



सत्यमेव जयते

GOVERNMENT OF GUJARAT



# Disaster Management Plan 2025

(Flood Warning Arrangements-2025)



**Water Resources Department  
Narmada, Water Resources, Water Supply and Kalpsar Department  
Government of Gujarat**



*(for official use only)*



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# Disaster Management Plan 2025

**(Flood Warning Arrangements 2025)**



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**Water Resources Department**  
Narmada, Water Resources, Water Supply and Kalpasar Department  
Government of Gujarat





## **P R E F A C E**

There are 18 major dams in the Gujarat State and 6 interstate river basins namely Tapi basin, Narmada basin, Damanganga basin, Mahi basin, Sabarmati basin and Banas basin in the State. Narmada, Water Resources, Water Supply and Kalpasar Department every year updates the information in this publication which provides information for flood warning arrangements during monsoon. Relief activities are not incorporated in this document as they are not supposed to be dealt with by the personnel of the Water Resources Department.

This disaster management plan includes information and terminology regarding cyclone warning specified by India Meteorological department, guide lines for maintenance of flood embankments, circulars regarding precautionary measures before monsoon, alerting concerned departments, details of wireless stations, type of warning and affected villages. The information is updated based on the suggestions received from various field officers related the flood warning arrangements.

Secretary (WR)



# I N D E X

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## ABBREVIATION

Addl. Secy.	Additional Secretary
B.D.O.	Block Development Officer
BBY	Bombay (Mumbai)
BOSL	Below Outlet Sill Level
C.A.D.	Command Area Development
C.D.	Civil Defense
C.D.O.	Central Designs Organisation
Circle- H.I.P.C.	Himmatnagar Irrigation Project Circle
Circle- P.P.C.	Panam Project Circle
Circle- R.I.C.	Rajkot Irrigation Circle
Circle- R.I.P.C.	Rajkot Irrigation Project Circle.
Circle- S.I.C.	Surat Irrigation Circle
Circle- V.I.C.	Vadodara Irrigation Circle.
C.W.C.	Central Water Commission
CRF	Cumulative Rainfall
CUM/CUS	Cumecs / Cusecs
Cumecs	Unit of measurement of Discharge in Metric System (Cubic Meter per Second)
Cusecs	Unit of Measurement of Discharge in British System (Cubic Feet per Second)
CWDS	Cyclone Warning Dissemination System
D.D.S.	Design Dead Storage
D.E.E.	Deputy Executive Engineer
D.G.S.	Design Gross Storage
D.L.S.	Design Live Storage
D.S.	Deputy Secretary
D.S.P.	District Superintendent of Police
D.S.R.P.	Dam Safety Review Panel
D'Ganga	Damanganga
Dam-Warning	The dam/reservoir filled more than 70% and upto 80% with respect to its Design Gross Storage
Dam-Alert	The dam/reservoir filled more than 80% and upto 90% with respect to its Design Gross Storage
Dam-High Alert	The dam/reservoir filled more than 90% with respect to its Design Gross Storage
Datum Level	Level with Respect to Sea Level
Disc.	Discharge
EOC	Emergency Operation Cell
ERC	Emergency Response Cell
Ft./ Mt.	Feet / Meter
G.E.B.	Gujarat Electricity Board
Gate-(FG)	Fuse Gated Scheme
Gate-(G)	Gated Scheme
Gate-(UG)	Un Gated Scheme
Gauge Height	Difference between two levels
HOC	Hydrological Observation Circle of CWC
H.R.W.	Heavy Rainfall Warning
I.M.D.	India Meteorological Department
I.P.Sub. Dn.	Irrigation Project Sub Division

## ABBREVIATION

IBPT	Irrigation Bye-pass Tunnel
Inf.	Inflow
IST	Indian Standard Time
Kts.	Knot (Unit of Measurement for wind Speed)
Lat / Long.	Latitude / Longitude
Level-D.L.	Danger Level
Level-F.R.L.	Full Reservoir Level
Level-H.F.L.	High Flood Level
Level-O.S.L.	Operational Sill Level
Level-P.W.L.	Present Water Level
Level-R.L.	Reduced Level
Max. / Min.	Maximum / Minimum
Mcft/(Mft <sup>3</sup> )	Million Cubic Feet
Mcm/MM <sup>3</sup>	Million Cubic Meter
MDDL	Minimum Draw Down Level
N.W.R.W.S. & K. Dept.	Narmada, Water Resources, Water Supply and Kalpasar Department
NA	Not Available
NTBO	Narmada and Tapi Basin Organisation
O.S.D.	Officer on Special Duty
Pri. Secy.	Principal Secretary
R & B	Roads and Building Department
R.H.	Rest House
Region-CG	Central Gujarat
Region-NG	North Gujarat
Region-Pan	Panchayat
Region-Sau	Saurashtra
Region-SG	South Gujarat
RF	Rainfall
Rule Level	A Rule level is a pre-defined level on a specified date to be maintained in the reservoir to fill the reservoir in stages during on-going monsoon season considering conservation and flood control aspects.
S.D.O.	Sub Divisional Officer
Sch. No.	Scheme No.
Secy.	Secretary
Signal-Blue	Ready for Evacuation
Signal-Red	Immediate Evacuation
Signal-White	Alert Condition
SRT	Surat
Storage-Dead	(Gross Storage - Live Storage)
Storage-Gross	(Live Storage + Dead Storage)
Storage-Live	(Gross Storage - Dead Storage)
U.S.	Under Secretary
U.T.	Union Territory
U/s, D/s	Up Stream, Down Stream
UTC/GMT	Universal Time Code / (Greenwich Mean Time)
V.M.C.	Vadodara Municipal Corporation



## B. INFORMATION AND TERMINOLOGY REGARDING CYCLONE WARNING, COASTAL AND WEATHER BULLETINS SPECIFIED BY INDIA METEOROLOGICAL DEPARTMENT (IMD)

### FAVOURABLE WEATHER PARAMETERS FOR FORMATION OF CYCLONE:-

1. Large sea area with sea surface temperature  $27^{\circ}\text{C}$  or more
2. Minimum vertical wind shear.
3. Minimum value of Coriolis parameter. (Generally originates between  $5^{\circ}$  to  $22^{\circ}$  North Latitude.)
4. Upper air divergence.
5. Sufficient moisture in the lower and middle troposphere.

### Terminologies for Tropical Cyclone:-

The classification adopted by Indian Meteorological Department to classify such disturbances is based on maximum strength of sustained wind in the circulation.

Type of Disturbance.	Associated wind speed.
Low Pressure area	Less than 17 kts.
Depression	17-27 kts.
Deep Depression	28-33 kts.
Cyclonic Storm	34-47 kts.
Sever Cyclonic Storm	48-63 kts.
Very Severe Cyclonic Storm	64-119 kts.
Super Cyclonic Storm	120 kts. and above
(1 Knot = 1.85 kmph.)	

Expected Wind Speed	Expected Damage
60-90 kmph	Tree branches broken off; Some damage to kachcha house
90-120 kmph	Trees uprooted; Pucca houses damaged; Communication disrupted.
More than 120 kmph	Big trees uprooted; Widespread damage to houses and installation. Total disruption of communication.

## FORMATION OF TROPICAL CYCLONE

Tropical cyclones generally form over the open areas where the sea surface temperature is 27° C or more.

Very cold temperatures of South Atlantic, Eastern parts of South Pacific and Eastern parts of North Pacific even during the warmest season are not congenial for formation of cyclones while in the warm Indian Ocean cyclones are frequent.

A Tropical cyclone generally forms from a pre-existing low pressure area over warm Tropical oceans and air from all directions rushes the area in an anticlockwise motion in Northern hemisphere due to deflection caused by rotation of earth. Greater pressure fall, greater the speed of wind rushing inward to the vacume - Low Pressure.

Simultaneously, in view of favorable conditions in the upper atmosphere at 6 km and above for the out flow or divergence of air, a large scale vertical motion of up rushing air takes place, as the moisture laden warm air rises, it cools and excess moisture, which it cannot sustain at these warm temperatures, falls as rain. The latent heat liberated in this process supplies further energy to this low pressure system of intensification.

### વાવાઝોડા - ચેતવણી પ્રચાર તંત્ર મારફત વાવાઝોડા અંગે

#### ભય - ચેતવણી પ્રસારણ માટેની રૂપરેખા

.....ખાતેની હવામાન ખાતાની કચેરીએ તા..... ના રોજ ભારતીય માનક સમય પ્રમાણે..... કલાકે બહાર પાડેલું વાવાઝોડા ચેતવણી બુલેટીન નંબર.....

તારીખ..... ના રોજ ભારતીય માનક સમય પ્રમાણે.....કલાકે.....(સ્થળ)  
થી લગભગ.....કિ.મી. ના અંતરે .....દિશામાં વાવાઝોડું ફુંકાશે ; જે વધુ તીવ્ર બનવાની અને.....દિશામાં ફંટાવવાની શક્યતા છે. આના પરિણામે.....(જિલ્લા)  
માં.....વાર, .....(તારીખ/સમય) થી ભારીથી અતિભારે વરસાદના છુટાછવાયા  
આપટા સાથે વ્યાપક પ્રમાણમાં વરસાદ થવાની શક્યતા છે. ....વાર,.....  
(તારીખ/સમય) થી આ જિલ્લાઓના દરિયાકાંઠાના વિસ્તારોમાં કલાકના.....કિ.મી. સુધીની  
ઝડપે તોફાની પવન ફુંકાવા માંડે તેવી શક્યતા છે. આ દરિયાકાંઠા વિસ્તારોના માછીમારોને દરિયામાં ન  
જવાની સલાહ આપવામાં આવે છે.

**FOR AIR STATION - (INCLUDING BBY AND SRT) AND REVENUE OFFICIALS.  
FORMAT FOR CYCLONE WARNING (SEVERE CYCLONIC STORM)**

CYCLONE BULLETIN NO.....ISSUED BY CYCLONE WARNING CENTRE,  
AHMEDABAD AT .....HRS IST OF .....(DATE) FOR REPEATED BROADCAST IN  
GUJARATI, SINDHI, HINDI AND ENGLISH AT HOURLY / HALF HOURLY INTERVALS  
(aaa) CYCLONE WARNING FOR .....  
.....DISTRICTS (aaa) SEVERE CYCLONIC  
STORM LOCATED..... KM..... (DIRECTION) OF.....  
OF..... (TIME) LATITUDE..... NORTH, LONGITUDE..... EAST, (aaa).  
EXPECTED TO STRIKE COAST BETWEEN..... AND..... ON.....  
(DAY)..... (MORNING/EVENING ETC) (aaa) GALES REACHING..... KMPH  
UPROOTING TREE, DAMAGING PUCCA HOUSE AND DISTURPTING COMMUNICATION  
LIKELY.....  
DISTRICTS..... FROM.....  
(DAY)..... (DATE) (aaa) WIDE SPREAD RAIN WITH SCATTERED HEAVY TO VERY  
HEAVY FALLS LIKELY COMMENCE FROM..... DISTRICTS FROM.....  
(DAY)..... (DATE)..... (TIME) (aaa) TIDAL WAVES..... METERS ABOVE  
NORMAL TIDE LIKELY INUNDATE COASTAL AREAS.....  
OF DISTRICTS AROUND..... (DAY/TIME) (aaa) STATE OF SEA..... OFF COAST  
(aaa) FISHERMEN ARE ADVISED NOT TO GO OUT IN THE SEA (aaa) DANGER/GREAT  
DANGER SIGNAL NO..... HOISTED AT PORTS (aaa) LOCAL WARNING SIGNAL NO 4:  
HOISTED AT..... PORTS (aaa) LOCAL CAUTIONARY SIGNAL No:  
3 HOISTED AT..... PORTS (aaa) ABOVE WARNINGS ARE  
FOR.....  
.....DISTRICTS (aaa)

(FOR AIR STATIONS ONLY (NOT TO BROADCAST) KINDLY MAINTAIN ROUND THE  
CLOCK WATCH TO RECEIVE AND BROADCAST THE SUBSEQUENT NUMBERED  
WARNING BULLETINS) (aaa)

## CYCLONE ALERT

CYCLONE ALERT NO. .... ISSUED BY CYCLONE WARNING CENTRE  
 AHMEDABAD ..... IST ON ..... (DATE). DEPRESSION / CYCLONIC  
 STORM LAY ..... AREBIAN SEA CENTRED .....HRS.  
 ..... IST ..... (DAY) ..... (DATE) CENTRED AT LATITUDE  
 ..... NORTH, LONGITUDE ..... EAST, ABOUT .....  
 KMS ..... (DIRECTION) OF ..... (PLACE) aaa LIKELY INTENSIFY  
 FURTHER AND MOVE IN ..... (DIRECTION) aaa UNDER ITS INFLUENCE  
 WIDESPREAD RAIN WITH SCATTERED HEAVY TO VERY HEAVY FALLS LIKELY  
 COMMENCE ..... DISTRICTS ..... FROM ..... (DAY)  
 ..... (DATE/TIME) (F/N ETC) aaa GALE WINDS SPEED REACHING .....  
 KMPS LIKELY COMMENCE A LONG COASTAL AREAS OF .....  
 .....DISTRICTS:.....  
 .....  
 .....

## ભારે સંકટ અંગેની ચેતવણીને અનુમોદન આપતા પત્રની નકલ

પ્રાદેશિક હવામાન કચેરી, અમદાવાદ દ્વારા ભારે સંકટ અંગેની ચેતવણી તંત્ર મારફત પ્રસારીત કરવા માટે તારીખ ..... ના રોજ ભારતીય સમય પ્રમાણે ..... કલાકે આપવામાં આવ્યું.

..... જિલ્લાઓ માટે વાવાઝોડાની ચેતવણી તારીખ ..... ના રોજ ભારતીય સમયાનુસાર ..... વાગે, ..... ની તે (સ્થળે), ..... દિશા તરફ સુમારે કિ.મી. દુરી પર થયેલું વાવાઝોડું/અતિભારે વાવાઝોડું, સાગરનું તોફાન તીવ્ર સ્વરૂપ ધારણ કરીને, ..... દિશા તરફ જવાની શક્યતા છે, અને તે (દિવસ) ..... તારીખ ..... (સમયે) દરીયાના કિનારાના સ્થળ પર ત્રાટકવાની શક્યતા છે.

ભરતીના મોજાઓની ઊંચાઇ સામાન્ય મોજાની ઊંચાઇથી ..... મીટર ઊંચા રહેવાની સંભાવના છે. તોફાન કાંઠો ઓળંગશે ત્યારે ભરતીના મોજા સામાન્ય ભરતીના મોજાથી ..... મીટર ઊંચા હશે જે વિનાશકારી હોવાની સંભાવના છે. .... જિલ્લાઓને કાંઠે સામાન્ય ભરતીના મોજાની ઊંચાઇ કરતાં ..... મીટર ઊંચા રહેશે તેથી અગાઉ જણાવ્યા પ્રમાણેના જિલ્લાઓના કાંઠાના નિંચાણ વાળા વિસ્તારો ઉપર પાણી ફરી વળવાની સંભાવના છે. કાંઠાના પ્રદેશના લોકોને સલામત ઊંચાઇ વાળા સ્થળે આશરો લેવા સલાહ આપવામાં આવે છે. .... જિલ્લામાં પવનનો વેગ વધીને કલાકના ..... કિ.મી. થવાની સંભાવના છે, જેથી ..... દરમિયાન ..... જિલ્લામાં મોટા વૃક્ષો મુળમાંથી ઉખડી જવાની, મકાન-મિલકતોને તથા ઇમારતોને મોટું નુકશાન થવાની અને સંદેશા વ્યવહાર સંપૂર્ણ પણે ખોરવાઇ જવાની સંભાવના છે.

..... જિલ્લામાં પવનનો વેગ કલાકના ..... કિ.મી. નો થશે, જે વૃક્ષો ઉખાડી નાખશે અને પાકા મકાનોને નુકશાન પહોંચાડશે તેમજ સંદેશા વ્યવહાર ખોરવાઇ જવાની સંભાવના છે.

..... જિલ્લામાં પવનનો વેગ કલાકના ..... કિ.મી. નો થશે. વૃક્ષની ડાળીઓ તુટી પડવાની અને કાચા મકાનો ને નુકશાન પહોંચવાની સંભાવના છે.

અતિભારે વરસાદથી ..... જિલ્લાઓમાં પૂર આવવાની સંભાવના છે.

..... જિલ્લાઓમાં ભારે વરસાદ થવાની સંભાવના આપવામાં આવે છે.

વાવાઝોડાની ચેતવણી અંગેનો બુલેટીન ક્રમાંક ..... અહિં સમાપ્ત થાય છે.

**For Air Station - (Including BBY and SRT) and Revenue Officials****FORMAT FOR CYCLONE WARNING (VERY SEVERE CYCLONIC STORM (120 knots & above SUPER CYCLONIC STORM) 64 -119 knots)**

CYCLONE BULLETIN NO ..... ISSUED BY CYCLONE WARNING CENTRE  
 AHMEDABAD AT ..... Hrs. IST OF ..... (DATE) FOR REPEATED  
 BROADCAST IN GUJARATI, SINDHI, HINDI AND ENGLISH AT HOURLY / HALF HOURLY  
 INTERVALS                      aaa                      CYCLONE                      WARNING                      FOR  
 ..... DISTRICTS (aaa) HURRICANE  
 LOCATED ..... K.M. (DIRECTION) OF ..... (PLACE) .....  
 (TIME) LAT .....° N LONG ..... ° E (aaa) EXPECTED TO STRIKE COAST BETWEEN ETC)  
 aaa GALES REACHING ..... Kmph UPROOTING TREES AND CAUSING  
 WIDESPREAD DAMAGE TO HOUSES AND INSTALLATION AND TOTAL DISRUPTION OF  
 COMMUNICATION                      LIKELY .....  
 .....  
 ..... DISTRICTS FROM ..... (DAY) .....  
 (DATE) (aaa) TIDAL WAVES ..... METERS ABOVE NORMAL TIDE LIKELY  
 INUNDATE                      COASTAL                      AREAS                      OF .....  
 ..... DISTRICTS                      AROUND  
 ..... (DAY/TIME) (aaa) PEOPLE IN THESE COASTAL AREAS OF  
 .....  
 DISTRICTS ARE ADVISED TO TAKE SHELTER IN HIGH BUILDINGS aaa VERY HEAVY  
 RAIN                      LIKELY                      CAUSE                      FLOODS                      IN                      THE .....  
 .....STATE  
 OF SEA ..... OFF ..... COAST aaa FISHER MEN ARE ADVISED NOT TO GO IN  
 THE                      SEA                      aaa                      DANGER                      /                      GREAT                      DANGER                      SIGNAL                      No  
 ..... HOISTED                      AT  
 ..... PORTS (aaa) LOCAL WARNING  
 SIGNAL                      NO                      4                      HOISTED                      AT .....  
 ..... PORTS (aaa) LOCAL CAUTIONARY SIGNAL  
 NO 3 HOISTED AT ..... PORTS (aaa) ABOVE WARNINGS ARE  
 FOR ..... DISTRICTS (aaa)



**FISHERIES WARNING BY CYCLONE WARNING CENTRE AHMEDABAD**  
**CRITERIA FOR THE ISSUE OF FISHERIES WARNING ARE:**

1. STRONG OFF SHORE AND ON SHORE (OR WITH APPROPRIATE DIRECTION) WIND - SPEED EXCEEDING 45 KMPS (25 KNOTS).
2. SQUALLY WEATHER.
3. GALES (STRONG WIND UNDER STEEP PRESSURE GRADIENT, 34-47 KNOT & 8-9 IN BEAUFORT SCALE).
4. STATE OF SEA VERY ROUGH OR WAVES OF 4 METERS OR MORE UPTO A DISTANCE OF 75 KM OFF THE COAST.

FISHERIES OFFICIALS ARE WARNED BY LAND LINE HIGH PRIORITY TELEGRAMS (INDIVIDUAL FISHERIES OFFICIALS WHO ARE ON THE WARNEES LIST OF CYCLONE WARNING CENTRE, I.M.D., AHMEDABAD.

FISHERIES WARNINGS ARE BROADCAST FOUR TIMES A DAY BY THE STATIONS OF ALL INDIA RADIO IN THE RESPECTIVE REGIONAL LANGUAGES OF CONCERNED AREAS.

**FISHERMEN WARNING**

CHART UTILISED			TIME OF ISSUE		VALIDITY PERIOD FROM	
HRS	IST	UTC	HRS	IST	HRS	IST
0830	(03 Z)	MID DAY	1200	HRS	1500	24 HRS
1130 & 1430	(06 & 09 Z)	EVENING	1500	HRS	1800	24 HRS
1730	(12 Z)	MID NIGHT	2030	HRS	0800 (NEXT DAY)	24 HRS

**ADDITIONAL WARNING DURING CYCLONE**

2030	(18 Z)		2330	HRS	0200 (MORNING)	24 HRS
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### SCHEDULE OF BROADCAST OF WARNINGS FOR FISHERMEN OVER ALL INDIA RADIO IN PLAIN LANGUAGE

Name of the Station	Language of Broadcasting	Area Covered Broadcast	Time IST	Wave Length
1	2	3	4	5
Ahmedabad	Gujarati	Gujarat coast	0645	358.6 KHz
			1600	
			1530	
			(Sunday/Holiday)	
			1814	
			2310	
Vadodara	Gujarati	Gujarat coast	0635	693 KHz
			1920	
Rajkot	Gujarati	Gujarat coast	0650	693 KHz
			0945	
			1100(only Sunday)	
			1530	
			1805 (between	
			1920 & 1950)	
Bhuj	Gujarati and Gujarati North Kachchha Local dialect	Gujarat coast	0645	13.14 KHz
			1500	228.3 MTS.
			1530	
			1600 (at the end	
			Second of transmission)	
			1800	

### COASTAL BULLETIN

COASTAL BULLETINES ARE MEANT FOR BENEFIT OF SHIPS PLYING MAINLY IN COASTAL AREAS i.e. SEA AREA UPTO 75 km OFF THE COAST LINE. COASTAL BULLETINES ARE BROADCAST IN MORSE CODE BY FROM COASTAL RADIO STATIONS ON FREQUENCIES NORMALLY USED BY SHIPS CYCLONE WARNING CENTRE AHMEDABAD ISSUES THESE BULLETINES FOR GUJARAT COAST.

ISSUED BY	FOR RADIO STATION	COASTAL STRIP	FREQUENCY
CWC AHMEDABAD	MUMBAI	SOUTH GUJARAT	521 KHz

### TIME (UTC) OF BROADCAST COASTAL RADIO STATION (FOR GUJARAT COAST)

EXTRA	2320	2330
STORM-ONE	0420	0430
DAILY – ONE	0820	0830
STORM - TWO	1220	1230
DAILY -- TWO	1620	1630
STORM - THREE	2020	2030
SPECIAL	AT ANY TIME	

### COASTAL BULLETIN CHART

CODE WORD FOR COASTAL RADIO STATIONS	TYPE OF BULLETIN	WEATHER CONDITION	CHART ON WHICH BASED IST (Z)	TIME OF ISSUE HRS IST
AURORA	DAILY-ONE	UNDISTRUBED WEATHER	0830 (03 Z)	1130
BALLON	DAILY-TWO	UNDISTURBED WEATHER	1730 (12 Z)	1930
DEW DROP	EXTRA	DEPRESSION	2330 (18 Z)	0400
ELECTRON	STORM-ONE	CYCLONE	0530 (00 Z)	0930
FORMULA	STORM-TWO	CYCLONE	1430 (09 Z)	1600
GAS BAG	STORM THREE	CYCLONE	2030 (15 Z)	2330
HEXAGON	SPECIAL		AT ANY TIME	

**PORT WARNINGS**  
**A UNIFORM SYSTEM OF STORM WARNING SIGNALS FOR PORTS**  
**IS BEING USED BY INDIA METEOROLOGICAL DEPARTMENT SINCE 1898.**

**1. GENERAL PORTS**

GENERAL PORTS USE ELEVEN SIGNALS OF WHICH 'I' AND 'II' INDICATE EXISTENCE OF DISTANT DISTURBED WEATHER.

SIGNALS 'III' TO 'X' INDICATE THE PORT ITSELF IS THREATENED BY BAD WEATHER AND 'XI' INDICATES THAT THE COMMUNICATION WITH THE FORECASTING CENTRE HAS BEEN BROKEN DOWN BUT THERE IS A DANGER OF BAD WEATHER AT THE PORT.

**2. BRIEF PORTS**

IT USED ONLY FIVE SIGNAL (VIZ. SIGNAL 'III, IV, VII, X AND XI').

**3. PORTS WITHOUT SIGNALS.**

THESE ARE MINOR PORTS WHICH GET WARNINGS SIMILAR TO BRIEF PORTS. THE WARNING MESSAGES WILL CONTAIN INFORMATION ON THE LOCATION, DIRECTION OF MOVEMENT OF DISTURBANCE AND EXPECTED WEATHER OVER PORTS.















**PORTS IN GUJARAT**  
**Ports with signals**









North Gujarat Coast		South Gujarat Coast	
(01)	Portal Mandvi - Kachchh (General Port)	(10)	Cyclone Mangrol (General Port)
(02)	Cyclone Mundra (General Port)	(11)	Cyclone Veraval (General Port)
(03)	Cyclone New Kandla (General Port)	(12)	Cyclone Diu (Brief Port)
(04)	Portal Morbi (For Navlakhi Port) (General Port)	(13)	Cyclone Jafrabad (General Port)
(05)	Cyclone Jamnagar Bedi (General Port)	(14)	Cyclone Pipavav (Dunger/Rajula) (General Port)
(06)	Cyclone Sikka (General Port)	(15)	Portal Bhavnagar (General Port)
(07)	Cyclone Salaya (General Port)	(16)	Portal Alang (General Port)
(08)	Portal Okha (General Port)	(17)	Port Office Dahej (General Port)
(09)	Cyclone Porbandar (General Port)	(18)	Cyclone Magdalla (Surat) (General Port)
		(19)	Cyclone Daman (Brief Port)

**Ports without Signals**

North Gujarat Coast		South Gujarat Coast	
(01)	Cyclone Jakhau	(03)	Port Officer Mul Dwarka
(02)	Cyclone Dwarka (Rupen)		(Dist. Junagadh via Kodinar)
		(04)	Port Officer Victor (Amreli)
		(05)	Portal Bharuch

**Pictorial form of visual Storm warning signals in use**

Storm Warning	Signal No.	Day Signal	Night Signal
<b>Distant Cautionary</b> There is a region of squally weather in which a storm may be forming	I		
<b>Distant Warning</b> A Storm has formed	II		
<b>Local Cautionary</b> The port is threatened by squally* weather	III		
<b>Local Warning</b> The port is threatened by a storm but it does not appear that the danger is as yet sufficiently great to justify extreme measures of precaution	IV		
<b>Danger</b> Port will experience severe weather from a cyclone expected to move keeping the port to the left of its track.	V		
<b>Danger</b> Port will experience severe weather from a cyclone expected to move keeping the port to the right of its track.	VI		
<b>Danger</b> Port will experience severe weather from a cyclone expected to move over or close to the port. Note :- This signal is also hoisted when a storm is expected to skirt the coast without (actually) crossing it.	VII		

Storm Warning	Signal No.	Day Signal	Night Signal
<b>Great Danger</b> Port will experience severe weather from a severe cyclone expected to move keeping the port to the left of its track.	VIII		
<b>Great Danger</b> Port will experience severe weather from a severe cyclone expected to move keeping the port to the right of its track.	IX		
<b>Great Danger</b> Port will experience severe weather from a cyclone expected to move over or close to the port. Note :- This signal is also hoisted when a storm is expected to skirt the coast without (actually) crossing it.	X		
<b>Failure of Communications</b> Communications with the meteorological warning centres has broken down and the local officer considers that there is danger of bad weather.	XI		

**Note:-**

‘\*’ Squally weather is meant to cover occasional/frequent squalls with rain or persistent type of strong gusty winds (mean wind speed not less than 20 knots) accompanied by rain. Such conditions are associated with low pressure systems or onset and strengthening of monsoon. Mean wind speeds exceeding 33 knots associated with cyclone storms are generally covered by signals higher than LC-III. The word generally has been added to permit hosting of LC-III at ports outside the inner storm area where wind speed may exceed 33 knots.

**Note:-**

Night signals shaded in Grey indicates Red Light.



## CYCLONE WARNING DISSEMINATION SYSTEM. (CWDS)

Government of India announced a policy decision 1975 to utilize a satellite based communication network to cater to domestic requirements.

The INSAT - CWDS make use of community broadcast capability of the INSAT satellite system. The system enables the Cyclone Warning Center, CWC to directly and selectively address a particular area likely to hit by a cyclone.

The uplink to satellite is done from ACWC for disseminating the warning messages. These messages are picked up by C/S band transponder in C - band and their frequency is translated to S - band for down link purposes. A total of 150 receivers have been installed in the vulnerable coastal areas in the initial two phases. Another set of 100 receivers are being installed to augment the density of these CWDS network. The warnings are transmitted in speech mode in both English and Local language.

### CYCLONE WARNING DISSEMINATION SYSTEM CWDS STATION IN GUJARAT STATE

NO.	STATIONS	ADDRESS
1.	Ahmedabad	Director, Met. Center, Ahmedabad (Monitoring Station)
2.	Gandhinagar	Director of Relief, Sachivalaya, Gandhinagar (State Head Quarter)
3.	Surat	Collector Office, Surat Dist. Surat
4.	Bharuch	Collector office Bharuch Dist. Bharuch
5.	Bhavnagar	Collector Office Bhavnagar Dist. Bhavnagar
6.	Mahuva	Mamlatdar Office Mahuva Dist. Bhavnagar
7.	Veraval	Mamlatdar Office Veraval Dist. Junagadh
8.	Porbander	Collector Office Porbander Dist. Porbander
9.	Dwarka	Mamlatdar Office, Dwarka Dist. Jamnagar
10.	Mandvi	Mamlatdar Office, Mandvi Dist. Kachchh
11.	Okha	Police Station, Okha Dist. Jamnagar
12.	Jamnagar	Civil Defence Office, Jamnagar Dist. Jamnagar
13.	Mangrol	Mamlatdar Office, Mangrol Dist. Junagadh
14.	Diu ( Union Territory)	Police Station, Diu.
15.	Jafrabad	Mamlatdar Office, Jafrabad Dist. Amreli
16.	Khambhat	Mamlatdar Office, Khambhat Dist. Anand
17.	Baroda	Collector Office Vadodara Dist. Vadodara
18.	Valsad	Collector Office, Valsad Dist. Valsad
19.	Gandhidham	Civil Defence Office, Gandhidham Dist. Kachchh
20.	Daman (Union Territory)	Port Office Daman
21.	Silvassa (Union Territory)	Mamlatdar Office, Silvassa
22.	Kandla Port	Dist. Kachchh

**GENERAL TERMINOLOGY USED IN WEATHER BULLETINS**

<b>(A)</b>	<b>Intensity of Rainfall</b>		<b>Terminology Used.</b>
1.	0.1 mm to 2.4 mm	(24 hrs)	Very light rain
2.	2.5 mm to 7.5 mm	”	Light rain.
3.	7.6 mm to 34.9 mm	”	Light to Moderate rain
4.	35.0 mm to 64.9 mm	”	Moderate rain
5.	65.0 mm to 124.9mm	”	Heavy rain
6.	Exceeding 125 mm.	”	Very Heavy rain.
<b>(B)</b>	<b>Spatial distribution of weather phenomenon.</b>		
	<b>Percentage Area Covered</b>		<b>Terminology Used</b>
1.	1 to 25		Isolated
2.	26 to 50		Few Places
3.	51 to 75		Many Places
4.	76 to 100		At Most Places
<b>(C)</b>	<b>Emergency Situation</b>		
1.	When water level is rising above the danger of H.F.L		
2.	When intensity of rainfall is above 65 mm /hr		
3.	When breaches are anticipated which may cause disaster.		
4.	When water levels are rising abruptly which may cause disaster.		
<b>(D)</b>	<b>Evacuation</b>		
1	White Signal	-	Alert condition
2	Blue Signal	-	Ready for Evacuation
3	Red Signal	-	Immediate Evacuation

## POST LAND FALL OUTLOOK FROM METEOROLOGICAL CENTER, AHMEDABAD.

1. EVEN AFTER LANDFALL, THE SYSTEM IS LIKELY TO MAINTAIN ITS INTENSITY FOR \_\_\_\_\_ Hrs. AND WEAKEN GRADUALLY AAA UNDER ITS INFLUENCE RAINS AT MOST / MANY PLACES WITH HEAVY TO VERY HEAVY FALLS AT \_\_\_\_\_ LIKELY COMMENCE / CONTINUE IN \_\_\_\_\_ (COASTAL DISTRICTS) FROM \_\_\_\_\_ (TIME) \_\_\_\_\_ (DAY) \_\_\_\_\_ (DATES) CAUSING INUNDATION OF LOW-LYING AREAS AAA  
  
GALE WINDS / SQUALLY WINDS SPEED REACHING \_\_\_\_\_ Kmph. LIKELY COMMENCE / CONTINUE IN \_\_\_\_\_ (COASTAL DISTRICTS) FROM \_\_\_\_\_ (TIME) ON \_\_\_\_\_ (DAY) \_\_\_\_\_ (DATE) CAUSING DAMAGES TO \_\_\_\_\_ AND \_\_\_\_\_ (VEGETATION) AND GENERAL DISRUPTION OF COMMUNICATION AND POWER SUPPLY FOR \_\_\_\_\_
2. AS THE CYCLONE MOVES IN LAND \_\_\_\_\_ INTERIOR DISTRICTS MAY ALSO EXPERIENCE HEAVY / VERY HEAVY RAIN ACCOMPAINED WITH GALE WITH SPEED REACHING \_\_\_\_\_ Kmph. COMMENCING FROM \_\_\_\_\_ (TIME) ON \_\_\_\_\_ (DAY) \_\_\_\_\_ (DATE) FOR \_\_\_\_\_ Hrs., CAUSING FLOODING OF LOW-LYING AREAS AND DAMAGE TO PROPERTY AS INDICATED IN IMD MONOGRAPH ON " DAMAGE POTENTIAL OF TROPICAL CYCLONE" (AS PER IMD INSTRUCTION)
3. PEOPLE ARE ADVISED TO REMAIN INDOORS / IN SAFE PLACES AND CO-OPERATE WITH STATE GOVERNMENT OFFICIALS AND DISASTER MANAGEMENT AGENCIES

## **State/Central Govt. Officials/Vital installations/Registered User**

Cyclone Alert/Cyclone Warning Bulletin No.

Date and Time of Issue:

**(i) Information on cyclone:**

The cyclonic storm lay over \_\_\_\_\_ Arabian Sea Center \_\_\_\_\_  
Kms. \_\_\_\_\_ (Direction) of \_\_\_\_\_ place

**(ii) Forecast**

Further intensification:

Direction of Movement:

Expected landfall area:

Expected time of landfall:

**(iii) Weather Warning**

(a) Rainfall \_\_\_\_\_ in \_\_\_\_\_ Districts (Names)

(b) Gales reaching \_\_\_\_\_ Kmph \_\_\_\_\_ in \_\_\_\_\_  
Districts (Names)

(c) Gale force winds reaching \_\_\_\_\_ knots in \_\_\_\_\_ Districts

(d) Tidal waves \_\_\_\_\_ upto \_\_\_\_\_ in coastal areas of \_\_\_\_\_  
Districts (Names)

(e) Sea condition:

(f) Damage: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ Districts (Names)

(g) Likely impacts:

**1.0 INTRODUCTION****1.1 Disaster Management Plan (Flood Warning Arrangements):**

**1.1.1** Disaster Management Plan (Flood Warning Arrangement) consists of flood forecasting system for various rivers of State, instructions & functions to be performed by various officers at the time of flood in the river during monsoon period. The system of flood forecasting consists of four phases viz.,

- (a) Observation and collection of operational data shall mean activities such as - Collection of field data regarding rainfall, water levels of gauge sites, etc., by different field officers at various places as described hereafter.
- (b) Transmission of data to forecast centers means: - Transmission / Email / Facsimile / Physical copy of data collected as above to the concerned officers in charge of formulation of forecast.
- (c) Formulation of forecast means: - Preparing flood forecast on the basis of the data collected above along with necessary data from the I.M.D.
- (d) Issue of forecast: - All officers formulating the forecast are authorized to issue the forecast.

The complete list of gauge stations for which Hydro Meteorological data are being collected, danger level/F.R.L. of the stations and the officers in-charge with their telephone numbers are given vide Annexure 1-B and Flood Telephone Directory of the current year respectively. The warning and danger levels for the important gauge stations are also appended vide Annexure 1-C

**1.2 Contact Numbers;**

**1.2.1** The Contact numbers of the concerned officers are listed in the Flood Telephone Directory of the current year

**1.3 Meteorological Center and Flood Meteorological Officer.**

**1.3.1** Meteorological Center and Flood Meteorological office stationed at Ahmedabad collects information regarding meteorological situation of the State. These Hydro Meteorological data are transmitted by flood meteorological office to the Executive Engineer, Mahi Division, (C.W.C.) at Gandhinagar and Executive Engineer, Tapi Division (C.W.C.) Surat as per their specific requirements. Meteorological center also issues heavy rainfall warnings to those officers of N.W.R.W.S. & Kalpasar Dept. and Revenue Departments of Government of Gujarat who have specifically got their names registered with Meteorological Center, Ahmedabad for receiving of heavy rainfall warning. IMD Ahmedabad website is <https://mausam.imd.gov.in/ahmedabad/>. The address of Meteorological Centre and Flood Meteorological office are as under:

TABLE – 1.3.1

(a)	Head, Meteorological Center Office Ahmedabad, RS/RW Building, Airport Fire Station Road, Ahmedabad – 382475	<b>Note:-</b> Kindly refer Flood Telephone Directory of current year for Telephone Nos.
(b)	Flood Metrological Office, RS/RW Building, Airport Fire Station Road, Ahmedabad – 382475	

#### 1.4 Central Water Commission Offices

1.4.1 Government of India has set up two Divisions, **Tapi Division, (C.W.C.), Kshetrapal Health Centre, Sangrampur, Surat – 395 008 and Mahi Division, (C.W.C.), 3rd Floor, Narmada Tapi Bhavan, Sector-10-A, Gandhinagar-382010**, working under Superintending Engineer, Hydrological Observation Circle, (C.W.C.) Gandhinagar for issuing flood warnings of six inter-state rivers viz. (1) Damanganga (2) Tapi (3) Narmada (4) Mahi (5) Sabarmati (6) Banas and one Local river Shetrunji. The inflow forecast and flood level forecast for the above basins are to be conveyed by Executive Engineer, Tapi Division, (C.W.C.) Surat and Executive Engineer, Mahi Division, (C.W.C.) Gandhinagar to Focal Officers, Flood Control Cell, Gandhinagar and respective project officers well in advance. The details of warnings and danger level for important stations of above **six interstate rivers and one local river are given in Annexure - 1(C)**.

The names of Officer in-charge of above basins are as under:

TABLE - 1.4.1

Name Of Officer	Name of Basins
Executive Engineer Tapi Division (C.W.C.) Surat	(a) Damanganga (b) Tapi (c) Narmada
Executive Engineer Mahi Division (C.W.C.) Gandhinagar	(a) Mahi (b) Sabarmati (c) Banas and one local river shetrunji

#### 1.5 Appropriate Authorities (Focal Officers):

1.5.1 The State Government has considered the officer of the rank of Superintending Engineer or Collector of concerned districts or Municipal Commissioners, as Appropriate Authorities (Focal Officers) for various Basins / Regions during monsoon period (as per the [Gujarat State Disaster Management Act-2003](#)). The Focal Officer can nominate any Executive Engineer / Officers in his area as his second in command who will act as Sub-Focal Officer for discharging duties of Focal Officer. He will inform the name, address and telephone Nos. of sub-focal officer to all concerned. List of **Gauge Stations & Officer-in-Charge**, for monitoring the flood given in **Annexure-1(B)**.



**The Focal Officers are responsible for :-**

- 1.5.2** Keeping constant watch over the flood situation, flood warning, monitoring flood discharges through concerned project authorities, formulating flood forecast as and when required conveying these warning including conveying inflow forecast and flood level forecast from C.W.C. or the case may be in advance to the concerned Revenue and Police authorities for alerting and evacuating people of the area likely to be affected by the incoming floods if necessary. On receipt of flood warning the revenue authorities will in turn take necessary actions for alerting and evacuating the people likely to be affected in accordance with warning as per Flood Warning Arrangement.
- 1.5.3** Whenever heavy outflow is likely to be let off from the dam/weir or whenever bursting of dam is anticipated, warnings are also communicated by the Focal Officer/Executive Engineer either to the Assistant Engineer of Railway or to the Station Master of the nearest railway station or Divisional Railway Managers as per list below:

**TABLE - 1.5.3****Divisional Railway Manager Western Railway**

(a)	Mumbai	<b>Note:</b> Kindly refer Flood Telephone Directory of current year for Telephone Nos.
(b)	Vadodara	
(c)	Ratlam	
(d)	Bhavnagar para	
(e)	Rajkot	

Further the Divisional Railway Manager, Western Railway, Vadodara vide his letter No. W. 694/i/vol.V(W13) Dated 28-2-95 has requested that the Focal Officer should inform the control room of Vadodara Division wherever it is contemplated to release water from the Dams & in case, advance warning is received by the Railway authority in time it will be possible to take preventive measures to regulate the running of trains & to protect the Railway property, staff and passengers. The Chief Bridge Engineer, North-West Railway, Jodhpur and The Chief Bridge Engineer, Churchgate Mumbai office has requested to instruct the field engineers to carry out necessary inspections and execute required maintenance works well before next monsoon so that any damage to railway track on this account can be avoided.

- 1.5.4** During flood emergency, in any of the rivers it is the duty of the Focal Officer of the basin to intimate the full situation of the flood including measures taken etc. to the Principal Secretary (Narmada), Secretary (Water Resources), Chief Engineer (Central Gujarat) and Additional Secretary, concerned Chief Engineer and Additional Secretary of the Project and the Flood Control Cell, Gandhinagar.
- 1.5.5** During emergency flood messages are also conveyed by Focal Officer or any officer authorized by him and **Collector of the District to Akashwani / Doordarshan** for necessary broadcast. The said messages should also be conveyed to the Flood Control Cell, Gandhinagar, confirmation copies thereof are to be sent to **Akashwani / Doordarshan and Flood Control Cell, Gandhinagar** by email/post as performa given in **Annexure 2-B**.

**1.5.6** All concerned Focal Officers should prepare a drill to be followed during monsoon at the time of various floods including catastrophic flood and fix duties of all concerned persons at that moment. The rehearsal of this drill should be made before the onset of monsoon.

**1.5.7** Following are the Appropriate Authorities (Focal Officers) for Various Basins/Areas.

**TABLE - 1.5.7.**

Sr. No.	Name of Basin/Area	Name & Address of Focal Officer
1.	Damanganga Basin	Superintending Engineer, Damanganga Project Circle, 2 <sup>nd</sup> Floor, Damanganga Bhavan, Behind Jilla Seva Sadan-1, Valsad – 396 001
2.	Tapi Basin	Superintending Engineer, Surat Irrigation Circle, Near M.T.B. College, Surat
3.	Narmada Basin	Superintending Engineer, N.P. Head Works Circle, New Administrative Block-B, First floor, Kevadia-393151
4.	Rami & Sukhi (Sub Basins of Narmada)	Superintending Engineer Vadodara Irrigation Circle, New Kothi Building, Vadodara.
5.	Karjan Basin (Sub Basins of Narmada)	Superintending Engineer Vadodara Irrigation Circle, New Kothi Building, Vadodara.
6.	Mahi Basin	Superintending Engineer Mahi Irrigation Circle Nadiad Sarkari Vasahat Mission Road, Nadiad
7.	Sabarmati Basin	Superintending Engineer Ahmedabad Irrigation Project Circle,Block No A/9,Bahumalu Bhavan,Nr. Vastrapur Sarkari Vasahat, Drive in Road,380052
7a.	Sub Basin of Sabarmati Mohar & Shedhi River	Superintending Engineer Mahi Irrigation Circle Nadiad Sarkari Vasahat Mission Road, Nadiad
8.	River of Sabarkatha District	Superintending Engineer Himmatnagar Irrigation Project Circle, “Sinchai Bhavan” Himmatnagar

Sr. No.	Name of Basin/Area	Name & Address of Focal Officer
9.	Banas Basin	Superintending Engineer Sujlam Suflam Circle No.2 Opp Administrative Block,Narmada Project colony Lakhvad road, Mehsana-1
10.	Vishwamitry & Deo Basins	Superintending Engineer Vadodara Irrigation Circle Near Kothi Building, Vadodara.
11.	Saraswati Basin	Superintending Engineer Sujlam Suflam Circle No.2 Opp Administrative Block,Narmada Project colony Lakhvad road, Mehsana-1
12.	Rivers of Panchmahals & Dahod District	Superintending Engineer, Panam Project Circle, Civil Lines, Behind Collector Office, Godhra-389001.
13.	Rivers of Rajkot, Morbi,Jamnagar, Dev Bhumi Dwarka & Surendranagar	Superintending Engineer, Rajkot Irrigation Circle Nr. Jilla seva Sadan-II, Opp. Prayag 'C' Appartment, Race Course,Rajkot.
14.	Rivers of Bhavnagar, Amreli, Junagadh, Porbandar, Botad & Gir Somnath Districts	Superintending Engineer, Bhavnagar Irrigation Project Circle,S-3, Jila Seva Sadan-2, Bhavnagar
15.	Rivers of Kachchh District.	Superintending Engineer Kachchh Irrigation Circle "Sinchai Sadan", Near Jubilee Ground, Bhuj.
16.	Minor Irrigation Projects of Districts.	
	(A)	
1.	Ahmedabad	Superintending Engineer Gandhinagar Panchayat Irrigation Circle. Patnagar Yojna Bhavan Sector No. 16, Gandhinagar
2.	Anand	
3.	Aravalli	
4.	Banaskantha	
5.	Gandhinagar	
6.	Kheda	
7.	Mehsana	
8.	Patan	
9.	Sabarkanta	

Sr. No.	Name of Basin/Area	Name & Address of Focal Officer
	<b>(B)</b>	
1.	Amreli	Superintending Engineer Rajkot Panchayat Irrigation Circle, 3/7 Jilla Seva Sadan-2, Race Course, Rajkot-360001
2.	Bhavnagar	
3.	Botad	
4.	Dev Bhumi Dwarka	
5.	Gir Somnath	
6.	Jamnagar	
7.	Junagadh	
8.	Morbi	
9.	Porbandar	
10.	Rajkot	
11.	Surendranagar	
	<b>(C)</b>	
1.	Bharuch	Superintending Engineer, Vadodara Panchayat Irrigation Circle, Room No.512, 513, 5 <sup>th</sup> Floor, Kuber Bhavan Kothi Char Rasta, Vadodara
2.	Chhotaudepur	
3.	Dahod.	
4.	Dangs	
5.	Mahisagar	
6.	Narmada	
7.	Navsari	
8.	Panchmahals	
9.	Surat	
10.	Tapi	
11.	Vadodara	
12.	Valsad	
	<b>(D)</b>	
1.	Kachehh District	Superintending Engineer, Kachchh Irrigation Circle, "Sinchai Sadan", Jubilee Ground, Bhuj.
17.	Water Supply Schemes:	
	<b>(A)</b>	
1.	Tappar	Superintending Engineer, Public Health Circle, Bhuj.
	<b>(B)</b>	
1.	Hasnapur	Municipal Commissioner, Junagadh, Municipal Corporation, Junagadh
2.	Khambhala	
3.	Phodarness	
	<b>(C)</b>	
1.	Ajwa	Municipal Commissioner, Vadodara Municipal Corporation, Vadodara
2.	Pratappura	

Sr. No.	Name of Basin/Area	Name & Address of Focal Officer
	<b>(D)</b>	
1.	Nyari-I	Municipal Commissioner, Rajkot Municipal Corporation Rajkot.
	<b>(E)</b>	
1.	Ranjit Sagar	Municipal Commissioner Jamnagar Municipal Corporation, Jamnagar.

**Note:** Kindly refer Flood Telephone Directory of current year for Telephone Nos.

**1.5.8** Where Government has not nominated any officer of Narmada, Water Resources Water Supply and Kalpasar Department as Focal Officer, the Collector of the District will be responsible for all the situations arising out of floods, heavy rains etc. for taking all necessary steps regarding rescue and relief operations and obtain meteorological data from I.M.D. directly. Kindly refer flood telephone directory for contact nos of collector of Gujarat.

## 1.6 Control Room

- 1.6.1** As a part of “Flood Warning Arrangements” The Flood Control Cell under the control of Superintending Engineer, State Water Data Centre, Sector - 8, Gandhinagar, is set up from 1<sup>st</sup> June to 31<sup>st</sup> October or up to one week after withdrawal of monsoon by I.M.D. or as directed by Govt. of Gujarat. Accordingly, The Flood Control Cell at 1<sup>st</sup> Floor, State Water Data Centre Building, Sector - 8, CH-2 Road, Gandhinagar-382007. The Telephone No E-mail ID for any detail related to the flood in Gujarat State is 079-23248735/36 /flood@gujarat.gov.in. This acts as the coordinating unit between the Focal Officers of various river basins and the Government. The Flood Control Cell operates round the clock during the monsoon period. The Flood Control Cell, Gandhinagar handling website namely Reservoir Data Management System (<http://wrd.guj.nic.in/dam>) in which data is updated online by regional flood control cell. The daily flood report of the 8 am situation is generated and conveyed to the officers of the Narmada Water Supply and Kalpasar Department, Revenue Department, and other concerned departments via email/hard copy. During heavy rain or after 15<sup>th</sup> July onwards daily flood report of the 4 pm situation is generated and conveyed to same via email. The hourly data entry of 18 major schemes is updated online by regional flood control cell. IMD Weather forecast, Nowcast and other information are also shared to higher authorities, regional flood cell, etc. via email/social media (WhatsApp). The Flood Control Cell collects gauge levels of inter State rivers viz. Damanganga, Tapi, Narmada, Mahi, Sabarmati and Banas and one local river shetrunji from Tapi and Mahi Divisions of C.W.C. Flood Control cell also collects information of other Major/Medium/Minor Projects and informs to the officers of the Narmada Water Resources, Water Supply & Kalpasar Department & Revenue Department of the state at Sachivalaya, Gandhinagar about the situation of floods in various rivers of the State.
- 1.6.2** The Collectors, District Superintendents of Police and Focal Officers who open the Control Room and issue flood warning and flood forecast, should intimate the opening of the flood cell with proper Address, Telephone Nos., etc. to the Executive Engineer, Tapi Division, (C.W.C.), Surat/Executive Engineer, Mahi Division (C.W.C.) Gandhinagar as per their jurisdiction and Flood Control Cell, 1<sup>st</sup> Floor, State Water Data Centre Building, Sector - 8, Gandhinagar.
- 1.6.3.** In addition to this when heavy rainfall warnings are received or when flood level is likely to cross White Signal in any of the rivers in the state, the information will be conveyed to the following officers immediately and Flood Control Cell, Gandhinagar by the concerned Officer-In-Charge of the concerned control room.
- (i) Additional Chief Secretary (Narmada), Narmada, Water Resources, Water Supply and Kalpasar Department
  - (ii) Secretary (Water Resources), Narmada, Water Resources, Water Supply and Kalpasar Department
  - (iii) Secretary, Roads and Buildings Department (If necessary)
  - (iv) Special Secretary (Water Resources), Narmada, Water Resources, Water Supply and Kalpasar Department

- (v) Special Secretary, Roads and Buildings Department (If necessary)
  - (vi) Chief Engineer, (Central Gujarat) and Addl. Secretary, Narmada, Water Resources, Water Supply and Kalpasar Department
  - (vii) Chief Engineer and Addl. Secretary of concerned projects of Narmada, Water Resources, Water Supply and Kalpasar Department
  - (viii) Officer on Special Duty (I.P) Narmada, Water Resources, Water Supply and Kalpasar Department
  - (x) Superintending Engineer, State Water Data Centre, Gandhinagar.
- 1.6.4** All the Officers-In-Charge of control rooms are requested to ensure that their Control Rooms are manned by responsible officers of Gazetted rank even on holidays.
- 1.6.5** As a part of Flood Warning Arrangements, the Narmada Water Resources, Water Supply and Kalpasar Department has been linked with point-to-point speech circuit (i.e. Hot line) with the following control rooms during **1<sup>st</sup> June to 31<sup>st</sup> October**.
- (1) The Flood Control Cell Gandhinagar to : (12 Hotlines)**
- a. Office of The Chief Engineer (Central Gujarat) & Additional Secretary,** Narmada, Water Resources, Water Supply and Kalpasar Department, Block No. 9, 2<sup>nd</sup> Floor, New Sachivalaya, Gandhinagar (Local)
  - b. Officer on Special Duty (IP),** Narmada, Water Resources, Water Supply and Kalpasar Department, Block No. 9, 3rd Floor, New Sachivalaya, Gandhinagar (Local)
  - c. The Superintending Engineer, Rajkot Irrigation Circle,** Multi Storied Building, Race Course Road, Rajkot
  - d. The Executive Engineer, Bhavnagar Irrigation Division,** Sinchai Sankul, Panwadi, Bhavnagar
  - e. The Executive Engineer, Mahi Division (C W C)** Sector-10-A, Near to Ch-3 Circle, Gandhinagar (Local)
  - f. The Executive Engineer, Tapi Division (C W C)** Kshetrapal Health Centre, Sangrampur Society, Surat.
  - g. The Executive Engineer and Sub Focal Officer, Surat Canal Dn,** Athwa lines, M.T.B. College Road, Surat.
  - h. The Executive Engineer and Sub Focal Officer, Dharoi Canal Division No.3,** Dharoi Colony Rest House, Visnagar, District: Mehsana.
  - i. The Superintending Engineer and Focal Officer, Kachchh Irrigation Circle** "Sinchai Sadan" Nr. Jubilee Ground, Bhuj -- Kachchh.
  - j. The Superintending Engineer and Focal Officer, Panam Project Circle,** Civil Lines, Behind Collector Office, Godhra, Dist. Panchmahals.
  - k. The Superintending Engineer, Panam Project Circle,** Floodcell Kadana Division No.1, Diwada Colony Lunawada, Dist. Mahisagar
  - l. The Superintending Engineer, Ukai (Civil) Circle, Ukai,** Via: Songadh, Taluka: Vyara, District: Surat
- (2) Superintending Engineer, and Focal Officer, Rajkot Irrigation Circle, Rajkot i.e., Flood Control Cell Rajkot to, (4 Hotlines)**
- (a) Executive Engineer, Rajkot Irrigation Division, Rajkot.
  - (b) Executive Engineer, Irrigation Division, Morbi.

- (c) Executive Engineer, Salinity Control Division, Jamkhambhaliya.
- (d) Executive Engineer, Surendranagar Irrigation Division, Surendranagar.
- (3) **Superintending Engineer, and Focal Officer, Bhavnagar Irrigation Project Circle, Bhavnagar i.e., Flood Control Cell Bhavnagar, to: (5 Hotlines)**
  - (a) Executive Engineer, Amreli Irrigation Division, Amreli.
  - (b) Executive Engineer, Junagadh Irrigation Division, Junagadh.
  - (c) Executive Engineer, Botad Irrigation Division, Botad
  - (d) Executive Engineer, Gir Somnath Irrigation Division, Veraval
  - (e) Executive Engineer, Salinity Control Division, Porbandar
- (4) **Superintending Engineer and Focal Officer, Surat Irrigation Circle, i.e., Flood Control Cell, to: (1 Hotline)**
  - (a) Ukai Flood Control Cell. (Ukai)
- 1.7 Miscellaneous**
  - 1.7.1** All the officers concerned with flood warning should see that necessary correspondence in connection with flood warning and flood forecasting with all officers of Tapi Division (C.W.C.) Surat/Mahi Division, (C.W.C.), Gandhinagar and other Central Government Officers are made in Hindi or English only.
  - 1.7.2** The data will be conveyed in metric units by Executive Engineer, Tapi Division, (C.W.C.) Surat/Executive Engineer, Mahi Division, (C.W.C.), Gandhinagar.
  - 1.7.3** **In the event of any news items appearing in the newspapers/news media regarding flood damages including inundation etc. in any area, the concerned Superintending Engineer should immediately take stock of situation and issue necessary press release clarifying the actual situation. Intimation to this effect should immediately be sent to Flood Control Cell. Gandhinagar, Chief Engineer (Central Gujarat) and Additional Secretary and Chief Engineer & Additional Secretary of the project concerned.**
  - 1.7.4** Whenever the assistance of Air Force is required during the natural calamities and grave emergencies, the State Revenue Authorities are requested to liaison immediately in writing with local (Air Force) Station Commander/HQ Station Western Air Command, Gandhinagar.
  - 1.7.5** Whenever the assistance of military is required during the natural calamities and grave emergencies, the State Revenue Authorities are requested to liaison immediately to the nearest Military (H.Q).
  - 1.7.6** In the case of emergency, the flood forecast and flood warning shall also be sent to the Secretary(Water Resources) , Narmada, Water Resources, Water Supply and Kalpasar Department, Special Secretary(Water Resources), Narmada, Water Resources, Water Supply and Kalpasar Department, Chief Engineer, (Central Gujarat) and Additional Secretary and Chief Engineer & Additional Secretary concerned project of the Government of Gujarat, Gandhinagar by the Appropriate Authorities (Focal Officers) of various basins, Focal Officers and Collectors of the District shall also convey the warning during emergency to the nearest Station Director, All India Radio/Doordarshan Kendra, for the broadcasting the said warning.
  - 1.7.7** As per Dam Safety Act 2021 to provide surveillance, inspection, operation and maintenance of the specified dam for prevention of dam failure related disasters and



to provide for institutional mechanism to ensure their safe functioning and for matters connected therewith or incidental thereto.

- 1.7.8** All the Project Officers, who are in-charge of the Irrigation Projects under construction as well as in case of completed schemes, shall remain more vigilant during monsoon. In case of Irrigation tank or reservoirs, which are to be filled in for the first time, after construction, the field officer shall keep close watch and vigil during monsoon for safety of the Irrigation tank or reservoir. The field officer should follow the initial filling criteria given in **C.W.C. letter No. L/25/86-DSS/509 dated 13th May 1986, (Annexure 1-E)**. In case of any apprehension of danger to the scheme the same shall be immediately informed to the concerned of the project Superintending Engineers, Chief Engineer and Add. Secretary, Flood Control Cell, Gandhinagar, Government officers for necessary remedial steps shall be taken to stop the danger and the safety of the structure.
- 1.7.9** The flood forecasting & flood warning arrangements for following water supply projects under **Municipal Corporation/ Gujarat Water Supply & Sewerage Board is being looked after by Municipal Commissioner/Superintending Engineer of the concerned projects**. They shall directly collect Weather Bulletin/H.R.W. from Indian Meteorological Department, Ahmedabad or Revenue Control Room of the concerned district and shall formulate the flood forecast and convey to the concerned Collector regarding the area likely to be affected for alerting and evacuation of the people as warranted by flood, simultaneously, they shall convey the flood forecast and action taken by them to the Flood Control Cell, (Irrigation) nearest to them.

**TABLE 1.7.8**

Sr. No.	Name of Water Supply Scheme	Officer In-charge of Scheme	Telephone Nos.
1.	Tappar	Superintending Engineer, Kachchh Irrigation Circle, Bhuj	<b>Note:</b> Kindly refer Flood Telephone Directory of current year for Telephone Nos.
2.	Hasnapur	Muni. Commi., Junagadh	
3.	Khambhala	Executive Engineer, Public Health Division, Porbandar	
4.	Phodarness	Executive Engineer, Public Health Division, Porbandar	
5.	Ajwa	Municipal Commissioner	
6.	Pratappura	Vadodara Municipal Corporation, Vadodara	
7.	Nyari-I	Municipal Commissioner Rajkot Municipal Corporation, Rajkot	
8.	Ranjit Sagar	Municipal Commissioner Jamnagar Municipal Corporation, Jamnagar	

**1.7.10** The Narmada, Water Resources, Water Supply and Kalpasar Department, Gandhinagar has setup the flood fighting units for Monsoon, equipped with various machinery @ various locations of Gujarat as per given in Annexure –3B of Chapter-3.

## **1.8 DRAINS.**

There are many drains in the state. These drains are linked up with inter taluka or inter-districts. Several drains are long and having a large capacity. Several drains are also passing from nearby villages or town. Due to heavy to very heavy rainfall in the catchment areas of drain, the drains cause damages to land, crops, property, cattle of the adjoining areas. Sometimes it is difficult to approach the drain sites, particularly when the drain overflows and makes breaches in the banks of the drains.

The Executive Engineer, in charge of drain has to function as a “FOCAL OFFICER” and has to take the necessary action. The Deputy Executive Engineer who is physically in-charge of the drains called as “Sub-Focal Officer”, has to take necessary action and make efforts to control the situation.

The Sub-Focal Officer in-charge of the drains has to intimate his higher authorities and revenue authorities like Mamlatdar, Prant Officer, Collectors, Police Authorities, Home Guard Authorities and respective local/regional flood control cell regarding the situation. All authorities are requested to extend the help required by the sub-focal officer to overcome the situation.

## **1.9 Operation of Gates and Rule curve levels for Irrigation Projects**

**1.9.1** The detailed guidelines for gate operation with graphs of (1) Spillway discharges at different reservoir levels and gate opening and (2) Rate of change in storage to decide inflow based on rise/fall in Reservoir level in unit duration are prepared by CDO under NWRWS&KD. For almost all the projects and are furnished to concern Project Officers. These guidelines may be followed for operation of reservoir, (Rule levels are appended in Annexure 1D).

**1.9.2** The rule levels are prepared considering following points.

- (i) There is no specific flood storage space provided in any of the dams in the State. Due to this, if the provision of artificial flood control space is proposed to be kept for flood moderation by keeping lower rule levels whenever feasible, then there may be a risk of non-filling of reservoir full up to FRL. If in later part of the monsoon, the availability as assumed is less and in turn as its repercussions, the irrigation requirements as planned thereafter may not be fulfilled.
- (ii) For dams completed recently the initial filling criteria given in C.W.C. Letter No. L/25/86-DSS/509 dated 13/5/86 should be followed. The same is also reproduced in the Flood Warning Arrangement for ready reference. While following the CWC's criteria for initial filling, the concerned Superintending Engineer/Executive Engineer should assess the behavior of the structure on the basis of observed data of instruments provided in dams at different stages of filling as well as seepage through dams and review the decision for further filling of reservoir accordingly in consultation with CDO, Gandhinagar.

- (iii) For the safety measures against the existence of hidden damages of dams that have been recently restored or are planned to be restored should complete before June each Year.
  - (iv) As an advance precaution to safe guard against occurrence of any abnormal condition required goods and materials like sand, rubble stone, empty cement bags wire cages, etc. should be stacked at suitable places. Gates, Hoists and other mechanical accessories, wireless sets, lighting arrangement, alternative arrangement in absence of electricity supply, D.G. set etc. approach road, should be kept in working condition. For further information Govt. Circular included in Chapter No.3 of this Disaster Management Plan may kindly be referred.
  - (v) In case of reservoir, which releases water for hydro power generation and the same water is utilized through downstream weir, as far as possible, the releases from reservoir should be made critically and economically in accordance with the actual irrigation demand at the weir site, so that, undue wastage of water through overflow over the weir can be avoided.
  - (vi) There may be restriction in filling the reservoir due to other aspects like leakage for which remedial measures may be in progress / likely to be taken up etc. This point may also be considered while deciding rule levels. The concerned SEs are requested to submit the proposal to Govt. for approval from the respective Chief Engineer and Additional Secretary for this restricted filling of reservoir.
- 1.9.3** In case of the reservoir proposed for restricted filling due to reasons mentioned in Para No. 1.9.2 Above concerned Superintending Engineer are requested to submit proposal to the Government and get it approved before on set of monsoons.
- 1.9.4** The proposed Rule Levels are tentative and concerned project officers are requested to give their comments/views based on their past experiences of observed storms, the downstream hazards, safe carrying capacity of the downstream channel and other restrictions if any. The project officers are also requested to review and finalize the Rule Levels for this monsoon based on the inflow data, water requirements for irrigation, water supply and power generation for the year, reservoir losses etc. In consultation with C.D.O. and get it approved from the Government.
- 1.9.5** When the proposed Rule Levels are reached and the position is such that water is to be stored above the rule level, in that case or water is to be released for the purpose other than irrigation before Rule Levels are reached, the concurrence from the concerned Chief Engineer & Addl. Secretary may please be obtained. While deciding the above parameters, following points should be examined critically by the concerned field officers in consultation with respective Chief Engineer & Addl Secretary.
- (i) Prevailing overall conditions of the rainfall during the monsoon.
  - (ii) Storage capacity and safety of dam structure and U/s -D/s Structures, flood cushion available in the reservoir above the rule level of the particular time.
  - (iii) Efficiency of the existing network of flood forecasting system and flood warning arrangement along with communication system and actual experiences of the same in past to reduce the downstream hazard potential.

- 1.9.6** When two or more reservoirs are to be operated on the same river basin, gate regulation should be done in such a way that the maximum water can be stored without risk to the safety of upstream and downstream of the dams along with consideration of floods moderation to suit the downstream safe channel carrying capacity such that there is minimum hazarded potential in downstream areas.
- 1.9.7** Release of water from the dam (outflow) is to be decided by Superintending Engineer, Ukai Circle (Civil), Ukai on consultation of Chief Engineer (S.G) and Additional Secretary. (With reference to the Govt. Letter No. Ukai/2006(23)/Part-I-J Dtd. 11.06.2008)
- 1.9.8** The details of the Spillway/Weir and the maximum discharge capacity of the Spillway/Weir are also mentioned in the Scheme. The maximum discharge released after the year 1990 from the major project is mentioned in **Annexure-1- G**
- 1.9.9** The Flood Risk Map of Gujarat, Major & Medium dams in Gujarat, Flood Prone River Sections, Rivers of Gujarat and Rainfall data and Map of Last 30 Years Average Rainfall are given in **Annexure-1- H**.

### **1.10 Hazards Analysis**

Owing to its geo-climatic, geological and physical features, Gujarat is vulnerable to all major natural hazards namely, drought, flood, cyclone, earthquake, tsunami, Heat wave, etc. The State is also under constant threat of various human made hazards like that of Industrial (chemical) hazards, fire, transportation accidents, epidemic, accidents, etc.

Gujarat State Disaster Management Authority (GSDMA) developed Gujarat Hazard Risk & Vulnerability Atlas. As per the same, following are the major hazards in the State:

#### **1.10.1 Earthquake**

As per Indian Seismic Zone Map, Gujarat region lies in three zones- Zone III, IV and V. Kachchh region (about 300km x 300km) lies in zone V where earthquakes of magnitude 8 can be expected. A belt of about 60-70km width around this zone covering areas of North Saurashtra and areas bordering Eastern part of Kachchh lie in zone IV where intensity VIII can be expected mainly due to earthquakes in Kachchh and some local earthquakes along North Kathiawar Fault in Northern Saurashtra. The rest of Gujarat lies in zone III where intensity VII earthquakes can be expected due to moderate local earthquakes or strong Kachchh earthquakes.

The estimated mean taluka earthquake peak ground acceleration (PGA) zonation for a 100-year return period is presented in the Annexure 1(I). All of Kachchh, almost the entire coastline of northern Saurashtra that adjoins Kachchh and a small area in Patan district fall into the very severe intensity zone over a 100-year return period. The cities of Ahmedabad, Bharuch, Rajkot, and Bhavnagar fall into the severe intensity zone, while Bhuj and Jamnagar fall in the very severe intensity zone over this time frame.

#### **1.10.2 Cyclone**

Gujarat falls in the region of tropical cyclone. With the longest coast line of 2341 km in the country, it is highly vulnerable to cyclone and its associated hazards such as floods, storm surges, etc. Most of the cyclones affecting the state are generated in the Arabian Sea. They move North-East and hit the coast particularly the Southern Kutch and Southern Saurashtra and the Western part of Gujarat.

Two cyclonic storm seasons are experienced in Gujarat: May to June (advancing southwest monsoon) and September to November (retreating monsoon).

Over 120 cyclones originating in the Arabian Sea had passed through Gujarat over a period of 100 years. Annexure 1(J) shows a maximum wind speed class of more than 55 m/sec along the Saurashtra coast, specifically in Junagadh, Porbandar, Jamnagar, Morbi, and Kutch districts, which are exposed to high intensity cyclonic and storm impact.

The 51 to 55 m/sec class extends further inland to cover much of Jamnagar, part of Rajkot, Morbi and Kutch districts. The 48 to 50 m/sec class extends to most of Rajkot, part of Amreli and Jamnagar districts including Jamnagar, Rajkot cities and parts of Kutch. The 45 to 47 m/sec class covers much of Saurashtra and all of Kutch. This is followed by the 40 to 44 m/sec class that gets its swathe from Kutch through northern Saurashtra all the way to the coast of Gulf of Khambhat and southern Gujarat. The rest of the State falls into the 34 to 39 m/sec class.

### 1.10.3 Drought

Daily temperature of the State ranges from a minimum 13°C to 27°C in January to 27°C to 41°C in the summer during May. The South-West winds mostly bring rain between June to September and approximately 90 to 95% of precipitation is registered in these three months. From the North-West areas to South Gujarat areas, the rainfall varies from 300 mm to 2000 mm per annum. In Gujarat, 60% of rainfall is uncertain, unprecedented and unequal and the regions of Saurashtra, Kutch and North Gujarat face famine every third year. Since 1900, the state has faced scarcity of water and food almost 30 times.

Gujarat is one the chronic drought prone state of India, with an average annual rainfall about mm with more than half of the Talukas of Gujarat receiving rainfall within the range of 200-400 mm.

Substantial portions of the State are arid to semiarid. With large parts of North Gujarat and Saurashtra having no source of alternate irrigation, groundwater exploitation is leading increased threats of droughts. Falling water tables have added stress on crops and water supplies.

### 1.10.4 Flood

The climatology of Gujarat is influenced by the Arabian Sea in the West and three hill ranges along its Eastern border. A long coastline makes parts of arid Saurashtra and Kutch occasionally experience very high rainfall. These occasional heavy rainstorms are responsible for most of the floods in the State. While the Northern part of the State is mostly arid and semi-arid, the Southern part is humid to sub-humid. Extremes of climate, be it rainfall or temperatures are quite common in this region. All major rivers in the State pass through a wide stretch of the very flat terrain before reaching the sea. These flat lowlands of lower river basins are prone to flooding. Cities like Ahmedabad, Surat and Bharuch are located on the flat alluvial plains of large rivers.

Concentrated runoff resulted by heavy rainfall cause flash floods in the small river basin of Saurashtra and Kutch because of their fairly impervious catchments (rocky or black cotton soils) and steep sloping upper catchments.

The flood prone river sections were identified from settlement level analysis. Flood prone river sections in Saurashtra extend to the upper basins due to the presence of dams which have to resort to emergency discharge during heavy rainstorms. Even small

valleys in Saurashtra are used for agriculture. Hence flooding in these zones impacts both residents and settlements.

Annexure 1(M) shows the majority of the area of Gujarat is flood prone, irrespective of the size of the catchment. The flood risk in Saurashtra is lower than that of the South Gujarat plains. The relatively flat plains in the lower basic areas with hilly catchments in upper parts of South Gujarat accentuate flood risks. Few villages in the North Gujarat are flood prone too.

#### **1.10.5 Tsunami**

Gujarat is prone to tsunami risk due to its long coastline and probability of occurrence of near and offshore submarine earthquakes in the Arabian Sea. Makran Subduction Zone (MSZ) -South West of Karachi is an active fault area which may cause a high magnitude earthquake under the sea leading to a tsunami.

In past, Kandla coast was hit by a Tsunami of 12 mtrs height in 1945, due to an earthquake in the Makran fault line. Tsunami prone areas in the State include coastal villages of Kutch, Jamnagar, Rajkot, Porbandar, Bhavnagar, Anand, Ahmedabad, Bharuch, Surat, Navsari and Valsad districts.

The Hazard Risk and Vulnerability Atlas prepared by GSDMA shows the estimated inundation based on Probable Maximum Surge (PMS) at highest high tide level in Annexure 1(N).

## ANNEXURE - 1(A)

## MAXIMUM DISCHARGE CAPACITY AND THE DETAILS OF SPILLWAY OF THE SCHEMES

Sr No	Sch ID	Name of District and Name of Scheme	Type	F.R.L. (M)	Crest Level (M)	Spillway Length (M)	Details of Gates		Max. Discharge (Cumecs)	Top of Dam (M)	Design MWL (M)	Observed MWL till today (M)
							Nos.	Size (M)				
AMRELI												
1	65	Khodiyar	G	202.68	196.58	102.00	9	9.15 x 6.10	2409	207.57	202.68	202.68
2	66	Thebi	G	126.00	119.90	136.58	12	9.15 x 6.10	3794	129.30	126.44	126.0
3	67	Dhatarwadi	UG	81.23	-	329.00	-	-	4342	88.45	84.70	85.18
4	68	Raidy	G	50.85	44.75	102.00	9	9.15 x 6.10	2265	54.35	50.85	50.85
5	69	Vadia	G	130.25	124.15	55.50	5	9.15 x 6.10	1556	133.75	130.25	130.25
6	70	Vadi	G	134.00	127.90	90.23	8	9.15 x 6.10	2195	136.95	134.00	134.00
7	71	Shell-Dedumal	G	179.50	173.40	55.50	5	9.15 x 6.10	1408	182.50	180.37	179.50
8	72	Munjiasar	UG	62.93	-	366.00	-	-	1184	66.60	64.46	66.29
9	73	Sankroli	UG	44.20	-	243.82	-	-	1848	47.23	46.60	46.34
10	74	Surajwadi	UG	50.28	-	320.00	-	-	1396	54.26	51.80	51.80
11	75	Dhatarwadi-II	G	34.41	30.76	651.47	32	18.29 x 3.66	8370	38.50	34.41	34.41
12	93	Ghelo – I	UG	166.72	-	213.00	-	-	1190	170.49	168.55	167.81
ARAVALLI												
13	27	Watrak	G	136.25	128.00	89.00	6	12.50 x 8.23	5669	145.00	140.49	136.40
14	29	Mazam	G	157.10	151.00	102.00	9	9.15 x 6.10	3313	163.15	158.44	157.13
15	30	Hathmati	UG	180.75	-	241.00	-	-	2943	185.36	183.18	181.66
16	31	Lank	G	111.55	105.45	-	5	9.15 x 6.10	-	113.75	111.55	111.55
17	34	Meshwo	UG	214.59	-	62.00	-	-	2067	221.29	219.16	214.95
18	35	Waidy	UG	199.20	-	122.00	-	-	1090	204.10	201.10	201.50
BANASKANTHA												
19	3	Mukteshwar	G	201.65	193.37	104.00	7	12.50 x 8.23	4698	205.60	202.12	201.65
20	4	Dantiwada	G	184.10	175.91	165.00	11	12.50 x 8.23	7504	187.20	185.06	185.73
					Add. Spillway		14	18.29 x 4.87	7787			
21	5	Sipu	G	186.43	178.15	180.00	12	12.50 x 8.23	8603	192.00	186.48	186.10
BHARUCH												
22	7	Dholi	UG	136.00	-	260.00	-	-	847	141.00	136.00	136.60
23	9	Baldeva	UG	141.50	-	198.00	-	-	698	145.70	141.50	142.65
24	10	Pigut	UG	139.70	-	125.00	-	-	285	144.85	139.70	140.20
BHAVNAGAR												
25	76	Shetrunji	G	55.53	54.63	646.00	59	8.84 x 0.91	7080	60.71	57.66	57.27
26	77	Rajawal	G	56.75	50.65	95.00	8	9.15 x 6.10	4294	62.03	58.49	56.75
27	80	Kharo	G	54.12	48.02	163.00	14	9.15 x 6.10	3592	57.75	54.25	54.12
28	81	Malan	G	104.24	102.74	448.00	46	9.14 x 1.52	1334	106.68	104.24	104.24
29	82	Ranghola	G	62.52	60.98	548.78	47	10.96 x 1.52	2378	64.94	62.83	62.52
30	84	Lakhanka	G	44.22	38.22	44.00	4	9.15 x 6.10	1182	47.48	44.98	44.22
31	85	Hamirpara	G	87.80	81.70	32.00	3	9.15 x 6.10	661	90.30	87.80	87.80
32	86	Hanol	G	90.10	87.05	148.20	13	9.15 x 3.05	1852	93.05	90.10	90.10
33	88	Pingli	G	51.30	45.20	43.90	4	9.15 x 6.10	1061	53.35	51.30	51.30
34	90	Bagad	UG	60.41	-	242.46	-	-	3222	66.78	63.28	61.41
35	91	Rojki	UG	99.06	-	314.00	-	-	1094	102.74	100.88	100.00
36	196	Jaspara-Mandva	UG	40.25	-	142.00	-	-	841	43.75	42.25	37.90
BOTAD												



Sr No	Sch ID	Name of District and Name of Scheme	Type	F.R.L. (M)	Crest Level (M)	Spillway Length (M)	Details of Gates		Max. Discharge (Cumecs)	Top of Dam (M)	Design MWL (M)	Observed MWL till today (M)
							Nos.	Size (M)				
37	1	Khambhada	G	50.35	46.69	140.00	7	18.29 x 3.66	1817	53.20	50.35	50.35
38	2	Utavali (Gunda)	G	49.30	45.64	304.19	15	18.29 x 3.66	3862	51.50	49.30	49.30
39	78	Kalubhar	G	60.36	54.26	182.92	16	9.15 x 6.10	7983	66.40	62.34	64.00
40	79	Malpara	G	78.10	72.00	90.28	8	9.15 x 6.10	2148	81.10	78.10	78.10
41	83	Limbali	G	128.10	122.00	136.57	12	9.15 x 6.10	5394	131.45	128.44	128.10
42	87	Kaniyad	G	102.25	99.20	78.69	7	9.15 x 3.05	963	104.75	102.25	102.25
43	89	Goma	UG	126.50	-	164.00	-	-	1189	130.61	128.81	126.97
44	92	Bhimdad	UG	104.85	-	110.00	-	-	975	109.14	107.31	105.30
45	182	Sukhbhadar	G	109.20	103.10	236.50	20	9.15x6.10	10705	115.00	110.70	109.20
CHHOTAUDEPUR												
46	40	Sukhi	G	147.82	139.59	149.66	10	12.50 x 8.23	7894	152.80	148.30	148.15
47	41	Rami	UG	196.35	-	220.98	-	-	660	200.31	197.87	197.50
DAHOD DISTRICT												
48	18	Patadungri	UG	170.84	170.84	137.00	-	-	878	175.60	172.97	172.71
49	21	Machhanala	UG	277.64	-	260.00	-	-	363	283.80	271.16	271.30
50	22	Kabutri	UG	186.30	-	104.00	-	-	1232	193.05	189.56	189.35
51	23	Wankleshwar-Bhey	UG	223.57	223.57	137.00	-	-	961	227.69	225.24	225.38
52	24	Umaria	UG	280.00	280.00	70.00	-	-	2010	285.20	284.24	282.40
53	25	Edalwada	FG	237.30	235.70	60.00	20	1.60 x 2.85	1033	241.00	238.78	238.70
54	26	Kali - II	UG	257.00	257.00	98.50	-	-	95	263.50	250.00	246.60
DEV BHUMI DWARKA												
55	95	Sani	G	17.25	11.15	192.06	17	9.15x6.10	7019	24.00	18.68	17.25
56	97	Ghee	UG	40.54	-	107.00	-	-	671	45.65	42.74	41.46
57	100	Vartu-I	UG	39.01	-	350.52	-	-	1557	42.97	41.15	40.16
58	104	Gadhaki	UG	30.00	30.00	100.00	Ogee shaped spillway		607	34.00	32.00	30.20
59	109	Vartu-II	G	39.95	33.85	368.20	32	9.15 x 6.10	10801	44.65	39.95	39.95
60	115	Sonmati	UG	78.50	78.50	145.00	-	-	1540	83.50	81.04	80.00
61	117	Shedhabhadhari	UG	32.50	-	274.00	-	-	1093	36.10	34.00	32.85
62	118	Veradi	UG	85.15	-	175.00	-	-	1390	89.90	85.15	86.05
63	122	Sindhani	UG	16.35	-	125.00	-	-	1391	21.20	18.42	16.91
64	123	Kabarka	UG	96.85	96.85	150.00	-	-	917	100.50	96.85	98.35
65	194	Veradi-II	UG	65.40	65.40	269.00	-	-	1795	65.40	67.50	67.50
66	195	Minsar(V)	UG	91.80	91.80	136.50	-	-	845	95.80	91.80	92.50
GIR SOMNATH												
67	124	Shingoda	G	141.58	133.33	90.00	6	12.50 x 8.23	6936	144.08	141.58	141.58
68	125	Hiran-II	G	71.26	63.03	104.00	7	12.50x8.23	3559	75.13	71.26	71.26
69	126	Raval	G	148.85	140.60	90.00	6	12.50x8.23	2774	151.855	148.855	148.855
70	127	Machhundri	UG	109.50	-	350.00	-	-	3591	116.50	109.50	109.50
71	140	Hiran-I	UG	44.20	-	194.00	-	-	1034	48.16	44.20	44.20
JAMANAGAR												
72	94	Und-I	G	98.00	91.90	127.44	11	9.15x6.10	15866	105.20	102.92	99.20
			(Addl Spillway)		89.77	91.44	6	12.50x8.23	34538			
73	96	Sasoi	UG	28.96	28.96	1037.0	-	-	2921	32.30	30.48	30.01
74	98	Fulzar-I	UG	24.69	24.69	305.00	-	-	1274	28.50	26.51	26.52
75	99	Dai-Minsar	UG	75.40	75.40	135.00	-	-	1982	82.00	78.61	76.30



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							Nos.	Size (M)				
76	101	Vijarkhi	UG	30.48	30.48	304.80	-	-	453	32.30	31.48	30.63
77	102	Puna	UG	24.38	24.38	135.00	-	-	963	27.43	25.60	25.34
78	103	Umiyasagar	G	71.05	66.48	217.63	19	9.14 x 4.57	6119	75.95	74.73	71.05
79	105	Ruparel	UG	48.20	48.20	142.10	Ogee shaped spillway		898	51.85	50.20	48.30
80	106	Und-II	G	18.25	12.15	623.00	54	9.14x6.10	16450	22.70	19.11	19.11
81	107	Kankawati	G	30.50	27.75	113.39	10	9.15x2.74	1557	34.80	31.68	31.00
82	108	Rangmati	G	43.20	37.10	56.00	5	9.15x6.10	1125	46.00	43.20	43.20
83	110	Fulzar(KB)	G	95.85	89.75	136.55	12	9.15 x 6.10	5456	101.30	91.30	95.85
84	111	Aji-IV	G	20.40	14.30	658.00	57	9.14 x 6.10	18354	24.90	20.40	19.5
85	113	Phophal-II	UG	129.33	129.33	110.00	-	-	1220	134.35	132.34	130.10
86	114	Sapada	UG	32.77	32.77	344.00	-	-	807	35.96	34.13	33.98
87	116	Fulzar-II	UG	52.12	52.12	277.00	-	-	1076	55.47	53.64	57.62
88	119	Wadisang	UG	76.50	76.50	371.70	-	-	3204	81.85	79.00	78.50
89	120	Rupavati (Lalpur)	UG	77.30	77.30	164.00	-	-	653	81.30	78.80	78.55
90	121	Und-III	UG	110.60	110.60	123.00	-	-	1048	115.10	113.10	110.90
91	205	Sasoi-II	UG	104.40	104.40	112.20	-	-	640	107.80	106.30	105.40
92	206	Wagadia	UG	62.05	62.05	207.00	-	-	1051	65.30	63.80	-
JUNAGADH												
93	128	Uben	UG	107.61	107.61	160.00	-	-	1550	114.31	110.98	108.61
94	129	Madhuvanti	UG	165.19	165.19	183.00	-	-	750	169.46	167.02	166.09
95	130	Prempara	UG	127.50	127.50	30.00	-	-	130	131.10	129.10	128.00
96	131	Hasnapur (WS)	UG	148.13	148.13	62.00	-	-	488	152.40	150.26	148.85
97	132	Ozat-II	G	77.50	69.27	378.26	25	12.50 x 8.23	14890	82.00	77.59	77.89
98	133	Vrajmi	G	94.00	90.95	102.00	9	9.15x3.05	1175	97.86	94.36	94.00
99	134	Ambajal	G	182.31	176.21	49.00	4	9.15x6.10	1030	184.14	182.31	182.31
100	135	Draphad	G	124.00	117.90	125.00	11	9.15x6.10	3073	127.65	124.00	124.00
101	136	Bantva-Kharo	G	16.25	13.20	183.00	16	9.14 x 3.05	1764	19.70	16.25	16.25
102	137	Ozat-Weir Sahpur (Verical Gate)	G	32.85	29.80	233.40	10	18.00 x 3.50	10581	36.00	35.77	38.00
103	138	Ozat-Weir (Vanthli)	G	27.50	25.00	202.80	12	9.14 x 3.05 (Vertical)	7170	31.00	28.80	30.15
104	139	Mota Gujaraya	UG	140.02	140.02	150.00	-	-	1320	144.25	142.52	141.50
105	141	Jhanjeshri	UG	149.96	149.96	137.00	-	-	935	154.68	152.25	151.06
106	198	Sabali	G	43.75	40.70	125.00	11	9.14 x 3.05 (Vertical)	1159	46.90	43.75	43.75
KACHCHH												
107	45	Tapper (WS))	G	40.85	-	159.71	14	9.14 x 4.57	4182	45.04	41.90	40.50
108	46	Godhatad	UG	23.00	-	55.00	-	-	1641	29.50	27.99	23.75
109	47	Sanandro	UG	59.74	-	152.00	-	-	1466	64.31	63.32	59.89
110	48	Rudramata	UG	66.44	-	435.00	-	-	6788	71.80	69.88	67.64
111	49	Nara	UG	27.43	-	152.00	-	-	1840	34.07	32.54	31.43
112	50	Niruna	UG	43.58	-	274.00	-	-	2997	48.46	47.83	45.88
113	51	Bhukhi	UG	73.00	-	80.00	-	-	1490	78.30	77.15	73.65
114	52	Kankavati	UG	131.67	-	457.20	-	-	1893	135.63	133.50	132.50

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							Nos.	Size (M)				
115	53	Mathal	UG	83.18	-	550.00	-	-	1260	86.50	84.87	84.03
116	54	Kaila	UG	79.25	-	190.50	-	-	1752	83.23	81.74	80.46
117	55	Suvi	UG	42.67	-	121.92	-	-	2828	46.94	46.37	43.02
118	56	Kaswati	UG	51.20	-	175.00	-	-	933.90	54.86	53.75	52.10
119	57	Gajod	UG	90.82	-	152.40	-	-	1612.39	94.51	93.72	92.975
120	58	Jangadia	UG	38.60	-	70.00	-	-	1447	45.45	42.00	39.90
121	59	Fatehgadh	UG	22.70	-	35.00	-	-	714	27.70	25.15	22.95
122	60	Berachiya	UG	70.40	-	250.00	-	-	1337	74.90	72.40	71.00
123	61	Gajansar	UG	30.00	-	430.00	-	-	1601	36.42	31.89	34.115
124	62	Kalaghogha	UG	37.00	-	81.70	-	-	1342	43.50	41.00	39.00
125	63	Don	UG	47.75	-	61.00	-	-	1050	55.25	51.75	48.75
126	64	Mitti	UG	18.65	-	235.00	-	-	5328	24.50	22.10	19.80
KHEDA												
127	202	Varansi	G	81.00	76.43	159.68	14	9.14 x 4.57	1503	82.70	81.20	81.10
MAHISAGAR												
128	12	Wanakbori	UG	67.23	-	735.00	-	-	46978	67.30	76.50	76.11
129	17	Kadana	G	127.71	113.72	406.00	27	15.50 x 14.00	49497	131.40	127.71	127.71
		(Additional Spillway)			113.72	113.00						
130	19	Bhadar (P)	G	123.72	115.52	89.00	6	12.48 x 8.25	5706	130.37	128.35	123.72
MEHSANA												
131	13	Dharoi	G	189.59	178.92	219.46	12	14.94 x 11.28	18427	195.07	190.86	189.59
MORBI												
132	112	Demi - III	G	25.60	19.50	206.03	18	9.14 x 6.10	5516	28.55	25.60	25.60
133	150	Machhu-II	G	57.30	49.09	508.18	20	12.50x8.23	26419	63.70	59.20	57.30
					(Addl Spillway)	51.20		18	9.15x6.10			
134	158	Machhu-I	UG	135.33	-	488.00	-	-	11522	143.20	139.99	139.96
135	164	Demi-II	G	48.00	41.90	194.50	17	9.14x6.10	4240	52.80	48.78	48.00
136	166	Ghodadharoi	G	98.30	92.20	102.00	9	9.15x6.10	3247	102.50	98.90	98.30
137	172	Demi-I	Fuse Gate	60.35	59.35	244.00	135	1.80 x 1.00	4044	63.10	61.19	61.25
138	178	Bangawadi	UG	42.65	41.05	200.00	-	-	2186	47.10	44.20	44.20
139	189	Brahmani	UG	64.62	-	426.82+548.78	-	-	2945	68.60	66.15	67.06
140	200	Brahamani-II	G	44.50	36.27	271.58	18	12.50 x 8.23	11896	48.20	45.09	43.35
141	203	Machhu-III	G	28.70	20.47	302.12	20	12.50x8.23	13450	34.02	28.70	28.70
NARMADA												
142	6	Karjan	G	115.25	101.23	172.00	9	15.545 x 14.02	17286	119.70	115.25	115.45
143	8	Chopadvav	FG	187.40	186.30	70.00	35	1.10 x 1.98	863	192.30	188.80	187.55
144	11	Kakdi-Amba	FG	187.71	186.71	100.00	55	1.0 x 1.80	822	192.21	188.71	187.58
NAVSARI												
145	43	Jhuj	UG	167.50	-	97.00	-	-	1554	174.50	171.25	169.00
146	44	Kelia	UG	113.40	-	113.00	-	-	1225	118.60	115.79	114.35
PANCHMAHALS												
147	14	Panam	G	127.41	116.74	182.00	10	14.93 x 11.28	10075	131.50	128.015	128.02

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							Nos.	Size (M)				
148	15	Deo	G	89.65	81.40	120.00	8	12.50 x 8.23	4118	93.65	90.15	89.65
149	16	Hadaf	G	166.20	155.53	89.00	5	14.43 x 10.67	5324	171.63	168.33	166.20
150	20	Karad	FG	140.08	140.08	107.00	36	1.80 x 1.00	934	143.26	141.70	141.70
PORBANDAR												
151	142	Phodarness (WS)	UG	93.57	-	27.00	-	-	204	99.97	93.57	96.01
152	143	Khambhala (WS)	UG	39.63	-	107.00	-	-	344	42.67	39.62	41.14
153	144	Sorthi	UG	95.50	-	157.00	-	-	1427.16	99.60	98.82	97.80
154	145	Amipur	G	5.64	3.23	20.00	4	2.44x2.86	139	9.44	6.81	6.34
			Note: Waste weir under Construction									
155	146	Kalindri	UG	52.23	-	49.4	-	-	595	57.40	54.96	52.53
156	147	Advana	UG	24.00	-	153.00	-	-	604	27.05	25.5	24.25
157	199	Saran	G	37.00	33.95	182.00	16	9.14 x 3.05 (Vertical)	1748	39.25	37.00	37.00
158	204	Rana Khirasra	G	36.75	28.52	119.18	8	12.50x8.23 (Radial)	4213	38.75	37.03	33
RAJKOT												
159	148	Bhadar	G	107.90	106.07	378.00	29	10.67x1.83	16504	114.20	112.74	110.43
160	149	Bhadar - II	G	53.10	42.43	405.32	22	14.93x10.67	26380	56.40	53.10	53.10
161	151	Aji-III	G	53.15	44.92	272.00	18	12.50x8.23	17571	60.00	55.30	54.50
162	152	Moj	G	72.54	71.02	329.00	27	9.14x1.52	7243	76.50	76.50	73.12
163	153	Venu-II	G	55.00	48.91	229.00	20	9.15x6.10	9866	60.40	56.91	56.40
164	154	Nyari-II	G	88.50	82.40	160.00	14	9.15x6.10	4826	92.70	88.50	89.00
165	155	Karmal	G	169.00	162.90	79.00	7	9.15x6.10	3588	173.20	170.34	169.00
166	156	Veri	G	142.04	141.12	427.00	75	3.05x0.91	1642	145.58	143.41	144.04
167	157	Karnuki	G	164.50	161.45	183.00	16	9.14x3.05	2486	167.40	164.50	164.50
168	159	Phophal	UG	81.75	-	417.00	-	-	10580	87.40	86.44	84.04
169	160	Aji-I	UG	147.52	-	335.00	-	-	1785	150.81	149.35	148.50
170	161	Nyari-I (WS)	UG	104.50	-	54.00	-	-	396			
171	162	Lalpari	UG	137.46	-	733.31	-	-	2095	140.75	138.71	139.59
172	163	Aji-II	G	73.76	67.66	183.00	16	9.15x6.10	5644	78.10	74.38	73.85
173	165	Chhaprawadi-II	G	98.38	90.15	89.00	6	12.50x8.23	6219	100.82	100.44	98.38
174	167	Motisar	G	143.00	141.00	150.50	15	9.10x2.00	759	145.70	143.00	143.00
175	168	Khodapipar	G	55.27	52.22	113.40	10	9.15x3.05	1339	58.52	55.27	55.27
176	169	Survo	G	99.85	93.75	183.00	16	9.14x6.10	2068	102.80	99.85	99.85
177	170	Dondi	G	103.72	100.67	101.81	9	9.14x3.05	1354	106.00	103.72	103.72
178	171	Sodvadar	UG	76.70	76.70	100.00	-	-	1183	80.70	79.20	77.30
179	173	Gondali	UG	45.80	-	350.00	-	-	948	49.39	47.24	45.80
180	174	Ghelo-S	UG	135.10	-	213.00	-	-	878	138.54	136.62	136.30
181	175	Vachhapari	UG	43.89	-	183.00	-	-	535	47.40	45.57	44.59
182	176	Phardangbeti	UG	189.25	-	190.00	-	-	2370	194.40	191.84	189.80
183	177	Ishwaria	UG	157.30	-	211.00	-	-	1377	162.00	159.55	157.90
184	179	Kabir Sarovar	UG	32.45	32.45	295.00	-	-	2350	36.00	34.54	32.65
185	181	Malgadh	UG	159.37	-	140.00	-	-	760	163.75	161.25	159.40

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							Nos.	Size (M)				
SABARKANTHA												
186	28	Guhai	G	173.00	164.77	89.00	6	12.50 x 8.23	4380	178.07	173.77	173
187	32	Javanpura	G	91.00	86.43	171.29	15	9.15 x 4.57	3723.73	100.57	94.70	93.00
188	33	Harnav – II	G	332.00	323.77	43.00	3	12.50 x 8.23	1632	336.85	333.35	332.25
189	197	Khedva	G	259.70	253.60	55.50	5	9.15 x 6.10	1651	262.00	259.70	258.25
190	201	Gorthiya (Mota Chekhala)	G	110.43	105.25	101.80	9	9.14 x 5.18	3774	115.50	113.75	110.43
SURAT												
191	38	Ver – II	G	115.80	109.73	90.22	8	9.15 x 6.10	2155	119.50	116.00	115.80
192	39	Lakhigam	UG	74.10	-	25.00	-	-	434	77.10	75.30	75.10
SURENDRANAGAR												
193	180	Dhari	UG	49.07	-	84.00	-	-	651	53.35	51.52	51.52
194	183	Nayka	G	101.80	99.36	671.00	34	9.15x2.44	2097	103.65	101.82	101.80
195	184	Dholidhaja	UG	80.47	-	566.00	-	-	1839	84.02	82.22	80.47
196	185	Falku	G	107.00	103.00	182.50	16	10.00x4.00	4275	110.35	107.00	107.00
197	186	Nimbhani	G	134.50	131.45	113.00	10	9.14 x 3.05	1463	137.10	134.50	134.50
198	187	Limbdhi Bhogavo II	G	76.00	69.90	322.00	28	9.15 x 6.10	10530	79.60	76.00	76.00
199	188	Vansal	UG	100.70	100.70	220.00	-	-	736	105.00	102.50	102.06
200	190	Limbi-Bhogavo - I	UG	46.02	-	457.17	-	-	1471	49.39	47.56	46.02
201	191	Morsal	UG	177.00	-	106.00	-	-	1271	181.50	179.50	178.50
202	192	Saburi	UG	129.50	-	255.00	-	-	1446	132.50	131.00	130.00
203	193	Triveni Thanga	UG	208.00	-	207.00	-	-	1794	211.50	210.00	209.50
TAPI												
204	36	Ukai	G	105.156	91.135	425.30	22	15.54 x 14.78	46269	111.25	106.98	105.539
205		Kakrapar	UG	48.77	-	613.38	-	-	1083			
206	37	Doswada	UG	123.44	-	210.00	-	-	899	126.52	125.30	124.97
VALSAD												
207	42	Damanganga	G	79.86	65.83	191.11	10	15.55 x 14.02	22040	85.60	82.40	80.10

Note: All above mentioned schemes (scheme ids) are monitored via Reservoir data management system (<https://wrd.guj.nic.in/dam/>)

## ANNEXURE-1 (B)

Note: Kindly refer Flood Telephone Directory of the current year for telephone numbers.

