



टीएचडीसी इंडिया लिमिटेड THDC INDIA LIMITED

(भारत सरकार एवं उ. प्र. सरकार का संयुक्त उपक्रम)
(A Joint Venture of Govt. of India & Govt. of U.P.)
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दिनांक : 02-03-2022

सं० टीएचडीसी/ऋ०/सा० एवं पर्या०/फ०-117/ 298(६०)

मेवा में,

1.) Shri Pankaj Agarwal, IFS

Deputy Director General of Forests (C)

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय,

उत्तर केन्द्रीय क्षेत्रीय कार्यालय,

25, मुभाष रोड, देहरादून - 248001

2.) सदस्य - सचिव,

पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय,

आई.ए. डिवीज़न (आर.वी. एवं एच.ई.पी.),

वायु विंग, कमरा सं० 303, इंदिरा पर्यावरण भवन

जोर बाग रोड, नई दिल्ली - 110 003

विषय: 16th Six monthly progress report (July'2021 to Dec'2021) on environmental aspects of Vishnugad Pipalkoti Hydroelectric Project (444 MW) located at Distt. Chamoli, Uttarakhand - reg.

Sir,

In compliance to Point (vii) of Part B: General Conditions of Environment Clearance letter No. J-12011/29/2007-IA.I dtd. 22.08.2007 and subsequent denovo clearance on dated 26.08.2021 issued by MoEF&CC, please find enclosed herewith the 16th Six monthly progress report on environmental aspects of Vishnugad Pipalkoti Hydroelectric Project (444 MW) located at Distt. Chamoli, Uttarakhand for your kind perusal and record please.

Thanking You,

02/03/2022
(विपिन थपलियाल)
वरि० प्रबंधक (पर्यावरण)

संलग्नक: उपरोक्तानुसार

प्रतिलिपि: सादर सूचनार्थ

1. आधिशाषी निदेशक (तकनीकी), टीएचडीसीआईएल, ऋषिकेश
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प्रधान कार्यालय : गंगा भवन, प्रगतिपुरम, बाई पास रोड, ऋषिकेश-249 201

Corporate Office : GANGA BHAWAN, PRAGATIPURAM, BYPASS ROAD, RISHIKESH - 249201

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("हिन्दी को राजभाषा बनाना, भाषा का प्रश्न नहीं अपितु देशभिमान का प्रश्न है")

	<p>a) Dam and Submergence area (forest & non-forest)</p> <p>b) Others</p>	<p>a) Dam and Submergence area Forest: 28.478 Ha. Non-Forest: -</p> <p>b) Others (Exclusive of above 'a') Forest: 71.912 Ha. Non-Forest: 31.639 Ha. (Private) Transferred to Project by PWD : 9.539 Ha.</p>
8.	<p>Breakup of the Project affected population with enumeration of those losing houses / dwelling units only, agricultural land only, both dwelling units and agricultural land and landless laborers / Artisans.</p> <p>a) SC /ST /Tribal's b) Others</p>	Attached as Annexure - II
9.	<p>Financial details</p> <p>a) Project cost as originally planned and subsequent revised estimates and the years of price reference.</p> <p>b) Actual expenditure incurred on the Project so far.</p> <p>c) Allocations made for Environmental Management Plan.</p>	<p>a) Investment approval to the project amounting to Rs. 2491.58 Cr at March, 2008 Price Level has been accorded by CCEA on 21.08.2008. Revised RCE of Rs. 3860.35 Cr (including IDC & FC) at Feb'19 PL has been vetted by CEA on 20.03.2020.</p> <p>b) The expenditure incurred on VPHEP Project till Sept' 2021 is Rs. 2297.07 Cr.</p> <p>c) Rs. 109.53 Crs (As per EMP of VPHEP formulated during July' 2021)</p>
10.	<p>Forest Land requirements</p> <p>a) Status of approval for diversion of forest land for non -forestry use</p> <p>b) The status of clear felling in forest land</p>	<p>a) Vide letter no. F.No.8-65/2009-FC dated 28.05.2013, stage-II Forest clearance was accorded by MoEF, GoI.</p> <p>b) The details of 812 Number of Tree Felling is under: Dam - 555, Approach Road (TRT to Siyasain to Durgapur) – 200, Approach Road (Siyasain Road to Dhobi Ghat) – 07 & Dumpyard (Siyasain) - 50</p>
11	<p>Status of construction</p> <p>a) Date of commencement (actual and/planned)</p> <p>b) Date of completion (actual or planned)</p>	<p>a) 17.01.2014</p> <p>b) Planned: 16.07.2018 (54 months from date of commencement of construction work). Revised: The completion of the Project is expected in Dec-2024.</p>
12.	Reason for the delay if the project is yet to be started.	NIL

ENVIRONMENTAL MANAGEMENT PLAN
(PHYSICAL ACHIEVEMENT IN REPORTING PERIOD)

S. NO.	PLAN	ACHIEVEMENT
1	Development of Herbal Garden	<ul style="list-style-type: none"> • Based on recommendations of HRDI, Mandal, Gopeshwar, Herbal garden has been developed in the VPHEP colony over an area of 1800 sqm. approx. Also, two nos. dedicated manpower/gardener has been deployed for the maintenance of Herbal Garden. • Approx. Rs. 19.10 lakhs have been incurred on various works related to the development of the Herbal Garden. • Medicinal plants like Harad (Terminalia Chebula), Lemon Grass (Cymbogogonfelxuosus), Sarpgandha (Rauvolfia Serpentiina), Aloe Vera etc. planted.
2	Road Side Plantation	<ul style="list-style-type: none"> • Requisite funds have been deposited under CAMPA for implementation. • Matter is under persuasion with CAMPA and State Forest Deptt. for start of works.
3	Wildlife Protection (related to NDBR & KWLS)	<ul style="list-style-type: none"> • Wildlife Protection: <ul style="list-style-type: none"> – Two (02) nos. Watch Towers has been installed at identified locations at Powerhouse and TBM sites nearby the boundary of KWLS. – Ten nos. Camera Traps were procured on the recommendation of E&S panel. Out of which,08 nos. Camera Traps handed over to Forest Department (Nanda Devi National Park) for installation in NDBR on 20.03.2018 and has been installed in NDBR by Forest Department at appropriate location. Balance 02 nos. of Camera Traps have been handed over to Forest officials on 12.06.2019. – Controlled Blasting techniques are being practiced and the same is being monitored by construction contractor through Central Institute of Mining & Fuel Research (CIMFR), Roorkee. Report up to Sept’ 2021 have been received. – Environment Awareness Program has been organized at VPHEP during Dec’ 2021 in the presence of noted Environmentalist Sh. Jagat Singh Chaudhary alias “<i>Jungli Ji</i>” and Forest Deptt. officials. – Awareness Programs are being organized from time to time.
4	Compensatory Afforestation in 120.27 Ha	<ul style="list-style-type: none"> • Compensatory Afforestation and other works (Roadside Plantation, construction of 4 feet high pillar etc.) is being done by the State Forest Department, GoUK. Requisite funds (Rupees 1.25 Cr)have already been deposited by THDCIL in CAMPA. However, the funds yet to be released by the CAMPA to the concerned Forest Deptt. • THDCIL is continuously pursuing the issue with Senior Forest Officials at Dehradun and at Divisional Level. • Issue was also discussed in the meeting of Multi-Disciplinary Committee constituted by MoEF&CC, New Delhi under the chairmanship of PCCF-HoFF, GoUK held on 31.07.2021 at Van Bhawan, Dehradun. • DFO Badrinath apprised to the chair that the 80.507 Ha. of non forest land required for raising Compensatory Afforestation stands transferred & mutated in favor of State Forest Deptt., GoUK. Under the Badrinath Forest Division, CA is to be done on 58 Ha land, out of which 10 Ha has been completed till Mar’ 2021. CA on remaining 48 Ha land

		<p>in Badrinath Forest Division is still pending, due to problem in identification of the required land in terms of suitability for plantation. Under the Kedarnath Wildlife Division, 22.507 Ha of Land has to be executed out of which 22.507 Ha has been completed..</p> <ul style="list-style-type: none"> • The Chairman - MDC, PCCF-HoFF, has directed the concerned Forest officials to take all-out efforts to for early completion of these activities and directed DFO, Badrinath to assess the suitability of the existing 48 Ha land w.r.t. plantation at the earliest and send across a proposal to HoFF through APCCF-Projects, providing for alternate land for plantation in case the existing 48 Ha is not suitable for plantation. • Till Dec'21 Compensatory Afforestation works in 31.5 Ha area has been completed by State Forest Department. Balance 90 Ha area is to be done by Forest Department.
5	Catchment Area Treatment Plan	<ul style="list-style-type: none"> • Total Implementation value for CAT is Rs. 47 Crs., the total amount of Rs. 47 Crs stands deposited by THDCIL in CAMPA fund. DFO Badrinath Forest Division is the Nodal Officer for CAT Plan. • Vide letter dtd. 30.12.2017, Final approval has been granted to DPR along with Micro plans for CAT Plan of VPHEP by Forest Deptt., GoUK. • State Forest Deptt., Uttarakhand is executing activities as per approved DPR. An expenditure of Rs. 23.22 Cr (approx.) has been made by Forest Deptt. till Dec' 2021 under CAT Plan of VPHEP. • Issue of slow progress of CAT Plan was also discussed in the meeting of Multi-Disciplinary Committee constituted by MoEF&CC, New Delhi under the chairmanship of PCCF-HoFF, GoUK held on 31.07.2021 at Van Bhawan, Dehradun. • DFO, Badrinath Forest Division (Nodal Officer) appraised that slow progress is due to non release of funds from CAMPA. • The Chairman - MDC, PCCF-HoFF, has directed the concerned Forest officials to take all-out efforts to for early completion of these activities. • DFO Badrinath, Nodal Officer has been requested for earliest completion of works under CAT Plan of VPHEP.
6	Muck Management Plan	<ul style="list-style-type: none"> • Dumping of muck is being done at designated / identified area & well above the high flood level. Engineering measures such as construction of gabion faced reinforced earth wall with uniaxial geo-grid reinforcement are adopted at dumping site. Benches are being developed to discontinue the slopes in dumpyard. • Work of plantation of Vetivar (Chrysopogon Zizanioides) grass as slope stabilization measure at Siyasain dumping site (DY-4) has been started in September 2018. • Plantation in approx. 10,000 sqm. area has been completed at DY-4. • M/s HCC Ltd. has been instructed to ensure necessary reclamation works at all Disposal sites. • Details of muck till Dec' 2021, is as under; <ul style="list-style-type: none"> ➤ Muck generated (Approx.) = 21.35 Lacs m³ ➤ Muck utilized (Approx.) = 3.62 Lacs m³ ➤ Muck dumped (Approx.) = 17.73 Lacs m³
7	Fish Management Plan	<ul style="list-style-type: none"> • The Consultancy Services for preparation & supporting Implementation of Fish Management Plan for VPHEP have been awarded to Directorate of Coldwater Fisheries Research (ICAR-DCFR), Bhimtal. • For framing the appropriate fish management plan, ICAR-DCFR has conducted a series of fish survey and water

		<p>sampling work along River Alaknanda from Vishnupyarag to Karan Prayag.</p> <ul style="list-style-type: none"> Final Report has been received from ICAR-DCFR. ICAR-DCFR has recommended to construct Snow Trout Fish Hatchery. A MoU has been signed with M/s UPRNN for a total value of 268.26 lakhs for construction of Fish Hatchery nearby Jaisal Nala at some part of DY-5 area. Construction work is under progress. Also, A one week training on Aquatic Biodiversity in Feb' 2020, has also been conducted for the Executives of Environment Deptt. at College of Fisheries, GB Pant University of Agriculture & Technology (GBPUAT), Pantnagar by HRD, Rishikesh.
8	Green Belt Development Plan (Plantation of approx 12500 trees)	<ul style="list-style-type: none"> Green Belt Development is being implemented under the Consultancy of noted Environmentalist Sh. Jagat Singh Chaudhary alias "Junglee". Broad Leaved, Fast Growing plant species have also been planted as suggested by "Jungli Ji" and Forest Deptt. Till Dec' 2021, cumulatively 8500 nos. (approx.) trees are planted. Maintenance of plants is being done regularly.
9	Restoration of Quarry Site	<ul style="list-style-type: none"> Till Dec' 2021, no Quarry site has been opened for excavation / mining. All statutory clearances for Gadi Quarry have been obtained. Mining from Gadi Quarry has not yet been started. The quarrying is yet to commence. However, the quarry areas will to be restored after completion of quarrying operations.
10	Solid Waste Management	<p>VPHEP COLONY</p> <ul style="list-style-type: none"> The Solid Waste is collected at source, stored in bins and transported through vehicle for handing over to Nagar Panchayat, Chamoli for safe disposal. Necessary infrastructure for SWM facility constructed nearby the VPHEP colony area. Roadside Bins (Separate bins for Organic and Inorganic Waste) etc. have been procured and installed at appropriate locations for proper collection of waste. Additionally, 01 nos. dumper has been procured through SEWA-THDC and donated to Nagar Panchayat – Pipalkoti. As per mutual agreement Nagar Panchayat – Pipalkoti is collecting the solid waste of VPHEP for safe disposal. <p>M/S HCC LTD. – WORKER/LABOR CAMPS</p> <ul style="list-style-type: none"> Necessary provisions have been kept for Waste Collection, Handling, Segregation, Disposal process under the contractor's EMP. Separate bins are placed at labor camps and construction sites for biodegradable and non-biodegradable wastes. The waste collected is handed over to Nagar Palika / Panchayat. Wastes (Hazardous/E-waste/others) being stored in storage yard for safe disposal and handed over to authorized vendors only.
11	Road Construction	<ul style="list-style-type: none"> During Road Construction all precautionary measures for soil erosion, slope stability, drainage to be taken care as per Indian Standards Regular Water Sprinkling is being done for dust suppression.

		<ul style="list-style-type: none"> Provision for water drainage along the road line is provided where ever required.
12	Sanitary Facility Labor Camp	<ul style="list-style-type: none"> HCC has constructed the camps for its staff / workers and for PRW workers at Helang for the persons engaged at Dam site activities and also at Haat & Batula (Haat-Kauria Road) for the Power House activities. Also, HCC has hired various private accommodations / hotels for accommodating the officers and workers at site. The total number of staff / workers presently residing in these accommodations is 636. All the accommodations are provided with Toilets, Bathrooms and community mess. Septic cum Soak pit tank have also been constructed at camp sites for safe disposal of sewage.
13	Fuel	<ul style="list-style-type: none"> Community kitchen for labor / worker at camps being run on LPG. Usage of approx. 10,092 nos. LPG cylinders have been reported by the contractor up to Dec' 2021.
14	Public Health Delivery Plan	<p>Public Health Delivery system</p> <p>– VPHEP, THDCIL</p> <ul style="list-style-type: none"> At VPHEP Complex, a Dispensary is operational with adequate number of beds. Medical Staff includes Doctor, Nurse, Para medical staff, Dresser etc. Additional facilities by engaging staff on contractual basis deputed. Ambulance deployed. The Medical Facilities are extended free of cost among Project Affected people apart from local Population as well. <p>– M/s HCC</p> <ul style="list-style-type: none"> 01 nos. First Aid Centres operational at each at Power House, TBM and Dam site. 01 nos. Dispensary located at Swami Vivekanand Hospital, Mayapur, Pipalkoti. Para Medical Staff & facilities deployed at First Aid Centers. Ambulance facilities available at Power House, TBM and Dam. Necessary treatment including required vaccination is being given to labors from time to time.
15	Environmental Monitoring Plan	<p>The monitoring on Environment Parameters (Air/Water/Noise/Effluents/Indoor Air/Emissions from DG Sets/Emissions from Vehicles/Noise from Construction Machinery/Meteorology etc.) to be monitored by the construction contractor. Blasting is being done in a controlled manner and monitoring of the same is being done through the reputed organization <i>Central Institute of Mining and Fuel Research, Roorkee</i>. Various monitoring includes;</p> <p>Monitoring of Air/Water/Noise etc. by contractor: The monitoring being conducted at different time intervals. Report from M/s HCC for Ambient Air, Indoor Air, Drinking water, Effluent water & Noise level monitoring conducted during the period Oct'21 to Dec' 21 has been received and all parameters are found within the permissible limits.</p>

		<p>Monitoring of Incidence of Water Related Diseases: MoU signed with CMO, District Hospital Gopeshwar Chamoli in 2015 for a period of 04 years. Monitoring of water related diseases was carried out and various HIV awareness programs have been organized in affected villages as per MoU through CMO, District Hospital Gopeshwar Chamoli.</p> <p>A Fresh MoU has been signed with CMO, District Hospital Chamoli on 23.05.2020 for further 03 years. Quarterly Monitoring reports upto Sept' 21 have been received.</p> <p>Ecological Monitoring: MoU was signed with Post Graduate College, Gopeshwar for a period of 4 years. Annual Progress Report for the years 2015-16, 2016-17, 2017-18 & 2018-19 has been received. A Fresh MoU has been signed with Post Graduate College, Gopeshwar on 19.05.2020 for further 03 years. Monitoring is under progress. Annual Report for the year 2020-21 has been received.</p> <p>River Water Quality Monitoring: Monitoring is being conducted at regular intervals through M/s PCRI BHEL Haridwar. Last set conducted recently during Oct' 2020, Parameters within permissible limits.</p> <p>Meteorological Monitoring: Automatic Weather Stations (AWS) for Recording of Temperature, Wind Speed & Direction, Humidity & Rainfall has been installed at PH Site/Colony during mid-February 2016. AWS at Dam Site has been installed on 26.04.2016 at HCC Camp, Helang. One AWS dismantled from MJ-JT HEP has been reinstalled at Siyasain, VPHEP colony campus.</p>
16	Third Party Monitoring Mechanism for Environmental Works	<p>For Third Party Monitoring, M/s WAPCOS was engaged through Open Tender process & agreement was signed on 10.10.2014. Final consolidated report from (2015-2018) has been received in August 2019.</p> <p>Further in continuation, a MoU has also been signed between M/s WAPCOS and THDCIL on 18.04.2019 for Third Party EMP monitoring works of VPHEP from April 2019 to March 2020. Final consolidated report was submitted by M/s WAPCOS.</p> <p>For further continuing the monitoring, the work has been awarded to M/s WAPCOS from Jan' 2021 for a period of 03 years (36 months) on 31.12.2020. Inception Report has been received. Monitoring work is under progress.</p>
17	Third Party Monitoring Mechanism for CAT Works	<p>The MoU has been signed with ICFRE, Dehradun on 11.12.2014. Letter issued & date of start reckoned as 10.08.2015. Half yearly Reports to be furnished at regular intervals. 8th Half yearly Report (Oct'19 to March'2020) has been received.</p> <p>The monitoring works for additional period upto Dec. 2021 has been awarded to M/s ICFRE, Dehradun vide GM (S&E), Rishikesh letter dtd. 25.02.2020.</p>
18	ISO 14001 & OHSAS 18001	<ul style="list-style-type: none"> VPHEP project unit is ISO 9001:2015, ISO 14001:2015 & OHSAS 18001 certified unit.

<p>19</p>	<p>Archaeological Management Plan</p>	<p>As per the EMP, following actions are to be taken, i.e.</p> <ul style="list-style-type: none"> • The Laxmi Narayan Temple at Village Haat is to be preserved through ASI Dehradun. • A 10 Member Committee comprising 8 Members from Village Haat has been constituted by DM, Chamoli and 1st meeting of committee was held on 17.01.2015. • ASI Dehradun was requested vide letters dated 11.02.2016, 01.06.2016, 05.09.2016 and 26.12.2016 for visit and consultancy. • Meanwhile, the ASI team has visited the project on 21.02.2016. It was discussed with ASI team to provide the Action Plan and consent for executing the work. • Thereafter, the ASI team visited the project on 18th March 2017 for site visit and assured that the necessary proposal shall be prepared and submitted very soon. • A preliminary report has been obtained from ASI Dehradun. • A meeting under the chairmanship of District Administration in presence of representative from ASI and The World Bank has been conducted between THDCIL and the representatives from Haat village on 23.04.2019 at VPHEP for protection and beautification works of Laxmi Narayan Temple at village Haat. The preliminary report of ASI Dehradun along with further protection plan suggested by The World Bank has also been shared and discussed with the Temple Committee and others during the meeting. • Drawings as per the suggestions of the World Bank have been issued by Design Department, THDCIL, Rishikesh. • Necessary action has been initiated at various levels of department. Recently, vide letter dtd. 20.09.2021, ASI Dehradun has been requested to provide the DPR for taking up the preservation work of Laxmi Narayan Temple. • Also, DM-Chamoli vide letter dtd. 27.10.2021 has also requested DG-ASI, New Delhi for directing the concerned official for taking up the work at the earliest. Matter is being pursued with ASI officials. <p>Further, Remains of Archaeological importance also need to be preserved or conserved.</p> <ul style="list-style-type: none"> • An Archaeological Chance Find Card has also been issued to the contractor to report Chance finds, if any. • No chance finds reported till date. <p>An Archaeological museum is proposed to be opened in the project area for display of Archaeological findings, if any.</p>
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STATUS OF CONDITIONS ON ENVIRONMENT CLEARANCE

SL. NO.	BRIEF DESCRIPTION OF CONDITIONS	STATUS AS ON DEC' 2021
MoEF&CC LETTER Dated: 22.08.2007		
PART - A: SPECIFIC CONDITIONS		
1.	6202 hectare degraded Catchment Area of high category to be treated. CAT as has been proposed should be completed in three years.	<p>DPR for CAT along with micro plans has been approved during December 2017. As per the CAT Plan total Implementation value is Rs. 47 Crs. and the same has already been deposited in the CAMPA fund. DFO, Badrinath Forest Division is the Nodal Officer for implementation of the CAT Plan.</p> <p>Forest Deptt. is executing activities as per approved CAT- DPR . An expenditure of Rs. 23.22 Cr. (approx.) has been made by Forest Deptt. till Dec' 2021.</p> <p>Matter was also discussed in the 3rd meeting of Multi-Disciplinary Committee constituted by MoEF&CC, GoI under the chairmanship of PCCF-HoFF, GoUK held on 31.07.2021 at Van Bhawan, Dehradun. In the said meeting, DFO, Badrinath Forest Division (Nodal Officer) appraised that slow progress is due to non release of funds from CAMPA.</p> <p>The Chairman - MDC, PCCF-HoFF, has directed the concerned Forest officials to make all-out efforts for early completion of these activities.</p>
2.	346 project affected families are likely to lose their agriculture land. All the PAFs would be compensated as per the rates that would be assessed and decided by the district authorities. Over and above these compensations, the PAFs will be given "land for land" or "Vocation / job" or "financial assistance "in addition to various rehabilitation	<p>Land Compensation as assessed & decided by Land Acquisition Officer is being disbursed through Special Land Acquisition Officer (SLAO) in accordance to the provisions of LA Act. About 94% PAF's have received payment from SLAO.</p> <p>Besides SLAO Payment, Project is extending various other benefits to the Project Affected Families in accordance to the R&R Policy of the Project, framed based on NRRP-2007 & considering the World Bank Operational Policy.</p> <p>The Affected Families are getting cash benefits in the form of various Grants.</p>

	benefits as per the NRRP - 2003.	Apart from above, Project is complying with the Social Obligation & the details are annexed at Annexure A-1.
3.	A Monitoring Committee for R & R should be constituted which must include representatives of project - affected persons from SC/ST category and a woman beneficiary.	Monitoring Committee has been constituted by DM, Chamoli; vide Order No. 725/26-MB (2008-09), Dt. 09.11.2009.
4.	All the equipment which are likely to generate high noise levels are to be fully mollified (Noise reduction measures) in view of the proximity of the project to Nanda Devi Biosphere Reserve.	<p>The PUC certificate for the Light/Heavy Vehicles including for hired one and other construction equipment are being undertaken as per prevailing Guidelines, Rules and acts as renewed from time to time.</p> <p>The controlled blasting is being undertaken involving non electric delay detonation technique.</p> <p>Blasting is done during day time at pre-notified time only. Blast pattern & vibration is monitored by Central Institute of Mining and Fuel Research (CIMFR), Roorkee.</p> <p>No blasting is done during night & no disturbance is created for wild life habitat.</p> <p>Monitoring Agencies M/s PCRI-BHEL, Haridwar and M/s Harayana Test House, Panipat recognized by MoEF&CC has been engaged to monitor the Environmental Parameters that includes Noise as well. The monitoring is being conducted at regular intervals as stipulated. The last set of monitoring was conducted through M/s Haryana Test House, Panipat by M/s HCC during Nov' 2021. Reports have been received and all parameters are within permissible limit.</p>
5.	Minimum Water Flow of 15.65 Cumecs (Revised by letter dtd. 31.05.2011) should be released downstream during lean season.	Environmental flow shall be ensured as per latest Gazette Notification of MoWR,RD&GR, GoI.dtd. 10.10.2018.
6.	Consolidation and compilation of the muck should be carried out in the muck dump sites and the dump sites should be	<p>Dumping of muck is being done at designated / identified area & well above the high flood level.</p> <p>Engineering measures such as construction of gabion faced reinforced earth wall with uniaxial</p>

	above high flood level.	geo-grid reinforcement are adopted at dumping site. Benches are being developed to discontinue the slopes in dump yards. Biological measures such as formation of Micro-benches (kyaries), laying of top soil, plantation of vetivar grass, manuring etc. are also being undertaken at site for slope stabilization. Plantation of Vetivar (Chrysopogon Zizanioides) in approx. 10,000 sqm. area has been completed till Dec' 2021 at DY- 4.
7.	The project area is situated in close proximity to Nanda Devi Bio-Sphere Reserve, the possibility of the endemic flora cannot be ruled out completely. Hence suggested the plantation of those species which come under Rare, Endangered and Threatened (RET) category, if any, should be planted during the implementation of CAT and Compensatory Afforestation Works.	The Implementation of CAT Plan & Compensatory Afforestation are being undertaken by State Forest Department, Uttarakhand. State Forest Department is executing the plantation of appropriate species as per their approved DPR of CAT Plan of VPHEP. Matter was also discussed in the 3 rd meeting of Multi-Disciplinary Committee constituted by MoEF&CC, GoI held on 31.07.2021 at Van Bhawan, Dehradun. The Chairman - MDC, PCCF-HoFF, has directed the Nodal Officer, Forest Deptt. to take immediate necessary action and expedite the matter.
8.	Commitment made during public hearing should be fulfilled.	The status towards Commitments made during Public Hearing is annexed as Annexure – A 3 .
PART - B: GENERAL CONDITIONS		
1.	Adequate free fuel arrangement should be made for the labour force engaged in the construction works at project cost so that indiscriminate felling of trees is prevented.	Contractor is running Community mess for its employees & work force. Also Commercial LPG Cylinders have been utilized in the Community Mess. No trees are felling for the fuel wood.
2.	Fuel depot may be opened at the site to provide the fuel (kerosene / wood / LPG). Medical facilities as well as recreational facilities should also be provided to the labors.	<ul style="list-style-type: none"> • Community Kitchen with LPG are established in Camps for Contractors Employees & Workforce. • 01 nos. First Aid Centre is operational at each site i.e Power House, TBM and Dam site. • 01 nos. Dispensary located at Swami Vivekanand Hospital, Mayapur, Pipalkoti. • Para Medical Staff & facilities deployed at First Aid Centers. • Ambulance facilities available at Power House, TBM & Dam area.

		<ul style="list-style-type: none"> • Necessary treatment including required vaccination is being given to labors from time to time. • Recreational facilities have been provided at labor camps by the contractor.
3.	All the labourers to be engaged for construction works should be thoroughly examined by health personnel and adequately treated before issuing them work permit.	Pre-Employment Medical checkup is undertaken before induction and issuing Work Permit to the labours. Medical examination & vaccination of workmen is done from time to time. Treatment as & when required is also administered.
4.	Restoration of construction area including dumping site of excavated materials should be ensured by leveling, filling up of borrow pits, landscaping etc. The area should be properly treated with suitable plantation.	Proper re-vegetation provisions exist in EMP and are being ensured at appropriate stage. Biological measures such as formation of Micro-benches (kyaries), laying of top soil, plantation of vetivar grass, manuring etc. are also being undertaken at site for slope stabilization. Plantation of Vetivar (Chrysopogon Zizanioides) in approx. 10,000 sqm. area has been completed till Dec' 2021 at DY- 4.
5.	Financial provision should be made in the total budget of the project for implementation of the above suggested safeguard measures.	A revised Budget Provisions of Rupees 109.53 Crores in EMP of July' 2021 have been earmarked towards implementation of Environment Management Plan (EMP) by Project.
6.	A Multi-Disciplinary Committee should be constituted with representatives from various disciplines of forestry, ecology, wildlife, soil conservation, NGO etc. to oversee the effective implementation of the suggested safeguard measures.	<p>District Magistrate, Chamoli, vide order dated 17.10.2014, constituted the Environment Monitoring Committee under the Chairmanship of Chief Development Officer (CDO), District Chamoli. The 1st Meeting was undertaken on 20.03.2015. The 2nd Meeting of committee was conducted on 22.02.2016.</p> <p>Based on the suggestions of the Additional Director, MoEF&CC R.O. Dehradun (Jan 2017 visit), the Multi Disciplinary Committee has been re-constituted vide MoEF&CC letter no. J-12011/29/2007-IA-1 dated 10.10.2017.</p> <p>The 1st, 2nd and 3rd meeting of re-constituted Multi-Disciplinary Committee held on 28.07.2018, 28.02.2020 and 31.07.2021 respectively under the chairmanship of PCCF-HoFF, GoUK. The Chairman - MDC, PCCF-HoFF, has directed the Forest Deptt. to make all out</p>

		efforts for earliest completion of all the activities.
7.	Six monthly monitoring reports should be submitted to the Ministry and its Regional Office, Lucknow for review.	Last Six Monthly report was submitted to concerned office vide letter dated 20.07.2021.
OTHER CONDITIONS		
4.	Officials from Regional Office MOEF, Lucknow who would be monitoring the implementation of environmental safeguards should be given full cooperation, facilities and documents / data by the project proponents during their inspection.	<p>Full Logistic supports as and when required will be ensured by Project.</p> <p>a) Dr. S.C. Katiyar, Addl. Director (S), MoEF&CC, North Central Regional Office, Dehradun visited the VPHE Project on 09.01.2017 & 10.01.2017.</p> <p>b) Dr. S. C. Garkoti, Advisor, MoEF&CC, New Delhi along with Dr. S. C. Katiyar, Addl. Director (S), MoEF&CC, North Central Regional Office, Dehradun has visited the VPHEP site on 02.08.2017 & 03.08.2017.</p> <p>c) Dr. S.C. Katiyar, Addl. Director (S), MoEF&CC, North Central Regional Office, Dehradun has visited the VPHE Project on 28.07.2018.</p> <p>d) Sh. Pankaj Agarwal, Addl. PCCF and Dr. S. C. Katiyar, Addl. Director, MoEF&CC, Regional Office, Dehradun has visited the Project on 11-12 Nov, 2018.</p> <p>e) Dr. Krishnendu Mondal, Scientist – C, MoEF&CC, Regional Office, Dehradun has visited the Project on 12-13 Oct’ 2020.</p>
5.	The responsibility of implementation of environmental safeguards rests fully with the THDC Ltd. & Government of Uttarakhand.	THDCIL is ensuring proper implementation of environmental safeguards as applicable.
6.	In case of change in the scope of the project, project would require a fresh appraisal.	There is no change in Project Scope.
EC validity Extension vide MoEF&CC Letter Dated: 25.04.2018		
1.	The project proponent (PP) should ascertain that there shall not be any wash off during the rainy season beyond the retaining wall, PP should monitor the silt flow at the downstream	<p>Retaining structures of suitable load bearing capacity have been developed at each dumping sites, so that there shall not be any wash off during rainy season.</p> <p>Terraces at dump yards have been developed and benches are being developed to discontinue the slopes in dump yards.</p>

	and upstream of the river during monsoon season. Similarly, PP should provide adequate width having intermittent retaining bunds so that silt is collected at the retaining bunds during rainy season and silt is let out in to the river.	To control silt wash off, biological measures such as formation of Micro –benches (kyaries), laying of top soil, plantation of vetivar grass, manuring etc. are also being undertaken at site.
2.	The PP should opine that as and when any active dumps/muck disposal sites are getting inactive, intermediate measures like both engineering and biological to be carried–out so that no silt is going into the downstream of the river.	Benches are being developed to discontinue the slopes in dump yards. Engineering measures such as construction of gabion faced reinforced earth wall with uniaxial geo-grid reinforcement are adopted at dumping site. Biological measures such as formation of Micro –benches (kyaries), laying of top soil, plantation of vetivar grass, manuring etc. are also being undertaken at site for slope stabilization. Plantation of Vetivar (<i>Chrysopogon Zizanioides</i>) in approx. 10,000 sqm. area has been completed till Dec’ 2021 at DY- 4.
3.	The PP should ensure that in case of generation of any top soil, a site exclusively for topsoil dumping and also make commitment that collection of topsoil and prevention of the same be made so that nutrient value of the soil is retained and utilized subsequently at the time of plantation, reclamation of muck dumps, etc.	Necessary provision has been made and same is being complied with. Topsoil generated from different sites, if any, is being used for biological stabilization measures at Dumping site.
4.	There should be benching of dumps of appropriate height and stabilization of slopes so that spoils of muck etc. are not created during rainy season. In critical areas, use of geo-textile along the slopes and provision of garland drains on the toe of dumps are to be provided for better stabilization and	Benches are being developed to discontinue the slopes in dump yards. Engineering measures such as construction of gabion faced reinforced earth wall with uniaxial geo-grid reinforcement are adopted at dumping site.

	biological measures. This has to be strictly adhered to.	
5.	All the terms and conditions of the Environmental Clearance stipulated in Letter J-12011/29/2007-IA.I dated 22.08.2007, 18.01.2008 and 30.11.2011 remains unchanged.	The conditions laid down letter J-12011/29/2007-IA.I dated 22.08.2007, 18.01.2008 and 30.11.2011 are being fully complied and status of same are provided above.

Environment Clearance (EC) conditions of VPHEP granted by MoEF&CC vide letter dtd. 26.08.2021

Additional Terms & Conditions		
S.No.	Brief Description of conditions	Status as on Dec' 2021
i.	<p>The Environmental Management Plan (EMP) shall be strictly adhered to as submitted in the EIA/EMP report. The budgetary provisions for implementation of EMP, shall be fully utilized and not to be diverted to any other purpose.</p> <p>In case of revision of the Project cost or due to price level change, the cost of EMP shall also be updated proportionately.</p>	<p>The Environmental Management Plan (EMP) shall be strictly adhered to as submitted in the EIA/EMP report. The Budgetary provisions for implementation of EMP shall not be diverted for any other purpose.</p> <p>Shall be complied.</p> <p>Revised Budget Provisions of Rupees 109.53 Crores in EMP of July' 2021 have been earmarked towards implementation of Environment Management Plan (EMP) by the Project proponent.</p>
ii.	Environment matrix provided in EMP be revised if any data change. Number and period of stocking of Fish be incorporated in EMP.	<p>Environment matrix provided in EMP shall be revised if any data change occurs.</p> <p>Fish Management Plan has been prepared through Indian Council of Agricultural Research – Directorate of Coldwater Fisheries Research (ICAR-DCFR), Bhimtal. The stocking details have been included in the Fish</p>

		Management Plan for VPHEP prepared by ICAR-DCFR, Bhimtal.
iii.	Separate budget shall be allocated for Fish Hatcheries and Herbal and the same shall be implement in stipulated time period.	<p>Separate Budget is allocated for Fish Management Plan & Herbal Garden in the EMP.</p> <p>Fish Management Plan has been prepared through ICAR-DCFR. In the EMP 2007, the Budget provisions for Fisheries Management was 65 Lakhs, which has been revised to 429 Lakhs in the EMP 2021, out of which 279 Lakhs has already been incurred till date.</p> <p>Based on recommendations of Herbal Research and Development Institute, Mandal, Gopeshwar (a nodal agency of Uttarakhand Medicinal Plant Board), a Herbal Garden has been already developed in the project over an area of 1800 sqm. approx. Approx. Rs. 19.10 lakhs have been incurred on various works related to the development of the Herbal Garden.</p>
iv.	The contract clause limiting the No. of vehicles used during excavation and transportation shall followed scrupulously and the same shall informed to the ministry.	<p>After careful assessment of requirements, optimum number of vehicles required for excavation and transportation are being deployed at site.</p> <p>The details of vehicles deployed by the contractor are enclosed at Annexure A-4.</p>
v.	Pasture Development Plan be revised in terms of Rate of plantation and their Cost.	<p>The Pasture Development plan, Social Forestry works and Fuel wood and fodder related works are being implemented as per the Catchment Area Treatment Plan prepared and implemented by Forest Department.</p> <p>Further, for loss of Fuel & Fodder, PAFs are being compensated with the Fuel & Fodder grant. Each entitled house hold in the affected habitation is being paid 100 days of Minimum Agriculture Wages per year for a period of 5 yrs. On the recommendations of the World Bank, THDCIL has increased disbursement of Fuel & Fodder Grants from 5 years to 8 years. The amount is paid as a grant / assistance towards the loss of fuel and fodder. Around 2700 households are getting benefited through this assistance.</p>

vi.	After 5 years of the Commissioning of the Project, a study shall be undertaken regarding impact of the Project on the Environment. The study shall be undertaken by an independent agency.	As stipulated, study to be conducted after 5 years of commissioning of Project.
vii.	Geological changes or Catastrophic event within 10 km region, every two year data shall be submitted to RO, MoEF&CC. The same shall be obtained from Geological Survey of India. If any major events which can affect the Dam, Management plan shall be prepared and submit to the RO, MoEF&CC.	Report of Geological changes or catastrophic event within 10 km region shall be obtained from GSI and to be submitted to RO, MoEF&CC. Also, a request letter for providing the details as required is being sent to GSI as per EC dated 26.08.2021. Disaster Management plan was prepared and uploaded along with compliance report at Parivesh Portal.
viii.	Solid waste generated, especially plastic waste, etc. should not be disposed off as landfill material. It should be treated with scientific approach and recycled. Use of single-use plastics may be discouraged.	Solid Waste, Hazardous/E-waste/others are being disposed-off as per prevalent rules and regulation of MoEF&CC, CPCB etc. The Hazardous/E-waste/Biomedical waste generated at site is handed over to authorized agency for safe disposal and recycling. Necessary infrastructure facility for Solid Waste Management has been constructed in the Project Colony. Solid waste generated is safely collected and handed over to Nagar Panchayat, Pipalkoti for safe disposal. At construction sites and labour camps, separate bins are placed for biodegradable and non-biodegradable Solid waste. The waste so collected is handed over to Nagar Panchayat (Joshimath) at Dam Site and Nagar Panchayat (Pipalkoti) at Power House Site. Additionally, 01 nos. dumper has been provided to Nagar Panchayat, Pipalkoti for collection of Solid waste.
ix.	PP shall ensure the Ambient Air Quality Monitoring Stations for real time data display and regularly submit to respective RO, MoEF&CC.	The process to establish Ambient air Quality Stations for real time data display is under process.
x.	Land acquired for the Project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines. Private land shall be acquired as per provisions of Right to Fair	Acquisition of entire private land was done prior to “Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013” The total compensation amount was deposited with the SLAO. No new Land is being acquired for the Project.

