248.68	16-09-2019	237.8	29/09/2024 19	0	0	-
131	Banas	Abu Road	258.00	259.00	265.40	31-08-1973	255.40	27/08/2024 19	0	0	-
	Sikkim										
132	Teesta	Malli Bazaar	226.00	227.00	280.00	10-04-2023	227.72	20/06/2024 13	362	288	79.56
133	Teesta	Joretahang(Rothak)	363.98	364.98	365.98		361.95	28/09/2024 08	0	0	-
134	Teesta	Singtam	354.59	355.09	356.09		353.45	11/06/2024 06	0	0	-

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Sl. No.	Name of the river	Name of FF site	Warning Level (m)	Danger level (m)	Highest Flood Level		Maximum Level -2024		No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)			
1	2	3	4	5	6	7	8	9	10	11	12
	Tamilnadu										
135	Cauvery	Musiri(Srirangam)	82.11	83.11	86.98	25-11-2005	84.10	02/08/2024 07	12	11	91.67
136	Cauvery	Kodumudi (Erode)	125.50	126.50	128.14	17-08-2018	127.24	02/08/2024 12	8	5	62.50
137	Bhavani	Savandapur(Bhavani)	184.50	185.50	187.75	17-08-2018	184	18/10/2024 23	0	0	-
138	Vaigai	Madurai	131.50	132.50	134.76	17-11-1997	131.29	15/12/2024 17	0	0	-
	Telangana										
139	Godavari	Kaleswaram	103.50	104.75	108.19	15/07/2022	103.68	22/07/2024 15	2	2	100.00
140	Godavari	Eturunagaram	73.33	75.83	77.66	24-08-1990	74.63	27/07/2024 03	15	15	100.00
141	Godavari	Dummagudem	53.00	55.00	60.25	15-08-1986	54.63	27/07/2024 20	15	14	93.33
142	Godavari	Bhadrachalam	45.72	48.77	55.66	16-08-1986	49.04	28/07/2024 00	32	31	96.88
143	Wardha	Sirpur Town	159.95	160.95	162.74	29/07/2023	161.16	03/09/2024 08	4	4	100.00
	Tripura										
144	Manu	Kailashahar	22.10	24.00	25.65	13-06-2018	25.05	21/08/2024 18	5	4	80.00
145	Gumti	Sonamura	11.50	13.50	14.47	24-07-1993	14.27	23/08/2024 08	23	21	91.30
	Uttar Pradesh										
146	Ganga	Kannauj	124.97	125.97	126.78	27-09-2010	126	20/09/2024 05	11	11	100.00
147	Ganga	Ankinghat	123.00	124.00	124.49	28-09-2010	124.09	20/09/2024 02	31	31	100.00
148	Ganga	Kanpur	113.00	114.00	114.08	29-09-2010	113.15	21/09/2024 05	20	20	100.00
149	Ganga	Dalmau	98.36	99.36	99.84	03-08-1973	99.15	23/09/2024 06	9	9	100.00
150	Ganga	Phaphamau	83.73	84.73	87.98	08-09-1978	84.07	16/09/2024 08	4	4	100.00
151	Ganga	Allahabad Chhatnag	83.73	84.73	88.03	08-09-1978	83.41	16/09/2024 11	0	0	-
152	Ganga	Mirzapur	76.72	77.72	80.34	09-09-1978	76.54	16/09/2024 21	0	0	-
153	Ganga	Varanasi	70.26	71.26	73.90	09-09-1978	70.83	17/09/2024 07	5	5	100.00
154	Ganga	Ghazipur	62.10	63.10	65.22	09-09-1978	63.67	17/09/2024 23	12	12	100.00
155	Ganga	Ballia	56.62	57.62	60.39	25-08-2016	59.81	19/09/2024 08	52	52	100.00
156	Ramganga	Moradabad	189.60	190.60	192.88	21-09-2010	190.24	16/09/2024 05	17	17	100.00
157	Ramganga	Bareilly	162.07	163.07	162.82	22-09-2010	161.75	17/09/2024 05	0	0	-
158	Yamuna	Mawi	231.00	231.50	232.75	18-06-2013	229.81	12/08/2024 15	0	0	-
159	Yamuna	Mathura	165.20	166.00	169.73	08-09-1978	165.17	18/09/2024 19	0	0	-
160	Yamuna	Agra	151.40	152.40	154.76	09-09-1978	149.74	12/09/2024 14	0	0	-
161	Yamuna	Etawah	120.92	121.92	126.13	11-09-1978	120.79	15/09/2024 14	0	0	-
162	Yamuna	Auraiya	112.00	113.00	118.51	06-08-2021	113.6	15/09/2024 01	4	4	100.00
163	Yamuna	Kalpi	107.00	108.00	112.98	25-08-1996	108.89	15/09/2024 01	3	3	100.00
164	Yamuna	Hamirpur	102.63	103.63	108.59	12-09-1983	104	14/09/2024 05	4	4	100.00
165	Yamuna	Chillaghat	99.00	100.00	105.16	06-09-1978	100.07	14/09/2024 11	5	5	100.00
166	Yamuna	Naini	83.74	84.74	87.99	08-09-1978	83.91	16/09/2024 12	3	3	100.00
167	Betwa	Mohana	121.66	122.66	132.16	05-09-1978	122.3	12/09/2024 18	1	1	100.00
168	Ken	Banda	103.00	104.00	113.29	07-07-2005	106.75	06/08/2024 08	5	5	100.00
169	Gomati	Lucknow HanumanSetu	108.50	109.50	110.85	10-09-1971	105.87	07/08/2024 04	0	0	-
170	Gomati	Jaunpur	73.07	74.07	77.74	22-09-1971	71.3	28/09/2024 06	0	0	-
171	SAI	Rae-Bareli	100.00	101.00	104.81	17-09-1982	98.65	29/08/2024 20	0	0	-
172	Ghaghra	Elgin Bridge	105.07	106.07	107.62	18-08-2014	107.01	16/09/2024 01	110	109	99.09
173	Ghaghra	Ayodhya	91.73	92.73	94.01	11-10-2009	93.32	16/09/2024 12	101	101	100.00
174	Ghaghra	Turtipar	63.01	64.01	66.00	28-08-1998	64.81	26/08/2024 11	111	110	99.10
175	Rapti	Balrampur	103.62	104.62	106.07	10-10-2022	105.26	09/07/2024 12	42	41	97.62
176	Rapti	Bansi	83.90	84.90	86.27	16/10/2022	85.39	13/07/2024 15	68	68	100.00
177	Rapti	Gorakhpur Birdghat	73.98	74.98	77.54	23-08-1998	75.99	16/07/2024 04	68	68	100.00
178	Rapti	Kakardhari	130.00	131.00	132.37	15-08-2014	130.36	07/07/2024 16	2	2	100.00
179	Gandak	Khadda	95.00	96.00	97.50	23-07-2002	96.54	29/09/2024 06	246	243	98.78

Statewise Flood Forecasting Information In India during Flood Season 2024

Sl. No.	Name of the river	Name of FF site	Warning Level (m)	Danger level (m)	Highest Flood Level		Maximum Level -2024				
					Level (m)	Date/ Month/ Year	Level (m)	Date and Time DD/MM/YY)	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6	7	8	9	10	11	12
180	Ganga	Fathegarh	136.60	137.60	138.14	26-09-2010	137.73	18/09/2024 04	67	66	98.51
181	Ganga	Dabri	136.30	137.30	139.70	28-09-1983	138.09	20/09/2024 05	42	42	100.00
182	Ganga	Garhmuktheswar	198.33	199.33	199.90	23-09-2010	198.76	04/09/2024 19	71	71	100.00
183	Ganga	Kachla Bridge	161.00	162.00	162.91	20/07/2023	162.63	17/09/2024 07	229	227	99.13
184	Betwa	Shahjina	103.54	104.54	108.95	06-09-1978	103.45	13/09/2024 22	0	0	-
	Uttarakhand										
185	Mandakini	Ganganagar	803.00	804.00	808.00	17/06/2013	801.5	31/07/2024 23	0	0	-
186	Alaknanda	Srinagar	535.00	536.00	537.90	17-06-2013	535.30	01/08/2024 02	1	1	100.00
187	Ganga	Rishikesh	339.50	340.50	341.72	05-09-1995	340.06	23/08/2024 13	6	6	100.00
188	Ganga	Haridwar	293.00	294.00	296.30	19-09-2010	293.70	23/08/2024 13	6	5	83.33
	West Bengal										
189	Ganga	Farakka	21.25	22.25	25.14	07-09-1998	23.53	24/09/2024 06	143	135	94.41
190	Mayurakshi	Narayanpur	26.99	27.99	29.69	27-09-1995	25.27	03/08/2024 21	0	0	-
191	Ajoy	Gheropara	38.42	39.42	43.94	27-09-1978	37.60	17/09/2024 16	0	0	-
192	Mundeswari	Harinkhola	11.80	12.80	14.60	28-07-2017	14.44	18/09/2024 15	8	8	100.00
193	Kangsabati	Mohanpur	24.73	25.73	29.62	02-09-1978	25.4	18/09/2024 01	0	0	-
194	Raidak-I	Tufanganj	34.22	35.30	36.50	12-08-2017	35.81	07/07/2024 15	30	20	66.67
195	Torsa	Hasimara	116.30	116.90	118.50	13-07-1996	116.4	30/06/2024 08	1	0	0.00
196	Torsa	Ghugumari	39.80	40.41	41.46	03-08-2000	40.14	13/07/2024 00	25	20	80.00
197	Jaldhaka	NH-31	80.00	80.90	81.33	28-08-1972	80.84	09/07/2024 15	133	117	87.97
198	Jaldhaka	Mathabanga	47.70	48.20	49.85	07-09-2007	47.9	06/07/2024 05	5	4	80.00
199	Tista	Domohani	85.65	85.95	89.30	14-10-1968	86.13	28/09/2024 18	21	17	80.95
200	Tista	Mekhliganj	65.45	65.95	66.62	20-10-2021	66.28	06/07/2024 13	340	321	94.41
							Total Level Forecasts		**7086**	**6790**	**95.82**
							Total Inflow Forecast		**3356**	**3177**	**94.67**
							Total Forecast		**10442**	**9967**	**95.45**

Statewise Flood Forecasting Information In India during Flood Season 2024

Sl. No.	Name of the river	Name of FF site	FRL/PL (m)	Maximum Level (m)	Date and Time DD/MM/YY)	No.of Forecasts issued	No.of Forecasts within limits	Percent-age of accuracy
1	2	3	4	5	6	7	8	9
	Andhra Pradesh							
1	Godavari	Indirasagar(Polavaram)	-	**24.817**	**28/07/2024 17**	85	85	100.00
2	Tungabhadra	Sunkesula Barrage	292	**292.00**	**24/06/2024 08**	97	97	100.00
3	Krishna	Srisailam Dam	269.75	**269.75**	**28/08/2024 06**	73	73	100.00
4	Krishna	Dr K L R S Pulichintala Dam	53.34	**53.34**	**19/08/2024 08**	91	90	98.90
5	Krishna	Prakasham Barrage	17.39	**21.19**	**02/09/2024 12**	85	85	100.00
6	North Pennar	Somasila Dam	100.58	**99.94**	**02/12/2024 06**	31	23	74.19
7	Vamsadhara	Gotta Barrage	34.84	**38.1**	**04/07/2024 08**	0	0	-
8	Nagavali	Thottapalli Reservoir Scheme	105	**104.6**	**27/06/2024 08**	0	0	-
9	Suwarnamukhi	Madduvalasa Reservoir	65	**64.86**	**20/10/2024 08**	1	1	100.00
10	Nagavali	Narayanapuram Anicut	32.77	**29.50**	**09/09/2024 08**	2	2	100.00
	Assam							
	Arunachal Pradesh							
11	Subansiri	Lower Subansiri Dam	-	-	-	0	0	-
	Bihar							
12	Sone	Indrapuri Barrage	173	-	-	0	0	-
13	Gandak	Gandak Barrage	110.3	**110.61**	**29/09/2024 08**	0	0	-
14	Kosi	Kosi Barrage	74.69	**76.08**	**29/09/2024 08**	0	0	-
	Chhattisgarh							
15	Mahanadi	Ravishankar Dam	348.7	**348.65**	**10/09/2024 18**	5	5	100.00
16	Hasdeo	Bango Dam	359.66	**358.43**	**25/08/2024 08**	3	2	66.67
	Daman & Diu							
	Gujarat							
17	Mahi	Kadana Dam	127.71	**127.71**	**20/09/2024 15**	25	24	96.00
18	Panam	Panam Dam	127.41	**133.84**	**13/11/2024 18**	20	20	100.00
19	Sabarmati	Dharoi Dam	189.59	**189.07**	**28/10/2024 22**	0	0	-
20	Narmada	Sardar Sarovar Dam	138.38	**138.68**	**01/10/2024 08**	152	150	98.68
21	Tapi	Ukai Dam	105.16	**105.16**	**01/10/2024 08**	124	123	99.19
22	Damanganga	Madhuban Dam	79.86	**79.89**	**27/10/2024 04**	23	23	100.00

23	Banas	Dantiwada Dam	55.54	55.53	30/09/2024 05	4	3	75.00
24	Shetrunji	Shetrunji Dam	184.1	185.54	28/11/2024 13	0	0	-
	Haryana							
25	Yamuna	Tajewala Weir	334	335.02	26/09/2024 06	0	0	-
	Himachal Pradesh							
	Jammu & Kashmir							
	Jharkhand							
26	Khoranadi	Annaraj Dam	252.44	-	-	0	0	-
27	Goda Nala	Bhairwa Dam	356.70	-	-	0	0	-
28	Baranadi	Amanat Barage	274.39	-	-	0	0	-
29	Jamunia	Batane Dam	232.85	-	-	0	0	-
30	Mayurakshi	Massanjore Dam	121.31	119.42	30/09/2024 13	7	7	100.00
31	Ashra nadi	Sikatia Barrage	165.22	161.62	17/09/2024 03	0	0	-
32	Damodar	Tenughat Dam	268.83	262.8	03/08/2024 16	43	38	88.37
33	Barakar	Tilaiya Dam	372.46	369.85	13/10/2024 06	0	0	-
34	Konar	Konar Dam	427.93	427.421	17/09/2024 06	0	0	-
35	Damodar	Panchet Dam	132.59	129.61	17/09/2024 17	78	77	98.72
36	Barakar	Maithon Dam	150.88	150.7	17/09/2024 07	48	45	93.75
37	Anjanwa	Sundar Dam	110.795	-	-	0	0	-
38	Subarnarekha	Getlasud Dam	590.06	590.24	17/09/2024 08	0	0	-
39	Subernarekna	Chandil Dam	189	183.56	18/09/2024 08	6	6	100.00
40	Subarnarekha	Galudih Barrage	94.5	92.9	05/10/2024 08	10	10	100.00
	Karnataka							
41	Karanja	Karanja Dam	584.15	584.13	07/09/2024 08	0	0	-
42	Krishna	Hippargi Dam	524.87	527.87	06/11/2024 08	37	37	100.00
43	Ghataprabha	Hidkal Dam	662.94	662.94	15/08/2024 06	62	57	91.94
44	Krishna	Alamati Dam	519.6	519.60	17/08/2024 01	40	40	100.00
45	Malaprabha	Malaprabha Dam	633.83	633.91	05/12/2024 06	40	33	82.50
46	Krishna	Narayanpur Dam	492.25	492.41	16/12/2024 18	84	84	100.00
47	Tunga	Upper Tunga	588.24	588.24	26/06/2024 06	121	114	94.21
48	Bhadra	Bhadra Dam	657.75	657.76	15/10/2024 06	68	63	92.65
49	Tungabhadra	Tungabhadra Dam	497.74	497.74	09/08/2024 20	85	84	98.82
50	Krishna	Singatalur Barrage	507	507.55	04/12/2024 08	0	0	-
51	Harangi	Harangi Dam	871.42	871.35	10/09/2024 08	26	23	88.46