Sr No	Name of River Gauge Station/Dam	Danger level H.F.L. in Meter (Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
[I]	<b><u>GUJARAT REGION</u></b>			
(A)	<b><u>Damanganga Basin</u></b>			(1) Executive Engineer, Tapi Division (C.W.C), Surat (2) Superintending Engineer, Damanganga Project Circle, Valsad (Focal Officer).
	<b><u>Valsad District</u></b>			
1.	Madhuban Dam	82.40 (270.27)	79.86 (261.94)	Executive Engineer Damanganga Project Dn. No. 1, Madhuban Colony
2.	Madhuban Dam D/S	49.45(162.20)	— ( — )	
3.	Vapi (R.G.) (N.H.No. Bridge)	19.20 ( 62.98)	— ( — )	
	<b><u>Union Territory</u></b>			
4.	Daman (R.G.)	3.40 (11.159)	— ( — )	Collector, Daman
5.	Silvassa (R.G.) (Athal Bridge)	30.00 (98.43)	— ( — )	Collector, DNH Silvassa
(B)	<b><u>Tapi Basin</u></b>			(1) Executive Engineer Tapi Division (C.W.C), Surat (2) Superintending Engineer Surat Irrigation Circle, Surat (Focal Officer).
	<b><u>Narmada District</u></b>			
1.	Chopadvav Dam	188.80 (619.44)	187.40 (614.85)	Executive Engineer, Ver - II Project, Division Vyara (Surat),
2.	Kakdiamba Dam	188.71 (619.15)	187.71 (616.53)	
	<b><u>Tapi District</u></b>			
3.	Ukai Dam	106.98 (351.00)	105.156(345.00)	Executive Engineer, Ukai Division No.1, Ukai
	<b><u>Surat District.</u></b>			
4.	Lakhigam Dam	75.90 (249.02)	74.10 (243.11)	Executive Engineer, Ver - II Project Division, Vyara (Surat District)
5.	Ver - II Dam	116.00 (380.57)	115.80 (379.93)	
6.	Ver - I Dam	64.16 (210.50)	60.96 (200.00)	
	<b><u>Tapi District.</u></b>			
7.	Kakrapar Weir	53.66 (176.05)	48.77 (160.00)	Executive Engineer, Surat Canal Division, Surat
8.	Ghala (R.G.)	— ( — )	— ( — )	Executive Engineer Tapi Division (C.W.C.) Surat
9.	Surat Nehru Bridge (R.G.)	9.50( 31.16)	— ( — )	
(C)	<b><u>Narmada Basin</u></b>			
1.	Executive Engineer Tapi Division, (C.W.C.) Surat.			

Sr No	Name of River Gauge Station/Dam	Danger level H.F.L. in Meter (Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
2.	Superintending Engineer, N.P.Head Works Circle, New Administrative Block-B, First floor, Kevadia-393151			
3.	Superintending Engineer Vadodara Irrigation Circle, Vadodara. (Focal Officer for Sukhi/Rami)			
	<b><u>Bharuch &amp; Narmada Districts</u></b>			
1.	Bharuch Golden Bridge (R.G.)	7.315 ( 24.00)	— ( — )	Executive Engineer Tapi Division (C.W.C.) Surat
2.	Garudeshwar Bridge (R.G.)	31.09 (102.00)	— ( — )	
3.	Dholi Dam	137.41 (450.82)	136.00 (446.22)	Executive Engineer Irri. Proj. Dn.No.4, Rajpipala
4.	Karjan Dam	116.10 (380.50)	115.25 (378.13)	Executive Engineer Irrigation Project Dn. No. 4, Rajpipla
	<b><u>Chhotaudepur District</u></b>			
5.	Rami Dam	197.87 (649.21)	196.35 (644.22)	Executive Engineer Irri.Proj.Dn.No.2, Bodeli
6.	Sukhi Dam	148.30 (486.57)	147.82 (485.00)	Executive Engineer Irri.Proj.Dn.No.2, Bodeli
7.	Wadhwana	56.39 (185.00)	55.63 (182.50)	Executive Engineer Vadodara Irrigation Division,Vadodara
(D)	<b><u>Mahi Basin</u></b>			(1) Executive Engineer Mahi Division (C.W.C.) Gandhinagar
				(2) Superintending Engineer Mahi Irrigation Circle, Nadiad (Focal Officer)
	<b><u>Mahisagar District</u></b>			
1.	Wanakbori Weir	74.98 (246.00)	67.234 (220.60)	Executive Engineer Nadiad Irrigation Division, Nadiad
2	Kadana Dam	127.71 (419.00) (Danger Level)	127.71 (419.00)	Executive Engineer Kadana Dn. No. 1 Divda Colony
		126.18 (414.07) (Warning Level)		
	<b><u>Kheda District</u></b>			
3.	Varansi dam	81.20(266.34)	81.00 (265.68)	Executive Engineer WatrakProject Canal Dn. Modasa
	<b><u>Panchmahals District</u></b>			
4.	Panam Dam	128.00 (420.00)	127.41 (418.00)	Executive Engineer, Panam Project Division, Godhra.

Sr No	Name of River Gauge Station/Dam	Danger level H.F.L. in Meter (Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
	<b><u>Vadodara District</u></b>			
5.	Mahi Weir at Sindhrot	19.50 (63.98) (HFL)		Executive Engineer, Vadodara Irrigation Division,Vadodara
(E)	<b><u>Sabarmati Basin</u></b>			
1.	Executive Engineer Mahi Division (C.W.C.) Gandhinagar			
2.	Superintending Engineer, Ahmedabad Irrigation Project Circle Ahmedabad, (Focal Officer)			
3.	Superintending Engineer, Himmatnagar Irrigation Project Circle, Himmatnagar (Focal Officer)			
	<b><u>Ahmedabad District</u></b>			
1	Subhash Bridge	45.34 (148.76) (Danger Level)	— ( — ) (R.G.)	Executive Engineer Ahmedabad Irrigation Dn., Ahmedabad
		44.09 (144.65) (Warning Level)		
	<b><u>Kheda District</u></b>			
2.	Dakor Bridge(R.G.)	7.05 ( 23.13)	— ( — )	Executive Engineer, Shedhi Irrigation Dn., Nadiad
3.	Kathlal Bridge(R.G.)	6.49 ( 21.30)	— ( — )	
4.	Ladvel Bridge(R.G.)	5.27 ( 17.30)	— ( — )	Executive Engineer, Mahi Division, (C.W.C.) Gandhinagar
5.	Kheda Bridge(R.G.)	6.57 (21.56)	— ( — )	
	<b><u>Mehsana District</u></b>			
6.	Dharoi Dam	190.86 (626.18) (Danger Level)	189.59 (622.00)	Executive Engineer Dharoi Head Works Division No.1, Dharoi Colony
		187.06 (613.72) (Warning Level)		
7.	Derol Bridge(R.G.)	— ( — )	100.23(328.85)	Executive Engineer, Mahi Division, (C.W.C.) Gandhinagar
	<b><u>Sabarkantha District</u></b>			
8.	Himmatnagar Weir (R.G.)	--- ( — )	134.05(439.82)	Executive Engineer, Mahi Division, (C.W.C.) Gandhinagar
9.	Harnav Weir (R.G.)	— ( — )	234.76 ( — )	
10.	Ratanpur Bridge (R.G.)	9.63( 31.60)	— ( — )	
11.	Raska Weir (R.G.)	38.17(125.20)	— ( — )	
12.	Guhai Dam	174.02 (570.78)	173.00(567.44)	Executive Engineer Project Construction Division No.3,Himmatnagar
13.	Harnav Stage II Dam	332.25(1090.11)	332.00 (1088.96)	
14.	Khedva Dam	259.70(851.82)	259.70(851.82)	
15.	Javanpur Rech. MI Sch.	94.70 (310.62)	91.00 (298.48)	Executive Engineer Himmatnagar Irrigation Division, Himmatnagar

Sr No	Name of River Gauge Station/Dam	Danger level H.F.L. in Meter (Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
16.	Gorathiya	113.75(373.21)	110.43 (362.21)	Executive Engineer, Suj. Suf. Spre.Ch. Dn. No. 1, Himmatnagar
	<b><u>Aravalli District</u></b>			
17.	Hathmati Dam	183.18 (601.00)	180.75 (593.00)	Executive Engineer Himmatnagar Irrigation Division, Himmatnagar
18.	Mazam Dam	158.44 (519.83)	157.10 (515.29)	Executive Engineer Irrigation Project Division, Modasa
19.	Watrak Dam	140.49 (460.95)	136.25 (447.00)	
20.	Meshwo Dam	219.16(718.86)	214.59 (703.86)	
21.	Waidy Dam	201.10 (659.80)	199.20 (653.57)	
22.	Lank Weir (R.G.)	111.55 (365.67)	111.55 (365.67)	Watrak Project Construction Division ,Modasa
(F)	<b><u>Banas Basin</u></b>			Executive Engineer Mahi Division (C.W.C.) Gandhinagar
				Superintending Engineer Sujlam Suflam Circle No.2, Mehsana (Focal Officer)
	<b><u>Rajasthan State</u></b>			
1.	Abu Road (R.G.)	265.00 (869.47)	— ( — )	Executive Engineer, Mahi Division, (C.W.C.) Gandhinagar
2.	Swaroopganj (R.G.)	335.35 (1100.28)	— ( — )	
	<b><u>Banaskantha District</u></b>			
3.	Bhakhudar (R.G.)	163.87(537.66)	— ( — )	Executive Engineer Mahi Division (C.W.C.) Gandhinagar
4.	Chitrasani (R.G.)	195.00 (639.80)	— ( — )	
5.	Sarotri (R.G.)	192.00(629.95)	— ( — )	
6.	Dantiwada Dam	185.06 (607.00) (Danger Level)	184.10(604.00)	Executive Engineer Deesa Irrigation Division, Deesa
7.	Deesa Road Bridge (R.G.)	123.75(406.00)	— ( — )	
8.	Sipu Dam	186.48 (611.84)	186.43 (611.68)	Executive Engineer, Sipu Project Dn. Palanpur.
(G)	<b><u>Vishwamitry Basin &amp; Deo Basin</u></b>			Superintending Engineer, Vadodara Irrigation Circle, Vadodara (Focal Officer)
	<b><u>Vadodara District</u></b>			
1.	Ajwa (W.S.) (Gauge)	64.31 (211.00)	— ( — )	Municipal Commissioner Vadodara Municipal Corp. Vadodara
2.	Pratappura (Gauge)	69.69 (228.63)	— ( — )	
3.	City Bridge (R. G.)	30.57 (100.27)	— ( — )	
4.	Bhaniara (Gauge)	— ( — )	— ( — )	Executive Engineer Vadodara Irrigation Division, Vadodara
5.	Dhanora (Gauge)	62.18 (204.00)	— ( — )	
6.	Ghansarvav (Gauge)	34.75 ( 114.00)	— ( — )	
7.	Haripura (Gauge)	65.84 (216.00)	— ( — )	



Sr No	Name of River Gauge Station/Dam	Danger level H.F.L. in Meter (Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
8.	Vadadala (Gauge)	58.52 (191.95)	— ( — )	
9.	Shivrajpur (Gauge)	90.15 (295.78)	— ( — )	
	<b><u>Panchmahals District</u></b>			
9.	Halol (Gau.ge)	— ( — )	— ( — )	Executive Engineer Vadodara Irrigation Division, Vadodara
10.	Deo Dam	90.15 (295.77)	89.65 (294.14)	
(H)	<b><u>Saraswati Basin</u></b>			Superintending Engineer Sujlam Suflam Circle No.2, Mehsana (Focal Officer)
	<b><u>Banaskantha District</u></b>			
1.	Mukteshwar Dam	202.12 (663.11)	201.65 (661.57)	Executive Engineer Sipu Project Dn.Palanpur.
	<b><u>Patan District</u></b>			
2.	Saraswati Barrage	85.39 (280.11)	84.40 (277.00)	Executive Engineer, Deesa Irri. Dn., Deesa
(I)	<b><u>Bharuch District</u></b>			
1.	Baldeva Dam	143.10 (469.49)	141.50 (464.26)	Executive Engineer Irri.Proj.Dn.No.4 Rajpipala
2.	Pigut Dam	141.34 (463.71)	139.70 (458.36)	
(J)	<b><u>Panchmahals &amp; Dahod District</u></b>			Superintending Engineer, Panam Project Circle, Godhra. (Focal Officer)
1.	Bhadar (P) Dam	128.35 (421.00)	123.72 (406.00)	Executive Engineer,Kadana Dn no 1,Diwada Colony
2.	Hadaf Dam	168.32 (552.09)	166.20 (545.30)	Executive Engineer, Panam Proj. Dn. Godhra
3.	Patadungri Dam	172.97 (567.50)	170.84 (560.50)	Executive Engineer Dahod Irri.Dn., Dahod
4.	Wankleshwar Bhey Dam	225.24 (739.00)	223.57 (733.50)	
5.	Edalwada Dam	238.78 (783.20)	237.30 (778.58) (With fuse gate)	
6.	Machhanala Dam	281.33 (923.04)	277.64 (910.66)	
7.	Umaria Dam	284.24 (932.31)	280.00 (918.68)	
8.	Kabutri Dam	189.56 (621.75)	186.30 (611.25)	
9.	Kali - II Dam	269.90 (885.54)	257.00 (843.22)	
10.	Karad Dam	141.43 (454.00)	140.08 (459.60) (With fuse gate)	Executive Engineer Panam Irrigation Division, Godhara
11.	Padardi	149.65 (491.00)		Executive Engineer Mahi Dn., G’nagar (CWC)
		Max. Water Level		
12.	Chekli	230.20 (755.29)		Executive Engineer Mahi Dn., G’nagar (CWC)
		Max. Water Level		
13.	Anas P.S.	160.00 (524.96)		
		Max. Water Level		

Sr No	Name of River Gauge Station/Dam	Danger level H.F.L. in Meter (Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
14.	Santroad Weir	150.64 (494.25)	144.50 (474.11)	Executive Engineer Panam Proj. Dn., Godhra
(K)	<u>Tapi District</u>			
1.	Doswada Dam	— ( — )	123.44 (405.00)	Executive Engineer, Ver - II Project Dn., Vyara (Surat District)
(L)	<u>Navsari District</u>			
1.	Kelia Dam	115.79 (379.79)	113.40 (371.85)	Executive Engineer, Ukai Left Bank Canal & Investigation Division no. -2, Valod (Dist. Tapi)
2.	Jhuj Dam	171.25 (561.70)	167.50 (549.40)	
[II]	<u>KACHCHH REGION</u>			
	<u>Kachchh District</u>			
1.	Fatehgadh Dam	25.15 (82.49)	22.70 (74.48)	EE, WRI Dn., Bhuj
2.	Gajansar Dam	31.89 (104.60)	30.00 (98.40)	EE,Salinity Control Dn.,Bhuj
3.	Gajod Dam	93.72 (307.40)	90.83 (297.92)	EE, Kachchh Irri Dn., Bhuj
4.	Godhatad Dam	27.99 (91.81)	23.00 (75.46)	EE,Salinity Control Dn.,Bhuj
5.	Kaila Dam	81.74 (268.11)	79.26 (259.97)	EE, Kachchh Irri Dn., Bhuj
6.	Kalaghogha Dam	41.00 (134.48)	37.00 (121.40)	EE, Kachchh Irri Const. Dn.,Bhuj
7.	Kankawati Dam	133.50 (437.88)	131.67 (432.01)	
8.	Kaswati Dam	53.75 (176.30)	51.20 (167.99)	EE, Kachchh Irrigation Dn. Bhuj
9.	Nara Dam	32.54 (106.73)	27.43 (90.00)	EE,Salinity Control Dn.,Bhuj
10.	Niruna Dam	47.83 (156.88)	43.58 (142.99)	EE, Kachchh Irri Dn., Bhuj
11.	Rudramata Dam	69.88 (229.21)	66.44 (217.99)	
12.	Sanandro Dam	63.32 (207.69)	59.74 (196.01)	EE,Salinity Control Dn.,Bhuj
13.	Suvi Dam	46.37 (152.09)	42.67 (140.00)	EE, WRI Dn., Bhuj
14.	Tappar (W.S)Dam	41.90 (137.43)	40.85 (134.00)	EE, Kachchh Irrigation Dn. Bhuj
15.	Bhukhi Dam	77.15 (253.05)	73.00 (239.44)	EE,Salinity Control Dn.,Bhuj
16.	Berachiya Dam	73.99 (241.69)	70.40 (230.98)	EE, Kachchh Irri Const. Dn.,Bhuj
17.	Don Dam	54.33 (178.20)	47.75 (156.67)	EE,Salinity Control Dn.,Bhuj
18.	Jangadia Dam	42.81 (140.42)	38.60 (126.64)	
19.	Mathal Dam	84.87 (278.37)	83.18 (272.83)	EE,Salinity Control Dn.,Bhuj
20.	Mitti Dam	23.53 (77.18)	18.65 (61.17)	EE, Kachchh Irri Const. Dn.,Bhuj
[III]	<u>SAURASHTRA REGION</u>			
{A}	<u>Under Flood Control Cell, Rajkot.</u>			Superintending Engineer Rajkot Irrigation Circle, Rajkot (Focal Officer)
(1)	<u>Jamnagar District</u>			
1.	Dai Minsar Dam	78.61 (257.62)	75.40 (247.39)	Executive Engineer

Sr No	Name of River Gauge Station/Dam	Danger level H.F.L. in Meter (Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
2.	Fulzar - I Dam	26.52 (87.00)	24.69 (81.00)	Jamnagar Irrigation Division, Jamanagar.
3.	Fulzar - II Dam	53.65 (176.00)	52.12 (171.00)	
4.	Puna Dam	25.60 (84.00)	24.38 (80.00)	
5.	Rangmati Dam	43.20 (141.74)	43.20 (141.74)	
6.	Sapada Dam	34.14 (112.00)	32.77 (107.52)	
7.	Sasoi Dam	30.48 (100.00)	28.96 (95.00)	
8.	Vijarkhi Dam	31.39 (103.00)	30.48 (100.00)	
9.	Kankavati Dam	31.68 (103.91)	30.50 (100.00)	
10.	Und - I Dam	102.92 (337.57)	98.00 (321.54)	
11.	Rupavati(Lalpur) Dam	78.80 (258.54)	77.30 (253.62)	
12.	Umiyasagar Dam	73.63 (241.58)	71.05 (233.11)	Executive Engineer Und Irrigation. Division. Jamnagar
13.	Ruparel Dam	50.20 (164.66)	48.20 (158.10)	
14.	Ranjit-Sagar(WS) Dam	----- (---)	---- (----)	Municipal Commissioner, Municipal Corporation, Jamnagar
15.	Und - II Dam	19.11 (62.68)	18.25 (59.88)	Executive Engineer Und Irrigation. Division. Jamnagar
16.	Wadisang Dam	79.00 (259.12)	76.50 (250.92)	Executive Engineer Jamnagar Irrigation Division, Jamanagar.
17.	Fulzar(KB) Dam	98.12 (321.83)	95.85 (314.38)	Executive Engineer Und Irrigation. Division. Jamnagar
18.	Und - III Dam	113.10 (371.08)	110.60(362.87)	Executive Engineer Jamnagar Irrigation Division, Jamanagar.
19.	Phophal - II Dam	132.33 (434.19)	129.33 (424.30)	
20.	Aji - IV Dam	20.40 (66.91)	20.40 (66.91)	Executive Engineer Und Irrigation. Division. Jamnagar
21.	Sasoi-II	106.30(348.75)	104.40(342.52)	
(2)	<u>Dev Bhumi Dwarka District</u>			
1.	Ghee Dam	42.73 (140.20)	40.54 (133.00)	Executive Engineer Salinity Control Division, Jamkhambhaliya.
2.	Sonmati Dam	81.04 (265.88)	78.50 (257.56)	
3.	Vartu -I Dam	41.15 (135.00)	39.01 (127.98)	
4.	Sani Dam	18.68 (61.27)	17.25 (56.58)	
5.	Sindhani Dam	18.42 (60.41)	16.35 (53.62)	
6.	Shedhabhadthari Dam	34.00 (111.55)	32.50 (106.63)	
7.	Vartu - II Dam	40.55 (133.00)	39.95 (131.04)	
8.	Gadhaki Dam	32.00 (104.96)	30.00 (98.40)	
9.	Veradi -I Dam	87.52 (287.06)	85.15(287.29)	
10.	Kabarka Dam	98.85 (324.33)	96.85 (317.76)	
11.	Veradi-II (W.R.)	67.50 (221.40)	65.40 (214.51)	

Sr No	Name of River Gauge Station/Dam	Danger level H.F.L. in Meter (Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
12.	Minsar(V) (W.R.)	93.80 (307.66)	91.80 (301.10)	
(3)	<b><u>Porbandar District</u></b>			
1.	Sorthi Dam	98.82 (324.21)	95.50 (313.32)	Executive Engineer Salinity Control Division, Jamkhambhaliya.
(4)	<b><u>Rajkot District</u></b>			
1.	Nyari – I (W.S.) Dam	105.75 (346.96)	104.50 (342.88)	Municipal Commissioner, R.M.C. Rajkot
2.	Aji – I Dam	149.35 (490.00)	147.52 (484.00)	Executive Engineer Rajkot Irrigation Division, Rajkot.
3.	Bhadar Dam	112.74 (369.88)	107.90 (354.00)	
4.	Gondali Dam	47.24 (155.00)	45.80 (150.25)	
5.	Kabir–Sarovar Dam (Chhapparwadi-I)	34.52 (113.25)	32.45 (106.46)	
6.	Lalpari Dam	138.71 (455.08)	137.46 (451.00)	
7.	Moj Dam	76.50 (251.00)	72.54 (238.00)	
8.	Phophal Dam	86.44 (283.60)	81.75 (268.23)	
9.	Vachhapari Dam	45.57 (149.50)	43.89 (144.00)	
10.	Veri Dam	143.41 (470.50)	142.04 (466.00)	
11.	Chhapparwadi-II Dam	100.44 (329.44)	98.38 (322.78)	
12.	Ishwaria Dam	159.30 (522.66)	157.30 (516.10)	
13.	Karmal Dam	170.94 (560.68)	169.00 (554.49)	
14.	Motisar Dam	143.00 (469.18)	143.00 (469.18)	
15.	Nyari – II Dam	88.50 (290.28)	88.50 (290.28)	
16.	Bhadar - II Dam	53.10 (174.22)	53.10 (174.22)	
17.	Dondi Dam	103.72 (340.31)	103.72 (340.31)	
18.	Survo Dam	99.85 (327.61)	99.85 (327.61)	
19.	Sodvadar Dam	79.20 (259.86)	76.70 (251.65)	
20.	Venu – II Dam	56.91 (186.71)	55.00 (180.46)	
21.	Aji – II Dam	74.72 (245.14)	73.76 (242.00)	
22.	Phadangbeti Dam	191.94 (629.76)	189.25 (620.93)	
23.	Aji – III Dam	55.34 (181.56)	53.15 (174.38)	Executive Engineer Rajkot Irrigation Division, Rajkot.
24.	Karnuki Dam	164.50 (539.72)	164.50 (539.72)	
25.	Khodapipar Dam	55.27 (181.34)	55.27 (181.34)	
26.	Ghelo (s) Dam	136.62 (448.11)	135.10 (443.24)	
27.	Malgadh Dam	161.25 (528.90)	159.37 (522.73)	
(5)	<b><u>Surendranagar District</u></b>			
1.	Dholidhaja Dam	82.22 (269.75)	80.47 (264.00)	Executive Engineer Surendranagar Irrigation Divison Surendranagar
2.	Limdi Bhogovo-I Dam	47.55 (156.00)	46.02 (151.00)	
3.	Nayka Dam	101.80 (334.00)	101.80 (334.00)	
4.	Falku Dam	107.00 (351.06)	107.00 (351.06)	
5.	Morsal Dam	179.50 (588.94)	177.00 (580.74)	
6.	Saburi Dam	131.00 (429.81)	129.50 (424.89)	

Sr No	Name of River Gauge Station/Dam	Danger level H.F.L. in Meter (Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
7.	Vansal Dam	102.55 (336.36)	100.70 (330.40)	
8.	Nimbhani Dam	134.50 (441.29)	134.50 (441.29)	
9.	Limdi Bhogavo-II Dam	76.00 (249.35)	76.00 (249.35)	
10.	Triveni - Thanga Dam	210.00(688.50)	208.00(682.24)	
11.	Dhari Dam	51.51(169.00)	49.07 (161.00)	
(6)	<u>Morbi District</u>			
1.	Bangawadi Dam	44.20 (145.00)	42.65 (139.90)	E.E., Irrigation Dn. Morbi
2.	Demi – I Dam	61.19 (200.755)	60.35 (198.00)	
3.	Godhadharoi Dam	100.49 (329.60)	98.30 (322.52)	
4.	Machhu–I Dam	137.46 (451.00)	135.33 (444.00)	
5.	Machhu – II Dam	59.20 (194.22)	57.30 (187.99)	
6.	Demi – II Dam	48.78 (160.05)	48.00 (157.49)	
7.	Brahmani Dam	66.15 (217.028)	64.62 (212.00)	
8.	Brahmani-II	44.50 (146.00)	44.50(146.00)	
9.	Machhu - III Dam	28.70 (94.15)	28.70 (94.15)	
10.	Demi - III Dam	25.60 (83.99)	25.60 (83.99)	
(7)	<u>Amreli District</u>			
1.	Sankroli Dam	46.60 (152.88)	44.20 (145.00)	E.E.R.I.Dn., Rajkot
	<u>SAURASHTRA REGION</u>			
{B}	<u>Under Flood control Cell, Bhavnagar</u>			Superintending Engineer Bhavnagar Irrigation Project Circle, Bhavnagar (Focal Officer)
(1)	<u>Amreli District</u>			
1.	Dhatarwadi Dam	84.70 (277.81)	81.23 (266.43)	Executive Engineer, Amreli Irrigation Division, Amreli
2.	Khodiyar Dam	202.68 (665.00)	202.68 (665.00)	
3.	Munjiasar Dam	64.46 (211.50)	62.93 (206.50)	
4.	Vadia Dam	130.25(427.35)	130.25 (427.35)	
5.	Raidy Dam	50.85 (166.78)	50.85 (166.78)	Executive Engineer, Amreli Irrigation Division Amreli
6.	Shell-Dedumal Dam	180.37(591.61)	179.50(588.76)	
7.	Surajwadi Dam	51.80 (169.69)	50.28 (164.91)	
8.	Vadi Dam	134.00 (439.52)	134.00 (439.52)	
9.	Thebi Dam*	126.44 (414.72)	126.00 (414.38)	
10.	Dhatarwadi-II Dam	34.41 (112.89)	34.41 (112.89)	
11.	Ghelo(Itaria) Dam	168.55 (552.84)	166.72 (546.84)	Executive Engineer, Botad irrigation Division, Botad
(2)	<u>Bhavnagar District</u>			
1.	Shetrunji Dam	57.66 (189.12)	55.53 (182.13)	Executive Engineer, Bhavnagar Irrigation Division, Bhavnagar
2.	Hamirpara Dam	87.80 (288.07)	87.80 (288.07)	
3.	Kharo Dam	54.25 (177.99)	54.12 (177.57)	
4.	Rajawal Dam	58.49 (191.91)	56.76 (186.23)	

Sr No	Name of River Gauge Station/Dam	Danger level H.F.L. in Meter (Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
5.	Lakhanka Dam	44.98 (147.58)	44.22 (145.08)	Executive Engineer, Bhavnagar Irrigation Division, Bhavnagar
6.	Bagad Dam	63.28 (207.62)	60.41 (198.21)	
7.	Malan Dam	104.25 (342.04)	104.25 (342.04)	
8.	Ranghola Dam	62.83 (206.08)	62.52 (205.06)	
9.	Rojki Dam	100.88 (330.88)	99.08 (325.08)	
10.	Hanol Dam	90.10 (295.52)	90.10 (295.52)	
11.	Pingali Dam	51.30 (168.26)	51.30 (168.26)	
12.	Jaspara-Mandva	42.25 (138.58)	40.25 (132.02)	
(3)	<b><u>Botad District</u></b>			
1.	Khambhada Dam	50.35 (165.14)	50.35 (165.14)	Executive Engineer, Botad Irrigation Division, Botad
2.	Utavali Dam	49.30 (161.70)	49.30 (161.70)	
3.	Bhimdad Dam	107.31 (352.08)	104.85 (343.90)	
4.	Goma Dam	128.81 (422.63)	126.50 (415.05)	
5.	Kalubhar Dam	62.34 (204.47)	60.36 (198.04)	Executive Engineer, Bhavnagar Irrigation Project Division, Bhavnagar
6.	Malpara Dam	78.10 (256.17)	78.10 (256.17)	Executive Engineer, Botad Irrigation Division, Botad
7.	Kaniyad Dam	102.25(335.38)	102.25 (335.38)	
8.	Sukhbhadar Dam	110.73 (363.20)	109.20 (358.18)	
9.	Limballi Dam	128.44 (421.28)	128.10 (420.17)	
(4)	<b><u>Junagadh District</u></b>			
1.	Hasnapur (WS) Dam	150.26 (493.00)	148.13 (486.00)	Municipal Commissioner Municipal Corporation, Junagadh
2.	Vrajmi Dam (Salinity)	94.36(309.50)	94.00 (308.32)	Executive Engineer Junagadh Irrigation Division Junagadh
3.	Ambajal Dam	182.31 (598.00)	182.31 (598.00)	Executive Engineer Junagadh Irrigation Division Junagadh
4.	Jhanjeshri Dam	152.25 (499.50)	149.96 (492.00)	
5.	Madhuvanti Dam	167.02 (548.00)	165.19 (542.00)	E. E., Junagadh Irr.Proj Dn.Junagadh
6.	Uben Dam	110.98 (364.12)	107.61 (353.06)	
7.	Dhrafad Dam	124.00 (406.84)	124.00 (406.84)	Executive Engineer Junagadh Irrigation Division Junagadh
8.	Bantwa-Kharo Weir	16.25(53.30)	16.25 (53.30)	E. E., Junagadh Irr.Proj Dn.Junagadh
9.	Ozat-Weir(Shapur)	35.77 (117.32)	32.80 (107.58)	
10.	Ozat-II Dam	77.59 (254.49)	77.50 (254.28)	
11.	Ozat-Weir(Vanthli)	28.80 (94.46)	27.50 (90.20)	
12.	Mota Gujariya	142.52(467.46)	140.02(459.26)	
13.	Sabali	43.75 (143.54)	43.75 (143.54)	
(5)	<b><u>Porbandar District</u></b>			

Sr No	Name of River Gauge Station/Dam	Danger level H.F.L. in Meter (Feet)	Full Reservoir Level in Meter (Feet)	Officer in Charge
1	2	3	4	5
1.	Khambhala (WS) Dam	41.15(135.00)	39.63(130.00)	Superintending Engineer, Public Health Circle, Porbandar.
2.	Phodarness(WS) Dam	96.63(317.04)	93.57 (306.91)	
3.	Amipur Dam	6.81(22.34)	5.64(18.50)	Executive Engineer, Salinity Control Division, Porbandar
4.	Kalindri Dam	54.96 (180.30)	52.23 (171.31)	
5.	Advana Dam	25.50 (83.66)	24.00(78.72)	
6.	Saran	37.00 (121.40)	37.00 (121.40)	
7.	Rana Khirasra(RRP)	37.03(121.49)	36.75(120.55)	
(6)	<u>Gir Somnath District</u>			
1.	Hiran – I Dam	46.42 (152.30)	44.20 (145.00)	Executive Engineer Gir Somnath Irrigation Division, Veraval
2.	Hiran – II Dam	71.26 (233.80)	71.26 (233.80)	
3.	Shingoda Dam	141.58 (464.52)	141.58 (464.52)	
4.	Machhundri Dam	112.29 (368.42)	109.50 (359.26)	
5.	Raval Dam	148.855 (488.40)	148.855 (488.40)	

## ANNEXURE - 1 (C)

## LIST OF IMPORTANT GAUGE STATIONS

List showing the Danger Level and Warning Level in Mt (Ft)

SR No.	NAME OF GAUGE STATION	DANGER LEVEL		WARNING LEVEL	
		Meter	Feet	Meter	Feet
1	2	3	4	5	6
<b>(1)</b>	<b>DAMANGANGA BASIN</b>				
1.	Madhuban Dam Site (Damanganga Dam)	82.40	(270.27)	79.86	(261.94)
2.	Madhuban Dam D/S	49.45	(162.20)	48.30	(158.42)
3.	Daman (Moti Daman-Nani Daman Bridge)	03.40	(11.16)	2.60	(8.53)
4.	Vapi (National High way No.8 Bridge)	19.20	(63.00)	18.20	(59.71)
5.	Silvasa (Athal Bridge)	30.00	(98.43)	29.00	(95.15)
<b>(2)</b>	<b>TAPI BASIN</b>				
1.	Ukai	105.15	(344.98)	102.41	(336)
2.	Kakrapar	53.66	(176.05)	53.15	(174.33)
3.	Surat Nehru Bridge	9.50	(31.16)	8.50	(27.88)
<b>(3)</b>	<b>NARMADA BASIN</b>				
1.	Garudeshwar	31.09	(102.00)	30.48	(100.00)
2.	Bharuch	7.315	(24.00)	6.705	(22.00)
<b>(4)</b>	<b>MAHI BASIN</b>				
1.	Kadana	127.71	(419.00)	126.18	(414.00)
2.	Panam	128.00	(420.00)	126.18	(414.00)
3.	Wanakbori	74.98	(246.00)	71.93	(236.00)
<b>(5)</b>	<b>SABARMATI BASIN</b>				
1.	Dharoi	190.86	(628.18)	187.06	(613.72)
2.	Subhash Bridge	45.34	(148.76)	44.09	(144.65)
<b>(6)</b>	<b>BANAS BASIN</b>				
1.	Dantiwada	185.06	(607.00)	182.88	(600.00)
2.	Deesa Road Bridge	123.75	(406.00)	122.95	(403.40)
<b>(7)</b>	<b>SHETRANJI BASIN</b>				
1	Shetrunji Dam	57.66	(189.17)	55.53	(182.18)

Note: The Danger Level and Warning Level values can be subjected to change by State Govt.



**ANNEXURE - 1 (C-1)****LIST OF GAUGE STATIONS FOR INFORMATION****List showing the Danger Level and Warning Level in Mt (Ft)**

SR No.	NAME OF GAUGE STATION	DANGER LEVEL/ HFL		“0” Gauge R.L.	
		Meter	Feet	Meter	Feet
1	2	3	4	5	6
<b>[1] NORTH GUJARAT REGION</b>					
<b>A. SABARMATI RIVER</b>					
1.	Derol Bridge (R. G)	100.23*	328.85	89.00	292.00
2.	Hathmati Weir-Balochpur (R.G.)	146.40	480.34	142.50	467.54
3.	Wasana Bridge (R.G.)	41.75	137.00	38.09	125.00
<b>B. Rupen River (Mehsana)</b>					
1.	At Delwada Site	51.61	169.33	46.26	151.73
<b>C. WATRAK RIVER</b>					
1.	Ratanpur Bridge	44.62	146.40	39.12	128.35
2.	Dabha Bridge	83.20	272.98	71.19	233.57
<b>D. MESHWO RIVER</b>					
1.	Raska Weir	38.17	125.24	35.61	116.85
<b>E. SHEDHI RIVER</b>					
1.	Dakor Bridge	53.51	175.51	45.01	147.63
<b>F. MOHAR RIVER</b>					
1.	Kathlal Bridge	45.09	147.90	36.94	121.16
<b>[2] CENTRAL GUJARAT REGION</b>					
<b>G. PANAM RIVER</b>					
1.	Santroa Bridge	152.02	498.63	143.06	469.24
<b>H. VISHWAMITRI RIVER</b>					
1.	Pilol	104.00	341.12	93.18	305.63
2.	City Bridge	30.57	100.30	22.64	74.28
<b>[3] SOUTH GUJARAT REGION</b>					
<b>I. KARJAN RIVER</b>					
1.	Rajpipla Bridge	30.45	99.90	19.75	64.80
<b>J. ORSANG RIVER</b>					
1.	Bodeli Bridge	92.00	301.76	73.00	239.44
<b>K. PURNA RIVER</b>					
1.	Wankla	57.42	188.34	46.37	152.09
<b>L. Ambika River</b>					
1.	Unai (Vansda)	58.45	191.72	46.45	152.36
2.	Waghai (Ahwa)	105.91	347.49	99.66	327.00
<b>M. AURANGA RIVER</b>					
1.	Bhervi (Chikhali)	42.08	138.02	31.58	103.58

Note: 1. The Danger Level and Warning Level values can be subjected to change by State Govt.

2. "\*" Before Const. of Dharoi Dam, {95.83 mt. (314.42 ft.)} for Derol Bridge (R. G)

**ANNEXURE - 1 (D)****Statement Showing the Tentative Rule Levels of Water Resources Project of Gujarat  
State for Monsoon -2025**

Sch. No.	Name of Scheme	Crest Level in Meter	F.R.L. in Meter	Tentative Rule Levels for Monsoon-2025 as on				
				01/07	01/08	01/09	16/09	01/10
1	2	3	4	5	6	7	8	9
001	Khambhada	46.69	50.35	50.00	50.25	50.35		50.35
002	Utavali (Gunda)	45.64	49.30	49.00	49.30	49.30		49.30
003	Mukteshwar	193.37	201.65	198.00	200.00	200.75		201.65
004	Dantiwada (A) Main Spillway	175.87	184.10	182.00	182.50	183.00		184.10
	(B) Additional Spillway	179.22						
005	Sipu	178.16	186.43	180.00	183.50	185.02		186.24
006	Karjan	101.23	115.25	103.23	107.55	110.50		115.25
013	Dharoi	178.92	189.59	188.06	188.37	188.67		189.28
014	Panam	116.73	127.41	125.00	125.88	127.41		127.41
015	Deo	81.40	89.65	87.50	88.00	88.50		89.65
016	Hadaf	155.53	166.20	164.00	164.50	166.20		166.20
017	Kadana	113.72	127.71	124.50	126.00	126.80		127.71
019	Bhadar (P)	115.52	123.72	121.50	122.50	123.72		123.72
027	Watrak	128.00	136.25	133.50	134.50	136.00		136.25
028	Guhai	164.77	173.00	171.00	172.25	173.00		173.00
029	Mazam	151.00	157.10	155.00	155.50	156.75		157.10
031	Lank	105.45	111.55	107.00	110.00	111.25		111.55
032	Javanpura (Minor Recharge Scheme)	86.43	91.00	Gate open	Gate open	91.00		91.00
033	Harnav-II	323.77	332.00	330.50	331.00	332.00		332.00
036	Ukai	91.135	105.156	97.840	101.498	102.108	103.632 (15/09)	105.156
038	Ver-II	109.73	115.80	111.00	113.00	115.00		115.80

Sch. No.	Name of Scheme	Crest Level in Meter	F.R.L. in Meter	Tentative Rule Levels for Monsoon-2025 as on				
				01/07	01/08	01/09	16/09	01/10
1	2	3	4	5	6	7	8	9
040	Sukhi	139.59	147.82	145.50	146.50	147.32		147.82
042	Damanganga (Madhuban Dam)	65.83	79.86	70.00	72.00	76.00	78.00	79.86
045	Tappar	36.27	40.85	39.00	40.00	40.55		40.85
065	Khodiyar	196.58	202.68	201.01	202.50	202.68		202.68
066	Thebi	119.90	126.00	124.50	124.50	124.50		124.50
068	Raidy	44.75	50.85	50.00	50.65	50.85		50.85
069	Vadiya	124.15	130.25	130.25	130.25	130.25		130.25
070	Vadi	127.90	134.00	133.50	133.70	133.70		133.70
071	Shell-Dedumal	173.40	179.50	178.00	178.50	178.50		178.50
075	Dhatarwadi-II	30.76	34.41	33.50	34.25	34.41		34.41
076	Shetrunji	54.62	55.53	55.25	55.53	55.53		55.53
077	Rajawal	50.65	56.75	56.00	56.50	56.75		56.75
078	Kalubhar	54.26	60.36 (59.36)	58.50	59.00	59.36		59.36
079	Malpara	72.00	78.10	77.80	77.80	78.10		78.10
080	Kharo	48.02	54.12	53.50	53.50	54.12		54.12
081	Malan	102.74	104.25	104.25	104.25	104.25		104.25
082	Ranghola	60.98	62.50	62.50	62.50	62.50		62.50
083	Limballi	122.00	128.10	125.10	126.60	127.60		128.10
084	Lakhanka	38.12	44.22	44.22	44.22	44.22		44.22
085	Hamirpara	81.70	87.80	87.50	87.50	87.80		87.80
086	Hanol	87.05	90.10	89.50	90.10	90.10		90.10
087	Kaniyad	99.20	102.25	102.00	102.25	102.25		102.25
088	Pingli	45.20	51.30	50.70	51.00	51.30		51.30

Sch. No.	Name of Scheme	Crest Level in Meter	F.R.L. in Meter	Tentative Rule Levels for Monsoon-2025 as on				
				01/07	01/08	01/09	16/09	01/10
1	2	3	4	5	6	7	8	9
094	Und-I	<u>91.90</u> 89.77	98.00	97.00	97.75	98.00		98.00
095	Sani	11.15	17.25	NA	NA	NA	NA	NA
103	Umiyasagar	66.48	71.05	69.50	70.00	70.50		71.05
106	Und-II	12.15	18.25	17.75	18.00	18.25		18.25
107	Kankavati	27.75	30.50	30.20	30.50	30.50		30.50
108	Rangmati	37.10	43.20	42.60	42.90	43.20		43.20
109	Vartu-II	33.85	39.95	38.95	39.45	39.95		39.95
110	Fulzar (KB)	89.75	95.85	94.85	95.50	95.75		95.85
111	Aji-IV	14.30	20.40	19.00	19.50	19.50		19.50
112	Demi – III	19.50	25.60	24.60	25.30	25.60		25.60
124	Shingoda	133.33	141.58	139.73	140.23	141.00		141.58
125	Hiran-II	63.03	71.26	70.10	70.30	70.50		71.26
126	Raval	140.60	148.855	146.555	147.555	148.555		148.855
132	Ozat-II	69.27	77.50	76.50	76.75	77.00		77.50
133	Vrajmi R.R.	90.95	94.00	93.00	93.50	94.00		94.00
134	Ambajal	176.21	182.31	179.60	180.50	181.10		182.31
135	Draphad	117.90	124.00	122.50	123.00	123.50		124.00
136	Bantva-Kharo	13.20	16.25	15.75	16.00	16.25		16.25
137	Ozat-Weir (Shahpur)	29.80	32.85	29.80	29.80	29.80		32.50
138	Ozat-Weir (Vanthali)	25.00	27.50	25.00	25.00	27.50		27.50
148	Bhadar	106.07	107.90	107.30	107.60	107.90		107.90
149	Bhadar - II	42.43	53.10	52.00	52.50	53.00		53.10

Sch. No.	Name of Scheme	Crest Level in Meter	F.R.L. in Meter	Tentative Rule Levels for Monsoon-2025 as on				
				01/07	01/08	01/09	16/09	01/10
1	2	3	4	5	6	7	8	9
150	Machchhu-II	Existing Gate 51.20 Additional Gate 49.07	57.30	57.00	57.30	57.30		57.30
151	Aji-III	44.92	53.15	52.55	52.85	53.15		53.15
152	Moj	71.02	72.54	72.54	72.54	72.54		72.54
153	Venu-II	48.91	55.00	54.00	54.50	55.00		55.00
154	Nyari-II	82.40	88.50	87.90	88.20	88.50		88.50
155	Karmal	162.90	169.00	168.70	169.00	169.00		169.00
157	Karnuki	161.45	164.50	163.50	164.00	164.50		164.50
161	Nyari - I	98.40	104.50	103.50	104.00	104.25		104.50
163	Aji - II	67.66	73.76	72.50	72.50	72.50		73.76
164	Demi - II	41.90	48.00	47.70	48.00	48.00		48.00
165	Chhapparwadi-II	90.15	98.38	98.00	98.38	98.38		98.38
166	Ghodadhroi	92.20	98.30	98.00	98.30	98.30		98.30
168	Khodapipar	52.22	55.27	55.20	55.27	55.27		55.27
169	Survo	93.75	99.85	99.00	99.50	99.85		99.85
170	Dondi	100.67	103.72	102.80	102.80	102.80		102.80
182	Sukhbhadar	103.10	109.20	108.20	108.70	109.20		109.20
183	Nyka (Wadhavan Bhogavo-I)	99.36	101.80	101.50	101.50	101.80		101.80
186	Nimbhani	131.45	134.50	134.20	134.50	134.50		134.50
187	Lim-Bhogavo-II	69.90	76.00	74.50	75.50	76.00		76.00
197	Khedva	253.60	259.70	256.00	257.00	257.50		258.25
198	Sabali	40.70	43.75	41.50	42.50	43.25		43.75
199	Saran	33.95	37.00	36.50	36.75	37.00		37.00

Sch. No.	Name of Scheme	Crest Level in Meter	F.R.L. in Meter	Tentative Rule Levels for Monsoon-2025 as on				
				01/07	01/08	01/09	16/09	01/10
1	2	3	4	5	6	7	8	9
200	Brahmani-II	36.27	44.50	43.00	43.00	43.00		43.00
201	Gorathiya Recharge Scheme	105.25	110.43	105.25	106.25	108.25		110.43
202	Varansi	76.43	81.00	76.43 (Gate open)	79.50	80.00		81.00
203	Machchhu-III	20.47	28.70	27.00	27.00	28.00		28.70
204	Rana Khirasara	28.52	36.75	30.50	33.50	35.00		36.75

**ANNEXURE – 1 (E)**

Accompaniment to GOI CWC's letter No L/25/86-DSS/509 dated 13th May 1986

**CRITERIA AND GUIDELINES FOR EVACUATING STORAGE RESERVOIR  
SIZING LOW LEVEL OUTLETS AND INITIAL FILLING OF RESERVOIRS**

**General:**

All dams should be provided with low level outlets of adequate capacity to lower the reservoir water level to a specified elevation for inspection, maintenance and repairs to control the rate of reservoir pool rise during initial filling and for emergency draw down

The draw down levels and the evacuation time shall be set forth for each project

**Criteria for evacuating facilities**

For lowering the water level for inspection and repairs when necessary the requirement would be to evacuate a major portion of the reservoir in such time so that after the water level is lowered, sufficient time is available for repairs before the water level rises due to higher inflows. For such a consideration the outlets should be at the lowest possible level and sufficient cater for the anticipated inflows

**Other factors to be taken into account are:**

- 1 To control the rate of reservoir rise during initial filling and if necessary subsequently also
- 2 To hold the reservoir at pre-determined levels for stage-wise initial filling
- 3 Emergency draw down during initial filling or at a future date when distress conditions are noticed

The low level outlets should be sized to maintain specific reservoir filling rates and also to hold the reservoir level reasonably constant at specified elevations during initial filling to accomplish a predetermined monitoring programme. The period during which the initial reservoir filling is to be done has to be decided and a detail programme drawn up. Flood routing studies with different frequency floods (lower floods) will have to be done. As such the low level outlets works should have discharge capacity sufficient to maintain reservoir filling rate to a pre-specified programme and to hold the reservoir levels reasonably constant for elevations above fifty percent of the height. Inflows in the reservoir should include a reasonable frequently flood which would be dependent on the anticipated filling period.

The capacity and level of low level outlets for emergency draw down during initial filling or at a future date when distress conditions are noticed has to be evaluated in each individual case separately.

For Structural safety the reduction in height of water which gives relief is important. For very large reservoirs this would mean very large capacity outlets for prompt evacuation. Sizing of outlets works should be accomplished in a systematic way considering the following aspects

- (1) Project release requirements

- (2) Economic benefits that can be derived from using the outlet works in routing the inflow design flood. This study may result in increase in outlet works capacity
- (3) Initial filling required
- (4) Evacuation Criteria:- This study to meet the evacuation criteria may result in further increase in capacity which may turn be beneficial in routing the inflow design flood
- (5) After the above requirements are satisfied a study to take the advantage of the outlets works capacity for diversion requirements during construction and the multistage construction of outlet works is made

### **Initial Filling of Reservoirs :**

Initial reservoir filling is the first test of a dam to perform its, intended functions. As the sizing of the outlet works to meet the probable outflow requirements during initial filling has to be fixed during designs. The information on the desired rates of pool rise must also be available at the time their design requirements are established.

In order to monitor reservoir performance, the rate of filling should be controlled to the extent feasible to allow in accomplishing a pre-determined monitoring programme. Low level outlets should be located and sized to provide discharge capacity sufficient to maintain the reservoir filling rates specified by the initial filling criteria to hold reservoir levels reasonably constant for elevation above 50 percent of the hydraulic heights of the dam. Inflow into the reservoir should be assumed as the average of the mean monthly inflow in the selected filling period and reasonable frequency flood.

Reservoir filling criteria are established on dam. In general the objective as already stated above is to provide a planned programme with adequate time for monitoring and evaluating performance of the dam and its foundation as the reservoir is being filled for the first time.

The major factors to be considered in establishing initial filling criteria are as under:

- (1) Type of dam namely Concrete, Earth and Rockfill
- (2) Geology of the dam foundation and reservoir and land-slide potential along the banks of the reservoir
- (3) Hazard potential
- (4) Inflow characteristics controlled or uncontrolled
- (5) Hydrology - flood patterns and seasonal based flows
- (6) Release provisions for projects requirements flood release and emergency evacuation
- (7) Type of instrumentation and provision for monitoring reading and evaluation time needed and response time
- (8) Safe channel capacities down stream of the dam
- (9) Characteristics of reservoir Storage

Filling rates for concrete dams are much less restricted and are not normally specified for the bottom half of the depth of the reservoir impounded of the dam. Broadly the stage wise filling to be done as under



The first stage consists of filling the reservoir upto MDDL This filling can be done without restraint as there is no hazard potential to the public and economic development downstream of the dam The second stage consists of filling the reservoir from MDDL to the crest of the spillway The rate of the filling should be controlled and it has to be specified The third stage consists of filling above the crest of the spillway upto the full reservoir level (FRL) which has also to be conducted in stages

### **Concrete Dams**

The first stage consists of filling the reservoir upto Minimum Draw Down Level (MDDL) This filling can be done without restraint

The second stage consists of filling the reservoir from MDDL to the crest of spillway The reservoir above MDDL should be gradually built up at a rate not exceeding 3 meters per fortnight depending upon the height of the dam and held at the level of crest of spillway in order to assess the behaviour of the structure on the basis of observed data and to take a decision about further storage

This third stage consists of filling above the crest of the spillway and upto full reservoir level (FRL) Above the crest level of spillway the building upto the reservoir should be restricted to 03 meters (1 ft) in 48 hours and the same should be temporarily held at half the height between the crest of spillway and FRL to monitor and assess the behaviour of structure before further filling is resumed The period for which the reservoir is held at this level will depend on the instrument response time

In case of concrete dams having high earthen flanks the procedure suggested for earthen dams should be followed

### **Earthen Dam :**

The first stage consists of filling the reservoir upto MDDL This filling can be done without restrain

The second stage consists of filling the reservoir from MDDL to the crest of spillway In case of earthen and rockfill dam, this stage filling shall be done in two parts

The reservoir above MDDL should be gradually built at a rate not exceeding 3 meters per fortnight and filling should be temporarily stopped at 50 percent elevation from MDDL to crest of spillway in order to assess the behaviour of the structures on the basis of observed values and to take a decision about further storage

After a decision is taken to continue the filling further building upto the storage should be done in gradual sub stage of 2 to 3 meters depending upon the height of the dam Observations of pore pressure cells, uplift pressures, seepage quantum other instrumentation data should be carried out at each stage after allowing a suitable establishing period before going on to the next sub stage of filling

The third stage consists of filling above the crest of the spillway upto the full reservoir level (FRL)

The rate of reservoir filling crest of spillway should be restricted to 03 meters (1 feet) in 48 hours the reservoir should be temporarily held at half the height between FRL and crest of spillway for sufficient time for monitoring and evaluation

performance of dam also taking into account instrument response time and to take a decision about further storage

#### Evacuation Time :

Guidelines on this aspect should generally take into account the assessment of hazard potential and risk potential of the dam. However, in the Indian conditions where population growth in downstream areas is not controllable the hazard potential at the initial stage and its subsequent increase can not be assessed. In most cases, the dams would come under high hazard category.

Similarly risk is very difficult to classify because of many combinations of adverse conditions that may be involved at particular dam site and the type of dam.

Classification is also recommended to be based on the height of dams so far as determination of risk potential is concerned and dams with a height of more than 50 meters are to be considered more important than those of height less than 50 meters.

For evacuating storage reservoirs sizing low-level outlets, three categories have been suggested is given in the table below. These assume a general balance between hazard and risk could be adjusted on the basis of detailed site specific studies.

#### Evacuation Time (in days):

Sr No	Depth of Evacuation (from initial pool level)	Degree of Hazard or risk		
		High	Significant	Low
		(Evacuation time in days)		
1	25 percent	20	30	50
2	50 percent	40	50	70
3	75 percent	80	90	100

The above evacuation periods would generally be within the overall requirement to draw down the reservoir within a period of one to four months allowing sufficient time for carrying out inspection and repairs, before the water level rises due to higher inflows of monsoon.

In some exceptional case it may not be technically possible and economically feasible to provide the required draw down capability to meet the above criteria because of the size of the project (unusually small or large) or because of some special feature. In such a case the criteria regarding draw down level or the evacuation time could be altered to suit the site specific case if the result of studies so indicate.

**ANNEXURE - 1 (F)**

**Hourly Information to be submitted to the concern Chief Engineer & Add Secretary,  
Chief Engineer (Central Gujarat) & Add Secretary & Flood Control Cell, Gandhinagar**

**District :-**

**Date:**

**Name of Scheme :-**

**& Scheme No :-**

**Rule Level :-**

**Full Reservoir Level:-**

Date & Time	PWL in Meter	Gate Position		Inflow (Cumecs)	Outflow (Cumecs)	Remarks
		No	Opening in Mt			
(1)	(2)	(3)	(4)	(5)	(6)	(7)

0800

0900

1000

1100

1200

1300

1400

1500

1600

1700

1800

1900

2000

2100

2200

2300

2400

And Up to 0700 Hrs of Next Day

Seal and Signature of  
Superintending Engineer

## ANNEXURE - 1 (G)

## Maximum Release Made After the Year 1990 in Major Dams of the Gujarat State

Sr No	District	Name of Dam	Date	Maximum Flood Discharge in Cumecs
1	Valsad	Damanganga	03-08-2004	17443.00
2	Tapi	Ukai	09-08-2006	25774.00
3	Narmada	Sardar Sarovar	07-09-1994	62296.00
4.	Narmada	Karjan	11-07-2022	5959.65
5	Chhotaudepur	Sukhi	23-08-1990	3510.00
6	Mahisagar	Kadana	12-08-2006	27079.00
7	Panchmahals	Panam	07-09-1994	9590.00
8	Mahisagar	Wanakbori	12-08-2006	32568.00
9	Aravalli	Watrak	07-09-2006	3398.00
10	Mehsana	Dharoi	17-07-1993	315010
11	Banaskantha	Dantiwada	24-07-2017	6821.40
12	Rajkot	Bhadar	24-06-2015	6015.23
13	Morbi	Machchhu-II	22-10-2017	6357.63
14	Bhavnagar	Shetrunji	25-06-2015	3692.23
15	Banaskantha	Sipu	24-07-2017	7015.00
16	Aravalli	Hathmati	19-08-2006	365.66
17	Aravalli	Meshwo	20-08-1994	155.02
18	Jamnagar	Und-I	14-07-1994	6900.00
19	Morbi	Machhu-I	22-10-2017	3670.50

**ANNEXURE - 1 (H)**  
**Last 30 Years (1995-2024) Average Rainfall**

Sr.No.	District	Average Rainfall
<b>KUTCH</b>		
<b>Kutch</b>		
1	Abdasa	457
2	Anjar	541
3	Bhachau	485
4	Bhuj	444
5	Gandhidham	466
6	Lakhpat	366
7	Mandvi(K)	527
8	Mundra	561
9	Nakhatrana	469
10	Rapar	517
<b>Dist. Avrg</b>		<b>483</b>
<b>NORTH GUJARAT</b>		
<b>Patan</b>		
1	Chanasma	502
2	Harij	587
3	Patan	706
4	Radhanpur	671
5	Sami	520
6	Santalpur	454
7	Sarswati	699
8	Shankheshwar	513
9	Siddhpur	766
<b>Dist. Avrg</b>		<b>602</b>
<b>Banaskantha</b>		
1	Amirgadh	801
2	Bhabhar	531
3	Danta	891
4	Dantiwada	652
5	Deesa	679
6	Deodar	563
7	Dhanera	597
8	Kankrej	492
9	Lakhani	586
10	Palanpur	770
11	Suigam	556
12	Tharad	442
13	Vadgam	772
14	Vav	499
<b>Dist. Avrg</b>		<b>631</b>
<b>Mehsana</b>		
1	Becharaji	701
2	Jotana	767
3	Kadi	834
4	Kheralu	639
5	Mehsana	806
6	Satlasana	728
7	Unjha	718
8	Vadnagar	599
9	Vijapur	817
10	Visnagar	656
<b>Dist. Avrg</b>		<b>727</b>
<b>Sabarkantha</b>		
1	Himatanagar	854

Sr.No.	District	Average Rainfall
2	Idar	967
3	Khedbrahma	821
4	Posina	830
5	Prantij	855
6	Talod	825
7	Vadali	850
8	Vijaynagar	832
<b>Dist. Avrg</b>		<b>854</b>
<b>Arvalli</b>		
1	Bayad	873
2	Bhiloda	897
3	Dhansura	918
4	Malpur	777
5	Meghraj	882
6	Modasa	893
<b>Dist. Avrg</b>		<b>873</b>
<b>Gandhinagar</b>		
1	Dahegam	810
2	G'nagar	695
3	Kalol	774
4	Mansa	792
<b>Dist. Avrg</b>		<b>768</b>
<b>SAURASHTRA</b>		
<b>Surendranagar</b>		
1	Chotila	686
2	Chuda	600
3	Dasada	582
4	Dhrangadhra	549
5	Lakhtar	602
6	Limbdi	622
7	Muli	530
8	Sayla	544
9	Thangadh	630
10	Wadhvan	625
<b>Dist. Avrg</b>		<b>597</b>
<b>Rajkot</b>		
1	Dhoraji	812
2	Gondal	785
3	Jamkandorna	743
4	Jasdan	579
5	Jetpur	763
6	Kotdasangani	785
7	Lodhika	781
8	Paddhari	552
10	Rajkot	840
11	Upleta	847
12	Vichhiya	547
<b>Dist. Avrg</b>		<b>730</b>
<b>Morbi</b>		
1	Halvad	497
2	Maliya	498
3	Morbi	666
4	Tankara	664
5	Wankaner	545
<b>Dist. Avrg</b>		<b>574</b>

Sr.No.	District	Average Rainfall
<b>Jamnagar</b>		
1	Dhrol	633
2	JamJodhpur	788
4	Jamnagar	824
5	Jodia	683
6	Kalavad	714
7	Lalpur	776
<b>Dist. Avrg</b>		<b>736</b>
<b>Devbhumi Dwarka</b>		
1	Bhanvad	777
2	Dwarka	627
3	Kalyanpur	939
4	Khambhalia	938
<b>Dist. Avrg</b>		<b>820</b>
<b>Porbandar</b>		
1	Kutiana	850
2	Porbandar	786
3	Ranavav	864
<b>Dist. Avrg</b>		<b>833</b>
<b>Junagadh</b>		
1	Bhesan	783
2	Junagadh	1070
3	Junagadh City	1070
4	Keshod	981
5	Maliya Hatina	1118
6	Manavadar	949
7	Mangrol	955
8	Mendarda	1051
9	Vanthali	1067
10	Visavadar	1266
<b>Dist. Avrg</b>		<b>1031</b>
<b>Gir Somnath</b>		
1	Gir Gadhada	924
2	Kodinar	1065
3	Sutrapada	991
4	Talala	1161
5	Una	929
6	Veraval	994
<b>Dist. Avrg</b>		<b>1011</b>
<b>Amreli</b>		
1	Amreli	704
2	Babra	688
3	Bagasra	724
4	Dhari	629
5	Jafrabad	681
6	Khambha	684
7	Lathi	646
8	Lilia	657
9	Rajula	719
10	Savarkundla	694
11	Kunkavav Vadia	707
<b>Dist. Avrg</b>		<b>685</b>
<b>Bhavnagar</b>		
1	Bhavnagar	762
2	Gariadhar	458
3	Ghogha	630
4	Jesar	649
5	Mahuva	688
6	Palitana	608
7	Shihor	645
8	Talaja	569
9	Umralla	614

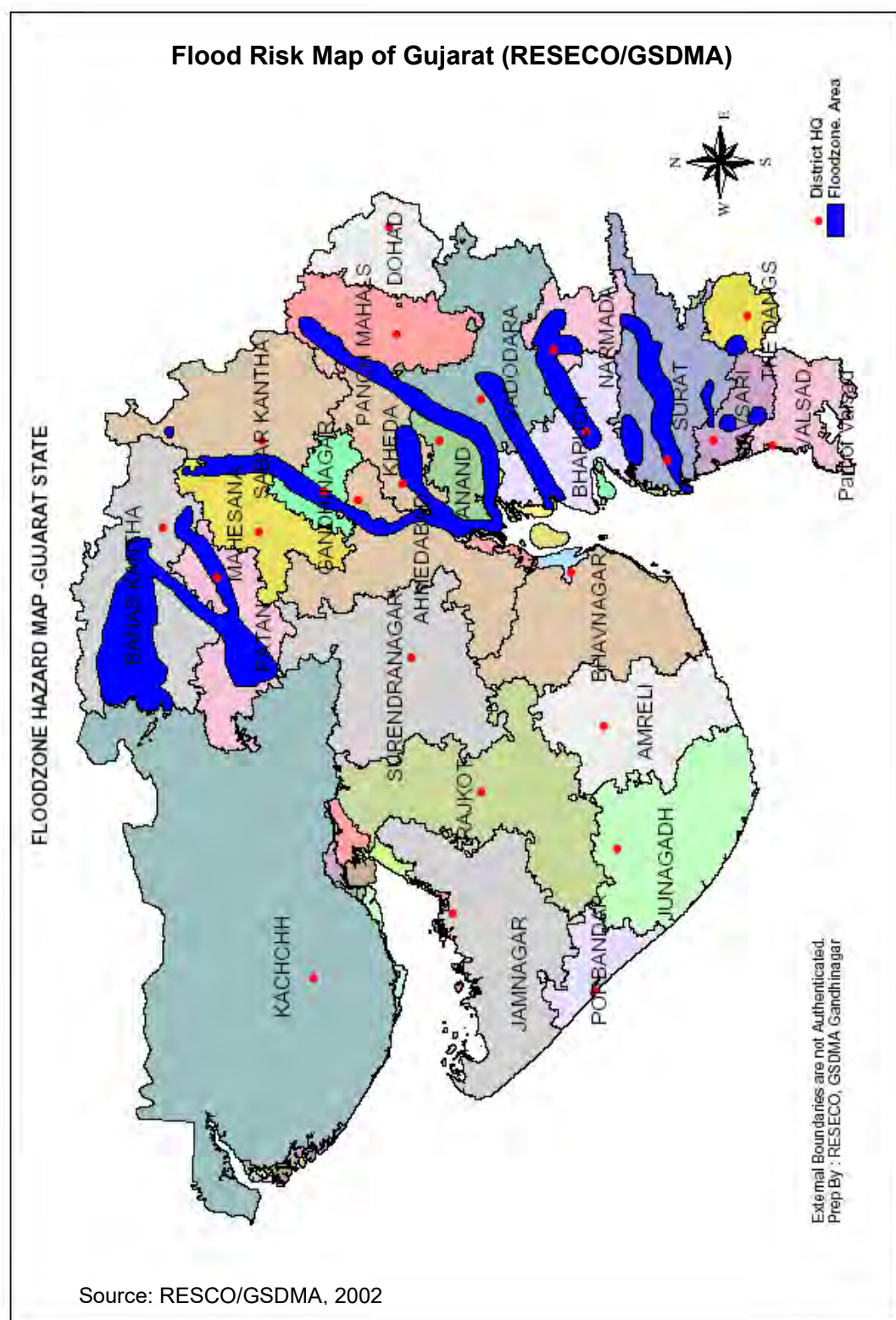
Sr.No.	District	Average Rainfall
10	Vallabhipur	655
<b>Dist. Avrg</b>		<b>628</b>
<b>Botad</b>		
1	Botad	625
2	Barvala	682
3	Gadhda	616
4	Ranpur	637
<b>Dist. Avrg</b>		<b>640</b>
<b>EAST-CENTRAL GUJARAT</b>		
<b>Ahmedabad</b>		
1	Abad City	806
2	Bavla	658
3	Daskroi	617
4	Detroj-rampura	568
5	Dhandhuka	739
6	Dholera	694
7	Dholka	730
8	Mandal	498
9	Sanand	772
10	Viramgam	599
<b>Dist. Avrg</b>		<b>668</b>
<b>Kheda</b>		
1	Galteshwar	753
2	Kapadvanj	932
3	Kathalal	866
4	Kheda	780
5	Mahemdavad	762
6	Mahudha	896
7	Matar	797
9	Nadiad	936
10	Thasra	721
11	Vaso	820
<b>Dist. Avrg</b>		<b>826</b>
<b>Anand</b>		
2	Anand	889
3	Anklav	833
4	Borsad	855
5	Khambhat	801
6	Petlad	818
7	Sojitra	735
8	Tarapur	697
9	Umreth	644
<b>Dist. Avrg</b>		<b>784</b>
<b>Vadodara</b>		
1	Dabhoi	1002
2	Desar	792
3	Karjan	1027
4	Padra	731
5	Savli	801
6	Sinor	749
8	Vadodara	1088
9	Vaghodia	718
<b>Dist. Avrg</b>		<b>864</b>
<b>ChhotaUdepur</b>		
1	Bodeli	1201
2	Chhota Udepur	1001
3	Jetpur Pavi	1048
4	Nasvadi	917
5	Kavant	1006
6	Sankheda	1175
<b>Dist. Avrg</b>		<b>1058</b>

Sr.No.	District	Average Rainfall
<b>Panchmahal</b>		
1	Ghoghamba	813
2	Godhra	876
3	Halol	1056
4	Jambughoda	1131
5	Kalol	679
6	Morwa (Hadaf)	933
7	Shahera	756
<b>Dist. Avg</b>		<b>892</b>
<b>Mahisagar</b>		
1	Balasinor	865
2	Kadana	845
3	Khanpur	582
4	Lunawada	740
5	Santrampur	779
6	Virpur	672
<b>Dist. Avg</b>		<b>747</b>
<b>Dahod</b>		
1	Dahod	765
2	Devgadhi Baria	710
3	Dhanpur	670
4	Fatepura	725
5	Garbada	631
6	Jhalod	672
7	Limkheda	734
8	Sigvad	699
9	Sanjeli	702
<b>Dist. Avg</b>		<b>701</b>
<b>SOUTH GUJARAT</b>		
<b>Bharuch</b>		
1	Amod	490
2	Ankleshwar	788
3	Bharuch	963
4	Hansot	892
5	Jambuser	543
6	Jhagadia	726
7	Netrang	861
8	Vagra	787
9	Valia	817
<b>Dist. Avg</b>		<b>763</b>
<b>Narmada</b>		
1	Dediapada	1230
2	Garudeshwar	989
3	Nandod	1004
4	Sagbara	1189
5	Tilakwada	1057
<b>Dist. Avg</b>		<b>1094</b>
<b>Tapi</b>		
1	Nizer	899
2	Songadh	1754
3	Uchchhal	1001
4	Valod	1521
5	Vyara	1680
6	Dolvan	1785
7	Kukarmunda	931
<b>Dist. Avg</b>		<b>1367</b>
<b>Surat</b>		
1	Bardoli	1479
2	Choryasi	1323
3	Kamrej	1450
4	Mahuva	1624
5	Mandvi	1510

Source: Revenue Department, Government of Gujarat

Sr.No.	District	Average Rainfall
6	Mangrol	1415
7	Olpad	1051
8	Palsana	1483
9	Surat City	1430
10	Umerpada	1918
<b>Dist. Avg</b>		<b>1468</b>
<b>Navsari</b>		
1	Chikhli	1880
2	Gandevi	1867
3	Jalalpore	1722
4	Khergam	1988
5	Navsari	1809
6	Vansada	1939
<b>Dist. Avg</b>		<b>1868</b>
<b>Valsad</b>		
1	Dharampur	2443
2	Kaprada	2917
3	Pardi	2188
4	Umbergaon	1979
5	Valsad	2080
6	Vapi	2277
<b>Dist. Avg</b>		<b>2314</b>
<b>Dangs</b>		
1	Dangs (Ahwa)	2260
2	Subir	2167
3	Waghai	2423
<b>Dist. Avg</b>		<b>2283</b>
<b>STATE AVERAGE</b>		<b>867</b>

Annexure – 1 (H)





Annexure – 1 (H)

Major and Medium Dams in Gujarat

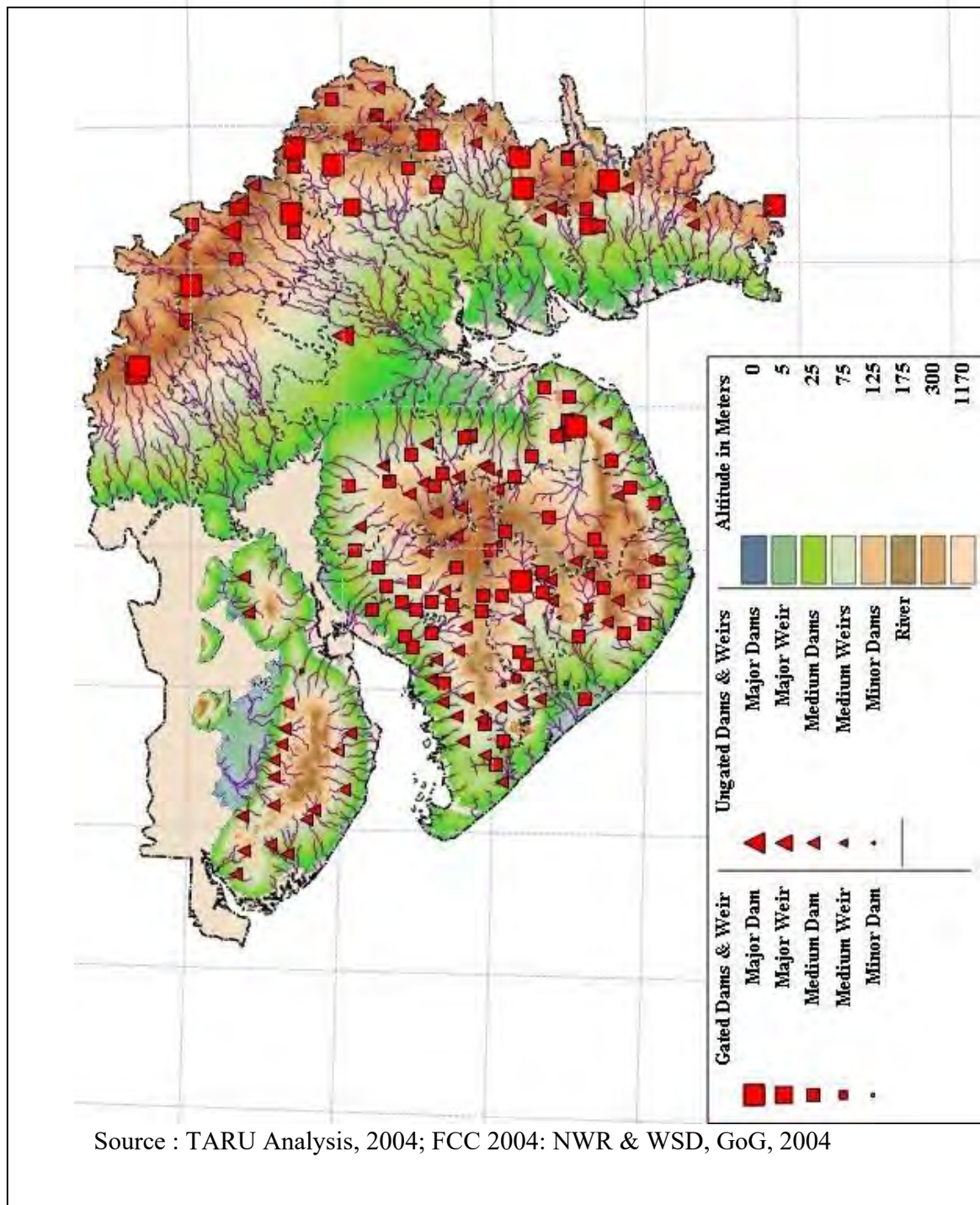
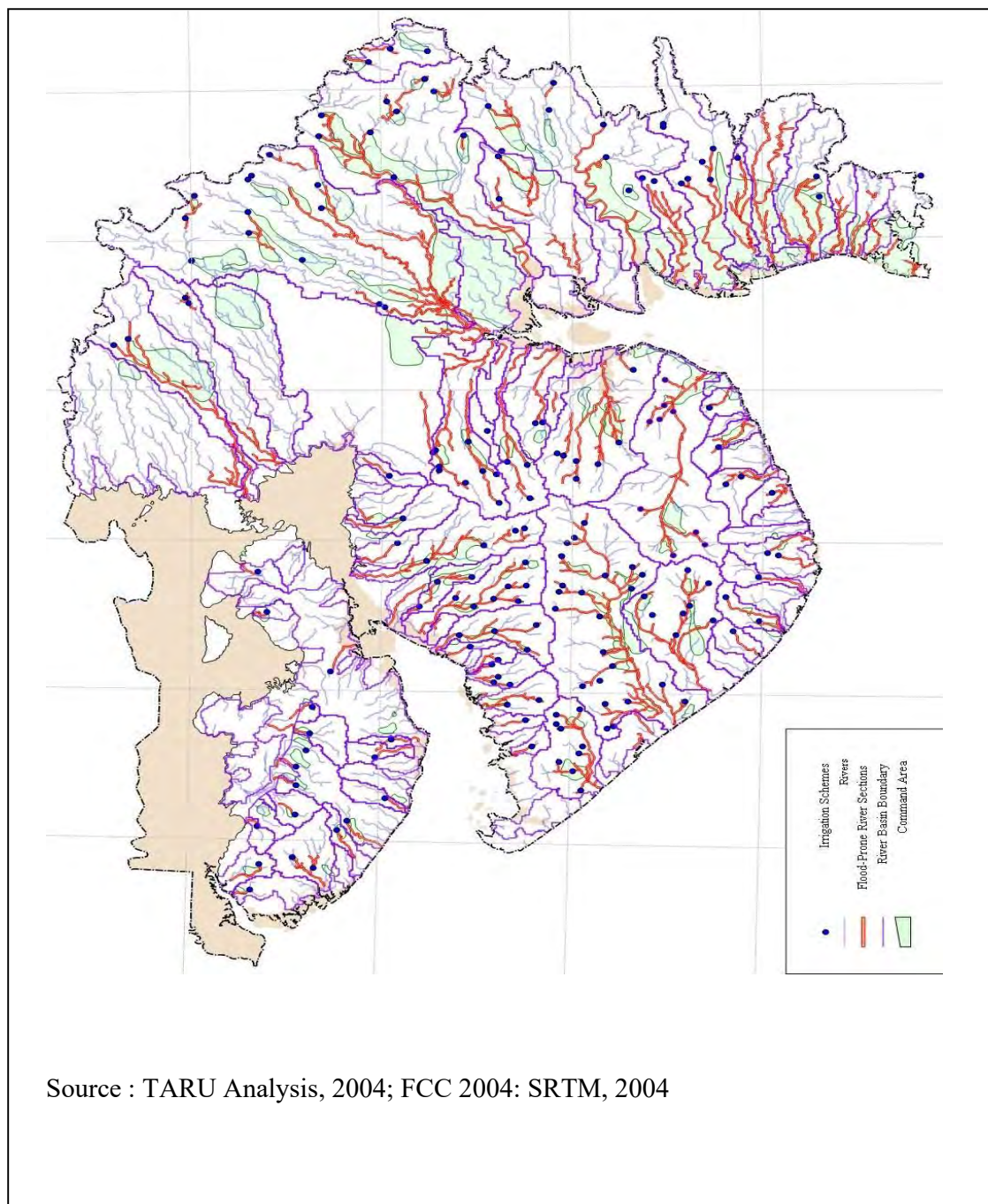
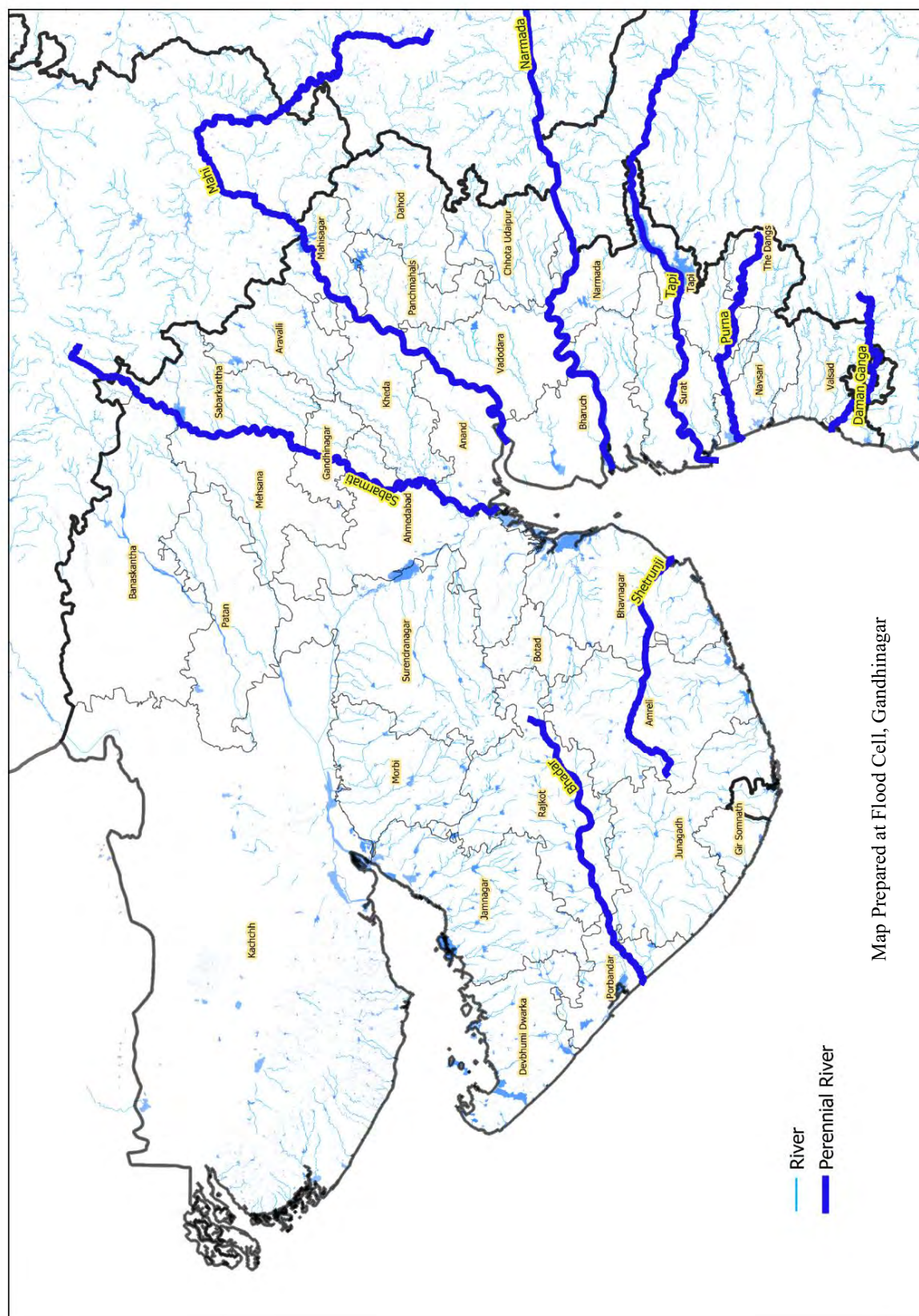


Fig. (7) Flood prone River Sections





## Rivers of Gujarat

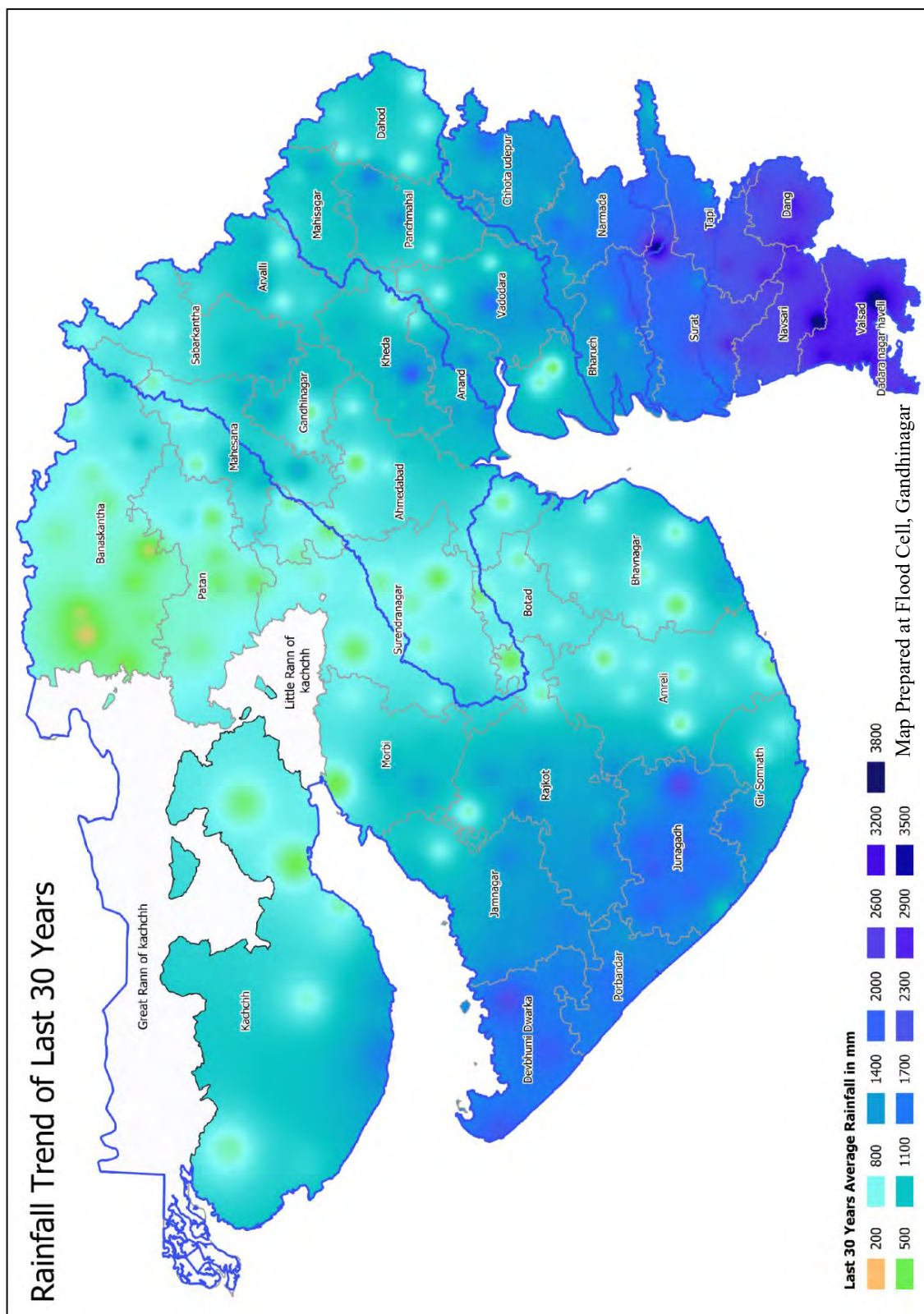


Map Prepared at Flood Cell, Gandhinagar

— River  
— Perennial River

## Annexure – 1 (H)

## Last 30 Years (1995-2024) Average Rainfall

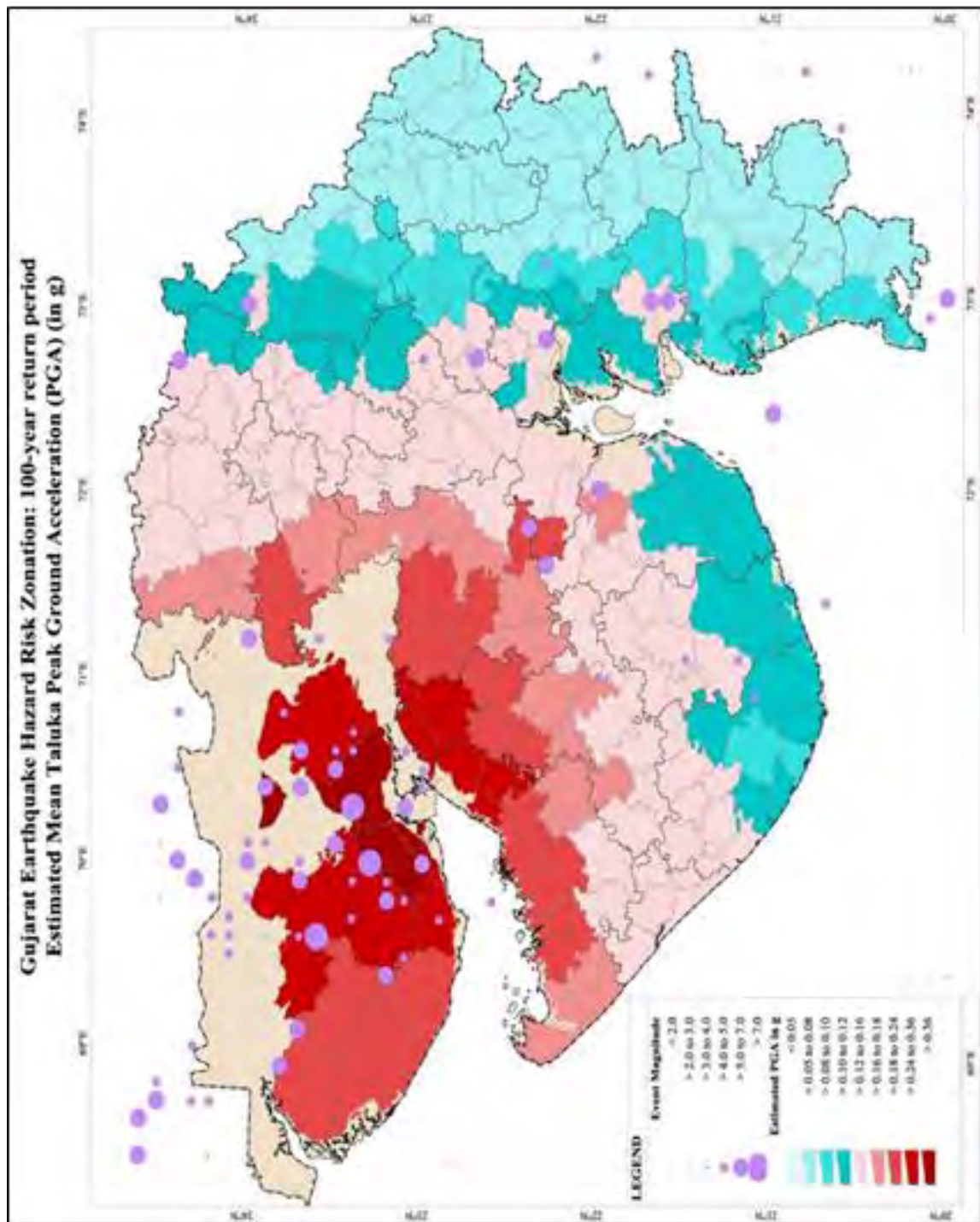


Source: Revenue Department, Government of Gujarat

Annexure – 1 (H)

