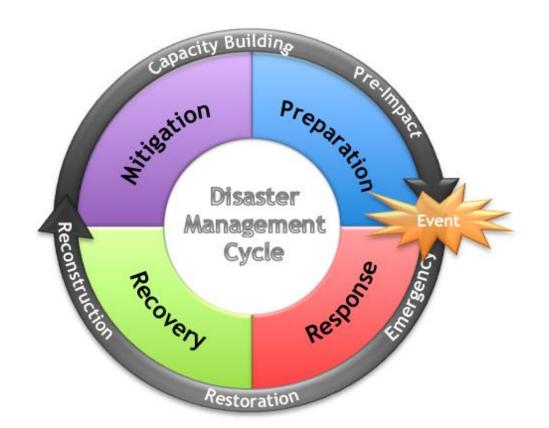


MONSOON PREPAREDENESS - 2023 NAGPUR MUNICIPAL CORPORATION





Nagpur City Profile

• City Population : 24,05,421 (Census 2011)

■ Area : 218 sqkm

■ No. of slums : 426

■ Slum population : 8.06 Lacs (2005)

■ Potable water supply in slums : 100%

■ Installed water capacity : 725 MLD

Sewerage system coverage : 96% (Geographical)

■ Underground Sewarage : 70%

■ Solid waste generation : 1200 TPD

■ Road Length : 3465.84 kms



NMC Monsoon Preparedness 2023 City Disaster Management Committee

1	Municipal Commissioner, N.M.C.	Chairperson
2	Police Commissioner, Nagpur City	Member
3	Additional Commissioner, (City), N.M.C.	Member
4	Chief Engineer (PWD), N.M.C.	Member
5	Deputy Municipal Commissioner & Director, (Solid West	Member
	Management) N.M.C.	
6	Assistant Director, (Town Planning), N.M.C.	Member
7	Superintending Engineer (PWD), N.M.C.	Member
8	Superintending Engineer (Public Health Engineering Dept	Member
9	Executive Engineer (Electrical) N.M.C.	Member
10	Medical Officer, Health, N.M.C.	Member
11	Superintending Engineer (M.S.E.B.)	Member
12	Superintending Engineer (PWD), Nagpur City	Member
13	Deputy Regional Transport Officer, (R.T.O.) Nagpur City	Member
14	General Manager, (BSNL) Nagpur	Member
15	Commandant (S.D.R.F.) Nagpur	Member
16	Sub Divisional Officer, (SDO), Revenue Deptt., Nagpur	Member
17	Chief Fire Officer, N.M.C., Nagpur	Member,
		Secretary
18	Arusha Anand, City nodal officer, Diaster, NMC	Member
		Y Y

