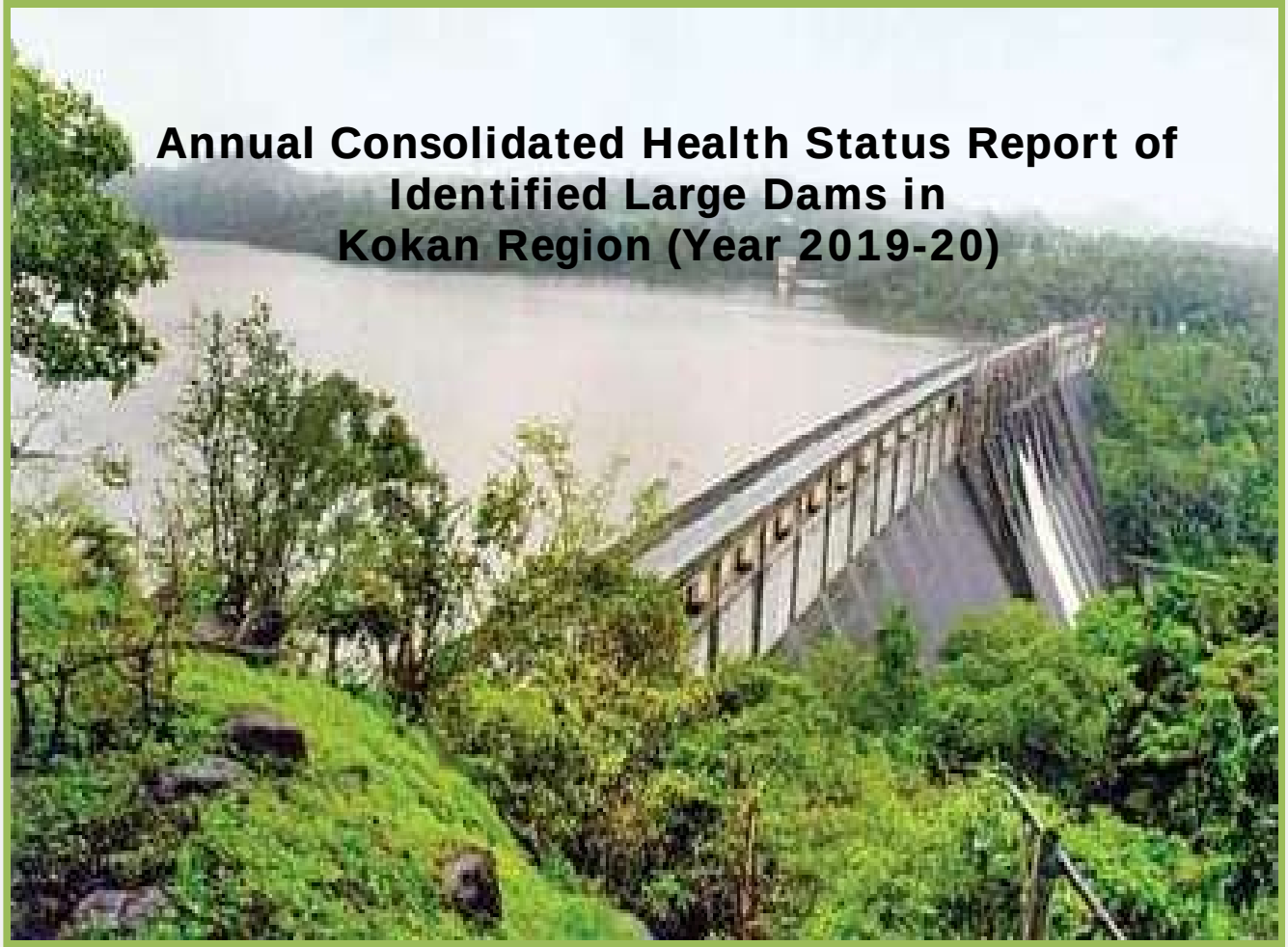
DSO/DSD1/KONKAN/HSR2019/ 214, Date:- 21 .05.2020

Government of Maharashtra
Water Resources Department



Annual Consolidated Health Status Report of Identified Large Dams in Kokan Region (Year 2019-20)

Modaksagar Dam

Superintending Engineer,
Dam Safety Organization,
CDO Building Dindori Road,
Nashik- 4

GOVERNMENT OF MAHARASHTRA
Water Resource Department
Superintending Engineer
Dam Safety Organisation (DSO), Nashik
Dindori Road, Nashik-422004.
Phone (Off.): 0253 – 2530030
Fax: 0253 – 2530030
E-mail: se.damsafety@gmail.com
Website: www.mahadso.org

सत्यमेव जयते

DSO

महाराष्ट्र शासन
जलसंपदा विभाग
अधीक्षक अभियंता,
धरण सुरक्षितता संघटना,नाशिक
दिंडोरी मार्ग, नाशिक- 422 004
दूरध्वनी (ऑ.):0253 - 2530030
फॅक्स : 0253 - 2530030
ई-मेल :se.damsafety@gmail.com

जा.क्र.धसुसं/धसुवि-१/कोकण प्रदेश/धरण स्थिती अहवाल/२०१९-२०/२७४/२०२० दिनांक :२१/०५/२०२०

प्रति,

१) मुख्य अभियंता,(जलसंपदा)जलसंपदा विभाग,
कोकण प्रदेश,हाँगकाँग बिल्डिंग,४ था मजला मुंबई-४००००१

२) मुख्य अभियंता,लघुसिंचन(जलसंधारण),बंगला नं.१२,
येरवाडा, पुणे-४११००६

विषय: कोकण विभागातील पुर्ण झालेल्या मोठया धरणांचा धरण स्थिती अहवाल २०१९-२०२०

संदर्भ: १) महाराष्ट्र शासनाचे इंग्रजी पत्र क्र. पा.वि.१०७७/२४०२/१८६७/२ दिनांक १९.१.८२
2) केंद्रिय जल आयोगाचे इंग्रजी पत्र क्र. —No -3/19/NCDS/HS/DSM/ 2001/627/56 dated 28/08/2002.

संदर्भीय पत्रानुसार कोकण प्रादेशिक विभागाचा धरण स्थिती अहवाल धरण सुरक्षितता संघटना मार्फत तयार करण्यात येतो. तथापि धरण स्थिती अहवालात परिशिष्ट I नुसार क्षेत्रीय कार्यालयाकडून अहवाल विहीत कालावधीत प्राप्त न झाल्याने धरण स्थिती अहवाल प्रकाशित करण्यास विलंब झालेला आहे.

सन २०१८-१९ या वर्षात आढळुन आलेल्या संवर्ग-२ तृटी निर्मूलनाबाबत अक्षम्य दुर्लक्ष झाल्याचे निदर्शनास आले आहे.याबाबत आपण वैयक्तिकरित्या लक्ष देऊन आवश्यक कार्यवाही करणे अपेक्षित आहे.

क्षेत्रीय स्तरावरून प्राप्त पावसाळा पूर्व व उत्तर २०१९ धरण तपासणी अहवालांची छाननी करून मा. महासंचालक (सं.प्र.जसं.सु.) मेरी, नाशिक यांच्या मान्यतेने धरण स्थिती अहवाल प्रकाशित करण्यात येत आहे.

धरण स्थिती अहवालात तक्ता क्र.2.18 वर्ग-१ धरणातील व तक्ता क्र. 2.19 मध्ये संवर्ग-२ तृटी नमूद केलेल्या आहेत त्या तृटींच्या निर्मुलनाबाबत प्रादेशिक स्तरावरून प्रामुख्याने तिमाही आढावा घेउन संवर्ग-२ च्या तृटी निर्मूलन करण्याचे नियोजन करावे. जेणेकरून धरणाची सुरक्षितता वाढविणे शक्य होईल.

केंद्र शासनाने Dam Health And Rehabilitation Monitoring Application (DHARMA) Portal वर धरणांची माहिती भरणेबाबत कार्यवाही प्रगतीपथावर आहे. सदर बाबींचे संनियंत्रणही तिमाही आढावा घेऊन करण्याची विनंती आहे.धरण स्थिती अहवाल सर्व संबंधित मंडळ व विभागीय कार्यालयांना कार्यालयांना ई-मेलद्वारे पाठविण्यात येत आहे.

हे आपले माहिती व पुढील कार्यवाहीसाठी सविनय सादर.

सहपत्र: धरण स्थिती अहवालाच्या प्रती यादी प्रमाणे

O/C 19/05/2

(य.का. भदाणे)
अधीक्षक अभियंता,
धरण सुरक्षितता संघटना
नाशिक- ४

प्रत -1) सचिव (जसंव्य व लाक्षेवि) जलसंपदा विभाग,मंत्रालय,मुबंई-32 यांना अहवालासह माहितीस्तव सहपत्रासह सविनय सादर.

2) महासंचालक, संकल्पन, प्रशिक्षण, जलविज्ञान, संशोधन व सुरक्षितता, मेरी, नासिक यांना अहवालासह माहितीस्तव सविनय सादर.

3) कार्यकारी संचालक, कोकण पाटबंधारे विकास महामंडळ, ठाणे यांना अहवालासह माहितीस्तव सहपत्रासह सविनय सादर..

4) मा. व्यवस्थापकीय संचालक महाराष्ट्र जलसंधारण महामंडळ, औरंगाबाद यांना अहवालासह माहितीस्तव सहपत्रासह सविनय सादर.

5) मुख्य अभियंता (नियोजन व जलविज्ञान),जलविज्ञान प्रकल्प , नासिक यांना अहवालासह माहितीस्तव सहपत्रासह सविनय सादर

6) मुख्य अभियंता (यांत्रिकी), त्र्यंबकरोड, नासिक-2 यांना अहवालासह माहितीस्तव सविनय सादर.

7) जल अभियंता,जलविकास (एम.सी.जी.बी.), बृहन्मुबंई महानगर पालिका इमारत,फोर्ट,मंबई-पिन:-400001 यांना अहवालासह माहितीस्तव सविनय सादर.

8) जल अभियंता,इंजिनिअरिंग हब इमारत,पहिला मजला,डॉ.ई.मोसेस रोड,वरळी, मुबंई-400018 यांना अहवालासह माहितीस्तव सविनय सादर.

9) मुख्य अभियंता एम.आय.डी.सी.,उदयोग सारथी ,महाकालीरोड,अंधेरी (पूर्व) मुबंई-400093 यांना अहवालासह माहितीस्तव सविनय सादर.

10) मा. मुख्य अभियंता, सार्वजनिक बांधकाम विभाग,बांधकाम भवन,४ था मजला,मर्झबान पथ,फोर्ट , मंबई-400001 यांना अहवालासह माहितीस्तव सविनय सादर.

11) मा. मुख्य अभियंता, महाराष्ट्र जीवन प्राधिकरण,विष्णू प्रतिभा हॉल,विहार (पश्चिम) कोकण प्रदेश, ठाणे-401303 यांना अहवालासह माहितीस्तव सविनय सादर.

प्रत - (डी.व्ही.डी. द्वारे)

1) अधीक्षक अभियंता, ठाणे पाटबंधारे मंडळ, सिंचन भवन, 3 रा मजला, कोपरी कॉलनी, ठाणे. (पूर्व) पिन:-400 603

2) अधीक्षक अभियंता, रत्नागिरी पाटबंधारे मंडळ, कुवारबाँव, रत्नागिरी. पिन:-415 639

3) प्रादेशिक जलसंधारण अधिकारी , मृद व जलसंधारण विभाग, ठाणे, सिंचन भवन, 1 ला मजला, कोपरी कॉलनी, ठाणे (पूर्व) पिन:-400 603

4) अधीक्षक अभियंता, उत्तर कोकण पाटबंधारे मंडळ, जुना मुंबई पुणे महामार्ग, कळवा,ठाणे (पूर्व) पिन:-400 603.

5) अधीक्षक अभियंता, दक्षिण कोकण पाटबंधारे प्रकल्प मंडळ, मुख्य प्रशासकीय इमारत,ओरस, सिंधुदूर्गनगरी, ता. कुडाळ, जि. सिंधुदर्ग. पिन:-416812

6) अधीक्षक अभियंता, डेअरी बांधकाम मंडळ, वरळी कंपाऊड, मुबई पिन:-400 018

7) अधीक्षक अभियंता, मुंबई बांधकाम मंडळ, चेंबूर, मुबई पिन:-400071

8) अधीक्षक अभियंता,(एम.एम.आर) एम आय डी सी डोबिंवली (पूर्व),जि.ठाणे

9) अधीक्षक अभियंता, एम.आय.डी.सी. कोकण विभाग,महाड, जि रायगड

10) उप जल अभियंता (परीरक्षण) एम.सी.जी.बी.,घाटकोपर (प.),मुंबई पिन:-400 086

11) उप जल अभियंता (ऑपरेशन्स) एम.सी.जी.बी.,सॅडोज बाग ,कापूर बावडी, जिल्हा ठाणे (प.)पिन:- 400 607

12) अधीक्षक अभियंता, महाराष्ट्र जीवन प्राधिकरण मंडळ, पनवेल,जि रायगड पिन:-410 206

13) अधीक्षक अभियंता, महाराष्ट्र जीवन प्राधिकरण मंडळ, ठाणे

14) **अधीक्षक अभियंता, (माती धरणे/दगडी धरणे/दरवाजे) मसंचिसं,नासिक**-4

यांचे माहितीसाठी व पुढील योग्य त्या कार्यवाहीसाठी सस्नेह अग्रेषित

2/- वरील अहवालाची प्रत व आपल्या अखत्यारितील विभागाच्या डी.व्ही.डी. मुख्य अभियंता यांचे कार्यालयाकडून प्राप्त करुन घ्याव्यात व पोहच या कार्यालयास पाठवावी हि विनंती.

प्रत -

1) कार्यकारी अभियंता, ठाणे लघु पाटबंधारे विभाग, कळवा, ठाणे. (पूर्व) पिन:- 400 603

2) कार्यकारी अभियंता, रायगड पाटबंधारे विभाग, कोलाड, ता. रोहा, जि. रायगड. पिन:- 402 304

3) कार्यकारी अभियंता, भातसा धरण विभाग क्रं.1, भातसानगर,जि. ठाणे. पिन :- 4210603

4) कार्यकारी अभियंता, पालघर पाटबंधारे विभाग,मनोर,जि.पालघर, पिन:- 401 403

5) कार्यकारी अभियंता, पालघर पाटबंधारेप्रकल्प बांधकाम विभाग, सुर्यानगर ता.डहाणू, जि.पालघर पिन:- 401 404
6) कार्यकारी अभियंता, रत्नागिरी पाटबंधारे विभाग, कुवारबाँव, रत्नागिरी पिन:- 415 639
7) कार्यकारी अभियंता, तिल्लारी हेडवर्क्स,विभाग क्रं.1,कोनाळकटटा,ता.दोडामार्ग,जि.सिंधुदूर्ग पिन:- 416 549
8) जिल्हा जलसंधारण अधिकारी , मृद व जलसंधारण विभाग , कुवारबाँव, रत्नागिरी पिन:- 415 639
9) जिल्हा जलसंधारण अधिकारी , मृद व जलसंधारण विभाग, कडा वसाहत, कळवा, ठाणे. पिन:- 400 605
10) कार्यकारी अभियंता, लघु पाटबंधारे विभाग, ओरस, सिंधुदूर्गनगरी, ता. कुडाळ, जि. सिंधुदर्ग. पिन:- 416 812
11) कार्यकारी अभियंता, लघू पाटबंधारे विभाग,कापसाळ वसाहत,चिपळूण, जि. रत्नागिरी. पिन:- 415 605
12) कार्यकारी अभियंता, हेटवणे मध्यम प्रकल्प विभाग, कामरली, जि. रायगड. पिन:- 402 107
13) कार्यकारी अभियंता, रायगड पाटबंधारे विभाग क्रं.2, कोकण भुवन ,नवी मुंबई पिन:-400 614
14)कार्यकारी अभियंता,पाटबंधारे प्रकल्प बांधकाम विभाग, रत्नागिरी. पिन:- 415 639
15) कार्यकारी अभियंता, सिंधुदूर्ग पाटबंधारे विभाग, अंबडपाल, ता. कुडाळ, जि. सिंधुदूर्ग. पिन:- 416 812
16) कार्यकारी अभियंता, कृषी बांधकाम विभाग,गोरेगाव,मुंबई पिन:-400 065
17) कार्यकारी अभियंता, (ऑपरेशन्स) बृहन्मुबंई महानगर पालिका,सॅडोज बाग ,ठाणे-पिन:- 400 607
18) कार्यकारी अभियंता, बृहन्मुबंई महानगर पालिका,घाटकोपर, मुंबई पिन:- 400 086
19) कार्यकारी अभियंता, एम.आय.डी.सी.,बारवी धरण विभाग, (अतिरिक्त), अंबरनाथ. (पूर्व) जि. ठाणे. पिन:- 421 506
20) कार्यकारी अभियंता, एम.आय.डी.सी., विभाग क्रं.2,वागळे इस्टेट, ठाणे पिन:-400 604
21) कार्यकारी अभियंता, एम.आय.डी.सी., विभाग, (स्थापत्य),महाड जि. रायगड. पिन:- 402 309
22) कार्यकारी अभियंता, (ई एड एम) ,एम.आय.डी.सी.,विभाग, अंबरनाथ जि. ठाणे. पिन:- 421 506
23) कार्यकारी अभियंता, महाराष्ट्र जीवन प्राधिकरण विभाग ,पनवेल पिन:- 410 206
24) कार्यकारी अभियंता, ग्रामिण पाणीपुरवठा विभाग, रायगड जिल्हा परिषद,अलिबाग, जि. रायगड. पिन:- 402 201

दोष व त्रुटी बद्दल त्वरीत कार्यवाही करुन अनुपालन / पुर्तता अहवाल या कार्यालयास त्वरित पाठवावा ही विनंती.

2/-सदर अहवालाच्या डी.व्ही.डी. आपल्या मंडळ कार्यालयाकडून प्राप्त करुन घ्याव्यात.

26) कार्यकारी अभियंता, धरण सुरक्षा विभाग क्र.2, नाशिक 4
27) कार्यकारी अभियंता, धरण सुरक्षा विभाग क्र.3, नाशिक 4
28) कार्यकारी अभियंता, प्रकल्प आखणी विभाग क्र.3, नाशिक 4

यांना ग्रंथालयात संग्रहासाठी व राज्याचा एकत्रीत धरण स्थिती अहवाल तयार करणेसाठी :- एकुण 3 प्रती

29) ग्रंथालय, मध्यवर्ती संकल्पचित्र संघटना, नाशिक यांना अहवालाच्या प्रतीसह माहितीसाठी

FOREWORD

1. "The Annual Health Status Report of Identified Large Dams i.e. Large Dams Class-I and Large Dams Class-II in Kokan Region for the Year 2019-20 is prepared, based on the Inspection Reports (Pre and Post Monsoon 2019) received from field officers and the test inspections carried out by this Organisation during year 2019-20. The period of the report is from April 2019 to March 2020

2. This Report comprises of following parts, as per guidelines received from Dam Safety Monitoring Unit of Central Water Commission, New Delhi vide letter No. 3/19/NCDS/HS/DSM/2001 dt. 28/8/2002.

Part-I: Action Taken Report on the Health Status Report 2018 On deficiencies classified under Category I & II.

Part-II : Annual Consolidated Health Status Report prepared for the year 2019-20as described above for identified Large Dam Class-I and Dam Class-II on the basis of deficiencies classified under Category No. 1, 2 & 3.

Part-III : Annual Report of Performance of Dam Instruments installed on identified Large dams.

Part-IV: Annual Report of Performance of Meteorological Instruments installed on Large Dams.

Part- V: Status of NCDS documents submitted to DSO of class-I Dams

Part-VI: Data filling status on Dam Health and Rehabilitation Monitoring Application (DHARMA) portal of Konkan Region, in DRIP- II

Part-VII: Annual Report of Inspections done by Mechanical Organisation. Deficiency Category-I & II from Health Status Report made available by Mechanical.

3. This report provides condensed summary of dam deficiencies noticed during inspection carried out by field officer and dam safety organisation in the year **2019.**Field officer / owners of dams are requested to remove deficiencies to achieve dam safety aspects and send compliance report earliest.

4. Inspecting officers are requested to follow the suggestion given in Annexure – 1 while carrying out forthcoming Pre/Post Monsoon inspections of dams.In Annexure – 1 general information viz. Time schedule of inspection, classification of dams, inspection authorities, Preparation of AHSR for class-I & class-II dams, NRLD register updation, categorization and standardization of deficiencies, monitoring of deficiency removal program is given, which will be helpful to field officers.

5 As Health Status Report of Large Dams of Class I & II is prepared by Dam Safety Organization, it is suggested to carry out inspections of Class-III dams and small dams by competent field officers and to prepare the Health Status Report of these dams at the Regional Level & forward it to DSO. This has been also persused through letters, but the response from field officers is not encouraging. So special attention needs to be paid by field Chief Engineers in this regard.

6. This report covers Dam Health Status of **200** Class-I & II dams owned by WRD and Local sector. Also covers all private dams inspected by DSO twice in the year.

7. In Kokan region 39 Class- I & 111 Class-II dams of WRD, 2 class I & 33 Class-II dams of Local sector and 9 class I and 6 class II private dams are in existence. Pre & post monsoon inspection reports of all the dams have been received. & scrutinized for preparation of HSR.

8. Director General, MERI, Nashik has issued technical circular in 2006 (No.5325 of 2006 dated 15/12/2006) regarding guide lines for periodical inspections of spillway gates by the mechanical Organisation information regarding no. of deficiencies observed during the inspections carried out by Mechanical Organisation are also incorporated in this Health Status Report.

Statement showing total numbers of dams having deficiencies

Sr. No	Dam owner	Year	Number of dams								
			Class -I	Class II	Total	Class I Dams having Deficiencies			Class II Dams having Deficiencies		
						Cat-I	Cat-II	Cat-III	Cat-I	Cat-II	Cat-III
1	W.R.D	2018	39	110	149	0	20	39	0	52	110
		2019	39	111	150	01	32	39	0	49	111
2	Local Sector	2018	02	033	035	0	02	35	0	03	035
		2019	02	033	035	0	02	35	0	12	035
3	**Private**										
	1)M.C.G.M	2018	04	02	06	0	03	04	0	00	04
		2019	04	02	06	0	03	04	0	01	04
	2) Navi Mumbai	2018	01	00	01	0	01	01	0	00	01
		2019	01	00	01	0	00	01	0	00	01
	3) M.I.D.C	2018	03	01	04	0	02	03	0	01	01
		2019	03	01	04	0	03	03	0	01	04
	4)P.W.D (Diary Dept)	2018	01	00	01	0	01	01	0	00	00
		2019	01	00	01	0	01	01	0	00	00
	5)M.J.P	2018	00	01	01	0	00	00	0	01	01
		2019	00	01	01	0	00	00	0	01	01
	6) Z.P	2018	00	02	02	0	00	00	0	00	02
		2019	00	02	02	0	00	00	0	00	02
Grand Total		2018	50	149	199	0	29	50	00	57	199
		2019	50	150	200	01	41	50	00	64	200

Category I - Deficiency in Tillari Main dam of Spillway gate (Mechanical Organisation)

Statement showing total number of deficiencies

Sr.N0	Dam owne	Year	Number of Deficiencies								
			Category –I			Category –II			Category -III		
			Class -I	Class -II	Total	Class - I	Class- II	Total	Class- I	Class- II	Total
1	W.R.D	2018	0	0	0	60	100	160	305	344	649
		2019	1	0	01	110	96	206	315	361	676
2	Local Sector	2018	0	0	0	04	06	10	20	088	108
		2019	0	0	0	07	19	26	20	162	182
3	**Private**										
	1)M.C.G.M	2018	0	0	0	16	0	16	15	22	37
		2019	0	0	0	17	02	19	22	16	38
	2) Navi Mumbai	2018	0	0	0	00	00	00	10	00	10
		2019	0	0	0	00	00	00	00	00	10
	3) M.I.D.C	2018	0	0	0	13	05	18	24	19	43
		2019	0	0	0	12	05	17	26	19	45
	4)P.W.D Diary Dept	2018	0	0	0	10	00	10	15	00	15
		2019	0	0	0	09	00	09	17	00	17
	5)M.J.P	2018	0	0	0	00	03	03	00	05	05
		2019	0	0	0	00	02	02	00	06	06
	6) Z.P	2018	0	0	0	00	00	00	00	11	11
		2019	0	0	0	00	00	00	00	14	14

Statement showing total number of deficiencies in gated dams (As per data from Mechanical Organization)

No	Dam Owner	Year	Number of Gated Dams			No. of dams inspected		Number of Deficiencies								
								Category-I			Category-II			Category-III		
			Cl.I	Cl II	Ttl	Cl I	Cl II	Cl -I	Cl-II	Ttl	Cl-I	Cl-II	Ttl	Cl-I	Cl-II	Ttl
1	WRD	2018	15	0	15	15	0	0	0	0	259	0	259	459	0	459
		2019	15	0	15	15	0	0	0	0	407	0	407	959	0	959
2	Private															
	Private	2018	08	0	08	08	0	0	0	0	44	0	44	135	0	135
		2019	08	0	08	08	0	0	0	0	87	0	87	255	0	255
Grand Total		2018	23	0	23	23	0	0	0	0	303	0	303	594	0	594
		2019	23	0	23	23	0	0	0	0	494	0	494	1214	0	1214

9. **Observations / Findings in HSR-2019**

9.1 It is seen that in Kokan Region, there is no dam having Category-I deficiency (Civil component) It is observed. there is 115 Class-I & II dams (57.50 %) are having major deficiencies of Category- II.

9.2 As per HSR 2018, in 86 dams (Class-I & II dams), 217 numbers of deficiencies were observed. Field officers send all action taken reports but after scrutiny it is observed that, only in 18 dams some deficiencies were attended by field officers, others are pending with them. (Details are given in table no 1.1)

9.3 Regarding deficiencies in Mechanical components (Gates & Hoists etc.) 1 dam (Tillari Main) have been noticed Category- 1 deficiency and 21 dams have been noticed Category II deficiencies and need attention of the project authorities.

9.4 The deficiencies shown in the present report are based on the pre/ post monsoon inspections of the dams carried out by the field officers and reports of them received by this organisation. As such, the deficiencies and action taken thereof is the sole responsibility of the field officers.

10. Being the dam owner, safety of the dam is the prime responsibility of the concerned field Executive Engineer. In order to ensure safety of dam/dams in his jurisdiction, he shall intiate the procedures for removal of deficiencies noticed in the pre-post monsoon inspection as well as pointed out in this HSR. Higher authorities shall accord timely sanction to works required for deficiency removal. Executive Director of the corporation are requested to make required funds available to the deficiency removal and monitor the progress periodically. This will help in keeping the dam safe.

I hope this report will serve desired expectations expressed by Dam Safety Monitoring Directorate of C.W.C.New Delhi. Any error, discrepancies omissions if any may please kindly by brought to the notice of ~~this~~ Dam Safety Organisation, so that it can be taken into consideration in the next report.

The efforts taken by the Superintending Engineer, Dam Safety Organisation, Nashik and his staff, for completion of this report are highly appreciated.

Place: Nashik-4
Date: 20/05 / 2020

(A.P.Kohirkar)
Director General
Design, Training, Hydrology.
Research and Safety,
MERI, Nashik-4.

INDEX

Annual Consolidated Health Status Report Of Identified Large Dams In Konkan Region

PART – 1

Action Taken Report on Annual Health Status Report of Identified Large Dam for Year 2018

PART – 1 : Action Taken Report on Annual Health status Report 2018 of Identified Large Dams Konkan Region

1.0 General

The Annual Health Status Report of Konkan Region for the year 2018 was prepared, submitted and circulated to all field officers and same was submitted to Government of Maharashtra vide letter No. DSO/DSD-1/KONKAN/STATUSREPORT 2018-19/288 dtd. 31.05.2019 by Dam Safety Organisation. Field officers were requested to carry out remedial measures to remove major deficiencies pointed out in HSR and send action taken report to DSO.

In most of the cases response received from field officers regarding information of initiation of administrative procedures viz. estimate preparation, reference to design organization or Mechanical organization. The ATR part of this HSR doesn't give correct picture. Hence, it is necessary that ATR be sent to DSO only after careful scrutiny at the level of Chief Engineer. The agency wise no of dams having major deficiencies as per HSR 2018 and status of compliance is given in Table 1.1

In Konkan region there are 199 (Class-I =50 & Class-II=150) large dams. Out of these dams, 86 (Class-I 29 & Class-II 57) dams have major deficiencies. Action taken reports of 04 dams (Class-I= 02 & Class-II= 02) are not received from field officers. Agencywise list of these 4 dams is given in Table 1.2

1.1 Action Taken Report on Defeciencies of Large Dams Class I

1.1.1 Action Taken Report on Deficiency Category-1 of Large Dams Class I

No such dams under this category is reported. (Table 1.3)

1.1.2 Action Taken Report on Deficiency Category-2 of Large Dams Class I

There are 22 dams reported under this category. Agencywise list of dams is given in Table 1.4

1.2 Action Taken Report on Defeciencies of Large Dams Class II

1.2.1 Action Taken Report on Deficiency Category-1 of Large Dams Class II

No such dams under this category is reported. (Table 1.5)

1.2.2 Action Taken Report on Deficiency Category-2 of Large Dams Class II

There are 55 dams reported under this category. Agencywise list of dams is given in Table 1.6

1.3 Action Taken Report on Defeciencies of Private Large Dams

In Konkan region, there are 16 private dams. Out of which 9 dams are under category - II.

1.3.1 Action Taken Report on Deficiency Category-1 of Private dams Class I

No such dams under this category is reported. (Table 1.7)

1.3.2 Action Taken Report on Deficiency Category-2 of Private dams Class I

There are 7 dams reported under this category. Agencywise list of dams is given in Table (Table 1.8)

1.3.3 Action Taken Report on Deficiency Category-1 of Private dams Class II

No such dams under this category is reported (Table 1.9)

1.3.4 Action Taken Report on Deficiency Category-2 of Private dams Class II

There are 02 dams reported under this category. Agency wise list of dams is given in Table 1.10

Part- 2 of this report gives the details of Annual Health Status Report of identified large dams based on Pre & Post monsoon - 2019 inspection reports.

Table - 1.1

Statement showing the position of compliance of Deficiencies Identified in Health Status Report (2018)

Sr. No	Agency	Major deficiencies reported in Large Dams			Status of Deficiencies removal as per compliance report received in DSO											
					Physically fully complied			Physically in progress			Administrative action initiated			Compliance report not received in DSO		
		Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
[A] Chief Engineer, (Water Resources), Konkan																
(1)	TIC, Thane	6	28	34	00	* 01	01	00	00	00	06	27	33	00	00	00
(2)	RIC,Ratnagiri	7	20	27	00	* 03	03	03	10	13	04	07	11	00	00	00
(3)	NKIPC,Thane	2	4	6	00	00	00	00	00	00	02	04	06	00	00	00
(4)	SKIPC, Oras	5	0	5	00	00	00	00	00	00	05	00	05	00	00	00
[B] Chief Engineer, Small Scale (W. C.), Pune																
(1)	SSI(WC) Circle, Thane	02	03	05	00	00	00	00	00	00	02	02	04	00	01	01
Govt.Total		**22**	**55**	**77**	**00**	**04**	**04**	**03**	**10**	**13**	**19**	**40**	**59**	**00**	**01**	**01**

* **Physically fully complied (Class-II Dams)**
1) SE,TIC,Thane 1) Kothurde
2) SE,RIC,Ratnagiri 1) Beni 2) Pulas 3)Sanamtemb

Sr. No	Agency	Major deficiencies reported in Large Dams			Status of Deficiencies removal as per compliance report received in DSO											
					Physically fully complied			Physically in progress			Administrative action initiated			Compliance report not received in DSO		
		Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Private																
1	M.I.D.C. Thane	02	01	03	01	00	01	00	00	00	00	00	00	01	01	02
2	M.I.D.C. Raigad	01	00	01	00	00	00	00	00	00	00	00	00	01	00	01
3	M.J.P.C. Thane	00	01	01	00	00	00	00	00	00	00	01	01	00	00	00
4	M.C.G.B. Mumbai	03	00	03	00	00	00	00	00	00	03	00	03	00	00	00
5	Dairy Const.Circle Mumbai	01	00	01	00	00	00	00	00	00	01	00	00	00	00	00
Private Total		**07**	**02**	**09**	**01**	**00**	**01**	**00**	**00**	**00**	**04**	**01**	**05**	**02**	**01**	**03**
Grand Total		**29**	**57**	**86**	**01**	**04**	**05**	**03**	**10**	**13**	**23**	**41**	**64**	**02**	**02**	**04**

Table - 1.2

List of dams whose deficiencies compliance report not received from field officers

Sr. No.	Class –I			Class -II		
	Circle Office	Compliance report awaited	Total no of dams	Division Office	Compliance report awaited	Total no of dams
Govt. dams [A] CE, WR,Konkan				**Govt. dams [A] CE, WR,Konkan**		
1	**2**	**3**	4	5	6	7
(2)	SKIPC, Oras, Sindhudurg	--	00	--	--	--
(3)	SSI (WC) Circle, Thane	--	00	EE S.S.I.(W.C.) Thane	1) Aswali	01
Total..			00	Total..		01

Private Dams				**Private Dams**		
1	M.I.D.C. Thane	**Barvi**	01	M.I.D.C. Thane	Murbadi	01
2	M.I.D.C. Raigad	**Savitri**	01	--	--	--
		Total..	02			01
		Grand Total ..	**02**		**Grand Total ..**	**02**

Table 1.3

Action Taken Report on Deficiency Category-1 of Large Dams Class I

Sr. No.	Name of Dam	Date of Inspection	Main component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested	Implimentation Status
1	2	3	4	5	6	7
---------- No Such Dams under this category is reported ----------						

Table 1.4
Action Taken Report on Deficiency Category-2 of Large Dams Class- I

<table>
<tr><th>Sr. No</th><th>Dam Features</th><th>Date of Inspection</th><th>Main component of Dam</th><th>Observations / Significant Deficiencies Noticed</th><th>Remedial Measures Suggested</th><th>Implimentation Status</th></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr>
<tr><td colspan="7">[1] CE,WR,(Konkan), Mumbai.
(1) Thane Irrigation Circle, Thane
(a) Bhatsa Dam Division No. 1 , Bhatsanagar</td></tr>
<tr><td>1</td><td>Name :- Bhatsa(G)
Dist-Thane
Year of Completion:- 2005
Location :-
Longitude: -73° 25′ 00″
Latitude: - 19° 31′ 00″
Height: 88.50 m
Gross capacity: 976.10 Mm^3
Spillway capacity:10242 m^3/sec
Sr.No.in National Register of LargeDams:MH09HH1011</td><td>17/04/2018
01/12/2018</td><td>Body of dam</td><td>1) Leakage in to gallery in post 2018 is 89640 LPM and is greater than 2005 was 40725.72 LPM.

2) Considerable leaching from the seepage water & deposition of lime near the seepage exist spots.</td><td>Quantum of seepage should be monitored monolith wise. Efforts should be made to stop these leakages from gallery on top priority.

Leached material to be collected yearly monolith wise and weighed and record of quantity and weight to be maintained.</td><td>For reducing leakage through bhatsa dam drilling grouting work of bhatsa masonary dam M.No. 1d to 11,12 A to 25B inspection gallery and high level gallery is in progress the details of leakages up to 10/07/2019 is as per follows
LEAKAGES IN 2018
<table>
<tr><th>Date</th><th>RL</th><th>Gross storage Mm^3</th><th>Leakages LPM</th></tr>
<tr><td>5/7/2018</td><td>115.67</td><td>410.176</td><td>38346</td></tr>
<tr><td>7/7/2018</td><td>117.87</td><td>445.795</td><td>41178</td></tr>
<tr><td>8/7/2018</td><td>118.95</td><td>463.98</td><td>45732</td></tr>
</table>
LEAKAGES IN 2019
<table>
<tr><th>Date</th><th>RL</th><th>Gross storage Mm^3</th><th>Leakages LPM</th></tr>
<tr><td>8/7/2019</td><td>115.22</td><td>403.15</td><td>25968</td></tr>
<tr><td>9/7/2019</td><td>117.14</td><td>433.74</td><td>31356</td></tr>
<tr><td>10/7/2018</td><td>118.60</td><td>458.07</td><td>34860</td></tr>
</table>
Leached material is scrapped off regularly, the sample of seepage water is submitted to MERI Nashik regularly two times in a year
For arresting loss of leaching from seepage water the pointing work with cementitious mortar and shotcreating treatment to U/S side of Bhatsa dam will be carried out in this year.</td></tr>
</table>

				3) Drainage gallery is not fully accessible	Necessary repairs to be carried out.	Work of dewatering will be carried out by Mechanical Division Kalwa (Thane) Leakage control measure work like drilling & cement grouting is in progress and cementitious mortar pointing with shotcreating treatment to U/S side will be taken immediately
			Outlet	4)Damage noticed to the conduit at low level irrigation outlet. (Right Bank)	Necessary repairs to be carried out.	Civil work will be carried out after thoroughly inspection by divers and detail reports received from Mechanical unit
			W.W.Bar & Tail Channel	5)Rainforcement is exposed at some places.	Necessary repairs to be carried out.	Epoxy mortar plaster treatment on exposed bar will be carried out in this year.
			Instrumentation	6)Instruments are not in working condition.	Necessary repairs to be carried out.	For repair of instruments, communicated to MERI.Nashik & cleaning of Uplift Pressure Cells & Drainage holes will be carried out after dewatering of foundation gallery.
2	Name :- **Upper Vaitarna&Alwandi (G)** Dist-Thane Year of Completion:- **1973** Longitude: -**73° 30′ 00″** Latitude: - **19° 47′ 00″** Height: **46.02 m** Gross capacity: **353.96 Mm^3** Spillway capacity: **1378 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH0384**	11/06/2018 24/10/2018	Saddle dam	1)All the toe and cross drains of saddle dam are totaly damaged due to submergence of Mukane dam.	Proper arrangement should be made in consultation with C.D.O.	Proposal and estimates of providing bund to protect cross drains and toe drains from backwater of Mukane dam are proposed for approval .
			Masonry Dam	2) Considerable leaching is observed from the seepage water.	Leaching material getting accumulated to be scraped off frequently. Leached material to be collected yearly monolith wise and weighed and record of quantity and weight to be maintained.	Leaching Material is removed, weighed and tested every year from MERI, Nashik. Tender process is under progress for the work of removing and cleaning leaching materials from horizontal pipe and vertical pipe this year.
			Instruments	3)Vertical plumb bob, uplift pressure cells and piezometers are not working.	Necessary repairs to be carried out.	Plumb bob was fitted in the gallery of Vaitarna dam. But the slot is having considerable leakages due to which plumb bob is not working. We are in communication with MERI,Nashik

1	2	3	4	5	6	7
(c) Bhatsa Canal Division No. 1, Shahapur						
3	Name :**Dhamni (Surya) (G)** Dist- Palghar Year of Completion:- **1987** Location :- Longitude: -**73° 03′ 20″** Latitude: - **19° 55′ 15″** Height: **58.08 m** Gross capacity: **299.01 Mm^3** Spillway capacity: **3180 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH1173**	08/05/2018 21/11/2018	Earthen Dam	1) Cross drains are not functioning properly.	Necessary repairs to be carried out.	Estimate of the said work is under preparation at field level & work will be carried out in 2020-21.
			Masonry Dam	2) Excessive seepage sweating in monolith no.8, 9 & 11.	Quantum of seepage/leakage should be monitored monolith wise. Result oriented efforts should be made precisely to stop leakages on top priority.	Representatives of CWPRS visited Dhamani dam on dated 10-12-2019.They have inspected foundation gallery and inspection gallery .Report is awaited from WWPRS Pune. Cement Grouting will be done as per guidelines by CWPRS Pune .To measure leakages of dam work of fixing V-Notches is in progress.
				3) Considerable leaching is observed on d/s face of dam.	Leached material to be collected yearly monolith wise and weighed and record of quantity and weight to be maintained.	Work of removing leaching material and bushes /trees is in progress. Quantum of leaching material is average.
			Outlet	4) Leakage is observed around the conduit.	Necessary repairs to be carried out.	Necessary repairing work is carried out by mechanical wing.
				5)Outlet gate are not operating smoothly.	The repairs should be carried out either through mechanical organisation or under its advice.	Work done by Mechanical Organization and gate operation is smooth.
			W.W.Bar & Tail Channel	6) Damges to guide and divide walls	Necessary repairs to be carried out.	Estimate of the said work is under preparation at field level & after sanction of estimate the work will be taken up for execution in 2020-21
			Instrumentation	7)Instruments are not in working condition.	Necessary repairs to be carried out.	Repairing works of plumbob will be carried out by research officer instrumentation and research division MERI,Nashik invoice for plumbob repairs and Pan evqporimeter received from instrumentation and research division Meri,Nashik work will be carried out in 2019-20

1	2	3	4	5	6	7
(d) Thane Minor IrrigationDivision, Kalwa,Thane						
4	Name :-**Domihira(UG)** Dist- Palghar Year of Completion:- **2009** Longitude: -**73° 15′ 30″** Latitude: - **19° 57′ 00″** Height: **51.50 m** Gross capacity:**14.49 Mm^3** Spillway capacity:**502.25m^3/sec** Sr.No.in National Register of Large Dams:- **MH09HH1851**	08/05/2018 16/11/2018	W.W.Bar & Tail Channel Outlet	1) Leakage through both flank walls and through ogee portion at bottom level observed. 2) Service gate not operating smoothly. 3) Leakage through SG and EG	Necessary repairs may be carried out accordingly. The repairs should be carried out either through mechanical organisation or under its advice. Necessary repairs to be carried out.	Remedial measures to prevent leakages through spillway are in progress Work will be carried out by mechanical Division in current season Work will be carried out by mechanical Division in current season.
5	Name:-**UpperGhatghar**(UG) Dist-A'Nagar Year of Completion:- **2004** Longitude: -**73° 40′ 00″** Latitude: - **19° 32′ 30″** Height: - **15.16 m** Gross capacity**: 5.82 Mm3** Spillway capacity:-**837.00 m3/sec** Sr.No.in National Register of Large Dams:**MH09HH1643**	10/05/2018 24/10/2018	E.D.A. Instruments	1)Condition of emergency dissipation arrangement is not satisfactory. 2)Instruments are not in working condition.	Necessary repairs to be carried out. Necessary repairs to be carried out.	Energy dissipation arrangement was made empty & inspection is done. Some minor repairs are carried out. Planning for necessary repairs of Instruments is done & being carried out.
(e) Raigad Irrigation Dn. Kolad. Tal –Roha, Dist-Raigad.						
6	Name:- **Bhira (Pick up) (G)** Dist- Raigad Year of Completion:- **1987** Longitude: -**73° 23′ 00″** Latitude: - **18° 27′ 00″** Height: - **42.60 m** Gross capacity**: 1.76 Mm3** Spillway capacity:-**64.00 m3/sec** Sr.No.in National Register of Large Dams:**MH09MH0539**	09/05/2018 27/11/2018	Earth Dam	1) Leakage observed through pickup weir.	Leakages be measured & study be made with the concerned reduction of storage of dam. Result oriented efforts under the guidance of higher authorities should be made precisely to stop these leakages on top priority.	Estimate work is in Progress and it is proposed in prapansuchi 2019-20

1	2	3	4	5	6	7
(2) Ratnagiri Irrigation Circle, Ratnagiri **(a) Irrigation Project Constn Division,Chiplun**						
7	Name :- **Bholawali(UG)** Dist-Ratnagiri Year of Completion:- **2001** Location :- Longitude: -**73° 24′ 00″** Latitude: - **17° 53′ 00″** Height: **35.32 m** Gross capacity: **5..618 Mm^3** Spillway capacity:-**91.39 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH1564**	23/05/2018 21/11/2018	Earth Dam Outlet	1)Portion remains slushy at d/s of the dam. 2)Slight leakage observed near d/s head wall of conduit. 3)Rubber seal damaged of outlet gate.	Relief well should be constructed in consultation with C.D.O. Necessary repairs may be carried out. The repairs be carried out through mechanical wing.	It has been decided to declare project completed w/o w.w. bar at 80 % water storage. After getting approval from Govt. project will handover to sinchan & necessary repairs will purpose in Bigar Sinchan.
8	Name :- **Gadgadi(G)** Dist-Ratnagiri Year of Completion:- **2001** Location :- Longitude: -**73° 39′ 00″** Latitude: - **16° 30′ 00″** Height: **35.20 m** Gross capacity: **13.52 Mm^3** Spillway capacity: **928 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH1590**	18/05/2018 08/12/2018	Junction of earth work with outlet masonry	1) Leakage is observed @ junction of Earthwork with NOF masonry. 2)Leakage through the foundation masonry of well & conduit.	Location & amount of leakages should be monitored and necessary treatment to upstream face and grouting of masonry in the affected area, should be carried out to control leakage. Causes of leakages should be investigated & treated accordingly	This work will be carried out from contractor as contract is still live. Necessary correspondnace regarding this matter is in process.
9	Name :- **Kondivali (UG)** Dist-Ratnagiri Year of Completion:- **1995** Location :- Longitude: -**73° 23′ 00″** Latitude: - **17° 39′ 30″** Height: - **31.14 m** Gross capacity: **4.68 Mm^3** Spillway capacity:**254 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH1360**	24/05/2018 22/11/2018	Earth Dam Outlet	1)Leakage spots are at RD 120 m to 330m at R.L. 114.00 m. 2) Operation of the gates not smooth.	Leakages be measured & study be made with the concerned reduction of storage of dam. Result oriented efforts under the guidance of higher authorities should be made precisely to stop these leakages on top priority. The repairs be carried out through mechanical wing.	Repair work order issued and work is in progress. Work will be completed upto may 2020. Repair work will carried out by mechanical wing upto May-20

1	2	3	4	5	6	7
10	Name :- **Tangar (UG)** Dist-Ratnagiri Year of Completion:- **1995** Longitude: -**73° 15′ 00** Latitude: - **18° 50′ 30′** Height: **31.75 m** Gross capacity:**3.575 Mm³** Spillway capacity:-**256.0 m³/sec** Sr.No.in National Register LargeDams: **MH09MH1361**	23/05/2018 21/11/2018	Earth Dam Outlet	1)Wet and slushy patches observed on the d/s slopes and toe. 2) Upstream and downstream slopes show signs of bulging and concavity. 3)Conduit is not structurally sound and leak proof, seepage noticed around conduit.	Relief well should be constructed in consultation with C.D.O. Dam section to be brought to correct design section and level by adding proper earthwork duly compacted properly. Causes of leakages should be investigated & treated accordingly.	This work is now included in DRIP -II/III
11	Name :- **Gadnadi (G)** Dist-Ratnagiri Year of Completion:- **2009** Longitude: -**73° 36′ 50′** Latitude: - **17° 16′ 30′** Height: **71.78 m** Gross capacity:**83.212 Mm³** Spillwaycapacity **1563 m³/sec** Sr.No.in National Register LargeDams: **MH09HH1783**	18/05/2018 18/12/2018	Masonry Dam Gallery Outlet	1) Lighting arrangement is not provided in gallery. 2) S.G and E.G. Not working properly. 3) Tremendous leakage through service gate.	Necessary repairs may be carried out. The repairs be carried out through mechanical wing. The repairs be carried out through mechanical wing.	This work is in progress. These repair works have completed.
12	Name :- **Pimpalwadi (Dubi) (G)** Dist-Ratnagiri Year of Completion:- **2004** Location :- Longitude: -**73° 34′ 00″** Latitude: - **17° 40′ 22″** Height: **50.84 m** Gross capacity: **27.59 Mm³** Spillway capacity:-**140.83 m³/sec** Sr.No.in National Register of LargeDams: **MH09HH1635**	24/05/2018 22/10/2018	W.W.& T.C.	1)The condition of waste weir bar is not good. 2)Left side guide wall is damaged, heavy leakages occurred through it. 3)Stilling basin concrete is cracking and spalling.	Necessary repairs may be carried out. Necessary repairs may be carried out. Necessary repairs may be carried out.	Repair work has been sanctioned in Bigar Sinchan so work is take in hand & in process.