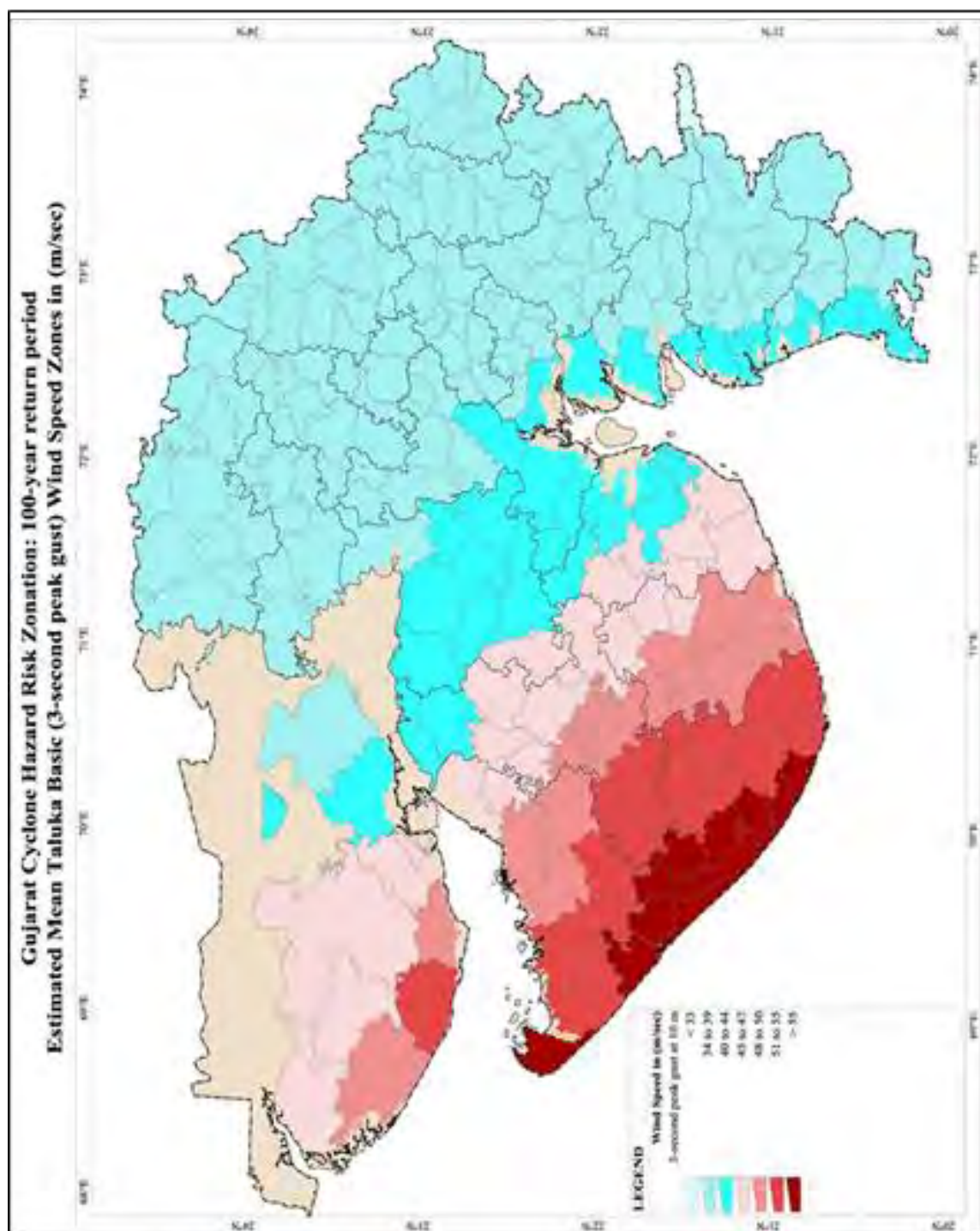


### Annexure 1(I) : Gujarat Earthquake Hazard Risk Zonation Map



Source: Gujarat State Disaster Management Plan 2023-2024

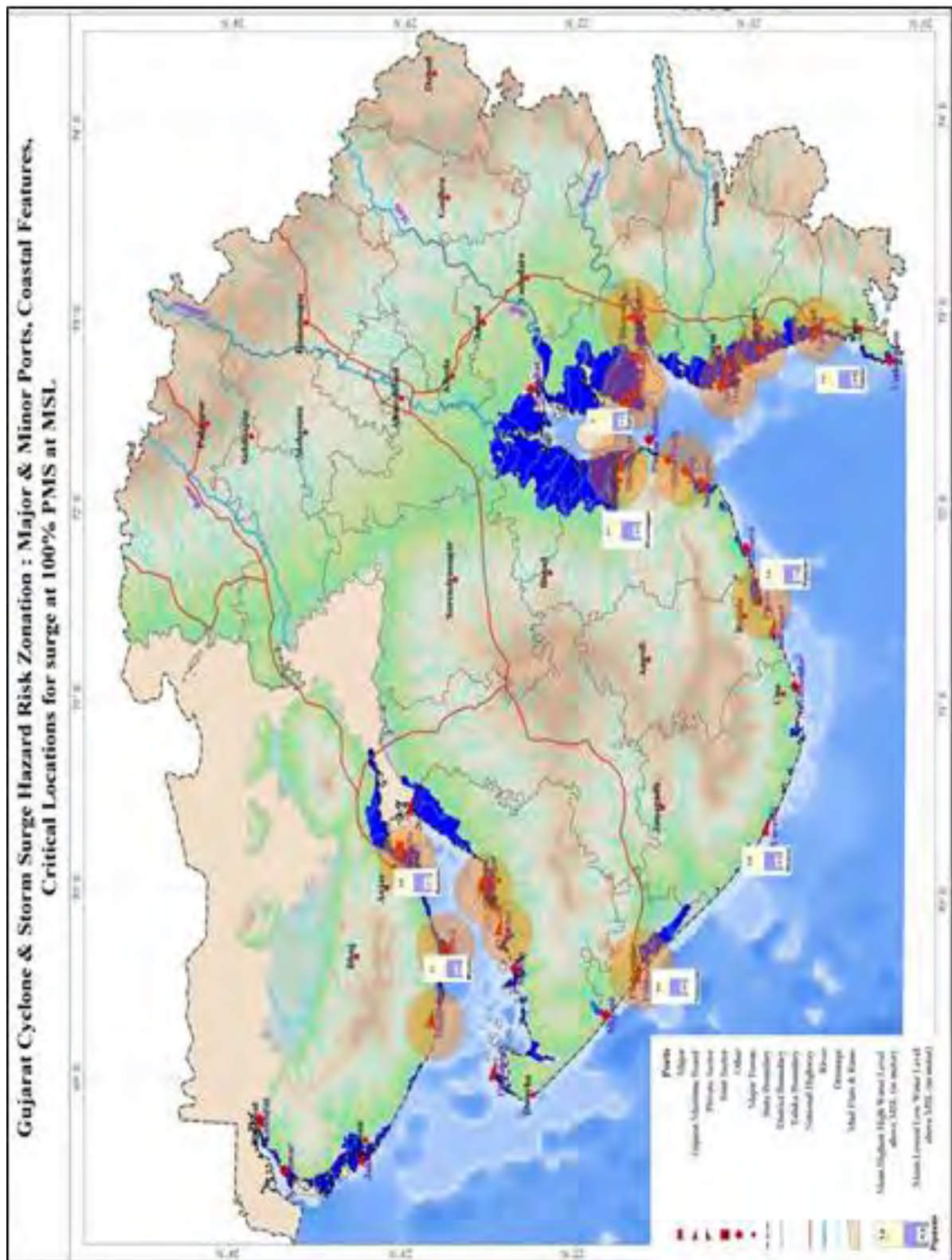
## Annexure 1(J): Gujarat Cyclone Hazard Risk Zonation Map



Source: Gujarat State Disaster Management Plan 2023-2024

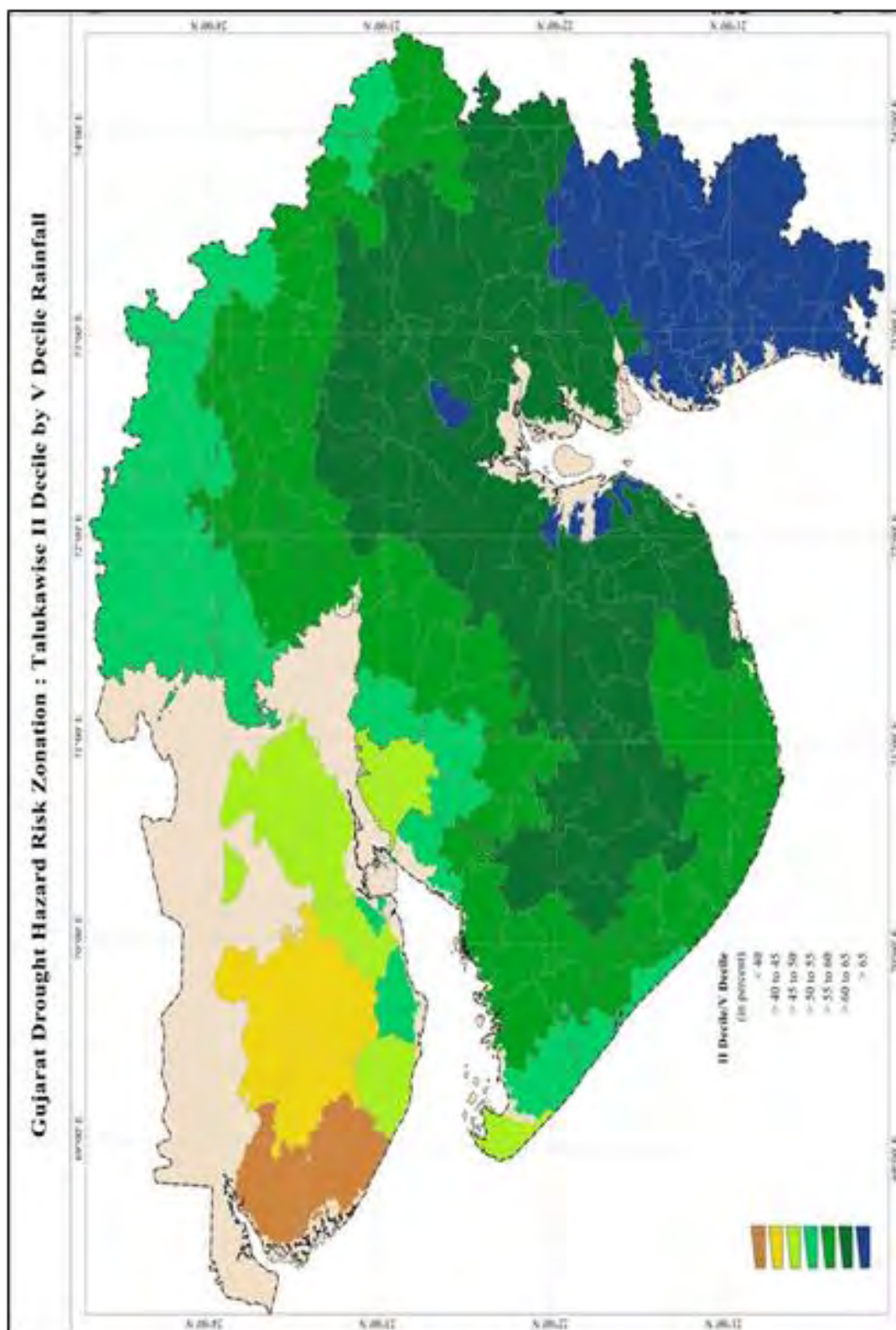


### Annexure 1(K) : Gujarat Storm Surge Hazard Risk Zonation Map



Source: Gujarat State Disaster Management Plan 2023-2024

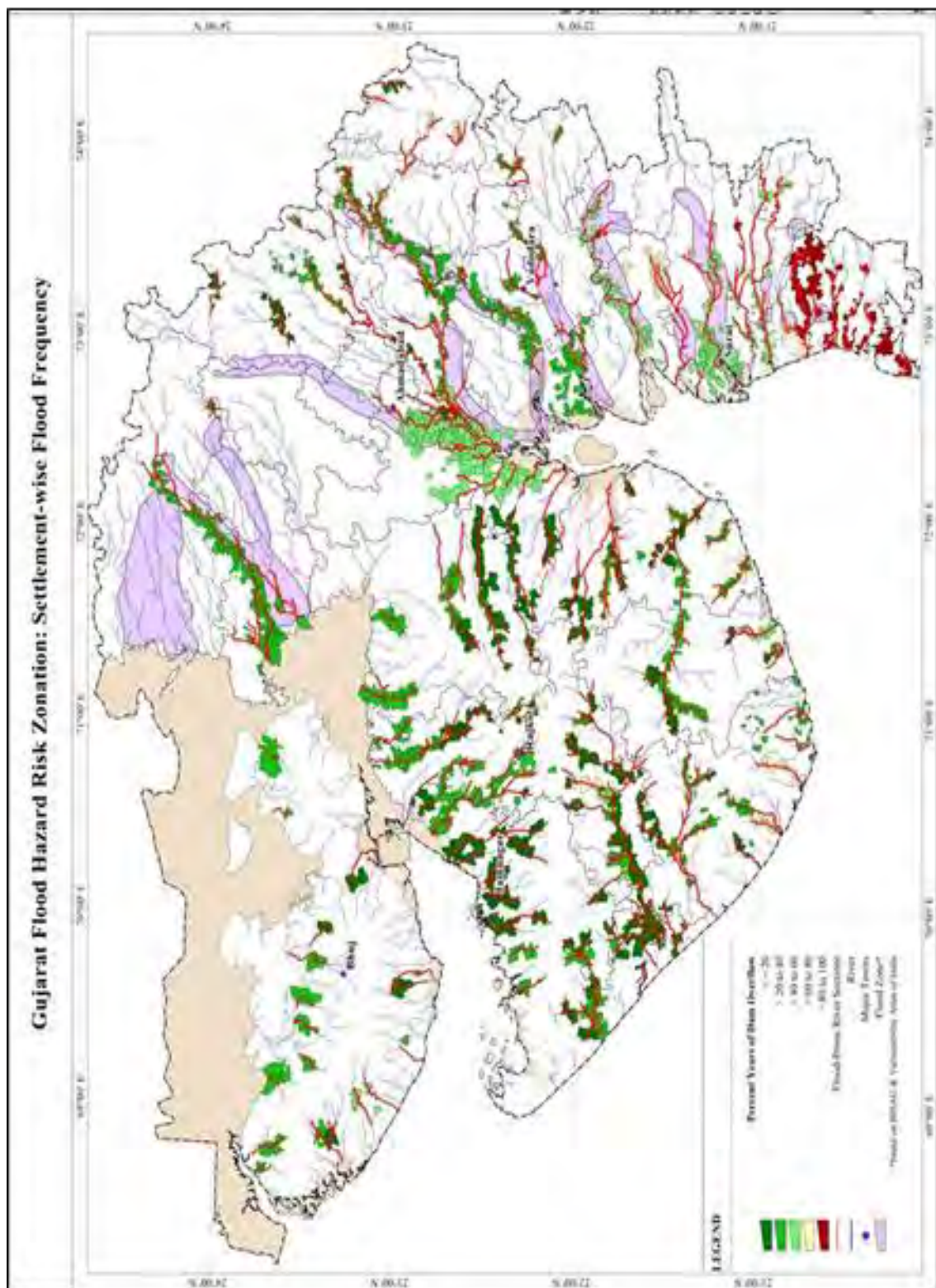
### Annexure 1(L): Gujarat Drought Hazard Risk Zonation Map



Source: Gujarat State Disaster Management Plan 2023-2024

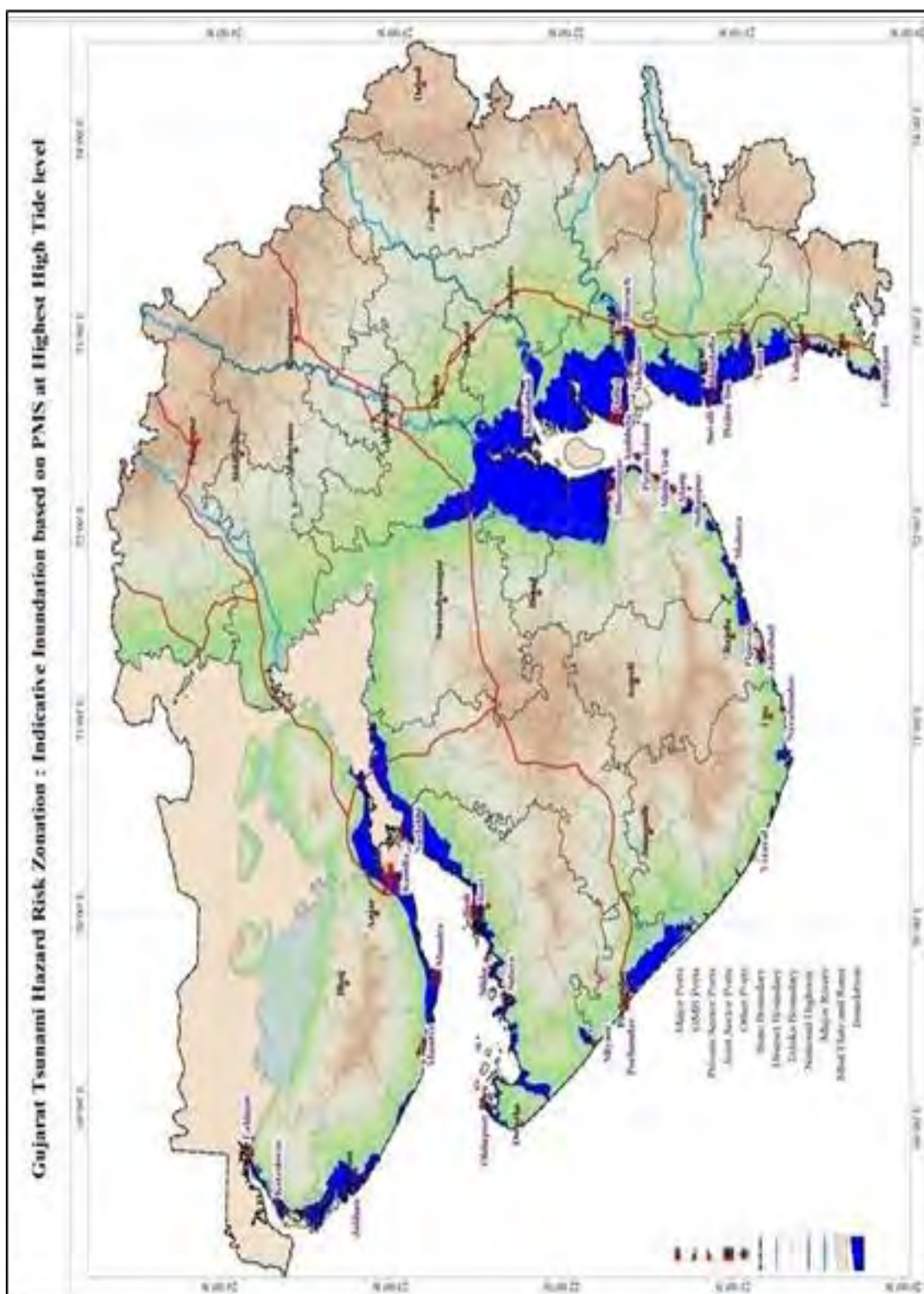


### Annexure 1(M) : Gujarat Flood Hazard Risk Zonation



Source: Gujarat State Disaster Management Plan 2023-2024

## Annexure 1(N): Gujarat Tsunami Hazard Risk Zonation



Source: Gujarat State Disaster Management Plan 2023-2024

## 1.11 Role Matrix: Responsibility Matrix for Various Departments during Monsoon 2025

1.11

### Role and Responsibility of Disaster Response Departments

Sr. No	Stages	Disaster Management Authority / EOC	IMD	CWC	WRD	Revenue Dept. / EOC	Urban/Rural Authority	Roads and Building	Railway Authority	Home Dept.	Energy
1	Monsoon Period	To arrange regular meeting with all concerned departments during Monsoon Period	Issue of weather bulletin for forecasting rainfall	To coordinate with the neighboring states of Gujarat for rainfall and inflow forecast for inter state rivers.  To issue inflow forecast in the reservoir and flood level forecast warning for city. Warning to be issued to the focal officer of the projects of the basin and concerned officers of WRD.	To coordinate with the concerned Water Resources officers of the neighboring states in the event of Heavy rainfall in the catchment, release of water from the upstream dams along with upstream reservoir position. To plan for operation of reservoir w.r.t. outflow from the reservoir to be decided and to inform concerned Revenue authority by way of Flood warning. Appropriate warning message to be sent to Revenue Dept. and if deemed fit for broadcasting on All India Radio and Doordarshan. Place the Disaster Management Plan on wrd.guj.nic.in/dam for open access.	To take appropriate action for alerting and evacuating the people likely to be affected in accordance with the warning and threat perception along with relief measures. In demanding situation if deemed fit messages for broadcasting on All India Radio and Doordarshan.	To take appropriate action for alerting and evacuating the people likely to be affected in urban areas in accordance with the warning and threat perception.	To take appropriate action for safety of bridge, causeways roads and traffic	To take appropriate action for safety of railway bridge, tracks and rail traffic.	To take appropriate action in consultation with revenue dept.	To take appropriate action for safety of transmission infrastructure for maintain power supply in the affected areas.
2	Heavy Rainfall		Issue of weather bulletin for forecasting rainfall of various durations Issue of Special Bulletins	To coordinate with the neighboring states of Gujarat for rainfall and inflow forecast for inter state rivers.  To issue inflow forecast in the reservoir and flood level forecast warning in for city. Warning to be issued to the focal officer of the projects of the basin and concerned officers of WRD,	Dam authority monitors the dam situation during monsoon. When any unusual condition or incident is noticed the information / emergency level is communicated to the disaster management authorities responsive actions to save the dam and minimize impact to life, property and the environment. CWC guidelines Emergency Action Plan for dams (CDSO_GUD_DS_01_v2.0) in this regard may be referred for more details.	To take appropriate action for alerting and evacuating the people likely to be affected in accordance with the warning and threat perception along with relief measures. In demanding situation if deemed fit messages for broadcasting on All India Radio and Doordarshan. Alert Central Assistance agencies on need basis.	As above and be prepared for responding to likely Flooding situation	As above	As above	As above	As above and be prepared for responding to likely Flooding situation
3	Reservoir Storage position										
	a.	Storage more than 70% and unto 80% (Warning Stage)	-	-		Warning message to Collectors for awareness of the affected people	Warning message to Municipal Commissioners for awareness of the affected people				
	b.	Storage more than 80% and unto 90% (Alert Stage)	-	-	To inform concerned District Administration falling in the downstream likely flood affected village / town in writing for the position of reservoir. Clearly mention the Storage percentage and Warning stage on the Departmental website wrd.guj.nic.in/dam Open Access Reports.	Alert message to collectors for awareness of the affected people	Alert message to Municipal Commissioners for awareness of the affected people				
	c.	Storage more than 90% (High Alert)	-	-		High Alert message to collectors for awareness of the affected people	High Alert message to Municipal Commissioners for awareness of the affected people				
	d.	Release of Flood Water from the Reservoir			Issue the Flood warning before release of water from the reservoir to revenue authority / police dept. concerned with downstream affected areas / village / town by the Focal Officer of the Project / Basin in standard proforma stipulated in Disaster Management Plan stating likely affect villages / towns, quantum and time for release of water, warning signal etc.  <b>Concerned Executive Engineer of the dam shall inform on the appropriate decision to the Focal officer of the river basin. The Focal officer in turn shall intimate to the District Collector and the Flood Control Cell (WRD) Gandhinagar.</b>  <b>The details of focal officer for the respective basins are provided in the Disaster Management Plan.</b>	To take appropriate action for alerting and evacuating the people likely to be affected in accordance with the warning and threat perception. In case of natural calamities and grave emergencies liaison with Air force authority, Military authority for their assistance	To take appropriate action for alerting and evacuating the people likely to be affected in urban areas in accordance with the warning and threat perception.	To take appropriate action for safety of bridge, causeway roads and traffic	To keep constant watch over the situation and mobiles teams.	To take appropriate action in consultation with revenue dept.	To take appropriate action for safety of transmission infrastructure for maintaining power supply in the affected areas.
4		Main Rivers (Damanganga, Tapi, Narmada, Mahi, Sabarmati and Banas) Flowing at danger level		To coordinate with the neighboring states of Gujarat for rainfall and inflow forecast for inter state rivers.  To issue inflow forecast in the reservoir and flood level forecast warning in for city. Warning to be issued to the focal officer of the projects of the basin and concerned officers of WRD.	To inform concerned District Administration / Police dept. located in the riverine areas with the details of location of the Gauge site.  Appropriate warning message to be sent to Revenue Dept. and if deemed fit for broadcasting on All India Radio and Doordarshan.  <b>Concerned Executive Engineer of the dam shall inform on the appropriate decision to the District Collector and the Flood Control Cell (WRD) Gandhinagar.</b>  <b>The details of focal officer for the respective basins are provided in the Disaster Management Plan.</b>	To take appropriate action for awareness, alerting the people likely to be affected in accordance with the threat perception.	To take appropriate action for awareness, alerting the people likely to be affected in accordance with the threat perception.	To take appropriate action for safety of bridge, causeway, roads and traffic	To take appropriate action for safety of railway bridge, tracks and rail traffic.	To take appropriate action in consultation with revenue dept.	



## 1.11 Role Matrix: Responsibility Matrix for Various Departments during Monsoon 2025

1.11

### Role and Responsibility of Disaster Response Departments

Sr. No	Stages		Disaster Management Authority / EOC	IMD	CWC	WRD	Revenue Dept. / EOC	Urban/Rural Authority	Roads and Building	Railway Authority	Home Dept.	Energy
5	Dam Failure		To keep constant watch over the situation and send Rapid action force or Air force as per necessity in the flooded areas of evacuation of the affected people.			In the event of breach in the embankment, heavy uncontrolled leakages from spillway / gates - concerned revenue authorities / district administration be informed immediately with likely affected areas. Dam authority should immediately inform the Focal Officer and Senior WRD officials too. Appropriate warning message to be sent to Revenue Dept. and if deemed fit for broadcasting on All India Radio and Doordarshan.  Concerned Executive Engineer of the dam shall inform on the appropriate decision to the Focal officer of the river basin. The Focal officer in turn shall intimate to the District Collector and the Flood Control Cell (WRD) Gandhinagar.  The details of focal officer for the respective basins are provided in the Disaster Management Plan.	To take appropriate action for awareness, alerting the people likely to be affected in accordance with the threat perception.	To take appropriate action for awareness, alerting the people likely to be affected in accordance with the threat perception.	To take appropriate action for safety of bridge, causeway, roads and traffic	To take appropriate action for safety of railway bridge, tracks and rail traffic.	To take appropriate action in consultation with revenue dept.	To take appropriate action for safety of transmission infrastructure for maintaining power supply in the affected areas.
6	Disaster Preparedness for Flood		To finalize and review Disaster Management Plan for each Department	To issue weather bulletin	To issue inflow forecast for reservoirs / level forecast for cities for six inter state rivers and one local river.	To implement model action plan as per Annex 3 A of WRD Disaster Management Plan of current year.	To implement model action plan as per Annex 3 A of WRD Disaster Management Plan of current year. Refer the District Disaster Management Plan of respective districts.	To implement model action plan as per Annex 3 A of WRD Disaster Management Plan of current year. Refer the District Disaster Management Plan of respective districts.	To implement model action plan as per Annex 3 A of WRD Disaster Management Plan of current year. Refer the District Disaster Management Plan of respective districts.		To implement model action plan as per Annex 3 A of WRD Disaster Management Plan of respective districts.	To implement model action plan as per Annex 3 A of WRD Disaster Management Plan of current year. Refer the District Disaster Management Plan of respective districts.
			Warning			Inform Revenue Dept. - Taluka level, District level and State Level intimation						
			Alert			Inform Revenue Dept. - Taluka level, District level and State Level intimation	Preparatory actions - Logistics readiness				Appropriate actions as per their protocol and Revenue Dept. instructions	
			High Alert			Inform Revenue Dept. - Taluka level, District level and State Level intimation- details like Release of Water to be made, likely villages to be affected by concerned Focal / Sub focal Officer.	Public intimation, inter-departmental co-ordination				Appropriate actions as per their protocol and Revenue Dept. instructions	
			Ready to Shift			Inform Revenue Dept., (Taluka level, District level and State Level intimation.						
			Post Damage			Appropriate actions w.r.t Damage Control, Relief of Dam / Irrigation Infrastructure	Relief, Rescue, Rehabilitation related actions	Relief, Rescue, Rehabilitation related actions	Damage Control, Repairs	Damage Control, Repairs	Rescue, Relief, Security related actions	Damage Control, Repairs
Levels of Incidents												
Dam			To arrange emergency meeting with all line Department and intimate situation to all concerned. Maintain constant touch with Air force, Army and Navy.	Provide information about probable rainfall in the area which may be affected due to emergency situation of the dam.	Provide flood forecast and probable levels in the river.	Dam authority/operator keeps monitoring the dam situation continuously during monsoon. When any unusual condition or incident is noticed the information regarding emergency level is communicated to the disaster management authorities and will act to save the dam and minimize impact to life, property and the environment. CWC guidelines in this regard may be referred for more details. Follow Rule levels as per Annexure 1 D (page 1-36) and Circular 2 clause 17 ( page 3-8) for filling of dams	To take appropriate action for alerting and evacuating the people likely to be affected in accordance with the warning and threat perception. In case of natural calamities and grave emergencies liaison with air force authority, Military authority for their assistance	To take appropriate action for alerting and evacuating the people likely to be affected in accordance with the warning and threat perception.	To take appropriate action for safety of bridge, causeway roads and traffic	To keep constant watch over the situation and mobilize teams.	To take appropriate action in consultation with revenue dept.	To take appropriate action for safety of transmission infrastructure for maintain power supply in the affected areas.
River/Canal/Drains						WRD Authorities act as per Chapter 4 , ( Maintenance of Flood Embankments, page 4-1) and Annexure 4-A (page 4-2) covering maintenance of Flood Embankments. ( In event of Drain Overflow or Breaches in banks - Concerned Executive Engineer shall act as Focal Officer and Dy. Ex Eng. as sub focal Officer )						
	Mild	Small Breaches in Canal, Small disturbance in Earthen Bunds, Slopes and Pitching	Warning			Timely repairs,		To take appropriate action for awareness, Alerting and the people likely to be affected in accordance with the threat perception.				
		Canal / Drain Inundation Inundation in 1 Village				Timely repairs						
	Medium					Inform Revenue Dept., (Taluka level, District level and State Level intimation Project / Scheme Executive Engineer to take appropriate actions	Public intimation, inter-departmental co-ordination, Relief as deemed fit	To take appropriate action for awareness, alerting and the people likely to be affected in accordance with the threat perception.	Ensure accessibility to the Village Gamtal	To take appropriate action for safety of railway bridge, tracks and rail traffic.	To take appropriate action in consultation with revenue dept.	To take appropriate action for safety of transmission infrastructure.

# 1.11 Role Matrix: Responsibility Matrix for Various Departments during Monsoon 2025

1.11

## Role and Responsibility of Disaster Response Departments

Sr. No	Stages		Disaster Management Authority / EOC	IMD	CWC	WRD	Revenue Dept. / EOC	Urban/Rural Authority	Roads and Building	Railway Authority	Home Dept.	Energy
		Heavy Inundation More than 1 Village				Inform Revenue Dept., (Taluka level, District level and State Level intimation. Mechanical Unit Fighter Squad to alerted	Assessment and Relief coordination	To take appropriate action for awareness, alerting and the people likely to be affected in accordance with the threat perception.	Ensure accessibility to the Village Gamtal	To take appropriate action for safety of railway bridge, tracks and rail traffic.	To take appropriate action in consultation with revenue dept.	To take appropriate action for safety of transmission infrastructure.
Riverine Flooding						Inform Revenue Dept., (Taluka level, District level and State Level intimation). Mechanical Unit Fighter Squad to alerted	Assessment and Relief coordination	To take appropriate action for awareness, alerting and the people likely to be affected in accordance with the threat perception.	Ensure accessibility to the Village Gamtal	To take appropriate action for safety of railway bridge, tracks and rail traffic.	To take appropriate action in consultation with revenue dept.	To take appropriate action for safety of transmission infrastructure.
	Major	Major	Cracks, Failures			Inform Revenue Dept., (Taluka level, District level and State Level intimation). Central Designs Organisation Visit and Problem Solving by CDO and Field Officers	Assessment and Relief coordination	To take appropriate action for awareness, alerting and the people likely to be affected in accordance with the threat perception.	Ensure accessibility to the Village Gamtal	To take appropriate action for safety of railway bridge, tracks and rail traffic.	To take appropriate action in consultation with revenue dept.	To take appropriate action for safety of transmission infrastructure.
			Heavy Leakages			Inform Revenue Dept., (Taluka level, District level and State Level intimation.) Central Designs Organisation Visit and Problem Solving by CDO/ Mechanical Wing and Field Officers	Assessment and Relief coordination	To take appropriate action for awareness, alerting and the people likely to be affected in accordance with the threat perception.	Ensure accessibility to the Village Gamtal	To take appropriate action for safety of railway bridge, tracks and rail traffic.	To take appropriate action in consultation with revenue dept.	To take appropriate action for safety of transmission infrastructure.
			Mechanical Gate Problems			Inform Revenue Dept., (Taluka level, District level and State Level intimation.) Central Designs Organisation Visit and Problem Solving by Design Mechanical Wing and Field Officers	Assessment and Relief coordination	To take appropriate action for awareness, alerting and the people likely to be affected in accordance with the threat perception.	Ensure accessibility to the Village Gamtal	To take appropriate action for safety of railway bridge, tracks and rail traffic.	To take appropriate action in consultation with revenue dept.	To take appropriate action for safety of transmission infrastructure.
Coordination with Adjoining State					Coordinate with Water Resources Department, Forecasting and Monitoring data Sharing mechanism in place.	Coordinate with Central Water Commission Forecasting and Monitoring mechanism in place.	Coordinate response with various agencies					
					Intimation to State Emergency Operations and Concerned Disaster officers of adjoining States.	Intimation to State Emergency Operations and Concerned Disaster officers of adjoining States.						
Relief Measures						WRD Dept. takes up relief measures for its Irrigation infrastructure. WRD Circle offices shall regularly send report of the Flood Damages WRD infrastructure to OSD (IP) and Central Flood Cell, Gandhinagar	Revenue dept. shall Coordinate efforts by various departments and various departmental Control rooms shall manage gather information of flood damage and response.					
7	Pre Monsoon and non monsoon activities		Capacity Building	Issue of warning and capacity building.strengthening early warning mechanism	Coordination meeting and strengthening early warning mechanism	Preventive mentanance, Pre-monsoon inspections and actions ensure in safety. Guidelines implementation. River/Drainage, Water bodies free of encroachments	Training and coordination Public awarness and capacity building	Formalization of byelaws guidelines and implimentation mechanism Drainage implimentation Rain water harvesting Implementation of guidelines plastic/debrease free rivers/drainages/canals & gutter lines	Capacity building Ensure implimentation and guidelines Ensure safety of public infrastucture	Capacity building	Capacity building	Capacity building



**2.0 FLOOD WARNING ANNOUNCEMENT THROUGH AKASHWANI /  
DOORDARSHAN**

- 2.1** The Chief Engineer (Central Gujarat) & Addl. Secretary to Government of Gujarat, Narmada, Water Resources, Water Supply & Kalpasar Department, Sachivalaya, Gandhinagar, Collector of concerned District and Appropriate Authorities (Focal Officers) of rivers in Gujarat or the officers authorized on their behalf are empowered to send flood warning message to be broadcasted over the AKASHWANI and DOORDARSHAN as and when necessary. The messages will be sent to the nearest Station Director or Duty Officer, by immediate means and also be confirmed in writing as per Annexure 2-A, 2-B, and 2-C respectively.
- 2.2** The messages should be written clearly and readable while conveying to AIR and or DOORDARSHAN. Name of the officer should also be conveyed along with telephone No. of the Control Room. Any message given to AIR and DOORDARSHAN should also simultaneously be conveyed to Flood Control Cell, State Water Data Centre Building, Sector-8, and Gandhinagar.
- 2.3** In the case of emergency the announcement on Radio / T.V. shall be made every fifteen minutes. Telephone number of the officer of AKASHWANI, Ahmedabad / Vadodara / Rajkot/ Bhuj / Godhra / Surat /Ahwa / Daman centers and DOORDARSHAN KENDRA are given in Flood Telephone Directory of the current year.

## ANNEXURE - 2 -A (ગુજરાતી)

**The Akashwani / Door Darshan shall arrange to announce the Messages.**

પુર ચેતવણી અંગે અધિક્ષક ઇજનેર શ્રી, .....,  
નરફથી જણાવવામા આવે છે કે નારીખ ..... ના રોજ ..... નદીમાં પુર ચઢી રહ્યા છે. અને  
લગભગ ..... કલાકે પુર.....ઉંચાઈ એ પહોંચશે, આથી નીચે જણાવેલ ગામના લોકોને  
સ્થળાંતર કરવા માટે ચેતવણી આપવામા આવે છે.

અનુ.નંબર	ગામનુ નામ	તાલુકો	જિલ્લો

## ANNEXURE - 2 -A (English)

Regarding the flood warning, the Superintending Engineer,  
..... is notified that the date..... on  
..... (Name of River) river is flooding and about ..... (time)Hourly flood .....  
height(m) will be reached, hence people of below mentioned villages are warned to evacuate.

Sr No	Name of Village	Taluka	District



## ANNEXURE - 2 –B (ગુજરાતી)

પ્રતિ,  
 નાયબ નિયામક શ્રી,  
 ફરજ પરના અધિકારી શ્રી, આકાશવાણી / દુરદર્શન,  
 અમદાવાદ / વડોદરા / રાજકોટ / ભુજ / ગોધરા / સુરત / આહવા / દમણ

વિષય :- આકાશવાણી / દુરદર્શન ઉપર પુર અંગેના સંદેશા પ્રસારિત કરવા બાબત

અનુસંધાન :- તારીખ ..... ના ..... નદીના આવેલ પુર અંગે આપશ્રીને ફોન ઉપર આપેલ સંદેશો.

મે. સાહેબ,

જય ભારત સાથે જણાવવાનું કે આપશ્રીને, ફોન ઉપર પૂર અંગે ચેનવાણી માટેના ..... ના સંદેશાના અનુસંધાનમાં જણાવવાનું કે તારીખ ..... ના રોજ ..... નદીમાં ..... કલાકે પાણીની સપાટી વધતી હોવાથી નીચે જણાવેલ સંદેશો પ્રસારિત કરવા વિનંતી કરવામાં આવે છે / આવી હતી નેને અનુમતી આપવાના હેતુસર સંદેશાની નકલ આ પત્ર દ્વારા જાણ કરવામાં આવે છે.  
 ગામોના નામો અને વિગતો નીચે પ્રમાણે હતી :

અનુ.નંબર ૧.	ગામનું નામ ૨.	તાલુકો ૩.	જિલ્લો ૪.

આપનો વિશ્વાસુ,

ક્ષેત્રિય અધિકારી અને અધિક્ષક ઇજનેર

**ANNEXURE - 2 – B (English)**

To,  
Deputy Director,  
Officer on Duty, Akashvani / Doordarshan,  
Ahmedabad / Vadodara / Rajkot / Bhuj / Godhra / Surat / Ahwa / Daman

Subject : Matter of Broadcasting flood related messages on Akashvani / Doordarshan

Ref. : Dated ..... of .....(Name of River) to you regarding the flood of  
the river Message given over phone.

Sir,

It is to inform you, in reference to the warning message regarding the flood received on phone....., that on the date ....., the water level in the ..... (Name of River) to river is expected to rise at ..... (time)hours. Therefore, it is requested to circulate the following message / the copy of the message is being shared for the purpose of granting approval.

The Names and details of the villages as below :-

Sr No 1.	Name of Village 2.	Taluka 3.	District 4.

Yours faithfully,

Focal Officer and  
Superintending Engineer

## ANNEXURE - 2 – C (ગુજરાતી)

પ્રતિ,

..... ,  
 ..... ,  
 .....

રાજ્યના પુર નિયંત્રણ એકમની યાદી જણાવે છે કે આજ રોજ રાજ્યમાં આવેલ કુલ ૨૦૬ જળાશયોની નોંધનીય માહિતી નીચે મુજબ છે.

(૧) આજે સવારે ૮.૦૦ કલાકે પુરા થના છેલ્લા ૨૪.૦૦ કલાકમાં નીચે જણાવેલ જુદા જુદા જિલ્લાઓના જળાશયોનાં ઉપરવાસ માં ભારે વરસાદ નોંધાયેલ છે.

અનુ.નંબર	જળાશયનું નામ	જિલ્લો	છેલ્લા ૨૪ કલાક દરમિયાન થયેલો વરસાદ ( મી.મી.માં)

(૨) રાજ્યના કુલ ૨૦૬ જળાશયો પૈકી જુદા જુદા જિલ્લાઓના નીચે દર્શાવેલ જળાશયોના ઉપરવાસમાં થયેલા વરસાદને કારણે પાણીની આવક વધનાં નીચે મુજબ નોંધપાત્ર પાણીનો પ્રવાહ છોડવામાં આવી રહ્યો છે.

અનુ.નંબર	જળાશયનું નામ	જિલ્લો	છોડવામાં આવેલ મહત્તમ પ્રવાહધન કુટ પ્રતિ સેકન્ડે	સમય	રીમાર્ક્સ
૧.	૨.	૩.	૪.	૫.	૬.
૧.					
૨.					
૩.					
૪.					

(૩) રાજ્યના જે જળાશયોમાંથી ઉપરવાસના વધુ વરસાદને કારણે છોડવામાં આવના પાણીના લીધે નીચે વાસના ગામડાઓને મુલ્કી સ-ાઓને ચેનવાણી આપવા જણાવેલ છે. નેવા જળાશયોની જિલ્લાવાર માહિતી નીચે મુજબ છે.

અનુ.નંબર	જળાશયનું નામ	જિલ્લો	રીમાર્ક્સ
૧.			
૨.			
૩.			

(૪) રાજ્યમાં આવેલ મુખ્ય નદીઓની ભયજનક સપાટી નીચે મુજબ છે. અને ને નદીઓની હાલની સપાટી નીચે મુજબ છે.

અનુ.નંબર	નદીઓનું નામ	ગેજસાઇટ નું સ્થળ	ભયજનકસપાટી કુટમા	હાલની સપાટી કુટમાં	રીમાર્ક્સ
૧.	દમણગંગા	સિલ્વાસા	૮૮.૪૩		
		વાપી	૬૩.૦૦		
૨.	તાપી	સુરન(નહેરુબ્રિજ)	૩૧.૧૬		
૩.	નર્મદા	ગરુડેશ્વર	૧૦૨.૦૦		
		ભરૂચ	૨૪.૦૦		
૪.	મહી	વણાંકબોરી	૨૪૬.૦૦		
૫.	સાબરમતી	સુભાષબ્રિજ	૧૪૮.૭૬		
૬.	બનાસ	ડીસા રોડ બ્રિજ	૪૦૬.૦૦		

સહી /-  
સક્ષમ અધિકારી

**ANNEXURE – 2 - C (English)**

To,

.....,

.....,

.....,

The list of State Flood Control Unit states that the following are the noteworthy details of the total .....(nos) reservoirs in the state today.

- 1) In the last 24.00 hours ending at 8.00 am today, heavy rainfall has been recorded upstream in the reservoirs of different districts mentioned below.

Sr No	Name of Scheme	District	Rainfall during last 24 hours (in mm)

- 2) Out of the total .....(nos) reservoirs of the state, water are being released as follows due to increase in water level due to rainfall in the upstream of the reservoirs mentioned below in different districts.

Sr No	Name of Scheme	District	Maximum Outflow (cusecs)	Time	Remark
1	2	3	4	5	6
1					
2					
3					
4					

- 3) Concern authorities have been asked to alert the downstream villages due to the release of water from reservoirs of the state due to heavy rainfall. The district-wise information of such reservoirs is as follows:

Sr No	Name of Scheme	District	Remark
1			
2			
3			

- 4) The following are the danger levels of major rivers in the state and the present levels of those rivers are as follows.

Sr No	Name of River	Location of Gaugesite	Danger Level (feet)	Present Water Level (feet)	Remark
1	Damanganga	Silvasa	98.43		
		Vapi	63.00		
2	Tapi	Surat (Naheru bridge)	31.16		
3	Narmada	Garudeshwar	102.00		
		Bharuch	24.00		
4	Mahi	Wanakbori	246.00		
5	Sabarmati	Subhash brigde	148.76		
6	Banas	Deesa road Bridge	406.00		

Sign/-  
Concern Officer

**3.0 DISASTER PREPAREDNESS FOR FLOOD.**

- 3.1** Well before the onset of the monsoon, Revenue Department convenes a meeting with all the departments and agencies including those of Government of India concerned with rescue, relief and public awareness, under the Chairmanship of Chief Secretary of the state, wherein the detailed contingent plan specifying and delineating the role to be played by various departments during calamity period, pre calamity period and post calamity period is drawn. The checklist for the same is appended vide Annexure 3-A.

**ANNEXURE - 3 A****MODEL ACTION PLAN FOR DISASTER PREPAREDNESS (FOR FLOOD)****(A) At The State Level**

- 1.** Is there a separate operation control center ?  
Is it equipped with a number of telephones, wireless sets, etc. ? Are there arrangements to run it round the clock ?  
Whether roster of duty is kept ready to put into operation such a control center at short notice ?
- 2.** Have flood prone blocks, talukas, tehsils been identified ?
- 3.** Have steps been taken to see that all such Block/Talukas/Tehsils can be reached over telephone/wireless sets in the event of flood ?
- 4.** Where are the flood warning signals received ?  
Are they attended to immediately ?
- 5.** Are stores of immediate breach / leakage control and relief articles , heavy duty pump sets (for draining)?
- 6.** Has the operation of reservoirs been coordinated for providing flood operation ? Have the reservoir engineers been asked to be in continuous touch with the district authorities before releasing water likely to inundate village etc. ?

**(B) For District and Sub-Divisional Officers :**

- 1.** Have you identified the flood prone blocks, talukas, tehsils and villages ?
- 2.** Is there clear division of responsibility for dam / river water flood management among the officers and the staff ?
- 3.** Is there an operation control center? Is there a roster of duties to run it round the clock?
- 4.** Is a log book maintained to keep data about rise of flood waters at regular intervals of the rivers in the State ?
- 5.** How is the flood warning communicated ?

6. Are the flood prone blocks ready for quick repairs ? viz. Sand bag for repairs of flood protection embankment are kept ready ?
7. Have the villages water logged for a long time been identified ?
8. **MOBILISATION OF EQUIPMENT FOR FLOOD FIGHTING UNITS FOR MONSOON.**

Government of Gujarat, Narmada, Water Resources Water Supply & Kalpasar Department has set up flood fighting units along with accessories, equipment's & staff for mobilization during the monsoon period from 10th June to 15th October @ following places as per **Annexure – 3 B**

**The List of Dewatering Pumps allotted to the District Collectors / District Development Officer and Irrigation Mechanical Dn. of NWRWS & Kalpasar Dept. are also compiled in Annexure. 3 B. The operation, maintenance and repairing of the pumps under District Collector shall be done by the District Panchayat.**



## ANNEXURE – 3 B

## Proposed distribution of the equipment planned for the Flood Fighting Units for the Monsoon 2025

Sr. No	Location of unit	IMC-1, Vadodara			IMC-2 Ahmedabad			
		Ukai Work shop	Gotri Work shop	Nadiad Section	Wasna Barrage Ah'bad	Dharoi	Nyari-II Dam Rajkot	Rudramata Dam site Bhuj-kutch
	Name of Dn under whom the unit will work	Irr.Mech Dn No-2 Ukai	Irr.Mech Dn No-1 Vadodara	Irr.Mech Dn No-1 Vadodara	Irr.Mech Dn No-4 Ah'bad	Irr.Mech Dn No-5 Ah'bad	Irr.Mech Dn No-6 Rajkot	Irr.Mech Dn No-6 Rajkot
1	Hyd. Excavator	2	2	-	1	1	2	1
2	Bharat Dozer.50T	2	2	-	1	1	1	1
3	Heavy Dozer BD-65	-	-	-	-	-	-	-
4	Trallor	2	1	-	1	1	2	1
5	Tipper	4	4	-	3	3	4	4
6	Diesel Engine driven dewatering pump with Accessories	4(6.5 H.P.) 1(38 H.P.) Truck Mounted	8(6.5 H.P.) 1(38 H.P.) Truck Mounted	7(6.5 H.P.) 1(38 H.P.) Truck Mounted	8(6.5 H.P.) 1(38 H.P.) Truck Mounted	5(6.5 H.P.) 1(38 H.P.) Truck Mounted	4(6.5H.P.) 1(38 H.P.) Truck Mounted	4(6.5 H.P.) 1(38 H.P.) Truck Mounted
7	Elect.Submersible Dewatering Pump with Floating Platform.	4(10 H.P.) 1(20 H.P.)	4(10 H.P.) 2(20 H.P.)	4(10 H.P.) 2(20 H.P.)	4(10 H.P.) 2(20 H.P.)	4(10 H.P.) 2(20 H.P.)	4(10 H.P.) 2(20 H.P.)	-

Pump sets mentioned in above allotment is distributed by following mechanical divisions of NWRWS&K Dept. as per following table.

Sr No	Name of Division	Capacity of Pump	Allotted Quantity	Stand by Quantity	Total available Quantity
1	Irr. Mech. Dn. No.- 6 Rajkot	6.5 H.P.(D) 10 H.P. (E) 20 H.P. (E) 38 H.P. (TM)	8 4 2 2	7	23 Nos
2	Irr. Mech. Dn. No.- 4 A'bad	6.5 H.P.(D) 10 H.P. (E) 20 H.P. (E) 38 H.P. (TM)	8 4 2 1	2	17 Nos
3	Irr. Mech. Dn. No.- 5 A'bad	6.5 H.P.(D) 10 H.P. (E) 20 H.P. (E) 38 H.P. (TM)	5 4 2 1	0	12 Nos
4	Irr. Mech. Dn. No.- 1 Vadodara	6.5 H.P.(D) 10 H.P. (E) 20 H.P. (E) 38 H.P. (TM)	15 8 4 2	0	29 Nos.
5	Irr. Mech. Dn. No.- 2 Ukai	6.5 H.P.(D) 10 H.P. (E) 20 H.P. (E) 38 H.P. (TM)	4 4 1 1	0	10 Nos.
	Total No of Pump				91 Nos.

Note: - (D) Diesel (E) Electrical (TM) Truck Mounted

**Various Important Circulars Issued to Appropriate Authorities to Take Precautionary Measures under Flood warning Arrangements**

ચોમાસુ - ૨૦૨૫ પરિપત્ર-૧

ચોમાસા દરમિયાન તથા અન્ય  
કુદરતી આપદા અંગે પુર નિયંત્રણ  
એકમો, બંધો, વાયરલેસ સ્ટેશનોની  
ગોઠવણી અને સેટેલાઇટ ફોનના  
ઉપયોગ બાબત

નર્મદા, જળ સંપત્તિ, પાણી પુરવઠા અને કલ્પસર વિભાગ, ગુજરાત સરકાર,  
સચિવાલય, ગાંધીનગર

પરિપત્ર નં. ૧: એફડબલ્યુએ/૨૦૨૦/૧૧૨૭/જ-૧

તારીખ: ૨૬-૧૨-૨૦૨૪

વિષય: સને ૨૦૨૫ ચોમાસા અગાઉ સાવચેતીનાં પગલા, વાયરલેસ સ્ટેશન, નુકશાનીની વિગતો

આમુખ:

ચોમાસા અને વાવાઝોડા જેવી કુદરતી આપદા સમયે પૂર્ણ નિયંત્રણ કક્ષ તથા જરૂરી સંદેશ વ્યવહારની ગોઠવણી બાબત વિચારણા હેઠળ હતી. જે અંગે નીચે મુજબ કાર્યવાહી થવા નક્કી કરવામાં આવેલ છે.

સુચના:

- (૧) વર્ષ ૨૦૨૫ ચોમાસા દરમિયાન રાજ્યના ગાંધીનગર, અમદાવાદ, રાજકોટ, ભાવનગર, ભુજ, વિસનગર, હિંમતનગર, નડિયાદ, વડોદરા, ઉકાઈ, વલસાડ અને સુરત ખાતેના પૂર નિયંત્રણ એકમો તારીખ: ૦૧-૦૬-૨૦૨૫ થી તા. ૩૦-૧૧-૨૦૨૫ સુધી કાર્યરત રાખવાના રહેશે.
- (૨) રાજ્યના ગૃહ વિભાગ સાથે સંપર્કમાં રહી જરૂરી જગ્યાએ વાયરલેસ સ્ટેશનો પણ ૨૪ કલાક કાર્યરત કરવાના રહેશે. તેમજ નક્કી કરેલ સ્થળોએ વાયરલેસની સુવિધા ચાલુ રહે તેની ચકાસણી/ કાર્યવાહી નિયમીત રીતે કરવાની રહેશે.
- (૩) પૂરનિયંત્રણ એકમોમાં હોટલાઇનની સુવિધા પુરી પાડવામાં આવે છે, જે હોટલાઇન ૦૧/૦૬/૨૦૨૫ થી ૩૦/૧૧/૨૦૨૫ સુધી અવિરતપણે કામ કરે તેની ચકાસણી કરવી, જો બંધ જણાય તો તાત્કાલિક ચાલુ કરાવવાની સ્થાયી સુચના આપવી.
- (૪) જે બંધો પર સેટેલાઇટ ફોનની સુવિધા આપવામાં આવેલ છે. તે બંધો પર સેટેલાઇટ ફોનનો તાકિદના સમયે ઉપયોગ થઈ શકે તે બાબતે જરૂરી સુચનાઓ ક્ષેત્રીય અધિકારીને આપવાની રહેશે.

- (૫) પુર નિયંત્રણ એકમોમાં જરૂરી કોમ્પ્યુટર, પ્રિન્ટર વગેરે ઉપકરણો સુચારૂ રીતે કાર્ય કરે તે સુનિશ્ચિત કરવાનું રહેશે. તેમજ જરૂરી સ્ટેશનરી અને ડેટા કનેક્ટીવિટી ની ઉપલબ્ધતા રહે તે રીતે આયોજન કરવાનું રહેશે.
- (૬) જળ સંપત્તિ વિભાગ દ્વારા અગત્યના બંધો દ્વારા છોડવામાં આવતા પાણીના જથ્થા અંગેની માહિતી સંબંધિત પુર એકમના ફરજ પરના અધિકારીશ્રીઓ દ્વારા ઓન લાઇન એન્ટ્રી કરવામાં આવે તે અંગે જરૂરી કાળજી નોડલ અધિકારીશ્રીઓ, ફોકલ અધિકારીશ્રીઓ અને યોજનાઓના સંબંધિત અધિક્ષક ઇજનેરશ્રીઓ દ્વારા સમયાંતરે ચકાસણી કરવાની રહેશે.
- (૭) વેબસાઇટ wrd.guj.nic.in/dam માં તા. ૦૧-૦૪-૨૦૨૫ સુધીમાં સંબંધિત અધિકારીશ્રીઓએ માહિતી જોઇ શકે તે માટે જરૂરી કાર્યવાહી (login ID, તાલીમ ઇત્યાદી) પુર નિયંત્રણ એકમ ગાંધીનગરએ, NIC ના પરામર્શમાં રહી કરવાની રહેશે.
- (૮) વેબસાઇટ wrd.guj.nic.in/dam પર રૂલ લેવલ અંગેની માહિતી મધ્યસ્થ આલેખન તંત્ર દ્વારા નિભાવવાની રહેશે.
- (૯) વધુમાં ૨૦૨૫ ચોમાસામાં સિંચાઈ યોજનાઓને જ્યારે પણ પૂરથી નુકશાન થાય તો તે નુકશાનની વિગતો નુકશાન થયાના ચોવીસ કલાકની અંદર નિયત નમૂનામાં તૈયાર કરી સંબંધિત અધીક્ષક ઇજનેરશ્રીએ, સંબંધિત મુખ્ય ઇજનેર અને અધિક સચિવશ્રીને તથા ગાંધીનગર ખાતે મધ્યસ્થ પૂર નિયંત્રણ એકમને પહોંચી જાય તે રીતે અચૂક મોકલી આપવી વધુમાં થયેલ નુકસાન વેબસાઇટ wrd.guj.nic.in/dam પર SDRF ૨૦૧૫ની ગાઈડલાઈન અનુસાર નુકસાનની વિગતો તેમજ અંદાજિત રકમની એન્ટ્રી કરવાની રહેશે. તેમજ નુકશાનની વીગતો SDRFની ગાઈડલાઈન મુજબ મળવાપાત્ર તાત્કાલીક સહાય વગેરેની માહિતી કેંદ્રીય પુર નિયંત્રણ એકમ તેમજ સંબંધિત મુ.ઈ અને અ.સ.શ્રી ને મોકલી આપવાની રહેશે. વધુમાં અસ્કયામતની માહિતીની નિભાવણી અને તેને નિયમિત અધ્યતન કરવાથી આપત્તિથી થયેલ નુકશાનના આંકલનના અહેવાલમાં એકસુત્રતા જળવાય અને વહિવટી સરળતા રહે.
- (૧૦) Flood Prone Area Map દરેક ફોકલ અધિકારીશ્રીએ નિભાવવના રહેશે તેમજ નક્શાઓ (બેઝિન/યોજના માટેના) wrd.guj.nic.in/dam વેબસાઇટ પર તેની ચકાસણી કરી જરૂરી સુધારા માર્ચ-૩૧ પહેલા મધ્યસ્થ પૂર નિયંત્રણ એકમને જણાવવાના રહેશે.

(એસ. જી. પંડ્યા)

ખાસ ફરજ પરના અધિકારી (સિં.યો.)

નર્મદા જળ સંપત્તિ પાણી પુરવઠા

અને કલ્પસર વિભાગ

ચોમાસુ-૨૦૨૫ પરિપત્ર-૨

પૂરની પરિસ્થિતિમાં પૂર નિયંત્રણ કામો,  
દરિયાઈ ધોવાણ અટકાવવાના કામો,  
ડ્રેનેજના કામો તથા સિંચાઈ બાંધકામો જેવા  
કે મોટી, મધ્યમ અને નાની સિંચાઈ  
યોજનાઓ વિગેરેની સલામતીના પગલાં  
અંગે

નર્મદા, જળ સંપત્તિ, પાણી પુરવઠા અને કલ્પસર વિભાગ, ગુજરાત સરકાર, સચિવાલય,  
ગાંધીનગર

પરિપત્ર નં. ૨: એફડબલ્યુએ/૨૦૨૦/૧૧૨૭/જ-૧

તારીખ: ૨૬-૧૨-૨૦૨૪

વિષય: સને ૨૦૨૫ ચોમાસા અગાઉ પૂર અંગેની સાવચેતીના પગલા લેવા અંગે નિરીક્ષણની  
કામગીરી બાબત

આમુખ:

પ્રતિ વર્ષે પૂરની પરિસ્થિતિમાં પૂર નિયંત્રણ કામો, દરિયાઈ ધોવાણ અટકાવવાના કામો,  
ડ્રેનેજના કામો તથા સિંચાઈ બાંધકામો જેવા કે મોટી, મધ્યમ અને નાની સિંચાઈ યોજનાઓ  
વિગેરેની સલામતીના પગલાં સમયસર લેવાના રહે છે. જે અંગે નીચે મુજબ કાર્યવાહી થવા નક્કી  
કરવામાં આવેલ છે.

સુચના:

- (૧) સરકારશ્રીના સ્થાયી હુકમોનુસાર રાજ્યની મોટી, મધ્યમ કે નાની સિંચાઈ યોજનાઓ, પૂર  
નિયંત્રણ યોજનાઓ, કાંસ યોજનાઓ, દરિયાઈ ધોવાણ અટકાવવાના કામોનું ચોમાસા પહેલાં  
નિરીક્ષણ કરી ચેકલીસ્ટમાં વિગતો ભરી સક્ષમ કક્ષાએ રજુ કરવી. ભારે વરસાદ કે પૂરથી  
કામોને નુકશાન ન થાય તે માટે મરામત કરાવી/કરી લેવી જરૂરી છે. આ હુકમો અન્વયે  
ચોમાસા પહેલા નિરીક્ષણના મોકલાવાના પ્રમાણપત્રો મે માસના અંત પહેલા સરકારશ્રીમાં  
અચૂક સાદર કરવાના રહેશે. આ નિરીક્ષણ દરમિયાન આવરી લેવાયેલ તમામ મુદ્દાઓ અને  
તેની સ્પષ્ટતા નોંધ સામેલ કરવી.
- (૨) દરેક યોજનાના સ્થળ સુધી પહોંચવાનો એપ્રોચ રોડ તૈયાર હોવો જરૂરી છે. ક્ષેત્રીય  
અધિકારીશ્રી દ્વારા આગામી ચોમાસા પહેલાની ચકાસણી કરી ચકાસણી કર્યા તારીખ સાથેનો  
જરૂરી અહેવાલ રજુ કરવો.

- (૩) સિંચાઈ બંધોમાં આવતા પૂરના પાણીના નિયંત્રણ માટે છલતી ઉપરના દરવાજાની કામગીરીની ચકાસણી ચોમાસા અગાઉ તથા ચોમાસા દરમિયાન સમયાંતરે કરાવી/કરી લેવાની રહેશે.
- (૪) ભારે વરસાદ અને પૂર વખતે અગત્યના સંદેશાઓની આપ-લે માટે વપરાતા સંદેશા વ્યવહારના સાધનો કાર્યાન્વિત રહે તેની ખાતરી કરી લેવાની રહેશે જેથી કટોકટીના સમયે સંદેશા વ્યવહાર ખોરંભે ન પડે.
- (૫) સિંચાઈના કામો ઉપર સલામતિના ભાગ રૂપે ડીઝાસ્ટર મેનેજમેન્ટ-૨૦૨૫માં દર્શાવ્યા મુજબનો માલસામાન રાખવો જરૂરી છે. આ અંગે પૂર્વ તૈયારી કરાવી લેવાની રહેશે.
- (૬) સિંચાઈના કામો ઉપર સલામતિના પ્રશ્ન અંગે જો તાંત્રિક માર્ગદર્શનની જરૂર પડે તો સંબંધિત મુખ્ય ઈજનેર અને અધિક સચિવશ્રી, બંધ સુરક્ષા તંત્ર, ગુજરાત ઈજનેરી સંશોધન સંસ્થા, વડોદરા અને મધ્યસ્થ આલેખન તંત્ર, ગાંધીનગરના સંપર્કમાં રહી કાર્યવાહી કરવાની રહેશે.
- (૭) પૂર અથવા ભારે વરસાદના સમયે સલામતી માટે જરૂરી મશીનરી મેળવવા અધીક્ષક ઈજનેરશ્રી સિંચાઈ યાંત્રિક વર્તુળ નં. ૧, વડોદરા અને અધિક્ષક ઈજનેરશ્રી, સિંચાઈ યાંત્રિક વર્તુળ નં. ૨, અમદાવાદનો સંપર્ક સાધી કામગીરી ઝડપી થાય તેમ કાર્યવાહી કરવાની રહેશે તેમજ આ અંગે અગાઉથી આયોજન પુર્ણ કરી તથા તેની જાણ દરેકને યાંત્રિક વર્તુળો મારફત કરવાની રહેશે.
- (૮) અનુભવોના આધારે દરેક વિભાગીય કચેરીઓએ મશીનરી, વિવિધ સેવાઓ તથા તાત્કાલીક મરામત માટે જરૂરી આઈટમો, મટીરીયલ તથા કામગીરીના વાર્ષિક / અર્ધ વાર્ષિક ભાવો યુનિટ રેટ થકી અગ્રતાના ધોરણે મંગાવી મંજૂર કરી રાખવાના રહેશે.
- (૯) મહત્વની યોજનાઓના Hourly Reservoir Data ની વિગતો નિયમિત ધોરણે તેમજ Heavy Rainfall તબક્કે પણ ક્ષેત્રિય કચેરી દ્વારા NIC ના પોર્ટલ પર અપલોડ કરવાની રહેશે. (અમલકર્તા: તમામ ક્ષેત્રીય પુર નિયંત્રણ એકમ)
- (૧૦) ભારે વરસાદ દરમિયાન અને તાકીદની પરિસ્થિતિએ પ્રિ-મોનિટરિંગ ઇન્પેક્શન રીપોર્ટ ઓનલાઇન જોવા માટેની વ્યવસ્થા (અમલકર્તા: ગાંધીનગર પૂર નિયંત્રણ એકમ) તથા તેના ઉપયોગ માટે તમામ ક્ષેત્રીય પુર નિયંત્રણ એકમ તથા સંબંધિત ફોકલ ઓફિસર અને નોડલ ઓફિસર તેમના યુઝર આઇ.ડી. કેન્દ્રીય પુર નિયંત્રણ એકમને તા. ૧૦/૦૫/૨૦૨૫ પહેલા મોકલી આપવાના રહેશે. (અમલકર્તા: તમામ ક્ષેત્રીય પુર નિયંત્રણ એકમ)
- (૧૧) ક્ષેત્રીય પુર નિયંત્રણ એકમ ખાતે જે-તે શીફ્ટ માટે નોડલ ઓફિસરના હુકમો ક્ષેત્રિય સ્તરેથી લગત વર્તુળ કચેરી દ્વારા કરવાના રહેશે. જેથી ગાંધીનગર ખાતેના પૂર નિયંત્રણ એકમ ખાતેથી જે-તે શીફ્ટ ઇન્ચાર્જ, આવશ્યક વિગત મેળવવા માટે સરળતાથી સંપર્ક કરીને વિગતો મેળવી શકે. (અમલકર્તા: તમામ ક્ષેત્રીય પુર નિયંત્રણ એકમ)

- (૧૨) પૂરના સમયે કામની સલામતી અને પૂર ચેતવણીની વ્યવસ્થા અંગે કરવાની થતી વિવિધ કામગીરીનું આયોજન કરી જુદી જુદી કક્ષાએ જવાબદારી નિયત કરવી અને જરૂર પડે, જિલ્લા કલેક્ટરશ્રીના/તેમજ અન્ય લગતના સંપર્કમાં રહી જરૂરી પગલાં લેવાના રહેશે.
- (૧૩) કોઈપણ યોજનાને કે સંલગ્ન વિસ્તારને પૂરથી નુકશાન થવાના અથવા થયાના સમાચાર દૈનિક પત્ર/ટેલિવિઝનમાં આવે ત્યારે અધિક્ષક ઇજનેરશ્રીએ ખરેખર પરિસ્થિતિનો અભ્યાસ કરી જરૂરી સ્પષ્ટીકરણ પ્રેસ નોંધ દ્વારા બહાર પાડવું તથા તેની જાણ સંબંધિત મુખ્ય ઇજનેરશ્રી અને અધિક સચિવશ્રી તેમજ ગાંધીનગર ખાતેના ફ્લડ કંટ્રોલ સેલને કરવાની રહેશે.
- (૧૪) રાજ્ય સરકાર તરફથી દરેક વર્ષે ચોમાસાની શરૂઆતમાં ડીઝાસ્ટર મેનેજમેન્ટ પ્લાન બહાર પાડવામાં આવે છે. જેમાં પૂર ચેતવણી અને પૂર સલામતી અંગે લેવાના જરૂરી પગલાં અંગે વિગતવાર સુચનાઓ આપવામાં આવતી હોય છે. ક્ષેત્રીય અધિકારીશ્રીઓએ આ સુચનાઓને ચુસ્તપણે અમલ કરવાનો રહેશે.
- (૧૫) દરવાજાવાળા સિંચાઈના બંધોમાંથી છોડવામાં આવનાર પૂરનાં પાણી તેમજ દરવાજા વગરના સિંચાઈના બંધોમાંથી છલતી ઉપરથી પસાર થનાર પૂરના પાણીની જાણ જે તે મહેસુલી તેમજ પોલીસ અધિકારીશ્રીઓ તથા અન્ય સંબંધિત અધિકારીશ્રીઓને અગાઉથી અવશ્ય કરવી. જેથી તકેદારીના પગલાં તેઓ મારફતે સમયસર લઈ શકાય. આ અંગેની માહિતી [wrd.guj.nic.in/wms](http://wrd.guj.nic.in/wms) માં સંબંધિત પુરનિયંત્રણ એકમ/યોજનાના અધિકારી દ્વારા સમયસર એન્ટ્રી કરવાની રહેશે. દરવાજાના તેમજ દરવાજા વગરના બંધોમાંથી છોડવામાં આવેલ/પસાર થયેલા પૂરના પાણીનો સમય અને પ્રવાહ તથા તેની મહેસુલી અને પોલીસ અધિકારીશ્રીઓને કરેલી જાણની સમયની વિગતોની નોંધ રજીસ્ટરમાં રાખવી અને ફ્લડ કંટ્રોલ સેલ ગાંધીનગરને પણ તેની નકલ સંકલન અર્થે મોકલી આપવાની રહેશે.
- (૧૬) ક્ષેત્રીય અધિકારીશ્રીઓ તરફથી કેંદ્રીય પુર નિયંત્રણ એકમ, ગાંધીનગરને સિંચાઈના બંધોમાંથી છોડવામાં આવેલ પૂરના પ્રવાહની વિગતો, જથ્થામાં (ક્યુસેક્સ) તેમજ છલતી ઉપરથી પસાર થયેલા પાણીની ઉંચાઈની વિગતો આપવાની રહેશે.
- (૧૭) રૂલ લેવલ કરતા વધારે પાણી ભરવા અંગે જળાશયમાં ઉપલબ્ધ જથ્થો, ઉપરવાસ તથા હેઠવાસની પરિસ્થિતિ અને નજીકની આગાહી વગેરે બાબતો ધ્યાને લઈ ચાલુ ચોમાસા દરમિયાન રૂલ લેવલ કરતા વધુ પાણી ભરવા યોગ્ય જણાય તો સંબંધિત મુખ્ય ઇજનેરશ્રીની પૂર્વ મંજૂરી મેળવી લઈ મંજૂર થયેલ સપાટી સુધી જળાશયમાં પાણી ભરવાની કાર્યવાહી કરવાની રહેશે.
- (૧૮) નેશનલ ડીઝાસ્ટર મેનેજમેન્ટ ઓથોરીટી (NDMA) ભારત સરકારની એનેક્સર-૧માં આવેલ સુચનાઓ ધ્યાને લઈ જરૂરી કાર્યવાહી કરવાની રહેશે.
- (૧૯) બંધોમાં સંગ્રહાયેલ જથ્થો, પાણીનાં લેવલ, છોડવામાં આવી રહેલ પાણીની વિગતો, અને વરસાદની માહિતી નીચમીત [wrd.nic.in/dam](http://wrd.nic.in/dam) પર થવા સારું ક્ષેત્રીય પુર નિયંત્રણ એકમ

અને સબંધીત યોજનાના અધીકારીશ્રીઓને આ અંગેની તાલીમ/વર્કશોપ વાલ્મી સંસ્થા મારફતે મધ્યસ્થ પુર નિયંત્રણ એકમે ૧૦/૦૫/૨૦૨૫ પહેલા પુર્ણ કરવાનો રહેશે.

(૨૦) રોસ્ટર ડયુટી સ્ટાફને જાહેર પરિવહનની સુવિધા ઉપલબ્ધ ન હોય તો તેમજ અન્ય સંજોગોમાં જરૂર જણાયે ફલડ સેલને યાંત્રિક વિભાગ દ્વારા અલાયદું વાહન ફાળવવાનું રહેશે.  
(અમલકર્તા: કેંદ્રીય પૂર નિયંત્રણ એકમ તથા યાંત્રિક વિભાગ)

(એસ. જી. પંડ્યા)

ખાસ ફરજ પરના અધિકારી (સિં.યો.)

નર્મદા જળ સંપત્તિ પાણી પુરવઠા

અને કલ્પસર વિભાગ

## ANNEXURE-I

## Important Points of Guidelines Published by NDMA to be followed by field offices

Sr. No.	Points of Guidelines															
A	To be followed in the event of dam failure/sudden release of water.															
1.	Install such scientific and technical instruments which are invented or adopted for the purpose of ensuring the safety of the dam and life and property of the people d/s. The inhabitant's d/s should be made aware of the highest flood level and evacuation plan.															
2.	Mock drill for mitigation measures be carried out from time to time to keep the staff and d/s inhabitants prepared for any eventuality.															
3.	Project authority shall ensure identification of vulnerable stretches along discharge route and ensure proper fencing to stop access to the riverbank.															
4.	Powerful siren/hooters to be installed at audible locations to give prior warning to people in the vicinity of dam site and river bank before release of water.															
5.	The danger sign board/hoardings to be erected along the vulnerable stretches carrying message of warning in order to prohibit access of people to the river bank.															
6.	The project authority complies with the norms for observance of a standard drill to be necessary taken before release/discharge of water from the reservoir.															
B.	Devising a well defined, adequate and reliable advance alarm system before release of water.															
1.	Pre warning system consisting of hooters/sirens of high capacity with distinct sound audible up to a minimum distance of one Km. installed in series upto vulnerable stretches and connected through a network of well protected cable/optical fiber using modern technology, operable from the control room of Barrage/Dam/even power house with recording mechanism in the system to minimize the human error to the extent possible, needs to be updated/incorporated.															
2.	The sirens should be capable of operation both on AC and DC supply available in the control Room to avoid malfunctioning in case of power failure, if any.															
3.	Simultaneously, a mobile van equipped with public address system essentially needs to be alerted to give prior warning along identified vulnerable stretches for evacuation of humans/animals from the river bank before release of water.															
4.	The Alarm/Siren for various emerging situations shall be blown as per the following schedule: <table><tr><th>Sr.No.</th><th>Type of Emergency</th><th>Duration</th></tr><tr><td>1</td><td>Normal dam/power house complex operation</td><td>Continuous 1 (one) minute</td></tr><tr><td>2</td><td>In case of fire</td><td>10 Sec on, 5 Sec off, 5 times</td></tr><tr><td>3</td><td>Emergency situations/flood release</td><td>20 Sec on, 5 Sec off, 5 times</td></tr><tr><td>4</td><td>Clear</td><td>Continuous on for 3 minutes only once.</td></tr></table>	Sr.No.	Type of Emergency	Duration	1	Normal dam/power house complex operation	Continuous 1 (one) minute	2	In case of fire	10 Sec on, 5 Sec off, 5 times	3	Emergency situations/flood release	20 Sec on, 5 Sec off, 5 times	4	Clear	Continuous on for 3 minutes only once.
Sr.No.	Type of Emergency	Duration														
1	Normal dam/power house complex operation	Continuous 1 (one) minute														
2	In case of fire	10 Sec on, 5 Sec off, 5 times														
3	Emergency situations/flood release	20 Sec on, 5 Sec off, 5 times														
4	Clear	Continuous on for 3 minutes only once.														
5.	For public awareness in respect of pre warning sirens/hooters and its frequency etc., the notice board highlighting pre warning system procedure should be installed at appropriate places and public in large be made aware by mock drills from time to time.															



## ચોમાસુ-૨૦૨૫ પરિપત્ર-૩

ચોમાસા અને કુદરતી આપતા દરમ્યાન  
પૂર ચેતવણીની માહિતી મહેસુલ,  
પંચાયત તથા પોલીસ વિભાગના  
અધિકારીઓને આપવા બાબત.

નર્મદા, જળ સંપત્તિ, પાણી પુરવઠા અને કલ્પસર વિભાગ, ગુજરાત સરકાર, સચિવાલય, ગાંધીનગર

પરિપત્ર નં. ૩: એફડબલ્યુએ/૨૦૨૦/૧૧૨૭/૪-૧

તારીખ: ૨૬-૧૨-૨૦૨૪

વિષય: ચોમાસા દરમ્યાન પૂર ચેતવણીની માહિતી મહેસુલ, પંચાયત તથા પોલીસ વિભાગના  
અધિકારીઓને આપવા બાબત

ચોમાસા દરમ્યાન વિભાગના જળાશયોમાંથી પાણી છોડવામાં આવે તે પહેલા પૂર ચેતવણીના ભાગ  
રૂપે તે અંગેની માહિતી મહેસુલ, પંચાયત અને પોલીસ વિભાગના સંબંધિત અધિકારીઓને આપવા અંગેની  
સ્થાયી સુચનાઓ છે.

વિભાગના ક્ષેત્રીય અધિકારીઓ દ્વારા આપવામાં આવતી આ માહિતી સંબંધિત અધિકારીશ્રીઓને  
સમયસર પહોંચે જેથી એમના દ્વારા રાહતની કામગીરી હાથ ધરી શકાય. આ અનુસંધાને સંબંધિત કચેરી દ્વારા  
પૂર અંગેની કોઈપણ માહિતી જ્યારે અન્ય કચેરીને આપવામાં આવે ત્યારે નીચે પ્રમાણે કાર્યવાહી કરવા  
વિનંતી છે.

- (ક) માહિતીનાં સંદેશા નંબર આપવો અને રજીસ્ટરમાં તે અંગેની નોંધ કરવી.
- (ખ) સંદેશો પાઠવનાર વ્યક્તિનું નામ હોદ્દો, સદર રજીસ્ટરમાં લખવા.
- (ગ) સંદેશો લેનાર કચેરીનું નામ અને લેનાર વ્યક્તિના હોદ્દા સહિત નામ અચૂક લખવું.
- (ઘ) સંદેશો પાઠવ્યાની તારીખ અને સમય અચૂક લખવા.
- (ચ) પૂર ચેતવણીના ભાગરૂપે આપવાના થતા સંદેશાઓ વિના વિલંબે આપવાના રહેશે.
- (છ) ચોમાસા/કુદરતી આપદા સમયે આપવાના થતા અગત્યનાં સંદેશાઓ ઈ-મેઈલ/ફેક્સ  
ઉપરાંત [wrd.guj.nic.in/dams](http://wrd.guj.nic.in/dams) વેબસાઈટમાંથી મોકલી શકાય તે અંગે જરૂરી કાર્યવાહી  
મધ્યસ્થ પુર નિયંત્રણ એકમ અને N.I.C ના પરામર્શ માં રહી વખતો વખત અધ્યતન  
કરવાનું રહેશે.

ઉપરોક્ત કાર્યવાહીનો ચુસ્તપણે અમલ થાય તે જોવા વિનંતી છે.

(એસ. જી. પંડ્યા)

ખાસ ફરજ પરના અધિકારી (સિં.યો.)

નર્મદા જળ સંપત્તિ પાણી પુરવઠા અને કલ્પસર વિભાગ

ચોમાસુ-૨૦૨૫ પરિપત્ર-૪

જળાશયોમાંથી પાણી છોડતાં  
જળાશયની પરિસ્થિતિથી જીલ્લા  
વહીવટી તંત્રને માહિતગાર (હાઈ  
એલર્ટ, એલર્ટ અને વોર્નિંગ) કરવા અંગે

નર્મદા, જળ સંપત્તિ, પાણી પુરવઠા અને કલ્પસર વિભાગ, ગુજરાત સરકાર, સચિવાલય, ગાંધીનગર

પરિપત્ર નં. ૩: એફડબલ્યુએ/ ૨૦૨૦/૧૧૨૭/જ-૧

તારીખ: ૨૬-૧૨-૨૦૨૪

વિષય: જળાશયોમાંથી પાણી છોડતાં જળાશયની પરિસ્થિતિથી જીલ્લા વહીવટી તંત્રને માહિતગાર  
(હાઈ એલર્ટ , એલર્ટ અને વોર્નિંગ) કરવા અંગે

આમુખ:

જે તે જળાશયમાંથી પાણી છોડવાની પરિસ્થિતિ ઉભી થાય ત્યારે પૂર નિયંત્રણ અંતર્ગત મહેસૂલ વિભાગ દ્વારા યોગ્ય કાર્યવાહી માટેનો પુરતો સમય મળે તે માટે અધિકારીશ્રીઓને તેઓની શિફ્ટ ડ્યુટી દરમિયાન નીચે મુજબની કામગીરી અચૂક કરવા અને તે અંગે રજિસ્ટરમાં નોંધ કરવા સુચના આપવામાં આવે છે:

સુચના:-

- (૧) ડેમના જળાશયમાં જ્યારે સ્ટોરેજ ૭૦ ટકાથી વધારે (Warning Stage) ભરાય ત્યારે, સ્ટોરેજના ૮૦ ટકાથી વધારે (Alert Stage) ભરાય ત્યારે તથા ૯૦ ટકાથી વધારે (High Alert Stage) ભરાય ત્યારે પ્રાદેશિક પૂર નિયંત્રણ એકમે જીલ્લા વહીવટી તંત્રને તેમજ તેને સંલગ્ન વહીવટી તંત્રને લેખિતમાં તે સમયની સ્થિતિ સહિત જાણ કરવાની રહેશે.
- (૨) ઉપરોક્ત સંદેશાઓની નોંધ પ્રાદેશિક પૂર નિયંત્રણ એકમના મેસેજ રજિસ્ટરમાં તે સમયના શિફ્ટ ઈન્ચાર્જ અધિકારીના નામ, હોદ્દા, સમય, તારીખ, સાથે વિગતે કરવાનો રહેશે સાથે સાથે આ અંગેની જાણ તે જ સમયે ગાંધીનગર સ્થિત મધ્યસ્થ પૂર નિયંત્રણ એકમને ફેક્સ/E-mail થી અચૂક કરવાની રહેશે.

ઉપર આપવામાં આવેલા સુચનાનો યોગ્યતે અમલ કરવાનો રહેશે અને આ કાર્યવાહી ઉપર જે તે પ્રાદેશિક પૂર નિયંત્રણ એકમના શિફ્ટ ઈન્ચાર્જ અધિકારીશ્રીએ યોગ્ય દેખરેખ રાખવાની રહેશે.

(એસ. જી. પંડ્યા)

ખાસ ફરજ પરના અધિકારી (સિં.યો.)

નર્મદા જળ સંપત્તિ પાણી પુરવઠા અને કલ્પસર વિભાગ

**4.0 MAINTENANCE OF FLOOD EMBANKMENTS**

- 4.1** Proper maintenance of embankments is extremely important as breaches in these can be disastrous and can cause even greater damage than the inundation by the floods from rivers where no embankments are provided. Very careful maintenance of the embankment is necessary during high waters. Frequent inspections and constant attendance by all concerned is essential particularly in case of new embankments or dangerous section of old embankments. The establishment required for proper upkeep of an embankment.

**Patrolling: -**

Patrolling should commence as soon as water comes against an embankment and should continue until water finally leaves the embankment. When the river is in floods, the embankment requires close and constant watching and unremitting supervision both by day and night by adequate trained staff.

**Wave-Wash: -**

During the heavy storms erosive wave action takes place which sometimes erodes/washes the soil on slope of earth embankment resulting into wave-wash. Short grass and small thick bushes like pilchi, lai etc. growing on the embankment is good protection against erosion and wave-wash.

**Leaks: -**

Water coming out through the body of embankment in any form such as seepage through cracks or piping action may be termed as leak. Rodents and other borrowing animals make holes, cavities and tunnels through and under an embankment. These are a source of danger as very often these causes leaks and excessive seepage and even serious breaches during flood periods.

**Breaches: -**

Failure of a section of earth embankment due to over-topping causes breach of section. Successive and heavy rains cause very often severe erosion of unprotected slopes and render the section unsafe. This may result in disastrous breaches. In case of such emergencies the top and sides of particularly weak and dangerous sections of freshly made-up earth should be protected by materials sand bags etc.

The materials required during monsoon period to meet the situation is given vide **Annexure: 4A.**

## ANNEXURE - 4-A

## (Materials Required During Monsoon Period)

Materials required during monsoon period should be provided in ample quantity as experience shows them to be necessary. Particular care should be taken that there is an adequate quantity of the required materials distributed with carefully forethought so as to be readily available everywhere, particularly at dangerous sites. The quantity of materials required depends on importance or dangerousness of the embankment line and the distances of the embankment from the nearest stations at which there can be purchased. Adequate provision should be made at the discretion of the Superintending Engineer of the Circle Office. The following scale of materials prescribed for one Circle, is an indication of the relative quantities of the different kinds of materials usually required during monsoon period.

## 1. Patrolling

(i)	Lamps Hurricane	1 For every 2 Labours. 1 For every Work Assist/Karkoon. 1 For every A.E/A.A.E./Overseer. And 20% of the Total for Spare.
(ii)	Wicks	9 Nos. per Lamp.
(iii)	Globes	1 No. spare for each Lamp.
(iv)	Burners and Caps	Spare for 1/3 No of Lamp.
(v)	Torches	1 No. for Executive Engineer. 1 No. for Dy. Executive Engineer. 1 For every A.E/A.A.E./Overseer. And 2 Nos. for Spare.
(vi)	Cells	1 Fill and Two Spare sets.
(vii)	Petromax Lamps.	At dangerous places as necessary; each lamp with 2 spare Globes, 2 Nozzles, 2 Washers, 2 Wire Gauzes, 2 Needles and 6 Mantles.(3/4 of the members should be 300 C.P. and 1/4th 200 C.P.
(viii)	Fuel for Lighting	Firewood/Fuel To be collected by labour establishment.
(ix)	Kerosene & Oil	1 Tin per hurricane Lanterns (Excluding Spare) And 2 Tins for Petromax lamp per season.
(x)	Match Boxes	One Dozen per Lamp per season.
(xi)	Spirit	1 Bottle per petromax lamp per Season
(xii)	Funnels	½ Dozen per Work Assistant / Karkoon
(xiii)	Oil Extractors/Caps	¼ Dozen per Work Assistant / Karkoon
(xiv)	Spirit Cane	1 per Petromax.

## 2. Wave – Wash

- (i) Lai fascines or any other mattress made up of split bamboos or “pilchi” or any other locally available materials. Material for providing light longitudinal Groynes sewed with compactly woven pilchi or split bamboos etc.
- (ii) Munj rope of lengths to be provided with fascines 11 Kg/Km.

## 3. Leaks

(i)	Gunny Bags	(a)	Where High Flood Depth is less than 1.80 Mt and the embankment is generally safe then 65 Bags per Kilometer.
		(b)	Where High Flood Depth is greater than 1.80Mt. or the embankment is known to give trouble of leaks then 130 Bags per Kilometer.
(ii)	Stakes	65 to 130 Stakes per Kilometer.	
(iii)	Baskets	1 Basket of Toot per labour or 1 Basket of lai per Labour. And One Spare.	
(iv)	Sutli	450 gms. Per 100 Bags.	
(v)	Needles	½ Dozen with each Work Assistant.	
(vi)	Sand	Collection of 1.80 to 3.60 Cu.Mt.Per every Kilometer for Dangerous Lengths.	

## 4. Breaches

Provision for materials required should be made for one or more small breach length each 76 Mt. long depending upon the embankment.

Materials for protecting ends of one breach and constructing one 76 m. long, 4 rows are as under

(i)	Big stakes or Sal Ballies.	Every 1.50 Mt. apart with 100% spare.
(ii)	Split Sal Ballies or Bamboos.	For Horizontal bracing of Vertical ballies - 3.0 Mt. long each for the entire length.
(iii)	Split Sal Ballies or Bamboos	For Cross bracing of vertical ballies – 3.0 Mt. long One for each vertical ballies.
(iv)	Mattresses of split bamboos or “Pilchi” or other locally available material.	For sufficient length.
(v)	Brushwood of local material	For sufficient length.
(vi)	Stakes	0.45 Mt. center long each row of frame.
(vii)	Munj Rope	Enough quantity

(viii)	Coir Rope	Enough quantity
(ix)	Gunny Bags	2500 Nos. for every A.E/A.A.E./Overseer.
(x)	Sutli	450 gms. Per 100 Nos. Bags.
(xi)	Needles	1 No. per 100 Nos. Bags.
(xii)	Baskets	500 Nos. per Ordinary Sub Division, and 1000 Nos. for Sub Divisions with dangerous Embankments.

## 5.0 WIRELESS STATIONS

**5.1** The flood warning arrangements consists of collection of rainfall, gauge, discharge and other hydro meteorological data through Wireless Station, located in the river basin, by the Executive Engineer, (C.W.C), Tapi Division, Surat & Executive Engineer (C.W.C) Mahi Division, Gandhinagar, Appropriate Authorities (Focal Officers). Based on these data, these authorities will formulate the flood forecast and prepare “Flood Warning” and communicate the same to the concerned officers of Narmada, Water Resources, Water Supply and Kalpasar Department, Revenue and Police Departments of the State for taking necessary precautionary measures in respect of alerting and evacuating the people of the area likely to be affected if required. The areas and villages affected by the various basins are shown in the annexures of respective river basins, by the Executive Engineer, Mahi and Tapi Divisions, (C.W.C) and the State Government for collecting gauge and storm data etc.