52	Hemavathy	Hemavathy Dam	890.63	**890.63**	**13/10/2024 08**	86	81	94.19
53	Kabini	Kabini Dam	696.16	**696.16**	**30/07/2024 06**	69	68	95.10
54	Cauvery	Krishnarajasagar	752.49	**752.49**	**25/07/2024 08**	143	136	88.78
	Kerala							
55	Periyar	Idduki Dam	732.43	**725.14**	**10/11/2024 16**	5	2	40.00
56	Edamalayar	Idamalayar	169	**163.31**	**23/11/2024 13**	6	2	33.33
	Madhya Pradesh							
57	Chambal	Gandhisagar Dam	399.9	**399.9**	**19/10/2024 08**	4	4	100.00
58	Betwa	Rajghat Dam	371	**371**	**16/09/2024 06**	16	14	87.50
59	Sone	Bansagar Dam	341.65	**341.64**	**19/09/2024 08**	18	10	55.56
60	Sindh	Madikhera(Atal Sagar)	346.25	346.25	15/09/2024 08	2	1	50.00
61	Wainganga	Upper Wainganga Project/SS	519.38	**519.4**	**10/10/2024 08**	0	0	-
62	Pench	Pench Reservoir/Chaurai/Ma	625.75	**625.75**	**24/09/2024 08**	1	0	-
63	Bawanthri	Bawanthadi Reservoir	344.4	**344.3**	**28/09/2024 14**	0	0	-
64	Narmada	Barna Dam	348.55	**348.66**	**28/09/2024 08**	7	7	100.00
65	Narmada	Bargi Dam	422.76	**423.50**	**11/09/2024 17**	22	22	100.00
66	Narmada	Tawa Dam	355.39	**355.55**	**21/10/2024 07**	11	11	100.00
67	Narmada	Indira Sagar Dam	262.13	**262.13**	**12/09/2024 04**	65	65	100.00
68	Narmada	Omkareshwar Dam	196.6	**196.6**	**30/07/2024 00**	0	0	-
	Maharashtra							
69	Godavari	N M D Weir	533.50	**535.51**	**19/07/2024 21**	0	0	-
70	Mula	Mula Dam	552.3	**563.52**	**08/06/2024 06**	0	0	-
71	Godavari	Jaikwadi Dam	463.91	**463.906**	**13/10/2024 23**	8	8	100.00
72	Sindhpana	Manjlegaon	431.80	**431.16**	**31/10/2024 06**	0	0	-
73	Puma	Yeldari Dam	461.77	**545.5**	**13/07/2024 06**	0	0	-
74	Pench	Totladoh Project	490	**490**	**11/09/2024 08**	0	0	-
75	Wainganga	Goshikhurd Dam	245.5	**244.9**	**11/11/2024 08**	10	10	100.00
76	Wardha	Upper Wardha Project	342.5	**342.5**	21/09/2024 08	0	0	-
77	Penganga	Issapur/Upper Penganga Pro	441	**441**	**15/09/2024 20**	0	0	-
78	Nira	Veer Dam	579.85	**579.85**	**10/08/2024 08**	0	0	-
79	Bhima	Ujjani Dam	496.83	**497.33**	**14/10/2024 08**	0	0	-
80	Koyna	Koyna Dam	659.43	**659.43**	**04/09/2024 08**	1	1	100.00
81	Warana	Warana Dam	626.9	**626.9**	**25/09/2024 08**	0	0	-
82	Tapi	Hatnur Dam	212.02	**214.14**	**12/10/2024 12**	76	75	98.68
	NCT Delhi							
	Odisha							

83	Indravathi	Upper Indravathi Project	642	**637.12**	**27/09/2024 10**	0	0	-
84	Kolab	Kolab Project	858	**857.16**	**14/09/2024 14**	0	0	-
85	Machhkund	Machhkund Project	838.2	**838.078**	**09/09/2024 11**	0	0	-
86	Balimela	Balimela Project	462.07	**837.18**	**30/11/2024 18**	2	2	-
87	Salandi	Salandi Dam	82.3	**76.1**	**31/10/2024 08**	0	0	-
88	Brahmani	Rengali Dam	123.5	**123.84**	**28/09/2024 08**	30	27	90.00
89	Mahanadi	Hirakud Dam	192.02	**192.02**	**21/09/2024 09**	65	64	98.46
	Rajasthan							
90	Chambal	Rana Pratap Sagar	352.81	**352.82**	**07/10/2024 08**	1	1	100.00
91	Chambal	Kota Barrage	260.3	**260.48**	**28/05/2024 08**	1	1	100.00
92	Banas	Bisalpur Dam	315.50	**315.5**	**07/09/2024 08**	0	0	-
93	Kalisindh	Kalisindh Dam	316	**315.92**	**25/09/2024 08**	5	5	100.00
94	Parwan	Parwan Dam	308.8	-	-	0	0	-
95	Gambhiri	Gambhiri Dam	431.90	**432.21**	**05/09/2024 08**	0	0	-
96	Gambhiri	Panchana Dam	258.62	**258.45**	**30/09/2024 08**	0	0	-
97	Mej	Gudha Dam	305.87	**306.09**	**07/09/2024 08**	0	0	-
98	Parwati	Parwati Dam	308.15	-	-	0	0	-
99	Mahi	Mahi Bajajsagar Dam	281.5	**281.5**	**26/10/2024 08**	11	11	100.00
100	Som Kamla	Som Kamla Amba Dam	213.5	**213.8**	**22/11/2024 08**	0	0	-
	Sikkim							
101	Teesta	Teesta-III HEP Dam Chungta	1585	-	-	0	0	-
102	Teesta	Teesta V HEP Dam Singtam	579	-	-	0	0	-
103	Rongpo	Rongpo Dam	913.8	**911.38**	**18/05/2024 19**	0	0	-
104	Rongli	Rongli Dam	913.8	**910.25**	**03/09/2024 16**	0	0	-
105	Rangit	Rangit-III HEP Dam	640	**639.92**	**21/12/2024 09**	0	0	-
	Tamilnadu							
106	Cauvery	Mettur Dam	240.79	**240.92**	**13/08/2024 08**	98	87	88.78
107	Bhavani	Bhavanisagar Dam	280.42	**278.78**	**15/12/2024 08**	33	28	84.85
108	Kodaganar	Kodaganar Dam	200.25	**200.02**	**13/12/2024 06**	0	0	-
109	Cauvery	Grand Anicut	59.21	**59.21**	**01/05/2024 06**	106	91	85.85
110	Cauvery	Upper Anicut	74.40	**75.98**	**02/08/2024 06**	110	92	83.64
111	Kosasthaliyar	Poondi Satyamurthy reservoi	42.67	**42.66**	**13/12/2024 06**	4	2	50.00
112	Adyar	Chembarampakkam	26.03	**25.81**	**13/12/2024 06**	1	1	100.00
113	South Pennar	Sathnur Dam	222.2	**280.43**	**20/09/2024 06**	4	3	75.00
114	Gomukhinadi	Gomukhi Dam	183.18	**189.16**	**20/09/2024 06**	1	0	0.00

115	Periyar Odai	Wellington Dam	72.54	71.86	14/12/2024 06	1	0	0.00
116	Vaigai	Vaigai Dam	279.20	277.42	31/12/2024 06	20	18	90.00
	Telangana							
117	Manjira	Singur Dam	523.6	532.59	15/10/2024 15	0	0	-
118	Manjira	Nizamsagar Dam	428.24	429.74	25/10/2024 23	1	0	0.00
119	Godavari	Sriram Sagar	332.54	332.537	11/09/2024 06	13	13	100.00
120	Kaddamvagu	Kaddam Dam	213.21	213.42	26/09/2024 00	1	1	100.00
121	Godavari	Sripada Yellampally Dam	148.00	148	13/09/2024 06	15	13	86.67
122	Godavari	Laxmi Barrage	100.00	97.2	27/07/2024 00	72	72	100.00
123	Maner	Mid Manair Dam	318.00	317.72	11/10/2024 06	0	0	
124	Godavari	PVNR Kanthapally Project	83	84.2	27/07/2024 06	78	78	100.00
125	Krishna	Priyadarshini	318.51	318.51	20/09/2024 17	63	62	98.41
126	Musi	Musi Project	196.60	196.54	28/11/2024 08	0	0	-
	Tripura							
	Uttar Pradesh							
127	Ganga	Choudhury Charan Singh MC	220.45	219.9	14/09/2024 18	151	142	94.04
128	Ganga	Narora Barrage	179.07	179.07	01/05/2024 08	39	39	100.00
129	Betwa	Matatilia Dam	308.46	308.45	16/09/2024 08	13	10	76.92
130	Ghaghra	Katerniaghat Dam	136.8	137.90	06/10/2024 06	69	68	98.55
131	Rihand	Rihand Dam	265.18	265.75	18/09/2024 08	17	9	52.94
	Uttarakhand							
132	Ramganga	Kalagarh Dam	365.3	360.62	02/12/2024 08	0	0	-
133	Sharda	Banbasa	222.96	222.80	29/07/2024 03	17	17	100.00
134	Tons	Ichari Dam	644.75	644.75	06/07/2024 02	0	0	-
135	Bhagirathi	Tehri Dam	830	829.88	05/10/2024 15	77	70	90.91
136	Yamuna	Juddo Dam	631.5	643.38	22/11/2024 18	0	0	-
	West Bengal							
137	Mayurakshi	Tilpara Barrage	62.79	62.667	28/08/2024 17	4	4	100.00
138	Damodar	Durgapur Barrage	64.47	64.64	03/12/2024 21	77	77	100.00
139	Kangsabati	Hinglow Dam	97.84	96.44	23/09/2024 06	0	0	-
140	Kangsabati	Kangsabati Dam	134.11	133.65	20/09/2024 12	30	28	93.33
			Total Inflow Forecast			**3356**	**3177**	**94.67**
			Total Level Forecast			**7086**	**6790**	**95.82**
			Total Forecast			**10442**	**9967**	**95.45**

Extreme Flood

S. No.	State	District	River	Station	Period	
					From	To
Sl No.	State	District	River	Station	Period	
					From	To
1	Assam	Jorhat	Brahmaputra	Neamatighat	30-06-2024	02-07-2024
2		Sonitpur	Jiabharali	Jia-Bharali NT Road Crossing	01-07-2024	01-07-2024
3		Sivasagar	Dikhow	Sivasagar	02-07-2024	02-07-2024
4		Dibrugarh	Buridehing	Khowang	02-07-2024	03-07-2024
5	Bihar	Sitamarhi	Bagmati	Dheng Bridge	28-09-2024	29-09-2024
6		Muzzafarpur	Bagmati	Runisaidpur	29-09-2024	30-09-2024

Severe Flood

S. No.	State	District	River	Station
1	Assam	Karimganj	Kushiyara	Karimganj
2		Karimganj	Barak	Badarpurghat
3		Cachar	Barak	Annapurna Ghat
4		Nagaon	Kopili	Kampur
5		Hailakandi	Katakhal	Matizuri
6		Morigaon	Kopili	Dharamtul
7		Dibrugarh	Brahmaputra	Dibrugarh
8		Kamrup	Brahmaputra	Guwahati DC Court
9		Goalpara	Brahmaputra	Goalpara
10		Dhubri	Brahmaputra	Dhubri
11		Kamrup	Puthimari	Puthimari N H
12		Barpeta	Beki	Beki Rd Bridge
13		Sonitpur	Brahmaputra	Tezpur
14		Lakhimpur	Subansiri	Badatighat
15		Sivasagar	Desang	Nanglamoraghat
16		Golaghat	Dhansiri(s)	Numaligarh
17		Golaghat	Dhansiri(s)	Golaghat
18		Dhubri	Sankosh	Golokganj
19		Bongaigaon	Manas	Manas NH Xing
20		Purnea	Mahananda	Dhengraghat
21		Kishanganj	Mahananda	Taibpur
22		Madhubani	Kamla	Jainagar
23		Katihar	Mahananda	Jhawa
24		Madhubani	Kamlabalan	Jhanjharpur

25	Bihar	Araria	Parman	Araria
26		Khagaria	Kosi	Baltara
27		Muzzafarpur	Gandak	Rewaghat
28		Siwan	Ghaghra	Darauli
29		Gopalganj	Gandak	Dumariaghat
30		Adhwara	Sitamarhi	Sonebarsa
31		Muzzafarpur	Bagmati	Benibad
32		Supaul	Kosi	Basua
33		Darbhanga	Adhwara gr.	Kamtaul
34		Katihar	Kosi	Kursela
35		Bhagalpur	Ganga	Bhagalpur
36		Siwan	Ghagra	Gangpur Siswan
37		Patna	Ganga	Dighaghat
38		Patna	Sone	Maner
39		Patna	Ganga	Gandhighat
40		Bhagalpur	Ganga	Kahalgaon
41		Patna	Ganga	Hatidah
42		Khagaria	Burhi Gandak	Khagaria
43		Khagaria	Burhi Gandak	Rosera
44		East Champaran	Gandak	Chatia
45		Darbhanga	Bagmati	Hayaghat
46		Darbhanga	Adhwara Group	Ekmighat
47		Munger	Ganga	Munger
48		Patna	Punpun	Sripalpur
49	Sikkim	Namchi	Teesta	Melli
50	West Bengal	Murshidabad	Ganga	Farakka
51		Coochbehar	Teesta	Mekhliganj
52		Coochbehar	Raidak-I	Tufanganj
53		Jalpaiguri	Tista	Domohani
54		Hoogly	Mundeswari	Harinkhola
55	Uttar Pradesh	Barabanki	Ghaghra	Elginbridge
56		Siddharthnagar	Rapti	Bansi
57		Gorakhpur	Rapti	Birdghat
58		Balrampur	Rapti	Balrampur
59		Ayodhya	Ghaghra	Ayodhya
60		Ballia	Ghaghra	Turtipar
61		Budaun	Ganga	Kachlabridge
62		Kushinagar	Gandak	Khadda
63		Ballia	Ganga	Ballia
64		Banda	Ken	Banda
65		Ghazipur	Ganga	Ghazipur
66		Shahjahanpur	Ganga	Dabri
67		Farukkabad	Ganga	Fathegarh
68		Kanpur	Ganga	Ankinghat

69		Kannauj	Ganga	Kannauj
70		Auraiya	Yamuna	Auraiya
71		Hamirpur	Yamuna	Hamirpur
72		Jalaun	Yamuna	Kalpi
73		Banda	Yamuna	Chillaghat
74	Kerala	Palakkad	Bharathapuzha	Kumbidi
75		Wayanad	Kabini	Muthankera
76	Andhra Pradesh	Alluri Sitharama Raju	Godavari	Kunavaram
77		Alluri Sitharama Raju	Sabri	Chinturu
78	Telangana	Kumuram	Wardha	Sirpur T
79		Bhadradri	Godavari	Bhadrachalam
80	Maharashtra	Bhandara	Wainganga	Bhandara
81		Bhandara	Wainganga	Pauni
82	Tamilnadu	Erode	Cauvery	Kodumudi
83		Tiruchirapally	Cauvery	Musiri
84	Tripura	Sipahijala	Gumti	Sonamura
85	Jharkhand	Sahibganj	Ganga	Sahibganj
86	Odisha	Balasore	Jalaka	Mathani Road Bridge
87		Balasore	Subarnarekha	Rajghat
88	Madhya Pradesh	Mandla	Narmada	Mandla
89	Rajasthan	Dholpur	Chambal	Dholpur
90	Gujarat	Bharuch	Narmada	Bharuch
91	Chhattisgarh	Bastar	Indravathi	Jagdalpur

Above Normal Flood

S. No.	State	District	River	Station
1	Arunachal Pradesh	East Siang	Siang	Passighat
2	Assam	Lakhimpur	Ranganadi	Ranganadi NT Rd Crossing
3		Tinsukia	Lohit	Dhollabazar
4		Dibrugarh	Buridehing	Naharkatia
5		Nalbari	Pagladiya	Pagladiya NT Rd Crossing
6		Kokrajhar	Gaurang	Kokrajhar
7	West	Alipurduar	Torsa	Hasimara