Main control room & Zone wise control room

अनु क्रं.	झोनचे नाव	दुरध्वानी क्रमांक	सहा. आयुक्त Incident Commander	संलग्न अगिनशमन केंद्र	दुरध्वानी क्रंमांक	अग्निशमन केंद्राचे अधिकारी यांचे नाव व मोबाड्रल नंबर
१	मुख्य आपत्ती व्यवस्थापन कक्ष	७०३०१७२२००	अति आयुक्त (शहर)	आपातकालीन नियंत्रण कक्ष	<i>০</i> ७१२/२५६७७७७	सर्व अग्निशमन केंद्र व नियंत्रण कक्ष
१	मुख्य आपातकालीन नियंत्रण कक्ष	१०१ ০७१२-२५६७७७७ / २५६७०२९	मुख्य अग्निशमन अधिकारी	सर्व झोन व अग्निशमन केंद्र	०७१२-२५५१८६६ /७०३०९७२२००	श्री.भिमराव. पी. चंदनखेडे 9923751402
3	लक्ष्मीनगर झोन क्रं. १	२२४५८६६ / २२४५८५५	श्री.मिलींद मेश्राम ९८२३३३०९३४	त्रिमुर्तीनगर अग्निशमन केंद्र	२२३३३००	श्री. तुषार बाराहाते ९५९४९४२१७१
₹	धरमपेठ झोन क्रं. २	२५६५५८९ / २५६७०५६	श्री. प्रकाश वराडे ९८२३३३०९३१	सिव्हील अग्निशमन केंद्र	२५५७८६१	श्री. तुषार बाराहाते ९५९४९४२१७१
8	हनुमाननगर झोन क्रं. ३	२७५५५८९	श्री. प्रकाश वराडे ९८२३३३०९३१	नरेंद्रनगर अग्निशमन केंद्र	२७३३०९१	श्री. राजेंद्र सिरकीरवार ९६७३००९१०१
ų	धंतोली झोन क्रं. ४	२९५८४०१ / २९५८४००	महेश धामेचा ९८२३३३०९३७	कॉटन मार्केट अगिनशमन केंद्र	२७२०३५५	श्री. भगवान वाघ ९३७१०८२८५५
ĸ	नेहरू नगर झोन क्रं. ५	२७०००९०	श्री. घनश्याम पंघरे ८६००३६३७५०	सक्करदरा अग्निशमन केंद्र	२७०३८५२	श्री. सुनिल डोकरे ९७६५५५९८२०
9	गंधीबाग झोन क्रं. ६	२७३९८३२ / २३७९००७	श्री. गणेश राठोड ९८२३१२८२७५	गंजीपेठ अग्निशमन केंद्र	२७६०९०६	श्री. सय्यद शौकत अली ९३७१५०२५४५
۷	संतरंजीपुरा झोन क्रं. ७	२५६७०२९ / २५६७७७७	श्री. घनश्याम पंघरे ८६००३६३७५०	कळमना अग्निशमन केंद्र	२६८०८५५	श्री. अनिल गोळे ९७६५४९०४४०
8	लकडगंज झोन क्रं. ८	२७३७५९९ / २७३९०२०	श्री. गणेश राठोड ९८२३१२८२७५	लकडगंज अग्लिशमन केंद्र	२७६०९२०	श्री. अनिल गोळे ९७६५४९०४४०
१०	आसीनगर झोन क्रं. ९	२६५५६०३ / २६५५६०५	श्री.हरीष राऊत ९७६५५५९८४२	सुगतनगर अग्निशमन केंद्र	२६५०१००	श्री. सुनिल डोकरे ९७६५५५९८२०
११	मंगळवारी झोन क्रं. १०	२५९६९०३	श्री.हरीष राऊत ९७६५५५९८४२	सिव्हील अग्निशमन केंद्र	२५५७८६१	श्री. तुषार बाराहाते ९५९४९४२१७१

Important Control Room Contact Details

जिल्हा आपत्ती नियंत्रण कक्ष, नागपूर	विभागीय आपत्ती नियंत्रण कक्ष, नागपुर
<i>6</i> /	~ ~~~
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0712-2567777/ 2567029	0712-2564431
	9850371509
	edvidc@gmail.com
हवाई दल ऑपरेशन्स	Indian Army HQ,
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0712-2280051/22802227	0712-2559927
44Wing Air Force Base Sonegaon:	hquttarmaharashtra@gmail.com
0712-2280055	Army नियंत्रण कक्ष
	(Gurad Regiment Centre)
	07109-288594
होमगार्डस्, नियंत्रण कक्ष, नागपूर	
0712-2461986/ 2465147	

NMC Monsoon Preparedness 2023 संभावित

Hazard Seasonality Mapping of NMC area

				Probable Months									
SN	HAZARD	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1	FLOOD												
2	EARTHQUAKE												
3	DROUGHT												
4	FIRE												
5	STORM												
6	COLD WAVE												
7	HEAT WAVE												₹

NMC Monsoon Preparedness 2023 Hazard, Vulnerability, Capacity Analysis (HVCA)

Hazard	Characteristics	Who/What at risk	Probability of Occurrence (Rating)	bility	Ranking (probabi- lity x rating)
Flood	 There are three rivers, Nag, Pilli & Pohora Rivers in Nagpur which flows from West to East Small Nalla meet these rivers at few locations 	and Commercial establishme nt adjoining the Rivers	Occasional (2)	Low (1)	2



STANDARD OPERATING PROCEDURES (SOPs)

The SOPs for "Normal time activities", "On receiving the warning" and "Post disaster activities" is being updated and "Incident Response System" framework is being incorporated in Disaster Management Plan.



Summary of Incidences arising out of heavy Rains during the period 2018 – 2023 in Nagpur City.