**5.2** The basin wise wireless stations mentioned below will be established by the C.W.C and State during the monsoon.

**TABLE - (5.2)**

Sr. No.	Basin/District	No. of Wireless Stations to be Established			
		By C.W.C		By State	Total
		Out of State	Within State	Within State	
1	2	3	4	5	6
1.	Damanganga Basin	7	3	2	12
2.	Tapi Basin	36	9	13	58
3.	Narmada Basin	13	4	10	27
4.	Mahi Basin	6	5	7	18
5.	Sabarmati Basin	1	12	28	41
6.	Banas Basin	3	6	3	12
7.	Vishwamitri & Deo Basin	-	-	13	13
8.	Saraswati Basin	-	-	3	3
9.	Valsad District	-	-	1	1
10.	Navsari District	-	-	3	3
11.	Tapi District	-	-	3	3
12.	Surat District	-	-	10	10
13.	Bharuch District	-	-	2	2
14.	Panchmahals District	-	-	3	3
15.	Dahod District	-	-	9	9
16.	Rajkot District	-	-	30	30
17.	Morbi District	-	-	11	11
18.	Jamnagar District	-	-	23	23
19.	Dev Bhumi Dwarka	-	-	12	12



Sr. No.	Basin/District	No. of Wireless Stations to be Established			
		By C.W.C		By State	Total
		Out of State	Within State	Within State	
1	2	3	4	5	6
20.	Surendranagar District	-	-	11	11
21.	Bhavnagar District	-	-	17	17
22.	Amreli District.	-	-	12	12
23.	Botad District	-	-	10	10
24.	Junagadh District	-	-	16	16
25.	Gir Somnath District	-	-	8	8
26.	Porbandar District	-	-	9	9
27.	Kachchh District	-	-	20	20
28.	Mahisagar Dist.		-	1	1
29.	Ahmedabad City	-	-	1	1
30.	Panchayat Circles.	-	-	13	13
	Total	66	39	304	409

### 5.3 List of Wireless stations to be installed during monsoon by State Government

Sr. No.	Name of Basin/District	Name of wireless Station		Name of wireless Station	
1	Damanganga Basin	Madhuban (Dam Site)	(DPC)		
		Madhuban Colony	(DPC)		
2.	Tapi Basin	Ukai	(UCC)	Chopadvav	(UCC)
		Vyara Ver - II	(UCC)	Kakdi Amba	(UCC)
		Ukai Dam Site	(UCC)	Rumkitalav	(WRI)
		Lakhigam	(UCC)	Borda	(WRI)
		Kukarmunda	(Revenue)	Uchchhal	(Revenue)
		Naranpur	(WRI)	Jamkhadi	(Revenue)
		Nizar	(Revenue)		
3.	Narmada Basin	Bodeli (Dn.Office)	(VIC)	Zoz	(VIC)
		Karjan	(VIC)	Sukhi (Dam Site)	(VIC)
		Dholi	(VIC)	Wadhwana	(VIC)
		Fulwadi	(VIC)	Vadoth	(VIC)
		Ghantoli	(VIC)		
		Rami (Dam Site)	(VIC)		
4.	Mahi Basin	Nadiad	(MIC)	Diwada Colony	(PPC)
		Kadana	(PPC) HR Gate SSSC	Sant Road Weir.	(PPC)
		Panam	(PPC)	Additional Spill Way Kadana	(PPC)

Sr. No.	Name of Basin/District	Name of wireless Station		Name of wireless Station	
		Wanakbori	(MIC)		
5.	Sabarmati Basin	Himmatnagar	(HIPC-S.K.)	Badoli	(HIPC-S.K.)
		Hathmati	(HIPC-S.K.)	Modasa	(HIPC-S.K.)
		Meshwo	(HIPC-S.K.)	Idargadh (Repeater)	(HIPC-S.K.)
		Mazam	(HIPC-S.K.)	Ahmedabad	(AIPC-A)
		Harnav.II	(HIPC-S.K.)	Dharoi	(SSC-2-MEH)
		Guhai	(HIPC-S.K.)	Karol	(HIPC-S.K.)
		Waidy	(HIPC-S.K.)	Dakor Rd. Brdg.	(MIC)
		Watrak	(HIPC-S.K.)	Kathlal Rd. Brdg.	(MIC)
		Mahudi	(HIPC-Meh)	Wasna Barrage	(AIPC-A)
		Deradungari	(HIPC-SK)	Ratanpur Bridge	(CWC-Kh)
		Meghraj	(HIPC-S.K.)	Kheda Road Bridge.	(CWC-Kh)
		Kherva	(SSC-2-MEH)	Lank	(HIPC-S.K.)
		Javanpura	(HIPC-S.K.)	Gorathiya Mota Chekhala	(AIPC-A)
		Khedva	(HIPC-S.K.)	Varansi	(HIPC-S.K.)
6.	Banas Basin	Dantiwada	(SSC 2)		
		Bhakodar-Sipu	(SSC 2)		
		Bhilda	(SSC 2)		
7.	Vishwamitri & Deo Basin	Vadodara	(VIC Office)	Pilol	(VIC)
		Vadodara (Muni.Corpn.)	(VMC)	Shivrajpur	(VIC)
		Ajwa Tank	(VMC)	Deo Dam Site	(VIC)
		Pratap pura	(VMC)	Rameshra Colony	(VIC)
		Ghansarvav	(VIC)	Bhaniara	(VIC)
		Dhanora Tank	(VIC)	Pavagadh Repeater	(VIC)
		Halol	(VIC)		
8.	Saraswati Basin	Palanpur	(SSC 2)	Saraswati Barrage	(SSC 2)
		Mukteshwar	(SSC 2)		
9.	Valsad Dist.	Valsad	(DPC)		
10.	Navsari Dist.	Kelia	(UCC)	Khergam	(UCC)
		Jhuj	(UCC)		
11.	Tapi Dist.	Doswada	(UCC)	Sonagadh flood repeater	(UCC)
		Valod	(UCC)		
12.	Surat Dist.	Surat	(SIC)	Kosamba	(SIC)
		Anaval	(UCC)	Bardoli	(SIC)
		Tadkeshwar	(SIC)	Mahuva	(SIC)
		Kathor	(SIC)	Kakarapar	(SIC)
		Amali dam-ver	(UCC)		

Sr. No.	Name of Basin/District	Name of wireless Station		Name of wireless Station	
		Umara Gam (Ambica River), Mahuva			
13.	Bharuch Dist.	Baldeva	(VIC)		
		Pigut	(VIC)		
14.	Panchamahals Dist.	Godhra	(PPC)	Karad	(PPC)
		Hadaf	(PPC)		
15.	Dahod District	Machchhanla	(PPC)	Umaria	(PPC)
		Edalwada	(PPC)	Wankleshwar Bhey	(PPC)
		Patadungri	(PPC)	Bandibar	(PPC)
		Kali - II	(PPC)	Repeater Bariya	
		Kabutari	(PPC)		
16.	Rajkot Dist.	Rajkot	(RIC)	Vachhapari	(RIC)
		Nyari – I	(RMC)	Lalpari	(RIC)
		Nyari – II	(RIC)	Ishwaria	(RIC)
		Bhadar	(RIC)	Karmal	(RIC)
		Dhari	(RIC)	Veri	(RIC)
		Chhapparwadi – II	(RIC)	Motisar	(RIC)
		Kabir-Sarovar	(RIC)	Dondi	(RIC)
		Phophal	(RIC)	Survo	(RIC)
		Aji-III	(RIC)	Khodapipar	(RIC)
		Phadangbeti	(RIC)	Bhadar - II	(RIC)
		Moj	(RIC)	Sodvadar	(RIC)
		Venu-II	(RIC)	Karnuki	(RIC)
		Aji – I	(RIC)	Ghelo Somnath	(RIC)
		Aji-II	(RIC)	Malgadh	(RIC)
		Gondali	(RIC)	Sankroli	(RIC)
17.	Morbi Dist	Machhu – I	(RIC)	Brahmani	(RIC)
		Machhu – II	(RIC)	Brahamani-II	(RIC)
		Machhu-III	(RIC)	Ghodadharoi	(RIC)
		Demi – I	(RIC)	Bangawadi	(RIC)
		Demi – II	(RIC)	Demi – III	(RIC)
		Flood Control(Morbi)	(RIC)		
18.	Jamnagar Dist	Jamnagar (Jl. Dn.)	(RIPC)	Ranjit – Sagar	(JMC)
		Sasoi	(RIPC)	Dia Minsar	(RIPC)
		Fulzar – I	(RIPC)	Und – I	(RIPC)
		Fulzar – II	(RIPC)	Und – II	(RIPC)
		Sapada	(RIPC)	Kankavati	(RIPC)
		Puna	(RIPC)	Wadisang	(RIPC)

Sr. No.	Name of Basin/District	Name of wireless Station		Name of wireless Station	
		Vijarkhi	(RIPC)	Aji-IV	(RIPC)
		Rupavati	(RIPC)	Und-III	(RIPC)
		Fulzer (K.B)	(RIPC)	Ruparel	(RIPC)
		Phophal-II	(RIPC)	Umiyasagar	(RIPC)
		Rangamati	(RIPC)	Sasoi-II	(RIPC)
		Wagadiya	(RIPC)		
19.	Dev Bhumi Dwarka Dist	Vartu – I	(SIPC)	Ghee	(SIPC)
		Vartu – II	(SIPC)	Sani	(SIPC)
		Shedhabhadthari	(SIPC)	Sonmati	(SIPC)
		Sindhani	(SIPC)	Minsar V	(SIPC)
		Kabarka	(SIPC)	Verdi – I	(SIPC)
		Verdi – II	(SIPC)		
		Gadhki	(SIPC)		
20.	Surendranagar Dist.	Wadhwan Bhogavo – I	(RIC)	Vansal	(RIC)
		Wadhwan Bhogavo-II	(RIC)	Morshal	(RIC)
		Falku	(RIC)	Limdi Bhogavo	(RIC)
		Triveni Thanga	(RIC)	Saburi	(RIC)
		Limdi Bhogavo-II	(RIC)	Nimbhani	(RIC)
		Flood Control	(RIC)		
21.	Bhavnagar Dist.	Bhavnagar	(BIPC)	Ranghola	(BIPC)
		Rajawal	(BIPC)	Jaspar-Mandva	(BIPC)
		Bagad	(BIPC)	Kharo	(BIPC)
		Shetrunji	(BIPC)	Palitana	(BIPC)
		Shetrunji Fringe	(BIPC)	Hanol	(BIPC)
		Rojki	(BIPC)	Pingali	(BIPC)
		Malan	(BIPC)	Hastagiri Repeater	(BIPC)
		Lakhanka	(BIPC)	Mahuva	(BIPC)
		Hamirpura	(BIPC)		
22.	Amreli Dist.	Amreli (A.I.S. Dn.)	(BIPC)	Vadia	(BIPC)
		Khodiar--	(BIPC)	Thebi	(BIPC)
		Munjiasar	(BIPC)	Surajwadi	(BIPC)
		Dhatarwadi - I	(BIPC)	Vadi	(BIPC)
		Dhatarwadi - II	(BIPC)	Ghelo-I	(BIPC)
		Shell-Dedumal	(BIPC)		
		Raidy	(BIPC)		
23.	Botad	Goma	(BIPC)	Limbali	(BIPC)
		Malpara	(BIPC)	Botad	(BIPC)
		Kalubhar	(BIPC)		

Sr. No.	Name of Basin/District	Name of wireless Station		Name of wireless Station	
		Bhimdad	(BIPC)		
		Kaniyad	(BIPC)		
		Khambhada	(BIPC)		
		Utavali (Gunda)	(BIPC)		
		Sukhbhadar	(BIPC)		
24.	Junagadh Dist.	Hasanapur	(RIPC)	Disaster Control	
		Madhuvanti	(RIPC)	Junagadh Ir. Dn.	(RIPC)
		Ambajal	(RIPC)	Jhanjheshri	(RIPC)
		Uben	(RIPC)	Drafad	(RIPC)
		Vrajami	(RIPC)	Girnar Repeater	(RIPC)
		Bantva-Kharo	(RIPC)	Ozat-II	(RIPC)
		Ozat-Weir Sahpur	(RIPC)	Mota Gujaraia	(RIPC)
		Ozat Weir ( Vanthli)	(RIPC)	Sabali	(RIPC)
25.	Gir Somnath	Raval	(SIPC)	Machhundri	(SIPC)
		Hiran – I	(SIPC)	Hiran – II	(SIPC)
		Singoda	(SIPC)	Una Irr.Sub Dn.	(SIPC)
		Kodinar Irri.Sub.Dn.	(SIPC)	Gir Somnath Irr. Dn.	(SIPC)
26.	Porbandar Dist.	Phodarness	(SIPC)	Amipur	(SIPC)
		Khambhala	(SIPC)	Salinity Control Dn., Potrbandar	(SIPC)
		Sorthi	(SIPC)	Advana	(SIPC)
		Kalindri	(SIPC)	Saran	(SIPC)
		Rana Khirasra	(SIPC)		
27.	Kachchh Dist.	Bhuj	(KIC)	Nara	(KIC)
		Kalaghogha	(KIC)	Rudramata	(KIC)
		Niruna	(KIC)	Kasvati	(KIC)
		Godhatad	(KIC)	Tappar	(KIC)
		Suvi	(KIC)	Bhukhi	(KIC)
		Gajod	(KIC)	Berachia	(KIC)
		Kaila	(KIC)	Don	(KIC)
		Sanandro	(KIC)	Mathal	(KIC)
		Fategadh	(KIC)	Jangadia	(KIC)
		Kankavati	(KIC)	Mitti	(KIC)
28.	Mahisagar Dist.	Bhadar	(PPC)		
29.	Ahmedabad City	Sanskar Kendra, Paldi	(AMC)		

**5.4** In case of flood emergency the facilities of Police Wireless /Home Guard Network shall also be utilised.

**5.5** As a part of Flood Warning Arrangement, the Narmada, Water Resources , Water Supply and Kalpasar Department, Sachivalaya, Gandhinagar has decided to install the

V.H.F. sets on various minor irrigation projects coming under the following Panchayat Circles. The details of Minor Irrigation projects are appended vide Table No. 5.6 and details on map vide Annexure 5.6-A.

- (A) Gandhinagar Panchayat Irrigation Circle, Gandhinagar
- (B) Rajkot Panchayat Irrigation Circle, Rajkot
- (C) Vadodara Panchayat Irrigation Circle, Vadodara

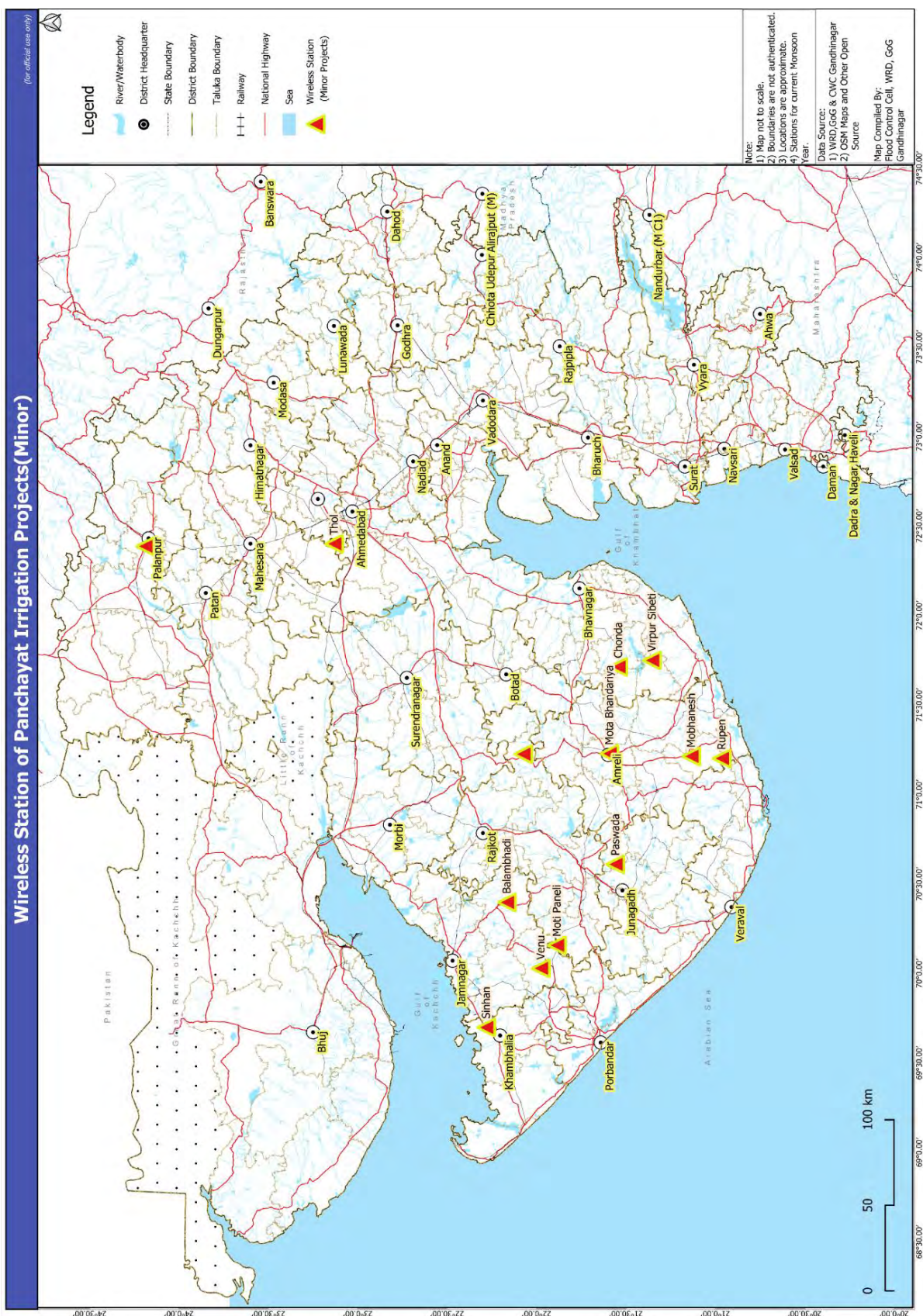
(A)	<u>S.E.GPIC G'nagar</u>	Nos.	(B)	<u>S.E. RPIC, Rajkot</u>	Nos.
1.	Gandhinagar	[ - ]	1.	Amreli	[ 2 ]
2.	Mehsana.	[ 1 ]	2.	Bhavnagar	[ 2 ]
3.	Ahmedabad.	[ - ]	3.	Botad	[ - ]
4.	Kheda.	[ - ]	4.	D.B.Dwarka	[ 1 ]
5.	Sabarkantha.	[ - ]	5.	Gir Somnath	[ 1 ]
6.	Patan	[ - ]	6.	Jamnagar.	[ 2 ]
7.	Anand	[ - ]	7.	Junagadh	[ 1 ]
8.	Banaskantha	[ 1 ]	8.	Morbi	[ - ]
9.	Aravalli	[ - ]	9.	Porbandar	[ - ]
			10.	Rajkot	[ 2 ]
			11.	Surendranagar	[ - ]
(C)	<u>S.E.VPIC Vadodara</u>	Nos.	(D)	<u>S.E. KIC, Bhuj-Kachchh</u>	Nos.
1.	Vadodara.	[ - ]	1.	Kachchh	[ - ]
2.	Bharuch	[ - ]			
3.	Surat	[ - ]			
4.	Valsad	[ - ]			
5.	Dangs.	[ - ]			
6.	Panchmahal	[ - ]			
7.	Dahod	[ - ]			
8.	Navsari	[ - ]			
9.	Narmada	[ - ]			

**5.6** Wireless system at the following important places of Minor Irrigation Projects shown in Table 5.6 are suggested by The Chief Engineer (Panchayat) and Add. Secretary Sachivalaya Gandhinagar for flood Situation and its communication to higher authorities.

**TABLE - 5.6**

Sr. No.	Name of Minor Irrigation Schemes	Taluka	District	In Charge Focal Officer
1	2	3	4	5
1.	Mobhanesh	Khambha	Amreli	S.E., R.P.I.C. Rajkot
2.	Mota Bhandariya	Amreli	Amreli	S.E., R.P.I.C. Rajkot
3.	Virpur Sibeti	Palitana	Bhavnagar	S.E., R.P.I.C. Rajkot
4.	Chonda	Palitana	Bhavnagar	S.E., R.P.I.C. Rajkot
5.	Venu	Jamjodhpur	Jamnagar	S.E., R.P.I.C. Rajkot
6.	Sinhan	Khambhalia	D.B.Dwarka	S.E., R.P.I.C. Rajkot
7.	Balambhadi	Kalavad	Jamnagar	S.E., R.P.I.C. Rajkot
8.	Paswada	Bhesan	Junagadh	S.E., R.P.I.C. Rajkot
9.	Rupen	Gir Gadhada	Gir Somnath	S.E., R.P.I.C. Rajkot
10.	Moti Paneli	Upleta	Rajkot	S.E. R.P.I.C. Rajkot
11.	Alan Sagar	Jasdan	Rajkot	S.E. R.P.I.C. Rajkot
12.	Thol	Kadi	Mehsana	S.E.G.P.I.C. Gandhinagar
13.	Kapasiya	Palanpur	Banaskantha	S.E.G.P.I.C. Gandhinagar





Annexure 5.6-A



## 6.0 DAMANGANGA BASIN:

6.1 The flood forecasting for Damanganga Basin is being looked after by Superintending Engineer, Hydrological Observation circle, Gandhinagar through his Executive Engineer, Tapi Division (C.W.C.) at Surat. He has established various wireless stations at locations upstream and downstream of Madhuban Dam to obtain the details about rainfall and discharge in the Damanganga Basin. The gauge and rainfall data are being communicated through wireless stations located at various stations on the main river as well as on tributaries.

6.2 Name of villages/dams where wireless stations are located to report rainfall and gauge discharge are as under :

### A. C.W. C's Wireless Stations

Sr No	Wireless Station	State/UT
1	Ozerkheda	Maharashtra
2	Harsul (Rainfall only)	Maharashtra
3	Mokheda (Rainfall only)	Maharashtra
4	Dhandode (Rainfall only)	Maharashtra
5	Silvassa	Union Territory
6	Solachar	Union Territory
7	Daman	Union Territory
8	Madhuban Dam Site	Gujarat State
9	Vapi	Gujarat State
10	Nani Palsan	Gujarat State

### B. State's Wireless Stations

Sr No	Wireless Station	State/UT
1	Madhuban Dam (Dam Site)	Gujarat State
2	Madhuban Dam (Colony)	Gujarat State
3	Valsad (D.P.C.)	

6.3 The list of villages affected at various levels is appended vide Annexure 6-A, Annexure 6-B. The Basin Map showing all the wireless stations, Rain gauge and River gauge stations is appended on Annexure 6-C. The warning and danger levels are fixed with respect to Pati site which is 0.3 kilometer down stream of Madhuban Dam.

**TABLE - 6.4**

Note :- Kindly Refer Flood Telephone Directory of the current year for telephone nos.

<b>Name of the Officer with Telephone Nos.</b>	<b>Observation to be made by the Officer</b>	<b>Officer to whom the messages to be sent.</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
<b>(A)</b> Executive Engineer Tapi Division (C.W.C), Surat	The inflow forecast of 50,000 Cusecs (1500 Cumecs) for MADHUBAN (Damanganga) Dam to be conveyed to the Officer in Column No. 3 at Sr. No (a) & (g).	(a) Superintending Engineer Damanganga Project Circle, Valsad (b) Collector, Valsad. (c) District Superintendent of Police, Valsad. (d) Collector, DNH, Silvassa. (e) Executive Engineer Public Works Department Daman. (f) Collector, Daman. (g) Flood Cell, Gandhinagar.
	Flood level forecast for VAPI to be conveyed to the officers at Sr. No. (a), (b), (f) & (g) in Column No. 3 when Gauge levels are about to cross Warning Level, i.e., 18.20 M. and Danger Level, i.e. 19.20 M.	
	Flood Level forecast for DAMAN to be conveyed to the officers in Column No.3 mentioned @ Sr. No. (a) (b) (d) (f) and (g) when Gauge level is about to cross Warning Level i.e., 2.60 M and Danger Level i.e., 3.40 M.	
<b>(B)</b> Superintending Engineer Damanganga Project Circle, Valsad	The Flood Level Forecast for VAPI and DAMAN to be conveyed to the officers in column No. 3 mentioned @ Sr. No.(b), (c), (d), (e), (f) and (g) when Gauge level is about to cross Warning and Danger Level.	

**6.5.** Statement showing the time lag for various stations from origin to the end of river basin as under.

Sr. No.	Name of Site	Type of Site	State/UT	Catchment Area in Sq. Kms.	Distance from Origin in Kms.	Danger Level in Meters	Time Lag in Hours
1	2	3	4	5	6	7	8
1.	Dhandore	W,R	Maha.				
2.	Harshul	W,R.	Maha.	Only Rainfall Recording			
3.	Mokheda	W,R	Maha	Stations			8.10
4.	Ozerkheda	W,G,D,R	Maha.	640	75	-	8.10
5.	Nani-Palsan	W,G,D,R	Gujarat	764	60	-	5
6.	Madhuban Dam	W,G,R,I	Gujarat	1800	83	82.40	3.4
7.	Solachar	W,G,R	UT (DNH)	1948	45	-	3.4
8.	Silvasa	W,G,R	UT (DNH)	266	108	30	2
9.	Vapi	W,G,R,F	Gujarat	2227	116	19.20	1
10.	Daman	W,G,R	UT(Daman)	2318	131	3.40	0

Note : W = Wireless  
G = Gauge

D = Discharge  
R = Rainfall

F = Flood Level Forecast  
I = Inflow Forecast

#### **6.6 Appropriate Authority (Focal Officer)**

The Superintending Engineer  
Damanganga Project Circle,  
Damanganga Bhavan,  
Valsad.

**Note :**  
Kindly refer Flood Telephone  
Directory of the current year  
for telephone nos.

**ANNEXURE - 6 (A)**

List of villages likely to be affected by floods in **Damanganga River** on the basis of Gauges & Discharge at Pati Site 0.30 Km.D/s of **Madhuban Dam**.

Sr. No.	KAPARADA TALUKA	Sr. No.	VAPI TALUKA	Sr. No.	UMARGAON TALUKA
	(1)		(2)		(3)
		<b><u>VALSAD DISTRICT</u></b>			
1.	Meghaval	1.	Lavachha	1.	Kachigam
		2.	Dungara	2.	Borigam
		3.	Chandor	3.	Mohangam
		4.	Namdha	4.	Jamburi
		5.	Kunta	5.	Achchhari
		6.	Chanod	6.	Valvada

**UNION TERRITORY of D and N. H. and Daman**

Sr. No.	DADRA, NAGAR AND HAVELI	Sr. No.	DAMAN
	(1)		(2)
		<b>NANI DAMAN</b>	
1.	Karad	1.	Nani Daman
2.	Rakholi	2.	Verkund
3.	Kudacha	3.	Kharivad
4.	Samarvarni	4.	Kudaiya Machhiwad
5.	Masat	5.	Kachigam
6.	Athal Bridge		
7.	Amla	<b>MOTI DAMAN</b>	
8.	Pati	6.	Moti Daman
9.	Chinch Pada	7.	Singa Falia
10.	Vasona	8.	Ambavad
11.	Dapada	9.	Zari
12.	Piparia	10.	Patlora
13.	Tighra		
14.	Vaghdhara		

Note: Refer Annexure 6-B for the villages likely to be affected by floods at different Water Levels.

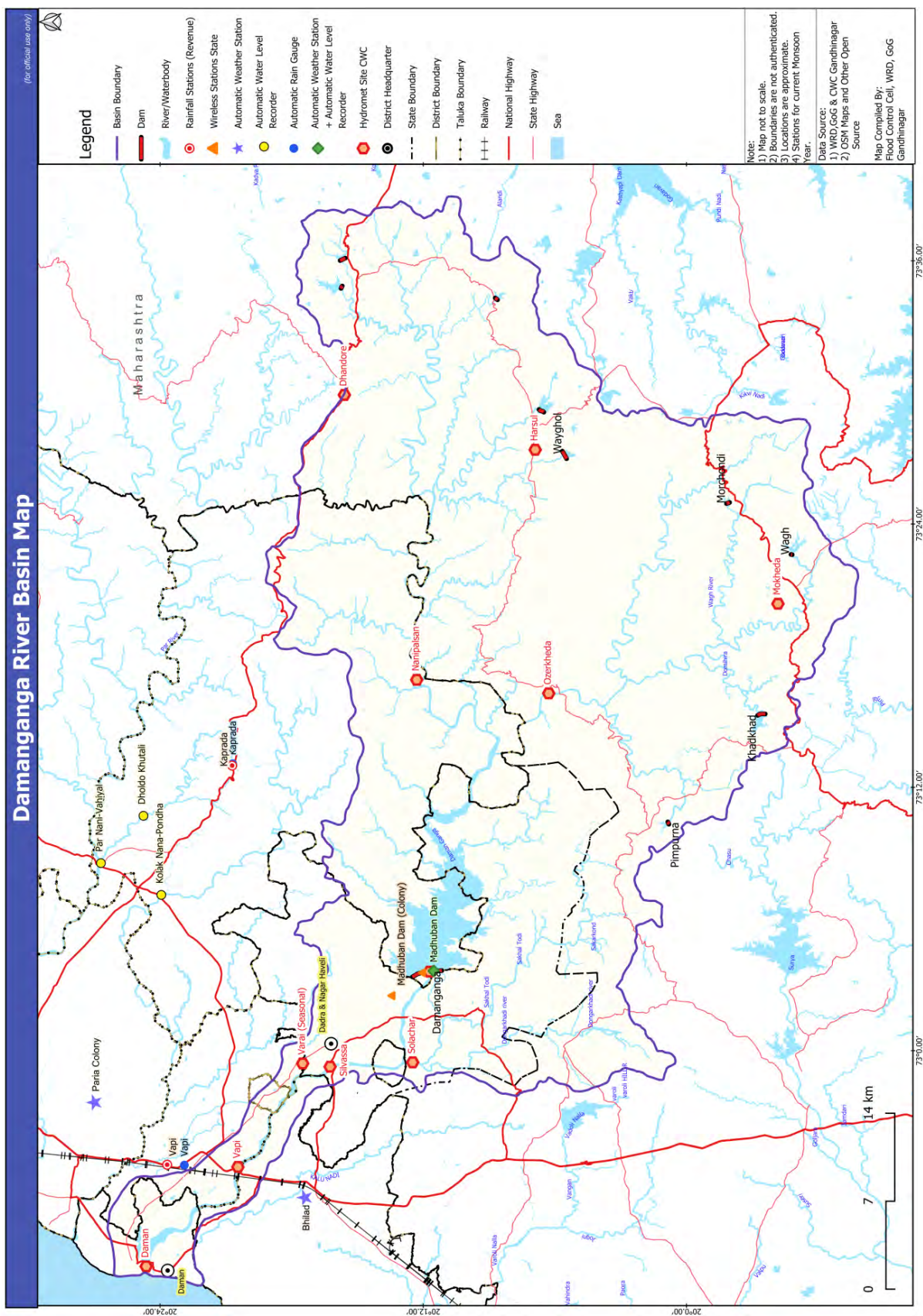
## ANNEXURE - 6 (B)

List of villages likely to be affected by floods in **Damanganga River** on the basis of Gauges & Discharge at D/s of **Madhuban Dam**.

Sr. No.	Discharge at D/S of Dam in (Cus/Cum)	Gauge Level at D/S of Dam		Name of District / UT Taluka	Signal for Village at Sr. No.		
		In Feet	In Meter		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
NOTE :-							
1	<b>WHITE SIGNALS</b>		: ALERT				
2	<b>BLUE SIGNALS</b>		: READY FOR EVACUATION				
3	<b>RED SIGNALS</b>		: IMMEDIATE EVACUATION				
(1)	250000	157.27	47.95	<b><u>Valsad</u></b>			
	—————			1. Kaparada	1	—	—
	7079.14			2. Vapi	1 to 6	—	—
				3. Umargaon	1 to 6	—	—
				<b><u>Union Territory</u></b>			
				4. Dadra & Nagar Haveli.	1 to 14	—	---
				5. Daman	1 to 10	—	—
(2)	300000	159.40	48.60	<b><u>Valsad</u></b>			
	—————			1. Kaparada	—	1	—
	8494.97			2. Vapi	—	1 to 6	—
				3. Umargaon	—	1 to 6	—
				<b><u>Union Territory</u></b>			
				4. Dadra & Nagar Haveli.	—	1 to 14	—
				5. Daman	—	1 to 10	—
(3)	350000	162.2	49.45	<b><u>Valsad</u></b>			
	—————			1. Kaparada	—	—	1
	9910.80			2. Vapi	—	—	1 to 6
				3. Umargaon	—	—	1 to 6
				<b><u>Union Territory</u></b>			
				4. Dadra & Nagar Haveli.	—	—	1 to 14
				5. Daman	—	—	1 to 10

**Note:-**Refer Annexure 6-A for the villages likely to be affected by floods at different Water Levels.

*Flood Warning Arrangements - 2025*



## Annexure 6-C

**7.0 TAPI BASIN:**

**7.1** The flood forecasting for Tapi basin is looked after by Superintending Engineer, Hydrological Observation Circle, Gandhinagar through Executive Engineer, Tapi Division (C.W.C) at Surat, who has established various wireless stations at locations upstream of Surat to obtain the details about rainfall and discharge in the river. The gauge and rainfall data are being communicated through wireless stations located on the main river as well as on tributaries.

**7.2** Name of villages/dams where Wireless Stations are located to report rainfall and gauge discharge are as under:

**A. C.W.C's / Wireless and other communication system Stations.**

Sr No	Station	State
1.	Teska	Madhya Pradesh.
2.	Dedtalai	Madhya Pradesh.
3.	Nawtha	Madhya Pradesh.
4.	Burhanpur	Madhya Pradesh.
5.	Hathnur	Maharashtra
6.	Chikhaldara	Maharashtra
7.	Lakhpuri	Maharashtra
8.	Gopalkheda	Maharashtra
9.	Kurankheda	Maharashtra
10.	Akola	Maharashtra
11.	Lohara	Maharashtra
12.	Duskheda	Maharashtra
13.	Yerli	Maharashtra
14.	Shelgaon	Maharashtra
15.	Talaswada	Maharashtra
16.	Bhusawal	Maharashtra
17.	Pimpri	Maharashtra
18.	Girna Dam	Maharashtra
19.	Saygaon	Maharashtra
20.	Wankhed	Maharashtra
21.	Dahigaon Weir	Maharashtra
22.	Narne	Maharashtra
23.	Savkheda	Maharashtra
24.	Dhupeshwar	Maharashtra
25.	Morane	Maharashtra
26.	Sirpur	Maharashtra
27.	Gidhade	Maharashtra
28.	Sindkheda	Maharashtra
29.	Balsana	Maharashtra
30.	Sarangkheda	Maharashtra
31.	Prakasha	Maharashtra
32.	Velda	Gujarat



Sr No	Station	State
33.	Chandapur (Uchhal)	Gujarat
34.	Sagbara	Gujarat
35.	Ukai	Gujarat
36.	Kakrapar	Gujarat
37.	Gavachi (Ver)	Gujarat
38.	Ghala	Gujarat
39.	Kathore	Gujarat
40.	Surat (Seasonal)	Gujarat
41.	Nandurbar	Maharashtra
42.	Nizampur	Maharashtra
43.	Khetia	Madhya Pradesh
44.	Chiklod	Maharashtra
45.	Bambrul	Maharashtra

**B. State's Wireless Stations and other communication system Stations.**

Sr No	Station	State
1.	Ukai	Gujarat
2.	Ver-II	Gujarat
3.	Ukai Dam Site	Gujarat
4.	Lakhigam	Gujarat
5.	Chopadvav	Gujarat
6.	Kakdi Amba	Gujarat
7.	Rumkitalav	Gujarat
8.	Borda	Gujarat
9.	Kukarmunda	Gujarat
10.	Naranpur	Gujarat
11.	Nizar	Gujarat
12.	Uchehhal	Gujarat
13	Jhamkhadi	Gujarat

- 7.3** The Basin Map showing all the wireless stations, Rain gauge and River gauge stations is appended vide Annexure : 7-F.
- 7.4** Ukai Reservoir is located at Ukai on River Tapi which is moderating the flood on Tapi River.
- 7.5** Due to remoteness of Ukai head works and poor reliability of the telephone system during heavy rains and floods, it may not be possible for the Superintending Engineer Ukai (Civil) Circle, Ukai to communicate the flood message to the Flood Control Cell, Gandhinagar. The Executive Engineer, Tapi Division (C.W.C) Surat shall therefore help to pass on such information to Flood Control Cell, Gandhinagar.
- 7.6** For flood control operation of Ukai Dam using forecast supplied by the Central Water Commission, the project authorities of Ukai Dam i.e. Superintending Engineer, Ukai (Civil) Circle, Ukai and Focal Officer of the Tapi Basin i.e. Superintending Engineer, Surat Irrigation Circle, Surat are advised to thoroughly refer the guidelines contained

in the newly adopted Manual on Flood Control Operation of Ukai Dam issued vide, Govt. Resolution No. - PRCH-1097-4605-(120) Part-3-K dated 4.8.2000 and part modified operation policy vide Govt. letter No.Ukai/2006(23)/Part-I-J Dtd.11.06.2008.

The Executive Engineer, Tapi Division, CWC, Surat will start issuing inflow forecast for Ukai Dam for a flood of peak discharge of 1000 cumec and above irrespective of Water Level of reservoir. 12-Hourly regular inflow forecast will be issued by him based on the hydro-meteorological data of base station Gidhade and Ukai. These forecasts will be monitored regularly and revised (if required) after 6 hours based on hydro-meteorological data of Sarangkhedha and Surat. In addition to 12-hours regular forecast and 6 hourly revised forecasts, advisory warning for expected high flood for Ukai Dam would also be issued when the reservoir level is above 100.59 m (330.00 ft.)

For issue of flood forecasts and advance warning, the CWC has now defined following three situations viz. Normal, High Alert and Emergency.

#### **7.6.1 Normal Situation.**

The flood situation is considered as Normal when:

- (i) Water Level in Ukai Reservoir is less than 102.41 m (336.00 ft.)
- (ii) (a) Average daily rainfall recorded at 0830 IST at 7(Seven) key rain gauge stations in Upper Tapi Catchment up to Hathnur is less than 65mm and  
(b) Average daily rainfall recorded at 0830IST at all 15 (fifteen) key rain gauge stations up to Ukai is less than 50mm

The flood forecast will be issued starting from June 01 to October 31 in the format shown in "Form-N" whenever inflow in to Ukai reservoir is expected more than 1000 cumec.

#### **7.6.2. High Alert Situation**

High Alert situation is implied when condition (i) and any one of the conditions (ii) (a) & (ii) (b) mentioned in 7.6.1. Are violated. In this situation, the High Alert Warning shall be issued in the format as shown in "Form-H".

#### **7.6.3 Emergency Situation**

An emergency situation is said to have been created when the Ukai Reservoir Water Level is above 102.41 m (336.00 ft) and

- (i) Combined Estimated discharged at Burhanpur and Yerli river gauging sites is above 14000 Cumecs or
- (ii) Average daily rainfall in lower Tapi between Hathnur to Ukai (8 rain gauge station) is above 65mm or
- (iii) The situation when there is failure of forecasting system.

In this situation, Emergency Situation Warning shall be issued in the format shown in "Form-E" depending upon the availability of data in Upper Tapi Basin with Forecasting Agency.

The CWC will issue these forecasts to the Superintending Engineer, Ukai (Civil) Circle, Ukai, Focal Officer i.e. Superintending Engineer, Surat Irrigation Circle, Surat and Flood Control Cell, Gandhinagar well in advance.

On receipt of the forecasts from CWC, the project authorities have to fill all information in "Form-FBRO" given in the manual to decide the releases to be made from the dam if necessary, and act accordingly.

**FORM – N**  
**CENTRAL WATER COMMISSION**  
**FORECAST FOR UKAI DAM**  
WARNING LEVEL    102.41 M  
DANGER LEVEL     105.15 M.

FORECAST NO. TU-

TIME OF ISSUE.....IST  
DATE:

1. The water level in Ukai Reservoir.....m. at.....IST on..... date.
2. It is expected that..... MCM of water is likely to reach into Ukai Reservoir in next 12 hours commencing from..... IST on.....
3. Additional information's
  - (i) Expected inflow in 0 to 6 Hrs..... MCM
  - (ii) Expected inflow in 6 to 12 Hrs..... MCM
  - (iii) Tentatively expected inflow in 12 to 24 Hrs.....MCM
  - (iv) Expected trend inflow in Ukai dam after 24 Hrs. ....Raising/Steady/Falling.

**EXECUTIVE ENGINEER**

NOTE:

1. The forecast in point No. 2) is based on present indications available at base station viz. Gidhade and with the assumption that there is not appreciable rains in intermediate catchment during the period of forecast.
2. This forecast and additional information valid for next 12 hours from the forecast time supercedes the forecast issued previously for the overlapping period, if any.

**FORM – H**  
**CENTRAL WATER COMMISSION**  
**HIGH ALERT WARNING FOR UKAI DAM**

WARNING LEVEL    102.41 M

DANGER LEVEL     105.15 M.

HIGH ALERT WARNING NO.-

TIME OF ISSUE.....IST  
DATE:

1. The water level in Ukai Dam at .....IST on.....was ..... m.
2. Average of Daily rainfall (last 24 hour) recorded at 0830 IST on date.....
  - i. Based on 7 key Raingauge stations upto Hathnur Dam.....mm
  - ii. Based on 15 key Raingauge stations upto Ukai Dam.....mm
3. Due to above rainfall low/high flood is likely to develop in Tapi basin. Ukai/other State authorities are advised to raise their guards and take action as deemed fit.
4. 12 hourly regular forecast shall be issued separately at every six hour till high alert situation is continued.

**EXECUTIVE ENGINEER**

NOTE:

- I. This warning is to be issued only when:
  - i. Water level of Ukai reservoir is above 336.00 ft. (102.41 m)
  - ii. Average of daily rainfall at 7 key raingauge station in the upper Tapi catchment is 65 mm and above.
  - iii. Average of Daily rainfall at 15 key raingauge station upto Surat is 50 mm and above.
- II. (i) Low flood means expected combined flood at Burhanpur and Yerli < 14000 m<sup>3</sup> sec.  
 (ii) High flood means expected combined flood at Burhanpur and Yerli > 14000 m<sup>3</sup> sec.
- III. The format of this warning can be changed depending upon flood situation.

**FORM – E**  
**CENTRAL WATER COMMISSION**  
**EMERGENCY WARNING UKAI DAM**

WARNING LEVEL    102.41 M

DANGER LEVEL     105.15 M.

EMERGENCY WARNING NO.-

TIME OF ISSUE.....IST  
DATE:

1. The water level in Ukai Dam at ..... IST on..... was ..... m.
2. Approximate estimated discharge passed/likely to pass from Burhanpur/Yerli at ..... IST on..... is ..... MCM.
3. TENTATIVE INFLOW.....MCM of water is likely to reach into Ukai dam in next 36/48 hours commencing from .....IST on .....
4. Ukai Dam authorities/other state authorities are advised to take immediate action as deemed fit.
5. 12 hourly regular forecast shall be issued separately at every six hours till emergency situation continued.

**EXECUTIVE ENGINEER**

NOTE:

1. Tentative inflow as mentioned in point No. 3 may vary  $\pm 30\%$  depending upon the rainfall and other parameters of intermediate catchment.

**FORM – FBRO**  
**UKAI RESERVOIR PROJECT**  
**Proforma for Forecast based Reservoir Operation**

Date	FRL	: 345 ft.(105.15m)
Forecast No.	Capacity at FRL	: 7497 MCM
Time of Forecast	HFI	: 351 ft.(106.99m)
Reservoir level at time of forecast	Permissible Upper Limit	:
Corres. Capacity in MCM (X)	Capacity at Permissible	:
Expected trend inflow	Upper limit (Y) in MCM	:

**TABLE A: - FORECAST INFORMATION**

Sr No	Forecast Period	Duration of Forecast	Volume of inflow Forecasted	Average inflow (Col 4/Col3) *0.0981	Expected capacity after forecast period (X) + Col (4)	Expected level after forecast period	Excess capacity above permissible level Col.(6)-(Y)	Average Outflow (Col 8/Col3) X 0.0981
	hrs	hrs	MCM	Lac Cusec	MCM	Ft	MCM	Lac Cusec
1	2	3	4	5	6	7	8	9
1	0-6	6						(A)
2	0-12	12						(B)
3	12-24	12						(C)= 2*(B)
4	0-24 (2+3)	24						(D)
5	0-48	48		(P)				(Q)

**TABLE B: REAL TIME RESERVOIR PERFORMANCE**

Sr No	Time	Reservoirs Level	Capacity	Expected Reservoir level after forecast period
	hrs	m	MCM	Ft
1	2	3	4	5
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

**Reservoirs Operation:**

- In this case, the authorities downstream of the Ukai Dam should be in readiness with all the necessary arrangements made, to receive a flood up to 5.0 Lakh cusec (about 14,000 cumec) any time during the flood season, for which prior warning of 3 hours will be issued before first release of water from the dam. For subsequent release, downstream authority shall be kept informed before such release.

- |              |                                      |                               |
|--------------|--------------------------------------|-------------------------------|
| <b>(i)</b>   | <b>6.0 Lakh cusec</b>                | <b>-3 hrs. + Travel time</b>  |
|              | <b>(16,660 cumec) from Ukai Dam*</b> |                               |
| <b>(ii)</b>  | <b>8.0 Lakh cusec</b>                | <b>-6 hrs. + Travel time</b>  |
|              | <b>(22,655 cumec) from Ukai Dam*</b> |                               |
| <b>(iii)</b> | <b>10.0 Lakh cusec</b>               | <b>-9 hrs. + Travel time*</b> |

The collector, Surat has to make all necessary arrangements to make the downstream river channel clear up to danger level i.e. R.L. 9.50 m (31.16 ft) and the people may be shifted from the river banks so as not to hamper the flood routing operation from Ukai Dam for a release of 4.0 Lakh cusec about (11,300 cumec) and above.

- 7.10** Action to be taken by the Executive Engineer, Tapi Division, (C.W.C) Surat and other officers.



TABLE (7.10)

Note: - Kindly refer Flood Telephone Directory of the current year for contact nos.

Name of the Officer with Telephone Nos.	Observation to be made by the Officer	Officer to whom the messages to be sent.
(1)	(2)	(3)
(A) Executive Engineer Tapi Division (C.W.C), Surat	The Flood Level forecast of NEHRU BRIDGE, Surat shall be conveyed to the Officer in Column No. 3 at Sr.No. (a), (b), (c) and (e). The inflow forecast of 1000 Cumecs or more coming into Ukai Dam shall be conveyed to the officers in Column No. 3 at Sr. No. (a),(b), (c) & (e)	(a) Superintending Engineer, Surat Irrigation, Circle, Surat. (b) Superintending Engineer, Ukai (Civil) Circle, Ukai (c) Collector, Surat. (d) District Superintendent of Police, Surat (e) Municipal Commissioner, Surat (f) Police Commissioner, Surat (g) Port Officer, Magadalla, Port, Surat (h) O.N.G.C. (Village Bhatpur), (i) Station Director, Chief Superintendent, Control Room, Kakarpar Atomic Power Plant Vyara & Surat. (j) Executive Engineer, Tapi Division (C.W.C), Surat. (k) Executive Engineer, Surat Canal Division, Surat
(B) Superintending Engineer, Ukai (Civil) Circle, Ukai	The Officer will intimate the Out Flow of Ukai Dam to the officers as shown in Column No.3 at Sr. No. (a), (c), (e), (g), (j) & (k).	
(C) Executive Engineer, Surat Canal Dn., Surat	The officer will arrange to intimate the levels of Kakarpar to the officers as shown in Column No.3 at Sr. No. (a), (c), (e), (g), (h), (i) & (j).	

## Annexure-7-(A) Time lag along Stations

7.11 ment showing the Time lag for various stations from origin to the end of river basin is as under:

Sr. No.	Name of Site	Type of Site		Catchment Area in Sq. Kms.	Distance from Origin in Kms.	Danger Level in Meters	Time Lag in Hours
1	2	3	4	5	6	7	8
1.	Teska	WGR	M. P.	1486	74	—	—
2.	Dedtalai	WGDR	M. P.	6660	200	—	44
3.	Nawtha	GDR	M. P.	— —	—	—	—
4.	Burhanpur	WGDSQR	M. P.	8487	241	220.90	36-37
5.	Hathnur	WGR	Maha.	29430	290	214.00	32
6.	Chikhaldara	WR	Maha.	—	—	—	—
7.	Lakhpuri	WGR	Maha.	3560	—	—	—
8.	Gopalkheda	WGDSQR	Maha.	9500	—	—	45
9.	Kurankheda	GDR	Maha.	42720	605	—	—
10.	Akola	GR	Maha.	34140	615	—	—
11.	Luhara	GDR	Maha.	—	128	—	—
12.	Duskheda	GR	Maha.	775.07	43.363	234.90	—
13.	Yerli	WGDSR	Maha.	16517	223	—	37-38
14.	Shelgaon	R	Maha.	—	—	—	—
15.	Talaswada	GR	Maha.	—	—	—	—
16.	Bhusaval	WGR	Maha.	32478	306	185.32	31
17.	Pimpri	GDR	Maha.	—	—	—	—
18.	Girna Dam	WGR	Maha.	4729	110	398.069	—
19.	Saygaon	GDR	Maha.	911.93	65.106	344.123	—
20.	Vankhed	GDR	Maha.	18330.75	370	—	—
21.	Dahigaon Weir	WGDR	Maha.	8599	222	230.150	—
22.	Narne	GR	Maha.	537.395	61.214	153.140	—
23.	Savkheda	WGR	Maha.	48136	408	—	—
24.	Dhupeshwar	GDR	Maha.	—	—	—	—
25.	Morane	WGDR	Maha.	1933	95	—	22-24
26.	Sirpur	GDR	Maha.	700.74	39.39	149.000	—
27.	Gidhade	WGDR	Maha.	54750	420	—	18
28.	Sindkheda	GDR	Maha.	1080.45	88.602	156.000	—
29.	Balsana	GR	Maha.	342.73	35.44	200.350	—
30.	Sarangkheda	WGDSQR	Maha.	58400	488	—	—
31.	Prakasha	GDR	Maha.	1091	150	117	—
32.	Velda	GR	Gujarat	—	—	—	—
33.	Chandapur (Uchhal)	GR	Gujarat	412.698	36	—	—
34.	Sagbara	R	Gujarat	— —	—	—	—
35.	Ukai	WGRF	Gujarat	62225	595	105.15	8
36.	Kakrapar	GR	Gujarat	62826	624	53.66	7-8
37.	Gavachi (Ver)	GDR	Gujarat	365	40	—	—
38.	Ghala	WGDR	Gujarat	63325	640	—	—
39.	Kathore	GR	Gujarat	—	—	—	—

Sr. No.	Name of Site	Type of Site		Catchment Area in Sq. Kms.	Distance from Origin in Kms.	Danger Level in Meters	Time Lag in Hours
1	2	3	4	5	6	7	8
40.	Surat (Seasonal)	GR	Gujarat	63973	708	9.50	0
41.	Nandurbar	R	Maha.	—	—	—	—
42.	Nizampur	R	Maha.	—	—	—	—
43.	Khetia	R	M. P.	—	—	—	—
44.	Chiklod	R	Maha.	—	—	—	—
45.	Bambrul	GD	Maha.	—	—	—	—
Note :	W = Wireless		D = Discharge			F = Flood	
	G = Gauge		R = Rainfall			S = Silt	
	Q = Water Quality						

### 7.12 Appropriate Authority (Focal Officer.)

The Superintending Engineer,  
Surat Irrigation Circle,  
Near M.T.B. College  
Athwa Lines, Surat

**Note: -**  
Kindly refer Flood Telephone  
Directory of the current year for  
Telephone Nos.

**ANNEXURE - 7-(B)**

List of villages likely to be affected by floods in **Tapi River** on the basis of Gauge & Discharge at **Kakrapar Weir site**, Surat.

**SURAT DISTRICT**

<b>SR. NO.</b>	<b>CHORASI TALUKA</b>	<b>SR. NO.</b>	<b>BARDOLI TALUKA</b>	<b>SR. NO.</b>	<b>KATARAGAM TALUKA</b>	<b>SR. NO.</b>	<b>MAJURA TALUKA</b>
	<b>1</b>		<b>3</b>		<b>5</b>		<b>8</b>
1	Bhatha	1	Haripura	1	Athwa	1	Abhava
2	Bhatalai	2	Kadod	2	Dabholi	2	Althan
3	Bhatpor	3	Khravasa	3	Kataragam	3	Bamaroli
4	Bhesan	4	Miyawadi	4	Siganpore	4	Barthana vesu
5	Damka	5	Movachchi	5	Tunki	5	Bhatar
6	Ichapor	6	Nasura	6	Ved	6	Bhimpore
7	Kavas	7	Rayam			7	Bhimrad
8	Limla	8	Samthan	<b>SR. NO.</b>	<b>PUNA TALUKA</b>	8	Dumas
9	Malgama	9	Sankri			9	Gaviyar
10	Mora	10	Uchcharel		<b>6</b>	10	Khajod
11	Saniya	11	Umrakh	1.	Fulpada	11	Khatodara
12	Saroli	12	Vadhvaniya	2.	Kapodara	12	Magdhalla
13	Sunvali	13	Zarimora	3.	Karanj	13	Majura
14	Vansa			4.	Magob	14	Piplod
				5.	Nanavaracha	15	Rundh
<b>SR. NO.</b>	<b>PALSANA TALUKA</b>	<b>SR. NO.</b>	<b>ADAJAN TALUKA</b>	6.	Navagam	16	Sarasana
	<b>2</b>		<b>4</b>	7.	Puna	17	Sultanbad
1	Amalsadi	1	Adajan	8.	Sarthana	18	Umara
2	Baleshwar	2	Amroli	9.	Simada	19	Vadod
3	Bhutpor	3	Chaparabhatha	10.	Kumbariya	20	Vanta
4	Dhamdod	4	Jahangirpura			21	Vesu
5	Ena	5	Kosad	<b>SR. NO.</b>	<b>UDHNA TALUKA</b>	<b>SR. NO.</b>	<b>MANGROL TALUKA</b>
6	Gangpor	6	Motavarachaa		<b>7</b>		<b>9</b>
7	Isroli	7	Pal	1.	Anjana		
8	Jolva	8	Palanpor	2.	Limbayat	1	Vadi
9	Kadodara	9	Pisad	3.	Pandesara	2	Limodara
10	Kanav	10	Rander	4.	Parvat	3	Varoli
11	Kareli	11	Utran	5.	Udhana	4	Kosamba
12	Malekpor	12	Variyav				
13	Palsana	13	Bharthana(Kosad)				
14	Pisad						
15	Sanki						
16	Siyod						
17	Soyani						
18	Tundi						

SR. NO.	MANDAVI TALUKA	SR. NO.	KAMREJ TALUKA	SR. NO.	KAMREJ TALUKA	SR. NO.	OLPAD TALUKA
	<b>10</b>		<b>11</b>		<b>11 continue</b>		<b>12</b>
1	Andhatri	1	Abrama	42	Sevani	1	Sayan
2	Baudhan	2	Ankhakhol	43	Sekhpur	2	Vasvari
3	Birama	3	Alura	44	Simadi	3	Atodara
4	Gavachi	4	Amboli	45	Tharoli	4	Asnad
5	Godavadi	5	Antroli	46	Timba	5	Sarol
6	Jankhla	6	Dhoranapardi	47	Umbel	6	Gothan
7	Kakvada	7	Bhada	48	Valak	7	Jothan
8	Kakdapar	8	Bherav	49	Valan	8	Umra
9	Kamlapor	9	Dhatava	50	Vasda rundhi	9	Sivan
10	Kevadiya	10	Dungar	51	Vav	10	Delad
11	Khanjroli	11	Choryasi	52	Velanja	11	Segwa
12	Kharoli	12	Delad	53	Vihan	12	Madhar
13	Khedpur	13	Derod	54	Kosmadi	13	Karamala
14	Kosadi	14	Dungra			14	Ariana
15	Mandvi	15	Ghala			15	Sonsak
16	Mori-cher	16	Ghaludi			16	Balkas
17	Nandpor	17	Haldharu			17	Gola
18	Nanicher	18	Jior			18	Kosam
19	Naren	19	Jokha			19	Mahamadpur
20	Patna	20	Kamrej			20	Earthan
21	Piparia	21	Karjan			21	Selut
22	Rajvad	22	Kathodara			22	Ambheta
23	Rataniya	23	Kathor			23	Kunkani
24	Rosvad	24	Khanpur			24	Veluk
25	Rupan	25	Kholesher			25	Pinjrat
26	Tarsadabar	26	Kholvad			26	Olpad
27	Umarasadi	27	Koli-Barthana			27	Asnabad
28	Un	28	Kosmada			28	Barbodhan
29	Vadod	29	Laskana			29	Paria
30	Vaghnera	30	Machchi			30	Vadod
31	Vankla	31	Makna			31	Sandhiar
32	Vareli	32	Morthana			32	Sithana
33	Vareth	33	Nansad			33	Masama
34	Varethi	34	Navagam			34	Andhi
35	Varjakhan	35	Navi-pardi			35	Kalipur
36	Vegi	36	Netrang			36	Isanpur
37	Virpor	37	Pali			37	Dihen
38	Vaghecha	38	Parab			38	Achharan
39	Nogama	39	Pasodara			39	Kanaj
40	Pardi	40	Sampura			40	Saroli
41	Pipalvada	41	Segva			41	Talad

<b>SR.</b>	<b>OLPAD</b>	<b>SR.</b>	<b>TAPI-VYARA</b>
<b>NO.</b>	<b>TALUKA</b>	<b>NO.</b>	<b>TALUKA</b>
	<b>12 continue</b>		<b>13</b>
42	Sherdi	1	Kanja
43	Orma	2	Bed kuva
44	Bhandut	3	Kalavyara
45	Kaslakhrud	4	Unchamala
46	Kachhol		
47	Tena	<b>SR.</b>	<b>SURAT-CITY</b>
48	Kasla	<b>NO.</b>	<b>TALUKA</b>
49	Saras		14
50	Vadila	1	Surat city
51	Hathisa		
52	Bhat gam		
53	Sarsana		
54	Sondla Mitha		
55	Morthan		
56	Takarma		
57	Kanbhai		
58	Obhala		
59	Bharunda		
60	Lavachha		
61	Admor		
62	Kudiyana		
63	Kuwad		
64	Kapasi		
65	Kunbhari		
66	Naghoi		
67	Kobra-Pardi		
68	Kachhab		
69	Delasa		
70	Sondlakhara		
71	Mirzapor		
72	Mindhi		
73	Morbhagva		
74	Syadla		

**Note:** Refer Annexure 7-C for the villages likely to be affected by floods at different Water levels.

## ANNEXURE - 7 (C)

List of villages likely to be affected by floods in **Tapi River** on the basis of Gauge & Discharge at **Kakrapar Weir Site**, Surat.

Sr. No.	Discharge at Kakrapar Weir in (Cus/Cum)	Gauge Level at Kakrapar Weir		Name of District Taluka	Signal for Village at Sr. No.		
		In Feet	In Meter		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
NOTE :-							
1	<b>WHITE SIGNALS</b>		: ALERT				
2	<b>BLUE SIGNALS</b>		: READY FOR EVACUATION				
3	<b>RED SIGNALS</b>		: IMMEDIATE EVACUATION				
(1)	3,91,100	174.40	53.15	<b>Surat</b>			
	————			1. Majura	2,4,9,12,18	—	—
	11,074			2. Puna	5	—	—
				3. Surat City	1	—	—
				4. Katargam	5,6,4	—	—
				5. Adajan	10	—	—
(2)	4,40,400	175.50	53.40	<b>Surat</b>			
	————			1. Majura	3,5,7,8,11,16,13,21,14	2,4,9,12, 18	—
	12,740			2. Puna	1,9,3,10	5	—
				3. Surat City	—	1	—
				4. Katargam	1,2,3	5,6,4	—
				5. Adajan	1,4,5,8,12	10	—
				6. Udhna	1,4,5	—	—
				7. Palsana	4	—	—
				8. Choryasi	7,1	—	—
(3)	4,60,640	176.05	53.66	<b>Surat</b>			
	————			1. Majura	15	3,5,7,8,11,16,13,21,14	2,4,9,12,18
	13,044			2. Puna	6,7	1,9,3,10	5
				3. Surat City	—	—	1
				4. Katargam	—	1 to 3	5,6,4
				5. Adajan	—	1,4,5,8,12	10
				6. Udhna	—	1,4,5	—
				7. Palsana	—	4	—
				8. Choryasi	12,6	7,1	—
(4)	<u>5,20,375</u>	177.25	54.04	<b>Surat</b>			
	14,735			1. Majura	—	15	3,5,7,8,11,16,13,21,14
				2. Puna	—	6,7	4
				3. Katargam	—	—	1,9,3,10
				4. Adajan	13,3	—	1 to 3
				5. Udhna	—	—	1,4,5,8,12
				6. Palsana	—	—	1,4,5
				7. Choryasi	9,8,4,3	6,12	4
				8. Mandvi	8	—	7,1
				9. Kamrej	4,8,20,25,26,29	—	—



Sr. No.	Discharge at Kakrapar Weir in (Cus/Cum)	Gauge Level at Kakrapar Weir		Name of District Taluka	Signal for Village at Sr. No.		
		In Feet	In Meter		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
(5)	5,80,740	178.50	54.42	<b>Surat</b>			
	—————			1. Choryasi	—	9,8,4,3	6,12
	16,444			2. Adajan	—	13,3	—
				3. Puna	8	—	6,7
				4. Majura	—	—	15
				5. Vyara(Tapi)	1	—	—
				6. Olpad	1 to 25	—	—
				7. Bardoli	4	—	—
				8. Mandvi	7,13,15,16,20,38,40,41	8	—
				9. Kamrej	46,11,5,45,7,48,2	4,8,20,25,26,29	—
(6)	6,90,370	180.50	55.03	<b>Surat</b>			
	—————			1. Kamrej	54	46,11,5,45,7,48,2	4,8,20,25,26,29
	19,449			2. Mandavi	—	7,3,15,16,20	8
				3. Olpad	26 to 36	1 to 25	—
				4. Bardoli	—	4	—
				5. Vyara (Tapi)	—	1	—
				6. Majura	20	—	—
				7. Adajan	2,6,11	—	13,3
				8. Choryasi	10	—	9,4,8,3
				9. Puna	—	8	—
(7)	7,60,150	181.75	55.41	<b>Surat</b>			
	—————			1. Olpad	37 to 43	26,36	1 to 25
	21,524			2. Vyara(Tapi)	—	—	1
				3. Majura	—	20	—
				4. Adajan	—	2,6,11	—
				5. Choryasi	—	10	—
				6. Bardoli	2,10	—	4
				7. Mandvi	23,27,32,9,33,22,12,28,37,31	—	15,13,20,1,6,7
				8. Kamrej	18,21,8,4,35,1,13,15,6,14,9,30,33,40	54	4,8,2,46,11,5,45,7

Sr. No.	Discharge at Kakrapar Weir in (Cus/Cum)	Gauge Level at Kakrapar Weir		Name of District Taluka	Signal for Village at Sr. No.		
		In Feet	In Meter		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
				9.Vyara (Tapi)	—	—	1
				10.Puna	—	—	8
(8)	8,90,760	184.00	56.10	<b>Surat</b>			
	—			1.Olpad	44 to 59	37 to 43	26 to 36
	25,223			2.Bardoli	6	2,10	
				3.Kamrej	16,28,34,39, 46	1,4,6,8,9,13,1 4,15,18,21,30, 33,35,40	54
				4.Mangrol	1,2	—	—
				5.Vyara (Tapi)	3	—	—
				6.Mandvi	5,11,14,24,3 0,34	23,27,32,9, 33,22,12,28,3 7,31	—
				7.Majura	1,2,4	—	20
				8.Adajan	—	—	2,6,11
				9.Choryasi	14,2,5,10, 13	—	10
				10. Udhna	3	—	—
(9)	9,50,950	185.00	56.40	<b>Surat</b>			
	—			1.Mandavi	29,39,10,36, 19,12,17,1	24,11,14,5, 30,34	23,27,32,9, 33,22, 12,28,37,3 1
	26,927			2.Bardoli	1	6	2,10
				3.Kamrej	—	16,39,34,46,2 8	18,21,8,4,3 5,1,13, 15,6,14,9,3 0,33,40
				4.Olpad	61 to 69	44 to 59	37 to 43
				5.Mangrol	—	1,2	—
				6. Vyara(Tapi)	—	3	—
				7.Choryasi	—	14,2,5,10,13	—
				8.Udhna	2,4,11	3	—
				9.Majura	—	1,2,4	—
(10)	10,00,000	185.70	56.40	<b>Surat</b>			
	—			1.Mandavi	26,35	29,39,10,36,1 9,12,17,1	24,11,14,5, 30,34
	28,317			2.Bardoli	12,13	1	6
				3.Kamrej	23,22,27,36	—	16,39,34,4 6,28
				4.Olpad	70 to 75	61 to 69	44 to 59

Sr. No.	Discharge at Kakrapar Weir in (Cus/Cum)	Gauge Level at Kakrapar Weir		Name of District Taluka	Signal for Village at Sr. No.		
		In Feet	In Meter		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
				5.Vyara (Tapi)	2,4	—	3
				6. Choryasi	—	—	14,2,5,10,13
				7.Udhna	3	2,4,11	3
				8.Majura	1,10,2,16,	—	4,2,1
				9.Puna	4	—	—
				10.Mangrol	4	—	—
(11)	11,00,000	187.20	57.05	<b>Surat</b>			
	—			1.Mandavi	—	26,35	29,39,10,36,19,12,17,1
	31,148			2.Bardoli	—	12,13	1
				3.Kamrej	—	23,22,27,36	—
				4.Olpad	—	70 to 75	61 to 69
				5.Vyara (Tapi)	—	2,4	—
				6. Udhna	—	3	2,4,11
				7.Majura	—	1,10,2,16	—
				8.Puna	—	4	—
				9.Mangrol	—	4	—
(12)	12,00,000	188.70	57.51	<b>Surat</b>			
	—			1.Mandavi	—	—	26,35
	33,980			2.Bardoli	—	—	12,13
				3.Kamrej	—	—	22,23,27,36
				4.Olpad	—	—	70 to 75
				5.Vyara (Tapi)	—	—	2,4
				6. Udhna	—	—	3
				7.Majura	—	—	1,10,2,16
				8.Puna	—	—	4
				9.Mangrol	—	—	1

**Note:** Refer Annexure 7-B for the villages likely to be affected by floods at different Water levels.

**ANNEXURE - 7 (D)**  
**DRAIN NETWORK OF TAPI BASIN**

Sr.No	Name of River / tributary	Bank	Elevation of source above m.s.l [m]	Length [K.m]	Catchment area [K.m <sup>2</sup> ]	% of total area
1	2	3	4	5	6	7
1	Tapi	Main Steam	752	724	22522	34.57
2	Gomai	Right	600	58	1148	1.76
3	Arunavati	Right	450	53	935	1.44
4	Buray	Left	600	64	1419	2.18
5	Panjhra	Left	600	138	3257	5.00
6	Bori	Left	600	130	2580	3.96
7	Aner	Right	600	94	1702	2.61
8	Girna	Left	900	260	10061	15.44
9	Waghur	Left	751	96	2592	3.98
10	Purna	Left	900	274	18929	29.06
			TOTAL	1896	65145	100

**ANNEXURE - 7 (E)**

**EXISTING WATER RESOURCES PROJECT IN TAPI BASIN**

Sr No	Name of Project	River	Status	Capacity (MCM)		Utilization
				Gross	Live	
1	Chandora tank	Tapi	Medium	18.20	16.482	Irrigation
2	Sonkhedi tank	Local Nala	Medium	5.456	4.595	Irrigation
3	Girna Project	Girna	Medium	608.45	523.55	Irrigation
4	Manyad	Manyad	Medium	53.950	40.27	Irrigation
5	Bori	Bori	Medium	40.310	25.15	Irrigation
6	Hathnur	Tapi	Medium	388.00	255.0	Irrigation
7	Waghur	Waghur	Major	325.287	248.548	Irrigation & Hydro-power generation
8	Suki	Suki	Medium	50.160	39.85	Irrigation
9	Abhora	Boked Nalla	Medium	7.440	6.020	Irrigation
10	Bokar Bari	Bokar Bari Nalla	Medium	7.090	6.540	Irrigation
11	Agnawati	Agnawati	Medium	3.740	2.760	Irrigation
12	Tondapur	Khadki Nalla	Medium	6.304	4.636	Irrigation
13	Aner Project	Aner	Medium	103.23	56.380	Irrigation
14	Karwand Project	Arunawati	Medium	33.840	31.150	Irrigation
15	Panjhra Project	Panjhra	Medium	43.410	35.630	Irrigation
16	Malangaon	Kan	Medium	13.020	11.350	Irrigation
17	Kanholi	Khanholi	Medium	11.79	8.450	Irrigation
18	Burai	Burai	Medium	21.330	14.210	Irrigation
19	Arunawati	Arunawati	Medium	27.780	14.970	Irrigation
20	Rangwali	Rangwali	Medium	15.020	12.890	Irrigation
21	Nagasakya	Panjar	Medium	15.620	11.240	Irrigation

Sr No	Name of Project	River	Status	Capacity (MCM)		Utilization
				Gross	Live	
22	Haran Bari	Mousam	Medium	34.780	---	Irrigation
23	Ukai	Tapi	Major	8510	7092	Power & irrigation
24	Kakrapar	Tapi	Medium	Diversión	N. A	Irrigation
25	Ver-I	Ver	Medium	38.6	37.41	Irrigation
26	Lakhigav	Dhakni	Medium	4.9	4.61	Irrigation
27	Sulwade	Tapi	Medium	65.071	64.942	Irrigation
28	Saragkheda	Tapi	Medium	92.19	91.82	Irrigation

## DETAILS OF C. W. C. OFFICES IN THE CATCHMENT OF UKAI DAM

### 1 SURAT

Executive Engineer  
Tapi Division,  
Central Water Commission,  
Opp. Kshetrapal Health Center  
Sagarampura,  
SURAT  
Ph.No. 0261-2478569

### 2 BHUSAWAL

Sub Divisional Engineer  
Upper Tapi Sub Division  
CWC, Opp. Yawal naka  
Bhusawal,  
Dist. Jalgaon  
MAHARASHTRA  
Ph.No.02582-222913

### 3 DHULIA

Sub Divisional Engineer  
Middle Tapi Sub Division  
CWC, Near Vidya Vardhani College  
Sakri Road, Dhulia  
Ph.No.02562-276147 M - 9713679200

### 4 SURAT

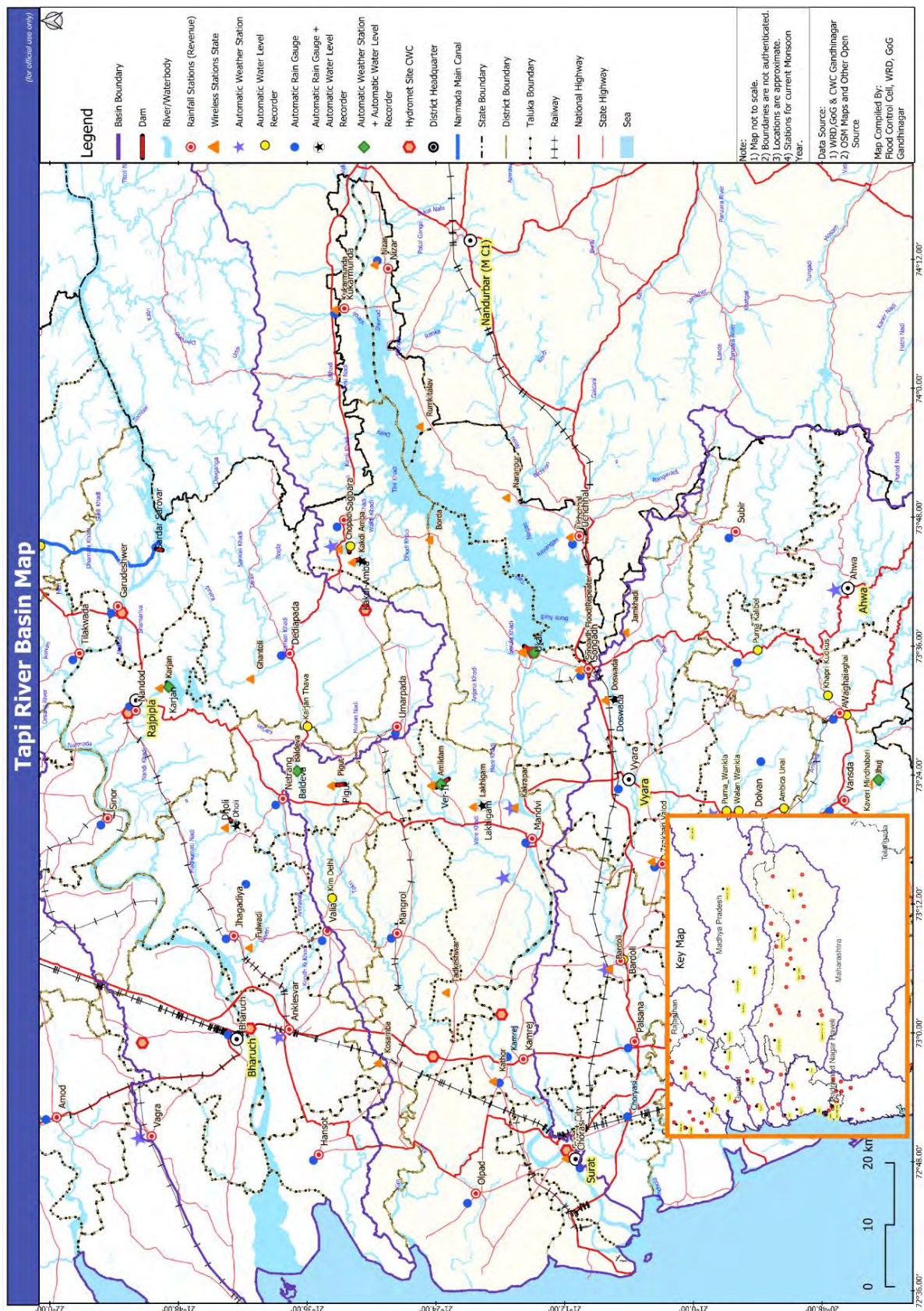
Sub Divisional Engineer  
Lower Tapi Sub Division  
CWC, Opp. Kshetrapal Health Center  
Sagarampura,  
SURAT  
Ph.No. 0261-2478569 M - 8770867375

### 5 HATHNUR

Sub Divisional Engineer  
Upper Tapi Sub Division  
CWC, Opp. Yawalnaka  
Bhushwal,  
Dist. Jalgaon  
MAHARASHTRA



## Flood Warning Arrangements - 2025



Annexure 7-F

**8.0 NARMADA BASIN:**

**8.1.1** The flood forecasting system for Narmada Basin is being looked after by Superintending Engineer, Hydrological Observation Circle, Gandhinagar through his Executive Engineer, Tapi Division (C.W.C.) at Surat. The Executive Engineer, Narmada Division, Bhopal is entrusted and looked after the all-wireless set in Madhya Pradesh (i.e. Sr. No. 1 to 16 in para 8.1.2). They have established various wireless stations at locations from where they can obtain the details about rainfall and discharges in the river. The gauge and rainfall data are being communicated, through wireless stations located on the main river as well as on tributaries. The responsibility of Flood Level Forecast of Mandla and Hosangabad, Bhopal w.e.f. monsoon - 2000. The Flood Forecast of Garudeshwar and Bharuch is still with Tapi Dn., Surat. As such, Tapi Division is collecting hydro-meteorological data from Garudeshwar to Bharuch only. Narmada Division, Bhopal is collecting hydro-meteorological data upstream of Sardar Sarovar Dam.

**8.1.2** Name of villages/dams where wireless stations are located to report rainfall and gauge discharges are as under:

**A. C.W. C's Wireless Stations**

Sr No	Station	State
1	Manot	Madhya Pradesh
2	Mawai	Madhya Pradesh
3	Mohegaon	Madhya Pradesh
4	Dindori	Madhya Pradesh
5	Mukki	Madhya Pradesh
6	Mandla	Madhya Pradesh
7	Barmanghat	Madhya Pradesh
8	Tawa Upstream/Downstream	Madhya Pradesh
9	Panchmari	Madhya Pradesh
10	Narmadapuram	Madhya Pradesh
11	Morttakka	Madhya Pradesh
12	Bargi Dam	Madhya Pradesh
13	Sandiya	Madhya Pradesh
14	Indra Sagar Dam	Madhya Pradesh
15	Omkareshwar Dam	Madhya Pradesh
16	Mandaleshwar	Madhya Pradesh
17	Sardar Sarovar Dam	Gujarat
18	Garudeshwar	Gujarat
19	Rajpipla	Gujarat
20	Bodeli	Gujarat
21	Bharuch	Gujarat

**B. State's Wireless Stations.**

Sr No	Station	State
1	Karjan	Gujarat
2	Dholi	Gujarat
3	Fulwadi	Gujarat
4	Ghantoli Tal. Dediapada	Gujarat



**8.1.3** The Basin Map showing all the wireless stations, Rain gauge and River gauge stations is appended vide **Annexure: 8-C-1 & 8-C-2.**

**8.1.4** The list of villages with District and Taluka affected by floods of Narmada River are given vide Annexure : 8 (A-1) and list of villages affected at various levels at Garudeshwar and Bharuch are given in Annexure 8 (B-1.1) and 8 (B-1.2).

Flood forecasting of Karnali village is being done on the basis of the water level at Garudeshwar gauge site. Danger level of Karnali is 34.14 m (112 ft). Therefore, Garudeshwar water level reaches 34.14 m (i.e 112 ft), the water level will start entering into the village Karnali.

The runoff time from Narmada dam site to village Karnali will be approximately 2.5 hours and 1.5 hours from Garudeshwar.

**8.1.5** The Executive Engineer, Tapi Division, (C.W.C.) Surat will inform Research Officer, Narmada Project Laboratory Division, Kevadia Colony about the release of discharge of 1.0 Lacs Cusecs (2832 Cumecs) and more from Tawa Dam (Madhya Pradesh) who in turn will inform the focal officer of Narmada Basin.

**8.1.6** Action to be taken by the Executive Engineer, Tapi Division, (C.W.C.), Surat and other Officers.

**TABLE - (8.1.6)**

Note :- Kindly refer Flood Telephone Directory of the current year for telephone nos.

<b>Name of the Officer with Telephone Nos.</b>	<b>Observation to be made by the Officer</b>	<b>Officer to whom the messages to be sent.</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
Executive Engineer Tapi Division (C.W.C), Surat.	The Flood Level forecast of GARUDESHWAR & BHARUCH (Golden Bridge) shall be conveyed to the Officers in Column No. 3 (a) (c) to (e) (h) (i) & (l)	(a) Superintending Engineer, N.P.Head Works Circle New Administrative Block-B First floor, Kevadia-393151 (b) Executive Engineer N.P.Dam Division No.2 New Administrative Block-B, Second floor, Kevadia-393151. (c) Collector, Bharuch. (d) Collector, Narmada (e) Collector, Vadodara. (f) District Superintendent of Police, (i) Bharuch. (ii) Narmada (g) District Superintendent of Police (Rural), Vadodara. (h) The Research Officer, Narmada Project Laboratory Division, Kevadia Colony. (i) Flood Cell, "Narmada Bhavan" Vadodara. (j) Superintending Engineer, Vadodara Irrigation Circle, Vadodara (k) Executive Engineer Tapi Division, (C.W.C)
Executive Engineer, Irrigation Project Division No.4, Rajpipla. (Incharge of Karjan Dam)	Communication about Rainfall, Water Level Waste Weir Overflow at 6.00 AM. or every hour as required through Wireless	

Name of the Officer with Telephone Nos.	Observation to be made by the Officer	Officer to whom the messages to be sent.
(1)	(2)	(3)

/Telephone to the Officers in Column No.3 at Sr. No. (a) (c) (d) (j) (k) & (l) (b)

(l) Flood Cell, Gandhinagar.

Executive Engineer  
N.P.Dam Division No.2  
New Administrative Block-B,  
Kevadia-393151.

The Flood Level forecast of Orsang river shall be conveyed to officers in Column no.3 at Sr.no.(a), (d),(e),(f),(g) & (i)

Dy. Executive Engineer  
Dholi Irri, Scheme,  
Rajpardi.

Communication about inflow/outflow, Flood reservoir water level, rainfall etc. shall be conveyed to the Officers in Col. No. 3 @ Sr. No. (c) (d) (j) & (k)

**8.1.7** Statement showing the Time lag for various stations from origin to the end of river basin is as under. (From Site to Bharuch)

Sr. No.	Name of Site	Type of Site	State	Catchment Area in Sq. Kms.	Distance from Origin in Kms.	Danger Level in Meters	Time Lag in Hours
1	2	3	4	5	6	7	8
1.	MAWAI	W.R	M.P.	Only Rainfall recording stations			
2	DINDORI	W,G,D,R	M.P.	2292	97.00	—	90
3	MUKKI	W,G,R	M.P.	968	84.00	—	90
4	MANOT	W,G,D,R,	M.P.	4667	265.00	—	81
		S,Q					
5	MOHEGAON	W,G,D,R,	M.P.	4090	160.00	—	82
		S,Q					
6	MANDLA	W,G,D,R,F	M.P.	13000	296.00	437.80	78
7	BURMANGHAT	W,G,D,R	M.P.	26453	526.00	323.03	52
		S,Q					
8	1. TAWA U/s	W,G,R	M.P.	6060	126	—	36-37
	2. TAWA D/s	W,G,R,	M.P.	6060	126	—	36-37
9	HOSHANGABAD	W,G,D,R,	M.P.	44548	676	293.83	30
		F,S,Q					
10	PANCHMARI	W,R	M.P.	Only Rainfall recording stations			
11	INDIRA SAGAR PROJECT	G	M.P.	61642	851.00	262.13 (FRL)	20
12	OMKARESHWAR PROJECT	G	M.P.	64880	893.00	196.60 (FRL)	16
13	MORTAKKA	W,G,D,R,S	M.P.	N.A.	908.00	162.75	15
14	BARWANI	W,G,D,R	M.P.	77674	1064.00	123.28	07
		S,Q					
15	Dam Site	G	Gujarat	88000	1168.00	121.92 (CREST LEVEL)	0
16	GARUDESHWAR	W,G,D,R,	Gujarat	89345	1188.40	31.09	-1*
		F,S,Q					

Sr. No.	Name of Site	Type of Site	State	Catchment Area in Sq. Kms.	Distance from Origin in Kms.	Danger Level in Meters	Time Lag in Hours
1	2	3	4	5	6	7	8
17	RAJPIPLA	W,G,R	Gujarat	1440	70	26.80	-(6-8)*
18	BODELI	W,G,R	Gujarat	2300	85	80.06	-(6-8)*
19	BHARUCH	W,G,R,F	Gujarat	98796	1271.00	7.31	-7*

Note: (1) W = Wireless D = Discharge F = Flood G = Gauge R = Rainfall S = Silt

Q = Water Quality.

\*(2) For calculating the Time Lag period considering the Dam Site (Sardar Sarovar) as (0) base.

### 8.1.8. Appropriate Authority (Focal Officer)

(A) **Superintending Engineer**

N.P.Head Works Circle,  
New Administrative Block-B  
First floor, Kevadia-393151

Note:-

Kindly refer  
Flood Telephone  
Directory of the current  
year for Telephone Nos.

(B) For Dholi Irrigation Scheme  
Superintending Engineer  
Vadodara Irrigation Circle, Vadodara

## 8.2 A - RAMI BASIN (Sub basin of Narmada River)

8.2.1 The river Rami is tributary of river Narmada reaching through Heran and Orsang rivers.

8.2.2. Names of places where wireless stations are located to report rainfall gauge & discharge are as under:

1. Rami Dam site (near Khandibara village)

8.2.3. The Basin Map showing all the wireless stations, Rain gauge and River gauge stations is appended vide Annexure 8-C-1.

8.2.4. The list of villages affected by the floods in river Rami at various stages at different levels is appended vide Annexure 8-A-2 & 8-B-2.

8.2.5 Action to be taken by various concerned officers.

TABLE – (8.2.5)

Note: Kindly refer Flood Telephone Directory of the current year for telephone nos.

Name of the Officer with Telephone Nos.	Observation to be made by the Officer	Officer to whom the messages to be sent.
(1)	(2)	(3)
<b>Dy Executive Engineer</b> (In charge of RAMI Dam) Under Rami Dam site Wireless Station	<b>Communication about Rain</b> fall, Water Level, Waste weir Over flow at 6.00 A.M. or every hour as required through Wireless / Telephone to be conveyed to the Officer in Column No. 3 at Sr. No. (b).	<b>a) Executive Engineer</b> Irrigation Project Division No.2, Bodeli
Bodeli Wireless Station under Executive Engineer Irrigation Project Division No.2, Bodeli	Communication about Rain fall, Water Level, Waste Weir Overflow at 6.00 A.M or Every one hour as required through Wireless/Telephone to the officers in column No.3 at Sr. No. (a) to (e)	<b>b) Superintending Engineer</b> Vadodara Irrigation Circle Vadodara <b>c) Dy. Executive Engineer,</b> Vadodara Irrigation Sub- Division, Vadodara i.e., Control Room. <b>d) Executive Engineer</b> Tapi Division (C.W.C), Surat. <b>e) Superintending Engineer</b> Designs. , N.P. (Dam & Power House) Circle, Vadodara.

#### 8.2.6. Appropriate Authority (Focal Officer)

**Superintending Engineer**  
**Vadodara Irrigation Circle**  
Kothi Building, Vadodara

Note:-  
Kindly refer Flood Telephone  
Directory of the current year  
for Telephone Nos.

### 8.3 B - SUKHI BASIN (Sub Basin of Narmada River)

**8.3.1** The Sukhi River is tributary of Orsang river which is a tributary of Narmada river.

**8.3.2** The flood forecasting for Sukhi river is being looked after by Superintending Engineer, Vadodara Irrigation Circle, Vadodara. Various wireless stations are established at suitable locations from where discharge and gauge data including rainfall data are obtained by Focal Officer.

**8.3.3** Names of places of Wireless Stations installed in the basin are as under:

- (1) Bodeli (Office of the Executive Engineer, Irrigation Project Division No. 2, Bodeli).
- (2) Zoz
- (3) Sukhi Dam Site.
- (4) Wadhwana
- (5) Vadoth

**8.3.4** The Basin Map showing all the wireless stations, Rain gauge and River gauge stations is appended vide Annexure: 8-C-1

**8.3.5** The list of villages affected by the floods in river Sukhi at various stages at different levels is appended vide Annexure 8-A-3 & Annexure 8-B-3.

Action to be taken by various concerned officers.

**TABLE – (8.3.5)**

Note : Kindly see Flood Telephone Directory of the current year for telephone nos.

Name of the Officer with Telephone Nos.	Observation to be made by the Officer	Officer to whom the messages to be sent.
(1)	(2)	(3)
Zoz Wireless Station (under the control of Deputy Executive Engineer, Irrigation Project Sub Dn No. 10, Bodeli)	Communication about Rain fall, in up stream area to be submitted to the Dam site through wireless.	a) Dy. Executive Engineer Irrigation Project Sub-Division No.10, Bodeli (Incharge of Wireless Station at SUKHI Dam Site) (Dungarwant-Control Cabin)
SUKHI Dam Site Wireless Station (near village Dungarwant) under the control of Deputy Executive Engineer, Irrigation Project Sub-Dn. No. 10, Bodeli	Messages about Rain fall Spillway discharges of reservoir, Water level and messages received from Zoz Wireless Stations of up stream catchment area, information regarding Gauging Data Rainfall and Discharge etc. at 6.00 A.M. or every hour as required will be conveyed to the officers mentioned in Column No.3 at Sr. No. (a) to (d) (through Bodeli Wireless Station)	b) Dy. Executive Engineer Irrigation Project Sub Division No. 10, Bodeli c) Executive Engineer Irrigation Project Division No. 2, Bodeli (Admn. Block) d) Mamlatdar Pavi-Jetpur Taluka District, Vadodara. e) Superintending Engineer Vadodara Irrigation Circle, Vadodara
Bodeli Wireless Station in the Office of the Executive Engineer Irrigation Project Division No. 2 Bodeli.	Communication as above & other messages pertaining to floods to be conveyed to the officers mentioned in Column No. 3 at Sr. No. (e) to (h)	f) Superintending Engineer N.P.Head Works Circle New Administrative Block-B, Kevadia-393151. g) Executive Engineer, Tapi Division, (C.W.C), Surat, h) Collector, Bharuch.

**8.3.6 Appropriate Authority (Focal Officer)**

Superintending Engineer  
Vadodara Irrigation Circle,  
Kothi Building, Vadodara

**Note:-**  
Kindly refer Flood Telephone Directory of the current year for Telephone Nos.

#### 8.4 C - KARJAN BASIN: (SUB- BASIN OF NARMDA RIVER)

**8.4.1** Karjan Dam is located on Karjan River near village Jitgadh. Karjan River is a tributary of Narmada River.

**8.4.2** The flood forecasting for the Karjan River is being looked after by Superintending Engineer, Vadodara Irrigation Circle, Vadodara.

**8.4.3** Names of places of Wireless Stations installed in the basin are as under:

- (1) Karjan Dam site
- (2) Fulwadi
- (3) Ghantoli

**8.4.4** The Basin Map showing all the wireless stations, Rain gauge and River gauge stations is appended vide Annexure: 8-C-2

**8.4.5** The list of villages affected by released from Karjan Dam on basis of Gauge & Discharge at Rajpipla Bridge, on river Karjan near Rajpipla is shown vide annexure: 8-A-4 & 8-B-4.

**8.4.6** Action to be taken by various concerned officers.

**TABLE - (8.4.6)**

**Note :** Kindly refer Flood Telephone Directory of the current year for contact nos.

Name of the Officer with Telephone Nos.	Observation to be made by the Officer	Officer to whom the messages to be sent.
(1)	(2)	(3)
(A) Deputy Executive Engineer, Irrigation Project Sub-Division No. 27, Rajpipla	Communication about Inflow, Outflow, Reservoir Water Level shall be conveyed to the officer at Sr. No.(a) to (h) of Column No.3	a) Superintending Engineer Vadodara Irrigation Circle Vadodara b) Executive Engineer Irrigation Project Division No. 4 Rajpipla c) Superintending Engineer N.P.Head Works Circle New Admini. Block-B, 1 <sup>st</sup> floor,Kevadia-393151 d) Executive Engineer Tapi Division (CWC), Surat e) Collect, Bharuch f) District Superintendent of Police, Bharuch Dist. g) Collector : Narmada h) Dist. Superintendent of Police, Narmada

**8.4.7 Appropriate Authority (Focal Officer)**  
Superintending Engineer  
Vadodara Irrigation Circle, Vadodara

**Note:-**  
Kindly refer Flood Telephone Directory of the current year for Telephone Nos.

# ANNEXURE – 8 (A-1)

List of villages likely to be affected by floods in **Narmada River** on the basis of Gauge of **Garudeshwar & Bharuch sites**.

BHARUCH DISTRICT							
SR.	BHARUCH	SR.	ANKLESHWAR	SR.	JHAGADIA	SR.	HANSOT
NO.	TALUKA	NO.	TALUKA	NO.	TALUKA	NO.	TALUKA
1		2		3		4	

1.	Bharuch City	1.	Khalpiya	1.	Ore	1.	Hansot
2.	Dashan Bet	2.	Sarfuddin	2.	Patar		
3.	Kabirvad Bet	3.	Juna Kansia	3.	Juni Tarasali		
4.	Shuklatirth	4.	Juna Chhapara	4.	Juna Tothidra		
5.	Kelod	5.	Koyali-	5.	Juna Pora		
			Dhanturiya	6.	Indor		
6.	Tavara Bet	6.	Taria Bawli	7.	Juni Jarasad		
7.	Nikora	7.	Juna Haripura	8.	Mota Vasana		
8.	Dashan	8.	Borbhatha (Bet)	9.	Nana Vasana		
9.	Jhanor	9.	Juna Borbhatha	10.	Bhalod		
10.	Mangaleswar	10.	Ankleshwar	11.	Limodara		
11.	Sindhot	11.	Sakkarpora	12.	Vadhavana		
12.	Vadava	12.	Pungam	13.	Velugam		
13.	Karjan	13.	Divi	14.	Vanakpor		
14.	Jhadeshwar	14.	Diva	15.	Panetha		
		15.	Sajod	16.	Kakalpur		
				17.	Sarsad		
				18.	Uchedia		
				19.	Krushnapuri		

VADODARA DISTRICT					
SR.	KARJAN	SR.	DABHOI	SR.	SINOR
NO.	TALUKA	NO.	TALUKA	NO.	TALUKA
1		2		3	

1.	Pura	1.	Chandod	1.	Madhi Devasthan
2.	Alampura	2.	Karmali	2.	Ansuya Temple
3.	Lilaipura	3.	Nanderia	3.	Malsar
4.	Nani Koral			4.	Barkal
5.	Moti Koral				
6.	Juna Sayar				

NARMADA DISTRICT					
SR.	TILAKWADA	SR.	NANDOD	SR.	NANDOD
NO.	TALUKA	NO.	TALUKA	NO.	TALUKA
1		2		3	

1.	Vasan	1.	Sisodara	13.	Saherav
2.	Vadia	2.	Bhadam	14.	Varachha
3.	Virpur	3.	Mangrol	15.	Sanjaroli
4.	Renghan	4.	Gubar	16.	Akteshwar
		5.	Rampura	17.	Surajvad
		6.	Rajpipla	18.	Ghambhipura
		7.	Ori	19.	Poicha
		8.	Navapura	20.	Garudeshwar
		9.	Dhamancha	21.	Goral
		10.	Dhanpor	22.	Rundh
		11.	Bhachawada	23.	Vansla
		12.	Hajapara		

**Note:** (1) Refer Annexures 8(B-1.1) & 8 (B-1.2) for villages to be affected at different Water Levels.



## ANNEXURE – 8 (B-1.1)

Statement showing villages affected by floods of **Narmada River** on the basis of Gauge Level at **Garudeshwar Gauge Site**.