8		Coochbehar	Torsa	Ghugumari
9		Coochbehar	Jaldhaka	Mathabhanga
10		Jalpaiguri	Jaldhaka	NH 31
11		Medinipur	Kongsabati	Mohanpur
12	Bihar	Buxar	Ganga	Buxar
13		Saran	Ghaghra	Chhapra
14		Vaishali	Gandak	Hajipur
15		Muzaffarpur	Burhi Gandak	Muzaffarpur Sikandarpur
16		East Champaran	Burhi Gandak	Lalbegiaghat
17		Samastipur	Burhi Gandak	Samastipur
18		Patna	Sone	Koelwar
19	Uttar Pradesh	Moradabad	Ramganga	Moradabad
20		Ghaziabad	Ganga	Garhmukhteshwar
21		Kanpur	Ganga	Kanpur
22		Bahraich	Rapti	Kakardhari
23		Jalaun	Betwa	Mohana
24		Prayagraj	Yamuna	Naini
25		Rae-Bareilly	Ganga	Dalmau
26		Prayagraj	Ganga	Phaphamau
27		Varanasi	Ganga	Varanasi
28	Uttarakhand	Pauri Garhwal	Alaknanda	Srinagar
29		Haridwar	Ganga	Haridwar
30		Dehradun	Ganga	Rishikesh
31	Maharashtra	Kolhapur	Krishna	Arjunwad
32		Ahmednagar	Godavari	Kopergaon
33		Nashik	Godavari	Nashik
34		Chandrapur	Wardha	Bamni(Balharsha)
35		Nanded	Godavari	Nanded
36	Odisha	Balasore	Burhabalang	Govindpur (NH5 Rd Bridge)
37		Cuttack	Mahanadi	Naraj
38		Bhadrak	Baitarani	Akhuapada
39		Gajapati	Vamsadhara	Kashinagar
40	Telangana	Kothagudem	Godavari	Dummagudem
41		Mulugu	Godavari	Eturunagaram
42		Bhopalpalli	Godavari	Kaleswaram
43	Andhra Pradesh	East Godavari	Godavari	Dowlaiswaram
44		Kurnool	Tungabhadra	Kurnool
45		Kurnool	Tungabhadra	Mantralayam
46		Krishna	Krishna	Avanigadda
47	Tripura	Unakoti	Manu	Kailashahar
48	Karnataka	Kalaburagi	Bhima	Deongaon Bridge
49	Gujarat	Mahisagar	Mahi	Wanakbori
50	Jharkhand	Purba	Subarnarekha	Jamshedpur

Performance of Flood Forecasting Stations (Divisionwise) in India during Flood Season 2024

Sl. No	Division	Level Forecasts only					Inflow Forecasts only					Total Forecast Stations				
		Stns.	F/c issued for	Level Forecast	Level Forecast Within Limit	Accuracy	Stns.	F/c issued for	Inflow Forecast	Inflow Forecast Within Limit	Accuracy	Stns.	F/c issued for	Total	Within Limit	Accuracy
1	Himalayan Ganga Divn, Dehradun	4	3	13	12	92.31	2	2	228	212	92.98	6	5	241	224	92.95
2	Middle Ganga Division 1, Lucknow	7	7	502	499	99.40	2	2	86	85	98.84	9	9	588	584	99.32
3	Middle Ganga Division 2, Lucknow	12	9	497	494	99.40	2	1	39	39	100.00	14	10	536	533	99.44
4	Middle Ganga Division 3, Varanasi	7	4	73	73	100.00	2	2	35	19	54.29	9	6	108	92	85.19
5	Lower Ganga Division I, Patna	25	24	1923	1849	96.15	2	0	0	0	-	27	24	1923	1849	96.15
6	Lower Ganga Division 2, Patna	18	17	886	848	95.71	4	0	0	0	-	22	17	886	848	95.71
7	Upper Yamuna Divn, Delhi	6	0	0	0	-	3	0	0	0	-	9	0	0	0	-
8	Chambal Division, Jaipur	2	0	0	0	-	10	4	11	11	100.00	12	4	11	11	100.00
9	Lower Yamuna Divn, Agra	11	8	36	35	97.22	3	3	31	25	80.65	14	11	67	60	89.55
10	Damodar Divn, Asansol	4	1	8	8	100.00	13	7	287	276	96.17	17	8	295	284	96.27
11	Upper Brahmaputra Divn, Dibrugarh	19	16	967	957	98.97	1	0	0	0	-	20	16	967	957	98.97
12	Middle Brahmaputra Divn, Guwahati	9	8	346	344	99.42	0	0	0	0	-	9	8	346	344	99.42
13	Meghna Division Silchar	2	2	28	25	89.29	0	0	0	0	-	2	2	28	25	89.29
14	Meghna Investigation Divn , Shillong	4	4	402	398	99.00	0	0	0	0	-	4	4	402	398	99.00
15	Lower Brahmaputra Divn, Jalpaiguri	8	8	641	579	90.33	0	0	0	0	-	8	8	641	579	90.33
16	Eastern Rivers Divn, Bhubaneswar	11	6	59	55	93.22	9	5	49	46	93.88	20	11	108	101	93.52
17	Mahanadi Divn, Burla	3	1	3	3	100.00	3	3	73	71	97.26	6	4	76	74	97.37
18	Lower Godavari Divn, Hyderabad	10	8	184	179	97.28	5	2	87	87	100.00	15	10	271	266	98.15
19	Upper Godavari Division	4	3	18	18	100.00	14	7	188	185	98.40	18	10	206	203	98.54
20	Lower Krishna Divn, Hyderabad	4	3	50	46	92.00	11	9	655	652	99.54	15	12	705	698	99.01
21	Mahi Divn, Gandhinagar	3	1	3	1	33.33	7	4	60	58	96.67	10	5	63	59	93.65
22	Tapi Divn,Surat	5	1	9	8	88.89	4	4	375	371	98.93	9	5	384	379	98.70
23	Narmada Divn, Bhopal	2	1	27	27	100.00	5	4	105	105	100.00	7	5	132	132	100.00
24	Chenab Divn. Jammu	3	0	0	0	-	0	0	0	0	-	3	0	0	0	#DIV/0!
25	Southern River Divn. Coimbtr.	4	2	20	16	80.00	6	5	367	316	86.10	10	7	387	332	85.79
26	Hydrology Divn. Chennai	1	0	0	0	-	6	6	42	29	69.05	7	6	42	29	69.05
27	Cauvery Divn. Bangalore	1	0	0	0	-	8	8	615	575	93.50	9	8	615	575	93.50
28	UKD Pune	1	1	21	21	100.00	4	1	1	1	100.00	5	2	22	22	100.00
29	WGD Nagpur	4	2	6	6	100.00	7	2	11	10	90.91	11	4	17	16	94.12
30	SWRD, Kochi	3	1	2	1	50.00	2	2	11	4	36.36	5	3	13	5	38.46
31	SID Gangtak	3	1	362	288	79.56	5	0	0	0	-	8	1	362	288	79.56
Total		**200**	**142**	**7086**	**6790**	**95.82**	**140**	**83**	**3356**	**3177**	**94.67**	**340**	**225**	**10442**	**9967**	**95.45**

Performance of Flood Forecasting Stations (Major Basinwise) in India during Flood Season 2024

Sl. No	Name of the Major River basin	Total no.of FF sites			No.of FF sites where no forecast was issued			Level Forecasts			Inflow Forecasts			Overall Forecasts		
		Total no	Level FF sites	Inflow FF sites	Total no	Level FF sites	Inflow FF sites	Total No.	Within limits	% of Accu-racy	Total No.	Within limits	% of Accu-racy	Total No.	Within limits	% of Accu-racy
1	Indus and its tributaries	3	3	0	3	3	0	0	0	-	0	0	-	**0**	**0**	-
2	Ganga & tributaries	139	96	43	45	23	22	3938	3818	96.95	717	667	93.03	**4655**	**4485**	96.35
3	Brahmaputra	45	39	6	12	6	6	2316	2168	93.61	0	0	-	**2316**	**2168**	93.61
4	Barak and others	6	6	0	0	0	0	430	423	98.37	0	0	-	**430**	**423**	98.37
5	Subarnarekha including Burhabalang	7	4	3	1	0	1	54	51	94.44	16	16	100.00	**70**	**67**	95.71
6	Brahmani and Baitarni	5	3	2	3	2	1	3	3	100.00	30	27	90.00	**33**	**30**	90.91
7	East flowing rivers between Mahanadi and Pennar	8	4	4	5	3	2	2	1	50.00	3	3	100.00	**5**	**4**	80.00
8	Narmada	10	4	6	3	2	1	36	35	97.22	257	255	99.22	**293**	**290**	98.98
9	Tapi	3	1	2	1	1	0	0	0	-	200	198	99.00	**200**	**198**	99.00
10	Mahi	5	1	4	1	0	1	3	1	33.33	56	55	98.21	**59**	**56**	94.92
11	Sabarmati	2	1	1	2	1	1	0	0	-	0	0	-	**0**	**0**	-
12	Mahanadi	6	3	3	2	2	0	3	3	100.00	73	71	97.26	**76**	**74**	97.37
13	Godavari	44	18	26	20	5	15	208	203	97.60	286	282	98.60	**494**	**485**	98.18
14	Krishna	24	5	19	6	1	5	71	67	94.37	947	920	97.15	**1018**	**987**	96.95
15	West flowing rivers of Kutch and saurashtra including Luni	3	1	2	2	1	1	0	0	-	4	3	75.00	**4**	**3**	75.00
16	West Flowing rivers from Tapi to Tadri	3	2	1	2	2	0	0	0	-	23	23	100.00	**23**	**23**	100.00
17	Cauvery and tributaries	13	4	9	3	2	1	20	16	80.00	671	606	90.31	**691**	**622**	90.01
18	Pennr	2	1	1	1	1	0	0	0	-	31	23	74.19	**31**	**23**	74.19
19	East flowing rivers between Pennar and Kanyakumari	7	1	6	1	1	0	0	0	-	31	24	77.42	**31**	**24**	77.42
20	West Flowing river Tadri to Kanyakumari	5	3	2	2	2	0	2	1	50.00	11	4	36.36	**13**	**5**	38.46
Total		**340**	**200**	**140**	**115**	**58**	**57**	**7086**	**6790**	**95.82**	**3356**	**3177**	**94.67**	**10442**	**9967**	**95.45**

Performance of Flood Forecasting Stations (Statewise) in India during Flood Season 2024

Annex VIII

Sl. No	Name of the Major River basin	Total no.of FF sites			No.of FF sites where no forecast was issued			Level Forecasts			Inflow Forecasts			Overall Forecasts		
		Total no	Level FF sites	Inflow FF sites	Total no	Level FF sites	Inflow FF sites	Total No.	Within limits	Accuracy (%)	Total No.	Within limits	Accuracy (%)	Total No.	Within limits	Accuracy (%)
1	Andhra Pradesh	20	10	10	7	5	2	159	152	95.60	465	456	98.06	624	608	97.44
2	Arunachal Pradesh	4	3	1	3	2	1	3	3	100.00	0	0	-	3	3	100.00
3	Assam	30	30	0	2	2	0	1798	1776	98.78	0	0	-	1798	1776	98.78
4	Bihar	43	40	3	5	2	3	2339	2241	95.81	0	0	-	2339	2241	95.81
5	Chattisgarh	3	1	2	0	0	0	8	8	100.00	8	7	87.50	16	15	93.75
6	Gujarat	14	6	8	6	4	2	12	9	75.00	348	343	98.56	360	352	97.78
7	Haryana	2	1	1	2	1	1	0	0	-	0	0	-	0	0	-
8	Himachal Pradesh	1	1	0	1	1	0	0	0	-	0	0	-	0	0	-
9	Jammu & Kashmir	3	3	0	3	3	0	0	0	-	0	0	-	0	0	-
10	Jharkhand	17	2	15	9	0	9	84	78	92.86	192	183	95.31	276	261	94.57
11	Karnataka	15	1	14	2	0	2	3	3	100.00	861	820	95.24	864	823	95.25
12	Kerala	6	4	2	3	3	0	2	1	50.00	11	4	36.36	13	5	38.46
13	Madhya Pradesh	14	2	12	4	1	3	27	27	100.00	146	134	91.78	173	161	93.06
14	Maharashtra	22	8	14	13	3	10	41	41	100.00	95	94	98.95	136	135	99.26
15	Odisha	19	12	7	10	6	4	59	58	98.31	97	93	95.88	156	151	96.79
16	Rajasthan	15	4	11	10	3	7	11	10	90.91	18	18	100.00	29	28	96.55
17	Sikkim	8	3	5	7	2	5	362	288	79.56	0	0	-	362	288	79.56
18	Tamilnadu	15	4	11	3	2	1	20	16	80.00	378	322	85.19	398	338	84.92
19	Telangana	15	5	10	3	0	3	68	66	97.06	243	239	98.35	311	305	98.07
20	Tripura	2	2	0	0	0	0	28	25	89.29	0	0	-	28	25	89.29
21	Uttar Pradesh	44	39	5	11	11	0	1343	1334	99.33	289	268	92.73	1632	1602	98.16
22	Uttarakhand	9	4	5	4	1	3	13	12	92.31	94	87	92.55	107	99	92.52
23	West Bengal	16	12	4	4	3	1	706	642	90.93	111	109	98.20	817	751	91.92
24	Daman n Diu	1	1	0	1	1	0	0	0	-	0	0	-	0	0	-
25	NCT, DELHI	2	2	0	2	2	0	0	0	-	0	0	-	0	0	-
Total		**340**	**200**	**140**	**115**	**58**	**57**	**7086**	**6790**	**95.82**	**3356**	**3177**	**94.67**	**10442**	**9967**	**95.45**

Annex-IX

FLOOD FORECASTING PERFORMANCE FROM 2000 TO 2024

Year	No.of Level Forecasts issued			No.of Inflow Forecasts issued			Total No.of Forecasts issued		
	Total	Within +/-15 cm of deviation from actual	Accuracy (%)	Total	Within +/- 20% cumec of deviation from actual	Accuracy (%)	Total	Within +/- 15 cm or +/- 20% cumec of deviation from actual	Accuracy (%)
2000	5622	5504	97.90	821	747	90.99	6443	6251	97.02
2001	4606	4533	98.42	857	809	94.40	5463	5342	97.79
2002	3618	3549	98.09	623	602	96.63	4241	4151	97.88
2003	5989	5789	96.66	611	586	95.91	6600	6375	96.59
2004	4184	4042	96.61	705	654	92.77	4889	4696	96.05
2005	4323	4162	96.28	1295	1261	97.37	5618	5423	96.53
2006	5070	4827	95.21	1593	1550	97.30	6663	6377	95.71
2007	6516	6339	97.28	1707	1651	96.72	8223	7990	97.17
2008	5670	5551	97.90	1021	1003	98.24	6691	6554	97.95
2009	3343	3298	98.65	667	629	94.30	4010	3927	97.93
2010	6491	6390	98.44	1028	988	96.11	7519	7378	98.12
2011	4848	4795	98.91	1143	1109	97.03	5991	5904	98.55
2012	4200	4136	98.47	831	803	96.63	5031	4939	98.17
2013	5741	5471	95.30	1319	1289	97.73	7060	6760	95.75
2014	3884	3804	97.94	888	863	97.18	4772	4667	97.80
2015	3500	3429	97.97	572	562	98.25	4072	3991	98.01
2016	4969	4891	98.43	1270	1057	83.23	6239	5948	95.34
2017	5085	4975	97.84	1212	926	76.40	6297	5901	93.71
2018	4969	4871	98.03	1882	1624	86.29	6851	6495	94.80
2019	6004	5773	96.15	3750	2678	71.41	9754	8451	86.64
2020	8243	8133	98.67	3478	3065	88.13	11721	11198	95.54
2021	6670	6456	96.79	3947	3520	89.18	10617	9976	93.96
2022	6779	6476	95.53	4779	4369	91.42	11558	10845	93.83
2023	4567	4336	94.94	1772	1616	91.20	6339	5952	93.89
2024	7086	6790	95.82	3356	3177	94.67	10442	9967	95.45
Average	5279	5133	97.23	1645	1486	90.33	6924	6618	95.58