1	2	3	4	5	6	7
(b) Irrigation Project Construction Division, Ratnagiri.						
13	Name **:- Sakharpa (UG)** Dist-Ratnagiri Year of Completion:- **2001** Longitude: -**73° 59′ 00″** Latitude: - **17° 41′ 50″** Height: - **32.50 m** Gross capacity**: 3.69 Mm3** Spillway capacity**104.22 m3/sec** Sr.No.in National Register of Large Dams: **MH09HH1566**	18/05/2018 31/10/2018	Outlet	1)Leakage (6 lps approx.) is observed through the divide wall of well also leakage are seen through construction lift joint of divide wall. 2)Operation of outlet gate is not smooth.	Necessary repairs should be carried out. Necessary repairs should be carried out	The compliance of remarks raised by CE office on repair estimate has been sumitted to CE office vide this office letter No. 989 dtd. 18/03/2020. After approval of estimate work will be completed upto Dec. 2020
(3) North Konkan Irrigation Project Circle, Kalwa Thane **(a) Raigad Irrigation Division No. 2 , Navi Mumbai**						
14	Name :-**Wagh (UG)** Dist- Palghar Year of Completion:- **2001** Longitude: -**73° 20′ 00″** Latitude: - **19° 05′ 00″** Height: **30.80 m** Gross capacity:**10.30 Mm^3** Spillway capacity: **315.00m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH1580**	04/05/2018 12/11/2018	Earthen dam Outlet	1)D/s slope shows settlement & concavity in gorge.(RD 670 m. to 910 m.) 2) Leakage through earthen dam section at various places. 3)A pond was observed on d/s side of dam & in gorge (RD 720 m. to 910 m.) 4)Shaft bearing is required for easy operating of gate . 5)Leakage observed from vertical post(side slot) of gate leaf.	Dam section to be brought to correct design section and level by adding proper earthwork duly compacted properly. Arrangement for measurement of leakage should be made. It is to be watched to see whether the leakages are from dam body or not. Drains should be free from obstructions to have smooth functioning. The leakages should be observed & if in increasing order, result oriented efforts should be made precisely to stop these leakages on top priority. Necessary repairs may be carried out Necessary repairs may be carried out	of Resectioning of Dam Estimate has been prepared and Embankment After .submitted to circle office for sanctioning prior approval the rectification work will be .carried out has been of Bentonite Grouting Estimate prepared and submitted to circle office for After prior approval the .sanctioning .ctification work will be carried outre has been of Bentonite Grouting Estimate prepared and submitted to circle office for After prior approval the .sanctioning .rectification work will be carried out Shaft bearing repair work has been carried out by Mechanical Department in the year 2020. Service gate repair work has been carried out by Mechanical Department in the year 2020.

1	2	3	4	5	6	7
(b) Hetawane Medium Project Division , Kamarli , Dist- Raigad						
15	Name :- **Hetawane (G)** Dist- Raigad Year of Completion:- **2000** Location :- Longitude: -**73° 12′ 00″** Latitude: - **18° 42′ 00″** Height: **52.20 m** Gross capacity: **147.49 Mm^3** Spillway capacity: **1084 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH1551**	25/05/2018 15/11/2018	Earth Dam Outlet Instruments	1) Concavity in pitching on d/s at RD 550 m. to 560 m.below berm R.L. 83.00 m. is observed. 2) Section of dam from RD 290 to 310m & u/s RD 340 m. is structurally not sound. 3) Top surface of the bank work is to be properly leveled and compacted at the desired TBL 4) ICPO Service gate does not operate. 5) Instruments are under repair.	Dam section to be brought to correct design section and level by adding proper earthwork duly compacted properly. The repairs be carried out through mechanical wing. Necessary repairs to be carried out.	The Construction work of the dam is in progress. The Contractor has been instructed for rectification. The Executive Engineer, Mechanical Division No. 2, Swargate, Pune has been instructed for the work of repairs and maintenance. Instruments repairing work is in progress.
(4) South Konkan Irrigation Project Circle, Oras,Sindhudurgnagari **(a) Sindhudurg Irrigation Project Construction Division, Charathe, Sawantwadi.**						
16	Name :- **Tillari(Forebay)(G)** Dist- Sindhudurg Year of Completion:- **1986** Longitude: -**74° 17′ 45″** Latitude: - **15° 40′ 20″** Height: **23.04 m** Gross capacity: **8.46 Mm^3** Spillway capacity: **7.90 m^3/sec** Sr.No.in National Register of LargeDams: **MH09MH1071**	09/05/2018 13/12/2018	Body of masonry dam Spillway gate	1) There is 1 m. thick concrete damage for full height and length on u/s face of dam. 2) Approx 4.15 Lit./sec. leakages are observed through conduit surface (from wall, gate, rubber seal and vent pipe) 3) Operation of gate is not satisfactory.The condition of the steel surface & the	Necessary repairs should be carried out. Necessary repairs may be carried out accordingly. The repairs be carried out through mechanical wing.	To rectify this defect provision of drilling & grouting from U/s face for full length of dam is considered in sanctioned estimate for year 2019-20. Tender process is in final stage. Work will be completed during this season. To stop leakage drilling & grouting from U/s face for full length of dam is considered in sanctioned estimate for year 2019-20. For minimising leakage through river sluice and vent pipe item is considered in Sanctioned estimate Year 2019-20. Tender process is in final stage. Work will be completed during this season. To carry out neccesary repairs of Godbole gate & to provide hydraulic

			Instruments	surface paint is deteriorated. Rubble seal damaged 4)Instruments are not in working condition.	Necessary repairs to be carried out.	hoisting system Divisional Office requested to send Invoice Part-I vide letter no. SIPCD/PB-4/ 640 Dt 15/02/2020 to S.E. mechanical circle kolhapur at earliest. Excluding Inspection bridge structural components other structural parts of Godbole gate have been painted in June 2019. As the storage capacity is minimal i.e. 2.12 M.cum and Dam is balancing reservoir, No gallery and instruments provided at Forebay Dam
1	**2**	**3**	**4**	**5**	**6**	**7**
17	Name :- **Tillari Main DamDhamane (G)**Sindhudurg Year of Completion:- **1986** Location :- Longitude: -**74° 17′ 45″** Latitude: - **15° 45′ 20″** Height: **38.05 m** Gross capacity: **106.65 Mm^3** Spillway capacity:**7.90 m^3/sec** Sr.No.in National Register of LargeDams**: MH09HH1134**	09/05/2018 13/12/2018	Body wall	1)Considerable leaching from seepage water is observed .	Leached material to be collected yearly monolith wise and weighed and record of quantity and weight to be maintained.	Sample of leaching material was sent to the Scientific Research Office Structural Research and Physics Division Dindori Road, Meri Nasik . But the test results are not received till date. Leaching material test results are available for year 2010 to 2013. From 27/01/2017 supply of electricity has been disconnected by MSEB due to accident occured at 33/11 KVA substation Tillarinagar. For new connection efforts have been made by Dn office letr no SIPCD/PB/1851/ Dt.9/5/2018 A1 form. No any response got from MSEB Kolhapur. So again vide Dn office letr. No. SIPCD /PB-4/1252/Dt.7/3/2019 A1 form resubmitted but arrears of intrest Rs. 1,27,43,650/- are outstanding from WRD. So MSEB distribution denyed for new 11 KVA connection to main dam Dhamne from Tudiye Dhamne electric line. Due to this seepage water collected in gallery cannot be pumped out from sumpwell so it is difficult to collect leaching material from Jan 2017. At present only four C.R.T. Labours are deployed at main dam for day and night

						shift.To reduce seepage and leaching leakage treatment estimate prepared and sanctioning tha same is in progress.
			Spillway gate	2)Operation of gate is not satisfactory.The condition of the steel surface & the surface paint is deteriorated. Rubble seal damaged	Repairs be carried out through mechanical wing.	Divisional Office requested to send Invoice Part-I of Radial gate repair works vide letter no. SIPCD /PB-4/3421/Dt.27/8/2019 and 3421/ Dt.15/2/2020 to S.E. mechanical circle kolhapur as earliest. Work will be carried out before mansoon 2020. Structural parts of Radial gate have been painted in June 2019.
			Instruments	3)Instruments are not in working condition.	Necessary repairs should be carried	Research officer Instrument research division, Nashik requested to send probable expenditure vide letter no. SIPCD/PB-4/553/Dt.07/02/2020. Accordingly necessary repairs will be carried out after getting assured power supply by MSEB distrubution.
(b) Minor Irrigation Division, Sindhudurgnagari.						
18	Name**:Korale Satandi (NG)** Dist-Ratnagiri Year of Completion:- **2009** Location :- Longitude: -**73° 36′ 00″** Latitude: - **16° 31′ 00″** Height: - **59.02 m** Gross capacity**: 26.171 Mm3** Spillway capacity**: 1559.74 m3/sec** Sr.No.in N. R.Large Dams: **MH09HH1858**	05/05/2018 07/12/2018	W.W.Bar & Tail Channel	1)On the left side of waste weir a gap is seen from which 10% of total storage was flowed from this gap.	Necessary repairs may be carried out.	Work order to carried out this work has been issued. C.D.O. drawing submitted to C.E.office for approval. The RPR including the same is submitted to SLTAC. The work will be carried out after approval to RPR as project cost is exceeded the approval cost of Project.

1	2	3	4	5	6	7
19	Name **:- Nadhawade(UG)** Dist-Ratnagiri Year of Completion:- **2004** Location :- Longitude: -**73° 30′ 45″** Latitude: - **16° 28′ 55″** Height: - **30.25 m** Gross capacity**: 8.220 Mm3** Spillway capacity**121.45 m3/sec** Sr.No.in N.R.of Large Dams: **MH09HH1881**	05/05/2018 07/12/2018	Earth Dam Outlet	1) Standing pool of water is seen on d/s of dam at ch.710 m.at 20m from toe drain.	The d/s area should be well drained so as to avoid any stagnant water. The d/s area at least up to or above 200 m. from toe should be free from stagnation.	This leakage seems to be not from the earthen dam but from the mountain next to ch.no.820m. Leakage is seen only when the dam water level is between 120.50m to 115.78m. Leakage is stops automatically when water level in the dam goes below 115.70m. The embankment work of dam was completed up to 50m to 810m at level 124.75m. After completion of COT & embankment work of earthen dam te seepage shall be checked. Balance work will be carried out after approval to RPR which is submitted to Govt. as project cost is exceeded the approval cost of Project.
20	Name **:- Otav (UG)** Dist-Ratnagiri Year of Completion:- **2009** Location :- Longitude: -**73° 40′ 00″** Latitude: - **16° 21′ 00″** Height: - **32.00 m** Gross capacity**: 7.718 Mm3** Spillway capacity:- **96.95 m3/sec** Sr.No.in N.R.of Large Dams: **MH09MH1698**	05/05/2018 07/12/2018	Earth Dam Outlet	1) Seepage (@ 2.50 to 3 cu secs) on d/s of saddle dam beyond toe drain & in case of main dam @ 2 cu secs is observed	The seepage should be observed & if in increasing order, result oriented efforts should be made precisely to stop these leakages on top priority.	The record of leakage can be maintained in this season by installing V-Notchw on D/S of saddle dam.

1	2	3	4	5	6	7
[1] CE Small Scale Irrigation (W.C.),PUNE.			(1) Small Scale Irrigation (W.C.) Circle, Thane.		(a) Small Scale Irrigation (W.C.) Division, Ratnagiri.	
21	Name :**Parule (UG)** Dist-Ratnagiri Year of Completion:**2004** Longitude: -**73° 45′ 00″** Latitude: - **16° 45′ 00″** Height: **30.54 m** Gross capacity:**2.06Mm^3** Spillway capacity:4**1m^3/sec** Sr.No.inNational Register of Large dams: **MH09HH1625**	11/05/2018 24/11/2018	Outlet	Leakage is observed through divide wall of well.	Leakages should be monitored and should be reduced by giving proper treatment.	In this dam the Head Regulator has following components. i) U/S conduit in U.C.R. wall and top slab R.C.C. ii) The H.R. well in R.C.C. (M-20) iii) The D/S conduit are in R.C.C. To avoid the leakage in well, U/S and D/S conduit following repairing works were suggested accordingly estimate of repair which has scope as below. i) Inserting HDPE coated M.S. Pipe from U/S upto D/S end and with butterfly valves at D/S end. ii) Filling the annular space at U/S by polymer grout. iii) Filling the annular space at D/S by shortcrete. iv) Filling the well by concrete upto ht. 3.00m and then by earth. i.e. Nullifying the well. The above estimate has been submitted to Govt vide CE, Pune letter No. 197 Date 20/01/2020 for approval.
22	Name :-**Rajewadi (UG)** Dist-Ratnagiri Year of Completion:- **1999** Longitude: **73° 34′ 00″** Latitude: - **17° 23′ 00″** Height: **39.00 m** Gross capacity: **3.24Mm^3** Spillway capacity:**168m^3/sec** Sr.No.inNational Register of LargeDams: **MH09HH1501**	11/05/2018 23/11/2018	Outlet W.W.& T.C.	1) Heavy leakage is observed through outlet conduit on d/s side of dam. 1) There is heavy leakages through bottom of w.w.bar. 3) Heavy leakage is observed through foundation of right side flank wall of waste weir bar.	All leakages needs to be attended in time. The leakage may be due to damages or misalignment of stem rod or damages to rubber seals, improper operation of hoist etc. Necessary repairs to be carried out to stop this leakage. Necessary repairs to be carried out to stop this leakage.	Detailed estimate of well repair is submitted to CE office on 20.01.2020 for approval. It include. 1) Inserting of MS pipe with HDPE coating through exesting RCC conduit & dry well is filled with concrete and hearting material. 2) Filling the annular space around the pipe is filled with u/s side by shotcrete and d/s side bypolymer grout Detailed estimate of repair is submitted. It include grouting cement slurry and encasing of flank wall and waste weir bar with RCC wall by upstrem side Detailed estimate of repair is submitted. It include removing of 5m depth casing material and blanketing with hearting and casing material

Table 1.5

Action Taken Report on Deficiency Category-1 of Large Dams Class II

Sr.No	Name of Dam	Date of Inspection	Main Component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested	Implimentation Status
1	2	3	4	5	6	7
---------- No Such Dams under this category is reported ----------						

Table 1.6

Action Taken Report on Deficiency Category-2 of Large Dams Class II

Sr. No.	Name of Dam	Date of Inspection	Main Component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested	Implimentation Status
1	2	3	4	5	6	7
[A] Chief Engineer, (Water Resources), Konkan (1) Thane Irrigation Circle, Thane (a) Thane Minor IrrigationDivision, Kalwa,Thane						
1	Name :- **Dongaste** Dist- Palghar Year of Completion:- **1983** Location :- Longitude: -**73° 57′ 00″** Latitude: - **19° 30′ 00″** Height: **17.94 m** Gross capacity: 4**.03 Mm^3** Spillway capacity: **178.00 Cumecs** Sr.No.in National Register of LargeDams: **MH09MH0339**	23/05/20181 9/12/2018	Earth Dam	1)Earthen dam required resectioning.	Dam section to be restored to design section.	U/s side resectioning work will be carried out in this season.
2	Name :-**Jambhe.** Dist-Thane. Year of Completion:- **1972** Location :- Longitude: -**72° 20′ 00″** Latitude: - **19° 24′ 00″** Height: **13.65 m** Gross capacity: **5.18 Mm^3** Spillway capacity:**455.19 Cumecs** Sr.No.in National Register of LargeDams: **MH09MH0302**	21/05/2018 22/10/2018	Masonry dam	1) Minor leakage through masonry dam at ch.99.50.	Location & amount of leakages should be monitored and if large then necessary treatment in the affected area,d/s & u/s should be carried out to control leakage.	For rectification of work the estimate is under preparation to prevent the leakages.

1	2	3	4	5	6	7
3	Name:-**Jambhivali** Dist-Thane Date of completion :- **1978** Location : - Longitude :- **73° 10' 00"** Latitude :- **19° 09' 00"** Height :- **23. 40 m.** Gross capacity :-**2. 26 Mm^3** Design Spillway capacity :-**111.92 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0671**	24/05/2018 21/12/2018	Outlet	1)Outlet gate does not open & close smoothly.	The repairs should be carried out either through mechanical organisation, or under its advice.	Issue will be solved during height raising work of Jambhiwali M.I.
4	Name :- **Khoch** Dist- Palghar Year of Completion:- **1981** Location :- Longitude: -**73^o 24$'$ 00$''$** Latitude: - **19^o 53$'$ 00$''$** Height: **22.07 m** Gross capacity: **1.989 Mm^3** Spillway capacity:**134.00 Cumecs** Sr.No.in National Register of LargeDams : **MH09MH0813**	23/05/2018 15/12/2018	Earth Dam	1)Wet patches , water seepages on d/s of dam.	Check whether this has any connection with storage. Check the functioning of L&C drains for any obstructions & do necessary action.	Rectification work will be carried in this season.
5	Name:-**Pimpurna.** Dist- Palghar Date of completion :- **1994** Location : - Longitude :- **73° 10' 00"** Latitude :- **20° 37' 00"** Height :- **17. 45 m.** Gross capacity :-**2. 409 Mm^3** Design Spillway capacity :-**259 cumecs** Sr.No.in National register oflarge Dams:**MH09MH1324**	23/05/2018 15/12/2018	Outlet	1)Flow of water jet noticed in the conduit just near to H.R.gate	Pipe joints should be repaired & all leakages needs to be attended in time.Causes of exact leakages should be investigated & treated accordingly.	Necessary repairing work will be carried in this season through Mechanical Wing.

1	2	3	4	5	6	7
6	Name:**Thakurwadi** Thane Year of Completion:- **1977** Longitude: -**73° 16′ 00″** Latitude: - **19° 14′ 00″** Height: - **18.00 m** Gross capacity: **3.741 Mm³** Spillway capacity: **112.00 Cumecs** Sr.No.in National Register of LargeDams: **MH09MH0604**	23/05/2018 21/12/2018	Earth Dam W.W.&T.C	1)U/s section of dam indicates concavity & need resectioning. 2)Some portion of spillway bar broken.	Dam section to be restored to design section. Damaged portion of w.w.bar should be repaired.	Dam section restored estimate has been prepared and work will be carried upto May 2020. W.W. repair estimate is under preparation
(b) Palghar Irrigation Dn. Manor, Dist-Palghar.						
7	Name:**Wandri** Dist- Palghar Year of completion :- **1984** Location Longitude: -**72° 36′ 00″** Latitude: - **19°36′ 00″** Height: - **28.27 m** Gross capacity:**37.11 Mm³** Spillway capacity: **605.00Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1164**	21/05/2018 13/11/2018	Earth Dam	1)U/s slope from RD 540 to 690m shows concavity & settlement in ch.540 to 690m	Dam section to be restored to design section.	i)As per DSO inspection on 07/10/2015 and inspection note wide NO/DSO/DSD-1/402/2015 & dated 14/10/2015, U/S embankment in gorge portion from RD 540m to 690 m should be kept in observation and proper decision can be taken from the competent field authority.ii)C.E.Konkan region ,Mumbai inspected wandri dam on 13/1/2016 during inspecton it was instructed that no need to carry out repairs to embankment of Wandri dam in RD 540m to 690m .This portion shall be kept under observation.iii)Repairs of settlement of U/S embankment portion from RD 540m to 690m is included in DRIP-II proposal.

1	2	3	4	5	6	7
8	Name :-**Deocope.** Dist- Palghar Year of Completion:- **1983** Location :- Longitude: -**72° 49′ 00″** Latitude: - **19° 43′ 00″** Height: **17.94 m** Gross capacity: **3.34 Mm^3** Spillway capacity:**101.23 Cumecs** Sr.No.inNational Register of LargeDams: **MH09LH0953**	29/05/2018 24/10/2018	Earth Dam	1) Scouring observed at about 102 m of about 1m depth.	Scouring should be kept under observation. Necessary repairs may be carried out.	The estimate of the said work is in progress at field level and sanction of estimate the work will be taken up for execution in 2020-21
9	Name:-**Mohakhurd** Dist- Palghar Date of completion :- **1975** Longitude :- **73° 06' 00"** Latitude :- **19° 45' 00"** Height :- **23.00 m.** Gross capacity **:- 4.89 Mm^3** Design Spillway capacity : **120.00 cumecs** Sr.Noin National register of large Dams: **MH09MH0469**	30/05/2018 19/10/2018	Earth Dam	1)There are heavy leakages in right side of dam body.	The repairs should be carried out.	Quantum of seepage is being monitored. On result based orientation, the estimate is in progress at field level & after sanction of estimate the work will be taken up for execution in 2020-21
10	Name:-**Raitale.** Dist- Palghar Date of completion :- **1979** Longitude :- **72° 43' 00"** Latitude :- **19° 56' 05"** Height :- **19.00 m.** Gross capacity :-**1. 92 Mm^3** Design Spillway capacity : **112.00 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0748**	31/05/2018 20/10/2018	Earth Dam W.W.&T.C	1)U/s side pitching dislocated. 2)Scouring noticed at about 25m of about 1m depth.	Dam section to be restored to design section. Scouring should be kept under observation. Necessary repairs may be carried out.	The estimate of the said work is in progress at field level and sanction of estimate the work will be taken up for execution in 2020-21 The estimate of the said work is in progress at field level and sanction of estimate the work will be taken up for execution in 2020-21

1	2	3	4	5	6	7
(c) Raigad Irrigation Dn. Kolad. Tal –Roha, Dist-Raigad.						
11	Name:**Ambeghar** Raigad Year of Completion:- **1973** Location :- Longitude: -**73° 07′ 00″** Latitude: - **18° 44′ 00″** Height: - **26.25 m** Gross capacity: **2.54 Mm^3** Spillway capacity: **982.75 Cumecs** Sr.No.inNational Register of LargeDams**: MH09MH0323**	19/05/2018 29/10/2018	Earth Dam Outlet W.W&T.C.	1)Dam top 0.15 to 0.30m is settled. 2)Well is totally collapsed in water with gate. 3)W.W. Bar completely damaged at more places.	Dam section to be restored to design section. Necessary repairs to be carried out. Damaged portion of w.w.bar should be repaired.	Estimates are in progress in section office. This work is proposed in prapansuchi 2019-20 After procurement of fund work will be carried out. S/S and D/S thrust block is constructed in June 2017 and sluice gate system is completed. Estimates are in progress in section office. This work is proposed in prapansuchi 2019-20 After procurement of fund work will be carried out.
12	Name:**Bamnoli** Dist-Raigad Year of Completion:- **1974** Longitude: -**73° 11′ 00″** Latitude: - **18° 50′ 00″** Height: - **22.00 m** Gross capacity: **2.53 Mm^3** Spillway capacity:**346.73 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0462**	29/05/2018 29/10/2018	Earth Dam Outlet W.W.&T.C	1)Rock toe is damaged in gorge portion. 2) Outlet gate does not open & close smoothly. 3) Leakage through gate & pipe joints. 4) Outlet well is cracked. 5)W.W.Bar totally damaged. 6) Leakage through bar at bottom & flank wall.	Rock toe should be reset as per design profile. The repairs should be carried out either through mechanical organisation, or under its advice. Pipe joints should be repaired & all leakages needs to be attended in time.Causes of exact leakages should be investigated & treated accordingly. Necessary repairs to be carried out. Damaged portion of w.w.bar should be repaired. Location & amount of leakages should be monitored and if large then necessary treatment in the affected area, u/s & d/s should be carried out to control leakage.Necessary repairs to be carried out.	Estimates are in progress in section office. This work is proposed in prapansuchi 2019-20 After procurement of fund work will be carried out. Tender work is completed and work will be carried out after 15 April 2020. Tender work is completed and work carried out after Irrigation 15 April 2020. Tender work is completed and work carried out after Irrigation 15 April 2020 Estimate work is in Progress and it is proposed in prapansuchi 2019-20 After procurement of fund work will be carried out. Estimate work is in Progress and it is proposed in prapansuchi 2019-20 After procurement of fund work will be carried out.

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13	Name:- **Dokshet** Raigad Date of completion;- **1972** Longitude :- **73° 17' 00"** Latitude :- **18° 39' 00"** Height :- **11.50 m.** Gross capacity **:2.633 Mm^3** Spillway capacity:-**74.35 cumecs** Sr.No.inNational register of large Dams: **MH09MH0236**	22/05/2018 31/12/2018	Outlet	1)H.R.well not in good condition.	Necessary repairs may be carried out.	The work of repairs of H.R.well is proposed in prapansuchi 2019-20
14	Name:-**Dolwahal weir** Dist-Raigad Date of completion;- **1969** Longitude :- **73° 13' 00"** Latitude :- **18° 25' 00"** Height :- **12.50 m.** Gross capacity **:10.07 Mm^3** Spillway capacity:-**3030 cumecs** Sr.No.inNational register of large Dams: **MH09LH0195**	29/05/2018 01/11/2018	Outlet W.W.&T.C	1) The stem rods of all right flank gate are bent. 2) Some portion of right flank wall, guide wall is damaged in flood on dtd 25/07/2005.	Necessary repairs to be carried out. Damaged portion of flankwall, guide wall should be repaired.If necessary repairs to be carried out in consultation with C.D.O., Nashik-4	The work of Outlet Gates is proposed in prapansuchi 2019-20 Damaged portion of flankwall, guide wall should be repaired. If necessary repairs to be carried out in consultation with C.D.O. Nasik-4
15	Name:-**Ghotawade** Dist-Raigad Date of completion :- **1979** Location : - Longitude :- **73° 18' 45"** Latitude :- **18° 40' 00"** Height :- **18.74 m.** Gross capacity **:2.797 Mm^3** Spillway capacity:**155 cumecs** Sr.No.inNational register of large Dams: **MH09MH0749**	22/05/2018 31/12/2018	Outlet W.W.&T.C	1)Outlet well not in good condition. 2)Scouring noticed in tail channel	Necessary repairs to be carried out. Scouring should be kept under observation. Necessary repairs may be carried out.	The repairs work of H.R.well is proposed in prapansuchi 2019-20 The repairs work of H.R.well is proposed in prapansuchi 2019-20

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16	Name:**Kalote Mokashi** Dist-Raigad Year of Completion:- **1976** Location :- Longitude: -**73° 16′ 00″** Latitude: - **18° 52′ 00″** Height: - **27.50 m** Gross capacity:**4.34 Mm^3** Spillway capacity:**173Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0555**	30/05/2018 07/12/2018	Earth Dam Outlet W.W.&T.C	1)Top embankment near H.R. well is not in section. 2)Leakage through outlet concrete well & jet of water in the well. 3)Coping of w.w.bar need repairs. 4)Retrogression noticed in tail channel	Dam section to be restored to design section. Rock toe should be reset to design profile. Location & amount of leakages should be monitored and necessary treatment in the affected area, u/s & d/s should be carried out to control leakage. Necessary repairs to be carried out. Necessary repairs to be carried out.	Estimate work is in progress in section office. This work is proposed in Prapan Suchi 2019-20. Estimate work is in progess in section office. This work is proposed in Prapan Suchi 2019-20. After procurement of funds work will be carried out Estimate work is in progess in section office. This work is proposed in Prapan Suchi 2019-20. After procurement of funds work will be carried out. Estimate work is in progess in section office. This work is proposed in Prapan Suchi 2019-20. After procurement of funds work will be carried out
17	Name:**Khindwadi** Raigad Year of Completion:- **1983** Location :- Longitude: -**73° 24′ 00″** Latitude: - **17° 56′ 00″** Height: - **25.05 m** Gross capacity: **2.41 Mm^3** Spillway capacity:**296.00 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0975**	07/06/2017 07/12/2017	Earth Dam W.W.&T.C	1)There are standing pool of water on d/s of dam. 2)W.W.bar is not in good condition. Coping badly damaged.	The area should be well drained so as to avoid any stagnant pools of water. The d/s area at least up to above 200m. from toe should be free from stagnation. Damaged portion of w.w.bar should be repaired.	For this purpose Nalla regrading work will be proposed in 2020-21. This work including in R.R.R. work in 2015-16. But R.R.R. work will be cancelled.

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18	Name:-**Kavele** Dist-Raigad Date of completion :- **1973** Location : - Longitude :- **73° 14' 00"** Latitude :- **18° 37' 00"** Height :- **22. 00 m.** Gross capacity :-**3. 29 Mm^3** Spillway capacity :- **150.00 cumecs** Sr.No.inNational register of large Dams: **MH09MH0334**	22/05/2018 31/12/2018	W.W.&T.C	1)Major portion of the masonry flank wall is damaged & leakage over major portion.	Damaged portion of U.C.R.masonry should be repaired.	Tender process for the repairs work is completed, in due course of time, repairs work will be completed.
19	Name:-**Khaire** Dist-Raigad Date of completion;- **1990** Location : - Longitude :- **73° 21' 30"** Latitude :- **18° 02' 30"** Height :- **28.09 m.** Gross capacity**: 1.791 Mm^3** Spillway capacity:-**117.30 cumecs** Sr.No.inNational register of large Dams: **MH09MH1275**	06/06/2018 31/01/2019	Earth Dam	1)There is leakage sign marks as visible in ch.75 to195m on d/s side berm of earthen dam. At some portion of d/s wet patches are observed.	Arrangement for measurement of leakage should be made. Reason (source & location/ path of leakage)should be found out & in consultation of C.D.O.,Nashik & concerned field authorities result oriented remedies should be made precisely to stop these leakages on top priority.	As per above remedial, estimate of Rs.1.26 crore will be submitted to Region Office. This work is sanctioned in prapansuchi 2019-20.
20	Name:-**Kothurde** Dist-Raigad Date of completion;- **1975** Location : - Longitude :- **73° 23' 00"** Latitude :- **18° 12' 00"** Height :- **21.65 m.** Gross capacity**: 2.72 Mm^3** Spillway capacity:-**855.00 cumecs** Sr.No.inNational register of large Dams: **MH09MH0524**	06/06/2018 31/01/2019	Earth Dam Outlet	1)General condition of embankment is not good Undulations are observed in some patches. 2)Cavitation in pipe joints.	Dam section to be restored to design section. Necessary repairs to be carried out.	Due for cavitation of pipe joints there is leakage from d/s of dam. Total remedial work for this portion was completed in 2014-15 and leakage will stopped complete.. Due to cavitation of pipe joints there is leakage from d/s of dam. Total remedial work for this portion was completed in 2014-15 and leakage have been stopped completely

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21	Name:-**Morbe** Dist-Raigad Date of completion :- **1974** Location : - Longitude :- **73° 13' 00"** Latitude :- **19° 30' 00"** Height :- **20. 78 m.** Gross capacity :-**3.22 Mm^3** Spillway capacity :- **2794 cumecs** Sr.No.inNational register of large Dams: **MH09MH0498**	04/05/2017 11/12/2017	Outlet	1)Outlet gate not in good condtion. Bearing damaged, Stem rod bent & cut at height 11m.	The repairs should be carried out either through mechanical organisation or under its advice.	Estimate is submitted to Circle office and also the said work is proposed in prapansuchi 2019-20
22	Name:-**Pabhare** Dist-Raigad Date of completion :- **1974** Location : - Longitude :- **73° 07' 00"** Latitude :- **18° 10' 00"** Height :- **22. 90 m.** Gross capacity :-**2.287 Mm^3** Design Spillway capacity : **375.93 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0297**	04/05/2018 01/11/2018	Outlet	1)H.R. well collapsed. UCR masonary well structure collapsed. Hoist & approach bridge also collapsed.	Necessary repairs to be carried out.	1) H.R.well New construction is completed in year 98-99. 2) Approach bridge estimate under scrutey at Division level.
23	Name:-**Punade** Dist-Raigad Date of completion :- **1991** Location : - Longitude :- **73° 12' 00"** Latitude :- **18° 50' 00"** Height :- **29. 01 m.** Gross capacity :-**1.72 Mm^3** Design Spillway capacity : **46.35 cumecs** Sr.No.inNational register of large Dams: **MH09MH1259**	19/05/2018 29/10/2018	Outlet	1) Leakage through pipe joints. 2) Jet of water observed in major quantities.	Necessary repairs to be carried out.	Estimate work is in Progress in section office. This work is proposed in prapansuchi 2019-20. After procurement of fund works will be carried out.

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24	Name:**Sanderi** Dist-Raigad Year of Completion:- **1986** Location :- Longitude: -**73° 14′ 15″** Latitude: - **18° 05′ 00″** Height: - **28.52 m** Gross capacity: **2.496 Mm^3** Spillway capacity:**269.89 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1118**	04/05/2018 01/11/2018	W.W.&T.C	1)Stilling basin is fully damaged.Divide wall in stilling basin washed out.	Damaged portion of devide wall should be repaired.	Estimate is under prepartion ..
25	Name:-**Unhere** Raigad Date of completion :- **1972** Location : - Longitude :- **73° 12' 00"** Latitude :- **18° 32' 00"** Height :- **16.50 m.** Gross capacity**: 1.859 Mm^3** Spillway capacity:-**262.02 cumecs** Sr.No.inNational register of large Dams: **MH09MH0245**	22/05/2018 31/12/2018	Outlet	1)H.R.well is collapsed.	Necessary repairs to be carried out.	Tender process for the repairs work is completed, Repairs work will be completed in due course of time.
26	Name:-**Usran** Dist-Raigad Date of completion :- **1982** Location : - Longitude :- **73° 10' 00"** Latitude :- **18° 54' 00"** Height :- **22.93 m.** Gross capacity **:- 2.32 Mm^3** Spillway capacity:-**262.02 cumecs** Sr.No.inNational register of large Dams: **MH09MH0909**	29/05/2018 29/10/2018	W.W.&T.C	1)W.W.Bar masonry dismantled. 2) Scouring noticed on d/s of w.w.bar at ch. 34m.	Dismantled portion of w.w.bar should be repaired. Scouring should be kept under observation. Necessary repairs may be carried out.	Estimate work is in Progress in section office . This work is proposed in prapansuchi 2019-20 After procurement of fund works will be carried out.

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27	Name:-**Varandh** Dist-Raigad Date of completion :- **1984** Location : - Longitude :- **73° 33' 00"** Latitude :- **18° 08' 00"** Height :- **26.00 m.** Gross capacity **:- 2.17 Mm^3** Spillway capacity:-**219.00** Sr.No.inNational register of large Dams: **MH09MH1040**	06/06/2018 31/01/2019	Outlet W.W.&T.C	1)Out let well not in good condtiion due to some cracks. 2)Some damages to guide wall.	Necessary repairs may be carried out. Damaged portion to repaired.	Two Girders span are join parallelly by Mechanical Division. For leakage of H.R. Gate We propose this remedial work to the Executive engineer, Mechanical Division Dapodi, Pune. The Mechanical department has surveyed the work and repairing of Gate Shaft and Hoist Leakage work is pending.
28	Name:-**Wawa** Dist-Raigad Date of completion :- **1989** Location : - Longitude :- **73° 09' 45"** Latitude :- **18° 17' 15"** Height :- **20.80 m.** Gross capacity **:3.174 Mm^3** Spillway capacity:-**140.00** Sr.No.inNational register of large Dams **MH09MH1460**	04/06/2018 03/12/2018	Earth Dam	1) Right flank a wet patches observed on d/s of dam in bet. two drains.	Causes of leakages should be investigated & treated accordingly.	Leakages are not observed. wet patches observed on d/s of dam in between 2 drains was due to rainy water. later on wet patches were not observed.
(2) Ratnagiri Irrigation Circle, Ratnagiri **(a) Ratnagiri Irrigation Dn.(South) Ratnagiri.**						
29	Name:**Adare** Dist-Ratnagiri Year of Completion:- **1991** Location :- Longitude: -**73° 34′ 00″** Latitude: - **17° 23′ 00″** Height: - **27.25 m** Gross capacity: **3.424 Mm^3** Spillwaycapacity:**242.81 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1272**	28/05/2018 01/12/2018	Outlet W.W.&T.C	1)Leakage is observed from L.B.H.R. gate @ 50 lit/sec. 2)Scouring on d/s side of bar @ RD 0 to 65 m. av. depth 1.5 m. 3) Protection wall R/Side of tail channel is damaged.	All leakages needs to be attended in time. The leakage may be due to damages or misalignment of stem rod or damages to rubber seals, improper operation of hoist, etc. Proper remedial measures to be taken and scouring be monitored. Damaged portion of protection wall should be repaired.	Work is in progress mechanical wing. Work Completed . Work is in progress. will be completed before June 2020.

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30	Name: **Beni** Dist-Ratnagiri Year of Completion:- **1981** Location :- Longitude: -**73° 35′ 00″** Latitude: - **16° 57′ 00″** Height: - **17.00 m** Gross capacity**: 2.446 Mm^3** Spillway capacity: **157.80 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0855**	09/05/2018 01/12/2018	W.W.&T.C	1)Scouring at RD 53 m. to 132m. from bar. Av. depth of scouring is 2.50m.	Scouring should be kept under observation. Necessary action may be carried out with consultation of geologist CDO (MD) Nashik.	Work is completed
31	Name: **Diwalwadi,** Dist-Ratnagiri Year of Completion:- **1988** Location :- Longitude: -**73° 44′ 00″** Latitude: - **16° 43′ 00″** Height: - **28.00 m** Gross capacity**: 3. 538 Mm^3** Spillway capacity:**89 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1181**	18/05/2018 17/10/2018	Earth Dam W.W.&T.C	1)There is dislocation occurred near the ch. 300 to 390m 2)Scouring noticed on d/s of EDA.	Necessary repairs to be carried out. Scouring should be kept under observation. Necessary action may be carried out to control further scouring or erosion.	95 % work is completed. Remaining work will be completed till May 2020.
32	Name:-**Gavane** Dist-Ratnagiri Year of Completion:- **1982** Location :- Longitude: -**73° 30′ 00″** Latitude: - **16° 53′ 00″** Height: - **19.63 m** Gross capacity: **1.91 Mm^3** Spillway capacity:**192.83 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0918**	09/05/2018 13/12/2018	Outlet	1) Leakage from the conduit pipe @ 20 lit/sec. 2) Seepage around the pipe observed. Soil is washed away around the wall.	Causes of exact leakages should be investigated & treated accordingly. Necessary remedial measures to be carried out .	Work is in progress and will be completed till June 2020.

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33	Name:-**Kelamba** Dist-Ratnagiri Date of completion :- **1980** Location : - Longitude :- **73° 35' 00"** Latitude :- **16° 52' 00"** Height :- **19. 63 m.** Gross capacity :-4**.913 Mm^3** Spillway capacity :- **80.60 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0809**	09/05/2018 13/12/2018	Outlet	1)Out let gate not in working condition from last 10 years.	The repairs should be carried out either through mechanical organisation or under its advice.	Got sanctioned in prapansuchi 2019-20. and repairs will be carried out through Mechanical organisation soon.
34	Name:-**Khopad** Dist-Ratnagiri Date of completion :- **1992** Location : - Longitude :- **73° 27' 18"** Latitude :- **17° 32' 18"** Height :- **20. 30 m.** Gross capacity :-**1.863 Mm^3** Spillway capacity :- **502.94 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1292**	28/05/2018 18/11/2018	Earth Dam Outlet	1)There is leakage on d/s slope. 2)Leakage at d/s pipe conduit	Causes of leakages should be investigated & treated accordingly. Causes of exact leakages should be investigated & treated accordingly.	Work order issues and work is in progresss will be completed upto June 2020.
35	Name: **Nive** Dist-Ratnagiri Year of Completion:- **1986** Location :- Longitude: -**73^o 32$'$ 30$''$** Latitude: - **17^o 30$'$ 30$''$** Height: - **21.92 m** Gross capacity**: 2.617 Mm^3** Spillway capacity: **119.41 Cumecs** Sr.No.inNational Register of LargeDams**: MH09MH1110**	31/05/2018 01/12/2018	Outlet W.W.&T.C	1)There is leakage through d/s head wall of conduit. 1 Lit/sec. 2)W.W.bar need repairs.	Causes of exact leakages should be investigated & treated accordingly. Necessary repairs to be carried out.	Work is in progress & will Completed upto May 2020.

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36	Name:-**Phanaswadi,** Dist-Ratnagiri Year of Completion:- **1972** Longitude: -**73° 10′ 45″** Latitude: - **17° 39′ 00″** Height: - **20.00 m** Gross capacity: **1.408 Mm^3** Spillway capacity:**345.65 Cumecs** Sr.No.inNational Register of LargeDams**: MH09MH0292**	25/05/2018 01/12/2018	Earth Dam W.W.&T.C.	1) There is water flow from joint of flank wall. 2)D/s divide wall is washed away.	Causes of exact leakages should be investigated & treated accordingly. Necessary repairs to be carried out.	Work in progress. Will be completed upto June 2020.
37	Name:**Telewadi** Dist-Ratnagiri Year of Completion:- **1978** Longitude: -**73° 36 00″** Latitude: - **17° 11′ 00″** Height: - **23.34 m** Gross capacity**: 2.35Mm^3** Spillway capacity: **231.86 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0696**	31/05/2018 01/12/2018	Outlet W.W.&T.C	1) Outlet gate does not operate smoothly. 2)Leakage through gate & d/s pipe line.10 to 15 Lit/sec 3)Leakage from conduit pipe, joints @ 2 Lit/sec. 4) Both outlet well is in poor condition. 5)W.W.Bar masonry need repairs.	The repairs should be carried out either through mechanical organisation or under its advice. All leakages needs to be attended in time. The leakage may be due to damages or misalignment of stem rod or damages to rubber seals, improper operation of hoist, etc. Causes of exact leakages should be investigated & treated accordingly. Necessary remedial measures to be carried out in consultation with C.D.O. Nashik-4. Necessary repairs to be carried out.	Work is in progress and will be completed upto June 2020.

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38	Name: **Chorgewadi** Dist- Sindhudurg Year of Completion:- **1989** Location :- Longitude: -**73° 43′ 36″** Latitude: - **16° 04′ 28″** Height: - **18.78 m** Gross capacity: **3.214 Mm^3** Spillway capacity:**55.59 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1204**	12/05/2018 02/11/2018	Earth Dam W.W.&T.C	1) Rain cuts are observed on d/s in some places. 2)Oozing on d/s slope at RD 490 to 735 m. 3)Heavy scouring at RD 440 to 750 m. in tail channel.	Rain cuts are filled with casing material & Dam section restored to design section. Leakages appearing on d/s should be treated by providing inverted filters at exit points & the path of leakage from u/s should be traced out & treated properly i.e. filling with proper earth blanket or filling on upstream side. If retrogression is moving closer to the EDA of spillway or waste weir bar, protective measures should be undertaken to prevent progressive damage. Extent of retrogression should be ascertained and monitors every year by mapping .If the problem of retrogression is moving upstream and serious,for geological investigation the problem may be referred to respective organization for undertaking investigations and studies for evolving suitable solution to the problem.	The work is sanctioned in Prapansuchi 2019-20. The tender work is in final stage. It is planned to complete this work before June 2020.
(b) Sindhudurg Irrigation Division, Ambadpal.						
39	Name:**Karivade** Dist- Sindhudurg Year of Completion:- **2000** Longitude: -**73° 52′ 00″** Latitude: - **15° 55′ 00″** Height: - **25.00 m** Gross capacity: **1.414 Mm^3** Spillway capacity:**28.70 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1525**	12/05/2018 28/11/2018	Earth Dam	1) Small leakages on d/s slope on first berm. ch.10m to 50m.	Causes of leakages should be investigated & treated accordingly.	The work is sanctioned in Prapansuchi 2019-20. The Tender work is in final stage. It is planned to complete this work before June 2020.

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40	Name :- **Madkhol** Dist- Sindhudurg Year of Completion:- **1974** Location :- Longitude: -**73° 51′ 00″** Latitude: - **16° 42′ 00″** Height: - **14.70 m** Gross capacity: **2.252 Mm^3** Spillway capacity: **499.80 Cumecs** Sr.No.inNational Register of LargeDams**:MH09MH0437**	12/05/2018 28/11/2018	Earth Dam.	1)Minor seepage on d/s toe in gorge portion. 2)Standing pool of water on d/s of dam at RD 260m.	Investigate the source of seepage i.e .whether due chocking of drainage arrangement or from embankment & take measures accordingly. The area should be well drained so as to avoid any stagnant pools of water. The d/s area at least up to above 200m. from toe, should be free from stagnation.	Work completed in May 2019. Yet to attended
41	Name:**-Ozaram** Dist- Sindhudurg Year of Completion:- **1981** Longitude: -**73° 38′ 00″** Latitude: - **16° 27′ 00″** Height: - **18.17 m** Gross capacity:**1.912 Mm^3** Spillwaycapacity: **222.30 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0867**	24/05/2018 02/11/2018	Earth Dam. W.W.&T.C	1)From ch.90 to 180 m leakages at berm level RL.101.50 2)At d/s face some masonry washed out	Causes of exact leakages should be investigated & treated accordingly. Damaged portion of w.w.bar should be repaired.	Work is in progress (50 % completed) and will be completed up to May 2020 Work completed in Dec 2019.
42	Name:**-Osargaon** Dist- Sindhudurg Year of Completion:- **1973** Longitude: -**73° 42′ 00″** Latitude: - **16° 12′ 00″** Height: - **16.71 m** Gross capacity:**1.377 Mm^3** Spillwaycapacity1**.30 Cumecs** Sr.No.inNational Register of LargeDams:**MH09MH0321**	24/05/2018 26/12/2018	Earth Dam. Outlet	1)Leakage on d/s of berm level. It is clear. 2)Leakage from pipe conduit joints. 10 lps	Causes of exact leakages should be investigated & treated accordingly. Causes of exact leakages should be investigated & treated accordingly.	Remedial measures planned. Problem referred to C.D.O., Nashik (for inspection.)

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43	Name:**Pawashi,** Dist- Sindhudurg Year of Completion:- **1976** Location :- Longitude: -**73° 42′ 00″** Latitude: - **16°02′ 00″** Height: - **17.50 m** Gross capacity: **3.256 Mm^3** Spillway capacity:**284.00 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0571**	12/05/2018 02/11/2018	W.W.&T.C	1) Leakage through R/S & L/S flank wall about 35 LPS. 2)Masonry bar jacketing damaged. Major leakage through foundation.	Location & amount of leakages should be monitored and if large then necessary treatment in the affected area, u/s & d/s should be carried out to control leakage. Damaged portion of w.w.bar should be repaired. Location & amount of leakages should be monitored and if large then necessary treatment in the affected area, u/s & d/s should be carried out to control leakage.	Work is in progress (90 % completed) and will be completed before June 2020.
44	Name:**Pulas** Dist- Sindhudurg Year of Completion:- **1981** Location :- Longitude: -**73° 52′ 00″** Latitude: - **16° 01′ 00″** Height: - **17.00 m** Gross capacity**: 1.535 Mm^3** Spillway capacity: **94.60 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0848**	12/05/2018 15/11/2018	Outlet W.W.&T.C	1) Out let well is not in good condtiion.. 2) Spillway masonry damaged & right side flank wall totally collap - sed	Necessary repairs to be carried out. Damaged portion of w.w.bar should be repaired.	Work completed in May 2019.
45	Name :- **Sanamtemb** Dist- Sindhudurg Year of Completion:- **1992** Location :- Longitude: -**73° 53′ 45″** Latitude: - **15° 59′ 00″** Height: - **21.30 m** Gross capacity: **2.45 Mm^3** Spillway capacity: **181.71Cumecs** Sr.No.inNational Register of LargeDams:**MH09MH1286**	12/05/2018 28/11/2018	W.W&T.C.	1) W.W.bar,Flank wall, Key wall,Guide wall damaged.	Necessary repairs for damaged portion may be carried out.	Work completed in Feb. 2020.

1	2	3	4	5	6	7
46	Name:**Panderi** Ratnagiri Year of Completion:- **1995** Location :- Longitude: --**73° 13′ 00″** Latitude: - -**18° 03′ 00″** Height: - **27.97 m** Gross capacity: **4.010 Mm³** Spillway capacity:**1189.98 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1485**	12/06/2018 18/11/2018	Earth dam Outlet W.W.&T.C	1) Section of the dam is not as per design section. 2) Leakage with oozing on d/s embankment @ RD 250 to 265m. @ RL 111.50m 3)Water jets along the perphery of well. 4)Total length of guide wall portion of bottom ht.1m is damaged.	Dam section to be brought to correct design section and level by adding earthwork duly compacted properly. Leakages appearing on d/s should be treated by providing inverted filters at exit points as per DSO manual chapter No.8 & the path of leakage from u/s should be traced out & treated properly i.e. filling with proper soil blanket or filling on upstream side. Repointing to masonry on external & internal face wherever is necessary. Necessary repairs to be carried out.	Work is in progress. Will be completed upto June 2020. Repair work will be proposed in prapansuchi of next year & will be completed upto may 2021. Work is added in Pakharan Program. Tender process of Repair work is in progress and work will be completed upto June 2020.
(c) Irrigation Project Construction Division, Ratnagiri.						
47	Name:**Talwade** Dist-Sindhudurgnagari Year of gorge filling:- **2004** Location :- Longitude: --**73° 43′ 00″** Latitude: - -**16° 46′ 00″** Height: - **29.18 m** Gross capacity: 4**.640 Mm³** Spillway capacity:**88.60 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1894**	19/04/2018 26/11/2018	Outlet	1) Leakages observed near & around the junction of conduit pipe & earth work.	Causes of leakages should be investigated & treated accordingly.	To stop the leakages estimate of remedial measures is sanctioned and finalisation of tender and completed tender process in going on upto May 2020.