Sr. No.	Gauge Level at Garudeshwar		Name of District Taluka	Signal for Village at Sr. No.		
	In Feet	In Meter		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7
NOTE :-						
1	<b>WHITE SIGNALS</b>		: ALERT			
2	<b>BLUE SIGNALS</b>		: READY FOR EVACUATION			
3	<b>RED SIGNALS</b>		: IMMEDIATE EVACUATION			

1.	100.00	30.48	<b>Vadodara</b>			
			2. Dabhoi	1	—	—
2.	101.00	30.78	<b>Vadodara</b>			
			2. Dabhoi	—	1	—
3.	102.00	31.09	<b>Vadodara</b>			
			2. Dabhoi	—	—	1
4.	103.00	31.39	<b>Narmada</b>			
			4. Nandod	1	—	—
5.	104.00	31.70	<b>Narmada</b>			
			4. Nandod	—	1	—
6.	105.00	32.00	<b>Vadodara</b>			
			3. Sinor	1	—	—
			<b>Narmada</b>			
			4. Nandod	—	—	1
7.	106.00	32.31	<b>Vadodara</b>			
			3. Sinor	—	1	—
8.	107.00	32.61	<b>Vadodara</b>			
			3. Sinor	—	—	1
9	108.00	32.92	<b>Narmada</b>			
			4. Nandod	2&3	—	—

Sr. No.	Gauge Level at Garudeshwar		Name of District Taluka	Signal for Village at Sr. No.		
	In Feet	In Meter		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7
10.	109.00	33.22	<b>Narmada</b>			
			4. Nandod	—	2 & 3	—
11.	110.00	33.53	<b>Narmada</b>			
			4. Nandod	—	—	2 & 3
12.	111.00	33.83	<b>Vadodara</b>			
			3. Sinor	2	—	—
			<b>Narmada</b>			
			4. Nandod	4 to 6	—	—
13.	112.00	34.14	<b>Vadodara</b>			
			2. Dabhoi	2	—	—
			3. Sinor	3	2	—
			<b>Narmada</b>			
			4. Nandod	—	4 to 6	—
14.	113.00	34.44	<b>Vadodara</b>			
			2. Dabhoi	—	2	—
			3. Sinor	—	3	2
			<b>Narmada</b>			
			4. Nandod	—	—	4 to 6
15.	114.00	34.75	<b>Vadodara</b>			
			2. Dabhoi	—	—	2
			3. Sinor	—	—	3
			<b>Narmada</b>			
			4. Nandod	7	—	—
16.	115.00	35.05	<b>Narmada</b>			
			4. Nandod	—	7	—

Sr. No.	Gauge Level at Garudeshwar		Name of District Taluka	Signal for Village at Sr. No.		
	In Feet	In Meter		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7
17.	116.00	35.36	<b>Narmada</b>			
			4. Nandod	—	—	7
18.	117.00	35.66	<b>Narmada</b>			
			4. Nandod	8 to 10	—	—
19.	118.00	35.96	<b>Vadodara</b>			
			2. Dabhoi	3	—	—
			<b>Narmada</b>			
			4. Nandod	—	8 to 10	—
20	119.00	36.27	<b>Vadodara</b>			
			2. Dabhoi	—	3	—
			<b>Narmada</b>			
			4. Nandod	—	—	8 to 10
21	120.00	36.57	<b>Vadodara</b>			
			2. Dabhoi	—	—	3
			<b>Narmada</b>			
			4. Nandod	11 to 12	—	—
22	121.00	36.88	<b>Narmada</b>			
			4. Nandod	13	11 to 12	—
23.	122.00	37.18	<b>Narmada</b>			
			4. Nandod	—	13	11 to 12
24.	123.00	37.49	<b>Narmada</b>			
			4. Nandod	—	—	13
25.	125.00	38.10	<b>Narmada</b>			
			4. Nandod	14 to 15	—	—

Sr. No.	Gauge Level at Garudeshwar		Name of District Taluka	Signal for Village at Sr. No.		
	In Feet	In Meter		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7
26	126.00	38.40	<b>Narmada</b>			
27.	127.00	38.71	4. Nandod <b>Narmada</b>	—	14 to 15	—
			4. Tilakwada <b>Narmada</b>	1	—	—
			4. Nandod	—	—	14 to 15
28.	128.00	39.01	<b>Narmada</b>			
			4. Tilakwada <b>Narmada</b>	—	1	—
			4. Nandod	16	—	—
29.	129.00	39.32	<b>Narmada</b>			
			4. Tilakwada <b>Narmada</b>	—	—	1
			4. Nandod	—	16	—
30.	130.00	39.62	<b>Narmada</b>			
			4. Tilakwada <b>Narmada</b>	2 to 3	—	—
			4. Nandod	—	—	16
31.	131.00	39.93	<b>Narmada</b>			
			4. Tilakwada <b>Narmada</b>	—	2 to 3	—
			4. Nandod	17	—	—
32.	132.00	40.23	<b>Narmada</b>			
			4. Tilakwada <b>Narmada</b>	4	—	2 to 3
			4. Nandod	18 to 22	17	—

Sr. No.	Gauge Level at Garudeshwar		Name of District Taluka	Signal for Village at Sr. No.		
	In Feet	In Meter		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7
33.	133.00	40.54	<b>Narmada</b>			
			4.Tilakwada	5	4	—
			<b>Narmada</b>			
			4. Nandod	—	18 to 22	17
34.	134.00	40.84	<b>Vadodara</b>			
			3. Sinor	4	—	—
			<b>Narmada</b>			
			4.Tilakwada	—	5	4
			<b>Narmada</b>			
			4. Nandod	—	—	18 to 22
35.	135.00	41.15	<b>Vadodara</b>			
			3. Sinor	—	4	—
			<b>Narmada</b>			
			4.Tilakwada	—	—	5
			<b>Narmada</b>			
			4. Nandod	23	—	—
36.	136.00	41.45	<b>Vadodara</b>			
			3.Sinor	—	—	4
			<b>Narmada</b>			
			4. Nandod	—	23	—
37.	137.00	41.76	<b>Narmada</b>			
			4.Nandod	—	—	23

**Note:** Refer Annexure - 8-(A-1) for the names of villages mentioned in column Nos. 5 to 7

## ANNEXURE - 8 (B-1.2)

Statement showing villages affected by floods of **Narmada River** on the basis of Gauge Level at Golden **Bridge Site, Bharuch**.

Sr. No.	Gauge Level at Golden Bridge		Name of District Taluka	Signal for Village at Sr. No.		
	In Feet	In Meter		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7
NOTE :-						
1	<b>WHITE SIGNALS</b>		: ALERT			
2	<b>BLUE SIGNALS</b>		: READY FOR EVACUATION			
3	<b>RED SIGNALS</b>		: IMMEDIATE EVACUATION			

1.	22.00	6.71	<b>Bharuch</b>			
			1. Bharuch	1	—	—
			2. Ankleshwar	1 to 2	—	—
2.	23.00	7.01	<b>Bharuch</b>			
			1. Bharuch	—	1	—
			2. Ankleshwar	—	1 to 2	—
3.	24.00	7.31	<b>Bharuch</b>			
			1. Bharuch	—	—	1
			2. Ankleshwar	—	—	1 to 2
4.	25.00	7.62	<b>Bharuch</b>			
			2. Ankleshwar	3	—	—
5.	26.00	7.92	<b>Bharuch</b>			
			1. Bharuch	2 to 3	—	—
			2. Ankleshwar	4 to 6	3	—
6.	27.00	8.23	<b>Bharuch</b>			
			1. Bharuch	—	2 to 3	—
			2. Ankleshwar	—	4 to 6	3
7.	28.00	8.53	<b>Bharuch</b>			
			1. Bharuch	—	—	2 to 3
			2. Ankleshwar	—	—	4 to 6
			3. Jhagadia	1 to 5	—	—
8.	29.00	8.84	<b>Bharuch</b>			
			1. Bharuch	4 to 5	—	—
			2. Ankleshwar	7	—	—
			3. Jhagadia	—	1 to 5	—

Sr. No.	Gauge Level at Golden Bridge		Name of District Taluka	Signal for Village at Sr. No.		
	In Feet	In Meter		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7
9.	30.00	9.14	<b>Bharuch</b>			
			1. Bharuch	6	4 to 5	—
			2. Ankleshwar	8 to 9	7	—
			3. Jhagadia	6 to 8	—	1 to 5
10.	31.00	9.45	<b>Bharuch</b>			
			1. Bharuch	—	6	4 to 5
			2. Ankleshwar	—	8 to 9	7
			3. Jhagadia	—	6 to 8	—
			<b>Vadodara</b>			
			1. Karjan	1	—	—
11.	32.00	9.75	<b>Bharuch</b>			
			1. Bharuch	—	—	6
			2. Ankleshwar	10	—	8 to 9
			3. Jhagadia	9	—	6 to 8
			<b>Vadodara</b>			
			1. Karjan	—	1	—
12.	33.00	10.06	<b>Bharuch</b>			
			2. Ankleshwar	11 to 14	10	—
			3. Jhagadia	—	9	—
			<b>Vadodara</b>			
			1. Karjan	—	—	1
13.	34.00	10.36	<b>Bharuch</b>			
			2. Ankleshwar	—	11 to 14	10
			3. Jhagadia	—	—	9
			<b>Vadodara</b>			
			1. Karjan	2	—	—
14.	35.00	10.67	<b>Bharuch</b>			
			2. Ankleshwar	—	—	11 to 14
			3. Jhagadia	10 to 11	—	—
			5. Hansot	1	—	—



Sr. No.	Gauge Level at Golden Bridge		Name of District Taluka	Signal for Village at Sr. No.		
	In Feet	In Meter		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7
15.	36.00	10.97	<b>Vadodara</b>			
			1. Karjan	—	2	—
			<b>Bharuch</b>			
			3. Jhagadia	—	10 to 11	—
			5. Hansot	—	1	—
16.	37.00	11.28	<b>Vadodara</b>			
			1. Karjan	3	—	2
			<b>Bharuch</b>			
			1. Bharuch	7 to 8	—	—
			2. Ankleshwar	—	—	—
17.	38.00	11.58	3. Jhagadia	12	—	10 to 11
			5. Hansot	—	—	1
			<b>Vadodara</b>			
			1. Karjan	—	3	—
			<b>Bharuch</b>			
18.	39.00	11.89	1. Bharuch	9 & 10	7 to 8	—
			3. Jhagadia	13	12	—
			<b>Vadodara</b>			
			1. Karjan	—	—	3
			<b>Bharuch</b>			
19.	40.00	12.19	1. Bharuch	11	9 & 10	7to 8
			3. Jhagadia	—	13	12
			<b>Vadodara</b>			
			1. Karjan	—	—	3
			<b>Bharuch</b>			
			1. Bharuch	12	11	9 & 10
			2. Ankleshwar	15	—	—
			3. Jhagadia	14 to 17	—	13

Sr. No.	Gauge Level at Golden Bridge		Name of District Taluka	Signal for Village at Sr. No.		
	In Feet	In Meter		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7
			<b>Vadodara</b>			
20.	41.00	12.50	1. Karjan <b>Bharuch</b>	4 to 5	—	—
			1. Bharuch	—	12	11
			2. Ankleshwar	—	15	—
			3. Jhagadia	18 to 19	14 to 17	—
			<b>Vadodara</b>			
21.	42.00	12.80	1. Karjan <b>Bharuch</b>	—	4 to 5	—
			1. Bharuch	—	—	12
			2. Ankleshwar	—	—	15
			3. Jhagadia	—	18 to 19	14 to 17
			<b>Vadodara</b>			
22.	43.00	13.11	1. Karjan <b>Bharuch</b>	6	—	4 to 5
			1. Bharuch	13	—	—
			3. Jhagadia	—	—	18 to 19
			<b>Vadodara</b>			
23.	44.00	13.41	1. Karjan <b>Bharuch</b>	—	6	—
			1. Bharuch	14	13	—
			<b>Vadodara</b>			
24.	45.00	13.72	1. Karjan <b>Bharuch</b>	—	—	6
			1. Bharuch	—	14	13
25.	46.00	14.02	<b>Bharuch</b>			
			1. Bharuch	—	—	14

**Note:-**Refer Annexure - 8 - (A-1) for the names of villages mentioned in column Nos. 5 to 7.

**ANNEXURE - 8 (A-2)**

List of villages likely to be affected by floods in **Rami River** on the basis of Gauge of **Rami Dam Spillway**.

**CHHOTAUDEPUR DISTRICT**

Sr.No.	KAWANT TALUKA	Sr.No.	KAWANT TALUKA
1.	Zalawant	5.	Vijli
2.	Devadh	6.	Mota Wanta
3.	Chiliyavant	7.	Khandibara
4.	Deri	8.	Moti Sankal

**Note:** (1) Refer Annexures 8 (B-2) for villages to be affected at different Water Levels.

**ANNEXURE - 8 (B-2)**

List of villages likely to be affected by floods in **Rami River** on the basis of Gauge of **Rami Dam & Discharge over weir**.

Sr. No.	Gauge Level at Rami Dam & Disc. Over Waste Weir		Name of District Taluka	Signal for Village at Sr. No.		
	Mt. CUM	Ft. CUS		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7
NOTE :-						
1	<b>WHITE SIGNALS</b>		: ALERT			
2	<b>BLUE SIGNALS</b>		: READY FOR EVACUATION			
3	<b>RED SIGNALS</b>		: IMMEDIATE EVACUATION			

1.	196.30	644.06	<b>Chhotaudepur</b>			
	—	—	1.Kawant	1 to 8	—	—
2.	196.50	644.72	<b>Chhotaudepur</b>			
	18.71	660.76	1. Kawant	—	1 to 8	—
3.	196.90	646.03	<b>Chhotaudepur</b>			
	131.37	4639.29	1. Kawant	—	—	1 to 8

Note: - Refer Annexure 8 (A-2) for the names of villages mentioned in Column Nos. 5 to 7.

**ANNEXURE - 8 (A-3)**

List of villages likely to be affected by floods in **Sukhi River** on the basis of **Sukhi Dam Spillway**

**CHHOTAUDEPUR DISTRICT**

Sr. No.	PAVI JETPUR (JABUGAM) TALUKA	Sr. No.	PAVI JETPUR (JABUGAM) TALUKA
1.	Moti bej	12.	Sithol
2.	Amadra	13.	Dungarwant
3.	Waghwa	14.	Khandia
4.	Kikawada	15.	Koliyari
5.	Hood	16.	Lodhan
6.	Vadesia	17.	Gambhirpura
7.	Moti Rasli	18.	Gutanvad
8.	Ghutia	19.	Palia
9.	Nani bej	20.	Sajod
10.	Thalki	21.	Sihod
11.	Nani Rasli		

**Note:** (1) Refer Annexures 8 (B-3) for villages to be affected at different releases from Sukhi Dam.

**ANNEXURE - 8 (B-3)**

List of villages likely to be affected by floods in Sukhi River on the basis of Gauge of Sukhi Dam Spillway.

Sr. No.	Discharge Released from Spillway		Name of District Taluka	Signal for Village at Sr. No.		
	CUMECS	CUSECS		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7
NOTE :-						
1	<b>WHITE SIGNALS</b>		: ALERT			
2	<b>BLUE SIGNALS</b>		: READY FOR EVACUATION			
3	<b>RED SIGNALS</b>		: IMMEDIATE EVACUATION			

1.			<b>Chhotaudepur</b>			
	1133	40,000	1. Pavi Jetpur	1 to 3	—	—
2.			<b>Chhotaudepur</b>			
	1700	60,000	1. Pavi Jetpur	4 to 7	1 to 3	—
3.			<b>Chhotaudepur</b>			
	2267	80,000	1. Pavi Jetpur	8 to 12	4 to 7	1 to 3
4.			<b>Chhotaudepur</b>			
	2834	1,00,000	1. Pavi Jetpur	13 to 16	8 to 12	4 to 7

Sr. No.	Discharge Released from Spillway		Name of District Taluka	Signal for Village at Sr. No.		
	CUMECS	CUSECS		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7
5.			<b>Chhotaudepur</b>			
	3401	1,20,000	1. Pavi Jetpur	17 to 21	13 to 16	8 to 12
6.			<b>Chhotaudepur</b>			
	3968	1,40,000	1. Pavi Jetpur	—	17 to 21	13 to 16
7.			<b>Chhotaudepur</b>			
	4535	1,60,000	1. Pavi Jetpur	—	—	17 to 21

**Note:** Refer Annexure 8 (A-3) for the names of villages mentioned in Column Nos. 5 to 7.

#### ANNEXURE - 8 (A-4)

Statement showing the villages affected by floods in **Karjan River** on the basis of Gauge of **Rajpipla Bridge near Rajpipla.**

Sr.No.	NANDOD TALUKA
--------	---------------

#### NARMADA DISTRICT

1. Rajpipla
2. Bhadam
3. Bhacharwada
4. Hazarpura
5. Dhanpor
6. Dhamnacha

Note: (1) Refer Annexures 8 (B-4) for villages to be affected at different Water Levels.

#### ANNEXURE – 8 (A-5)

Statement showing the villages affected by Floods in **MADHUMATI RIVER**, tributary of Narmada River on the basis of overflow from **Dholi Irrigation Scheme.**

Sr.No.	Name of Taluka	Name of District	Name of Affected Villages
1.	Jhagadia	Bharuch	1. Dholi 2. Rajalwada 3. Mota Sorva 4. Rajpardi 5. Bilwada 6. Kantol 7. Sarsa 8. Kapat 9. Vanakpor

**ANNEXURE - 8 (B - 4)**

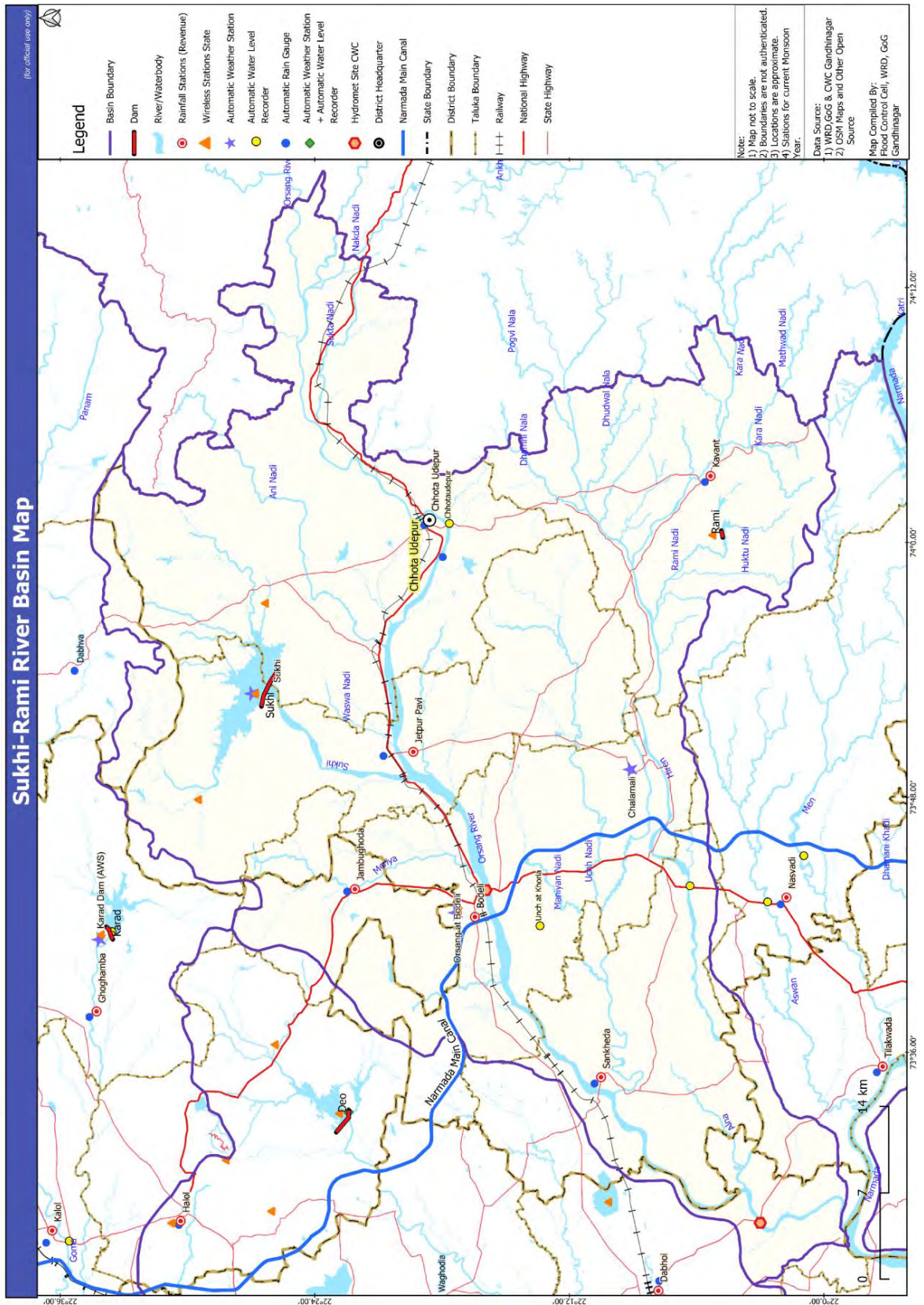
Statement showing villages affected due to flood/discharge in **KARJAN RIVER** on the basis of Gauge Station situated at **Rajpipla Bridge**.

Sr. No.	Discharge Released from Karjan Dam (Cusecs)	Gauge Level at Rajpipla Bridge		Name of District Taluka	Signals for Villages at Sr. No.		
		In Feet	In Meter		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
NOTE :-							
1	<b>WHITE SIGNALS</b>	: ALERT					
2	<b>BLUE SIGNALS</b>	: READY FOR EVACUATION					
3	<b>RED SIGNALS</b>	: IMMEDIATE EVACUATION					

1.	100000	85.14	25.96	<b>Narmada</b>			
				1. Nandod	1	—	—
2.	106000	85.60	26.10	<b>Narmada</b>			
				1. Nandod	—	1	—
3.	118000	86.60	26.40	<b>Narmada</b>			
				1. Nandod	—	—	1
4.	142000	88.63	27.02	<b>Narmada</b>			
				1. Nandod	2	—	—
5.	148000	89.08	27.16	<b>Narmada</b>			
				1. Nandod	—	2	—
6.	150000	89.24	27.20	<b>Narmada</b>			
				1. Nandod	—	—	2
7.	196000	92.33	28.15	<b>Narmada</b>			
				1. Nandod	3	—	—
8.	204000	92.82	28.30	<b>Narmada</b>			
				1. Nandod	—	3	—
9.	216000	93.51	28.51	<b>Narmada</b>			
				1. Nandod	—	—	3
10.	260000	98.97	29.26	<b>Narmada</b>			
				1. Nandod	4	—	—

Sr. No.	Discharge Released from Karjan Dam (Cusecs)	Gauge Level at Rajpipla Bridge		Name of District Taluka	Signals for Villages at Sr. No.		
		In Feet	In Meter		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
11.	267000	96.39	29.39	<b>Narmada</b>			
				1. Nandod	—	4	—
12.	278000	96.98	29.57	<b>Narmada</b>			
				1. Nandod	—	—	4
13.	424000	104.43	31.84	<b>Narmada</b>			
				1. Nandod 5 to 6	—	—	
14.	437000	105.03	32.02	<b>Narmada</b>			
				1. Nandod	—	5 to 6	—
15.	451000	105.71	32.23	<b>Narmada</b>			
				1. Nandod	—	5 to 6	—

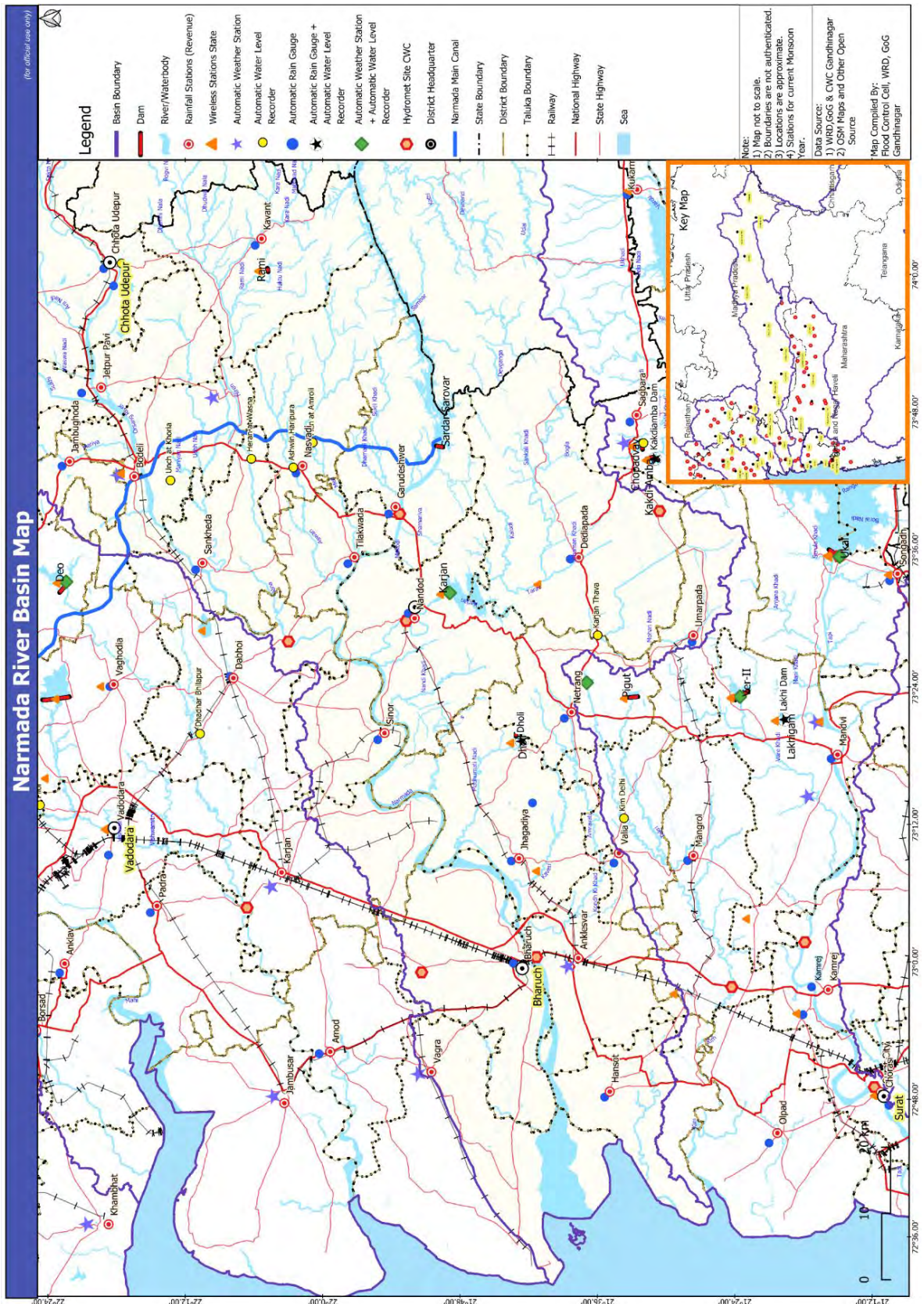
**Note:** - Refer Annexure 8- A-4 for the villages likely to be affected by floods at different Water Levels.



Annexure 8-C-1



## Flood Warning Arrangements - 2025



Annexure 8-C-2

## 9.0 MAHI BASIN

**9.1** As stated earlier, the flood forecasting system for Mahi River Basin is being looked after by the Officer of Executive Engineer, Mahi Division (C.W.C.), Gandhinagar under the control of The Superintending Engineer, Hydrological Observation Circle, and Gandhinagar. He has established various Wireless Stations at locations from where he can obtain the details about rainfall and discharges in the river. The gauge and rainfall data are being communicated, through Wireless Stations located at various stations on the main river as well as on the tributaries.

**9.2** Name of villages/dams where Wireless Stations are located to report rainfall and gauge discharges are as under:

**A. C.W.C's Wireless Stations.**

Sr No	Wireless Station	State
1.	Paderdibadi	Rajasthan
2.	Mahi Dam (Bajaj Sagar Dam)	Rajasthan
3.	Dhariawad	Rajasthan
4.	Anas Dam Site	Rajasthan
5.	Som Kamla Amba Dam	Rajasthan
6.	Mataji	Madhya Pradesh
7.	Diwada Colony(Kadana Dam)	Gujarat
8.	Panam Dam	Gujarat
9.	Wanakbori Weir	Gujarat
10.	Chakaliya	Gujarat
11.	Khanpur	Gujarat

**B. State's Wireless Stations.**

Sr No	Wireless Station	State
1.	Nadiad	Gujarat
2.	Kadana Dam	Gujarat
3.	Panam Dam	Gujarat
4.	Wanakbori Weir (Mahisagar)	Gujarat
5.	Diwada Colony	Gujarat
6.	Sant Road Weir	Gujarat
7.	Addition Spillway (Kadana)	Gujarat

**9.3.** Statement showing the villages affected at various signals at different levels in Mahi River enclosed vide Annexure 9-A and 9-B respectively and for Panam river is appended in Annexure 9-A-1 & 9-B-1 respectively.

**9.4** The Basin Map showing all the wireless stations, Rain gauge and River gauge stations is appended vide Annexure 9-C.

**9.5** Kadana reservoir is located on Mahi River at Kadana in Gujarat , which is moderating the flood in Mahi River. There are other dams viz. Mahi dam (Bajaj Sagar) and Anas dam site (on upper catchment) situated in Rajasthan on Mahi River and Anas River,

which is a tributary of Mahi River. There is Panam dam on Panam river, which is a tributary of Mahi River meeting on the downstream of Kadana dam and situated in Gujarat . Panam reservoir on this river also helps in moderating the floods in Mahi River.

**9.6** Action to be taken by the Executive Engineer, Mahi Division (C.W.C.), Gandhinagar i.e.

1. Formulation and dissemination of Flood Forecast of Kadana Dam and Wanakbori Weir.
2. Sharing of hourly observed Gauge, estimated discharge and rainfall data of site Paderdibadi and Anas PH-II, as per data dissemination schedule (0000, 0300,0600,0800,1000,1200,1500,1800, 2100 hrs).

**TABLE - 9.6**

Note: - Kindly refer Flood Telephone Directory of the current year for contact Nos.

Name of Office	Observation to be made by the Officer	Officer to whom the messages to be sent.	
(1)	(2)	(3)	
<b>(A)</b> Executive Engineer Mahi Division, CWC, Gandhinagar	The Flood inflow forecast of Kadana dam & Panam Dam and Level forecast of Wanakbori Weir, shall be conveyed to the Officer in Column No. 3 Sr. No. (a),(b), (c) ,(d),(e),(r) & (s) Whenever it is likely to cross warning level	(a)	Superintending Engineer, Mahi Irrigation Circle Nadiad.
		(b)	Superintending Engineer Panam Project Circle Godhra.
	Hourly rainfall Data of Kadana Dam and Wanakbori weir may be conveyed to the officers at Sr. No. (a), (b), (c), (e) & (s) for deciding the inflow from Kadana reservoir.	(c)	Superintending Engineer Panam Project Circle Godhra.
		(d)	Executive Engineer, Kadana Div. No. 1, Diwda Colony
<b>(B)</b> Superintending Engineer Mahi Irrigation Circle, Nadiad.	Any Flood Forecast received from above (A) regarding the crossing of warning level at Wanakbori should be conveyed to officer at Sr. No. (b) to (u) except (p)	(e)	Executive Engineer, Nadiad Irrigation Division, Nadiad
		(f)	Collector, Panchmahals Dist., Godhra
		(g)	Collector Vadodara Dist., Vadodara
<b>(C)</b> Executive Engineer Panam Project Division, Godhra	Daily Information regarding Water Level in U/s & D/s of Panam Dam, Water released through Sluice or Spillway from Panam Dam to be conveyed to the Officer in Column	(h)	Collector, Kheda, Dist., Kheda
		(i)	Collector, Anand, Dist., Anand



Name of Office	Observation to be made by the Officer	Officer to whom the messages to be sent.	
(1)	(2)	(3)	
	No. 3 at Sr. No. (a) to (e), (l) & (m)	(j)	Dist. Superintendent of Police Panchmahals District, Godhra
		(k)	Collector, Dhaod Dist., Dahod
(D) Executive Engineer Kadana Div. No. 1 Diwda Colony	Outflow from Kadana Reservoir to be conveyed to the Officers in Column No. 3 at Sr. No. (a) to (c), (l) (m) & (n)	(l)	Dist. Superintendent of Police Dist. Dahod
		(m)	Dist. Superintendent of Police Kheda
	The Inflow forecast of 1 Lac Cusecs (2832 Cumecs) or more coming in to KADANA Dam shall be conveyed to the Officers in Column No. 3 at Sr. No. (a), (b) & (s)	(n)	Dist. Superintendent of Police Anand
		(o)	Dist. Superintendent of Police Vadodara(Rural)
		(p)	Executive Engineer, Mahi Dn. (C.W.C.) Gandhinagar
		(q)	Flood Cell, Godhra
		(r)	Executive Engineer Panam Project Division Godhra
		(s)	Flood Control Cell Gandhinagar
		(t)	Collector, Mahisagar Dist. Lunawada
		(u)	Dist. Sup. of Police, Mahisagar Dist. Lunawada

9.7 ment showing the time lag for various stations from origin to the end of river basin are as under:

Sr. No.	NAME OF SITE	TYPE OF SITE		CATCH-MENT AREA (In Sq. Kms)	DISTANCE FROM ORIGIN (In Kms)	DANGER LEVEL (In Meter)	TIME LAG (In Hours)
1	2	3	4	5	6	7	9
1	BANSWADA	W,R,F,D	Rajasthan	1540	215.60	—	13-27
2	KADANA	W,R,F,D	Gujarat	25520	337.00	127.71	9-18
3	WANAKBORI	W,D,G,R,F	Gujarat	30665	411.00	74.98	5-10
4	MAHI BRIDGE AT VASAD	W	Gujarat	31080	434.40	—	0

NOTE: W = Wireless D = Discharge F = Flood G = Gauge R = Rainfall

- 9.8**     **Appropriate Authority (Focal Officer)**  
The Superintending Engineer  
Mahi Irrigation Circle,  
Sarkari Vasahat, Mission Road, Nadiad

**Note:-**  
Kindly refer Flood  
Telephone Directory of the  
current year for Telephone Nos.

## ANNEXURE – 9 (A)

List of Villages likely to be affected by floods in Mahi River on the basis of gauge of **Wankbori Weir.**

VADODARA DISTRICT							
Sr.	PADRA	Sr.	SAVLI	Sr.	SAVLI	Sr.	VADODARA
No.	TALUKA	No.	TALUKA	No.	TALUKA	No.	TALUKA
	(1)		(2)		(2)-Contd.		(3)
1.	Tithor	1.	Khandi	15.	Amarapura	1.	Singrot
2.	Pavda	2.	Chavda na	16.	Varsada	2.	Phajalpur
3.	Sultanpur		Muvada	17.	Mewalipura	3.	Dodka
4.	Mohamadpur	3.	Bamana	18.	Nani Mamoli	4.	Rayka
5.	Kharera		Muvada	19.	Savli	5.	Angadh
6.	Dabka	4.	Jambugoral	20.	Shibora	6.	Sherikh
7.	Chokarai	5.	Gulabpura	21.	Muval	7.	Nandesari
8.	Jaspur	6.	Vankaner	22.	Vaghra	8.	Amliara
9.	Umraya	7.	Jalampur	23.	Desaipura	9.	Adalpur
10.	Mujpura	8.	Vaghpura	24.	Levaliapura		
11.	Konta	9.	Kanoda	25.	Mianagar		
12.	Ekalbara	10.	Poicha	26.	Bandipura		
		11.	Parthampura	27.	Jesangpura		
		12.	Paicha (Rania)	28.	Bandipura		
		13.	Intwad		na Muvada		
		14.	Wanoti Nani				

ANAND DIST.				KHEDA DIST.			
BORSAD TALUKA		ANKLAV TALUKA		River Mahi		River Shedhi	
1	Gajna	1	Chamara	THASRA TALUKA		THASRA TALUKA	
2	Salol	2	Bamangam	1	Kotariya	1	Thasara
3	Kankupura	3	Umeta	2	Rania	2	Pipalwada
4	Nani Sherdi	4	Khadol (Umeta)	3	Bhadrasa	3	Goraj
5	Kothia Khad	5	Sankhyad	4	Chitlav	4	Aurangpura
6	Dhevan	6	Kanvadi	5	Akalacha	5	Rasulpura
7	Badalpur	7	Amrol	GALTESHWAR TAL.		6	Wantoi/Wanoti
8	Valvod	8	Bhanupur	1	Vanoda	7	Ekalvally
		9	Ashrama	2	Mahi Itadi	8	Dakor
ANAND TALUKA		10	Nava Khal	3	Kuni	9	Rakhial
		11	Bhetasi Vanto	4	Galteshwar	10	Jakhed
1	Khanpur	12	Gambhira	5	Pali	11	Simlaj
2	Kheda			6	Singol	12	Vinjol
3	Anklavadi					13	Khijalpur Vanta
4	Rajupura					14	Khijalpura Talpad
						15	Malai
UMRETH TALUKA						GALTESHWAR TAL.	
						1	Manpur
1	Pratapura					2	Padal
2	Khorwad					3	Jargal
						4	Dabhali
						5	Mithana Muvada
						6	Dabhasar

MAHISAGAR DIST.		MAHISAGAR DIST.		PANCHMAHAL DIST.		MAHISAGAR DIST.	
Sr. No.	LUNAVADA TALUKA	Sr. No.	LUNAVADA TALUKA (cont.)	Sr. No.	SHAHERA TALUKA	Sr. No.	KADANA TALUKA
	(1)		(2)		(3)		(4)
1.	Thana Savli	39.	Hadod	1.	Kharoli	1.	Vagadia na
2.	Rabadia	40.	Kanesav	2.	Bilitha		Andhari
3.	Vanka	41.	Kohan	3.	Hadkimata na	2.	Charan -ni-
4.	Gajoandri	42.	Meghwada		Muvada		Muvada
5.	Tintoi	43.	Simlia	4.	Ramadi	3.	Chopad-devi
6.	Mudava Dekh	44.	Sada	5.	Bhimthal	4.	Mal
7.	Virapara na	45.	Chantiyada	6.	Navi Bordi	5.	Baluji na
	Muvada	46.	Rajgadad	7.	Nathuri na		Muvada
8.	Kanisher	47.	Nana Vadadala		Muvada	6.	Nana-Rajanpur
	Muvada	48.	Handana	8.	Valavpura	7.	Mota- Rajanpur
9.	Madhana		Muvada	9.	Poyda	8.	Diwada
10.	Bhanara	49.	Hindolia	10.	Vadi	9.	Kadana
11.	Limbodra	50.	Golana Palla	11.	Bordi	10.	Thakor na
12.	Pattan	51.	Taktaji na Palla	12.	Vahaka		Nadhra
13.	Kakachia	52.	Kakana			11.	Dadhalia
14.	Ladval		Bhesavada			12.	Kharawada
15.	Kharol	53.	Semara na	<b>SR</b>	<b>GODHRA</b>	13.	Tantroli
16.	Fatepura		Muvada	<b>NO.</b>	<b>TALUKA</b>	14.	Padamji na
17.	Kothampalla	54.	Chandapur				Muvada
18.	Guvalia	55.	Gadhanpur	1.	Nadisar	15.	Ghodiar
19.	Chaerangam	56.	Paji na Muvada	2.	Kabaria	16.	Agarwada
20.	Agarwada.	57.	Mahudia	3.	Juni Dhari	17.	Vagh-Dungari
21.	Dalvaisavli	58.	Vaghji Baria	4.	Nani Dhari	18.	Machhi na
22.	Champli		Muvada		Nadhara	19.	Deda-wada
23.	Kachoti na	59.	Zarakhwada	5.	Gothda	20.	Anup-pur
	Muvada	60.	Chopda	6.	Timba	21.	Khatwa
24.	Juna Karva	61.	Chanasar			22.	Ladu-Damor na
25.	Pania	62.	Ambali na				Vanta
26.	Dholi		Muvada			23.	Munpur
27.	Mera	63.	Mota Dokawa			24.	Antalwada
28.	Sadhakpur	64.	Nani Charel			25.	Math (zNear Mal)
29.	Kidiya	65.	Moti Charel				
30.	Khemalpur	66.	Damanwad			26.	Velanvada
31.	Zer	67.	Verama			27.	Dodia
32.	Bhuvabar	68.	Dokelav			<b>SR.</b>	<b>KHANPUR</b>
33.	Naroda	69.	Vanata			<b>NO.</b>	<b>TALUKA</b>
34.	Ghoghawada	70.	Moti Ghoda			1.	Dolaria
35.	Panam Palla	71.	Dokalina			2.	Nana Khanpur
36.	Valinatah		Muvada			3.	Raheman
37.	Chuva na	72.	Salawada			4.	Mena
	Muvada	73.	Aritha			5.	Bamroda
38.	Kidia	74.	Kotla			6.	Sanpadia
						7.	Patapur
						8.	Dolatpur
						9.	Zara

**Note:** - Refer Annexure 9 (B) for villages to be affected at different water levels.

**Annexure - 9 (A-1)**

Statement showing affected due to floods in **Panam River** through releases discharged from **Panam Dam** till conflict Point of **Mahi River**

Sr. No.	Name of Taluka	Name of Villages			
1	2	3			
PANCHMAHALS DISTRICT					
1.	Shahera	1.	Ramji-ni-nal	4.	Mor
		2.	Khotha	5.	Baluji-na Muvada
		3.	Undara		
MAHISAGAR DISTRICT					
2.	Santrampur	1.	Amaliyat	3.	Nana Salia
		2.	Jotanjiya	4.	Rajbari
3.	Lunawada	1.	Chopada	10.	Jamapagina
		2.	Verama		Muvada
		3.	Nathuji-na Muvada	11.	Chansar
		4.	Nava Muvada	12.	Undara
		5.	Gantav	13.	Kenabariya-na-muvada
		6.	Motigora	14.	Lunavada
		7.	Dokelav	15.	Jesingpur
		8.	Panampalla	16.	Medjio-na-Muvada
		9.	Amali-Muvada	17.	Dokaliya-na-Muvada
				18.	Nanicharel.
4.	Khanpur	1.	Pandarada		

Note: Refer Annexure-9-(B-1) for villages to be affected at different discharges.



## Annexure - 9 (B)

Statement showing villages affected by floods of Mahi River on the basis of discharge released from Upstream Dams of Wanakbori Weir

Sr. No.	Discharge at D/S of Dam in (Cus/Cum)	Gauge Level at D/S of Dam		Name of District Taluka	Signal for Village at Sr. No.		
		In Meter	In Feet		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
NOTE :-							
1	<b>WHITE SIGNALS</b>			: ALERT			
2	<b>BLUE SIGNALS</b>			: READY FOR EVACUATION			
3	<b>RED SIGNALS</b>			: IMMEDIATE EVACUATION			
1	325000 9202.88	71.93	236.00	<b><u>Vadodara</u></b>			
				Padra	1 to 10	--	--
				<b><u>Anand</u></b>			
				Anklav	1 to 5	--	--
2	435000 12317.71	72.54	238.00	<b><u>Mahisagar</u></b>			
				Lunawada	1 to 5	--	--
				<b><u>Panchmahal</u></b>			
				Shahera	1 to 10	--	--
				<b><u>Vadodara</u></b>			
				Savli	1 to 15	--	--
				Vadodara	1 to 5	--	--
				<b><u>Anand</u></b>			
				Borsad	1 to 5	--	--
				Anand	1 to 4	--	--
				Umreth	1 to 2	--	--
3	450000 12742.46	73.15	240.00	<b><u>Mahisagar</u></b>			
				Lunawada	6 to 74	--	--
				Kadana	1 to 27	--	--
				Khanpur	1 to 9	--	--
				<b><u>Panchmahal</u></b>			
				Shahera	11 to 12	--	--
				<b><u>Kheda</u></b>			
				Thasra	1 to 2	--	--
				Galteswar	1 to 2	--	--
				<b><u>Anand</u></b>			
				Anklav	6 to 9	--	--
				<b><u>Vadodara</u></b>			

Sr. No.	Discharge at D/S of Dam in (Cus/Cum)	Gauge Level at D/S of Dam		Name of District Taluka	Signal for Village at Sr. No.		
		In Meter	In Feet		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
				Padra	11 to 12	--	--
				Vadodara	6 to 9	--	---
4	710000 20104.77	73.76	242.00	<b><u>Mahisagar</u></b>			
				Lunawada	--	1 to 5	--
				<b><u>Panchmahal</u></b>			
				Shahera	--	1 to 10	--
				Godhra	1 to 5	--	--
5	745000 21095.85	74.07	243.00	<b><u>Vadodara</u></b>			
				Padra	--	1 to 10	--
				Savli	16 to 28	1 to 8	---
6	865000 24493.84	74.67	245.00	<b><u>Vadodara</u></b>			
				Savli	--	9 to 12	--
				Vadodara	--	1 to 5	--
				Padra	--	11 to 12	--
				<b><u>Anand</u></b>			
				Anklav	10 to 12	1 to 5	--
				Borsad	6 to 8	--	--
				Umreth	--	1 to 2	--
7	900000 25484.92	74.98	246.00	<b><u>Mahisagar</u></b>			
				Lunawada	--	6 to 74	--
				Kadana	--	1 to 27	--
				Khanpur	--	1 to 9	--
				<b><u>Panchmahal</u></b>			
				Shahera	--	11 to 12	--
				Godhra	6	--	--
				<b><u>Vadodara</u></b>			
				Padra	--	--	1 to 10
8	1000000 28316.57	75.44	247.50	<b><u>Vadodara</u></b>			
				Savli	--	13 to 15	--
				Vadodara	--	6 to 9	--
				<b><u>Kheda</u></b>			
				Thasra	3 to 5	1 to 2	--

Sr. No.	Discharge at D/S of Dam in (Cus/Cum)	Gauge Level at D/S of Dam		Name of District Taluka	Signal for Village at Sr. No.		
		In Meter	In Feet		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
				Galteshwar	3 to 6	1 to 2	--
				<u>Anand</u>			
				Anand	--	1 to 4	--
				Umreth	--	1 to 2	--
				Borsad	--	1 to 5	--
9	$\frac{1142000}{32337.53}$	75.90	249.00	Anklav	--	6 to 9	--
				<u>Mahisagar</u>			
				Lunawada	--	--	1 to 5
				<u>Panchmahal</u>			
				Shahera	--	--	1 to 10
				Godhra	--	6	--
				<u>Anand</u>			
				Anklav	--	--	1 to 5
				Anand	--	1 to 4	--
10	$\frac{1210000}{34263.06}$	76.20	250.00	<u>Vadodara</u>			
				Padra	--	--	11 to 12
				Savli	--	16 to 28	1 to 15
				Vadodara	--	6 to 9	1 to 5
				<u>Kheda</u>			
				Thasra	--	3 to 5	1 to 2
				Galteshwar	--	3 to 6	1 to 2
				<u>Mahisagar</u>			
				Lunawada	--	--	6 to 74
				Kadana	--	--	1 to 27
				Khanpur	--	--	1 to 9
				<u>Panchmahal</u>			
				Shahera	--	--	11 to 12
				Godhra	--	1 to 5	--
				<u>Anand</u>			
				Borsad	--	6 to 8	1 to 5
				Anklav	--	10 to 12	6 to 9
				Umreth	--	--	1 to 2
				Anand	--	--	1 to 4
11	$\frac{1227000}{34263.06}$	76.28	250.25	<u>Panchmahal</u>			

Sr. No.	Discharge at D/S of Dam in (Cus/Cum)	Gauge Level at D/S of Dam		Name of District Taluka	Signal for Village at Sr. No.		
		In Meter	In Feet		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
	34744.44			Godhra	--	--	1 to 5
				<b><u>Vadodara</u></b>			
				Savli	--	--	16 to 28
				Vadodara	--	--	6 to 9
				<b><u>Kheda</u></b>			
				Thasra	--	--	3 to 5
				Galteshwar	--	--	3 to 6
				<b><u>Anand</u></b>			
				Anklav	--	--	10 to 12
				Borsad	--	--	6 to 8
12	$\frac{1265000}{35820.47}$	76.45	250.80	<b><u>Panchmahal</u></b>			
				Godhra	--	--	6

**Note:** Refer **Annexure 9-A** for the villages likely to be affected by floods at different Water Levels.

**ANNEXURE – 9(B-1)**

ment showing villages affected due to floods in **PANAM RIVER** through release made from **PANAM Dam** till conflict Point of **MAHI RIVER**

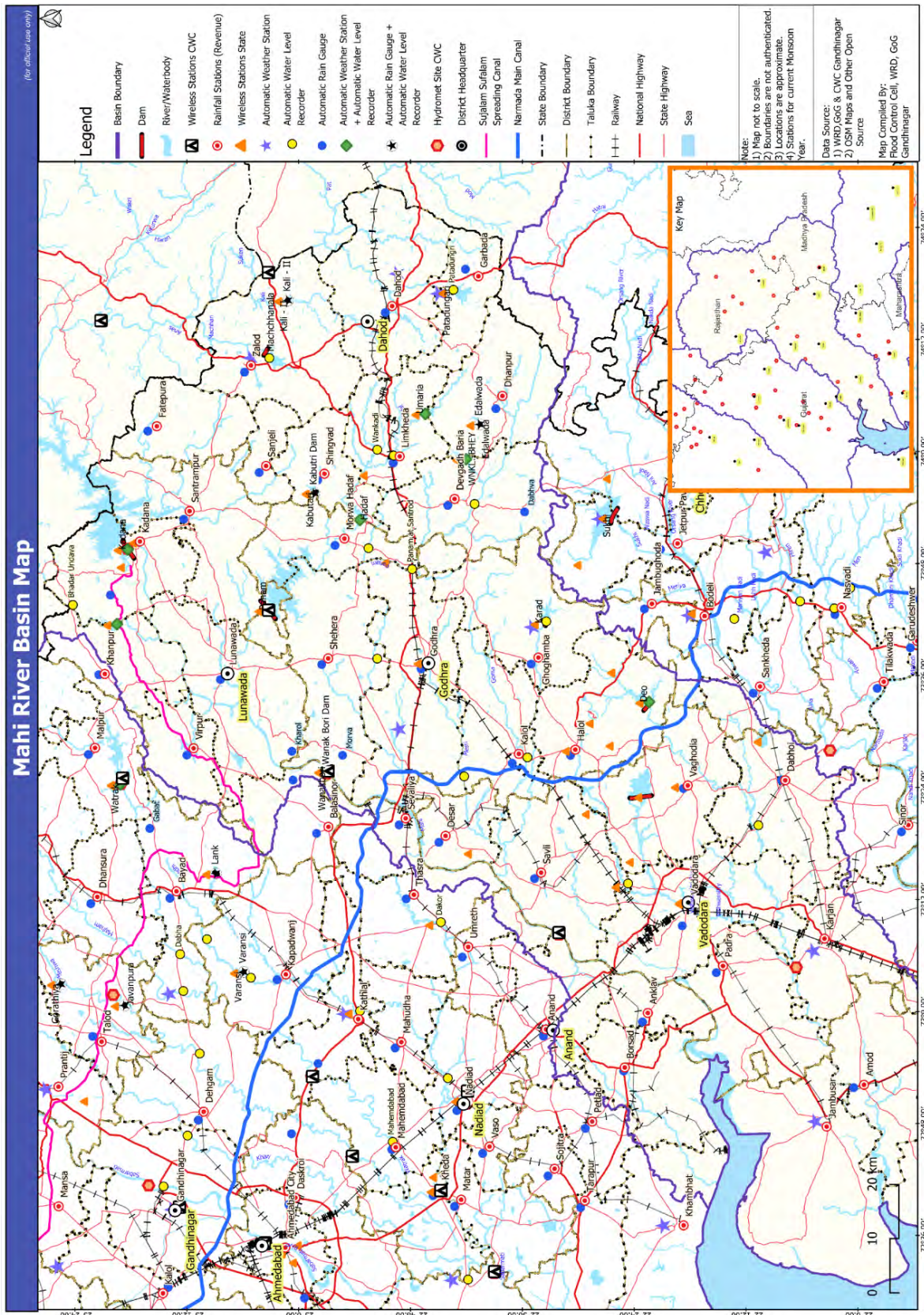
Sr. No.	Discharge Release from Panam Dam in (Cus/Cum)	Name of District Taluka	Signal for Village at Sr. No.		
			White Signal	Blue Signal	Red Signal
1	2	3	4	5	6
1.	150000	<b>Panchmahal</b>			
	4227	1. Shahera	1	—	—
2.	280000	<b>Panchmahal</b>			
	7929	1. Shahera	2 to 5	1	—
		<b>Mahisagar</b>			
		1. Santrampur	1 to 4	—	—
		2. Lunavada	1 to 19	—	—
		3. Khanpur	1	—	—
3.	350000	<b>Panchmahal</b>			
	9911	1. Shahera	—	2 to 5	1
		<b>Mahisagar</b>			
		1. Santrampur	—	1 to 4	—
		2. Lunavada	—	1 to 19	—
		3. Khanpur	—	1	—
4.	393000	<b>Panchmahal</b>			
	11128	1. Shahera	—	—	2 to 5
		<b>Mahisagar</b>			
		1. Santrampur	—	—	1 to 4
		2. Lunavada	—	—	1 to 19
		3. Khanpur	—	—	1

Refer **Annexure - 9(A-1)** for the villages likely to be affected by floods at different discharges.

## LIST OF EXISTING PROJECTS IN MAHI BASIN

Sr. No.	Name of Project	River	Storage Capacity (Mm <sup>3</sup> )		Purpose	Cost in Rs. In Crores.
			Gross	Live		
	<b>Rajsthan</b>					
1	Mahi Bajaj Sagar	Mahi	2180	1712	Multi	397.06
2	Jakham	Jakham	141.9	131.6	Irrigation	60.250
3	Jaisamand	Gomti	414.6	296.1	Irrigation/ Water Supply	---
4	Nagalia Weir	Jakham	---	---	Irrigation	---
5	Karmai Weir	Karnmai	---	---	Irrigation	---
6	SomKamala Weir	Som	126.06	125.83	Irrigation	---
	<b>Gujarat</b>					
7	Kadana	Mahi	1249.30	958.00	Multi	101.86
8	Panam	Panam	578.185	552.966	Irrigation Flood Control	59.895
9	Machhan nalla	Machhan	37.91	29.16	Irrigation	11.775
10	Wanakbori Weir	Mahi	41.884	36.224	Irrigation	46.534
11	Hadaf	Hadaf	22.08	17.27	Irrigation	16.534
12	Kabutary	Kabutary	9.58	8.07	Irrigation	4.782
13	Bhadar	Bhadar	46.72	40.06	Irrigation	27.376
14	Umaria	Hadaf	13.53	11.67	Irrigation	4.699
15	Edalwada	Naleshvar	14.08	13.28	Irrigation	2.636
16	Karad	Karad	42.38	40.08	Irrigation	0.56





Annexure 9-C

**10.0 SABARMATI BASIN**

**10.1** The flood forecasting for Sabarmati Basin is being looked after by Superintending Engineer, Hydrological Observation Circle, Gandhinagar through his Executive Engineer, Mahi Division (C.W.C.) at Gandhinagar. He has established various wireless stations at locations upstream and downstream of Dharoi Dam to obtain the details about rainfall and discharge in the Sabarmati Basin. The gauge and rainfall data are being communicated, through wireless stations located at various stations on the main river as well as on tributaries.

**10.2** Name of villages/dams where wireless stations are located to report rainfall and gauge discharge are as under:

**A. C.W. C's Wireless Stations.**

Sr No	Wireless Station	State
1.	Sei Dam	Rajasthan
2.	Jotasan at River Wakal	Gujarat
3.	Harnav Weir	Gujarat
4.	Kheroj Bridge	Gujarat
5.	Hathmati Weir	Gujarat
6.	Dharoi Dam	Gujarat
7.	Derol Bridge	Gujarat
8.	Ahmedabad [Subhash Bridge]	Gujarat
9.	Ratanpur	Gujarat
10.	Raska Weir	Gujarat
11.	Kheda Town	Gujarat
12.	Watrak Dam	Gujarat
13.	Wautha	Gujarat

**B. State's Wireless Stations.**

Sr No	Wireless Station	Circle	State
1.	S.E., H.I.P.C., H'nagar	(HIPC)	Gujarat
2.	Hathmati Dam	(HIPC)	Gujarat
3.	Meshwo Dam	(HIPC)	Gujarat
4.	Mazam Dam	(HIPC)	Gujarat
5.	Harnav-II Dam	(HIPC)	Gujarat
6.	Guhai Dam	(HIPC)	Gujarat
7.	Waidy Dam	(HIPC)	Gujarat
8.	Watrak	(HIPC)	Gujarat
9.	Badoli	(HIPC)	Gujarat
10.	Karol	(HIPC)	Gujarat



Sr No	Wireless Station	Circle	State
11.	Mahudi	(HIPC)	Gujarat
12.	Ahmedabad	(AIPC)	Gujarat
13.	Wasana Barrage	(AIPC)	Gujarat
14.	Dakor Road Bridge	(MIC)	Gujarat
15.	Kathlal Road Bridge	(MIC)	Gujarat
16.	Dharoi	(SSC.2)	Gujarat
17.	Ratanpur Road Bridge	(CWC)	Gujarat
18.	Kheda Road Bridge	(CWC)	Gujarat
19.	Kherva	(SSC-2)	Gujarat
20.	Javanpura	(HIPC)	Gujarat
21.	Deradungari	(HIPC)	Gujarat
22.	Meghraj	(HIPC)	Gujarat
23.	Modasa	(HIPC)	Gujarat
24.	Idargadh (Repeater)	(HIPC)	Gujarat
25.	Lank	(HIPC)	Gujarat
26.	Khedva	(HIPC)	Gujarat
27.	Gorathiya Mota Chekhala	(AIPC)	Gujarat
28.	Varansi	(HIPC)	Gujarat

- 10.3** Statement showing the names of affected villages of basin and areas of Ahmedabad city at various signaling stages at different levels are enclosed vide **Annexure 10-A-1 to Annexure 10-A-12**
- 10.4** The Basin Map showing all the wireless stations, Rain gauge and River gauge stations is appended vide **Annexure 10-C**.
- 10.5** Dharoi Reservoir located about 165 Kms upstream of Ahmedabad City on River Sabarmati.
- 10.6** The Executive Engineer, Mahi Division, (C.W.C.) Gandhinagar, calculates the inflow in Dharoi reservoir based on the rainfall and discharge data of the upstream stations and reports to **the Superintending Engineer, Sujlam Suflam Circle No.2, Mehsana (Kherva) and Superintending Engineer, Ahmedabad Irrigation Project Circle, Ahmedabad and Executive Engineer, Dharoi Head Works Division-1, Dharoi**. CWC will also convey the gauge data, estimated discharge data, hourly rainfall and weather report of Dharoi, kheroj and kotra as per data transmission schedule. All the data from June 1st to October 31<sup>st</sup> send to the officers of project circle through email or WhatsApp as per data transmission schedule (0000,0300,0600,0800,1000,1200,1500,1800,2100 hrs.). The inflow forecast for Dharoi Dam is to be issued when discharge is of the order of **20,000 Cusecs/567 Cumecs or above is expected to come in reservoir at any time.**

- 10.7** Inflow data as well as gauge and discharge data observed at Subhash Bridge in Ahmedabad are necessary for deciding the operation of Dharoi spillway gates as well as Vasna Barrage gates during floods. The release from Dharoi are to be finalized by the Executive Engineer, Dharoi Head Works Division-1, Dharoi and Mahi Division (C.W.C.), Gandhinagar, in case of normal floods. However, in case of high floods of more than 2.00 lacs Cusecs (5664 Cumecs) the operation of gates and quantum of outflow is to be decided by Executive Engineer, Dharoi Head Works Division in consultation with the Executive Engineer Mahi Division (C.W.C.), Gandhinagar and Superintending Engineer, Sujlam Suflam Circle No.2, Mehsana (Kherva) and Focal Officer, i.e. Superintending Engineer, Ahmedabad Irrigation Project Circle, Ahmedabad.
- 10.8** There are some huts in the bed of river Sabarmati which are affected by the level of even at 5' to 6' at Subhash Bridge. It is not practicable to forecast the gauge of 5' at Subhash Bridge by Executive Engineer. Hence before monsoon Municipal Authorities as well as Executive Engineer, A.I. Division, Ahmedabad, will issue notices in newspapers for evacuation of such huts.
- 10.9** Action to be taken by the Executive Engineer, Mahi Division (C.W.C), Gandhinagar
1. Formulation and Dissemination of Flood Forecast of Dharoi Dam and Subhash Bridge.
  2. Sharing of hourly observed gauge, estimated discharge and rainfall data of site Kheroj, kotra (Jotasan) and Kheda as per data dissemination schedule (0000,0300,0800,1000,1200,1500,1800,2100 hrs)
  3. (a) Support Executive Engineer, Dharoi Head Works Division, Dharoi in finalizing releases from Dharoi Dam in case of normal floods.  
(b) Support Executive Engineer, Dharoi Head Works Division, Dharoi, Superintending Engineer Sujalam Suflam Circle No. 2, Mehsana (Kherva) and focal officer, i.e. Superintending Engineer Ahmedabad Irrigation Project Circle, Ahmedabad, in deciding operation of gates and quantum of outflow from Dharoi Dam, in case of high floods of more than 2.0 lacs Cusecs (5664 Cumecs).

**TABLE - (10.9)**

**Note:** - Kindly refer Flood Telephone Directory of the current year for telephone nos.

Name of the Officer with Telephone Nos.	Observation to be made by the Officer	Officer to whom the messages to be sent.
(1)	(2)	(3)
(A) Executive Engineer Mahi Division (C.W.C.), Gandhinagar	The Inflow forecast for 20000 Cusecs for DHAROI Dam is to be conveyed to the officer at Sr.No. (a) (b) (d) & (s) in Column No.3.  The Flood Level forecast of SUBHASH BRIDGE,	a) Superintending Engineer Ahmedabad Irrigation Project Circle, Ahmedabad.  b) Superintending Engineer Sujlam Suflam Circle No.2, Mehsana (Kherva).  c) Executive Engineer, Ahmedabad Irrigation Division,

	Ahmedabad. As per Annexure - 10-B-1-1 is to be conveyed to the Officers in Column No.3 at Sr.No.(a),(c) and (s) Only G & D Data of KHEDA TOWN for the Villages covered under Annexure 10-B-1.2 to 10-B-1.4 & 10-B-1.7 is to be conveyed to the Officers in Column No.3 at Sr.No. (a) (c) & (s)	d) Executive Engineer, Dharoi Head works Dn. No.1, Dharoi Colony e) Police Commissioner of KHEDA f) Municipal Commissioner, Ahmedabad. g) Dy. Muni. Commissioner, Ahmedabad. h) Collector, Ahmedabad. i) Area Superintend. (W.R) Ahmedabad. j) Commandant Home Guard, Ahmedabad. k) Collector, Kheda, District Kheda.
<b>(B)</b> Executive Engineer, Dharoi Head Works Dn. No.1, Dharoi Colony.	Release made from Dharoi reservoir is to be conveyed to the officer in column No.3 at Sr.No. (a) to (c), (h) & (o) to (r) & (s) (t) (u)	l) District Superintend of Police, Kheda, Nadiad m) Mamlatdar, Dholka. n) Dy. Executive Engineer, Sanand Irrigation Sub Dn. Sanand.
<b>(C)</b> Executive Engineer, Shedhi Irrigation Dn., Nadiad	Gauge levels of SHEDHI River at Dakor and MOHAR River at Kathlal will be conveyed to the officer in Column No.3 at Sr.No.(a) & (c) (k) & (l), (r) & (s)	o) Collector, Sabarkantha District, Himmatnagar. p) Collector, Mehsana District, Mehsana. q) Collector, Gandhinagar District, Gandhinagar. r) Executive Engineer Mahi Division (C.W.C.), Gandhinagar s) Flood Control Cell, Gandhinagar. t) Executive Engineer, Irri. Project Dn., Modasa u) Mamlatdar, Satlasana

**10.10** Statement showing the Time lag for various stations from origin to the end of river basin as under.

Sr. No.	Name of Site	Type of Site	State	Catchment Area in (Sq. Kms.)	Distance from Origin in (Kms.)	Danger Level in (Meters)	Time Lag in (Hours)
1	2	3	4	5	6	7	8
1	DHAROI	W,G,D,R,F	Gujarat	5540.00	163.00	190.86	8 to 11
2	DEROL	W,R,G,D	Gujarat	6724.00	221.00	----	5 to 11
3	SUBHASH BRIDGE	G,D,F	Gujarat	10674.00	311.00	45.34	7 to 11

**NOTE:** W=Wireless D=Discharge F=Flood G=Gauge R=Rainfall

**10.11 Appropriate Authority (Focal Officer)**

Superintending Engineer  
Ahmedabad Irrigation Project Circle,  
A-Block, 9<sup>th</sup> Floor, Bahumali Bhavan,  
Vastrapur, Ahmedabad-52.

Note:-

Kindly refer Flood  
Telephone Directory of the  
Current year for telephone nos.

## 10.12 RIVERS OF SABARKANTHA DISTRICT (EXCEPT RIVER SABARMATI)

**10.12.1** Floods are being experienced in the rivers of Sabarkantha district during heavy rains viz. (1) **Watrak**, (2) **Meshwo**, (3) **Hathmati**, (4) **Guhai**, (5) **Harnav**, (6) **Waidy**, and (7) **Mazam**. For dams of Sabarkantha District (except Dharoi Reservoir), the Superintending Engineer, Himmatnagar Irrigation Project Circle, Himmatnagar is the Focal Officer. The Executive Engineer, H.I. Division, Himmatnagar is now under the control of S.E.H.I.P.C., Himmatnagar, so, the project under H.I.Dn.Himmatnagar are under control of S.E. H.I.P.C. Himmatnagar (The Focal Officer of Sabarkantha Project except Sabarmati Project.)

**10.12.2** The flood warning for the village shown in Annexure 10-A-2 to 10-A-7 & 10-B-1.3 to 10-B-1.9 will be issued by S.E.H.I.P.C., Himmatnagar to revenue authorities for taking necessary action for alerting and evacuating the people likely to be affected by release of water from following dams.

- |                    |                  |                      |
|--------------------|------------------|----------------------|
| 1. Meshwo Dam      | 5. Hathmati Weir | 9. Jawanpura Barrage |
| 2. Mazam Dam       | 6. Hathmati Dam  | 10. Lank             |
| 3. Watrak Dam      | 7. Guhai Dam     |                      |
| 4. Harnav - II Dam | 8. Waidy         |                      |

**10.12.3** The locations of Wireless Stations in Sabarkantha district are as under

- |                           |               |               |               |
|---------------------------|---------------|---------------|---------------|
| 1. S.E.,H.I.P.C., H'Nagar | Gujarat State | 2. Harnav Dam | Gujarat State |
| 3. Guhai Dam              | Gujarat State | 4. Badoli     | Gujarat State |
| 5. Idargadh (Repeater)    | Gujarat State | 6. Karol      | Gujarat State |
| 7. Jawanpura              | Gujarat State | 8. Khedva     | Gujarat State |
| 9. Gorathiya              | Gujarat State | 10. Varansi   | Gujarat State |

The locations of Wireless Stations in Aravalli district are as under

- |                 |               |                          |               |
|-----------------|---------------|--------------------------|---------------|
| 1. Hatmathi Dam | Gujarat State | 2. Meshwo Dam            | Gujarat State |
| 3. Mazam Dam    | Gujarat State | 4. Waidy Dam             | Gujarat State |
| 5. Watrak       | Gujarat State | 6. Mahudi                | Gujarat State |
| 7. Modasa       | Gujarat State | 8. Deradungari           | Gujarat State |
| 9. Meghraj      | Gujarat State | 10. Ratanpur Road Bridge | Gujarat State |
| 11. Lank        | Gujarat State |                          |               |

**Note:** The above Wireless Stations are shown in para 10.12.2 and 10.12.3 but they are to be looked after by Superintending Engineer, Himmatnagar Irrigation Project Circle, Himmatnagar.

#### 10.12.4 Action to be taken by various officers:

**TABLE - (10.12.4)**

**Note:-** Kindly refer Flood Telephone Directory of the current year for telephone nos.

<b>Name of the Officer with Telephone Nos.</b>	<b>Observation to be made by the Officer</b>	<b>Officer to whom the messages to be sent.</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
(A) Deputy Executive Engineer (In charge of MAZAM & MESHWO Dam site Wireless station) Modasa Irri. Sub Dn. Modasa	Collection & communication of data regarding Rainfall, Reservoir Water Level, releases from dam @ 6.00 AM or hourly if required through Wireless station on telephone to the Officer in column No.3 at Sr.No.(a),(c) (h) & (j)	a) Superintending Engineer Himmatnagar Irrigation Project Circle, Himmatnagar b) Superintending Engineer Ahmedabad Irrigation Project Circle, Ahmedabad.
Executive Engineer Irrigation Project Division, Modasa.	Data received from Dam site & flood forecast if any will be communicated to the officer in column No.3 at Sr.No. (a), (b), (g), (h), to (t)	c) Executive Engineer Irrigation Project Division, Modasa. d) Executive Engineer Himmatnagar Irrigation Division, Himmatnagar
(B) Deputy Executive Engineer (In charge of WATRAK dam) Dam Site Wireless Station (Anior) Modasa Irri. Sub Dn.1 Bhempoda	Collection & communication of data regarding Rainfall, Reservoir Water Level, releases from dam at 6.00 AM or hourly if required through Wireless Station on telephone to the Officer in column No.3 at Sr.No.(c) (h) and (i).	e) Executive Engineer Project Construction Division No.3, Himmatnagar. f) Executive Engineer Ahmedabad Irrigation Division, Ahmedabad. g) Executive Engineer, Himmatnagar Irrigation Division, Himmatnagar. h) Executive Engineer, Dharoi Head Works Division No.1, Dharoi. i) Flood Cell, Himmatnagar
Executive Engineer Irrigation Project Division, Modasa.	Data received from Dam site to formulate flood level forecast of KHEDA TOWN for villages covered in Annexure 10-C-1.2 to 10-C-1.4 & 10-C-1.7 will be Communicated to the Officer in column no.3 at Sr.No.(a) (b),(f),(h), (j),to(t)	j) Flood Cell, Gandhinagar. k) Collector, Ahmedabad. i) Collector, Sabarkantha m) Collector, Kheda District, Kheda

Name of the Officer with Telephone Nos.	Observation to be made by the Officer	Officer to whom the messages to be sent.
(1)	(2)	(3)
(C) Deputy Executive Engineer (In charge of GUHAI dam) Guhai Sub Division No.5 Himmatnagar Dam site Wireless station (Jamla)	Collection & Communication of data regarding Rainfall, Reservoir Water Level, Live storage releases from dam @ 6.00 AM or hourly if required through Wireless station on telephone to the Officer in Column No.3 at Sr.No. (e) & (i).	n) District Superintendent of Police, Sabarkantha Himmatnagar. o) District Superintendent of Police, Kheda (North) District, Kheda. p) Chief Area Manager (W.R) Ahmedabad.
Executive Engineer Project construction Division No.1, Himmatnagar.	Data received from Dam site & flood forecast if any will be communicated to the officer in column no.3 at Sr. No. (a), (b), (e) to (h), (j) (l) to (n) & (s), (t)	q) District Superintendent of Police, Ahmedabad (Rural) Ahmedabad. r) Mamlatdar, Dholka. s) Executive Engineer Mahi Division (C.W.C), Gandhinagar.
(D) Deputy Executive Engineer (In-charge of HARNAV dam) Harnav Sub Division No.2, Vijaynagar.	Collection & communication of data regarding Rainfall, Reservoir Water Level, Live storage releases from dam @ 6.00 AM or hourly if required through Wireless station on telephone to the Officer in column No.3 at Sr.No.(e) & (i)	t) Collector, Anand (u) Mamlatdar, Kapadwanj
Executive Engineer Project construction Division No.3, Himmatnagar.	Data received from Dam site to formulate flood level forecast of KHEDA TOWN for villages covered in Annexure 10-B-1.2 to 10-B-1.4 & 10-B-1.7 will be communicated to the officer in column no.3 at Sr.No.(a).	
(E) Deputy Executive Engineer (In charge of Hathmati & Indrasi dam) Himmatnagar Irri. Sub.Dn. Himmatnagar	Collection & communication of data regarding Rainfall, Reservoir Water Level, releases from dam @ 6.00 AM or hourly if required through Wireless station on telephone to the Officer in column No.3 at Sr.No.(g) & (i)	

<b>Name of the Officer with Telephone Nos.</b>	<b>Observation to be made by the Officer</b>	<b>Officer to whom the messages to be sent.</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
Executive Engineer Himmatnagar Irrigation Division, Himmatnagar.	Data received from Dam site & flood forecast if any will be communicated to the officer in column No.3 at Sr.No. (a), (b), (e), (f), (h) to (o), (s)	
<b>(F)</b> Deputy Executive Engineer (In charge of Waidy dam) Mazam Reha. Sub. Dn. Megharaj	Collection & communication of data regarding Rainfall, Reservoir Water Level, releases from dam at 6.00 AM or hourly if required through Wireless Station on telephone to the Officer in column No.3 at Sr.No.(g) and (i).	
Executive Engineer Irrigation Project Division, Modasa.	Data received from Dam site & flood forecast for villages covered in Annex. 10B-1.1,10-B-1.3 to 10.B-1.5, 10-B-1.8 to 10.B.1.10,10-A. 2, 10-A-6,10-A-7. will be commu- nicated to the officer in Col.3 at Sr. No.(a),(b),(e),(f),(h),(j), (k),(i) to (s)	
<b>(G)</b> Deputy Executive Engineer (In charge of Jawanpura Barrage) Guhai Sub. Dn.No-4 Himmatnagar	Collection & communication of data regarding Rainfall, Reservoir Water Level, releases from dam at 6.00 AM or hourly if required through Wireless Station on telephone to the Officer in column No.3 at Sr.No.(d), (e) and (i), t	
<b>(H)</b> Deputy Executive Engineer (In charge of Lank) Watrak Canal Sub. Dn. 9 Bayad	Collection & communication of data regarding Rainfall, Reservoir Water Level, releases from dam at 6.00 AM or hourly if required through Wireless Station on telephone to the Officer in column No.3 at Sr.No.(a)to (g), (h) & (i)	
<b>(I)</b> Deputy Executive Engineer (In charge of Khedva) Guhai Canal Sub. Dn. 1 Khedbrahma	Collection & communication of data regarding Rainfall, Reservoir Water Level, releases from dam at 6.00 AM or hourly if required through Wireless Station on telephone to the Officer in column No.3 at Sr.No.(a),(d),(e), (i),(j) & (l)	
<b>(J)</b> Deputy Executive Engineer (In charge of Varansi dam) Watrak Canal Sub. Dn.13 Bayad	Collection & communication of data regarding Rainfall, Reservoir Water Level, releases from dam at 6.00 AM or hourly if required through Wireless Station on telephone to the Officer in column No.3 at Sr.No.(a),(d),(e), (i),(m),(o) & (u)	

**10.11.6 Appropriate Authority (Focal Officer)****(A) For Sabarkantha District and Aravalli District**

(Except Sabarmati River)

Superintending Engineer

Himmatnagar Irrigation Project Circle

Sinchai Bhavan, Himmatnagar

**Note:-**

Kindly refer Flood Telephone

Directory of the current year for  
telephone nos.**ANNEXURE - 10 (A-1)**

**White signal is to be issued by S.E. A.I.P.C. when discharge released from Subhash Bridge is more than 86,597 Cusecs in Rivers Sabarmati and intimation should be given to S.E.,SWDC & concerned Revenue Authorities.**

**GANDHINAGAR DISTRICT**

<b>SR. No.</b>	<b>GANDHINAGAR TALUKA</b>	<b>SR. No.</b>	<b>MANASA TALUKA</b>	<b>SR. No.</b>	<b>KALOL TALUKA</b>
1	Valad	1	Khadat	1	Aluva
2	Raysan	2	Mahudi		
3	Randesan	3	Anodia		
4	Bhat	4	Dodipal		
5	Koba	5	Lakroda		
6	Pethapur	6	Varsoda		
7	Palaj	7	Gunma		
8	Sahpur	8	Ambod		
9	Ratanpur	9	Amarpura(Gra)		
10	Lekawada	10	Delwada		
11	Nava Dharampur				
12	Sadara				
13	Dholakuwa				
14	Indroda				
15	Borij				
16	Pimpalaj				
17	Pidharda				



**List of villages likely to be affected by floods In Rivers Sabarmati, Watrak, Shedhi.**

## AHMEDABAD DISTRICT.

SR. No.	CITY TALUKA	SR. No.	DASKROI TALUKA	SR. No.	DHOLKA TALUKA	SR. No.	DHOLKA TALUKA (3.. Contd.....)
1	Paldi	1	Laxmipura	1	Ambaliyara	38	Bhavanpara
2	Old Vadaj	2	Lambha	2	Chandisar	39	Badarkha
3	New Vadaj	3	Kunod	3	Jalalpur Vajifa	40	Diman
4	Giaspur	4	Giramtha	4	Khatripur	41	Dhulajipara
5	Ellisbridge Police Station Area	5	Ode	5	Rajpur	42	Kodariapara
6	Jamalpur	6	Naz	6	Saroda	43	Mandalpara
7	Raikhad	7	Paldi- Kankrej	7	Sathal	44	Jakhda
8	Kochrab	8	Miroli	8	Ambethi	45	Anandpara
9	Subhas Bridge Area	9	Nava Pura	9	Andhari	46	Vejalka
10	Pirana	10	Dharoda-Mahijada	10	Pisawada	47	Arnej
11	Piplaj	11	Visal pur	11	Sahij	48	Juwaraj
12	Gopalpur	12	Vasai	12	Varna	49	Koth
13	Shahvadi	13	Wanzar	13	Vataman	50	Rupgadhd
14	Kama Hotel Area	14	Bhat	14	Bharatwada	51	Kariyana
15	Sabarmati Power House	15	Fatewadi	15	chaloda	52	Godhneswar
16	Sarkhej	16	Kasindra	16	Dadusar	53	Kalia
17	Dudheshwer	17	Bakrol	17	Dholi	54	Ambareli
18	Madhupura	18	Tihmba	18	Ganesar	55	Kadipur
19	Shahpur Area			19	Ganol	56	Begva
		SR. No.	BAVALA TALUKA	20	Girand	57	Rampur
		1	Devthal	21	Ingoli	58	Raipur
SR. No.	DHANDHUKA TALUKA	2	Dumali	22	Kaliapura	59	Ranoda
1	Dholera	3	Kavitha	23	Kauka	60	Deliya
2	Vithal Bandar	4	Memar	24	Kharanti	61	Jundal
3	Kum	5	Kavala	25	Lolia	62	Rupavati
4	Gogha	6	Ranesar	26	Mafalipur	63	Shekhadi
5	Kadipur	7	Siyal	27	Moti-Boru	64	Dhanwada
6	Kasindra	8	Bagodara	28	Nani-Boru	65	Utelia
7	Ambali	9	Rohika	29	Mujpur Para	66	Saragwada
8	Kama Talav			30	Nesda	67	Gandi
9	Ganeshpura	SR. No.	SANAND TALUKA	31	Paladi	68	Samani
10	Navagam	1	Matoda	32	Simej	69	Dholka
				33	Trasad	70	Lothal
				34	Vautha	71	Bhumali
11	Valinda	2	Savi	35	Kelia-Wasana	72	Sarandi
12	Pipali	3	Palvada	36	Viridi	73	Walthera
13	Pachchham	4	Tajpur	37	Virpur	74	Lana
14	Ratanpur	5	Moraiya				
15	Kamibala	6	Wasana				
16	Fedra	7	Jivanpura				
17	Behrampura	8	Sanathal(Chacharwadi)				
18	Anandpur	9	Lodarial				
		10	Changodar				
		11	Zamp				
		12	Kalol				
		13	Moti Devti				
		14	Modasar				

## ANNEXURE - 10 (A-1).Contd.....

List of villages likely to be affected by floods In Rivers Sabarmati, Watrak, Shedhi.

## KHEDA DISTRICT.

SR. No.	MATAR TALUKA	SR. No.	NADIAD TALUKA	SR. No.	KHEDA TALUKA	SR. No.	KAPADVANJ TALUKA
1	Rasikpura	1	Vina	1	Nani - Kaloli	1	Vaghari
2	Varsang	2	Navagam	2	Moti - Kaloli	2	Pathavat
3	Baroda	3	Valla	3	Radhu		
4	Asmali	4	Aljada	4	Pathapura		
5	Pabla	5	Nana - Vagana	5	Kathwada		
6	Sokhad	6	Erendipura	6	Naika		
7	Rathanpur	7	Bilodra	7	Dharoda		
8	Matar	8	Munjpura	8	Navagam		
9	Hayjrabad	9	Vadai	9	Chitrasar		
10	Pipariar	10	Andhari Ambali	10	Chalindra		
11	Kosiya			11	Vasana-Buzarag		
12	Agovi			12	Hariyala		
13	Mahela			13	Samadralat		
				14	Kheda		
				15	Khumanvad		
				16	Kheda Camp		

SR. No.	THASRA TALUKA	SR. No.	MEHMADA VAD TALUKA	SR. No.	MAHUDHA TALUKA	SR. No.	KATHLAL TALUKA
1	Bharthar	1	Gadhav	1	Undra	1	Chelavat
2	Golaj	2	Bara Muvada	2	Herenj	2	Chhipal
3	Vinzol	3	Ghodali	3	Alina	3	Bharkunda
4	Zakhed	4	Mankuva				
5	Pilol	5	Godhaj (Gedbai)				
6	Simlaj	6	Adika				
7	Vaso	7	Vancol Soda				
8	Dadad	8	Vamali				
9	Mitha-na-Muvada	9	Khambhli				
10	Dabhali	10	Varsola				
11	Jargal	11	Iyava				
12	Vanthrauh						
13	Pipalwada						
14	Dhhudi						
15	Vanoti						
16	Rasulpura						
17	Ekively						
18	Masra						
19	khijalpur Talpad						
20	Khijalpur Vant						

**ANAND DISTRICT.**

<b>SR No.</b>	<b>TARAPUR TALUKA</b>	<b>SR. No.</b>	<b>KHAMBHAT TALUKA</b>
1	Galiana	1	Golana
2	Rinza	2	Pandad
3	Khada		
4	Milarampur		
5	Chitravada		
6	Dughari		
7	Nabhoi		
8	Mota-Kalodra		
9	Fatehpur		
10	Pachegam		
11	Kasbara		

**ARAVALLI DISTRICT**

<b>SR No.</b>	<b>BAYAD TALUKA</b>	<b>SR. No.</b>	<b>DHANSURA TALUKA</b>	<b>SR. No.</b>	<b>MALPUR TALUKA</b>
1	Dolpur	1.	Barnoli	1.	Khalipur
2	Nana Lalpur	2.	Chhevadiya na Muvada	2.	Narshinh Khant na Muvada
3	Mota Lalpur	3.	Sageyani Rayan	3.	Jalam Khant na Muvada
4	Gopalpur	4.	Khadol		
5	Hematral na Muvada				
6	Motipur				
7	Ranechi				
8	Dahegamda				
9	Nani Simlaj				
10	Moti Simlaj				

**SABARKANTHA DISTRICT**

<b>SR. No.</b>	<b>TALOD TALUKA</b>
1	Takar
2	Motachkhla
3	Varvada
4	Mohanpur

Note:-

- (1) Paldi means the low lying area between Banks of River Sabarmati and Road from Paldi Bus Stand to Wasna.
- (2) Refer Annexures 10 (B-1.1) to 10 (B-1.8) for villages to be affected at different Water Levels.

**ANNEXURE - 10-B-1.1 (Warning to be issued by S.E.AIPC, AHMEDABAD)**

Statement showing villages affected by floods of **Sabarmati River** on the basis of discharge/ gauge available at **Subhash Bridge** gauge site.

Sr. No.	Discharge from Dharoi Dam (Cus/Cum)	Gauge Level at Subhash Bridge Ft./Mt.	Gauge in Ft. Mt.	Name of District Taluka	Signal for Village at Sr. No.		
					White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
NOTE :-							
1	<b>WHITE SIGNALS</b>			: ALERT			
2	<b>BLUE SIGNALS</b>			: READY FOR EVACUATION			
3	<b>RED SIGNALS</b>			: IMMEDIATE EVACUATION			

1.	86597	144.65	10.00	<b>AHMEDABAD</b>			
	2452.08	44.09	3.01	1. City	1 to 5	—	—
				2. Dholka	1 to 7	—	—
				<b>KHEDA</b>			
				1. Matar	1 to 3	—	—
				2. Kheda	1 to 5	—	—
				<b>ANAND</b>			
				1. Tarapur	—	—	—
				2. Khambhat	1	—	—
2.	116892	146.79	12.00	<b>AHMEDABAD</b>			
	3309.91	44.74	3.66	1. City	6 to 9	1 to 5	—
				2. Dholka	8 to 12	1 to 7	—
				<b>KHEDA</b>			
				1. Matar	4 to 13	1 to 3	—
				2. Kheda	6 to 12	1 to 5	—
				<b>ANAND</b>			
				1. Tarapur	1 to 11	—	—
				2. Khambhat	2	1	—
3.	145000	148.76	14.00	<b>AHMEDABAD</b>			
	4105.90	45.34	4.27	1. City	10 to 12	6 to 9	1 to 5
				2. Dascroi	1 to 18	—	—
				3. Dholka	13 to 43	8 to 12	1 to 7
				6. Bavla	1 to 7	—	—

Sr. No.	Discharge from Dharoi Dam (Cus/Cum)	Gauge Level at Subhash Bridge Ft./Mt.	Gauge in Ft. Mt.	Name of District Taluka	Signal for Village at Sr. No.		
					White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8

**KHEDA**

1. Matar	—	4 to 13	1 to 3
2. Kheda	—	6 to 12	1 to 5

**ANAND**

1. Tarapur	—	1 to 11	—
2. Khambhat	—	2	1

4. 173300 150.78 16.00

4907.26 45.95 4.87

**AHMEDABAD**

1. City	13 to 19	10 to 12	6 to 9
2. Dascroi	—	1 to 18	—
3. Dholka	—	13 to 43	8 to 12
4. Dhandhuka	1 to 18	—	—
5. Sanand	1 to 14	—	—
6. Bavla	—	1 to 7	—

**KHEDA**

1. Matar	—	4 to 13	1 to 3
2. Kheda	—	6 to 12	1 to 5

**ANAND**

1. Tarapur	—	—	1 to 11
2. Khambhat	—	—	2

5. 203300 152.75 18.00

5756.76 46.56 5.49

**AHMEDABAD**

1. City	—	13 to 19	10 to 12
2. Dascroi	—	—	1 to 18
3. Dholka	43 to 74	—	13 to 43
4. Dhandhuka	—	1 to 18	—
5. Sanand	—	1 to 14	—
6. Bavla	8 to 9	—	—

**KHEDA**

1. Matar	—	—	4 to 13
2. Kheda	—	—	6 to 12

**ANAND**

1. Tarapur	—	—	1 to 11
2. Khambhat	—	—	2

Sr. No.	Discharge from Dharoi Dam (Cus/Cum)	Gauge Level at Subhash Bridge Ft./Mt.	Gauge in Ft. Mt.	Name of District Taluka	Signal for Village at Sr. No.		
					White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
6.	230000	154.75	20.00	<b>AHMEDABAD</b>			
	6512.81	47.17	6.10	1. City	—	—	13 to 19
				3. Dholka	—	43 to 74	—
				4. Dhandhuka	—	—	1 to 18
				5. Sanand	—	—	1 to 14
				6. Bavla	—	8 to 9	—
7.	260000	156.75	22.00	<b>AHMEDABAD</b>			
	7362.31	47.78	6.71	3. Dholka	—	—	43 to 74
				6. Bavla	—	—	8 to 9

**Note:** - (1) Zero Gauge of Subhash Bridge is 134.75 ft. i.e. 41.08 M.

(2) Refer **Annexure 10-A-1** for affected villages mentioned in Column Nos 6 to 8 in this Annexure.

(3) Extrapolated Probable discharges, to be observed annually & amended Accordingly.

#### ANNEXURE - 10-B-1.2 (Warning to be issued by S.E., MIC, NADIAD)

Statement showing villages affected by floods of **Mohar River** on the basis of discharge/gauge available at downstream of **Kathlal Bridge**.

Sr. No.	Discharge in River Mohar (Cum/Cus)	Gauge Level at Kathlal Bridge Ft./Mt.	Gauge in Ft. Mt.	Name of District Taluka	Signal for Village at Sr. No.		
					White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
1.	NA	NA	5.70	<b>KHEDA</b>			
	NA	NA	18.70	2. Nadiad	1 to 10	—	—
				6. Mahemdabad	1	—	—
				7. Mahudha	1 to 2	—	—
2.	NA	NA	6.10	<b>KHEDA</b>			
	NA	NA	20.01	2. Nadiad	—	1 to 10	—
				6. Mahemdabad	—	1	—
				7. Mahudha	—	1 to 2	—
3.	NA	NA	6.50	<b>KHEDA</b>			
	NA	NA	21.33	2. Nadiad	—	—	1 to 10
				6. Mahemdabad	—	—	1
				7. Mahudha	—	—	1 to 2

**Note:** (1) Refer **Annexure 10-A-1** for affected villages mentioned in Column Nos 6 to 8 in this Annexure.

(2) Zero Gauge of Kathlal Bridge is **36.94 Meter**.

**ANNEXURE - 10-B-1.3 (Warning to be issued by S.E.HIPC, Himmatnagar)**

Statement showing villages affected by floods of **Watrak River** on the basis of discharge/gauge available at **D/s of Ratanpur-Gadvel Road**.

Sr. No.	Discharge in River Watrak (Cum/Cus)	Gauge Level at Ratanpur Gadval Road	Gauge in Mt. Ft.	Name of District Taluka	Signal for Village at Sr. No.		
					White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
1.	NA	NA	4.50	<b>KHEDA</b>			
	NA	NA	14.76	1. Matar	1 to 5	—	—
				2. Kheda	1 to 10	—	—
				4. Kapadwanj	1 to 2	—	—
				5. Mahemdabad	2 to 6	—	—
				8. Kathlal	1 to 3	—	—
2.	NA	NA	4.90	<b>KHEDA</b>			
	NA	NA	16.07	1. Matar	—	1 to 5	—
				2. Kheda	—	1 to 10	—
				4. Kapadwanj	—	1 to 2	—
				5. Mahemdabad	—	2 to 6	—
				8. Kathlal	—	1 to 3	—
3.	NA	NA	5.50	<b>KHEDA</b>			
	NA	NA	18.04	1. Matar	—	—	1 to 5
				2. Kheda	—	—	1 to 10
				4. Kapadwanj	—	—	1 to 2
				5. Mahemdabad	—	—	2 to 6
				8. Kathlal	—	—	1 to 3

**Note:** (1) Refer **Annexure 10-A-1** for affected villages mentioned Column Nos 6 to 8 in This Annexure.

(2) Zero Gauge of Ratanpur Gadwal Bridge is **39.12 Meter**.

**ANNEXURE - 10-B-1.4 (Warning to be issued by SE, HIPC, Himmatnagar)**

Statement showing villages affected by floods of **Watrak River** on the basis of discharge/gauge available at **Kheda Road Bridge on N.H. 8**.