Annex-X

Extreme flood events in India under CWC FF & W Network - 2024 flood season										
Sl. No	River	Station	State	Danger level in metres	Existing Highest Flood Level (HFL)		New HFL		Duration	
					Level in metres	Date of occurrence	Level	Date and Time of Occurrence	From	To
1	Brahmaputra	Neamatighat	Assam	85.54	87.37	11-07-1991	87.47	01/07/2024 02	30/06/2024 15	02/07/2024 00
2	Jiabharali	Jia-Bharali NT Road Crossing	Assam	78.00	78.50	26-07-2007	78.50	01/07/2024 06	01/07/2024 06	01/07/2024 07
3	Dikhow	Sivasagar	Assam	92.40	94.34	11-08-2023	94.35	02/07/2024 16	02/07/2024 15	02/07/2024 22
4	Buridehing	Khowang	Assam	102.11	104.16	02-09-2015	104.23	03/07/2024 02	02/07/2024 19	03/07/2024 12
5	Bagmati	Dheng Bridge	Bihar	71.00	73.00	13-08-2017	73.47	29/09/2024 00	28/09/2024 19	29/09/2024 05
6	Bagmati	Runisaidpur	Bihar	55.00	58.15	14-08-2017	58.34	29/09/2024 23	29/09/2024 21	30/09/2024 03

Above Normal and Severe flood events on main Ganga and its tributaries- 2024 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2024		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
1	Alaknanda	Srinagar	Uttarakhand	535.00	536.00	535.30	01/08/2024 02	01/08/2024 02	01/08/2024 03	1	-	-	-
2	Ganga	Rishikesh	Uttarakhand	339.50	340.50	340.06	23/08/2024 13	26/07/2024 16	26/07/2024 19	1	-	-	-
								01/08/2024 09	01/08/2024 13	1	-	-	-
								11/08/2024 10	11/08/2024 13	1	-	-	-
								23/08/2024 12	23/08/2024 18	1	-	-	-
								14/09/2024 03	14/09/2024 10	1	-	-	-
3	Ganga	Haridwar	Uttarakhand	293.00	294.00	293.70	23/08/2024 13	26/07/2024 14	26/07/2024 17	1	-	-	-
								01/08/2024 08	01/08/2024 11	1	-	-	-
								11/08/2024 09	11/08/2024 16	1	-	-	-
								23/08/2024 12	23/08/2024 16	1	-	-	-
								14/09/2024 03	14/09/2024 10	1	-	-	-
4	Mandakini	Ganganagar	Uttarakhand	803.00	804.00	801.5	31/07/2024 23	-	-	-	-	-	-
5	Ganga	Kannauj	Uttar Pradesh	124.97	125.97	126	20/09/2024 05	15/09/2024 19	25/09/2024 18	11	19/09/2024 22	21/09/2024 08	3
6	Ganga	Ankinghat	Uttar Pradesh	123.00	124.00	124.09	20/09/2024 02	14/07/2024 07	17/07/2024 11	4	19/09/2024 09	22/09/2024 05	4
								11/08/2024 22	19/08/2024 03	9	-	-	-
								27/08/2024 09	31/08/2024 00	5	-	-	-
								13/09/2024 03	26/09/2024 15	14	-	-	-
7	Ganga	Kanpur	Uttar Pradesh	113.00	114.00	113.15	21/09/2024 05	20/09/2024 05	23/09/2024 09	4	-	-	-
8	Ganga	Dalmau	Uttar Pradesh	98.36	99.36	99.15	23/09/2024 06	18/09/2024 16	26/09/2024 20	9	-	-	-
9	Ganga	Phphamau	Uttar Pradesh	83.73	84.73	84.07	16/09/2024 08	15/09/2024 03	19/09/2024 00	5	-	-	-
10	Ganga	Allahabad Chhatnag	Uttar Pradesh	83.73	84.73	83.41	16/09/2024 11	-	-	-	-	-	-
11	Ganga	Mirzapur	Uttar Pradesh	76.72	77.72	76.54	16/09/2024 21	-	-	-	-	-	-
12	Ganga	Varanasi	Uttar Pradesh	70.26	71.26	70.83	17/09/2024 07	15/09/2024 13	19/09/2024 18	5	-	-	-
13	Ganga	Ghazipur	Uttar Pradesh	62.10	63.10	63.67	17/09/2024 23	08/08/2024 14	10/08/2024 23	3	15/09/2024 23	20/09/2024 20	6
								14/09/2024 23	23/09/2024 13	10	-	-	-
14	Ganga	Buxar	Bihar	59.32	60.32	60.3	17/09/2024 21	08/08/2024 21	10/08/2024 23	3	-	-	-
								15/09/2024 04	23/09/2024 13	9	-	-	-
15	Ganga	Ballia	Uttar Pradesh	56.62	57.62	59.81	19/09/2024 08	07/08/2024 03	07/09/2024 12	31	08/08/2024 00	15/08/2024 23	8
								14/09/2024 19	04/10/2024 04	21	18/08/2024 16	25/08/2024 06	8
								-	-	-	29/08/2024 13	04/09/2024 00	7
								-	-	-	15/09/2024 02	26/09/2024 17	12
16	Ganga	Patna Dighaghat	Bihar	49.45	50.45	51.76	20/09/2024 06	31/07/2024 15	31/07/2024 15	1	10/08/2024 00	14/08/2024 19	5
								06/08/2024 06	05/09/2024 20	31	16/09/2024 21	24/09/2024 18	9
								15/09/2024 11	28/09/2024 07	14	-	-	-
								29/09/2024 07	05/10/2024 07	7	-	-	-
17	Ganga	Patna Gandhighat	Bihar	47.60	48.60	50.28	20/09/2024 05	14/07/2024 14	15/07/2024 21	2	08/08/2024 01	04/09/2024 22	28
								31/07/2024 15	31/07/2024 15	1	15/09/2024 13	26/09/2024 05	12
								05/08/2024 06	10/10/2024 17	67	29/09/2024 19	04/10/2024 05	6
18	Ganga	Hathidah	Bihar	40.76	41.76	43.41	21/09/2024 09	31/07/2024 15	31/07/2024 15	1	31/07/2024 15	31/07/2024 15	1
								05/08/2024 23	12/10/2024 20	69	08/08/2024 23	06/09/2024 00	30
								13/10/2024 00	13/10/2024 20	1	16/09/2024 11	27/09/2024 19	12
								-	-	-	30/09/2024 00	05/10/2024 11	6
19	Ganga	Munger	Bihar	38.33	39.33	39.95	22/09/2024 01	10/08/2024 18	06/09/2024 01	28	19/09/2024 14	25/09/2024 09	7
								17/09/2024 08	28/09/2024 12	12	-	-	-
								30/09/2024 09	05/10/2024 20	6	-	-	-
20	Ganga	Bhagalpur	Bihar	32.68	33.68	34.66	22/09/2024 19	09/08/2024 08	12/09/2024 04	35	12/08/2024 01	12/08/2024 23	1
								17/09/2024 08	08/10/2024 23	22	13/08/2024 01	19/08/2024 04	7
								-	-	-	24/08/2024 15	29/08/2024 06	6
								-	-	-	19/09/2024 03	27/09/2024 08	9
21	Ganga	Colgong/ Kahalgaon	Bihar	30.09	31.09	32.58	23/09/2024 15	14/07/2024 09	20/07/2024 14	7	08/08/2024 13	09/09/2024 04	33
								24/07/2024 13	28/07/2024 06	5	17/09/2024 21	08/10/2024 21	22
								03/08/2024 17	16/10/2024 08	75	-	-	-
22	Ganga	Sahibganj	Jharkhand	26.25	27.25	28.42	24/09/2024 16	14/07/2024 12	20/07/2024 20	7	10/08/2024 00	08/09/2024 20	30
								24/07/2024 09	28/07/2024 00	5	19/09/2024 05	08/10/2024 21	20
								04/08/2024 13	15/10/2024 03	73	-	-	-
23	Ganga	Farakka	West Bengal	21.25	22.25	23.53	24/09/2024 06	15/07/2024 10	20/07/2024 22	6	10/08/2024 20	08/09/2024 13	30
								07/08/2024 09	15/10/2024 05	70	19/09/2024 11	10/10/2024 06	22
24	Ramganga	Moradabad	Uttar Pradesh	189.60	190.60	190.24	16/09/2024 05	08/07/2024 06	10/07/2024 09	3	-	-	-
								24/08/2024 11	26/08/2024 00	3	-	-	-
								14/09/2024 05	17/09/2024 21	4	-	-	-

Above Normal and Severe flood events on main Ganga and its tributaries- 2024 flood season														
Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2024		Flood period above warning level			Flood period above danger level			
						Level in metres	Date	From	To	No.of days	From	To	No.of days	
25	Ramganga	Bareilly	Uttar Pradesh	162.07	163.07	161.75	17/09/2024 05	-	-	-	-	-	-	
26	Yamuna	Mawi	Uttar Pradesh	231.00	231.50	229.81	12/08/2024 15	-	-	-	-	-	-	
27	Yamuna	Delhi Rly Bridge	NCT Delhi	204.50	205.33	204.38	13/08/2024 03	-	-	-	-	-	-	
28	Yamuna	Mathura	Uttar Pradesh	165.20	166.00	165.17	18/09/2024 19	-	-	-	-	-	-	
29	Yamuna	Agra	Uttar Pradesh	151.40	152.40	149.74	12/09/2024 14	-	-	-	-	-	-	
30	Yamuna	Etawa	Uttar Pradesh	120.92	121.92	120.79	15/09/2024 14	-	-	-	-	-	-	
31	Yamuna	Auraiya	Uttar Pradesh	112.00	113.00	113.6	15/09/2024 01	13/09/2024 20	16/09/2024 01	4	14/09/2024 02	15/09/2024 12	2	
32	Yamuna	Kalpi	Uttar Pradesh	107.00	108.00	108.89	15/09/2024 01	13/09/2024 18	16/09/2024 11	4	14/09/2024 01	15/09/2024 22	3	
33	Yamuna	Hamirpur	Uttar Pradesh	102.63	103.63	104	14/09/2024 05	13/09/2024 13	16/09/2024 08	4	13/09/2024 23	15/09/2024 11	3	
34	Yamuna	Chilaghat	Uttar Pradesh	99.00	100.00	100.07	14/09/2024 11	13/09/2024 16	16/09/2024 01	4	14/09/2024 05	14/09/2024 17	3	
35	Yamuna	Naini	Uttar Pradesh	83.74	84.74	83.91	16/09/2024 12	15/09/2024 14	17/09/2024 10	3	-	-	-	
36	Sahibi	Dhansa	NCT Delhi	211.44	212.44	210.65	15/09/2024 08	-	-	-	-	-	-	
37	Betwa	Mohana	Uttar Pradesh	121.66	122.66	122.3	12/09/2024 18	12/09/2024 15	13/09/2024 00	2	-	-	-	
38	Betwa	Sahjina	Uttar Pradesh	103.54	104.54	103.45	13/09/2024 22	-	-	-	-	-	-	
39	Ken	Banda	Uttar Pradesh	103.00	104.00	106.75	06/08/2024 08	05/08/2024 07	07/08/2024 03	3	05/08/2024 10	06/08/2024 23	2	
								12/09/2024 16	14/09/2024 08	3	12/09/2024 20	14/09/2024 06	3	
40	Gomati	Lucknow	Uttar Pradesh	108.50	109.50	105.87	07/08/2024 04	-	-	-	-	-	-	
41	Gomati	Jaunpur	Uttar Pradesh	73.07	74.07	71.3	28/09/2024 06	-	-	-	-	-	-	
42	SAI	Raibareli	Uttar Pradesh	100.00	101.00	98.65	29/08/2024 20	-	-	-	-	-	-	
43	Ghaghra	Elginbridge	Uttar Pradesh	105.07	106.07	107.01	16/09/2024 01	04/07/2024 22	06/07/2024 04	3	08/07/2024 11	12/07/2024 22	5	
								07/07/2024 10	07/10/2024 09	93	20/07/2024 11	23/07/2024 21	4	
								-	-	-	24/07/2024 07	24/07/2024 22	1	
								-	-	-	01/08/2024 18	02/08/2024 07	2	
								-	-	-	08/08/2024 08	15/08/2024 20	8	
								-	-	-	19/08/2024 21	29/08/2024 03	11	
								-	-	-	04/09/2024 07	07/09/2024 01	4	
								-	-	-	13/09/2024 10	19/09/2024 14	7	
								-	-	-	28/09/2024 14	30/09/2024 11	3	
44	Ghaghra	Ayodhya	Uttar Pradesh	91.73	92.73	93.32	16/09/2024 12	08/07/2024 06	05/10/2024 06	90	09/07/2024 14	13/07/2024 11	5	
								-	-	-	21/07/2024 00	22/07/2024 09	2	
								-	-	-	08/08/2024 22	15/08/2024 12	8	
								-	-	-	21/08/2024 19	28/08/2024 00	8	
								-	-	-	14/09/2024 03	19/09/2024 19	6	
45	Ghaghra	Turtipar	Uttar Pradesh	63.01	64.01	64.81	26/08/2024 11	08/07/2024 03	25/09/2024 13	80	10/07/2024 21	15/07/2024 10	6	
								27/09/2024 18	13/10/2024 08	17	22/07/2024 02	24/07/2024 23	3	
								-	-	-	10/08/2024 04	17/08/2024 14	8	
								-	-	-	21/08/2024 04	31/08/2024 15	11	
								-	-	-	15/09/2024 14	21/09/2024 15	7	
								-	-	-	29/09/2024 10	04/10/2024 00	6	
46	Ghaghra	Darauli	Bihar	59.82	60.82	61.41	26/08/2024 15	09/07/2024 11	25/09/2024 16	79	12/07/2024 15	14/07/2024 03	3	
								28/09/2024 11	12/10/2024 02	15	10/08/2024 16	18/08/2024 05	9	
								13/10/2024 00	13/10/2024 02	1	21/08/2024 17	31/08/2024 13	11	
								-	-	-	16/09/2024 06	22/09/2024 04	7	
47	Ghaghra	Gangpur Siswan	Bihar	56.04	57.04	57.67	20/09/2024 01	11/07/2024 01	15/07/2024 20	2	12/08/2024 20	16/08/2024 06	5	
								22/07/2024 15	22/07/2024 23	1	25/08/2024 06	30/08/2024 07	6	
								23/07/2024 15	25/07/2024 00	3	17/09/2024 12	22/09/2024 02	6	
								09/08/2024 07	04/09/2024 22	27	-	-	-	
								07/09/2024 07	11/09/2024 08	5	-	-	-	
								16/09/2024 00	23/09/2024 22	8	-	-	-	
								29/09/2024 19	07/10/2024 02	9	-	-	-	