1	2	3	4	5	6	7
(d) Irrigation Project Construction Division, Chiplun						
48	Name**:Rangav** Dist-Sindhudurgnagari Year of gorge filling:- **2006** Longitude: --**73° 35′ 44″** Latitude: - -**17° 15′ 55″** Height: - **23.87 m** Gross capacity: **5.524 Mm^3** Spillway capacity:**152.28 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1893**	29/05/2018 24/11/2018	Earth dam W.W.&T.C	1)Wet patches were seen on d/s of dam. Heavy leakages were seen through rocktoe in gorge portion. 2)Seepages were seen at the junction bet. embankment & spillway bar from divide wall portion.	The reasons for this leakage should be ascertained by studying the construction drawing vis-a-vis changes on original section of revised section for revised section.Proper remedial measures should be taken up in consultaion with CDO,Nashik. Causes of leakages should be investigated & treated accordingly.	These remedial measure work is now including in DRIP-II/III . Necessary information is submitted to DSO. DSRP members does not visited this site yet. Necessary action will be taken in consultation with DSRP.
2)Superintending Engineer, North Konkan Irrigation Project Circle, Thane. (a) Executive Engineer, Raigad Irrigation Dn. No.2, New Mumbai.						
49	Name**: Dhasai** Dist-Thane Year of Completion:- **1984** Longitude: -**73° 36′ 00″** Location :- Latitude: - **19° 15′ 00″** Height: - **28.00 m** Gross capacity:**5.012 Mm^3** Spillway capacity:**602.38Cumecs** Sr.No.inNational Register of Large Dams:**MH09MH1020**	17/05/2018 16/11/2018	Earth Dam Outlet W.W.&T.C	1)At hillock foot behind dam RD 405 to 465 m water continusly perco- lates in a length of 150m till water level draw down up to RL 97.00M. 2)The wall of HR wall collapsed on18.02.2018. The gate operation were noisy & not smoothly. 3)Water jets & leakages in the length of 60 % of bar. Leakages between joints of bar & right flank wall. 4)More than half of check wall @ RD 140m is wash out on d/s side. 5)Length of 20m coping concrete of stilling basin washed out up to 0.60m depth. Water jets & leakages 40% length of bar.	Leakages appearing on down stream, through pervious & weak stratas in abutments should be treated with impervious soil blanket or filling on upstream side, after identification of leaky & pervious rocks. If upstream treatment is not possible then immediately suitable drainage system should be provided on downstream to prevent piping, erosions etc. Necessary repairs to be carried out. Location & amount of leakages should be ascertained and necessary treatment in the affected portion, u/s & d/s should be carried out to control leakage. Necessary repairs to be carried out. Necessary repairs to be carried out.	Under tender process estimate Estimate submitted to circle office as per divn off.letter ref.RID-2 / letter / PB-2 / 497 / 2019 Dated 21-2-2018 for technical sanction. Under tender Process Estimate

1	2	3	4	5	6	7
(b) Palghar Irrigation Project Construction Division, Suryanagar.						
50	Name:-**Tulyachapada** Dist- Palghar Year of Completion:- **1995** Location :- Longitude: --**73° 25′ 00″** Latitude: - -**19° 58′ 00″** Height: - **21.58 m** Gross capacity: **1.985 Mm^3** Spillway capacity:**545.15 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1349**	04/05/2018 12/11/2018	Earth Dam	1) Wet patches at ch. 60m was found on d/s of dam. 2) Standing pool of water in ch.200m.	Necessary repairs to be carried out. Suitable drainage arrangement need to be adopted in d/s nalla portion	Estimate has been prepared submitted to circle office and After prior .for sanctioning approval the rectification work will be carried out
(c) Irrigation Project Construction Division,Shahapur.						
51	Name:-**Padale** Dist- Thane Year of Completion:- **2010** Location :- Longitude: --**72° 35′ 55″** Latitude: - -**19° 13′ 35″** Height: - **26.66 m** Gross capacity: **7.857 Mm^3** Spillway capacity**: 682.95 Cumecs** Sr.No.inNational Register of LargeDams**: MH09MH1853**	17/05/2018 16/11/2018	Earth Dam	1)Leakage through dam body at ch.190m at 136.90m on d/s of dam.	Leakages appearing on down stream, through pervious & weak stratas should be treated with impervious soil blanket on upstream side, after identification of leaky & pervious stratas. If upstream treatment is not possible then immediately suitable drainage system should be provided on downstream to prevent piping, erosions etc.	Upstream treatment is not possible. Estimate of providing drains on d/s side has been prepared and after approval of higher authority, work will be executed immediately. Estimate is prepared to prevent the leakage, after sanctioning of prapan suchi the work will be started.
(d) Hetawane Medium Project Division Kamarli						
52	Name**:Panhalghar,** Raigad Year of Completion:- **2001** Longitude: --**73° 03′ 00″** Latitude: - -**18° 03′ 00″** Height: - **19.25 m** Gross capacity: **3.230 Mm^3** Spillway capacity:**95.90 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1565**	19/05/2018 12/11/2018	Earth dam	1)There is wet patches, seepage on d/s of the dam. ch.300 to 800m. 2) There are standing pool of water on d/s of dam. Ch.405m about 7m	Suitable drainage arrangement need to be adopted in d/s nalla portion The area should be well drained so as to avoid any stagnant pools of water. The d/s area at least up to/ above 200m. from toe, should be free from stagnation.	To rectify this deficiency the estimate of Bentonite Grouting is in the process of sanction . To rectify this deficiency the provision of filling pool with concrete is made in the Estimate of Right Bank Canal km.no. 1

1	2	3	4	5	6	7
[1] Chief Engineer, Small Scale Irrigation (W.C.),Pune. **(1) Regional Water Coservation Officer,Soil & Water Coservation, Thane.** **(a) District Water Coservation Officer, Soil & Water Coservation Dn, Thane.**						
53	Name**:Aswali** Dist- Palghar Year of Completion:- **1996** Location : - Longitude: -**72° 48′ 30″** Latitude: - **20° 48′ 00″** Height: - **23.83 m** Gross capacity: **2.083 Mm^3** Spillway capacity: 209.97 **cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1394**	24/04/2018 16/11/2018	Earth Dam	1) Settlement of embankment is seen between ch. 45m to 365m on upstream side.	Dam section to be restored to design section.	Compliance not received
54	Name**:Devle** Dist-Raigad Year of Completion:- **2003** Longitude: -**73° 33′ 00″** Latitude: - **17° 58′ 00″** Height: - **29.30 m** Gross capacity:**1.23 Mm^3** Spillway capacity**:78.16 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1614**	16/05/2018 27/11/2018	Earth Dam	1) Leakage at RL 121.00 m. of RD 60 & at RL. 112.00m.,RD110 to 150. 2)Abnormal leakage through rock toe portion.	Leakages appearing on d/s should be treated by providing inverted filters at exit points & the path of leakage from u/s should be traced out & treated properly i.e. filling with proper soil blanket or filling on upstream side.	The estimate is prepared and sanctioned by the Chief Engineer,Pune. After allocation of funds the repair works taken in hand.Received administrative approvel for the same. M.I.S.2020/CASE No.27/JAL-1/Dt.14/03/2020.
55	Name**:Karvel** Dist-Thane Year of Completion:- **1996** Location : - Longitude: -**72° 51′ 30″** Latitude: - **19° 33′ 00″** Height: - **26.00 m** Gross capacity: **3.135 Mm^3** Spillwaycapacity: **89.74 Cumec** Sr.No.inNational Register of LargeDams: **MH09MH1406**	24/04/2018 16/11/2018	Earth Dam W.W.&T.C	1)General condition of the embankment is not good. 2)Settlement on U/S @ RD 180 to 280 m. 3)There is retrogression or scouring noticed in tail channel.RD 40m onwards.	Dam section to be restored to design section. Scouring should be kept under observation. Necessary repairs to be carried out.	Provision for repairing is made in the Estimate of Repairs & Maintenance works of karvel dam & Estimate submitted for approval to division office.

Table 1.7

Action Taken Report on Deficiency Category-1 of Private dams Class I

Sr. No.	Name of Dam	Date of Inspection	Main component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested	Implimentation Status
1	2	3	4	5	6	7
---------- No Such Dams under this category is reported ----------						

Table 1.8
Action Taken Report on Deficiency Category-2 of Private Dams Class- I

Sr. No	Dam Features	Date of Inspection	Main component of Dam	Observations / Significant Deficiencies Noticed	Remedial Measures Suggested	Implimentation Status
1	2	3	4	5	6	7
Private Dams (Class- I)						
(1)S.E., M.I.D.C. Mahad, Dist. Raigad (a)E.E., M.I.D.C. Mahad, Dist. Raigad						
1	Name :-**Savitri (G)** Dist:- Raigad Year of Completion:- **1999** Location :- Longitude: **NA** Latitude: - **NA** Height: **33.62 m** Gross capacity: **29.45Mm^3** Spillway capacity: **3919.79** Sr.No.in National Register of LargeDams: **MH09HH1521**	10/05/2018 01/11/2018	Gallery Spillway Dam EDA	1) Leaching from seepage water and deposition of lime near some seepage exit spots is observed in gallery. 2) Heavy leakage observed in gallery. 3) Foundation holes were chocked 4) Reinforcement of spillway opened. 5) Sweating on down stream side was observed. 6) The outlet of main drain pipe is totally choked up with silt & cementing material in the gallery due to which pounding of seepage water was observed in the gallery. 7)Inspection of stilling basin could not be carried out due to ponding. 8) Some joints of masonry guide wall are opened.	The leaching material in gallery should be removed & its weight be measured regularly blockwise. Chemical analysis of leaching material should be carried in near by laboratory. Also necessary repairs should be done. Necessary procedure should be adopted for finding out the leakage source location & then preventive measures should be taken. Necessary action should be initiated for cleaning foundation drains. Necessary action should be initiated . Necessary action should be initiated Proper arrangement to drain this water should be done immediately. After dewatering, inspection should be carried out by the field officer and appropriate repairs if required should be done. Necessary repairs shold be carried out.	Compliance not received

1	2	3	4	5	6	7
(1)HYDRAULIC ENGINEER (M.C.G.B.) MUMBAI.						
(a)Dy. Hydraulic Engineer (M.C.G.B.) Thane.						
2	Name :- **Tansa** Dist-Thane Year of Completion:- **1892** Longitude: -**73° 15′ 00″** Latitude: - **19° 33′ 00″** Height: **41.00 m** Gross capacity: **208.70 Mm^3** Spillway capacity:**1188.60 m^3/sec** Sr.No.in National Register of Large Dams: **MH09HH0020**	15/03/2018 16/10/2018	Dam	1) Down stream side road along the dam was damaged.. 2) UCR guide wall foundation eroded at some places. 3) Minor sweating was observed on) down stream side the dam	Necessary repairs should be done It shall be refilled with appropriate material. It should be monitored regularaly.	Work will be executed by E.E (construction) section The work is to be carried out in next year Necessary steps have been taken to attend the minor sweating on down stream side at ch. 1 to 280 mts and work is in progress
3	Name :- **Modaksagar (G)** Dist-Thane Year of Completion:- **1954** Location :- Longitude: -**73° 17′ 00″** Latitude: - **19° 40′ 00″** Height: **82.00 m** Gross capacity: **204.98 Mm^3** Spillway capacity: **5660.00m^3/sec** Sr.No.in National Register of LargeDams**: MH09HH0068**	16/03/2018 16/10/2018	Gallery Dam Instruments	1) In lower gallery leaching observed. 2) Insufficient lighting arrangement in gallery 3)The rock sliding may be occur in front of entrance of the gallery. 4)Leakage observed through under sluice gate No 1 and 2. 5) Leakages were observed in upper gallery at monolith joints 15 6) Porous holes blocked by leaching material. 7) Instruments are not in	The leaching material in gallery should be removed & its weight be measured regularly blockwise. Also the leached material shall be got tested from MERI.Nashik & record of leached material should be maintained yearly. Necessary repairs should be done. All leakages need to be attended in time. Causes of leakages should be investigated & treated accordingly All leakages need to be attended in time. Causes of leakages should be investigated & treated accordingly Porous pipes in upper & lower gallery need to be cleared immediately. Necessary repairs should be done.	1)Leaching observed in gallery which is completely removed & gallery is clean. Sufficient lighting arrangement provided. Not complied . Work of repairing of wire rope of under sluice gate is in progress. Not complied . Not complied. Necessary steps have been taken

				working condition.		
1	**2**	**3**	**4**	**5**	**6**	**7**
4	Name :- **Middle vaitarana (G)**Dist-Thane Year of Completion:- **2014** Location :- Longitude: -73°26′00″ Latitude: - 19°42′00″ Height: 102.40 **m** Gross capacity: 202.40 **Mm^3** Spillway capacity: 6538.00**m^3/sec** Sr.No.in National Register of LargeDams**:**	15/03/2018 16/10/2018	Dam	1)Mionor leached material was observed in stair shaft Nos 3 and also many places white and brown leaching were observed.	The leaching material in gallery should be removed & its weight be measured regularly blockwise. Also the leached material shall be got tested from MERI.Nashik & record of leached material should be maintained yearly.	Work will be executed by E.E (construction) section
				2)Minor sweating on d/s of dam is observed	It should be monitored with respect to water level in the dam	Work will be executed by E.E (construction) section
			WSCPC	3)In outlet well some sound with vibration of platform noticed. Concrete inside conduit and d/s of service gate and iron plate were washed away,Reinforce ment near service gate conduit were exposed	Exact reason of vibrations needs to be verified by field authority and necessary remedial measures should be taken on top priority to avoid vibrations of platform.	For arresting leakages wscpo service gate necessary site rubber seal & bottom seal replaced. For rainfotcement contractual agency will appoint.
			Gallery	4)Fundation holes were seen chocked.	Necessary action should be initiated.	Not complied.
			Instruments	5)Instruments are not in working condition.	Necessary repairs shold be carried out	The plumbob reading obtained by using proper instrument.
			General	6)Concrete road need to be provided on entire length considering steep slope and high density rainfall of the region for access to E.D.A. and downstream of non overflow section of the dam.	Necessary repairs should be done.	Work will be executed by E.E (construction) section

1	**2**	**3**	**4**	**5**	**6**	**7**
[1]Chief Engineer, MIDC, Andheri, Mumbai **(1)Superintending Engineer, MIDC, Dombivali (E), Dist.Thane** **(a)Executive Enginer, MIDC, Barvi Dam Dn., Anandnagar, Ambernath, Dist.Thane**						
5	Name :-**Barvi (G)** Dist- Thane Year of Completion:- **1986** Location :- Longitude: **73° 20′ 10″** Latitude: - **19° 11′ 22″** Height: **46.55 m** Gross capacity:**178.58 Mm^3** Spillway capacity: **1585.00 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH0738**	30/05/2018 10/12/2018	Overflow section Non overflow section Instruments	1) Water ponding is noticed at D/S side of dam. 2)Some sweating is noticed on D/S face of NOF Section. 3)Instruments are not in working condition.	Exact source and cause to be located and necessary arrangements to avoid ponding should be provided. Cement pointing should be carried out at NOF portion wherever it is damaged. Necessary repairs shold be carried out	Compliance not received
(b)Executive Engineer, MIDC, Dn. No.2 ,Plot No.AM-20, Behind Lokmat Printing Press, Thane Belapur Road, T.T.Industrial Area, Mahape, Navi Mumbai						
6	Name :-**Ransai (G)** Dist:- Raigad Year of Completion:- **1970** Location : - Longitude: **79° 04′ 00″** Latitude: - **18° 30′ 00″** Height: **25.91 m** Gross capacity: **10.00Mm^3** Spillway capacity:**363 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH0213**	29/05/2018 10/12/2018	Overflow section EDA	1) On d/s side of ogee portion, concrete was seen deteriorated & reinforcement was exposed in many places. 2) Damages close to end sill on d/s side of stilling basin is observed.	Necessay repairs to be carried out . Masonry or oncrete filling may be done to prevent progressive damage.	Work is completed. Work is completed.

1	**2**	**3**	**4**	**5**	**6**	**7**
(1) S.E., Dairy Constuction Circle, Warli, Mumbai -17 **(a) E.E., Agricultural Construction Dn Aarey Milk Colony, Goregaon(E), Mumbai-65**						
7	Name :- **Kurze (Dapcheri)** Dist- Palghar Year of Completion:- **1967** Location :- Longitude: -**74° 56′ 30″** Latitude: - **19° 32′ 30″** Height: **22.96 m** Gross capacity: **39.05 Mm³** Spillway capacity: **598.00m³/sec** Sr.No.in National Register of LargeDams**: MH09MH0151**	26/04/2018 31/10/2018	Gallery	1) Leakages observed in gallery	It should be monitored with respect to water level in the dam	Submitted for sanction.
				2) Some porous pipes are choked.	Cleaning of poros holes should be done.	Work is done ,all porous pipes is cleared
				3) Leaching is found at u/s & d/s of gallery at some places	The leaching material in gallery should be removed & its weight be measured regularly blockwise. Also the leached material shall be got tested from MERI.Nashik & record of leached material should be maintained	Leaching material cleaned and record
				4) Side drains in gallery is full of silt	It should be cleaned	Side drains in gallery cleaned.
			Spillway	5) Leakage through gate No.1 side pier and bottom seal of gate no.2 is observed	Necessary repairs should be done.	Leakage through gate No.1 side pier is stopped and bottom seal of gate No.2 work is in tender stage
			Dam	6) Sweating was observed on downstream side of NOF near entrance gate to gallery	It should be monitored with respect to water level in the dam	Groting work is done and stops sweating of NOF.
				7) The bottom portion of the left side guide wall downstream of conduit was damaged.It may collapse	Necessary repairs should be carried out immediately	Submitted for sanction
				8) Leakages are found through d/s slope of left side of NOF and sloping portion of ogee	Necessary repairs should be carried out immediately	Grouting work is done and stop leakage
			EDA	9) Ponding in EDA bucket.	It should be inspected periodically by dewatering by field officers.	Submitted for sanction
			Instruments	10) Instruments are not in working condition.	Necessary repairs should be carried out immediately	Submitted for sanction .

Table 1.9

Action Taken Report on Deficiency Category-1 of Large Dams Class II

Sr.No	Name of Dam	Date of Inspection	Main Component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested	Implimentation Status
1	2	3	4	5	6	7
---------- No Such Dams under this category is reported ----------						

Table 1.10

Action Taken Report on Deficiency Category-2 of Private dams Class II

Sr. No.	Name of Dam	Date of Inspection	Main component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested	Implimentation Status
1	2	3	4	5	6	7
Private Dams (Class- II)						
(1) S.E.,(MMR) M. I.D.C. Dombiwali, Dist-Thane . (a) E.E., M.I.D.C.Barvi Dam Div.Ambarnath(E),Dist-Thane.						
1	Name**: Murbadi** Dist-Thane Year of completion:**1984** Location :- Longitude :- **73° 25' 23"** Latitude :- **19° 13' 15"** Height: **- 15.50 m** Gross capacity**: 1.10 Mm^3** Spillway capacity:- **585.95Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0934**	30/05/2018 11/12/2018	Earth Dam Masonry Dam W.W.& T.C	1) Section of earth dam should be checked & compared with designed section. 2) Drainage gallery was partially filled with water, hence the gallery could not be inspected thoroughly. 3) Lighting arrangement was totally damaged due to flooding of gallery by seepage water. 4) Leaching from seepage water & deposition of lime was observed. 5)End weir of stilling basin was found damaged at many places.	Corrective measures should be carried out accordingly. Dewatering of gallery is utmost necessary from safety point of view. It Is necessary to install a new lighting arrangement with water proof wiring in the drainage gallery. Leaching material should be tested from MERI Nashik. &Record of leahing material should be maintained. Necessary repairs to be carried out .	Compliance not received

1	2	3	4	5	6	7
[1] C.E., Maharashtra Jeevan Pradhikaran, Konkan Region, Thane. **(1) S.E., Maharashtra Jeevan Pradhikaran Circle, Thane** **(a) E.E., Maharashtra Jeevan PradhikaranProject Dn. Virar (W)**						
1	Name**:Sakhare,** Dist- Palghar Year of Completion:- **1968** Longitude :- **73° 48' 48"** Latitude :- **19° 54' 33"** Height: - **17.37 m** Gross capacity: **4.07 Mm^3** Spillway capacity:-**690.40 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0166**	26/04/2018 31/10/2018	Masonry Dam	1) Leakages on d/s side of w.w. and left & right side of NOF was observed.. 2) Pounding observed downstream side of right side non overflow section. It should be verified that the leakages through junction of right side flank or through right side Non overflow section. Stilling basin 3)Ponding observed in stilling basin.	All leakages need to be attended in time. Causes of leakages should be investigated & treated accordingly. Necessary treatment shall be given to stop the leakages. It should be dewatered and inspection should be carried out	Provision of grouting is made in estimate to stop the leakages. Provision of grouting is made in estimate to stop the leakages. Ponding dewatering washed carried out and there is deterioration of concrete stilling basin

Consolidated Health Status Report of Identified Large Dams In Konkan Region

PART – 2

Annual Health Status Report of Identified Large Dams Based on

Pre & Post Monsoon 2019 Inspection Reports

(Year 2019)

PART – 2 Annual Health Status Report of Identified Large Dams Based on Pre & Post Monsoon 2019 Inspection Reports

2.1 General

The Government of Maharashtra has issued instructions for pre and post monsoon inspection of the dams. Dam Safety Organisation, Nashik has issued guidelines regarding questionnaire for inspecting dams by field officers vide letter (Marathi) DSO/DSD-III/128/47/dated 19-1-1998 and also conveyed discrepancies, errors & omissions noticed after the scrutiny of inspections reports time to time. It is again requested to issue orders to field officers to perform careful inspection according to the guidelines for proper monitoring of safety of dams.

The important information like time schedule of inspection, classification of dams, competent authority of dam inspection, preparation of health status report, categorization of deficiencies, monitoring of deficiency removal programme, standard procedure for confirmation and removal of category – I deficiency and suggestions for inspection by field officers are given vide Annexure – 1.

Considering the various deficiencies observed over dams of Maharashtra over last few years , Dams Safety Organisation have Standardized the category wise deficiencies and these are given vide Annexure – 2.

2.2 Inspections of dam.

A systematic approach & working methodology is very essential to monitor the safety aspects of the dams. Maharashtra which is one of the pioneer state has established an elaborate set up for effective monitoring of dams. The periodical inspections of dams are completed by concerned field officers and the inspection reports are sent to Dam Safety Organisation for further action.

Dam Safety Organisation, Nashik carries out scrutiny of the inspection reports received from field officers for class-I & II dams, significant & serious deficiencies observed during scrutiny are immediately intimated to field officers to carry out remedial measures. To keep a check on the inspections carried out at field level, Test inspections are carried out by Dam Safety Organisation as a third party inspection. The annual Dam inspection programme of Dam safety organisation is prepared and is sanctioned by Director General ,(D.T.H.R.S.) M.E.R.I., Nashik. In Maharashtra, there are about 52 private dams owned by Tata Power, Sahara India Pvt. Ltd. etc. and by Urban Local bodies and Power generation companies. Dam Safety Organisation carries out pre and post monsoon inspections of private dams on consultancy basis.

For Konkan region following officers have inspected the dams and taken efforts to prepare this report.

1) Y.K. Bhadane, Superintending Engineer
2) P.S.Shirsath, Executive Engineer
3) D.T. Phalak, Sub Divisional Engineer.
4) B.P. Kandekar, Sectional Engineer.
5) H.P. Deokate, Junior Engineer.
6) V. D. Jagtap, Research Assistant

2.2.1 Dam inspection by field officers

There are 41 no. of Class - I Govt. dams & 144 nos.Class - II dams in Konkan region. Out of these, 6 Class -I dams and 15 Class -II dams pre monsoon inspection reports were received as per schedule. For post monsoon inspection 4 Class -I dams and 1 class - II dams were reported within time schedule given in inspection proforma. However as on 15/04/2020 inspection reports of 41 class-I dams and 144 class-II dams are received and have been incorporated in this status report. The circle office wise breakup of dams and status of inspection report received is given in Table 2.1. List of dams of which inspection report were not received in DSO from field officers is given in table no. 2.2.

2.2.2 Dam Inspection by Dam Safety Organisation.

As per Annual inspection programme, DSO has inspected 13 nos. Class-I dams and 19 nos. of Class-II dams. List of dams inspected is given in Table 2.3. Also the photographs of some of inspections by Dam Safety Organisation are appended as Annexure – 3

2.3 Overall health status of large dams

Circlewise number of large dams in Konkan region where deficiencies are noticed are summarized and given in table no. 2.4. Damwise number of category – II deficiencies noticed are given in table no 2.5. Over all there are 200 dams and there are 115 dams where category – II deficiencies are noticed. Agencywise, damwise and categorywise detailed status is given in next sections.

2.4 Health status report of Class-I dams

2.4.1 Health status report of Class-I dams with Category-1 deficiency.

Details of Class-I dams with category 1 deficiency are given in table 2.6. & P. No -191 One dams (Tillari Main) mechanical deficiency of spillway gate are reported under this category.

2.4.2 Health status report of Class-I dams with Category-2 deficiency.

Out of 41 dams 34 dams have been identified as having category-2 deficiencies. Details of class – I dams, with category – 2 deficiencies are given in table 2.7.

2.4.3 Health status report of Class-I dams with Category-3 or NIL deficiency.

Out of 41 dams 41 dams have been identified as having category-3 deficiencies. And 0

dams having NIL deficiencies. Details of class-I dams with category – 3 or Nil deficiency are given in table 2.8.

2.5 Health status report of Class-II dams

2.5.1 Health status report of Class--II dams with Category-1 deficiency.

Out of 144 dams NIL dams are reported under this category. Details of class – II dams, with category – 1 deficiencies are given in table 2.9.

2.5.2 Health status report of Class-II dams with Category-2 deficiency.

Out of 144 dams 61 dams have been identified as having category-2 deficiencies. Details of class – II dams, with category – 2 deficiencies are given in table 2.10.

2.5.3 Health status report of Class-II dams with Category-3 or NIL deficiency.

Out of 144 dams 144 dams have been identified as having category-3 deficiencies and 0 dams having NIL deficiencies. Details of class – II dams, with category – 3 or Nil deficiencies are given in table 2.11.

2.6 Health status report of Class-III dams

2.6.1 Criteria of Inspection of Class –III dams.

The Govt. of Maharashtra has restricted the scope of DSO in monitoring safety aspects to the extent of identified large dams .i.e. Class-I and Class-II dams only in view of large no. of dams and limited staff of DSO. The safety monitoring of other large dams (Class-III) including preparation of HSR rests with the respective regional Chief Engineers. Hence every year for Class III dams, based on inspection report, HSR of Class – III dams need to be prepared by respective Chief Engineer and sent it to Dam Safety Organisation for record.

2.6.2 Districtwise and classwise break up of number of dams

Classwise Number of dams in each district are given as below..

District	Large Dam Class- I	Large Dam Class- II	Large Dam Class- III	Grand Total
Thane	02	21	--	23
Palghar	03	16	--	19
Raigad	05	38	--	43
Ratnagiri	21	43	--	64
Sindhudurg	06	26	05	37
Kolhpur	02	--	--	02
Nashik	01	--	--	01
Ahmadnagar	01	--	--	01
TOTAL	**41**	**144**	**05**	**190**
PRIVATE	09	06	01	16
GRAND TOTAL	**50**	**150**	**06**	**206**

Graphical representation of district wise and class wise dams in the region is given vide Chart No.1

2.7 Health status report of Private Class-I dams

2.7.1 Health status report of Private Class-I dams with Category-1 deficiency.

Out of 09 Class-I dams NIL dams have been identified as having category-1 deficiencies. Details of class-I Private dams with category 1 deficiency given in Table 2.12.

2.7.2 Health status report of Private Class-I dams with Category-2 deficiency.

Out of 09 Class-I dams 7 dams have been identified as having category-2 deficiencies. Details of class-I Private dams with category 2 deficiency given in Table 2.13.

2.7.3 Health status report of Private Class-I dams with Category-3 deficiency.

Out of 09 Class-I dams 9 dams have been identified as having category-3 deficiencies. Details of class-I Private dams with category 3 deficiency given in Table 2.14.

2.8 Health status report of Private Class-II dams

2.8.1 Health status report of Private Class-II dams with Category-1 deficiency.

Out of 06 Class-II dams NIL dams have been identified as having category-1 deficiencies.Details of class-II Private dams with category 1 deficiency given in Table 2.15.

2.8.2 Health status report of Private Class-II dams with Category-2 deficiency.

Out of 06 dams 03 dams have been identified as having category-2 deficiencies. Details of class-II. Private dams with category 2 deficiency given in Table 2.16.

2.8.3 Health status report of Private Class-II dams with Category-3 deficiency.

Out of 06 dams all the 06 dams have been identified as having category-3 deficiencies. Details of class-II Private dams with category 3 deficiency given in Table 2.17.

2.9 Observations

1. Significant category I & II Deficiency wise list of dams for Class-I & Class-II dams is given in Table 2.18 and table 2.19 respectively. Also graphical representation of significant category I & II deficiencies observed for Class-I & II dams are shown in chart 2 & chart -3 respectively.

2. Top five major deficiencies found in Class-I dams in Konkan region are as follows –

a) **A 12** : Excesssive considerable leaching from seepage water.– (06 Dam)

b) **A 4** : Major leakages through outlet conduit/pipe joints/Gates – (03 Dams)

c) **A.1**: Boil leakage/ seepage/ wet patches/ slushiness,in Earthen Dam.-- (05 Dam)

d) **A 2**: Standing pool / Ponding / Water Logging / Slushy condition on D/S of Dam – (02 Dams)

e) **A 8** : Drainage gallery in accessible/No adequate lighting./ No dewatering arrangement or failure. (01 Dams)

3. Likewise top five major deficiencies found in Class-II dams are –

a) **A.1**: Boil leakage/ seepage/ wet patches/ slushiness,in Earthen Dam.-- (15 Dam)

b) **A 6** : Outlet well is damaged/not in good condition /cracks observed/jets of water in well.– (8 Dam)

c) **A 4** : Major leakages through outlet conduit/pipe joints/Gates – (06 Dam)

d) **A 7 :** Retrogression /scouring in tail channel..-- (04 Dam)

e) **A 2** : Standing pool / Ponding / Water Logging / Slushy condition on D/S of Dam.-(03 Dam)

Table 2.1

Status of receipt of Pre / Post monsoon inspection reports - 2019

Sr No	Name of Office	Total dams			Both Pre & Post IR received			Either Pre or Post IR received			Pre & Post both IR not received		
		Class -I	Class -II	Total	Class-I	Class -II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
	[1] C.E., W.R., Konkan, Mumbai												
1	SE TIC Thane	08	55	63	08	55	63	00 00	00 00	00	00	00	00
2	SE RIC Ratnagiri	19	50	69	19	50	69	00 00	00 00	00	00	00	00
3	SE NKIPC Thane	04	04	08	04	04	08	00 00	00 00	00	00	00	00
4	SE SKIPC Oras	08	02	10	08	02	10	00 00	00 00	00	00	00	00
	[2] C.E., SSI, Pune												
6	SSI, Aurangabad	02	33	35	02	33	35	00 00	00 00	00	00	00	00
	PRIVATE DAMS												
8	DSO, Nashik	09	06	15	09	06	15	00 00	00 00	00	00	00	00
	Grand Total	50	150	200	50	150	200	00	00	00	00	00	00

Table 2.2

List of Dams of which Inspection Reports were not received

Sr. No	Name of Office	Name of Dam of which inspection reports not received					
		Both for Pre & Post-2018		Either for Pre or Post-2018			
				Pre monsoon 2018		Post monsoon 2018	
		Class-I	Class-II	Class-I	Class-II	Class-I	Class-II
1	2	3	4	5	6	7	8
---------- Nil ----------							

Table 2.3

List of dams inspected by Dam Safety Organisation, Nashik

Officers from Dam Safety Organisation Nashik have inspected following dams from 01/04/2019 to 31/03/2020 and inspection notes have been issued to concerned field officers.

Sr.No.	Name of Dam	Category	Date of Inspection
Class-I Dams			
1	Bhilawale	I	30.07.2019
2	Pimpalwadi (Dubi)	I	29.11.2019
3	Tarandale	I	20.12.2019
4	Otav	I	20.12.2019
5	Korale satanadi	I	20.12.2019
6	Berdewadi	I	20.12.2019
Class-II Dams			
7	Sonawale	II	29.07.2019
8	Kharsai	II	29.07.2019
9	Asanas	II	25.09.2019
10	Sayade	II	25.09.2019
11	Kondgaon	II	28.11.2019
12	Moravane	II	29.11.2019
13	Guhagar	II	29.11.2019
14	Sukondi waghivane	II	30.11.2019
15	Vapholi	II	19.12.2019
16	Dabhachiwadi	II	19.12.2019
17	Osargaon	II	19.12.2019
18	Dendonwadi	II	19.12.2019
19	Janawali	II	20.12.2019
Private Dams -			
Class-I			
20	Middle Vaitrana	I	05.04.2019 04.09.2019
21	Modaksagar	I	05.04.2019 31.08.2019
22	Tansa	I	05.04.2019 04.09.2019
23	Pise	I	03.05.2019 04.09.2019
24	Kurze (Dapcheri)	I	12.02.2019 11.10.2019
25	Savitri	I	14.03.2019 27.02.2020
26	Ransai	I	13.05.2019 07.02.2020
27	Barvi	I	14.05.2019 07.02.2020

Class-II			
28	Tulasi	II	04.05.2019 20.08.2019
29	Vihar	II	04.05.2019 20.08.2019
30	Pawai	III	04.05.2019 20.08.2019
31	Sakhare	II	10.05.2019 11.10.2019
32	Umate	II	29.07.2019 26.02.2020
33	Nandvipurar	II	30.07.2019 26.02.2020

Table 2.4

Circle wise no. of large dams where deficiencies are noticed

Sr. No	Name of Circle	Total No. of Dams			Large Dam Class-I			Large Dam Class-II		
		Class-I	Class-II	Total	Def. Cat-1	Def. Cat-2	Def. Cat-3	Def. Cat-1	Def. Cat-2	Def. Cat-3
1] C.E., W.R., Konkan, Mumbai										
1	SE TIC Thane	08	55	63	--	06	08	--	28	55
2	SE RIC Ratnagiri	19	50	69	--	16	19	--	17	50
3	SE NKIPC Thane	04	04	08	--	04	04	--	04	04
4	SE SKIPC Oras	08	02	10	--	06	08	--	00	02
2] C.E., SSI, Pune										
1	SSI, Thane	02	33	35	--	02	02	--	12	33
		41	**144**	**185**		**34**	**41**		**61**	**144**
Private										
1	**Private Dams**	09	06	15	--	07	09	--	03	06
	Grand Total	**50**	**150**	**200**	**--**	**41**	**50**	**--**	**64**	**150**

Table 2.5

Damwise number of Category-2 deficiencies noticed

Sr.	Name of Dam	No. of deficiencies noticed
Class-I Dams		
[1] CHIEF ENGINEER, WATER RESOURCES, KONKAN,MUMBAI		
(1) S.E.T.I.C.,Thane		
1	Bhatsa	09
2	Upper Vaitarna & Alwandi	02
3	Dhamni (Surya)	06
4	Domihira	03
5	UpperGhatghar	02
6	Bhira (Pick up)	01
(2) S.E.,R.I.C.,Ratnagiri		
7	Bholawali	02
8	Gadgadi	02
9	Kondivali	02
10	Tangar	06
11	Gadnadi	08
12	Pimpalwadi (Dubi)	04
13	Shil	03
14	Awashi	01
15	Kaykewadi	03
16	Sakharpa	04
17	Arjuna	01
18	Panhale	02
19	Berdewadi	02
20	Barewadi	02
21	Natuwadi	03
22	Pimpar	06
(3) S.E.,N.K.I.P.C.,Thane		
23	Wagh	05
24	Pali Bhutawali	03
25	Hetawane	05
26	Amboli	02
(4) S.E.,S.K.I.P.C., Oras,Sindhudurgnagari		
27	Tillari (Forebay)	04
28	Tillari MainDam Dhamane	11
29	Tillari Interstate	03
30	Korale Satandi	01
31	Nadhawade	01
32	Otav	01
[1] CHIEF ENGINEER, S.S.I. (W.C.) PUNE		
(1) Regional Watwer Coservation Officer, Soil & Water Coservation,Thane.		
33	Parule	03
34	Rajewadi	04
Class-II Dams		
[1] CHIEF ENGINEER, WATER RESOURCES, KONKAN,MUMBAI		
(1) S.E.T.I.C.,Thane		
1	Adivali	01
2	Dongaste	01
3	Jambhe	01
4	Jambhivali	01
5	Khoch	01
6	Thakurwadi	02

Sr.No	Name of Dam	No. of deficiencies noticed
7	Wandri	02
8	Deocope	02
9	Mohakhurd	01
10	Raitale.	02
11	Ambeghar	04
12	Bamnoli	06
13	Dokshet	01
14	Dolwahal weir	02
15	Ghotawade	02
16	Kalote Mokashi	04
17	Khindwadi	02
18	Kavele	01
19	Khaire	02
20	Kothurde	02
21	Morbe	02
22	Phansad	01
23	Punade	02
24	Sanderi	02
25	Unhere	01
26	Usran	02
27	Varandh	02
28	Wawa	01
(2) S.E.R.I.C.,Ratnagiri		
29	Adare	03
30	Gavane	02
31	Kalwande	01
32	Kelamba	01
33	Khopad	02
34	Nive	03
35	Telewadi	05
36	Moravane	02
37	Panderi	04
38	Chorgewadi	02
39	Madkhol	02
40	Ozaram	02
41	Osargaon	02
42	Sanamtemb	01
43	Talwade	01
44	Rangav	02
45	Talwat	01
(1) S.E.N.K.I.P.C.,Thane		
46	Dhasai	02
47	Tulyachapada	01
48	Padale	02
49	Panhalghar	02
[2] C.E.S.S.I.(W.C.)PUNE	**(1) Regional W.C. Officer, Soil & Water Coservation,Thane.**	
50	Aswali	02
51	Devale	02
52	Karvel	03
53	Kharsai	02
54	Pashane	01
(2) Regional Watwer Coservation Officer, Soil & Water Coservation,Thane.		
55	Morde	02
56	Juwathi	01
57	Kokisare	02
58	Gopalwadi	01
59	Sukondi Waghiwane	01
60	Chinchali	01
61	Tivare	01

1	2	3
Private Dams		
Class-I Dams		
1)S.E., M.I.D.C. Mahad, Dist. Raigad **(a)E.E., M.I.D.C. Mahad, Dist. Raigad**		
1	Savitri	07
(1)HYDRAULIC ENGINEER (M.C.G.B.) MUMBAI. **(a)Dy. Hydraulic Engineer (M.C.G.B.) Thane.**		
2	Tansa	03
3	Modaksagar	07
4	Middle vaitarana	07
(1) S.E., M.I.D.C. , Dombivali (E), Dist. Thane **(a) E.E., M.I.D.C. Barvi Dam Division, Anand Nagar, Ambarnath (E), Dist. Thane**		
5	Barvi (G)	03
(b) E.E., M.I.D.C. Dn. No.2 ,Wagle Estate, Thane Belapur Road,Koparkhairne, T.T.Industrial Area,Mahape,New Mumbai. 400710		
6	Ransai	02
(1) S.E., Dairy Constuction Circle, Warli, Mumbai -17 **(a) E.E., Agricultural Construction Dn Aarey Milk Colony, Goregaon(E), Mumbai-65**		
7	Kurze (Dapcheri)	09
Class-II Dams		
(1) S.E.,(MMR) M. I.D.C. Dombiwali, Dist-Thane . **(a) E.E., M.I.D.C.Barvi Dam Div.Ambarnath(E),Dist-Thane.**		
1	Murbadi	05
[1] C.E., Maharashtra Jeevan Pradhikaran, Konkan Region, Thane. **(1) S.E., Maharashtra Jeevan Pradhikaran Circle, Thane** **(a) E.E., Maharashtra Jeevan PradhikaranProject Dn. Virar (W)**		
2	Sakhare	02
(1) HYD. ENGINEER, M.C.G.B. MUMBAI. **(a) Dy.Hyd.Engineer (M.C.G.B.) Ghatkopar.**		
3	Vihar	02

Table 2.6

Damwise Health status report of Class-I dams with category-1 deficiency

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Observation / Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
---------- Tillari main dam under this category is reported by mechanical deficiency of spillway gate ---------- (Ref .page No 191)						

Table 2.7

Damwise Health status report of Class-I dams with category-2 deficiency

Sr. No	Dam Features	Date of inspection	Inspecting Officer	Main component of dam	Significant deficiencies noticed during inspection of field officers	Remedial measures suggested
1	2	3	4	5	6	7
[1] CE,WR,(Konkan), Mumbai. (1) Thane Irrigation Circle, Thane (a) Bhatsa Dam Management Dn.1, Bhatsanagar						
1	Name :- **Bhatsa(G)** Dist-Thane Year of Completion:- **2005** Location :- Longitude: -**73° 25′ 00″** Latitude: - **19° 31′ 00″** Height: **88.50 m** Gross capacity: **976.10 Mm^3** Spillway capacity:**10242 m^3/sec** Sr.No.in National Register of LargeDams:**MH09HH1011**	21/04/2019 18/09/2019	**Shri. B.B. Lohar S.E.,T.I.C., Thane** **Shri .V.S. Ghogre S.E.,T.I.C., Thane**	Body of dam	1) It is not possible to measure the leakage into gallery Total seepage in and leakage in to gallery in 2019 is 77382 LPM at 142.04 m and is more than double comparing with first filling season 2005 was 40725.72 LPM at RL 142.07 2) Considerable leaching from the seepage water & deposition of lime near the seepage exist spots. 3) Drainage gallery is not fully accessible 4) Excessive seepage through the body of dam. Foundation gallery flooded so it is not possible to measure the seepage from foundation	Quantum of seepage should be monitored monolith wise. Efforts should be made to stop these leakages from gallery on top priority. Leached material to be collected yearly monolith wise and weighed and record of quantity and weight to be maintained. Necessary arrangement should be made to access the gallery.. Seepage should be monitored & necessary repairs to be carried out.
				Outlet	5) Damage noticed to the conduit at low level irrigation outlet. (Right Bank)	Necessary repairs to be carried out.
				Spillway	6) Reinforcement is exposed at some places of coping over spillway	Necessary repairs to be carried out.

1	2	3	4	5	6	7
	Bhatsa(G) contd……			W.W.Bar & Tail Channel Instrumentation Gates	7). The right side guide wall at downstream side of Bhatsa dam is damaged due to heavy flood 8) Instruments are not in working condition. 9) Right side gate No 1 and 5 Rubber seal is damaged	Necessary repairs to be carried out Necessary repairs to be carried out Rubber Seal should be replaced.
2	Name :- **Upper Vaitarna&Alwandi (G)** Dist-Thane Year of Completion:- **1973** Longitude: -**73° 30′ 00″** Latitude: - **19° 47′ 00″** Height: **46.02 m** Gross capacity: **353.96 Mm^3** Spillway capacity: **1378 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH0384**	20/04/2019 12/12/2019	**Shri. B.B. Lohar S.E.,T.I.C., Thane** **Shri .V.S. Ghogre S.E.,T.I.C., Thane**	Masonry Dam Instrumentation	1) Left side gallery is chocked due to leaching 2)Vertical plumb bob, uplift pressure cells and piezometers are not working.	Leaching material getting accumulated to be scraped off frequently. Leached material to be collected yearly monolith wise and weighed and record of quantity and weight to be maintained. Necessary repairs to be carried out.
(b) Palghar Irrigation Division, Manor, Dist.Palghar						
3	Name :**Dhamni (Surya) (G)** Dist- Palghar Year of Completion:- **1987** Location :- Longitude: -**73° 03′ 20″** Latitude: - **19° 55′ 15″** Height: **58.08 m** Gross capacity: **299.01 Mm^3** Spillway capacity: **3180 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH1173**	04/05/2019 01/11/2019	**Shri. B.B. Lohar S.E.,T.I.C., Thane** **Shri .V.S. Ghogre S.E.,T.I.C., Thane**	Earthen Dam Masonry Dam W.W.Bar & Tail Channel Instrumenta tion Gates	1) Cross drains not functioning properly , Cross drains and toe drains beyond the downstream toe not in regular section and freely draining 2) Considerable leaching from the seepage water and deposition of lime near seepage exist spots Excessive seepage and leaching of the dam and the foundation 3) Guide wall and sloping apron need repair 4) Instruments are not in working condition. 5) Condition of steel surface and surface paint deteriorated 6) Rubber seal are damage	Necessary repairs to be carried out. Quantum of seepage/leakage should be monitored monolith wise. Result oriented efforts should be made precisely to stop leakages on top priority. Leached material to be collected yearly monolith wise and weighed and record of quantity and weight to be maintained. Necessary repairs to be carried out. Necessary repairs to be carried out The repairs should be carried out either through mechanical organisation or under its advice. Necessary repairs to be carried out. Necessary repairs to be carried out

1	2	3	4	5	6	7
(c) Thane Irrigation Division, Kalwa,Thane						
4	Name :-**Domihira(UG)** Dist- Palghar Year of Completion:- **2009** Longitude: -**73° 15′ 30″** Latitude: - **19° 57′ 00″** Height: **51.50 m** Gross capacity:**14.49 Mm^3** Spillway capacity:**502.25m^3/sec** Sr.No.in National Register of Large Dams:- **MH09HH1851**	04/05/2019 01/11/2019	**Shri. B.B. Lohar S.E.,T.I.C., Thane** **Shri .V.S. Ghogre S.E.,T.I.C., Thane**	W.W.Bar & Tail Channel Outlet	1) Leakage through both flank walls observed. 2) Hoisting is in damaged condition . 3) Leakage through SG observed	Necessary repairs may be carried out accordingly. The repairs should be carried out either through mechanical organisation or under its advice. Necessary repairs to be carried out.
5	Name:- **UpperGhatghar**(UG) Dist-A'Nagar Year of Completion:- **2004** Longitude: -**73° 40′ 00″** Latitude: - **19° 32′ 30″** Height: - **15.16 m** Gross capacity**: 5.82 Mm3** Spillway capacity:-**837.00 m3/sec** Sr.No.in National Register of Large Dams:**MH09HH1643**	19/04/2019 06/12/2019	**Shri. B.B. Lohar S.E.,T.I.C., Thane** **Shri .V.S. Ghogre S.E.,T.I.C., Thane**	E.D.A. Instruments	1) Condition of energy dissipation arrangement is not satisfactory. 2)Instruments are not in working condition.	Necessary repairs to be carried out. Necessary repairs to be carried out.
(d) Raigad Irrigation Dn. Kolad. Tal –Roha, Dist-Raigad.						
6	Name:- **Bhira (Pick up) (G)** Dist- Raigad Year of Completion:- **1987** Longitude: -**73° 23′ 00″** Latitude: - **18° 27′ 00″** Height: - **42.60 m** Gross capacity**: 1.76 Mm3** Spillway capacity:-**64.00 m3/sec** Sr.No.in National Register of Large Dams:**MH09MH0539**	29/04/2019 29/12/2019	**Shri. B.B. Lohar S.E.,T.I.C., Thane** **Shri .V.S. Ghogre S.E.,T.I.C., Thane**	Earth Dam	1) Leakage observed through earthen section	Leakages be measured & study be made with the concerned reduction of storage of dam. Result oriented efforts under the guidance of higher authorities should be made precisely to stop these leakages on top priority.

1	2	3	4	5	6	7
(2) Ratnagiri Irrigation Circle, Ratnagiri **(a) Irrigation Project Construction Division, Chiplun.**						
7	Name :- **Bholawali(UG)** Dist-Ratnagiri Year of Completion:- **2001** Location :- Longitude: -**73° 24′ 00″** Latitude: - **17° 53′ 00″** Height: **35.32 m** Gross capacity: **5..618 Mm^3** Spillway capacity:-**91.39 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH1564**	10/05/2019 17/12/2019	**Shri. A. A. Dabhade S.E, R.I.C. Ratnagiri And Smt, V.G. Narkar S.E, R.I.C. Ratnagiri**	Earth Dam Outlet	1) Wet and slushy patches, concreted leak spring are observed on d/s of the dam 2) Leakage observed through conduit. .	Relief well should be constructed in consultation with C.D.O. Necessary repairs may be carried out. The repairs be carried out through mechanical wing.
8	Name :- **Gadgadi(G)** Dist-Ratnagiri Year of Completion:- **2001** Location :- Longitude: -**73° 39′ 00″** Latitude: - **16° 30′ 00″** Height: **35.20 m** Gross capacity: **13.52 Mm^3** Spillway capacity: **928 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH1590**	09/05/2019 13/11/2019	**Shri. A. A. Dabhade S.E, R.I.C. Ratnagiri And Smt, V.G. Narkar S.E, R.I.C. Ratnagiri**	Junction of earth work with outlet masonry	1) Leakage is observed @ junction of Earthwork with NOF masonry. 2)Leakage through the foundation masonry of well & conduit.	Location & amount of leakages should be monitored and necessary treatment to upstream face and grouting of masonry in the affected area, should be carried out to control leakage. Causes of leakages should be investigated & treated accordingly
9	Name :- **Kondivali (UG)** Dist-Ratnagiri Year of Completion:- **1995** Location :- Longitude: -**73° 23′ 00″** Latitude: - **17° 39′ 30″** Height: - **31.14 m** Gross capacity: **4.68 Mm^3** Spillway capacity:**254 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH1360**	10/05/2019 20/11/2019	**Shri. A. A. Dabhade S.E, R.I.C. Ratnagiri And Smt, V.G. Narkar S.E, R.I.C. Ratnagiri**	Earth Dam Outlet	1) Excessive seepage/ sweating on d/s face and Evidence of boiling in vicinity of dam toe 2) Leakage through conduit observed, through rubber seal	Leakages measured & study be made with the concerned reduction of storage of dam. Result oriented efforts under the guidance of higher authorities should be made precisely to stop these leakages on top priority. The repairs be carried out through mechanical wing.