Sr. No.	Discharge in River Watrak (Cum/Cus)	Gauge Level at Kheda Road Bridge on NH-8	Gauge in Mt. Ft.	Name of District Taluka	Signal for Village at Sr. No.		
					White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
1.	NA	NA	4.50	<b>KHEDA</b>			
	NA	NA	14.76	1. Matar 2. Kheda	7 to 13 11 to 12	— —	— —
2.	NA	NA	5.50	<b>KHEDA</b>			
	NA	NA	18.04	1. Matar 2. Kheda	— —	7 to 13 11 to 12	— —
3.	NA	NA	6.50	<b>KHEDA</b>			
	NA	NA	21.32	1. Matar	—	—	6 to 13

- Note:** (1) Refer **Annexure 10-A-1** for affected villages mentioned in Column Nos 6 to 8 in this Annexure.  
 (2) Zero Gauge of **Kheda Bridge on N.H.No.8** is **19.75 Meter**.

**ANNEXURE - 10-B-1.5 (Warning to be issued by S.E, HIPC, H'NAGAR)**

Statement showing villages affected by floods of **Watrak River** on the basis of discharge released & gauge available at **Dabha Bridge**.

Sr. No.	Discharge Released from Watrak (Cum/Cus)	Gauge Level at Dabha Road Bridge Mt./ Ft.	Gauge in Mt./ Ft.	Name of District Taluka	Signal for Village at Sr. No.		
					White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
NOTE :-							
1	<b>WHITE SIGNALS</b>			: ALERT			
2	<b>BLUE SIGNALS</b>			: READY FOR EVACUATION			
3	<b>RED SIGNALS</b>			: IMMEDIATE EVACUATION			
1.	2000	78.53	7.34	<b>Aravalli.</b>			
	70630	287.67	24.07	Bayad	—	—	—
2.	2300	79.81	8.58	<b>Aravalli.</b>			
	81224.50	261.87	29.52	Bayad	1,9,10	—	—



Sr. No.	Discharge Released from Watrak (Cum/Cus)	Gauge Level at Dabha Road Bridge Mt./ Ft.	Gauge in Mt./ Ft.	Name of District Taluka	Signal for Village at Sr. No.		
					White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
3.	2450	80.20	9.00	<b>Aravalli</b>			
	86521.75	263.12	29.52	Dhansura Bayad	1 —	— 1,9,10	— —
4.	2500	80.31	9.12	<b>Aravalli</b>			
	88287.50	263.51	29.91	Dhansura Bayad	— 2	1 —	— 1,9,10
5.	3000	80.91	9.72	<b>Aravalli</b>			
	105945	265.48	31.88	Dhansura Bayad	— 3,4	— 2	1 1,9,10
6.	3500	81.41	10.22	<b>Aravalli</b>			
	123602.50	267.12	33.52	Dhansura Bayad Malpur	— 5 1&2	— 3,4 —	1 1,9,2,10 —
7.	4000	81.81	10.62	<b>Aravalli</b>			
	141260	268.43	34.83	Dhansura Bayad Malpur	4 6 —	— 5 1&2	1 1,2,3,4,9,10 —
8.	4500	82.16	10.95	<b>Aravalli</b>			
	158917.50	269.58	35.94	Dhansura Bayad Malpur	— — —	4 6 —	1 1,2,3,4,5,9,10 1&2
9.	5000	82.46	11.26	<b>Aravalli</b>			
	176575	270.56	36.96	Dhansura Bayad Malpur	2 7,8 —	— — —	1,4 1,2,3,4,5,6,9,10 1&2
10.	5500	82.71	11.51	<b>Aravalli</b>			
	194232.50	271.38	37.78	Dhansura Bayad Malpur	— — —	2 7,8 —	1,4 1,2,3,4,5,6,9,10 1&2
11.	6000	82.91	11.72	<b>Aravalli</b>			
	211890	272.04	38.44	Dhansura Bayad Malpur	— — 3	3 — —	1,2,4 1 to10 1&2

Sr. No.	Discharge Released from Watrak (Cum/Cus)	Gauge Level at Dabha Road Bridge Mt./ Ft.	Gauge in Mt. Ft.	Name of District Taluka	Signal for Village at Sr. No.		
					White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
12.	6500	83.06	11.87	<b>Aravalli</b>			
	229547.5	272.53	38.93	Dhansura	—	3	1,2,4
				Bayad	—	—	1 to 10
				Malpur	—	3	1&2
13.	7000	83.06	11.87	<b>Aravalli</b>			
	247205	273.02	39.42	Dhansura	—	—	1 to 4
				Bayad	—	—	1 to 10
				Malpur	—	—	1 to 3

**Note:** - Refer Annexure 10-A-1 with Addendum for affected villages mentioned in Col. 6 to 8 in this Annexure.

#### ANNEXURE - 10-B-1.6 (Warning to be issued by S.E, MIC, NADIAD)

Statement showing villages affected by floods of **Shedhi River** on the basis of discharge/gauge available at **D/s of Dakor Road Bridge**.

Sr. No.	Discharge in River Shedhi (Cum/Cus)	Gauge Level at Dakor Road Bridge	Gauge in Mt. Ft.	Name of District Taluka	Signal for Village at Sr. No.		
					White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
1.	<u>NA</u>	<u>NA</u>	<u>6.80</u>	<b>KHEDA</b>			
	NA	NA	22.30	3. Kheda	13 to 16	—	—
				2. Nadiad.	9 to 10	—	—
				6. Mahemdabad	1 to 5	—	—
				5. Thasra	1 to 6	—	—
				8. Kathalal	3	—	—
2.	<u>NA</u>	<u>NA</u>	<u>7.13</u>	<b>KHEDA</b>			
	NA	NA	23.38	3. Kheda	—	13 to 16	—
				2. Nadiad.	—	9 to 10	—
				6. Mahemdabad	—	1 to 5	—
				5. Thasra	7 to 20	1 to 6	—
				8. Kathalal	—	3	—
3.	<u>NA</u>	<u>NA</u>	<u>7.50</u>	<b>KHEDA</b>			
	NA	NA	24.60	3. Kheda	—	—	13 to 16
				2. Nadiad.	—	—	9 to 10
				6. Mahemdabad	—	—	1 to 5
				5. Thasra	—	7 to 20	1 to 6
				8. Kathalal	—	—	3

Sr. No.	Discharge in River Shedhi (Cum/Cus)	Gauge Level at Dakor Road Bridge	Gauge in Mt. Ft.	Name of District Taluka	Signal for Village at Sr. No.		
					White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
4.	NA	NA	8.00	<b>KHEDA</b>			
	NA	NA	26.25	6. Thasra	—	—	7 to 20

**Note:** - (1) Refer **Annexure 10-A-1** for affected villages mentioned in Column Nos 6 to 8 in this Annexure.

(2) Zero Gauge of Dakor Road Bridge is **46.01 Meter**.

**ANNEXURE-10-B-1.7 (Warning to be issued by SE, HIPC. Himmatnagar)**

Statement showing the villages affected by the Floods of **Guhai River** on the basis of discharge released from the **Guhai Dam**.

Sr. No.	Discharge Released from Guhai Dam (Cum/Cus)	Name of District Taluka	Signal for Village at Sr. No.		
			White Signal	Blue Signal	Red Signal
1	2	3	4	5	6
1	2831.65	<b>Sabarkantha</b>			
	100000	Himmatnagar	1	—	—
2.	3539.57	<b>Sabarkantha</b>			
	125000	Himmatnagar	4, 6 & 7	1	—
3.	3964.32	<b>Sabarkantha</b>			
	142000	Himmatnagar	2	4, 6 & 7	1
4	5380.15	<b>Sabarkantha</b>			
	190000	Himmatnagar	5, 9, 10 & 17	2	4, 6 & 7
5.	5493.41	<b>Sabarkantha</b>			
	194000	Himmatnagar	-	5, 9, 10 & 17	2
6.	5493.41 & above	<b>Sabarkantha</b>			
	194000 & above	Himmatnagar	-	-	5, 9, 10 & 17

**Note:** - Refer **Annexure 10-A-5** for affected villages mentioned.

**ANNEXURE 10-B-1.8 (SE,HIPC Himmatnagar)**

Statement showing the villages affected by the Floods of **Mazam River** on the basis of discharge released from the **Mazam Dam**

Sr. No.	Discharge Released from Mazam Dam (Cum/Cus)	Name of District Taluka	Signal for Village at Sr. No.		
			White Signal	Blue Signal	Red Signal
1	2	3	4	5	6
1.	500	<b>Aravalli</b>			
	17657.50	Modasa Dhansura	—	—	—
2.	750	<b>Aravalli</b>			
	26486.25	Modasa Dhansura	1 & 7	—	—
3.	1000	<b>Aravalli</b>			
	35315	Modasa Dhansura	4	1 & 7	—
4	1200	<b>Aravalli</b>			
	42378	Modasa Dhansura	8, 9 & 10 3, 5 & 8	4	1 & 7
5	1500	<b>Aravalli</b>			
	52972.50	Modasa Dhansura	—	8, 9 & 10 3, 5 & 8	4
6.	1900	<b>Aravalli</b>			
	67098.50	Modasa Dhansura	3, 6 & 14 12	—	8, 9 & 10 3, 5 & 8
7.	2000	<b>Aravalli</b>			
	70630	Modasa Dhansura	13	3, 6 & 14 12	—
8.	2250	<b>Aravalli</b>			
	79458.75	Modasa Dhansura	5 & 11	13	3, 6 & 14 12
9.	2500	<b>Aravalli</b>			
	88287.50	Modasa Dhansura	—	5 & 11	13
10.	2850	<b>Aravalli</b>			

	100647.75	Modasa	2	—	5 & 11
11	3000	Dhansura <b>Aravalli</b>			
	105945	Modasa	—	2	—
		Dhansura			
12	3313 & above	<b>Aravalli</b>			
	116998.6 & above	Modasa	—	—	2
		Dhansura			

**Note:** Refer **Annexure 10-A-3** for affected villages mentioned in Column No. 4 to 6.

#### **ANNEXURE 10-B-1.9 (SE,HIPC Himmatnagar)**

Statement showing the villages affected by the Floods of **Harnav-II River** on the basis of discharge released from the **Harnav - II Dam**

Sr. No.	Discharge Released from Harnav-II Dam (Cum/Cus)	Name of District Taluka	Signal for Village at Sr. No.		
			White Signal	Blue Signal	Red Signal
1	2	3	4	5	6
1.	566.33	<b>Sabarkantha</b>			
	20000	Khedbrahma	3	—	—
2	1132.66	<b>Sabarkantha</b>			
	40000	Khedbrahma	1 & 2	3	—
3	1699	<b>Sabarkantha</b>			
	60000	Khedbrahma	—	1 & 2	3
		Vijaynagar	1, 2, 3, 4 & 7	—	—
4.	2123.74	<b>Sabarkantha</b>			
	75000	Khedbrahma	—	—	1 & 2
		Vijaynagar	5	1, 2, 3, 4 & 7	—
5	2406.9	<b>Sabarkantha</b>			
	85000	Vijaynagar	—	5	1, 2, 3, 4 & 7
6	2406.9 & above	<b>Sabarkantha</b>			
	85000 & above	Vijaynagar	—	—	5

**Note:** Refer Annexure 10-A-4 for affected villages mentioned in column 1, 2, 3, 4.

**ANNEXURE - 10-A-2**

List of villages likely to be affected in downstream of **Hathmati Reservoir** due to floods in **Hathmati River**.

<b>SABARKANTHA DISTRICT</b>							
<b>HIMMATNAGAR TALUKA</b>							
<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>
1. Fatepur		10. Chandarni		17. Balwantpura		23. Rajpur	
2. Khapreta		11. Khed		18. Kump		24. Keshargadh	
3. Medi Timba		12. Chaplanar		19. Surpur		25. Amrapur	
4. Naroda		13. Mor Dungra		20. Demai		26. Parthipura	
5. Mankadi		14. Ambawada		21. Pratapura		27. Himmatnagar	
6. Amidpura		15. Jambadi		22. Balochpur			
7. Motipura		16. Rabada					
8. Kadodari							
9. Vasana (Ch.)							

**ANNEXURE - 10-A-3**

List of villages likely to be affected in downstream of Mazam **Reservoir** due to floods in **Mazam River**.

<b>ARAVALLI DISTRICT</b>						<b>KHEDA DISTRICT</b>	
<b>MODASA TALUKA</b>		<b>DHANSURA TALUKA</b>		<b>BAYAD TALUKA</b>		<b>KAPADVANJ TALUKA</b>	
<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>
1. Volva		1. Vadagam		1. Anakhol		1. Talpora	
2. Hafsabab		2. Khilodiya		2. Land		2. Derdi-Pavthi	
3. Bajkot		3. Mahadevpura		3. Chandrej		3. Kedareshwar	
4. Ganeshpura		4. Alva		4. Ambaliryara		Mahadev	
5. Pahadpur		5. Umedpura		5. Vasani			
6. Sayara		6. Navi Sinol		6. Gobrajini-muvadi			
7. Modasa Kashi		7. Bibipura		7. Mathasulia			
Vishwaanath		8. Kanjoria		8. Limb			
Temple		9. Dolpur		9. Untrada			
8. Sabalpur		10. Jamtha		10. Amarbharti School			
9. Khadoda		11. Rampur		11. Mota Pavthi			
10. Garudi		12. Rajpur		12. Paladi			
11. Sitpur							
12. Modasa							
13. Dhunavada							
14. Modasa City							

**ANNEXURE - 10-A- 4**

List of villages likely to be affected in downstream of **Harnav Stage - II Reservoir** due to floods in **Harnav River**.

<b><u>SABARKANTHA DISTRICT</u></b>							
<b>VIJAYNAGAR TALUKA</b>				<b>KHEDBRAHMA TALUKA</b>			
<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>
1. Antarsuba		4. Virpur		6. Dholivav		1. Vangha Kampa	
2. Matali		5. Abhapur		7. Antari		2. Saghara Kampa	
3. Bandhana						3. Silvad	

**ANNEXURE - 10-A- 5**

List of villages likely to be affected in downstream of **Guhai Reservoir** due to floods in **Guhai River**.

<b><u>SABARKANTHA DISTRICT</u></b>							
<b>HIMMATNAGAR TALUKA</b>							
<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>
1. Khandol		6. Rampur		11. Balochpur		16. Balantpura	
2. Zump		7. Karanpur (Kampur)		12. Rajpur		17. Khanusa	
3. Vasana		8. Ghorwada		13. Amarapur			
4. Bholano Math		9. Tornia Campa		14. Pruthvipura			
5. Kaniol		10. Demai		15. Nava			

**ANNEXURE - 10-A- 6**

List of villages likely to be affected in downstream of **Meshwo Reservoir** due to floods in **Meshwo River**.

<b><u>ARAVALLI DISTRICT</u></b>							
<b>BHILODA TALUKA</b>				<b>MODASA TALUKA</b>			
<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>
1. Shamlaji		6. Vajapur		1. Bamanvada		6. Gokharia	
2. Bhecarpura		7. Brahmpuri		2. Jalia		7. Rakhial	
3. Samadpura		8. Nandisan		3. Bolundra		8. Jalampur	
4. Kherancha		9. Gadadhar		4. Bharkot		9. Rajpur	
5. Vandol				5. Bakrol			

**ANNEXURE - 10-A-7**

List of villages likely to be affected in downstream of **Waidy Reservoir** due to floods in **Suron River**.

<b><u>ARAVALLI DISTRICT</u></b>					
<b>MEGHRAJ TALUKA</b>					
<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>
1. Gotha		4. Varthali		7. Munshivada	
2. Jitpur		5. Vunk		8. Lalpur	
3. Khokharia		6. Narsoli			

**ANNEXURE - 10-A- 8**

List of villages likely to be affected in downstream of **Khedva Reservoir** due to floods in **Kosambi River (Tributory of Harnav)**.

<b>SABARKANTHA DISTRICT</b>					
<b>KHEDBRAHMA TALUKA</b>					
<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>
1. Basol		4. Paroya		7. Shitol	
2. Navanana		5. Rodhara		8. Boradi	
3. Bhutiya		6. Jagnnathpura		9. Vaartol	

**ANNEXURE - 10-A- 9**

List of villages likely to be affected in downstream of **Varansi Reservoir** due to floods in **Varansi River** (Tributory of Watrak river).

<b>KHEDA DISTRICT</b>					
<b>KAPADWANJ TALUKA</b>					
<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>
1. Dolpur Timba		3. Bariana Muvada		5. Navi Thunchal	
2. Betawada		4. Thunchal		6 Sulatanpur	

**ANNEXURE - 10-A- 10**

List of villages likely to be affected in downstream of **Jawanpura Reservoir** due to floods in **Meshwo River**.

<b>SABARKANTHA DISTRICT</b>							
<b>TALOD TALUKA</b>							
<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>
1. Badodara		3. Nana		5. Gadhaval		7. Mahekal	
2. Panapur		4. Simaliya		6 Lalani Muvadi			

<b>GANDHINAGAR DISTRICT</b>							
<b>DEHGAM TALUKA</b>							
<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>
1. Vadol		2. Bavalani Muvadi		3. Masang		4. Khakhara	

**ANNEXURE - 10-A- 11**

List of villages likely to be affected in downstream of **Gorathiya Reservoir** due to floods in **Meshwo River**.

<b>SABARKANTHA DISTRICT</b>							
<b>TALOD TALUKA</b>							
<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>	<b>Sr No</b>	<b>Name of Village</b>
1. Mota Chekhla		3. Antroli Pujaji		5. Panapur		7. Simaliya	
2. Antroli Doliji		4. Badodara		6 Nana		8. Gadhaval	
9. Lalani Muvadi		10. Mahekal					



**GANDHINAGAR DISTRICT**

**DEHGAM TALUKA**

Sr No	Name of Village	Sr No	Name of Village	Sr No	Name of Village	Sr No	Name of Village
1. Vadol		2. Bavalani Muvadi		3. Masang		4. Khakhara	

**ANNEXURE - 10-A- 12**

List of villages likely to be affected in downstream of **Lank Reservoir** due to floods in **Dhamani River**.

**SABARKANTHA DISTRICT**

**BAYAD TALUKA**

Sr No	Name of Village	
1. Demai		

**KHEDA DISTRICT**

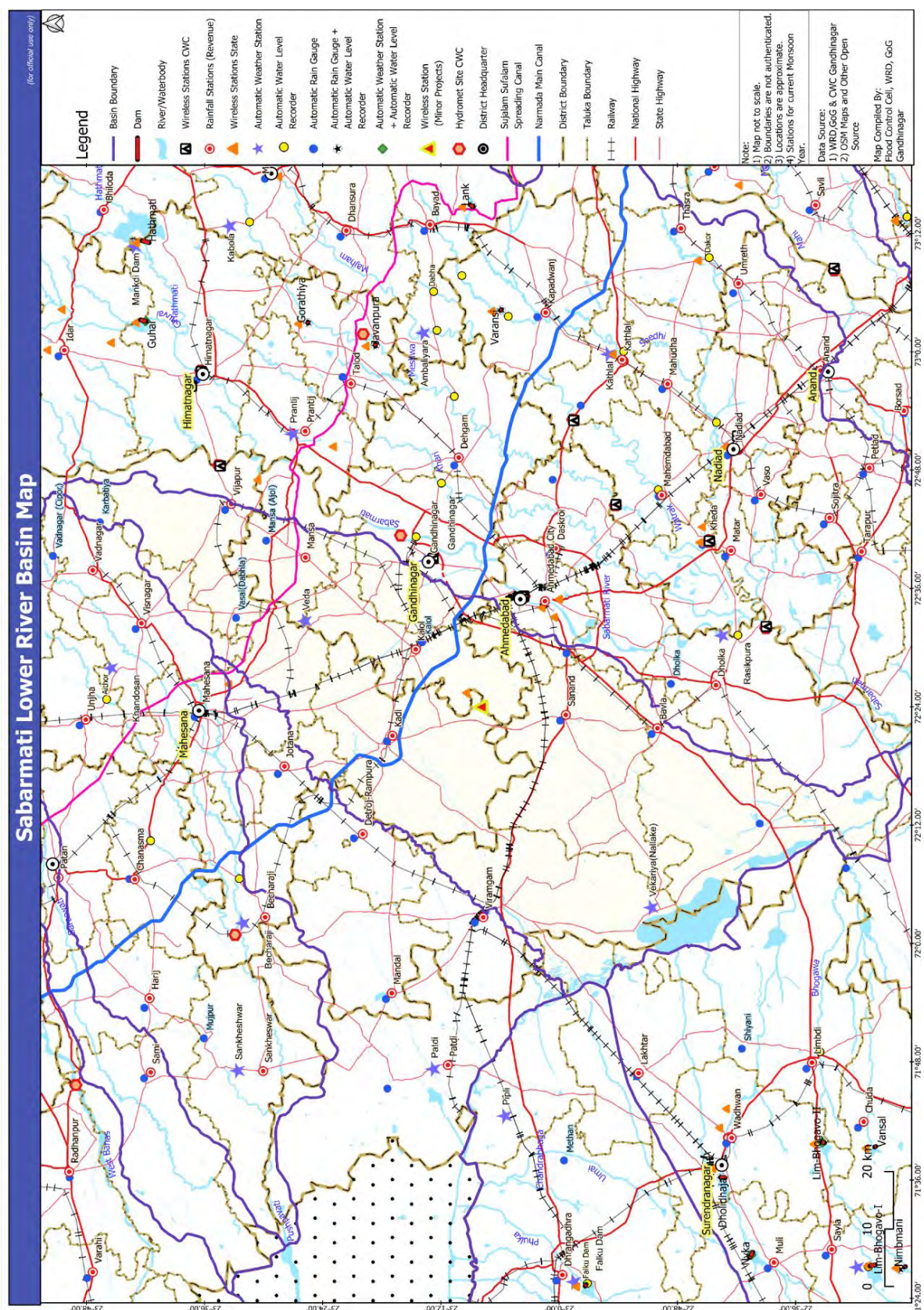
**KAPADWANJ TALUKA**

Sr No	Name of Village	Sr No	Name of Village	Sr No	Name of Village
1. Mota Muwada		3. Kawath		5. Nava Lotia	
2. Vantada		4. Vasna Mota		6. Akodiana Muwada	

**LIST OF EXISTING PROJECTS IN SABARMATI BASIN**

Sr. No	Name of Project	River	Storage Capacity (Mm <sup>3</sup> )		Purpose	Cost Rs. In Crores.
			Gross	Live		
	<b>Rajasthan State</b>					
1	Sei Dam	Sei	31.34	24.16	Diversion	—
	<b>Gujarat State</b>					
2	Dharoi Dam	Sabarmati	813.14	745.63	Irrigation/ Water Supply	96.00
3	Harnav-I	Harnav	—	—	Irrigation	6.500
4	Harnav-II	Harnav	21.67	19.97	Irrigation	0.510
5	Guhai	Guhai	68.75	61.22	Irrigation	6.500
6	Hathmati	Hathmati	152.84	149.32	Irrigation	5.710
7	Meshwo	Meshwo	53.13	49.97	Irrigation Flood Control	2.949
8	Mazam	Mazam	43.86	36.58	Irrigation	22.37
9	Watrak	Watrak	158.203	134.79	Irrigation	47.58
10	Waidy	Suron	9.292	8.707	Irrigation	1.806
11	Raska Weir	Meshwo	—	—	Irrigation	—
12	Moti Fatewadi	Sabarmati	—	—	Irrigation	0.749
13	Sant sarovar	Sabarmati	10.06	—	Ground Water Recharging	129.27
14	Vasana Barrage	Sabarmati	—	—	Irrigation	8.875
15	Khedva	Kosambi	7.63	6.68	Irrigation	10.23
16	Varanasi	Varanasi	3.184	2.617	Irrigation	11.86
17	Javanpura Barrage	Meshwo	2.4887	2.3435	Ground Water Recharging	8.14
18	Lakroda Weir	Sabarmati	3.75	3.75	Ground Water Recharging	14.23
19	Valasana Barrage	Sabarmati	4.58	—	Ground Water Recharging	125.09

## Flood Warning Arrangements - 2025



Annexure 10-C

**11.0 BANAS BASIN:**

**11.1** The flood forecasting for Banas River Basin is being looked after by the Executive Engineer, Mahi Division (C.W.C.) Gandhinagar under the control of the Superintending Engineer, Hydrological Observation Circle, Gandhinagar. He has established Wireless Stations locations from where he can obtain the details about rainfall and discharges in the river. The gauge and rainfall data are being communicated, through Wireless Stations located at various stations on the main river as well as on tributaries.

**11.2** Name of villages / dams where wireless stations are located to report rainfall and gauge discharge are as under.

**A. C.W.C's Wireless Stations and location**

Sr No	Wireless Station	State
1.	Mount Abu	Rajasthan
2.	Abu Road	Rajasthan
3.	Swaroop Ganj	Rajasthan
4.	Dantiwada	Gujarat
5.	Sarotri	Gujarat
6.	Palanpur	Gujarat
7.	Chitrasani	Gujarat
8.	Bhakudar	Gujarat
9.	Ambaji	Gujarat

**B. State's Wireless Stations.**

Sr No	Wireless Station	State
1.	Dantiwada (SSC-2)	Gujarat
2.	Bhakodar (Sipu) (SSC-2)	Gujarat
3.	Bhilada (SSC-2)	Gujarat

**11.3** Statement showing the villages affected at various signals at different levels in Banas River enclosed vide Annexure 11 (A) and 11 (B) respectively and for Sipu River Annexure 11-A-1.

**11.4** The Basin Map showing all the wireless stations, Rain gauge and River gauge stations is appended vide Annexure 11-C.

**11.5** West Banas Bund (Swaroop Gunj) Weir is located in Rajasthan State in upstream of Dantiwada dam. Whenever release is made from West Banas Bund, water enters in upstream of Dantiwada dam.

In case of failure or breaches in West Banas Bund, Executive Engineer, Mahi Division (CWC), Gandhinagar will inform Collector, Banaskantha, Patan and Executive Engineer, Deesa Irrigation Dn., Deesa, for precautionary measures to be taken within Gujarat State for the villages Deri, Aval, Arnivada and Balundra, which are likely to be affected by floods.

Executive Engineer, Deesa Irrigation Division, Deesa will report in detail to the Focal Officer, Superintending Engineer, Sujalam Suflam circle No. 2, Mehsana



immediately. The Executive Engineer, Deesa Irrigation Division, Deesa, will remain in touch with C.W.C. authorities when Maximum Water Level of Swaroop Gunj reaches at 1100.75 Feet or 335.50 Meter for appraisal of the situation.

**11.6** Dantiwada dam is located on Banas River at Dantiwada in Gujarat State, which is moderating the flood in the river. The Executive Engineer in Deesa Irrigation Division, Deesa, should work out outflow through the spill way of Dantiwada dam on the basis of incoming flood and gauge, estimated discharge data of upstream stations received from executive Engineer, Mahi Division, CWC, Gandhinagar & discharges/releases made through Sipu dam who is in-charge of Executive Engineer, Sipu Project Division, Palanpur. The Flood releases should be frequently supplied to Executive Engineer, Mahi Division (C.W.C.), Gandhinagar and Superintending Engineer, Sujalam Suflam circle No. 2, Mehsana. The inflow forecast for Dantiwada Dam is to be issued for the minimum inflow of 20,000 Cusecs (566.4 Cumecs) and also for minimum inflow of 10,000 Cusecs (283.2 Cumecs) when the reservoir level comes to R.L.595.00 Ft. (181.34M).

**11.6.1** The release outflow made from spillway of Sipu Dam should be intimated to the Executive Engineer, Deesa Irrigation Division, Deesa by Executive Engineer Sipu Project Division, Palanpur, so that the gate operation of Dantiwada Dam can be planned accordingly.

**11.7** Action to be taken by the Executive Engineer, Mahi Division (C.W.C.), Gandhinagar.

1. Formulation and dissemination of flood forecast of Dantiwada Dam.
2. Sharing of hourly observed gauge, estimated discharge and rainfall data of site Sarotry and Chitrasani, as per data dissemination schedule (0000, 0300, 0600, 0800, 1000, 1200, 1500, 1800, 2100 hrs)
3. Information in case of failure or breaches in West Banas Bund.

**TABLE - (11.7)**

Note: - Kindly refer Flood Telephone Directory of the current year for telephone nos.

<b>Name of the Officer with Telephone Nos.</b>	<b>Observation to be made by the Officer</b>	<b>Officer to whom the messages to be sent.</b>
<b>1</b>	<b>2</b>	<b>3</b>
Executive Engineer, Mahi Division, (C.W.C), Gandhinagar	The Inflow forecast for DANTIWADA DAM is to be conveyed to the Officer at Sr.No.(a),(b) & (g) in Column No.3.	(a) Superintending Engineer, Sujlam Suflam Circle No.2, Kherva, Mehsana. (b) Executive Engineer, Deesa Irrigation Division, Deesa. (c) Collector, Banaskantha Dist. Palanpur. (d) District Superintendent of Police, Banaskantha, Dist. Palanpur. (e) Collector Patan Dist. (f) District Superintendent of Police, Patan District, Patan.

(g) Flood Control Cell, Gandhinagar.

**11.8 Appropriate Authority (Focal Officer)**

Superintending Engineer  
Sujlam Suflam Circle No.2,  
Kherva, Mehsana.

Note: - Kindly refer Flood  
Telephone Directory of current  
Year for telephone nos.

**ANNEXURE 11 (A)**

List of villages likely to be affected by Floods in D/S of Dantiwada Dam over Banas River.

PATAN DISTRICT				BANASKANTHA DISTRICT			
Sr.	SANTALPUR	Sr.	RADHANPUR	Sr.	KANKREJ	Sr.	DEESA
NO.	TALUKA	NO.	TALUKA	NO.	TALUKA	NO.	TALUKA
1		2		1		2	
1.	Abiyana	1.	Dharvadi	1.	Lilapura	1.	Bhadath
2.	Unadi	2.	Jetalpura	2.	Jamana Padar	2.	Multhar Golia
3.	Gadsai	3.	Joravargadh	3.	Mali Goliya	3.	Chandaji Golia
4.	Lunichana	4.	Karshangadh	4.	Bakoli	4.	Vidi
5.	Gokhantar	5.	Agi chana	5.	Sohanpur	5.	Vasada
6.	Rajosana	6.	Pedashpura	6.	Sakaria	6.	Ranpur East
7.	Hamirpura	7.	Najupura	7.	Sudrosan	7.	Ranpur West
8.	Naliya	8.	Sabdalpura	8.	Rupapura	8.	Akhol Moti
9.	Antarnes	9.	Gochanad	9.	Shihori	9.	Akhol Nani
		10.	Masali	10.	Umri	10.	Mahadevia
<b>Sr. SAMI</b>		11.	Kamalpur	11.	Dudosan	11.	Malgadh
<b>No. TALUKA</b>		12.	Bismilla gunj	12.	Manpur	12.	Kupat
<b>(3)</b>		13.	Amirpura	13.	Shiya	13.	Vadaval
1.	Math	14.	Chhaniyathara	14.	Anandpura	14.	Jabadiya
2.	Masel	15.	Saharapura	15.	Oon	15.	Bhadramali
3.	Dadar	16.	Gulabpura	16.	Kharia	16.	Sanath
4.	Khakharia	17.	Madhavpura	17.	Bhadravadi	17.	Chhatrok
5.	Ramnagar	18.	Dharampura	18.	Totana	18.	Bodol
6.	Dundpura	19.	Shergadh	19.	Tana		
7.	Adgam	20.	Dholakada	20.	Nagot		
8.	Haripura	21.	Sathan	21.	Mangalpura	<b>Sr. DANTIWADA</b>	
9.	Takha	22.	Dahegam	22.	Vada	<b>No. TALUKA</b>	
10.	Mandavi	23.	Delana	23.	Ranavada	<b>(3)</b>	
11.	Gajdinpura	24.	BadarPura	24.	Odna	1.	Nadotra.
12.	Chandrani	25.	Manpura	25.	Kasalpur		Thakorwas
13.	Bismillabad	26.	Kuntasari	26.	Balochpura	2.	Nodotra
14.	Sherpura	<b>Sr. SARASWATI</b>		27.	Belapura		Brahmanwas
15.	Ranavada	<b>No. TALUKA</b>		28.	Magarpur	3.	Sikariya
16.	Babari	<b>(4)</b>		29.	Jamipura(Juna)		
17.	Rampura			30.	Kamboi		
18.	Kodth	1.	Undra	31.	Anganvada		
19.	Bhadvada	2.	Delia Thara	32.	Abmainna		
				33.	Jampur Mota		
				34.	Jampur Nana		
				35.	Ganyapura		
				36.	Valpura		
				37.	Avaniwada		

## ANNEXURE 11-A-1

List of villages likely to be affected by floods in **Sipu River** on downstream of **Sipu Dam** & up to **conflict Point of Banas River**.

SR. No.	DEESA TALUKA	REMARKS
1.	Chandaji(Golia)	White Signals @50,000 Cusecs Discharge @Banas Road Bridge, Deesa.
2.	Morthal(Golia)	
3.	Bhadath	

## ANNEXURE - 11(B)

Statement showing villages affected by floods of **Banas River** on the basis of discharge available at **Deesa Road Bridge** gauge site.

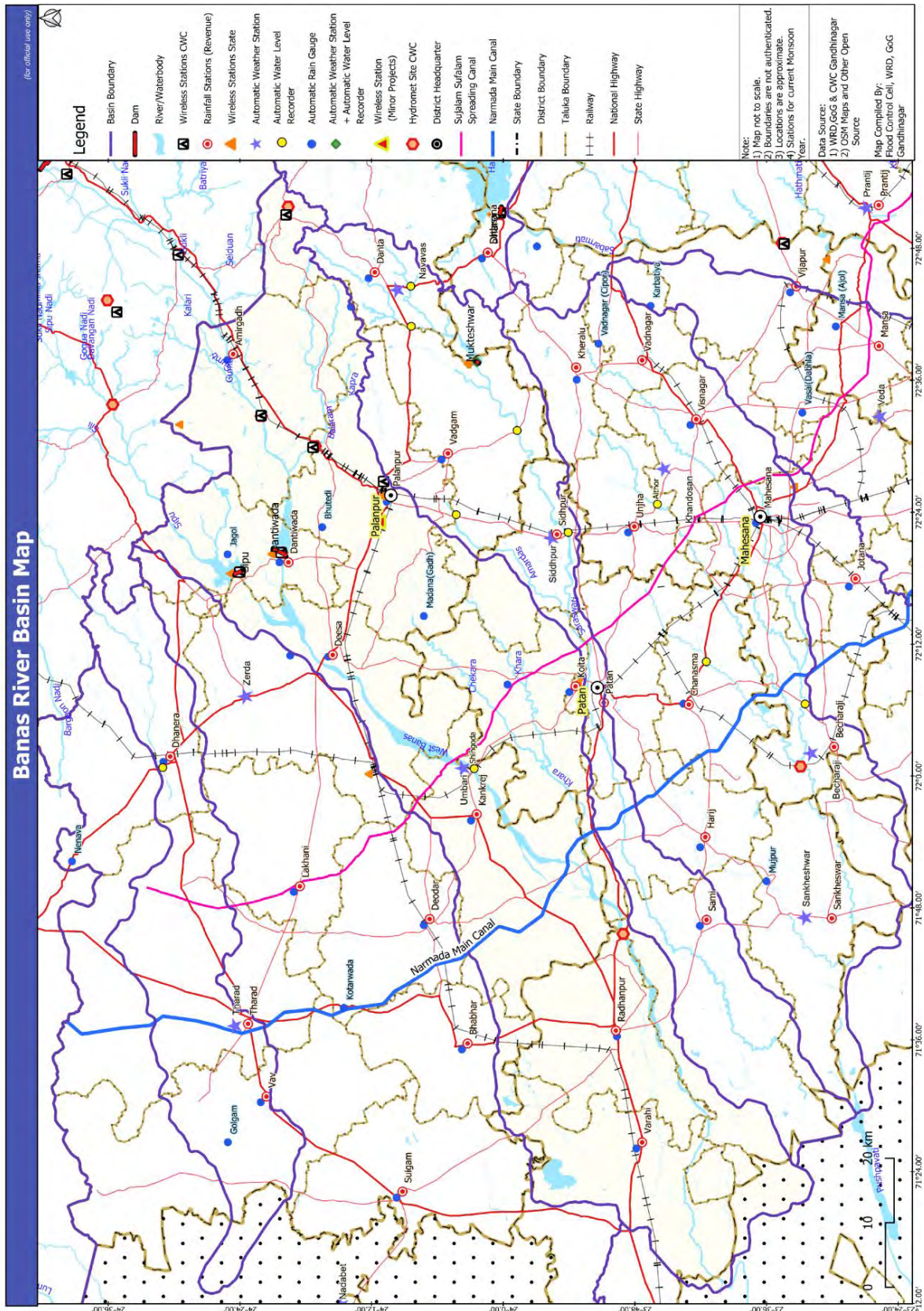
Sr. No.	Discharge in River Banas (Cum/Cus)	Gauge Level at Deesa Bridge In Meter	Gauge in Meter Feet	Name of District Taluka	Signals for Villages at Sr. No.		
					White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
NOTE :-							
1	WHITE SIGNALS	:	ALERT				
2	BLUE SIGNALS	:	READY FOR EVACUATION				
3	RED SIGNALS	:	IMMEDIATE EVACUATION				
1.	283.00	122.95	1.85	<b>Patan</b>			
	9994.14		6.06	2.Radhanpur	1 to 6	—	—
2.	708.00	123.35	2.25	<b>Patan</b>			
	25003.02		7.38	1.Santalpur	1	—	—
				2.Radhanpur	7	1 to 6	—
3.	1416.00	123.75	2.65	<b>Patan</b>			
	50006.04		8.69	1.Santalpur	—	1	—
				2.Radhanpur	—	7	1 to 6
				<b>Banaskatha</b>			
				2.Deesa	1 to 3	—	—
4.	1700.00	123.95	2.85	<b>Patan</b>			
	60035.00		9.35	1.Santalpur	—	—	1
				2.Radhanpur	8	—	7
				<b>Banaskantha</b>			
				2.Deesa	—	1 to 3	—
				4.Dantiwada	1 to 3	—	—

Sr. No.	Discharge in River Banas (Cum/Cus)	Gauge Level at Deesa Bridge In Meter	Gauge in Meter Feet	Name of District Taluka	Signals for Villages at Sr. No.		
					White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
5.	1982.00	124.15	3.05	<b>Patan</b>			
	69994.33		10.00	1.Santalpur	2 to 9	—	—
				2.Radhanpur	9 to 12	8	—
				<b>Banaskantha</b>			
6.	2832.00	124.45	3.35	<b>Patan</b>			
	100012.08		10.99	1.Santalpur	—	2 to 9	—
				2.Raddhanpur	—	9 to 12	8
				3.Sami	1 to 9	—	—
7.	3398.00	124.70	3.60	<b>Patan</b>			
	120000.37		11.81	1.Santalpur	—	—	2 to 9
				2.Radhanpur	13 to 26	—	9 to 12
				3.Sami	10 to 19	1 to 9	—
8.	3682.00	124.75	3.65	<b>Patan</b>			
	130029.83		11.97	2.Radhanpur	—	13 to 26	—
				3.Sami	—	10 to 19	1 to 9
				4.Saraswati	1 to 2	—	—
9.	4248.00	124.95	3.85	<b>Banaskantha</b>			
	150018.12		12.63	1.Kankrej	9 to 25	1 to 8	—
				<b>Patan</b>			
				2.Radhanpur	—	—	13 to 26
				3.Sami	—	—	10 to 19
				4. Saraswati	—	1 to 2	—
				<b>Banaskantha</b>			
				1.Kankrej	26	—	9 to 25



Sr. No.	Discharge in River Banas (Cum/Cus)	Gauge Level at Deesa Bridge In Meter	Gauge in Meter Feet	Name of District Taluka	Signals for Villages at Sr. No.		
					White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
10.	5664.00	125.50	4.40	<b>Banaskantha</b>			
	200024.16		14.43	1. Kankrej	27 to 37	26	—
				2. Deesa	4 to 18	—	—
				<b>Patan</b>			
				4. Saraswati	—	—	1 to 2
11.	9912.00	126.85	5.75	<b>Banaskantha</b>			
	350042.28		18.86	1. Kankrej	—	27 to 37	26
				2. Deesa	—	4 to 18	—
12.	11328.00	127.25	6.15	<b>Banaskantha</b>			
	400048.32		20.17	1. Kankrej	—	—	27 to 37
				2. Deesa	—	—	4 to 18

**Note:** - Zero level of Deesa Road Bridge is **121.10 Meter.**







Annexure 11-C

## BANAS RIVER ORIGIN (ARAVALLI HILLS)



Full Reservoir Level of Projects in m	
Name	FRL
(1) KADAMBARI DAM	383.70
(2) SWAROOPGANJ DAM	334.36
(3) BATTISA DAM	331.00
(4) SIPU DAM	186.43
(5) DANTIWADA DAM	184.10

LEGEND	
	R.G. SITE (W.R.I)
	R.G. SITE (CWC)
	DAM
	RIVER



**12 (1) VISHWAMITRY BASIN:**

**12.1.1** The flood forecasting system for Vishwamitry Basin is being looked after by the Superintending Engineer, Vadodara Irrigation Circle, Vadodara. Various Wireless Stations are established at the locations upstream of Vadodara from where gauge and rainfall data & spillway discharges from various tanks are obtained by him. The gauge and rainfall data are being communicated to him through Wireless Stations.

**12.1.2** Name of villages / tanks where wireless stations are located to report rainfall and gauge discharge are as under:

**State's Wireless Stations.**

Sr No	Wireless Station	Circle	State
1.	Vadodara	(VIC)	Gujarat State
2.	Central Control Station, (Vadodara Municipal Corporation)		Gujarat State
3.	Ajwa Tank	(VMC)	Gujarat State
4.	Pratappura Tank	(VMC)	Gujarat State
5.	Halol	(VIC)	Gujarat State
6.	Ghansarvav Tank	(VIC)	Gujarat State
7.	Dhanora Tank	(VIC)	Gujarat State
8.	Pilol	(VIC)	Gujarat State
9.	Bhaniara	(VIC)	Gujarat State
10.	Pavagadh Repeater	(VIC)	Gujarat State

**12.1.3** The Basin Map showing all the wireless stations, Rain gauge and River gauge stations is appended vide Annexure 12-C.

**12.1.4** The flood forecasting & flood warning arrangements for following water supply projects under Municipal Corporation will be looked after by Municipal Commissioner, Vadodara. He shall directly collect weather bulletin, H.R.W from Indian Meteorological Department, Ahmedabad or Revenue Control Room of the concerned districts & shall formulate the flood forecast & convey to the concerned Collector regarding the area likely to be affected for alerting and evacuation of the people as affected by flood, Simultaneously, they convey the flood forecast and action taken by them to the Flood Control Cell (Irrigation) nearest to them.

**TABLE-12.1.4**

Sr. No.	Name of Water Scheme	Officer In Charge of Scheme	Telephone Nos.
1.	Ajwa	Municipal Commissioner, Vadodara Municipal Corporation, Vadodara	Kindly refer Flood Telephone Directory of current year for Telephone Nos.
2.	Pratappura		

**12.1.5** Action to be taken by various Officers.

**TABLE -12.1.5**

**Note:** Kindly refer Flood Telephone Directory of current year for Telephone Nos.

<b>Name of the Officer with Telephone Nos.</b>	<b>Observation to be made by the Officer</b>	<b>Officer to whom the messages to be sent.</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
(A) Officer In Charge Dhanora Wireless Station under Executive Engineer, Vadodara Irrigation Division, Vadodara	1. Messages about rain-fall, gauge levels, out-flow of Haripura, Vadodara and Dhanora and M.I. tanks to be conveyed to the officer at Sr. No. (a) in Col. No. 3	(a) Deputy Executive Engineer, Irrigation Project Sub-Division, No.23 , Waghodia
(B) Deputy Executive Engineer, Irrigation Project Sub-Division, No.23, Waghodia	2. Messages received from Dhanora to be conveyed to the Officers at Sr. No. (b) in Col No.3	(b) Officer incharge of Ajwa Station under V.M.C., Vadodara.
(C) Officer In Charge of Bhaniara & Pilol Wireless Stations under Executive Engineer, Irrigation Division, Vadodara.	3. Messages about rain-fall, gauge levels, and velocity of River Vadodara channel and discharge data to be conveyed to the Officer at Sr. No. (b) in Col. No.3 Corporation, Vadodara.	(c) Chief Officer (Fire) Central Wireless Station, V.M.C, Vadodara
(D) Officer In Charge of Ghansarvav Wireless station under Executive Engineer, Vadodara Irrigation Division	4. Messages about rainfall gauge levels, outflow of Ghansarvav Tank to be conveyed to the officer at Sr. No.(b) in Column No.3	(d) Executive Engineer, Vadodara Irrigation Division, Vadodara.
(E) Officer In Charge of Ajwa Station under V.M.C, Vadodara.	5. Messages received vide (1) to (4) about rainfall and water level of Ajwa & Pratappura to be conveyed to the officer at Sr. No. (c) in Col. No.3.	
(F) Chief Officer (Fire) Central Wireless Station, V.M.C, Vadodara.	6. Messages received from Ajwa Wireless Station as per (5) above, to be conveyed to the Officer at Sr. No. (d) in column No.3.	

**12.1.6** The City Engineer, Vadodara Municipal Corporation, Vadodara, Shall also give messages about the gauge levels at City Bridge and also rainfall observed at the M.S.University Observatory, Sayaji Ganj, Vadodara. Whenever the rainfall recorded at the observatory over the previous 24 Hours exceeds 50 mm, the hourly rainfall shall also be obtained by the City Engineer and transmitted together with gauges at City Bridge to the Flood Cell of the Vadodara Irrigation Circle, Vadodara.

**12.1.7** The list of villages and the water levels at the City Bridge is likely to cross the danger mark i.e., various signal stages as given vide Annexures 12-A-1 & 12-B-1.The message shall immediately be conveyed to the Flood Control Cell of the Collector,

Vadodara for taking necessary measures by the City Engineer, Vadodara Municipal Corporation, Vadodara.

**12.1.8** Statement Showing the Time lag for various stations from origin to the end of river basin are as under.

Sr. No.	Name of Site	Distance of River from Vadodara		Catchment Area in Sq. Kms.	Danger Level in Meters	Time Lag in Hours	
		Origin In Kms.	In Kms.			High Flood	Low Flood
1	2	3	4	5	6	7	8
1.	AJWA SAROVAR	19.31	32.38	95.00	64.31	4	8
2.	INTER-LINKING FEEDER(VISHWAMITRI)	16.10	41.83	38.33	2.50	5	10
3.	PRATAPPURA (VISHWAMITRI)	16.10	41.83	71.59	69.69	5	10
4.	DHANORA (DISTRIBUTARY VISHWAMITRI)	25.74	37.06	32.37	62.18	3	10
5.	CITY BRIDGE	64.36	0.00	0.00	30.57	0	0

**Note:** W = Wireless D = Discharge F = Flood G = Gauge R = Rainfall.

## 12 (2) DEO BASIN

**12.2.1** The Deo river is a tributary of river Dhadhar. The flood forecasting and flood warning for Deo Basin is being looked after by the Superintending Engineer, Vadodara Irrigation Circle, Vadodara. The hydro meteorological data and spillway discharges are obtained by the focal officer and the same will be communicated to the concerned officers through wireless stations.

**12.2.2** Names of villages/dams where wireless stations located are as under:

### State's Wireless Stations:

- |    |                                      |       |
|----|--------------------------------------|-------|
| 1. | Vadodara (S.E.V.I Circle, Vadodara)  | (VIC) |
| 2. | Halol                                | (VIC) |
| 3. | Shivrajpur (Rain gauge stations)     | (VIC) |
| 4. | Deo dam site (Nr. Kuberpara Village) | (VIC) |
| 5. | Rameshra Colony                      | (VIC) |
| 6. | Pavagadh Repeater                    | (VIC) |

**12.2.3** Deputy Executive Engineer, I.P. Sub-Dn. No.23, Waghodia will communicate the necessary flood message to Flood Control Cell, Vadodara, in the Office of Superintending Engineer, Vadodara Irrigation Circle, Vadodara, Executive Engineer, Vadodara Irrigation Division, Vadodara. He will also pass the required data to the Flood Control Cell, Gandhinagar, as and when required.

**12.2.4** The Basin Map showing all the wireless stations, Rain gauge and River gauge stations is appended vide Annexure 12-C.

**12.2.5 Action** to be taken by various Officers.

TABLE - (12.2.5)

**Note:** - Kindly refer Flood Telephone Directory of current year for Telephone Nos.

Name of the Officer with Telephone Nos.	Observation to be made by the Officer	Officer to whom the messages to be sent.
(1)	(2)	(3)
(A) Deputy Executive Engineer, I.P. Sub-Dn. No.23, Waghodia Officer in charge of Shivrajpur wireless Station & Deo Dam site near wireless station Halol	Collect the Hydro meteorological data regarding rainfall, gauge level, outflow & other necessary pertaining to flood to be conveyed to the Officer in Col.No.3 from Sr.No. (a) to (e)	(a) Executive Engineer, Vadodara Irrigation Dn., Vadodara (b) S.E.V.I.C, Vadodara. (c) Flood Cell, Vadodara. (d) Collector, Panchmahals. Godhra (e) Collector, Vadodara.
B) Executive Engineer Vadodara Irrigation Dn., Vadodara	Messages as received above to be conveyed to the Officer in Col.No.3 at Sr. No. (e) to (i).	(f) District Superintendent of Police (Panchmahals), Godhra (g) District Superintendent of Police, Vadodara (Rural) (h) Flood Control Cell, Gandhinagar (i) Collector, Bharuch.

**12.2.6** The list of affected villages by floods in river DEO at various signal stages at different levels is appended vide Annexure 12-A-2 & 12-B-2

**12.2.7 Appropriate Authority (Focal Officer)**

- (A) (For Vishwamitri & Deo Basin)  
Superintending Engineer, Vadodara  
Irrigation Circle, Kothi Building, Vadodara
- (B) (For Ajwa and Pratappura Water Supply Scheme)  
The Municipal Commissioner,  
Vadodara Municipal Corporation, Vadodara.

**Note:** - Kindly refer Flood the Telephone Directory of current year for Telephone Nos.

**ANNEXURE - 12-A-1**

Statement of low lying area of **Vadodara City** and list of villages to be affected due to floods in **Vishwamitry River**.

SR. NO	SAYAJI GUNJ AREA	SR. NO.	WADI AREA	SR. NO.	BABAJPURA AREA	SR. NO.	RAOPURA AREA
-----------	---------------------	------------	--------------	------------	-------------------	------------	-----------------

**Low lying areas of Vadodara City:-**

1.	Parasaram Bhatto	1.	Low lying areas outside Pani gate	1.	Behind-Nava pura Tank Khanderao	1.	North Portion of Vinoba Bhawe Marg.
2.	Area of Bhimnath Mahadev	2.	Mahamad Talav Area		Mahavir Maholla		Tulsi bhai's. Chal, Bhavaman Chal, Ra bari Faliya
3.	Camp Fatehganj Harijanwas Ranchodji Mandir Kamatipura, Modikhana, Area Near Methodist Church	3.	Marial's wada Maliwas Mangal park North East Corner	2	Kumbhar wado (Parasan Society near S.R.P. Camp)	2	Low lying area of Kasamahala Moffusil
4.(i)	Chhani Road Sardar Nagar Kans, Lalpur, Ramwadi,	4.	Gujarat Housing Board Portion Behind Ranmukteshwar Barvi	3.	Sindhwai Road	3.	North portion of Societies of Karelibag.
4.(ii)	Pensionpura	5.	Road beyond Yamuna Mill	4.	Dandia Bazar	4.	Naya Dharati Area.
4.(iii)	Akota	6.	Hakim's Palace Nr. Sindwai Mata.			5.	Portion near Ajabadi mill, Taraknath Mahadev
4.(iv)	Manenagar (Munj Mohallo)	7.	Behind Godi & Navagam Mandir.			6.	Surrounding areas of Sarasia Tank and new Society's Area
		8.	From Jawahar Society to Simodwali Talawadi place near Satyadev Chemicals				



SR. NO	SAYAJI GUNJ AREA	SR. NO.	WADI AREA	SR. NO.	BABAJIPURA AREA	SR. NO.	RAOPURA AREA
-----------	---------------------	------------	--------------	------------	--------------------	------------	-----------------

9. Warsia new Colony and surrounding societies
10. Manalgeshwar area
11. Society area. Situated at Harai Marg.

#### Affected Villeges of Vadodara Taluka:

- |               |               |            |             |
|---------------|---------------|------------|-------------|
| 1. Dumad      | 5. Ambaliara  | 9. Kotali  | 13. Vadsar. |
| 2. Ganpatpura | 6. Sukalipura | 10. Vemali |             |
| 3. Harani     | 7. Dena       | 11. Chapad |             |
| 4. Sama       | 8. Virod      | 12. Kalali |             |

**Note:** Refer Annexure - 12-B-1 for villeges affected at different Water levels.

#### ANNEXURE - 12-B-1

Statement showing warning signals arrangement for low lying area of Vadodara City & villeges affected by floods of **Vishwamitri River** on the basis of gauge levels of **Vadodara City Bridge**.

Sr. No	Gauge R.L. at Vadodara City Bridge		Name of District Taluka	Signal for Village at Sr. No.		
	In Meter	In Feet		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7
NOTE :-						
1	<b>WHITE SIGNALS</b>		: ALERT			
2	<b>BLUE SIGNALS</b>		: READY FOR EVACUATION			
3	<b>RED SIGNALS</b>		: IMMEDIATE EVACUATION			

#### LOWLYING AREA OF VADODARA CITY/VADODARA TALUKA:

1.	29.34	96.68	1. Sayaji Gunj Area	1 to 4	—	—
			2. Wadi Area	1 to 11	—	—
			3. Babaji-Pura Area	1 to 4	—	—
			4. Rao-pura Area	1 to 6	—	—
			5. Vadodara Taluka	1 to 13	—	—
2.	29.95	98.25	1. Sayaji Gunj Area	—	1 to 4	—
			2. Wadi Area	—	1 to 11	—
			3. Babaji Pura Area	—	1 to 4	—
			4. Raopura Area	—	1 to 6	—
			5. Vadodara Taluka	—	1 to 13	—
3.	30.57	100.28	1. Sayaji Gunj Area	—	—	1 to 4
			2. Wadi Area	—	—	1 to 11
			3. Babaji Pura Area	—	—	1 to 4
			4. Raopura Area	—	—	1 to 6
			5. Vadodara Taluka	—	—	1 to 13

**Remarks:** The inhabitants of low lying area of Vadodara City and villages in Vadodara Taluka mentioned in Column No.4 are to be requested to alert themselves on account of floods and evacuation of their places as suggested by the Vadodara Municipal Corporation Authority and District Collector respectively.

**Note:** Refer Annexure - 12-A-1 for the names of villages mentioned in Column Nos. 5 to 7.

#### ANNEXURE - 12-A-2

List of villages likely to be affected in **downstream of Deo Reservoir** due to floods in **Deo River**.

VADODARA DISTRICT				PANCHMAHALS DISTRICT	
Sr. No	VAGHODIA TALUKA	Sr. No.	DABHOI TALUKA	Sr. No.	HALOL TALUKA
1.	Falod	1.	Banaiya	1.	Sonaviti
2.	Vejalpur	2.	Abdulpura	2.	Rasgagar
3.	Walva	3.	Kadadra	3.	Gadit
4.	Zaverpura	4.	Karali	4.	Sonipur
5.	Goraj	5.	Gojali	5.	Kuberpur
6.	Madhavpura	6.	Kadadarapura	6.	Indral
7.	Dankheda	7.	Wanadra	7.	Badharpuri
8.	Ambali				
9.	Patiyapura				
10.	Muni Ashram				
11.	Muvada				
12.	Jayapura				
13.	Antoli				
14.	Wankuva				
15.	Ghodadara				
16.	Vyara				
17.	Dholar				
18.	Kagdipura				
19.	Akadiyapura				

**Note:** - Refer Annexure - 12-B-2 for villages affected at different Water Levels.

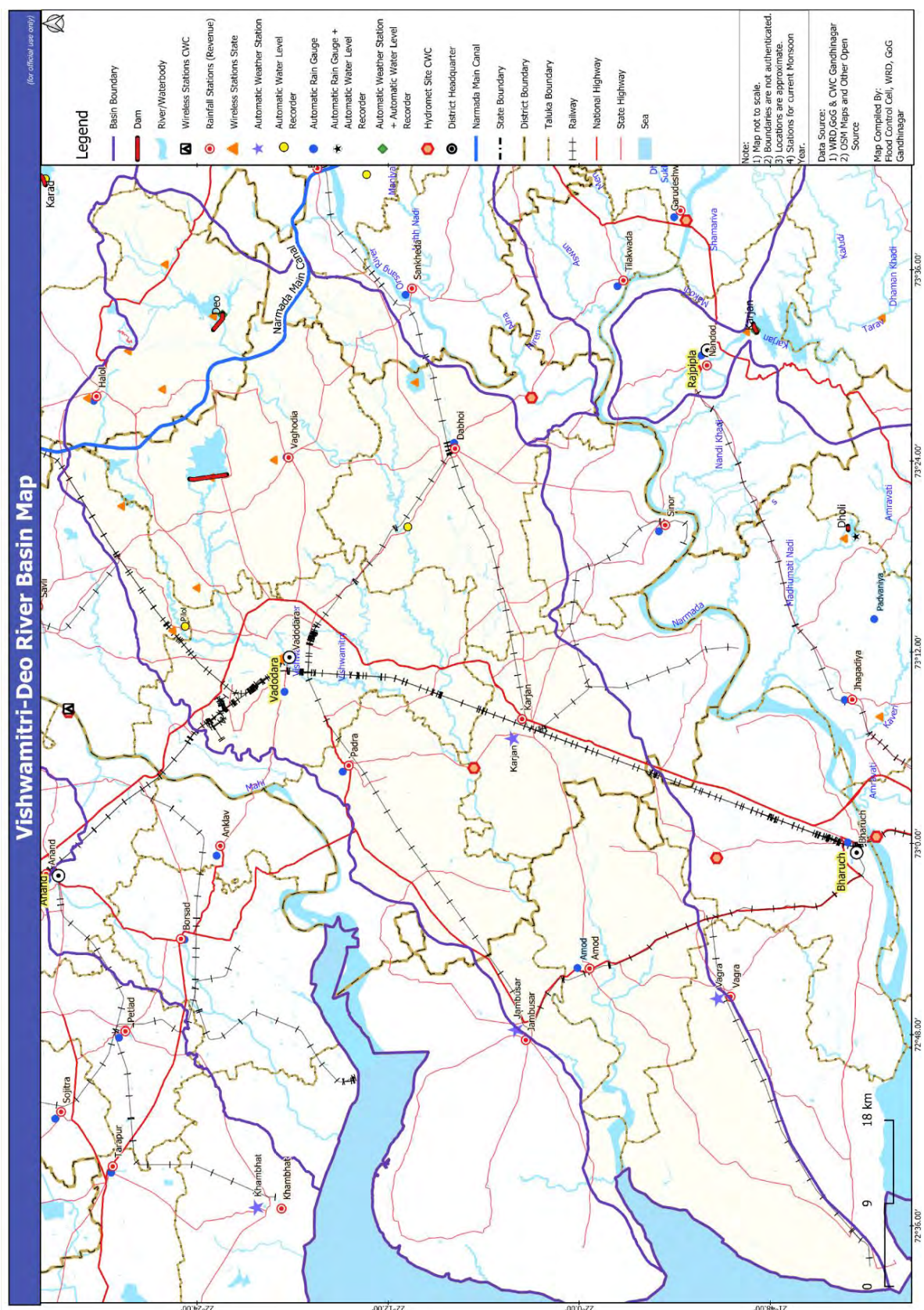
## ANNEXURE - 12-B-2

Statement showing villages affected by floods of **Deo River** on the basis of Discharge released from **Deo Dam**.

Sr. No.	Discharge Released from Deo Dam (Cum/Cus)	Gauge Level at Spillway		Name of District Taluka	Signal for Village at Sr. No.		
		In Meter	In Feet		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
NOTE :-							
1	<b>WHITE SIGNALS</b>		: ALERT				
2	<b>BLUE SIGNALS</b>		: READY FOR EVACUATION				
3	<b>RED SIGNALS</b>		: IMMEDIATE EVACUATION				
1.	1134.00	83.70	274.62	<b>Vadodara</b>			
	40047.21			1. Vaghodia	1	—	—
2.	1275.00	83.90	275.28	<b>Vadodara</b>			
	45026.63			1. Vaghodia	2	1	—
3.	1417.00	84.09	275.90	<b>Vadodara</b>			
	50041.36			1. Vaghodia	—	2	1
				2. Dabhoi	1	—	—
4.	1559.90	84.20	276.26	<b>Vadodara</b>			
	55056.09			1. Vaghodia	3 & 4	—	1 & 2
				2. Dabhoi	—	1	—
				<b>Panchmahals</b>			
				1. Halol	1	—	—
5.	1700.00	84.30	276.59	<b>Vadodara</b>			
	60035.50			1. Vaghodia	5 to 9	3 & 4	1 & 2
				2. Dabhoi	—	—	1
				<b>Panchmahals</b>			
				1. Halol	—	1	—
6.	1984.00	84.60	277.59	<b>Vadodara</b>			
	80800.72			1. Vaghodia	—	5 to 9	1 to 4
				2. Dabhoi	2	—	1
				<b>Panchmahals</b>			
				1. Halol	2	—	1
7.	2288.00	84.90	278.56	<b>Vadodara</b>			
	80800.72			1. Vaghodia	10 to 13	—	1 to 9
				2. Dabhoi	3	2	1
				<b>Panchmahals</b>			
				1. Halol	—	2	1

Sr. No.	Discharge Released from Deo Dam (Cum/Cus)	Gauge Level at Spillway		Name of District Taluka	Signal for Village at Sr. No.		
		In Meter	In Feet		White Signal	Blue Signal	Red Signal
1	2	3	4	5	6	7	8
8.	2551.00 90088.56	85.20	279.54	<b>Vadodara</b> 1. Vaghodia 2. Dabhoi <b>Panchmahals</b> 1. Halol	14 to 17 4	10 to 13 3	1 to 9 1 & 2
9.	2834.00 100082.71	85.50	280.53	<b>Vadodara</b> 1. Vaghodia 2. Dabhoi <b>Panchmahals</b> 1. Halol	— 5	14 to 17 4	1 to 13 1 to 3 1 & 2
10.	3117.00 110076.86	85.80	281.51	<b>Vadodara</b> 1. Vaghodia 2. Dabhoi <b>Panchmahals</b> 1. Halol	— —	— 5	1 to 17 1 to 4 1 & 2
11.	3401.00 120106.32	86.00	282.17	<b>Vadodara</b> 1. Vaghodia 2. Dabhoi <b>Panchmahals</b> 1. Halol	3 18 —	— —	1 to 17 1 to 5 1 & 2
12.	3685.00 130135.78	86.30	283.15	<b>Vadodara</b> 1. Vaghodia 2. Dabhoi <b>Panchmahals</b> 1. Halol	4 to 6 19 6 & 7	3 18 —	1 to 2 1 to 17 1 to 5 1 & 2
13.	4535.00 160153.53	87.00	285.45	<b>Vadodara</b> 1. Vaghodia 2. Dabhoi <b>Panchmahals</b> 1. Halol	7 — —	4 to 6 19 6 & 7	1 to 3 1 to 18 1 to 5
14.	4670.00 164921.05	87.20	286.10	<b>Vadodara</b> 1. Vaghodia 2. Dabhoi <b>Panchmahals</b> 1. Halol 1. Halol	— — — —	— — 7	1 to 19 1 to 7 1 to 7 1 to 6

**Note:** Refer Annexure - 12-A-2 for the Names of villages mentioned in col. 6, 7 & 8.



Annexure 12-C



**13.0 SARASWATI BASIN:**

- 13.1** The flood forecasting and flood warning system for Saraswati Basin is being looked after by Superintending Engineer, Sujlam Suflam Circle No.2, Mehsana through his Executive Engineer, Sipu Project Dn. Palanpur. The gauge discharge and rainfall data are being communicated through Wireless Stations located at various stations on the main river as well as on tributaries.
- 13.2** Name of Weir/Dams where wireless stations are located are as under:-

**State's Wireless Stations.**

Sr No	Wireless Station	State
1.	Palanpur (Irrigation Construction Sub-Dn.No.4 Palanpur)	Gujarat
2.	Mukteshwar	Gujarat
3.	Saraswati Barrage	Gujarat

- 13.3** The villages affected in Down Stream of Mukteshwar Dam due to floods in Saraswati are given vide Annexure - 13-A.
- 13.4** The Basin Map showing all the wireless stations, Rain gauge and River gauge stations is appended vide Annexure - 13-B.
- 13.5** The actual time of flood releases from dam site will be informed by Executive Engineer, Sipu Project Dn. Palanpur, to the Executive Engineer, Deesa Irrigation Division, Deesa for taking precautionary measures for Saraswati Barrage.
- 13.6** Action to be taken by Executive Engineer, Sipu Project Dn. Palanpur

**TABLE - (13.6)**

**Note:** - Kindly refer Flood Telephone Directory of current year for Telephone Nos.

Name of the Officer with Telephone Nos.	Observation to be made by the Officer	Officer to whom the messages to be sent.	
(1)	(2)	(3)	
Executive Engineer Sipu Project Dn. Palanpur	The Inflow forecast for 20,000 Cusecs incoming to dam is to be conveyed to the Officer at Sr.No. (a) & (b) in Column No. 3	(a)	Superintending Engineer Sujlam Suflam Circle No.2, Kherva, Mehsana
		(b)	Dy.Ex.Engineer, Irrigation Construction Sub-Dn.No.4, Palanpur (Flood Cell).
		(c)	Collector, Banaskantha Dist. Palanpur.
		(d)	District Superintending of Police, Banaskantha District,

Name of the Officer with Telephone Nos.	Observation to be made by the Officer	Officer to whom the messages to be sent.
(1)	(2)	(3)
	No. 3	Palanpur.
		(e) Collector, Mehsana District, Mehsana.
		(f) District Superintendent of Police, Mehsana District. Mehsana
		(g) District Collector, Patan District.
		(h) District Superintending of Police, Patan District, Patan
		(i) Flood Control Cell, Gandhinagar.
		(j) Executive Engineer, Deesa Irrigation Dn., Deesa

### 13.7 **Appropriate Authority (Focal Officer)**

Superintending Engineer  
Sujlam Suflam Circle No.2,  
Kherva, Mehsana

Note:-

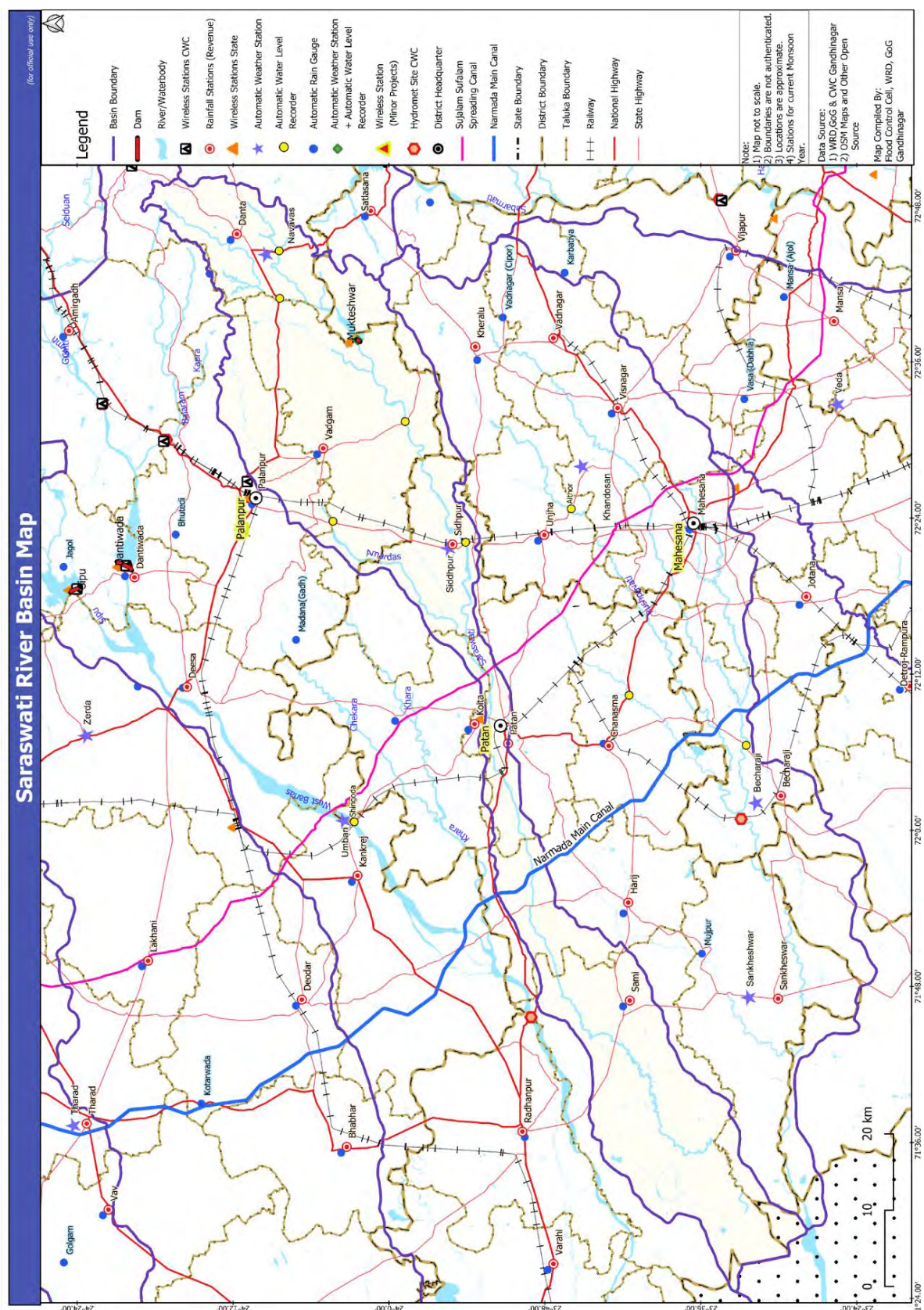
Kindly refer Flood Telephone Directory of current year for Telephone Nos.

**ANNEXURE - 13 (A)**

List of Villages likely to be affected by floods of Saraswati **River** on downstream of **Mukteshwar Dam**

<b>BANASKANTHA DISTRICT</b>		
<b>VADGAM TALUKA</b>		
(1) Nizampura	(2) Ikbalpura	(3) Tajpura
(4) Sherpura(Old & New)	(5) Salemkot	(6) Badarpur
(7) Mepda	(8) Nagorpura	(9) Bhukhala
(10) Pilucha	(11) Umrecha	(12) Delwana





Annexure 13-B

**14.0 RIVERS OF SOUTH GUJARAT:**

- 14.1** Floods are being experienced in all rivers of South Gujarat viz. Auranga, Purna, Mindhola, Dhadhar etc. The time lag for the floods to reach from the catchment to its confluence point being very short, the flood waters are likely to reach earlier than the period required for the evacuation.
- 14.2** The flood forecasting & flood warning system for South Gujarat is being looked after by the Collector of the concerned district. The Collector shall be directly received the weather and heavy rainfall messages from the India Meteorological Centre and necessary instructions will be issued by Collectors to Taluka Mamlatdar, Taluka Development Officer for the areas likely to be affected to take further necessary action to alert the people of villages in danger and to make necessary arrangements for evacuation and shifting as may be warranted.
- 14.2.1** The Executive Engineer, Ukai Left Bank Canal Investigation Division No. -2, Valod will formulate the Flood forecast for Jhuj Irr. Scheme & Kelia Irr. Scheme & convey the same to the Collector, Navsari for necessary action pertaining to flood warning arrangements.
- 14.3** Name of Villages/Dams where the wireless stations are located are as under:-

**State's Wireless Stations.**

Sr No	Wireless Station	Circle	District
1.	Valsad	(S.E.D.P.C. Valsad)	Valsad District
2.	Kelia dam site	(UCC)	Navsari District
3.	Khergam	(UCC)	Navsari District
4.	Surat	(S.E.S.I.C. Surat)	Surat District
5.	Doswada Dam Site	(UCC)	Tapi District
6.	Tadkeshwar	(SIC)	Surat District
7.	Kathor	(SIC)	Surat District
8.	Valod	(UCC)	Tapi District
9.	Anaval	(UCC)	Surat District
10.	Kosamba	(SIC)	Surat District
11.	Bardoli	(SIC)	Surat District
12.	Mahuva	(SIC)	Surat District
13.	Vyara	(UCC)	Tapi District
14.	Jhuj Dam Site	(UCC)	Navsari District
15.	Baldeva Dam Site	(VIC)	Bharuch District
16.	Pigut Dam Site	(VIC)	Bharuch District
17.	Kakrapar weir	(SIC)	Surat District
18.	Lakhi Dam	(UCC)	Surat District
19.	Amla Dam	(UCC)	Surat District

- 14.4** The Map showing all the wireless stations, Rain gauge and River gauge stations is appended vide Annexure 14 (B).

- 14.5** Due to remoteness and poor reliability of telephone system during heavy rain floods, Superintending Engineer, Ukai (Civil) Circle, Ukai is not able to communicate the flood message of the Schemes under his Circle to the Flood Cell, Gandhinagar. In that event of failure of transmission of flood data to Flood Cell, Gandhinagar, through telephone system, Superintending Engineer Ukai (Civil) Circle, Ukai, shall communicate the said data to the Superintending Engineer, Surat Irrigation Circle, Flood Cell, Surat.

In that case Superintending Engineer Surat Irrigation Circle, Surat, shall therefore collect the data from the Superintending Engineer, Ukai (Civil) Circle, Ukai, and convey the same along with the data of Scheme under his jurisdiction to the Flood Cell, Gandhinagar.

- 14.6** The villages likely to be affected by the floods in Valsad District, Surat District, Bharuch District, Vadodara District, Navsari District & Dangs District are given in Annexure 14 (A).

**14.7 Appropriate Authority (Focal Officers)**

(1)	Valsad District	– S.E., Damanganga Project Circle, Valsad
(2)	Surat District	– S.E., Surat Irrigation Circle, Surat
(3)	Bharuch District	– S.E., Surat Irrigation Circle, Surat
(4)	Dangs District	– S.E.Ukai (Civil) Circle, Ukai
(5)	Vadodara District	– S.E., Vadodara Irrigation Circle, Vadodara
(6)	Navsari District	– S.E., Surat Irrigation Circle, Surat

## ANNEXURE - 14 (A)

List of villages likely to be affected due to floods in various rivers of south Gujarat

Sr No	Name of River	Name of District	Name of Taluka	Affected Villages	
1	Derotha river	Valsad	Umargam	1. Boralia 2. Karambele 3. Nahuli 4. Eklahara 5. Jamburi	6. Mohan 7. Punat 8. Aangam 9. Sarigam 10. Bhilad
2	Kaveri river	Navsari	Vansada	1. Nani valzar 2. Moti valzar 3. Chapal dhara 4. Pratapnagar 5. Bhinar 6. Godhabari 7. Vansda 8. Gangpur 9. Moti bhamati 10. Nani bhamati 11. Charan vada 12. Khadakia 13. Navanagar 14. Manpur 15. Boriachh 16. Mindhabari 17. Vasia talav 18. Chikatia 19. Jamalia 20. Vanarasi	21. Dubal falia 22. Hanumanbari 23. Rani falia 24. Palgabhan 25. Singad 26. Rupvel 27. Rajpur 28. Doldha 29. Jhuj 30. Khata amba 31. Mankuniya 32. Raibor 33. Billmoda 34. Ambapani 35. Kapadvanj 36. Vangan 37. Dhakmal 38. Navtad 39. Kurelia
			Chikhali	1. Chikhali 2. Malvada 3. Talav chora 4. Hond 5. Vankala 6. Donja 7. Harangam 8. Sadakpur	9. Khundh 10. Manekpore 11. Sadadvel 12. Bamanvel 13. Kunkeri 14. Ghekti 15. Khambhada
			Gandevi	1. Undach-luhar-falia 2. Undach-vahia falia. 3. Goyandi bhathala	4. Khapar wada 5. Desara 6. Waghrech

Sr No	Name of River	Name of District	Name of Taluka	Affected Villages	
3	Ambika river	Navsari	Chikhali	1. Jogvad	
			Gandevi	1. Damandachha 2. Kachholi 3. Davadha 4. Gandevi 5. Torangam 6. Vegam 7. Manekpore 8. Gadat 9. Sonvadi 10. Bilimora 11. Vaghrech 12. Kalamtha 13. Morli	14. Bhatha 15. Kolva 16. Salej 17. Ichhapore 18. Pinjra 19. Matwad 20. Khaparia 21. Valoti 22. Ganghor 23. Ajarai 24. Khakhawada 25. Devsar 26. Talodh
			Vandsa	1. Sindhai 2. Vati 3. Unai 4. Chadhav 5. Ambabari 6. Chapaldhara 7. Kavdej 8. Khambhala 9. Vadichondha 10. Raybor 11. Vangam 12. Mankunia 13. Khata amba 14. Kelia 15. Doldha 16. Hanumanbari 17. Ranifaliya 18. Godhabari 19. Nanibhamti 20. Jamaliya 21. Pratapnagar 22. Navtad 23. Gangpur 24. Navanagar 25. Boriachh	26. Motibhamti 27. Charanwada 28. Khadakiya 29. Ambapani 30. Bansda 31. Manpur 32. Vanarasi 33. Dubalfaliya 34. Kureliya 35. Singadh 36. Rupvel 37. Motivalzar 38. Dhakmal 39. Vasiya talav 40. Mindhabari 41. Chikatiya 42. Umarkui 43. Zuj 44. Bilmoda 45. Kapadvanj 46. Palgabhan 47. Nanivalzar 48. Rajpur 49. Bhinar 50. Chadhav
		Dang	Waghai	1. Waghai 2. Ambapada 3. Kunda	15. Gira 16. Dabdar Waghai 17. Kosimpatal 18. Borigaopha



Sr No	Name of River	Name of District	Name of Taluka	Affected Villages	
				4. Kumarbandh 5. Bordahad 6. Dhangdi 7. Sadadmāl 8. Chikar Rambhas-saja 9. Sakarpatal 10. Barkhandhiya 11. Ambapada Chikhli sa 12. Susarda 13. Chikhalda 14. Bhawadi	Waghasiya 19. Barda Manmodisaja 20. Daguniya 21. Bhadarpada 22. Bondarmal 23. Dokpatal 24. Jhariya Dungarda 25. Kudkas 26. Devipada 27. Nanapada
3	Ambika River	Dang	Ahwa	1. Kutarnachiya 2. Isdar- 3. Borkhalsaja 4. Sunda 5. Khapri 6. Gaykhas 7. Ravchond 8. Wangan 9. Chaukiya 10. Chikhali- Samgahan_S 11. Chirapada 12. Moti_Dabhas 13. Temburgartha 14. Umbarpada 15. Chikatiya 16. Dhulchond 17. Bhavandagad 18. Wanki	19. Payarpada 20. Samgahan 21. Jogbari 22. Umarya 23. Bhapkhāl 24. Lahandabhas 25. Borigaatha- Samgahan 26. Bhurapani 27. Chinchpada 28. Baripada 29. Dhumkhāl 30. Baradpani 31. Barmiwad 32. Gotiyamal 33. Humbapada 34. Wawanda 35. Sati 36. Davdahad
		Dang		1. Davipada 2. Dokapatal	3. Dungarda 4. Baj
		Tapi	Dolvan	1. Pathakwadi 2. Chunawadi 3. Dungarda	4. Padam-Dungari 5. Halmundi
		Surat	Mahuva	1. Vaheval 2. Haladhava 3. Kankariya 4. Umra	5. Valvada 6. Mahuvariya 7. Kumkotar
4	Kharera river	Navsari	Vansda	1. Kelia 2. Umarkui	3. Vadichondha
			Khergam	1. Vad	

Sr No	Name of River	Name of District	Name of Taluka	Affected Villages	
			<b>Chikhali</b>	1. Kanbhai 2. Ghej 3. Malvada 4. Sarvani 5. Fadvel 6. Mandavkhadakk 7. Syada 8. Rumla 9. Kakadvel 10. Valanpur 11. Godthal	12. Ambach 13. Kaliyari 14. Aamadhara 15. Gholar 16. Maliyadhara 17. Tejlav 18. Balvada 19. Mograwadi 20. Soldhara 21. Pipalgabham
5	Auranga River	Valsad	<b>Vandsa</b>	1. Khanpur 2. Kavdej	3. Ankalach 4. Khambhala
			<b>Valsad</b>	1. Sandpur 2. Tithal 3. Magarvadi 4. Bhagada- 5. Khurd 6. Kosamba- 7. Machhivad 8. Valsad 9. Bhadeli 10. Jagalala 11. Bhadeli desai 12. Pardi 13. Lilapor 14. Vejalpur	15. Dhamdachi 16. Pitha 17. Sanragpur 18. Marla 19. Kalwada 20. Bhagadwada 21. Kanjan ranchhod 22. Kanjan-hari 23. Ghadoi 24. Jujava 25. Abrama 26. Atak pardi 27. Bandar rd.
6	Par River	Valsad	<b>Dharampur</b>	1. Kharedi 2. Vahiya	3. Tamachhadi
			<b>Pardi</b>	1. Kachval	2. Umarsadi
			<b>Valsad</b>	1. Haria 2. Bhagod 3. Atul 4. Binwada 5. Chinchai	6. Kakadmati 7. Navera 8. Kosamkuva 9. Velvach 10. Kachigam
			<b>Kaprada</b>	1. Kharedi	2. Moti vahiya
7	Kolak River	<b>Navsari</b>	<b>Pardi</b>	1. Pandor 2. Kolak 3. Kalsar	4. Tukwada 5. Patigam
		<b>Valsad</b>	<b>Kaprada</b>	1. Dhodhadkuva 2. Sukhula	3. Ambhati
			<b>Pardi</b>	1. Chival 2. Tukwada	3. Bagwada



Sr No	Name of River	Name of District	Name of Taluka	Affected Villages	
8	Purna River	Navsari	Navsari	1. Navsari	10. Chovisi
				2. Supa	11. Kasbapar
				3. Pindsadra	12. Amari
				4. Kurala	13. Asura
		Jalalpor	Jalalpor	5. Tarsadi	14. Pera
				6. Dharagiri	15. Vachchharvad
				7. Amadpur	16. Telada
				8. Viraval	17. Kaliawadi
				9. Moldhara	
		Dang	Ahwa	1. Sandalpor	6. Bhinar
				2. Tavdi	7. Delwada
				3. Jalalpor	8. Alura
				4. Machhad	9. Vadoli
				5. Manekpor	
			Waghai	1. Chinchli	5. Taklipada
				2. Waidun	pipalaidevi
				3. Gadvihir	6. Sadadvahir
				4. Wanztemrun	7. Dhuda
			Subir	1. Sawarkhadi	7. Wankan
				2. Bhonjdya	8. Kakarda
				3. Khopriamba	9. Khatal
				4. Chikhala kalibelsaja	10. Patli
				5. Enginpada Kolbari	11. Divadyawan
				6. Pandharmal	12. Tekpada
				1. Sajupada	13. Dardi
				2. Burthadi	15. Dhulda
				3. Jamnyamal	16. Bandhpada
				4. Gavdahad	17. Karanjda lavchalisa
				5. Girmal	18. Sawardakasad
				6. Chikhli lavchali	19. Mahal
				7. Chinchvihir	20. Moti kasad
				8. Padalkhadi	21. Jarsol
				9. Pandharpada	22. Jogthawa
				10. Moti jhadadar	23. Lahan kasad
				11. Lavchali	24. Ghana
				12. Bijurpada	25. Daher
				13. Hindla	26. Ugalavchali
				14. Bokdamal	27. Gawhan
				1. Mahal	28. Pipaldahad
				2. Motikasad	5. Kasadbari
				3. Savardakasad	6. Bhongadia
				4. Khopriamba	7. Karanjada

Sr No	Name of River	Name of District	Name of Taluka	Affected Villages	
8	Purna River	Tapi	Dolvan	1. Dhamandevi 2. Bagalpur 3. Kumbhiya 4. Vankla	5. Antapur 6. Garvan 7. Kamalpor
			Valod	1. Andhatri 2. Mordevi 3. Dumkhal 4. Inaman 5. Kanajod 6. Valod	7. Vedchhi 8. Ambach 9. Virpor 10. Buhari 11. Peladbuhari
			Songadh	1. Kumkuva 2. Khanjar 3. Doswada 4. Kharsi	5. Kanala 6. Chorvad 7. Khadka chikhali
			Vyara	1. Vaghzari 2. Chikhali	3. Musa 4. Kanpura
		Navsari		1. Chhitra 2. Miyapur 3. Sevasan 4. Vedchhi 5. Ambach 6. Valod 7. Bhuvasan 8. Kanai 9. Vadia 10. Bhudhleshvar 11. Shakhpur 12. Mahuva 13. Ondach	14. Noadch 15. Amchak 16. Kavitha 17. Ranat 18. Amroli 19. Bagumra 20. Karchaka 21. Babla 22. Vankaner 23. Dhat 24. Bagalpur 25. Kelkui
9	Mindhola River	Navsari	Navsari	1. Ranodara 2. Kala kacha 3. Aasna	4. Vada 5. Intarva 6. Chokhad
		Surat		1. Makhinga 2. Kamalchhad 3. Syadla 4. Karala 5. Utara 6. Bardoli 7. Mota rampura 8. Lingad 9. Kapletha 10. Pardi pata 11. Taraj 12. Amboli	18. Ten 19. Varad 20. Dastan 21. Dhamdod 22. Vyara 23. Pansora 24. Asta 25. Kalkachha 26. Kansad 27. Padi 28. Umber 29. Magob

Sr No	Name of River	Name of District	Name of Taluka	Affected Villages	
				13. Kanpura 14. Panavadi 15. Kachholi 16. Popda 17. Mohini	30. Samrod 31. Khajod 32. Abhva 33. Budiya 34. Astan
9	Mindhola River		Vyara	1. Panwadi 2. Vyara	3. Kapura 4. Andharwadi Najik
			Valod	1. Kamalchod	2. Syadla
10	Varoli River	Valsad	Umargaon	1. Sanjan 2. Khatalwada 3. Nargol 4. Padgam 5. Tembi 6. Umargaon 7. Palgam	8. Bhathi 9. Karambeli 10. Nahuli 11. Kalai 12. Jamburi 13. Humaran
11	Kalu River	Valsad	Umargaon	1. Jamburi 2. Punat 3. Bhilad	4. Borlai 5. Karambele
12	Khapri River	Dang		1. Kudkas 2. Dav dahad	3. Sati 4. Vanvada
13	Gira River	Dang		1. Bandhapada	2. Dhulda
14	Ver River	Surat	Mandavi	1. Gordha 2. Amalsadi 3. Karvali 4. Kachhiya bori 5. Godavadi 6. Gavachi 7. Godsamba 8. Gangapur 9. Bundha 10. Devgiri 11. Maldha 12. Limdha	13. Kolkhadi 14. Devgad 15. Andharvadi 16. Junvan 17. Visdaliya 18. Fulvadi 19. Moritha 20. Salaiya 21. Valargadh 22. Kharoli 23. Pipariya 24. Vareli
		Tapi	Mandavi	1. Amli 2. Kalibel	3. Pardi
15	Dhadhar River	Bharuch	Jambusar	1. Valia 2. Asaroi 3. Kundal 4. Bojedara 5. Nada 6. Devla 7. Bhadhkodra 8. Sigam	16. Magnand 17. Jambusar 18. Koteswar 19. Nobar 20. Uber 21. Nondhana 22. Jafarapura 23. Kopuria

Sr No	Name of River	Name of District	Name of Taluka	Affected Villages	
				9. Muradpur-neja 10. Kavi 11. Jantran 12. Medafarr-neja 13. Tankari 14. Khanpur 15. Mahapura	24. Malpur 25. Vad 26. Kora 27. Kava 28. Umara 29. Ankhi 30. Vahelam
15	Dhadhar River	Bharuch	Amod	1. Vasna 2. Manjola 3. Kankaria 4. Ikhar 5. Danda 6. Sarbhan	7. Modhana 8. Dadapur 9. Kobla 10. Amod 11. Pursha
		Vadodara		1. Nahar 2. Barsundh	3. Nodra
16	Tokari river	Bharuch	Valia	1. Mauza 2. Kamalia 3. Chikhli 4. Gundia 5. Rajpura 6. Jabugam	7. Vandaria 8. Chormca 9. Umargam 10. Sodgam 11. Sinoda 12. Navapura
17	Doman khadi	Narmada	Sagbara	1. Simamali 2. Bhavri saver 3. Kel	4. Pat 5. Panchpipari
18	Tokari Khadi and Tributary of Kim River	Bharuch	Valia	1. Baldeva 2. Borkhadi 3. Kambodi 4. Panchim 5. Kesargam 6. Zarna 7. Chasvad	8. Sheer 9. Dolatpur 10. Singla 11. Pithor 12. Dehli 13. Desad
19	Waghati khadi	Narmada	Sagbara	1. Nana kakdiamba 2. Nana doramba 3. Makran 4. Kuvdavadi 5. Rozdev	6. Dattwada 7. Pati 8. Tavel 9. Ghodmung 10. Nani devrupan
20	Dhanki khadi	Surat	Mandavi	1. Kalamkuva 2. Beddha 3. Bhatkhai 4. Sarkui	5. Makan zar 6. Rakhas khadi 7. Lakhgam
21	Tapi river	Tapi	Songadh	1. Ghasiya medha 2. Sisor 3. Bhanpur 4. Jamapur	8. Limbi 9. Bori savar 10. Bhatvada 11. Singal khanch

Sr No	Name of River	Name of District	Name of Taluka	Affected Villages	
				5. Vaghnera 6. Panch pipala 7. Nindvada	12. Vadi bhensot 13. Vekur 14. Singpur
21	Tapi river	Tapi	<b>Uchchhal</b>	1. Uchchhal 2. Jamki 3. Vaghsepa nana 4. Naranpur 5. Khabda 6. Sundarpur 7. Bhintbudak 8. Babarghat 9. Bhintkhurd	10. Vadpada nesu 11. Karod 12. Arkati 13. Sakrada 14. Kataswan 15. Dhupi 16. Dhaj 17. Nurbad 18. Sase
			<b>Nizar</b>	1. Vyaval 2. Kvelde 3. Hingni digar 4. Sulvade 5. Antruli 6. Khodada 7. Mubarakpur 8. Hathnur digar 9. Lekurvadi	10. Nasarpur 11. Borthu 12. Nevale 13. Kavithe 14. Kothli budark 15. Vanka 16. Chinchoda 17. Shelu
			<b>Kukarmunda</b>	1. Sadagvan 2. Ashrava 3. Gorasa 4. Varpada 5. Pishavar 6. Rajpur 7. Tulse 8. Untavad 9. Ubhad 10. Kevdamoi 11. Jhumkathi 12. Panibara 13. Jajpampi alis jhampa 14. Kukarmunda 15. Patipada	16. Amode tarfe satone 17. Vesgam 18. Bej 19. Gadid 20. Kondraj 21. Pimlas 22. Bhamsal 23. Hol 24. Satola 25. Balde 26. Bahurupa 27. Hathode 28. Gangtha 29. Pati





Annexure 14-B

**15.0 RIVERS OF MAHISAGAR, PANCHMAHALS & DAHOD DISTRICT**

(Except Mahi & Panam Rivers)

**15.1** The Flood forecasting and flood warning system for the rivers of Panchmahals and Dahod Districts are being looked after by Superintending Engineer, Panam Project Circle, Godhra, through his Executive Engineers, (1) Panam Project Division, Godhra (2) Panam Irrigation Division, Godhra (3) Dahod Irrigation Division, Dahod. The gauge, discharge and rainfall data are being communicated through wireless stations located at various stations on the main river as well as on tributaries. The Superintending Engineer, Vadodara Irrigation Circle, Vadodara should provide all necessary helps to the Superintending Engineer, Panam Project Circle, Godhra, to perform his duties as Focal Officer (for the projects under Panam Project Circle), viz.,

1. Bhadar (Panchmahals)
2. Machhanala
3. Karad
4. Umaria
5. Edalwada
6. Kabutri
7. Kali - II
8. Patadungari
9. Wankleshwer-Bhey

**15.2** The rivers are having very short length and therefore for incoming floods the time lag available will not be helpful in speedy alerting and evacuation of affected people.