Sr. No.	Year	Water logging into houses	Felling of Trees	Walls Collapse	Houses Collapse	Injured	Deaths
1	2018	157	47	02	00	00	00
2	2019	16	63	03	03	00	00
3	2020	117	37	01	02	05	01
4	2021	21	37	-	01	-	-
5	2022	28	164	01	-	-	01
6	2023	03	41	-	02	-	-

NMC Monsoon Preparedness 2023 Summary of heavy Rains fall period 2018 – 2023 in Nagpur City.

Years	June	July	August	September	October
2018	9,10				
2019		2,26,28			
2020	14,15,30	21,23	2,6	20, 26	
2021	8,9,10,11,12, 15,17,18,23,28	8			
2022	21,22	7,9,10,11,12,13,14,15, 16,17,18,19,20 ते 31	4 ते 16,21,22,23,27, 28,29,30,31	1 ते 9, 8 ते 17, 12,13,7,14,16, 25,28,29	3,10,12,16,14,15,6,17,1 8,19,26,11
2023	8,14,23,24,2 6,27,28,29,3 0	2,3,5,7,8,9,10,11,12,13 ,14,15,16,17,18,19			

Summary of Rains fall period June 2023 – to October 2023 in Nagpur City as per metrological department & Tahsil office, Nagpur

Years	June	July	August	September	October
2023	8,14,23,24,26, 27,28,29,30	2,3,5,7,8,9,10,11,12,13, 14,15,16,17,18,19,20,2 1,22,23,24,25,26,27,28	2,3		

Month wise Average Rainfall Data

Sr. No.	Month	Average Rainfall in mm
1	January	14
2	February	21
3	March	16
4	April	10
5	May	26
6	June	158
7	July	308
8	August	280
9	September	176
10	October	57
11	November	14
12	December	12

Rainfall Statement

नागपुर महानगरपालीच्या	हददीतील	पर्जन्यमानाचा	अहवाल सन	2022
-11-1 17 -161-17 11171111	CAALLILL	1010 4011011 41	2164141 (141	

		एकक	मिलिमीटर								जिल्हा नागपूर			
			पडणारा सरासरी पर्जन्यमान											
	अ.क्र	तालुक्याचे नाव	जुन मि.मि	जुलै मि.मि	ऑगस्ट मि.मि	सप्टेंबर मि.मि	ऑक्टोबर मि.मि	दि. 1 जुन ते 31 मे पर्यंत पडणारा वार्षिक सरासरी पाऊस मि.मि	दि. 1 जुन ते 31 ऑक्टोबर अखेर पडणारा सरासरी पाऊस मि.मि	14 जुलै पर्यंत पडणारा सरासरी पाऊस मि.मि	दि 13 जुलै 2022 पर्यंत पडलेला पाऊस मि.मि.	दि 14 जुलै 2022 ला पडलेला पाऊस मि.मि.	दि 1 जुन 2022 पासून आता पर्यंत पडलेला पाऊस मि.मि.	टक्केवारी
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	1	नागपूर (शहर)	173.29	304.42	282.63	191.07	59.83	1127.63	1011.24	310.8	430.5	10.33	440.7	141.80
	:	सरासरी	173.29	304.42	282.63	191.07	59.83	1127.63	1011.24	310.8	430.5	10.33	440.7	141.80

Rainfall Statement

					00/06/2022	10/06/2022
नागपर मध	हानगरपा।लाच्या	हददाताल	पजन्यमानाचा	अहवाल सन	08/06/2023 to	19/00/2023

	एकक	मिलिमीटर								जिल	हा नागपूर
			पडणाः	रा सरासरी पर	र्जन्यमान						
अस्त क्रम	तालुक्याचे नाव	जुन मि.मि	जुलै मि.मि	ऑगस्ट मि.मि	सप्टेंबर मि.मि	ऑक्टोबर मि.मि	दि. 1 जुन ते 31 मे पर्यंत पडणारा वार्षिक सरासरी पाऊस मि.मि	दि. 1 जुन ते 31 ऑक्टोबर अखेर पडणारा सरासरी पाऊस मि.मि	19 जुलै पर्यंत पडणारा सरासरी पाऊस मि.मि	दि 1 जुन 202 ³ पासून आता पर्यंत पडलेला पाऊस मि.मि.	टक्केवारी
1	2	3	4	5	6	7	8	9	10	11	12
1	नागपूर (शहर)	171.2	171.86				343.06	343.06	343.06	343.06	114.35
	सरासरी	171.2	171.86				343.06	343.06	343.06	343.06	114.35