1	2	3	4	5	6	7
10	Name :- **Tangar (UG)** Dist-Ratnagiri Year of Completion:- **1995** Longitude: -**73° 15′ 00** Latitude: - **18° 50′ 30′** Height: **31.75 m** Gross capacity:**3.575 Mm^3** Spillway capacity:-**256.0 m^3/sec** Sr.No.in National Register LargeDams: **MH09MH1361**	11/05/2019 14/11/2019	**Shri. A. A. Dabhade S.E, R.I.C. Ratnagiri And Smt, V.G. Narkar S.E, R.I.C. Ratnagiri**	Earth Dam Outlet w.w/Spillway Instrumentation	1) Leakage on downstream slop from ch.100m to 200 m at R.L 77m to 88 m 2) Upstream and downstream slopes show signs of bulging and concavity. 3) Sag observed to u/s slope on first and second slope 4) Leakage observed through conduit 5) leakage through guide wall of spillway 6) Geotechnical instruments not working condition	Causes of leakages should be investigated & treated accordingly. Dam section to be brought to correct design section and level by adding proper earthwork duly compacted properly. Dam section to be brought to correct design section and level by adding proper earthwork duly compacted properly. Necessary repairs may be carried out. Necessary repairs may be carried out. Necessary repairs may be carried out.
11	Name :- **Gadnadi (G)** Dist-Ratnagiri Year of Completion:- **2009** Longitude: -**73° 36′ 50′** Latitude: - **17° 16′ 30′** Height: **71.78 m** Gross capacity:**83.212 Mm^3** Spillwaycapacity **1563 m^3/sec** Sr.No.in National Register LargeDams: **MH09HH1783**	09/05/2019 13/11/2019	**Shri. A. A. Dabhade S.E, R.I.C. Ratnagiri And Smt, V.G. Narkar S.E, R.I.C. Ratnagiri**	Masonry Dam Gallery Earthen dam E.D.A Gates	1) Lighting arrangement is not provided in gallery. 2) Leaching is seen in large scale 3) Large amount of water seepage is found from concrete of dam 4) Sagging is found at R.L .122.00 m in between ch 460.0m to 510 m .5) Sign of water logging or Growth of aquatic weeds on d/s of the dam 6) Bituminous carpet and WBM of approach road is washed off 7) EDA arrangement not working satisfactory 8) Provision of three phase electric supply for E.G and SG is not made	Necessary repairs may be carried out. Leached material to be collected frequently and weighed and record of quantity and weight to be maintained. Causes of leakages should be investigated & treated accordingly. Dam section to be brought to correct design section and level by adding proper earthwork duly compacted properly Aquatic weeds on d/s of the dam should be removed. Necessary repairs may be carried out. The repairs be carried out through mechanical wing.

1	2	3	4	5	6	7
12	Name :- **Pimpalwadi (Dubi) (G)** Dist-Ratnagiri Year of Completion:- **2004** Location :- Longitude: -**73° 34′ 00″** Latitude: - **17° 40′ 22″** Height: **50.84 m** Gross capacity: **27.59 Mm^3** Spillway capacity:-**140.83 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH1635**	10/05/2019 20/11/2019	**Shri. A. A. Dabhade S.E, R.I.C. Ratnagiri And Smt, V.G. Narkar S.E, R.I.C. Ratnagiri**	W.W.& T.C. Earthen dam Gates	1) Significant leakage at spillway glacis 2) Deterioration of spillway Concrete 3) On u/s 1st berm slope at ch 240.0 m and length 80.0m get concavity 4) No electric arrangements for gate operation	Findout the cauises of leakages & Necessary repairs may be carried out. Necessary repairs may be carried out. Dam section to be brought to correct design section and level by adding proper earthwork duly compacted properly. Necessary repairs may be carried out.
13	Name :- **Shil (UN)** Dist-Ratnagiri Year of Completion:- 1996 Location :- Longitude: -73°21′00″ Latitude: - 17° 20′ 00″ Height: **33.31m** Gross capacity**: 3.829Mm^3** Spillway capacity:- **768.36 m^3/sec** Sr.No.in National Register of LargeDams: MH09HH1404	15/05/2019 16/11/2019	**Shri. A. A. Dabhade S.E, R.I.C. Ratnagiri And Smt, V.G. Narkar S.E, R.I.C. Ratnagiri**	W.W.& T.C. Gates	1) Left side of w.w on u/s ch.70.0 m and d/s ch 135.00 m guide wall tilted at some angle on monsoon -2011 2) Land slide at left side of w.w causes serious problem on approach and tail channel. 3)Rubber seals show sign of weathering, hardening and damage	Necessary repairs may be carried out. Find out the causes of Land Slide & carry out necessary remedial measure. The repairs to be carried out through mechanical wing.
14	Name :- **Awashi (UN)** Dist-Ratnagiri Year of Completion:- 1999 Location :- Longitude: -73°15′00″ Latitude: - 17° 37 00″ Height: **36.51m** Gross capacity**: 11.15Mm^3** Spillway capacity:- **221.18 m^3/sec** Sr.No.in National Register of LargeDams: MH09HH1503	10/05/2019 17/12/2019	**Shri. A. A. Dabhade S.E, R.I.C. Ratnagiri And Smt, V.G. Narkar S.E, R.I.C. Ratnagiri**	Outlet	**1)** Leakage observed in H.R. well and conduit	Necessary repairs may be carried out.

1	2	3	4	5	6	7
15	Name :- **Kaykewadi (UN)** Dist-Ratnagiri Year of Completion:- 2010 Location :- Longitude: -73°41′17″ Latitude: - 6° 37′ 37″ Height: **36.50m** Gross capacity**: 6.46Mm^3** Spillway capacity:- 82**.775 m^3/sec** Sr.No.in National Register of LargeDams: MH09HH1856	06/05/2019 25/11/2019	**Shri. A. A. Dabhade S.E, R.I.C. Ratnagiri And Smt, V.G. Narkar S.E, R.I.C. Ratnagiri**	Earthen Dam Outlet	1) Wet or slushy patches or concreted leak spring , Leakage is observed under pitching at RL about 78 .0 throughout the length of dam 2) Section of dam and upstream slope not appear structurally sound and stable 3) Leakage through conduit observed	Causes of leakages should be investigated & treated accordingly. Dam section to be brought to correct design section and level by adding proper earthwork duly compacted properly. Necessary repairs may be carried out.
(b) Irrigation Project Construction Division, Ratnagiri.						
16	Name **:- Sakharpa (UG)** Dist-Ratnagiri Year of Completion:- **2001** Longitude: -**73° 59′ 00″** Latitude: - **17° 41′ 50″** Height: - **32.50 m** Gross capacity**: 3.69 Mm3** Spillway capacity**104.22 m3/sec** Sr.No.in National Register of Large Dams: **MH09HH1566**	09/05/2019 05/11/2019	**Shri. A. A. Dabhade S.E, R.I.C. Ratnagiri And Smt, V.G. Narkar S.E, R.I.C. Ratnagiri**	Outlet Earthen dam w.w. /spillway	1) Leakage (6 lps approx.) is observed through the divide wall of well also leakage are seen through construction lift joint of divide wall. 2) Leakage through rubber seal 3) Leakage through earthen body of the dam at ch.50.00mto ch 200.00 m from berm R.L119.00m to 121.00m since year 2008 4) Spillway bar is observed major leakage	Necessary repairs should be carried out. Necessary repairs should be carried out Causes of leakages should be investigated & treated accordingly
17	Name **:- Arjuna (UG)** Dist-Ratnagiri Year of Completion:- **2014** Longitude: -**73° 47′ 00″** Latitude: - **17° 43′ 00″** Height: - **70.35 m** Gross capacity**: 74.67 Mm3** Spillway capacity **1505.51 m3/sec** Sr.No.in National Register of Large Dams: **MH09HH1855**	09/05/2019 12/11/2019	**Shri. A. A. Dabhade S.E, R.I.C. Ratnagiri And Smt, V.G. Narkar S.E, R.I.C. Ratnagiri**		1) Scouring on both side of tail channel is observed	Necessary repairs should be carried out

1	2	3	4	5	6	7
18	Name **:- Panhale (UG)** Dist-Ratnagiri Year of Completion:- **1967** Longitude: -**73° 34′ 00″** Latitude: - **16° 49′ 00″** Height: - 39**.25 m** Gross capacity**: 3.52 Mm3** Spillway capacity **104.30 m3/sec** Sr.No.in National Register of Large Dams: **MH09HH1567**	09/05/2019 31/10/2019	**Shri. A. A. Dabhade S.E, R.I.C. Ratnagiri And Smt, V.G. Narkar S.E, R.I.C. Ratnagiri**	Earthen Dam Outlet	1) Section of dam and upstream slope not appear structurally sound and stable 2) Leakage observed in H.R well wall	Dam section to be brought to correct design section and level by adding proper earthwork duly compacted properly. Necessary repairs should be carried out
19	Name **:- Berdewadi (UG)** Dist-Ratnagiri Year of Completion:- **2001** Longitude: -**73° 36′ 47″** Latitude: - **16° 51′ 40″** Height: - **55.17 m** Gross capacity**: 21.68 Mm3** Spillway capacity 296**.20 m3/sec** Sr.No.in National Register of Large Dams: **MH09HH1579**	09/05/2019 12/11/2019	**Shri. A. A. Dabhade S.E, R.I.C. Ratnagiri And Smt, V.G. Narkar S.E, R.I.C. Ratnagiri**	Earthen Dam Outlet	1) Section of dam and upstream slope not appear structurally sound and stable 2) There is leakage observed in conduit concert on d/s of well at 5 to 7 m in junction of vertical wall and arch portion from construction joints on right side wall of conduit	Dam section to be brought to correct design section and level by adding proper earthwork duly compacted properly. Necessary repairs should be carried out
Ratnagiri Irrigation Division,Ratnagiri						
20	Name **:- Barewadi (UG)** Dist-Ratnagiri Year of Completion:- **1982** Longitude: -**73° 37′ 00″** Latitude: - **16° 43′ 00″** Height: - **33.10 m** Gross capacity**: 1.96 Mm3** Spillway capacity 82**.00 m3/sec** Sr.No.in National Register of Large Dams: **MH09HH0912**	06/05/2019 28/11/2019	**Shri. A. A. Dabhade S.E, R.I.C. Ratnagiri And Smt, V.G. Narkar S.E, R.I.C. Ratnagiri**	Outlet	1) Conduit not structurally sounds and reasonably leak proof. 2) Leakage observed through the well proper and the conduit concrete or masonry	Design Should be checked by CDO & necessary repairs should be carried out. Necessary repairs should be carried out

1	2	3	4	5	6	7
21	Name **:- Natuwadi (G)** Dist-Ratnagiri Year of Completion:- **1984** Longitude: -**73° 24′ 00″** Latitude: - **17° 50′ 00″** Height: - 4**5.25 m** Gross capacity**: 28.08 Mm3** Spillway capacity **689.35 m3/sec** Sr.No.in National Register of Large Dams: **MH09HH1058**	10/05/2019 20/11/2019	**Shri. A. A. Dabhade S.E, R.I.C. Ratnagiri And Smt, V.G. Narkar S.E, R.I.C. Ratnagiri**	Earthen Dam Gate Instumentation	1) Section of dam and upstream slope not appear structurally sound and stable 2) Connection bolts of rubber seals loosened and damaged 3) Geotechnical instruments not working condition	Dam section to be brought to correct design section and level by adding proper earthwork duly compacted properly Necessary repairs should be carried out Necessary repairs should be carried out
22	Name **:- Pimpar (UG)** Dist-Ratnagiri Year of Completion:- **1985** Longitude: -**73° 16′ 00″** Latitude: - **17° 23′ 00″** Height: - 3**5.00 m** Gross capacity**: 1.88 Mm3** Spillway capacity **48.46 m3/sec** Sr.No.in National Register of Large Dams: **MH09HH1065**	11/05/2019 16/12/2019	**Shri. A. A. Dabhade S.E, R.I.C. Ratnagiri And Smt, V.G. Narkar S.E, R.I.C. Ratnagiri**	Earhen Dam Outlet Spillway Instrumentation	1) Upstream and downstream slopes show signs of bulging and concavity 2) Sag observed to U/S slop on first and second slop- 3) Leakages on D/S slopes from Ch.100.m to 200 m at R.L 77 to 88 m 4) Leakage through conduit observed 5) Leakaged through guide wall or spillway 6) Geotechnical instruments not installed	Dam section to be brought to correct design section and level by adding proper earthwork duly compacted properly Dam section to be brought to correct design section and level by adding proper earthwork duly compacted properly Causes of leakages should be investigated & treated accordingly. Necessary repairs should be carried out Necessary repairs should be carried out Necessity of Instrument should be checked.

1	2	3	4	5	6	7
(3) North Konkan Irrigation Project Circle, Kalwa Thane						
(a) Palghar Irrigation Project Construction Division, Suryanagar.						
23	Name :-**Wagh (UG)** Dist- Palghar Year of Completion:- **2001** Longitude: -**73° 20′ 00″** Latitude: - **19° 05′ 00″** Height: **30.80 m** Gross capacity:**10.30 Mm^3** Spillway capacity: **315.00m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH1580**	15/05/2019 12/12/2019	**Shri. P.B. Misal S.E, N.K.I.P.C. Kalwa, Thane**	Earthen dam Outlet	1)D/s slope shows settlement & concavity in gorge.(RD 670 m. to 910 m.) 2) Leakage through earthen dam section at various places. 3)A pond was observed on d/s side of dam & in gorge (RD 720 m. to 910 m.) 4)Shaft bearing is required for easy operating of gate . 5)Leakage observed from vertical post(side slot) of gate leaf.	Dam section to be brought to correct design section and level by adding proper earthwork duly compacted properly. Arrangement for measurement of leakage should be made. It is to be watched to see whether the leakages are from dam body or not. Drains should be free from obstructions to have smooth functioning. The leakages should be observed & if in increasing order, result oriented efforts should be made precisely to stop these leakages on top priority. Necessary repairs may be carried out Necessary repairs may be carried out
(b) Raigad Irrigation Division No.2, New Mumbai						
24	Name :-**Pali Bhutawali (UG)** Dist- Raigad Year of Completion:- **2005** Longitude: -**73° 29′ 00″** Latitude: - **18° 58′ 00″** Height: **32.40 m** Gross capacity:**13.07 Mm^3** Spillway capacity: **258.30m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH1716**	24/05/2019 19/10/2019	**Shri. P.B. Misal S.E, N.K.I.P.C. Kalwa, Thane**	Earthen dam Outlet	1) Weak portion has been created due to incomplete earthen work betweeb ch. 620.0m to 675.00 m 2) No hoist assembly has been provided to E.G. 3) Leakage through S.G The leakage is observed through the conduit	Incomplete earth work should be complete on top priority. Necessity should be checked by mechanical wing. Necessary repair should be carried out.

1	2	3	4	5	6	7
(b) Hetawane Medium Project Division , Kamarli , Dist- Raigad						
25	Name :- **Hetawane (G)** Dist- Raigad Year of Completion:- **2000** Location :- Longitude: -**73° 12′ 00″** Latitude: - **18° 42′ 00″** Height: **52.20 m** Gross capacity: **147.49 Mm^3** Spillway capacity: **1084 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH1551**	06/06/2019 20/11/2019	**Shri. A. S. Kalokhe S.E, N.K.I.P.C. Kalwa, Thane**	Earth Dam Outlet Instruments	1) Concavity in pitching on d/s at RD 550 m. to 560 m.below berm R.L. 83.00 m. is observed. 2) Section of dam from RD 290 to 310m & u/s RD 340 m. is structurally not sound. 3) Top surface of the bank work is to be properly leveled and compacted at the desired TBL 4) ICPO Service gate does not operate. 5) Instruments are under repair.	Dam section to be brought to correct design section and level by adding proper earthwork duly compacted properly. The repairs should be carried out through mechanical wing. Necessary repairs to be carried out.
26	Name :- **Amboli (UG)** Dist- Raigad Year of Completion:- **2014** Location :- Longitude: -**73° 00′ 00″** Latitude: - **18° 19′ 00″** Height: **32.59 m** Gross capacity: **9.96 Mm^3** Spillway capacity: **290.15 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH1854**	07/06/2019 12/11/2019	**Shri. P.B. Misal S.E, N.K.I.P.C. Kalwa, Thane**	Earthen Dam Outlet	1) Slight concavity is observed in u/s & d/s slopes from RD. 200 m. to 240 m. & 430 m. to 500 m 2) Outlet gates are not working satisfactory, not smooth working	Dam section to be brought to correct design section and level by adding proper earthwork duly compacted properly The repairs should be carried out through mechanical wing.

1	2	3	4	5	6	7
(4) South Konkan Irrigation Project Circle, Oras,Sindhudurgnagari **(a) Sindhudurg Irrigation Project Construction Division, Charathe, Sawantwadi.**						
27	Name :- **Tillari(Forebay)(G)** Dist- Sindhudurg Year of Completion:- **1986** Longitude: -**74° 17′ 45″** Latitude: - **15° 40′ 20″** Height: **23.04 m** Gross capacity: **8.46 Mm^3** Spillway capacity: **7.90 m^3/sec** Sr.No.in National Register of LargeDams: **MH09MH1071**	10/05/2019 12/02/2020	**Shri. M.J. Naik S.E. S.K.I.P.C., Sindhudurg**	Body of masonry dam Spillway gate Instruments	1) There is excessive seepage/sweating at any location on downstream face 2) Permanent electric supply is not available from MSEB. 3) Leakage observed through monoliths 4)Rubble seal damaged. 5) Obstructions preventing or impairing smooth operation. 6)There is 1m.thick concrete damage for full height and length on u/s face of dam 7)Instruments are not in working condition.	Excessive seepage/sweating record should be maintained & Necessary repairs should be carried out. Necessary repairs may be carried out accordingly. Leakage record should be maintained & Necessary repairs may be carried out accordingly The repairs be carried out through mechanical wing. Necessary repairs to be carried out. Necessary repairs to be carried out. Necessary repairs to be carried out.
28	Name :- **Tillari Interstate (G)**Sindhudurg Year of Completion:- 2009 Location :- Longitude: -**74° 05′ 30″** Latitude: - **15° 45′ 30″** Height: **74.55 m** Gross capacity: **462.17 Mm^3** Spillway capacity:**3233 m^3/sec** Sr.No.in National Register of LargeDams**: MH09HH0945**	10/05/2019 02/12/2019	**Shri. M.J. Naik S.E. S.K.I.P.C., Sindhudurg**	Spillway gate	1)Rubber seal needs repairs 2)Operation of spillway gate not smooth and satisfactory , Rurn buckles are corroded , therefore create noise, Gate No1 turn buckle are broken 3)Emergency gate is not in working condition	The repairs be carried out through mechanical wing & Necessary repairs should be carried. The repairs be carried out through mechanical wing & Necessary repairs should be carried. The repairs be carried out through mechanical wing & Necessary repairs should be carried.

1	2	3	4	5	6	7
29	Name :- **Tillari Main DamDhamane (G)**Sindhudurg Year of Completion:- **1986** Location :- Longitude: -**74° 17′ 45″** Latitude: - **15° 45′ 20″** Height: **38.05 m** Gross capacity: **106.65 Mm^3** Spillway capacity:**7.90 m^3/sec** Sr.No.in National Register of LargeDams**: MH09HH1134**	10/05/2019 12/02/2020	**Shri. M.J. Naik S.E. S.K.I.P.C., Sindhudurg**	Body wall Spillway gate Instruments	1)Due to heavy seepage from earthen dam drain downstream area getting water logged 2) Significant leakage at any location on downstream face on downstream sloping surface leakage and sweating is observed 3)Excessive seepage/ sweating at any location on downstream face is observed 4)Permanent electric supply is not available from MSEB Rubble seal damaged 5) 2/3 rd portion of Gallery is flooded with water 6)Considerable leaching from the seepage water and deposition of lime near the seepage exit spots observed 7)Water jets are observed in power outlet well side wall and also canal outlet conduit. 8)Damages or undermining to guide walls, divide wall and other appurtenants observed 9)Obstructions in smooth operation of spillway gate 10)Rubber seals are damaged 11) Chain & wire rope of the hoist is not in sound condition.	Heavy seepage record should be maintained & Necessary repairs should be carried out. Significant leakage record should be maintained & Necessary repairs should be carried out. Excessive seepage/sweating record should be maintained & Necessary repairs should be carried out. Necessary repairs should be carried Gallery should be esily accessable. Leached material to be collected yearly monolith wise and weighed and record of quantity and weight to be maintained. The repairs be carried out through mechanical wing & Necessary repairs should be carried Necessary repairs should be carried Necessary repairs should be carried Rubber seals should be replaced. The repairs be carried out through mechanical wing & Necessary repairs should be carried

1	2	3	4	5	6	7
(b) Minor Irrigation Division, Sindhudurgnagari.						
30	Name**:Korale Satandi (NG)** Dist-Ratnagiri Year of Completion:- **2009** Location :- Longitude: -**73° 36′ 00″** Latitude: - **16° 31′ 00″** Height: - **59.02 m** Gross capacity**: 26.171 Mm3** Spillway capacity**: 1559.74 m3/sec** Sr.No.in N. R.Large Dams: **MH09HH1858**	25/05/2019 16/12/2019	**Shri. M.J. Naik S.E. S.K.I.P.C., Sindhudurg**	W.W.Bar & Tail Channel	1)On the left side of waste weir a gap is seen from which 10% of total storage was flowed from this gap.	Necessary repairs may be carried out.
31	Name **:- Nadhawade(UG)** Dist-Ratnagiri Year of Completion:- **2004** Location :- Longitude: -**73° 30′ 45″** Latitude: - **16° 28′ 55″** Height: - **30.25 m** Gross capacity**: 8.220 Mm3** Spillway capacity**121.45 m3/sec** Sr.No.in N.R.of Large Dams: **MH09HH1881**	07/05/2019 03/11/2019	**Shri. M.J. Naik S.E. S.K.I.P.C., Sindhudurg**	Earth Dam Outlet	1) Standing pool of water is seen on d/s of dam at ch.710 m.at 20m from toe drain.	The d/s area should be well drained so as to avoid any stagnant water. The d/s area at least up to or above 200 m. from toe should be free from stagnation.
32	Name **:- Otav (UG)** Dist-Ratnagiri Year of Completion:- **2009** Location :- Longitude: -**73° 40′ 00″** Latitude: - **16° 21′ 00″** Height: - **32.00 m** Gross capacity**: 7.718 Mm3** Spillway capacity:- **96.95 m3/sec** Sr.No.in N.R.of Large Dams: **MH09MH1698**	07/05/2019 03/11/2019	**Shri. M.J. Naik S.E. S.K.I.P.C., Sindhudurg**	Earth Dam Outlet	1) Seepage (@ 2.50 to 3 cu secs) on d/s of saddle dam beyond toe drain & in case of main dam @ 2 cu secs is observed	The seepage should be observed & if in increasing order, result oriented efforts should be made precisely to stop these leakages on top priority.

1	2	3	4	5	6	7
[1] CE Small Scale Irrigation (W.C.),Pune. **(1) Regional Water Coservation Officer, Soil & Water Coservation,Thane.** **(a) District Water Coservation Officer Dn, Thane.**						
33	Name :**Parule (UG)** Dist-Ratnagiri Year of Completion:**2004** Longitude: -**73° 45′ 00″** Latitude: - **16° 45′ 00″** Height: **30.54 m** Gross capacity:**2.06Mm^3** Spillway capacity:4**1m^3/sec** Sr.No.inNational Register of Large dams: **MH09HH1625**	18/05/2019 27/12/2019	**Shri. S.S. Khandekar S.E. S.S.I. (W.C.) C Thane** .	Earthen Dam Outlet	1) Sign of water logging near toe drain in nalla The sign of standing pools of water near toe of dam 2) Leakage through body of dam between Ch 294.00 m to Ch 305.00 m when water level above 126.00 m 3) Leakage through divide wall of well.	Leakages should be monitored and should be reduced by giving proper treatment. Leakages should be monitored and should be reduced by giving proper treatment. Necessary repairs may be carried out
34	Name :-**Rajewadi (UG)** Dist-Ratnagiri Year of Completion:- **1999** Longitude: **73° 34′ 00″** Latitude: - **17° 23′ 00″** Height: **39.00 m** Gross capacity: **3.24Mm^3** Spillway capacity:**168m^3/sec** Sr.No.inNational Register of LargeDams: **MH09HH1501**	Not given 04/01/2020	**Shri. S.S. Khandekar S.E. S.S.I. (W.C.) C Thane**	Earthen Dam Outlet W.W.& T.C.	1) Standing pool of water on the downstream side of dam 2) Heavy leakage through D/s of conduit is observed 3) Leakage through bottom of right side flank wall of waste weir bar 4) Minor leakage through bottom of waste weir bar	All leakages need to be attended in time. The leakage may be due to damages or misalignment of stem rod or damages to rubber seals, improper operation of hoist etc. It should be checked. Necessary repairs to be carried out to stop this leakage. Necessary repairs to be carried out to stop this leakage.

Table 2.8

Damwise Health status report of Class-I dams with category-3 deficiency

Sr. No	Name of Dam	Date of Compl-etion	Location Longitude/ Latitude	Height in m	Gross Capacity Mm^3	Design Spillway Capacity m^3 / sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection Pre & Post	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11	12
[1] CE,WR,(Konkan), Mumbai. **(1) Thane Irrigation Circle, Thane** **(a) Bhatsa Dam Management Dn.*1*, Bhatsanagar**											
1	**Bhatsa(G)** Dist-Thane	2005	74° 25' 00" 19° 31' 30"	88.50	976.10	10242	MH09HH1011	Gated	21/04/2019 18/09/2019	3.6, 3.11, 3.13, 3.18, 3.23, 3.30, 3.31, 3.34, 3.35	9
2	**Upper Vaitarna &Alwandi** Dist-Thane	1973	73° 30′ 00″ 19° 47′ 00″	46.02	353.96	1378	MH09MH0384	Gated	20/04/2019 12/12/2019	3.1, 3.7, 3.9, 3.10,3.12, 3.21, 3.24, 3.30, 3.31, 3.34	10
(b) Palghar Irrigation Division, Manor, Dist.Palghar											
3	**Dhamni** (Surya) Dist- Palghar	1987	73° 03′ 20″ 19° 55′ 15″	58.08	299.01	3180	MH09HH1173	Gated	04/05/2019 01/11/2019	3.1,3.3,3.6,3.10,3.13,3.15,3.18,3.23,3.24,3.27,3.28,3.30,3.31,3.36	14
(c) Thane Irrigation Division, Kalwa,Thane											
4	**Domihira(UG)** Dist- Palghar	2009	73° 15′ 30″ 19° 57′ 00″	51.50	14.49	502.25	MH09HH1851	Ungated	04/05/2019 01/11/2019	3.1,3.6,3.10,3.16,3.20,3.23,3.25, 3.27,3.30,3.31	10
5	**LowerGhatghar** Dist-Thane	2007	74° 39' 06" 19° 31' 54"	86.14	3.21	192.38	MH09HH1670	Gated		3.22, 3.30, 3.34, 3.36, 3.31.,3.28	06
6	**Upper Ghatghar** Dist-A'Nagar	2004	74°40' 00" 19° 32' 30"	15.16	5.82	837.00	MH09MH1643	Gated	19/04/2019 06/12/2019	3.13,3.24, 3.28, 3.30, 3.31	05
(d) Raigad Irrigation Division, Kolad											
7	**Bhira (Forebay)** Dist- Raigad	1987	73° 23′ 00″ 18° 27′ 00″	42.60	1.76	64.00	MH09MH0539	Gated	29/04/2019 29/12/2019	3.1,3.5,3.31,3.28,3.33,3.22,3.30, 3.20	08
8	**Bhira (Pick up)** Dist- Raigad	1985	73°20′00″ 18°26′ 00″	28.00	5.50	37.40	MH09MH1132	Gated	29/04/2019 29/12/2019	3.1, 3.8, 3.11, 3.28	04
(2) Ratnagiri Irrigation Circle, Ratnagiri **(a) Ratnagiri Irrigation Division,Ratnagiri**											
9	**Barewadi** Dist-Ratnagiri	1982	73°37′00″ 16° 43′00″	33.10	1.96	82.00	MH09HH0912	Ungated	06/05/2019 28/11/2019	3.1, 3.2, 3.6, 3.26, 3.9, 3.10,3.25, 3.20,3.21,3.23 3.28, 3.30, 3.24	13
10	**Natuwadi** Dist-Ratnagiri	1984	73°24′00″ 17° 50′ 00″	45.25	28.08	689.35	MH09HH1058	Gated	10/05/2019 20/11/2019	3.1, 3.10, 3.25, 3.19, 3.20, 3.31, 3.21, 3.28, 3.30, 3.24	10

1	2	3	4	5	6	7	8	9	10	11	12
11	**Pimpar** Dist-Ratnagiri	1985	73°16′00″ 17° 23′ 00″	35.00	1.88	48.46	MH09HH1065	Ungated	11/05/2019 16/12/2019	3.1,3.9,3.5,3.6,3.2,3.26,3.10,3.25 ,3.20,3.27,3.31,3.26,3.30,3.24,3. 33	15
(b) Irrigation Project Constn Division,Ratnagiri											
12	**Arjuna** Dist-Ratnagiri	2014	73°47′00″ 17° 43′ 00″	70.35	74.67	1505.51	MH09HH1855	Ungated	09/05/2019 12/11/2019	3.26, 3.10, 3.25, 3.34, 3.20,3.28,3.30,3.24	08
13	**Muchkundi** Dist-Ratnagiri	2014	73°42′25″ 16° 51′ 34″	61.87	24.354	491.05	MH09HH1875	Ungated	18/05/2019 03/12/2019	3.2, 3.26, 3.10, 3.25, 3.20, 3.22, 3.23, 3.24, 3.31, 3.30, 3.34	11
14	**Berdewadi** Dist-Ratnagiri	2001	73°36′47″ 16° 51′40″	55.17	21.68	296.20	MH09HH1579	Ungated	09/05/2019 12/11/2019	3.5, 3.2,3.26,3.25,3.22,3.6,3.20,3.24, 3.30	09
15	**Panhale** Dist-Ratnagiri	1567	73°34′00″ 16° 49′00″	39.25	3.52	104.30	MH09MH1567	Ungated	09/05/2019 31/10/2019	3.6, 3.2, 3.25, 3.16, 3.35, 3.31, 3.30, 3.24	08
(c) Irrigation Project Constn Division,Chiplun											
16	**Awashi** Dist-Ratnagiri	1999	73°15′00″ 17° 37′ 00″	36.51	11.15	221.18	MH09HH1503	Ungated	10/05/2019 17/12/2019	3.1,3.26,3.10,3.9,3.13,3.22,3.27, 3.21,3.20,3.23,3.31,3.6,3.24,3.3 0,3.28	15
17	**Bholawali** Dist-Ratnagiri	2001	73°24′00″ 17° 53′ 00″	35.32	5.618	91.39	MH09HH1564	Ungated	10/05/2019 17/12/2019	3.1,3.6,3.10,3.9,3.25,3.20,3.27,3 .31,3.26,3.30,3.24	11
18	**Gadgadi** Dist-Ratnagiri	2001	73°39′00″ 16° 30′00″	35.20	13.52	928.00	MH09HH1590	Gated	09/05/2019 13/11/2019	3.1, 3.26, 3.10, 3.9, 3.25, 3.35, 3.31, 3.28, 3.30, 3.24	10
19	**Gadnadi** Dist-Ratnagiri	2009	73°36′50″ 17°16′30″	71.78	83.212	1563.00	MH09HH1565	Gated	09/05/2019 13/11/2019	3.1, 3.26, 3.25, 3.36, 3.29, 3.6, 3.28, 3.30, 3.24	09
20	**Kondivali** Dist-Ratnagiri	1995	73°23′00″ 17° 39′ 30″	31.14	4.68	254.00	MH09HH1360	Ungated	10/05/2019 20/11/2019	3.1,3.2,3.26,3.10,3.9,3.25,3.20,3 .31,3.6,3.30,3.28.3.24	12
21	**Pimpalwadi(Dubi)** Dist-Ratnagiri	2004	73°34′00″ 17° 40′ 22″	50.84	27.59	140.83	MH09HH1565	Gated	10/05/2019 20/11/2019	3.1,3.26,3.25,3.19,3.16,3.31,3.3 4,3.27,3.23,3.20,3.6,3.30,3.24	13
22	**Shil** Dist-Ratnagiri	1996	73°21′00″ 17° 20′ 00″	33.31	3.829	768.36	MH09HH1404	Ungated	15/05/2019 16/11/2019	3.6, 3.26, 3.1, 3.9, 3.25 , 3.19, 3.31, 3.20, 3.30, 3.24	10
23	**Tangar** Dist-Ratnagiri	1995	73°15′00″ 18° 50′ 30″	31.75	3.575	256.00	MH09MH1361	Ungated	11/05/2019 14/11/2019	3.1 , 3.9, 3.5,3.6,3.2.,3.1,3.26, 3.10,3.25,3.20,3.27,3.31,3.26,3. 30,3.24,3.33	16
24	**Kakyewadi** Dist-Ratnagiri	2010	73°41′17″ 16° 37′ 37″	36.50	6.46	82.775	MH09HH1856	Ungated	06/05/2019 25/11/2019	3.1,3.2,3.26, ,3.25,3.27.3.16,3.34,3.30.3.24	09
25	**Shelarwadi (Waki)** Dist-Ratnagiri	2014	73°28′30″ 17° 39′ 17″	51.00	16.234	343.90	MH09HH1857	Ungated	11/05/2019 20/11/2019	3.1,3.33,3.9,3.13,3.22,3.20,3.28, 3.31,3.26,3.6,3.30,3.24	12

1	2	3	4	5	6	7	8	9	10	11	12
(d) Irrigation Project Constn Division, Ratnagiri											
26	**Sakharpa** Dist-Ratnagiri	2001	73°59′00″ 17° 41′ 50″	32.50	3.69	104.22	MH09HH1566	Ungated	09/05/2019 05/11/2019	3.2,3.1,3.26,3.25,3.8,3.16,3.20,3 .22,3.31,3.30,3.24	11
27	**Tide** Dist-Ratnagiri	2017		34.35	7.507	408.10	MH09HH1878	Ungated	- 14/11/2019	3.9, 3.25, 3.31, 3.28, 3.20, 3.26, 3.6, 3.30,3.24	09
(3) North Konkan Irrigation Project Circle, Kalwa-Thane (a) Hetawane Medium Project Division , Kamarli , Dist- Raigad											
28	**Hetawane** Dist- Raigad	2000	73°12′00″ 18° 42′00″	52.50	147.49	1084	MH09HH1551	Gated	06/06/2019 20/11/2019	3.2,3.3,3.5,3.9,3.20,3.21,3.27, 3.31,3.34,3.36	10
29	**Amboli** Dist- Raigad	2014	73°00′00″ 18° 19′ 00″	32.59	9.96	290.15	MH09HH1854	Ungated	07/06/2019 12/11/2019	3.2, 3.5, 3.6, 3.19, 3.20, 3.22, 3.30, 3.31, 3.32	09
(b) Raigad Irrigation Division No.2, New Mumbai.											
30	**Pali Bhutawali** Dist- Raigad	2005	73°29′00″ 18° 58′ 00″	32.40	13.07	258.30	MH09HH1716	Ungated	24/05/2019 19/10/2019	3.2, 3.3, 3.6, 3.13, 3.20, 3.22, 3.24, 3.25, 3.30, 3.31	10
(c) Palghar Irrigation Project Construction Division, Suryanagar.											
31	**Wagh** Dist- Palghar	2001	73°20′00″ 19° 05′ 00″	30.80	10.30	315.00	MH09HH1580	Ungated	15/05/2019 12/12/2019	3.1, 3.3, 3.5, 3.7, 3.9, 3.13, 3.20, 3.24, 3.30, 3.31	10
(4) South Konkan Irrigation Project Circle, Oras, Sindhudurgnagari. (a) Sindhudurg Irrigation Project Construction Division, Charathe, Sawantwadi.											
32	**Tillari(Forebay)** Dist- Sindhudurg	1986	74°17′45″ 15° 40′ 20″	23.04	8.46	7.90	MH09MH1071	Gated	10/05/2019 12/02/2020	3.1.3.6,3.35,3.20,3.21,3.31,3.2 8,3.23,3.34,3.22,3.30,3.27	12
33	**Tillari Main** Dist- Sindhudurg	1986	74°17′45″ 15° 45′ 20″	38.05	106.65	7.90	MH09HH1134	Gated	10/05/2019 12/02/2020	3.1,3.7,3.6,3.5,3.9,3.10,3.25, 3.13,3.36,3.12,3.16,3.18,3.19, 3.21,3.20,3.31,3.28,3.30	18
34	**Tillari(Interstate)** Dist- Sindhudurg	2009	74°05′30″ 15° 45′ 30″	74.55	462.170	3233	MH09HH0945	Gated	10/05/2019 02/12/2020	3.1,3.6,3.24,3.26,3.10,3.11 ,3.13,3.12,3.33,3.20.3.27,3.30	12
(b) Medium Project Division, Ambadpal											
35	**Deoghar** Dist- Sindhudurg	2005	73°48′00″ 16° 25′30″	53.58	100.42	2078	MH09HH1648	Gated	05/05/2019 16/12/2020	3.25, 3.20, 3.24, 3.28,3.1	05
36	**Tarandale** Dist- Sindhudurg	2007	73°44′20″ 16° 18′00″	46.75	100.84	148	MH09HH1669	Ungated	07/05/2019 03/11/2019	3.1,3.5,3.6,3.9,3.10,3.13,3.8, 3.22,3.20,,3.22,3.31,3.27,3.30, 3.24	14

1	2	3	4	5	6	7	8	9	10	11	12
(c) Minor Irrigation Division, Sindhudurgnagari.											
37	**KorleSatanadi** Dist-Ratnagiri	2009	73°36′00″ 16° 31′00″	59.02	26.171	1559.74	MH09HH1858	Ungated	25/05/2019 16/12/2019	3.6,3.26,3.10,3.25,3.19,3.23, 3.24	07
38	**Nadhawade** Dist-Ratnagiri	2004	73°30′45″ 16° 28′55″	30.25	8.220	121.45	MH09HH1881	Ungated	07/05/2019 03/11/2019	3.1 3.26, 3.10, 3.25, 3.13,3.34, 3.20,3.21, 3.28,3.30,3.24,3.31	12
39	**Otav** Dist- Sindhudurg	2009	73°40′00″ 16° 21′00″	32.00	7.718	96.95	MH09MH1698	Ungated	07/05/2019 03/11/2019	3.1 , 3.2,3.26,3.10,3.13, 3.24,3.30,3.34	08
[1] CE Small Scale Irrigation (W.C.),Pune. **(1) Regional Water Coservation Officer, Soil & Water Coservation,Thane.** **(a) District Water Coservation Officer Dn, Thane.**											
40	**Parule** Dist-Ratnagiri	2004	73°45′00″ 16° 45′00″	30.54	2.06	41.00	MH09HH1625	Ungated	18/05/2019 27/12/2019	3.2, 3.3, 3.6, 3.9, 3.10, 3.16, 3.22, 3.20, 3.24, 3.25, 3.28, 3.30,	12
41	**Rajewadi** Dist-Ratnagiri	1999	73°34′00″ 16° 23′00″	39.00	3.24	168	MH09HH1501	Ungated	Not Given 04/01/2019	3.1, 3.9, 3.13,3.20, 3.21, 3.24,3.28,,3.30	08

Table 2.9

Damwise Health status report of Class-II dams with category-1 deficiency

Sr. No	Name of Dam	Year of Completi-on	Location	Height in m	Gross Capacity Mm^3	Design Spillway Capacity m^3/sec	Sr. No. in NRLD Register	Date of Inspection	Inspecting Officer
1	2	3	4	5	6	7	8	9	10
---------- No Such Dams under this category is reported ----------									

Table 2.10

Damwise Health status report of Class-II dams with category-2 deficiency

Sr. No	Dam features	Date of Inspection	Inspecting Officer	Main component of dam	Significant deficiencies noticed during inspection of field officers	Remedial measures suggested
1	2	3	4	5	6	7
[1] CE,WR,(Konkan), Mumbai. (1) Thane Irrigation Circle, Thane (a) Thane Irrigation Division, Kalwa,Thane						
1	Name :-**Adivali.** Dist-Thane. Year of Completion:- **1980** Location :- Longitude: -**71° 31′ 00″** Latitude: - **19° 25′ 00″** Height: **21.52 m** Gross capacity: 2**.22 Mm^3** Spillway capacity:**245.56 Cumecs** Sr.No.in National Register of LargeDams: **MH09MH0824**	13/05/2019 17/11/2019	**Shri. U.L. Pawar** **Shri. N.D. Mahajan** **E.E., T.M.I.D. Thane**	Earth Dam	1) Minor leakage through right side of embankment and 0.30m above intake well.	Causes of leakages should be investigated & treated accordingly.
2	Name :- **Dongaste** Dist- Palghar Year of Completion:- **1983** Location :- Longitude: -**73° 57′ 00″** Latitude: - **19° 30′ 00″** Height: **17.94 m** Gross capacity: 4**.03 Mm^3** Spillway capacity: **178.00 Cumecs** Sr.No.in National Register of LargeDams: **MH09MH0339**	17/05/2019 18/12/2019	**U.L. Pawar** **Shri. N.D. Mahajan** **E.E., T.M.I.D. Thane**	Earth Dam	1) U/S side dam required resectioning	Dam section to be restored to design section.

1	2	3	4	5	6	7
3	Name :-**Jambhe.** Dist-Thane. Year of Completion:- **1972** Location :- Longitude: -**72° 20′ 00″** Latitude: - **19° 24′ 00″** Height: **13.65 m** Gross capacity: **5.18 Mm^3** Spillway capacity:**455.19 Cumecs** Sr.No.in National Register of LargeDams: **MH09MH0302**	13/05/2019 17/11/2019	**U.L. Pawar** **Shri. N.D. Mahajan** **E.E., T.M.I.D. Thane**	Masonry dam	1) Minor leakage through masonry dam at ch.99.50.	Location & amount of leakages should be monitored and if large then necessary treatment in the affected area,d/s & u/s should be carried out to control leakage.
4	Name:-**Jambhivali** Dist-Thane Date of completion :- **1978** Location : - Longitude :- **73° 10' 00"** Latitude :- **19° 09' 00"** Height :- **23. 40 m.** Gross capacity :-**2. 26 Mm^3** Design Spillway capacity :- **111.92 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0671**	15/05/2019 18/10/2019	**U.L. Pawar** **Shri. N.D. Mahajan** **E.E., T.M.I.D. Thane**	Outlet	1)Outlet gate does not open & close smoothly.	The repairs should be carried out either through mechanical organisation, or under its advice.
5	Name :- **Khoch** Dist- Palghar Year of Completion:- **1981** Location :- Longitude: -**73° 24′ 00″** Latitude: - **19° 53′ 00″** Height: **22.07 m** Gross capacity: **1.989 Mm^3** Spillway capacity:**134.00 Cumecs** Sr.No.in National Register of LargeDams : **MH09MH0813**	17/05/2019 18/12/2019	**U.L. Pawar** **Shri. N.D. Mahajan** **E.E., T.M.I.D. Thane**	Earth Dam	1)Wet patches , water seepages on d/s of dam.	Check whether this has any connection with storage. Check the functioning of L&C drains for any obstructions & do necessary action.

1	2	3	4	5	6	7
6	Name:**Thakurwadi** Thane Year of Completion:- **1977** Longitude: -**73° 16′ 00″** Latitude: - **19° 14′ 00″** Height: - **18.00 m** Gross capacity: **3.741 Mm^3** Spillway capacity: **112.00 Cumecs** Sr.No.in National Register of LargeDams: **MH09MH0604**	10/05/2019 07/12/2019	**U.L. Pawar** **Shri. N.D. Mahajan** **E.E., T.M.I.D. Thane**	Earth Dam W.W.&T.C	1)U/s section of dam indicates concavity & need resectioning. 2)Some portion of spillway bar broken.	Dam section to be restored to design section. Damaged portion of w.w.bar should be repaired.
(b) Palghar Irrigation Division Manor, Dist-Palghar.						
7	Name:**Wandri** Dist- Palghar Year of completion :- **1984** Location Longitude: -**72° 36′ 00″** Latitude: - **19°36′ 00″** Height: - **28.27 m** Gross capacity:**37.11 Mm^3** Spillway capacity: **605.00Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1164**	13/05/2019 29/11/2019	**Shri. N.S. Dusane** **Shri. R.B. Pawar** **E.E., P.I.D. Manor**	Earth Dam W.W.&T.C	1)U/s slope from RD 540 to 690m shows concavity & settlement in ch.540 to 690m 2)Leakages observed through junction of w.w. and embankment of dam.	Dam section to be restored to design section. Causes of leakages should be investigated & treated accordingly.
8	Name :-**Deocope.** Dist- Palghar Year of Completion:- **1983** Location :- Longitude: -**72° 49′ 00″** Latitude: - **19° 43′ 00″** Height: **17.94 m** Gross capacity: **3.34 Mm^3** Spillway capacity:**101.23 Cumecs** Sr.No.inNational Register of LargeDams: **MH09LH0953**	14/05/2019 27/11/2019	**Shri. N.S. Dusane** **Shri. R.B. Pawar** **E.E., P.I.D. Manor**	Earth Dam W.W.&T.C	1) Clear water oozing near by outlet embankment. @ ch.445 at RL 35.34m. (3.7) 2) Scouring observed at about 102 m of about 1m depth.	Check whether this has any connection with storage. Check the functioning of L&C drains for any obstructions & do necessary action. Scouring should be kept under observation. Necessary repairs may be carried out.

1	2	3	4	5	6	7
9	Name:-**Mohakhurd** Dist- Palghar Date of completion :- **1975** Longitude :- **73° 06' 00"** Latitude :- **19° 45' 00"** Height :- **23.00 m.** Gross capacity **:- 4.89 Mm^3** Design Spillway capacity : **120.00 cumecs** Sr.Noin National register of large Dams: **MH09MH0469**	15/05/2019 28/11/2019	**Shri. N.S. Dusane** **Shri. R.B. Pawar** **E.E., P.I.D. Manor**	Earth Dam	1)There are heavy leakages in right side of dam body.	The repairs should be carried out.
10	Name:-**Raitale.** Dist- Palghar Date of completion :- **1979** Longitude :- **72° 43' 00"** Latitude :- **19° 56' 05"** Height :- **19.00 m.** Gross capacity :-**1. 92 Mm^3** Design Spillway capacity : **112.00 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0748**	15/05/2019 28/11/2019	**Shri. N.S. Dusane** **Shri. R.B. Pawar** **E.E., P.I.D. Manor**	Earth Dam W.W.&T.C	1)U/s side pitching dislocated. 2)Scouring noticed at about 25m of about 1m depth.	Dam section to be restored to design section. Scouring should be kept under observation. Necessary repairs may be carried out.
(c) Raigad Irrigation Division Kolad. Tal –Roha, Dist-Raigad.						
11	Name:**Ambeghar** Raigad Year of Completion:- **1973** Location :- Longitude: -**73^o 07$'$ 00$''$** Latitude: - **18^o 44$'$ 00$''$** Height: - **26.25 m** Gross capacity: **2.54 Mm^3** Spillway capacity: **982.75 Cumecs** Sr.No.inNational Register of LargeDams**: MH09MH0323**	20/05/2019 09/10/2019	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	Earth Dam Outlet W.W&T.C.	1)Dam top 0.15 to 0.30m is settled. 2)Well is totally collapsed in water with gate. 3)Leakage in bet. Concrete pipe and steel pipe on d/s of the outlet before thrust block 4)W.W. Bar completely damaged at more places.	Dam section to be restored to design section. Necessary repairs to be carried out. Leakage in bet. Concrete pipe and steel pipe on d/s of the outlet before thrust block Damaged portion of w.w.bar should be repaired.