	<p>Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.</p>	<p>Land Compensation as assessed & decided by Land Acquisition Officer is being disbursed through Special Land Acquisition Officer (SLAO) in accordance to the provisions of LA Act. About 94% PAF's have received payment from SLAO.</p> <p>Besides SLAO Payment, Project is extending various other benefits to the Project Affected Families in accordance to the R&R Policy of Project, framed based on NRRP-2007 & considering the World Bank Operational Policy.</p> <p>The Affected Families are getting cash benefits in the form of various Grants.</p> <p>Apart from above, Project is complying with the Social Obligation & the details are annexed at Annexure A-1.</p>
<p>xi.</p>	<p>PP shall procure construction material only from those Organizations having all valid legal/statutory clearances/permissions or necessary permission to be obtained for quarrying construction materials for the Project as per the EIA Notification, 2006 and as amended thereof.</p>	<p>The same is being complied as per rules and regulation stipulated in EIA Notification, 2006 and as amended thereof.</p>
<p>xii.</p>	<p>An institutional mechanism to be developed to ensure the preference of jobs to PAFs and also a policy for preferential treatment for award of sundry works to the PAFs and their dependents.</p>	<p>An institutional mechanism has already been identified in the R&R Policy of VPHEP as under: “Employment opportunity, if any, 100% recruitment at the level of workman (including technical & ministerial) required to be done, will be done first from the land oustees & in case of non availability of suitable candidate among the land oustees, the recruitment will be done from other residents of Uttarakhand state, whose names are registered on live register of any employment”.</p> <p>In addition, other provisions for economic/employment opportunities have been done as under:</p> <ol style="list-style-type: none"> i. Employment with contracting agencies. ii. Allotment of shops/kiosk.

		<p>iii. Award of petty contracts. iv. Vehicle hiring. v. PCO/Internet kiosk. vi. News paper vendors. vii. Any other opportunity deemed fit by the project.</p> <p>Till date, 20 PAP's have been provided with permanent employment in THDCIL. In addition, around 1300 persons have been provided direct / indirect employment opportunities in main project construction company and through other modes as mentioned above.</p>
xiii.	Necessary control measures such as water sprinkling arrangements, and construction of paved roads leading to Muck disposal sites etc. shall be taken up on priority to arrest fugitive dust at all the construction sites.	Water Sprinkling is being done on regular basis to control fugitive dust emission at all the construction sites.
xiv.	Stabilization of Muck disposal sites using biological and engineering measures shall be taken up immediately to ensure that Muck does not roll down the slopes and shall be disposed safely and that it does not pollute the natural streams and water bodies in surrounding area. Report of the same to be submitted to Ministry and its Regional office.	<p>Dumping of muck is being done at designated / identified area & well above the high flood level.</p> <p>Engineering measures such as construction of gabion faced reinforced earth wall with uniaxial geo-grid reinforcement are adopted at dumping site. Benches are being developed to discontinue the slopes in dump yards.</p> <p>Biological measures such as formation of Micro-benches (kyaries), laying of top soil, plantation of vetivar grass, manuring etc. are also being undertaken at site for slope stabilization.</p> <p>Plantation of Vetivar (Chrysopogon Zizanioides) in approx. 10,000 sqm. area has been completed till Dec' 2021 at DY- 4.</p>
xv.	A multi-specialty hospital to cater the need of people living within 10 km radius of the Project shall be established.	The matter was discussed with District Administration for establishing Multi-specialty hospital. The District Magistrate, Chamoli has suggested to upgrade /adopts the District Hospital, Gopeshwar which will cater the need of

		<p>all the people living in the Chamoli District. District Hospital is located at district headquarter in Gopeshwar Town of Chamoli District. The District Hospital is located within the 9 km radius of the project boundaries.</p> <p>After various levels of discussions with District Authorities in this regard, CMO Chamoli, vide Letter dtd. 01.01.2022, has requested to take up the work of construction of a new building of the District Hospital, Gopeshwar, Chamoli.</p> <p>A dispensary is already operational at VPHEP comprising of proper medical staff viz. Doctor, Nurse, Para-Medical staff, Dresser etc. 02 nos ambulance in place. The Medical Facilities are being extended free of cost among Project Affected People including population from nearby villages as well.</p>
xvi.	Solar lights for illumination along with associated Solar panels to be provided to the families living in rural areas within 10 km radius of Project.	<p>The VPHEP Project has already distributed 110 Nos. of Solar lights to the PAFs & surrounding areas of the project. Details are attached at Annexure-05.</p> <p>At present, it is proposed to distribute 40 nos. of more Solar Lights near project area as per the requirement raised by local authority for community development.</p> <p>Further, need based assessment is being done regularly for assessing the requirement of local area.</p>
xvii.	The e-flow shall continue to be released as per the previous EC granted to the Project.	E-flow shall be released as per CWC Notification dtd. 10.10.2018.
xviii.	Computer labs with internet facility shall be established in primary schools within 10 km radius of Project.	<p>The VPHEP Project has engaged an expert Agency M/s MRIDA Energy& Development Pvt. Ltd, New Delhi towards the work “Engagement of Specialized Agency to help Prepare Livelihood Development / Employment Generation Plan & its Implementation in relation to VPHEP” for supporting Livelihood Development / Employment Generation in the Project Affected villages. 02 no. of Development Hub will be established by the M/s MIRDA Energy& Development Pvt. Lt. The Development Hubs is a physical space that provides access to Digital services, Online services, Banking services, E-citizen services, and skill development services all under one roof. The development initiative will enable community members to access all services</p>

		<p>at one location, saving money and time both. The Development Hub facilitates digital connectivity, fosters the development of digital skills and promotes the adoption of emerging digital technologies.</p> <p>The Development Hub will also act as computer training centers for the youth from the PAFs also, leveraging the strength of the computer literacy of the Village Level Entrepreneurs (VLEs) and these centers.</p> <p>Distribution of Computers and other necessary facilities are being provided to primary schools under Community Development.</p>
xix.	Sport complex with multi - sport facility shall be established. The children's from economically weaker section shall be given free of cost sport facility.	<p>The VPHEP Project is situated in Chamoli District which is located in Hilly Terrain of state Uttarakhand. The Hilly terrains are land constraint area where Land is not easily available for Infrastructure Development. The Project is also located at Land constraint terrain.</p> <p>After completion of Muck Dumping at Dump yard near Project Colony, an open space with Terrace will be available. The same Terrace will be developed for creating necessary Infrastructure for Multi-Sports complex and shall be opened for the Local Population. In the meantime, a Club with Volleyball Court, already developed at the Project site Colony shall remain available for the Local Population.</p>
xx.	A time bound action plan for compliance of each of the above condition will be submitted to RO, MoEF&CC within 3months.	A time bound action plan for compliance of each of the above condition has been submitted to MoEF&CC vide letter dtd. 26.11.2021.
xxi.	Observations raised by RO, MoEF&CC in certified compliance report shall be complied with and if not done in stipulated time/ before commencement of Project, Environmental Clearance will be withdrawn.	Currently, no observation has been raised by RO, MoEF&CC.
xxii.	The Multi-Disciplinary Committee needs to be reconstituted and the meeting needs to be held at regular interval	Based on the suggestions of the Additional Director, MoEF&CC R.O. Dehradun, the Multi Disciplinary Committee has been re-constituted vide MoEF&CC letter no. J-12011/29/2007-IA-1 dated 10.10.2017.

		Also, a request letter for reconstitution of Multi-Disciplinary Committee is being sent to MoEF&CC as per as per EC dated 26.08.2021.
xxiii.	PP should establish in house Project Environment laboratory for measurement of Environment parameter with respect to air quality and water (surface and ground. A dedicated team to oversee Environment management shall be setup which should comprise of Environment Engineers, Laboratory chemist and (at site) Environment laboratory staff for monitoring of air, water quality parameters on routine basis.	At present, the Environment Monitoring at Project site is being conducted through the external authorized agencies. The process for establishing Environment Monitoring Laboratory at Project has been initiated.
xxiv.	All the specific conditions mentioned in the EC dated 22nd August 2007 shall be complied within stipulated time.	The conditions laid down letter J-12011/29/2007-IA.I dated 22.08.2007 is being fully complied and status of same are provided above.

Standard EC Conditions for River Valley and Hydro electric projects

I. Statutory compliance:

i.	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non- forest purpose involved in the project.	The Forest Clearance for the Project has been granted by MoEF&CC on 28.05.2013 and GO from GoUK has been issued on 06.12.2013.
ii.	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable	The Wildlife Clearance form NBWL has been granted on 20.12.2012.
iii.	The project proponent shall prepare a Site-Specific Conservation Plan& Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan/ Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report	In the EIA-EMP 2021, Schedule-I species has not been reported. The Compensatory Afforestation Plan & Catchment Area Treatment Plan is being implemented by State Forest Deptt., Uttarakhand. The Project does not fall under Core & Buffer Zone. For Wildlife Protection, various measures have been undertaken at the Project. The details are as follows: <ul style="list-style-type: none"> • Two (02) nos. Watch Towers have been installed at identified locations in

	shall be furnished along with the six- monthly compliance reports. (in case of the presence of schedule-I species in the study area)	<p>consultation with Forest Deptt. at Powerhouse and TBM sites nearby the boundary of KWLS.</p> <ul style="list-style-type: none"> • Ten nos. Camera Traps have been handed over to Forest Department for monitoring of Nanda Devi National Park (NDBR) for the conservation and wild life management. • Controlled Blasting techniques are being practiced and the same is being monitored by Central Institute of Mining & Fuel Research (CIMFR), Roorkee. Report up to Sept’ 2021 have been received. • Environment Awareness Program has been organized at VPHEP during Dec’ 2021 in the presence of noted Environmentalist Sh. Jagat Singh Chaudhary alias “<i>Jungli Ji</i>” and Forest Deptt. officials. • Awareness Programs are being organized from time to time.
iv.	The project proponent shall obtain Consent to Establish/ Operate under the provisions of Air (Prevention & Control of Pollution) Act , 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.	The CTE from UKPCB has been obtained on 10.04.2007.
v.	NOC shall be obtained from National Commission of Seismic Design Parameters (NCSDS) of CWC.	NOC from National Commission of Seismic Design parameters (NCSDP) have already been obtained vide letter No CWC/2/2/2008/FE&SA/425 dated 04.05.2008. (Annexure-NCSDP)
vi.	Necessary approval of CEA shall be obtained for those projects having the project cost more than Rs. 1,000 crore.	The approval from CEA has already been obtained vide letter dated 21.09.2006. (Annexure-CEA)

II. Air quality monitoring and preservation

(i)	Regular monitoring of various environmental parameters viz., Water Quality, Ambient Air Quality and Noise levels as per the CPCB guidelines at designated locations shall be carried out on monthly basis and a detailed database of the same shall be prepared and recorded. This shall be	M/s PCRI-BHEL, Haridwar and M/s Harayana Test House, Panipat recognized by MoEF&CC has been engaged to monitor the Environmental Parameters that includes Water Quality, Ambient Air and Noise levels. The monitoring is being conducted at regular intervals as stipulated. The last set of monitoring was conducted through M/s Haryana Test House, Panipat by M/s HCC during Nov’ 2021. Reports have been received and all parameters are
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	used as a baseline data for post construction EIA/ Monitoring purposes.	within permissible limit.
(ii)	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed standards.	The PUC certificate for the Light/ Heavy Vehicles including for hired one and other construction equipment are being undertaken as per prevailing Guidelines, Rules and acts as renewed from time to time. CCA from UKPCB has been obtained for Batching Plants by the contractor. Water Sprinkling is being done on regular basis to control fugitive dust emission at all the construction sites. Also, ventilation has been provided in the Underground areas by the contractor.
(iii)	Necessary control measures such as water sprinkling arrangements, etc. be taken up to arrest fugitive dust at all the construction sites.	Water Sprinkling is being done on regular basis to control fugitive dust emission at all the construction sites.
III. Water quality monitoring and preservation		
(i)	Conjunctive use of surface water to be planned in the project to check water logging as well as to increase crops productivity. The field drains shall be connected with natural drainage system.	Not applicable
(ii)	Re modeling of existing natural drains (link drains) and connecting them with irrigated land through constructed field drains, collector tor drains, etc. are to be ensured on priority basis.	Not applicable
(iii)	Before impounding of the water, Cofferdams for both at the upstream and downstream are to be decommissioned as per EIA/EMP report so that once the project is commissioned; cofferdam should not create any adverse impact on water environment including the rock mass and muck used for the Cofferdam.	The Cofferdam of concrete is a temporary construction for diverting the water at Dam site (upstream). No cofferdam has been constructed the downstream of the river. During the commissioning of the Project, the Cofferdam at Dam site will be decommissioned without any adverse impact on the water environment.
(iv)	As the reservoir will be acting as balancing reservoir and there would be fluctuation of water level during peaking period, efforts be made to	The reservoir of VPHEP project shall be fluctuating between EL 1267 m to 1252.5 m after the commissioning of Project. Moreover, E-Flow shall be maintained vide Gazette Notification dtd.

	reduce impact on aquatic life including impacts during spawning period both at the upstream and downstream of the project	10.10.2018 of MoWR, RD&GR for the reducing the impacts on the aquatic life.
(v)	Water depth sensors shall be installed at suitable locations to monitor e-flow. Hourly data to be collected and converted to discharge data. The Gauge and Discharge data in the form of Excel Sheet be submitted to the Regional Office, MoEF&CC and to the CWC on weekly basis.	Shall be complied after commissioning of the Project. Also, the installation and monitoring of e-flow shall be carried out as per the Gazette Notification of MoWR dated 10.10.2018 and data shall be submitted to RO, MoEF&CC.
(vi)	Mixed irrigation shall be practiced and necessary awareness be given to all the farmers and trained in the use of such systems. Proper crops selection shall be carried out for making irrigation facility more effective.	Not applicable
(vii)	On Farm Development (OFD) works like landscaping, land levelling, drainage facilities, field irrigation channels and farm roads, etc. should be taken up in phased manner prior to the start of irrigation in the entire command area. The Command Area Development Plan should be strictly implemented as proposed in the EIA/ EMP report	Not applicable

IV. Noise monitoring and prevention

(i)	All the equipment likely to generate high noise shall be appropriately enclosed or inbuilt noise enclosures be provided so as to meet the ambient noise standards as notified under the Noise Pollution (Regulation and Control) Rules, 2000, as amended in 2010 under the Environment Protection Act (EPA), 1986.	The PUC certificate for the Light/ Heavy Vehicles including for hired one and other construction equipment are being undertaken as per prevailing Guidelines, Rules and acts as renewed from time to time. The controlled blasting is being undertaken involving non electric delay detonation technique. Blasting is done during day time at pre-notified time only. Blast pattern &
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		<p>vibration is monitored by Central Institute of Mining and Fuel Research (CIMFR), Roorkee.</p> <p>No blasting is done during night & no disturbance is created for wild life habitat.</p>
(ii)	<p>The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.</p>	<p>M/s PCRI-BHEL, Haridwar and M/s Harayana Test House, Panipat recognized by MoEF&CC has been engaged to monitor the Environmental Parameters that includes Water Quality, Ambient Air and Noise levels. The monitoring is being conducted at regular intervals as stipulated. The last set of monitoring was conducted through M/s Haryana Test House, Panipat by M/s HCC during Nov' 2021. Reports have been received and all parameters are within permissible limit.</p>

V. Catchment Area Treatment Plan

(i)	<p>Catchment Area Treatment (CAT) Plan as proposed in the EIA/EMP report shall be implemented in consultation with the State Forest Department and shall be implemented in synchronization with the construction of the project.</p>	<p>As Per approved EMP, 6202 hectare degraded Catchment Area of high category to be treated. DPR for CAT along with micro plans has been approved during December 2017. As per the CAT Plan total implementation value is Rs. 47 Crs. and the same has already been deposited, in the CAMPA fund. DFO, Badrinath Forest Division is the Nodal Officer for implementation of the CAT Plan.</p> <p>Forest Deptt. is executing activities as per approved CAT-DPR. An expenditure of Rs. 23.22 Cr (approx.) has been made by Forest Deptt. till Dec' 2021.</p> <p>Matter was also discussed in the 3rd meeting of Multi-Disciplinary Committee constituted by MoEF&CC, GoI under the chairmanship of PCCF-HoFF, GoUK held on 31.07.2021 at Van Bhawan, Dehradun. In the said meeting, DFO, Badrinath Forest Division (Nodal Officer) appraised that slow progress is due to non release of funds from CAMPA.</p> <p>The Chairman - MDC, PCCF-HoFF, has directed the concerned Forest officials to make all-out efforts for early completion these activities</p>
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VI. Waste management

(i)	Muck disposal be carried out only in the approved and earmarked sites. The dumping sites shall be located sufficiently away from the HFL of the river. Efforts be made to reuse the muck for construction and other filling purposes and balanced be disposed of at the designated disposal sites. Once the muck disposal sites are inactive, proper treatment measures like both engineering and biological measures be carried out so that sites are stabilized quickly.	Dumping of muck is being done at designated / identified area & well above the high flood level. Engineering measures such as construction of gabion faced reinforced earth wall with uniaxial geo-grid reinforcement are adopted at dumping site. Benches are being developed to discontinue the slopes in dump yards. Biological measures such as formation of Micro-benches (kyaries), laying of top soil, plantation of vetivar grass, manuring etc. are also being undertaken at site for slope stabilization. Plantation of Vetivar (Chrysopogon Zizanioides) in approx. 10,000 sqm. area has been completed till Dec' 2021 at DY- 4.
(ii)	Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead be used for various purposes as envisaged in the EIA/EMP reports. Efforts be made to avoid one time use of plastics.	Solid Waste, Hazardous/E-waste/others are being disposed-off as per prevalent rules and regulation of MoEF&CC, CPCB etc. The Hazardous/E-waste/Biomedical waste generated at site is handed over to authorized agency for safe disposal and recycling. Necessary infrastructure facility for Solid Waste Management has been constructed in the Project Colony. Solid waste generated is safely collected and handed over to Nagar Panchayat, Pipalkoti for safe disposal. At construction sites and labour camps, separate bins are placed for biodegradable and non-biodegradable Solid waste. The waste so collected is handed over to Nagar Panchayat (Joshimath) at Dam Site and Nagar Panchayat (Pipalkoti) at Power House Site. Additionally, 01 nos. dumper has been provided to Nagar Panchayat, Pipalkoti for collection of Solid waste.

VII. Green Belt, EMP Cost, Fisheries and Wildlife Management

(i)	Based on the recommendation of Cumulative Impact Assessment and Carrying capacity study of river basin or as per the ToR conditions or minimum 15% of the average flow of four consecutive leanest months, whichever value is higher, shall be released as environmental flow.	E-flow shall be ensured after commissioning of the Project as per Gazette notification dtd. 10.10.2018 of MoWR, RD&GR, GoI.
(ii)	Detailed information on species composition particular to fish species from previous	The Fish Management Plan for VPHEP has been prepared through Indian Council of Agricultural Research – Directorate of Coldwater Fisheries

	study/literature be inventorized and proper management plan shall be prepared for insitu conservation in the streams , tributaries of river and the main river itself for which adequate budget provision be made and followed strictly.	Research (ICAR-DCFR), Bhimtal. Based on the findings of the survey/primary data, construction of Fish Hatchery has been recommended by ICAR-DCFR under the Fish Management Plan. Accordingly, construction of Fish Hatchery (Snow Trout) at site is under progress. In the EMP 2007, the Budget provisions for Fisheries Management was 65 Lakhs, which has been revised to 429 Lakhs in the EMP 2021, out of which 279 Lakhs has already been incurred till now.
(iii)	Wildlife Conservation Plan prepared for both core and buffer zones shall be implemented in consultation with the local State Forest Department.	The Project does not fall under Core & Buffer zone.
(iv)	To enrich the habitat of the project site, plantation shall be raised as envisaged in the EIA/EMP report. Plantation to be developed along the periphery of the reservoir in multi-layers with local indigenous species in consultation with the local State Forest Department.	Green Belt Development is being implemented under the Consultancy of noted Environmentalist Sh. Jagat Singh Chaudhary alias “Jungle”. Broad Leaved, Fast Growing plant species have also been planted as suggested by “Jungli Ji” and Forest Deptt. Till Dec’ 2021, cumulatively 8500 nos. (approx.) trees are planted. Maintenance of plants is being done regularly.
(v)	Compensatory afforestation programme shall be implemented as per the plan approved.	Compensatory Afforestation and other works (Roadside Plantation, construction of 4 feet high pillar etc.) is being done by the State Forest Department, GoUK. Requisite funds (Rupees 1.25 Cr) have already been deposited by THDCIL in CAMPA. Till Dec’21 Compensatory Afforesation works in 31.5 Ha area has been completed by State Forest Department.
(vi)	Fish ladder /pass as envisaged in the EIA/EMP report shall be provided for migration of fishes. Regular monitoring of this facility be carried out to ensure its effectiveness.	The Fish Management Plan for VPHEP has been prepared through Indian Council of Agricultural Research – Directorate of Coldwater Fisheries Research (ICAR-DCFR), Bhimtal. Based on the findings of the survey/primary data, construction of Fish Hatchery has been recommended by ICAR-DCFR as Fish ladder /pass was not found feasible. Accordingly construction of Fish Hatchery at site is under progress. Monitoring will be carried out after construction of fish hatchery.

VIII. Public hearing and Human health issues		
(i)	Resettlement & Rehabilitation plan be implemented in consultation with the State Govt. as approved by the State Govt.	<p>Land Compensation as assessed & decided by Land Acquisition Officer is being disbursed through Special Land Acquisition Officer (SLAO) in accordance to the provisions of LA Act. About 94% PAF's have received payment from SLAO.</p> <p>Besides SLAO Payment, Project is extending various other benefits to the Project Affected Families in accordance to the R&R Policy of Project, framed based on NRRP-2007 & considering the World Bank Operational Policy.</p> <p>The Affected Families are getting cash benefits in the form of various Grants.</p> <p>Apart from above, Project is complying with the Social Obligation & the details are annexed at Annexure A-1.</p>
(ii)	Budget provisions made for the community and social development plan including community welfare schemes shall be implemented in toto.	<p>The budget provision of Rs 1930 Lakh is already earmarked under Corporate Environment Responsibility.</p> <p>Details are annexed at Annexure A-1.</p>
(iii)	Preventive measures viz. fuming and spraying of mosquito control shall be done in and around the labour colonies, affected villages, stagnated pools, etc. Provisions be made to not to create any stagnated pools to avoid creation of breeding grounds of the vector borne diseases	Condition is being complied.
(iv)	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Condition is being complied.

(v)	Labour force to be engaged for construction works shall be examined thoroughly and adequately treated before issuing them work permit. Medical facilities shall be provided at the construction sites.	Pre-Employment Medical checkup is undertaken before induction and issuing Work Permit to the labours. Medical examination & vaccination of workmen is done from time to time. Treatment as & when required is also administered.
(vi)	Early Warning Telemetric system shall be installed in the upper catchment area of the project for advance intimation of flood forecast.	The process of installing Early Warning System is in advance stage of implementation and will be installed shortly. The details of the same are being regularly monitored by NHPC, which has been appointed as the Nodal Agency by MoP for EWS.
(vii)	Emergency preparedness plan be made for any eventuality of the dam failure and shall be implemented as per the Dam Break Analysis	Disaster Management Plan is already prepared for the Project.
IX. Corporate Environment Responsibility		
(i)	The project proponent shall comply with the provisions contained in this Ministry's OM vide F. No. 22-65 / 2017-IA. III dated 1st May, 2018, as applicable, regarding Corporate Environment Responsibility.	The provision of CER has been included under the EMP 2021 of VPHEP and being complied.
(ii)	Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, necessary trainings to the youths be provided for their long time livelihood generation.	An institutional mechanism has already been identified in the R&R Policy of VPHEP as under: “Employment opportunity, if any, 100% recruitment at the level of workman (including technical & ministerial) required to be done will be done first from the land oustees & in case of non availability of suitable candidate among the land oustees, the recruitment will be done from other residents of Uttarakhand state, whose names are registered on live register of any employment”. In addition, other provisions for economic/employment opportunities have been done as under: i. Employment with contracting agencies. ii. Allotment of shops/kiosk. iii. Award of petty contracts. iv. Vehicle hiring.

		<p>v. PCO/Internet kiosk. vi. News paper vendors. vii. Any other opportunity deemed fit by the project.</p> <p>Till date, 20 PAP's have been provided with permanent employment in THDCIL. In addition, around 1300 persons have been provided direct / indirect employment opportunities in main project construction company and through other modes as mentioned above.</p> <p>Moreover, Project has engaged an expert Agency M/s MRIDA Energy& Development Pvt. Ltd, New Delhi towards the work "Engagement of Specialized Agency to help Prepare Livelihood Development / Employment Generation Plan & its Implementation in relation to VPHEP" for supporting Livelihood Development / Employment Generation in the Project Affected villages.</p>
(iii)	<p>The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/ deviation/ violation of the environmental/ forest/ wildlife norms/ conditions. The company shall have defined system of reporting infringements/ deviation/ violation of the environmental/ forest/ wildlife norms/ conditions and/ or shareholders/ stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.</p>	<p>The Environment Policy of THDCIL is already under place and is also displayed at THDCIL website. Website Link of the Environment Policy is as below:</p> <p>https://thdc.co.in/content/environment-policy</p>
(iv)	<p>A separate Environmental Cell both at the project and company head quarter level, with</p>	<p>A separate Environment Deptt. is in place at Head quarter / Corporate office as well as at Project site.</p>

	qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.	The Deptt. is headed by a General Manager level at Corporate office, who reports to the Management of the organization. At Project level, the Deptt. is headed by an Addl. General Manger/Dy. General Manager level officer, who reports to the Head of Project. Both the Deptts. has been deployed with well qualified professionals and staff.
(v)	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/ Regional Office along with the Six Monthly Compliance Report.	The responsibility Matrix is already included in the EIA-EMP of the Project. The budget has been allocated for EMP shall not be diverted for any other purpose. The details of EMP implementation is attached at Annexure – I .
(vi)	Post EIA and SIA be prepared for the project through a third party and evaluation report be submitted to the Ministry after five years of commissioning of the project.	As stipulated, study to be conducted after 5 years of commissioning of the Project.
(vii)	Multi-Disciplinary Committee (MDC) be constituted with experts from Ecology, Forestry, Wildlife, Sociology, Soil Conservation, Fisheries, NGO, etc. to oversee implementation of various environmental safeguards proposed in EIA/EMP report during construction of the project. The monitoring report of the Committee shall be uploaded in the website of the Company.	Based on the suggestions of the Additional Director, MoEF&CC R.O. Dehradun (Jan 2017 visit), the Multi Disciplinary Committee has been re-constituted vide MoEF&CC letter no. J-12011/29/2007-IA-1 dated 10.10.2017. Also, a request letter for reconstitution of Multi-Disciplinary Committee is being sent to MoEF&CC as per as per EC dated 26.08.2021. MoM of MDC shall be uploaded in the website of the Company. Third meeting of MoM is still awaited from the Forest Department.
(viii)	Formation of Water User Association/ Co-operative be made involvement of the whole community be ensured for discipline use of	Not applicable

	available water for irrigation purposes	
X. Miscellaneous		
(i)	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by 5 prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.	<p>The EC has been published in two (02) local newspapers namely Amar Ujala & Hindustan on 01.09.2021. Copy of Advertisement is annexed at Annexure-06.</p> <p>The EC of the Project has been uploaded on the website of THDCIL. The website link of the EC is as below:</p> <p>https://thdc.co.in/sites/default/files/EC_2021_0.pdf</p>
(ii)	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	The copy of EC has been distributed to concerned DM, SDMs, DFOs and Heads of Local Bodies, Panchayats and Municipal Bodies. Copy of letter is annexed at Annexure -07 .
(iii)	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.	<p>Condition is being complied.</p> <p>https://www.thdc.co.in/content/environment-monitoring</p>
(iv)	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.	Condition is being complied.
(v)	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently	<p>The Environment Statement for each Financial Year is regularly being submitted to UKPCB.</p> <p>Last Environment Statement for FY 2020-21 was submitted to UKPCB vide letter dtd. 08.09.2021 and same is already uploaded on company's website.</p> <p>Link: https://www.thdc.co.in/content/environment-monitoring</p>

	and put on the website of the company.	
(vi)	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project. vii.	The Project is under active construction stage and is complying with all the stipulations / commitments / recommendations of the UKPCB, EIA-EMP as well as Public Hearing. Before commissioning of the Project, Ministry will be well informed including its RO.
(vii)	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	Being complied.
(viii)	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	Being complied.
(ix)	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC)	No expansion / modifications are planned in the Project.
(x)	Concealing factual data or submission of false/ fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Noted, shall be taken care.
(xi)	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory	Noted.
(xii)	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	Additional Conditions, if any, stipulated by the Ministry in the future shall be complied with.
(xiii)	The Regional Office of this Ministry shall monitor	Full cooperation/logistic support, as and when required, will be ensured by

	compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data/ information/ monitoring reports.	the Project.
(xiv)	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India/ High Courts and any other Court of Law relating to the subject matter.	Noted and being complied.
(xv)	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010	Appeal No. 21/2021 filed by Dr. Bharat Jhunjunwala before NGT on dated 08.10.2021. The first hearing is schedule on 31.03.2022 before Principle Bench of NGT.

**COMMITMENTS OF PROJECT DURING PUBLIC HEARING ON
09.01.2007**

S. No	ISSUES RAISED	STATUS AS ON DEC' 2021
1	Negative impact on Environment due to Project's Activities shall not take place and provisions shall be made as per the standards and approval from competent level shall be obtained.	As per Environmental studies undertaken, no significant impacts have been noticed. However, EMP envisages precautionary measures in order to prevent occurrence of negative impacts and action is being taken accordingly.
2	Geological structures around the project area shall not be affected, In this regard, permission from concerned department shall be taken after Detailed investigations and implementation of recommendations shall be ensured.	<ul style="list-style-type: none"> • Work is being undertaken only in areas where approval has been accorded by concerned authorities / agencies. • No Incidence or deviation noticed during Reporting period • Work in project area is done with due precautions such as mechanical excavation, controlled blasting, vibration monitoring etc.
3	Minimum water flow shall be ensured in river Alaknanda in such a way that the aquatic fauna is not adversely affected and also there is no impact on water quality.	MEFR shall be ensured as per latest Gazette Notification dtd. 10.10.2018 of MoWR,RD&GR, GoI.
4	There shall be no negative impact on Area's Forest resources, Flora, Fauna and life style of the people, due to Project's activities. In this regard, proper appropriate measures shall be taken and permission from concerned department shall be taken.	<ul style="list-style-type: none"> • Environment Management measures are properly taken care off. Entry of workforce is restricted in forest area. • Contractor is running Community mess for workforce. • Labors camps have been constructed at different locations and in isolation from local villagers. Meanwhile hired accommodation and community mess is being provided by contractor. • Nevertheless awareness programmes are being conducted to safeguard flora and fauna.
5	During all stages of Project, Local people shall be given job opportunities on priority basis.	<p>Based on the requirement, direct & indirect job opportunities are being extended among local people on priority basis at THDCIL & Contractors Level.</p> <p>Employment opportunities includes:</p>

		<ul style="list-style-type: none"> • Direct/Indirect job opportunities in THDCIL & with Contractor • Award of petty Contracts • Hiring of Vehicles • Allocation of Shops <p>Details are indicated at Annexure- A-1 under Employment.</p>
6	<p>Arrangements as per standards/policy shall be ensured for Project Affected Persons and Complete compensation of the acquired land shall be released to the concerned in time.</p>	<p>Land Compensation as assessed & decided by Land Acquisition Officer is being disbursed through Special Land Acquisition Officer (SLAO) in accordance to the provisions of LA Act. About 94% PAF's have received payment from SLAO.</p> <p>Besides SLAO Payment, Project is extending various other benefits to the Project Affected Families in accordance to the R&R Policy of Project, framed based on NRRP-2007 & considering the World Bank Operational Policy.</p> <p>The Affected Families are getting cash benefits in the form of various Grants.</p> <p>Apart from above, Project is complying with the Social Obligation & the details are as per Annexure- A-1.</p>
7	<p>The explosives in construction related activities shall be used only in avoidable situations in minimum required quantity.</p>	<ul style="list-style-type: none"> • Explosive used in avoidable situations only & in minimum quantity. • The controlled blasting is being undertaken involving non electric delay detonation technique • Blasting is done during day time only and at pre-notified time. Blast pattern & vibration is monitored by Central Institute of Mining and Fuel Research (CIMFR), Roorkee.
8	<p>Various facilities developed for the project shall be available for the people of the area and community development works shall be carried out in nearby villages.</p>	<p>Various facilities, awareness programmes etc. under Community Development have been made available for the Project Affected Villages including surrounding villages that comprise of;</p> <p>Construction of Pathways, Waiting shelters, Community buildings, Road widening, Hill side slope protection works, Solar street lights for villages, furniture & sports kits for community, water supply schemes, Teaching aids & furniture to schools, Construction of additional classrooms & toilets, promotion of sports & cultural activities, awareness camps on social & environmental aspects, health camps & awareness camps on HIV</p>

		AIDS, Pulse Polio etc.
9	A Comprehensive Disaster Management Plan shall be prepared for the project and the recommendations of the Plan shall be complied.	A Comprehensive Disaster Management Plan has been prepared.
10	THDC shall ensure the development of Affected villages Forest Rehabilitation, as per directions of Uttarakhand Government and with the help of Local People.	<ul style="list-style-type: none"> • The development activities like construction of pathway, minor water supply schemes etc. under affected villages are being executed through involvement of local people. • A provision of involving local population also exists under CAT plan.
11	Labors and their families, working in the construction works of the Project shall be properly vaccinated.	Medical examination of workforce is done prior to induction and properly vaccinated whenever needed. Medical camps are also organized for labors.
12	The proper development of religious places and Shamshan Ghats nearby the river bank shall be ensured.	The aspect has been covered under Community Development activities at Point No. 8 above.
13	The treatment of sewage generated by the Labors engaged in construction works of the Project shall be ensured by means of Septic Tank and soak pits.	At each camp site; One Community latrine per 20 persons was provided. Each camp is equipped with septic cum soak pits. The effluent is being disposed-off in septic cum soak tanks.
14	In order to provide all necessary Project related information to local people, a Public Information Centre shall be established and completed information shall be provided to the people.	Project has established Public Information Centers (PIC`s) at two locations under Project area. Necessary information related to Technical, Social & Environmental aspects are displayed and are available in PIC`s.
15	Complete details related to the project shall be published through Press and the views /opinions of the people shall properly solve.	<p>Project related information is being published in the local newspapers from time to time.</p> <p>Grievance Redress Mechanism resolves the issues of affected population in accordance to R&R Policy of VPHEP.</p>

ANNEXURE A-1

SOCIAL RESPONSIBILITIES:

CONSTRUCTION OF COMMON PROPERTY RESOURCES:

In addition to the compensation / Grants provided by SLAO/ THDCIL, common property resources like Pathways, Drinking water facility, Street Light, Primary School, Panchayat Ghar, Anganwari Kendra etc has been constructed at self resettlement sites.

LOSS OF FUEL & FODDER:

Each entitled house hold in the affected habitation is being paid 100 days of Minimum Agriculture Wages per year for a period of 5 yrs. On the recommendations of the World Bank, THDCIL has increased disbursement of Fuel & Fodder Grants from 5 years to 8 years. The amount is paid as a grant / assistance towards the loss of fuel and fodder. Around 2600 households are getting benefited through this assistance.

COMMUNITY DEVELOPMENT WORKS:

Under Community development various works have been taken up in the Project affected villages ie; construction of Pathways, Waiting shelters, Community buildings, Road widening, Hill side slope protection works, Solar street lights for villages, furniture & sports kits for community, water supply schemes, Teaching aids & furniture to schools, Construction of additional classrooms & toilets, promotion of sports & cultural activities, awareness camps on social & environmental aspects, health camps & awareness camps on HIV AIDS, Pulse Polio etc.

LIVELIHOOD ACTIVITIES:

Various activities have also been taken up to create livelihood opportunities. These are Dairy Development, Poultry, Tailoring & Stitching, Wool Knitting, Bee Keeping, Mushroom cultivation, vermin composting to promote organic farming, plantation etc. Awareness programs for Project affected people are also organized with the help of various State Govt. Deptts ie; Horticulture, Agriculture, Tourism, Animal Husbandry etc to give awareness on various schemes, subsidies, technical assistance etc to convince local youth to opt for self employed income generation activities. Around 500 beneficiaries are benefited through these programs.

On the recommendations of the World Bank, the work towards “Engagement of Specialized Agency to help Prepare Livelihood Development / Employment Generation Plan & its Implementation in relation to VPHEP” awarded on M/s Mirda Renergy & Development Pvt. Ltd, New Delhi commenced on 03.01.2020. The agency has completed Draft Base line survey/final base line survey & Submitted draft strategy report on 31.03.2021.

VOCATIONAL TRAININGS:

Apart from above, Vocational Trainings in hotel management, Excavator operator, Electrician, Fitter, Refrigerating & Air Conditioning and other skill enhancement activities, etc. are also

undertaken, in coordination with various institutes like GMR Foundation, Dr. Reddy Foundation, and Industrial Training Institutes in nearby areas. Around 300 beneficiaries are benefited through these programs.

EDUCATION:

To promote Education the Project has undertaken various activities ie; Scholarship to Project affected Meritorious/Poor/ Girls students, Construction of additional class rooms & toilets, providing teaching aids & uniform, Assistance for getting admission in ITIs, assistance to schools for cultural activities etc. Around 1400 students having approx. 800 girls have been benefited through scholarship program of THDCIL till Academic year 2018-19. The above assistance has been kept on hold as the schools are presently closed due to COVID-19 pandemic.

HEALTH:

The project is helping PAPs by facilitating them to THDCILs Dispensaries (Allopathy & Homeopathy) established in the Project Campus. OPD / IPD facility including medicines is given free of cost to PAPs. In addition to this Medical health camps are organized in project affected villages and Ambulance facility is also provided to the needy PAPs free of cost. The Health camps have been immensely beneficial for local population & nearby areas that include people from project affected villages of Project. Approx. 18000 beneficiaries having approx 5000 females have been administered treatment in Allopath and approx. 24600 benefited in Homeopathy.

1 Hopper Dumper Tipper TATA ACE 1.8 CUM has been handed over to Nagar Panchyat, Pipalkoti, District Chamoli on the 9th June, 2020 through SEWA, THDCIL, Rishikesh under Corporate Social Responsibility (CSR). The vehicle is used for transportation of Garbage to Disposal sites under their control. The Garbage generated at THDCIL, Project Complex, VPHEP is also being addressed by Nagar Panchayat, Pipalkoti.

EMPLOYMENT:

Keeping in view that the Hydro Projects are capital intensive with the State of the Art Technology and therefore do not offer much employment opportunity, particularly in unskilled category, the option of providing job with THDCIL as per policy is not considered as a rehabilitation option. However, as on date around 1118 persons have been provided direct / indirect employment opportunities in Project HCC / THDCIL/ Contractors/ Hiring of vehicles/Lease land for various purposes etc.