Average Rainfall Data in Nagpur City June 2022 & 2023

	June 2022		June 2023			
Date	Total	Average	Date	Total	Average	
01.06.2022	0	0	01.06.2023	0	0	
02.06.2022	0	0	02.06. 2023	0	0	
03.06.2022	0	0	03.06. 2023	0	0	
04.06.2022	0	0	04.06. 2023	0	0	
05.06.2022	0	0	05.06. 2023	0	0	
06.06.2022	0	0	06.06. 2023	0	0	
07.06.2022	0	0	07.06. 2023	0	0	
08.06.2022	0	0	08.06. 2023	6.1	2.0	
09.06.2022	0	0	09.06. 2023	0	0	
10.06.2022	0	0	10.06.2023	0	0	
11.06.2022	0	0	11.06.2023	0	0	
12.06.2022	0.2	0.06	12.06.2023	0	0	
13.06.2022	0	0	13.06.2023	0	0	
14.06.2022	1.6	0.53	14.06.2023	10.3	3.43	
15.06.2022	0	0	15.06.2023	0	0	

Average Rainfall Data in Nagpur City June 2022 & 2023

	June 2022			June 2023			
Date	Total	Average	Date	Total	Average		
16.06.2022	7.2	2.4	16.06.2023	0	0		
17.06.2022	0.8	0.26	17.06.2023	0	0		
18.06.2022	10.6	3.53	18.06.2023	0	0		
19.06.2022	32.8	10.93	19.06.2023	0	0		
20.06.2022	0	0	20.06.2023	0	0		
21.06.2022	172.4	57.46	21.06.2023	0	0		
22.06.2022	25.9	8.63	22.06.2023	0	0		
23.06.2022	0	0	23.06.2023	133.4	44.4		
24.06.2022	0	0	24.06.2023	80.0	26.6		
25.06.2022	8	2.66	25.06.2023	0	0		
26.06.2022	0	0	26.06.2023	171.9	57.3		
27.06.2022	0	0	27.06.2023	48.5	16.1		
28.06.2022	18.1	6.03	28.06.2023	33.9	11.3		
29.06.2022	0	0	29.06.2023	18.4	6.13		
30.06.2022	0	0	30.06.2023	11.1	3.7		

Average Rainfall Data in Nagpur City July 2022 & 2023

	July 2022			July 2023	
Date	Total	Average	Date	Total	Average
01.07.2022	30.1	10.03	01.07.2023	0	0
02.07.2022	33.3	11.43	02.07. 2023	1.8	0.6
03.07.2022	7	2.33	03.07. 2023	2.0	0.6
04.07.2022	43.6	14.53	04.07. 2023	0	0
05.07.2022	88	29.33	05.07. 2023	12.5	4.1
06.07.2022	0.6	0.2	06.07. 2023	0	0
07.07.2022	4	1.33	07.07. 2023	6.6	2.2
08.07.2022	158.8	52.93	08.07. 2023	18.6	6.2
09.07.2022	51	17	09.07. 2023	154.1	51.3
10.07.2022	67.8	22.6	10.07.2023	29.2	9.73
11.07.2022	228.8	76.26	11.07.2023	4.4	1.46
12.07.2022	109.5	36.5	12.07.2023	22.3	7.43
13.07.2022	109.6	63.53	13.07.2023	1.5	0.5
14.07.2022	30.4	10.13	14.07.2023	3.0	1.0
15.07.2022	226.8	75.6	15.07.2023	73.0	24.33