1	2	3	4	5	6	7
12	Name:**Bamnoli** Dist-Raigad Year of Completion:- **1974** Longitude: -**73° 11′ 00″** Latitude: - **18° 50′ 00″** Height: - **22.00 m** Gross capacity: **2.53 Mm^3** Spillway capacity:**346.73 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0462**	01/04/2019 03/12/2019	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	Earth Dam Outlet W.W.&T.C	1)Rock toe is damaged in gorge portion. 2) Outlet gate does not open & close smoothly. 3) Leakage through gate & pipe joints. 4) Outlet well is cracked. 5)W.W.Bar totally damaged. 6) Leakage through bar at bottom & flank wall.	Rock toe should be reset as per design profile. The repairs should be carried out either through mechanical organisation, or under its advice. Pipe joints should be repaired & all leakages needs to be attended in time.Causes of exact leakages should be investigated & treated accordingly. Necessary repairs to be carried out. Damaged portion of w.w.bar should be repaired. Location & amount of leakages should be monitored and if large then necessary treatment in the affected area, u/s & d/s should be carried out to control leakage. Necessary repairs to be carried out.
13	Name:- **Dokshet** Raigad Date of completion;- **1972** Longitude :- **73° 17' 00"** Latitude :- **18° 39' 00"** Height :- **11.50 m.** Gross capacity **:2.633 Mm^3** Spillway capacity:-**74.35 cumecs** Sr.No.inNational register of large Dams: **MH09MH0236**	03/05/2019 14/10/2019	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	Outlet	1)H.R.well not in good condition.	Necessary repairs may be carried out.
14	Name:-**Dolwahal weir** Dist-Raigad Date of completion;- **1969** Longitude :- **73° 13' 00"** Latitude :- **18° 25' 00"** Height :- **12.50 m.** Gross capacity **:10.07 Mm^3** Spillway capacity:-**3030 cumecs** Sr.No.inNational register of large Dams: **MH09LH0195**	07/06/2019 07/06/2019	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	Outlet W.W.&T.C	1) The stem rods of all right flank gate are bent. 2) Some portion of right flank wall, guide wall is damaged in flood on dtd 25/07/2005.	Necessary repairs to be carried out. Damaged portion of flankwall, guide wall should be repaired.If necessary repairs to be carried out in consultation with C.D.O., Nashik-4

1	2	3	4	5	6	7
15	Name:-**Ghotawade** Dist-Raigad Date of completion :- **1979** Location : - Longitude :- **73° 18' 45"** Latitude :- **18° 40' 00"** Height :- **18.74 m.** Gross capacity **:2.797 Mm^3** Spillway capacity:**155 cumecs** Sr.No.inNational register of large Dams: **MH09MH0749**	03/05/2019 14/10/2019	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	Outlet W.W.&T.C	1)Outlet well not in good condition. 2)Scouring noticed in tail channel	Necessary repairs to be carried out. Scouring should be kept under observation. Necessary repairs may be carried out.
16	Name:**Kalote Mokashi** Dist-Raigad Year of Completion:- **1976** Location :- Longitude: -**73^o 16' 00"** Latitude: - **18^o 52' 00"** Height: - **27.50 m** Gross capacity:**4.34 Mm^3** Spillway capacity:**173Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0555**	20/05/2019 21/11/2019	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	Earth Dam Outlet W.W.&T.C	1)Top embankment near H.R. well is not in section. 2)Leakage through outlet concrete well & jet of water in the well. 3)Coping of w.w.bar need repairs. 4)Retrogression noticed in tail channel	Dam section to be restored to design section. Rock toe should be reset to design profile. Location & amount of leakages should be monitored and necessary treatment in the affected area, u/s & d/s should be carried out to control leakage. Necessary repairs to be carried out. Necessary repairs to be carried out.
17	Name:**Khindwadi** Raigad Year of Completion:- **1983** Location :- Longitude: -**73^o 24' 00"** Latitude: - **17^o 56' 00"** Height: - **25.05 m** Gross capacity: **2.41 Mm^3** Spillway capacity:**296.00 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0975**	07/05/2019 11/01/2020	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	Earth Dam W.W.&T.C	1)There are standing pool of water on d/s of dam. 2)W.W.bar is not in good condition. Coping badly damaged.	The area should be well drained so as to avoid any stagnant pools of water. The d/s area at least up to above 200m. from toe should be free from stagnation. Damaged portion of w.w.bar should be repaired.

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18	Name:-**Kavele** Dist-Raigad Date of completion :- **1973** Location : - Longitude :- **73° 14' 00"** Latitude :- **18° 37' 00"** Height :- **22. 00 m.** Gross capacity :-**3. 29 Mm^3** Spillway capacity :- **150.00 cumecs** Sr.No.inNational register of large Dams: **MH09MH0334**	03/05/2019 14/10/2019	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	W.W.&T.C	1)Major portion of the masonry flank wall is damaged & leakage over major portion.	Damaged portion of U.C.R.masonry should be repaired.
19	Name:-**Khaire** Dist-Raigad Date of completion;- **1990** Location : - Longitude :- **73° 21' 30"** Latitude :- **18° 02' 30"** Height :- **28.09 m.** Gross capacity**: 1.791 Mm^3** Spillway capacity:-**117.30 cumecs** Sr.No.inNational register of large Dams: **MH09MH1275**	07/05/2019 11/01/2020	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	Earth Dam	1)There is heavy leakage are shown in ch.75 to195m on d/s side at II berm of earthen dam. 2)At some portion of d/s wet patches are observed.	Arrangement for measurement of leakage should be made. Reason (source & location/ path of leakage)should be found out & in consultation of C.D.O.,Nashik & concerned field authorities result oriented remedies should be made precisely to stop these leakages on top priority.
20	Name:-**Kothurde** Dist-Raigad Date of completion;- **1975** Location : - Longitude :- **73° 23' 00"** Latitude :- **18° 12' 00"** Height :- **21.65 m.** Gross capacity**: 2.72 Mm^3** Spillway capacity:-**855.00 cumecs** Sr.No.inNational register of large Dams: **MH09MH0524**	07/05/2019 12/11/2019	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	Earth Dam Outlet	1)General condition of embankment is not good Undulations are observed in some patches. 2) Leakage observed through pipe joints.	Dam section to be restored to design section. Necessary repairs to be carried out.

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21	Name:-**Morbe** Dist-Raigad Date of completion :- **1974** Location : - Longitude :- **73° 13' 00"** Latitude :- **19° 30' 00"** Height :- **20. 78 m.** Gross capacity :-**3.22 Mm^3** Spillway capacity :- **2794 cumecs** Sr.No.inNational register of large Dams: **MH09MH0498**	01/04/2019 21/11/2019	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	Outlet Masonry Dam	1) Bearing damaged, Stem rod bent & cut at height 11m. Large leakage through the body of dam at d/s face.	The repairs should be carried out either through mechanical organisation or under its advice. Causes of leakages should be investigated & treated accordingly.
22	Name:**Phansad** Dist-Raigad Date of completion :- **1984** Location : - Longitude :- **72° 56' 00"** Latitude :- **18° 27' 00"** Height :- **25. 65 m.** Gross capacity :-**2.375 Mm^3** Design Spillway capacity : **240 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1044**	03/04/2019 05/1/2020	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	Earth Dam	Small leakage at d/s first berm level ch.160 to170m. Water is clear.	Arrangement for measurement of leakage should be made. Reason (source & location/ path of leakage)should be found out & in consultation of C.D.O.,Nashik & concerned field authorities result oriented remedies should be made precisely to stop these leakages on top priority.
23	Name:-**Punade** Dist-Raigad Date of completion :- **1991** Location : - Longitude :- **73° 12' 00"** Latitude :- **18° 50' 00"** Height :- **29. 01 m.** Gross capacity :-**1.72 Mm^3** Design Spillway capacity : **46.35 cumecs** Sr.No.inNational register of large Dams: **MH09MH1259**	20/05/2019 03/12/2019	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	Outlet	1) Leakage through pipe joints. 2) Jet of water observed in major quantities.	Necessary repairs to be carried out.

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24	Name:**Sanderi** Dist-Raigad Year of Completion:- **1986** Location :- Longitude: -**73° 14′ 15″** Latitude: - **18° 05′ 00″** Height: - **28.52 m** Gross capacity: **2.496 Mm^3** Spillway capacity:**269.89 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1118**	03/04/2019 11/01/2019	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	Outlet	1)H.R. well is not in good condition. 2) Cavitation in pipe joints. Leakage is observed through coduit pipe joints..	Necessary repairs to be carried out. Necessary repairs to be carried out.
25	Name:-**Unhere** Raigad Date of completion :- **1972** Location : - Longitude :- **73° 12' 00"** Latitude :- **18° 32' 00"** Height :- **16.50 m.** Gross capacity**: 1.859 Mm^3** Spillway capacity:-**262.02 cumecs** Sr.No.inNational register of large Dams: **MH09MH0245**	03/05/2019 14/10/2019	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	Outlet	1) Part of H.R. well above embankment is collapsed.	Necessary repairs to be carried out.
26	Name:-**Usran** Dist-Raigad Date of completion :- **1982** Location : - Longitude :- **73° 10' 00"** Latitude :- **18° 54' 00"** Height :- **22.93 m.** Gross capacity **:- 2.32 Mm^3** Spillway capacity:-**262.02 cumecs** Sr.No.inNational register of large Dams: **MH09MH0909**	01/04/2019 03/12/2019	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	W.W.&T.C	1)W.W.Bar masonry dismantled. 2) Scouring noticed on d/s of w.w.bar at ch. 34m.	Dismantled portion of w.w.bar should be repaired. Scouring should be kept under observation. Necessary repairs may be carried out.

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27	Name:-**Varandh** Dist-Raigad Date of completion :- **1984** Location : - Longitude :- **73° 33' 00"** Latitude :- **18° 08' 00"** Height :- **26.00 m.** Gross capacity **:- 2.17 Mm^3** Spillway capacity:-**219.00** Sr.No.inNational register of large Dams: **MH09MH1040**	07/05/2019 11/01/2020	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	Outlet W.W.&T.C	1)Out let well not in good condtiion due to some cracks. 2) Some portion of wall collapsed in left side of w.w./tail channel	Necessary repairs to be carried out. Damaged portion to repaired.
28	Name:-**Wawa** Dist-Raigad Date of completion :- **1989** Location : - Longitude :- **73° 09' 45"** Latitude :- **18° 17' 15"** Height :- **20.80 m.** Gross capacity **:3.174 Mm^3** Spillway capacity:-**140.00** Sr.No.inNational register of large Dams **MH09MH1460**	21/05/2019 05/01/2020	**Shri. D.M. Godase** **Shri. P.C. Dabhire** **E.E., R.I.D. Kolad**	Earth Dam	1) Right flank a wet patches observed on d/s of dam in bet. two drains.	Causes of leakages should be investigated & treated accordingly.
(2) Ratnagiri Irrigation Circle, Kuwarbav,Ratnagiri. **(a) Ratnagiri Irrigation Division, Kuwarbav,Ratnagiri.**						
29	Name:**Adare** Dist-Ratnagiri Year of Completion:- **1991** Location :- Longitude: -**73^o 34$'$ 00$''$** Latitude: - **17^o 23$'$ 00$''$** Height: - **27.25 m** Gross capacity: **3.424 Mm^3** Spillwaycapacity:**242.81 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1272**	07/06/2019 05/12/2019	**Shri. J.M. Patil E.E. R.I.D Ratnagiri**	Outlet W.W.&T.C	1)Leakage is observed from L.B.H.R. gate @ 10 lit/sec. 2) Protection wall R/Side of tail channel is damaged.	All leakages needs to be attended in time. The leakage may be due to damages or misalignment of stem rod or damages to rubber seals, improper operation of hoist, etc. Damaged portion of protection wall should be repaired.

1	2	3	4	5	6	7
30	Name:-**Gavane** Dist-Ratnagiri Year of Completion:- **1982** Location :- Longitude: -**73° 30′ 00″** Latitude: - **16° 53′ 00″** Height: - **19.63 m** Gross capacity: **1.91 Mm^3** Spillway capacity:**192.83 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0918**	18/05/2019 03/12/2019	**Shri. J.M. Patil E.E. R.I.D Ratnagiri**	Outlet	1) Out let well is not in good condition.There is leakage through bottom masonry of outlet well. 2) Seepage around the pipe observed. Soil is washed away around the wall.	Causes of exact leakages should be investigated & treated accordingly. Necessary remedial measures to be carried out .
31	Name:-**Kalwande** Dist-Ratnagiri Year of Completion:- **1981** Location :- Longitude: -**73° 29′ 00″** Latitude: - **17° 28′ 00″** Height: - **15.56 m** Gross capacity: **1.97 Mm^3** Spillway capacity:**113.45 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0851**	07/06/2019 16/12/2019	**Shri. J.M. Patil E.E. R.I.D Ratnagiri**	Earth Dam	There was leakage through dam body in both side of H.R. line.Water is clear.	Arrangement for measurement of leakage should be made. Reason (source & location/ path of leakage)should be found out & in consultation of C.D.O.,Nashik & concerned field authorities result oriented remedies should be made precisely to stop these leakages on top priority.
32	Name:-**Kelamba** Dist-Ratnagiri Date of completion :- **1980** Location : - Longitude :- **73° 35' 00"** Latitude :- **16° 52' 00"** Height :- **19. 63 m.** Gross capacity :-4**.913 Mm^3** Spillway capacity :- **80.60 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0809**	08/05/2019 03/12/2019	**Shri. J.M. Patil E.E. R.I.D Ratnagiri**	Outlet	1)Out let gate not in working condition from last 10 years.	The repairs should be carried out either through mechanical organisation or under its advice.

1	2	3	4	5	6	7
33	Name:-**Khopad** Dist-Ratnagiri Date of completion :- **1992** Location : - Longitude :- **73° 27' 18"** Latitude :- **17° 32' 18"** Height :- **20. 30 m.** Gross capacity :-**1.863 Mm^3** Spillway capacity :- **502.94 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1292**	24/05/2019 16/12/2019	**Shri. J.M. Patil** **E.E. R.I.D Ratnagiri**	Earth Dam Outlet	1)There is leakage on d/s slope. 2)Leakage at d/s pipe conduit	Causes of leakages should be investigated & treated accordingly. Causes of exact leakages should be investigated & treated accordingly.
34	Name: **Nive** Dist-Ratnagiri Year of Completion:- **1986** Location :- Longitude: -**73° 32′ 30″** Latitude: - **17° 30′ 30″** Height: - **21.92 m** Gross capacity**: 2.617 Mm^3** Spillway capacity: **119.41 Cumecs** Sr.No.inNational Register of LargeDams**: MH09MH1110**	15/05/2019 17/10/2019	**Shri. J.M. Patil** **E.E. R.I.D Ratnagiri**	Outlet W.W.&T.C	1) UCR masonary of outlet well not in good condition 2) Leakage were observed about 50 lit /sec. 3)W.W.bar need repairs.	Necessary repairs to be carried out. Causes of exact leakages should be investigated & treated accordingly. Necessary repairs to be carried out.
35	Name:**Telewadi** Dist-Ratnagiri Year of Completion:- **1978** Longitude: -**73° 36 00″** Latitude: - **17° 11′ 00″** Height: - **23.34 m** Gross capacity**: 2.35Mm^3** Spillway capacity: **231.86 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0696**	15/05/2019 28/11/2019	**Shri. J.M. Patil** **E.E. R.I.D Ratnagiri**	Outlet W.W.&T.C	1) Hoisting arrangement of both outlet gates is collapsed. 2)Leakage through gate & d/s pipe line. 3)Leakage from conduit pipe, joints @ 5 Lit/sec. 4) Both outlet well is in poor condition. 5)W.W.Bar masonry need repairs.	The repairs should be carried out either through mechanical organisation or under its advice. All leakages needs to be attended in time. The leakage may be due to damages or misalignment of stem rod or damages to rubber seals, improper operation of hoist, etc. Causes of exact leakages should be investigated & treated accordingly. Necessary remedial measures to be carried out in consultation with C.D.O. Nashik-4. Necessary repairs to be carried out.

1	2	3	4	5	6	7
36	Name:**Moravane** Dist-Ratnagiri Year of Completion:- **2006** Longitude: -**73° 36 40″** Latitude: - **17° 32′ 55″** Height: - **24.37 m** Gross capacity**: 3.841Mm^3** Spillway capacity: **281.00 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1604**	15/05/2019 29/11/2019	**Shri. J.M. Patil E.E. R.I.D Ratnagiri**	Earth Dam Outlet	1) D/S at HR outlet level minor leakage observed 5 to 10 LPS . 2) Leakages or jets observed from well @ 2 to 5 LPS	Causes of leakages should be investigated & treated accordingly. Necessary repairs to be carried out.
37	Name**:Panderi** Ratnagiri Year of Completion:- **1995** Location :- Longitude: --**73° 13′ 00″** Latitude: - -**18° 03′ 00″** Height: - **27.97 m** Gross capacity: **4.010 Mm^3** Spillway capacity:**1189.98 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1485**	15/05/2019 20/01/2020	**Shri. J.M. Patil E.E. R.I.D Ratnagiri**	Earth dam Outlet W.W.&T.C General	1) Section of the dam is not as per design section in respect of T.W. &slope u/s/&d/s embankment. 2)Water jets along the perphery of well. 3)Total length of guide wall portion of bottom ht.1m is damaged. 4)W.W. bar flank wall damaged & Leakage bet. earthen bank & flank wall junction.	Dam section to be brought to correct design section and level by adding earthwork duly compacted properly. Repointing to masonry on external & internal face wherever is necessary. Necessary repairs to be carried out. Necessary repairs to be carried out.
(b) Sindhudurg Irrigation Division, Ambadpal.						
38	Name: **Chorgewadi** Dist- Sindhudurg Year of Completion:- **1989** Location :- Longitude: -**73° 43′ 36″** Latitude: - **16° 04′ 28″** Height: - **18.78 m** Gross capacity: **3.214 Mm^3** Spillway capacity:**55.59 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1204**	28/05/2019 26/11/2019	**Shri.J.M. Patil Smt.Joti A. Deokar E.E.S.I.D Ambadpal**	Earth Dam W.W.&T.C	1) Oozing noticed on d/s slope ch. 490 to 735. It is clear. 2)There is heavy scouring & retrogression noticed in tail channel.ch.400 to 750m.	Check whether this has any connection with storage. Check the functioning of L&C drains for any obstructions & do necessary action. If retrogression is moving closer to the EDA of spillway or waste weir bar, protective measures should be undertaken to prevent progressive damage. Extent of retrogression should be ascertained and monitors every year by mapping .If the problem of retrogression is moving upstream and serious,for geological investigation the problem may be referred to respective organization for undertaking investigations and studies for evolving suitable solution to the problem.

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39	Name :- **Madkhol** Dist- Sindhudurg Year of Completion:- **1974** Location :- Longitude: -**73° 51′ 00″** Latitude: - **16° 42′ 00″** Height: - **14.70 m** Gross capacity: **2.252 Mm^3** Spillway capacity: **499.80 Cumecs** Sr.No.inNational Register of LargeDams**:MH09MH0437**	21/05/2019 28/11/2019	**Shri.J.M. Patil** **Smt.Joti A. Deokar** **E.E.S.I.D Ambadpal**	Earth Dam.	1)Minor seepage on d/s toe in gorge portion. 2)Standing pool of water on d/s of dam at RD 260m.	Investigate the source of seepage i.e .whether due chocking of drainage arrangement or from embankment & take measures accordingly. The area should be well drained so as to avoid any stagnant pools of water. The d/s area at least up to above 200m. from toe, should be free from stagnation.
40	Name:**-Ozaram** Dist- Sindhudurg Year of Completion:- **1981** Longitude: -**73° 38′ 00″** Latitude: - **16° 27′ 00″** Height: - **18.17 m** Gross capacity:**1.912 Mm^3** Spillwaycapacity: **222.30 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0867**	24/05/2018 02/11/2018	**Shri.J.M. Patil** **Smt.Joti A. Deokar** **E.E.S.I.D Ambadpal**	Earth Dam. W.W.&T.C	1)Minor leakage or oozing noticed on d/s slope at ch.90 to 150m. 2)At d/s face some masonry washed out	Causes of exact leakages should be investigated & treated accordingly. Damaged portion of w.w.bar should be repaired.
41	Name:**-Osargaon** Dist- Sindhudurg Year of Completion:- **1973** Longitude: -**73° 42′ 00″** Latitude: - **16° 12′ 00″** Height: - **16.71 m** Gross capacity:**1.377 Mm^3** Spillwaycapacity1**.30 Cumecs** Sr.No.inNational Register of LargeDams:**MH09MH0321**	28/05/2019 25/11/2019	**Shri.J.M. Patil** **Smt.Joti A. Deokar** **E.E.S.I.D Ambadpal**	Earth Dam. Outlet	1)Leakage on d/s of berm level. It is clear. 2)Leakage from pipe conduit joints. 10 lps	Arrangement for measurement of leakage should be made. Reason (source & location/ path of leakage)should be found out & in consultation of C.D.O.,Nashik & concerned field authorities result oriented remedies should be made precisely to stop these leakages on top priority. Causes of exact leakages should be investigated & treated accordingly.

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42	Name :- **Sanamtemb** Dist- Sindhudurg Year of Completion:- **1992** Location :- Longitude: -**73° 53′ 45″** Latitude: - **15° 59′ 00″** Height: - **21.30 m** Gross capacity: **2.45 Mm^3** Spillway capacity: **181.71Cumecs** Sr.No.inNational Register of LargeDams:**MH09MH1286**	21/05/2019 28/11/2019	**Shri.J.M. Patil** **Smt.Joti A. Deokar** **E.E.S.I.D Ambadpal**	W.W&T.C.	1) Guide wall has been collapsed chances of outflanking	Necessary repairs to be carried out.
(c) Irrigation Project Construction Division, Ratnagiri.						
43	Name**:Talwade** Dist-Sindhudurgnagari Year of gorge filling:- **2004** Location :- Longitude: --**73° 43′ 00″** Latitude: - -**16° 46′ 00″** Height: - **29.18 m** Gross capacity: 4**.640 Mm^3** Spillway capacity:**88.60 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1894**	N.A. 12/11/2019	**Shri.G.H. Salagar E.E. I.P.CD Ratnagiri.**	Outlet	1)The outlet gates do not open and close smoothly. 2) Leakages observed near & around the junction of conduit pipe & earth work.	The repairs should be carried out either through mechanical organisation or under its advice. Causes of leakages should be investigated & treated accordingly.
(d) Irrigation Project Construction Division, Chiplun						
44	Name**:Rangav** Dist- Ratnagiri Year of gorge filling:- **2006** Longitude: --**73° 35′ 44″** Latitude: - -**17° 15′ 55″** Height: - **23.87 m** Gross capacity: **5.524 Mm^3** Spillway capacity:**152.28 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1893**	N.A. 31/12/2019	**Shri. C.K. Godabole E.E. I.P.C.Dn Chiplun**	Earth dam W.W.&T.C	1) Wet patches seen on d/s slope & toe of dam . 2)Leakage observed through d/s both divide wall.	Arrangement for measurement of leakage should be made. Reason (source & location/ path of leakage)should be found out & in consultation of C.D.O.,Nashik & concerned field authorities result oriented remedies should be made precisely to stop these leakages on top priority. Causes of leakages should be investigated & treated accordingly.

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45	Name:**Talwat** Dist- Ratnagiri Year of gorge filling:- **2010** Longitude: --**73° 17′00″** Latitude: - -**17° 18′ 30″** Height: - **26.97 m** Gross capacity: 6**.650 Mm^3** Spillway capacity:**338.10 cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1895**	N.A. 16/12/2019	**Shri. C.K. Godabole E.E. I.P.C.Dn Chiplun**	Earth dam	There is certain leakage between second berm & rocktoe.	Arrangement for measurement of leakage should be made. Reason (source & location/ path of leakage)should be found out & in consultation of C.D.O.,Nashik & concerned field authorities result oriented remedies should be made precisely to stop these leakages on top priority.
(3) North Konkan Irrigation Project Circle, Thane. (a) Raigad Irrigation Division No.2, New Mumbai.						
46	Name**: Dhasai** Dist-Thane Year of Completion:- **1984** Longitude: -**73° 36′ 00″** Location :- Latitude: - **19° 15′ 00″** Height: - **28.00 m** Gross capacity:**5.012 Mm^3** Spillway capacity:**602.38Cumecs** Sr.No.inNational Register of Large Dams:**MH09MH1020**	N.A. 04/11/2019	**Shri. Dineshri Rajbhoj E.E. Raigad Irr.Dn. No.2 New Mumbai**	Earth Dam W.W.&T.C	1) At hillock behind dam ch.405 to 465 m water continusly percolates in a length of 150m . 2) Water jets & leakages in the length of 40 % of bar. Leakages between joints of bar & right flank wall. 3)The stone masonry of wall is deteriorated in length 20 to 25m in patches. Coping of the wall in length 10m is washed out. The Chute wall is washed out .	1) Leakages appearing on down stream, through pervious & weak stratas in abutments should be treated with impervious soil blanket or filling on upstream side, after identification of leaky & pervious rocks. If upstream treatment is not possible then immediately suitable drainage system should be provided on downstream to prevent piping, erosions etc. 2) Location & amount of leakages should be ascertained and necessary treatment in the affected portion, u/s & d/s should be carried out to control leakage. 3) Necessary repairs to be carried out.
(b) Palghar Irrigation Project Construction Division, Suryanagar.						
47	Name:-**Tulyachapada** Dist- Palghar Year of Completion:- **1995** Location :- Longitude: --**73° 25′ 00″** Latitude: - -**19° 58′ 00″** Height: - **21.58 m** Gross capacity: **1.985 Mm^3** Spillway capacity:**545.15 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1349**	09/05/2019 01/11/2019	**Shri. S.S. Thakur E.E. Palghar Irr.Project Const.Dn. Surya-nagar.**	Earth Dam	1) Wet patches at ch. 60m was found on d/s of dam.	Necessary repairs to be carried out.

1	2	3	4	5	6	7
(c) Irrigation Project Construction Division,Shahapur.						
48	Name:-**Padale** Dist- Thane Year of Completion:- **2010** Location :- Longitude: --**72° 35′ 55″** Latitude: - -**19° 13′ 35″** Height: - **26.66 m** Gross capacity: **7.857 Mm³** Spillway capacity**: 682.95 Cumecs** Sr.No.inNational Register of LargeDams**: MH09MH1853**	10/05/2019 06/11/2019	**Shri. S.S. Thakur** **Shri. S.G. Gadhe** **I.P.C.Dn Shahapur**	Earth Dam	1) Leakage through dam body at ch.190m, 297m, 310m at RL.136.90, 128.30 &136.50 m on d/s of dam. Less amount of leak water & no turbidity 2) There are standing pool of water on d/s of dam.	Arrangement for measurement of leakage should be made. Reason (source & location/ path of leakage)should be found out & in consultation of C.D.O.,Nashik & concerned field authorities result oriented remedies should be made precisely to stop these leakages on top priority. The area should be well drained so as to avoid any stagnant pools of water. The d/s area at least up to/ above 200m. from toe, should be free from stagnation.
(d) Hetawane Medium Project Division Kamarli						
49	Name**:Panhalghar,** Raigad Year of Completion:- **2001** Location : - Longitude: --**73° 03′ 00″** Latitude: - -**18° 03′ 00″** Height: - **19.25 m** Gross capacity: **3.230 Mm³** Spillway capacity:**95.90 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1565**	13/05/2019 18/11/2019	**Shri. S. G. Gadhe** **E.E.** **H.M.P.Dn Kamarli**	Earth dam	1)There is wet patches, leakage on d/s of the dam. ch.300 to 800m. 2) There are standing pool of water on d/s of dam. Ch.405m about 7	Arrangement for measurement of leakage should be made. Reason (source & location/ path of leakage)should be found out & in consultation of C.D.O.,Nashik & concerned field authorities result oriented remedies should be made precisely to stop these leakages on top priority. The area should be well drained so as to avoid any stagnant pools of water. The d/s area at least up to/ above 200m. from toe, should be free from stagnation.
[1] Chief Engineer, Small Scale Irrigation (W.C.),Pune. **(1) Regional Water Coservation Officer,Soil & Water Coservation, Thane.** **(a) District Water Coservation Officer, Soil & Water Coservation Dn, Thane.**						
50	Name**:Aswali** Dist- Palghar Year of Completion:- **1996** Location : - Longitude: -**72° 48′ 30″** Latitude: - **20° 48′ 00″** Height: - **23.83 m** Gross capacity: **2.083 Mm³** Spillway capacity: 209.97 **cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1394**	09/05/2019 04/11/2019	**Shri. A.B. Phunde** **District WC officer, Thane**	Earth Dam W.W.&T.C	1) Settlement of embankment is seen between ch. 45m to 365m on upstream side. 2) There is scouring at D/S of bar.	Dam section to be restored to design section. Scouring should be kept under observation. Necessary repairs to be carried out.

1	2	3	4	5	6	7
51	Name**:Devle** Dist-Raigad Year of Completion:- **2003** Location : - Longitude: -**73° 33′ 00″** Latitude: - **17° 58′ 00″** Height: - **29.30 m** Gross capacity:**1.23 Mm^3** Spillway capacity**:78.16 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH1614**	08/05/2019 24/11/2019	**Shri. A.B. Phunde District WC officer, Thane**	Earth Dam W.W.&T.C	1)There is noticeable leakage atRL 118 & 112m. when water level reaches RL 121m. 2)Scouring is noticed in tail channel at Ch 20 to 60.	Arrangement for measurement of leakage should be made. Reason (source & location/ path of leakage)should be found out & in consultation of C.D.O.,Nashik & concerned field authorities result oriented remedies should be made precisely to stop these leakages on top priority. Scouring should be kept under observation. Necessary repairs to be carried out.
52	Name**:Karvel** Dist-Thane Year of Completion:- **1996** Location : - Longitude: -**72° 51′ 30″** Latitude: - **19° 33′ 00″** Height: - **26.00 m** Gross capacity: **3.135 Mm^3** Spillwaycapacity: **89.74 Cumec** Sr.No.inNational Register of LargeDams: **MH09MH1406**	08/07/2019 04/11/2019	**Shri. A.B. Phunde District WC officer, Thane**	Earth Dam W.W.&T.C	1) General condition of the embankment is not good. Settlement on U/S @ RD 180 to 280 m. 2)The UCR masonry is not in good condition. There is heavy leakage from UCR masonary bar. 3)There is retrogression or scouring noticed in tail channel.ch.40m. to onawards	Dam section to be restored to design section. Necessary repairs to UCR masonry should be carried out. Causes of leakages should be investigated & treated accordingly. Scouring should be kept under observation. Necessary repairs to be carried out.
53	Name: **Kharsai** Dist-Raigad Year of Completion:- 2012 Location : - Longitude: -**73° 07′ 30″** Latitude: - **18° 10′ 00″** Height: - 29 m Gross capacity: 1.954 MM3 Sr.No.inNational Register of LargeDams:MH09MH1685	08/05/2019 28/11/2019	**Shri. A.B. Phunde District WC officer, Thane**	Earth Dam	1) Leakage is noticed on downstream slope at RL 104.00 m between CH 90 to 165m. 2)The d/s slope indicates concavity near d/s conduit.	Arrangement for measurement of leakage should be made. Reason (source & location/ path of leakage)should be found out & in consultation of C.D.O.,Nashik & concerned field authorities result oriented remedies should be made precisely to stop these leakages on top priority. Dam section to be restored to design section.

1	2	3	4	5	6	7
54	Name: **Pashane** Dist-Raigad Year of Completion:- 1998 Location : - Longitude: -**73° 14′ 00″** Latitude: - **19° 06′ 30″** Height: - 25.94 m Gross capacity: 2.987 Mm3 Spillwaycapacity: 72.40 Cumec Sr.No.inNational Register of LargeDams: MH09MH1205	09/04/2019 05/11/2019	**Shri. A.B. Phunde District WC officer, Thane**	Earth dam	1)Leakage or oozing is seen on downstream side slope of dam from ch. 320 to 450m. RL 89	Arrangement for measurement of leakage should be made. Reason (source & location/ path of leakage)should be found out & in consultation of C.D.O.,Nashik & concerned field authorities result oriented remedies should be made precisely to stop these leakages on top priority.
(a) District Water Coservation Officer, Soil & Water Coservation Dn, Ratnagiri.						
55	Name: **Morde**Dist.Ratnagiri Year of Completion:- 2001 Location : - Longitude: -**73° 39′ 30″** Latitude: - **17° 30′ 00″** Height: - 28.09 m Gross capacity: 2.090 Mm3 Spillwaycapacity: 58.905 Cumec Sr.No.inNational Register of LargeDams: MH09MH1562	09/05/2019 13/11/2019	**Shri P.A. Deshmukh** **Shri S.S. Patole,** **District WC officer, Ratnagiri**	Outlet W.W.&T.C	1)Leakages or jets observed in the well 2)Seepage is observed through junction of embankment and spillway.	Repointing to masonry on external & internal face wherever is necessary. Causes of leakages should be investigated & treated accordingly.
56	Name: **Juwathi** Dist-Ratnagiri Year of Completion:- 2004 Location : - Longitude: -**73° 32′ 00″** Latitude: - **16° 34′ 00″** Height: - 27.58 m Gross capacity: 2.234 Mm3 Sr.No.inNational Register of LargeDams: MH09MH1637	09/05/2019 17/01/2020	**Shri P.A. Deshmukh** **Shri S.S. Patole,** **District WC officer, Ratnagiri**	Earth dam	Minor leakage or oozing is noticed on d/s is noticed	Causes of leakages should be investigated & treated accordingly.

1	2	3	4	5	6	7
57	Name: **Kokisare** Dist-Sindhudurg Year of Completion:- 1999 Longitude: -**73° 44′ 30″** Latitude: - **16° 30′ 19″** Height: - 24.11 m Gross capacity: 1.845 Mm3 Spillwaycapacity: 23.97 Cumec Sr.No.inNational Register of LargeDams: MH09MH1524	16/05/2019 07/12/2019	**Shri P.A. Deshmukh** **Shri S.S. Patole,** **District WC officer, Ratnagiri**	Earth dam	1)Standing pools of water are seen on downstream side. 2)Leakage is noticed on downstream slope	The area should be well drained so as to avoid any stagnant pools of water. The d/s area at least up to/ above 200m. from toe, should be free from stagnation. Arrangement for measurement of leakage should be made. Reason (source & location/ path of leakage)should be found out & in consultation of C.D.O.,Nashik & concerned field authorities result oriented remedies should be made precisely to stop these leakages on top priority.
58	Name: **Gopalwadi** Dist-Ratnagiri Year of Completion:- 1993 Longitude: -**72° 51′ 30″** Latitude: - **16° 36′ 00″** Height: - 22.66 m Gross capacity: 1.706 Mm3 Sr.No.inNational Register of LargeDams: MH09MH1306	09/05/2019 17/01/2020	**Shri P.A. Deshmukh** **Shri S.S. Patole,** **District WC officer, Ratnagiri**	Earth dam	Minor leakage is noticed on d/s side slope of dam.	Causes of leakages should be investigated & treated accordingly.
59	Name**Sukondi Waghiwane** Dist-Ratnagiri Year of Completion:- 1993 Longitude: -**72° 51′ 30″** Latitude: - **16° 36′ 00″** Height: - 22.66 m Gross capacity: 1.706 Mm3 Sr.No.inNational Register of LargeDams: MH09MH1306	09/05/2019 13/11/2019	**Shri P.A. Deshmukh** **Shri S.S. Patole,** **District WC officer, Ratnagiri**	Outlet	Major leakages are observed through outlet wall. (A6)	Arrangement for measurement of leakage should be made. Reason (source & location/ path of leakage)should be found out & in consultation of C.D.O.,Nashik & concerned field authorities result oriented remedies should be made precisely to stop these leakages on top priority.
60	Name: **Chinchali** Ratnagiri Year of Completion:- 2004 Location : - Longitude: -**73° 23′ 30″** Latitude: - **18° 10′ 45″** Height: - 27.80 m Gross capacity: 2.14 Mm3 Spillwaycapacity: 421.40 Cumec Sr.No.inNational Register of LargeDams: MH09MH1632	09/05/2019 13/11/2019	**Shri P.A. Deshmukh** **Shri S.S. Patole,** **District WC officer, Ratnagiri**	W.W.&T.C	Major leakages are observed through R/S flank wall.	Causes of leakages should be investigated & treated accordingly.

1	2	3	4	5	6	7
61	Name: **Tivare** Dist-Ratnagiri Year of Completion:- 2004 Location : - Longitude: -**73° 42′ 00″** Latitude: - **17° 36′ 35″** Height: - 28.00 m Gross capacity: 2.451 Mm3 Spillwaycapacity: 420.35 Cumec Sr.No.inNational Register of LargeDams: MH09MH1636	09/05/2019 13/11/2019	**Shri P.A. Deshmukh** **Shri S.S. Patole,** **District WC officer, Ratnagiri**	Earthen Embankment	Dam was breached from CH. 40m. to 160m. on 2nd July 2019	Dam section Should be restored as per designs.

Table 2.11

Damwise Health status report of Class-II dams with category-3 deficiency

Sr. No	Name of Dam	Date of Compl-etion	Location Longitude Latitude	Height in m	Gross Capacity Mm^3	Design Spillway Capacity m^3 / sec	Sr.No. in NRLD Register	Date of Inspection	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11
[1] CE,WR,(Konkan), Mumbai. **(1) Thane Irrigation Circle, Thane** **(a) Thane Irrigation Division, Kalwa,Thane**										
1	**Adivali,** Dist-Thane	1980	71° 31'00" 19°25'00"	21.52	2.22	245.56	MH09MH0824	13/05/2019 17/11/2019	3.7,3.20,3.22	3
2	**Bhoj,** Dist-Thane	1972	73° 10'00" 19°09'00"	22.25	2.52	162.25	MH09MH0050	15/05/2019 18/10/2019	3.5,3.6,3.22,3.33	4
3	**Dolkhamb,** Dist-Thane	1972	73° 34'00" 19°30'00"	19.76	4.703	262.89	MH09MH0274	13/05/2019 17/11/2019	3.7,3.19,3.20,3.28,3.33	5
4	**Dongaste,** Dist-Thane	1983	73° 57'00" 19°30'00"	17.94	4.03	178.00	MH09MH0339	17/05/2019 18/12/2019	3.5,3.7,3.22	3
5	**Hattipada,** Dist-Thane	1982	73° 57'00" 19°30'00"	21.34	2.058	154.00	MH09MH0858	20/05/2019 25/11/2019	3.7,3.33,3.35	3
6	**Jambhe** Dist-Thane	1972	72° 20'00" 19°24'00"	13.65	5.18	455.19	MH09MH0302	13/05/2019 17/11/2019	3.6,3.19,3.20,3.22,3.33	5
7	**Jambhivali** Dist-Thane	1978	73° 10'00" 19°09'00"	23.40	2.26	111.92	MH09MH0671	15/05/2019 18/10/2019	3.5,3.6,3.22,3.35	4
8	**Jambhurde** Dist-Thane	1984	73° 30'00" 19°10'00"	25.00	3.064	207.00	MH09MH1036	10/05/2019 07/12/2019	3.3,3.5,3.7,3.20,3.22	5
9	**Khandpe** Dist-Thane	1975	73° 28'00" 19°18'00"	20.29	2.05	98.97	MH09MH1092	10/05/2019 07/12/2019	3.5, 3.7,3.20, 3.22,3.28	5
10	**Kharde** Dist-Thane	1985	73° 33'00" 19°29'00"	22.31	2.316	126.77	MH09MH1068	13/05/2019 17/11/2019	3.6,3.7,3.20,3.22, 3.28	5
11	**Khoch** Dist-Thane	1981	73° 24'00" 19°53'00"	22.07	1.989	134.00	MH09MH0813	17/05/2019 18/12/2019	3.6,3.19,3.20,3.22	4
12	**Maniwali** Dist-Thane	1980	73° 36'00" 19°17'00"	18.40	4.808	163.43	MH09MH0814	10/05/2019 07/12/2019	3.7,3.19,3.20,3.22,3.33	5
13	**Musai** Dist-Thane	1972	73° 28'00" 18°28'00"	17.90	3.80	100.58	MH09MH0237	13/05/2019 17/11/2019	3.7,3.20,3.21,3.22,3.28	5
14	**Pimpurna** Dist-Thane	1994	73° 10'00" 20°37'00"	17.45	2.409	259.00	MH09MH1324	17/05/2019 18/12/2019	3.22,3.33	2

1	2	3	4	5	6	7	8	9	10	11
15	**Thokarwadi** Dist-Thane	1977	73° 16'00" 19°14'00"	18.00	3.741	112.00	MH09MH0604	10/05/2019 07/12/2019	3.5, 3.7,3.19,3.20,3.22,3.35	6
16	**Usgaon** Dist-Thane	1978	73° 26'00" 19°14'00"	19.57	5.16	215.21	MH09MH0614	20/05/2019 25/11/2019	3.3,3.7,3.28	3
17	**Velholi** Dist-Thane	1978	73° 30'00" 19°61'00"	24.53	3.245	89.48	MH09MH0669	13/05/2019 17/11/2019	3.6,3.7,3.20,3.22,3.28	5
18	**Vanjale** Dist-Thane	1985	73° 21'00" 19°51'06"	18.59	1.61	040.20	MH09MH1064	10/05/2019 07/12/2019	3.7,3.20,3.22	3
(b) Palghar Irrigation Division Manor.										
19	**Kawadas.** Dist- Palghar	1979	73° 58'00" 19°55'00"	28.08	13.70	3700.00	MH09MH0799	13/05/2019 30/11/2018	3.7	1
20	**Wandri** Dist- Palgha	1984	72° 36'00" 19°36'00"	28.27	37.11	605.00	MH09MH1164	13/05/2019 29/11/2019	3.5,3.7,3.16,3.19,3.20, 3.22	6
21	**Deokope,** Dist- Palghar	1983	72° 49'00" 19°43'00"	17.94	3.34	101.23	MH09LH0953	14/05/2019 27/11/2019	3.5,3.7,3.19	3
22	**Khand,** Dist- Palghar	1973	73° 07'00" 15°46'00"	20.00	4.76	293.25	MH09MH0354	15/05/2019 28/11/2019	3.7,3.19	2
23	**MahimKelwa** Dist- Palghar	1981	72° 49'30" 19°14'00"	17.80	3.399	207.00	MH09MH0863	14/05/2019 27/11/2019	3.7,3.22,3.35	3
24	**Manor** Dist- Palghar	1979	72° 53'00" 19°43'00"	23.70	2.52	68.63	MH09MH0805	14/05/2019 27/11/2019	3.19,3.22	2
25	**Mohakhurd** Dist- Palghar	1975	73° 06'00" 19°45'00"	23.00	4.89	120.00	MH09MH0469	15/05/2019 28/11/2019	3.22	1
26	**Raitale** Dist- Palghar	1979	72° 43'00" 19°56'05"	19.00	1.92	112.00	MH09MH0748	15/05/2019 28/11/2019	3.7,3.19,3.22	3
(c) Raigad Irrigation Division Kolad.Tal –Roha,Dist-Raigad.										
27	**Ambeghar** Raigad	1973	73°07'00" 18°44' 00"	26.25	2.54	982.75	MH09MH0323	20/05/2019 09/10/2019	3.5,3.7,3.22	3
28	**Ausare** Dist-Raigad	1984	73°20'00" 19°04' 00"	20.62	1.95	58.00	MH09MH1019	01/04/2019 21/11/2019	3.5,3.7,3.20,3.21,3.22,3.33	6
29	**Bamnoli** Dist-Raigad	1973	73°11'00" 18°50' 00"	22.00	2.53	346.73	MH09MH0462	01/04/2019 03/12/2019	3.5,3.7,3.19,3.20,3.33	5
30	**Bhilawle** Dist-Raigad	1973	73°17'00" 18°54' 00"	18.76	2.35	225.00	MH09MH0422	15/04/2019 21/11/2019	3.9,3.19,3.20,3.22,3.33	5
31	**Dokshet** Raigad	1972	73°17'00" 18°39' 00"	11.50	2.633	74.35	MH09MH0236	03/05/2019 14/10/2019	3.6,3.7,3.20,3.28	4

1	2	3	4	5	6	7	8	9	10	11
32	**Dolwahal weir** Dist-Raigad	1969	73°13′00″ 18°25′ 00″	12.50	10.07	3030.00	MH09LH0195	07/06/2019 01/11/2018	3.19,3.20,3.22	3
33	**Donwat** Dist-Raigad	1972	73°16′00″ 18°48′ 00″	20.36	3.38	116.00	MH09MH0273	15/04/2019 19/11/2019	3.7,3.19,3.33	3
34	**Ghotawade** Dist-Raigad	1979	73°18′00″ 18°40′ 00″	18.74	2.797	155.00	MH09MH0749	03/05/2019 14/10/2019	3.6,3.7,3.19,3.20,3.28	5
35	**Kalote Mokashi** Dist-Raigad	1976	73°16′00″ 18°52′ 00″	27.50	4.34	173.00	MH09MH0555	20/05/2019 21/11/2019	3.5,3.7,3.19,3.20,3.35	5
36	**Karle** Dist-Raigad	1984	73°00′00″ 18°14′ 00″	23.33	2.084	34.08	MH09MH1017	03/04/2019 05/01/2020	3.7,3.22	2
37	**Khaire** Dist-Raigad	1990	73°21′00″ 18°02′ 30″	28.09	1.791	117.30	MH09MH1275	07/05/2019 11/01/2020	3.5,3.7,3.21,3.22,3.28	5
38	**Khindwadi** Raigad	1983	73°24′00″ 17°56′ 30″	25.05	2.41	296.00	MH09MH0975	07/05/2019 11/01/2020	3.5,3.7,3.21,3.22,3.28,3.35	6
39	**Kavele** Dist-Raigad	1973	73°14′00″ 18°37′ 00″	22.00	3.29	150.00	MH09MH0334	03/05/2019 14/10/2019	3.7,3.20,3.33	3
40	**Kondagaon** Dist-Raigad	1979	73°18′00″ 18°36′ 00″	22.47	3.769	220.00	MH09MH0701	03/05/2019 14/10/2019	3.6,3.7,3.20,3.21,3.28	5
41	**Kothurde** Dist-Raigad	1975	73°23′00″ 18°12′ 00″	21.65	2.72	855.00	MH09MH0524	07/05/2019 12/11/2019	3.5,3.7,3.20,3.21,3.22,3.35	6
42	**Kudaki** Dist-Raigad	1984	73°00′00″ 18°12′ 00″	24.30	1.87	108.00	MH09MH1025	03/04/2019 05/01/2020	3.6,3.7,3.28	3
43	**Morbe** Dist-Raigad	1974	73°13′00″ 19°30′ 00″	20.78	3.22	2794.00	MH09MH0498	01/04/2019 21/11/2019	3.16,3.20,3.22	3
44	**Pabhare** Dist-Raigad	1974	73°07′00″ 18°10′ 00″	22.90	2.287	375.93	MH09MH0297	14/05/2019 05/01/2020	3.7	1
45	**Phansad** Dist-Raigad	1984	72°56′00″ 18°27′ 00″	25.65	2.375	240.00	MH09MH1044	21/05/2019 05/01/2020	3.5,3.7,3.21,3.22,3.33,3.35	6
46	**Punade** Dist-Raigad	1991	73°12′00″ 18°50′ 00″	29.01	1.72	46.35	MH09MH1259	20/05/2019 03/12/2019	3.5,3.7,3.22	3
47	**Ranivali** Dist-Raigad	1977	73°04′00″ 18°04′ 00″	24.47	2.272	68.16	MH09MH0461	03/04/2019 05/01/2020	3.7,3.19,3.21,3.22	4
48	**Salokh** Dist-Raigad	1980	73°22′00″ 19°07′ 00″	21.60	2.334	73.23	MH09MH0806	01/04/2019 21/11/2019	3.5,3.7,3.20,3.21,3.22,3.33, 3.35	7
49	**Sanderi** Dist-Raigad	1986	73°14′15″ 18°05′ 00″	28.52	2.496	269.89	MH09MH1118	03/04/2019 11/01/2020	3.7,3.22	2

1	2	3	4	5	6	7	8	9	10	11
50	**Shrigaon** Dist-Raigad	1987	73°00′00″ 18°39′ 08″	23.41	3.003	68.22	MH09MH0743	20/05/2019 05/01/2020	3.5,3.7,3.20,3.22	4
51	**Sutarwadi** Dist-Raigad	1977	73°18′00″ 18°25′ 00″	16.39	2.319	148.00	MH09MH0607	31/05/2019 15/10/2019	3.5,3.7,3.20,3.22	4
52	**Unhere** Raigad	1972	73°12′00″ 18°32′00″	16.50	1.859	262.02	MH09MH0245	03/05/2019 14/10/2019	3.6,3.7,3.19,3.22,3.28,3.35	6
53	**Usran** Dist-Raigad	1982	73°10′00″ 18°54′00″	22.93	2.32	262.02	MH09MH0909	01/04/2019 03/12/2019	3.7,3.19,3.20,3.22	4
54	**Varandh** Dist-Raigad	1984	73°33′00″ 18°08′00″	26.00	2.17	219.00	MH09MH1040	07/05/2019 11/01/2020	3.5, 3.16,3.21,3.22	4
55	**Wawa** Dist-Raigad	1989	73°09′45″ 18°17′15″	20.80	3.174	140.00	MH09MH1460	21/05/2019 05/01/2020	3.5,3.7,3.16,3.21,3.22	5
(2) Ratnagiri Irrigation Circle, Kuwarbav, Ratnagiri. **(a) Ratnagiri Irrigation Division Kuwarbav, Ratnagiri.**										
56	**Adare** Dist-Ratnagiri	1991	73°34′00″ 17°23′ 00″	27.25	3.424	242.81	MH09MH1272	07/06/2019 05/12/2019	3.5,3.7	2
57	**Ambatkhol** Dist-Ratnagiri	1979	73°31′01″ 17°22′ 00″	23.73	2.405	212.37	MH09MH0754	07/06/2019 05/12/2019	3.20	1
58	**Asurde** Dist-Ratnagiri	1991	73°31′00″ 17°22′ 00″	23.42	1.85	46.70	MH09MH1260	24/05/2019 05/12/2019	3.5,3.7,3.22	3
59	**Beni** Dist-Ratnagiri	1981	73°35′00″ 16°57′ 00″	17.00	2.446	157.80	MH09MH0855	18/05/2019 03/12/2019	3.7	1
60	**Diwalwadi,** Dist-Ratnagiri	1988	73°44′00″ 16°43′ 00″	28.00	3.538	89.00	MH09MH1181	12/05/2019 04/01/2020	3.1,3.33	2
61	**Gavane** Dist-Ratnagiri	1982	73°30′00″ 16°53′ 00″	19.63	1.91	192.83	MH09MH0918	18/05/2019 03/12/2019	3.22	1
62	**Guhagar** Dist-Ratnagiri	1974	73°16′00″ 17° 29′00″	19.13	4.47	305.99	MH09MH0412	07/06/2019 29/11/2019	3.1,3.35	2
63	**Kadwai.** Dist-Ratnagiri	1982	73°34′00″ 17°17′ 00″	25.50	1.765	169.89	MH09MH0917	15/05/2019 21/11/2019	3.22,3.35	2
64	**Kalwande** Dist-Ratnagiri	1981	73°29’ 00” 17°28’00”	15.56	1. 97	113.45	MH09MH0851	07/06/2019 16/12/2019	3.1,3.5,3.22,3.33	4
65	**Kelamba** Dist-Ratnagiri	1980	73°35′00″ 16°52′ 00″	19.63	4.913	80.60	MH09MH0809	08/05/2019 03/12/2019	3.20	1
66	**Khopad** Dist-Ratnagiri	1992	73°27’18” 17°32’18”	20.30	1.863	502.94	MH09MH1292	24/05/2019 16/12/2019	3.19,3.22	2