PROJECT: VISHNUGAD PIPALKOTI HYDRO ELECTIC PORJECT

List of Compnay Vehicle and Equipments

SI.No.	File No	Equipment	Log No	Registration No. Old	Registration No. New	Remarks
1	1	Tata Mobile 207 (Diesel Bouser)	T0500352	KA20C 0431	UK11CA 0685	
2	4	Tata Hyva Dumper	T0900926	UK09CA 0292	UK09CA 0292	
3	6	16 Ton Tata Hyva Dumper	T0900903	UK09CA 0347	UK09CA 0347	
4	7	Ambulance	T0500191	HR66A 5614	UK11PA 0124	
5	9	T.Mixer	T0100856	HP73 0582	UK11CA 0682	
6	10	T.Mixer	T0100864	HP73 0577	UK11CA 0681	
7	11	Water Tanker	T0100927	AP31TU 4008	UK11CA 0676	
8	12	Bus	T0500220	HP73 0198	UK11PA 0122	
9	13	Tata Tipper	T0901345	AS09A 3359	UK11CA 0680	
10	15	10 Ton Flat Bed Truck	T0100828	HP73 0484	UK11CA 0738	
11	16	Water Tanker	T0100731	HP73 0178	UK11CA 0673	
12	17	Scissor lift mounted	T0100956	SK04D 0714	UK11CA 0739	
13	19	TATA Motors Goods Carriage	T0100929	AP31TU 4006	UK11CA 0684	
14	20	T.Mixer	T0100922	AP31TU 2890	UK11CA 0671	
15	21	TATA Motors 407	T0500322	KA20B 9301	UK11CA 0737	
16	22	T.Mixer	T0100923	AP31TU 2887	UK11CA 0674	
17	23	Ambulance	T0500326	KA20B 9583	UK11PA 0121	
18	24	Diesel Bowser	T0100926	KA20C 2006	UK11CA 0672	
19	25	Hydraulic M Crane	H0900070	HP73 0180	UK11CA 0686	
20	27	Hydraulic M Crane	H0900106	KA20P 2618	UK11CA 0710	
21	28	Tata Safari	T0600407	HP25A 0978	UK11 6974	
22	29	Hydraulic Excavator Loader	H0400074	UK11CA 0627	UK11CA 0627	
23	30	Hydraulic Excavator Loader	H0400075	UK11CA 0625	UK11CA 0625	
24	31	Hydraulic Excavator Loader	H0400076	UK11CA 0626	UK11CA 0626	
25	32	Water Tanker	T0100939	AP31TU 6454	UK11CA 0683	
26	33	Truck	T0100941	SK03 4113	UK11CA 0705	
27	34	Vibratory Compactors	Q0500104	WB65B 1415	UK11 6947	
28	35	T.Mixer	T0100659	UK09CA 0283	UK09CA 0283	
29	37	Truck Close Body (Service Van)	T0100687	TN72Q 1005	UK11CA 0690	
30	38	Truck Open Body	T0101013	KA20C 0114	UK11CA 0694	
31	39	Tipper	T0901534	JK02AW 7906	UK11CA 0733	
32	40	Tipper	T0901533	JK02AW 7892	UK11CA 0754	
33	41	Tipper	T0901507	JK02AQ 1104	UK11CA 0732	
34	42	Vibratory Compactors	Q0500100	HP51B 9856	UK11CA 0706	
35	43	T.Mixer	T0100649	HR38P6627	UK11CA 0709	
36	45	Crane	H090094	HR38P 5480	UK11 7053	
37	47	Tata Truck	T0100790	WB65B 9078	UK11CA 0740	
38	48	Volvo Hyva	T0901418	SK04D 0717	UK11CA 0766	
39	49	Volvo Hyva	T0901423	SK04D 0719	UK11CA 0770	
40	50	Volvo Hyva	T0901422	SK04D 0723	UK11CA 0765	
41	51	Volvo Hyva	T0901438	SK04D 0724	UK11CA 0764	
42	52	Volvo Hyva	T0901437	SK04D 0725	UK11CA 0763	

STATUS OF R T O FORMALITIES FOR TYRE MOUNTED (self propelled) EQUIPMENTS

PROJECT: VISHNUGAD PIPALKOTI HYDRO ELECTIC PORJECT

List of Compnay Vehicle and Equipments

Sl.No.	File No	Equipment	Log No	Registration No. Old	Registration No. New	Remarks
43	53	Volvo Hyva	T0901432	SK04D 0728	UK11CA 0771	
44	54	Hyva	T0900979	SK04D 0748	UK11CA 0768	
45	56	Hyva	T0901509	JK02AQ 1103	UK11CA 0759	
46	57	Hyva	T0901506	JK02AQ 1105	UK11CA 0758	
47	58	Hyva	T0901508	JK02AQ 1107	UK11CA 0762	
48	59	TM	T0100648	WB59A 6645	UK11CA 0757	
49	60	Hyva	T0901511	JK02AQ 1102	UK11CA 0760	
50	63	Loader	H0800118	NL02L 5354	UK11CA 0773	
51	64	TM	T0101018	AR01F 0755	UK11CA 0831	
52	65	TM	T0101017	AR01F 0759	UK11CA 0832	
53	66	Water Tanker	T0100783	WB76 4350	UK11CA 0834	
54	68	JCB	H0400053	KA20P 5676	UK11CA 0837	
55	69	Loader	H0800147	KA20P 6007	UK11CA 0838	
56	70	Hyva	T0901091	NL02N0129	Waiting for fund	Re-Registration Under Process
57	71	Hyva	T0900958	NL02N0128	Waiting for fund	Re-Registration Under Process
58	72	Hyva	T0900976	NL02L8402	Waiting for fund	Re-Registration Under Process
59	74	Hyva	T0901093	NL02L8283	Waiting for fund	Re-Registration Under Process
60	75	Hyva	T0900963	NL02N0830	Waiting for fund	Re-Registration Under Process
61	78	Volvo Hyva	T09001436	SK04D 1003	UK11CA 0865	
62	79	Truck	T0100758	WB73A 8970	UK11CA 0870	
63	84	Transit Mixer	T0100724	RJ20GB 1006	Under Process	Re-Registration Under Process
64	86	T.Mixer	T0100757	WB73A 9056	Under Process	Re-Registration Under Process
65	87	Tata 407	T0500265	NL02N 7286	Under Process	Re-Registration Under Process
66	88	Innova	T0600368	HP49A 0619	UK11A 0198	done
67	89	LPT 1613	T0100932	AS09C 1355	Under Process	Re-Registration Under Process
68	90	Crane	G0700043	NL03A 7831	Under Process	Re-Registration Under Process
69	91	Ambulance	T0500320	HP25A 1364	UK11PA 0165	
70	92	Transit Mixer	T0101091	NEW	UK14CA 2996	
71	93	Transit Mixer	T0101092	NEW	UK14CA 2997	
72	94	Loader New	H0800163	NEW	UK11CA 1335	
73	95	Tata Chasis for Jet Pump	T0100575	RJ20GB 7096	Under Process	Re-Registration Under Process
74	96	Tipper Bharat Benz	T0901559	New	UK14CA 3056	
75	97	Tipper Bharat Benz	T0901560	New	UK14CA 3057	
76	98	Loader	H0800164	New	UK11CA 1336	

INSTALLATION REPORT

(AS ON 10.05.2018)

**Towards Installation of Solar Streets Light at Project Affected
& Surrounding Villages/Area of VPHEP.**

AGENCY:-

M/s Traurja Solutions LLP

First Floor, 2Gh35, Janta Colony,

Vaishali Nagar, Ajmer – 305001, Rajasthan.

P.O. No. THDC/VPHEP/P.Koti/MM/2k17-2k18/13, Dated. 28.02.2018

Sl. N.	Name of Village/Hamlet (s)	Solar Light Installed
1	Batula	02
2	Srikot	02
3	Kaudia	02
4	Math Jaretha	09
5	Guniyala	03
6	Bemru	02
7	Baunla	03
8	Durgapur	03
9	Agthala	04
10	Kiruli	03
11	Digoli	04
12	Gadora	02
13	Salla- Ratoli	03
14	Kamiyar	02
15	Luhan	03
16	Naurakh-Hospital	01
17	Naurakh-Vivekanand Hospital	01
18	Lanjhi	02
19	Pokhni	02
20	Dcongri Bharasi	03
21	Doongra	03
22	Saloor	03
23	Painee	03
24	Palla	04
25	Nauligwad (Ganai)	03

26	Dwing	03
27	Tapon	03
28	Salna	03
29	Bharki	04
30	Badginda-Talla Badginda (Urgam)	04
31	Bhenta	04
32	Lyari	04
33	Devgram Bansaa	04
34	Harsari & ST Families Relocation Site	03
35	Mehargon	01
36	Gadi (Approach Path at Daswana)	01
37	Mayapur (Near Sarswati Shishu Vidya Mandir)	01
38	Haat- Near Shri Laxmi Naryan Mandir	01
39	Haat- Near Shri Chandika Mandir	01
40	Haat- Near Shri Shiv Mandir	01
Total		110

Ankur Panchajanya
For- Traurja Solutions LLP

Authorised Signatory

Sr. Manager (CEE MMA)

Successfully installed

10/05/2018
Sr. Manager (Social)

देहरादून में आयोजित किया जायेगा।

क्र.सं.	पद का नाम	कुल पदों की संख्या	प्रतिमाह मानदेय
1	सेन्टर मैनेजर	01	30000.00
2	कॉमर्शियल एक्जीक्यूटिव	02	20000.00
3	स्टोरकीपर/लेखाकार	01	15000.00

आवेदन का प्रारूप व शर्तों की जानकारी cdodoon.gov.in व कार्यालय से प्राप्त की जा सकती है।

मुख्य विकास अधिकारी
देहरादून।



टीएचडीसी इंडिया लिमिटेड
THDC INDIA LIMITED

(श्रेणी-क, मिनी रत्न, सरकारी उपक्रम)
(SCHEDULE-A, Mini Ratna, Government PSU)

आवश्यक सूचना

सर्व साधारण को सूचित किया जाता है कि टीएचडीसी इंडिया लिमिटेड द्वारा पीपलकोटी, जिला चमोली, उत्तराखण्ड में निर्माणाधीन विष्णुगाड, पीपलकोटी जल विद्युत परियोजना (444 मेगावाट) को पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार द्वारा पत्रांक F.No. J-12011/10/2020-IA.I(R), दिनांक 26 अगस्त 2021 के माध्यम से पर्यावरण स्वीकृति प्रदान की गयी है। स्वीकृति पत्र की प्रति पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय के परिवेश पोर्टल की वेबसाइट <http://parivesh.nic.in/> एवं टीएचडीसी इंडिया लिमिटेड की वेबसाइट <https://www.thdc.co.in/> पर उपलब्ध है।

महाप्रबन्धक
सामाजिक एवं पर्यावरण
टीएचडीसी इंडिया लिमिटेड, ऋषिकेश

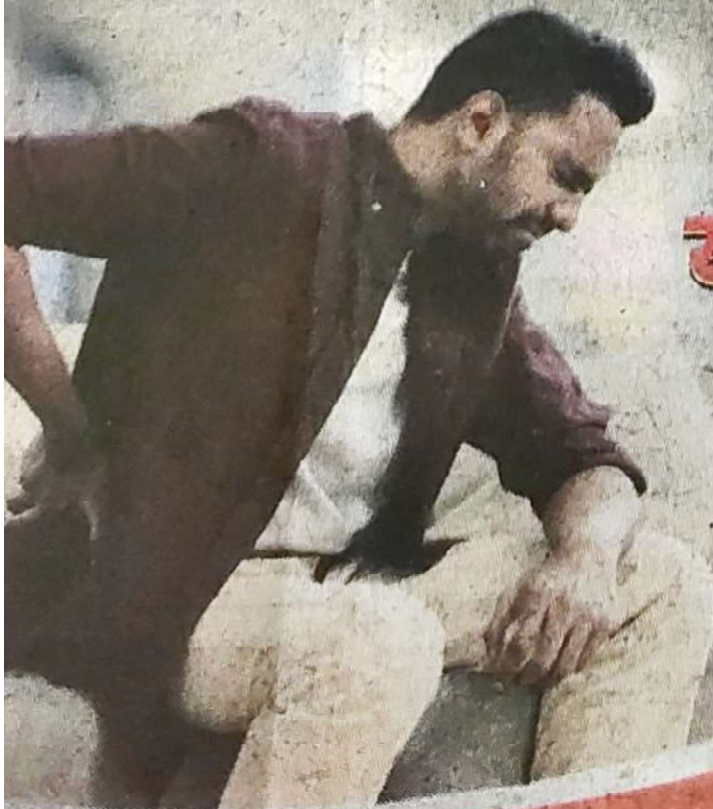
महंगा पड़ गया। स्कूटी स्टार्ट करने के बहाने युवक उसकी स्कूटी ले उड़ा। पीड़ित ने इसकी शिकायत थाना रायवाला में की। थाना पुलिस ने सोनीपत हरियाणा से आरोपी को स्कूटी समेत गिरफ्तार कर लिया।

थाना रायवाला पुलिस ने बताया कि बीते सोमवार को बल सिंह पुत्र मेहताब सिंह वासी नेपाली फार्म रायवाला ने ने में आकर तहरीर दी कि वह गनी एक्टिवा से घर जा रहा था। डेवे होटल के सामने उसकी टी बंद हो गई। पास खड़े एक के ने स्कूटी स्टार्ट करने को कहा, जिस पर उसने उसे स्टार्ट करने को दे दी, इस दौरान वह स्कूटी स्टार्ट कर के लेकर भाग गया। तहरीर के बाद थाना पुलिस ने विभिन्न मोटोर्स में मुकदमा दर्ज कर सोनीपत में जुट गई। मुखबिर की सूचना पर पुलिस टीम ने अंकित चिंटू निवासी इंद्रा नदी, बहालगढ़ थाना राई, सोनीपत, हरियाणा को तहरीर से स्कूटी समेत गिरफ्तार कर लिया।

अमर इजाला, देहरादून 01.09.2021

JAGAT PHARMA

दर्द में सिर्फ
यही काम आये



राजकाज की खबरें पेज आठ पर भी



टीएचडीसी इंडिया लिमिटेड
THDC INDIA LIMITED
(श्रेणी-क, मिनी एलन, सरकारी उपक्रम)
(SCHEDULE-A, Mini Ratna, Government PSU)

आवश्यक सूचना

सर्व साधारण को सूचित किया जाता है कि टीएचडीसी इंडिया लिमिटेड द्वारा पीपलकोटी, जिला चमोली, उत्तराखण्ड में निर्माणाधीन विष्णुगाड, पीपलकोटी जल विद्युत परियोजना (444 मेगावाट) को पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार द्वारा पत्रांक F.No. J-12011/10/2020-IA.I(R), दिनांक 26 अगस्त 2021 के माध्यम से पर्यावरण स्वीकृति प्रदान की गयी है। स्वीकृति पत्र की प्रति पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय के परिवेश पोर्टल की वेबसाइट <http://parivesh.nic.in/> एवं टीएचडीसी इंडिया लिमिटेड की वेबसाइट <https://www.thdc.co.in/> पर उपलब्ध है।

महाप्रबन्धक
सामाजिक एवं पर्यावरण
टीएचडीसी इंडिया लिमिटेड, ऋषिकेश

मथुरादत्त को महामंत्री संगठन की जिम्मेदार

देहरादून | विशेष संवाददाता



कांग्रेस संगठन में बदलाव करते हुए प्रदेश महामंत्री-संगठन की जिम्मेदारी अब वरिष्ठ प्रवक्ता मथुरादत्त जोशी को सौंप दी गई है। अभी तक ये जिम्मा संभाल रहे प्रदेश महामंत्री विजय सारस्वत को संगठन के कामकाज से मुक्त कर दिया गया है। साथ ही पार्टी ने सदस्यता अभियान कमेटी का गठन करते हुए इसकी कमान प्रदेश उपाध्यक्ष राजेंद्र भंडारी को सौंपी है। पार्टी के प्रदेश अध्यक्ष गणेश गोदियाल ने मंगलवार को इसके आदेश किए।

पार्टी के पूर्व प्रदेश अध्यक्ष किशोर उपाध्याय के कार्यकाल में कदावर रहे मथुरा और राजेंद्र, पूर्व प्रदेश अध्यक्ष

प्रीतम सिंह के कार्यकाल में मुख्य धारा से हट गए थे। पार्टी के वरिष्ठ नेताओं में शामिल जोशी कई अहम जिम्मेदारियां निभा चुके हैं। गोदियाल ने बताया कि सदस्यता अभियान समिति में राजेंद्र के साथ अनिल रावत, सुलेमान अली

व मोहन कुमार काला को नियुक्त बनाया है। नियुक्ति गोदियाल ने सभी को मिठाई रि बधाई दी। इस मौके पर प्रदेश जोत सिंह बिष्ट, महामंत्री नवी सुशील राठी, गरिमा महार दस मौजूद रहे।

एससी प्रकोष्ठ और

समिति का गठन जल्द : का प्रकोष्ठ की प्रदेश कार्यका घोषणा जल्द होगी। एससी अध्यक्ष राजकुमार ने का सूची गोदियाल को सौंप दी ने बताया कि सूची राज्य कर हाईकमान को भेज हाईकमान से अनुशास अध्यक्ष नियुक्त करने की गई है। पूर्व अध्यक्ष निधन के बाद से यह

हिन्दुस्तान देहरादून 01/09/2021



मात्र ₹4999*
डाउन पेमेंट

हेलीसेवा: श्रीनगर गौचर का किराया

हिन्दुस्तान

एक्सप्लूसिव

देहरादून | संजीव कंडवाल

बारिश में ऑलवेदर रोड जगह-जगह बाधित होने के बीच श्रीनगर व गौचर जाने वालों के लिए अच्छी खबर है। उड़ान सेवा के तहत इस रूट पर चलने वाली हेलीसेवा का किराया काफी घट गया है।

प्रदेश सरकार ने पिछले साल उड़ान योजना के तहत जौलीग्रंट

एयरपोर्ट से गौचर के लिए थी। इस सेव दून से टिह अंत में श्री करता था वाले यात्रियों का भी प श्रीनगर किराया यात्री तक लेवि किरा

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विष्णुगाड़-पीपलकोटी जल विद्युत परियोजना
VISHNUGAD-PIPALKOTI HYDRO ELECTRIC PROJECT
टीएचडीसी इण्डिया लिमिटेड
THDC INDIA LIMITED

(A Joint Venture of Govt. of India and Govt. of U.P.)

पत्रांक- टीएचडीसी/वीपीएचईपी/पर्या./एफ- 21 / 117

दिनांक 04/09/2021

सेवा में,

जिलाधिकारी महोदय,
जनपद चमोली, गोपेश्वर।

विषय – टीएचडीसीआईएल को विष्णुगाड़ पीपलकोटी जलविद्युत परियोजना के निर्माण हेतु प्राप्त पर्यावरणीय स्वीकृति के सम्बंध में।

महोदय,

उपरोक्त विषयक सादर सूचित किया जाना है कि टीएचडीसीआईएल द्वारा उत्तराखंड के चमोली जनपद में अलकनंदा नदी पर विश्व बैंक द्वारा वित्तपोषित विष्णुगाड़ पीपलकोटी जलविद्युत परियोजना (444 मेगावाट) के निर्माण हेतु वन एवं पर्यावरण मंत्रालय द्वारा पर्यावरणीय स्वीकृति दी जा चुकी है।

पर्यावरण एवं वन मंत्रालय द्वारा प्राप्त स्वीकृति के बिंदु संख्या 5 X(ii) के अनुसार पर्यावरण स्वीकृति की प्रति स्थानीय प्रशासन को उपलब्ध की जानी है तथा सम्बंधित कार्यालय द्वारा 30 दिनों तक उक्त सूचना को अपने कार्यालय के सूचनापट्ट पर प्रसारित/प्रचालित किया जाना है, जिसकी प्रतिलिपि सादर सूचनार्थ संलग्न है।

अतः आपसे निवेदन है कि अधीनस्थ अधिकारी को उक्त पर्यावरणीय स्वीकृति की प्रतिलिपि को अपने कार्यालय की सूचनापट्ट पर प्रचालित करने हेतु निर्देशित करने की कृपा किजियेगा।

धन्यवाद,

संलग्नक: उपरोक्तानुसार

भवदीय

स. गुप्ता
4.9.2021
(संदीप गुप्ता)

अपर महाप्रबंधक पर्यावरण

प्रतिलिपि:-

1- अधिशासी निदेशक (परियोजना), वीपीएचईपी, टीएचडीसीआईएल, पीपलकोटी महोदय को सादर सूचनार्थ प्रेषित।

अलकनन्दापुरम, सियासैण, पीपलकोटी, चमोली, फोन : 01372-256230, 256200, फैक्स: 01372-256203
 Alaknandapuram, Siyasain, Pipalkoti, Chamoli, Tel.: 01372-256230, 256200, Fax : 01372-256203

पंजीकृत कार्यालय : भागीरथी भवन, (टॉप टेरिस) भागीरथीपुरम, टिहरी गढ़वाल-249001
 Regd. Office : BHAGIRATHI BHAWAN, (TOP TERRACE) BHAGIRATHIPURAM, TEHRI GARHWAL-249001



विष्णुगाड़-पीपलकोटी जल विद्युत परियोजना
VISHNUGAD-PIPALKOTI HYDRO ELECTRIC PROJECT

टीएचडीसी इण्डिया लिमिटेड
THDC INDIA LIMITED

(A Joint Venture of Govt. of India and Govt. of U.P.)

पत्रांक- टीएचडीसी/वीपीएचईपी/पर्या./एफ- 21 / 112

दिनांक 04/09/2021

सेवा में,

उप जिलाधिकारी महोदय,
तहसील चमोली।

विषय – टीएचडीसीआईएल को विष्णुगाड़ पीपलकोटी जलविद्युत परियोजना के निर्माण हेतु प्राप्त पर्यावरणीय स्वीकृति के सम्बंध में।

महोदय,

उपरोक्त विषयक सादर सूचित किया जाना है कि टीएचडीसीआईएल द्वारा उत्तराखंड के चमोली जनपद में अलकनंदा नदी पर विश्व बैंक द्वारा वित्तपोषित विष्णुगाड़ पीपलकोटी जलविद्युत परियोजना (444 मेगावाट) के निर्माण हेतु वन एवं पर्यावरण मंत्रालय द्वारा पर्यावरणीय स्वीकृति दी जा चुकी है।

पर्यावरण एवं वन मंत्रालय द्वारा प्राप्त स्वीकृति के बिंदु संख्या 5 X(ii) के अनुसार पर्यावरण स्वीकृति की प्रति स्थानीय प्रशासन को उपलब्ध की जानी है तथा सम्बंधित कार्यालय द्वारा 30 दिनों तक उक्त सूचना को अपने कार्यालय के सूचनापट्ट पर प्रसारित/प्रचालित किया जाना है, जिसकी प्रतिलिपि सादर सूचनार्थ संलग्न है।

अतः आपसे निवेदन है कि अधीनस्थ अधिकारी को उक्त पर्यावरणीय स्वीकृति की प्रतिलिपि को अपने कार्यालय की सूचनापट्ट पर प्रचालित करने हेतु निर्देशित करने की कृपा किजियेगा।

धन्यवाद,

संलग्नक: उपरोक्तानुसार

भवदीय

स. गुप्ता, 4.9.2021
(संदीप गुप्ता)

अपर महाप्रबंधक पर्यावरण

प्रतिलिपि:-

1- अधिशासी निदेशक (परियोजना), वीपीएचईपी, टीएचडीसीआईएल, पीपलकोटी महोदय को सादर सूचनार्थ प्रेषित।

अलकनन्दापुरम, सियासैण, पीपलकोटी, चमोली, फोन : 01372-256230, 256200, फैक्स: 01372-256203
Alaknandapuram, Siyasain, Pipalkoti, Chamoli, Tel.: 01372-256230, 256200, Fax : 01372-256203

पंजीकृत कार्यालय : भागीरथी भवन, (टॉप टेरिस) भागीरथीपुरम, टिहरी गढ़वाल-249001

Regd. Office : BHAGIRATHI BHAWAN, (TOP TERRACE) BHAGIRATHIPURAM, TEHRI GARHWAL-249001



विष्णुगाड़-पीपलकोटी जल विद्युत परियोजना
VISHNUGAD-PIPALKOTI HYDRO ELECTRIC PROJECT
टीएचडीसी इण्डिया लिमिटेड
THDC INDIA LIMITED

(A Joint Venture of Govt. of India and Govt. of U.P.)

पत्रांक- टीएचडीसी/वीपीएचईपी/पर्या./एफ- 21 / III

दिनांक 04/09/2021

सेवा में,

उप जिलाधिकारी महोदय,
तहसील जोशीमठ।

विषय – टीएचडीसीआईएल को विष्णुगाड़ पीपलकोटी जलविद्युत परियोजना के निर्माण हेतु प्राप्त पर्यावरणीय स्वीकृति के सम्बंध में।

महोदय,

उपरोक्त विषयक सादर सूचित किया जाना है कि टीएचडीसीआईएल द्वारा उत्तराखंड के चमोली जनपद में अलकनंदा नदी पर विश्व बैंक द्वारा वित्तपोषित विष्णुगाड़ पीपलकोटी जलविद्युत परियोजना (444 मेगावाट) के निर्माण हेतु वन एवं पर्यावरण मंत्रालय द्वारा पर्यावरणीय स्वीकृति दी जा चुकी है।

पर्यावरण एवं वन मंत्रालय द्वारा प्राप्त स्वीकृति के बिंदु संख्या 5 X(ii) के अनुसार पर्यावरण स्वीकृति की प्रति स्थानीय प्रशासन को उपलब्ध की जानी है तथा सम्बंधित कार्यालय द्वारा 30 दिनों तक उक्त सूचना को अपने कार्यालय के सूचनापट्ट पर प्रसारित/प्रचालित किया जाना है, जिसकी प्रतिलिपि सादर सूचनार्थ संलग्न है।

अतः आपसे निवेदन है कि अधीनस्थ अधिकारी को उक्त पर्यावरणीय स्वीकृति की प्रतिलिपि को अपने कार्यालय की सूचनापट्ट पर प्रचालित करने हेतु निर्देशित करने की कृपा किजियेगा।

धन्यवाद,

संलग्नक: उपरोक्तानुसार

भवदीय

स. गुप्ता
4.9.2021
(संदीप गुप्ता)

अपर महाप्रबंधक पर्यावरण

प्रतिलिपि:-

1- अधिशासी निदेशक (परियोजना), वीपीएचईपी, टीएचडीसीआईएल, पीपलकोटी महोदय को सादर सूचनार्थ प्रेषित।

अलकनन्दापुरम, सियासैण, पीपलकोटी, चमोली, फोन : 01372-256230, 256200, फैक्स: 01372-256203
Alaknandapuram, Siyasain, Pipalkoti, Chamoli, Tel.: 01372-256230, 256200, Fax : 01372-256203

पंजीकृत कार्यालय : भागीरथी भवन, (टॉप टेरिस) भागीरथीपुरम, टिहरी गढ़वाल-249001

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विष्णुगाड़-पीपलकोटी जल विद्युत परियोजना
VISHNUGAD-PIPALKOTI HYDRO ELECTRIC PROJECT
टीएचडीसी इण्डिया लिमिटेड
THDC INDIA LIMITED
(A Joint Venture of Govt. of India and Govt. of U.P.)

पत्रांक- टीएचडीसी/वीपीएचईपी/पर्या./एफ- 21 / 113

दिनांक 04/09/2021

सेवा में,

प्रभागीय वनाधिकारी,
अलकनंदा भूमि संरक्षण वन प्रभाग,
जोशीमठ, चमोली।

विषय – टीएचडीसीआईएल को विष्णुगाड़ पीपलकोटी जलविद्युत परियोजना के निर्माण हेतु प्राप्त पर्यावरणीय स्वीकृति के सम्बंध में।

महोदय,

उपरोक्त विषयक सादर सूचित किया जाना है कि टीएचडीसीआईएल द्वारा उत्तराखंड के चमोली जनपद में अलकनंदा नदी पर विश्व बैंक द्वारा वित्तपोषित विष्णुगाड़ पीपलकोटी जलविद्युत परियोजना (444 मेगावाट) के निर्माण हेतु वन एवं पर्यावरण मंत्रालय द्वारा पर्यावरणीय स्वीकृति दी जा चुकी है।

पर्यावरण एवं वन मंत्रालय द्वारा प्राप्त स्वीकृति के बिंदु संख्या 5 X(ii) के अनुसार पर्यावरण स्वीकृति की प्रति स्थानीय प्रशासन को उपलब्ध की जानी है तथा सम्बंधित कार्यालय द्वारा 30 दिनों तक उक्त सूचना को अपने कार्यालय के सूचनापट्ट पर प्रसारित/प्रचालित किया जाना है, जिसकी प्रतिलिपि सादर सूचनार्थ संलग्न है।

अतः आपसे निवेदन है कि अधीनस्थ अधिकारी को उक्त पर्यावरणीय स्वीकृति की प्रतिलिपि को अपने कार्यालय की सूचनापट्ट पर प्रचालित करने हेतु निर्देशित करने की कृपा किजियेगा।

धन्यवाद,

संलग्नक: उपरोक्तानुसार

भवदीय

स. गुप्ता 4.9.2021
(संदीप गुप्ता)

अपर महाप्रबंधक पर्यावरण

प्रतिलिपि:-

1-अधिशासी निदेशक (परियोजना), वीपीएचईपी, टीएचडीसीआईएल, पीपलकोटी महोदय को सादर सूचनार्थ प्रेषित।

अलकनन्दापुरम, सियासैण, पीपलकोटी, चमोली, फोन : 01372-256230, 256200, फैक्स: 01372-256203
Alaknandapuram, Siyasain, Pipalkoti, Chamoli, Tel.: 01372-256230, 256200, Fax : 01372-256203

पंजीकृत कार्यालय : भागीरथी भवन, (टॉप टेरिस) भागीरथीपुरम, टिहरी गढ़वाल-249001

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विष्णुगाड़-पीपलकोटी जल विद्युत परियोजना
VISHNUGAD-PIPALKOTI HYDRO ELECTRIC PROJECT
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पत्रांक- टीएचडीसी/वीपीएचईपी/पर्या./एफ- 21 / 116

दिनांक 04/09/2021

सेवा में,

प्रभागीय वनाधिकारी,
बद्रीनाथ वन प्रभाग,
गोपेश्वर, चमोली।

विषय – टीएचडीसीआईएल को विष्णुगाड़ पीपलकोटी जलविद्युत परियोजना के निर्माण हेतु प्राप्त पर्यावरणीय स्वीकृति के सम्बंध में।

महोदय,

उपरोक्त विषयक सादर सूचित किया जाना है कि टीएचडीसीआईएल द्वारा उत्तराखंड के चमोली जनपद में अलकनंदा नदी पर विश्व बैंक द्वारा वित्तपोषित विष्णुगाड़ पीपलकोटी जलविद्युत परियोजना (444 मेगावाट) के निर्माण हेतु वन एवं पर्यावरण मंत्रालय द्वारा पर्यावरणीय स्वीकृति दी जा चुकी है।

पर्यावरण एवं वन मंत्रालय द्वारा प्राप्त स्वीकृति के बिंदु संख्या 5 X(ii) के अनुसार पर्यावरण स्वीकृति की प्रति स्थानीय प्रशासन को उपलब्ध की जानी है तथा सम्बंधित कार्यालय द्वारा 30 दिनों तक उक्त सूचना को अपने कार्यालय के सूचनापट्ट पर प्रसारित/प्रचालित किया जाना है, जिसकी प्रतिलिपि सादर सूचनार्थ संलग्न है।

अतः आपसे निवेदन है कि अधीनस्थ अधिकारी को उक्त पर्यावरणीय स्वीकृति की प्रतिलिपि को अपने कार्यालय की सूचनापट्ट पर प्रचालित करने हेतु निर्देशित करने की कृपा किजियेगा।

धन्यवाद,

संलग्नक: उपरोक्तानुसार

भवदीय

स. गुप्ता
4.9.2021
(संदीप गुप्ता)

अपर महाप्रबंधक पर्यावरण

प्रतिलिपि:-

1-अधिशासी निदेशक (परियोजना), वीपीएचईपी, टीएचडीसीआईएल, पीपलकोटी महोदय को सादर सूचनार्थ प्रेषित।

अलकनन्दापुरम, सियासैण, पीपलकोटी, चमोली, फोन : 01372-256230, 256200, फैक्स: 01372-256203
Alaknandapuram, Siyasain, Pipalkoti, Chamoli, Tel.: 01372-256230, 256200, Fax : 01372-256203

पंजीकृत कार्यालय : भागीरथी भवन, (टॉप टेरिस) भागीरथीपुरम, टिहरी गढ़वाल-249001

Regd. Office : BHAGIRATHI BHAWAN, (TOP TERRACE) BHAGIRATHIPURAM, TEHRI GARHWAL-249001



विष्णुगाड़-पीपलकोटी जल विद्युत परियोजना
VISHNUGAD-PIPALKOTI HYDRO ELECTRIC PROJECT
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THDC INDIA LIMITED

(A Joint Venture of Govt. of India and Govt. of U.P.)

पत्रांक- टीएचडीसी/वीपीएचईपी/पर्या./एफ- 21 / 115

दिनांक 04/09/2021

सेवा में,

प्रभागीय वनाधिकारी,
केदारनाथ वन प्रभाग,
गोपेश्वर, चमोली।

विषय – टीएचडीसीआईएल को विष्णुगाड़ पीपलकोटी जलविद्युत परियोजना के निर्माण हेतु प्राप्त पर्यावरणीय स्वीकृति के सम्बंध में।

महोदय,

उपरोक्त विषयक सादर सूचित किया जाना है कि टीएचडीसीआईएल द्वारा उत्तराखंड के चमोली जनपद में अलकनंदा नदी पर विश्व बैंक द्वारा वित्तपोषित विष्णुगाड़ पीपलकोटी जलविद्युत परियोजना (444 मेगावाट) के निर्माण हेतु वन एवं पर्यावरण मंत्रालय द्वारा पर्यावरणीय स्वीकृति दी जा चुकी है।

पर्यावरण एवं वन मंत्रालय द्वारा प्राप्त स्वीकृति के बिंदु संख्या 5 X(ii) के अनुसार पर्यावरण स्वीकृति की प्रति स्थानीय प्रशासन को उपलब्ध की जानी है तथा सम्बंधित कार्यालय द्वारा 30 दिनों तक उक्त सूचना को अपने कार्यालय के सूचनापट्ट पर प्रसारित/प्रचालित किया जाना है, जिसकी प्रतिलिपि सादर सूचनार्थ संलग्न है।

अतः आपसे निवेदन है कि अधीनस्थ अधिकारी को उक्त पर्यावरणीय स्वीकृति की प्रतिलिपि को अपने कार्यालय की सूचनापट्ट पर प्रचालित करने हेतु निर्देशित करने की कृपा किजियेगा।

धन्यवाद,

संलग्नक: उपरोक्तानुसार

भवदीय

स. सुपु. 4.9.2021
(संदीप गुप्ता)

अपर महाप्रबंधक पर्यावरण

प्रतिलिपि:-

1- अधिशासी निदेशक (परियोजना), वीपीएचईपी, टीएचडीसीआईएल, पीपलकोटी महोदय को सादर सूचनार्थ प्रेषित।

अलकनन्दापुरम, सियासैण, पीपलकोटी, चमोली, फोन : 01372-256230, 256200, फैक्स: 01372-256203
Alaknandapuram, Siyasain, Pipalkoti, Chamoli, Tel.: 01372-256230, 256200, Fax : 01372-256203

पंजीकृत कार्यालय : भागीरथी भवन, (टॉप टेरिस) भागीरथीपुरम, टिहरी गढ़वाल-249001

Regd. Office : BHAGIRATHI BHAWAN, (TOP TERRACE) BHAGIRATHIPURAM, TEHRI GARHWAL-249001



विष्णुगाड़-पीपलकोटी जल विद्युत परियोजना
VISHNUGAD-PIPALKOTI HYDRO ELECTRIC PROJECT
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पत्रांक- टीएचडीसी/वीपीएचईपी/पर्या./एफ- 21 / 114

दिनांक 04/09/2021

सेवा में,

प्रभागीय वनाधिकारी,
नंदा देवी बायोस्फिर रिजर्व,
जोशीमठ, चमोली।

विषय – टीएचडीसीआईएल को विष्णुगाड़ पीपलकोटी जलविद्युत परियोजना के निर्माण हेतु प्राप्त पर्यावरणीय स्वीकृति के सम्बंध में।

महोदय,

उपरोक्त विषयक सादर सूचित किया जाना है कि टीएचडीसीआईएल द्वारा उत्तराखंड के चमोली जनपद में अलकनंदा नदी पर विश्व बैंक द्वारा वित्तपोषित विष्णुगाड़ पीपलकोटी जलविद्युत परियोजना (444 मेगावाट) के निर्माण हेतु वन एवं पर्यावरण मंत्रालय द्वारा पर्यावरणीय स्वीकृति दी जा चुकी है।

पर्यावरण एवं वन मंत्रालय द्वारा प्राप्त स्वीकृति के बिंदु संख्या 5 X(ii) के अनुसार पर्यावरण स्वीकृति की प्रति स्थानीय प्रशासन को उपलब्ध की जानी है तथा सम्बंधित कार्यालय द्वारा 30 दिनों तक उक्त सूचना को अपने कार्यालय के सूचनापट्ट पर प्रसारित/प्रचालित किया जाना है, जिसकी प्रतिलिपि सादर सूचनार्थ संलग्न है।

अतः आपसे निवेदन है कि अधीनस्थ अधिकारी को उक्त पर्यावरणीय स्वीकृति की प्रतिलिपि को अपने कार्यालय की सूचनापट्ट पर प्रचालित करने हेतु निर्देशित करने की कृपा किजियेगा।

धन्यवाद,

संलग्नक: उपरोक्तानुसार

भवदीय

स. गुप्ता
(संदीप गुप्ता) 4.9.2021

अपर महाप्रबंधक पर्यावरण

प्रतिलिपि:-

1-अधिशासी निदेशक (परियोजना), वीपीएचईपी, टीएचडीसीआईएल, पीपलकोटी महोदय को सादर सूचनार्थ प्रेषित।

अलकनन्दापुरम, सियासैण, पीपलकोटी, चमोली, फोन : 01372-256230, 256200, फैक्स: 01372-256203
Alaknandapuram, Siyasain, Pipalkoti, Chamoli, Tel.: 01372-256230, 256200, Fax : 01372-256203

पंजीकृत कार्यालय : भागीरथी भवन, (टॉप टेरिस) भागीरथीपुरम, टिहरी गढ़वाल-249001

Regd. Office : BHAGIRATHI BHAWAN, (TOP TERRACE) BHAGIRATHIPURAM, TEHRI GARHWAL-249001



विष्णुगाड़-पीपलकोटी जल विद्युत परियोजना
VISHNUGAD-PIPALKOTI HYDRO ELECTRIC PROJECT
टीएचडीसी इण्डिया लिमिटेड
THDC INDIA LIMITED
(A Joint Venture of Govt. of India and Govt. of U.P.)