Average Rainfall Data in Nagpur City July 2022 & 2023

	July 2022		July 2023			
Date	Total	Average	Date	Total	Average	
16.07.2022	21.6	7.2	16.07.2023	8.0	2.6	
17.07.2022	8.2	2.73	17.07.2023	81.3	27.1	
18.07.2022	176.2	58.7	18.07.2023	0.3	0.1	
19.07.2022	34.6	11.53	19.07.2023	97.0	32.3	
20.07.2022	04.03	1.4	20.07.2023			
21.07.2022	7	2.3	21.07.2023			
22.07.2022	0	0	22.07.2023			
23.07.2022	5.5	1.83	23.07.2023			
24.07.2022	125.5	41.83	24.07.2023			
25.07.2022	52.4	17.46	25.07.2023			
26.07.2022	7	2.33	26.07.2023			
27.07.2022	58.7	19.56	27.07.2023			
28.07.2022	51.2	17.06	28.07.2023			
29.07.2022	3.2	1.06	29.07.2023			
30.07.2022	1.4	0.46	30.07.2023			
31.07.2022	78.2	26.06	31.07.2023			

Nagpur City Rainfall 2022 (In mm)

Sr no	City	Month	Total	Average	Rainy Days
1		June	227.6	92.49%	2
2	Nagpur	July	1906.3	636.24%	23
		August	1144.8	381.546	21
		September	1012.3	337.36	26
		October	341	105.11	12

Nagpur City Rainfall 01/06/2023 to 19/07/2023 (In mm)

Sr no	City	Month	Total	Average	Rainy Days
1		June	513.6	171.2 %	9
2	Nagpur	July	515.6	171.86 %	16
		August			
		September			
		October			

Nagpur City Rainfall 3/08/2023 (In mm)

Sr no	City	Month	Total	Average	Rainy Days
1		June	513.6	171.2 %	9
2	Nagpur	July	1577.6	525.78 %	25
3		August	110.8	36.92 %	2
4		September			
5		October			
	Total		2202	733.9 %	36

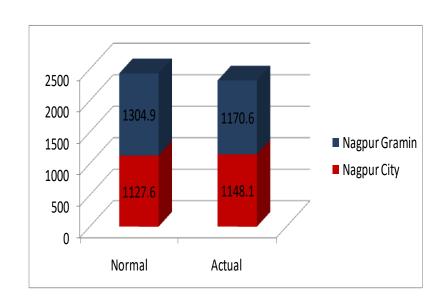
Nagpur City Rainfall	02/08/2023 (In mm)	03/08/2023 (In mm)
Place	mm	mm
Airport	5.0	34.9
Pardi	4.2	29.2
Sitabuldi	6.3	31.2
Total	15.5	95.3
Average	5.16	31.76

Rainfall Pattern

Year	2017	2018	2019	2020	2021	2022	2023	Avg
Rainfall	821.5	902.6	1129.1	1110.1	1146.3	332.38	1029	1091.30
%	77.47%	85.2%	106.4%	104.7	108.1	34.00 %	343.0	100 %

Taluka wise Rainfall 202	22 (In mm))
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Sr no	Taluka	Normal	Actual	Rainy Days	
1	Nagpur City	1127.6	1304.9	69	
2	Nagpur gramin	1148.1	1170.6	79	



- Disaster Management Control Room is set up at NMC HQ with Adequate Man Power 24X7
- Control room at all Zones will be functional from 1st of June till 31st September at all NMC Zones with Adequate Man Power and Machines
- Cleaning of Rivers is underway. Out of total length of 46.92 km. 11.92km is already cleared with 12 pocklands (on PPP) balance 35.00 km will be completed by $4^{\rm th}$ of June .
- Desilting of Drainage Lines, Nalla is in progress. Out of 227 Nallas 154 Nallas are being cleaned by man power and 73 Nallas are being cleaned by using machine and will be completed by $1^{\rm st}$ of June .
- Cleaning of strom water drain is in progress. The total length of strom water drain is 1146.41 km and will be cleared by 1^{st} of June
- Out of 88664 sewer Manhole Chambers all are covered.



Available Resources: Human Resource & Equipments

Resources available at:

- Search & Rescue Teams at Taluka level
- Fire Department, NMC & MC
- Police
- Home guards
- Health Department
- SDRF (Hingna Road)
- NDRF (RRC Nagpur)
- NGOs and other organisations

- All Dilapidated buildings are identified and necessary action as per the provision of MMC Act 1949 and as per the guidelines of GR dated 5/011/2015 regarding Dilapidated buildings is being taken.
- Smooth water supply will be ensured during Heavy Rainy days.
- Survey of Dangerous trees has been conducted and 10 teams are deployed in 10 Zones for cutting and removing the dangerous part of the tree.
- All 9 Fire Stations are equipped with Boats, Dewatering Pump, Cutting Breaking Tools, Emergency Lightings, Vehicles, Life Jackets and Trained Staff
- Disaster Management Control Room and Key Officers will be in constant touch with IMD for early warning and will be communicated to citizens via. Social Media, FM Radio, Television and Mega Phones



- •Low lying areas and flood prone areas are identified in all the Zones
- Temporary shelters for Flood affected families are identified in each Zones
- Mock drills will be conducted in the 1st week of June to check the preparedness of all departments.