1	2	3	4	5	6	7	8	9	10	11
67	**Kondye** Dist-Ratnagiri	1994	73°35′00″ 16°35′ 00″	28.42	1.741	27.30	MH09MH1321	12/05/2019 04/01/2020	3.22	1
68	**Malghar** Dist-Ratnagiri	1981	73°32'30" 17°28'30"	14.60	2.010	546.31	MH09LH0890	24/05/2019 16/12/2019	3.2	1
69	**Nive** Dist-Ratnagiri	1986	73°32′00″ 17°30′ 30″	21.92	2.617	119.41	MH09MH1110	15/05/2019 17/10/2019	3.19,3.35	2
70	**Phanaswadi,** Dist-Ratnagiri	1972	73°10′45″ 17°39′ 00″	20.00	1.408	345.65	MH09MH0292	24/05/2019 05/12/2019	3.7,3.22	2
71	**Shiposhi** Dist-Ratnagiri	1978	73°38′00″ 16°56′ 00″	24.08	2.605	91.08	MH09MH0668	04/05/2019 03/12/2019	3.3,3.20,3.22,3.35	4
72	**Shirawali** Dist-Ratnagiri	1971	73°26′00″ 17°45′ 00″	18.02	3.368	418.41	MH09MH0257	10/05/2019 20/11/2019	3.5,3.19,3.20,3.22	4
73	**Sondheghar** Dist-Ratnagiri	1980	73°17′00″ 17°48′ 00″	22.85	2.851	395.16	MH09MH0827	15/05/2019 20/11/2019	3.19,3.20,3.33,3.35	4
74	**Telewadi** Dist-Ratnagiri	1978	73°36′00″ 17°11′ 00″	23.34	2.35	231.86	MH09MH0696	15/05/2019 28/11/2019	3.3,3.5,3.22,3.35	4
75	**Vhel** Dist-Ratnagiri	1979	73°48′00″ 16°43′ 00″	19.39	1.544	200.01	MH09MH0745	04/05/2019 03/12/2019	3.21,3.22,3.35	3
76	**Zapade** Dist-Ratnagiri	1984	73°31′00″ 16°51′ 00″	25.06	1.671	104.32	MH09MH1024	15/05/2019 03/12/2019	3.20,3.35	2
77	**Morawane** Dist-Ratnagiri	2006	73°36′40″ 17°32′55″	24.37	3.841	281	MH09MH1604	07/06/2019 29/11/2019	3.1,3.5,3.19,3.22,3.33,3.35	6
78	**Panchanadi** Dist-Ratnagiri	1984	73°10′00″ 17°12′ 15″	25.92	1.738	73.97	MH09MH0997	15/05/2019 20/01/2020	3.16,3.20,3.22	3
79	**Panderi** Dist-Ratnagiri	1995	73°13′00″ 18°03′00″	27.97	4.010	1189.98	MH09MH1485	15/05/2019 20/01/2020	3.5,3.7,3.20,3.22,3.33	5
(b) Sindhudurg Irrigation Division, Ambadpal.										
80	**Amboli** Dist.Sindhudurg	1979	73° 04′00″ 16° 00′ 00″	26.32	1.779	96.65	MH09MH0746	21/05/2019 28/11/2019	3.5,3.7,3.19,3.21,3.22	5
81	**Chorgewadi** Dist.Sindhudurg	1989	73°43′36′′ 16° 04′28′′	18.78	3.214	55.59	MH09MH1204	28/05/2019 26/11/2019	3.5,3.23	2
82	**Dabhachiwadi** Dist.Sindhudurg	1993	73°41′18′′ 16° 06′18′′	15.79	2.441	38.07	MH09MH1300	28/05/2019 26/11/2019	3.33	1
83	**Harkul** Dist.Sindhudurg	1976	73° 48′00″ 16° 19′ 00″	19.50	2.662	237.00	MH09MH0565	28/05/2019 25/11/2019	3.5,3.21,3.35	3
84	**Karivade** Dist.Sindhudurg	2000	73°52′00″ 15° 55′ 00″	25.00	1.414	28.70	MH09MH1525	21/05/2019 28/11/2019	3.7,3.34	2

1	2	3	4	5	6	7	8	9	10	11
85	**Lore** Dist-Ratnagiri	1974	73°46′00″ 16°20′ 00″	15.18	1.836	2.35	MH09MH0324	08/05/2019 25/11/2019	3.5,3.7,3.22,3.33	4
86	**Madkhol** Dist.Sindhudurg	1974	73°51′00″ 16° 42′ 00″	14.70	2.252	499.80	MH09MH0437	21/05/2019 28/11/2019	3.21	1
87	**Nileli** Dist.Sindhudurg	1978	73°51′00″ 16° 02′ 00″	22.38	1.843	234.15	MH09MH0667	08/05/2019 26/11/2019	3.5,3.6,3.7,3.19,3.22	5
88	**Oras(BK) Gawadewadi**	1986	73°43′00″ 16°07′ 00″	23.60	2.419	37.10	MH09MH1105	28/05/2019 26/11/2019	3.5,3.19	2
89	**Oras (Kamanadevi)**	1986	73°40′30″ 16°07′ 06″	20.70	2.419	37.00	MH09MH1106	28/05/2019 26/11/2019	3.20,3.23	2
90	**Osargaon** Dist.Sindhudurg	1973	73°42′00″ 16°12′ 00″	16.71	1.377	1.30	MH09MH0321	28/05/2019 25/11/2019	3.5,3.7,3.22	3
91	**Ozaram** Dist.Sindhudurg	1981	73°38′00″ 16°27′ 00″	18.17	1.912	222.30	MH09MH0867	08/05/2019 25/11/2019	3.22,3.33	2
92	**Pawashi** Dist.Sindhudurg	1976	73°42′00″ 16°02′ 00″	17.50	3.256	284.00	MH09MH0571	08/05/2019 26/11/2019	3.5,3.7,3.20	3
93	**Pulas** Dist.Sindhudurg	1981	73°52′00″ 16°01′00″	17.00	1.535	94.60	MH09MH0848	08/05/2019 26/11/2019	3.5,3.23	2
94	**Sanamtemb** Dist.Sindhudurg	1992	73°53′45″ 16°59′00″	21.30	2.45	181.71	MH09MH1286	21/05/2019 28/11/2019	3.5,3.6,3.7,3.16	4
95	**Shirgaon** Dist.Sindhudurg	1979	73°34′00″ 16°24′ 00″	20.68	1.608	42.30	MH09MH0743	28/05/2019 26/11/2019	3.7	1
96	**Shirwal** Dist.Sindhudurg	1977	73°58′30″ 16°19′ 06″	25.25	3.752	159.30	MH09MH0608	21/05/2019 05/12/2019	3.7,3.10,3.22	3
97	**Telewadi (Digas)**	1978	72°04′00″ 16°00′ 00″	20.82	2.521	45.75	MH09MH0665	08/05/2019 26/11/2019	3.7,3.22,3.33	3
98	**Tithawali** Dist.Sindhudurg	1992	73°34′00″ 16°41′ 30″	18.24	1.733	32.63	MH09MH1281	08/05/2019 05/12/2019	3.1	1
99	**Vapholi** Dist.Sindhudurg	1978	73°53′00″ 15°51′ 00″	18.90	2.394	68.20	MH09MH0666	21/05/2019 28/11/2019	3.35	1
(c) Irrigation Project Construction Division, Ratnagiri.										
100	**Chinchwadi** Dist-Ratnagiri	2012	73°37′18″ 16°37′53″	28.50	6.390	84.36	MH09MH1891	03/12/2019	3.10,3.22,3.35	3
101	**Talwade** Dist-Ratnagiri	2004	73°43′00″ 16°46′ 00″	29.18	4.640	88.60	MH09MH1894	12/11/2019	3.5,3.16,3.20,3.22	4

1	2	3	4	5	6	7	8	9	10	11
(d) Irrigation Project Construction Division, Chiplun.										
102	**Shirsadi** Dist-Ratnagiri	2004	73°20′00″ 17°53′ 00″	28.15	4.408	90.58	MH09MH1627	28/05/2018 17/12/2019	3.1,3.20	2
103	**Talwat** Dist-Ratnagiri	2010	73°17′00″ 17°18′ 30″	26.97	6.650	338.10	MH09MH1895	11/05/2019 16/12/2019	3.6,3.20	2
104	**Rangav** Dist.Sindhudurg	2006	73°35′44″ 17°15′55″	23.87	5.524	152.28	MH09MH1893	29/05/2018 31/12/2019	3.1,3.22	2
105	**Ozar** Dist-Ratnagiri	2010	73°39′05″ 16°45′ 01″	29.12	5.460	144.19	MH09MH1892	12/05/2019 20/11/2019	3.6	1
(3) North Konkan Irrigation Project Circle, Thane. **(a) Raigad Irrigation Division No.2, New Mumbai.**										
106	**Dhasai** Dist-Thane	1984	73°36′00″ 19°15′00″	28.00	5.012	602.38	MH09MH1020	17/05/2018 04/11/2019	3.3,3.7	2
(b) Palghar Irrigation Project Construction Division, Suryanagar.										
107	**Tulyachapada** Dist- Palghar	1995	73°25'00" 19°58'00"	21.58	1.985	545.15	MH09MH1349	09/05/2019 01/11/2019	3.5,3.7,3.20,3.22	4
(c) Irrigation Project Construction Division,Shahapur.										
108	**Padale** Dist- Thane	2010	73°35′55″ 19°13′35″	26.66	7.857	682.95	MH09MH1853	10/05/2019 06/11/2019	3.7,3.22,3.33	3
(d) Hetawane Medium Project Division, Kamarli, Pen.										
109	**Panhalghar,** Raigad	2001	73°03'00" 18°03'00"	19.25	3.230	95.90	MH09MH1565	13/05/2019 18/11/2019	3.5,3.7,3.20,3.21,3.22,3.33	6
(4) South Konkan Irrigation Project Circle, Oras,Sindhudurgnagari. **(a) Minor Irrigation Division, Oras.**										
110	**Dendonwadi** Sindhudurg	2009	73°48′23″ 16° 18′23″	28.80	10.162	196.94	MH09MH1896	05/06/2019 16/11/2019	3.22	1
111	**Shivdav** Sindhudurg	2001	73°57′48″ 16° 01′10″	24.70	2.68	113.31	MH09MH1234	05/06/2019 16/11/2019	3.3,3.19,3.22,3.33	4
[1] Chief Engineer, Small Scale Irrigation (W.C.),Pune. **(1) Regional Water Coservation Officer, Soil & Water Coservation, Thane.** **(a) District Water Coservation Officer, Soil & Water Coservation Dn, Thane.**										
112	**Aswali** Dist- Palghar	1996	72°48′00″ 20°48′ 00″	24.20	2.083	209.97	MH09MH1394	09/05/2019 04/11/2019	3.5,3.7, 3.1, 3.13, 3.19,3.20, 3.33	7
113	**Devle** Dist-Raigad	2003	73°33′00″ 17°58′00″	29.30	1.23	78.16	MH09MH1614	08/05/2019 24/11/2019	3.5,3.7, 3.1, 3.13, 3.19,3.20, 3.33	7
114	**Karvel** Dist-Thane	1996	72°51′30″ 19°33′00″	26.00	3.135	89.24	MH09MH1406	08/07/2019 04/11/2019	3.1, 3.7, 3.22, 3.16, 3.35, 3.19	6

1	2	3	4	5	6	7	8	9	10	11
115	**Kalshetipada** Dist- Palghar	1997	73°00′00″ 19°00′00″	23.83	2.128	290.08	MH09MH1434	26/04/2019 27/11/2019	3.6, 3.13, 3.7, 3.22, 3.20, 3.16. 3.35.	7
116	**Kharsai** Dist-Raigad	2010	73°07′13″ 18°10′ 00″	29.60	1.954	64.85	MH09MH1685	08/05/2019 28/11/2019	3.1, 3.2, 3.5, 3.9, 3.13, 3.20, 3.22, 3.19, 3.33.	9
117	**Kundanpada** Dist-Thane	2001	73°45′25″ 19°45′ 25″	21.38	1.562	150.50	MH09MH1569	18/04/2019 22/11/2019	3.2, 3.7, 3.13, 3.20, 3.21, 3.22, 3.19	7
118	**Nandala** Dist-Raigad	1997	74°00′00″ 18°00′ 00″	22.30	1.619	72.39	MH09MH1420	07/05/2019 28/11/2019	3.1,3.2, 3.5. 3.22, 3.35	5
119	**Pashane** Dist-Raigad	2000	73°19′00″ 19°06′30″	25.40	2.987	72.40	MH09MH1205	09/04/2019 05/11/2019	3.7, 3.13, 3.20, 3.22, 3.30	5
120	**Vidhe** Dist-Raigad	1997	73°30′00″ 19°15′00″	19.20	1.61	31.50	MH09MH1417	08/04/2019 25/11/2019	3.5, 3.1,3.9, 3.13, 3.22, 3.20.	6
121	**Vinhere** Dist-Raigad	2001	73°24′00″ 18°17′ 54″	30.00	1.88	220.50	MH09MH1576	08/05/2019 21/11/2019	3.13, 3.22, 3.20, 3.35, 3.19.	5
122	**Asanas** Dist- Palghar	2008	73°01′30″ 19°35′00″	22.88	1.648	110.04	MH09MH1701	26/04/2019 27/11/2019	3.1, 3.13, 3.20, 3.22, 3.35	5
123	**Pahur** Dist-Raigad	2015	73°16′30″ 18°23′00″	16.40	1.818	64.75	MH09MH2389	07/05/2019 15/11/2019	3.13, 3.20, 3.22	3
124	**SaiStorage Tank** Dist-Raigad	2008	73°11′45″ 18°11′55″	19.00	1.054	174.65	MH09MH1683	07/05/2019 15/11/2019	3.2, 3.13	2
125	**Sayade** Dist-Thane		73°26′00″ 19°46′00″	26.87	2.155	77.88	MH09MH2387	18/04/2019 22/11/2019	3.2, 3.35,3.21, 3.20, 3.22,	5
126	**Sonawale** Dist-Thane	2008	73°36′60″ 19°15′30″	24.87	2.021	52.29	MH09MH2388	18/04/2019 25/11/2019	3.5,3.2, 3.20, 3.22	4
127	**Tala Talegaon** Dist-Raigad	2012	73°20′30″ 18°07′30″	24.90	2.397	132.65	MH09MH2390	07/05/2019 15/11/2019	3.20, 3.13	2
(b) District Water Coservation Officer, Soil & Water Coservation Dn, Ratnagiri										
128	**Chinchali** Dist-Ratnagiri	2004	73°23′30″ 18°10′ 45″	27.80	2.14	421.40	MH09MH1632	09/05/2019 13/11/2019	3.2,3.13, 3.22, 3.16	4
129	**Gopalwadi** Dist-Ratnagiri	1993	73°39′00″ 16°36′ 00″	22.66	1.706	225	MH09MH1306	09/05/2019 17/01/2020	3.1, 3.9, 3.2, 3.13, 3.20, 3.22, 3.35	7
130	**Hardkhale** Dist-Ratnagiri	1996	73 °41'00" 16°49'00"	24. 97	2. 053	120.50	MH09MH1387	09/05/2019 17/01/2019	3.2, 3.9,3.16, 3.22, 3.13, 3.20	6
131	**Juwathi** Dist-Ratnagiri	2004	73°32′00″ 16°34′ 00″	27.58	2.234	40.25	MH09MH1637	09/05/2019 17/01/2020	3.1, 3.2, 3.13, 3.20, 3.22	5

1	2	3	4	5	6	7	8	9	10	11
132	**Kasheli** Dist-Ratnagiri	2001	73°20′00″ 16°43′ 00″	22.94	2.266	46.00	MH09MH1527	09/05/2019 16/01/2020	3.1, 3.2,3.7, 3.9, 3.13, 3.20, 3.22	7
133	**Kokisare** Dist-Ratnagiri	1999	73 °44'00" 16°30'19"	24. 11	1.845	24.02	MH09MH1524	16/05/2019 07/12/2019	3.2, 3.13, 3.22	3
134	**Morde** Dist-Ratnagiri	2001	73°39′00″ 17°30'00″	28.90	2.091	58.91	MH09MH1562	09/05/2019 13/11/2019	3.5,3.9, 3.13, 3.7, 3.20, 3.22	6
135	**Naniwade** (Mahajanwadi) Sindhudurg	2000	73°36′00″ 16°42'00″	21.25	1.821	31.71	MH09MH1526	16/05/2019 07/12/2019	3.1, 3.2, 3.9, 3.13, 3.20, 3.22	6
136	**Sheldi** Dist-Ratnagiri	1998	73°32′00″ 17°38'00″	20.00	1.807	196.00	MH09MH1488	09/05/2019 13/11/2019	3.2, 3.22, 3.13, 3.20, 3.35	5
137	**Tivare** Dist-Ratnagiri	2004	73°42′00″ 17°36′ 30″	28.00	2.451	420.35	MH09MH1636	09/05/2019 13/11/2019	3.2, 3.13	2
138	**Tulshi** Dist-Ratnagiri	1996	73°13′00″ 18°02′ 00″	20.30	1.967	48.04	MH09MH1320	09/05/2019 13/11/2019	3.2,3.13,3.35 3.22	4
139	**Vilawade.** Sindhudurg	2000	73°53′45″ 15°51′ 30″	15.28	1.63	74.34	MH09MH1600	16/05/2019 07/12/2019	3.1,3.2, 3.9, 3.13, 3.20, 3.19, 3.22, 3.35	8
140	**Indavati** Dist-Ratnagiri	2012	73°20′00″ 16°43′ 00″	29.80	2.076	704.52	MH09MH2391	09/05/2020 17/01/2020	3.2, 3.1, 3.13, 3.20	4
141	**Janavali** Sindhudurg	2002	73°45′00″ 16°17′ 00″	15.25	2.541	13.24	MH09MH2394	16/05/2019 07/12/2019	3.1, 3.2, 3.9,3.13, 3.22	5
142	**Kuwa** Dist-Ratnagiri	2010	73°33′31″ 16°41′14″	24.52	1.665	58.10	MH09MH2392	09/05/2020 17/01/2020	3.2, 3.1, 3.13, 3.20	4
143	**Sukondi-waghivane** Dist-Ratnagiri	2008	73°42′30″ 17°30′30″	24.50	4.319	883.00	MH09MH2393	09/05/2019 13/11/2019	3.1, 3.2,3.5, 3.7, 3.22, 3.16	3
144	**Watul** Dist-Ratnagiri	2013	73°35′05″ 16°46′18″	24.05	2.990	86.10	MH09MH2395	09/05/2019 17/01/2020	3.1, 3.2, 3.13, 3.20, 3.35	5

Table 2.12

Damwise Health status report of Private Class-I dams with category-1 deficiency

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
---------- No Such Dams under this class ----------						

Table 2.13

Damwise health status report of private Class-I dams with category-2 deficiency ---done

Sr No	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
(1)S.E., M.I.D.C. Mahad, Dist. Raigad (a)E.E., M.I.D.C. Mahad, Dist. Raigad						
1	Name :-**Savitri (G)** Dist:- Raigad Year of Completion:- **1999** Location :- Longitude: -**73° 28′ 45″** Latitude: - **17° 56′ 15″** Height: **33.62 m** Gross capacity: **29.45Mm^3** Spillway capacity: **3919.79** Sr.No.in National Register of LargeDams: **MH09HH1521**	14/03/2019 27/02/2020	D.S.O. Nashik	Gallery Spillway Dam EDA	1) Leaching from seepage water and deposition of lime near some seepage exit spots is observed in gallery. 2) Heavy leakage observed in gallery..Gallery flooded , no adequate lighting 3) Foundation holes, and vertical poros pipes were chocked 4) Reinforcement of spillway opened. 5) Leakage through spillway , bottom seal of gate observed 6) Inspection of stilling basin could not be carried out due to ponding. 7) Some joints of masonry guide wall are opened.	The leaching material in gallery should be removed & its weight be measured regularly Chemical analysis of leaching material should be carried out Leakage source location & then preventive measures should be taken.drain out flooded water necessary arrangement should be done Necessary action should be initiated for cleaning foundation drains.and vertical pipes Necessary action should be initiated . Necessary action should be initiated . Go through record drawing and clean the draining holes/ pipes provided for the same Necessary repairs shold be carried out.

1	2	3	4	5	6	7
(1)HYDRAULIC ENGINEER (M.C.G.B.) MUMBAI. **(a)Dy. Hydraulic Engineer (M.C.G.B.) Thane.**						
2	Name :- **Tansa** Dist-Thane Year of Completion:- **1892** Location :- Longitude: -**73° 15′ 00″** Latitude: - **19° 33′ 00″** Height: **41.00 m** Gross capacity: **208.70 Mm^3** Spillway capacity:**1188.60 m^3/sec** Sr.No.in National Register of Large Dams: **MH09HH0020**	05/04/2019 04/09/2019	D.S.O. Nashik	Dam	1) Down stream side road along the dam was damaged.. 2) UCR guide wall foundation eroded at some places. 3) Minor sweating was observed on down stream side the dam	Necessary repairs should be done It shall be refilled with appropriate material. It should be monitored regularaly.
3	Name :- **Modaksagar (G)** Dist-Thane Year of Completion:- **1954** Location :- Longitude: -**73° 17′ 00″** Latitude: - **19° 40′ 00″** Height: **82.00 m** Gross capacity: **204.98 Mm^3** Spillway capacity: **5660.00m^3/sec** Sr.No.in National Register of LargeDams**: MH09HH0068**	05/04/2019 04/09/2019	D.S.O. Nashik	Gallery Dam Instruments	1) Brown geru type leaching material observed.in lower gallery 2)Insufficient lighting arrangement in gallery 3) The rock sliding may be occur in front of entrance of the gallery. 4) Leakage observed through under sluice gate No 1 and 2. 5)Leakages were observed in upper gallery at monolith joints15 6) Porous holes blocked by leaching material. 7) Instruments are not in working condition.	The leaching material in gallery should be removed & its weight be measured regularly blockwise. Also the leached material shall be got tested from MERI.Nashik & record of leached material should be maintained. Necessary arrangement should be carried out Appropriate remedial measure should be carried out All leakages need to be attended in time. Causes of leakages should be investigated & treated accordingly Necessary repairs should be done. Porous pipes in upper & lower gallery need to be cleared immediately. Necessary repairs should be done.

1	2	3	4	5	6	7
4	Name :- **Middle vaitarana (G)**Dist-Thane Year of Completion:- **2014** Location :- Longitude: -**73°26′00″** Latitude: - **19°42′00″** Height: **102.40 m** Gross capacity**: 202.40 Mm^3** Spillway capacity: **6538.00 m^3/sec** Sr.No.in National Register of LargeDams**: MH09VH1852**	05/04/2019 04/09/2019	D.S.O. Nashik	Dam	1) Minor leached material was observed. Also at many places white and brown leaching were observed.	The leaching material in gallery should be removed & its weight be measured regularly blockwise. Also the leached material shall be got tested from MERI.Nashik & record of leached material should be maintained.
					2)Minor sweating on d/s of dam is observed	It should be monitored with respect to water level in the dam
				WSCPC	3) Concrete inside conduit and d/s of service gate and iron plate were washed away,Reinforce ment near service gate conduit were exposed	Necessary repairs shold be carried out on top prority
				Gallery	4) Fundation holes were seen chocked.	Necessary action should be initiated.
					5) Considerabl;e leakage from top of the foundation gallery near shaft no 9	Necessary repairs shold be carried out
				Instruments	6) Instruments are not in working condition.	Necessary repairs should be done.
				General	7) Concrete road need to be provided on entire length considering steep slope and high density rainfall of the region for access to E.D.A. and downstream of non overflow section of the dam.	Necessary action should be initiated

1	2	3	4	5	6	7
[1] C.E., M.I.D.C. ANDHERI, MUMBAI **(1) S.E., M.I.D.C. , Dombivali (E), Dist. Thane** **(a) E.E., M.I.D.C. Barvi Dam Division, Anand Nagar, Ambarnath (E), Dist. Thane**						
5	Name :-**Barvi (G)** Dist- Thane Year of Completion:- **1986** Location :- Longitude: **73° 20′ 10″** Latitude: - **19° 11′ 22″** Height: **46.55 m** Gross capacity:**178.58Mm^3** Spillway capacity: **1585.00 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH0738**	14/05/2019 07/02/2020	D.S.O. Nashik	Overflow section Non overflow section Instruments	1) Water ponding is noticed at D/S side of dam. (A2) 2)Some sweating is noticed on D/S face of NOF Section. (A11) 3)Instruments are not in working condition. (B9)	Exact source and cause to be located and necessary arrangements to avoid ponding should be provided. Cement pointing should be carried out at NOF portion wherever it is damaged. Necessary repairs shold be carried out
(b) E.E., M.I.D.C. Dn. No.2 ,Wagle Estate, Thane Belapur Road,Koparkhairne, T.T.Industrial Area,Mahape,New Mumbai. 400710						
6	Name :-**Ransai (G)** Dist:- Raigad Year of Completion:- **1970** Location :- Longitude: **79° 04′ 00″** Latitude: - **18° 30′ 00″** Height: **25.91 m** Gross capacity: **10.00Mm^3** Spillway capacity:**363 m^3/sec** Sr.No.in National Register of LargeDams: **MH09HH0213**	13/05/2019 07/02/2020	D.S.O. Nashik	Overflow section EDA	1) On d/s side of ogee portion, concrete was seen deteriorated & reinforcement was exposed in many places. (B7) 2) Heavy Damages close to end sill on d/s side of stilling basin is observed. (A14)	Necessay repairs to be carried out . Masonry or concrete filling may be done to prevent progressive damage.

1	**2**	**3**	**4**	**5**	**6**	**7**
(1) S.E., Dairy Constuction Circle, Warli, Mumbai -17 **(a) E.E., Agricultural Construction Dn Aarey Milk Colony, Goregaon(E), Mumbai-65**						
7	Name :- **Kurze (Dapcheri)** Dist- Palghar Year of Completion:- **1967** Location :- Longitude: **74° 56′ 30″** Latitude: - **19° 32′ 30″** Height: **22.96 m** Gross capacity: **39.05 Mm^3** Spillway capacity: **598.00m^3/sec** Sr.No.in National Register of LargeDams**: MH09MH0151**	12/02/2019 11/10/2019	D.S.O. Nashik	Gallery	11) Leakages observed in gallery	It should be monitored with respect to water level in the dam
					12) Some porous pipes are choked.	Cleaning of poros holes should be done.
					13) Leaching is found at u/s & d/s of gallery at some places	The leaching material in gallery should be removed & its weight be measured regularly blockwise. Also the leached material shall be got tested from MERI.Nashik & record of leached material should be maintained It should be cleaned
					14) Leakage through gate No.1 side pier and bottom seal of gate no.2 is observed	Necessary repairs should be done. .
				Spillway	15) Sweating was observed on downstream side of NOF near entrance gate to gallery	It should be monitored with respect to water level in the dam
				Dam	16) The bottom portion of the left side guide wall downstream of conduit was damaged.It may collapse	Necessary repairs should be carried out on top priority
					17) Leakages water flowing along toe of dam on left side of NOF	Necessary repairs should be carried out immediately
				EDA	18) Ponding in EDA bucket.	Go through record drawing and clean the draining holes/ pipes provided for the same
				Instruments	19) Instruments are not in working condition.	Necessary repairs should be carried out immediately

Table 2.14

Damwise Health status report of Private Class-I dams with category-3 deficiency

Sr. No	Name of Dam	Date of Compl -etion	Location Longitude/ Latitude	Height in m	Gross Capacity Mm^3	Design Spillway Capacity m^3 / sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection Pre & Post	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11	12
(1) S.E., M.I.D.C. Mahad, Dist. Raigad (a) E.E., M.I.D.C. Mahad, Dist. Raigad											
1	**Savitri** Dist:- Raigad	1999	73°28′45″ 17°56′15″	33.62	29.45	3919.79	MH09HH1521	Gated	14/03/2019 27/02/2020	3.1,3.12,3.16,3.18,3.22,3.28,3.24, 3.35	8
(1) HYDRAULIC ENGINEER (M.C.G.B.) MUMBAI. (a) Dy. Hydraulic Engineer (M.C.G.B.) Thane											
2	**Tansa** Dist-Thane	1892	73°15′00″ 19°33′00″	41.00	208.70	1188.60	MH09HH0020	Gated	05/04/2019 04/09/2019	3.6,3.17,3.25. 3.16,3.19,3.24,3.33 3.1	8
3	**Modaksagar** Dist-Thane	1954	73°17′00″ 19°40′00″	82.00	204.98	5660.00	MH09HH0068	Gated	05/04/2019 04/09/2019	3.6,3.12,3.13, 3.19,3.24,	5
4	**Middle vaitarana** Dist-Thane	2014	73°26′00″ 19°42′00″	102.40	202.40	6538.00	MH09VH1852	Gated	05/04/2019 04/09/2019	3.2,3.19,3.6,3.12,3.13,3.21,3.22,3 .24, 3.30	9
[1] C.E., M.I.D.C. ANDHERI, MUMBAI (1) S.E., M.I.D.C. , Dombivali (E), Dist. Thane (a) E.E., M.I.D.C. Barvi Dam Division, Anand Nagar, Ambarnath (E), Dist. Thane											
5	**Barvi** Dist- Thane	1986	73°20′10″ 19°11′22″	46.55	178.58	1585.00	MH09HH0738	Gated	14/05/2019 07/02/2020	3.1,3.3,3.36,3.12,3.13,3.24,3.27, 3.22, 3.19	9
(b)E.E., M.I.D.C. Dn. No.2 ,Wagle Estate, Thane Belapur Road,Koparkhairne,T.T.Industrial Area,Mahape,New Mumbai. 400710											
6	**Ransai (G)** Dist:- Raigad	1970	79°04′00″ 18°30′00″	25.91	10.00	363.00	MH09HH0213	Gated	13/05/2019 07/02/2020	3.12,3.13,3.19,3.24,3.27,3.33, 3.35,3.36	8
(1) S.E., Dairy Constuction Circle, Warli, Mumbai -17 (a) E. E., Agricultural Construction Dn Aarey Milk Colony, Goregaon(E), Mumbai-65											
7	**Kurze (Dapcheri)** Dist- Palghar	1967	74°56′30″ 19°32′30″	22.96	39.05	598.00	MH09MH0151	Gated	12/02/2019 11/10/2019	3.1,3.2,3.5,3.8, 3.13,3.20, 3.21,3.22,3.24,3.25,3.28,3.33, 3.35,3.36. 3.9,3.12,,3.27	17

1	2	3	4	5	6	7	8	9	10	11	12
[1] Commissioner, Navi Mumbai Municipal Corporation, Navi Mumbai (a) E.E., Navi Mumbai Municipal Corporation, Navi Mumbai											
8	**Morbe** Dist-Raigad	2006	73°15′00″ 18°55′00″	59.10	19.089	160.01	MH09HH1662	Gated	13/05/2019 06/02/2020	3.9,3.1,3.18,3.19,3.24, 3.13, 3.26,3.27,3.28,3.2	10
(1)HYD. ENGINEER, M.C.G.B. MUMBAI. (a)Dy.Hyd.Engineer (M.C.G.B.) Ghatkopar.											
9	**Pise** Dist-Thane	2000	73°11′02″ 19°18′52″	10.00	4.277	8400	----------	Gated	03/05/2019 04/09/2019	3.3,3.18,3.21,3.22,3.24,3.25	6

Table 2.15

Damwise Health status report of Private Class-II dams with category-1 deficiency

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
---------- No Such Dams under this category is reported ----------						

Table 2.16

Damwise health status report of private Class-II dams with category-2 deficiency

Sr. No	Dam Features	Date of Inspection	Inspecting Officer	Main Compo-nent of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
(1) S.E.,(MMR) M. I.D.C. Dombiwali, Dist-Thane . (a) E.E., M.I.D.C.Barvi Dam Div.Ambarnath(E),Dist-Thane.						
1	Name**: Murbadi** Dist-Thane Year of completion:**1984** Location :- Longitude :- **73° 25' 23"** Latitude :- **19° 13' 15"** Height: **- 15.50 m** Gross capacity**: 1.10 Mm^3** Spillway capacity:- **585.95Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0934**	14/05/2019 06/02/2020	D.S.O. Nashik	Earth Dam	1) Section of earth dam should be checked & compared with designed section.(B1)	Corrective measures should be carried out accordingly.
				Masonry Dam	2) Drainage gallery was partially filled with water, hence the gallery could not be inspected thoroughly.(A8)	Dewatering of gallery is utmost necessary from safety point of view.
					3) Lighting arrangement was totally damaged due to flooding of gallery by seepage water.(A8)	It Is necessary to install a new lighting arrangement with water proof wiring in the drainage gallery.
				W.W.& T.C	4) Leaching from seepage water & deposition of lime was observed. (A12)	Leaching material should be tested from MERI Nashik. &Record of leahing material should be maintained.
					5)End weir of stilling basin was found damaged at many places. (A17)	Necessary repairs to be carried out .

1	2	3	4	5	6	7
[1] C.E., Maharashtra Jeevan Pradhikaran, Konkan Region, Thane. **(1) S.E., Maharashtra Jeevan Pradhikaran Circle, Thane** **(a) E.E., Maharashtra Jeevan PradhikaranProject Dn. Virar (W)**						
2	Name**:Sakhare,** Dist- Palghar Year of Completion:- **1968** Longitude :- **73° 48' 48"** Latitude :- **19° 54' 33"** Height: - **17.37 m** Gross capacity: **4.07 Mm^3** Spillway capacity:-**690.40 Cumecs** Sr.No.inNational Register of LargeDams: **MH09MH0166**	10/05/2019 11/10/2019	D.S.O. Nashik	Masonry Dam	1) Leakages on d/s side of w.w. and left & right side of NOF was observed.. 2) Sweating was observed on downstream side of non overflow section.	All leakages need to be attended in time. Causes of leakages should be investigated & treated accordingly. Necessary treatment shall be given to stop the sweating.
(1) HYD. ENGINEER, M.C.G.B. MUMBAI. **(a) Dy.Hyd.Engineer (M.C.G.B.) Ghatkopar.**						
3	Name**:Vihar,** Dist- Palghar Year of Completion:- **1859** Longitude :- 72°50'00" ' Latitude :- 19° 05'00' Height: - **25.60m** Gross capacity: **41.41 Mm^3** Spillway capacity:- 124.06 Sr.No.inNational Register of LargeDams: MH09MH005	04/05/2019 21/08/2019	D.S.O. Nashik	Spillway Bar	The downstream side of spillway bar was heavily damaged. Stones of spillway and concrete sheets of EDA were dislocated. Left side masonary guide wall is collapsed	Necessary remedial measures should be done and the damaged section should be restored. It should be repaired.

Table 2.17

Damwise Health status report of Private Class-II dams with category-3 deficiency

Sr. No	Name of Dam	Date of Compl-etion	Location Longitude/ Latitude	Height in m	Gross Capacity Mm^3	Design Spillway Capacity m^3 / sec	Sr.No. in NRLD Register	Date of Inspection Pre & Post	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11
(1) S.E.,(MMR) M. I.D.C. Dombiwali, Dist-Thane . **(a) E.E., M.I.D.C.Barvi Dam Div.Ambarnath(E),Dist-Thane.**										
1	**Murbadi** Dist-Thane	1984	73°25′23″ 19°13′15″	15.50	1.10	585.95	MH09MH0934	14/05/2019 06/02/2020	3.1,3.12,3.11,3.16,3.19,3.21, 3.20,3.5,3.24,3.35,3.36,3.2,3.3, 3.7,3.11,3.13, 3.26,3.27,3.30	19
(1) S.E., Maharashtra Jeevan Pradhikaran Circle, Thane **(a) E.E., Maharashtra Jeevan PradhikaranProject Dn. Virar (W)**										
2	**Sakhare,** Dist- Palghar	1968	73°48′48″ 19°54′33″	17.37	4.07	690.40	MH09MH0166	10/05/2019 11/10/2019	3.6, 3.1,3.27, 3.26, 3.2, 3.3	6
(1) HYD. ENGINEER, M.C.G.B. MUMBAI. **(a) Dy.Hyd.Engineer (M.C.G.B.) Ghatkopar.**										
3	**Tulasi** Dist-Thane	1879	72°50′00″ 19°10′00″	25.90	10.273	42.62	MH09MH0012	04/05/2019 21/08/2019	3.1,3.2,3.7,3.9,3.33, 3.16	6
4	**Vihar** Dist-Thane	1859	72°50′00″ 19° 05′00″	25.60	41.41	124.06	MH09MH005	04/05/2019 21/08/2019	3.1,3.19, 3.2, 3.27, 3.33, 3.16	6
5	**Pawai (III)** Dist-Thane	1890	72°50′00″ 19° 05′00″	9.14	5.455	177.88	MH09MH005	04/05/2019 21/08/2019	3.33, 3.19, 3.2, 3.27	4
[1] C.O. ZILLHA PARISHAD,RAIGAD **(a) E. E., Rural Water Supply Scheme,Zillha Parishad,Raigad.**										
6	**Nandvipurar** Dist-Raigad	2005	73°16′45″ 18° 06′20″	18.00	0.50	14.38	MH09MH1655	30.07.2019 26.02.2020	3.5, 3.7, 3.1, 3.6, 3.9, 3.2	6
7	**Umate** Dist-Raigad	1980	73°00′34″ 18° 32′59″	30.00	2.44	28.83	MH09MH0845	30.07.2019 26.02.2020	3.1, 3.22, 3.21, 3.9, 3.19, 3.6, 3.2, 3.27	8

Table 2.18

Significant category 2 deficiency wise list of class-I dams

Sr. No	Deficiency	Names of dams	Total no of dams
1	**A.1**: Boil leakage/ seepage/ wet patches/ slushiness,in Earthen Dam.	1) Dhamani (Surya) 2) Kondiwali 3) Tangar 4) Sakharpa 5) Wagh	05
2	**A 2**: Standing pool / Ponding / Water Logging / Slushy condition on D/S of Dam	1) Wagh 2) Nadhawade	02
3	**A 3** : Leakages in vicinity of junction between earthen dam & masonry dam portion.	1) Gadagadi	01
4	**A 4** : Major leakages through outlet conduit/pipe joints/Gates	1) Bholawali 2) Gadgadi 3)Rajewadi	03
5	**A 8** : Drainage gallery in accessible/No adequate lighting./ No dewatering arrangement or failure.	1) Bhatsa	01
6	**A 10** : Heavy leakages through porous pipes/ through dam body in gallery /monolith joints.	1) Savitri (P) 2)Kurze(Dapcheri)	02
7	**A 11** : Sweating / seepages through D/S of masonry dam	1) Dhamani(Surya) 2)Savitri (P)	03
8	**A 12** : Excesssive considerable leaching from seepage water.	1) Bhatsa 2) Dhamani (Surya) 3) Tillari Main Dam Dhamane 4)Savitri (P) 5)Modaksagar(P) 6)Kurze(Dapcheri) (P)	06
9	**A 14** : EDA / Stilling basin damaged/Hydraulic performance not good	1) Upper Ghatghar 2)Ransai(P)	02
10	**A 15** : Leakages through spillway /piers//junction of flank wall.	1)Domihira 2)Korale Satanadi 3)Rajewadi	03
11	**B 5 :** Outlet gates not functioning properly. Stem rod is bent(Service gate/Emergency gate/Stop log gate/sluice gate)	1) Dhamani (Surya) 2)Domihira 3) Wagh	04
12	**B 12** : Damage to Rubber seals/Leakages through gates.	1) Dhamani (Surya) 2)Domihira 3)Wagh	03

Table 2.19

Significant category 2 deficiency wise list of class-II dams

Sr. No	Deficiency	Names of dams	Total no of dams
1	2	3	4
1	**A.1**: Boil leakage/ seepage/ wet patches/ slushiness,in Earthen Dam.	1)Khoch 2)Jambhe 3)Mohakhurd 4)Khaire 5)Khopad 6)Chorgewadi 7) Madkhol 8)Ozaram 9)Osargaon , 10)Rangav 11)Dhasai 12)Tulychapada 13)Padale 14)Panhalghar 15)Devale	15
2	**A 2**: Standing pool / Ponding / Water Logging / Slushy condition on D/S of Dam	1)Khindawadi 2)Mandkhol 3)Panhalghar	03
3	**A 3** : Leakages in vicinity of junction between earthen dam & masonry dam portion.	1)Wandri 2)Rangav	02
4	**A 4** : Major leakages through outlet conduit/pipe joints/Gates	1) Punade 2) Gavane 3)Khopad 4) Nive 5)Telewadi 6) Talwade	06
5	**A 6** : Outlet well is damaged/not in good condition /cracks observed/jets of water in well.	1) Jambhivali 2)Bamnoli 3)Dhokshet 4) Ghotawade 5)Kalote- mokashi 6)Unhere 7)Varandh 8)Telewadi	8
6	**A 7 :** Retrogression /scouring in tail channel.	1)Raitale 2)Kalote Mokashi 3)Usran 4)Chorgewadi	04
7	**A 14** : EDA / Stilling basin damaged/Hydraulic performance not good	1)Sakhare(P)	01
8	**A 16** : Damages / foundation erosion/ scour/undermining observed in vicinity of flank walls/ guide walls/ junction walls/return walls	1)Panderi	01
9	**B 1** Dam section is not as per design	1) Thakurwadi 2) Ambeghar 3)Kalote - mokashi 4) Kothurde 5) Panderi 6)Murbadi(P)	06
10	**B 3** : Considerable settlement of embankment / Rock toe/Pitching/ U/S & D/S slops, bulging/concavity of slopes	1) Wandri, 2)Bamnoli	02
11	**B 5 :** Outlet gates not functioning properly. Stem rod is bent(Service gate/Emergency gate/Stop log gate/sluice gate)	1)Bamnoli 2)Morbe 3)Telewadi,	03
12	**B 7**: Waste weir/waste weir bar not in good condition/coping damaged/leakage through waste weir	1) Thakurwadi 2) Ambeghar 3)Bamnoli 4)Kalote- Mokashi 5)Khindwadi 6) Kavele 7)Usran 8)Telewadi 9)Ozaram 10) Sanamtemb 11)Dhasai	11
13	**B 12** : Damage to Rubber seals/Leakages through gates.	1)Bamnoli 2)Adare, 3)Telewadi	03

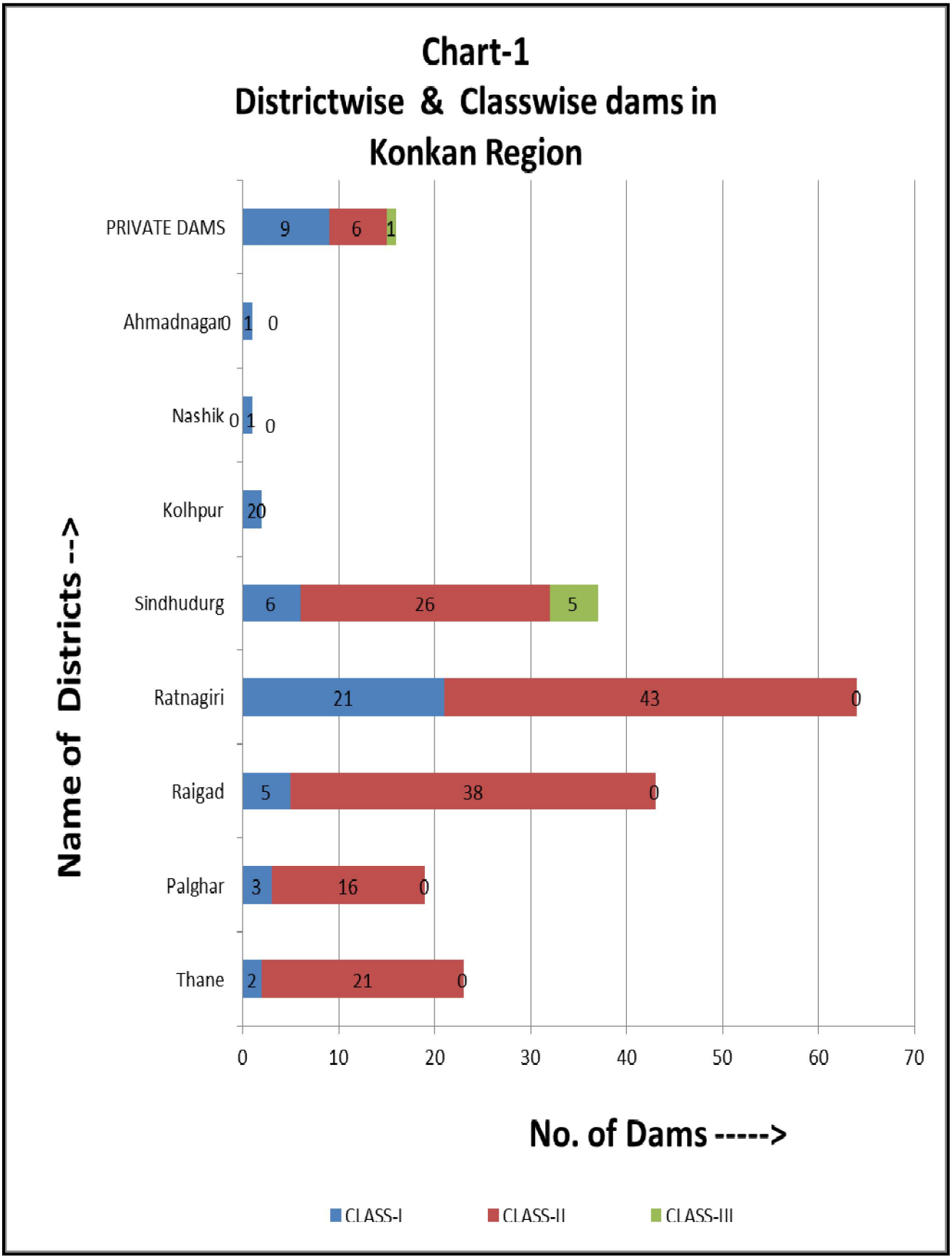


Chart-1
Districtwise & Classwise dams in Konkan Region
PRIVATE DAMS
Ahmadnagar
Nashik
Kolhpur
Sindhudurg
Ratnagiri
Raigad
Palghar
Thane
9
6
1
0
1
0
0
1
0
20
6
26
5
21
43
0
5
38
0
3
16
0
2
21
0
0
10
20
30
40
50
60
70
Name of Districts -->
No. of Dams ----->
CLASS-I
CLASS-II
CLASS-III

Chart-2
Significant Category-2 deficiencies in Class-I dams

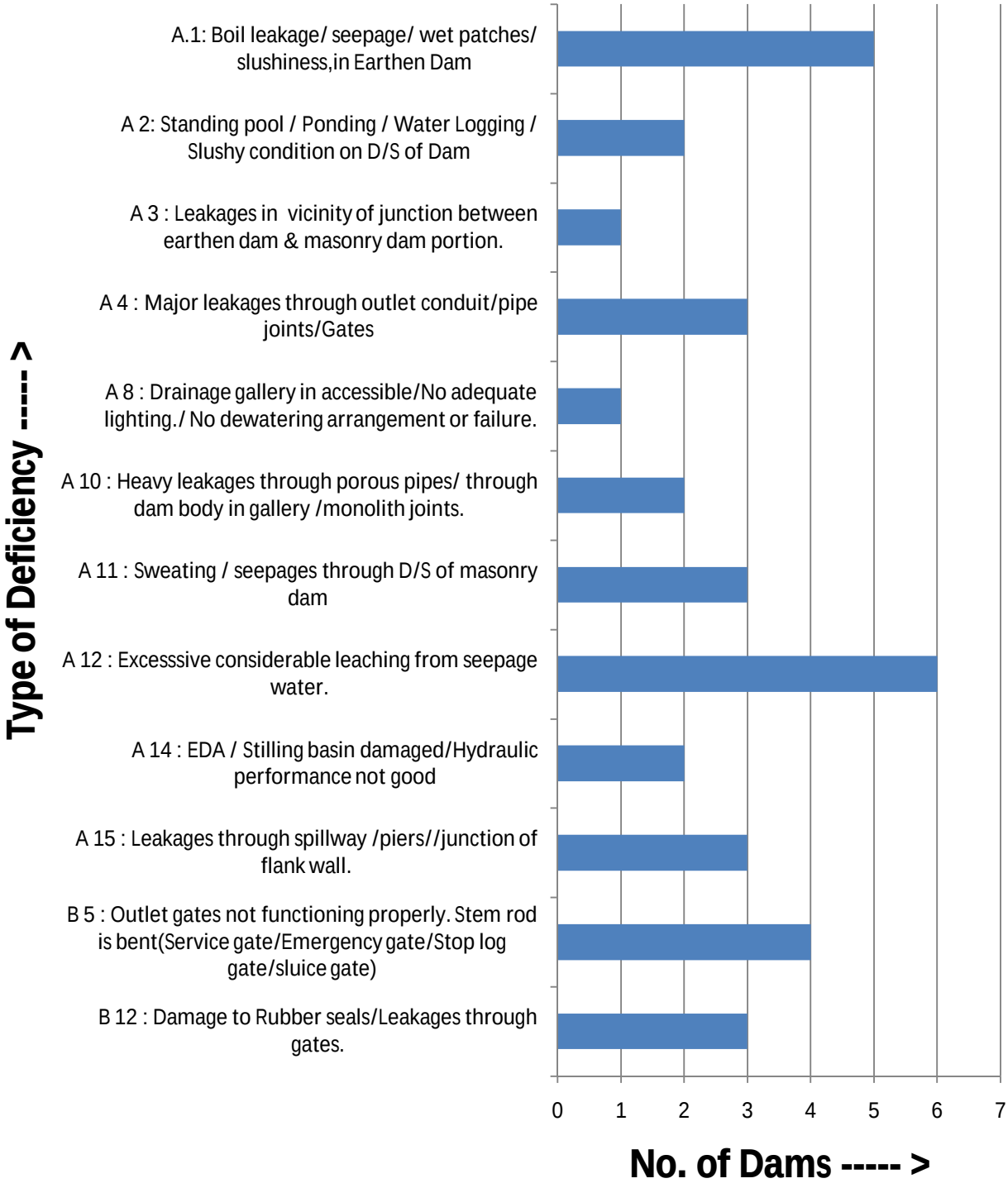
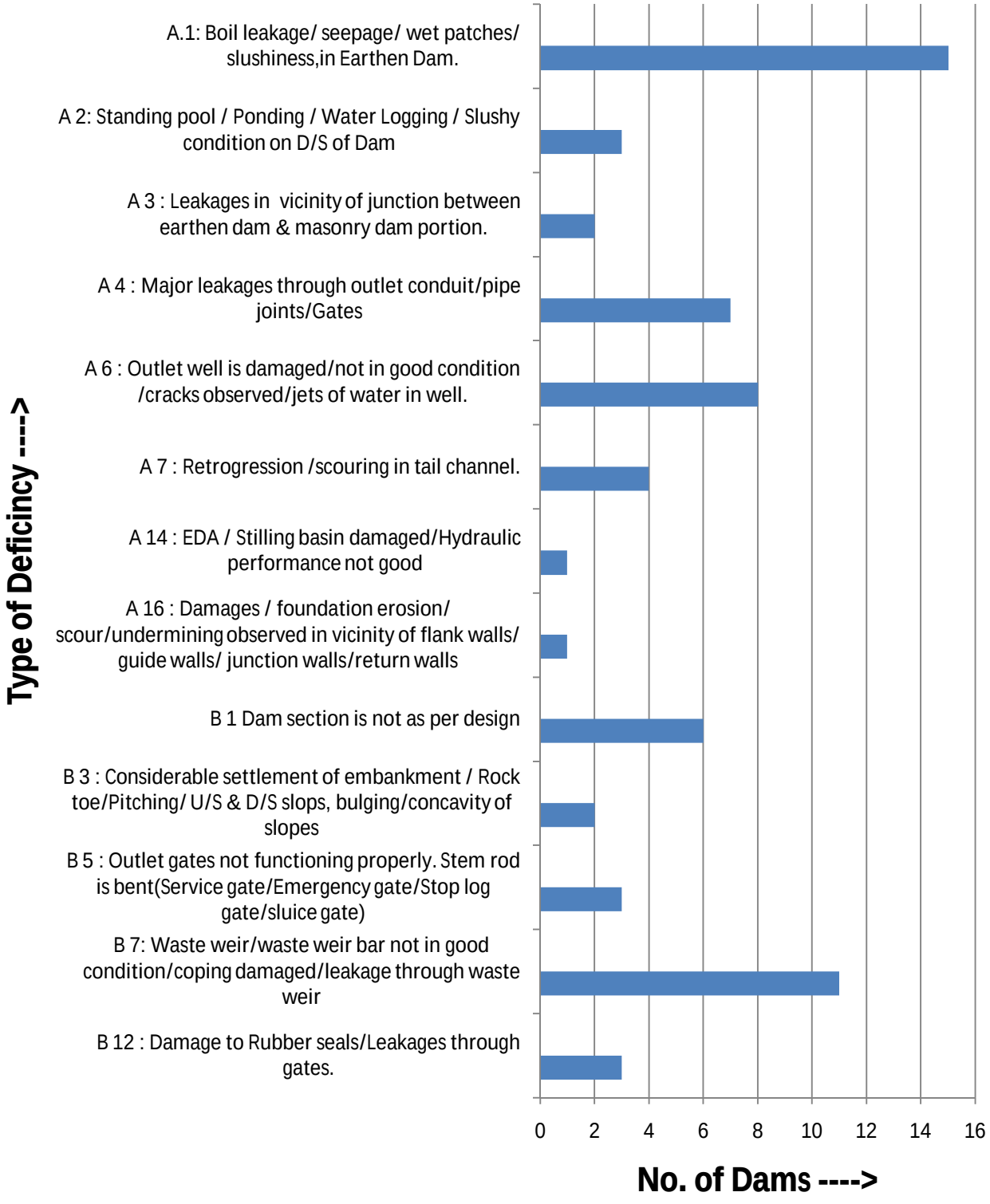


Chart-3
Significant Category-2 deficiencies in Class-II dams



ANNEXURE- 1
General Information For Dam Safety Inspections

1.0 TIME SCHEDULE OF INSPECTIONS

The Government of Maharashtra has designed systematic approach for monitoring each and every dam. The periodical inspection of dams must be completed as per following schedule.