पत्रांक- टीएचडीसी/वीपीएचईपी/पर्या./एफ- 21 / 118

दिनांक 04/09/2021

सेवा में,

वितरण सूची अनुसार।

विषय – टीएचडीसीआईएल को विष्णुगाड़ पीपलकोटी जलविद्युत परियोजना के निर्माण हेतु प्राप्त पर्यावरणीय स्वीकृति के सम्बंध में।

महोदय,

उपरोक्त विषयक सादर सूचित किया जाना है कि टीएचडीसीआईएल द्वारा उत्तराखंड के चमोली जनपद में अलकनंदा नदी पर विश्व बैंक द्वारा वित्तपोषित विष्णुगाड़ पीपलकोटी जलविद्युत परियोजना (444 मेगावाट) के निर्माण हेतु वन एवं पर्यावरण मंत्रालय द्वारा पर्यावरणीय स्वीकृति दी जा चुकी है, जिसकी प्रतिलिपि सादर सूचनार्थ संलग्न है।

धन्यवाद,

संलग्नक: उपरोक्तानुसार

भवदीय

स. गुप्ता
(संदीप गुप्ता) 4.9.2021

अपर महाप्रबंधक पर्यावरण

प्रतिलिपि:-

- 1- अध्यक्ष, जिला पंचायत चमोली, गोपेश्वर।
- 2- अध्यक्ष, नगर पालिका, गोपेश्वर/अध्यक्ष, नगर पालिका, जोशीमठ/अध्यक्ष, नगर पंचायत, पीपलकोटी।
- 3- ब्लाक प्रमुख दशोली/जोशीमठ।
- 4- जिला पंचायत सदस्य/ क्षेत्र पंचायत सदस्य/पार्षद नगर पंचायत ग्राम:- हाट, जैसाल, बाटुला, नौरख, नौली ग्वाड, तेंदुली चक हाट, गुनियाला, बेमरु, मठ, गाडी, बौला (दुर्गापुर), तपोण, द्विग, नौलीगाड, पल्ला, हेलंग, सलूड, डुंग्रा, डुंगरी भरोसी, पेनी, थेंग, सलना, गुलाबकोटी, ल्यारी, भेंटा, भर्की, देवग्राम एवं उर्गमा।
- 5- ग्राम प्रधान/ वार्ड सदस्य ग्राम ग्राम:- हाट, जैसाल, बाटुला, नौरख, नौली ग्वाड, तेंदुली चक हाट, गुनियाला, बेमरु, मठ, गाडी, बौला (दुर्गापुर), तपोण, द्विग, नौलीगाड, पल्ला, हेलंग, सलूड, डुंग्रा, डुंगरी भरोसी, पेनी, थेंग, सलना, गुलाबकोटी, ल्यारी, भेंटा, भर्की, देवग्राम एवं उर्गमा।

अलकनन्दापुरम, सियासैन, पीपलकोटी, चमोली, फोन : 01372-256230, 256200, फैक्स: 01372-256203
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पंजीकृत कार्यालय : भागीरथी भवन, (टॉप टेरिस) भागीरथीपुरम, टिहरी गढ़वाल-249001

Regd. Office : BHAGIRATHI BHAWAN, (TOP TERRACE) BHAGIRATHIPURAM, TEHRI GARHWAL-249001

For kind info of GM (CP) - 25/09/06
GOVERNMENT OF INDIA
CENTRAL ELECTRICITY AUTHORITY
SEWA BHAWAN : R.K. PURAM
NEW DELHI - 110066

Sanjay Kumar
21/9/06
(SANJAY KUMAR)

No.2/UTR/1/03-CEA/PAC/1316-47

Dated the 21 September, 2006

OFFICE MEMORANDUM

Subject: 4x111 MW (444 MW) Vishnugad Pipal Koti Hydro-Electric Project in Uttaranchal by M/s Tehri Hydro-Development Corporation Limited (THDC) at an Estimated Present Day Cost (at March, 2006 Price Level) of US \$ 13.5 Million + Rs.2031.64 Crores including IDC & FC of Rs.204.70 Crores at Foreign Exchange Rate of 1 US \$ = Rs.44.30 - Issue of Concurrence.

M/s Tehri Hydro Development Corporation Limited (THDC) submitted the Detailed Project Report (DPR) of the generation scheme of Vishnugad Pipalkoti Hydro Electric Project 444 MW (4 x 111 MW) vide their letter No. THDC/RKSH/VPP/C/3900 dated 28.3.2006 which was returned on 13.4.2006 due to non-submission of certain inputs / clearances and taken up for examination on 3.8.2006 after the submission of clarifications / inputs / clearances. The proposal for establishment of Vishnugad Pipalkoti Hydro-Electric Project in Chamoli District of Uttaranchal proposed by THDC, was considered in the 281st Meeting of CEA held on 10.8.2006 at Sewa Bhawan, R.K. Puram, New Delhi-110066 based on the Agenda note circulated vide CEA letter No.3/106/281st/2006/CEA/PAC/1459-82 dated 9.8.2006.

2. In exercise of the powers vested with the Authority under Section 8 of the Electricity Act, 2003, the Central Electricity Authority accords Concurrence to the aforesaid scheme at an Estimated Present Day Cost (at March, 2006 Price Level) of US \$ 13.5 Million + Rs.2031.64 Crores including IDC & FC of Rs.204.70 Crores with the following stipulations :

- (i) the completed cost of the scheme shall not exceed the above cost except on account of:-
 - (a) Variation in Foreign Exchange Rate in respect of US \$ only.
 - (b) Change in rates of Indian taxes and duties such as custom duty, excise duty, sales tax, works tax & service tax and additional taxes and duties levied, if any, subsequent to issue of this O.M.
 - (c) Change in Indian Law resulting in change in cost.
 - (d) Variation in actual interest rate.
 - (e) Geological surprises as mentioned under Para 4 (vii).
 - (f) Escalation during construction period.

- (ii) Interest During Construction (IDC) and financing charges (FC) shall be as per actuals but not exceeding the amount as indicated at Annex-I except for the pro-rata variation in hard cost as stated in clause 2 (i) (a), (b) & (c) of this O.M.

3. The abstract of the Estimated Present Day Cost (at March, 2006 Price Level) approved by CEA, is furnished at *Annex-I*. The summary of tentative Financial Package, as submitted by THDC and considered by CEA and the salient Features of the schemes are given in *Annex II and III* respectively.

4. This Concurrence is subject to the fulfillment of the following conditions:

- (i) The following conditions/circumstances shall not be a re-opener of the Present Day Cost / Concurrence :-

- (a) Non-acquisition of land.
(b) Non-finalisation of power purchase agreement.

(ii) THDC shall take into account the suggestions of CWC on Hydrology, Hydel Civil Design, Dam & Gates Design, Foundation Engineering & Seismic Aspects and Construction Material, etc during the detailed design as given in *Annex-IV*.

(iii) THDC shall establish G&D and sedimentation site to measure silt content in river in consultation with CWC. Collection of data shall continue to be maintained on long term basis even after the commissioning of the project. THDC shall also establish Hydro metrological sites at the project in consultation with CWC and IMD.

(iv) THDC shall obtain clearance from Ministry of Water Resources as the project is located on Alaknanda river, a tributary of Ganga river, which is an international river between India and Bangladesh having international aspect.

THDC shall also ensure that the losses due to evaporation or other consumptive use, if any are quantified and account this consumptive use against the share of Uttaranchal.

(v) THDC shall take into account the suggestions of Geological Survey of India as given at *Annex-V* and shall complete balance explorations as per programme given in *Annex-VI*. All explorations shall be completed by January, 2007. THDC shall not finalise the designs unless these investigations are completed.

(vi) THDC shall obtain environmental clearance of the project from MOEF. A provision of Rs 26.8 crores has been considered in the cost estimates of civil works, under the head 'Environment and Ecology'.



Suitable rehabilitation and re-settlement plan shall be prepared by THDC and submitted to MOE&F for obtaining their clearance. In case, Schedule Tribe population is affected, clearance from Ministry of Social Justice and Empowerment/ Tribal Affairs shall be obtained.

- (vii) In case any geological surprises in underground works are encountered, THDC shall systematically maintain record of geological surprises encountered and treatment provided. THDC shall request MOP to constitute an Expert Committee consisting of representatives of Government of Uttaranchal, Geological Survey of India, CWC and CEA. Once a Committee is constituted THDC shall submit their proposal for the enhanced cost to this Expert Committee which in turn shall examine and recommend the cost thereof subject a ceiling of 10% of cost of the respective underground works.
 - (viii) THDC shall identify the beneficiaries of power from the project and sign PPA with in a period of 6 months.
 - (ix) In case changes are made in design parameters during construction due to site conditions or otherwise, the same shall be intimated and got concurred from the Authority before such changes are implemented by THDC.
 - (x) No increase in civil cost of the project shall be allowed at a later date on account of variation in the quantities of civil works except on account of geological surprises as approved by Expert Committee to be constituted by Ministry of Power, Govt. of India.
 - (xi) The capital cost includes Rs.36.46 crores sanctioned by MoP for Stage I & II activities.
 - (xii) Ash and ash based products shall be used in the construction of various works in accordance with MOE&F notification dated 14.9.99 and its amendments notification dated 27.8.2003 to the extent possible based on the surveys/investigations for construction materials.
 - (xiii) THDC shall deploy modern tools/software for construction monitoring of the project.
 - (xiv) Final financial package shall not be inferior to the tentative financial package (Annex-II) presently submitted by THDC to CEA for obtaining Concurrence, except for variation in actual interest rate(s) achieved by THDC.
5. The cost cleared by the Authority is not for the determination of tariff. The tariff is to be determined by Appropriate Electricity Regulatory Commission based on the actual completed cost.

6. The commissioning schedule of the generating units from the date of CCEA Clearance shall be as follows :-

Unit - 1	-	51 months
Unit - 2	-	52 months
Unit - 3	-	53 months
Unit - 4	-	54 months

7. Monthly Status Report of compliance of the conditions stipulated under para 4 of this Concurrence letter shall be submitted to Secretary CEA.

8. Monthly Progress Report of the project shall be submitted to Hydro- Project Monitoring (HPM) Division of CEA. Three (3) copies of the semi-annual progress reports on physical progress of the scheme and expenditure actually incurred, duly certified by statutory auditors shall be submitted to the Authority till the Commercial Operation Date of the plant. The project promoters/project authorities shall give free accessibility to the CEA officers and staff to have on the spot assessment of various aspects of the project.

9. Monthly status of the project from the date of concurrence to Financial Closure shall be furnished to Secretary, CEA as per the proforma enclosed at *Annex-VII*.

10. On tying up of all essential inputs/ statutory clearances, the generating company shall submit the updated DPR incorporating all the changes/ modifications as incorporated by THDC during appraisal process and agreed during the 281st Meeting of CEA held on 10.8.2006 for record of the Authority. The company shall also submit the updated DPR to the State Government, Central Electricity Regulatory Commission and Transmission Utility.

11. In case the time gap between the CEA's concurrence and the CCEA approval is three years or more, a fresh concurrence of CEA shall be obtained by THDC.

12. The Authority reserves the right to revoke the approval of Concurrence, if the conditions stipulated in this Office Memorandum are not complied with to the satisfaction of the Authority.

Encls: Annexes I, II, III, IV, V, VI & VII.

(B.K. MISRA)
SECRETARY, CEA

- ✓ Chairman cum Managing Director, M/s Tehri Hydro Development Corporation Limited, Ganga Bhawan, Bye Pass Road, Pragatipuram, Rishikesh - 249201 (Uttaranchal)
- Secretary (Energy), Govt. of Uttaranchal, Secretariat, Dehradun-248001.
- Principal Secretary (Energy), Government of Uttar Pradesh, Bapu Bhawan, Lucknow-226001.

4. Chairman, Uttaranchal Power Corpn. Ltd., FRI Complex, Kolagarh Power House, Dehradun-248006.
5. Chairman, Central Electricity Regulatory Commission, Core-3, 5th Floor, Scope Complex, 7, Institutional Area, Lodhi Road, New Delhi -110003.
6. Chairman & Managing Director, Power Grid Corporation of India Limited, 'Saudamini' Plot No. 2, Sector - 29, Gurgaon - 122001.
7. Secretary, Ministry of Power, Govt. of India, Shram Shakti Bhawan, New Delhi -110001.
8. Secretary, Ministry of Environment & Forests, Government of India, Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi - 110003.
9. Chairman, Central Water Commission, Sewa Bhawan, R.K. Puram, New Delhi - 110066.
10. Joint Secretary (Hydro), Ministry of Power, Shram Shakti Bhawan, New Delhi-110001.
11. Adviser (Energy), Planning Commission, Yojana Bhawan, New Delhi - 110001.
12. Director(G), DPR Unit, Geological Survey of India, Room No.203/204, C-II, Pushpa Bhawan, Madangir Road, New Delhi - 110062.
13. Member (D&R), Central Water Commission, Sewa Bhawan, R. K. Puram, New Delhi - 110066.
14. Member (WP&P), Central Water Commission, Sewa Bhawan, R.K. Puram, New Delhi - 110066.
15. Member (Hydro / Planning / Thermal / Grid Operation & Distribution / Economic & Commercial / Power System), CEA, Sewa Bhawan, R.K. Puram, New Delhi - 110066.
16. Chief Engineer (HPA/ SP&PA/ F&CA/ TCD/ Legal/ HPM / IRP/ IPI/ HE&TD/ LD&T), CEA, Sewa Bhawan, R.K. Puram, New Delhi - 110066.
17. Chief Engineer (PAO), CWC, Sewa Bhawan, R.K. Puram, New Delhi - 110066.

Government of India
Central Water Commission
F. E. & S. A. Directorate

712(S). Sewa Bhawan. R.K.Puram. New Delhi-110066.
 Tel/Fax : 011-26101017, email : fesa_cwc@yahoo.co.in

No. CWC/2/2/2008/FE&SA/425

Dated : May 21st, 2008

To

Sh. G.M. Prasad, GM (Design)
 Tehri Hydro Development
 Corporation Ltd.
 Ganga Bhavan
 Pragatipuram, Bye Pass Road
 Rishikesh-249201
 Uttarakhand.
 Fax No. 0135-2438379 / 2431520

Sub: **Minutes of the XIX meeting of the National Committee on Seismic Design Parameters (NCSDP) for river valley projects held on 11th April, 2008 at New Delhi.**

Sir,

It is to inform you that Vishnugad Piplakoti, Hydro Electric Project, Uttarakhand was discussed in the XIX meeting of the National Committee on Seismic Design Parameters (NCSDP) for river valley projects held on 11/04/2008 at CWC, New Delhi. Extracts from the minutes of the meeting relevant to your project are enclosed herewith for your information and necessary action, please.

Yours faithfully,

Encl: As above.

J. Jai Raju
(J. Jai Raju)
 Director (FE&SA) &
 Member-Secretary, NCSDP

JGM/Design
11/5/08
 S/NCSDP/cou let.Xxx

Sh Vashney
11/5/08

Item No. 19.3.1 Vishnugad Pipalkoti H.E. Project, Uttarakhand

The Vishnugad Pipalkoti HE Project, Uttarakhand, involves construction of a 45m high concrete gravity dam. The project is located at about 1.4 km d/s of Hailang village situated on the left bank of Alaknanda river at latitude 30°31'00"N and longitude 79°29'37"E. As per the seismic zoning map of India IS 1893-Part-1 (2002) the project site lies in seismic zone IV.

The site specific study [Report no.P-2005-01(Sept. - 2005)] related to the local and regional geological conditions, earthquake occurrence and seismo-tectonic set up of the region was carried out by IIT, Roorkee. IIT, Roorkee has estimated a PGA value of 0.38g for MCE condition and 0.19g for DBE condition. The vertical spectral acceleration value has been recommended as 2/3 of the corresponding horizontal value. The normalized horizontal spectral accelerations are given in Fig. 3 & Table II of the site specific study report.

Member - Secretary apprised the Committee that the project was discussed in the XVIII meeting and the clarifications on the observations made by Dr. I.D. Gupta, CWPRS, Pune submitted by the Project Authorities was forwarded to Dr. I.D. Gupta and Dr. Gupta has conveyed his approval for adopting the coefficients and response spectra as given in the report.

The Committee gave the approval for the study.

EMERGENCY ACTION PLAN
For
Disaster Management of
Vishnugad Pipalkoti HEP



THDC INDIA LIMITED

Rev no:-0

January, 2016

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DEFINITIONS

- 1) **Disaster (definition as per Disaster Management Act, 2005):** Disaster means a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or manmade causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area.
- 2) **Disaster Management:** means a continuous and integrated process of planning, organising, coordinating and implementing measures which are necessary or expedient for:-
 - i) Prevention of danger or threat of any disaster;
 - ii) Mitigation or reduction of risk of any disaster or its severity or consequences;
 - iii) Capacity –building;
 - iv) Preparedness to deal with any disaster;
 - v) Prompt response to any threatening disaster situation or disaster;
 - vi) Assessing the severity or magnitude of effects of any disaster;
 - vii) Evacuation, rescue and relief;
 - viii) Rehabilitation and reconstruction;
- 3) **Emergency Action Plan (EAP):** A formal plan of procedures designed to minimize consequences to life & property in the event of an emergency.
- 4) **Crisis:** An event of acute danger, which can cause sudden disruption of power supply. The event is caused either due to human error / equipment failure or sabotage by anti-social elements.
- 5) **Crisis Management Plan:** It consists the processes by which an organization deals with a major event that threatens to harm the organization/plants, its stakeholders, or the general public.
- 6) **Probable Maximum Flood:** The flood hydrograph used for the design of a dam and its appurtenant structures, particularly the spillway and outlet works and for determining maximum temporary storage and height of dam.
- 7) **Bench Mark:** A permanent or temporary monument of known elevation above sea level, used as a vertical reference during construction and for topographical surveys.
- 8) **Breach:** An opening through a dam resulting from partial or total failure of the dam.
- 9) **Dam:** A barrier constructed across a watercourse for the purpose of storage, control or diversion of water.
- 10) **Dam Owner:** Refers to the individual dam owner and the operating organization.

- 11) **Draw Down:** The lowering of the water level in a reservoir over time or the volume lowered or released over a particular period of time.
- 12) **Dam Failure:** The catastrophic breakdown of a dam, characterized by the sudden, rapid and uncontrolled release of impounded water.
- 13) **Emergency:** A condition which develops unexpectedly and endangers structural integrity of a dam and / or downstream property and human life and requires immediate action.
- 14) **Floodplain:** The downstream area that would be inundated or otherwise affected by the dam failure or by large / flood flows.
- 15) **Longitudinal flood profile:** An elevation view showing the relationship of the water surface elevations and natural ground elevations for a discharge at a given location along longitudinal segments of a watercourse for a flood event. The flood event may either be a dam failure or a normal flow condition.
- 16) **Flood routing:** The process of determining progressively over time the amplitude of a flood wave as it moves past a dam or downstream to successive points along a river or stream.
- 17) **Water Head:** The water stored immediately upstream of a dam. The water surface elevation varies due to fluctuations in inflow and the amount of water passed through the dam.
- 18) **Hydrograph:** A graph showing the discharge, stage, velocity or other hydraulic property with respect to time at a particular point on a watercourse.
- 19) **Instrumentation:** The use of special devices to obtain critical scientific measurements of engineering structures.
- 20) **Inundation map:** A map showing areas that would be affected by flood conditions and / or by an uncontrolled release of reservoir water due to the failure of a dam.
- 21) **Mitigation:** Activities providing a critical foundation in the effort to reduce the loss of the life and property from natural and / or manmade disaster by avoiding or lessening the impact of a disaster and providing value to the public by creating safer communities. Mitigation seeks to fix the cycle of disaster damage, reconstruction repeated damage. These activities or actions, in most cases, will have a long-term sustained effect.
- 22) **Notification:** To immediately inform appropriate individuals, organizations, or agencies about a potentially emergency situation so they can initiate appropriate actions.

- 23) **Preparedness:** A continuous cycle of planning, organizing, training, equipping, exercising, evaluating taking corrective action in an effort to ensure effective coordination during incident response. Within the National Incident Management System, preparedness focuses on the following elements: planning; procedures and protocols; training and exercises; personnel qualification and certification; and equipment certification.
- 24) **Public Safety:** The protection of human life and related personal property resulting from proactive measures to mitigate potential adverse impacts caused by external incidents or actions.
- 25) **PDMG:** Project Disaster Management Group (PDMG) constituted of senior officers of project in line with the requirements of Disaster Management Act.
- 26) **Risk:** A measure of the likelihood and severity of an adverse consequence.
- 27) **Spillway:** A structure over or through which flood water is discharged. If the flow is controlled by mechanical means, such as gates, it is considered a controlled spillway.
- 28) **Seepage:** The infiltration or percolation of water.
- 29) **Sinkhole:** A depression indicating subsurface settlement or particle movement, typically having clearly defined boundaries with a sharp offset
- 30) **Slide:** The movement of a mass of earth down a slope on the embankment or abutment of the dam.
- 31) **Spillway Crest:** The lowest level at which reservoir water can flow into the spillway.
- 32) **Water Reservoir:** A body of water impounded by a dam and in which water can be stored.

CHAPTER - 1 INTRODUCTION

1.0 GENERAL

Dams store large amount of water, uncontrolled release of water has great potential for loss of life and damage to property in the downstream areas due to flooding. Such situations can occur due to several reasons, such as, breach of dam on account of earthquake, landslide and/or sabotage; excessive release of water on account of extreme storm events, etc. It is, therefore, necessary to have a thorough and consistent planning for any such eventuality so as to save lives and reduce property damage in areas that would be affected by dam failure or operation and putting in place action plans to cope with such an emergency. CWC issued "Guidelines for development and implementation of Emergency Action Plan (EAP) for dams" in May, 2006

In line with the guidelines issued by CWC, EAP for VPHEP has been prepared to identify potential emergency conditions at VPHEP and specified preplanned actions to be followed to minimize property damage and loss of life. The EAP specifies actions to be taken to moderate the problems at the dam site as well as in the areas downstream of the dam. It contains procedures and information to assist THDCIL in issuing early warning and notification messages / request for assistance to responsible emergency management authorities, viz., District Magistrate / Collector, Armed forces, Paramilitary forces, Project Authorities and other Central/ State Agencies. It also contains inundation maps to show the emergency management authorities of the critical areas for necessary relief and rescue actions in case of an emergency

1.1 PURPOSE AND SCOPE

EAP is intended to help officials dealing with the emergency, save lives, minimize damages to property, structures and inhabitations and also to minimize environmental impact in the event of flooding caused by large releases from the dam, dam failure or in other such events that present hazardous conditions. The EAP will guide the dam operation / supervisory personnel in identifying, monitoring, responding to and mitigating emergency situations. It outlines "who does what, where, when and how" in an emergency situation or any unusual occurrence affecting the dams.

Certain causes such as heavy floods or dam failure may create emergency conditions at the dam site as well as in the areas downstream of the dam that will require warning, evacuation of the population at risk or other response actions. The EAP is intended to interface with the emergency operation plans of other Local, District and State agencies to ensure effective and timely implementation of response actions

1.2 BRIEF DESCRIPTION OF THE PROJECT

(4x111) MW Vishnugad Hydro Electric Project (VPHEP) is being implemented on river Alaknanda near Village Helong. The Project is located at about 220km upstream of Rishikesh. Co-ordinates of the Project are E 79° 29' 30", N 30° 30' 50". It is owned by THDC India Ltd, which is a Joint venture of the Government of India and the Government of UP. Nearest rail head for VPHEP is Rishikesh town which is at about 220 kms and well connected with the Project by an all weather road. Nearest airport is at Jollygrant which is about 20 kms from Rishikesh on Rishikesh-Dehradun highway. Key plan showing location of the Project and other major cities/ towns are shown in Annexure-1.

The Project is a runoff river scheme comprises of 67 meter high Concrete Gravity Dam. The VPHEP Dam has a crest length of 89.55m, out of which 60.90m is overflow section to serve as spillway. The VPHEP reservoir has a live storage of 2.47 million cum.

Spillway arrangement of the Project consists of 4 bays of 8m x15m with radial gates for flood regulation and one Ogee spillway with vertical gate arrangement. A diversion cum spillway tunnel of 10.50m diameter is also provided at the Project. The spillway system is designed to cater 11050 cumecs, which is more than the Probable Maximum Flood (PMF) 10840 Cumecs.

An underground Power House to install 444 MW (4X 111-Francis Turbines) is being constructed at the HAAT Village. Annual energy generation from the Project would be appurtenant structures 65.42 GWh.

Brief descriptions of the scheme along with important salient features are given in Annexure-2.

Main hydroelectric power plant and dams on river Alaknanda under operation/ implementation in upstream and downstream of VPHEP are:

A. Upstream of VPHEP-

1. Tapovan Vishnugad HEP 520 MW - under Construction
2. Vishnuprayag Hydro Electric Project 400MW- Under Operation

B. Downstream of VPHEP-

1. GVK Power Plant, Srinagar 330MW - Under Operation

1.3 HAZARAD AREA

No emergencies are expected in the area upstream of the dam because all population in the area coming under submergence up to Maximum Reservoir Level i.e. EL 1269 m has been rehabilitated. In the downstream of the dam, Alaknanda River flows in a confined valley up to Srinagar, where it merges into the reservoir of GVK Power Plant, which is under operation. After GVK Power Plant, Srinagar, river Alaknada joins river Bhagirathi at Devprayag and after the confluence, river downstream of Deoprayag is known as Ganga. The valley is moderately narrow upto up-stream of Rishikesh and starts widening from Rishikesh. Flood plains are quite wide after Haridwar.

Therefore, in the event of release of large floods, villages and towns along river Alaknanda from downstream of dam up to reservoir of GVK Power Plant, Srinagar is likely to be affected.

1.4 PERIODIC REVIEW, TESTING, UPDATING OF EAP AND TRAININGS

The EAP of the Project is prepared by Operation & Maintenance Safety Department, THDCIL, Rishikesh in line with the guidelines issued by CWC. The EAP shall be revised after implementation of the Project and impoundment of reservoir to incorporate necessary changes based on inputs gathered and experience gained.

Before the Impoundment of reservoir, training of personnel involved with the EAP shall be ensured by PROJECT DISASTER MANAGEMENT GROUP (PDMG) and shall be carried out every year to ensure that they are thoroughly familiar with their responsibility, all the elements of the plan and availability of equipment etc. Mock drill shall also be carried out every year to ascertain the effectiveness / preparedness of disaster mitigation measures.

1.5 PROJECT DISASTER MANAGEMENT GROUP (PDMG)

PDMG shall be constituted in line with the requirements of Disaster Management Act 2005. The meetings of project level group will be held twice every year (around May & Nov.). In case of any emergency, a special meeting can also be called by Head of Project.

In-charge (Planning), VPHEP shall be the EAP Co-ordinator for PDMG and shall prepare agenda, minutes of meeting and status of action taken on the recommendations of PDMG on quarterly basis for the appraisal of management through Head (OMS). Actions on behalf and recommendations of the PDMG shall be initiated by Planning Department, THDCIL, VPHEP, Pipalkoti.

The project level group at VPHEP comprises of the following officers:

1. Head of the Project
2. Head (Safety)
3. In-charge (Dam, Spillway & PH)
4. In-charge (Planning) - *CONVENER MEMBER*
5. In-charge (Mechanical/ Hydro-mechanical)
6. In-charge (Electrical/ Operation and Maintenance)
7. In-charge (P&A and Dispensary)
8. In-charge (C&MM/ CSR/ Building & Roads)
9. In-charge (Finance)

The responsibilities of the project level group are following:

- i. To coordinate with the State and District Administration for necessary support for medical, law and order etc., and for evacuation of the likely affected area in the case of release of water from dam during emergency.
- ii. To identify activities to be done for implementation of EAP.
- iii. To review ongoing activities related to EAP.
- iv. To ensure availability of resources as proposed in the EAP through availability with THDC Deptts. and agencies working at Project. The shortcomings, if any, shall be fulfilled, as far as possible, through purchase/ hire / other nearby ongoing works.
- v. To identify additional resources (HMV, LMV, & Fire Tender etc.) available with other nearby projects (THDC or any other Agency) and State/ Distt. Administration before monsoon which can be called on in the case of any emergency.
- vi. To finalize action plan with role and responsibilities of concerned staff before monsoon.
- vii. To ensure training (in house or through outside agency) of the staff to be deputed for emergency management every year, to make them aware about their role and responsibility.
- viii. To ensure establishment of control rooms to operate round the clock during monsoon period.
- ix. To conduct a critique following any emergency to discuss and evaluate, the events prior to, during and following the emergency, significant actions taken by each participant and what improvements would be practicable for future

emergencies, and all deficiencies found in procedures, materials, equipment, manpower, leadership and funding.

- x. To ensure budget provisions for identified activities every year as per below mention clause no-1.6.
- xi. To identify scope for improvement in the EAP from time to time and following a test or actual emergency in order to facilitate revision of EAP every year before monsoon by OMS, QA & Safety Deptt.

In the PDMG meeting in May / June i.e before monsoon, officers from the corporate office and representatives from State and Distt. administration will also attend the meeting to facilitate coordination among all the stake holders and concerned as under :

- 1. Head (OMS, QA & Safety)
- 2. Head (Design-Civil)
- 3. Head (S&F)
- 4. Representative from Disaster Mitigation and Management Centre (DMMC), Dehradun.
- 5. Representative from Distt. Administration, Chamoli, Rudraprayag, Tehri-Garhwal and Pauri-Garhwal

1.6 BUDGET PROVISION

An appropriate budget provision will be made by concerned departments on account of Emergency Management activities including training programme identified by PDMG in revenue budget estimate. In-charge (Planning) will ensure that all the concerned departments make budget provision for activities related to Disaster Management.

CHAPTER - 2

ROLES AND RESPONSIBILITIES

2.0 GENERAL

THDC INDIA Ltd, as the owner of the dam, is fully responsible for the maintenance of the Dam and other structures. As per the Disaster Management Act-2005, providing relief in the event of calamities/ disasters is the primary responsibility of the State Government, In this case, the State of Uttarakhand. The Central Government, with its resources, physical and financial, does provide the needed help and assistance to buttress relief efforts. The responsibility of THDCIL as dam owner is to take most effective measures in ensuring health and integrity of the dam, project structures, the reservoir rim and in providing timely information to concerned State and Central Government Agencies about the flood forecasts from its network and the flood water being released from the spillways. Also in the event of any dam incident, it will take immediate measures to rectify the damage for preventing it to become a disaster while keeping the State and Central Government Authorities duly informed. The responsibility for issuing warnings to citizens, their shifting and providing relief measures rests mainly with the District Administration.

The list of telephone / fax nos., mobile nos. and other details of the concerned officials of Central Govt., State Govt., Distt. Administrations, CWC and Irrigation Deptts., is enclosed as Annexure-3.

The list of telephone / fax nos., mobile nos. and other details of the concerned THDCIL officials / staff is also enclosed as Annexure-4.

2.1 NOTIFICATION, CO-ORDINATION & COMMUNICATION

2.1.1 GENERAL

The initiator of any notification is In-Charge of the Control Room who is also In-Charge of Dam & Spillway. After a situation is identified which has the potential to become an emergency, action is to be taken to issue appropriate notification to concerned authorities. Three types of notifications can be issued depending upon the type of emergency. While issuing any notification, type of notification may be mentioned at the top.

2.1.2 PRE-ALERT NOTIFICATION

This type of notification is mainly used for disseminating important information only and is not intended to convey a possibility of an emergent situation that may or may not arise. This notification may include slowly developing dam site emergencies which can either be rectified or would at least take 15 days before they become real emergencies.

2.1.3 ALERT NOTIFICATION

An alert notification is used to provide notice that although failure or flooding is not imminent, but serious situation could occur unless conditions are improved. Local officials and residents in affected areas would be alerted that an unsafe situation could be developing. Some examples are forecasts for heavy storms in the catchment and reservoir is near its FRL which could lead to release of water through spillways that can submerge downstream areas or a dam that is leaking excessively but is not yet a hazardous situation.

2.1.4 WARNING NOTIFICATION

A warning notification is used to indicate that flooding is imminent as a result of high run off. Such a notification implies that an order for evacuation of delineated inundation areas is required to be issued by District Administration immediately.

2.1.5 NOTIFICATION RESPONSIBILITY & COMMUNICATION

In case of emergency situations whenever notification is required to be issued, In-charge Dam Control Room will be responsible for internal communication. However, notification to State/ District Authorities, regarding release of water shall be issued by In-charge Planning. Communication to and liaison with State/ District Authorities in case of civil disturbance/ security breach shall be done by In-charge P&A.

In case of slowly developing situations, In-charge Control Room would inform to OMS and Design department, and would take remedial measures as suggested by them. If required, necessary notification will also be issued. Notification responsibility and the officials to whom the notices are to be issued are given in Annexure-7 of the EAP. This does not include list of officials which are to be further notified by the District Magistrates.

2.1.6 CONTINUING CONDITIONS AND TERMINATION OF EMERGENCIES.

The In-charge Dam Control Room, who is In-charge of Dam, Spillway shall be responsible for providing information to In-charge, Planning Department regularly for further communication to District Administration from the time of initial determination that an emergency exists until the entire emergency has been terminated. When flood water is passed downstream which would inundate downstream areas due to release through spillways, information about flood volume passing down would be made available twice daily or as required by district administration. In case of emergency arising out of regular release of flood through spillway, its termination would be decided by In-charge Control Room. For all other types of emergencies, termination would be decided by In-charge, Control Room in consultation with OMS, QA & Safety and Design Department.

The above notices for termination of emergencies indicate only that an emergency condition no longer exists at the dam site. For the emergency conditions related to evacuation and disaster response, orders for termination of emergency shall be issued only by District Magistrates for the areas of their jurisdictions.

2.1.7 CONTROL ROOM & COMMUNICATION SYSTEM

A permanent control room at suitable location above the level of Dam top having landline phone, mobile phone, fax and computer with internet connection for communication will be established to function round the clock throughout the year. The control room will also be established by CISF. CISF personnel with phone/wireless will remain present there round the clock. Flow of information to and from control room is given in flow chart as Annexure-7.

All the offices of the concerned officials of Central Govt., State Govt., Distt. Administrations, CWC and Irrigation Deptts and THDCIL are having telephones/ fax/ mobiles. In addition, telephones & mobiles will also be provided at important Hydrological & Meteorological stations. A list of telephone/ mobile numbers shall be maintained with each official involved in the Emergency Action Plan.

2.1.8 DOWNSTREAM WARNING

Responsibility for the decision to proceed with the warning and evacuation of affected occupants rests with the concerned District Magistrates. As per Disaster Management Act 2005, District Magistrates are required to prepare the Disaster Management Plans for the district concerned.

2.1.9 PUBLIC PARTICIPATION

Public participation is must to make emergency preparedness plan a success. Consequently, all responsible persons of the locality, and village Pramukhs of the affected villages should be involved in the emergency preparedness plan. The help of voluntary organisations of the area may be utilized. To check out the plan of action and fixing responsibility, a meeting should be convened at the District Magistrate level before the flood season every year to assign responsibilities.

2.2 MAIN RESPONSIBILITIES FOR IMPLEMENTATION OF EAP AFTER IMPLEMENTATION OF THE PROJECT

2.2.1 THDCIL OFFICERS

S. No.	Particulars	Time/ frequency
OMS, QA & SAFETY Deptt , Rishikesh		
1	Revision of EAP	Every year before Monsoon
2	Special inspections in case of an emergency such as earth quake, heavy rain, landslides etc or requirement from project along with Design Deptt.	As and when required
3	In case of emergency (slowly developing situations/ abnormal observations), analysis of instrumentation data will be done along with Design Deptt.	As and when required
Planning Deptt., VPHEP		
1	Convening meetings of the Project Disaster Management Group (PDMG) and works in connection with this group as per Clause 1.5 of EAP	Twice every year around May & Nov and special meeting in emergency situation
2	Dissemination of information regarding reservoir level, inflow, outflow from plant/ spillway to internal and external deptts/ agencies	Daily or at a frequency decided depending upon situation or requirement of Dist. Admn. In the event of release from spillway.
3	Liasion with IMD for advance information of weather forecast, storm and heavy rainfall etc.	During monsoon.
4	Co-ordinate with District Administration regarding EAP related activities	As and when required
5	Issuing location wise complete list of equipment & material required v/s available as per Annex. - 5 & 6 of EAP.	Before monsoon
6	Issuing list of additional resources (HMV, LMV & Fire Tender etc.) available with other nearby projects (THDC or any other Agency) and State/ Distt. Administration	Before monsoon
7	Issuing action plan for monsoon period with role and responsibilities of concerned officers/ staff at Project level	Before monsoon
8	Making budget provision for emergency management activities as decided in the meeting of PDMG	Once a year
Hydro Mechanical Deptt., VPHEP		
1	Inspection & testing of spillway gates, hoists & power backup	Before monsoon
2	Ensuring smooth operation of spillway gates	As and when required
3	Providing regular information to planning deptt. regarding spillway operation/ spillage of water through spillway	During spillway operation

Dam, Spillway & PH Deptt., VPHEP, Helang & Birahi		
1	Ensuring smooth operation of control room established at Pipalkoti and making arrangements for discharge observation at Joshimath during monsoon Helang & Birahi	Whole Year
1(a)	Strengthening of control room and discharge observation teams to manage any emergency situation as per requirements of EAP	During monsoon
2	Providing reservoir related information to Planning Deptt. through control rooms	Daily/ As per requirement of EAP
3	Reservoir Rim survey with Geologist	At prescribed frequency and in any emergency situation described in EAP
4	Continuous monitoring of Dam behavior through instrumentation/ visual inspections as per routine inspection plan or in emergency situation as described in EAP	Whole Year
5	Providing complete details of equipment and material required in EAP (Annex. 5 & 6) with their location to Planning Deptt.	Before meetings of PDMG
Mechanical Deptt., VPHEP		
1	Ensuring smooth operation of light and heavy vehicles, heavy earth moving equipments, welding sets etc during emergency situation.	As and when required
2	Providing complete details of equipment required in EAP (Annex. 5) with their location to Planning Deptt.	Before meetings of PDMG
Electrical Deptt., VPHEP		
1	Ensuring smooth operation of electrical equipment i.e. sub-station, DG set etc.	As and when required
3	Ensuring power backup to all gates & other structures	As and when required during emergency
4	Providing complete details of equipment as required in EAP (Annex. 5) with their location to Planning Deptt.	Before meetings of PDMG
O&M Deptt., VPHEP		
1	To do all preventive maintenance to ensure smooth operation of all units during monsoon.	Before monsoon
B&R Deptt., VPHEP		
1	Maintenance/ restoration of all project roads and access roads.	Before monsoon every year
2	Availability of sufficient equipments & manpower to be ensured for cleaning the landslides etc. to keep road functional.	During monsoon
CSR		
1	Coordinating and ensuring relief supplies.	In case of disaster

C&MM, VPHEP		
1	Immediate procurement of Materials and equipments for Emergency Management in case of emergency, spot purchase can be made	During monsoon/ in case of emergency situation
P&A, VPHEP		
1	Liaison with Distt administration, CISF & other State Authorities for necessary	In the event of civil disturbance/ security breach/ terrorist attack/ bomb threat
F&A, VPHEP		
1	Provide necessary funds promptly to supporting depts.	In the event of emergency situation
THDC Dispensary, VPHEP		
1	Provide immediate necessary medical supports to Project & District authority. If required, arrangement to be done from nearby public/private hospitals, doctors etc.	In the event of emergency situation
2	To maintain adequate stock of medicine and medical equipments	Throughout the year
Safety Deptt., VPHEP		
1	Timely dissipation of information to general public through pamphlets, news papers and by making announcements regarding rise in level in u/s of dam due to heavy rains/ increase in inflow and d/s of the dam due to release of water from spillway.	During monsoon/ in case of emergency situation

2.2.2 STATE / DISTRICT ADMINISTRATION

District Administration-Chamoli, Rudraprayag, Tehri-Garhwal, Pauri-Garhwal and DMMC, D. Dun		
1	Dissemination of information regarding release of water from VPHEP in the low lying and likely affected areas and evacuation of people whenever required	During monsoon/ in case of emergency situation
District Administration-Chamoli		
1	Providing necessary police force to protect vulnerable locations of VPHEP project whenever required	In case of security breach/ sabotage

CHAPTER - 3

EMERGENCY SITUATIONS & THEIR IDENTIFICATION

3.0 EVENTS CAUSING EMERGENCY SITUATIONS

Following events can lead to emergency situations:

3.0.1 HEAVY RAINFALL/ STORM/ CLOUD BURST/ GLOF IN THE CATCHMENT

Following types of emergency situations can arise.