Above Normal and Severe flood events on main Ganga and its tributaries- 2024 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2024		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
48	Ghaghra	Chhapra	Bihar	52.68	53.68	53.45	19/09/2024 18	17/09/2024 21	22/09/2024 18	6	-	-	-
49	Rapti	Balrampur	Uttar Pradesh	103.62	104.62	105.26	09/07/2024 12	06/07/2024 15	14/07/2024 20	9	07/07/2024 15	11/07/2024 02	5
								01/08/2024 07	02/08/2024 12	2	-	-	-
								07/08/2024 16	08/08/2024 06	2	-	-	-
								10/08/2024 16	11/08/2024 10	2	-	-	-
								11/08/2024 18	12/08/2024 05	1	-	-	-
								18/08/2024 09	26/08/2024 12	9	-	-	-
								13/09/2024 07	15/09/2024 12	3	-	-	-
								29/09/2024 00	02/10/2024 01	4	-	-	-
50	Rapti	Bansi	Uttar Pradesh	83.90	84.90	85.39	13/07/2024 15	07/07/2024 17	19/07/2024 01	13	11/07/2024 21	17/07/2024 02	7
								02/08/2024 12	03/08/2024 06	2	22/08/2024 06	27/08/2024 18	6
								10/08/2024 22	14/08/2024 06	5	01/10/2024 04	03/10/2024 16	3
								18/08/2024 23	30/08/2024 10	13	-	-	-
								15/09/2024 01	16/09/2024 16	2	-	-	-
								29/09/2024 09	06/10/2024 01	8	-	-	-
51	Rapti	Birdghat	Uttar Pradesh	73.98	74.98	75.99	16/07/2024 04	07/07/2024 12	23/07/2024 22	17	11/07/2024 03	21/07/2024 12	11
								19/08/2024 06	30/08/2024 19	12	21/08/2024 11	27/08/2024 04	7
								28/09/2024 21	10/10/2024 22	13	30/09/2024 12	08/10/2024 15	9
52	Sone	Inderpuri	Bihar	107.20	108.20	105.35	18/09/2024 17	-	-	-	-	-	-
53	Sone	Koelwar	Bihar	54.52	55.52	55	19/09/2024 06	18/09/2024 15	21/09/2024 12	4	-	-	-
54	Sone	Maner	Bihar	51.00	52.00	53.29	20/09/2024 06	08/08/2024 21	05/09/2024 01	29	11/08/2024 19	12/08/2024 10	2
								15/09/2024 18	26/09/2024 14	12	13/08/2024 00	13/08/2024 10	1
								01/10/2024 03	03/10/2024 01	3	16/09/2024 23	24/09/2024 00	9
55	PunPun	Sripalpur	Bihar	49.60	50.60	51.92	20/09/2024 03	05/08/2024 17	06/08/2024 18	2	09/08/2024 08	09/08/2024 17	1
								08/08/2024 10	17/08/2024 16	10	11/08/2024 02	14/08/2024 13	4
								24/08/2024 07	02/09/2024 05	10	25/08/2024 16	29/08/2024 23	5
								17/09/2024 06	24/09/2024 01	8	17/09/2024 17	22/09/2024 16	6
56	Yamuna	Karnal Bridge	Haryana	248.80	249.50	247.66	12/08/2024 02	-	-	-	-	-	-
57	Yamuna	Paonta Sahib	Himachal Pradesh	383.50	384.50	381.3	02/09/2024 11	-	-	-	-	-	-
58	Gandak	Khadda	Uttar Pradesh	95.00	96.00	96.54	29/09/2024 06	30/06/2024 05	30/06/2024 09	1	06/07/2024 22	07/07/2024 22	2
								01/07/2024 22	04/07/2024 20	4	12/07/2024 20	13/07/2024 00	2
								05/07/2024 22	14/09/2024 08	72	28/09/2024 13	29/09/2024 23	2
								15/09/2024 15	17/09/2024 19	3	-	-	-
								25/09/2024 15	25/09/2024 18	1	-	-	-
								27/09/2024 15	04/10/2024 21	8	-	-	-
59	Ganga	Fathegarh	Uttar Pradesh	136.60	137.60	137.73	18/09/2024 04	09/07/2024 07	11/07/2024 05	3	16/09/2024 23	22/09/2024 06	7
								24/07/2024 07	26/07/2024 09	3	-	-	-
								29/07/2024 02	01/09/2024 13	35	-	-	-
								05/09/2024 16	27/09/2024 17	23	-	-	-
								29/09/2024 17	01/10/2024 15	3	-	-	-
60	Ganga	Dabri	Uttar Pradesh	136.30	137.30	138.09	20/09/2024 05	10/07/2024 09	20/07/2024 12	11	12/07/2024 18	15/07/2024 10	3
								10/08/2024 13	14/08/2024 21	5	17/09/2024 14	22/09/2024 04	6
								25/08/2024 20	30/08/2024 20	6	-	-	-
								15/09/2024 10	25/09/2024 20	11	-	-	-
61	Ganga	Garhmuktheswar	Uttar Pradesh	198.33	199.33	198.76	04/09/2024 19	07/07/2024 11	09/07/2024 05	3	-	-	-
								21/07/2024 18	21/07/2024 23	1	-	-	-
								22/07/2024 02	22/07/2024 18	1	-	-	-
								23/07/2024 06	23/07/2024 19	1	-	-	-
								26/07/2024 05	18/08/2024 21	24	-	-	-
								19/08/2024 07	19/08/2024 14	1	-	-	-
								20/08/2024 15	23/08/2024 06	4	-	-	-
								24/08/2024 11	27/08/2024 10	4	-	-	-
								28/08/2024 01	28/08/2024 05	1	-	-	-
								03/09/2024 14	20/09/2024 11	18	-	-	-
62	Ganga	Kachla Bridge	Uttar Pradesh	161.00	162.00	162.63	17/09/2024 07	07/07/2024 20	31/10/2024 23	117	08/07/2024 06	09/07/2024 20	2
								-	-	-	22/07/2024 18	24/07/2024 23	3
								-	-	-	27/07/2024 13	08/08/2024 01	13
								-	-	-	09/08/2024 00	19/08/2024 10	11
								-	-	-	21/08/2024 23	29/08/2024 10	9
								-	-	-	04/09/2024 10	24/09/2024 19	21
								-	-	-	28/09/2024 14	29/09/2024 23	2

Above Normal and Severe flood events on main Ganga and its tributaries- 2024 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2024		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
63	Gandak	Chatia	Bihar	68.15	69.15	69.3	01/10/2024 06	14/07/2024 16	15/07/2024 22	2	30/09/2024 20	01/10/2024 11	2
								30/09/2024 06	03/10/2024 07	4	-	-	-
64	Gandak	Rewaghat	Bihar	53.41	54.41	55.38	02/10/2024 04	04/07/2024 23	05/07/2024 09	2	10/07/2024 01	10/07/2024 12	1
								07/07/2024 21	18/07/2024 18	12	14/07/2024 01	16/07/2024 12	3
								21/07/2024 01	22/07/2024 06	2	01/09/2024 05	01/09/2024 05	1
								23/07/2024 00	23/07/2024 06	1	30/09/2024 06	03/10/2024 12	4
								08/08/2024 13	10/08/2024 16	3	-	-	-
								11/08/2024 09	14/08/2024 13	4	-	-	-
								15/08/2024 08	16/08/2024 19	2	-	-	-
								21/08/2024 19	27/08/2024 16	7	-	-	-
								01/09/2024 05	01/09/2024 05	1	-	-	-
								07/09/2024 21	10/09/2024 05	4	-	-	-
								28/09/2024 23	04/10/2024 22	7	-	-	-
65	Gandak	Hazipur	Bihar	49.32	50.32	50.21	20/09/2024 05	10/08/2024 21	14/08/2024 12	5	-	-	-
								23/08/2024 05	24/08/2024 05	2	-	-	-
								01/09/2024 05	01/09/2024 05	1	-	-	-
								16/09/2024 23	24/09/2024 06	9	-	-	-
								30/09/2024 22	03/10/2024 12	4	-	-	-
66	Burhi Gandak	Lalbeghiaghat	Bihar	62.20	63.20	62.8	05/10/2024 14	30/09/2024 18	09/10/2024 13	10	-	-	-
67	Burhi Gandak	Muzaffarpur (Sikandarpur)	Bihar	51.53	52.53	51.97	09/10/2024 15	04/10/2024 11	12/10/2024 17	9	-	-	-
68	Burhi Gandak	Samastipur	Bihar	45.02	46.02	45.46	10/10/2024 23	07/10/2024 00	14/10/2024 09	8	-	-	-
69	Burhi Gandak	Rosera	Bihar	41.63	42.63	43.27	11/10/2024 16	18/07/2024 11	20/07/2024 06	3	06/10/2024 04	15/10/2024 20	10
								28/08/2024 06	29/08/2024 06	2	-	-	-
								03/10/2024 07	17/10/2024 00	15	-	-	-
70	Burhi Gandak	Khagaria	Bihar	35.58	36.58	38.82	22/09/2024 15	15/07/2024 06	19/07/2024 04	5	09/08/2024 10	11/09/2024 01	34
								06/08/2024 11	17/10/2024 02	73	16/09/2024 19	10/10/2024 18	25
71	Bagmati	Benibad	Bihar	47.68	48.68	49.99	02/10/2024 17	29/06/2024 17	30/06/2024 13	2	02/07/2024 16	04/07/2024 13	3
								01/07/2024 09	05/07/2024 18	5	07/07/2024 13	17/07/2024 12	11
								07/07/2024 11	19/07/2024 20	13	24/07/2024 17	26/07/2024 07	3
								20/07/2024 03	19/09/2024 05	31	29/07/2024 18	30/07/2024 16	2
								26/09/2024 16	27/09/2024 19	2	31/07/2024 20	17/08/2024 06	18
								28/09/2024 10	23/10/2024 05	26	18/08/2024 21	30/08/2024 01	13
								-	-	-	02/09/2024 04	10/09/2024 16	9
								-	-	-	15/09/2024 19	16/09/2024 14	2
								-	-	-	17/09/2024 02	17/09/2024 23	1
								-	-	-	28/09/2024 14	14/10/2024 01	17
72	Bagmati	Hayaghat	Bihar	44.72	45.72	45.78	06/10/2024 16	02/10/2024 10	14/10/2024 22	13	06/10/2024 04	10/10/2024 13	5
73	Adhwara Group	Kamtaul	Bihar	49.00	50.00	50.82	06/10/2024 08	03/07/2024 21	06/07/2024 05	4	15/07/2024 02	16/07/2024 01	2
								12/07/2024 03	18/07/2024 18	7	01/10/2024 00	10/10/2024 04	10
								30/09/2024 07	12/07/2024 22	13	-	-	-
74	Adhwara Group	Ekmighat	Bihar	45.94	46.94	46.95	08/10/2024 05	02/10/2024 00	16/10/2024 09	15	08/10/2024 03	09/10/2024 08	2
75	Kamla Balan	Jhanjharpur	Bihar	49.50	50.50	52.28	29/09/2024 19	20/06/2024 20	21/06/2024 15	2	21/06/2024 00	21/06/2024 07	1
								27/06/2024 00	28/06/2024 20	2	27/06/2024 04	27/06/2024 10	1
								29/06/2024 06	06/07/2024 06	8	01/07/2024 18	01/07/2024 21	1
								07/07/2024 05	08/07/2024 22	2	02/07/2024 06	03/07/2024 14	2
								09/07/2024 16	21/07/2024 20	13	09/07/2024 20	15/07/2024 19	7
								22/07/2024 07	23/07/2024 03	2	31/07/2024 21	01/08/2024 14	2
								31/07/2024 16	03/08/2024 08	4	02/08/2024 13	02/08/2024 21	1
								04/08/2024 10	04/08/2024 18	1	07/08/2024 15	08/08/2024 03	2
								06/08/2024 17	24/08/2024 21	19	12/08/2024 18	13/08/2024 07	2
								30/08/2024 12	31/08/2024 11	2	05/09/2024 13	06/09/2024 12	2
								02/09/2024 17	03/09/2024 07	2	07/09/2024 12	07/09/2024 17	1
								04/09/2024 09	09/09/2024 07	6	15/09/2024 12	15/09/2024 17	1
								15/092024 07	17/09/2024 12	3	28/09/2024 02	02/10/2024 07	5
								27/09/2024 14	08/10/2024 19	12	-	-	-
								09/10/2024 12	11/10/2024 14	3	-	-	-
								15/10/2024 14	16/10/2024 07	2	-	-	-
76	Kosi	Basua	Bihar	46.75	47.75	48.57	29/09/2024 15	18/06/2024 09	22/06/2024 16	5	29/09/2024 06	30/09/2024 12	2
								27/06/2024 08	29/08/2024 09	64	-	-	-
								31/08/2024 10	31/08/2024 15	1	-	-	-
								02/09/2024 11	11/09/2024 23	10	-	-	-
								12/09/2024 08	14/09/2024 17	3	-	-	-

Above Normal and Severe flood events on main Ganga and its tributaries- 2024 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2024		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
								16/09/2024 08	18/09/2024 06	3	-	-	-
								27/09/2024 17	02/10/2024 14	6	-	-	-
								21/06/2024 15	23/06/2024 19	3	02/07/2024 20	05/07/2024 21	4
								27/06/2024 13	20/10/2024 16	116	07/07/2024 11	01/09/2024 21	57
	Kosi	Baltara	Bihar	32.85	33.85	35.79	01/10/2024 12	-	-	-	02/09/2024 23	12/09/2024 12	11
								-	-	-	14/09/2024 12	14/09/2024 21	1
								-	-	-	18/09/2024 06	18/09/2024 08	1
								-	-	-	28/09/2024 08	12/10/2024 16	15
78	Kosi	Kursela	Bihar	29.00	30.00	31.25	24/09/2024 09	13/07/2024 18	30/07/2024 00	18	08/08/2024 17	12/09/2024 01	36
								02/08/2024 12	15/10/2024 04	75	17/09/2024 12	09/10/2024 07	23
								18/06/2024 17	24/06/2024 04	7	19/06/2024 11	22/06/2024 07	4
								26/06/2024 11	21/07/2024 03	26	27/06/2024 13	28/06/2024 23	2
79	Mahananda	Dhengraghat	Bihar	34.65	35.65	37.22	29/09/2024 06	07/08/2024 13	14/08/2024 05	8	30/06/2024 01	30/06/2024 11	1
								26/09/2024 21	09/10/2024 07	14	01/07/2024 06	04/07/2024 13	4
								-	-	-	06/07/2024 16	16/07/2024 03	11
								-	-	-	27/09/2024 15	05/10/2024 18	9
								20/06/2024 07	23/06/2024 11	4	20/06/2024 17	21/06/2024 04	2
80	Mahananda	Jhawa	Bihar	30.40	31.40	32.59	30/09/2024 23	27/06/2024 09	21/07/2024 02	25	02/07/2024 07	03/07/2024 01	2
								08/08/2024 21	13/08/2024 15	6	07/07/2024 22	15/07/2024 23	9
								27/09/2024 16	10/10/2024 05	14	28/09/2024 10	06/10/2024 15	9
								27/06/2024 21	29/06/202411	3	04/07/2024 11	04/07/2024 22	1
								30/06/20245 17	21/10/2024 14	114	07/07/2024 03	31/07/2024 19	25
								-	-	-	01/08/2024 07	04/08/2024 08	4
								-	-	-	05/08/2024 09	05/08/2024 22	1
81	Gandak	Dumariaghat	Bihar	61.22	62.22	64	01/10/2024 04	-	-	-	07/08/2024 11	17/08/2024 08	11
								-	-	-	18/08/2024 05	29/08/2024 18	12
								-	-	-	02/09/2024 13	05/09/2024 06	4
								-	-	-	06/09/2024 06	10/09/2024 13	5
								-	-	-	28/09/2024 11	06/10/2024 08	9
82	Burhigandak	Ahirwalia	Bihar	58.62	59.62	57.99	06/10/2024 10	-	-	-	-	-	-
83	Mayurakshi	Narayanpur	West Bengal	26.86	27.86	25.27	03/08/2024 21	-	-	-	-	-	-
84	Ajoy	Gheropara	West Bengal	38.42	39.42	37.60	17/09/2024 16	-	-	-	-	-	-
85	Mundeshwari	Harinkhola	West Bengal	11.80	12.80	14.44	18/09/2024 15	04/08/2024 15	07/08/2024 01	4	17/09/2024 11	20/09/2024 08	4
								16/09/2024 23	21/09/2024 02	6	-	-	-
86	Kangsabati	Mohanpur	West Bengal	24.73	25.73	25.4	18/09/2024 01	17/09/2024 18	18/09/2024 18	2	-	-	-
								26/06/2024 20	27/06/2024 06	2	07/07/2024 02	07/07/2024 13	1
								28/06/2024 16	29/06/2024 01	2	12/07/2024 15	12/07/2024 21	1
								30/06/2024 07	30/06/2024 17	1	31/07/2024 21	31/07/2024 22	1
								01/07/2024 11	04/07/2024 04	4	02/08/2024 09	02/08/2024 12	1
								06/07/2024 17	08/07/2024 18	3	06/08/2024 12	06/08/2024 15	1
								09/07/2024 07	10/07/2024 07	2	07/08/2024 01	07/08/2024 09	1
								11/07/2024 05	15/07/2024 17	5	21/08/2024 15	21/08/2024 18	1
								19/07/2024 09	20/07/2024 07	2	27/09/2024 23	01/10/2024 20	5
								23/07/2024 05	25/07/2024 20	3	04/10/2024 09	04/10/2024 17	1
								26/07/2024 06	26/07/2024 23	1	05/10/2024 07	05/10/2024 16	1
								28/07/2024 14	04/08/2024 09	8	-	-	-
87	Bagmati	Dheng Bridge	Bihar	70.00	71.00	73.47	29/09/2024 00	06/08/2024 08	16/08/2024 11	11	-	-	-
								17/08/2024 06	17/08/2024 15	1	-	-	-
								18/08/2024 04	26/08/2024 19	9	-	-	-
								27/08/2024 04	28/08/2024 20	2	-	-	-
								30/08/2024 07	31/08/2024 04	2	-	-	-
								01/09/2024 06	03/09/2024 16	3	-	-	-
								04/09/2024 05	08/09/2024 17	5	-	-	-
								15/09/2024 05	15/09/2024 15	1	-	-	-
								16/09/2024 05	17/09/2024 00	2	-	-	-
								27/09/2024 15	08/10/2024 06	12	-	-	-
								09/10/2024 07	09/10/2024 14	1	-	-	-
88	Adhwara	Sonebarsha	Bihar	80.85	81.85	82.25	29/09/2024 13	09/07/2024 19	10/07/2024 02	2	29/09/2024 07	29/09/2024 21	1
								28/09/2024 21	30/09/2024 14	3	-	-	-
								20/06/2024 11	21/06/2024 05	2	20/06/2024 14	20/06/2024 18	1
								26/06/2024 16	27/06/2024 06	2	02/07/2024 09	02/07/2024 14	1
								30/06/2024 17	04/07/2024 07	5	09/07/2024 16	13/07/2024 07	5
								06/07/2024 20	08/07/2024 03	3	31/07/2024 12	31/07/2024 18	1