**15.3** Name of Weir/Dams where Wireless Stations are located are as under:-

**State's Wireless stations.**

Sr No	Wireless Station	Circle	District
1.	Godhara (Panam Colony)	(PPC)	Panchmahal
2.	Bhadar	(PPC)	Mahisagar
3.	Machhanala	(PPC)	Dahod
4.	Hadaf (Gated)	(PPC)	Panchmahal
5.	Umaria	(PPC)	Dahod
6.	Edalwada	(PPC)	Dahod
7.	Kabutri	(PPC)	Dahod
8.	Karad(Fuse Gated )	(PPC)	Panchmahal
9.	Patadungri	(PPC)	Dahod
10.	Wankleshwar Bhey	(PPC)	Dahod
11.	Kali -II	(PPC)	Dahod
12.	Mataria (Bandibar)	(PPC)	Dahod

**15.4** The villages affected in Downstream of dams of Mahisagar, Panchmahals District are given vide Annexure 15-A



**15.5** The Map showing all the wireless stations, Rain gauge and River gauge stations is appended vide Annexure 15-B.

**15.6** Action to be taken by various officers

**TABLE - (15.5)**

**Note:** Kindly refer Flood Telephone Directory of the current year for Telephone Nos.

<b>Name of the Officer with Telephone Nos.</b>	<b>Observation to be made by the Officer</b>	<b>Officer to whom the messages to be sent.</b>	
<b>(1)</b>	<b>(2)</b>		<b>(3)</b>
Officer In Charge of			
1. Bhadar Dam	The Inflow & outflow from the Dam mentioned in Column No. (1) are to be conveyed to the officer in column No.3	(a)	Superintending Engineer
2. Machhanala Dam			Panam Project Circle, Godhra.
3. Hadaf Dam		(b)	Collector, Panchmahals
4. Umaria Dam			District, Godhra.
5. Patadungri Dam Site		(c)	Collector, Dahod District, Dahod
6. Edalwada		(d)	District Superintendent of
7. Kabutri			Police, Panchmahals, Godhra.
8. Karad		(e)	District Superintendent of Police, Dahod
9. Wankleshwar-Bhey		(f)	Flood Control Cell, Godhra
10. Kali - II		(g)	Flood Control Cell, Gandhinagar
		(h)	Collector, Mahisagar Dist. Lunawada
		(i)	DSP, Mahisagar Dist., Lunawada

**15.7 Appropriate Authority (Focal Officer)**

The Superintending Engineer,  
Panam Project Circle, Civil Lines Road  
Behind Collector Office, Godhra

**Note:-**  
Kindly refer Flood  
Telephone Directory of  
Current year for Telephone Nos.

## ANNEXURE - 15 (A)

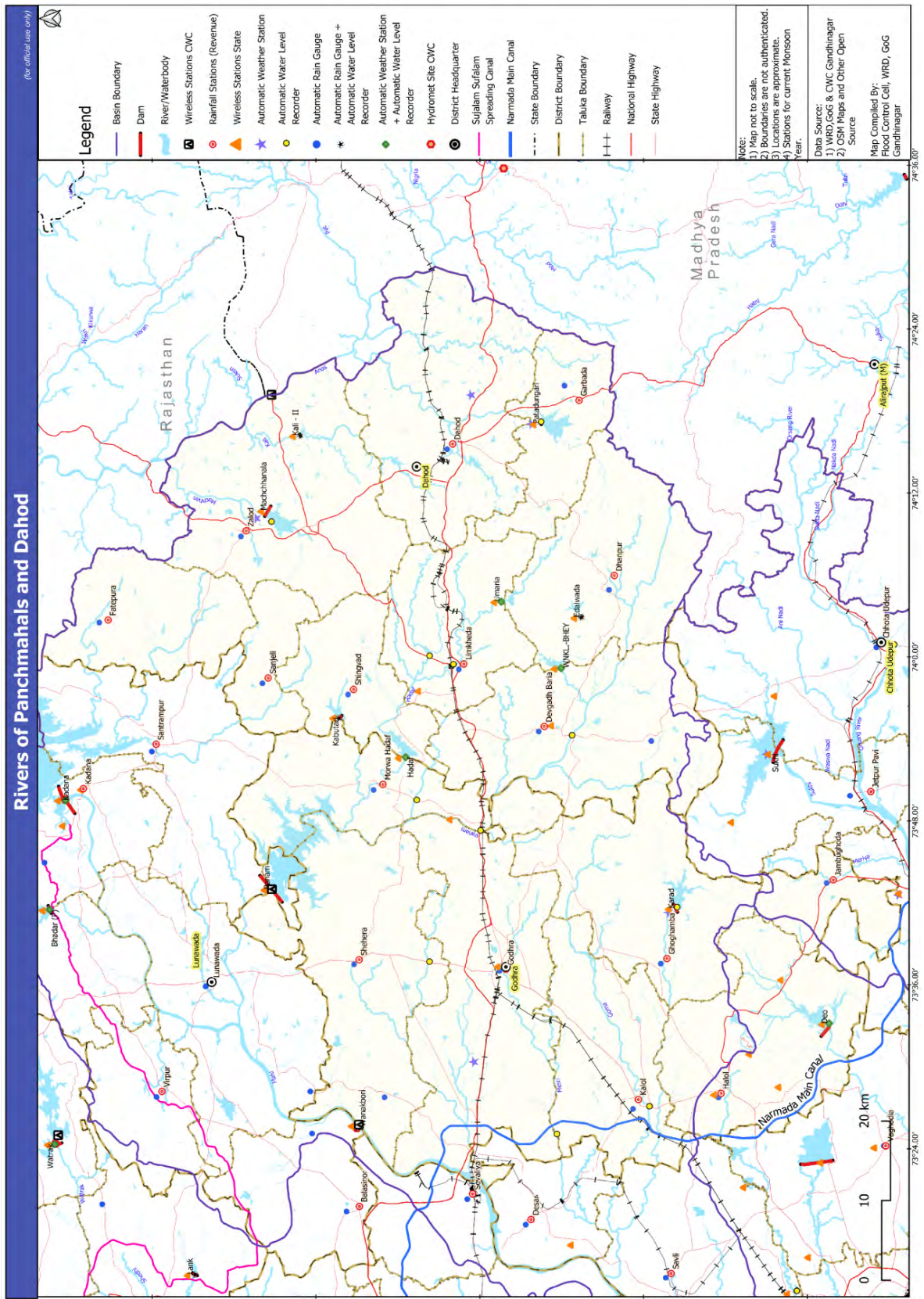
List of villages likely to be affected by floods on Downstream of the Dams in **Mahisagar, Panchmahals and Dahod Districts.**

SR. NO.	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
1	Bhadar (P) Irrigation Scheme	Mahisagar	Khanpur	1. Mota Khanpur 2. Nana Khanpur 3. Khanpur
			Kadana	1. Ankalia 2. Dariapur 3. Rehman
2.	Hadaf Irrigation Scheme	Panchmahals	Morva (Hadaf)	1. Khanpur 2. Morva (Hadaf) 3. Mataria 4. Dangaria 5. Kadadara
3	Machhannala Irrigation Scheme	Dahod	Jhalod	1. Bhanpur 2. Chitrodiya 3. Dhavadia 4. Mahudi 5. Mandali Khuta 6. Munkhosla 7. Therka 8. Kharsana 9. Melaniya 10. Nansalai 11. Varod
4	Kabutri Irrigation Scheme	Dahod	Singvad	1. Chandpur 2. Vandeli 3. Khudra
			Limkheda	1. Chundri 2. Vala Gota
5	Edalwada Irrigation Scheme	Dahod	Dhanpur	1. Bogadva 2. Edalwada 3. Khokhbed 4. Modhva

SR. NO.	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
				5. Rampur
				6. Ved
6	Umaria Irrigation Scheme	Dahod	Limkheda	1. Agara 2. Amba 3. Choidia 4. Dhadhela 5. Kundha 6. Ninama na Khakhria 7. Parmar na Khakhria 8. Patwan 9. Vislungh
7	Karad Irrigation Scheme	Panchmahals	Ghoghamba	1. Ghoghamba 2. Boria 3. Kanbi Palli 4. Kumbhar Palli 5. Navgam 6. Vel Kotar 7. Godh 8. Laalpuri 9. Pharod 10. Math 11. Vadinath 12. Paroli
			Kalol	1. Alwa 2. Medapur 3. Jiliya 4. Madhvas 5. Palasa 6. Naveria 7. Jetpur 8. Varwada 9. Saliaav 10. Alindra 11. Padhardevi
			Hanol	1. Varasada 2. Maruva 3. Arad 4. Naavaria

SR. NO.	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
				5. Govindpuri
8.	Wanakleshwar	Dahod	Devgadh Baria	1. Kelia
	Bhey			2. Degawada
	Irrigation Scheme			3. Jhabia
				4. Wandar
			Limkheda	1. Boghadawa
9.	Kali - II Irrigation	Dahod	Jhalod	1. Sabli
	Scheme			2. Gultord
				3. Raliyali Bhura
				4. Raliyali Gurjar
				5. Bantia
				6. Tada Gola
				7. Shorda
				8. Kankrakuva
				9. Pethapur
				10. Khakharia
				11. Chakalia
10.	Patadungari	Dahod	Garbada	1. Sahada
	Irrigation Scheme			2. Garbada
				3. Gungaradi
				4. Gangaradi
				5. Tunkivij
				6. Tunki Anop
				7. Nandva
				8. Panchvada
				9. Devdha
			Dahod	1 Varamkehda
				2. Borekheda
				3. Jalat
				4. Moti Kharaj
				5. Pusari
				6. Dahod Kashba

## Flood Warning Arrangements - 2025



**16.0 RIVERS OF SAURASHTRA REGION:**

- 16.1** The Flood forecasting and flood warning system for the rivers of Saurashtra Region is being looked after by the Superintending Engineer, Rajkot Irrigation Circle, Rajkot for the Rajkot, Morbi, Jamnagar, Devbhumi Dwarka, Surendranagar, Junagadh & Porbandar Districts. Also some projects of Amreli and Porbandar Districts which are under Superintending Engineer, Rajkot Irrigation Project Circle, Rajkot.
- 16.2** The rivers are having very short length and therefore for incoming floods in time lag available will not be helpful in speedy alerting and evacuation of affected people.
- 16.3** The Superintending Engineer, Rajkot Irrigation Project Circle, Rajkot should provide all the necessary data such as rainfall, gauge discharge, water levels, live storages, etc. to the focal officer for the area/district concerned under his jurisdiction and will extend all necessary help to the Focal Officer for discharging the duties by acting as Sub Focal Officers.
- 16.4.** The flood forecasting & flood warning arrangements for following water supply projects under Municipal Corporation will be looked after by Municipal Commissioner of the concerned projects. They shall directly collect weather bulletin, H.R.W. from India Meteorological Department, Ahmedabad or Revenue Control Room of the concerned districts & shall formulate the flood forecast & convey to the concerned Collector regarding the area likely to be affected for alerting and evacuation of the people as warranted by flood, simultaneously, they shall convey the flood forecast and action taken by them to the Flood Control Cell(Irrigation) nearest to them.

**TABLE - 16.4**

Sr. No.	Name of Water Scheme	Officer In charge of Scheme	Telephone Nos.
1	Nyari-I	Municipal Commissioner	<b>Note:-</b> Kindly refer Flood Telephone Directory of the current year for telephone nos.
		Rajkot Municipal	
		Corporation, Rajkot	
2	Ranjit Sagar	Municipal Commissioner	
		Jamnagar Municipal	
		Corporation, Jamnagar.	

- 16.5** The Map showing all the wireless stations, Rain gauge and River gauge stations is appended vide Annexure 16-B-1 to 16-B-4.
- 16.5.1** The Wireless Stations under the control of Superintending Engineer, Rajkot Irrigation Circle, Rajkot are as under.



## State's Wireless Stations.

RAJKOT DISTRICT			
1	Rajkot (S.E.RIC,Rajkot)	16	Aji-III
2	Nyari-I	17	Gondali
3	Nyari-II	18	Vachhapari
4	Bhadar	19	Lalpari
5	Karnuki	20	Karmal
6	Dhari	21	Ishwaria
7	Kabir-Sarovar	22	Bhadar - II
8	Phophal	23	Motisar
9	Chhaparvadi-II	24	Survo
10	Veri	25	Khodapipar
11	Phadangbeti	26	Dondi
12	Moj	27	Sodvadar
13	Venu-II	28	Ghelo (s) Dam
14	Aji- I	29	Malgadh Dam
15	Aji-II	30	Sankroli
MORBI DISTRICT			
1	Demi-I	7	Brahamani-II
2	Demi-II	8	Machhu-III
3	Machhu-I	9	Machhu-II
4	Ghodadharoi	10	Demi-III
5	Bangawadi	11	Flood Control(Morbi)
6	Brahmini		
JAMNAGAR DISTRICT			
1	Jamnagar (JI Dn. Jamnagar)	13	Kankavati
2	Sasoi	14	Ruparel
3	Fulzar-I	15	Phophal - II
4	Fulzar-II	16	Wadisang
5	Umiyasagar	17	Aji -IV
6	Sapada	18	Fulzer (KB)
7	Puna	19	Rupavati
8	Vijarkhi	20	Und - III
9	Rangmati	21	Dia minsar
10	Ranjit-Sagar	22	Sasoi-II
11	Und-I	23	Wagadiya
12	Und-II		
DEV BHUMI DWARKA DISTRICT			
1	Vartu-I	7	Gadaki
2	Ghee	8	Vartu-II
3	Sani	9	Verdi-I
4	Sindhani	10	Kabarka
5	Sonmati	11	Minsar-V
6	Shedhabhadthari	12	Veradi – II
SURENDRANAGAR DISTRICT			
1	Wadhwan Bhogavo-I	7	Saburi
2	Wadhwan Bhogavo-II	8	Limdi Bhogavo-II
3	Falku	9	Nimbhani
4	Limdi-Bhogavo	10	Triveni Thanga
5	Vansal	11	Flood Control
6	Morshal		
PORBANDAR DISTRICT			
1	Sorthi		



- 16.6** Whenever heavy rainfall warning is received from India Meteorological Department the officers of the respective areas shall obtain the storage level and rainfall data at very frequent interval and the same is to be communicated to the Flood Control Cell, Gandhinagar.
- 16.7** Action to be taken by local officer/project officer regarding dams in Saurashtra.
- 16.7.1** The Executive Engineer in-charge of the reservoirs shall arrange to obtain the gauge and other data from upstream of the reservoirs. The Deputy Executive Engineer/Assistant Engineer shall on the basis of this data compute the incoming flood and takes necessary steps to route the flood by operating the crest gates as per the operation manual of gates and as per instructions from the Focal Officer and concerned Superintending Engineer whenever warranted so that there would be no danger either to the head works or to the villages/area etc. downstream of the reservoir. If the routed flood is likely to be unexpectedly high enough to endanger certain areas downstream of the reservoir, the concerned revenue and Police authorities should be intimated in time, so that necessary precautionary measures in respect of alerting the people of the area likely to be affected by flood water including arranging evacuation if necessary.
- 16.7.2** When water level in the reservoir is likely to reach 0.3 Meter (i.e. 1.00 ft) below high flood level or even earlier in the event of rapid rising of flood water, in-charge Executive Engineer should immediately issue necessary warning and communicate the warning messages to the concerned Collector and District Superintendent of Police for taking up further necessary action. When water is likely to exceed H.F.L the warning regarding the conditions of dam should also be indicated in the warning to be issued. This flood warning messages shall be communicated to Flood Control Cell, Gandhinagar, Chief Engineer (Central Gujarat) and Additional Secretary and Chief Engineer and Additional Secretary concerned immediately without any delay.
- 16.7.3** The Executive Engineer of the concerned area should interpret the signals/messages received from various dams in his charge and shall arrange to intimate the flood warning signals to the collector and District Superintendent of Police of respective district in which the reservoir is located if necessary. The areas likely to be affected by floods waters are also to be intimated for taking further necessary action for alerting the people as warranted by flood levels in the reservoirs or in the rivers.
- 16.8** Villages affected by the flood in downstream of dams, in various are given vide **Annexure 16-A**
- 16.9** **Appropriate Authority (Focal Officer):**
- (A) (For Rajkot, Jamnagar, Morbi, D.B.Dwarka & Surendranagar District)
- |                                     |  |
|-------------------------------------|--|
| Superintending Engineer             | <b>Note:-</b>                          |
| Rajkot Irrigation Circle            | Kindly refer Flood Telephone Directory |
| Opp. Hotel Mohit, Near Race Course, | of the current year for Telephone nos. |
| Rajkot.                             |  |

(B) Appropriate Authority (Focal Officer) for following Water Supply Scheme.

Sr. No.	Name of Scheme	Appropriate Authority (Focal Officer)	Telephone Nos.
1.	Nyari -I	Municipal Commissioner, Rajkot Municipal Corporation, Rajkot	Note:- Kindly refer Flood Telephone Directory of current year for telephone nos.
2.	Ranjit Sagar	Municipal Commissioner, Jamnagar Municipal Corporation, Jamnagar.	

### ANNEXURE - 16 (A)

List of villages likely to be affected by floods on downstream of the Dams in Rajkot, Jamnagar, Surendranagar and some projects of Junagadh and Porbandar Districts.

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
1.	Sankroli	Amreli	Kukavav	1.Hanuman Khijadiya
		Rajkot	Jetpur	1.Charan Samdhiyala
				2.Resanadi-Galol
				3.Thana Galol
2.	Dai-Minsar	Jamnagar	Jamjodhpur	1. Satapar
	Irrigation	Porbandar	Kutiya	1. Baloch
	Scheme		Ranavav	2. Devda
				3. Khirasara
				4. Valotra
				5. Jambu
				6. Kandorna
				7. Rana Khijad
				8. Mahira
				9. Nerana
				10. Bhoddar
				11. Padardi
			Porbandar	12. Erda
3.	Fulzar - I	Jamnagar	Kalavad	1. Golaniya
	Irrigation			2. Khandhera
	Scheme			3. Nagpur
				4. Vadisang
4.	Sani	Dev Bhumi Dwarka	Kalayanpur	1. Dangarvad
	Irrigation			2. Jepur
	Scheme			3. Ranparda
				4. Raval
				5. Suryavadar
				6. Chandravada
				7. Harshad
				8. Gandhavi
				9. Ashiyavadar

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
5.	Sindhani Irrigation Scheme	Dev Bhumi Dwarka	Kalayanpur	1. Chachlana 2. Gangadi 3. Devalia 4. Harsad 5. Gandhavi
6.	Kankavati Irrigation Scheme	Jamnagar	Jamnagar Jodia	1. Falla 2. Baradi 3. Hadiyana 4. Beraja
7.	Vijarkhi Irrigation Scheme	Jamnagar	Jamnagar	1. Dhunvav 2. Khijadia 3. Khimrana 4. Thavariya 5. Navabandar 6. Vijarkhi
8.	Und - I Irrigation Scheme	Jamnagar	Dhrol          Jamnagar    Jodiya	1. Hamapar 2. Jaliya Devani 3. Jaliya Mansar 4. Roziya 5. Nathuvadla 6. Soyala 7. Vankiya 8. Virani Khijadya 10. Dhragda 11. Khambhalida 12. Ravani Khijadiya 13. Tamachan 14. Lakhtar
9.	Fulzar - II Irrigation Scheme	Jamnagar	Lalpur	1. Jakhar 2. Jasapar 3. Khatia Beraja 4. Mota Lakhia 5. Nana Lakhia 6. Modpar
10.	Ghee Irrigation Scheme	Dev Bhumi Dwarka	Jam-Khambhalia	1. Khambhalia 2. Kabar Visotri 3. Kotha Visotri 4. Salaya 5. Sodasala 6. Ramnagar 7. Harshadpur
11.	Puna Irrigation Scheme	Jamnagar	Lalpur    Jamnagar	1. Derachhikari 2. Kanachhikari 3. Navagam 4. Bed 5. Shapar 6. Sarmat 7. Vasai 8. Aamra

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
12.	Rangamati Irrigation Scheme	Jamnagar	Jamnagar	1. Changa 2. Chela 3. Dared 4. Jamnagar 5. Juna-Nagna 6. Nava-Nagna 7. Nava gam-Ghed
13.	Sapada Irrigation Scheme	Jamnagar	Jamnagar	1. Aliyabada 2. Dhunvav 3. Gangajala 4. Khijadiya 5. Khimrana 6. Moda 7. Nava Bandar 8. Sapada 9. Shekhat
14.	Sasoi Irrigation Scheme	Jamnagar	Lalpur Jamnagar	1. Dera Chikari 2. Kana Chikari 3. Pipli 4. Amra 5. Balambhadi 6. Dodhiya 7. Gaduka 8. Sarmat 9. Shapar 10. Vasai 11. Bed
15.	Sonmati Irrigation Scheme	Dev Bhumi Dwarka	Bhanvad	1. Ambaliyara 2. Bhenakvad 3. Jampar 4. Sevak Devaliya 5. Navagam 6. Ranparada 7. Rupamora
16.	Vartu - I Irrigation Scheme	Dev Bhumi Dwarka	Bhanvad	1. Ambaliyara 2. Bhenakvad 3. Morzar 4. Navagam 5. Ranparda 6. Rupamora 7. Sevak Devalia 8. Shedhakhai 9. Sanada
17.	Vartu - II Irrigation Scheme	Dev Bhumi Dwarka	Kalayanpur Porbandar	1. Gandhvi 2. Gorana 3. Harsad-Mata 4. Raval 5. Ranparda 1. Bhomiyavadar

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
				2. Fatana
				3. Ishwariya
				4. Morana
				5. Miyani
				6. Parvada
				7. Shingada
				8. Sodhana
		Jamnagar	Bhanvad	1. Zarera
18.	Ranjit-Sagar Water Supply Scheme	Jamnagar	Jamnagar	1. Dadiya
				2. Khimaliya
				3. Low Lying Area of Jamnagar City
				4. Mokhana
				5. Morkanda
				6. Nava Nagar
				7. Navagam(Ghed)
				8. Shri Maharana
				Sarkarshina Farm
19.	Und - II Irrigation Scheme	Jamnagar	Dhrol	1. Majoth
			Jodiya	2. Ananda
				3. Badanpur
				4. Bhadra
				5. Jodiya
				6. Kunad
20.	Shedha Bhadthari Irrigation Scheme	Dev Bhumi Dwarka	Kalyanpur	1. Kanpar-Sherdi
				2. Chapar
				3. Chur
				4. Mangaria
				5. Haripar
21.	Veradi - I Irrigation Scheme	Dev Bhumi Dwarka	Bhanavad	1. Veradi
				2. Sai Devalia
22.	Wadisang W.R. Irrigation Scheme	Jamnagar	Jamnagar	1. Dhudasiya
				2. Dhutarpur
				3. Sumri
23.	Und -III W.R Irrigation Scheme	Jamnagar	Kalavad	1. Rajasthali
				2. Dedhkhijadia
				3. Jasapar
				4. Bhayakhakharia
				5. Bavakhakharia
24.	Fulzar (KB) W.R.	Jamnagar	Jamjodhpur	1. Kotada – Bavisi
				2. Gingani
				3. Sidasar
		Rajkot	Upleta	1. Rabarika
				2. Hariyasan
				3. Charaliya
				4. Kharachia
				5. Rajapara

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
25.	Rupavati W.R. Irrigation Scheme	Jamnagar	Lalpur	1. Lalpur
26.	Aji - IV W.R.	Jamnagar	Jodia	1. Morana 2. Tarana 3. Hirapar 4. Balambha 5. Ranjitpara 6. Meghpar 7. Sampar 8. Jamsar 9. Manamora 10. Bhimkata 11. Jiragadh 12. Dudhai 13. Madhapar 14. Hajamchora 15. Kothariya
27.	Phopthal - II W.R.	Jamnagar	Kalavad	1. Gunda 2. Makhakarod 3. Kalmeghda
		Rajkot	Gondal	1. Ambardi
28.	Demi - III Irrigation Scheme	Morbi	Morbi	1. Koyali 2. Dhulkot 3. Amran 4. Bella 5. Rampur 6. Jinjuda
		Jamnagar	Jodiya	1. Mavanugam
29.	Kabarka Irrigation Scheme	Dev Bhumi Dwarka	Bhanvad	1. Kabarka 2. Bhorla 3. Fotadi
30.	Umiyasagar W.R. Scheme	Jamnagar Rajkot	Jamjodhpur Upleta	1. Sidsar 1. Hariyasan 2. Chareliya 3. Kharachia 4. Rajapara 5. Rabarika
31.	Gadaki W. R. Scheme	Dev Bhumi Dwarka	Jamkhambhaliya Jamkalyanpur	1. Sidhpur 2. Dhumthal
32.	Ruparel W.R. Scheme	Jamnagar	Jamnagar	1. Pasaya 2. Beraja
33.	Veradi-II W.R. Scheme	Dev Bhumi Dwarka	Bhanvad	1. Sai-Devalia 2. Bhanvad
34.	Minsar(V) W.R.	Dev Bhumi Dwarka	Bhanvad	1. Vanavad

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
	Scheme			2. Shiva
				3. Katkola
				4. Jasapar
		Jamnagar	Jamjodhapur	1. Vansjalia
35	Sorthi	Devbhoomi Dwarka	Kalyanpur	1. Gandhavi
	Irrigation			2. Gorana
	Scheme			3. Harshad
				4. Raval
				5. Sisali
		Porbandar	Porbandar	1. Advana
				2. Bhetakdi
				3. Miyani
				4. Sodhana
36	Nyari - I	Rajkot	Khadhari	1. Ishvariya
	Water Supply		Lodhika	2. Haripar (Pal)
	Scheme			3. Vadvali Vajdi
				4. Khambhana
				5. Nyara
				6. Paddhari
				7. Rampur
				8. Rangpur
				9. Tardhari
			Rajkot	10. Gadhivali - Vajelli
				11. Vejagam
				12. Vejagam(Vajdi)
				13. Vajdi (Virdavali)
37	Aji - I	Rajkot	Rajkot	1. Bedi
	Irrigation			2. Manharpur
	Scheme			3. Rajkot
				4. Rojki
				5. Thorala
38	Bangawadi	Morbi	Tankara	1. Bangawadi
	Irrigation	Jamnagar	Jodiya	1. Timbadi
	Scheme			2. Rasnal
39	Bhadar	Rajkot	Dhoraji	1. Bhukhi
	Irrigation			2. Umakot
	Scheme			3. Vegdi
			Gondal	4. Bhandariya
				5. Khambhalida
				6. Masitala
				7. Navagam
				8. Nilakha
			Jam-Kandorana	9. Ishvariya
				10. Taravda
			Jetpur	11. Derdi
				12. Jetpur
				13. Kerali
				14. Khirasra
				15. Lunagara
				16. Lunagari



SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
				17. Monpar
				18. Navagadh
				19. Panch Pipla
				20. Rabarika
				21. Sardharpur
				22. Vadasada
40	Demi - I Irrigation Scheme	Morbi	Tankara	1. Bhut Kotda 2. Harbetiyali 3. Haripur 4. Mitana 5. Rajavad 6. Tankara
41	Gondali Irrigation Scheme	Rajkot	Kotada Sangani	1. Panchiyavadar 2. Manekwada 3. Kherada 4. Kotda Sangani 5. Rajgadhd
42	Kabir-Sarovar (Chhapparwadi-I) Irrigation Scheme	Rajkot	Gondal	1. Daiya 2. Charkhadi 3. Kolithad 4. Lunivav 5. Padvala 6. Vejagam 7. Garnala 8. Trakuda
43	Lalpari Irrigation Scheme	Rajkot	Rajkot	1. Navagam 2. Bedi
44	Moj Irrigation Scheme	Rajkot	Upleta	1. Gadhala 2. Kerala 3. Khakhi-Jaliya 4. Mojira 5. Navapara 6. Sevantra 7. Upleta 8. Vadla
45	Phopthal Irrigation Scheme	Rajkot	Dhoraji Jam-Kandorana	1. Vegli 2. Dudhivadar 3. Ishvariya 4. Tarvada
46	Vachhapari Irrigation Scheme	Rajkot	Kotada Sangani	1. Panchiyavadar 2. Khareda 3. Kotda Sangani
47	Veri Irrigation Scheme	Rajkot	Gondal	1. Gondal 2. Kantoliya 3. Vora kotda
48	Chhapparwadi - II	Rajkot	Jetpur	1. Lunagara

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
	Irrigation Scheme			2. Jambudi
				3. Kerali
				4. Mevasa
				5. Premgadh
				6. Rabarika
				7. Lungari
49	Dhari Irrigation Scheme	Rajkot	Vichhiya	1. Mota Hadmatiya
				2. Mota Lakhavad
		Surendranagar	Sayala	3. Mota Matra
				4. Gangajal
				5. Nana Matra
				6. Shekhdod
50	Godhadharoi Irrigation Scheme	Morbi	Morbi	1. Chakampar
				2. Zikiyari
				3. Jivapar
				4. Jetpur ( Machchhu)
				5. Rapar
			Malia (Miyana)	6. Sapar
				7. Sultanpur
				8. Manaba
				9. Chikhali
51	Ishwaria Irrigation Scheme	Rajkot	Jasdan	1. Ishwaria
			Kotda Sangani	2. Detadiya
				3. Karmal Kotda
52	Karmal Irrigation Scheme	Rajkot	Kotda Sangani	1. Bagdadiya
				2. Karmal Kotda
				3. Pipalyia
				4. Vadipara
				5. Detadia
53	Machhu - I Irrigation Scheme	Morbi	Morbi	1. Adepur
				2. Lakhadnagar
				3. Lilapar
				4. Makansar
			Wankaner	5. Dhamalpur
				6. Dhuva
				7. Gariya
				8. Holmadh
				9. Jalsika
				10. Kerala
				11. Lunasaria
				12. Mahika
				13. Pajpanj
				14. Panchasar
				15. Panchasia
				16. Ranakpur
				17. Rasikgadh
				18. Rati Devdi
				19. Sobhala
				20. Vaghasia
				21. Vankaner

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
				22. Vankia
				23. Jodhpar
				24. Hasanpar
54	Motisar Irrigation Scheme	Rajkot	Gondal	1. Hadmatata 2. Kolithad 3. Patiyali
55	Nyari - II Irrigation Scheme	Rajkot	Paddhari	1. Govindpar 2. Khamta 3. Rampar 4. Targhadi 5. Vanpari
56	Venu - II Irrigation Scheme	Rajkot	Upleta	1. Gadgethad 2. Varjang Jalia 3. Mekha-timbi 4. Nagvadar 5. Nilakha
57	Aji - II Irrigation Scheme	Rajkot	Paddhari	1. Adbalka 2. Baghi 3. Dahisarda 4. Dungarka 5. Gadhada 6. Haripar 7. Khandheri 8. Naranka 9. Sakhapar 10. Ukarda
58	Machhu - II Irrigation Scheme	Morbi	Morbi	1. Amreli 2. Bhadiad 3. Dharampur 4. Gorkhijadia 5. Gungan 6. Jodhpur 7. Juna -Saduraka 8. Lilapar 9. Mansar 10. Morbi 11. Naranka 12. Nava Sadurka 13. Ravapar-Nadi 14. Ravapar 15. Timbadi 16. Vanalia 17. Vejepar 18. Bahadurgadh 19. Derala 20. Fatshar 21. Haripar 22.. Juna-Nagadavas 23. Mahendragadh 24. Malia Miyana

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
				25. Meghapur
				26. Navagam
				27. Nava Nagadavas
				28. Rasangpur
				29. Sokhda
				30. Virvadarkar
				31. Fatepur
				32. Amaranagar
59	Aji -III irrigation Scheme	Rajkot	Paddhari	1. Khajurdi
				2. Thoriyali
				3. Khijadi-Mota
			Tankara	4. Khakhara
		Jamnagar	Jodia	5. Bodaka
				6. Jasapar
				7. Jiragadh
				8. Meghpar
				9. Pithad
				10. Rasnal
				11. Timbadi
			Dhrol	12. Modpar
				13. Dharampur
				14. Sagadiya
				15. Sadhadhuna
				16. Dedakdad
60	Phadangbeti Irrigation Scheme	Rajkot	Rajkot	1. Bedala
				2. Jamgadh
				3. Lamba-Kotadi
				4. Phad-Dang
				5. Rafala
				6. Rampara
				7. Magharvada
				8. Parevala
61	Demi - II Irrigation Scheme	Morbi	Morbi	1. Amran
				2. Bela
				3. Dulkot
				4. Koyali
				5. Chanchapar
				6. Khanpar
				7. Mota-Rampar
		Morbi	Tankara	8. Nana-Rampar
				9. Nastipur
		Jamnagar	Jodiya	1. Mavanugam
62.	Khodapipar Irrigation Scheme	Rajkot	Paddhari	1. Khodapipar
				2. Thoriali
		Morbi	Tankara	1. Khakhara
63.	Bhadar - II Irrigation Scheme	Rajkot	Dhoraji	1. Bhola
				2. Bhol gamda
				3. Chhadavavadar
				4. Supedi
			Upleta	5. Dumiyani

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
				6. Chikhalia
				7. Samadhiyala
				8. Ganod
				9. Bhimora
				10. Gadha
				11. Gandod
				12. Hadfodi
				13. Isra
				14. Kundhech
				15. Lath
				16. Meli (Majethi)
				17. Nilakha
				18. Talagana
				19. Upleta
		Porbandar	Kutiyana	1. Bhogsar
				2. Bildi
				3. Chauta
				4. Chhatrava
				5. Katvana
				6. Kutiyana
				7. Mandva
				8. Pasvari
				9. Roghda
				10. Segras
				11. Thapda
			Manavadar	12. Chilodara
				13. Roghda
				14. Vadasada
				15. Vekri
			Porbandar	16. Chikasa
				17. Garej
				18. Mitrala
				19. Navi Bandar
64.	Dondi Irrigation Scheme	Rajkot	Paddhari	1. Pambhar Itala
				2. Nana Itala
				3. Lakshmi Itala
				4. Hidad
65.	Survo Irrigation scheme	Rajkot	Jetpur	1. Thana Galol
				2. Khirasara
				3. Khajuri Gundala
66.	Sodvadar Irrigation Scheme	Rajkot	Dhoraji	1. Zanzmer
				2. Supedi
67.	Karnuki W.R.Scheme	Rajkot	Jasdan	1. Jivapar
				2. Juna Pipalia
				3. Pratapura
				4. Kanpar
68.	Brahmani Irrigation Scheme	Morbi	Halvad	1. Ajitgadh
				2. Chadadhara
				3. Dhanala

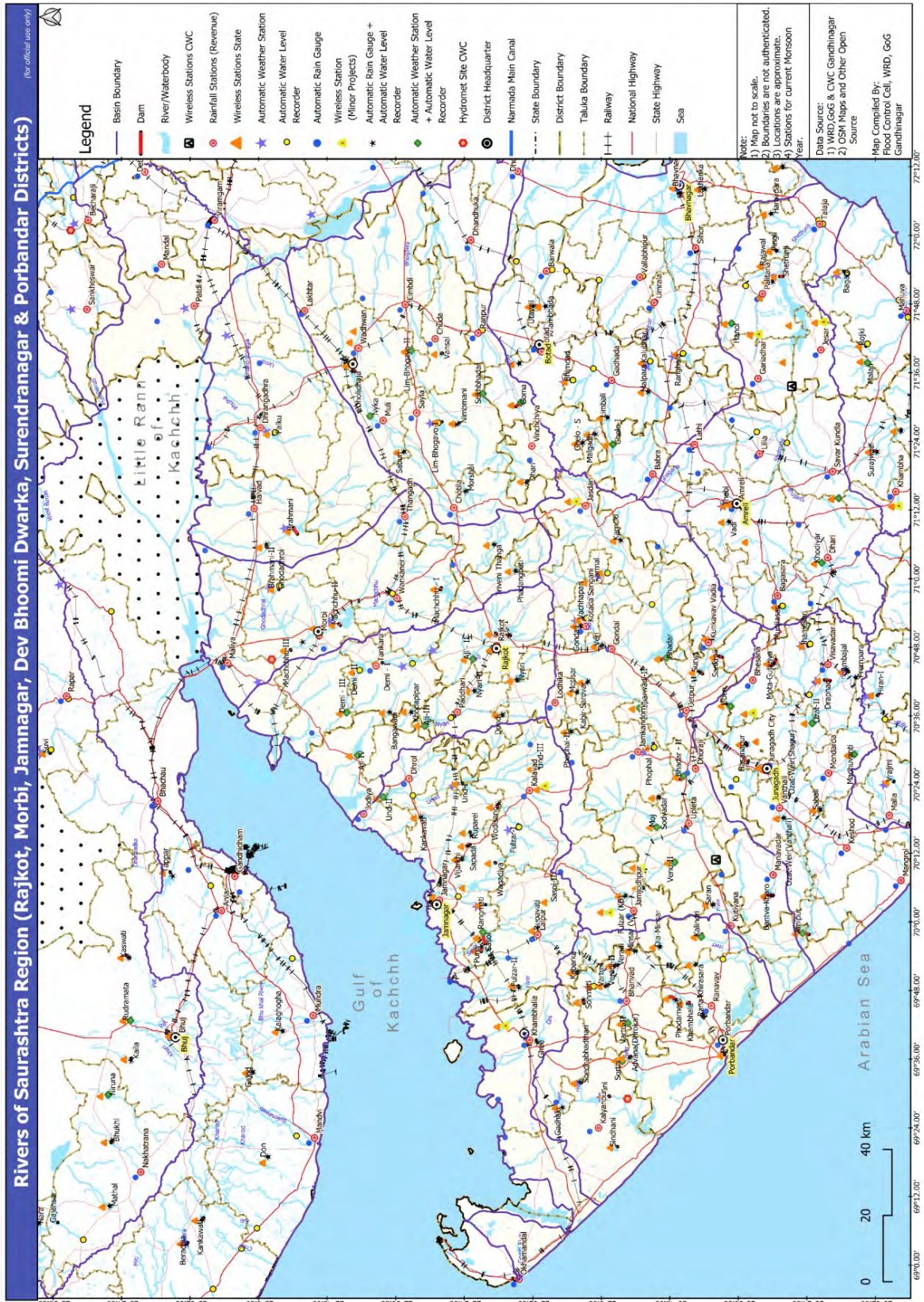
SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
				4. Golasan
				5. Kedariya
				6. Khod
				7. Mangadh
				8. Mayurnagar
				9. Merupar
				10. Miyani
				11. Panda Tirath
				12. Raisangpur
				13. Ranjitgad
				14. Shiroi
				15. Sundargadh
				16. Susvav
				17. Tikar
69.	Dholidhaja Irrigation Scheme (Wadhvan Bhogavo-II)	Surendranagar	Wadhvan	1. Bhadiyad
				2. Joravarnagar
				3. Khamisana Dam
				4. Mamka
				5. Nana Kerala
				6. Ratanpur
				7. Sankli
				8. Wadhvan
				9. Surendranagar
			Limbdi	10. Siyani
				11. Natavar gadh
				12. Dolatpar
70.	Limdi Bhogavo - I (Thoriyali) Irrigation Scheme	Surendranagar	Sayala	1. Thoriyali
				2. Mota Kerala
				3. Vadia
				4. Juna Jaspar
				5. Nava Jaspar
			Chuda	6. Samadhiyala
				7. Juni Morvad
				8. Navi-Morvad
			Wadhwan	9. Vastadi
				10. Nana Madhad
				11. Mota Madhad
71.	Nayka Irrigation Scheme (Wadhvan Bhogavo-I)	Surendranagar	Muli	1. Gautamgad
				2. Godavari
				3. Kukda
				4. Shekhapar
				5. U/s of Muli Dam
72.	Falku Irrigation Scheme	Surendranagar	Dhrangadhra	1. Dhrangadhra
				2. Ishdra
				3. Wawdi
				4. Moti Malavan
73.	Morsal Irrigation Scheme	Surendranagar	Chotila	1. Habiyasara
				2. Nani-Morsal
			Sayla	3. Mangalkui
				4. Moti-Morsal

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
				5. Sakhapar
				6. Sejakpar
				7. Tidoda
74.	Sabhuri W.R. Scheme.	Surendranagar	Muli	1. Dharmendragadh
				2. Umarda
				3. Tidana
				4. Gadhad
				5. Muli
75	Nimbhani W.R. Scheme	Surendranagar	Sayla	1. Vantavachh
				2. Sudamda
				3. Nathupura
				4. Vadiya
				5. Amarapar
				6. Samdhiyada
			Wadhvan	7. Moti Morwad
				8. Nani Morwad
				9. Vastadi
76	Limbdi Bhogavo II (Vadod) W.R. Scheme	Surendranagar	Limbdi	1. Ughal
				2. Liyad
				3. Bodiya
				4. Sauka
				5. Limbdi
				6. Untadi
				7. Choki
				8. Jakhan
				9. Charaniya
				10. Khanbhalav
				11. Panshina
				12. Kanpar
				13. Bhojpara
				14. Devpara
77	Triveni Thanga Scheme	Surendranagar	Chotila	1. Rampara
				2. Khatadi
				3. Shekhalia
				4. Mevasa
				5. Lama Kotadi
78	Vansal Irrigation Scheme	Surendranagar	Chuda	1. Chuda
				2. Gokharwada
79	Brahmani-II	Morbi	Halvad	1. Susvav
				2. Tikar
				3. Miyani
				4. Mayurnagar
				5. Mangadh
				6. Khod
				7. Kedariya
				8. Chadadhara
				9. Ajitgadh
				10. Dhanala
				11. Raisangpur



SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
80.	Machhu-III	Morbi	Morbi	1. Gorkhijadiya
				2. Vanaliya
				3. Sadulka
				4. Mansar
				5. Ravapar(Nadi)
				6. Amarnagar
				7. Gungan
				8. Nagdavas
				9. Bahudurgadh
				10.Sokhada
			Maliya(M)	1. Derala
				2. Mahendragadh
				3. Meghpar
				4. Navagam
				5. Rasangpar
				6. Virvidarka
				7. Fatepar
				8. Maliya(M)
				9. Haripar
81.	Sasoi-II	Jamnagar	Lalpur	1. Vavdi
				2.Mota Khadba
				3.Vallabhpur
82.	Ghelo (S)	Rajkot	Jasdan	1. Somalpur
	Irrigation			2. Bhadali
	Scheme	Botad	Gadhada	1. Rampara
				2. Mandavdhar
				3. Kerala
				4. Gadhada
				5. Adatala
				6. Pipal
				7. Tatan
				8. lakhanaka
				9. Ishvariya
		Bhavnagar	Vallabhipur	1. Dared
				2. Melana
				3. Loliyana
				4. Hadmatia
				5 Pachhegam
				6 Khetatimba
				7 Vallabhipur
83.	Malgadh	Rajkot	Jasdan	1. Bhadli
	Irrigation	Botad	Gadhada	1. Rampara
	Scheme			2 Mandavdhar
				3 Kerala
				4 Gadhada
				5 Adatala
				6 Pipal
				7 Tatan
				8 lakhanaka
				9 Ishvariya
		Bhavnagar	Vallabhipur	1. Dared

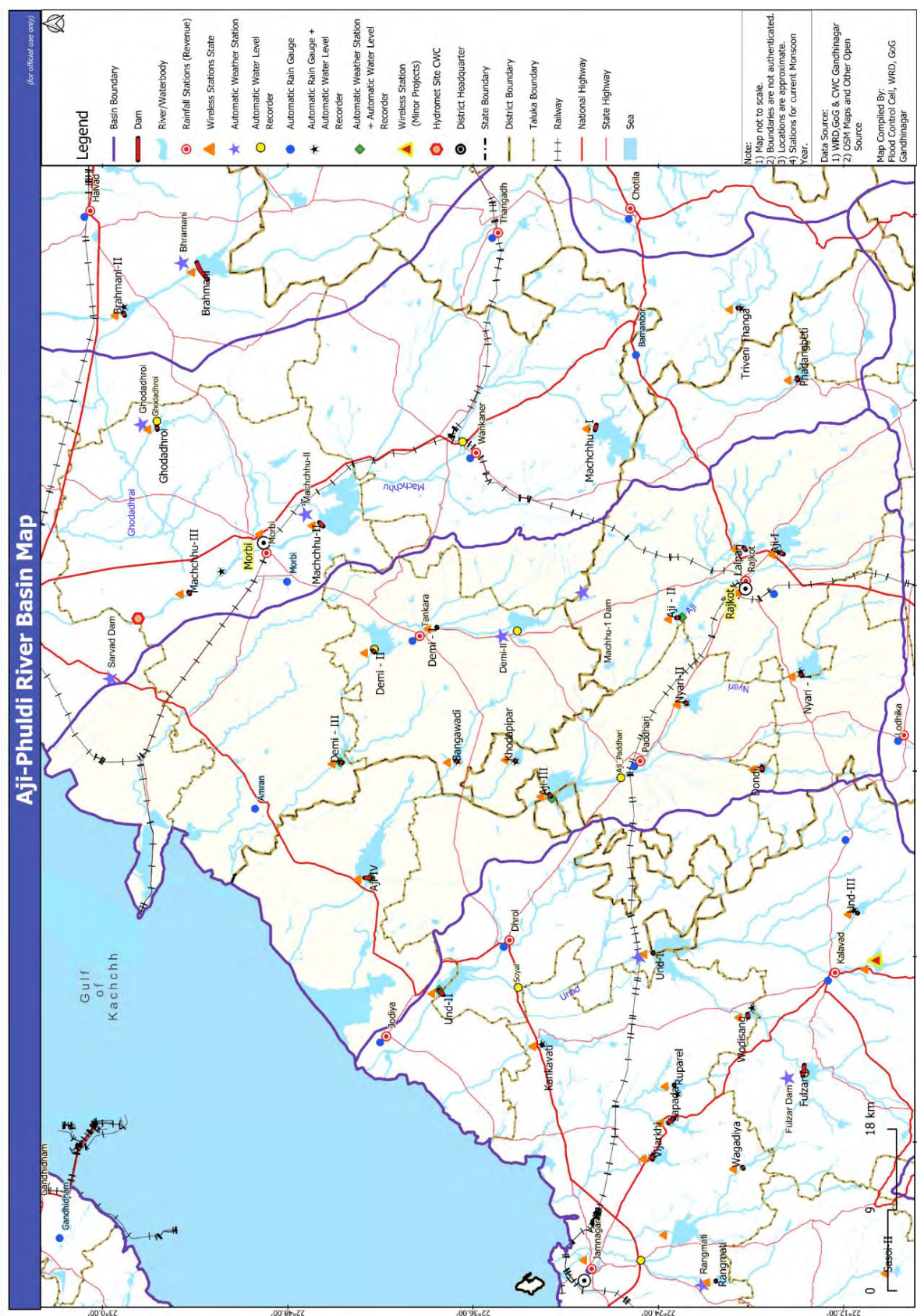
SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
				2. Melana
				3. Loliyana
				4. Hadmatia
				5 Pachhegam
				6 Khetatimba
				7 Vallabhipur
84	Wagadia	Jamnagar	Jamnagar	1. Moti Bhalsan
				2.Sumri
				3.Konza



Annexure 16-B-1

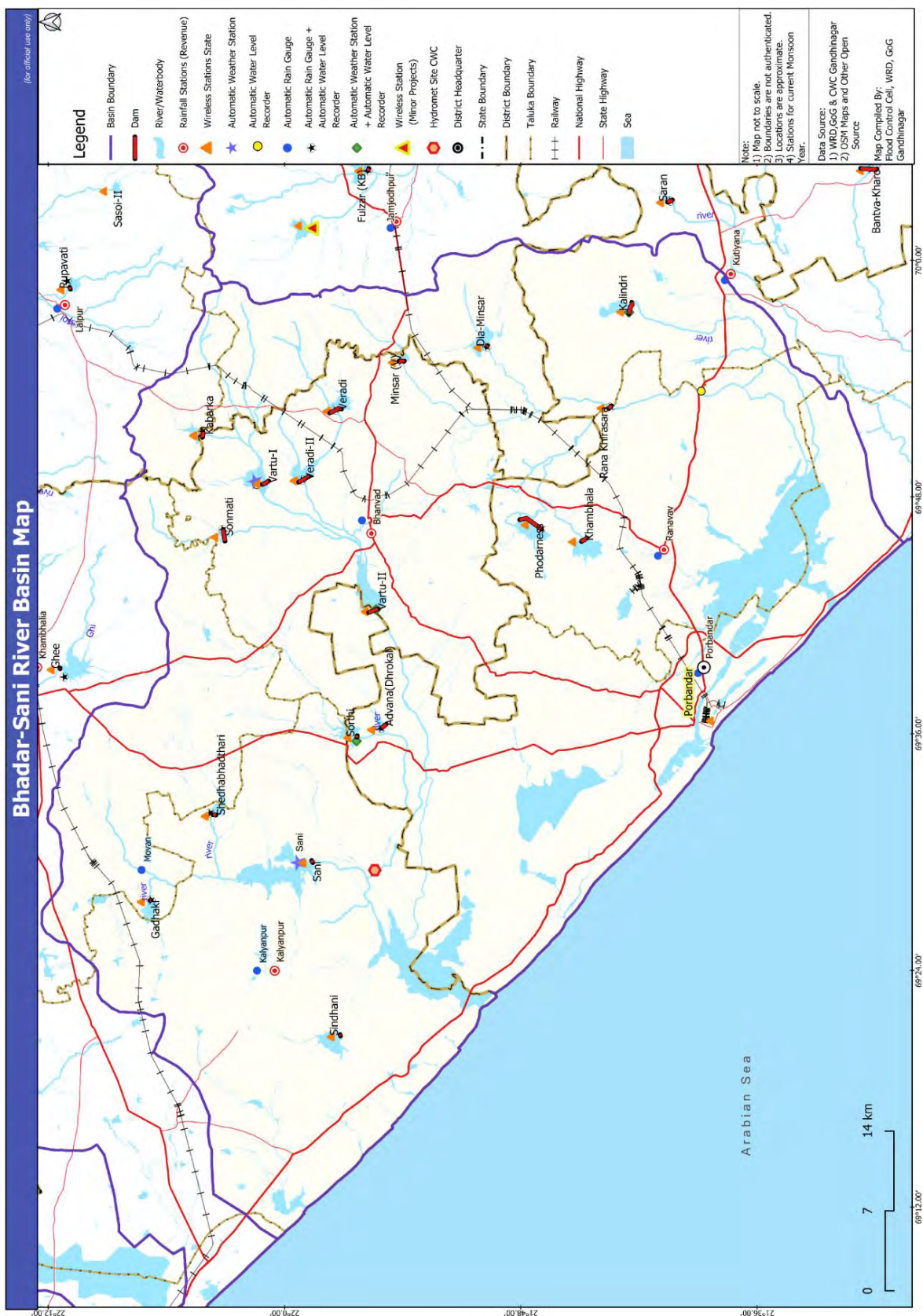


*Flood Warning Arrangements - 2025*



## Annexure 16-B-2

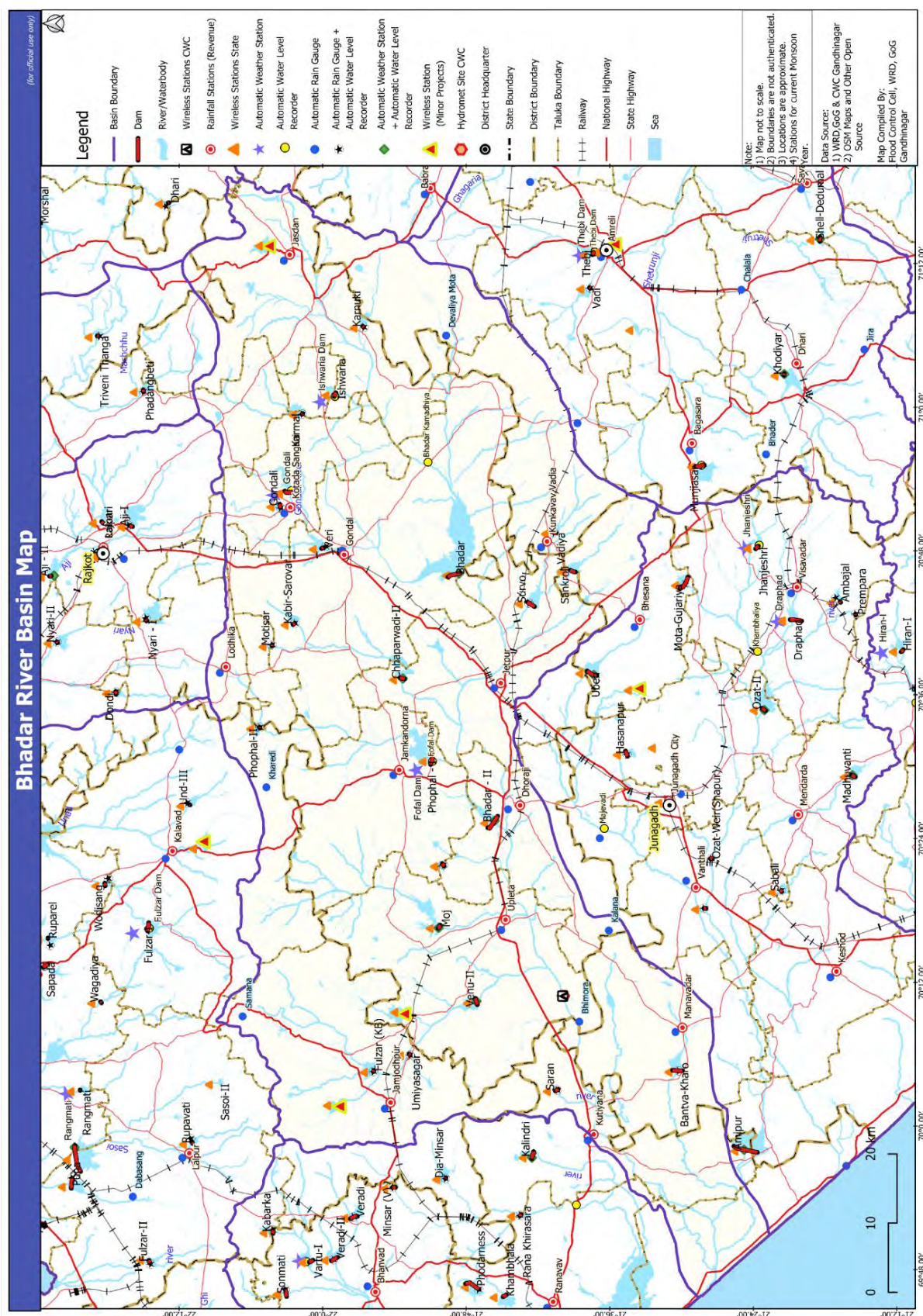




### Annexure 16-B-3



## Flood Warning Arrangements - 2025



Annexure 16-B-4

**17.0 RIVERS OF SAURASHTRA REGION (BHAVNAGAR, AMRELI, PORBANDAR, JUNAGADH, BOTAD AND GIR SOMNATH):-**

- 17.1** The Flood Forecasting and Flood Warning system for the rivers of Saurashtra Region is being looked after by Superintending Engineer, Bhavanagar Irrigation Project Circle, Bhavanagar for Bhavanagar, Amreli, Porbandar & Junagadh Districts. Some projects of Junagadh Districts which are under the Superintending Engineer, Rajkot Irrigation Project Circle are being looked after by the Superintending Engineer, Rajkot Irrigation Circle, Rajkot.
- 17.2** The rivers are having very short length and therefore for incoming floods the time lag available will not be helpful in speedy alerting and evacuation of affected people.
- 17.3** The Superintending Engineer, Bhavanagar Irrigation Project Circle, Bhavanagar, Superintending Engineer, Salinity Ingress Prevention Circle, Rajkot should provide all the necessary data such as rainfall, guage discharge, water levels, live storages, etc. to the Focal Officer for the area/district concerned under the jurisdiction and will extend all necessary help to the Focal Officer for discharging the duties by acting as Sub Focal Officers.
- 17.4** The flood forecasting & flood warning arrangements for the following water supply projects under Gujarat Water Supply & Sewerage Board will be looked after by the Superintending Engineer of the concerned projects. They shall directly collect weather bulletin, H.R.W. from India Meteorological Department, Ahmedabad or Revenue Control Room of the concerned districts & shall formulate the flood forecast & convey to the concerned Collector regarding the area likely to be affected for alerting and evacuation of the people as warranted by flood, simultaneously, they shall convey the flood forecast and action taken by them to the Flood Control Cell (Irrigation) nearest to them.

**TABLE 17.4**

Sr No.	Name of Water Scheme	Officer In charge of Scheme	Telephone No.
1	2	3	4
1.	Hasnapur	Municipal Commissioner Municipa Corporation, Junagadh	Note :- Kindly refer Flood Telephone Directory of the current year for Telephone Nos.
2.	Khambhada	S.E, Public Health Circle,	
3.	Phodarness	Porbandar	

- 17.5** The Map showing all the wireless stations, Rain gauge and River gauge stations is appended vide Annexure 17-B.
- 17.5.1** The Wireless Stations under the control of Superintending Engineer, Bhavnagar Irrigation Project Circle, Bhavnagar are as under:



### State's Wireless Stations.

<b>BHAVNAGAR DISTRICT</b>			
1	Bhavnagar (BIPC, Bhavnagar)	10	Ranghola
2	Rajawal	11	Jaspar-Mandva
3	Bagad	12	Kharo
4	Shetrunji	13	Palitana
5	Shetrunji Fringe	14	Hanol
6	Rojki	15	Pingali
7	Malan	16	Hastagiri Repeater
8	Lakhanka	17	Mahuva
9	Hamirpura		
<b>BOTAD DISTRICT</b>			
1	Goma	6	Khambhada
2	Malpara	7	Utavali (Gunda)
3	Kalubhar	8	Sukhbhadar
4	Bhimdad	9	Limbali
5	Kaniyad	10	Botad Irrigation Dn. Botad
<b>AMRELI DISTRICT</b>			
1	Amreli (A.I.S. Dn.)	7	Raidy
2	Khodiar--	8	Vadia
3	Munjiasar	9	Thebi
4	Dhatarwadi - I	10	Surajwadi
5	Dhatarwadi - II	11	Vadi
6	Shell-Dedumal	12	Ghelo-I
<b>JUNAGADH DISTRICT</b>			
1	Hasanapur	9	Disaster Control
2	Madhuvanti	10	Junagadh Ir. Dn.
3	Ambajal	11	Jhanjheshri
4	Uben	12	Drafad
5	Vrajami	13	Girnar Repeater
6	Bantva-Kharo	14	Ozat-II
7	Ozat-Weir Sahpur	15	Mota Gujarai
8	Ozat Weir ( Vanthli)	16	Sabali
<b>GIR SOMNATH DISTRICT</b>			
1	Raval	4	Hiran – II
2	Machhundri	5	Shingoda
3	Hiran-I		
<b>PORBANDAR DISTRICT</b>			
1	Phodarness	5	Amipur
2	Khambhala	6	Salinity Control Dn., Potrbandar
3	Kalindri	7	Advana
4	Rana Khirasra	8	Saran
<b>SURENDRANAGAR DISTRICT</b>			
1.	Sukhbhadar		

- 17.6** Whenever heavy rainfall warning is received from India Meteorological Department the officers of the respective areas shall obtain the storage level and rainfall data at very frequent interval and the same is to be communicated to the Flood Control Cell, Gandhinagar.
- 17.7** Action to be taken by Local / Project Officer regarding dams in Saurashtra.
- 17.7.1** The Executive Engineer - in – charge of the reservoirs shall arrange to obtain the gauge and other data from upstream of the reservoirs. The Deputy Executive Engineer

/ Assistant Engineer shall on the basis of this data compute the incoming flood and takes necessary steps to route the flood by operating the crest gates as per the operation manual of gates and as per instructions from the Focal Officer and concerned Superintending Engineer whenever warranted so that there would be no danger either to the head works or to the villages / area etc. downstream of the reservoir. If the routed flood is likely to be unexpectedly high enough to endanger certain areas downstream of the reservoir, the concerned Downstream Dam Authority, revenue and Police Department should be intimated in time, so that necessary precautionary measures in respect of alerting the people of the area likely to be affected by flood water including arranging for evacuation necessary.

- 17.7.2** When water level in the reservoir is likely to reach 0.3 Meter (i.e. 1.00 ft) below high flood level or even earlier in the event of rapid rising of water, he ( in charge Executive Engineer) should immediately issue necessary warning and communicate the warning message to the concerned Collector and District Superintendent of Police for taking up further necessary action. When water is likely to exceed H.F.L the warning regarding the conditions of dam should also be indicated in the warning to be issued . This flood warning messages shall be communicated to Flood Control Cell, Gandhinagar, Chief Engineer (Central Gujarat) and Addl. Secretary and Chief Engineer and Addl. Secretary concerned immediately without any delay.
- 17.7.3** The Executive Engineer of the concerned area should interpret the signals / messages received from the various dams in his charge and shall arrange to intimate the flood warning signals , to the Collector and District Superintendent of Police of respective district in which the reservoir is located if necessary. The areas likely to be affected by flood waters are also to be intimated for taking further necessary action for alerting the people as warranted by flood levels in the reservoirs or in the rivers.
- 17.8** Villages affected due the flood in various rivers in downstream of dams are given as Annexure 17-A.
- 17.9** In case of Padolia River, the Executive Engineer, Botad Irrigation Division, Botad under Superintending Engineer, Bhavnagar Irrigation Project Circle, Bhavnagar shall obtain weather and rainfall forecast from India Meteorological Center, Ahmedabad. He shall interpret the weather data and if found affecting area, the warning messages will be communicated to the Collector of District and District Superintendent of Police of Botad district, under intimation to the Focal Officer and Flood Control Cell, Gandhinagar.
- 17.10** The villages likely to be affected in Padolia River are given below.

<b>BHAVNAGAR DISTRICT</b>		
1. Muldharai	2. Rajgad	
<b>BOTAD DISTRICT</b>		
1. Dhanbhari	5. Sagavadar	9. Dhorinda
2. Janada	6. Rohishala	10. Moti
3. Pati	7. Lakheni	11. Dharki
4. Zinjhavadar	8. Sarval	

### 17.11 Appropriate Authority (Focal Officer)

**(A) (For Bhavnagar, Amreli, Botad, Porbandar, Gir Somnath & Junagadh District)**

Superintending Engineer,  
Bhavnagar Project Irrigation Circle,  
S-3, Jila Seva Sadan-2, Bhavnagar

**Note:-**

Kindly refer Flood Telephone  
Directory of the current year  
For Telephone Nos.

**(B) Appropriate Authority (Focal officer) for following Water Supply Scheme.**

Sr No.	Name of Scheme	Appropriate Authority	Telephone No.
1	2	3	4
1.	Hasnapur	Municipal Commissioner, Municipal Corporation, Junagadh	Note:- Kindly refer Flood Telephone Directory of current year Telephone Nos.
2.	Khambala	Superintending Engineer	
3.	Phodarness	Public Health Circle, Porbandar.	

### ANNEXURE - 17 (A)

List of villages likely to be affected by floods on downstream of the Dams in Bhavnagar, Amreli, Botad, Porbandar, Junagadh and Gir Somnath District.

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
1	Khambhada Irrigation Scheme	Botad	Baravala	1. Khambhada 2. Bela 3. Timbla 4. Kundal 5. Barvala 6. Khamidana 7. Juna Navda 8. Nava Navda 9. Wadhela
2.	Utavali Water Resources Scheme	Botad	Ranpur Barvala	1. Gunda 2. Bela 3. Timbla 4. Kundal 5. Barvala 6. Khamidana 7. Juna Navda 8. Nava Navda 9. Wadhela
3	Dhatarwadi Irrigation Scheme	Amreli	Jafrabad Rajula	1. Lothpur 2. Chhatadia 3. Dharanonesh 4. Dhareshwar 5. Hindorma 6. Jhampodar 7. Juni Mandardi 8. Khakhhbai 9. Navi Mandardi 10. Rampara 11. Uchariya 12. Vad

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
4	Ghelo (I) Irrigation Scheme	Botad	Gadhda (Swamina)	1. Gadhda 2. Itaria 3. Kerala 4. Mandavadhar 5. Rampura 6. Adatala 7. Pipal 8. Tatana 9. Lakhanaka 10. Ishvariya 11. Limbali
		Bhavnagar	Vallabhipur	1. Dared 2. Melana 3. Loliyana 4. Hadmatia 5. Pachhegam 6. Khetatimba 7. Vallabhupur
5	Khodiyar Irrigation Scheme	Amreli	Amreli	1. Babpur 2. Gavadka 3. Gorkhavalu Mota 4. Gorkhavalu Nana 5. Mandavade Nana 6. Medi 7. Pithvajal 8. Travada 9. Vankia 10. Vithalpur 11. Ambardi 12. Bhath 13. Dhari 14. Halaria 15. Hularia 16. Padargadh 17. Paldi 18. Sarambhada 19. Gujarda Juna 20. Manaji 21. Ranigam 22. Satapara 23. Thansa 24. Amba 25. Bavada 26. Bavadi 27. Ingorala 28. Kankot 29. Krankach 30. Shedhavadar 31. Lonka 32. Lonki 33. Ambolda 34. Borala

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
				35. Ghoba
				36. Fifad
				37. Juna Savar
				38. Khabpura
				39. Mekada
		Bhavnagar	Palitana	40. Chok
				41. Dungarpur
				42. Hathasani
				43. Jalirya (Manaji)
				44. Jiwapur
				45. Ranparda
				46. Rohishala
6	Munjiasar Irrigation Scheme	Amreli	Amreli	1. Babapur
				2. Mandava
				3. Timbla
				4. Gavadaka
				5. Paniya
			Bagasara	6. Jamka
				7. Sanalia
				8. Jethiyavadar
				9. Bagasara
7	Shingoda Irrigation Scheme	Gir Somnath	Kodinar	1. Chhachhar
				2. Dudana
				3. Ghatwad
				4. Govindpur (Bhandaria)
				5. Kodinar
				6. Mul-Dwarka
				7. Nana Ichvad
				8. Ronaj
				9. Sugala
				10. Chohan Ni Khan
		Gir Somnath	Gir-Gadhada	11. Jamwala
				12. Kansariya
				13. Jagatiya
				14. Bhandariya
				15. Panadar
8	Raidy Irrigation Scheme	Amreli	Jafrabad	1. Mithapur
				2. Nageshri
			Rajula	3. Chotra
				4. Mota-Barman
				5. Nana-Barman
9	Vadia Irrigation Scheme	Rajkot	Jetpur	1. Chharania
				2. Charan
				3. Thana-Galol
		Amreli	Vadia	4. Vadia
10.	Vadi W.R. Scheme	Amreli	Amreli	1. Amreli
				2. Fatehpur
				3. Champathal
				4. Mangavapal

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
				5. Varudi
11.	Shell - Dedumal	Amreli	Savar-Kundla	1. Hathasani
				2. Khambhalia
				3. Ditals
				4. Nana-Samadhiyala
				5. Nesadi
				6. Karajala
				7. Simaran
				8. Jira
12.	Thebi	Amreli	Amreli	1. Amreli
	Irrigation			2. Fatepur
	scheme			3. Champathal.
13.	Dhatarwadi - II	Amreli	Rajula	1. Nani Khakhabai
	W.R. Project			2. Khakhabai
				3. Hindorna
				4. Chhatadia
				5. Vad
				6. Dharness
				7. Uchaiya
				8. Lothpur
				9. Rampara
14.	Shetrunji	Bhavnagar	Palitana	1. Nani-Rajasthali
	Irrigation Scheme			2. Lapalia
				3. Lakhavad
				4. Mahidhar
			Talaja	5. Medha
				6. Bhegali
				7. Datrad
				8. Pingli
				9. Timana
				10. Shevalia
				11. Royal
				12. Makhaniya
				13. Talaja
				14. Gorkhi
				15. Lilivav
				16. Tarasara
				17. Sartanpar
15	Bagad	Bhavnagar	Talaja	1. Khardi
	Irrigation			2. Padargadh
	Scheme			3. Bordi
				4. Borda
			Mahuva	4. Moti-Jagadhar
				5. Lilvan
				6. Nani-Jagadhar
				7. Baguda
				8. Gundarana
			Talaja	9. Datha
				10. Valar
16	Bhimdad	Botad	Gadhda	1. Bhimdad

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
	Irrigation Scheme		(Swamina)	2. Goradka
				3. Meghavadiya
				4. Ningala
				5. Sakhpar
				6. Surka
17	Goma Irrigation Scheme	Botad	Botad	1. Alampur
				2. Babarkot
				3. Bodi
				4. Nana-Paliyad
				5. Paliyad
				6. Pipardi
				7. Ranpur
				8. Sankali
				9. Umralla
18	Hamirpura Irrigation Scheme	Bhavnagar	Talaja	1. Hamirpura
				2. Dihor
				3. Samadhiyala
				4. Nesia
				5. Nani-Babriat
				6. Moti-Babriat
				7. Hubak Vad
19	Kharo Irrigation Scheme	Bhavnagar	Palitana	1. Bhutia
				2. Moti-Paniali
				3. Nani-Paniali
				4. Palitana
20	Malan Irrigation Scheme	Bhavnagar	Mahuva	1. Mota Khuntawad
				2. Goras
				3. Sangania
				4. Lakhupura
				5. Kumbhan
				6. Nana Jadra
				7. Tavida
				8. Mahuva
				9. Katapar
21	Rajawal Irrigation Scheme	Bhavnagar	Palitana	1. Anida
				2. Lakhavad
				3. Mandavada
22	Ranghola Irrigation Scheme	Bhavnagar	Shihor Umarala	1. Bhangadh
				2. Chogath
				3. Devalia
				4. Dhambhalia
				5. Dharuka
				6. Jhanjhmer
				7. Langala
				8. Malpara
				9. Piprali
				10. Ranghola
23	Rojki	Bhavnagar	Mahuva	1. Goras



SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
	Irrigation Scheme			2. Jarda-Nana
				3. Kumbhan
				4. Lakhupura
				5. Mahuva
				6. Sangania
				7. Tavida
				8. Umania-Vadar
24	Surajvadi Irrigation Scheme	Amreli	Savarkundla	1. Dolti
				2. Ghandula
25	Kalubhar Irrigation Scheme	Botad	Gadhda	1. Gadhali
				2. Rajpipla
		Bhavnagar	Umralla	3. Bhojavadar
				4. Hadmatata
				5. Ratanpur
				6. Samadhiyala
				7. Tarapala
				8. Umralla
				9. Vangadhara
				10. Chogath
			Vallabhipur	11. Rajasthali
26	Lakhanka Irrigation Scheme	Bhavnagar	Bhavnagar	1. Adhevada
				2. Akvada
				3. Malanka
				4. Tarsamia
27	Limbali Irrigation Scheme	Bhavnagar	Gadhda	1. Adatata
				2. Gadhda
				3. Manavadar
				4. Rampura
				5. Kerala
				6. Pipal
				7. Tatana
			Vallabhipur	1. Dared
				2. Melana
				3. Loliyana
				4. Hadmatia
				5. Pachhegam
				6. Khetatimba
				7. Vallabhupur
28	Malpara Irrigation Scheme	Botad	Gadhda	1. Malpara
				2. Ghogadh-Samdi
				3. Ankadia
29	Hanol - W.R. Project	Bhavnagar	Palitana	1. Hanol
				2. Jalia (Ankolali)
				3. Akolali
				4. Juna Loichhada
				5. Nava Loichhada
				6. Senjadia
				7. Khijadia (Mokhadaka)

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
				8. Mokhadaka
				9. Randola
				10. Bhudarkha
				11 Sagapara
				12 Piparadi 1 & 2
				13 Bhadavav
30.	Kaniyad	Botad	Botad	1. Kaniyad
			Ranpur	2. Kundali
				3. Panvi
				4. Khas
				5. Chacharia
				6. Alav
31.	Pingali	Bhavnagar	Talaja	1. Pingli
32	Jaspar-Mandva	Bhavnagar	Talaja	1. Mandva
				2. Sosiya
				3. Manar
33	Hasnapur (WS) Irrigation Scheme	Junagadh	Junagadh	1. Bamangam
				2. Dervan
				3. Galiyavada
				4. Sabalpur
				5. Saragvada
				6. Virpur
34	Vrajami Salinity Ingress Prevention Scheme	Junagadh	Malia-Hatina	1. Dudhala
				2. Itala
				3. Old Vandarvad
				4. Kodaya
				5. Sarkadia
				6. Vadia
				7. Vandarvad
35	Ambajal Irrigation Scheme	Junagadh	Visavadar	1. Jambudi
				2. Mota chaparda
				3. Navi chavand
				4. Khijadiya
36	Hiran - I Irrigation Scheme	Gir Somnath	Talala	1. Kamleshwar Ness
				2. Dajiya Ness
				3. Chitravad
				4. Chitrod
				5. Gidariya
				6. Khirdhar
				7. Borvav
				8. Ramrechi
				9. Sangodra
				10. Ghusiya
				11. Talala
		Junagadh	Mendarada	12. Sasan
				13. Bhalchhel
37	Hiran - II	Gir Somnath	Talala	1. Maljinjva

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
	Irrigation Scheme		Veraval	2. Umrethi
				3. Badalpara
				4. Bherala
				5. Indroi
				6. Ishwariya
				7. Kajali
				8. Mandor
				9. Mithapur
				10. Navadra
				11. Prabhas Patan
				12. Savani
				13. Sonariya
38	Jhanjeshri Irrigation Scheme	Junagadh	Visavadar	1. Mahuda
				2. Mahudi
				3. Dhebar
				4. Desai Vadala
				5. Sukhpara
				6. Rupavati
				7. Ishwariya
				8. Vajadi
				9. Khambhaliya
				10. Khijadiya
39	Madhuvanti Irrigation Scheme	Junagadh	Mendarda	1. Kenedipur
				2. Babartirath
				3. Amargadh
				4. Mendarda
				5. Alindhra
				6. Mithapur
				7. Nani Khodiyar
			Vanthali	8. Bhandhada
				9. Bhatiya
				10. Bodka
				11. Gadoi
				12. Konjadi
				13. Mota Kajaliyala
				14. Tinmas
				15. Waspada
40	Uben Irrigation Scheme	Junagadh	Junagadh	1. Bhiyal
				2. Chowki (Sorath)
				3. Jalansar
				4. Kerala
				5. Majevasi
				6. Taliadhar
				7. Vadhvi
				8. Vala Simdi
				9. Vanandia
			Vanthali	10. Balot
				11. Dhandhusar
				12. Vanthali
		Rajkot	Jetpur	13. Arab Timbadi
				14. Bava Pipalva
				15. Pipalva

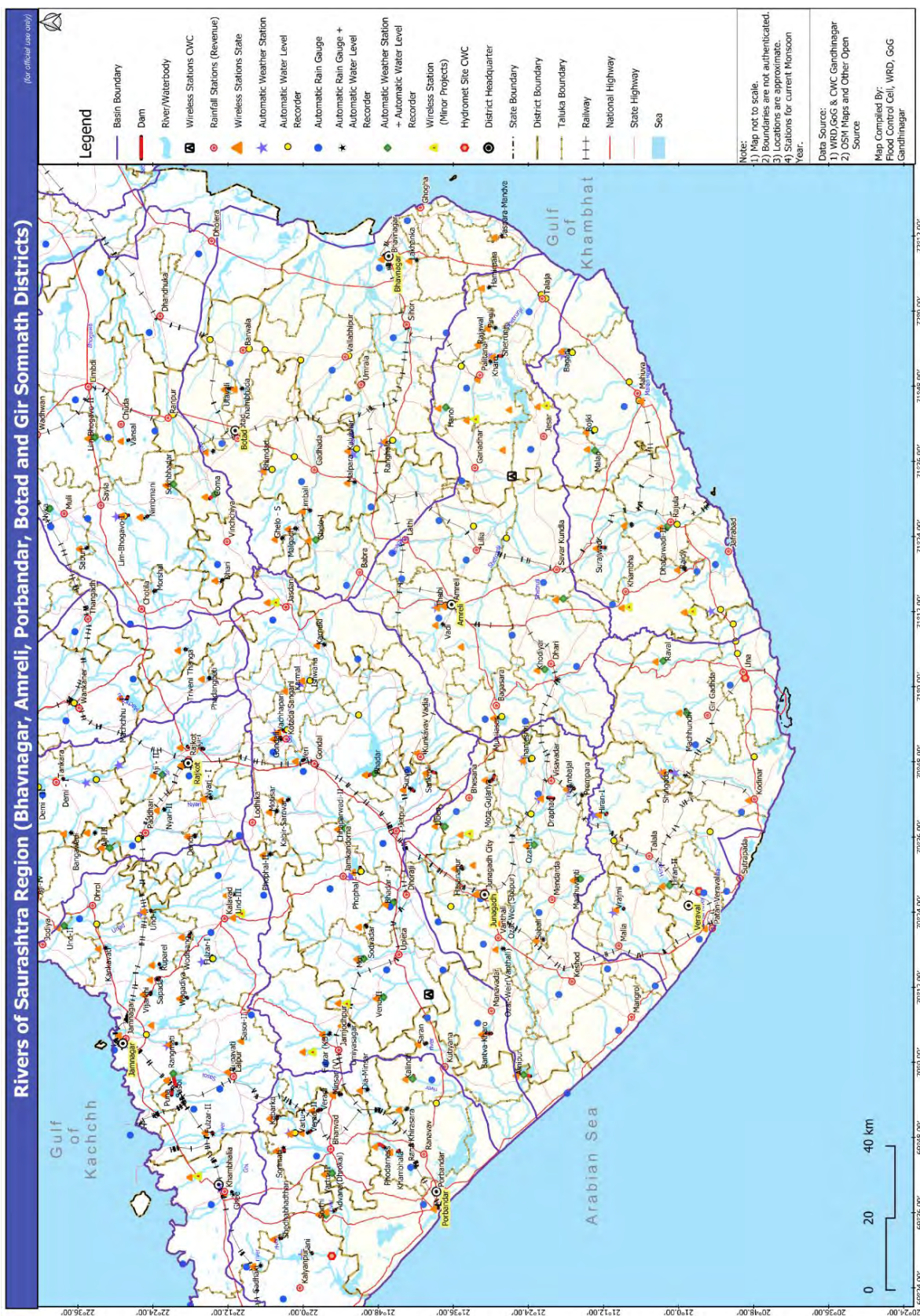
SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
41	Machhundri Irrigation Scheme	Gir Somnath	Gir Gadhada	1. Kodia
				2. Itwaya
			Una	3. Gundala
				4. Men
				5. Chachakvad
				6. Una
				7. Delwada
				8. Rampara
				9. Rajpara
				10. Kalapan
				11. Jhankharvada
				12. Nava Bander
				13. Rasulpara
				14. Dron
				15. Fatsar
				16. Judvadali
				17. Naliya Mandavi
				18. Rajput-Rajpara
42	Raval Irrigation Scheme	Gir Somnath	Gir Gadhada	1. Chikhalkuva
				2. Dhokadva
				3. Mohabatpura
				4. Jasadhar
			Una	5. Kandhi
				6. Kanek Barda
				7. Manekpur
				8. Garal
				9. Mota Samdhiyala
				10. Motha
				11. Padapadar
				12. Patapar
				13. Rameshwar
				14. Samter
				15. Sanjavapur
				16. Umej
				17. Sankhada
				18. Khatrivada
				19. Vadli
				20. Nitli
				21. Motisar
43	Mota Gujaria	Junagadh	Bhesan	1. Mota Gujaria
				2. Kotda
44	Ozat Weir (Shahpur)	Junagadh	Vanthli	1. Vanthli
				2. Shahpur
				3. Nana Kajaliyali
45	Bantwa – Kharo W.R.Project	Junagadh	Manavadar	1. Bhalgam
				2. Kodvav
				3. Aklera
				4. Samega
		Porbandar	Kutiyana	1. Revdra
				2. Gadavana

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
				3. Dharsen
				4. Tarkhal
46	Ozat – II	Junagadh	Junagadh	1. Bela
				2. Rameshwar
				3. Mevasa (Bava)
				4. Badalpur
				5. Anandpur
			Vanthali	6. Raipur
				7. Sukhpur
				8. Vanthali
				9. Kanza
			Mendarda	10. Nagalpur
47	Ozat Weir (Vanthli)	Junagadh	Vanthali	1. Kanza
				2. Tikar
				3. Piplana
				4. Vanthali
				5. Akha
		Porbandar	Kutiyana	6. Amipur
			Porbandar	7. Maiyari
				8. Balej
				9. Ratia
				10. Nevibandar
				11. Chikasa
48	Sabali	Junagadh	Vanthali	1. Khorasa
				2. Sendarda
			Keshod	1. Dervan
				2. Magharvada
				3. Manekwada
49	Khambhala (WS)	Porbandar	Jamjodhpur	1. Adhipat Nes
	Irrigation			2. Amiyari
	Scheme			3. Barapat Nes
				4. Bhod
				5. Bileshwar
				6. Dolatgadh
				7. Hanuman Gadh
				8. Javara Nes
		Porbandar	Jamjodhpur	9. Khambhala
				10. Pipaliya
				11. Ramgadh
				12. Rana Bordi
				13. Tarsat
				14. Vadvala
50	Phodarness (WS)	Porbandar	Jamjodhpur	1. Sakhpau
	Irrigation			2. Torsat
	Scheme		Ranavav	3. Bileshwar
				4. Gandiyavad Nes
				5. Hanuman Gadh
				6. Jambu
				7. Jarera Nes
				8. Kandorana

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
				9. Kandorana(Rana)
				10. Khandipat Nes
				11. Khijdad
				12. Khirsara
				13. Sajanvada Nes
				14. Samavadar Nes
				15. Thoyana
				16. Undariya
				17. Valotra
51	Adwana W.R.P.	Porbandar	Porbandar	1. Sodhana
				2. Adwana
52	Sukhbhadar Irrigation Scheme	Ahmedabad	Dhandhuka	1. Adval
				2. Dhandhuka
				3. Galsana
				4. Gunjar
				5. Jaliya
				6. Morasiya
				7. Vagad
				8. Vasana
				9. Rangpur
				10. Kotada
				11. Dholi
		Botad	Ranpur	12. Derdi
				13. Devalia
				14. Sarangpur
				15. Gadhadiya
				16. Hansalpur
				17. Kinara
				18. Patna
				19. Ranpur
				20. Baraniya
				21. Nagnesh
			Botad	22. Nana Bhadla
				23. Limboda
			Sayla	24. Mota Bhadla
				25. Chhorvira
				26. Loya
53	Dhrafad Irrigation Scheme	Junagadh	Visavadar	1. Sarsai
				2. Mota chaparda
				3. Navi chavand
				4. Khijadiya
54	Saran.	Porbandar	Kutiyana	1. Gokharan
				2. Khunpur
				3. Chautta
				4. Teri
55	Rana Khirasra	Porbandar	Ranavav	1. Rana Khirasra
				2. Valotra
				3. Rana Kandorana
			Kutiyana	1. Amar

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
56	Bhal Area	Bhavnagar	Bhavnagar	1. Jasvantpur
				2. Kotda
				3. Ganeshgadh
				4. Sanes
				5. Khetakhatli
				6. Narbad
				7. Kala talav
				8. Nava Madhiya
				9. Juna Madhiya
				10. Devaliya
				11. Paliyad
57	Alansagar MI	Rajkot	Jasdan	1. Jasdan
				2. Bhakhalvad





Annexure 17-B

**18.0 RIVERS OF KACHCHH REGION**

- 18.1** The flood forecasting & flood warning system for the rivers of Kachchh District is being looked after by the Superintending Engineer, Kachchh Irrigation Circle, Bhuj through his Executive Engineer (1) Kachchh Irrigation Dn, Bhuj (2) Kachchh Irrigation Construction Dn, Bhuj. (3) Salinity Control Dn, Bhuj (4) Water Resources Investigation Dn, Bhuj. The gauge, discharge & rainfall data are being communicated through wireless stations located at various stations on the main rivers as well as tributaries except Water Supply Schemes.
- 18.2** The flood forecasting & flood warning arrangements for Tappar water supply project under Gujarat Water Supply & Sewerage Board will be looked after by Superintending Engineer of the concerned projects. They shall directly collect weather bulletin, H.R.W from India Meteorological Department, Ahmedabad or Revenue Control Room (E.R.C.) of the concerned districts & shall formulate the flood forecast & convey to the concerned Collector regarding the area likely to be affected for alerting and evacuation of the people as warranted by flood. Simultaneously, they shall convey the flood, forecast and action taken by them to the Flood Control Cell (Irrigation) nearest to them.

**TABLE - 18.2**

Sr No.	Name of Scheme	Officer In charge	Telephone No.
1	2	3	4
1.	Tappar	Superintending Engineer Kachchh Irrigation Circle, Bhuj	Note:- Kindly refer Flood Telephone Directory of current year for Telephone Nos.

- 18.3** This region lies in the North West of Gujarat. It is scantily rainfall area with dry atmosphere and shallow flashy rivers. Overall, there are 20 Irrigation Schemes (Including Tappar Water Supply scheme). The time lag for flood to reach the desert or sea from the catchment is very short. The flood waters are likely to reach earlier than the period required for evacuation.
- 18.4** The name of Dams/ Weir where Wireless Stations are located as under:-

1	Bhuj(KIC)	11	Nara
2	Kalaghogha	12	Rudramata
3	Niruna	13	Kasvati
4	Godhataad	14	Tappar
5	Suvi	15	Bhukhi
6	Gajod	16	Berachia
7	Kaila	17	Don
8	Sanandro	18	Mathal
9	Fategadh	19	Jangadia
10	Kankavati	20	Mitti

- 18.4** The Map showing all the wireless stations, Rain gauge and River gauge stations is appended vide **Annexure 18-B.**
- 18.5** The Collector shall directly receive the weather and heavy rainfall messages from **I.M.D., Ahmedabad / Revenue Department (Emergency Relief Cell), Gandhinagar.** Necessary instruction will be issued by the Collector to warn / alert the people through the Local Officer i.e. Taluka Mamlatdar or Taluka Development Officer of the areas likely to be affected.
- 18.6** The villages likely to be affected in downstream of **Dams of Kachhh District** are given vide **Annexure 18-A.**
- 18.7 Appropriate Authority (Focal Officer)**
- (A) For Kachhh District**  
 Superintending Engineer  
 Kachhh Irrigation Circle,  
 Sinchai Sadan, Bhuj.(Kachhh)
- Note:-  
 Kindly refer Flood Telephone  
 Directory of current year for  
 Telephone Nos
- (B) Appropriate Authority (Focal Officer) for Water Supply Scheme.**  
 Superintending Engineer  
 Kachhh Irrigation Circle,  
 Bhuj.
- Note:-  
 Kindly refer Flood Telephone  
 Directory of current year for  
 Telephone Nos

#### ANNEXURE - 18 (A)

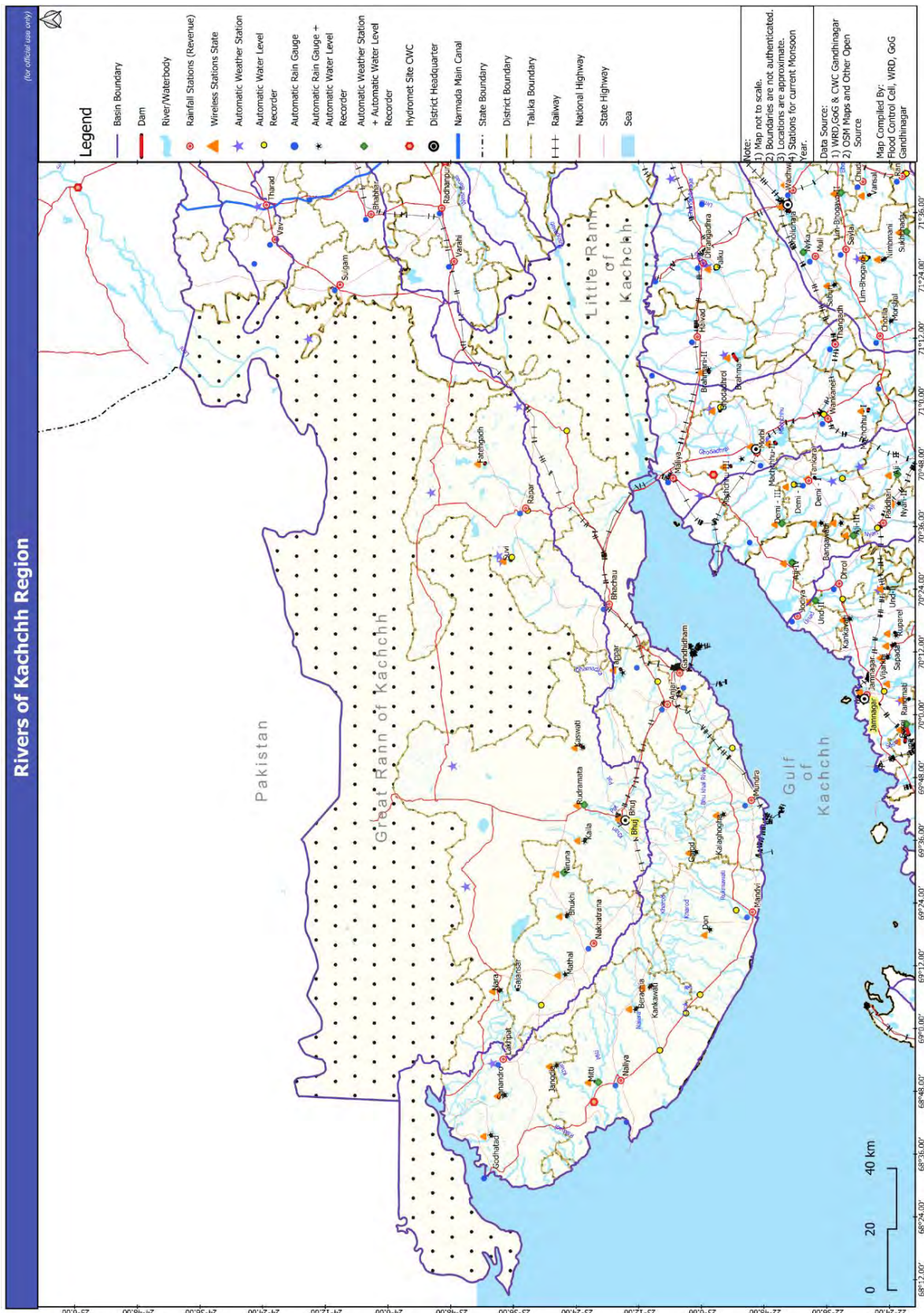
List of villages likely to be affected by floods on downstream of the Dams in

#### KACHCHH REGION

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
<b><u>KACHCHH DISTRICT :-</u></b>				
1	Fatehgadh	Kachhh	Rapar	1. Gedi
	Irrigation			2. Fatehgadh
	Scheme			
2	Gajod	Kachhh	Mundra	1. Beraja
	Irrigation			2. Bhujpur
	Scheme			3. Gelad
				4. Ramania
				5. Tumbadi
3.	Godhatad	Kachhh	Lakhpatt	1. Kapurashi
	Irrigation			2. Koriyani
	Scheme			
4.	Kaila	Kachhh	Bhuj	1. Zura
	Irrigation			
	Scheme			
5	Kalaghogha	Kachhh	Mundra	1. Somaghogha
	Irrigation			
	Scheme			
6	Kankawati	Kachhh	Abdasa	1. Hajapur
	Irrigation			2. Miyani
	Scheme			3. Nundhatad
				4. Vinzan

SR NO	NAME OF SCHEME	NAME OF DISTRICT	NAME OF TALUKA	NAME OF VILLAGES
1	2	3	4	5
				5. Khirsara (V.)
7	Kaswati	Kachchh	Bhuj	1. Khengarpur
	Irrigation			2. Lodia
	Scheme			3. Umedpur
8	Nara-Gajansar	Kachchh	Lakhpat	1. Gajansar
	Irrigation			2. Hajipur
	Scheme			3. Nara
				4. Uthangadi
				5. Zumara
9	Niruna	Kachchh	Nakhatrana	1. Niruna
	Irrigation			
	Scheme			
10	Rudramata	Kachchh	Bhuj	1. Dhor
	Irrigation			2. Kunaria
	Scheme			3. Sumarasar
11	Sanandro	Kachchh	Lakhpat	1. Mindhiyari
	Irrigation			2. Panandhro
	Scheme (Sanandro)			3. Subhaspur
12	Suvi	Kachchh	Rapar	1. Gauripur
	Irrigation			2. Suvi
	Scheme			
13	Tappar (W.S.)	Kachchh	Anjar	1. Bhimsar
	Irrigation			2. Tappar
	Scheme			
14	Bhukhi	Kachchh	Nakhatrana	1. Bhimsar
	Irrigation			2. Dador
	Scheme			3. Godhiyar
				4. Hirapur
				5. Karodia
				6. Wang
15	Berachiya	Kachchh	Abdasa	1. Bitiyari
	Irrigation			2. Bhachunda
	Scheme			3. Berachiya
				4. Rava
16	Don	Kachchh	Mandvi	1. Don
	Irrigation			2. Rajada
	Scheme			
17	Jangadia	Kachchh	Abdasa	1. Aida
	Irrigation			2. Butta
	Scheme			3. Jangadia
				4. Liyari
18	Mathal	Kachchh	Nakhatrana	1. Deshalpar
	Irrigation			2. Dhamay
	Scheme			3. Guntali
				4. Jinjay
				5. Nura
				6. Umarapar
19.	Mitti	Kachchh	Abdasa	1. Trambo
	Irrigation			2. Rampar
	Scheme			3. Chhasara
				4. Vadasara
				5. Korwali-Wandh





Annexure 18-B

**19-A - MINOR IRRIGATION PROJECTS**

**19. A.0** The Flood Forecasting and Flood warnings system for the Minor Irrigation in Gujarat State is being looked after by

- (1) The Superintending Engineer, Gandhinagar Panchayat Irrigation Circle, Gandhinagar.
- (2) The Superintending Engineer, Vadodara Panchayat Irrigation Circle, Vadodara
- (3) The Superintending Engineer, Rajkot Panchayat Irrigation Circle, Rajkot.
- (4) The Superintending Engineer, Kachchh Irrigation Circle, Bhuj.