- i) Release of large flood volumes downstream through spillways.
- ii) Damage to reservoir rim slopes resulting landslides in the reservoir.
- iii) In flow of large amount of debris with river discharge.
- iv) In flow due to Glacial lake outburst flood.

3.0.2 STRUCTURAL FAILURE

Emergency arising out in structural failures usually falls into one of the following categories:

- i) Overturning or sliding, resulting from erosion of the supporting foundation and/or abutments,
- ii) Abutment or foundation failure due to overstressing,
- iii) Structural failure of concrete unable to sustain imposed load

3.0.3 SLOWLY DEVELOPING SITUATION

The situations not emergent at the moment of their occurrence and can be rectified. But, if these are not attended properly, can develop into emergency situations.

- i. Formation of chimneys / sinkholes around structure.
- ii. Increase in amount of seepage.
- iii. Formation of boils at the downstream toe of the dam.
- iv. Visible cracks on the surface.
- v. Formation of vortices near the upstream slope.
- vi. Boggy soil downstream of the dam.
- vii. Abnormal results from functional instruments.

3.0.4 POTENTIALLY HARMFUL EARTHQUAKE

Following types of emergency situations can arise:

- i) Damage to dam or spillway structures.
- ii) Damage to reservoir rim slopes resulting landslides in the reservoir.

3.0.5 CIVIL DISTURBANCE/ SABOTAGE/ TERRORIST ATTACK/ BOMB THREAT

This may result in willful tampering with equipment and release of large volume of water by forcible opening of spillway gates during civil disturbances.

3.1 IDENTIFICATION OF EMERGENCY SITUATION

3.1.1 IDENTIFICATION OF SITUATION OF HEAVY RAIN/ STORM/ CLOUD BURST/ GLOF IN THE CATCHMENT

THDCIL is presently collecting discharge at 03 locations, at Joshimath, Helang & Birhi on river Alaknanda. These stations are equipped with telephones/ mobiles to pass on the information to Project control room. Details of Telephone nos. of Control rooms are enclosed at Annexure-8. Apart from it, forecasts issued by IMD, New Delhi/ Dehradun for daily rainfall/ extreme rainfall events will also be used for assessment of inflow at VPHEP during monsoon period.

In-charge of Project control room shall remain in constant contact with Indian Meteorological Department to get information's about storms and rains developing in the Catchment area during rainy season.

3.1.2 IDENTIFICATION OF STRUCTURAL FAILURE

VISIBLE CRACKS OF CONCRETE ON THE SURFACES OF DAM OR ON JUNCTIONS WITH ABUTMENTS

Formation of visible cracks of concrete on the surface or on junctions with abutment is likely but they should be investigated thoroughly to determine their cause. It is necessary to ascertain the depth and direction of cracks.

Either the cores will be taken out or these cracks will be dug up, as the case may be, to find out how they are propagating in the interior. If these are shallow and are not caused by any serious defect in the structure, these should be filled back with appropriate material. If the cracks are deep, the situation should be brought to the notice of the OMS & Design, who would be responsible for suggesting detailed measures.

3.1.3 IDENTIFICATION OF SLOWLY DEVELOPING SITUATIONS

- a) Regular inspections of dam shall be carried out by Project on daily basis during monsoon as per the Checklist and THDCIL Data Book.
- b) Instruments which are to be installed in the dam body shall be used to analyze the behavior of dam. Readings of the instruments will be recorded as per prescribed frequency during normal course as well as in emergency situations.
- c) The OMS, QA & Safety & Design Departments along with Project will conduct detailed inspection of the project twice during the year, once before the onset of Monsoon in the month of April/ May and once after the Monsoon in the month of November/ December. Inspection report of the above will be forwarded to OMS, Design Deptt, Rishikesh and Project. Actions to be taken on the observations of pre/ post monsoon inspections will be monitored through regular (e.g. ORT) meetings. Besides the schedule set as above, Special Inspections and Emergency Inspections shall also be carried out when unusual, potentially adverse conditions developed at the dam site as mentioned under 3.0.3.

3.1.4 IDENTIFICATION OF POTENTIALLY HARMFUL EARTHQUAKE

The dam and appurtenant structures shall be inspected immediately after occurrence of an earthquake damage report will be prepared and submitted by Dam & Spillway Deptt. in the format given at Annexure-9, to OMS Deptt. Remedial measures required if any should be taken immediately.

3.1.5 Alternate Supply of Power in Case of Power Failure:

Supply of power would be restored for operation of Dam & Spillway from available alternate sources immediately.

3.1.6 Adverse Weather Transportation:

In case of adverse weather, alternate mode of transportation such as boat, motor vehicle or other mode would be made available at site to reach Dam, Spillway & Power House for their operation and access in adverse weather condition.

CHAPTER - 4

PREVENTIVE & CORRECTIVE ACTIONS

4.0 GENERAL

In case of dams, preventive actions are required to be taken to avoid catastrophic situation of failure of dam. For this, constant vigil is made through regular inspections and analysis of instrumentation data. A brief resume is given below for the preventive actions to be taken by Dam Department for various developing situations.

4.1 ACTIONS/ ARRANGEMENTS TO AVOID OVERTOPPING OF THE DAM DUE TO EXTREME FLOODS

Overtopping of the dam due to extreme floods occurs only in the event of either when the design flood gets exceeded or when at the time of high floods, due to some defects, some gates of the spillway get stuck up.

In the sphere of preventive maintenance, all spillway gates and mechanical equipment for operating the gates shall be thoroughly inspected & tested by the Hydro-Mechanical Department before the start of monsoon season every year by a team comprising representatives from Project HM department, OMS and HM Design, Rishikesh. Inspection report is to be submitted to Head OMS, QA & Safety Deptt. Rishikesh. In case of operation of gates during power failure, DG power backup is to be kept ready for operating gates which is under the control of HM Unit.

Discharge & gauge stations shall communicate storm and gauge data to Central Control Room. If the information received from various stations in the catchment indicates that the incoming flood is likely to be very heavy and the reservoir is full, a notice for alert situation should be given and the reservoir appropriately lowered to receive the incoming flood.

4.2 ACTION TO AVOID OVERTOPPING DUE TO HUGE LAND SLIDES IN THE RESERVOIR

Landslides usually occur during rainy season either during heavy rainfall or immediately after it. Therefore, it is possible that the reservoir is nearly full when a slide situation begins to develop. As soon as a developing slide zone is noticed, it should be thoroughly examined by the representatives of Dam Deptt. and G&G, Group to estimate the likely volume of the slide material and its nearness to dam. If the assessment indicates that sliding can lead to overtopping of the Dam, a notice for alert situation will be given and the reservoir suitably lowered.

4.3 SLOWLY DEVELOPING SITUATIONS

Slowly developing situations have already been indicated under section 3.0.3. Herein remedial measures to be taken are given in brief.

4.3.1 APPEARANCE OF BOILS DOWNSTREAM OF DAM

If the boils are localized, these should be immediately loaded with an inverted filter. If the boils come under control, no further action will be necessary. However, sometimes it would happen that while the existing boils come under control new boil would begin to form. If this happens, the situation should be brought to the notice of the OMS, QA & Safety & Design Deptt., for suggesting detailed measures, which may be in terms of loading berm, constructing relief wells or carrying out additional grouting.

4.3.2 BOGGY CONDITIONS D/S OF THE DAM

General boggy conditions or high piezometric heads downstream of the dam indicate large seepage through the foundations and call for immediate action. The situation shall be brought to the notice of the OMS & Design department, who would be responsible for suggesting detailed measures. Generally one of the following solutions can be adopted:

- i) Installation of a row of relief wells downstream of the dam.
- ii) Providing properly designed loading berm.
- iii) Carrying out additional grouting through the foundations. If it is not possible to successfully carry out grouting against large seepage pressures, lowering of the reservoir may be required.

4.3.3 VISIBLE CRACKS ON THE SURFACE

Formation of visible cracks on the surface is likely but they should be investigated thoroughly to determine their cause. These should be investigated to find out how they are propagating in the interior. If these are shallow and are not caused by any serious defect, these should be packed with appropriate material. In case they are deep caused by differential movements or hydraulic fracturing, these may require to be sealed through grouting. In the later case, recommendations of the OMS & Design Deptt. would be followed for lowering of the reservoir, if found necessary.

4.3.4 INCREASED AMOUNT OF SEEPAGE

Increase in seepage, if it is not connected with rise in reservoir water level, could be due to increased seepage through the foundations or through dam body due to internal cracking.

The first thing in this case is to determine whether the increased seepage is from structure or the foundations. This will require interpretation of instrumentation data, especially of piezometric cells and seepage measurement weirs. Also water quality tests may be carried out which will help to determine whether the seepage is taking place from dam foundations.

If the increased seepage is found to be from foundations but is not accompanied by piezometric rise or excessive leaching of foundation material, no action may be needed unless loss of water is economically very costly as compared to additional grouting that would be required to be carried out.

If the increased seepage is through structure, investigations should be carried out for reasons of excess seepage and it should be immediately brought to the notice of OMS, QA & Safety & Design Deptt. If the seepage of water continuously goes on increasing, a message for alert situation should be given to District Administration and reservoir lowered till the seepage decreases in consultation with OMS & design depts. After locating the cracked/ internally eroded zone, grouting or other suitable remedial measures should be adopted as per advice of Design deptt.

4.3.5 FORMATION OF CHIMNEYS/ SINKHOLES OR VORTICES NEAR THE UPSTREAM & DOWNSTREAM SLOPE.

These indicate excessive seepage through dam foundation. A notice for alert situation should be given and reservoir lowered. Treatment would comprise of grouting of the affected zone. Normally such a situation would take considerable time before it appears at the surface and can be timely detected through analysis of seepage discharge and instrumentation data.

4.3.6 ACTIONS TO BE TAKEN IN CASE OF SLOWLY DEVELOPING EMERGENCY SITUATION

Actions to be taken have been described in the Emergency Operation Procedures given in Chapter-6. The spillways will be operated in accordance with instructions set out in the Emergency Operation Procedures.

4.4 EQUIPMENT AND FACILITIES FOR MEETING OUT EMERGENCY REQUIREMENTS

A set of construction equipment and stock of construction material shall be kept ready by the project for meeting out emergency requirements and maintenance of the dam. List of proposed materials is enclosed as Annexure- 6. The list of proposed equipment is at Annexure-5 which will be required to take immediate measures in case of any emergency and by the time more equipment are diverted from other sites/ locations. The equipment and stock of construction materials shall be kept on both the banks on identified location.

The requirement of equipment & material will be reviewed by PDMG every year before monsoon. A complete list of equipment & material required as per EAP w/s available with location will be issued by Planning deptt. before monsoon. While preparing the list of equipment, availability of equipment at the Project with THDC and other agencies will be considered. List of additional equipment available with other nearby projects (THDC or any other Agency) and State/ Distt. Administration will also be prepared.

CHAPTER - 5

HAZARD AREA

5.0 GENERAL

In the downstream of the dam, Alaknanda River flows in a confined valley up to Srinagar, where it merges into the reservoir of GVK Power Plant, which is under operation. After GVK Power Plant, Srinagar, river Alaknada joins river Bhagirathi at Devprayag and after the confluence, river downstream of Deoprayag is known as Ganga. The valley is moderately narrow up to upstream of Rishikesh and starts widening from Rishikesh. Flood plains are quite wide after Haridwar.

Therefore, in the event of release of large floods, villages and towns along river Alaknanda from downstream of dam up to reservoir of GVK Power Plant, Srinagar are likely to be affected.

5.1 DESCRIPTION OF HAZARD AREA

Hazard area is defined considering the area that will be flooded when high floods are released through spillways as indicated on inundation maps.

5.1.1 INUNDATION MAPS

For communities or significant numbers of dwellings located in the floodplains downstream of the dam, inundation maps are usually needed to develop an adequate evacuation plan. These maps show an outline of the area covered by the dam break or excessive release during flood in detail to identify dwellings and other significant features that are likely to be directly affected. Estimated flood travel time and depth at selected locations have been included on the map.

Length of river Alaknanda from Holang to downstream of Srinagar is about 105 kms. Digital Elevation Model (DEM) of the entire downstream area was developed using satellite images (Cartosat Stereo) due to inaccessibility of most of the downstream areas. After completion of DEM, river cross sections were extracted. Thereafter, flood simulation studies were carried out.

5.1.1.1 Flood simulation studies for PMF and Dam Break Flood

Static and Dynamic flow studies can be carried out either i) scaled physical hydraulic models ii) mathematical simulation using a computer. A modern tool to deal with this problem is the mathematical model, which is cost effective and approximately solves the governing flow equations of continuity and momentum by computer simulation.

In the present study, HEC-RAS version 4.1.0 model developed by Hydrologic Engineering Centre of U.S. Army Corps of Engineers has been used.

The procedure used for static flow analysis by HEC-RAS to compute water surface profiles assumes a steady, gradually varied flow scenario and is called the direct step method. The basic computation procedure is based on an iterative solution of the energy equation ($H = Z + Y + \alpha V^2 / 2g$) which states that the total energy (H) at any given location along the stream is the sum of potential and kinetic energy.

The fully dynamic HEC-RAS model for dam break study has been used. The basic theory for dynamic routing in Dam Break flow analysis consists of two well known partial differential equations originally derived by Barre De Saint Venant in 1871 for conservation of mass (continuity) equation and conservation of momentum equations. Energy losses are evaluated by friction (Manning's equation) and contraction/ expansion (coefficient multiplied by the velocity head). The above studies were carried out by Department of Water Resources Development & Management IIT, Roorkee (Uttarakhand)

5.1.1.2 Preparation of Inundation Maps

Detailed inundation maps of the areas downstream of Dam to Devprayag have been prepared on the basis of results of steady flow studies corresponding to different release scenarios and results of dynamic flow studies for dam break. These maps clearly delineate the infrastructure and habitation likely to inundate and likely to remain free from inundation under different flood situations which will help in preparing detailed evacuation plan for any emergency situation. This study was carried out and maps were prepared by Disaster Management & Mitigation Centre (DMMC), Dehradun Uttarakhand Govt. The key plan of the valley from downstream of Dam to Srinagar is enclosed at Exhibit 'A', Inundation Maps corresponding to flooding due to release of PMF are enclosed at Exhibit 'B' and Corresponding to Dam break are enclosed at Exhibit- 'C'.

CHAPTER - 6

EMERGENCY OPERATION PROCEDURES

6.0 Introduction

444MW Vishnugad Hydro Electric Project (VPHEP) is being implemented on river Alaknanda near Village Helong. The Project is a runoff river scheme comprises of 67 meter high Concrete Gravity Dam and underground Power House. Dam structure of VPHEP is located at about 30 kms downstream of Joshimath. Nearest rail head for VPHEP is Rishikesh town which is at about 220 kms and well connected with the Project by an all weather road. Nearest airport is at Jollygrant which is about 20 kms from Rishikesh on Rishikesh-Dehradun highway.

A. Upstream of VPHEP-

1. Tapovan Vishnugad HEP 520 MW - under Construction
2. Vishnuprayag Hydro Electric Project 400MW- Under Operation

B. Downstream of VPHEP-

1. GVK Power Plant, Srinagar 330MW - Under Operation

6.1 Upstream and downstream details

The G&D Stations, power plants and main towns in the upstream and downstream of Tehri dam are as below

A. Upstream of the Project

1. Tapovan Vishnugad, a under Construction hydro power plant is located at about 21 kms from VPHEP Dam Axis on river Dhauliganga.
2. Vishnuprayag Hydro Electric Project of 400 MW is under operation, located at about 26 kms from VPHEP Dam Axis on river Alaknanda.
3. One G&D station is located at Joshimath, which operates round the clock during monsoon. Water from this station would take about 1.0 to 1.5 hrs, in reaching up to VPHEP site.
4. Joshimath is the main town about 30 kms upstream of VPHEP Dam. The town is beyond the reservoir rim of VPHEP corresponding to its FRL/MWL.

B. Downstream of The Project

- 1 **Birahi** is the first town downstream of the project Birahi is located at about 18 kms from the project. Lowest level of Habitation in Birahi is 1026 m. Flood water may rise upto 1007 m corresponding to 11852 cumecs discharge of Alaknanda river.
- 2 **Chamoli** is first major town downstream of the project, Chamoli is located at about 25 kms from the project. Lowest level of Habitation in Chamoli is 940 m. Flood water may rise upto 955 m corresponding to 11124 cumecs discharge of Alaknanda River.
- 3 **Nandprayag** is the second major town downstream of the project, Nandprayag is located at about 28 kms from the project. Lowest level of Habitation in Nandprayag is 820 m. Flood water may rise upto 836 m corresponding to 12051 cumecs discharge of Alaknanda river.
- 4 **Karnprayag** is the Third major town downstream of the project, Karnprayag is located at about 51 kms from the project. Lowest level of Habitation in Karnprayag is 730 m. Flood water may rise upto 750 m corresponding to 14363 cumecs discharge of Alaknanda river.
- 5 **Rudraprayag** is the Forth main town downstream of the project, Rudraprayag is located at about 83 kms from the project. Lowest level of Habitation in Nandprayag is 590 m. Flood water may rise upto 643 m corresponding to 16630 cumecs discharge of Alaknanda river
6. **Srinagar** is about 105.kms from the project. 330 MW Srinagar Hydro Electric Project is also located near Srinagar Town.

6.2 Operation Procedures

6.2.1 During monsoon season

Filling of the reservoir will be governed by the reservoir rule curve. During monsoon period, apart from power plant, spillways may also be operated depending upon the increase in the inflow. Operation of spillways is envisaged under the following circumstances:

- i) The reservoir is at FRL / Near FRL and inflow is more than the outflow of power plant.
- ii) The reservoir is at FRL or near FRL and there is forecast for flood due to heavy rains in the catchment, the spillways are operated to create a cushion to absorb the anticipated flood.
- iii) There are other compelling reasons for which decision is required to be taken to operate the spillways for lowering the reservoir.

6.2.2 Spillway Operation

The spillway system of VPHEP has been designed to cater PMF of 11050 cumecs.

It consists of 4 bays of 8m x15m with radial gates for flood regulation and one Ogee spillway with vertical gate arrangement. A diversion cum spillway tunnel of 10.50m diameter is also provided at the Project.

Safety measures which are proposed to be taken while operating the spillways are given in Annexure-10.

6.3 Situations leading to emergency and actions to be taken

Various situations which may lead to emergency situations and actions to be taken during each of the situations are described below:

6.3.1 Emergency Action Plan for situations emerging due to Heavy Storm/ Rainfall/ Cloud Burst/ Gf of in the catchment area:

6.3.1.1 Filling of reservoir above the crest level of Ogee spillway (i.e. EL 1260m up to EL 1267m) and rate of filling is higher than planned rate

Detection	Observed Reservoir Levels and Observed G&D Data from G&D Stations is recorded at Control Room and communicated to all concerned U/c Control Room	
Assessment and Emergency Determination	Analysis of observed data w.r.t. Reservoir Rule Curve (RRC) and also considering monsoon and rainfall forecasts, archive data and discharge in Alaknanda for taking decision for release of water through spillway - U/c Planning and U/c OMS	
Expected Emergency	Reservoir reached EL 1260m	Reservoir level crossed Spillage Rule Curve (SRC) and Spillway can be operated any time
Emergency Level	Pre Alert	Alert
Internal Communication	U/c-Control Room (As per notification flow chart at Annex. 7)	
Notification Responsibility	U/c Planning (As per notification flow chart at Annex. 7)	
Notification	Notification No. 1	Notification No. 7
Expected Actions & responsibility	Observations at G&D stations will be recorded at maximum possible frequency and transmitted to control room & heavy rainfall occurring in any area of the catchment would be immediately reported to the Control Room - U/c Control Room	Smooth operation of spillway gates will be ensured as per release requirements- U/c HM
		Safety measures will be taken as per Ann.-10 before operating spillways- U/c HM
		Information about inflow of water into the reservoir and probable total outflow (through power house and Spillways) will be given to officials on twice daily/ as required by Dist. Admn. till the spillways are closed - U/c Planning
Termination & Follow Up	NR	U/c Planning

6.3.1.2 Reservoir at FRL i.e. EL 1267m Near FRL and spillways can be operated any time due to increase in inflow.

Defection	Observed Reservoir Levels and Observed G&D Data from G&D Stations is recorded at Control Room and communicated to all concerned - /c Control Room		
Assessment and Emergency Level Determination	Analysis of observed data and also considering monsoon and rainfall forecasts, archive data etc. for forecasting discharge for intimation to all concerned so as to release total inflowing water - /c Planning and /c OMS		
Expected Emergency	Reservoir reached EL 1267m. Though inflow is less than or equal to discharging capacity of power plant, spillways may be operated any time in case of increase in inflow	Reservoir reached EL 1267m and inflow is greater than discharging capacity of power plant	
Emergency Level	Pre Alert	Alert (If evacuation is not required)	Warning (If evacuation is required)
Internal Communication	/c-Control Room (As per notification flow chart at Annex. 7)		
Notification Responsibility	/c Planning (As per notification flow chart at Annex. 7)		
Notification	Notification No. 2	Notification No. 8	Notification No. 15
Expected Actions & responsibility	Gate operating staff will remain alert to ensure operation of spillway gates any time - /c HM	<p>i) Intimation about inflow of water into the reservoir and probable total outflow (through power house and Spillways) will be given to officials on twice daily / as required by Dist. Admn, till the spillways are closed - /c Planning.</p> <p>ii) Safety measures will be taken as per Ann.-10 before operating spillways- /c HM</p> <p>iii) Smooth operation of spillway gates will be ensured as per release requirements- /c HM</p> <p>iv) In case of immediate release of water, population along dis of project will be alerted by announcement through loudspeakers - /c Safety.</p>	
Termination & Follow Up	NR	/c Planning	

6.3.1.3 Reservoir level is at/near FRL, i.e. EIL, 1267m and there are incessant rains or forecast of heavy rains in the catchment area and reservoir is required to be lowered to accommodate incoming large flood

Detection	Observed G&D Data from G&D Stations, Information about incessant rains in the catchment area and / or forecast of heavy rains - I/c Control Room and I/c OMS	
Assessment and Emergency Level Determination	Analysis of observed data considering monsoon and rainfall forecasts, archive data and discharge in Alaknanda for taking decision for release of water through spillways for lowering the reservoir - I/c Planning and I/c OMS	
Expected Emergency	Release of water through Spillways	
Emergency Level	Alert (If evacuation is not required)	Warning (If evacuation is required)
Internal Communication	I/c-Control Room (As per notification flow chart at Annex. 7)	
Notification Responsibility	I/c Planning (As per notification flow chart at Annex. 7)	
Notification	Notification No. 9	Notification No. 16
Expected Actions & responsibility	<p>i) Intimation about inflow of water into the reservoir and probable total outflow (through power house and Spillways) will be given to officials on twice daily / as required by Dist. Admn. till the spillways are closed - I/c Planning.</p> <p>ii) Safety measures will be taken as per Ann.-10 before operating spillways- I/c HM</p> <p>iii) Smooth operation of spillway gates will be ensured as per release requirements- I/c HM</p> <p>v) In case of immediate release of water, population along d/s of project will be alerted by announcement through loudspeakers - I/c Safety.</p>	
Termination & Follow Up	I/c Planning	

6.3.2 Emergency situation arising due to Earthquake

Detection	Physical observations as well as reports in Electronic Media I/c Control Room		
Assessment and Emergency Level Determination	<p>Quick inspection (at the earliest possible) of dam & other structures including examination of instruments readings by Dam, Spillway & PH Dept. - I/c Control Room</p> <p>In case nothing abnormal is observed, message to this effect will be given to Design and OMS Dept. in the format for Earthquake damage report at Annex -9 - I/c Control Room</p> <p>In case some abnormalities are observed which may or may not lead to dam failure. Design and OMS will be immediately informed - I/c Control Room.</p> <p>A detailed inspection and assessment of situation will be done by Design and OMS within 24 hours to take decision for lowering the reservoir - I/c Design and I/c OMS</p> <p>In case serious abnormalities are observed and dam failure is imminent, warning notification as given below in this chart will be immediately issued - I/c Control Room and I/c Planning</p>		
Expected Emergency	Some minor impact of earth quake is noticed and an emergent situation may arise	Some significant impact of earthquake is noticed and reservoir is to be lowered for safety/ repair of dam.	
Emergency Level	Pro Alert	Alert (If evacuation is not required)	Warning (If evacuation is required)
Internal Communication	I/c Control Room (As per notification flow chart at Annex. 7)		
Notification Responsibility	I/c Planning (As per notification flow chart at Annex. 7)		
Notification	Notification No. 3	Notification No. 10	Notification No. appurtenant structures
Expected Actions & responsibility	Remedial measures and actions suggested by Design shall be taken by Project - I/c Control Room	<p>i) Intimation about inflow of water into the reservoir and probable total outflow (through power house and Spillways) will be given to officials on twice daily / as required by Dist. Admn till the spillways are closed - I/c Planning.</p> <p>ii) Safety measures will be taken as per Ann.-10 before operating spillways-I/c HM</p> <p>iii) Smooth operation of spillway gates will be ensured as per release requirements- I/c HM</p> <p>iv) In case of immediate release of water, population along d/s of project will be alerted by announcement through loudspeakers - I/c Safety.</p>	
Termination & Follow Up	I/c Planning		

6.3.3 Situation arising due to slowly developing conditions which are not emergent at the moment of occurrence and can be rectified, but if these are not attended properly, can develop into emergency situations.

(Signs- Formation of chimneys/ sinkholes, Increase in amount of seepage, Formation of boils at the downstream toe of the dam, visible cracks on the surface, Formation of vortices near the upstream & downstream slopes and Boggy condition downstream of the dam)

Defaction	<ul style="list-style-type: none"> O/S, Design & Dam Deptt. shall make detailed inspection of the project pre and post monsoon during the year and carry out evaluation Besides the schedule set above, Special Inspections and Emergency Inspections shall be made by Design, O/S & Dam Deptt. when unusual potentially adverse conditions reported by Dam Deptt. at the dam site. A close watch for the health of the dam shall be kept by Dam Deptt. during the monsoon season Besides looking for external signs, data of dam instrumentation will be collected and analyzed by Dam Deptt. Identifying and locating surface manifestations by Dam Deptt. Special attention shall be paid to seepage by Dam Deptt; whether any increase or decrease is occurring not related to reservoir levels Any wet spots, settlements; slumping of slopes, disturbance in upstream/ downstream profile, sloughing on the d/s slope, boggy situations or boils downstream of the toe, sinkholes at the on abutments and surface shall be carefully noted, recorded and immediately brought to the notice of the O/S & Design Deptts. by Dam Deptt 		
Assessment and Emergency Determination	Design Deptt. will carry out analysis and make assessment of the condition and inform to Dam Deptt. for further action - <i>I/c Design Deptt.</i>		
Expected Emergency	Some minor defect is noticed and an emergent situation may or may not arise	Some significant defect is noticed and reservoir is to be lowered for safety / repair of dam	
Emergency Level	Pre Alert	Alert (If evacuation is not required)	Warning (If evacuation is required)
Internal Communication	<i>I/c Control Room (As per notification flow chart at Annex. 7)</i>		
Notification Responsibility	<i>I/c Planning (As per notification flow chart at Annex. 7)</i>		
Notification	Notification No. 4	Notification No. 11	Notification No. 13
Expected Actions & responsibility	Remedial measures and actions suggested by Design shall be taken by Project - <i>I/c Control Room</i>	<ul style="list-style-type: none"> i) Intimation about inflow of water into the reservoir and probable total outflow (through power house and Spillways) will be given to officials on twice daily / as required by Dist. Admn. till the spillways are closed - <i>I/c Planning.</i> ii) Safety measures will be taken as per Ann.-10 before operating spillways-<i>I/c HM</i> iii) Smooth operation of spillway gates will be ensured as per release requirements- <i>I/c HM</i> vii) In case of immediate release of water, population along u/s of project will be alerted by announcement through loudspeakers - <i>I/c Safety.</i> 	
Termination & Follow Up	<i>I/c Planning</i>		

6.3.4 Emergency Action Plan for situations emerging due to Civil Disturbance/ Sabotage/ Vandals etc

Detection	Communication from CISF team posted at Project, Staff posted at Project, Media or any other source - Commandant CISF and I/c P&A		
Assessment and Emergency Level Determination	CISF and P&A team will rush to the incident site to understand the gravity of the situation and also to decide further action to be taken - Commandant CISF and I/c P&A Damage to dam or appurtenances will be assessed properly for its consequences about the release of water - I/c Control Room		
Expected Emergency	Damage to dam or appurtenances structures with no impacts on functioning of dam / spillway Or Modification to dam or appurtenances structures that could adversely affect functioning of dam / spillway	Damage to dam or appurtenances that has resulted seepage from dam or release of water	Damage to dam or appurtenances that has resulted uncontrolled release of water
Emergency Level	Pre Alert	Alert	Warning
Internal Communication	I/c Control Room (As per notification flow chart at Annex. 7)		
Notification Responsibility	I/c Planning (As per notification flow chart at Annex. 7)		
Notification	Notification No. 5	Notification No. 12	Notification No. 19
Expected Actions & responsibility	All available CISF teams will be deployed to protect vital locations - Commandant CISF and I/c P&A DM, Chandof and SP, Chamoli will be informed to send sufficient Police Force immediately to control the situation- I/c P&A O&M and HM team will cut off electric supply of spillway gates and keep the gates locked to prevent manual operation I/c O&M and HM i) Intimation about inflow of water into the reservoir and probable total outflow (through power house and Spillways) will be given to officials on twice daily / as required by Dist. Admin till the spillways are closed - I/c Planning. ii) Safety measures will be taken as per Ann.-10 before operating spillways-I/c HM vii) In case of immediate release of water, population along d/s of project will be alerted by announcement through loudspeakers - I/c Safety. iii) Smooth operation of spillway gates will be ensured as per release requirements- I/c HM		
Termination & Follow Up	I/c Planning		

Note - CISF team have their own action plan to tackle such kind of situations

6.3.5 Emergency Action Plan for situations emerging due to Security Breach/ Terrorist Attack/ Bomb threat

Detection	Communication from CISF team posted at Project, inputs from web cameras, Staff posted at Project, Media or any other source - Commandant CISF and I/c P&A	
Assessment and Emergency Level Determination	CISF and P&A team will rush to the incident site to understand the gravity of the situation and also to decide further action to be taken - Commandant CISF and I/c P&A	
Expected Emergency	Verified bomb threat/ intrusion which could result in damage to dam or appurtenances	Detonated bomb that has resulted damage to the dam or appurtenances
Emergency Level	Alert	Warning
Internal Communication	I/c Control Room (As per notification flow chart at Annex. 7)	
Notification Responsibility	I/c Planning (As per notification flow chart at Annex. 7)	
Notification	Notification No. 13	Notification No. 20
Expected Actions & responsibility	DM Chamoli and SP, Chamoli will be informed to send sufficient Police Force immediately to take control of the incident site - I/c P&A	
	NDMA will be informed about the incident and to provide necessary support, if required - I/c Project	
	Population along the river just r/s of project will be alerted by Safety Team by making announcement through loudspeakers in case of immediate release of water - I/c Safety	
	HM team will remain ready to ensure smooth operation of gates as and when required - I/c HM	
	O&M team will remain ready to carry out maintenance/ repair of gates in case they are damaged - I/c O&M	
Termination & Follow Up	I/c Planning	

Note - CISF team have their own action plan to tackle such kind of situations

6.3.6 Emergency Action Plan for situations emerging due to potential landslide after heavy rains in the catchment or occurrence of earthquake of intensity ≥ 4 or $PGA \geq 0.1g$

Detection	Information about heavy rains from G&D Station staff, Media Reports, Reports from CWC/IMD/ or other agency- I/c Control Room		
Assessment and Emergency Determination Level	The rim of the reservoir shall be inspected for possible slides by a team of representative from Dam Deptt. and Geologist both immediately after the such event is reported. Special attention shall be given to those areas which have been identified as vulnerable from the experience of previous years. The team will inspect the site and report to I/c Control Room about the likely volume of slide and whether any corrective actions are required / possible. - I/c Control Room & I/c G&G Deptt.		
Expected Emergency	A location of potential landslide is identified but slide is not imminent and can be a threat to dam if not attended timely	A landslide is imminent but expected volume is such that the reservoir can be lowered gradually	A huge landslide is imminent and reservoir is to be lowered immediately
Emergency Level	Pre Alert	Alert	Warning
Internal Communication	I/c Control Room (As per notification flow chart at Annex. 7)		
Notification Responsibility	I/c Planning (As per notification flow chart at Annex. 7)		
Notification	Notification No. 6	Notification No. 14	Notification No. 21
Expected Actions & responsibility	Design team in consultation with Geologist will suggest remedial measures -I/c Design	Smooth operation of spillway gates will be ensured as per release requirements- I/c HM	
	Remedial measures and actions suggested by Design shall be taken by Project - I/c Control Room	Safety measures will be taken as per Ann.-10 before operating spillways-I/c HM	
	Monitoring of the vulnerable location will be continued by Dam Deptt & Geologists - I/c Control Room and I/c G&G Deptt.	Intimation about probable total outflow (through power house and Spillways) will be given to officials on twice daily/ as required by Distt. Admin. till the spillways are closed - I/c Planning	
Termination & Follow Up	I/c Planning		

6.3.7 Emergency Action Plan for situations emerging due to landslide or Gf of in the catchment after earthquake or heavy rain when reservoir is at/ near FRL and dam overtopping appears to be imminent

Detection	During/ after heavy rains/ Gf of in the catchment area and after potentially damaging earthquake, staff posted at Control Room will keep a close watch on the reservoir level near dam site to detect any abrupt rise in the reservoir level- /c Control Room
Assessment and Emergency Level Determination	In case of abrupt rise in water level, Staff/ Executives available at Control Room will assess the situation and immediately report to /c Control Room for taking immediate action regarding lowering of the reservoir- /c Control Room
Expected Emergency	Occurrence of a huge landslide assessed/ occurred and reservoir or Gf of in the catchment is to be lowered immediately
Emergency Level	Warning
Internal Communication	/c Control Room (As per notification flow chart of Annex. 7)
Notification Responsibility	/c Planning (As per notification flow chart of Annex. 7)
Notification	Notification No. 22
Expected Actions & responsibility	Smooth operation of spillway gates will be ensured as per release requirements- /c HM Safety measures will be taken as per Ann.-10 before operating spillways- /c HM Information about probable total outflow (through power house and Spillways) will be given to officials on twice daily / as required by Dist. Admn. till the spillways are closed - /c Planning Monitoring of the reservoir level will be continued till the reservoir level is stabilized at / near FRL - /c Control Room
Termination & Follow Up	/c Planning

6.3.8 Emergency Action Plan for any situations which require immediate release of water from reservoir to protect dam failure due to overtopping or any other reason.

Detection	During/ after heavy rains or Glaf in the catchment area after potentially damaging earthquake, after security breach and after structural failure due to sliding, overturning of dam or abutment/ foundation failure due to overstressing or due to structure failure due to concrete unable to sustain imposed load etc, a close watch shall be kept on the dam and surrounding area/ abutments, seepage coming out of the dam body and instrument readings etc - I/c Control Room
Assessment and Emergency Level Determination	Staff/ Executives available at Control Room will assess the situation and immediately report to I/c Control Room for taking immediate action regarding lowering of the reservoir- I/c Control Room
Expected Emergency	Dam failure is imminent and for safety of dam reservoir is to be lowered at the earliest possible
Emergency Level	Warning
Internal Communication	I/c Control Room (As per notification flow chart at Annex. 7)
Notification Responsibility	I/c Planning (As per notification flow chart at Annex. 7)
Notification	Notification No. 23
Expected Actions & responsibility	Smooth operation of spillway gates will be ensured as per release requirements- I/c HM
	Safety measures will be taken as per Ann.-10 before operating spillways- I/c HM
	Intimation about probable total outflow (through power house and Spillways) will be given to officials on twice daily/ as required by Distt. Admn. if the spillways are closed - I/c Planning
	Monitoring of the reservoir level will be continued till the reservoir level is stabilized at safe levels - I/c Control Room
Termination & Follow Up	I/c Planning

6.4 Different Notifications for State / Dist. Administration
Notifications No. 1

Type of Notification	-	Pre Alert
Date of Notification	-	_____
Notification Issued by	-	I/c Planning, VPHEP (Mob. No. __)
Reservoir reached EL 1260m i.e. 7m below FRL and Spillway may be operated in case of Heavy Rains		

Notifications No. 2

Type of Notification	-	Pre Alert
Date of Notification	-	_____
Notification Issued by	-	I/c Planning, VPHEP (Mob. No. __)
Reservoir reached EL 1267m i.e. FRL and Spillway may be operated at any time		

Notifications No. 3

Type of Notification	-	Pre Alert
Date of Notification	-	_____
Notification Issued by	-	I/c Planning, VPHEP (Mob. No. __)
Some impact of earthquake dated _____ at _____ hrs. has been noticed in _____ (structure) _____ and remedial measures are being taken. An emergent situation requiring spillway operation for lowering the reservoir may arise and spillway may be operated at any time		

Notifications No. 4

Type of Notification	-	Pre Alert
Date of Notification	-	_____
Notification Issued by	-	I/c Planning, VPHEP (Mob. No. __)
Some defect in _____ (structure) _____ has been noticed and remedial measures are being taken. An emergent situation requiring spillway operation for lowering the reservoir may arise and spillway may be operated at any time		

Notifications No. 5

Type of Notification	-	Pre Alert
Date of Notification	-	_____
Notification Issued by	-	I/c Planning, VPHEP (Mob. No. __)
Damage to dam or appurtenant structures with no impacts on functioning of dam/ spillway or Modification to dam or appurtenances that could adversely affect functioning of dam/ spillway has been caused due to _____ (Civ) Disturbance/ Sabotage/ Vandalism) _____ dated _____. Remedial measures are being taken to rectify/ repair damages.		