Type of Inspection	Last dates for	
	Completion of inspection	Sending of inspection reports to concerned authorities.
(1) Pre Monsoon	15th May	30th June
(2) Post Monsoon	30th November	31st December
(3) Special inspection before the first filling (Report need not be sent to Dam safety organisation)	30th April	31st May
(4) Special inspection after the first filling	within one week after the lake attains the intended storage level.	within one week from the date of inspection.
(5) Special inspection after a severe distressing event or accident or incident.	Immediately after the event is noted.	Within one week form the date of inspection?

2.0 CLASSIFICATION OF DAMS -

The dams are categorized into three types based on their component and features as below.

SR No	Type of Dam	Height from general level of deepest foundation in m.	Impounded gross storage capacity Up to FRL in M Cum	Spillway capacity	Type of spillway
1	2	3	4	5	6
1	Large Dam (Class-I)	Above 30 m	Above 60 M Cum	Above 3,000 Cumecs	Gated Spillway
2	Large Dam (Class-II)	15 m to 30 m	15 MCum upto 60 MCum	2,000 to 3,000 Cumecs	Ungated Spillway
3	Large Dam (Class-III)	10 m.to15m	1.0 MCum upto 15 MCum	2,000 to 3,000 Cumecs	Ungated Spillway

3.0 FIELD INSPECTION AUTHORITIES –

The designated inspection authority for periodical inspection of dam depending upon the classification of type of dam is as below :-

SR No	Type of Dam	Inspection authority	Inspection Reports to be sent to	Test Inspection
1	2	7	8	9
1	Large Dam (Class-I)	Superintending Engineer/ Administrator	1) Chief Engineer 2) Superintending Engineer Dam Safety Organisation.	Test Inspection by the Regional Chief Engineer/ Chief Administrator for the dams having height more than 60 m or storage capacity more than 1000 MCum or spillway capacity 10000 Cumecs or more
2	Large Dam (Class-II)	Executive Engineer	1) Superintending Engineer/ Administrator 2) Superintending Engineer, Dam safety Organisation	
3	Large Dam (Class-III)	Sub-Divisional Eng./Sub Divisional Officer	1)Superintending Engineer/ Administrator 2) Executive Engineer	

4.0 PREPARATION OF ANNUAL HEALTH STATUS REPORTS OF CLASS-I AND CLASS-II DAMS.

Dam safety organisation takes over view of the periodical inspection reports of class-I & class-II dams received from field officers, and significant deficiencies are immediately reported to concern authorities to carry out remedial measures. Also based on all periodical inspection reports from field officers and test inspections by DSO officers, the Region wise Annual Health Status Report has been prepared and sent to government, CWC and all concerned Chief Engineers.

5.0 PREPARATION OF ANNUAL HEALTH STATUS REPORT OF CLASS-III DAMS

The responsibility of Health and Safety monitoring of class-III dams lies with the respective Chief Engineer. Hence for Class-III Dams based on periodical inspection reports, Annual Health Status Report of Class-III dams should be prepared by Chief Engineers and sent to DSO for record.

6.0 GUIDELINES REGARDING PREPARATION OF ANNUAL HEALTH STATUS REPORT OF IDENTIFIED LARGE DAMS-

ASHR is prepared in DSO as per Central Water Commission New Delhi's guidelines received vide letter No. 3/19/NCDS/HS/DSM/2001/627-56 dated 28 August 2002. As per this letter it is requested that all states / organizations should send the AHSR for all large dams in prescribed Performa in the month of 'April' every year.

7.0 CATEGORIZATION OF DEFICIENCIES

The deficiencies observed are categorized as per CWC, New Delhi's letter no.3/19/NCDS/HS/DSM/2007/627-56 dated 28 August 2002 , as below

Deficiency Category -1- Dams with major deficiencies which may lead to dam failure.

Deficiency Category -2- Dams with major rectifiable deficiencies needing immediate attention.

Deficiency Category -3- Dams having minor/nil deficiencies.

For further detailing of deficiencies based on the nature and priority of deficiency , DSO has standardized all the three types of deficiencies. These standardized deficiencies are appended as the Annexure -2

8.0 NATIONAL REGISTER OF LARGE DAMS-

NRLD is compilation of the large dams (Height above 10 meter) in the country as per information received from the owner of dams. In NRLD the definition of "Large Dams" has been adopted as per the norms of International Commission on Large Dams (ICOLD).

NRLD is consist of a Proforma with 20 columns which gives information regarding salient features of Large Dams. Field officers need to submit the information of new dams to DSO every year upto December. The DSO compiles the information required for NRLD from field officer. The response regarding submission of NRLD information from field officer is very poor . After regular follow up/ correspondence from DSO office incomplete information receives from field officers. In every January the NRLD register is updated. As per NRLD register 2017 Maharashtra state comprises of total 2354 dams (2069 completed dams and 285 under construction dams)

9.0 MONITORING OF DEFICIENCY REMOVAL PROGRAM AS PER ANNUAL HEALTH STATUS REPORT.

As per Water Resources Department Marathi letter No.2014 dt.12/02/2015 Director General, Design, Training, Hydrology, Research and Safety MERI Nashik has been entrusted to monitor the deficiency removal program. For this a meeting has been held with all concern Chief Engineers and the program has been prepared for removal of deficiencies as per AHSR.

10.0 SUGGESTION FOR INSPECTION BY FIELD OFFICERS -

1. Due care shall be taken while filling the salient features of dam and information regarding N.C.D.S. documents.
2. It is observed that the information regarding number of instruments installed does not tally for pre & post monsoon inspection report of the same dam. In some cases it is observed that the list of instruments given in previous year do not appears in the current year. These discrepancies should be avoided.
3. The periodical inspection reports of all the dams shall be sent in original instead of carbon or xerox copy.
4. Ambiguous or incomplete replies shall be avoided. It is necessary to check point wise replies, which should clear and self explanatory.
5. The deficiencies observed frequently since long shall be deleted only after rectification work is completed and reported to Dam Safety Organisation, Nashik- 4.
6. The inspecting officer is advised to write the word "special attention" in inspection report against all such items wherever immediate attention is necessary from concerned field officer in charge of dam from safety point of dams and life & property on the downstream & would be useful for identifying categorisation of deficiencies in Dam Safety Organisation, Nashik- 4.
7. The extent of embankment settlement shall be furnished with its measurement & Reduced Distance (R.D.) and it shall be with compared designed cross section.
8. If the existing dam section is found under section as compared to the design section during inspection then the work of resectioning shall be carried out and opinion of inspecting officer shall be stated in inspection report.
9. The quantum of retrogression/scouring in tail channel shall be given in inspection report.
10. The monolith wise quantum of leaching in galleries and all type of leakages in dam shall be noted in inspection report.
11. The trial of spillway gates shall be carried out before monsoon every year & observed condition shall be mentioned in inspection report.
12. The information in Appendix II (Performance of meteorological instruments installed) and Appendix III (performance of taking observation of instruments installed in large dams) shall be filled properly and complete.
13. The compliance of rectification work of deficiencies of each dam mentioned in status report shall be communicated to Dam Safety Organisation, Nashik every year so that this can be included in the Action Taken Report Part-I of status report.
14. Date of inspections is not mentioned in some pre / post inspection reports. This is mandatory since it will reflect in the Annual health status report.

11.0 STANDARD PROCEDURE FOR CONFIRMATION AND REMOVAL OF CATEGORY-I DEFICIENCY OF DAM.

A systematic approach and working methodology is very essential to monitor the safety aspects of the dams. Hence in order to avoid any havoc among the stakeholders of dam, the standard procedure for confirmation of category-I deficiency has been circulated by DSO vide Marathi letter No.1491 dt.25/11/2014.

During the scrutiny of Pre and Post Monsoon report or during DSO test Inspection whenever it is found that the deficiency is of Category-I it will be immediately communicated to concern SE and CE. Concerned CE/SE should immediately visit the dam and should satisfied himself that the deficiency pointed out is a major deficiency which may lead to failure of dam, and should confirm to the DSO regarding the classification of deficiency as per his opinion. If it is confirmed then it will be finalised as Category-I deficiency and accordingly it will be appear in AHSR .

As per government directions, Category-I deficiency should be removed immediately on top priority and after completion of physical work of deficiency removal, Concern Chief Engineer should communicate this to DSO.

Annexure II
Standardized Deficiencies

Standard Deficiencies Category- 1

1 E - Earthen Dam.

1E.1 Seepage water has created an open pathway or pipe through dam, which may lead to failure of dam by piping.

1E.2 Heavy seepage with muddy or turbid water is observed through any part of dam.

1E.3 Seepage water flooding from a boil in the foundation or from relief well on downstream side of dam.

1E.4 Outlet well / Head regulator well and hoisting structure is collapsed /completely damaged.

1E.5 Outlet pipe in the body of the dam is damaged/failed and uncontrolled outlet- releases eroding Toe of dam.

1E.6 Debris stuck under gate or gate leaf is cracked / failed resulting uncontrolled flow through outlet.

1 M Masonry Dam.

1M.1 Downstream movement or tilting of dam.

1M.2 Differential movement of dam blocks/monoliths.

1M.3 Vertical Displacement with visible cracking in the body of dam.

1 M.4 Spillway gate damaged / not working.

Standard Deficiencies Category – 2

Deficiency Cat II (A)	Deficiency Cat II (B)
Earthen Dam	
A.1: Boil leakage/ seepage/ wet patches/ slushiness,in Earthen Dam.	**B 1** Dam section is not as per design
A 2: Standing pool / Ponding / Water Logging / Slushy condition on D/S of Dam	**B 2** : Cross and toe drains not working properly/ drains silted or vegetated causing stagnant pool of water.
A 3 : Leakages in vicinity of junction between earthen dam & masonry dam portion.	**B 3** : Considerable settlement of embankment / Rock toe/Pitching/ U/S & D/S slops, bulging/concavity of slopes.
A 4 : Major leakages through outlet conduit/pipe joints/Gates.	**B 4**: Longitudinal / Transverse cracks/ low area/sink holes/gully formation on top side slope of earthen dam.
A 5 ; Relief wells not functioning properly./ Abnormal rise in water level in wells.	**B 5 :** Outlet gates not functioning properly. Stem rod is bent(Service gate/Emergency gate/Stop log gate/sluice gate)
A 6 : Outlet well is damaged/not in good condition /cracks observed/jets of water in well.	**B 6** : Approach to dam through all weather road not constructed/maintained properly.
A 7 : Retrogression /scouring in tail channel.	**B 7**: Waste weir/waste weir bar not in good condition/coping damaged/leakage through waste weir.
Masonry / Concrete Dam	
A 8 : Drainage gallery in accessible/No adequate lighting./ No dewatering arrangement or failure.	**B 8** : Pointing on U/S face of dam not in good condition./deterioration spalling of concrete surface.
A 9 : Foundation drains / holes/ porous pipes/chocked/ no seepage through foundation drain holes.	**B 9**: Instruments not in working condition.
A 10 : Heavy leakages through porous pipes/ through dam body in gallery /monolith joints.	**B 10** : Leakages through River sluice.
A 11 : Sweating / seepages through D/S of masonry dam	
A 12 : Excesssive considerable leaching from seepage water.	
A 13 : Swelling / minor cracking observed on body of dam.	
A 14 : EDA / Stilling basin damaged/Hydraulic performance not good.	
A 15 : Leakages through spillway /piers//junction of flank wall.	
A 16 : Damages / foundation erosion/ scour/undermining observed in vicinity of flank walls/ guide walls/ junction walls/return walls.	
A 17 :End weir not in good condition / scouring noticed on immediate D/S.	
Spillway gates.	
A 18 :Wire ropes of hoist not in good condition/hoisting structure damaged/cracked.	**B 11**: Surface paint/steel surface of spillway gates deteriorated.
A 19 : Alternative power system Generator for gate operation not working properly.	**B 12** : Damage to Rubber seals/Leakages through gates.
A 20 : Operation of gates not smooth needs repair.	
Other structures	
	B 13 : Heavy vegetation/big trees on embankment top/slope making dam portion not accessible.
	B 14 : Deck bridge slab/ pier / damaged cracked/ alignment disturbed.
	B 15 :Major portion of Pitching damaged/washed away.

Standard Deficiencies Category – 3

3.1 Profuse growth of bushes and trees over dam portion.

3.2 Guard stones/ chainage stones and parapet wall not provided / damaged.

3.3 Growth of aquatic weeds in reservoir of dam is observed.

3.4 Ant hills or crab holes/holes made by rodents/animals.

3.5 Minor undulation/ settlement/ Rain cuts / pot holes observed on dam top & slopes.

3.6 Access road/Dam top road surface/ slab joints damaged needs repair.

3.7 Pitching on embankment of dam is dislocated /disturbed at some places.

3.8 Breaching section is not accessible/ Instruction board showing operation of breaching section is not available.

3.9 Section of Toe drain/cross drain/ out fall drain damaged. Some weed growth/ siltation in drains/ nalla.

3.10 Surface drain/ Catch water drains for berms are silted /damaged.

3.11 Electric cable & wiring are damaged/not in good condition.

3.12 Minor leaching in the gallery/ body of dam.

3.13 V – notches/ measuring devices are not in working condition/ silted / damaged/ not provided.

3.14 Mosquito net door is to be provided to avoid entry of reptiles in the gallery.

3.15 Damage to natural slope protection works,guniting damaged/washed out. Wire mesh exposed.

3.16 Guide wall/Divide wall/Guide bund/End Sill wall damaged/ Pointing is not in good condition/weep holes not functioning. At some places w.w bar/coping is damaged.

3.17 Provision of access to stilling basin/ladder not provided.

3.18 EDA ponding with water not possible to Inspect.

3.19 Minor erosion/ Scouring/Retrogression/ pot holes in tail channel. Ponding,standing water in EDA /Tail channel.

3.20 Lubrication/painting required for parts of Gates / hoisting structure/Rubber seal damaged/ replacement.

3.21 Approach bridge to intake well / spillway gates railing /flooring plates damaged / need repairs. Need of ladder for inspection well/EDA.

3.22 Minor leakages through outlet gates.

3.23 Air vent not periodically cleaned./damaged/closed.

3.24 EAP / ROS /GOS /Record drawings/ not provided / not prepared at dam site.

3.25 The record of periodical measurements of leakage discharge from dam / relief well is not maintained.

3.26 Street light on dam top is not provided/not working.

3.27 Security / CC TV camera/entry gate not provided/not working/Unauthorized entry.

3.28 Sufficient staff arrangement is not available for security ,instrument readings and measurements and maintenance on dam site.

3.29 Fencing around dam is not provided/ damaged due to which unauthorized trespassers are seen.

3.30 Communication facilities like mobile wireless, warning devices, telephone is not available at dam site.

3.31 Sufficient stock of spares/stationary required is not available at dam site.

3.32 Security cabin at dam entrance/Irrigation outlets not provided/damaged/needs repair.

3.33 Minor leakages through masonary/ concrete dam body/gallery of dam.

3.34 Approach channel silted.Trash rack need to be cleaned/ damaged/not provided.

3.35 Minor damages to spillway / masonary/ concrete portion of dam.

3.36 Porous pipes/foundation drains / holes not periodically cleaned.

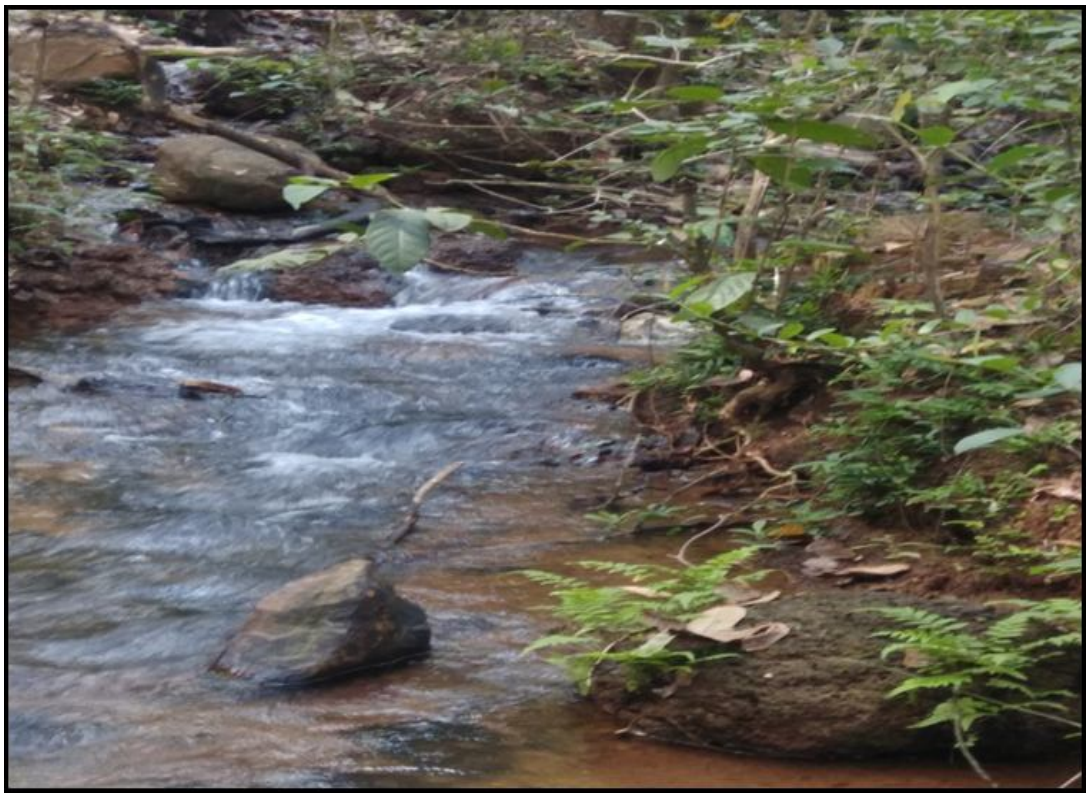


Photo -1

Otav dam (Class-I) Dist - Sindhudurg

Deficiency: Major leakages on nearly about 300m d/s of saddle dam from natural ground.

Date of Inspection - 19.12.2019.

Photo - 2

Kondgaon dam (Class-II) Dist - Raigad

Deficiency: Leakage through the w.w.bar & damaged U.C.R masonry

Date of Inspection - 28.11.2019.

Photo - 3
Middle Vaitarna Dam (Class-I) Dist - Thane
Deficiency- Considerable leakage from top of foundation gallery near shaft no.9
Date of Inspection - 04/09/2019

Photo - 4
Sakhare Dam (Class-II), Dist - Palghar
Deficiency- Leakages on the downstream side of overflow section
Date of Inspection - 11/10/2019

Consolidated Health Status Report
Of Identified Large Dams In
Kokan Region 2019-20

PART – 3

Annual performance Report of
Instruments installed on large Dams based
on Pre & Post Monsoon- 2019 inspection report

PART – 3 Annual performance Report of Instruments installed on large Dams

3.1 General.

The main purpose of instrumentation in dam is to monitor the safety of the dam and to warn of any changes that could in danger the safety of a dam, as well as to provide a confirmatory check in design assumptions and methods of computation.

Instruments embedded in or installed at the surface of the dam keeps a constant watch over the performance and indicate the distress spots for which remedial measures may be taken. Thus, instruments play an important role in checking the safety of dams and helps in monitoring and evaluating the performance of the dams during the construction as well as during the operation.

Instruments installed on dams are “Eyes and Ears” of dam’s performance vis-à-vis parameters adopted during its design. The field officers in charge of dams have not been able to upkeep and monitor/maintain instruments installed on dams. Efforts should be taken by all field officers to repair / replace instruments at the earliest. Monitoring of vital parameters like seepage, uplift, settlement and timely remedial measures will go long way in extending the life of the dam.

3.2 Instrumentation in Earthen Dams

Commonly used instrument in earthen dam are as below.

1) Pore Pressure Meter

They are installed in bore holes drilled below the foundation or through already completed embankment. Hence cannot be repaired or replaced.

2) Cassagrande/standpipe piezometers

These are used for measuring pore water pressure in soil. These instruments can be installed at any time after completion of construction of the dam at desired location.

3) Twin Tube Piezometers

These are also used for measuring pore water pressure in earthen dam. These are installed in foundation and embankment during construction of dam. If PVC pipes are found chocked due to leached material then it can be cleaned with CuSo4. If pipes are cut / broken then it cannot be replaced as those are in body of dam. Outside measuring assembly can be repaired. Periodical maintenance, periodical reading and periodical calibration are utmost important.

4) Earth pressure cells

These are installed in the foundation. The cables which are outside the body can be replaced if damaged. The sensor cannot be repaired or replaced.

5) Settlement Gauges (surface settlement gauges/vertical cross arms)

These are used for measuring settlement in earth fill dam, rock fill dam and high embankment. Initially when the dam is under construction these instruments are installed.
Settlement of dam is more in initial period, which gradually decreases and it is almost nil after certain period. As such these gauges also do not show settlement after few years.

6) Slope Indicator

This is installed in foundation with one end at bottom and other at top of the dam. It measures horizontal and vertical movement of the dam. This can be replaced.

3.3 Instrumentation in Concrete / Masonry Dams

Commonly used instruments in concrete / masonry dams are as below.

1) Stress meters

The stress meters measure stresses inside the dam body. These instruments are embedded in concrete/masonry during construction stage hence cannot be repaired or replaced.

2) Strain meter/ No stress strain meter

The strain meters measures the deformation in the structure at the particular location due to strain, creep, temperature etc. The main purpose is to determine the stress distribution in the concrete dam during and after construction of dam. Since instrument is installed in the body of the dam it cannot be repaired or replaced.

3) Uplift pressure cells

The bowl type uplift pressure cells are provided in the foundation of dam. Uplift pressure cell is used for monitoring uplift pressure of water in the foundation of dam and concrete structure. The pressure cell pipes can be cleaned if choked. The pressure gauges can be repaired or replaced.

4) Plumb bob /Co-ordimeter

Conventional/inverted plumb bob is used to measure deflection of the dam body. It measures the horizontal displacement in dam's foundation and abutment. Plumb bob can be repaired or replaced.

5) Thermocouples/ Thermometers

These are used to measure the temperature variations in the body of concrete dam. These are installed in layers at various levels and cannot be replaced or repaired after construction.

6) Long gauge extensometer

It is used to measure the deformation/displacement in the foundation of the concrete dam. Once it fails to function cannot be repaired.

7) Joint meters

The joint meters measure the opening of the joints across which they are embedded. As such they are located near the joints.

3.4 Status of Dam Instrumentation in the Region.

Considering the fact that most of the instruments were non-functional from many years, Govt.of Maharashtra appointed a committee to study these instruments. The recommendations of the committee were accepted and incorporated in G.R. धसुसं २०१४(६२१/१४)/ सिं.व्य.(कामे) dated 31.12.2015.

Accordingly to every dam owner, it is informed by Dam Safety Organisation to update the list of instruments at the dam site. In this report the updated details of instruments are considered.

The status of dam instrumentation in the region is given in table No, 3.1.Similarly the details of mortality of instruments is given in table No.3.2 and comparison of mortality rate with respect to previous year is given in Table No. 3.3.

3.5 Observations

1) There are 14 dams in the region where instruments were installed.

2) Various instruments numbering 1562 have been installed on these 14 dams. Out of which 1131 were functioning and 431 were not functioning i.e. 27.59 % instruments are in non-functioning condition.

3) As compared to last year, the percentage of instruments functioning is Decreases From 75 % to 72 % previous year.

4) The observations of the instruments should be taken regularly and need to be sent to D.S.O. Nashik for analysis.

Table No. 3.1

Dam wise Status of Dam Instruments Installed on Large Dams (Kokan Region)

Sr. No.	Dam Name	Instrument Name	Instrument Type	Year of Installation	Total	Functional Status (F/N.F)	
						Functional	Non Functional
1	Bhatsa	Uplift pressure cell	Mechanical	1980-86	16	0	16
		Inverted plumb bob	Mechanical	1986	1	0	1
		Joint meters	Electrical		3	0	3
2	Surya Dam	Inverted Plumb bob	Mechanical	1996	1	0	1
		Uplift Pressure cell	Mechanical	1990	10	0	10
3	Upper Vaitarna	Horizontal movement device	Mechanical	1970	1	0	1
		vertical settlement gauge	Mechanical	1970	1	0	1
		foundation piezometers	Pneumatic	1970	31	0	31
		Embankment piezometers	Pneumatic	1970			
		plumb bob	Mechanical	1996	1	0	1
		Uplift pressure cell	Mechanical		8	0	8
		Cassagrande piezometers	Mechanical		3	0	3
4	Natuwadi	Twin tube piezometer	Hydraulic	1980	47	0	47
		Cassagrande tube type	Hydraulic	1980	5	0	5
		Slop Indicator			2	0	2
5	Arjuna	Twin tube piezometer	Mechanical	2007-10	45	15	30
		Cassagrande piezometers	Mechanical	2017-18	6	6	0
		Earth pressure cell	Electrical	2007	3	0	3
		Surface settlement plug	Mechanical		7	7	0
6	Bhira	Twin tube piezometer	Hydraulic	1987	25	0	25
		Casagrande Piezometers	Hydraulic	1987	3	0	3
7	Hetawane	Twin tube Piezometers	Hydraulic	2001	68	0	68
8	Korle Satnadi	Foundation piezometers	Hydraulic	2009	4	0	4
		Twin tube piezometer	Hydraulic	2009	27	0	27
		Earth pressure cells	Electrical	2009	3	0	3
9	Tillari main dam	Uplift pressure cells	Mechanical	1986	3	0	3

		Plumb bob	Mechanical	1986	1	0	1
10	Tillari Interstate dam	Foundation piezometers	Hydraulic	1995	21	21	0
		Embankment Piezometers	Hydraulic	1995	104	78	26
		Pneumatic Piezometers	Pneumatic	2008	12	0	12
		vibrating wire type Piezometer		2008	10	3	7
		Casagrande Piezometer	Hydraulic	2008	18	18	0
		Earth pressure cells	Electrical	2008	19	0	19
		Uplift pressure cells	Hydraulic	2008	18	14	4
		Surface settlement plug	Mechanical	2008	77	77	0
		Plumb bob	Mechanical	2008	1	1	0
11	Deoghar medium project	Casagrande Piezometers	Hydraulic	2005	8	7	1
		Twin Tube Piezometers	Hydraulic	2005	25	8	17
		Earth pressure cells	Electrical	2005	5	0	5
		Surface settlement plug	Mechanical	2005	15	15	0
12	Upper Ghatghar (2006)	Piezometers	VW type	May-03	4	0	4
		Uplift pressure cells	VW type	May-03	6	0	6
13	*Lower Ghatghar (2006)	Pore Pressure cells	VW type	2004-06	24	24	0
		Stress meters	VW type	2004-06	24	23	1
		Strain meter	VW type	2004-06	24	24	0
		Uplift pressure cells	VW type	2004-06	16	15	1
		Thermometers	VW type		211	180	31
		Joint meters	VW type	2008	10	10	0
		Normal / Inverted Plumb bob	Mechanical		2	2	0
14	Middle Vaitarna, Dist:- Thane	Stress meters	VW type		36	36	0
		Strain meters	VW type		36	36	0
		Pore pressure meters	VW type		36	36	0
		Uplift pressure meters	VW type		21	21	0
		Thermometers	VW type		428	428	0
		Joint meters	VW type		24	24	0
		Normal/ Inverted plumb line	VW type		2	2	0
					1562	**1131**	**431**

TABLE NO 3.2

Mortality Status of Instruments installed on Large Dams (Kokan region)

Sr. No.	Type of Instruments	Number Of Instruments			
		Total	Working	Non-Working	Mortality (%)
1	2	3	4	5	6
(A) Earth Dams					
1	Casagrande/ Stand pipe piezometers /Vibrating	57	34	23	40.35
2	Twin tube piezometers	409	122	287	70.17
3	Horizontal/Vertical device / Cross arm surface settlement plug	101	99	2	1.98
4	Earth pressure cells	30	0	30	100.00
5	Slope indicator	2	0	2	100.00
Total		**599**	**255**	**344**	**57.43**
(B) Masonry Dams					
1	Pore pressure meters	60	60	0	0.00
2	Stressmeter	60	59	01	01.67
3	Strainmeter/ No stress-strain meter	60	60	0	0.00
4	Uplift pressure cells	98	50	48	48.98
5	Plumb bob/ Inverted Plumb Bob / co-ordimeter	9	5	4	44.44
6	Long Gauge extensometer, Multiple Bore hole extensometer	0	0	0	0.00
7	Thermometers	639	608	31	4.85
8	Jointmeters /Dial Gauge	37	34	3	8.11
9	Tiltmeter	0	0	0	0.00
Total		**963**	**876**	**87**	**9.03**

	Instruments in	Total	Working	Non Working	Mortality
A)	Earth Dams	599	255	344	57.43
B)	Masonry Dams	963	876	87	9.03
	Grand Total	**1562**	**1131**	**431**	**27.60**

Table No. 3.3

Comparative Statement For Status of Instruments in Dams

Kokan Region

Year		HSR 2018					HSR 2019				
Sr. No	Name of Chief Engineer	Total Dams	Total Instruments	Functioning	Not-Functioning	% functioning	Total Dams	Total Instruments	Functioning	Not-Functioning	% functioning
1	Chief Engineer Kokan, Mumbai	13	979	593	386	60.57	13	979	548	431	55.98
2	Hydraulic Engineer, BMCC Mumbai	1	583	583	0	100	1	583	583	0	100
	Total	**14**	**1562**	**1176**	**386**	**75.28**	**14**	**1562**	**1131**	**431**	**72.40**

Consolidated Health Status Report
of Identified Large Dams In
Kokan Region 2019 – 20

PART – 4

Annual performance Report of
Meteorological instruments installed on dams
based on Pre & Post Monsoon- 2019 inspection report

PART - 4
Annual performance Report of Meteorological instruments installed on dams

4.1 General

Hazard potential of dam depends upon the possible hazard it poses to population on the downstream during flood. In case of gated spillways, generally flood is considered to impinge when reservoir is at F.R.L. If flood forecasting and warning systems are in place, flood impingement can be considered at lower when F.R.L. considering prior depletion.

The establishment of hydro-meteorological stations in the vicinity of every Class-I dam and rain gauge network in its catchments assumes vital importance due to its role in flood forecasting and warning. The hydro-meteorological station shall be capable of recording data relating to, among other parameters, rainfall, atmospheric pressure, maximum & minimum temperature and humidty,wind speed, wind direction, height of waves and reservoir water temperature. It is important that a representative proportion of the rain gauge network is linked to flood forecasting and warning control centre by telemetry.

4.2 Observations

From Pre/Post Monsoon Reports it is seen that the ANNEXURE-IV which is "**Checklist of Various Meteorological Instruments installed on Dams**" is not filled properly and quantity of number of instruments varies from year to year. As this status of instruments is submitted to C.W.C. New Delhi. Field authorities need to make sure that correct information is filled. Table 4.1 gives the dam wise status of the meteorological instruments, and Table 4.2 gives the status of morality of meteorological instruments installed in the region.

1. As per Pre/Post Monsoon reports of Kokan region it is seen that 189 various meteorological instruments installed on dams out of which 113 are working and 76 are not working. The non-working instruments should be repaired / replaced on priority.
2. As per the government circular CDA-1013/(207/13)/CAD(works)/ August-2013. It is mandatory to install **Pan Evaporimeter** to measure evaporation on all major and medium projects.

Efforts should be taken by field officers to establish automatic flood warning systems which will help in saving lives, livestock and property and will invariantly contribute to lessening of the overall impact of floods.

Table - 4.1

Dam wise status of Meteorological instruments Installed on Large Dams

Sr. No.	Name of dam	Name of instruments	No. of instruments	Performance		Remark
				Working	Not working	
1	2	3	4	5	6	7
1	Upper Ghatghar	Rain Gauge on dam (Ordinary)	1	0	1	
		Rain Gauge on dam (Self recorder)	1	0	1	
		Pan Evaporimeter	1	0	1	
		Wind velocity recorder	1	0	1	
		Wind direction recorder	1	0	1	
		Wet/dry bulb thermometer	1	0	1	
2	Bhatsa	Rain Gauge on dam (Ordinary)	1	1	0	
		Rain Gauge in catchment (Self recorder)	7	7	0	
		Rain Gauge in catchment (Ordinary)	1	1	0	
		Pan Evaporimeter	1	1	0	
3	Lower Ghatghar	Rain Gauge on dam (Ordinary)	1	1	0	
		Rain Gauge on dam (Self recorder)	1	0	1	
		Pan Evaporimeter	1	1	0	
		Wind velocity recorder	1	0	1	
		Wind direction recorder	1	0	1	
		Wet/dry bulb thermometer	1	0	1	
4	Upper Vaitarna	Rain Gauge on dam (ordinary)	1	1	0	
		Rain Gauge in catchment(ordinary)	9	9	0	
		Pan Evaporimeter	1	1	0	
5	Barvi	Rain Gauge on dam (ordinary)	1	1	0	
		Rain Gauge in the catchment (ordinary)	1	1	0	
6	Ransai	Rain Gauge on dam (ordinary)	1	1	0	
7	Modaksagar	Rain Gauge on dam (ordinary)	1	0	1	
		Rain Gauge in the catchment (ordinary)	1	0	1	
		Rain Gauge on dam (Self record)	1	0	1	
		Pan Evaporimeter	1	0	1	
8	Dhamni (Surya)	Rain Gauge on dam (ordinary)	1	0	1	
		Pan Evaporimeter	1	1	0	
9	Wandri	Rain Gauge on dam (ordinary)	1	1	0	
		Rain Gauge on dam (self record)	1	0	1	
		Pan Evaporimeter	1	1	0	
10	Vanjale	Rain gauge on dam (ordinary)	1	0	1	
11	Tansa	Rain Gauge on dam (ordinary)	1	0	1	
		Rain Gauge on dam (Self record)	1	0	1	
		Pan Evaporimeter	1	0	1	
12	Velholi	Rain gauge on dam (ordinary)	1	1	0	

Sr. No.	Name of dam	Name of instruments	No. of instruments	Performance		Remark
				Working	Not working	
1	2	3	4	5	6	7
13	Adiwale	Rain Gauge on dam (ordinary)	1	0	1	
14	Ozar	Rain Gauge on dam	1	1	0	
15	Jambhe	Rain Gauge on dam (ordinary)	1	1	0	
16	Jambhurde	Rain Gauge on dam (ordinary)	1	0	1	
17	Khandape	Rain Gauge on dam (ordinary)	1	1	0	
18	Kharade	Rain Gauge on dam (ordinary)	1	1	0	
19	Maniwali	Rain Gauge on dam (ordinary)	1	0	1	
20	Musai	Rain Gauge on dam (ordinary)	1	1	0	
21	Thakurwadi	Rain Gauge on dam (ordinary)	1	0	1	
22	Wagh	Rain Gauge on dam (ordinary)	1	1	0	
23	Varandh	Rain Gauge on dam (ordinary)	1	0	1	
24	Bhira	Rain Gauge on dam (ordinary)	1	0	1	
		Rain Gauge in catchment (ordinary)	1	0	1	
		Rain Gauge on dam (self recorder)	1	0	1	
		Rain Gauge in catchment (self recorder)	1	0	1	
25	Bhira	Rain Gauge on dam (ordinary)	1	1	0	
26	Khaire	Rain Gauge on dam (ordinary)	1	0	1	
27	Punade	Rain Gauge on dam (ordinary)	1	1	0	
28	Hetawane	Rain Gauge on dam (ordinary)	1	1	0	
		Rain Gauge on dam (self recorder)	1	1	0	
		Rain Gauge in catchment (self recorder)	1	1	0	
		Wind velocity recorder	1	1	0	
		Wind direction recorder	1	1	0	
29	Wawa	Rain Gauge on dam (ordinary)	1	1	0	
30	Dolwhal	Rain Gauge in catchment (ordinary)	1	0	1	
		Rain Gauge in catchment (self recorder)	1	0	1	
31	Pali Bhutavli	Rain gauge on dam (ordinary)	1	1	0	
32	Sanderi	Rain Gauge on dam (ordinary)	1	1	0	
33	Sutarwadi	Rain Gauge on dam (ordinary)	1	1	0	
34	Pabhare	Rain Gauge on dam (ordinary)	1	1	0	
35	Morbe	Rain Gauge on dam (ordinary)	1	1	0	

Sr. No.	Name of dam	Name of instruments	No. of instruments	Performance		Remark
				Working	Not working	
1	2	3	4	5	6	7
36	Kothurde	Rain Gauge on dam (ordinary)	1	0	1	
37	Ranwali	Rain Gauge on dam (ordinary)	1	1	0	
38	Kalote Mokashi	Rain Gauge on dam (ordinary)	1	1	0	
39	Kudki	Rain Gauge on dam (ordinary)	1	1	0	
40	Donwat	Rain Gauge on dam (ordinary)	1	1	0	
41	Salokh	Rain Gauge on dam (ordinary)	1	1	0	
42	Ausare	Rain Gauge on dam (ordinary)	1	1	0	
43	Phansad	Rain Gauge on dam (Self record)	1	1	0	
44	Karle	Rain Gauge on dam (ordinary)	1	1	0	
45	Khindwadi	Rain Gauge on dam (ordinary)	1	0	1	
46	Bhilawale	Rain Gauge on dam (ordinary)	1	1	0	
47	Bamnoli	Rain Gauge on dam (ordinary)	1	1	0	
48	Shirgaon	Rain Gauge on dam (ordinary)	1	1	0	
49	Unhere	Rain Gauge on dam (ordinary)	1	1	0	
50	Ambatkhol	Rain Gauge on Dam (ordinary)	1	0	1	
51	Vhel	Rain Gauge on dam (ordinary)	1	1	0	
52	Beni	Rain Gauge on Dam (ordinary)	1	1	0	
53	Adare	Rain Gauge on dam (ordinary)	1	1	0	
		Rain Gauge on dam (Self recorder)	1	0	1	
		Rain Gauge in catchment (Self recorder)	1	0	1	
		Pan Evaporimeter	1	0	1	
		Wind velocity recorder	1	0	1	
		Wind direction recorder	1	0	1	
		Wet/ dry bulb Thermometer	1	0	1	
54	Asurde	Rain Gauge on dam (ordinary)	1	1	0	
		Rain Gauge on dam (Self recorder)	1	0	1	
		Pan Evaporimeter	1	0	1	
		Wind velocity recorder	1	0	1	
		Wind direction recorder	1	0	1	
		Wet/ dry bulb Thermometer	1	0	1	
55	Guhagar	Rain Gauge on Dam (ordinary)	1	1	0	
56	Kadwai	Rain Gauge on Dam (ordinary)	1	0	1	
57	Kalwande	Rain Gauge on Dam (ordinary)	1	0	1	
58	Malghar	Rain Gauge on Dam (ordinary)	1	1	0	
59	Nive	Rain Gauge on Dam (ordinary)	1	1	0	
60	Phanaswadi	Rain Gauge on Dam (ordinary)	1	1	0	
61	Telewadi	Rain Gauge on Dam (ordinary)	1	1	0	

Sr. No.	Name of dam	Name of instruments	No. of instruments	Performance		Remark
				Working	Not working	
1	2	3	4	5	6	7
62	Diwalwadi	Rain Gauge on Dam (ordinary)	1	1	0	
63	Morawane	Rain Gauge on Dam (ordinary)	1	0	1	
64	Panderii	Rain Gauge on Dam (ordinary)	1	1	0	
65	Gavane	Rain Gauge on Dam (ordinary)	1	1	0	
66	Kelamba	Rain Gauge on Dam (ordinary)	1	0	1	
67	Khopad	Rain Gauge on Dam (ordinary)	1	1	0	
68	Kondey	Rain Gauge on Dam (ordinary)	1	1	0	
69	Tide	Rain Gauge on Dam (ordinary)	1	1	0	
70	Shiposhi	Rain Gauge on Dam (ordinary)	1	1	0	
71	Sondheghar	Rain Gauge on Dam (ordinary)	1	1	0	
72	Zapde	Rain Gauge on Dam (ordinary)	1	1	0	
73	Shelarwadi	Rain Gauge on Dam (ordinary)	1	1	0	
74	Natuwadi Dist. :- Ratnagiri	Rain Gauge on dam (ordinary)	1	1	0	
		Rain Gauge in Catchment (ordinary)	1	1	0	
75	Pimpar	Rain Gauge on dam (ordinary)	1	0	1	
76	Barewadi	Rain Gauge on Dam (ordinary)	1	1	0	
77	Arjuna Dist.- Ratnagiri	Rain Gauge on Dam (ordinary)	1	1	0	
		Rain Gauge on Dam (Self Recorder)	1	1	0	
		Pan Evaporimeter	1	1	0	
		Wind velocity recorder	1	0	1	
		Wind direction recorder	1	1	0	
		Wet/dry bulb thermometer	1	1	0	
78	Kondiwali	Rain Gauge on dam (ordinary)	1	1	0	
79	Awashi	Rain Gauge on dam (ordinary)	1	1	0	
80	Gadgadi	Rain Gauge on Dam (ordinary)	1	1	0	
81	Shil	Rain Gauge on Dam (ordinary)	1	1	0	
82	Pimpalwadi	Rain Gauge on dam (ordinary)	1	1	0	
83	Panhale	Rain Gauge in Catchment (Self Recorder)	1	0	1	
84	Bholwali	Rain Gauge on Dam (ordinary)	1	1	0	
85	Gadnadi	Rain Gauge on Dam (ordinary)	1	1	0	
86	Kakyewadi	Rain Gauge on Dam (ordinary)	1	1	0	
87	Shirsadi	Rain Gauge in catchment (ordinary)	1	1	0	
88	Panchnadi	Rain Gauge on Dam (ordinary)	1	1	0	

Sr. No.	Name of dam	Name of instruments	No. of instruments	Performance		Remark
				Working	Not working	
89	Sakharpa	Rain Gauge on Dam (self recording)	1	0	1	
		Pan evaporimeter	1	0	1	
90	Berdewadi	Rain Gauge on Dam (Self Recorder)	1	1	0	
91	Tanger	Rain Gauge on Dam (ordinary)	1	1	0	
92	Shiravli	Rain Gauge on Dam (ordinary)	1	1	0	
93	Talvat	Rain Gauge on Dam (ordinary)	1	1	0	
94	Harkul	Rain Gauge on dam (ordinary)	1	0	1	
		Rain Gauge on dam (Self recorder)	1	0	1	
		Pan Evaporimeter	1	0	1	
		Wind velocity recorder	1	0	1	
		Wet/dry bulb thermometer	1	0	1	
		Sunshine recorder	1	0	1	
		Automatic level recorder	1	0	1	
95	Sanamtemb	Rain Gauge on dam (ordinary)	1	0	1	
96	Nileli	Rain Gauge on dam (ordinary)	1	0	1	
97	Oras (Bk)	Rain Gauge on dam (ordinary)	1	1	0	
98	Pawashi	Rain Gauge on catchment (self recording)	1	1	0	
99	Tillari Forbay	Rain Gauge on Dam (ordinary)	1	1	0	
		Rain Gauge in catchment (Self recorder)	1	0	1	
		Pan Evaporimeter	1	0	1	
100	Tillari Interstate	Rain Gauge on dam (ordinary)	1	1	0	
		Pan Evaporimeter	1	1	0	
		Wet/dry bulb thermometer	1	1	0	
		Barometer	1	0	1	
101	Tillari Main dam	Rain Gauge on dam (ordinary)	1	1	0	
		Rain Gauge in catchment (Self recorder)	1	1	0	
		Rain Gauge on dam (Self recorder)	1	0	1	
		Pan Evaporimeter	1	0	1	
102	Otav	Rain Gauge on dam (ordinary)	1	0	1	
		Pan Evaporimeter	1	0	1	
103	Shivdev	Rain Gauge on dam (ordinary)	1	0	1	
		Pan Evaporimeter	1	0	1	
104	Madkhol	Rain Gauge on dam (ordinary)	1	1	0	
105	Oras (kamanadevi)	Rain Gauge on dam (ordinary)	1	0	1	
106	Shirwal	Rain Gauge on dam (ordinary)	1	1	0	
107	Korle Satnadi	Rain Gauge on dam (ordinary)	1	0	1	
108	Amboli	Rain Gauge on dam (ordinary)	1	1	0	
109	Talwade	Rain Gauge on dam (Self recorder)	1	0	1	
TOTAL			**189**	**113**	**76**	

Table No. 4.2
Mortality status of Meteorological Instruments Installed on Dams

Sr. No.	Type of Instuments	Number Of Instruments			
		Total	Working	Non-Working	Mortality (%)
1	2	3	4	5	6
1	Rain gauge on dam (Ordinary)	101	74	27	26.73
2	Rain gauge on dam (Self Recorder)	16	04	12	75.00
3	Rain gauge in catchment (Ordinary)	16	13	03	18.75
4	Rain gauge in catchment (Self Recorder)	15	10	05	33.33
5	Pan Evaporimeter	18	07	11	61.11
6	Wind velocity recorder	7	1	6	85.71
7	Wind direction recorder	6	2	4	66.67
8	Wet/dry bulb thermometer	7	2	5	71.43
9	Thermometer for air jump	0	0	0	0.00
10	Thermometer for reservoir water temp	0	0	0	0.00
11	Water stage recorder	0	0	0	0.00
12	Barometer	1	0	1	100.00
13	Sun shine recorder	1	0	1	100.00
14	Max & Min thermometer	0	0	0	0.00
15	Wave height recorder	0	0	0	0.00
16	Hydrometer	0	0	0	0.00
17	Humidity Meter	0	0	0	0.00
18	Automatic level controller	1	0	1	100.00
19	Stevenmeter	0	0	0	0.00
20	DWLL	0	0	0	0.00
21	Other Instruments	0	0	0	0.00
Total		**189**	**113**	**76**	**42.21**

Consolidated Health Status Report of Identified Large Dams In Kokan Region

PART – 5

Status of NCDS documents submitted to DSO of class-I Dams (Including private dams)

(As on 31.03.2020)

Kokan Region
National Committee on Dam Safety (NCDS) Documents

Importance of National Committee on Dam Safety (NCDS) Documents :

Central Water Commission (CWC) has laid down various guidelines covering the standardized dam safety practices-essentially guiding the dam owners in preparation of Emergency Action Plans, Periodical Dam Safety inspections, comprehensive dam Safety evaluation and appropriate institutional framework for dam safety. Their implementation is emphasized during the meetings of National Committee on Dam Safety (NCDS) and through the communications sent in this regard.