Above Normal and Severe flood events on main Ganga and its tributaries- 2024 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2024		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
89	Kamla Balan	Jainagar	Bihar	67.50	68.50	69.7	29/09/2024 02	09/07/2024 11	16/07/2024 05	8	28/09/2024 08	29/09/2024 23	2
								31/07/2024 09	01/08/2024 17	2	-	-	-
								02/08/2024 05	02/08/2024 22	1	-	-	-
								06/08/2024 08	08/08/2024 22	3	-	-	-
								12/08/2024 06	13/08/2024 22	2	-	-	-
								14/08/2024 04	15/08/2024 09	2	-	-	-
								18/08/2024 06	18/08/2024 17	1	-	-	-
								20/08/2024 11	20/08/2024 21	1	-	-	-
								23/08/2024 08	23/08/2024 09	1	-	-	-
								30/08/2024 06	30/08/2024 10	1	-	-	-
								04/09/2024 07	04/09/2024 15	1	-	-	-
								05/09/2024 07	06/09/2024 22	2	-	-	-
								07/09/2024 05	07/09/2024 21	1	-	-	-
								15/09/2024 07	15/09/2024 15	1	-	-	-
								27/09/2024 11	03/10/2024 21	7	-	-	-
								04/10/2024 17	05/10/2024 12	2	-	-	-
								09/10/2024 12	09/10/2024 22	1	-	-	-
								15/10/2024 06	15/10/2024 18	1	-	-	-
90	Bagmati	Runisaidpur	Bihar	54.00	55.00	**58.34**	**29/09/2024 23**	29/06/2024 07	03/07/2024 13	5	02/07/2024 03	03/07/2024 04	2
								07/07/2024 04	16/07/2024 09	10	07/07/2024 06	08/07/2024 13	2
								20/07/2024 09	20/07/2024 14	1	11/07/2024 13	11/07/2024 20	1
								23/07/2024 22	24/07/2024 21	2	12/07/2024 04	15/07/2024 08	4
								25/07/2024 03	25/07/2024 09	1	31/07/2024 17	03/08/2024 22	4
								28/07/2024 22	30/07/2024 08	3	06/08/2024 19	09/08/2024 13	4
								31/07/2024 10	05/08/2024 05	6	12/08/2024 05	13/08/2024 18	2
								06/08/2024 16	16/08/2024 13	11	15/08/2024 01	15/08/2024 09	1
								18/08/2024 13	29/08/2024 00	12	18/08/2024 21	19/08/2024 10	2
								01/09/2024 18	09/09/2024 06	9	21/08/2024 18	23/08/2024 18	3
								15/09/2024 11	16/09/2024 04	2	27/08/2024 11	28/08/2024 03	2
								28/09/2024 01	09/10/2024 09	12	02/09/2024 07	03/09/2024 02	2
								-	-	-	07/09/2024 04	08/09/2024 02	2
								-	-	-	28/09/2024 05	07/10/2024 03	10
91	Parwan	Araria	Bihar	46.00	47.00	48.34	30/09/2024 18	19/06/2024 20	22/07/2024 09	34	21/06/2024 15	24/06/2024 19	4
								07/08/2024 09	21/08/2024 08	15	26/06/2024 21	02/07/2024 12	7
								24/08/2024 08	24/08/2024 13	1	03/07/2024 02	19/07/2024 12	17
								06/09/2024 06	08/09/2024 13	3	08/08/2024 04	13/08/2024 12	6
								27/09/2024 09	12/10/2024 22	16	15/08/2024 11	17/08/2024 20	3
								-	-	-	27/09/2024 15	08/10/2024 02	12
92	Mahananda	Taibpur	Bihar	65.00	66.00	66.81	29/09/2024 05	18/06/2024 09	21/06/2024 07	4	20/06/2024 02	20/06/2024 09	1
								25/06/2024 17	27/06/2024 14	3	30/06/2024 17	01/07/2024 10	2
								28/06/2024 16	03/07/2024 23	6	02/07/2024 15	03/07/2024 06	2
								06/07/2024 00	13/07/2024 23	8	07/07/2024 13	07/07/2024 20	1
								27/09/2024 11	30/09/2024 09	4	08/07/2024 01	08/07/2024 10	1
								-	-	-	09/07/2024 15	10/07/2024 10	2
								-	-	-	28/09/2024 04	29/09/2024 11	2
93	Chambal	Kota City	Rajasthan	239.00	242.00	237.8	29/09/2024 19	-	-	-	-	-	-
94	Rapti	Kakardhari	Uttar Pradesh	130.00	131.00	130.36	07/07/2024 16	07/07/2024 08	08/07/2024 10	2	-	-	-
95	Chambal	Dholpur	Rajasthan	129.79	130.79	134.67	13/09/2024 12	05/08/2024 17	07/08/2024 15	3	05/08/2024 19	07/08/2024 04	3
								16/08/2024 17	17/08/2024 23	2	16/08/2024 21	17/08/2024 12	2
								12/09/2024 19	15/09/2024 03	4	12/09/2024 20	14/09/2024 21	3
96	Chambal	Manderial	Rajasthan	164.00	165.00	161.05	13/09/2024 06	-	-	-	-	-	-

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2024 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2024		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
1	Siang	Yingkiang	Arunachal Pradesh	303.00	304.00	271.75	29/06/2024 03	-	-	-	-	-	-
2	Siang	Passighat	Arunachal Pradesh	152.96	153.96	153.1	29/06/2024 04	29/06/2024 03	29/06/2024 15	1	-	-	-
								30/06/2024 06	30/06/2024 09	1	-	-	-
3	Noa-Dehing	Namsai	Arunachal Pradesh	144.80	145.80	144.75	01/05/2024 20	-	-	-	-	-	-
4	Brahmaputra	Dibrugarh	Assam	104.70	105.70	105.8	30/06/2024 19	29/05/2024 10	31/05/2024 21	3	30/06/2024 00	01/07/2024 00	1
								01/06/2024 20	03/06/2024 14	3	-	-	-
								17/06/2024 09	17/06/2024 11	1	-	-	-
								18/06/2024 05	22/06/2024 09	5	-	-	-
								28/06/2024 18	03/07/2024 02	6	-	-	-
								04/07/2024 13	28/07/2024 17	25	-	-	-
								29/07/2024 07	30/07/2024 16	2	-	-	-
								04/08/2024 10	17/08/2024 02	14	-	-	-
								04/10/2024 11	08/10/2024 22	5	-	-	-
								11/10/2024 23	14/10/2024 01	4	-	-	-
5	Brahmaputra	Neamatighat	Assam	84.54	85.54	87.47	01/07/2024 02	04/05/2024 06	04/05/2024 20	1	29/06/2024 12	16/07/2024 16	18
								30/05/2024 08	07/06/2024 08	9	11/08/2024 19	12/08/2024 00	2
								15/06/2024 04	18/08/2024 19	65	-	-	-
								05/10/2024 13	09/10/2024 18	5	-	-	-
								13/10/2024 00	15/10/2024 06	3	-	-	-
6	Brahmaputra	Tezpur	Assam	64.23	65.23	66.23	02/07/2024 15	29/06/2024 18	03/08/2024 02	36	30/06/2024 14	04/07/2024 22	5
								06/08/2024 15	16/08/2024 11	11	05/07/2024 11	17/07/2024 02	13
								07/10/2024 09	09/10/2024 02	3	-	-	-
7	Brahmaputra	Guwahati	Assam	48.68	49.68	50.84	03/07/2024 15	01/07/2024 06	20/07/2024 12	20	02/07/2024 08	05/07/2024 16	4
								26/07/2024 13	27/07/2024 12	2	08/07/2024 00	10/07/2024 13	3
								13/08/2024 18	14/08/2024 17	2	-	-	-
8	Brahmaputra	Goalpara	Assam	35.27	36.27	36.93	04/07/2024 06	01/07/2024 09	29/07/2024 05	29	02/07/2024 18	06/07/2024 22	5
								-	-	-	10/07/2024 15	11/07/2024 00	2
9	Brahmaputra	Dhubri	Assam	27.62	28.62	29.95	04/07/2024 13	18/06/2024 12	03/08/2024 05	47	02/07/2024 01	21/07/2024 21	20
								09/08/2024 18	17/08/2024 17	9	-	-	-
								10/10/2024 18	12/10/2024 00	3	-	-	-
10	Buridehing	Naharkatia	Assam	119.40	120.40	119.89	02/07/2024 07	01/07/2024 10	03/07/2024 00	3	-	-	-
11	Buridehing	Chenimari/Khwong	Assam	101.11	102.11	104.23	03/07/2024 02	01/05/2024 22	03/05/2024 21	3	30/06/2024 19	16/07/2024 04	17
								30/05/2024 18	31/05/2024 19	2	12/08/2024 08	14/08/2024 10	3
								30/06/2024 03	18/07/2024 05	19	-	-	-
								23/07/2024 19	25/07/2024 17	3	-	-	-
								05/08/2024 15	06/08/2024 13	2	-	-	-
								09/08/2024 20	17/08/2024 03	9	-	-	-
								07/10/2024 05	07/10/2024 19	1	-	-	-
12	Subansiri	Badatighat	Assam	81.53	82.53	83.35	02/07/2024 00	29/06/2024 22	17/07/2024 09	19	30/06/2024 10	03/07/2024 11	4
								-	-	-	07/07/2024 09	08/07/2024 17	2
13	Dikhow	Sivasagar	Assam	91.40	92.40	94.35	02/07/2024 16	23/06/2024 13	24/06/2024 20	2	29/06/2024 13	09/07/2024 19	11
								28/06/2024 19	11/07/2024 17	14	15/07/2024 17	15/07/2024 22	1
								13/07/2024 11	19/07/2024 04	7	22/07/2024 15	26/07/2024 05	5
								21/07/2024 14	27/07/2024 06	7	08/08/2024 12	10/08/20245 13	3
								07/08/2024 10	07/08/2024 23	1	-	-	-
								08/08/2024 02	14/08/2024 02	7	-	-	-
14	Desang	Nanglamoraghat	Assam	93.46	94.46	96.19	04/07/2024 09	15/06/2024 04	20/06/2024 14	6	30/06/2024 18	21/07/2024 07	22
								24/06/2024 11	25/06/2024 22	2	22/07/2024 23	26/07/2024 20	5
								29/06/2024 20	27/07/2024 14	29	12/08/2024 00	18/08/2024 09	7
								09/08/2024 22	10/08/2024 09	2	-	-	-
								11/08/2024 04	19/08/2024 04	9	-	-	-

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2024 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2024		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
15	Dhansiri(S)	Golaghat	Assam	88.50	89.50	89.94	31/07/2024 21	02/07/2024 19	06/07/2024 06	5	31/07/2024 06	01/08/2024 12	2
								30/07/2024 21	02/08/2024 16	4	09/08/2024 01	10/08/2024 12	2
								07/08/2024 08	12/08/2024 07	6	-	-	-
								21/08/2024 01	21/08/2024 23	1	-	-	-
16	Dhansiri(S)	Numaligarh	Assam	77.42	78.42	78.95	01/08/2024 13	28/06/2024 23	14/07/2024 22	17	02/07/2024 07	08/07/2024 03	7
								16/07/2024 18	19/07/2024 21	4	31/07/2024 04	03/08/2024 09	4
								20/07/2024 08	14/08/2024 23	26	08/08/2024 15	12/08/2024 16	5
								21/08/2024 02	23/08/2024 20	3	-	-	-
								24/08/2024 11	29/08/2024 01	6	-	-	-
								31/08/2024 14	02/09/2024 01	3	-	-	-
								05/09/2024 06	07/09/2024 05	3	-	-	-
								07/09/2024 18	08/09/2024 08	1	-	-	-
								10/09/2024 14	11/09/2024 13	2	-	-	-
17	Kopili	Kampur	Assam	59.50	60.50	62.1	31/05/2024 12	29/05/2024 07	07/06/2024 18	10	29/05/2024 09	06/06/2024 16	9
								16/06/2024 13	24/06/2024 06	9	16/06/2024 23	22/06/2024 07	7
								02/07/2024 06	07/07/2024 07	6	02/07/2024 07	05/07/2024 19	4
								21/08/2024 13	23/08/2024 07	3	-	-	-
18	Kopili	Dharamtul	Assam	55.00	56.00	56.6	04/07/2024 17	29/05/202415	10/06/2024 15	13	01/06/2024 13	08/06/2024 03	8
								17/06/2024 09	27/06/2024 11	11	20/06/2024 09	22/06/2024 08	3
								02/07/2024 05	15/07/2024 03	14	02/07/2024 18	09/07/2024 11	8
								23/08/2024 01	23/08/2024 19	1	-	-	-
19	Jiabharali	NT.Rd.X-ing	Assam	77.00	78.00	78.5	01/07/2024 06	28/05/2024 22	29/05/2024 04	2	30/06/2024 05	30/06/2024 16	1
								30/05/2024 09	30/05/2024 13	1	01/07/2024 04	02/07/2024 12	2
								01/06/2024 14	05/06/2024 14	5	05/07/2024 06	05/07/2024 13	1
								20/06/2024 08	20/06/2024 14	1	06/07/2024 07	06/07/2024 08	1
								25/06/2024 06	16/07/2024 00	22	-	-	-
								17/07/2024 07	20/07/2024 20	4	-	-	-
								21/07/2024 10	21/07/2024 20	1	-	-	-
								22/07/2024 06	26/07/2024 18	5	-	-	-
								27/07/2024 09	27/07/2024 12	1	-	-	-
								28/07/2024 14	28/07/2024 19	1	-	-	-
								05/08/2024 16	05/08/2024 19	1	-	-	-
								06/08/2024 16	07/08/2024 06	2	-	-	-
								08/08/2024 07	14/08/2024 06	7	-	-	-
								04/10/2024 06	14/10/2024 21	11	-	-	-
								16/10/2024 11	16/10/2024 16	1	-	-	-
								19/10/2024 12	19/10/2024 17	1	-	-	-
20	Subansiri	Choldhowaghat	Assam	99.43	100.43	97.13	01/07/2024 09	-	-	-	-	-	-
21	Ranganadi	N H Crossing Ranganadi	Assam	93.81	94.81	94.55	02/07/2024 01	28/05/2024 20	29/05/2024 03	2	-	-	-
								30/06/2024 10	02/07/2024 18	3	-	-	-
								06/07/2024 06	06/07/2024 12	1	-	-	-
								22/07/2024 07	22/07/2024 11	1	-	-	-
								04/10/2024 13	05/10/2024 03	2	-	-	-
22	Lohit	Dholla Bazaar	Assam	127.27	128.27	127.43	30/06/2024 03	29/06/2024 23	30/06/2024 05	2	-	-	-
23	Puthimari	Puthimari _NHX	Assam	51.31	52.31	52.53	01/07/2024 14	19/06/2024 13	20/06/2024 08	2	29/06/2024 23	30/06/2024 00	1
								29/06/2024 19	03/07/2024 12	5	01/07/2024 11	01/07/2024 17	1
								05/07/2024 13	06/07/2024 02	2	02/07/2024 05	02/07/2024 12	1
24	Pagladia	Pagladia_NTX	Assam	51.75	52.75	52.55	01/07/2024 09	16/06/2024 12	17/06/2024 07	2	-	-	-
								18/06/2024 16	20/06/2024 09	3	-	-	-
								29/06/2024 14	30/06/2024 18	2	-	-	-
								01/07/2024 07	02/07/2024 16	2	-	-	-
								05/07/2024 10	05/07/2024 20	1	-	-	-