Notifications No. 6

Type of Notification - Pre Alert
Date of Notification - _____
Notification Issued by - I/c Planning, VPHEP (Mob. No.____)

"A location of potential landslide is identified in reservoir rim about ___ kms upstream of dam near _____ village in _____ river valley but there is no threat to dam structure at present and suitable measures are being taken by THDC to stabilize/ treat the area"

Notifications No. 7

Type of Notification - Alert
Date of Notification - _____
Notification Issued by - I/c Planning, VPHEP (Mob. No.____)

"Due to heavy rains/ Gloc in the catchment area of VPHEP, reservoir level is increasing at a rate higher than desired rate which is required to be controlled by regulated release of water from dam. Water @ _____ cumecs will be released from _____ hrs. on (date) from the reservoir. Rise in water level about _____ cm at Nandprayag, _____ cm at Karnprayag _____ cm at Rudraprayag _____ cm at Srinagar and _____ cm at Devprayag is expected. Population in the low lying areas is to be alerted"

Notifications No. 8

Type of Notification - Alert
Date of Notification - _____
Notification Issued by - I/c Planning, VPHEP (Mob. No.____)

"Reservoir is at El. 1267m (FRL) and inflows are more than power plant capacity. Excess water is required to be released from dam. Water @ _____ cumecs will be released from _____ hrs. on (date) from the reservoir. Rise in water level about _____ cm at Nandprayag, _____ cm at Karnprayag _____ cm at Rudraprayag _____ cm at Srinagar and _____ cm at Devprayag is expected. Population in the low lying areas is to be alerted"

Notifications No. 9

Type of Notification - Alert
Date of Notification - _____
Notification Issued by - I/c Planning, VPHEP (Mob. No.____)

"Reservoir is at/ near FRL and there is forecast of heavy rains for which reservoir is required to be lowered to accommodate likely incoming flood discharge. @ _____ cumecs will be released from _____ hrs. on (date) from the reservoir. Rise in water level about _____ cm at Nandprayag, _____ cm at Karnprayag _____ cm at Rudraprayag _____ cm at Srinagar and _____ cm at Devprayag is expected. Population in the low lying areas is to be alerted"

Notifications No. 10

Type of Notification	-	Alert
Date of Notification	-	_____
Notification issued by	-	I/c Planning, VPHEP (Mob. No. __)
"Significant impact of earthquake dated _____ at _____ hrs. has been noticed in ___(structure)___ and for taking remedial measures lowering of reservoir is required. Water @ _____ cumecs will be released from _____ hrs. on (date) from the reservoir. Rise in water level about _____ cm at Nandprayag, _____ cm at Karnprayag _____ cm at Rudraprayag _____ cm at Srinagar and _____ cm at Devprayag is expected. Population in the low lying areas is to be alerted"		

Notifications No. 11

Type of Notification	-	Alert
Date of Notification	-	_____
Notification issued by	-	I/c Planning, VPHEP (Mob. No.)
"A serious defect has been noticed in ___(structure)___ and for taking remedial measures lowering of reservoir is required. Water @ _____ cumecs will be released from _____ hrs. on (date) from the reservoir. Rise in water level about _____ cm at Nandprayag, _____ cm at Karnprayag _____ cm at Rudraprayag _____ cm at Srinagar and _____ cm at Devprayag is expected. Population in the low lying areas is to be alerted"		

Notifications No. 12

Type of Notification	-	Alert
Date of Notification	-	_____
Notification issued by	-	I/c Planning, VPHEP (Mob. No. __)
"Damage to dam or appurtenant structures with impacts on functioning of dam/ spillway or Modification to dam or appurtenances affecting functioning of dam/ spillway has been caused due to _____(Civil Disturbance/ Sabotage/ Vandalism)_____ dated _____, Reservoir is required to be lowered to take remedial measures to rectify/ repair damages. Water @ _____ cumecs will be released from _____ hrs. on (date) from the reservoir. Rise in water level about _____ cm at Nandprayag, _____ cm at Karnprayag _____ cm at Rudraprayag _____ cm at Srinagar and _____ cm at Devprayag is expected. Population in the low lying areas is to be alerted"		

Notifications No. 13

Type of Notification	-	Alert
Date of Notification	-	_____
Notification issued by	-	I/c Planning, VPHEP (Mob. No. __)
"Damage to dam or appurtenant structures with impacts on functioning of dam/ spillway has been caused due to _____(Security Breach/ Terrorist Attack/ Bomb threat)_____ Gated _____, Reservoir is required to be lowered to take remedial measures to rectify/ repair damages. Water @ _____ cumecs will be released from _____ hrs. on (date) from the reservoir. Rise in water level about _____ cm at Nandprayag, _____ cm at Karnprayag _____ cm at Rudraprayag _____ cm at Srinagar and _____ cm at Devprayag is expected. Population in the low lying areas is to be alerted"		

Notifications No. 14

Type of Notification	-	Alert
Date of Notification	-	_____
Notification Issued by	-	Uc Plann.g, VPHEP (Mob. No. __)
<p>"A huge landslide in reservoir run area about ___ kms upstream of dam near _____ village in _____ river Valley is imminent which may be a threat to dam. Reservoir is to be lowered gradually. Water @ _____ cumecs will be released from ___ hrs. on (date) from the reservoir. Rise in water level about ___ cm at Nandprayag, ___ cm at Karnprayag, ___ cm at Rudraprayag, ___ cm at Srinagar and ___ cm at Devprayag is expected. Population in the low lying areas is to be alerted"</p>		

Notifications No. 15

Type of Notification	-	Warning
Date of Notification	-	_____
Notification Issued by	-	Uc Planning, VPHEP (Mob. No. __)
<p>"Reservoir is at EL 1267m (FRL) and inflow is higher than capacity of plant and inflow is also increasing regularly. Water @ _____ cumecs will be released from ___ hrs. on (date) from the reservoir. Rise in water level about ___ cm at Nandprayag, ___ cm at Karnprayag, ___ cm at Rudraprayag, ___ cm at Srinagar and ___ cm at Devprayag is expected. Therefore, immediate evacuation from these areas is required.</p> <ol style="list-style-type: none">1. _____2. _____3. _____4. _____		

Notifications No. 16

Type of Notification	-	Warning
Date of Notification	-	_____
Notification Issued by	-	Uc Planning, VPHEP (Mob. No. __)
<p>"Reservoir is at/ near FRL and there is forecast of heavy rains for which reservoir is required to be lowered as early as possible to accommodate likely incoming flood discharge for safety of dam. Water @ _____ cumecs will be released from ___ hrs. on (date) from the reservoir. Rise in water level about ___ cm at Nandprayag, ___ cm at Karnprayag, ___ cm at Rudraprayag, ___ cm at Srinagar and ___ cm at Devprayag is expected. Therefore, immediate evacuation from these areas is required.</p> <ol style="list-style-type: none">1. _____2. _____3. _____4. _____		

Notifications No.17 Appurtenant structures

Type of Notification	-	Warning
Date of Notification	-	_____
Notification Issued by	-	I/c Planning, VPHEP (Mob. No. __)
*Significant impact of earthquake dated ____ at ____ hrs. has been noticed in __ (structure) __ and for taking remedial measures reservoir is required to lowered at the earliest possible. Water @ ____ cumecs will be released from ____ hrs. on (date) from the reservoir. Rise in water level about ____ cm at Nandprayag, ____ cm at Karnprayag ____ cm at Rudraprayag ____ cm at Srinagar and ____ cm at Devprayag is expected. The areas indicated in the below mentioned foundation maps are likely to be affected. Therefore, immediate evacuation from these areas is required.		
1.	-	
2.	-	
3.	-	
4.	-	

Notification No. 18

Type of Notification	-	Warning
Date of Notification	-	_____
Notification Issued by	-	I/c Planning, VPHEP (Mob. No. __)
*A serious defect has been noticed in __ (structure) __ and for taking remedial measures reservoir is required to lowered at the earliest possible. Water @ ____ cumecs will be released from ____ hrs. on (date) from the reservoir. Rise in water level about ____ cm at Nandprayag, ____ cm at Karnprayag ____ cm at Rudraprayag ____ cm at Srinagar and ____ cm at Devprayag is expected. Therefore, immediate evacuation from these areas is required.		
1.	-	
2.	-	
3.	-	
4.	-	

Notification No. 19

Type of Notification	-	Warning
Date of Notification	-	_____
Notification Issued by	-	Jc Planning, VPHEP (Mob. No. __)
<p>"Damage to dam or appurtenant structures with serious impacts on functioning of dam/ spillway or Modification to dam or appurtenances seriously affecting functioning of dam/ spillway has been caused due to ____ (Civil Disturbance/ Sabotage/ Vandalism) _____ dated _____ and for taking remedial measures reservoir is required to lowered at the earliest possible. Water @ _____ cumecs will be released from _____ hrs. on [date] from the reservoir. Rise in water level about _____ cm at Nandprayag, _____ cm at Karnprayag _____ cm at Rudraprayag _____ cm at Srinagar and _____ cm at Devprayag is expected. Therefore, immediate evacuation from these areas is required.</p>		
1.	-	
2.	-	
3.	-	
4.	-	

Notification No. 20

Type of Notification	-	Warning
Date of Notification	-	_____
Notification Issued by	-	Jc Planning, VPHEP (Mob. No. __)
<p>"Damage to dam or appurtenant structures with serious impacts on functioning of dam/ spillway has been caused due to ____ (Security breach/ terrorist attack /bomb attack) _____ dated _____ and for taking remedial measures reservoir is required to lowered at the earliest possible. Water @ _____ cumecs will be released from _____ hrs. on [date] from the reservoir. Rise in water level about _____ cm at Nandprayag, _____ cm at Karnprayag _____ cm at Rudraprayag _____ cm at Srinagar and _____ cm at Devprayag is expected. Therefore, immediate evacuation from these areas is required.</p>		
1.	-	
2.	-	
3.	-	
4.	-	

Notification No. 21

Type of Notification - Warning
Date of Notification - _____
Notification Issued by - I/c Planning, VPHEP (Mob. No.____)

"A huge landslide in reservoir rim area about ____ kms upstream of dam near _____ village in _____ river Valley is imminent which may be a threat to dam. Reservoir is to be lowered immediately. Water @ ____ cumecs will be released from ____ hrs. on (date) from the reservoir. Rise in water level about ____ cm at Nandprayag, ____ cm at Karnprayag ____ cm at Rudraprayag ____ cm at Srinagar and ____ cm at Devprayag is expected. Therefore, immediate evacuation from these areas is required.

1. _____
2. _____
3. _____
4. _____

Notification No. 22

Type of Notification - Warning
Date of Notification - _____
Notification Issued by - I/c Planning, VPHEP (Mob. No.____)

"A huge landslide in reservoir rim area upstream of dam has happened which is a threat to dam. Reservoir is to be lowered immediately. Water @ ____ cumecs will be released from ____ hrs. on (date) from the reservoir. Rise in water level about ____ cm at Nandprayag, ____ cm at Karnprayag ____ cm at Rudraprayag ____ cm at Srinagar and ____ cm at Devprayag is expected. Therefore, immediate evacuation from these areas is required.

1. _____
2. _____
3. _____
4. _____

Notification No. 23

Type of Notification	Warning
Date of Notification	- _____
Notification Issued by	- J/c Planning, VPHEP (Mob. No. __)
*Due to _____ (incident; _____ dam failure is imminent and reservoir is to be lowered immediately. Water @ _____ cumecs will be released from _____ hrs. on (date) from the reservoir. Rise in water level about _____ cm at Nanoprayang, _____ cm at Kottprayang _____ cm at Rudraprayag _____ cm at Srinagar and _____ cm at Devprayag is expected. Therefore, immediate evacuation from these areas is required.	
1.	-
2.	-
3.	-
4.	-

VISHNUGAD PIPALKOTI H.E. PROJECT (4 X 111 MW)

SALIENT FEATURES

A. LOCATION:	
State	Uttarakhand
Distt.	Chamoli
River	Alaknanda
Dam site	Near Village Helong (E – 79° 29' 30") (N - 30° 30' 50")
P.H site (underground)	Near Village Hat (E – 79° 24' 55") (N - 30° 25' 31")
B. HYDROLOGY:	
Catchment Area at Dam Site	4672 km ²
Annual mean flow	5682.6 Mcum
Submergence area	24.5 ha
Design Flood	SPF 6706m ³ /sec (For Design)
	PMF 10840m ³ /sec (For Checking)
Diversion Flood (1: 25 yr Non monsoon flood)	725 m ³ /sec
Normal Water Level in Non Monsoon season at Dam site	+ 1232 m.
HFL at Dam site	± 1238 m
Normal Water Level in Non Monsoon season at TRT Outlet site	± 1033 m
HFL at TRT outlet site	± 1040 m
C. RESERVOIR:	
Full reservoir level	E.L. 1267 m
Maximum water level	E.L. 1269 m (PMF)
Minimum draw down level	E.L. 1252.5 m
Gross storage at FRL	3.53 Mcum
Storage at MODL	1.16 Mcum
Live storage	2.47 Mcum
Surface Area at FRL	24.5 Ha.
D. DIVERSION ARRANGEMENT:	
Diversion Tunnel:	
Location	Left bank
Diameter	10.5 m, Circular
Design Discharge	725 m ³ /sec
Gates	10.5mx4.0m, Vertical lift fixed wheel
Invert level at Entry	1224m
U/S Cofferdam:	
Type	Colcrete
Length	40 m ±

height	20 m
Top Elevation	EL :241 m

D/S Cofferdam:

Type	Earth and Rockfill
Length	30 m ±
Height	7.5 m
Top El .	EL :222.50 m

E. DIVERSION DAM:

Type of dam	Concrete, gravity dam
Height of dam above deepest Foundation level	6.5 m
Top of dam	FL 1270 m
River bed level	EL 1225 m
Foundation level	EL 1205 m
Length	34.02 M (NOF 16.85 m, OF 77.17 m)

F. SPILLING ARRANGEMENT:

Sluices:

Nos.	4
Design Discharge	9500 m ³ /sec
Size of sluice	8 m (W) x 15 m (H)

Type of gate	Radial
--------------	--------

Crest level of sluice	1233 m
-----------------------	--------

Diversion cum Spillway Tunnel:

Diameter	10.5 m dia, Circular
Invert level at Entry	1249 m
Design Discharge	1350 m ³ /sec
Gate	2+1 no., 4, 1 m x 10 m (Vertical lift fixed wheel Gate)

Ogee spillway

No.	1
Type of gate	vertical
Size	7 m (H) x 6 m (W)
Design flow	240 m ³ /sec
Crest EL	EL 1260 m

Combined Capacity of all Spillways

4 Sluices + Diversion cum Spill Tunnel + Ogee (At MWL) 11050 m³/sec

G. POWER INTAKE:

Location	Right bank
Nos.	3
Type	Straight intake with bell mouth
Maximum discharge	274.63m ³ /sec
Intake invert level	EL 1242.5 m
Size	0.2 m circular

Gates	3 + 3 nos. 5.20 m x 6 m Vertical lift fixed wheel gate (Service gate + emergency gate)
H. DESILTING CHAMBER:	
Nos.	3
Size	390 m (L) x 16 m (W) x 21.25 m (H)
Particle size to be removed	0.2 mm & above
Gates	3 nos. 5.24 m x 6 m (H), Vertical lift fixed wheel
Operation level	EL 1270 m
Silt Flushing Tunnel:	
Size	3.6 m x 4.0 m (D shaped)
Flushing discharge	45.8 m ³ /sec
Gates	3 nos. 2.5 m x 2.85 m, (Vertical lift slide Gate)
Operation level	EL 1237 m
I. HEAD RACE TUNNEL:	
Length	13.4 km
Diameter	8.8 m (Circular)
Design discharge	228.86 m ³ /sec
Velocity	3.56 m/sec
Bed slope (average)	1:121 (before Maina River) 1:321 (After Maina River)
No. of adits	2
J. UPSTREAM SURGESHAFT:	
Type	Restricted Orifice type
Diameter	15/22 m Φ (15 m Φ , EL.1165m to 1240m) (22 m Φ , EL. 1240m to 1305 m)
Height (from HRT invert)	140 m
Top EL	1305 m
Orifice level	1165 m
Orifice diameter	1.5 m , 3 nos.
Tunnel inverts	EL 1165 m
K. BUTTERFLY VALVE CHAMBER:	
Size	50 m (L) x 9.8 m (W) x 19 m (H)
Butterfly Valve	2 nos. , 5.2 m
L. PENSTOCK ASSEMBLY CHAMBER:	
Size	50 m (L) x 9.8 m (W) x 19 m (H)

M. PRESSURE SHAFT:

Nos.	2 / 4
Type	Circular
Diameter	5.2 m / 3.65 m
Length of each PS	310 m / 35 m
Design velocity	5.39 m/sec

N. POWER HOUSE:

Type	Underground
Size of P/H cavern	146 m x 20.3 m x 49 m
Size of Transformer cavern	142 m x 15 m x 26.5 m
Nos. of units	4
Rated unit capacity	111 MW
Installed capacity	4 x 111 MW = 444 MW
Gross Head	237.0 m
Rated Head	212.46 m
Centre line of unit	EL 1022.0 m
Service bay level	EL 1038 m
Maximum flow through each unit	57.22 m ³ /sec
Generator:	
Synchronous speed of Generator	250 rpm
Power factor, Generator voltage	0.9, 13.8kV

Transformers- Type, Nos., No. of Phases, O/FWF, 4, 3, single phase, 46MVA,
13.8/ 420/13kV,

Step-up voltage, Capacity 400kV

O. D/S SURGE TANK:

Type	Underground
Size (under finalization)	120 m (L) x 16 m (W) x 35 m (H)
Maximum Surge level	1040 m
Minimum Surge level	1026.5 m

P. TAIL RACE TUNNEL:

a) Size	9.1 m ϕ (Circular)
b) Length	3.07 km
c) Max. TWL	1030.0 m (With all 4 M/C running)
d) Min. TWL	1020.2 m
e) TRT invert level	EL 1025.0

Q. POTYARD:

a) Type	GIS
b) No. of bays in the Potyard	8 bays
c) Voltage level	420 kV
d) Size of potyard	40m x 67 m

R. POWER GENERATION:

1. During DPR

a) Annual Energy	1813.03 GWh
b) Design Energy	1797.24 GWh

2. As per Revised E flows:

a) Annual Energy	1696.31 GWh
b) Design Energy	1674.29 GWh

**TELEPHONE / FAX NOS AND ADDRESSES OF CENTRAL / STATE GOVT./ DISTRICT
ADMINISTRATION / CWC / IRRIGATION DEPTT. OFFICIALS**

a) External

S.N.	Name of Officer & Designation	Office Address	Telephone
1.	Secretary, Ministry of Power, GOI	Shram Shakti Bhawan N. Delhi-1 <i>JS(Hydro), MoP</i>	011- 23711316 / 23710271(O), 24615656 (R), 011-23714367
2.	National Disaster Management Authority (GOI)	NDMA Bhawan A-1, Safdargarh Enclave New Delhi Control Room, New Delhi <i>JS(Admin)</i>	011-2670appurtenant structures 10, 2670appurtenant structures 16(fax) e-mail : controlroom@ndma.gov.in 011-2670appurtenant structures 28/ 011-1078 9868891801 / 9868101885 011-267018appurtenant structures
3.	Relief Commissioner, Govt. of UP	UP Secretariat, Bapu Bhawan, Chattai, F-Block Lucknow.	0522-2238107 (O), 0522-2238084/2236305 (Fax), 9889651263 Control room-0522-2238200
4.	Secretary , Disaster Management / Relief Commissioner, Govt. of UK	Govt. of UK Secretariat, Subhash Road, D.Dun.	0135-2656130 (O),2721232(R) 2714106(Fax) 9837542221
5.	District Magistrate, Chamoli	District Magistrate	01372-252102, (O) 01372- 252101 (R) 01372-252203 (F)
6.	District Magistrate, Tehri	SDM	01376-232092(O); 232040(R), 232354 (Fax), Control Room – 01376-233433 7500650000 01376-232520(O) 9452965426

7.	District Magistrate, Rudraprayag	District Magistrate	01364-233300 (O), 01364- 233378 (R) 01364-233380 (F) 01364-233834 (Steno)
8.	District Magistrate, Pauri	SDM	01368-222250(O), 222202(R), 222811(Fax) Control Room – 01368-222504 8650868860 01368-222422(O) 8650922204
9.	District Magistrate, Haridwar	SDM	01334-239845(O), 226677,239645 (R), 239554 (Fax), Control Room – 01334-223999/ 226849 9456597050 01334-239107(O) 9410112855
10.	District Magistrate, Dehradun	SDM	0135-2622389 (O), 2659975(R), 2655225 (Fax), Control Room – 0135-2728066 9412053715 / 7536022222 0135-2632881(O) 9456554882
11.	Disaster Mitigation & Management Centre, D.Dun	Govt. of UK Secretariat, Subhash Road, D.Dun Sh Piyush Routhela (ED)	0135-2710232, 2710233 State Emergency Operation Centre - 2710334, 2710335 Toll free- 01351070 9412054035
12.	UKID, Dehradun	Flood Control Room of Irrigation Deptt. Dehradun,	0135-2456167 2455700(O), 9456590282
13.	CWC, D.Dun	Central Flood Forecasting Unit, CWC D.Dun Sh Piyush Kumar (Ex. Engr)	0135-2745882, 2742418(Fax) 9212054507

14.	Pasulok Barrage, Rishikesh.	Control Room, Pasulok Barrage Sh. Musabar Ali, SDO	0135-2456167 2455700(O), 9456590282
15.	Bhimgoda, Barrage, Haridwar	Control Room, Bhimgoda Barrage Haridwar Sh.M.K.Singh, SDO,	01334-220233,226034, 9410561166, 9450733922
16.	UPID, Meerut	Flood Control Room of Irrigation deptt., Govt. of UP, Meerut	0121-2644254 / 2666476
17.	UFID, Muzafar Nagar	Flood Control Room of Irrigation deptt., Govt. of UP, Muzafar Nagar	0131-2436918
18.	NDRF	East Block -7, Level -7, Sector -1, R.K. Puram, New Delhi Sh Sudhir Thapa, Inspector, Control Room, New Delhi Commandant, NDRF, Ghaziabad (UP) Commandant General Civil Defense, Dehra Dun	011-26712851(O), 26151442, 09911357808 011-26715303 (Fax) e-mail- dg.ndrf@nic.in Control room 01126107953 / 26105912 011-26107953(O)/ 26105912(fax) 09711448595 0120-2766013 / 2766618 9968610014 0135-2674471(O)

TELEPHONE / FAX NOs AND ADDRESSES OF THDC OFFICIALS

S.N.	Name of Officer & Designation	Office Address	Telephone		
			Landline	Fax	Mobile
CORPORATE OFFICE, RISHIKESH					
1.	CMD, THDC	Ganga Bhawan, Pragatipuram, Bypass Road, Rishikesh.	0135-2431454(O), 2433234(R)		9412988211
2.	Dir.(Tech.), THDC	- Do -	0135-2431468 (O), 2430409(R)		9411103546
3.	Dir.(Per.), THDC	- Do -	0135-2432688(O), 2432689(R)		9411101990
4.	Dir.(Fin.), THDC	- Do -	0135-2430118(O), 2437854(R)		9411113501
5.	Sh. S. R. Miera General Manager (S&E), Rishikesh	Bhagirathi Bhawan, Pragatipuram, Bypass Road, Rishikesh.			9412051370
6.	Sh. H.L. Arora, General Manager, OMS, QA & Safety, Rishikesh.	Bhagirathi Bhawan, Pragatipuram, Bypass Road, Rishikesh.	0135-2430575(O),		9412075132, 999799033
7.	Sh. R.K. Vishnoi General Manager, Civil-Design, Rishikesh.	Aleknanda Bhawan, Pragatipuram, Bypass Road, Rishikesh.	0135-2437839(O),		9719653930
8.	Sh. V.K. Badoni GM(MPS/CP)	Ganga Bhawan, Pragatipuram, Bypass Road, Rishikesh.	0135-2439450(O), 2431943(R)		9412052897

9.	Sh. Vijay Goel, General Manager, P&A, Rishikesh.	Bhagirathi Bhawan, Pragatipuram, Bypass Road, Rishikesh	0135-2430753(O), 9411103794
10.	Sh.K.O.P.Dubey, Mgr, Corporate communication,	Bhagirathi Bhawan, Pragatipuram, Bypass Road, Rishikesh	0135-2473514(O), 9411106928

VPHEP, Pipalkoti

11.	PPS Maan ED(Project)	VPHEP, Siasain, Pipalkoti	01372- 256200(O), 256201(R); 9411101352
12.	DGM(QA) DGM (Safety)	QC Lab VPHEP, Siasain, Pipalkoti	01372-256231 9411112658
13.	Sh. D.K. Saxena AGM, (Dam , Spillway & HM) & In-charge Control Room, Pipalkoti	VPHEP, Siasain, Pipalkoti	01372-256219(O), 9837790454
14.	DGM (Planning)	VPHEP, Siasain, Pipalkoti	01372-256208 (O) 9411110808
15.	AGM (Mechanical) Pipalkoti	VPHEP, Siasain, Pipalkoti	9997999070
16.	DGM (P&A) Pipalkoti	- Do -	01372-256211(O), 9411109642
17.	Pipalkoti Dam Helong Control Room	Pipalkoti Dam	9997999070
18.	Power House, Control Room	VPHEP	01372-256218(O), 9837790454

NCR OFFICE, GHAZIABAD

19	Sh Deepak Sarwat E.D (SP)	Plot no- 20 Sector-14, Kaushambi Ghaziabad	0120-2776408(O), 9810287780
20	Sh R.K.Bhat AGM(KSTPP)	Plot no- 20 Sector-14, Kaushambi Ghaziabad	0120-2776493(O), 9560886435
21	Sh R.N Singh AGM(SP)	Plot no- 20 Sector-14, Kaushambi Ghaziabad	0120-2776490(O), 8899280905

LIAISON OFFICE, LUCKNOW

22	Sh A.K. Srivastava AGM	Flat no-101, Raj Apartment, 7- Jopling Road, Lucknow	0522-2204112(O), 9997999009
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LIAISON OFFICE, DEHRADUN

23	Sh A.K Chawla DGM	26, E C Road Dehradun	0135-2650888(O), 9412051850
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LIST OF EMERGENCY EQUIPMENT FOR RESCUE OPERATIONS-
VPHEP

Sl. No.	Type of Equipment	No. of Equipment
1	JCB (1 small)	01 No.
2	Pneumatic tyre loader	01 No.
3	Heavy Duty Truck Mounted Crane	1 No.
4	Motorised Boat (After impoundment)	1 No.
5	Trucks/Tippers	5 Nos.
6	Grouting Equipment	1 No.
7	Wire Ropes/Winches and accessories	As per requirement
8	Tractor Mounted Compressors	1 No.
9	Jack Hammers	3 Nos.
10	Welding sets	1 No.
11	Portable Diesel generating sets of suitable capacity for emergency	1 No.
12	Portable lights for emergency lighting	05 Nos.
13	Hand held emergency lights for inspections etc.	10 Nos.

* Note : The list of equipment is indicative and apart from it some equipment are available at VPHEP, Pipalkoti and with HCC for VPHEP Works which can be diverted in case of any emergency. Equipment (HMV, LMV, & Fire Tender etc.) with other agencies (Govt. / Private) available in the nearby will also be identified.

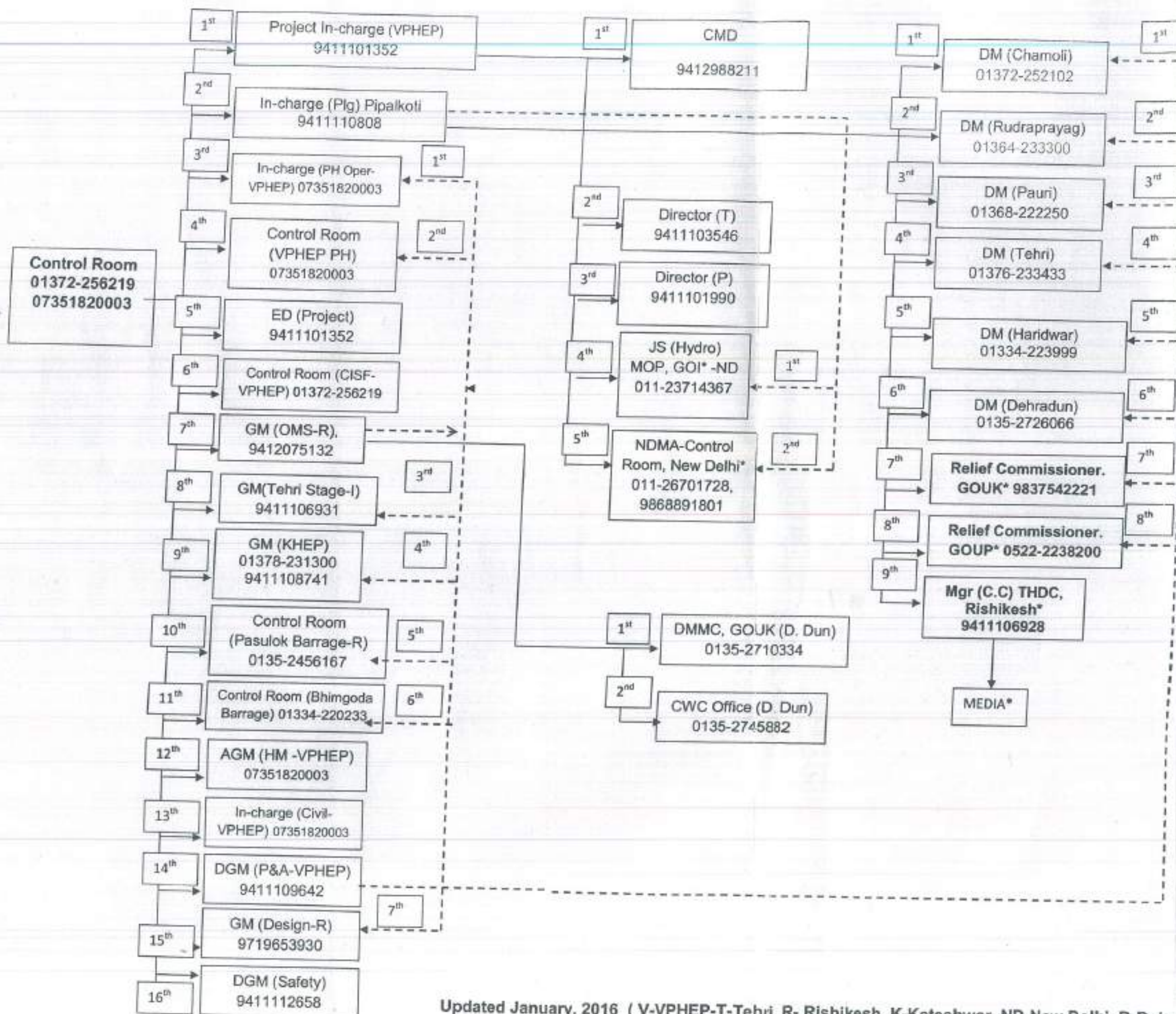
LIST OF MATERIALS-VPHEP

- | | | |
|--|---|--------------|
| 1. Blasted Rock/Large Boulder | - | 2000Cum |
| (It is not necessary to keep stock at site but it is to be kept identified in the nearby and should have proper approach road) | | |
| 2. Concrete Blocks | - | 500 Nos. |
| of 1mX1mX0.5m size | | |
| 3. Cement | - | 1000 bags |
| 4. Coarse and fine Aggregates | - | 500 Cum each |
| 5. Sand Bags | - | 2,000 Nos. |
| 6. Material for Scaffolding | - | 500Sq.m. |

Note : *The quantity of materials is tentative. In case of some practical problem of storage of any material at site, alternative arrangements can be made by HCC to ensure supply of that material in case of any emergency situations**

Vishnugad Pipalkoti HEP - NOTIFICATION FLOWCHART FOR PRE ALERT, ALERT & WARNING NOTICE

Annexure-7



WARNING NOTICE

Situation of inevitable catastrophe:-

1. Imminence of dam failure.
2. Dam failure.
3. "Little or no time is available" for analysis, decision & mitigation to be made before d/s of dam impacts occur.
4. Situation is worsened and a breach is apprehended.
5. "Little or no time is available" for analysis, decision & mitigation to be made before off-site impact occur.

ALERT NOTICE

Situation with high probability of dam failure, belief that it might not be possible to control the situation, and might cause serious consequences d/s of dam:-

1. Detection of severe anomalies in
 - Dam structural elements, or
 - Dam operational elements
2. Existence of severe foundations problems.
3. Occurrence of floods with high recurrence interval.
4. Situation is progressing rapidly.
5. "Some amount of time" is available for analysis, decisions and mitigation to be made before off-site impact may occur

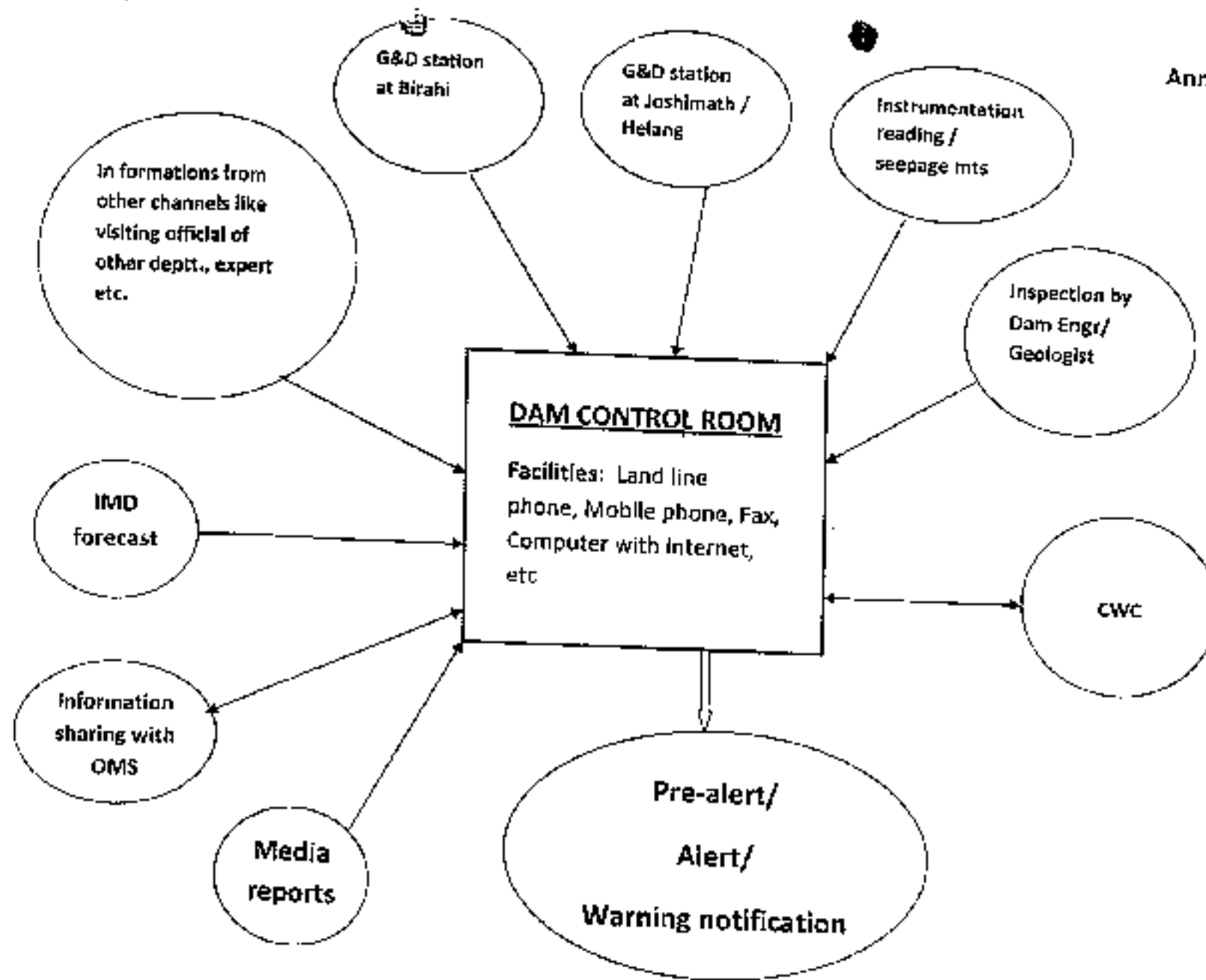
PRE-ALERT NOTICE

Existence of anomalies or events that might comprise up to some degree, the structure and /or operational dam safety or the dam observation system, assuming that eventual small consequences d/s of dam can happen:

1. Existence of meteorological adverse conditions.
2. Detection of anomalies in
 - Dam structural elements, or
 - Dam operational elements, or
 - Dam observation system.
3. Existence of dam foundations problems.
4. Situation is developing slowly

LEGEND

- Action Call →
- Follow up call - - - - -
- In case of Warning Notice only- *



FLOW OF INFORMATION TO AND FROM DAM CONTROL ROOM

DISCHARGE MEASURING STATIONS

Discharge at following locations is being collected by Dam Dept (THDCIL), Tehri:

S.No	River	Locations of collecting of discharge	Phone/mobile
1	Alaknanda	Joshimath	01389-222223 9411103623, 9411103629, 9810484487
2	Alaknanda	Helang	01372-256218 9411110515.
3	Alaknanda	Brahi	9456116113, 9568885358, 9761438912

Earthquake Damage Report: For Reporting Earthquakes

The VPHEP Dam (Coordinates- 30°22'40" N 75°28'50"E) lies within Seismic Zone-IV where major damage can be expected from earthquakes. The dam has the possibility of being subject to moderate to severe ground shaking from nearby or, distant, moderate to large magnitude earthquakes.

Earthquake Damage Report:

Date: _____ Time: _____

Person Reporting Information: _____

Feature Affected: _____

Description of Earthquake Effects:

On structural conditions:

Type of damage (slides, subsidence, etc.) _____

Location: _____

Severity: _____

Movement (direction, magnitude): _____

Deflection or settlement Readings: _____

Effect on Adjoining Structures: _____

On Hydraulic Conditions:

Type of effect (Leakage or stoppage) _____

Location: _____

Size of effect structure: _____

Estimated flow or change in flow: _____

Nature of discharge (including sediment): _____ wave action

damage _____

Other: _____

Site condition: _____

Water surface elevation / stoppage _____

Location: _____

Size of affected area: _____

Estimated flow or change in flow: _____

Nature of discharge (including sediment): _____

Wave action damage: _____

Other: _____

Action: _____

Change in operation: _____

Emergency repairs: _____

Regional assistance needed (examination): _____

Public information provided: _____

- To facilitate analysis of conditions, a map should be prepared showing the location and extent of all damaged areas such as subsidence areas, seeped areas, springs and any other pertinent data, including the dates of readings and site conditions at the time of observation. This map should be revised periodically to show changing condition until they are stabilised.

SAFETY PRECAUTIONS WHILE OPERATING SPILLWAYS

1.0 Precautionary measures to be taken during operation of VPHEP.

1.1 During normal days (when water is discharged only through power house)

1.1.1 Operation of the Power Plant to be governed by schedule given by Northern Region Load Dispatch Control (NRLDC) on daily basis in 96 time slots of 15 minutes each. Based on the schedule provided by the NRLDC nos. of machines to be operated.

1.1.2 **Blow of Sirens** : 15 minutes before starting any turbine (as per schedule/out of schedule) intimation to be given to CISF control room established at Dam top as well as outlet of the main access tunnel of the Power plant for blowing sirens to warn people. When more than one turbine is to be started, each consecutive machine to be started after a gap of 15 minutes.

1.1.3 **Sign Board**: Sign Boards to be installed at the various places along the river giving warning about the rise of water level and not to go into the water/river beyond a specified limit. These locations are to be identified after joint inspection with state govt. authorities.