• Water level monitoring system of Gorewada & Ambazari Lake is n place



Information of Disaster Management Plan 2023

- Low lying areas and flood areas
 66 Nos
- Slums dwelling houses damaged due to
 stagnation of Water
 22 Nos
- Planning during Rainy season of the houses situated in hollow areas adjacent to Rivers/Nallas in Nagpur City – 85 Nos
- Zone wise above the houses/buildings
 which are in dilapidated conditions
 442 Nos

Important Inventories with Nagpur Municipal Corporation

- 1) Dewatering pumps 53 Nos.
- 2) Chain Saw 22 Nos.
- 3) Life Jackets 99 Nos.
- 4) Lifebuoy 66 Nos.
- 5) Torches 42 Nos.
- 6) Inflatable lighting system 8 Nos.
- 7) Spade, crow bar, ropes etc.
- 8) Cutting & Breaking tools
- 9) Rescue boats 4 Nos.
- 10) Fire Tender 23 Nos.
- 11) Turn Table Ladder 1 No.
- 12) Hydraulic Platform 1 No
- 13) JCB -13 Nos.
- 14) Poclain -7 Nos.
- 15) Ambulance -9 Nos.
- 16) Hearse Van 9 Nos.

1. Administrative Preparedness: (MOH)

- 1.1 Review meeting with officials for briefing on preparedness measures
- 1.2 Rapid Response Team: Formation of dedicated team under Health Officer NMC prabhag wise for effective implementation of all activities
- 1.3 Control room: Control Room for effective management of queries raised by citizen, keeping a check on spread of the disease and monitor preparedness level of the city
- 1.4 Drug availability: Estimation of drugs requirement and provisioning of essential drugs availability in all health facilities
- 1.5 Preparedness of vehicles: Total 9 ambulances MMU are deployed
- 1.6 Interdepartmental coordination: Nodal officer for epidemic is ensuring interdepartmental coordination for effective implementation of activities planned

- 2. **Training and capacity building:** Training calendar has prepared to train all NMC Health staff. Cascading of training session planned to train front line health workers like ASHA, MAS (Mahila Arogya Samiti) members
- 3. **Medicine availability:** Estimation of essential drugs required and provisioning of essential drugs availability has ensured. Along with these, bleaching powder, Chlorine tablet, ORS powder has made available in appropriate quantity
- 4. Water quality testing: NMC Health department in collaboration with OCW is regularly doing water quality testing round the year. According to the report, appropriate measures are taken to provide safe & quality drinking water

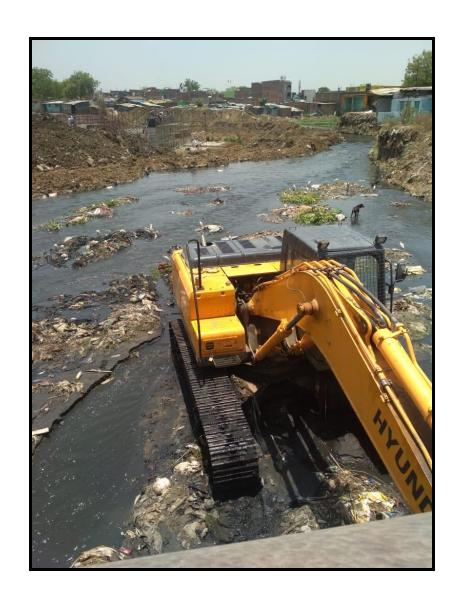
- 5. **Rapid Response Team:** NMC health department has formed rapid response team at prabhag level
- 6. Awareness generation: NMC is using mass media, social media, print media to spread awareness among Nagpur citizen regarding water borne disease prevention and health promotion.



Overflowing Ambazari Lake on 13.08.2015 at 10.55hrs









Thank you