Above Normal and Severe flood events on main Brahamaputra and its tributaries- 2024 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2024		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
25	Barak	APGhat	Assam	18.83	19.83	21.54	31/05/2024 01	29/05/2024 09	04/06/2024 01	6	29/05/2024 15	02/06/2024 15	4
								19/06/2024 08	21/06/2024 05	3	02/07/2024 20	06/07/2024 19	5
								24/06/2024 09	24/06/2024 17	1	07/08/2024 20	10/08/2024 11	4
								01/07/2024 16	13/07/2024 05	13	-	-	-
								15/07/2024 09	15/07/2024 18	1	-	-	-
								06/08/2024 21	11/08/2024 17	6	-	-	-
								21/08/2024 13	23/08/2024 10	3	-	-	-
								24/08/2024 19	26/08/2024 17	3	-	-	-
26	Katakhal	Matizuri	Assam	19.27	20.27	22.69	30/05/2024 09	28/05/2024 17	02/06/2024 07	6	28/05/2024 23	01/06/2024 16	5
								19/06/2024 06	21/06/2024 11	3	19/06/2024 20	20/06/2024 14	2
								22/06/2024 18	24/06/2024 01	3	02/07/2024 09	06/07/2024 07	5
								02/07/2024 06	07/07/2024 02	6	21/08/2024 07	25/08/2024 16	5
								17/08/2024 13	18/08/2024 11	2	28/08/2024 21	31/08/2024 02	4
								20/08/2024 21	27/08/2024 07	8	02/09/2024 01	03/09/2024 01	2
								28/08/2024 18	04/09/2024 05	8	-	-	-
27	Barak	Badarpurghat	Assam	15.85	16.85	18.15	31/08/2024 05	29/05/2024 09	07/06/2024 01	10	29/05/2024 15	03/06/2024 06	6
								16/06/2024 15	18/07/2024 19	3	19/06/2024 13	21/06/2024 08	3
								06/08/2024 23	13/08/2024 05	8	02/07/2024 00	09/07/2024 01	8
								20/08/2024 19	28/08/2024 05	9	08/08/2024 04	10/08/2024 11	3
								29/08/2024 07	29/08/2024 16	1	-	-	-
28	Kushiyara	Karimganj	Assam	13.94	14.94	16.51	30/05/2024 17	29/05/2024 06	11/06/2024 04	14	29/05/2024 13	06/06/2024 18	9
								15/06/2024 13	24/07/2024 14	40	18/06/2024 01	27/06/2024 11	10
								06/08/2024 11	06/09/2024 19	32	30/06/2024 01	30/06/2024 16	1
								-	-	-	01/07/2024 12	14/07/2024 03	14
								-	-	-	15/07/2024 10	17/07/2024 07	3
								-	-	-	07/08/2024 11	11/08/2024 17	5
								-	-	-	21/08/2024 08	27/08/2024 17	7
29	Manu	Kailashar	Tripura	24.34	25.34	25.05	21/08/2024 18	20/08/2024 23	22/08/2024 19	3	-	-	-
30	Gumti	Sonamura	Tripura	11.50	13.50	14.27	23/08/2024 08	20/08/2024 10	21/08/2024 23	2	23/08/2024 00	26/08/2024 15	4
								23/08/2024 00	31/08/2024 08	9	-	-	-
31	Manas	Mathanguri	Assam	98.10	99.10	95.93	30/06/2024 07	-	-	-	-	-	-
32	Manas	Manas NH- Crossing	Assam	47.81	48.42	48.57	16/06/2024 17	16/06/2024 06	18/06/2024 22	3	16/06/2024 12	16/06/2024 23	1
								19/06/2024 12	20/06/2024 11	2	-	-	-
								05/07/2024 18	06/07/2024 03	2	-	-	-
33	Beki	Beki Rd. Bridge	Assam	44.10	45.10	45.50	06/07/20245 18	19/06/2024 15	19/06/2024 22	1	30/06/2024 07	01/07/2024 08	2
								25/06/2024 11	30/07/2024 01	36	02/07/2024 08	02/07/2024 20	1
								03/08/2024 13	03/08/2024 17	1	03/07/2024 14	03/07/2024 17	1
								04/08/2024 10	04/08/2024 16	1	04/07/2024 12	04/07/2024 14	1
								06/08/2024 06	15/08/2024 03	10	05/07/2024 09	07/07/2024 18	3
								08/09/2024 19	09/09/2024 00	2	-	-	-
								25/09/2024 14	26/09/2024 01	2	-	-	-
								27/09/2024 11	29/09/2024 17	3	-	-	-
								04/10/2024 11	07/10/2024 07	4	-	-	-
								12/10/2024 10	12/10/2024 13	1	-	-	-
34	Gaurang	Kokrajhar	Assam	41.85	42.85	42.74	02/07/2024 07	17/06/2024 12	20/06/2024 21	4	-	-	-
								30/06/2024 13	03/07/2024 07	4	-	-	-
								05/07/2024 08	07/07/2024 17	3	-	-	-
								09/07/2024 13	11/07/2024 09	3	-	-	-
								12/07/2024 10	13/07/2024 04	2	-	-	-
								10/10/2024 06	10/10/2024 15	1	-	-	-

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Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2024		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
35	Sankosh	Golokganj	Assam	28.94	29.94	30.42	07/07/2024 09	18/06/2024 07	22/06/2024 00	5	05/07/2024 23	08/07/2024 21	4
								28/06/2024 06	28/06/2024 17	1	-	-	-
								30/06/2024 06	23/07/2024 16	24	-	-	-
								24/07/2024 09	25/07/2024 02	2	-	-	-
								07/08/2024 07	17/08/2024 13	11	-	-	-
								28/09/2024 09	30/09/2024 15	3	-	-	-
								05/10/2024 15	07/10/2024 04	3	-	-	-
36	Teesta	Domohani	W.B.	85.65	85.95	86.13	28/09/2024 18	30/06/2024 07	30/06/2024 17	1	28/09/2024 01	28/09/2024 23	1
								05/07/2024 17	05/07/2024 23	1	-	-	-
								07/07/2024 12	07/07/2024 22	1	-	-	-
								10/07/2024 00	10/07/2024 04	1	-	-	-
								28/07/2024 11	28/07/2024 16	1	-	-	-
								03/08/2024 09	03/08/2024 11	1	-	-	-
								04/08/2024 07	04/08/2024 10	1	-	-	-
								06/08/2024 07	06/08/2024 14	1	-	-	-
								07/08/2024 11	07/08/2024 18	1	-	-	-
								05/09/2024 13	05/09/2024 19	1	-	-	-
								26/09/2024 18	26/09/2024 22	1	-	-	-
								27/09/2024 05	29/09/2024 10	3	-	-	-
								03/10/2024 12	03/10/2024 13	1	-	-	-
								05/10/2024 07	05/10/2024 11	1	-	-	-
37	Teesta	Mekhliganj	W.B.	65.45	65.95	66.28	06/07/2024 13	29/05/2024 18	30/05/2024 07	2	20/06/2024 13	20/06/2024 21	1
								13/06/2024 16	20/07/2024 13	38	25/06/2024 16	25/06/2024 22	1
								21/07/2024 23	24/07/2024 04	4	29/06/2024 12	29/06/2024 22	1
								28/07/2024 14	29/07/2024 18	2	30/06/2024 03	30/06/2024 23	1
								30/07/2024 09	30/07/2024 20	1	02/07/2024 09	02/07/2024 22	1
								31/07/2024 05	31/07/2024 23	1	03/07/2024 03	03/07/2024 11	1
								01/08/2024 05	01/08/2024 23	1	05/07/2024 15	05/07/2024 23	1
								02/08/2024 07	28/08/2024 23	27	06/07/2024 07	08/07/2024 13	3
								30/08/2024 07	30/08/2024 10	1	09/07/2024 07	09/07/2024 23	1
								01/09/2024 11	03/09/2024 03	3	10/07/2024 02	10/07/2024 16	1
								04/09/2024 18	07/09/2024 05	4	13/07/2024 07	13/07/2024 10	1
								10/09/2024 12	10/09/2024 18	1	28/07/2024 23	29/07/2024 02	2
								26/09/2024 07	08/10/2024 03	13	06/08/2024 11	07/08/2024 23	2
								11/10/2024 08	11/10/2024 20	1	08/08/2024 15	08/08/2024 22	1
								12/10/2024 10	12/10/2024 19	1	09/08/2024 10	09/08/2024 21	1
								-	-	-	10/08/2024 09	10/08/2024 15	1
								-	-	-	27/09/2024 08	29/09/2024 14	3
								13/06/2024 14	13/06/2024 19	1	-	-	-
								14/06/2024 06	14/06/2024 15	1	-	-	-
								15/06/2024 15	15/06/2024 17	1	-	-	-
								16/06/2024 11	16/06/2024 22	1	-	-	-
								17/06/2024 13	18/06/2024 06	2	-	-	-
								19/06/2024 07	21/06/2024 01	3	-	-	-
								22/06/2024 07	22/06/2024 14	1	-	-	-
								24/06/2024 08	24/06/2024 15	1	-	-	-
								25/06/2024 05	25/06/2024 21	1	-	-	-
								28/06/2024 07	28/06/2024 14	1	-	-	-
								29/06/2024 07	29/06/2024 20	1	-	-	-
								30/06/2024 05	03/07/2024 19	1	-	-	-
								04/07/2024 07	04/07/2024 19	1	-	-	-
								05/07/2024 05	08/07/2024 17	4	-	-	-
								09/07/2024 08	11/07/2024 23	3	-	-	-

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Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2024		Flood period above warning level			Flood period above danger level		
						Level in metres	Date	From	To	No.of days	From	To	No.of days
38	Jaldhaka	N H 31	W.B.	80.00	80.90	80.84	09/07/2024 15	12/07/2024 04	13/07/2024 22	2	-	-	-
								14/07/2024 05	14/07/2024 22	1	-	-	-
								15/07/2024 05	15/07/2024 22	1	-	-	-
								16/07/2024 05	17/07/2024 11	2	-	-	-
								18/07/2024 05	19/07/2024 15	2	-	-	-
								22/07/2024 10	22/07/2024 23	1	-	-	-
								05/08/2024 07	05/08/2024 12	1	-	-	-
								07/08/2024 12	07/08/2024 18	1	-	-	-
								08/08/2024 06	09/08/2024 18	2	-	-	-
								10/08/2024 10	10/08/2024 19	1	-	-	-
								12/08/2024 06	12/08/2024 08	1	-	-	-
								13/08/2024 06	13/08/2024 08	1	-	-	-
								27/09/2024 17	29/09/2024 22	3	-	-	-
								02/10/2024 08	02/10/2024 22	1	-	-	-
								04/10/2024 06	05/10/2024 05	2	-	-	-
								10/10/2024 07	10/10/2024 15	1	-	-	-
								11/10/2024 06	11/10/2024 21	1	-	-	-
7	Jaldhaka	Mathabhanga	W.B.	47.70	48.20	47.9	06/07/2024 05	19/06/2024 19	20/06/2024 03	2	-	-	-
								06/07/2024 00	06/07/2024 14	1	-	-	-
40	Torsa	Ghughumari	W. B.	39.80	40.41	40.14	13/07/2024 00	18/06/2024 07	18/06/2024 09	1	-	-	-
								19/06/2024 12	20/06/2024 11	2	-	-	-
								21/06/2024 00	21/06/2024 07	1	-	-	-
								30/06/2024 00	30/06/2024 19	1	-	-	-
								02/07/2024 12	02/07/2024 20	1	-	-	-
								05/07/2024 08	07/07/2024 10	3	-	-	-
								09/07/2024 18	10/07/2024 05	2	-	-	-
								12/07/2024 12	14/07/2024 00	3	-	-	-
								28/09/2024 15	29/09/2024 03	2	-	-	-
41	Radak-I	Tufanganj	W. B.	34.22	35.30	35.81	07/07/2024 15	16/06/2024 20	21/06/2024 16	6	06/07/2024 10	08/07/2024 10	3
								02/07/2024 20	03/07/2024 09	2	-	-	-
								05/07/2024 15	14/07/2024 15	10	-	-	-
42	Teesta	Malli Bazaar	Sikkim	223.00	224.00	227.72	20/06/2024 13	29/05/2024 01	29/05/2024 14	1	13/06/2024 09	13/06/2024 10	1
								01/06/2024 08	01/06/2024 10	1	19/06/2024 22	21/06/2024 10	3
								13/06/2024 06	15/06/2024 15	3	30/06/2024 01	30/06/2024 09	1
								17/06/2024 06	17/06/2024 09	1	03/07/2024 01	03/07/2024 08	1
								18/06/2024 03	18/06/2024 06	1	12/07/2024 10	13/07/2024 05	2
								19/06/2024 10	22/06/2024 18	4	15/07/2024 08	15/07/2024 12	1
								25/06/2024 05	27/06/2024 20	3	18/07/2024 09	18/07/2024 15	1
								28/06/2024 02	11/07/2024 22	14	28/09/2024 01	29/09/2024 07	2
								12/07/2024 05	17/07/2024 22	6	-	-	-
								18/07/2024 02	20/07/2024 20	3	-	-	-
								21/07/2024 12	21/07/2024 12	1	-	-	-
								22/07/2024 03	29/07/2024 14	8	-	-	-
								30/07/2024 04	30/07/2024 06	1	-	-	-
								31/07/2024 06	31/07/2024 06	1	-	-	-
								02/08/2024 02	02/08/2024 08	1	-	-	-
								06/08/2024 07	06/08/2024 13	1	-	-	-
								07/08/2024 07	09/08/2024 11	3	-	-	-
								10/08/2024 05	10/08/2024 09	1	-	-	-
								11/08/2024 06	11/08/2024 10	1	-	-	-
								13/08/2024 06	13/08/2024 08	1	-	-	-
								14/08/2024 07	14/08/2024 11	1	-	-	-
								15/08/2024 08	15/08/2024 09	1	-	-	-
								27/09/2024 19	29/09/2024 13	3	-	-	-
43	Teesta	Joretahang(Rothak)	Sikkim	363.98	364.98	361.95	28/09/2024 08	-	-	-	-	-	-
44	Teesta	Singtam	Sikkim	354.59	355.09	353.45	11/06/2024 06	-	-	-	-	-	-
45	Torsa	Hasimara	West Bengal	116.30	116.90	116.4	30/06/2024 08	30/06/2024 07	30/06/2024 11	1	-	-	-