1.1.4 **Communication with Dist. Authorities** : Daily fax message to be sent about the release from the reservoir & water level of the reservoir to the following officials:

1. DM, Chamoli
2. DM, Rudraprayag
3. DM Pauri
4. THDCIL Officials
5. U.K. Irrigation Deptt.
6. CWC Office, Dehradun

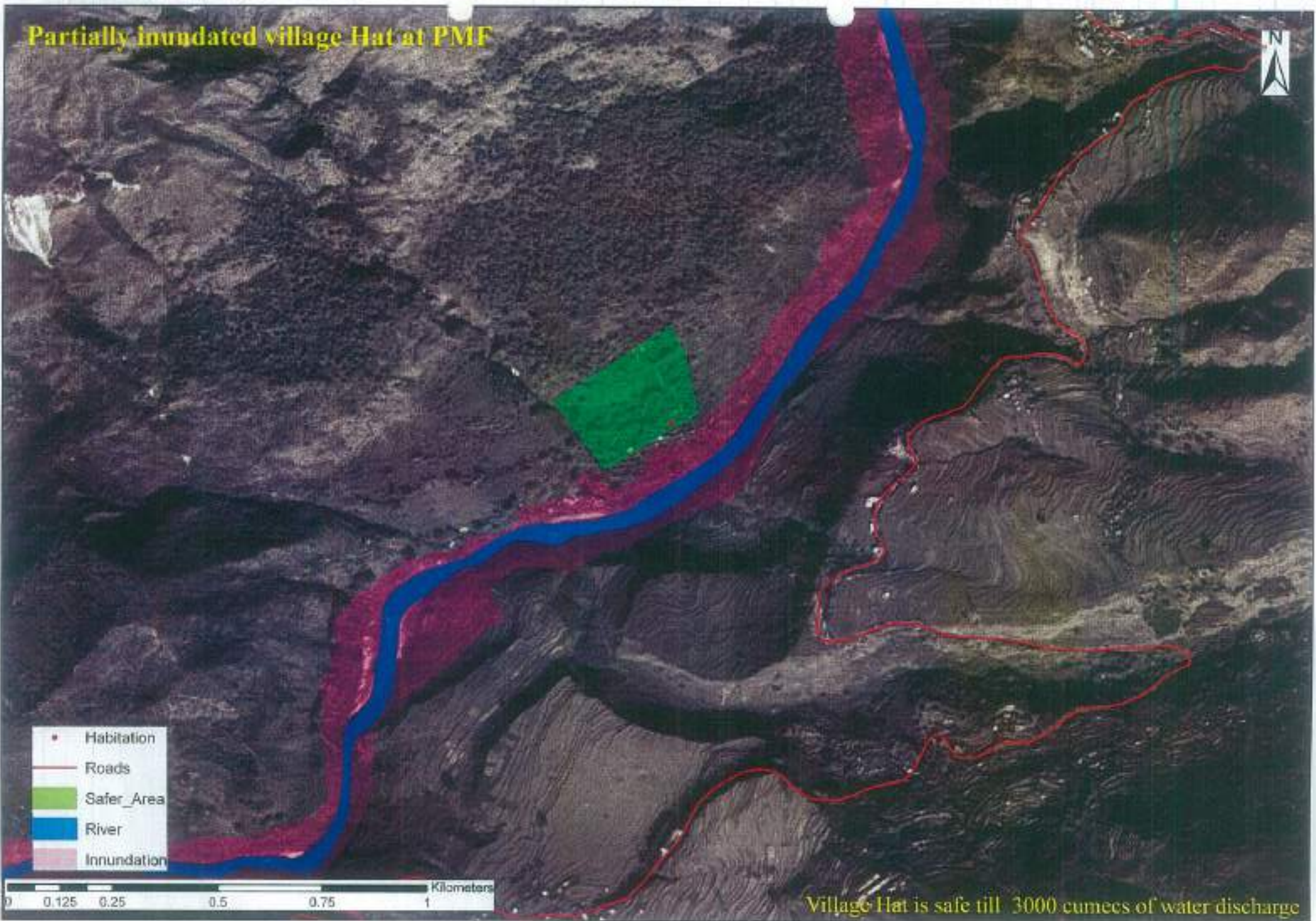
1.2 **During Monsoon Period**

1.2.1 A disaster management / action plan to be circulated to all concerned including District Administration and CWC for implementation and monitoring. As per disaster management plan, control room to be established at Dam site. The control room will be operational round the clock throughout the year. Complete record of the inflow into the reservoir, water being released from the reservoir and reservoir level to be maintained at Dam control room which is disseminated as and when required.

1.2.2 The monitoring of reservoir is done round the clock, whenever water is required to be released through spillways, advance information is given to all concerned as per notification flowchart (Annexure-7). Before operating Spillways, siren is blown for giving warning to the people in the downstream of dam in the proximity of the river. It is ensured before operation of Spillway Radial gates that the siren is blown continuously for one minute and repeated thrice at an interval of 5 minutes each. Announcement is also made for public awareness and warning in the downstream of Dam before release of water through Spillways. Spillway gates are opened gradually one after the other and at a time, only one gate is opened for about 100mm only to avoid any untoward situation in the downstream.

No.	Location	PMF		Lowest Level of Habitation	Result
		Maximum Discharge	Water Level		
1	Hai	10840	1080	1075	Partially Inundated
2	Kauriya	10840	1065	1115	Safe
3	Birahi	11124	1020	1026	Safe
4	Chhinko	11124	990	1000	Safe
5	Chamoli	11124	955	940	Partially Inundated
6	Kothiyalsain	11124	930	990	Safe
7	Tilphara	11124	920	927	Safe
8	Chapdyun	11124	880	870	Partially Inundated
9	Maithana	11124	880	875	Partially Inundated
10	Kafal khet	11124	870	880	Safe
11	Mason	11124	850	860	Safe
12	Near Nandprayag Bridge	12051	836	820	Fully Inundated
13	Dewali	12051	796	795	Major part Inundated
14	Langasu	12051	778	790	Safe
15	Jilasu	12051	770	763	Partially Inundated
16	Kaleshwar	12051	761	748	Partially Inundated
17	Siwar Talli	12051	765	770	Safe
18	Karanprayag	14363	750	730	Partially Inundated
19	Bandarkhand	14363	710	750	Safe
20	Gauchar	14363	700	710	Safe
21	Diarki	14363	680	745	Safe
22	Nagrasu	14363	685	730	Safe
23	Chhinka	14363	672	700	Safe
24	Gholtir	14363	665	680	Safe
25	Bhatwari	14363	685	690	Safe
26	Manak Sidh	14363	655	660	Safe
27	Nirwali	14363	650	670	Safe
28	Odali	14363	655	665	Safe
29	Ratura	14363	700	715	Safe
30	Sumerpur	14363	647	665	Safe
31	Tilni	14363	655	690	Safe
32	Lameri	14363	690	692	Safe
33	Khurar	14363	660	770	Safe
34	Rudraprayag	16630	643	590	Partially Inundated
35	Gulabrai	16630	645	670	Safe
36	Utyasu	16630	635	670	Safe
37	Maliyasu	16630	590	608	Safe
38	Hairi	16630	560	604	Safe
39	Kaliasaur	16630	560	604	Safe
40	Dhari	16630	555	575	Safe
41	Dungri	16630	560	560	Partially Inundated
42	Margaon	16630	541	588	Safe
43	Pharasu	16630	542	580	Safe
44	Gandasu	16630	535	560	Safe
45	Near Devprayag	18587	494.69	479	Partially Inundated

Partially inundated village Hat at PMF



Village Hat is safe till 3000 cumecs of water discharge

Partially inundated village Chamoli at PMF

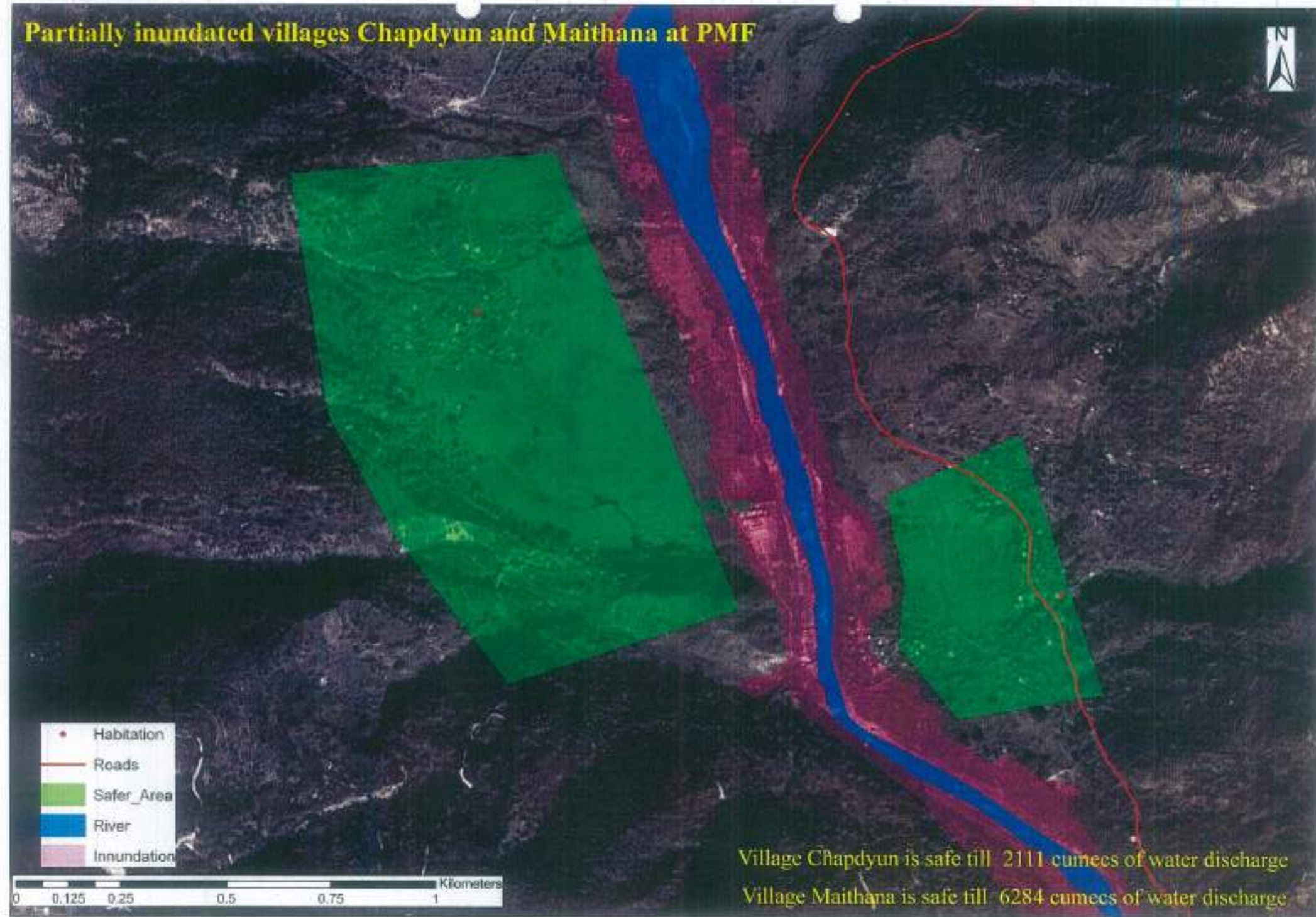


- Habitation
- Roads
- Safer Area
- River
- Inundation

0 0.125 0.25 0.5 0.75 1 Kilometers

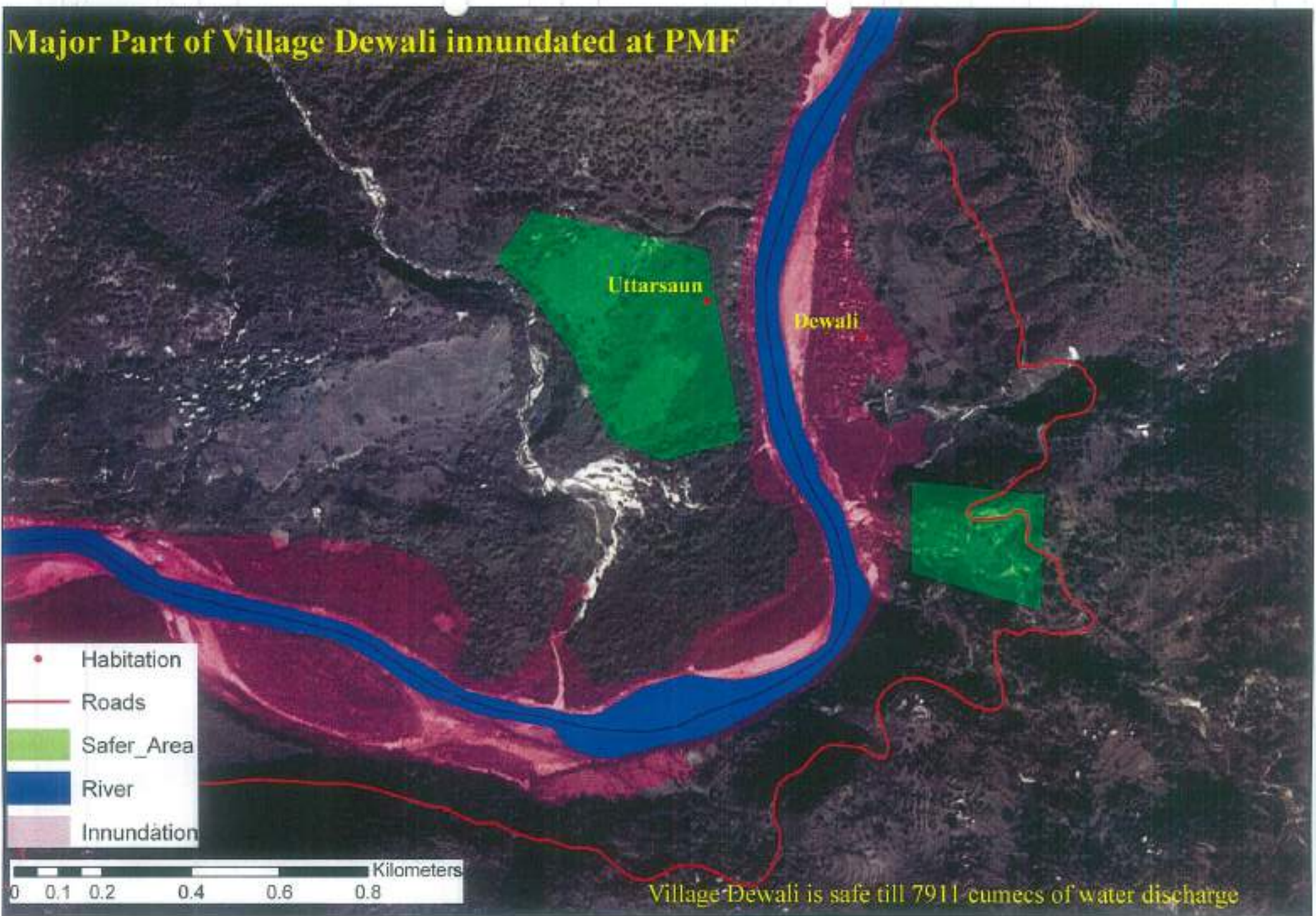
Village Chamoli is safe till 3166 cumecs of water discharge

Partially inundated villages Chapdyun and Maithana at PMF



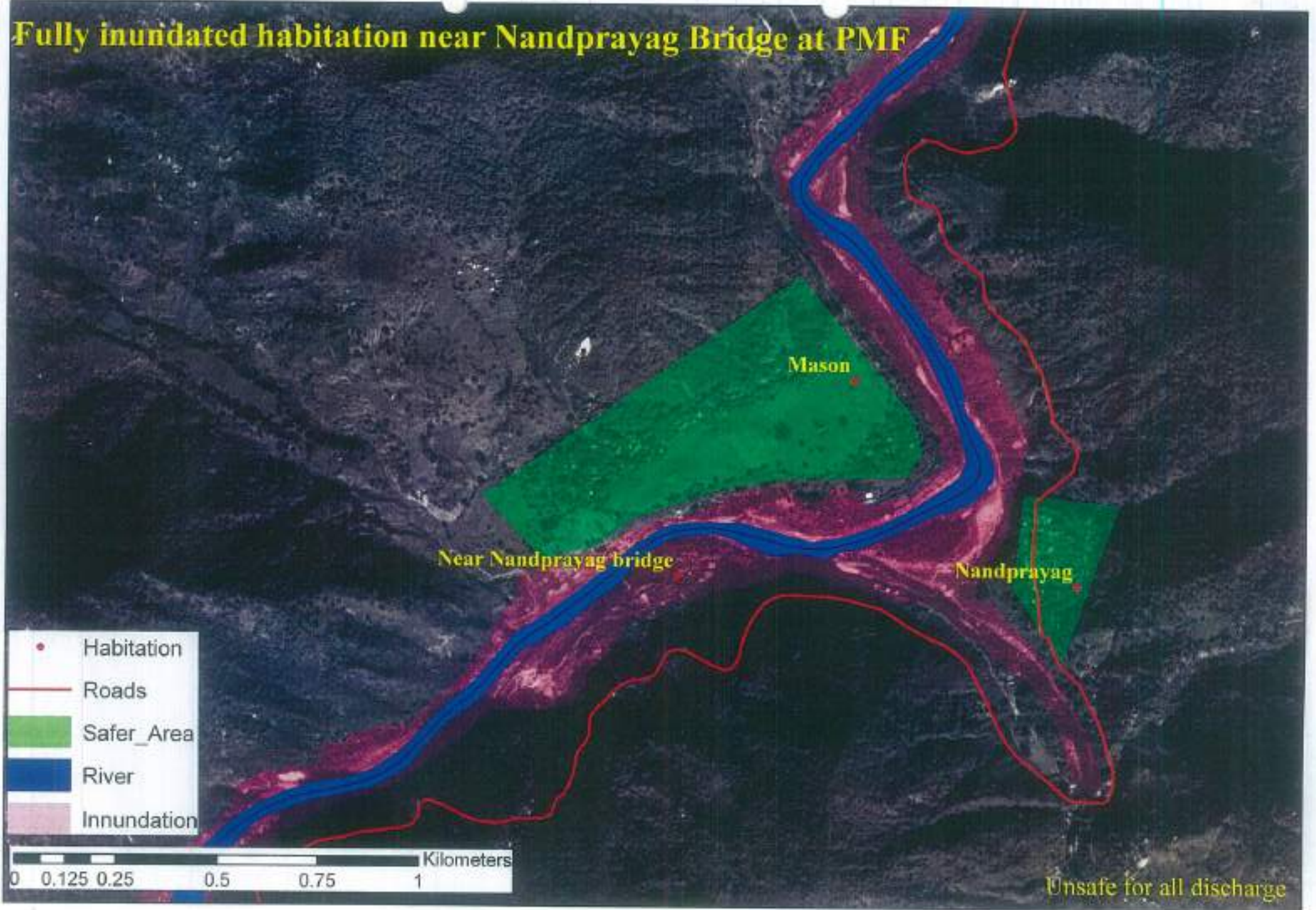
Village Chapdyun is safe till 2111 cumecs of water discharge
Village Maithana is safe till 6284 cumecs of water discharge

Major Part of Village Dewali innundated at PMF

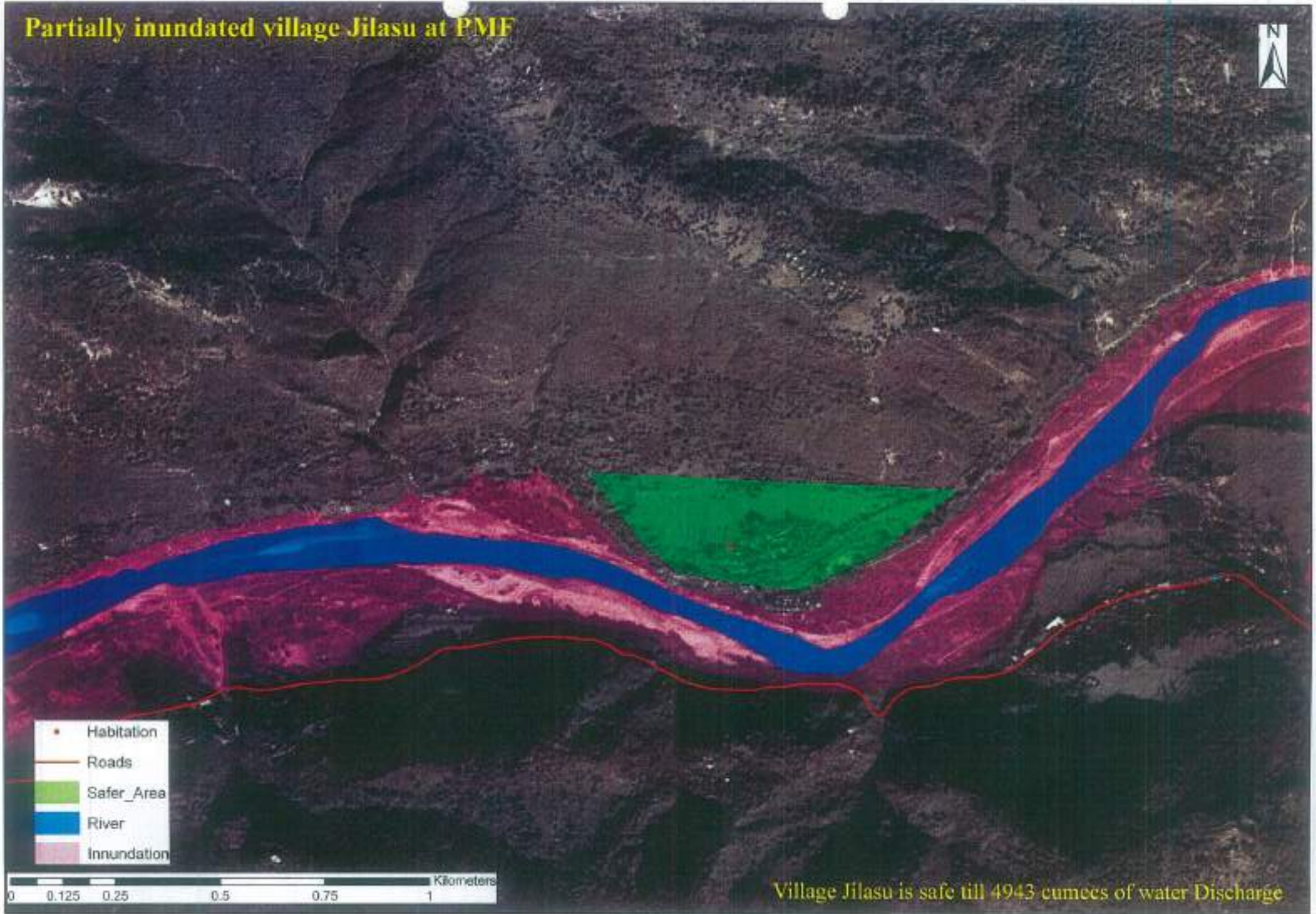


Village Dewali is safe till 7911 cumecs of water discharge

Fully inundated habitation near Nandprayag Bridge at PMF

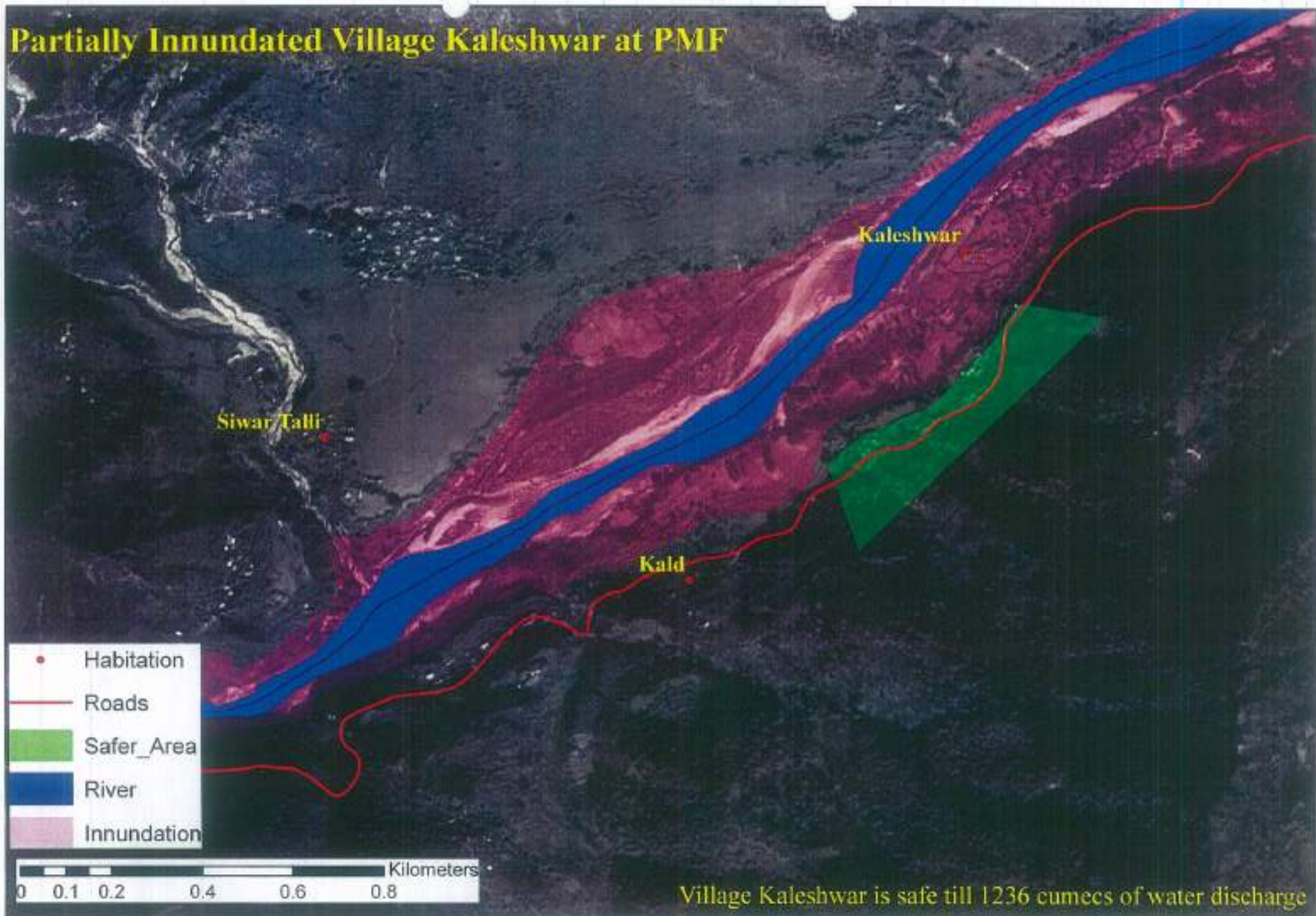


Partially inundated village Jilasu at PMF



Village Jilasu is safe till 4943 cumecs of water Discharge

Partially Innundated Village Kaleshwar at PMF

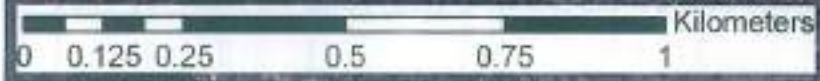


Partially innundated village Karanprayag at PMF

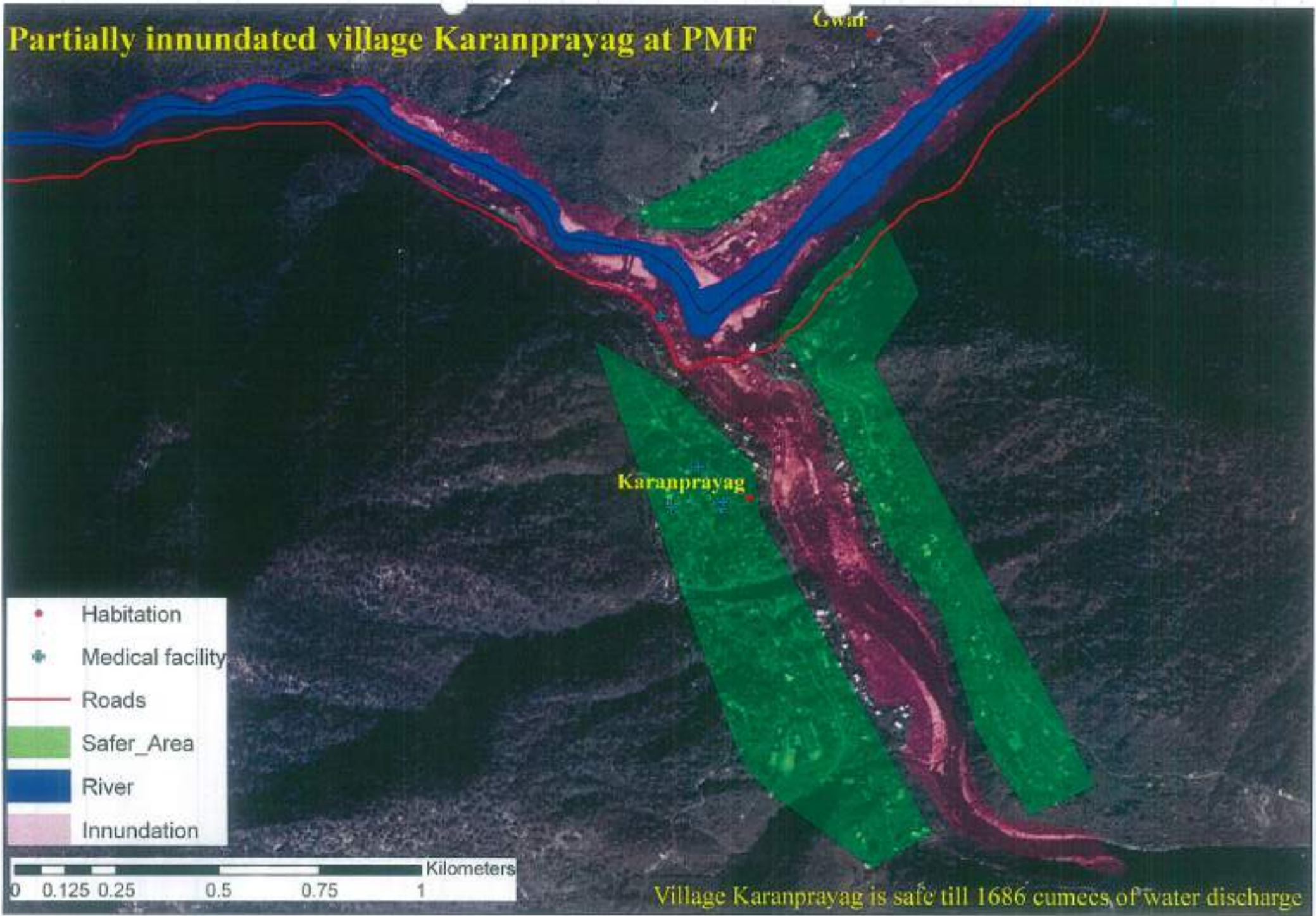
Gwar

Karanprayag

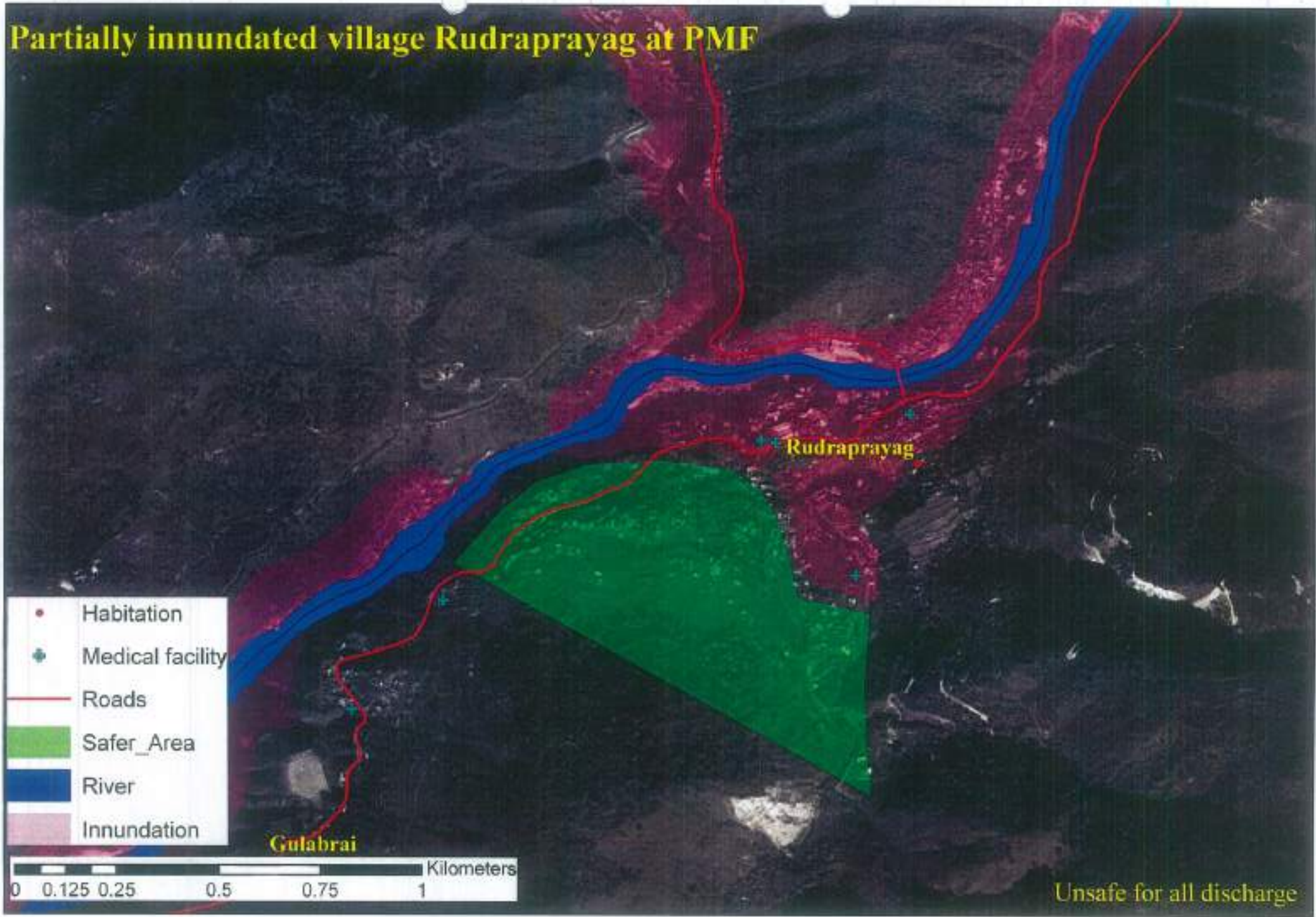
- Habitation
- ⊕ Medical facility
- Roads
- Safer_Area
- River
- Innundation



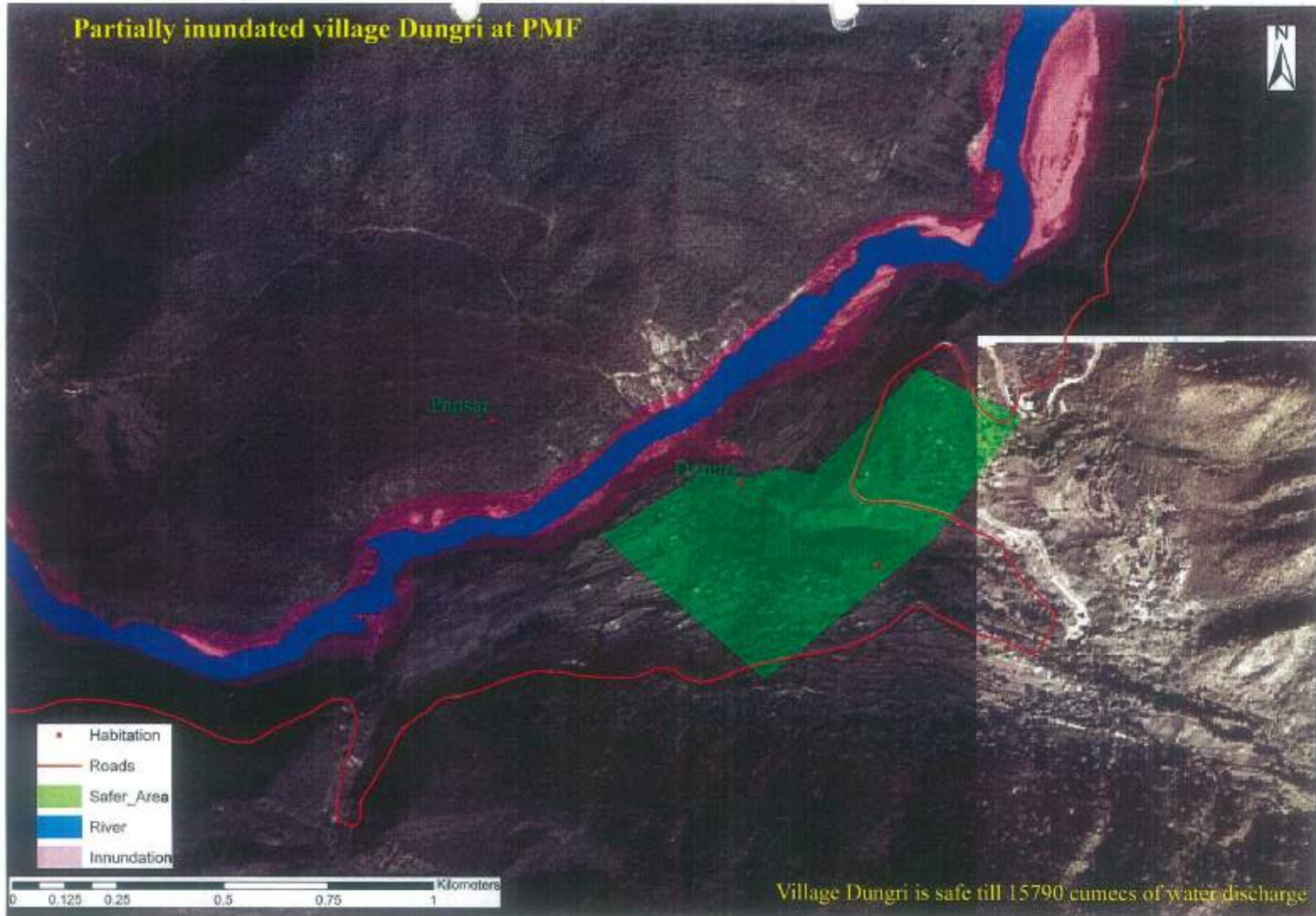
Village Karanprayag is safe till 1686 cumecs of water discharge