During the 34th meeting held at Chennai in March 2015 it was requested to all the Dam owners to take necessary steps for preparation of EAPs & other documents & report to NCDS Secretariat about the number of Dams for which EAPs & other documents have been prepared, along with the target dates for the preparation of EAPs & other documents for the remaining Dams.

The documents to be prepared as per National Committee on Dam Safety are as under & these shall be properly maintained and kept up to date by including latest information available.

1. EAP
2. R.O.S & G.O.S.
3. Data Book
4. O & M manual
5. Record Drawing & Completion Report,

1. EAP : Emergency Action Plan:

An Emergency action plan is a formal plan that identifies potential emergency conditions at a dam. It prescribes the procedures to be followed to minimize property damage and loss of life. The EAP contains procedures and information to assist the dam owner in taking necessary actions in time to moderate or alleviate the problems, in addition to issuing early warning & notification messages to responsible emergency management authorities,viz.,District Magistrate/Collector, Armed Forces, Paramilitary forces, Project Authorities & 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. In a nutshell, it outlines “who does, what, where, when and how” in an emergency situation or unusual occurrence affecting the Dams. The Emergency Action Plan has to be prepared as per Guidelines circulated by C.W.C., New Delhi’s vide letter no. 3/19/NCDS/Guidelines EAP/DSM/2004/233-67, Dtd. 17 May 2006.CWC Guidelines are available on

http://www.cwc.gov.in/main/ downloads /cwc/EAP chapters.pdf

2. R.O.S. (Reservoir operation schedule) and G.O.S. (Gate operation schedule) :

It is very necessary to lay down operating procedures of all storage reservoirs with the objective to limit the flood stages in the river downstream and with maximum feasible utilization of the flood capacity of the river channel downstream of reservoirs, consistent with the safety of the dam. A proper reservoir operation schedule should be in place.

For this purpose a schedule of opening and closing the gates to limit the reservoir levels to preset gauges should be laid down. Schedule for the dam as per operation & maintenance manual should be strictly adhered. The entire capacity of reservoir is used for active conservation. When the reservoir rises above active conservation, operation will be in accordance with the standing operation procedures. Inflow forecasting arrangement should be made for easy operation of gates. The Engineer in charge should inform immediately to the flood maintenance engineer downstream and flood –fighting center of the releases from the reservoir.

3. Data book:

Proper assessment of dam safety involves a thorough review of design, construction and performance records prior to conducting a field examination. The Data Book is an unpublished document which is prepared before the initial safety inspection of each dam. This book is abbreviated, convenient source of information, summarizing all pertinent records and history related to the safety of a dam and is a reference for the evaluation team. This Data Book should answer most questions about the dam. A list of reference is included if additional information is needed. Continual updating of the Data Book will be required as future inspections are made, new problems arise, new investigations are undertaken and remedial treatments performed. Documentation of all projects may be done in the Data Book format which is the primary data base for the team evaluating the safety of a dam. (Guidelines on standardized Data Book format are available at http://www.cwc.gov.in/ Dam_safety.html)

4. O & M Manual:

It is desirable that a separate manual is available with the officers .The officers Incharge of such works are requested to personally go through the manual and maintain the records from time to time in such a manner as to give their successors complete and

correct idea of the state of each of the several storage works in their charge and the different standing orders on all matters concerning the works. This will enable them to tackle problems as they arise, by quickly referring to the manual as far as possible without having to depend on the office to give information. The complete set of manual for each of the storage works should be personally handed over to successor by each concerned officer.

Copies of the maintenance manual shall be maintained at all offices right from sectional office to Circle office.

It is also necessary that the manuals are inspected at the time of inspection by the superior officers. Record of handing over and inspection should be maintained.

5. Record Drawing & Completion Report :

The importance of record drawings & completion report as an archival data need not be emphasized. All efforts should be made by field engineers to prepare Record Drawing & Completion Report and store them for future reference.

Kokan Region

Position of receipt in DSO of Emergency Action Plan (EAP)					
Sr.No	**Name of C.E.**	**Total**	**Received**	**Not received**	**Remarks**
1	C.E.(W.R.) Mumbai	39	11	28	
2	C.E.S.S.I.(W.C),Pune	2	0	2	
3	Private Dams in Konkan Region	9	3	6	
	Total for Konkan Region	**50**	**14**	**36**	

Position of receipt in DSO of Reservoir Operation Schedule (ROS)					
Sr.No	**Name of C.E.**	**Total**	**Received**	**Not received**	**Remarks**
1	C.E.(W.R.) Mumbai	15	11	4	
2	C.E.S.S.I.(W.C),Pune	0	0	0	
3	Private Dams in Konkan Region	6	1	5	
	Total for Konkan Region	**21**	**12**	**9**	

Position of receipt in DSO of Gate Operation Schedule (GOS)					
Sr.No	**Name of C.E.**	**Total**	**Received**	**Not received**	**Remarks**
1	C.E.(W.R.) Mumbai	15	11	4	
2	C.E.S.S.I.(W.C),Pune	0	0	0	
3	Private Dams in Konkan Region	6	0	6	
	Total for Konkan Region	**21**	**11**	**10**	

Position Of NCDS Doccuments in Konkan Region
Position of EAP ,ROS,GOS Documents(Class-I Dams)

R - Received , **NR** - Not Received , **AG** - Automatic Gate, **UG**-Ungated

Sr.No.		Name of Dam (Corporation /C.E./S.E.)	E.A.P.	ROS	GOS
1		2	3	4	5
		Kokan Region			
		K.I.D.C., Thane			
		A) C.E., (W.R.), Mumbai			
		1) S.E. (TIC) Thane			
1		Bhatsa	**NR**	R(2007)	R(2007)
2		Dhamni	R(1997)	R(2007)	R(2007)
3		Upp.Vaitarna Alwandi	R(1995)	R(2007)	R(2007)
4		Domihira (UG)	**NR**	–	–
5		Bhira forebay (UG)	R(1997)	–	–
6		Bhira Pick up	R(1997)	R(2007)	R(2007)
7		Ghatghar (Upper) *	**NR**	R(2009)	R(2009)
8		Ghatghar (Lower)(UG)	R(2012)	**-**	**-**
		2) S.E. (RIC)Ratnagiri			
9		Barewadi (UG)	R(1997)	–	–
10		Natuwadi	R(2003)	R(2007)	R(2007)
11		Pimpar (UG)	**NR**	–	–
12		Arjuna (UG)	R(2019)		
13		Muchkundi(UG)	**NR**		
14		Berdewadi (UG)	**NR**	–	–
15		Panhale (UG)	**NR**	–	–
16		Awashi (UG)	**NR**	–	–
17		Bholawali (UG)	**NR**	–	–
18		Gadgadi (UG)	**NR**	–	–
19		Gadnadi (UG)	**NR**	–	–
20		Kondiwali (UG)	**NR**	–	–
21		Pimpalwad(Dubi)	**NR**	R(2011)	R(2011)
22		Shil (UG)	**NR**	–	–
23		Tangar (UG)	**NR**	–	–
24		Kakyewadi	**NR**		
25		Shelarwadi(Waki) (UG)	**NR**		
26		Sakharpa (UG)	**NR**		
27		Tide(UG)	**NR**		
		3) S.E,(SKIPC) Sindhudurga			
28		Tillari (Forebay)	**NR**	R(2007)	R(2007)
29		Tillari (Main)	R(1985)	R(2007)	R(2007)
30		Tillari (Interstate)	R(2003)	R(2016)	R(2016)

1		2	3	4	5
31		Deoghar (UG)	**NR**	–	–
32		Korle Satanadi (UG)	**NR**		
33		Tarandale (UG)	**NR**	–	–
34		Nadhawade(UG)	**NR**		
35		Otav (UG)	**NR**	–	–
		4) S.E. (N.K.I.P.C.), Thane			
36		Amboli (UG)	**NR**	–	–
37		Wagh (UG)	R(2008)	–	–
38		Hetawane	**NR**	R(2011)	R(2011)
39		Pali Bhutawali (UG)	**NR**		
		CE WR Konkan Total	**39**	**15**	**15**
		(R)Received	**11**	**11**	**11**
		(NR) Not Received	**28**	**4**	**4**
		C) M.W.C.C., Aurangabad			
		C.E. (Local Sector), Pune			
		1) S.E., M.I. (L.S.),Thane			
40		Parule (UG)	NR	**-**	**-**
41		Rajewadi (UG)	NR	**-**	**-**
		CE LS Pune Total	**2**	**0**	**0**
		(R)Received	**0**	**0**	**0**
		(NR) Not Received	**2**	**0**	**0**
PRIVATE DAMS in Konkan Region					
		M.I.D.C., Dombivali			
		S.E.MIDC, Dombivali, Thane			
1		**Barvi(AG)**	NR	**-**	**-**
2		**Ransai (AG)**	NR	**-**	**-**
		S,E,(MIDC) Mahad, Raigad			
3		Savitri	NR	NR	NR
		S.E.Dairy Const.Circle,			
		Worli ,Mumbai			**-**
4		Kurze Dapcheri	NR	R(2009)	NR
		M.C.G.B., Mumbai			
5		**Tansa (AG)**	R(2016)	**-**	**-**
6		Modaksagar	R(2016)	NR	NR
7		Middle Vaitarna	R(2016)	NR	NR
8		Pise	NR	NR	NR
		S.E.,(MJP), Panvel			
9		Morbe	NR	NR	NR
		Konkan Private Total	**9**	**5**	**5**
		(R)Received	**3**	**1**	**0**
		(NR) Not Received	**6**	**4**	**5**

Position of receipt other NCDS Documents in DSD-1,Nashik

Kokan Region

Total Catogary-I dams= 50

Sr. No.	Name of C.E.	Total No Of Dams	Completion Report		Record Drawing		Data Book		O & M Mannual	
			Received	Not received	Received	Not received	Received	Not received	Received	Not Received
1	CE(WR) Mumbai	39	4	35	4	35	4	35	4	35
2	CE SSI(WC) Pune (Kokan Region)	2	0	2	0	2	0	2	0	2
3	Private Dams	9	0	9	0	9	0	9	0	9
Total For Konkan Region		**50**	**4**	**46**	**4**	**46**	**4**	**46**	**4**	**46**

Position Of NCDS Doccuments in Konkan Region

Position of Completion Repoprt, Record Drg. ,Data book, O&M Mannual Documents (Catogary-I)

Sr.No.	Name of Dam (Corporation /C.E./S.E.)	Completion Report	Record Drawing	Data Book	O & M Manual
	Kokan Region				
	K.I.D.C., Thane				
	A) C.E., (W.R.), Mumbai				
	1) S.E. (TIC) Thane				
1	Bhatsa	NR	NR	NR	NR
2	Domihira (UG)	NR	NR	NR	NR
3	Upp.Vaitarna Alwandi	NR	R	NR	NR
4	Dhamni	NR	NR	NR	NR
5	Bhira forebay (UG)	NR	NR	NR	NR
6	Bhira Pick up	NR	NR	NR	NR
7	Ghatghar (Upper) *	NR	NR	NR	NR
8	Ghatghar (Lower)(UG)	NR	NR	NR	NR
	2) S.E. (RIC)Ratnagiri				
9	Arjuna (UG)	NR	NR	NR	NR
10	Barewadi (UG)	R	R	R	R
11	Natuwadi	R	NR	R	R
12	Pimpar (UG)	NR	R	R	R
13	Muchkundi(UG)	NR	NR	NR	NR
14	Berdewadi (UG)	NR	NR	NR	NR
15	Panhale (UG)	NR	NR	NR	NR
16	Awashi (UG)	NR	NR	NR	NR
17	Bholawali (UG)	NR	NR	NR	NR
18	Gadgadi (UG)	NR	NR	NR	NR
19	Gadnadi (UG)	NR	NR	NR	NR
20	Kondiwali (UG)	NR	NR	NR	NR
21	Pimpalwad(Dubi)	NR	NR	NR	NR
22	Shil (UG)	NR	NR	NR	NR
23	Tangar (UG)	R	NR	NR	NR
24	Kakyewadi	NR	NR	NR	NR
25	Shelarwadi(Waki) (UG)	NR	NR	NR	NR
26	Sakharpa (UG)	NR	NR	NR	NR
27	Tide(UG)	NR	NR	NR	NR
	3) S.E,(SKIPC) Sindhudurga				
28	Tillari (Main)	R	R	R	R
29	Tillari (Interstate)	NR	NR	NR	NR
30	Tillari (Forebay)	NR	NR	NR	NR

1	2	3	4	5	6
31	Deoghar (UG)	NR	NR	NR	NR
32	Korle Satanadi (UG)	NR	NR	NR	NR
33	Tarandale (UG)	NR	NR	NR	NR
34	Nadhawade(UG)	NR	NR	NR	NR
35	Otav (UG)	NR	NR	NR	NR
	4) S.E. (N.K.I.P.C.), Thane				
36	Amboli (UG)	NR	NR	NR	NR
37	Hetawane	NR	NR	NR	NR
38	Wagh (UG)	NR	NR	NR	NR
39	Pali Bhutawali (UG)	NR	NR	NR	NR
	CE WR Konkan Total	**39**	**39**	**39**	**39**
	(R)Received	**4**	**4**	**4**	**4**
	(NR) Not Received	**35**	**35**	**35**	**35**
	C) M.W.C.C., Aurangabad				
M)	**C.E. (Local Sector), Pune**				
	1) S.E., M.I. (L.S.),Thane				
40	Parule (UG)	NR	NR	NR	NR
41	Rajewadi (UG)	NR	NR	NR	NR
	CE LS Pune Total	**2**	**2**	**2**	**2**
	(R)Received	**0**	**0**	**0**	**0**
	(NR) Not Received	**2**	**2**	**2**	**2**
P2)	**PRIVATE DAMS in Konkan Region**				
	M.I.D.C., Dombivali				
	S.E.MIDC, Dombivali, Thane				
1	Barvi(AG)	NR	NR	NR	NR
2	Ransai (AG)	NR	NR	NR	NR
	S,E,(MIDC) Mahad, Raigad				
3	Savitri	NR	NR	NR	NR
	S.E.Dairy Const.Circle,				
	Worli ,Mumbai				
4	Kurze Dapcheri	NR	NR	NR	NR
	M.C.G.B., Mumbai				
5	Tansa (Auto Gates)	NR	NR	NR	NR
6	Modaksagar	NR	NR	NR	NR
7	Middle Vaitarna	NR	NR	NR	NR
8	Pise	NR	NR	NR	NR
	S.E.,(MJP), Panvel				
9	Morbe	NR	NR	NR	NR
	Konkan Private Total	**9**	**9**	**9**	**9**
	(R)Received	**0**	**0**	**0**	**0**
	(NR) Not Received	**9**	**9**	**9**	**9**

Consolidated Health Status Report of Identified Large Dams In Kokan Region

PART – 6

Data filling status on Dam Health and Rehabilitation Monitoring Application (DHARMA) portal of Konkan Region, in DRIP- II

Part – 6

DHARMA: Dam Health And Rehabilitation Monitoring Application

6.1 Introduction-

Dam health & Rehabilitation Monitoring application (DHARMA) is a web based asset management software to support the effective collection and management of authentic asset and health data for all large dams in India and address key dam safety challenges of-

i. Insuring Completeness of information.
ii. Bring stake holders together
iii. Effectively managing asset inventory.
iv. Assess soundness of dame health.

6.2 Design and Development-

DHARMA software will consist of seven modules. -

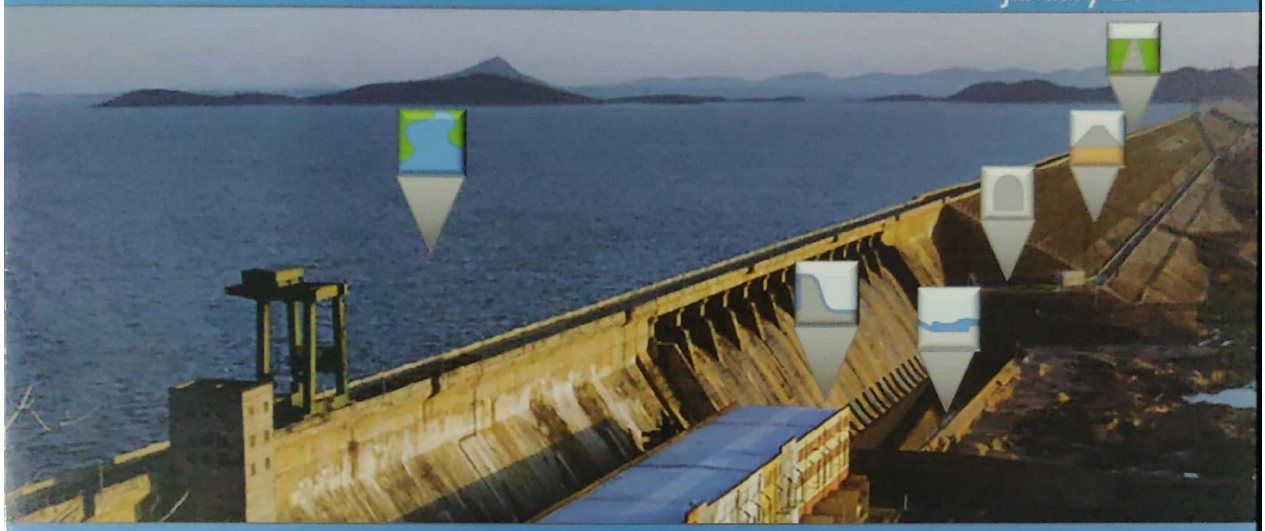
i. Project features
ii. Project portfolio
iii. Engineering features.
iv. Asset health.
v. Asset rehabilitation.
vi. Stake holders and
vii. Document library.

The first three modules (i to iii consist of mostly static data, to be enter once and rarely undergo a change where as modules iv) and v) will be dynamic and requires regular updating with information associated with inspections investigations, instrumentation and rehabilitation works. Modules vi) and vii)contain information useful for reference.

DHARMA

Integrated Approach for Asset Management of Dams in India

Information Bulletin No.4 January 2019



INSIDE

The Dam Health and Rehabilitation Monitoring Application (DHARMA)

is being developed as a part of the institutional strengthening component of the Dam Rehabilitation and Improvement Project (DRIP). DRIP is an initiative undertaken by the Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India with the financial assistance of The World Bank.

DHARMA has been designed and developed to enhance the capacity of individuals and organisations throughout India to manage their dam assets scientifically and professionally so as to sustain advantages of dams. This Information Bulletin No.4 has been prepared by the Central Project Management Unit (CPMU) to present an overview of the purpose and content of the software.

Project *Financial Assistance* *Technical Assistance*

DRIP Dam Rehabilitation & Improvement Project

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egis

What is DHARMA?

Introduction

There are 5264 large dams in operation in India and 437 are under construction. In addition, there are several thousand smaller dams. All these dams are vital for ensuring the water security of the country in a sustainable manner and regulating water during the rainy season to prevent floods.

Today, many of these dams are facing various structural deficiencies as well as shortcomings in the operation and monitoring facilities. There are also inefficiencies in the monitoring of real-time information regarding dam health and ongoing rehabilitation measures. These conditions affect the safety of the structures and pose risks to life and properties of people downstream of dam.

In April 2012, the six-year **Dam Rehabilitation and Improvement Project (DRIP)** was launched at an estimated cost of 2100 Crore INR for assisting dam-owning agencies in rehabilitating selected dams across selected states.

In 2017, the project has been extended by two years, until June 2020, to finish all of the programmed rehabilitation works on 223 dams in 7 states, with a revised cost of 3466 Crore INR.

In this context, the **Dam Health and Rehabilitation Monitoring Application (DHARMA)** has been designed and developed *to enhance the capacity of individuals and organisations throughout India to manage their dam assets* scientifically and professionally so as to sustain advantages of dams (irrigation and water supply, flood control, hydropower etc.) and prevent disasters.

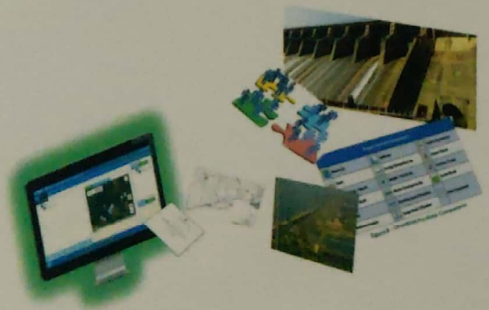


Figure 1: DHARMA capturing information

Why is it needed ?

Managing the Dam Safety of over five thousand dams entails a number of obstacles to overcome. The prime challenge is to deliver the precious dam health information collected during the site inspection to the State and Central **Dam Safety Organisations (DSOs)** in a timely and secure manner. Improving this transmission of information thanks to data analysis will generate a more precise monitoring of the dams' health in DSOs as well as a more informed prioritization of rehabilitation works. To accomplish this goal, the four main challenges listed below must be overcome; it is DHARMA's goal to address these challenges.

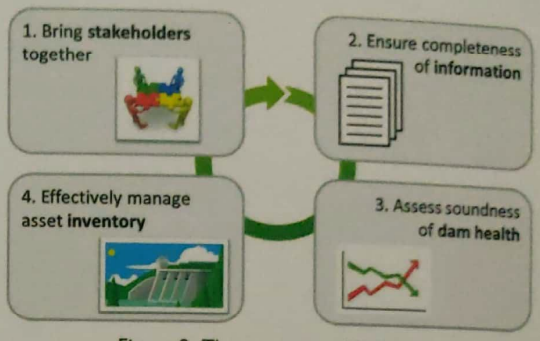


Figure 2: The purposes of DHARMA

1. Bring Stakeholders Together

DHARMA will ensure that details of all stakeholders are recorded and maintained. Such details may pertain to individuals as well as organisational entities associated with dam planning and design, construction, operation and maintenance, and rehabilitation.

2. Ensure Completeness of Information

DHARMA will enable gathering and updating of dam asset information in a centralised and structured manner so as to overcome limitations of multiplicity of agencies, wide geographical spread, voluminous data, varied terminologies and units, unknown and mismatched time reference and inconsistent formats.

3. Assess Soundness of Dam Health

DHARMA will ensure prompt capturing of inspection and investigation data directly by the 'Dam Health Engineers' and provide tools for correct analysis and interpretation of this time dependent data.

4. Effectively manage Asset Inventory

DHARMA will provide a complete data collection and management platform for assimilation of varied information for every dam component across all dam projects, also thereby benefiting from the insights and learning curves of a wider stakeholder spectrum.

The Users of DHARMA

DHARMA User Types

DHARMA has been designed for individuals and organisations at **Dam, State and Central level**. Owing to the large number of dams, several thousand individuals are expected to use the software; they will be assigned to seven main user roles across three tiers, as presented below:

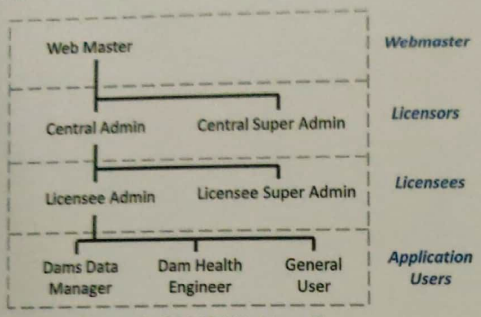
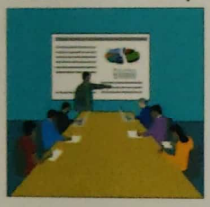


Figure 3: DHARMA User Types

The highest tier **'Licensors'** includes the 'Central Admin' and 'Central Super Admin' roles — these are based in the Central Dam Safety Organisation (in Central Water Commission) and are responsible for administrative control and distribution of the DHARMA software. One of the responsibilities of the 'Licensors' is to grant licenses to the second **'Licensees'** tier which includes the 'Licensee Admin' and 'Licensee Super Admin' roles. These are typically members of Central or State dam owning organisations (eg. State Water Resources Departments). Licensees, in turn, can add three types of **'Application Users'** namely 'Dams Data Manager', 'Dam Health Engineer' and 'General User' who are responsible for managing and updating the data in DHARMA.



A clear distinction is made between the 'Dams Data Manager' (DDM) and 'Dam Health Engineer' (DHE). The **Dams Data Manager**'s role is to manage the static information of dams, i.e. information that is entered once into the software and rarely changes (such as Spillway Capacity, Location of Dam, Access…). He/she is authorized to manage the data of the first three modules, presented in the next page. The **Dam Health Engineer**'s role is to manage dynamic data of a Dam, i.e. data that requires regular updates such as inspection report, investigations, instrumentation data…

DHEs are able to enter their inspection report directly on the software. A mobile application will also be developed for them to enter and upload their inspection report directly from dam site. An option to upload geo-referenced data and photos of each deficiency will be included so as to report deficiencies as precisely as possible.

	Dams Data Manager (DDM)	Dam Health Engineer (DHE)
Type of Data handled	**Static Data**	**Dynamic Data**
Modules	**Modules 1 to 3**: Project Features, Project Portfolio, Engineering Features	**Modules 4 to 7**: Asset Health, Asset Rehabilitation, Stakeholders, Document Library
Tasks assigned	• Entering **high level information** of the dam (Height, location, access, ...) • Creating the **Portfolio** of the Dam by assembling the different DHARMA **components** to match the physical layout of the dam • **Geo-referencing** of each component on Google Maps and adding **photos** • Entering the **technical details** of each **component** (Dam Block, Spillway, Gallery...)	• Entering the regular **pre** and **post monsoon inspection reports** • Entering and updating the **O&M, Investigations, Instrumentation, and EAP** data of the dam • Entering the details of **rehabilitation works** implemented at the dam • Entering the **contact** details of the dam's staff and suppliers in the **Stakeholders** Module • Uploading all important **dam documents** in pdf format into the Document Library Module

Figure 4: Distinction between DDM and DHE

DHARMA Modules

DHARMA consists of the **7** modules and **2** additional data analysis tools presented below:

Static Modules

1. Project Features

This module gives the static, high-level details of a dam project, such as the Dam's Height, Location, Access details… The General, Location and Financial information will be stored for all projects as well as the details of specific benefits provided by each dam: Irrigation, Hydropower, Navigation, Water Supply, Industrial, Tourism, Flood Control, Fishing, and Other Benefits.

2. Project Portfolio

It allows the Dams Data Manager to describe the make-up of his/her dam project using seventeen building blocks, the DHARMA components (Figure 6). Each component is added and organized in layers, similar to the MS Windows Explorer menu. For each component, the user can locate its exact position on Google Maps, upload pictures and schematics.

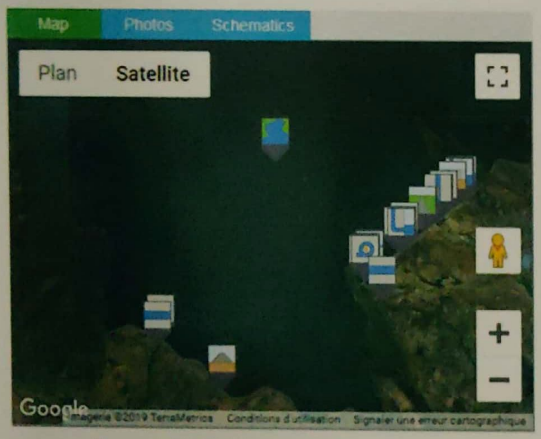


Figure 5: DHARMA Project Portfolio Map

3. Engineering Features

This module contains the technical details associated with each of the components entered in the Project Portfolio module. For example, whereas the name, location, photos and schematics of a storage reservoir would be entered in the Project Portfolio module, it is in Engineering Features that the volumes, elevations and dimensions are provided.

Dynamic Modules

4. Asset Health

This module supports the creation of regular pre and post-monsoon inspections and specific inspections. In this module, the Dam Health Engineers can also upload Instrumentation, Operation & Maintenance (O&M) and Emergency Action Plan (EAP) data, which is attached to the components from the Project Portfolio.

5. Asset Rehabilitation

Also to be administered by designated Dam Health Engineers, it captures the details of any rehabilitation works (minor or major) at the dam project. The need for future rehabilitation works should be identified in the inspection forms of the asset health module however, previous or historic rehabilitation works (pre-DHARMA) can also be entered into the module independently.

6. Stakeholders

The purpose of this module is to capture details of all individuals and organizations involved with each dam project including dam owners, operators, designers, consultants, contractors, and suppliers. Simple forms are provided explaining the nature and duration of involvement of each party and their contact details.

7. Document Library

The last module enables users to upload important designs and documents into a user-friendly database from where they can be easily retrieved using filters and other search criteria. An additional functionality will allow users to tag the documents such that they can be retrieved from other relevant sections of the software using hyperlinks.

Data Analysis Tools

The **Dashboard** enables Dam Safety Organisations to monitor the data-entry for each dam and to pinpoint dams with critical deficiencies.

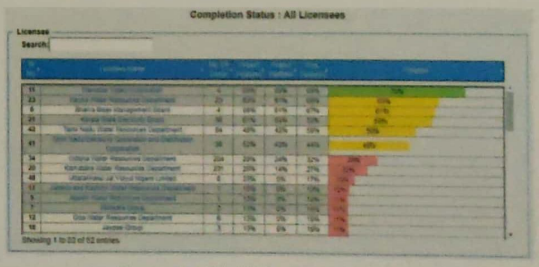


Figure 6: DHARMA Static Dashboard

The **Report Generator** creates lists of dams responding to selected criteria. (State, Purpose, Completion Year…)

Implementation of DHARMA

The success of DHARMA particularly depends on its uptake by Dam Data Managers and Dam Health Engineers around the country (cf. page 2, the users of DHARMA) as they will be in charge of entering all the data. The implementation of the DHARMA application is therefore as important as its design and development.

The first two modules were launched in May 2016 then, the team of designers, which gathers both software developing and civil engineering skills, started to perform training sessions around India in order to make the users familiar with the application.

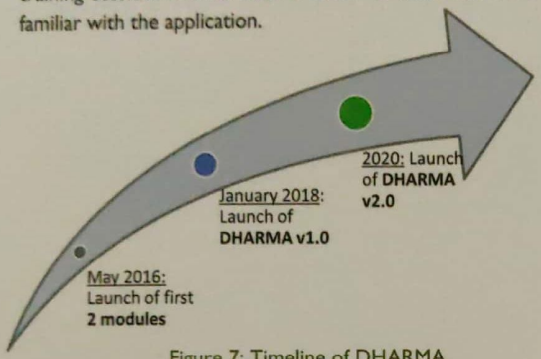


Figure 7: Timeline of DHARMA

DHARMA v1.0 was launched nationally in January 2018, during the previous International Dam Safety Conference in Trivandrum and following the successful migration of the National Register of Large Dams (NRLD) in 2017. Since then 24 trainings were held for 865 participants including 4 trainings in non-DRIP Sates (Rajasthan, Maharashtra & Gujarat). Thanks to these trainings sessions, today 600 people use DHARMA actively and 1546 dams are assigned (out of 5236 large dams in India).

The trainings take place in the State Capitals, they are arranged by the Implementing Agencies which are part of the Dam Rehabilitation and Improvement Project (DRIP). Participants of the trainings (ranging from 30 to 90 for each session) receive hands-on sessions for each module and tool, interactive quizzes and presentations on the purpose and benefits of DHARMA.

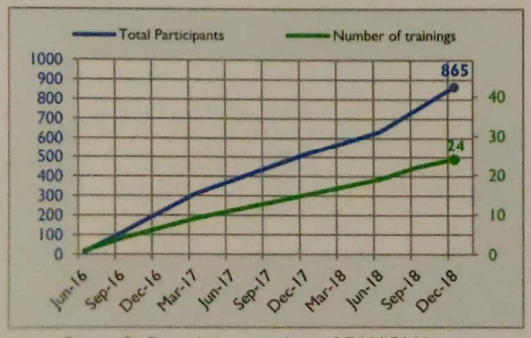


Figure 8: Cumulative number of DHARMA users

The **version 2.0** of DHARMA is to be implemented by December 2020. This version is currently under design and is likely to consist of 4 additional "sub-modules" and 3 additional tools.

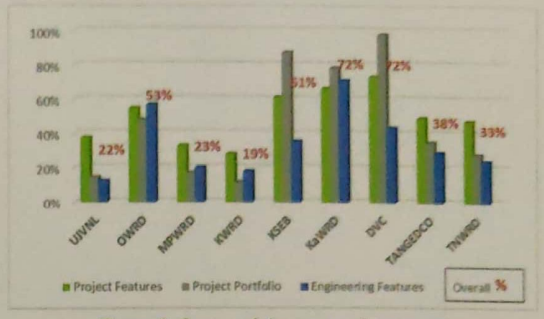
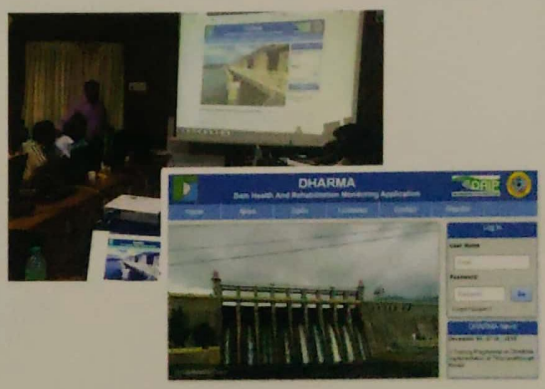


Figure 9: Status of data entry Agency-wise

Here is a list of all Implementing Agencies already using DHARMA:

	Implementing Agencies	Dams assigned to agency	Dams with entered data	Total Users
Agencies in DRIP	Odisha Water Resources Department	204	182	204
	Karnataka Water Resources Department	231	184	122
	Tamil Nadu Water Resources Department	84	84	91
	Madhya Pradesh Water Resources Dpt	887	42	85
	Kerala Water Resources Department	20	20	63
	Uttarakhand Jal Vidyut Nigam Limited	6	4	33
	Kerala State Electricity Board	36	36	25
	Tamil Nadu Elec Gen & Distrib Corp	38	38	15
	Damodar Valley Corporation	4	4	8
Agencies not in DRIP	Rajasthan Water Resources Department	211	131	90
	Maharashtra Water Resources Department	2354	60	49
	Gujarat Engineering Research Institute	631	21	31
	Punjab Water Resources Department	15	14	16
	Bhakra Beas Management Board	4	4	7
	Uttar Pradesh Irrigation and WRD	133	1	3
	National Hydroelectric Power Corporation	22	22	3
	Bihar Water Resources Department	26	1	3
	Meghalaya Power Gen Corp Limited	7	-	2
	Narmada Hydroelec Dvpt Corporation Ltd	-	-	2
	Telangana Irrigation and CAD Department	174	-	2
	Himachal Pradesh State Electricity Board	2	-	2
	Karnataka Engineering Research Station	-	-	2
	Chhattisgarh Water Resources Department	258	-	1
	Goa Water Resources Department	6	-	1
	Jammu and Kashmir Water Resources Dpt	1	-	1
TOTAL		5354	848	861



Who can I contact to know more?

This is the fourth information bulletin on DHARMA. Development of updated versions of DHARMA and implementation of the software will continue to be taken up in a phased manner under the guidance of the **DHARMA Development Group (D3G)** and **DHARMA Implementation Group (DIG)**. All DRIP dams are expected to be incorporated into DHARMA before the completion of DRIP.

In the meantime, further information on the Dam Rehabilitation and Improvement Project (DRIP) can be found at www.damsafety.in. For further information on DHARMA, please also visit our dedicated website '**damsafety.in/dharma**.' where you can download the latest **User Manual**.

For any other queries, the DHARMA team can be contacted through the details provided below.

For further information please contact:

Project Director, DRIP and DSR Director, Central Water Commission

3rd Floor, New Library Building, R.K. Puram, New Delhi—110066

Telefax: +91-11-26192633

Email: dir-drip-cwc@nic.in Website: www.damsafety.in

Data filling status on Dam Health and Rehabilitation Monitoring Application (DHARMA) portal of KonkanRegion for Class-I Dams

Name of Dam	NRLD registration number	Dharma data filling status(%)	Remarks
A)Chief Engineer :- CHIEF ENGINEER, WATER RESOURCES, KONKAN,MUMBAI			
1) Superintending Engineer S.E.T.I.C.,Thane			
i)Executive Engineer :- Bhatsa Dam Management Dn.1, Bhatsanagar			
Class I Dams			
1)Bhatsa	MH09HH1011	57	
2)Upper Vaitarna&Alwandi	MH09MH0384	10	
ii) Palghar Irrigation Division, Manor,Dist.Palghar			
Class I Dams			
1)Dhamni	MH09HH1173	11	
iii)Thane Irrigation Division,Thane			
Class I Dams			
1)Domihira	MH09HH1851	09	
2)Lower Ghatghar	MH09HH1670	11	
3)Upper Ghatghar	MH09MH1643	11	
iv)Raigad Irrigation Division,Kolad			
Class I Dams			
1)Bhira (Forebay)	MH09MH0539	11	
2)Bhira (Pick up)	MH09MH1132	11	
2) Superintending Engineer Ratnagiri Irrigation Circle, Ratnagiri			
i) Ratnagiri Irrigation Dn. Ratnagiri			
Class I Dams			
1)Barewadi	MH09HH0912	11	
2)Natuwadi	MH09HH1058	11	
3)Pimpar	MH09HH1065	11	
ii) Irrigation Project ConstnDn. Ratnagiri			
Class I Dams			
1)Arjuna	MH09HH1855	10	
2)Muchkundi	MH09HH1875	09	
3)Berdewadi	MH09HH1579	11	
4)Panhale	MH09MH1567	11	
5)Sakharpa	MH09HH1566	11	
6)Tide	MH09HH1878	09	
iii) Irrigation Project Constn Dn. Chiplun			
Class I Dams			
1)Awashi	MH09HH1503	11	
2)Bholawali	MH09HH1564	11	
3)Gadgadi	MH09HH1590	10	
4)Gadnadi	MH09HH1565		
5)Kondivali	MH09HH1360	11	
6)Pimpalwadi (Dubi)	MH09HH1565	11	
7)Shil	MH09HH1404	03	
8)Tangar	MH09MH1361	32	
9)Kakyewadi	MH09HH1856	11	
10)Shelarwadi(Waki)	MH09HH1857	11	
iii) Sindhudurg Irrigation Division,Ambadpal, Kudal			
3) Superintending Engineer,NorthKonkan Irrigation Circle, Thane			
i)Raigad Irrigation Division-2,Mumbai			
Class I Dams			
1)PaliBhutawali	MH09HH1716	11	
ii)Palghar Irrigation Project Construction Division, Suryanagar.			
Class I Dams			
1)Wagh	MH09HH1580	11	

iii)Irrigation Project Construction Division,Shahapur.			
iv)HetawaneMed.Proj.Dn,Kamarli,Pen			
Class I Dams			
1)Amboli	MH09HH1854	11	
2)Hetawane	MH09HH1551	10	
4) South Konkan Irrigation Project Circle, Oras, Sindhudurgnagari.			
i)Sindhudurg Irrigation Project Construction Division, Charathe, Sawantwadi			
Class I Dams			
1)Tillari Main	MH09HH1134	61	
2)Tillari(Forebay)	MH09MH1071	11	
3)Tillari (Interstate)	MH09HH0945	11	
ii)Medium Project Division,Ambadpal			
Class I Dams			
1)Deoghar	MH09HH1648	09	
2)Tarandale	MH09HH1669	11	
iii)Minor Irrigation Division,Oras,Sindhudurgnagari			
Class I Dams			
1)KorleSatanadi	MH09HH1858	10	
2)Nadhawade	MH09HH1881	11	
3)Otav	MH09MH1698	11	
[B] CE Small Scale Irrigation (W.C.),Pune.			
(1) Regional Water Coservation Officer, Soil & Water Coservation,Thane.			
(i) District Water Coservation Officer Dn,Ratnagiri			
Class I Dams			
1)Parule	MH09HH1625	11	
2)Rajewadi	MH09HH1501	11	

Data filling status on Dam Health and Rehabilitation Monitoring Application (DHARMA) portal of Konkan Region, in DRIP- II (Private Dams)

Name of Dam	NRLD registration number	Dharma data filling status(%)	Remarks
(1) S.E., M.I.D.C. Mahad, Dist. Raigad **(a) E.E., M.I.D.C. Mahad, Dist. Raigad**			
1. Savitri	MH09HH1521	10	
(1) HYDRAULIC ENGINEER (M.C.G.B.) MUMBAI. **(a) Dy. Hydraulic Engineer (M.C.G.B.) Thane**			
1. Tansa		11	
2. ModakSagar		11	
3. **Middle Vaitarna**		11	
[1] C.E., M.I.D.C. ANDHERI, MUMBAI **(1) S.E., M.I.D.C. , Dombivali (E), Dist. Thane** **(a) E.E., M.I.D.C. Barvi Dam Division, Anand Nagar, Ambarnath (E), Dist. Thane**			
1. Barvi	MH09HH0738	05	
(b) E.E., M.I.D.C. Dn. No.2 ,Wagle Estate, Thane Belapur Road,Koparkhairne,T.T.Industrial Area,Mahape,New Mumbai. 400710			
1. Ransai	MH09HH0213	10	
(1) S.E., Diary Constuction Circle, Warli, Mumbai -17 **(a) E. E., Agricultural Construction Dn Aarey Milk Colony, Goregaon(E), Mumbai-65**			
1. Kurze (Dapcheri)	MH09MH0151	10	
[1] Commissioner, Navi Mumbai Municipal Corporation, Navi Mumbai **(a) E.E., Navi Mumbai Municipal Corporation, Navi Mumbai**			
1. Morbe	**MH09HH1662**	03	
(1)HYD. ENGINEER, M.C.G.B. MUMBAI. **(a)Dy.Hyd.Engineer (M.C.G.B.) Ghatkopar.**			
1. Pise		11	

Annual Consolidated Health Status Report
Of Identified Large Dams In
Konkan Region

PART – 7

Status Report of Gates of Various Gated Dams in Konkan Region
(Including Private Dams)

Health Status Report 2019 of Gated Dams- Abstract

Sr. No.	Region & Name of Dam	Number of Gated Dams (As per Dam Category)			Report Taken into Account	Dam Category I Defficiencies			Dam Category II Defficiencies			Remarks
		Cat-I	Cat-II	Total		Cat-I	Cat-II (2A)&(2B)	Cat-III	Cat-I	Cat-II	Cat-III	
1	2	3	4	5	6	7	8	9	10	11	12	13
	KOKAN											
1	Bhatsa	1		1	Yes	0	47	147				
2	Vaitarana (Upper)	1		1	Yes	0	18	38				
3	Surya	1		1	Yes	0	31	107				
4	Ghatghar (Upper)	1		1	Yes	0	4	94				
5	Bhira	1	--	1	Yes	0	52	126				
6	Natuwadi	1	--	1	Yes	0	19	28				
7	Tillari Interstate Project	1	--	1	Yes	0	33	56				
8	Tillari Main Dam Dhamane	1	--	1	Yes	1	26	52				
9	Tillari Forebay Dam	1	--	1	Yes	0	37	61				
10	Gadgadi	1	--	1	Yes	0	9	15				
11	Gadnadi	1		1	Yes	0						Not in List of Dams Inspected by Mechanical Org
12	Pimpalwadi	1	--	1	Yes	0	22	57				
13	Hetwane	1		1	Yes	0	61	66				
14	Deoghar	1		1	Yes	0						Not in List of Dams Inspected by Mechanical Org
15	Vaitarana (Middle)	1		1	Yes	0	8	52				Private Dam

Sr. No.	Region & Name of Dam	Number of Gated Dams (As per Dam Category)			Report Taken into Account	Dam Category I Defficiencies			Dam Category II Defficiencies			Remarks
		Cat-I	Cat-II	Total		Cat-I	Cat-II (2A)&(2B)	Cat-III	Cat-I	Cat-II	Cat-III	
1	2	3	4	5	6	7	8	9	10	11	12	13
16	Tanasa	1		1	Yes	0	3	12				Private Dam
17	Modaksagar	1		1	Yes	0	15	13				Private Dam
18	Baravi	1		1	Yes	0	5	20				Private Dam Mumbai MIDC
19	Ransai	1		1	Yes	0	1	11				Private Dam Mumbai MIDC
20	Savitri	1		1	Yes	0	27	63				Private Dam
21	Morabe	1		1	Yes	0	13	25				Private Dam
22	Kurze	1		1	Yes	0				Not in List of Dams Inspected by Mechanical Org		
23	Tevan Medhe Tillari	1	--	1	Yes	0	33	53				Not in list of DSO
24	Dapcheri	1		1	Yes	0	15	59				Private Dam
	Total -	**24**		**24**		**1**	**479**	**1155**				

Annual Health Status Report Of Identified Dams Based On Pre & Post Mansoon 2019 Inspection Reports
Large Dam : Category 1 (Gated)
REGION :KOKAN

SR. NO	DAM FEATURES	DATE OF INSPECTION	MAIN COMPONENT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED	REMEDIAL MEASURES SUGGESTED
1	2	3	4	5	6
	Deficiency Category I				
	Executive Director, Konkan Irrigation Development Corporation, Thane				
	Chief Engineer, WRD Konkan Region, Mumbai				
	Superintending Engineer, South Konkan Irrigation Project Circle, OrosDist- Sindhudurga				
	Executive Engineer, Sindhudurg Irrigation Project Construction Division, Charhate Tal-Sawantwadi, Dist- Sindhudurga				
1	Tillari Hydro Project Main Dam Dhamne	19/12/2019	**Deficiency Category I - Implementation Status showing dams with major deficiencies which may lead to failure**		
			A) Radial Gate - Size 12m x 5m - 3 Nos.	Wirerope For gate no.1 is broken(RHS). Hence, gate can not lift While operation. Strands of wirerope for gate no.3 are get separate.	Replace wireropes for all gates.

Tansa Dam