Annex XIII

Above Normal and Severe flood events on various river systems (excluding Ganga and Brahmaputra basins)- 2024 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2024		Flood period above warning level			Flood period above danger level		
						Level in metres	Date/T	From	To	No. of days	From	To	No. of days
1	Jhelum	Rammunshibagh	Jammu & Kashmir	1585.48	1586.40	1585.15	01/05/2024 00	-	-	-	-	-	-
2	Jhelum	Sangam	Jammu & Kashmir	1591.20	1592.42	1589.27	01/05/2024 00	-	-	-	-	-	-
3	Jhelum	Safapora	Jammu & Kashmir	1580.05	1581.30	1580.03	01/05/2024 00	-	-	-	-	-	-
4	Subernarekna	Jamshedpur	Jharkhand	122.50	123.50	123.08	17/09/2024 12	17/09/2024 01	17/09/2024 18	1	-	-	-
5	Subernarekna	Rajghat	Odisha	9.45	10.36	11.61	18/09/2024 11	16/09/2024 18	20/09/2024 16	5	17/09/2024 10	19/09/2024 23	3
6	Burhabalang	NH_5 _Road Bridge	Odisha	7.21	8.13	7.84	26/10/2024 14	16/09/2024 15	18/09/2024 02	3	-	-	-
								26/10/2024 04	27/10/2024 19	2	-	-	-
7	Baitarni	Anandpur	Odisha	37.44	38.36	37.4	16/09/2024 23	-	-	-	-	-	-
8	Baitarni	Akhuapada	Odisha	17.83	18.33	18.26	17/09/2024 06	17/09/2024 01	17/09/2024 23	1	-	-	-
						18.26	17/09/2024 06	18/09/2024 02	18/09/2024 13	1	-	-	-
9	Brahmani	Jenapur	Odisha	22.00	23.00	20.88	30/09/2024 07	-	-	-	-	-	-
10	Rushikuluya	Purushottampur	Odisha	15.83	16.83	13.60	10/09/2024 09	-	-	-	-	-	-
11	Vamsadhara	Gunupur	Odisha	83.00	84.00	82.63	10/09/2024 05	-	-	-	-	-	-
12	Vamsadhara	Kashinagar	Odisha	54.10	54.60	54.50	10/09/2024 11	10/09/2024 09	10/09/2024 15	1	-	-	-
13	Jalaka	Mathani Road Bridge	Odisha	6.00	6.50	**6.83**	**17/09/2024 06**	30/07/2024 08	03/08/2024 02	5	01/08/2024 14	01/08/2024 20	1
								21/08/2024 08	21/08/2024 13	1	16/09/2024 12	19/09/2024 00	4
								16/09/2024 12	19/09/2024 21	4	-	-	-
								26/09/2024 07	29/09/2024 10	4	-	-	-
								26/10/2024 08	26/10/2024 16	1	-	-	-
14	Mahanadi	Naraj	Odisha	25.41	26.41	25.75	09/08/2024 00	08/08/2024 07	09/08/2024 14	2	-	-	-
15	Mahanadi	Alipingal Devi	Odisha	10.85	11.76	8.27	09/08/2024 08	-	-	-	-	-	-
16	Mahanadi	Nimapara	Odisha	9.85	10.76	5.3	10/08/2024 09	-	-	-	-	-	-
17	Godavari	Atreyapuram	Andhra Pradesh	13.50	15.00	12.33	29/07/2024 04	-	-	-	-	-	-
18	Godavari	Kopergaon	Maharashtra	490.90	493.68	492.1	26/08/2024 17	04/08/2024 03	06/08/2024 02	3	-	-	-
								25/08/2024 17	27/08/2024 23	3	-	-	-
19	Godavari	Gangakhed	Maharashtra	374.00	375.00	373.74	03/09/2024 05	-	-	-	-	-	-
20	Godavari	Nanded	Maharashtra	351.00	354.00	353.64	03/09/2024 05	02/09/2024 12	04/09/2024 05	3	-	-	-
21	Godavari	Kaleswaram	Telangana	103.50	104.75	103.68	22/07/2024 15	22/07/2024 10	23/07/2024 00	2	-	-	-
22	Godavari	Eturunagaram	Telangana	73.32	75.82	74.63	27/07/2024 03	22/07/2024 04	23/07/2024 20	2	-	-	-
								24/07/2024 17	28/07/2024 09	5	-	-	-
								10/09/2024 02	11/09/2024 14	2	-	-	-
23	Godavari	Dummagudam	Telangana	53.00	55.00	54.63	27/07/2024 20	22/07/2024 11	24/07/2024 00	3	-	-	-
								25/07/2024 09	25/07/2024 23	1	-	-	-
								26/07/2024 19	28/07/2024 13	3	-	-	-
								10/09/2024 12	11/09/2024 15	2	-	-	-
24	Godavari	Bhadrachalam	Telangana	45.72	48.77	49.04	28/07/2024 00	21/07/2024 19	29/07/2024 19	9	27/07/2024 16	28/07/2024 07	2
								30/07/2024 08	01/08/2024 06	3	-	-	-
								04/09/2024 13	06/09/2024 10	3	-	-	-
								10/09/2024 09	12/09/2024 09	3	-	-	-

Annex XIII

Above Normal and Severe flood events on various river systems (excluding Ganga and Brahmaputra basins)- 2024 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2024		Flood period above warning level			Flood period above danger level		
						Level in metres	Date/T	From	To	No. of days	From	To	No. of days
25	Wardha	Sirpur Town	Telangana	159.95	160.95	161.16	03/09/2024 08	25/07/2024 19	26/07/2024 10	2	02/09/2024 21	03/09/2024 18	2
								02/09/2024 06	04/09/2024 05	3	-	-	-
26	Godavari	Kunavaram	Andhra Pradesh	36.74	38.24	42.68	28/07/2024 13	21/07/2024 08	02/08/2024 16	13	21/07/2024 21	01/08/2024 19	12
								08/08/2024 17	08/08/2024 22	1	05/09/2024 08	07/09/2024 04	3
								04/09/2024 12	07/09/2024 16	4	10/09/2024 09	13/09/2024 17	4
								10/09/2024 04	15/09/2024 02	6	-	-	-
27	Godavari	Rajamundry	Andhra Pradesh	17.68	19.51	17.46	29/07/2024 03	-	-	-	-	-	-
28	Godavari	Dowalaiswaram	Andhra Pradesh	14.25	16.08	15.49	28/07/2024 20	22/07/2024 07	02/08/2024 00	12	-	-	-
								05/09/2024 23	07/09/2024 07	3	-	-	-
								10/09/2024 19	13/09/2024 23	4	-	-	-
29	Wainganga	Bhandara	Maharashtra	245.50	245.70	248.1	12/09/2024 11	24/07/2024 03	25/07/2024 03	2	24/07/2024 05	25/07/2024 02	2
								11/09/2024 05	13/09/2024 03	3	11/09/2024 06	13/09/2024 03	3
30	Wainganga	Pauni	Maharashtra	226.73	227.73	228.40	12/09/2024 06	11/09/2024 11	13/09/2024 04	3	11/09/2024 21	12/09/2024 19	2
31	Wardha	Balharsha	Maharashtra	171.50	174.00	172.12	02/09/2024 20	02/09/2024 06	03/09/2024 08	2	-	-	-
32	Indravati	Jagdalpur	Chhatisgarh	539.50	540.80	541.04	10/09/2024 22	20/07/2024 12	21/07/2024 17	2	10/09/2024 12	11/09/2024 06	2
								10/09/2024 02	11/09/2024 21	2			-
33	Krishna	Arjunwad	Maharashtra	539.20	540.70	539.78	01/08/2024 14	27/07/2024 04	04/08/2024 23	9	-	-	-
								06/08/2024 00	06/08/2024 04	1	-	-	-
34	Bhima	Deongaon	Karnataka	402.00	404.50	402.2	08/08/2024 05	08/08/2024 02	08/08/2024 17	1	-	-	
								29/08/2024 01	30/08/2024 23	2	-	-	-
35	Tungabhadra	Mantralayam	Andhra Pradesh	310.00	312.00	311.88	03/08/2024 02	26/07/2024 19	30/07/2024 20	5	-	-	-
								01/08/2024 03	06/08/2024 10	6	-	-	-
								12/08/2024 06	17/08/2024 03	6	-	-	-
								21/08/2024 04	21/08/2024 21	1	-	-	-
								13/10/2024 13	15/10/2024 10	3	-	-	-
								19/10/2024 11	20/10/2024 15	2	-	-	-
								23/10/2024 04	25/10/2024 12	3	-	-	-
36	Tungabhadra	Kurnool	Andhra Pradesh	273.00	274.00	273.1	03/08/2024 23	02/08/2024 03	04/08/2024 05	3	-	-	-
37	Nagavali	Srikakulam	Andhra Pradesh	10.17	10.80	10.15	08/09/2024 20	-	-	-	-	-	-
38	Pennar	Nellore	Andhra Pradesh	15.91	17.28	10.33	24/11/2024 00	-	-	-	-	-	-
39	Sabarmati	Ahmedabad Shubhash Bridge	Gujarat	44.09	45.34	41.84	30/12/2024 13	-	-	-	-	-	-
40	Mahi	Wanakbori	Gujarat	71.93	74.98	72.54	27/08/2024 05	27/08/2024 00	27/08/2024 07	1	-	-	-
41	Naramada	Mandla	Madhya Pradesh	437.00	437.80	438.74	11/09/2024 10	01/08/2024 13	01/08/2024 19	1	04/08/2024 06	04/08/2024 18	1
								03/08/2024 23	05/08/2024 04	3	11/09/2024 04	11/09/2024 23	1
								10/09/2024 21	12/09/2024 10	3	-	-	-
42	Naramada	Narmadapuram	Madhya Pradesh	292.83	293.83	291.95	13/09/2024 19	-	-	-	-	-	-
43	Naramada	Garudeswar	Gujarat	30.48	31.09	22.65	27/08/2024 09	-	-	-	-	-	-
44	Naramada	Bharuch	Gujarat	6.70	7.32	8.12	27/08/2024 13	26/08/2024 09	28/08/2024 15	3	26/08/2024 15	28/08/2024 04	3
45	Tapi	Surat	Gujarat	8.50	9.50	7.5	26/08/2024 13	-	-	-	-	-	-

Annex XIII

Above Normal and Severe flood events on various river systems (excluding Ganga and Brahmaputra basins)- 2024 flood season

Sl. No.	River	Station	State	Warning level in metres	Danger level in metres	Peak level in 2024		Flood period above warning level			Flood period above danger level		
						Level in metres	Date/T	From	To	No. of days	From	To	No. of days
46	Damanganga	Vapi Town	Gujarat	18.20	19.20	16.6	05/08/2024 01	-	-	-	-	-	-
47	Damanganga	Daman	Dadra & Nagar Have	2.60	3.40	2.10	23/07/2024 16	-	-	-	-	-	-
48	Cauvery	Musiri	Tamilnadu	82.12	83.12	84.10	02/08/2024 07	31/07/2024 19	07/08/2024 02	8	01/08/2024 08	03/08/2024 23	3
49	Cauvery	Kodumudi	Tamilnadu	125.50	126.50	127.24	02/08/2024 12	31/07/2024 01	04/08/2024 06	5	31/08/2024 18	03/08/2024 06	5
50	Bhavani	Savandapur	Tamilnadu	184.50	185.50	184	18/10/2024 23	-	-	-	-	-	-
51	Sabari	Chinturu	Andhra Pradesh	40.50	42.00	42.95	28/07/2024 15	22/07/2024 09	25/07/2024 02	4	27/07/2024 22	29/07/2024 07	3
								27/07/2024 05	29/07/2024 22	3	10/09/2024 21	12/09/2024 05	3
								09/09/2024 21	12/09/2024 21	4	-	-	-
52	Krishna	Avanigadda	Andhra Pradesh	9.00	11.00	10.3	02/09/2024 21	01/09/2024 22	04/09/2024 16	4	-	-	-
53	Periyar	Neeleswaram	Kerala	9.00	10.00	8.03	30/07/2024 10	-	-	-	-	-	-
54	Bharathapuzha	Kumbidi	Kerala	8.20	9.20	10.37	31/07/2024 01	30/07/2024 10	01/08/2024 05	3	30/07/2024 14	31/07/2024 17	2
55	Pamba	Malakkara	Kerala	6.00	7.00	5.46	16/07/2024 10	-	-	-	-	-	-
56	Kabini	Muthankera	Kerala	710.3	711.25	711.73	19/07/2024 02	27/06/2024 02	28/06/2024 01	2	18/07/2024 05	20/07/2024 19	3
								16/07/2024 04	22/07/2024 03	7	30/07/2024 15	01/08/2024 20	3
								26/07/2024 20	28/07/2024 14	3	-	-	-
								29/07/2024 14	03/08/2024 11	5	-	-	-
57	Godavari	Nasik	Maharashtra	558.10	559.60	558.11	24/08/2024 22	24/08/2024 22	25/08/2024 04	2	-	-	-
58	Banas	Abu Road	Rajasthan	258.00	259.00	255.40	27/08/2024 19	-	-	-	-	-	-
59	Vaigai	Madurai	Tamilnadu	131.50	132.50	131.29	15/12/2024 17	-	-	-	-	-	-

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, PRINCIPAL BENCH, NEW DELHI

I.A. No.557 of 2024

IN

ORIGINAL APPLICATION NO. 515/2023

(Writ Petition (PIL) No.4003/2006)

IN THE MATTER OF:

Ganga Pollution …Applicant

Versus

State of U.P. & Ors. …Respondents

AFFIDAVIT

I, Durgam Giri, S/o of Late Phani Bhusan Giri, aged about 53 years, having office at The Registered Office of the Institute is at Chhatnag Road, Jhunsi, Allahabad – 211019, do hereby solemnly affirm and declare as under:

1. I say that I am the authorized representative of the Applicant in the I.A.No.557/2024 and is well conversant with the facts and circumstances of the instant case and thus competent to swear the affidavit.

2. I say that the accompanying additional submission has been drafted by my Counsel under my instruction and the contents of the same have been read

Durgam Giri
Registrar
Harish-Chandra Research Institute
Department of Atomic Energy, GoI
Prayagraj-211019

over to me and explained to me in vernacular language and I have understood the same.

3. I say that the facts mentioned therein are true and correct to best of my knowledge and belief.

4. I say that the Annexures annexed to the application are true copies of their originals.

Deponent

Durgam Giri
Registrar
Harish-Chandra Research Institute
Department of Atomic Energy, GoI
Prayagraj-211019

NOTARY
G. S. Pathak
Reg. No.-4190
Prayagraj
GOVT. OF INDIA

VERIFICATION

Verified at Allahabad on this 19 day of September, 2025, do hereby solemnly affirm and declare that contents of above affidavit are true and correct and nothing material has been concealed.

Deponent

Durgam Giri
Registrar
Harish-Chandra Research Institute
Department of Atomic Energy, GoI
Prayagraj-211019

Signature Identified.

(N.K. Arora, Advocate)
15, Idgah Allahabad 211 003
Ph. No. 0532-2418520
M: 9335104794
Email: nkumararoraa@yahoo.co.in

19.9.25

SOLEMNLY AFFIRMED BEFORE ME
On.....202.....at.....AM/PM
Sri/Smt. Durgam Giri
Identified by Mr. N.K. Arora
be his/her Affidavit as True & Correct which
on verified and correct

G. S. Pathak
Public Notary
Alld., Prayagraj (U.P.)

19.9.25