Partially innundated village Rudraprayag at PMF



Partially inundated village Dungri at PMF



Phalsar

Dungri

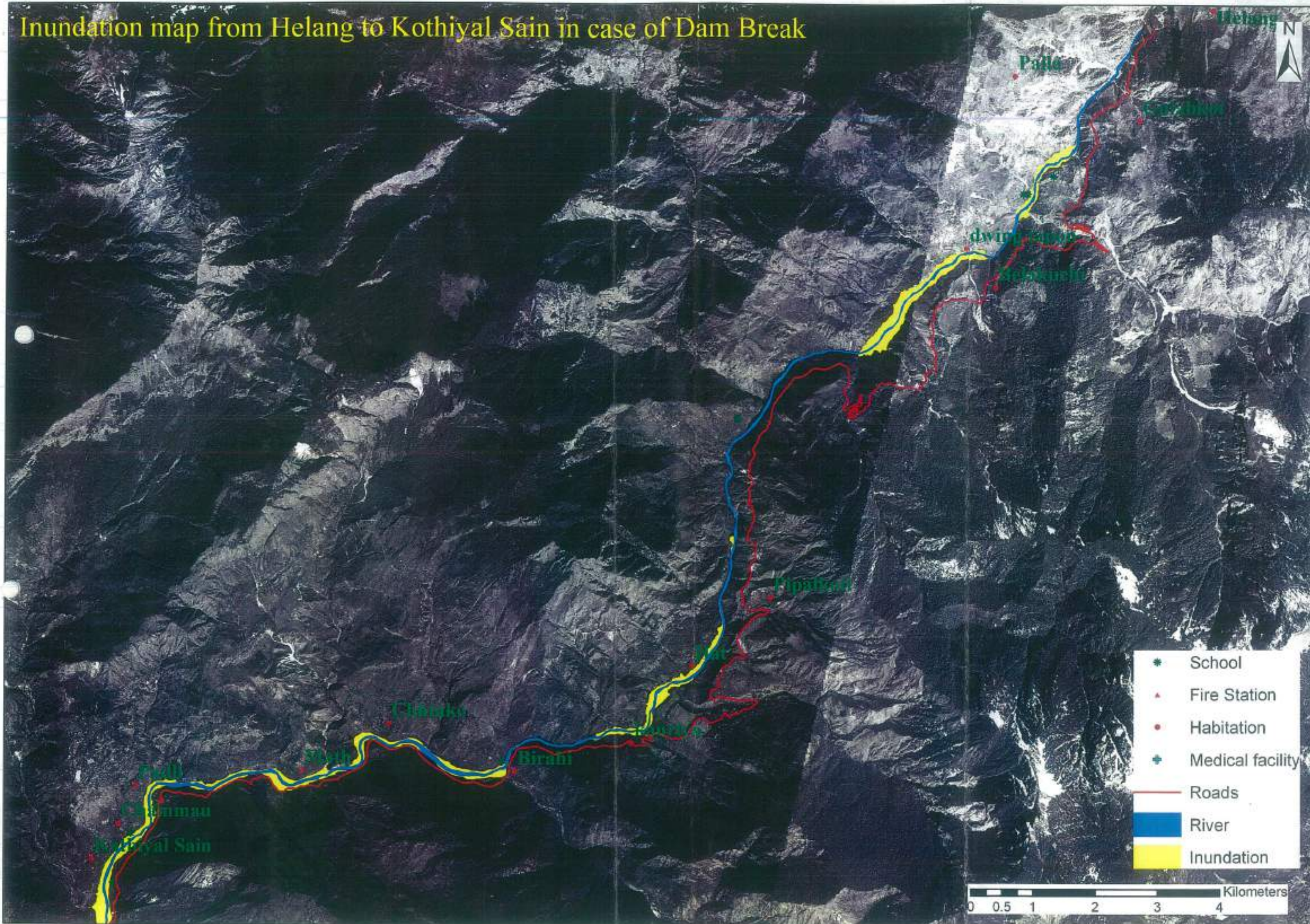
- Habitation
- Roads
- Safer_Area
- River
- Inundation

0 0.125 0.25 0.5 0.75 1 Kilometers

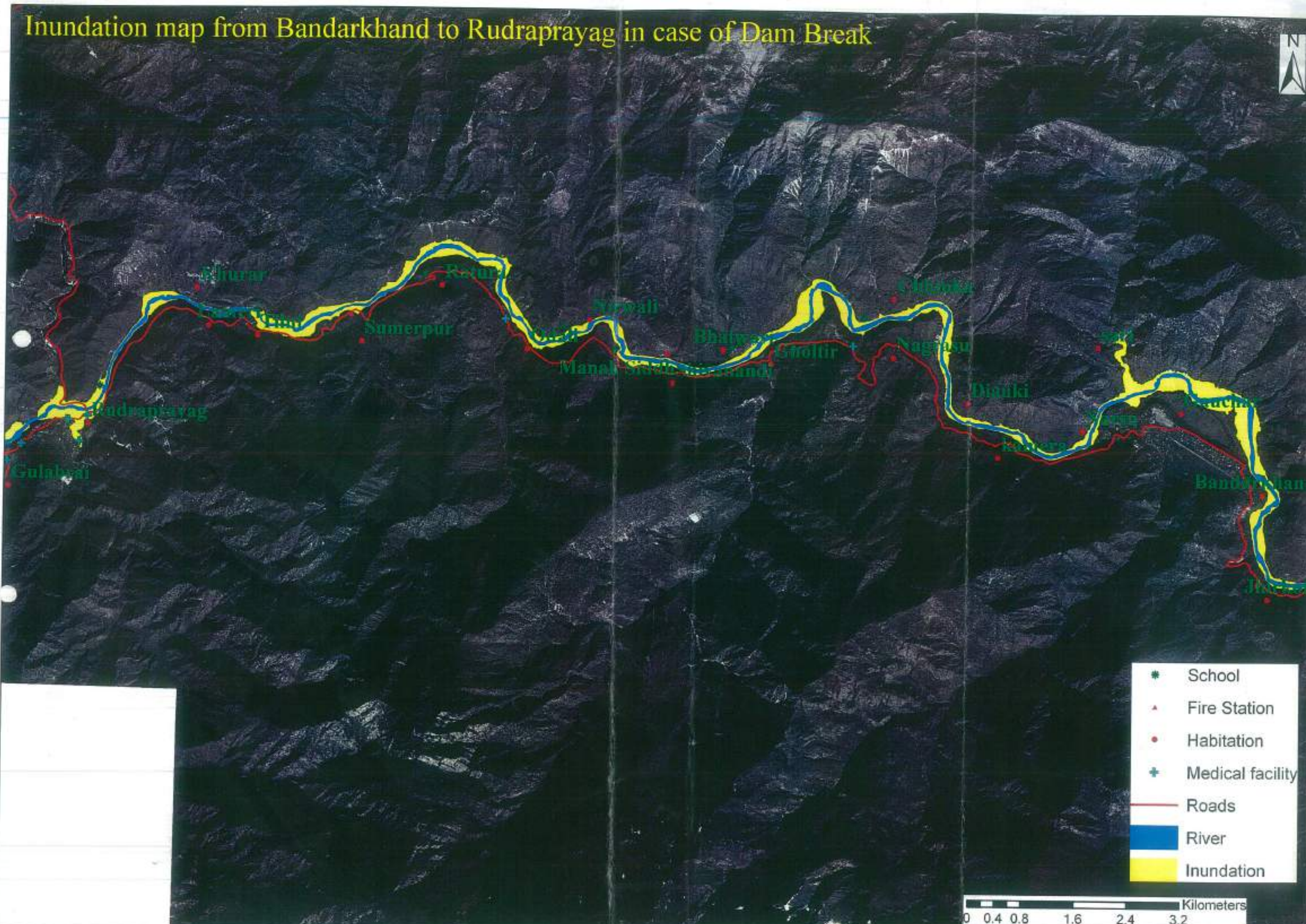
Village Dungri is safe till 15790 cumecs of water discharge

No.	Location	Dam Break		Lowest Level of Habitation	Result
		Maximum Discharge	Water Level		
1	Hau	12067	1078	1075	Partially Inundated
2	Kauriya	11923.98	1065	1115	Safe
3	Birahi	11852.49	1007	1026	Safe
4	Chhinko	11724.7	985	1000	Safe
5	Chamelt	11529.13	944	940	Partially Inundated
6	Kothiyalsain	11316.38	922	990	Safe
7	Tilphara	11283.29	915	927	Safe
8	Chapdyan	11105.18	880	870	Partially Inundated
9	Maithara	11100.18	880	875	Partially Inundated
10	Kafal khet	11068.58	860	880	Safe
11	Mason	11047.97	845	860	Safe
12	Near Nandprayag Bridge	11027.37	834	820	Fully Inundated
13	Dewali	10891.38	795	795	Major part inundated
14	Langasu	10836.15	775	790	Safe
15	Jilas	10795.08	766	763	Partially Inundated
16	Kaleshwar	10424.94	756	748	Partially Inundated
17	Siwar Talli	10422.83	760	770	Safe
18	Karauprayag	10387.39	740	730	Partially Inundated
19	Bandarkhand	10049.91	701	750	Safe
20	Gauhar	10015.79	698	710	Safe
21	Diarki	10009.23	678	745	Safe
22	Nagrasu	10001.27	665	730	Safe
23	Chhinka	10001.27	665	700	Safe
24	Gholtir	9956.47	645	680	Safe
25	Bhatwari	9946.39	675	690	Safe
26	Manak Sidh	9546.82	640	660	Safe
27	Nirwali	9604.86	645	670	Safe
28	Odali	9592.97	640	665	Safe
29	Raura	9582.25	640	715	Safe
30	Sumerpur	9570.36	649	665	Safe
31	Tilni	9570.45	640	690	Safe
32	Lameri	9569.88	640	692	Safe
33	Khumar	9567.16	660	770	Safe
34	Rudraprayag	9545.83	635	590	Partially Inundated
35	Gulabrai	9595.37	625	670	Safe
36	Utyasu	9530.34	622	670	Safe
37	Maliyasu	9512.97	578	608	Safe
38	Hairi	9432.49	555	604	Safe
39	Kaliasaur	9443.5	552	604	Safe
40	Dhari	9443.5	553	575	Safe
41	Dungri	9438.08	550	560	Safe
42	Margaon	9436.8	530	588	Safe
43	Pharasu	9432.98	527	580	Safe
44	Gandesu	9434.53	530	560	Safe
45	Devprayag	7097.27	484.89	479	Partially Inundated

Inundation map from Helang to Kothiyal Sain in case of Dam Break



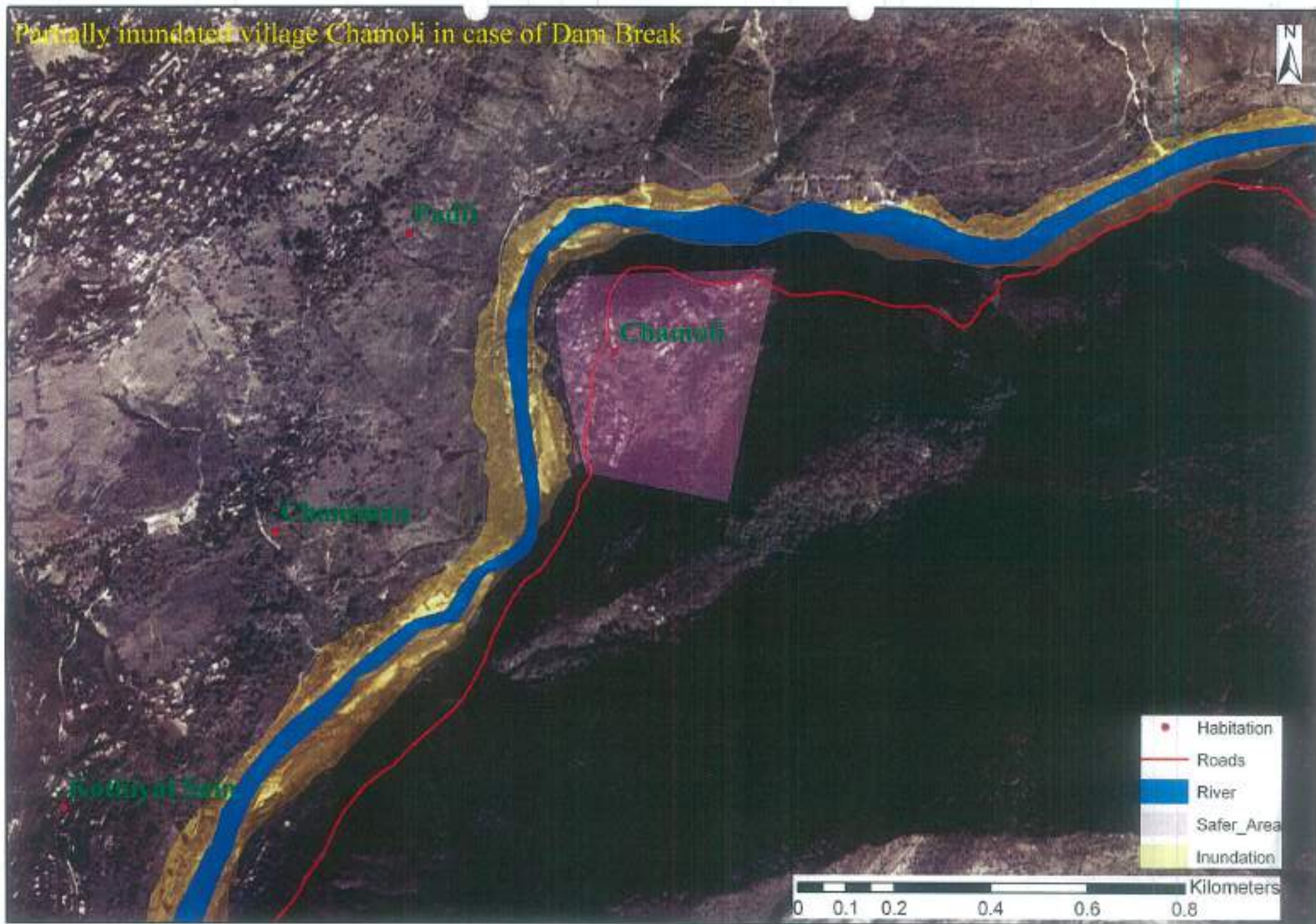
Inundation map from Bandarkhand to Rudraprayag in case of Dam Break



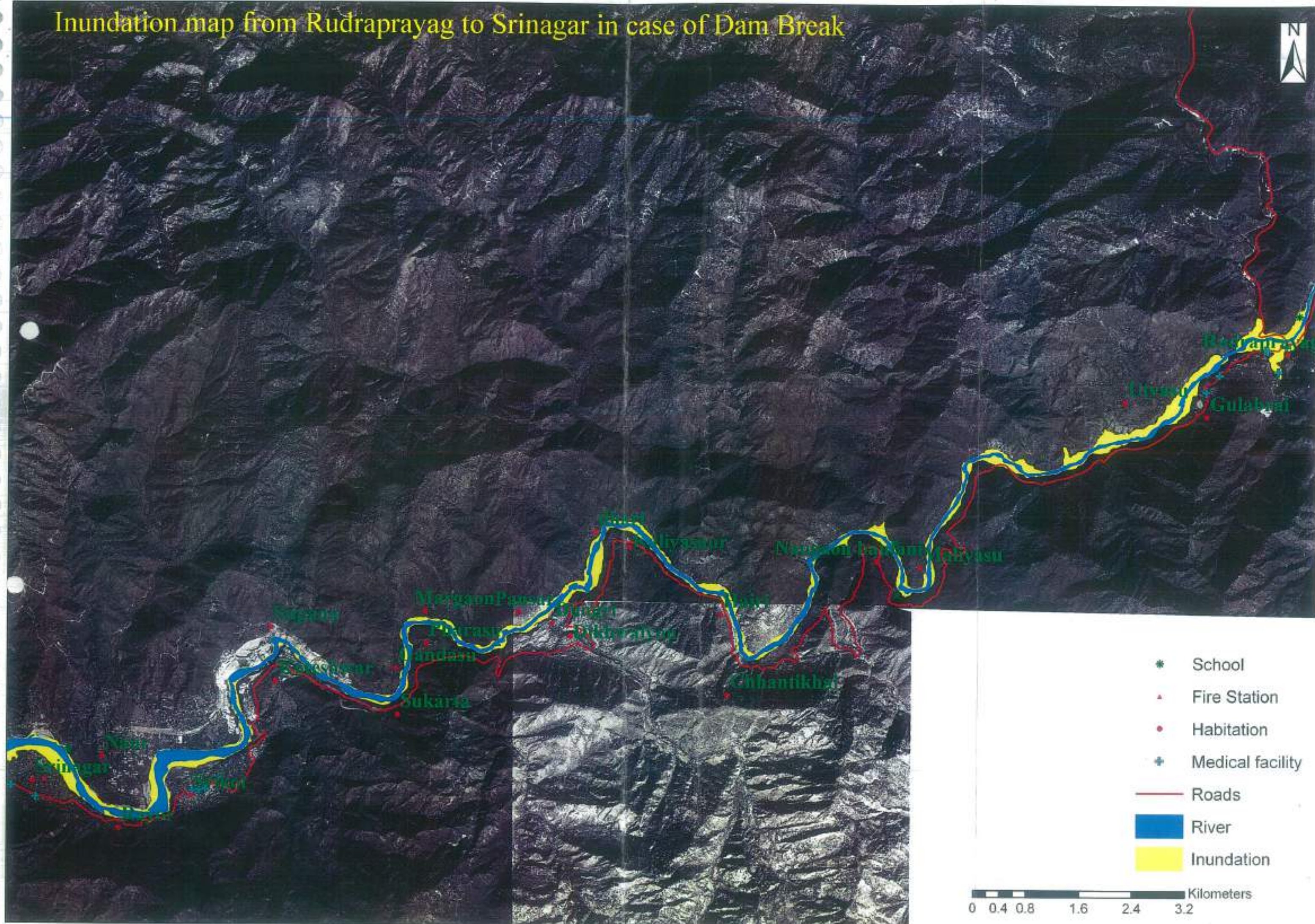
- * School
- ▲ Fire Station
- Habitation
- + Medical facility
- Roads
- River
- Inundation

0 0.4 0.8 1.6 2.4 3.2 Kilometers

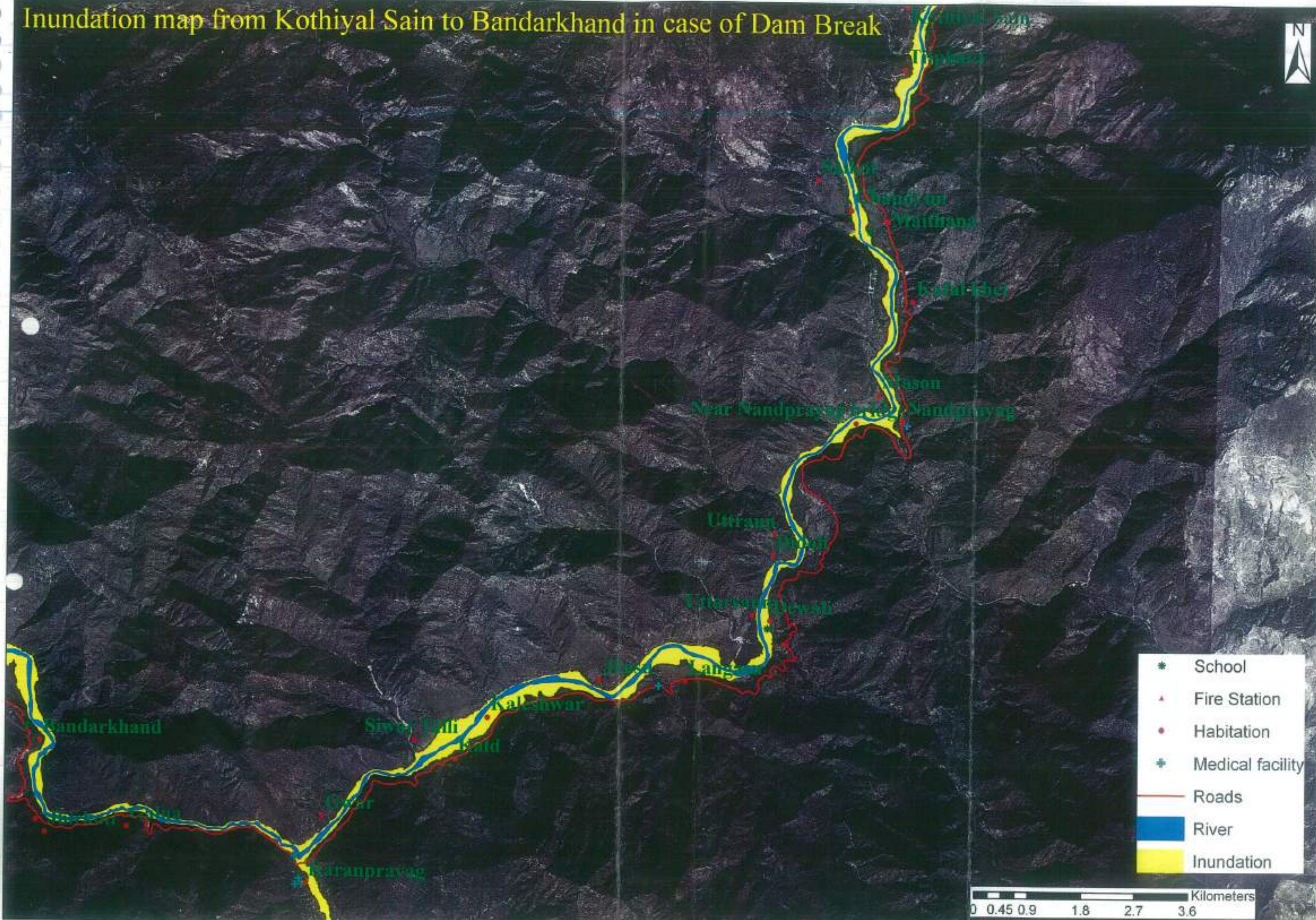
Partially inundated village Chamoli in case of Dam Break



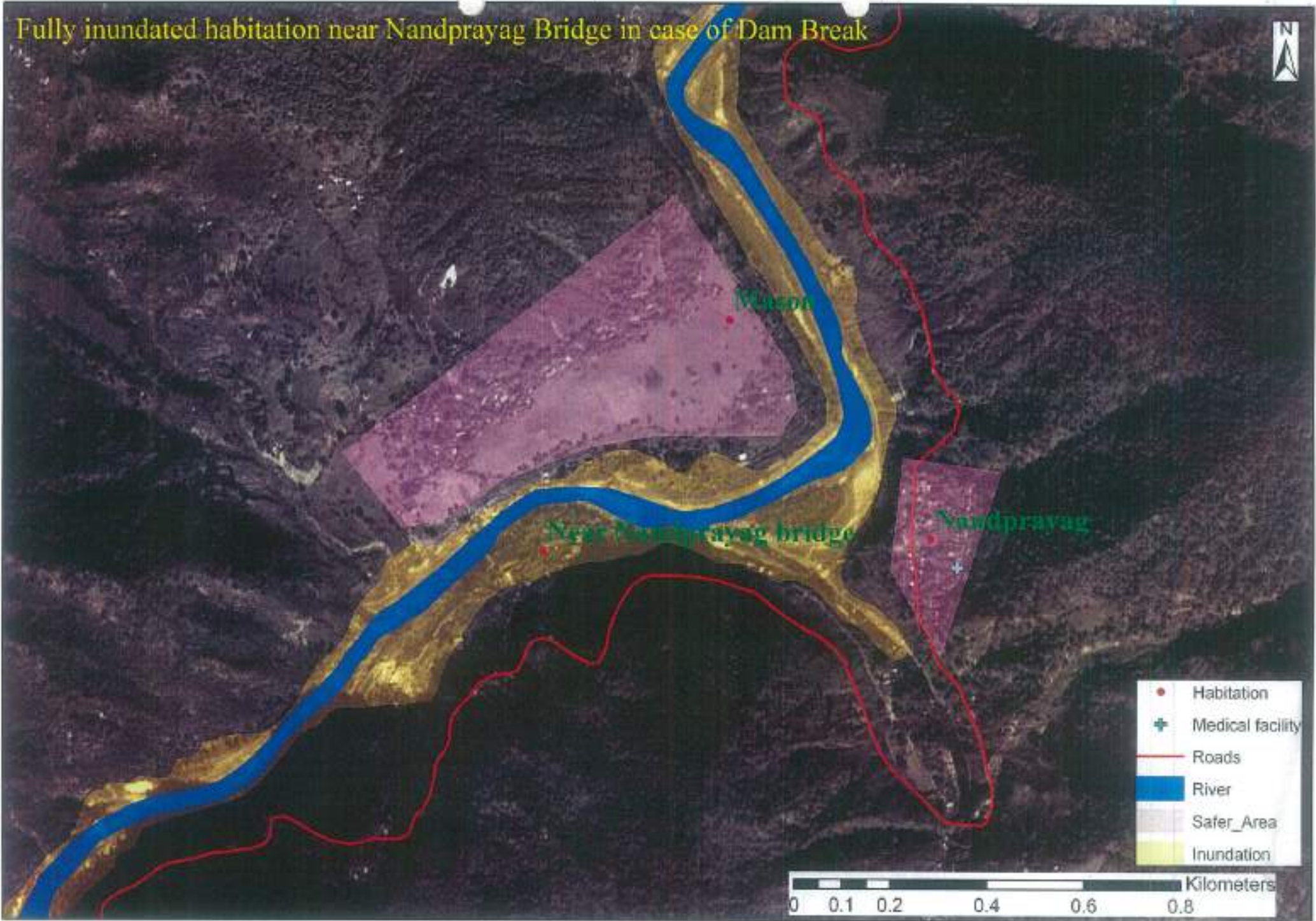
Inundation map from Rudraprayag to Srinagar in case of Dam Break



Inundation map from Kothiyal Sain to Bandarkhand in case of Dam Break



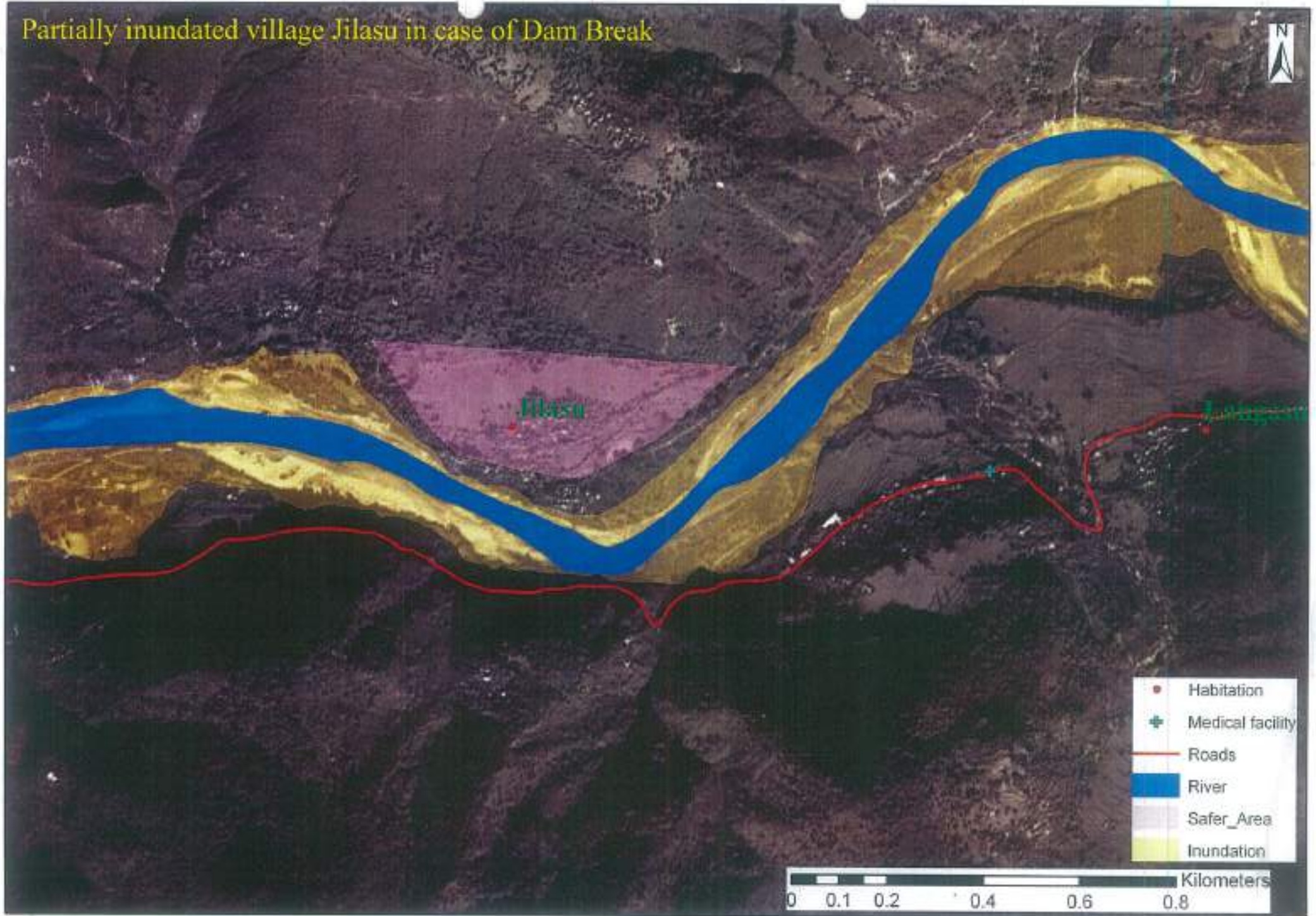
Fully inundated habitation near Nandprayag Bridge in case of Dam Break



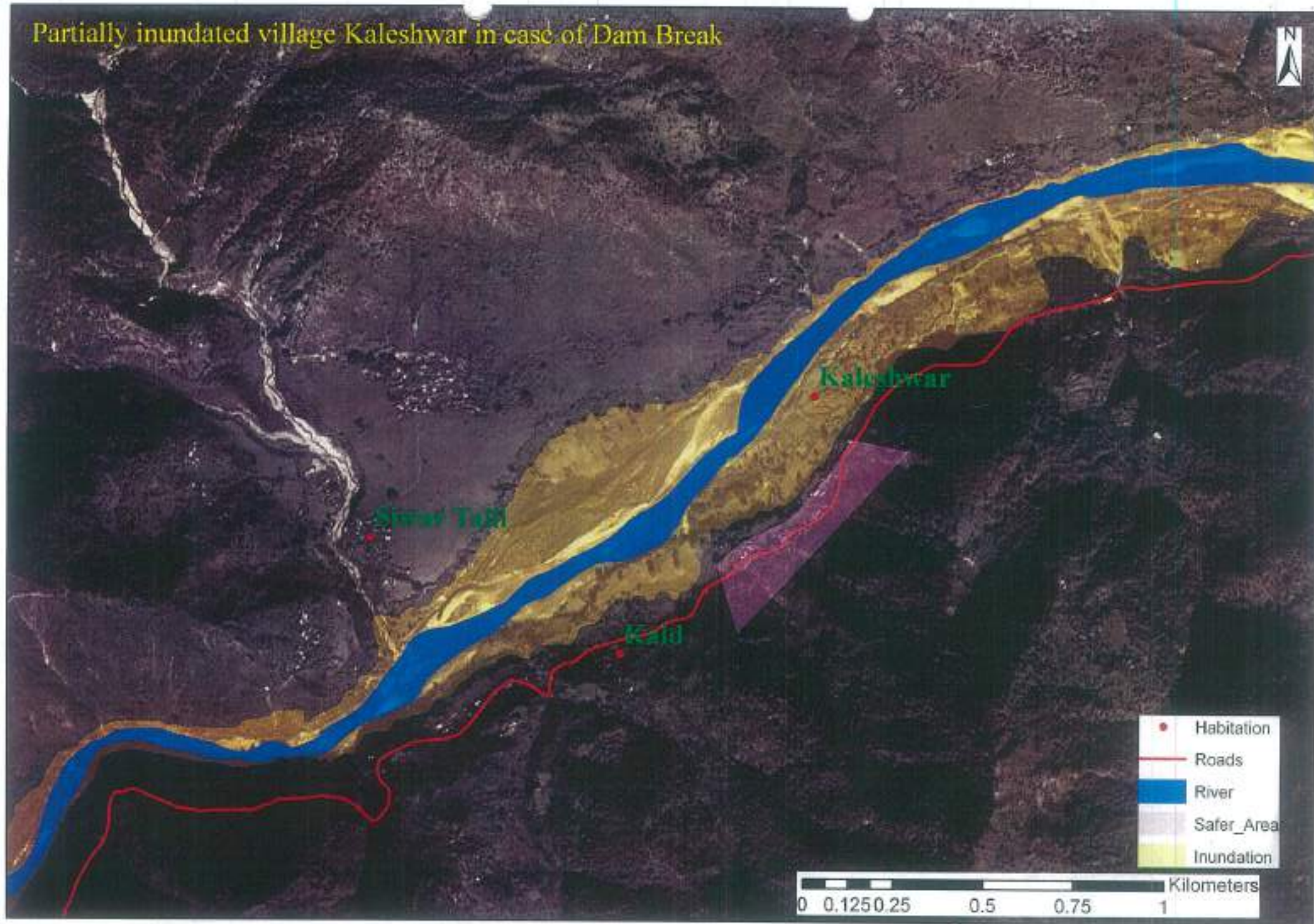
- Habitation
- + Medical facility
- Roads
- River
- Safer_Area
- Inundation

0 0.1 0.2 0.4 0.6 0.8 Kilometers

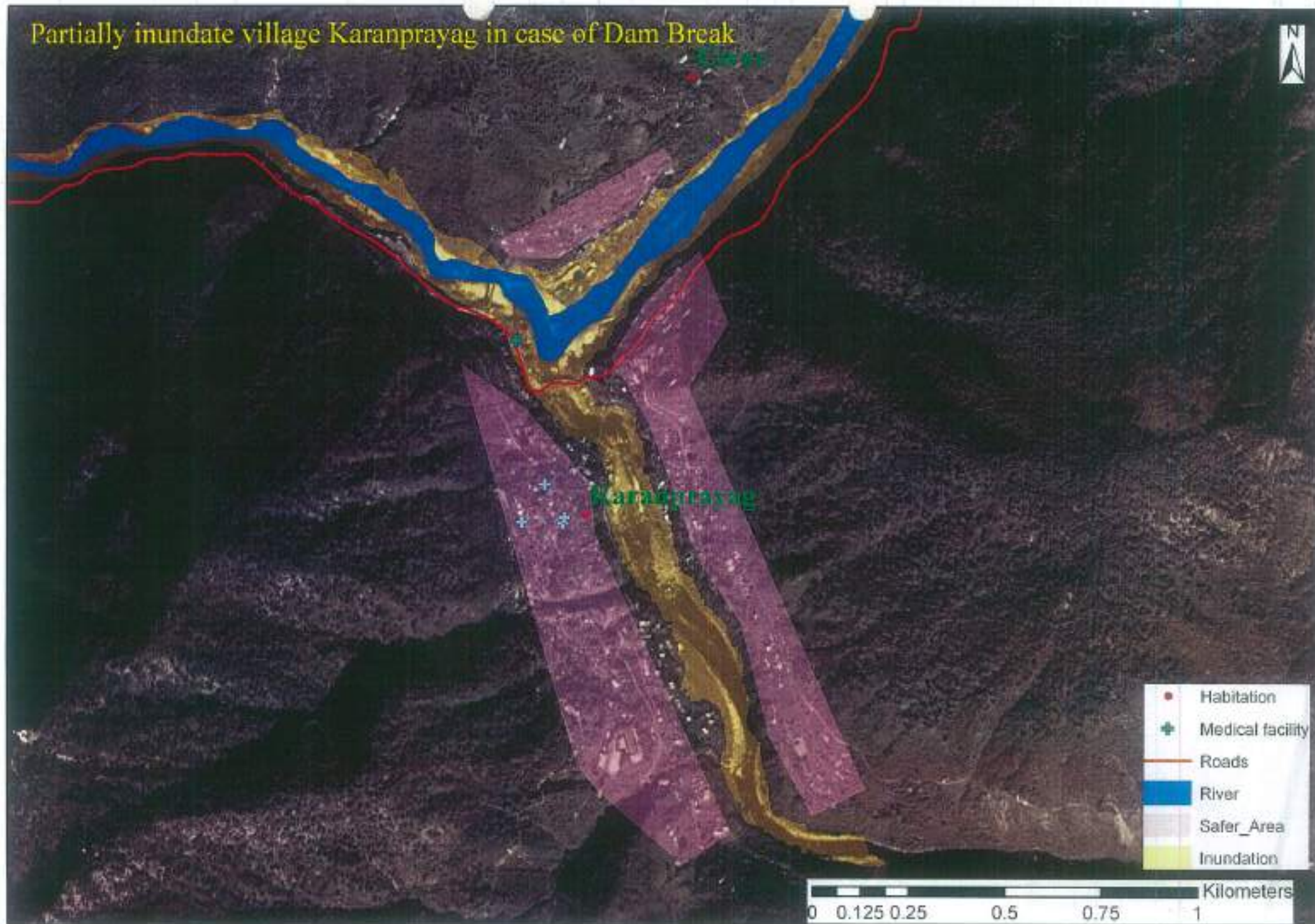
Partially inundated village Jilasu in case of Dam Break



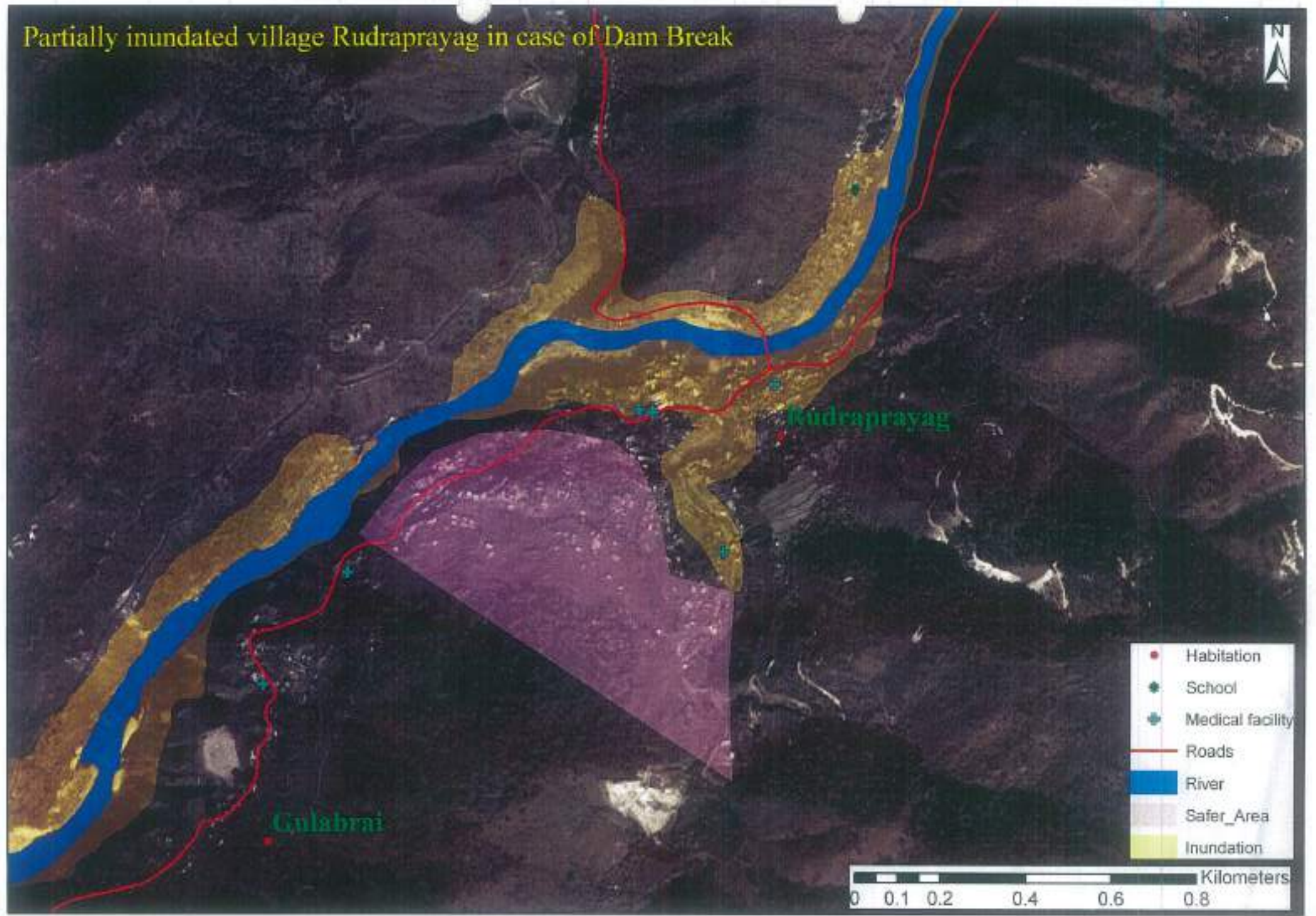
Partially inundated village Kaleshwar in case of Dam Break



Partially inundate village Karanprayag in case of Dam Break



Partially inundated village Rudraprayag in case of Dam Break



Major part of village Dewali inundated in case of Dam Break