**19. A.1** The construction of new Minor Irrigation Works and maintenance of existing Minor Irrigation Works are carried out by various District Panchayat Irrigation Division under three of the Panchayat Irrigation Circle and Kachchh Irrigation Circle, Bhuj. The administrative Head of this District Panchayats is District Development Officer.

**19. A.2** The Superintending Engineer, Gandhinagar Panchayat Irrigation Circle, Gandhinagar is looking after the Minor Irrigation Schemes of Gandhinagar, Mehasana, Patan, Banaskantha, Ahmedabad, Kheda, Anand, Sabarkantha and Aravalli Districts.

The Superintending Engineer, Vadodara Panchayat Irrigation Circle, Vadodara is looking after the Minor Irrigation Schemes of Vadodara, Bharuch, Surat, Valsad, Dangs, Panchmahals, Dahod, Navasari, Narmada, Mahisagar, Chhotaudepur, and Tapi Districts.

The Superintending Engineer, Rajkot Panchayat Irrigation Circle, Rajkot is looking after the Minor Irrigation Schemes of Amreli, Bhavnagar, Botad, Jamnagar, Dev Bhumi Dwarka, Rajkot, Junagadh, Gir Somnath, Porbandar, Morbi and Surendranagar Districts.

The Superintending Engineer, Kachchh Irrigation Circle, Bhuj is looking after the Minor Irrigation schemes of Kachchh District.

**19.A.3** The above four Superintending Engineer shall act as a Focal Officer and shall provide all the necessary data such as rainfall, gauge, discharge, water levels, live storages etc. for the district concerned under his jurisdiction and will extend all necessary help as and when asked by the Flood Control Cell, State Water Data Centre, Gandhinagar. The Executive Engineer, incharge of the Minor Irrigation Works shall function as a Sub Focal Officer and shall have to take the necessary action and make efforts to control the situation.

The sub focal officer incharge of the Minor Irrigation schemes has to intimate his higher authorities and revenue authorities like Mamlatdar, Prant Officer, Collectors, Police Authorities, Home Guard Authorities regarding the situation. They shall directly collect weather bulletin, Heavy Rainfall Warning from India Meteorological Department, Ahmedabad or Revenue Control Room (E.R.C.) of the concerned

districts. All authorities are requested to extend the help required by the sub focal officer to overcome the situation.

**19.A.4** At present there are M.I. Schemes, check dams, percolation tanks, safe stages works and lift Irrigation Schemes are existing in all districts of Gujarat State. For better control and immediate information and instructions to the field officer for precautionary steps are necessary. The phone numbers of all the Executive Engineers of Panchayat Irrigation Divisions and Irrigation Circles are shown in Flood Telephone Directory of current year.

**19.A.5** For Flood Warning Arrangements the information regarding the Flood situation and its communications to higher authority, wireless systems at the important places of M.I. Works is shown in table 5.6 (Chapter-5), are suggested by the Chief Engineer (Panchayat) and Add. Secretary Sachivalaya, Gandhinagar.

**19. A.6** Appropriate Authority (Focal Officer) for Panchayat Irrigation Scheme:

- |            |  |   |
|------------|--|---|
| <b>(A)</b> | For Gandhinagar, Mehasana, Patan, Banaskantha, Ahmedabad, Kheda, Anand, Sabarkantha and Aravalli Districts                             | The Superintending Engineer,<br>Gandhinagar Panchayat Irrigation Circle, Sector - 16, Gandhinagar   |
| <b>(B)</b> | For Amreli, Bhavnagar, Botad, Jamnagar, Porbandar, Dev Bhumi Dwarka, Junagadh, Gir Somnath, Rajkot, Morbi and Surendranagar Districts. | The Superintending Engineer,<br>Rajkot Panchayat Irrigation Circle, M.S.Building, Race Course, Rajkot.  |
| <b>(C)</b> | For Panchmahals, Vadodara, Narmada, Navsari, Bharuch, Valsad, Dahod, Surat,Dangs, Mahisagar, Chhotaudepur, and Tapi districts.         | The Superintending Engineer,<br>Vadodara Panchayat Irrigation Circle, Room No.512,513 5 <sup>th</sup> Floor, Kubera Bhavan Kothi Char Rasta, Vadodara |
| <b>(D)</b> | For Kachchh District.  | The Superintending Engineer,<br>Kachchh Irrigation Circle<br>“Sinchai Sadan” Jubilee Ground, Bhuj,Kachch  |

#### **19-B River gauging and Rain gauging Sites under NWRWS and Kalpasar Department.**

**19. B.0** The works of measuring discharge and gauge of almost all rivers of the Gujarat is being done by Narmada, Water Resources, Water Supply and Kalpasar Department, Gandhinagar since long back. The department has also made the facility to measure the rainfall, temperature, humidity, evaporation and quality of Water. All these activities were being carried out by the technical staff up to year 2020, in year 2021 RTDAS system has established and all the data is now captured by ARG, AWS & AWLR under the Superintending Engineer, State Water Data Centre, Gandhinagar.

**19. B.1** In RTDAS real time data of weather stations and water level stations measured hourly automatically. Communication of data from site is being carried out by mobile facilities during monsoon. The data collected by W. R. I. Division, Ahmedabad and



its six sub divisions do not give any flood forecast but it helps considerably in monsoon particularly where heavy rainfall occurs.

- 19. B.2** The following set up is working under the Executive Engineer, W. R. I. Division, Ahmedabad for almost all district of the state. It is monitored by the Superintending Engineer, State Water Data Centre, Gandhinagar.

The river gauging, Rainfall stations covering Banaskantha, Sabarkantha, Arvalli, Gandhinagar, Mehsana, Patan, Ahmedabad and Kheda District is being done by Dy. Ex. Engineer, W. R. I. Sub Division No.1, Ahmedabad

The river gauging, Rainfall stations covering Vadodara, Panchmahal, Dahod, Bharuch, Narmada, Chhotaudepur, Anand District is being done by Dy. Ex. Engineer, R. G. Sub Division, Vadodara.

The River gauging, Rainfall stations covering Dang, Navsari, Surat, Valsad, Tapi District is being done by Dy. Ex. Engineer, R.G.Sub Division, Navsari.

The River gauging, Rainfall stations covering Jamnagar, Rajkot, Junagadh, Porbandar, Surendranagar, Devbhumi Dwarka, District is being done by Dy. Ex. Engineer, R.G.Sub Division, Rajkot.

The River gauging, Rainfall stations covering Botad, Bhavnagar, Amreli, Gir Somnath District is being done by Dy. Ex. Engineer, R.G.Sub Division, Bhavnagar.

The River gauging, Rainfall stations data covering Kutch District is being done by Dy. Ex. Engineer, R.G.Sub Division, Bhuj.

- 19. B.3** The list of Automatic Water Level Recorder (River Gauging stations) site of the Department incl. Station Name, District, Taluka, Latitude and Longitude are appended in Annexure-19. A.3.1

The list of the Automatic Weather Stations of the Department incl. Station Name, District, Taluka, Latitude and Longitude are appended in Annexure-19. A.3.2

The list of the Automatic Weather Stations and Automatic Water Level Recorder of the Department incl. Station Name, District, Taluka, Latitude and Longitude are appended in Annexure-19. A.3.3

The list of the Automatic Rain Gauge of the Department incl. Station Name, District, Taluka, Latitude and Longitude are appended in Annexure-19. A.3.4

The list of the Automatic Rain Gauge and Automatic Water Level Recorder of the Department incl. Station Name, District, Taluka, Latitude and Longitude are appended in Annexure-19. A.3.5

Index map of AWLR, AWS, AWS+AWLR, ARG, ARG+AWLR (Total nos.-663) are appended in Annexure-19. B.3.4

- 19. B.4** The phone numbers of Superintending Engineer, Executive Engineer, W.R.I.Dn., A 'bad of State Water Data Centre, Gandhinagar are shown in Flood Telephone Directory of current year.

**19. B.5** The Collector shall directly receive the weather and heavy rainfall messages from I.M.D., Ahmedabad/Revenue Department (Emergency Relief Cell), Gandhinagar. Necessary instruction will be issued by the Collector to warn/alert the people through the Local officer i.e. taluka mamlatdar or talukas Development officer of the areas likely to be affected.

**19. B.6 Appropriate Authority**

**(Focal Officer)**

**(A) The Superintending Engineer**

State Water data Centre  
Sector -8, WALMI Campus,  
Gandhinagar

**(Sub Focal Officer)**

**The Executive Engineer**

Water Resources Investigation Division,  
C/9, Multistoried Bldg., Lal Darwaja,  
Ahmedabad.

District	AWLR	AWS	AWS+AWLR	ARG	ARG+AWLR
Ahmedabad	1	1	0	13	0
Amreli	6	2	4	17	6
Anand	0	1	0	7	0
Arvalli	6	2	3	7	2
Banaskantha	9	5	1	21	0
Bharuch	1	3	1	7	1
Bhavnagar	11	3	2	11	6
Botad	7	2	1	5	5
Chhota udepur	5	3	0	6	0
Dahod	5	3	3	10	3
Dang	3	1	0	5	0
Devbhumi Dwarka	1	2	1	7	7
Gandhinagar	3	2	0	3	0
Gir Somnath	5	2	3	7	0
Jamnagar	3	3	3	11	12
Junagadh	4	4	3	11	8
Kachchh	10	7	3	13	14
Kheda	6	2	0	10	1
Mahesana	3	2	0	12	0
Mahisagar	1	0	3	6	1
Morbi	4	5	1	7	3
Narmada	1	1	1	5	1
Navsari	6	1	1	10	0
Panchmahal	6	2	1	10	0
Patan	2	2	0	8	0
Porbandar	1	0	3	4	5
Rajkot	5	4	7	14	17
Sabarkantha	1	3	2	6	3
Surat	1	3	1	11	1
Surendranagar	3	4	3	13	5
Tapi	4	1	1	8	1
Vadodara	2	1	0	7	0
Valsad	5	2	1	6	0
<b>Total</b>	<b>131</b>	<b>79</b>	<b>53</b>	<b>298</b>	<b>102</b>

**AWLR** - Automatic Water Level Recorder

**AWS** - Automatic Weather Station

**ARG** - Automatic Rain Gauge

**Annexure-19.A.3.1**

Statement showing AWLR under NWRWS&KD					
Sr. No.	Station name	District	Taluka	Latitude	Longitude
1	Thebi dam	Amreli	Amreli	21.623143	71.213933
2	Bagad dam	Bhavnagar	Mahuva	21.286417	71.8862556
3	Suvi	Kachchh	Rapar	23.6088	70.498
4	Ghodadhroi	Morbi	Morbi	22.943091	70.975664
5	Chopadvav dam	Navsari	Vandsa	20.697091	73.2807486
6	Ishwaria dam	Rajkot	Jasdan	21.985145	71.012765
7	Falku dam	Surendranagar	Dhrangadhra	22.954906	71.42267214
8	Munjiasar	Amreli	Bagasara	21.47433	70.91716
9	Rupen_timbi	Amreli	Jafrabad	20.89149	71.20224
10	Gagadio sanaliya	Amreli	Lilia	21.54971	71.42397
11	Shetrunji junasavar	Amreli	Lilia	21.46198	71.39234
12	Dhatarwadi hindorana	Amreli	Rajula	21.00718	71.42892
13	Mazam_ambaliyra	Arvalli	Bayad	23.2095	73.03347
14	Dabha	Arvalli	Bayad	23.21512	73.09913
15	Hathmati bhiloda	Arvalli	Bhiloda	23.7643	73.25651
16	Meshwo_kabola	Arvalli	Modasa	23.52639	73.21663
17	Rellawada	Arvalli	Meghraj	23.61951	73.46887
18	Meghraj	Arvalli	Meghraj	23.49484	73.51517
19	Dantiwada	Banaskantha	Dantiwada	24.33706	72.33875
20	Kuvarika_navavas	Banaskantha	Danta	24.1429	72.74036
21	Sipu	Banaskantha	Dantiwada	24.39974	72.30946
22	Ganapipali	Banaskantha	Danta	24.29378	72.9455
23	Dhanera	Banaskantha	Dhanera	24.51971	72.01042
24	Shingoda	Banaskantha	Shihori	24.04651	72.0088
25	Kanodar	Banaskantha	Palanpur	24.07391	72.39389
26	Arjuni_motasada	Banaskantha	Vadgam	24.14212	72.67956
27	Pilucha	Banaskantha	Vadgam	23.98129	72.52166
28	Kim delhi	Bharuch	Valia	21.56398	73.20643
29	Bhadrodi bhadrod	Bhavnagar	Mahuva	21.13488	71.80796
30	Malan mahuva	Bhavnagar	Mahuva	21.10853	71.7581
31	Rojki	Bhavnagar	Mahuva	21.22659	71.68078
32	Rajawal mokhadka	Bhavnagar	Palitana	21.58217	71.84988
33	Shetrunji talaja	Bhavnagar	Talaja	21.36916	72.04041
34	Talaji talaja	Bhavnagar	Talaja	21.35667	72.02984
35	Kalubhar umarala	Bhavnagar	Umralla	21.84723	71.80237
36	Ranghola	Bhavnagar	Umralla	21.76493	71.6527
37	Ghelo vallabhipur	Bhavnagar	Vallabhipur	21.88169	71.87772
38	Padalio muldharai	Bhavnagar	Vallabhipur	22.00977	71.86628
39	Khalkhalio keria	Botad	Barwala	22.10502	71.89352
40	Lilka bhimnath	Botad	Barwala	22.25146	71.9207

Statement showing AWLR under NWRWS&KD					
Sr. No.	Station name	District	Taluka	Latitude	Longitude
41	Utavali barwala	Botad	Barwala	22.14684	71.89626
42	Bhimdad	Botad	Gadhada	22.08603	71.575
43	Kalubhar dam	Botad	Gadhada	21.86058	71.63002
44	Keri goradka	Botad	Gadhada	22.02656	71.60879
45	Ranpur	Botad	Ranpur	22.35041	71.72062
46	Chhotaudepur	Chhota udepur	Chhota udaipur	22.29551	74.01369
47	Ashwin haripura	Chhota udepur	Nasvadi	22.04545	73.71677
48	Men at amroli	Chhota udepur	Nasvadi	22.01706	73.753
49	Heran at wasna	Chhota udepur	Sankheda	22.1065	73.72934
50	Unch at khoria	Chhota udepur	Sankheda	22.22429	73.69797
51	Patadungri	Dahod	Garbada	22.72649	74.28559
52	Devgadh baria	Dahod	Devgadbaria	22.68866	73.90312
53	Hadaf limkheda	Dahod	Limkheda	22.83353	73.98966
54	Wankadi	Dahod	Limkheda	22.86266	74.00001
55	Machhannala dam	Dahod	Zalod	23.055725	74.163612
56	Ambika waghai	Dang	Vansda	20.76467	73.49036
57	Khapri kudkus	Dang	Ahwa	20.79376	73.5209
58	Purna kalibel	Dang	Ahwa	20.9027	73.59102
59	Vartu dam	Devbhumi dwarka	Bhanvad	22.024892	69.809204
60	Minamuvada	Gandhinagar	Dehgam	23.18017	72.92183
61	Khari magodi	Gandhinagar	Gandhinagar	23.20187	72.77532
62	Sabarmati_gandhin agar	Gandhinagar	Gandhinagar	23.24488	72.68456
63	Sangawadi malgam	Gir somnath	Kodinar	20.80206	70.81034
64	Saraswati pranchi	Gir somnath	Sutrapada	20.91944	70.61069
65	Malan ii gangada	Gir somnath	Una	20.85794	71.16373
66	Raval samter	Gir somnath	Una	20.85129	71.11772
67	Shahi nathej	Gir somnath	Una	20.84667	71.08502
68	Soyal	Jamnagar	Dhrol	22.55323	70.36495
69	Jamnagar	Jamnagar	Jamnagar	22.4208	70.07068
70	Fulzar dam	Jamnagar	Kalavad	22.24372	70.27296
71	Majevadi	Junagadh	Junagadh	21.60989	70.41182
72	Hiran sasan-gir	Junagadh	Talala	21.17559	70.5867
73	Jhanjeshri	Junagadh	Visavadar	21.39401	70.80604
74	Khambhaliya	Junagadh	Visavadar	21.39629	70.65817
75	Chock dumra	Kachchh	Naliya	23.05319	69.04526
76	Nareda kothara	Kachchh	Naliya	23.13634	68.92691
77	Khokhara varsamedi	Kachchh	Anjar	23.14319	70.10199
78	Rukmavati kodai	Kachchh	Mandvi	22.89289	69.37329
79	Sambharai	Kachchh	Mandvi	23.00825	69.10414

## Statement showing AWLR under NWRWS&amp;KD

Sr. No.	Station name	District	Taluka	Latitude	Longitude
80	Surkhan bhadreshwar	Kachchh	Mundra	22.90513	69.89004
81	Gajansar ravapar	Kachchh	Nakhatrana	23.51482	69.07072
82	Bhang mangadh	Kachchh	Rapar	23.43331	70.90093
83	Falku rapar	Kachchh	Rapar	23.55849	70.64678
84	Nani jher	Kheda	Kapadvanj	23.16726	73.12598
85	Betawada	Kheda	Kapadvanj	23.08879	73.05722
86	Mahor_kathlal	Kheda	Kathlal	22.89358	72.99795
87	Sabarmati_rasikpur a	Ahmedabad	Dholka	22.70036	72.51826
88	Mahemdabad	Kheda	Mehmedabad	22.83505	72.76418
89	Bilodra	Kheda	Nadiad	22.73658	72.87785
90	Dakor	Kheda	Thasra	22.74896	73.15637
91	Delwada	Mahesana	Becharaji	23.54387	72.10678
92	Dharoi	Mahesana	Kheralu	24.00453	72.85384
93	Aithor	Mahesana	Unjha	23.76821	72.40984
94	Bhadar undava	Mahisagar	Khanpur	23.40704	73.72286
95	Demi-i	Morbi	Tankara	22.55414	70.74942
96	Demi-ll	Morbi	Tankara	22.70836	70.72967
97	Wankaner	Morbi	Wankaner	22.61314	70.9534
98	Karjan thava	Narmada	Valia	21.60226	73.47264
99	Kaveri mindhabari	Navsari	Bansda	20.73053	73.33049
100	Kharera_kavdej	Navsari	Bansda	20.706466	73.30795
101	Kaveri harangam	Navsari	Chikhli	20.78502	73.14821
102	Auranga bhervi	Navsari	Dharampur	20.60417	73.1104
103	Kelia	Navsari	Bansda	20.69701	73.28066
104	Karad dam	Panchmahal	Ghoghamba	22.56053	73.693432
105	Sansoli	Panchmahal	Godhra	22.70725	73.41673
106	Panam at santrod	Panchmahal	Godhra	22.80035	73.78683
107	Kalol	Panchmahal	Kalol	22.59419	73.45058
108	Koliari rampur	Panchmahal	Morwa (hadaf)	22.87837	73.82419
109	Kun khandia	Panchmahal	Shehera	22.86272	73.62699
110	Khari ziliya	Patan	Chanasma	23.69395	72.1709
111	Saraswati_sidhpur	Patan	Sidhpur	23.90373	72.36695
112	Rana-kandorana	Porbandar	Ranavav	21.64868	69.88811
113	Bhadar kamadhiya	Rajkot	Gondal	21.85556	70.92143
114	Fofal dam	Rajkot	Jamkandorna	21.84924	70.50519
115	Gondli	Rajkot	Kotda sangani	22.04581	70.88198
116	Aji_paddhari	Rajkot	Paddhari	22.44235	70.5911
117	Harnav_khedbrahm a	Sabarkantha	Khedbrahma	24.03527	73.04959
118	Mindhola_bardoli	Surat	Bardoli	21.11138	73.11119

Statement showing AWLR under NWRWS&KD					
Sr. No.	Station name	District	Taluka	Latitude	Longitude
119	L.bhogavo_limbdi	Surendranagar	Limbdi	22.5614	71.81423
120	Limdi bhogavo dam	Surendranagar	Sayla	22.47953	71.45069
121	Zankhari valod	Tapi	Valod	21.04623	73.26698
122	Ambica unai	Tapi	Vyara	20.862052	73.345792
123	Purna_wankla	Tapi	Vyara	20.95134	73.34164
124	Walan wankla	Tapi	Vyara	20.93228	73.34187
125	Dhadhar bhilapur	Vadodara	Dabhoi	22.18115	73.32938
126	Pilol	Vadodara	Savli	22.41419	73.22544
127	Man asura	Valsad	Dharampur	20.55914	73.19923
128	Tan amba	Valsad	Dharampur	20.59431	73.23454
129	Dholdo khutali	Valsad	Kaprada	20.41397	73.17701
130	Kolak nana-pondha	Valsad	Kaprada	20.4004	73.11695
131	Par nani-vahiyal	Valsad	Kaprada	20.4463	73.14108



## Annexure-19.A.3.2

Statement showing AWS under NWRWS&KD					
Sr. No.	Station Name	District	Taluka	Latitude	Longitude
1	Vekariya(nallake)	Ahmedabad	Viramgam	22.82144	72.06399
2	Thebi dam	Amreli	Amreli	21.62311	71.21401
3	Rupen timbi	Amreli	Jafrabad	20.89036	71.2042
4	Ambaliyara	Arvalli	Bayad	23.2076	73.03513
5	Kabola	Arvalli	Modasa	23.53515	73.21558
6	Zerda	Banaskantha	Deesa	24.37159	72.12386
7	Navavas	Banaskantha	Danta	24.14078	72.74021
8	Umbari	Banaskantha	Shihori	24.04118	72.01487
9	Tharad	Banaskantha	Tharad	24.3875	71.62407
10	Nadabet	Banaskantha	Vav	24.22573	71.20067
11	Ankleshwar	Bharuch	Ankleshwar	21.62407	72.99619
12	Jambusar	Bharuch	Jambusar	22.05247	72.80725
13	Vagra	Bharuch	Vagra	21.84122	72.83977
14	Bagad dam	Bhavnagar	Mahuva	21.28642	71.88626
15	Shetrunji dam	Bhavnagar	Palitana	21.48249	71.88429
16	Ranghola	Bhavnagar	Umralla	21.76618	71.65165
17	Bhimdad is	Botad	Gadhada	22.08416	71.57717
18	Kalubhar dam	Botad	Gadhada	21.8436	71.62062
19	Chalamali	Chhota udepur	Jetpur pavi	22.14156	73.82352
20	Sukhi	Chhota udepur	Jetpur pavi	22.4389	73.88304
21	Gamla	Dahod	Dohad	22.80023	74.32101
22	Patadungri (gjsw0039)	Dahod	Garbada	22.72649	74.28559
23	Machhannala dam	Dahod	Jhalod	23.0621699	74.1706834
24	Ahwa	Dang	Ahwa	20.75965	73.68994
25	Vartu dam	Devbhumi dwarka	Bhanvad	22.01362	69.81488
26	Sani	Devbhumi dwarka	Kalyanpur	21.97708	69.49281
27	Gandhinagar	Gandhinagar	Gandhinagar	23.20239	72.64991
28	Veda	Gandhinagar	Kalol	23.40769	72.54829
29	Jamwala-gir	Gir somnath	Una	20.98634	70.77418
30	Shingoda	Gir somnath	Una	21.0205	70.77386
31	Und-1 dam	Jamnagar	Dhrol	22.40684	70.40125
32	Rangmati	Jamnagar	Jamnagar	22.33835	70.04779
33	Fulzar dam	Jamnagar	Kalavad	22.24616	70.27096
34	Vrajmi	Junagadh	Malia	21.15026	70.40275
35	Hiran-i	Junagadh	Talala	21.20269	70.66097
36	Draphad	Junagadh	Visavadar	21.3475	70.70461
37	Jhanjeshri	Junagadh	Visavadar	21.39245	70.80712
38	Aadhav	Kachchh	Bhuj	23.76611	69.84022
39	Mithdi	Kachchh	Bhuj	23.72345	69.45591

## Statement showing AWS under NWRWS&amp;KD

Sr. No.	Station Name	District	Taluka	Latitude	Longitude
40	Dayapar	Kachchh	Dayapar	23.63941	68.8923
41	Godsamba	Surat	Mandvi	21.27459	73.24352
42	Adesar	Kachchh	Rapar	23.55677	70.9853
43	Jatawada	Kachchh	Rapar	23.83434	70.71138
44	Jesda	Kachchh	Rapar	23.61984	70.51
45	Suvi	Kachchh	Rapar	23.61051	70.49218
46	Kathlal	Kheda	Kathlal	22.89429	72.99926
47	Khambhat	Anand	Khambhat	22.32394	72.62127
48	Rasikpura	Kheda	Nadiad	22.70207	72.52363
49	Becharaji	Mahesana	Becharaji	23.51238	72.03745
50	Khandosan	Mahesana	Visnagar	23.73591	72.46873
51	Bhramani	Morbi	Halvad	22.89971	71.14995
52	Sarvad dam	Morbi	Maliya	22.97732	70.70172
53	Ghodadhroi	Morbi	Morvi	22.94364	70.97573
54	Machchhu-ii	Morbi	Morvi	22.76659	70.87884
55	Demi-ii	Morbi	Tankara	22.55478	70.74739
56	Chopadvav	Narmada	Sagbara	21.54135	73.75742
57	Kavdej	Navsari	Bansda	20.71071	73.31268
58	Karad dam (aws)	Panchmahal	Ghoghamba	22.55888889	73.69
59	Veganpur	Panchmahal	Godhra	22.796559	73.507481
60	Sankheshwar	Patan	Sami	23.52154	71.788299
61	Siddhpur	Patan	Sidhpur	23.90669	72.36388
62	Fofal dam	Rajkot	Jamkandorna	21.85121	70.49801
63	Ishwaria dam	Rajkot	Jasdan	21.9847	71.01035
64	Gondali	Rajkot	Kotda sangani	22.04996	70.88065
65	Machhu-1 dam	Rajkot	Rajkot	22.46768	70.79461
66	Mankdi dam	Sabarkantha	Bhiloda	23.69591	73.18142
67	Khedbrahma	Sabarkantha	Khedbrahma	24.02721	73.04646
68	Prantij	Sabarkantha	Prantij	23.42908	72.86438
69	Mindhola bardoli	Surat	Bardoli	21.11572	73.10105
70	Kakrapar	Surat	Mandvi	21.26248	73.35153
71	Falku dam	Surendranagar	Dhrangadhra	22.95236	71.43141
72	Limdi bhogavo dam	Surendranagar	Sayla	22.47366	71.45607
73	Patdi	Surendranagar	Patdi	23.19015	71.79111
74	Pipli	Surendranagar	Patdi	23.06935	71.71167
75	Wankla	Tapi	Vyara	20.95028	73.34117
76	Karjan	Vadodara	Karjan	22.05603	73.11181
77	Orsang at bodeli	Chhota udepur	Sankheda	22.27865	73.7111
78	Paria colony	Valsad	Pardi	20.43974	72.96221
79	Bhilad	Valsad	Umbergaon	20.27991	72.89

## Annexure-19.A.3.3

Statement showing AWS+AWLR under NWRWS&KD					
Sr. No.	Station Name	District	Taluka	Latitude	Longitude
1	Ghelo-i	Amreli	Babra	21.96642	71.39077
2	Khodiyar	Amreli	Dhari	21.35687	71.04623
3	Dhatarvadi	Amreli	Rajula	21.02867	71.4278
4	Shell dedumal	Amreli	Savar kundla	21.30717	71.23418
5	Shamlaji dam	Arvalli	Bhiloda	23.68301	73.39121
6	Bhempoda	Arvalli	Malpur	23.31891	73.40556
7	Volvo	Arvalli	Modasa	23.48316	73.3546
8	Mukteshwar	Banaskantha	Kheralu	24.04014	72.6279
9	Baldeva	Bharuch	Valia	21.61569	73.40623
10	Malan	Bhavnagar	Mahuva	21.22306	71.62831
11	Hanol	Bhavnagar	Palitana	21.62008	71.7437
12	Goma	Botad	Botad	22.23466	71.51292
13	Hadaf	Dahod	Morwa (hadaf)	22.89058	73.87767
14	Wankleshwar bhey	Dahod	Dhanpur	22.70081	73.98624
15	Umaria	Dahod	Limkheda	22.77368	74.06725
16	Vartu-ii	Devbhumi dwarka	Bhanvad	21.92254	69.70498
17	Hiran-2 dam	Gir somnath	Talala	21.0241	70.47099
18	Machhundri	Gir somnath	Una	20.97787	70.92939
19	Raval	Gir somnath	Una	21.04104	71.06862
20	Sasoi	Jamnagar	Jamnagar	22.34579	69.9703
21	Aji-iv	Jamnagar	Jodiya	22.71094	70.4848
22	Und-2 dam	Jamnagar	Jodiya	22.63663	70.36372
23	Uben dam	Junagadh	Bhesan	21.62221	70.62768
24	Ozat-ii	Junagadh	Junagadh	21.38453	70.5787
25	Madhuvanti	Junagadh	Mendarda	21.26194	70.48807
26	Rudramata dam	Kachchh	Bhuj	23.37402	69.71237
27	Mitti dam	Kachchh	Naliya	23.32842	68.82864
28	Niruna dam	Kachchh	Nakhatrana	23.43859	69.49673
29	Kadana	Mahisagar	Kadana	23.30564	73.82503
30	Bhadar dam	Mahisagar	Khanpur	23.32502	73.69172
31	Panam dam	Mahisagar	Shehera	23.05403	73.71665
32	Demi-iii	Morbi	Jodiya	22.74343	70.60949
33	Karjan dam	Narmada	Rajpipla	21.81518	73.53674
34	Jhuj	Navsari	Bansda	20.71249	73.39285
35	Dev dam	Panchmahal	Halol	22.37351	73.55293
36	Kalindri	Porbandar	Kutiyana	21.70852	69.95603
37	Amipur	Porbandar	Mangrol	21.41278	69.96694
38	Sorthi dam	Porbandar	Porbandar	21.93904	69.59378
39	Bhadar-ii	Rajkot	Dhoraji	21.76036	70.42483

## Statement showing AWS+AWLR under NWRWS&amp;KD

Sr. No.	Station Name	District	Taluka	Latitude	Longitude
40	Bhadar dam	Rajkot	Gondal	21.81001	70.7688
41	Chhaparvadi	Rajkot	Jetpur	21.88835	70.62269
42	Aji-3 dam	Rajkot	Paddhari	22.51517	70.57051
43	Aji-2 dam	Rajkot	Rajkot	22.37459	70.76581
44	Moj	Rajkot	Upleta	21.8385	70.2757
45	Venu-ii (nagvadar)	Rajkot	Upleta	21.78598	70.17362
46	Khandiol (guhail) dam	Sabarkantha	Idar	23.69962	73.05173
47	Vanaj dam	Sabarkantha	Vijaynagar	23.98494	73.29911
48	Ver-ii	Surat	Mandvi	21.39257	73.38582
49	Nayka	Surendranagar	Muli	22.67502	71.47363
50	Sukhbhadar	Surendranagar	Sayla	22.34559	71.53907
51	Limdi bhogavo-ii	Surendranagar	Wadhwan	22.55492	71.66355
52	Ukai dam	Tapi	Songadh	21.24747	73.58965
53	Madhuban dam	Valsad	Silvassa	20.1921	73.06048

## Annexure-19.A.3.4

Statement showing ARG under NWRWS&amp;KD

Sr. No.	Station Name	District	Taluka	Latitude	Longitude
1	Sarkhej	Ahmedabad	Ahmedabad city	22.977896	72.500140
2	Bavla	Ahmedabad	Bavla	22.833733	72.363831
3	Bagodara	Ahmedabad	Bavla	22.650640	72.212526
4	Dascroi (vastral)	Ahmedabad	Dascroi	23.005768	72.667260
5	Kuha	Ahmedabad	Dascroi	23.001023	72.793630
6	Detroj	Ahmedabad	Detroj	23.337239	72.187711
7	Dhandhuka	Ahmedabad	Dhandhuka	22.375099	71.977470
8	Hadala bhal	Ahmedabad	Dhandhuka	22.504861	72.137258
9	Dholera	Ahmedabad	Dholera	22.243626	72.186783
10	Dholka	Ahmedabad	Dholka	22.801058	72.448641
11	Mandal	Ahmedabad	Mandal	23.283080	71.915918
12	Sanand	Ahmedabad	Sanand	22.988475	72.386556
13	Viramgam	Ahmedabad	Viramgam	23.132743	72.045186
14	Gabat	Aravalli	Bayad	23.254438	73.338851
15	Bayad	Aravalli	Bayad	23.218461	73.214153
16	Bhiloda	Aravalli	Bhiloda	23.766331	73.245978
17	Dhansura	Aravalli	Dhansura	23.359945	73.204516
18	Malpur	Aravalli	Malpur	23.364185	73.470803
19	Meghraj	Aravalli	Meghraj	23.489053	73.504215
20	Modasa	Aravalli	Modasa	23.487828	73.302320
21	Amirgadh	Banas kantha	Amirgadh	24.410201	72.639845
22	Danta	Banas kantha	Danta	24.195553	72.763858
23	Kansa	Banas kantha	Danta	24.222391	72.720640
24	Dantiwada	Banas kantha	Dantiwada	24.330911	72.333145
25	Jagol	Banas kantha	Dantiwada	24.409726	72.345133
26	Deesa	Banas kantha	Deesa	24.256888	72.190005
27	Davas	Banas kantha	Deesa	24.314539	72.191779
28	Deodar	Banas kantha	Deodar	24.111686	71.782856
29	Kotarwada	Banas kantha	Deodar	24.233058	71.657453
30	Dhanera	Banas kantha	Dhanera	24.507218	72.030608
31	Nenava	Banas kantha	Dhanera	24.646116	71.879548
32	Kankrej	Banas kantha	Kankrej	24.040001	71.941456
33	Palanpur	Banas kantha	Palanpur	24.168031	72.425036
34	Bhutedi	Banas kantha	Palanpur	24.266016	72.386469
35	Madana(gadh)	Banas kantha	Palanpur	24.111584	72.251566
36	Suigam	Banas kantha	Suigam	24.152861	71.369741
37	Vadgam	Banas kantha	Vadgam	24.084639	72.489215
38	Golgam	Banas kantha	Wav	24.409343	71.453720
39	Wav	Banas kantha	Wav	24.359353	71.514321

Statement showing ARG under NWRWS&amp;KD

Sr. No.	Station Name	District	Taluka	Latitude	Longitude
40	Kalol	Gandhinagar	Kalol	23.221839	72.519025
41	Mansa (ajol)	Gandhinagar	Mansa	23.485793	72.690734
42	Kheda	Kheda	Kheda	22.747844	72.683458
43	Kapadvanj	Kheda	Kapadvanj	23.026852	73.068664
44	Mahemdavad	Kheda	Mahemdavad	22.821568	72.765210
45	Matar	Kheda	Matar	22.709598	72.663766
46	Nadiad	Kheda	Nadiad	22.705326	72.835020
47	Thasra	Kheda	Thasra	22.795925	73.213125
48	Vaso	Kheda	Vaso	22.659200	72.758508
49	Kathlal (gogjipura)	Kheda	Kathlal	22.953571	72.919035
50	Jotana	Mahesana	Jotana	23.465955	72.296343
51	Kadi	Mahesana	Kadi	23.281465	72.351920
52	Mahesana	Mahesana	Mahesana	23.606936	72.392990
53	Satlasana	Mahesana	Satlasana	24.023234	72.793991
54	Hadol	Mahesana	Satlasana	23.939793	72.812110
55	Vadnagar (cipor)	Mahesana	Vadnagar	23.846393	72.664758
56	Karbatiya	Mahesana	Vadnagar	23.767176	72.721965
57	Vijapur	Mahesana	Vijapur	23.555201	72.742569
58	Vasai(dabhla)	Mahesana	Vijapur	23.536671	72.560088
59	Visnagar	Mahesana	Visnagar	23.706690	72.541421
60	Chanasma	Patan	Chanasma	23.717275	72.118655
61	Sami	Patan	Sami	23.692201	71.781916
62	Varahi	Patan	Santalpur	23.788826	71.444225
63	Mujpur	Patan	Shankheshwar	23.591103	71.849570
64	Sarswati	Patan	Sarswati	23.890571	72.136299
65	Himatanagar	Sabarkantha	Himatanagar	23.603351	72.962241
66	Idar	Sabarkantha	Idar	23.837141	73.002340
67	Posina	Sabarkantha	Posina	24.362661	73.028930
68	Vijaynagar	Sabarkantha	Vijaynagar	24.010226	73.351523
69	Anklav	Anand	Anklav	22.373471	72.993406
70	Borsad	Anand	Borsad	22.407005	72.905656
71	Umreth	Anand	Umreth	22.695604	73.109041
72	Anand	Anand	Anand	22.550676	72.968105
73	Sojitra	Anand	Sojitra	22.542443	72.718281
74	Tarapur	Anand	Tarapur	22.483848	72.661825
75	Amod	Bharuch	Amod	21.995645	72.875952
76	Hansot	Bharuch	Hansot	21.580027	72.812695
77	Jhagadia	Bharuch	Jhagadia	21.715854	73.156272
78	Padvaniya	Bharuch	Jhagadia	21.685032	73.240817
79	Netrang	Bharuch	Netrang	21.638681	73.363784
80	Valia	Bharuch	Valia	21.566556	73.153352

**Statement showing ARG under NWRWS&KD**

Sr. No.	Station Name	District	Taluka	Latitude	Longitude
81	Bharuch	Bharuch	Bharuch	21.712653	73.007232
82	Chhota udepur	Chhota udaipur	Chhota udaipur	22.309381	74.018178
83	Padharvat (nalej)	Chhota udaipur	Chhota udaipur	22.294836	73.993216
84	Jetpurpavi	Chhota udaipur	Jetpurpavi	22.341411	73.837136
85	Kwant	Chhota udaipur	Kwant	22.088892	74.052128
86	Naswadi	Chhota udaipur	Naswadi	22.029398	73.720698
87	Sankheda	Chhota udaipur	Sankheda	22.175561	73.580083
88	Dahod	Dohad	Dahod	22.833488	74.259856
89	Devgadh baria	Dohad	Devgadh baria	22.721546	73.915565
90	Dabhva	Dohad	Devgadh baria	22.584141	73.903963
91	Garbada	Dohad	Garbada	22.690060	74.337323
92	Jhalod	Dohad	Jhalod	23.085036	74.153470
93	Limkheda	Dohad	Limkheda	22.819071	73.991378
94	Singvad	Dohad	Singvad	22.954278	73.960621
95	Balasinor	Mahisagar	Balasinor	22.956110	73.330011
96	Janod	Mahisagar	Balasinor	22.998241	73.425154
97	Amthani	Mahisagar	Kadana	23.324883	73.755538
98	Bakor	Mahisagar	Khanpur	23.345700	73.613248
99	Kharol	Mahisagar	Lunawada	23.000388	73.476491
100	Virpur	Mahisagar	Virpur	23.188150	73.469753
101	Dediapada	Narmada	Dediapada	21.629986	73.595591
102	Nandod	Narmada	Nandod	21.865983	73.516516
103	Sagbara	Narmada	Sagbara	21.543242	73.795129
104	Tilakwada	Narmada	Tilakwada	21.953795	73.588911
105	Garudeshwar	Narmada	Garudeshwar	21.894423	73.661241
106	Godhra	Panchmahals	Godhra	22.769308	73.623638
107	Halol	Panchmahals	Halol	22.502080	73.469106
108	Jambughoda	Panchmahals	Jambughoda	22.369960	73.730785
109	Kalol	Panchmahals	Kalol	22.606400	73.455180
110	Morva hadaf	Panchmahals	Morva hadaf	22.923081	73.844271
111	Shahera	Panchmahals	Shahera	22.946978	73.631476
112	Morva	Panchmahals	Shahera	22.909738	73.469388
113	Dabhoi	Vadodara	Dabhoi	22.124775	73.425105
114	Savli	Vadodara	Savli	22.566458	73.249221
115	Vadodara city	Vadodara	Vadodara	22.302326	73.164861
116	Waghodia	Vadodara	Waghodia	22.300285	73.410123
117	Amreli	Amreli	Amreli	21.603934	71.217267
118	Babra	Amreli	Babra	21.849645	71.304485
119	Devaliya mota	Amreli	Babra	21.819748	71.108155
120	Bhader	Amreli	Dhari	21.373845	70.942766
121	Chalala	Amreli	Dhari	21.408309	71.171616



## Statement showing ARG under NWRWS&amp;KD

Sr. No.	Station Name	District	Taluka	Latitude	Longitude
122	Jira	Amreli	Dhari	21.236955	71.088546
123	Jafrabad	Amreli	Jafrabad	20.867196	71.359972
124	Nageshree	Amreli	Jafrabad	20.916426	71.341653
125	Khambha	Amreli	Khambha	21.141298	71.253468
126	Lathi	Amreli	Lathi	21.728046	71.390575
127	Jarkhiya	Amreli	Lathi	21.702620	71.321790
128	Gundran	Amreli	Lilia	21.603265	71.477070
129	Lilia	Amreli	Lilia	21.530818	71.372077
130	Rajula	Amreli	Rajula	21.021573	71.438083
131	Savarkundla	Amreli	Savarkundla	21.325102	71.311970
132	Vadia	Amreli	Vadia	21.687393	70.813600
133	Kunkavav moti	Amreli	Vadia	21.636786	70.986148
134	Bhavnagar	Bhavnagar	Bhavnagar	21.762135	72.149500
135	Gariadhar	Bhavnagar	Gariadhar	21.542951	71.582529
136	Ghogha	Bhavnagar	Ghogha	21.687773	72.275391
137	Jesar	Bhavnagar	Jesar	21.359173	71.666545
138	Mahuva	Bhavnagar	Mahuva	21.11022	71.78048
139	Palitana	Bhavnagar	Palitana	21.529790	71.829313
140	Shihor	Bhavnagar	Shihor	21.725174	71.963524
141	Tana	Bhavnagar	Shihor	21.583865	71.976505
142	Talaja	Bhavnagar	Talaja	21.363283	72.032751
143	Umralla	Bhavnagar	Umralla	21.844398	71.803035
144	Vallabhipur	Bhavnagar	Vallabhipur	21.887961	71.877232
145	Barvala	Botad	Barvala	22.159783	71.895815
146	Botad	Botad	Botad	22.181491	71.682248
147	Gadhda	Botad	Gadhda	21.969385	71.580751
148	Dhasa	Botad	Gadhda	21.784403	71.512971
149	Ranpur	Botad	Ranpur	22.359847	71.715280
150	Gir gadhda	Gir somnath	Gir gadhda	20.920356	70.880044
151	Kodinar	Gir somnath	Kodinar	20.797841	70.700768
152	Sutrapada	Gir somnath	Sutrapada	20.837432	70.490003
153	Una	Gir somnath	Una	20.828006	71.038836
154	Talala	Gir somnath	Talala	21.078341	70.549121
155	Ajotha	Gir somnath	Veraval	20.898015	70.486053
156	Veraval	Gir somnath	Veraval	20.909991	70.362678
157	Bhanvad	Devbhumi dwarka	Bhanvad	21.929384	69.785301
158	Dwarka	Devbhumi dwarka	Dwarka	22.239796	68.959337
159	Kalyanpur	Devbhumi dwarka	Kalyanpur	22.018232	69.404832
160	Asota mota	Devbhumi dwarka	Kalyanpur	22.265375	69.387983
161	Movan	Devbhumi dwarka	Kalyanpur	22.115984	69.489916
162	Khambhalia	Devbhumi dwarka	Khambhalia	22.209806	69.655930

## Statement showing ARG under NWRWS&amp;KD

Sr. No.	Station Name	District	Taluka	Latitude	Longitude
163	Salaya	Devbhumi dwarka	Khambhalia	22.285662	69.498319
164	Dhrol	Jamnagar	Dhrol	22.560613	70.416878
165	Jamjodhpur	Jamnagar	Jamjodhpur	21.905223	70.032385
166	Samana	Jamnagar	Jamjodhpur	22.103359	70.160909
167	Jamnagar	Jamnagar	Jamnagar	22.468308	70.067719
168	Sikka	Jamnagar	Jamnagar	22.425724	69.840977
169	Jodia	Jamnagar	Jodia	22.694046	70.313774
170	Kalavad	Jamnagar	Kalavad	22.210655	70.380377
171	Kharedi	Jamnagar	Kalavad	22.070265	70.479554
172	Nikava	Jamnagar	Kalavad	22.191653	70.531940
173	Lalpur	Jamnagar	Lalpur	22.187291	69.964108
174	Dabasang	Jamnagar	Lalpur	22.256368	69.910121
175	Bhesan	Junagadh	Bhesan	21.557154	70.702471
176	Junagadh (majevadi)	Junagadh	Junagadh	21.605582	70.408676
177	Junagadh city	Junagadh	Junagadh city	21.492684	70.470280
178	Keshod	Junagadh	Keshod	21.284268	70.215246
179	Maliyahatina	Junagadh	Maliyahatina	21.154674	70.283572
180	Chorvad	Junagadh	Maliyahatina	21.027456	70.238295
181	Manavadar	Junagadh	Manavadar	21.500300	70.139046
182	Mangrol	Junagadh	Mangrol	21.125352	70.119985
183	Mendarda	Junagadh	Mendarda	21.337056	70.433503
184	Vanthali	Junagadh	Vanthali	21.485228	70.349542
185	Visavadar	Junagadh	Visavadar	21.339057	70.749411
186	Halvad	Morbi	Halvad	23.013280	71.203876
187	Tikar	Morbi	Halvad	23.140581	71.097411
188	Malia miana	Morbi	Malia miana	23.089418	70.756891
189	Morbi	Morbi	Morbi	22.794448	70.810661
190	Amran	Morbi	Morbi	22.829106	70.565726
191	Tankara	Morbi	Tankara	22.659173	70.746803
192	Wankaner	Morbi	Wankaner	22.596791	70.943781
193	Porbandar	Porbandar	Porbandar	21.644865	69.656301
194	Ranavav	Porbandar	Ranavav	21.678964	69.755340
195	Madhavpur	Porbandar	Porbandar	21.262132	69.952819
196	Dhoraji	Rajkot	Dhoraji	21.733486	70.448884
197	Kalana	Rajkot	Dhoraji	21.593009	70.280364
198	Gondal	Rajkot	Gondal	21.964678	70.809336
199	Jamkandorna	Rajkot	Jamkandorna	21.893393	70.496532
200	Jasdan	Rajkot	Jasdan	22.045935	71.212196
201	Jetpur	Rajkot	Jetpur	21.752599	70.617563
202	Lodhika	Rajkot	Lodhika	22.135060	70.638775
203	Kotda sangani	Rajkot	Kotda sangani	22.045203	70.860686

## Statement showing ARG under NWRWS&amp;KD

Sr. No.	Station Name	District	Taluka	Latitude	Longitude
204	Paddhari	Rajkot	Paddhari	22.419890	70.611229
205	Rajkot south	Rajkot	Rajkot	22.268930	70.797279
206	Bamanbor	Rajkot	Rajkot	22.417846	71.054993
207	Upleta	Rajkot	Upleta	21.742955	70.280962
208	Bhimora	Rajkot	Upleta	21.634162	70.153427
209	Vichhiya	Rajkot	Vichhiya	22.193252	71.360153
210	Chotila	Surendranagar	Chotila	22.425631	71.201770
211	Chuda	Surendranagar	Chuda	22.484495	71.698481
212	Dasada (zainabad 2)	Surendranagar	Dasada	23.280591	71.764706
213	Dhrangadhra	Surendranagar	Dhrangadhra	22.994618	71.440136
214	Kuda	Surendranagar	Dhrangadhra	23.130306	71.396918
215	Methan	Surendranagar	Dhrangadhra	22.981811	71.643145
216	Lakhtar	Surendranagar	Lakhtar	22.858481	71.785321
217	Limbdi	Surendranagar	Limbdi	22.571763	71.798209
218	Shiyani	Surendranagar	Limbdi	22.680918	71.831915
219	Muli	Surendranagar	Muli	22.637236	71.460638
220	Sayla	Surendranagar	Sayla	22.539013	71.482401
221	Thangadh	Surendranagar	Thangadh	22.573031	71.181164
222	Wadhvan	Surendranagar	Wadhvan	22.707480	71.672003
223	Saputara	Dang	Ahwa	20.578575	73.745701
224	Galkund	Dang	Ahwa	20.645080	73.791451
225	Subir	Dang	Subir	20.934650	73.777931
226	Waghai	Dang	Waghai	20.772613	73.496537
227	Kalibel	Dang	Waghai	20.921692	73.584813
228	Chikhli	Navsari	Chikhli	20.766180	73.067341
229	Kukeri	Navsari	Chikhli	20.798340	73.203705
230	Gandevi	Navsari	Gandevi	20.808935	72.999726
231	Gadat	Navsari	Gandevi	20.861230	72.976806
232	Jalalpor	Navsari	Jalalpor	20.950348	72.902472
233	Krushnapur	Navsari	Jalalpor	20.804595	72.861599
234	Dharagri	Navsari	Navsari	20.960647	72.961613
235	Nagdhara	Navsari	Navsari	20.921475	73.084787
236	Vansda	Navsari	Vansda	20.778375	73.354290
237	Mahuva	Surat	Mahuva	21.020214	73.142566
238	Kamrej	Surat	Kamrej	21.278730	72.972999
239	Kathor	Surat	Kamrej	21.291161	72.932786
240	Mandvi	Surat	Mandvi	21.250226	73.305125
241	Mangrol	Surat	Mangrol	21.459224	73.156943
242	Olpad	Surat	Olpad	21.340644	72.746099
243	Surat city	Surat	Surat city	21.166050	72.800805
244	Umerpada	Surat	Umerpada	21.452669	73.474951

## Statement showing ARG under NWRWS&amp;KD

Sr. No.	Station Name	District	Taluka	Latitude	Longitude
245	Dolvan	Tapi	Dolvan	20.906132	73.332691
246	Karanjkhed	Tapi	Dolvan	20.884837	73.431086
247	Kukarmunda	Tapi	Kukarmunda	21.547297	74.125802
248	Songadh	Tapi	Songadh	21.165200	73.564184
249	Uchchhal	Tapi	Uchchhal	21.177683	73.768384
250	Vyara	Tapi	Vyara	21.106354	73.388509
251	Dharampur	Valsad	Dharampur	20.538740	73.180275
252	Kaprada	Valsad	Kaprada	20.344881	73.217946
253	Vapi	Valsad	Vapi	20.381561	72.913056
254	Pardi	Valsad	Pardi	20.497510	72.941890
255	Umergam	Valsad	Umergam	20.172843	72.760894
256	Valsad	Valsad	Valsad	20.605050	72.917133
257	Abdasa	Kachchh	Abdasa	23.257113	68.835371
258	Jakhau	Kachchh	Abdasa	23.222018	68.719026
259	Anjar	Kachchh	Anjar	23.108788	70.033053
260	Bhimasar	Kachchh	Anjar	23.189088	70.166596
261	Bhachau	Kachchh	Bhachau	23.295256	70.352801
262	Bhuj	Kachchh	Bhuj	23.244066	69.676245
263	Gandhidham	Kachchh	Gandhidham	23.039989	70.102713
264	Lakhpat (dayapar)	Kachchh	Lakhpat	23.631543	68.901563
265	Narayan sarovar	Kachchh	Lakhpat	23.676654	68.539611
266	Mandvi	Kachchh	Mandvi	22.837681	69.371158
267	Mundra	Kachchh	Mundra	22.843443	69.727106
268	Nakhatrana	Kachchh	Nakhatrana	23.343563	69.271301
269	Rapar	Kachchh	Rapar	23.561501	70.658141
270	Petlad_1	Anand	Petlad	22.475631	72.803106
271	Bhabhar_1	Banaskantha	Bhabhar	24.053719	71.594365
272	Lakhani_1	Banaskantha	Deesa	24.309223	71.833333
273	Fatepura_1	Dahod	Dahod	23.257988	74.048329
274	Sanjeli	Dahod	Dahod	23.058838	73.974343
275	Dhanpur_3	Dahod	Dhanpur	22.635669	74.088309
276	Dehgam_1	Gandhinagar	Dehgam	23.167654	72.817953
277	Mahudha_1	Kheda	Mahudha	22.815727	72.946787
278	Galteshwar	Kheda	Thasra	22.808704	73.345109
279	Kheralu_1	Mahesana	Kheralu	23.879323	72.610076
280	Unjha_1	Mahesana	Unjha	23.801272	72.378427
281	Khergam_1	Navsari	Gandevi	20.634413	73.099619
282	Ghoghamba	Panch mahals	Ghoghamba	22.572472	73.632331
283	Lunawada_1	Panch mahals	Lunawada	23.128137	73.604625
284	Santrampur_1	Panch mahals	Santrampur	23.193835	73.89103
285	Harij_1	Patan	Harij	23.69178	71.90105

## Statement showing ARG under NWRWS&amp;KD

Sr. No.	Station Name	District	Taluka	Latitude	Longitude
286	Vagdod	Patan	Patan	23.984553	72.147684
287	Radhanpur_1	Patan	Radhanpur	23.818331	71.614306
288	Kutiyana_1	Porbandar	Kutiyana	21.622369	69.988211
289	Talod_2	Sabarkantha	Talod	23.356646	72.967485
290	Vadali_2	Sabarkantha	Vadali	23.936837	73.038425
291	Choryasi	Surat	Chorasi	21.092102	72.880439
292	Bagasara_1	Surat	Palsana	21.480484	70.948253
293	Palsana_1	Surat	Palsana	21.091169	72.986908
294	Nizar_1	Tapi	Nizar	21.480789	74.208182
295	Valod_1	Tapi	Valod	21.049903	73.267468
296	Padra_1	Vadodara	Padra	22.241365	73.081236
297	Desar_2	Vadodara	Savli	22.737392	73.313993
298	Sinor_1	Vadodara	Sinor	21.910335	73.332695

## Annexure-19.A.3.5

Statement showing ARG+AWLR under NWRWS&KD					
Sr. No.	Station Name	District	Taluka	Latitude	Longitude
1	Vadi dam	Amreli	Amreli	21.627289	71.1656608
2	Raidy	Amreli	Khamba	20.983329	71.3128683
3	Survo dam	Amreli	Kunkavav vadia	21.712838	70.727674
4	Vadiya-surva	Amreli	Kunkavav vadia	21.677415	70.825496
5	Dhatarwadi-i (dhareshwar) dam	Amreli	Rajula	21.125446	71.430569
6	Surajwadi is	Amreli	Savarkundla	21.195089	71.369261
7	Vaidy	Aravalli	Meghraj	23.577024	73.591225
8	Lank_3	Arvalli	Bayad	23.14771	73.246612
9	Dholi_1	Bharuch	Jhagadia	21.710338	73.3207473
10	Lakhanka dam	Bhavnagar	Bhavnagar	21.697913	72.135666
11	Kharo is	Bhavnagar	Palitana	21.500359	71.8654037
12	Rajawal is	Bhavnagar	Palitana	21.515203	71.9115922
13	Bakhalka (pingli)	Bhavnagar	Talaja	21.488312	71.95509
14	Hamirpara	Bhavnagar	Talaja	21.504315	72.06341
15	Jaspara mandva dam	Bhavnagar	Talaja	21.470776	72.202062
16	Khambhada dam	Botad	Barwala	22.163184	71.7933127
17	Kaniyad	Botad	Botad	22.239943	71.626005
18	Limballi	Botad	Gadhada	21.982296	71.469553
19	Malpara	Botad	Gadhada	21.86315	71.5447402
20	Gundala (utavali)	Botad	Ranpur	22.198448	71.7938505
21	Edalwada	Dahod	Dhanpur	22.676052	74.0482323
22	Kali - ii	Dahod	Jhalod	23.019098	74.2697519
23	Kabutri dam	Dahod	Limkheda	22.97172	73.92506579
24	Veradi 2 dam	Dev bhumi dwarka	Bhanvad	21.985091	69.8143074
25	Kabarka	Devbhumi dwarka	Bhanvad	22.069327	69.8555289
26	Sonmati dam	Devbhumi dwarka	Bhanvad	22.052071	69.7725289
27	Veradi	Devbhumi dwarka	Bhanvad	21.957152	69.8735025
28	Shedha bhadthari dam	Devbhumi dwarka	Kalyanpur	22.062941	69.533169
29	Gadhaki dam	Devbhumi dwarka	Khambhaliya	22.11288	69.45941
30	Ghee	Devbhumi dwarka	Khambhaliya	22.186362	69.647943
31	Fulzar (k.b.)	Jamnagar	Jamjodhpur	21.929337	70.0758617
32	Umiyasagar dam	Jamnagar	Jamjodhpur	21.878305	70.098585
33	Kankavati dam	Jamnagar	Jamnagar	22.52573	70.3054857
34	Ruparel dam	Jamnagar	Jamnagar	22.379765	70.2515245
35	Sapda	Jamnagar	Jamnagar	22.387827	70.222322
36	Vijarkhi	Jamnagar	Jamnagar	22.406058	70.1855033



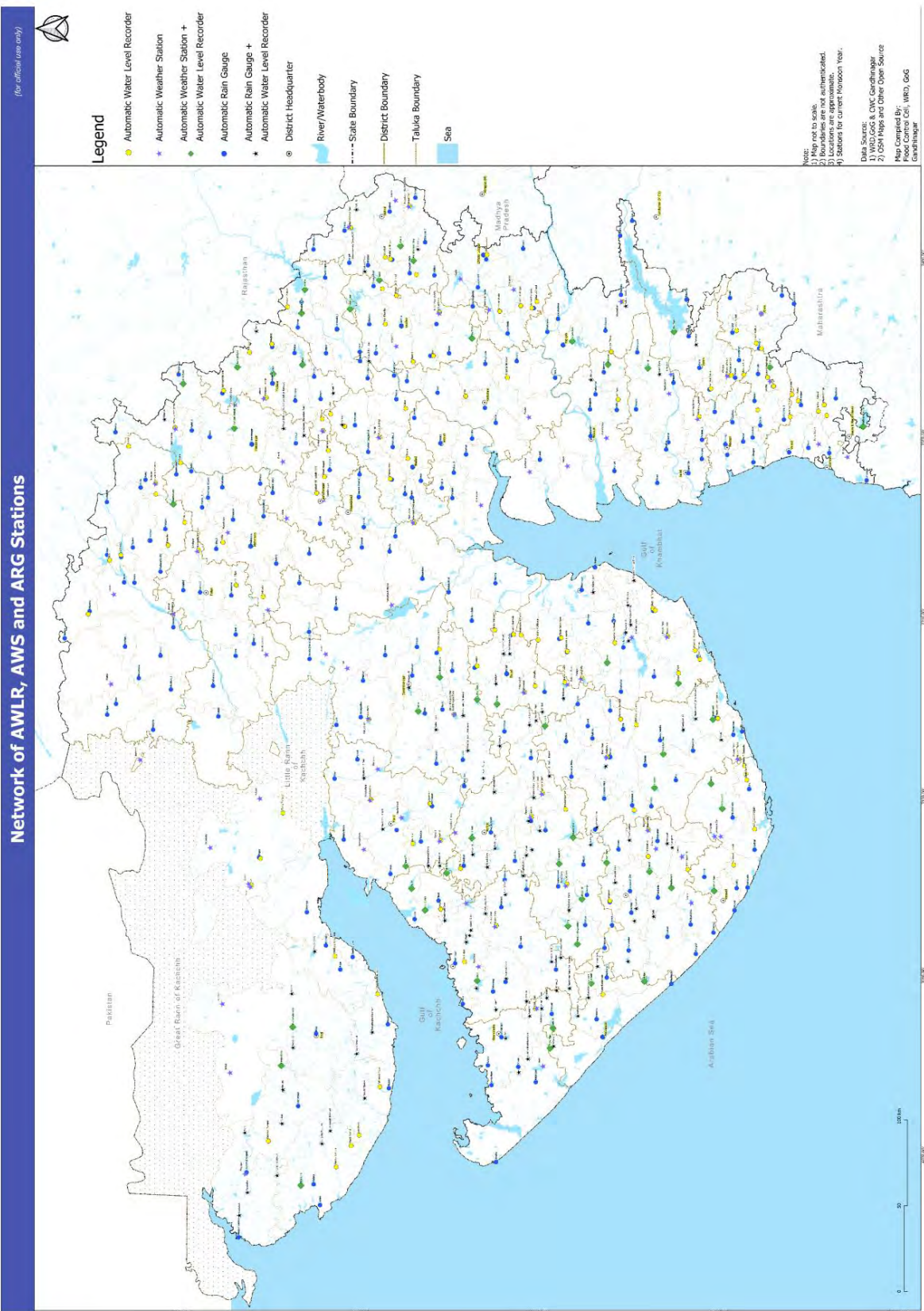
## Statement showing ARG+AWLR under NWRWS&amp;KD

Sr. No.	Station Name	District	Taluka	Latitude	Longitude
37	Dia-minsar dam( dai minsar)	Jamnagar	Jodiya	21.829045	69.9269433
38	Und 3 dam	Jamnagar	Kalavad	22.188987	70.449808
39	Wodisang dam	Jamnagar	Kalavad	22.298902	70.344589
40	Fulzar-ii	Jamnagar	Lalpur	22.239984	69.8077148
41	Puna dam	Jamnagar	Lalpur	22.349337	69.927851
42	Rupavati dam	Jamnagar	Lalpur	22.183913	69.982361
43	Mota gujariya	Junagadh	Bhesan	21.496098	70.7531929
44	Hasnapur dam	Junagadh	Junagadh	21.575853	70.516986
45	Bantva kharo	Junagadh	Manavadar	21.504022	70.0768483
46	Ozat vanthali	Junagadh	Vanthali	21.46822	70.3030033
47	Ozat-weir	Junagadh	Vanthali	21.458415	70.372101
48	Sabli	Junagadh	Vanthali	21.361008	70.32765
49	Ambajal	Junagadh	Visavadar	21.2849	70.734964
50	Prampara	Junagadh	Visavadar	21.25725	70.7122759
51	Berachia reservoir	Kachchh	Abdasa	23.211464	69.060325
52	Jangdiya reservoir	Kachchh	Abdasa	23.461348	68.882863
53	Kankawati reservoir_1	Kachchh	Abdasa	23.164303	69.132214
54	Tappar dam_1	Kachchh	Anjar	23.250537	70.133447
55	Gajod reservoir	Kachchh	Bhuj	23.016951	69.5628073
56	Kayala (irri.)	Kachchh	Bhuj	23.372502	69.596778
57	Kasvati	Kachchh	Bhuj	23.379766	69.896577
58	Godhatad	Kachchh	Lakhpat	23.671764	68.660754
59	Nara	Kachchh	Lakhpat	23.641421	69.122043
60	Sanandro	Kachchh	Lakhpat	23.627201	68.7886914
61	Don mi.sheme	Kachchh	Mandvi	22.97245	69.3150087
62	Kalaghogha reservoir	Kachchh	Mundra	22.929717	69.682928
63	Bhukhi_1	Kachchh	Nakhatrana	23.428412	69.361852
64	Mathal	Kachchh	Nakhatrana	23.434543	69.173138
65	Varansi	Kheda	Kapadvanj	23.0983	73.0706
66	Wanak bori dam	Mahisagar	Balasinor	22.949725	73.4251482
67	Brahmani 2 dam	Morbi	Halvad	22.976995	71.100309
68	Machchhu 3 dam	Morbi	Morbi	22.871874	70.8150582
69	Bangawadi dam	Morbi	Tankara	22.616922	70.6104045
70	Kakdiamba dam	Narmada	Sagbara	21.516021	73.7319426
71	Saran dam	Porbandar	Kutiyana	21.673497	70.0500816
72	Advana	Porbandar	Porbandar	21.918567	69.604391
73	Fodarnes is	Porbandar	Ranavav	21.782845	69.77307
74	Minsar_1	Porbandar	Ranavav	21.901713	69.9146917
75	Rana khirasara dam	Porbandar	Ranavav	21.724572	69.8757417



Statement showing ARG+AWLR under NWRWS&KD					
Sr. No.	Station Name	District	Taluka	Latitude	Longitude
76	Ghelo somnath	Rajkot	Dhoraji	22.053941	71.395796
77	Sodvadar dam	Rajkot	Dhoraji	21.831892	70.3630633
78	Chhaparvadi lunivav dam(kabir sarovar)	Rajkot	Gondal	22.038943	70.6995533
79	Dhari_2	Rajkot	Gondal	22.219143	71.2796187
80	Motisar	Rajkot	Gondal	22.070528	70.6694967
81	Veri	Rajkot	Gondal	21.99569	70.8064
82	Karnuki dam , jivapar	Rajkot	Jasdan	21.942466	71.1114634
83	Karmal dam , vadipara .	Rajkot	Kotada sangani	22.028748	70.9904112
84	Phophal-2 dam	Rajkot	Kotada sangani	22.08761	70.5548
85	Vachhapari	Rajkot	Kotada sangani	22.058973	70.86008
86	Dondi dam	Rajkot	Lodhika	22.288329	70.6036593
87	Khodapipar	Rajkot	Paddhari	22.554364	70.6102793
88	Nyari-ii	Rajkot	Paddhari	22.370291	70.6734296
89	Aji-i	Rajkot	Rajkot	22.270509	70.8360292
90	Malgadh dam	Rajkot	Rajkot	22.016528	71.420577
91	Nyari-1 dam	Rajkot	Rajkot	22.246298	70.7068883
92	Phadangbeti	Rajkot	Rajkot	22.249764	71.0220012
93	Khedva	Sabarkantha	Khedbrahma	24.089097	73.10024
94	Javanpura (badodara dam)	Sabarkantha	Talod	23.311112	73.010725
95	Mota chekhala/(gorathiya takkar barrage)	Sabarkantha	Talod	23.424875	73.0486711
96	Lakhi dam	Surat	Mandvi	21.327576	73.35234
97	Morshal dam , habiyasar	Surendranagar	Chotila	22.396602	71.2536278
98	Triveni thanga	Surendranagar	Chotila	22.31075	71.09881
99	Saburi dam	Surendranagar	Muli	22.575243	71.370018
100	Nimbmani (nimbani)	Surendranagar	Sayla	22.423384	71.448705
101	W.bhogavo-ii	Surendranagar	Wadhwan	22.726035	71.6043718
102	Dosvada	Tapi	Songadh	21.122995	73.5170247

Note: The data of these stations is available only on WIMS portal which is handled by NPMU Delhi



Annexure-19. B.3.4



### Understanding Disaster Risk

S. No.	Sub – Thematic Area for DRR	State / District Agencies and their Responsibilities		
		State	Responsibility – state	Responsibility – District
1.	Observation Networks, Information Systems, Monitoring, Research, Forecasting & Early Warning	<ol style="list-style-type: none"> <li>1. CWC</li> <li>2. IMD</li> <li>3. WRD</li> <li>4. CoR</li> <li>5. GSDMA</li> </ol>	<p><b>Regular/ Recurring</b></p> <ul style="list-style-type: none"> <li>Assessment, Monitoring, and Scientific studies</li> </ul> <p><b>Short term</b></p> <ul style="list-style-type: none"> <li>Assist districts in the identification of priority flood protection and drainage improvement works.</li> <li>Monitoring of flood preparedness, river basin and reservoir management plans.</li> </ul> <p><b>Medium Term</b></p> <ul style="list-style-type: none"> <li>Specialized efforts for different types of floods and causes of flooding, including cloudburst.</li> <li>Studies and monitoring of rivers flowing from neighboring states.</li> </ul>	<p><b>Regular/ Recurring</b></p> <ul style="list-style-type: none"> <li>Support and cooperate with state agencies</li> <li>Support local efforts for flood management</li> <li>Support local information systems and update data for better flood management</li> </ul> <p><b>Short Term (T1)</b></p> <ul style="list-style-type: none"> <li>Implementing and monitoring of flood preparedness, river basin and reservoir management plans including updating rule curves, improve system of water release from reservoirs</li> <li>Identification of priority flood protection and drainage improvement</li> </ul> <p><b>Medium Term (T2)</b></p> <ul style="list-style-type: none"> <li>Studies on land use and hydrological changes relevant to flood management in river basins and reservoir command areas of district.</li> </ul>

S. No.	Sub – Thematic Area for DRR	State / District Agencies and their Responsibilities			
		State	Responsibility – state	District	Responsibility - District
			<p><b>Long Term</b></p> <ul style="list-style-type: none"> <li>Developing/ improving/ updating forecasting methods and models for quantification of inflows and storage of dams</li> </ul>		<p><b>Long Term (T3)</b></p> <ul style="list-style-type: none"> <li>Execution of flood protection and drainage improvement schemes</li> </ul>
2.	Zoning, mapping, and classification flood prone areas	1. WRD 2. ISRO 3. BISAG	<p><b>Short Term (T1)</b></p> <ul style="list-style-type: none"> <li>Preparation of large-scale hazard maps of flood prone areas identifying areas of high vulnerability</li> </ul>	1. DM & Collector 2. NGOs 3. CSOs	<p><b>Recurring/ Regular (RR)</b></p> <ul style="list-style-type: none"> <li>Support and cooperate with state agencies</li> <li>Sponsor district-specific efforts; support local efforts</li> </ul>
3.	Research and Development	1. WRD 2. ISRO 3. R&B 4. GSDMA 5. GIDM 6. SIRD 7. WASMO	<p><b>Short Term (T1)</b></p> <ul style="list-style-type: none"> <li>Studies on support systems for people living in flood prone areas</li> <li>Evolving designs of shelters in flood prone areas</li> <li>Socio-economic impacts of flood</li> </ul> <p><b>Medium Term (T2)</b></p> <ul style="list-style-type: none"> <li>River basin studies</li> <li>Studies on flood related problems such as soil losses caused by flooding of rivers, sediment transport, river</li> </ul>	1. DM & Collector 2. DDO 3. NGOs 4. CSOs 5. WASMO	<p><b>Recurring/ Regular (RR)</b></p> <ul style="list-style-type: none"> <li>Support and cooperate with State agencies</li> <li>Sponsor/ carry out district-specific efforts in all these areas; support local efforts</li> </ul>

S. No.	Sub – Thematic Area for DRR	State / District Agencies and their Responsibilities		
		State	Responsibility – state	District
			<p>course changes, and appropriate use of embankments</p> <p><b>Long Term (T3)</b></p> <ul style="list-style-type: none"> <li>Hydrological and morphological studies before undertaking major flood control or prevention measures</li> </ul>	

### Investing in DRR-Structural measures

S. No.	Sub – Thematic Area for DRR	State / District Agencies and their Responsibilities		
		State	Responsibility – state	District
1.	Flood control measures such as construction of embankments and levees	1. WRD 2. R&B 3. SSNNL	<b>Recurring/ Regular (RR)</b> <ul style="list-style-type: none"> <li>Technical support and studies</li> </ul>	<b>Short Term (T1)</b> <ul style="list-style-type: none"> <li>Immediate repairs of embankments</li> </ul> <b>Medium Term (T2)</b> <ul style="list-style-type: none"> <li>Proper monitoring and maintenance of embankments / Construction of bank protection works.</li> </ul>
2	Water ways and drainage systems for roads, high ways, and express ways	1. R&B 2. WRD 3. NHAI	<b>Recurring/ Regular (RR)</b> <ul style="list-style-type: none"> <li>Proper alignment and design</li> </ul>	<b>Recurring/ Regular (RR)</b> <ul style="list-style-type: none"> <li>Coordination and cooperation with the state agencies and ensure proper alignment and design in all district projects</li> </ul>



S. No.	Sub – Thematic Area for DRR	State / District Agencies and their Responsibilities		
		State	Responsibility – state	Responsibility – District
3	Enhancing the safety of dams and reservoirs	1. WRD 2. SSNNL	<b>Recurring/ Regular (RR)</b> <ul style="list-style-type: none"> <li>Issuing Advisories and guidance</li> </ul>	1. DM & Collector 2. DDO 3. DEOC  <b>Recurring/ Regular (RR)</b> <ul style="list-style-type: none"> <li>Carry out measures to increase safety, reduce risks from flooding</li> <li>Undertake pre- and post-monsoon inspections of dams and reservoirs</li> <li>Monitor the implementation of safety enhancements in accordance with norms</li> </ul>
4	Hazard resistant construction, and strengthening, and retro fitting of all lifeline structures and critical infrastructure	1. R&B 2. WRD 3. UDD	<b>Recurring/ Regular (RR)</b> <ul style="list-style-type: none"> <li>Guidance and implementation</li> </ul>	1.DM & Collector  <b>Recurring/ Regular (RR)</b> <ul style="list-style-type: none"> <li>Collaboration with technical agencies and implementation</li> </ul>

### Investing in DRR-Non-Structural Measures

S. No.	Sub – Thematic Area for DRR	State / District Agencies and their Responsibilities		
		State	Responsibility – state	Responsibility – District
1.	Regulation and enforcement of laws, norms, regulations, guidelines including	1. WRD 2. SSNNL	<b>Recurring/ Regular (RR)</b> <ul style="list-style-type: none"> <li>Guidance and Support</li> <li>Oversight and monitoring of compliance with coastal zone laws</li> <li>Promote institutional mechanisms for sharing</li> </ul>	<b>Recurring/ Regular (RR)</b> <ul style="list-style-type: none"> <li>Implementing land-use regulation for low lying areas as per flood control norms</li> <li>Regulation of inhabitation of low-lying areas along the rivers, nallas and drains</li> <li>Implementing flood management action plan</li> <li>Support and cooperate with state agencies</li> </ul>



S. No.	Sub – Thematic Area for DRR	State / District Agencies and their Responsibilities		
		State	Responsibility – state	District
	<ul style="list-style-type: none"> <li>• Regulation for reservoir management</li> <li>• Integrated Water Resources Management (IWRM)</li> </ul>		<p>forecasts, warnings, data, and information</p> <p><b>Short Term (T1)</b></p> <ul style="list-style-type: none"> <li>• Adoption of revised reservoir operation manuals</li> <li>• Regulatory framework for flood plain zoning and flood inundation management</li> </ul> <p><b>Medium Term (T2)</b></p> <ul style="list-style-type: none"> <li>• Norms/ regulations applicable to buildings in flood-prone areas</li> </ul> <p><b>Long Term (T3)</b></p> <ul style="list-style-type: none"> <li>• Facilitate the implementation of IWRM in major river basins and their sub-basins</li> </ul>	<p><b>Short Term (T1)</b></p> <ul style="list-style-type: none"> <li>• Enforcing building codes and regulations</li> <li>• Review and modification of operation manuals for all major dams/ reservoirs</li> <li>• Prevention and removal of encroachment into the water ways and natural drainage systems</li> </ul> <p><b>Medium Term (T2)</b></p> <ul style="list-style-type: none"> <li>• Implementing regulatory framework for flood plain zoning and flood inundation management</li> <li>• Implementing flood plain zoning regulations</li> </ul> <p><b>Long Term (T3)</b></p> <ul style="list-style-type: none"> <li>• Implementation of IWRM in major river basins and their sub-basins</li> </ul>

## Capacity Development

S. No.	Sub – Thematic Area for DRR	State / District Agencies and their Responsibilities		
		State	State / District Agencies and their Responsibilities Responsibility – state	District Responsibility – District
1.	Training	1. GIDM 2. GSDMA	<b>Recurring/ Regular (RR)</b> <ul style="list-style-type: none"> <li>Training and orientation programs for state govt. staff, SDRF, community, and volunteers</li> </ul>	<b>Recurring/ Regular (RR)</b> <ul style="list-style-type: none"> <li>Training and orientation programs for district govt. staff, SDRF, community, and volunteers</li> </ul>
			<b>Recurring/ Regular (RR)</b> <ul style="list-style-type: none"> <li>Incorporating disaster response, search and rescue in the training programs of youth such as NCC, NYKS, Scouts and Guides, NSS, SDRF, CDEF, Community, Volunteers</li> </ul>	1. Police 2. Civil Defense <ul style="list-style-type: none"> <li>Incorporating disaster response, search and rescue in the training programs of youth such as village volunteers, and for protection of disaster-affected animals</li> <li>Training for CDEF, Community, Volunteers</li> </ul>

**UNITS**

cusec	=	Cubic feet per second
cumec	=	Cubic meter per second
Mcm = Mm <sup>3</sup>	=	million cubic meter
Mcft = Mft <sup>3</sup>	=	million cubic feet
Lac cusecs Hour	=	1 lac cusec flow for 1 hour
cumec day	=	1 cubic meter per second flow for 1 day (24 hours)
MAF	=	Million Acre Feet
TMC	=	Thousand Million Cubic Feet

**CONVERSION FACTORS**

CONVERT		FACTOR
FROM	TO	
LAC CUSEC HOUR	Mm <sup>3</sup>	10.19
Mm <sup>3</sup>	LAC CUSEC HOUR	0.098
CUMEC DAY	Mm <sup>3</sup>	0.086
Mm <sup>3</sup>	CUMEC DAY	11.57
MAF	Mm <sup>3</sup>	1233.5
TMC	Mm <sup>3</sup>	28.317
e.g....5 lac cusec of water is expected for 6 hr then expected volume of inflow to reach in reservoir = 5 lac cusec * 6 hr* 10.19 = 305.7 Mm <sup>3</sup>		
e.g....123.0 Mm <sup>3</sup> of water is expected to reach in reservoir in 6 hr then expected mean inflow = $\frac{123 \times 0.098}{6} = 2.0$ lac cusec		

**FORMAT AND EXAMPLE FOR ESTIMATION OF TIME**

(Format for guidance only)  
Details shall be project specific

Name of Project :-

F.R.L. : m

Gross storage :

Crest R.L. : m

M.W.L.: m

Sr. No.	Item	Date	06/02/2007
		Hour	12.00
1	Initial Level in reservoir		m
2	Initial Storage in reservoir	1000	Mm <sup>3</sup>
3	Level targeted		m
4	Storage Targeted	1400	Mm <sup>3</sup>
5	Expected inflow	1.0	Lac Cusecs
6	Expected outflow	0.5	Lac Cusecs
7	Expected time interval for targeted level	<b>79</b>	Hours
8	i.e. Targeted Level will be after	3 Days	7 Hours
9	i.e. Targeted Level will be on	09/02/2007	19 Hours

**Procedure to be followed.**

- 1 Give date and time in 24 hours format for initial storage
- 2 Put the initial storage in reservoir for Item No. 2.
- 3 Put the initial level in reservoir according to storage for Item No. 1.
- 4 Put the targeted storage in reservoir for Item No. 4.
- 5 Put the targeted level in reservoir according to storage for Item No. 3.
- 6 Put Expected Inflow and Outflow in Item No. 5 & 6
- 7 Item No.7 =  $\frac{(\text{Item 4} - \text{Item 2})}{(\text{Item 5} - \text{Item 6}) * 10.19}$
- 8 Item No. 8 & 9 to be calculated according to answer of Item No. 7.

**FORMAT AND EXAMPLE FOR ESTIMATION OF LEVEL**

(Format for guidance only)  
Details shall be project specific

Name of Project :-      F.R.L. :            m            Gross storage :  
                                 Crest R.L. :        m  
                                 M.W.L.:            m

Sr. No.	Item	Date	06/02/2007
		Hour	12.00
1	Initial Level in reservoir	<b>54.87</b>	m
2	Initial Storage in reservoir	258.06	Mm3
3	Expected inflow	4.0	Lac Cusecs
4	Expected outflow	2.0	Lac Cusecs
5	For Duration	6.0	Hours
6	Expected volume of Inflow	122	Hours
7	Total Volume of Water	1022	Mm3
8	Level of Reservoir after 6.0 Hours	<b>56.46</b>	m

Example Data

<u>Storage</u>	<u>Level</u>
54.87	258.06
54.92	261.78
56.43	377.692
56.48	382.016

Procedure to be followed.

- 1 Give date and time in 24 hours format for initial storage
- 2 Put the initial storage in reservoir for Item No. 2.
- 3 Put the initial level in reservoir according to storage for Item No. 1.
- 4 Put Expected Inflow and Outflow in Item No. 3 & 4
- 5 Put the duration in Item No. 5.
- 6  $\text{Item No. 6} = (\text{Item 3} - \text{Item 4}) * \text{Item 5} * 10.19$
- 7  $\text{Item No. 7} = \text{Item No. 2} + \text{Item No. 6}$
- 8 Put the corresponding level in reservoir according to storage for Item No. 7.

## List of Codes/Guidelines for Safety of Building/Structures

As these codes and guidelines are being updated from time to time by different Institutions/organizations therefore the latest updated version shall be referred at the time of conceiving a project. List has been attempted which may not be complete.

### I. General Structural Safety

1. BIS National Building Code 2005
2. IS: 456:2000 "Code of Practice for Plain and Reinforced Concrete
3. IS: 800-1984 "Code of Practice for General construction in Steel
4. IS: 801-1975 "Code of Practice for Use of Cold Formed Light Gauge Steel Structural Members in General Building Construction
5. IS 875 (Part 2) : 1987 Design Loads (other than earthquake) for buildings and structures part 2 Imposed Loads
6. IS 875 (Part 4) : 1987 Design Loads (other than earthquake) for buildings and structures part 4 Snow Loads
7. IS 875 (Part 5) : 1987 Design Loads (other than earthquake) for buildings and structures part 5 special load and load combination
8. IS: 883:1966 "Code of Practice for Design of Structural Timber in Buildings
9. IS: 1904:1987 "Code of Practice for Structural Safety of Buildings: Foundation's
10. IS:1905:1987 "Code of Practice for Structural Safety of Buildings: Masonry Walls
11. IS 2911 (Part 1): Section 1: 1979 "Code of Practice for Design and Construction of Pile Foundation  
 Section 1  
 Part 1: Section 2 Bored Cast-in-situ Piles  
 Part 1: Section 3 Driven Precast Concrete Piles Part 1: Section 4 Bored precast Concrete Piles Part 2: Timber Piles  
 Part 3: Under Reamed Piles Part 4: Load Test on Piles

## **II. Protection from Cyclones / Windstorms**

1. IS 875 (3) -1987 "Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures, Part 3, Wind Loads"
2. IS: 15498 - 2004 "Guidelines for construction of cyclone shelters."
3. IS: 15498 - 2004 "Guidelines for improving the cyclonic resistance of low-rise houses & other building/structures.
4. Guidelines (Based on IS 875 (3)-1987) for improving the Cyclone Resistance of Low-rise houses and other building.

## **III. Earthquake Protection**

1. IS: 1893-2002 "Criteria for Earthquake Resistant Design of Structures (Fifth Revision)"
2. IS: 13920-1993 "Ductile Detailing of Reinforced Concrete Structures subjected to Seismic Forces - Code Practice"
3. IS:4326-1993 "Earthquake Resistant Design and Construction of Buildings - Code of Practice (Second Revision)"
4. IS:13828-1993 "Improving Earthquake Resistance of Low Strength Masonry Buildings - Guidelines"
5. IS:13827-1993 "Improving Earthquake Resistance of Earthen Buildings - Guidelines"
6. IS:13935-1993 "Repair and Seismic Strengthening of Buildings - Guidelines"

## **IV. Flood Management / River Valley Projects**

1. IS: 4189-1985 "Guide for preparation of project report for river valley projects."
2. IS: 4410 (Part 3): 1988 "Glossary of terms relating to river valley project part 3 River and river training."
3. IS: 4410 (Part 11): Sec 5-1977 "Glossary of terms relation to river valley projects: Part 11 HydrologySection 5 Floods."
4. IS: 4410 (Part 21): 1987 "Glossary of terms relating to river valley projects: Part 21 Flood control."
5. IS:11532-1995 "Construction and maintenance of river embankments



(levees) -Guidelines"

6. IS: 12094 - 2000 "Guidelines for planning and Design of River Embankments (Levees)"
7. IS: 14262 - 1995 "Planning and design of revetments - Guidelines".
8. IS: 5477 (Part 4) : 1971 "Methods for Fixing the capacities or reservoirs: part 4 Flood storage"
9. IS: 7323 - 1994 " Operation of Reservoirs - Guidelines".
10. IS: 8408 - 1994 "Planning and design of groynes in alluvial river - Guidelines".
11. IS: 14815 - 2000 "Design Flood for River Diversion Works - Guidelines".

#### **v. Landslide Hazard**

1. IS: 14458 (Part 1): 1998 Guidelines for retaining wall for hill area: Part 1 Selection of type of wall.
2. IS: 14458 (Part 2): 1997 Guidelines for retaining wall for hill area: Part 2 Design of retaining? Breast walls.
3. IS: 14458 (Part 3): 1998 Guidelines for retaining wall for hill area: Part 3 Construction of dry stone walls.
4. IS: 14496 (Part 2): 1998 Guidelines for preparation of landslide - Hazard Zonation maps in mountainous terrains: Part 2 Macro-Zonation.
5. IS: 14680: 1999 Guidelines for land slide control.
6. IS: 14948: Code of practice for Reinforcement of Rock Slopes with plain edge of failure
7. BIS 12023: Code of practice for Field Monitoring and Movement of Structures using Tape Extensometer.
8. BIS: 14804: Guidelines for Sitting, Designing and selection of materials for Residential Building in Hilly Areas.

#### **VI. For Protection of Saline Embankments and Coastal Canals**

1. IS: 8835 - 1978 "Feasibility study and preparation of preliminary project report".
2. IS: 10635 - 1993 (reaffirmed 2003) "Freeboard requirements in embankments and dams".

3. IS: 12169 - 1987 - "Criteria for design of small embankment dams."
4. IS: 8835- 1978: Feasibility study, preparation of
5. IS: 12094 - 1978: Preliminary Project Report
6. IS: 10635 - 1993 (reaffirmed 2003): Freeboard requirements in embankments in embankments and dams.
7. IS: 11532 - 1995 (reaffirmed 2005): Construction and maintenance of river embankments
8. IS: 12094 - 2000 (reaffirmed 2005): Planning and design of river embankment
9. IS: 12169 - 1987: Criteria for design of small embankments dams.

## **VII. Railway Codes & Manuals - RDSO Publications**

1. RBF - 20: "Estimation of design discharge based on regional flood frequency approach for sub-zones 3(a), 3(b), 3(c), 3(e)".
2. RBF - 22: "50-year 24 hours set of is pluvial maps of India maps of short duration ratios".
3. RBF - 23: "Validation of flood estimation report No.UTN-7-1983 for sub-zone-3 (f)".
4. RBF - 24: "Validation of flood estimation report No.3/1980 for sub-zone-3 (f)".
5. RBF - 25: "Estimation of design discharge based on regional flood frequency approach for sub-zone-3 (f)".
6. RBF - 26: "Validation of flood estimation report No.UGP-9-1984 for sub-zone-1 (e)".
7. RBF - 27: "Validation of design discharge based on regional flood frequency approach for sub-zone-3 (e)".
8. RBF - 28: "Estimation of design discharge based on regional flood frequency approach for sub-zone-3 (i)".
9. RBF - 29: "Estimation of design discharge based on regional flood frequency approach of sub-zone-3 (b)".
10. RBF - 32: "Validation of flood estimation report no. S/16/1988 subzone - 1 (b) (Chambal basin)".

11. RBF - 33: "Estimation of design discharge based on regional flood frequency approach for sub-zone-1(d) (sone basin)".
12. RBF - 34: "Validation of flood estimation report no. S/15/1987 sub-zone-1 (d) (sone basin)".

GE - 1: "Guidelines - Erosion control on slopes of banks and cuttings".

GE - 6: "Guidelines for earthwork in conversion projects".

### **VIII. Indian Road Congress (IRC) Codes/Manuals**

1. IRC: 5 -1998 (Seventh Revision) - "Standard specifications and codes of practice for Road, Bridges Section 1 - General features of Design".
2. IRC: 10-1961 - "Recommended Practice for Borrow pits for Road Embankments constructed by Manual Operation".
3. IRC: 34-1970 - "Recommendations for Road Construction in Waterlogged Area".
4. IRC: 36-1970 - "Recommendations Practice for the construction of Earth Embankments for Road Works".
5. IRC: 45-1972 - "Recommendations for Estimating the Resistance of Soil Below the Maximum Scour Level in the Design of well foundations of Bridges".
6. IRC: 52-2001 (Second Revision) - "Recommendations about the Alignment Survey and Geometric Design of Hill Roads."
7. IRC: 56-1974 - "Recommendations Practice for treatment of Embankment Slopes for Erosion Control."
8. IRC: 75-1979 - "Guidelines for the Design of High Embankments."
9. IRC: 78-2000 (Second Revision) - "Standard specifications and Code of practice for road, bridges, section VII - Foundations and substructure.
10. IRC: 89-1997 (First Revision) - "Guidelines for Design and Construction of River Training and Control Works for Road Bridges".
11. IRC: 104-1988 - "Guidelines for Environmental Impact Assessment of Highway Projects".
12. IRC: SP: 13-2004 (First Revision) - "Guidelines for the Design of Small Bridges and Culverts."

13. IRC: SP: 35-1990 - "Guidelines for Inspection and Maintenance of Bridges".
  14. IRC: SP: 42-1994 - "Guidelines on Road Drainage".
  15. IRC: SP: 50-1999 - "Guidelines of Urban Drainage".
  16. IRC: SP: 54 -2000 - " Project preparation Manual for Bridges".
  17. IRC: 6 - 2000 - "Standard specifications and code of practice for road bridges  
- section II Loads & Stresses".
  18. IRC: SP: 57 -2001 - "Guidelines for quality systems for road construction."
  19. IRC: 28 - 1967 - "Recommendation of road construction in water logged  
areas".
  20. IRC: SP: 26 1984 - "Project preparation manual for bridges".
  21. IRC: 87 - 1984 - "Guidelines for design and erection."
  22. IRC: 21 - 2000 - "Standard specification and codes for roads and bridges."
  23. IRC: SP: 20 - 2002 - "Rural Roads."
  24. MORT & H Pocket Book for Highway Engineers, 2002 (Second Revision)
- IRC: SP33: 1989 Guidelines on supplemental Measures for Design, Detailing &  
Durability of Important Bridge Structures.

Source: Gujarat State Disaster Management Plan 2023-2024

## Websites for Weather Forecast/Storm Prediction

<a href="https://mausam.imd.gov.in">https://mausam.imd.gov.in</a>	
<a href="https://mausam.imd.gov.in/ahmedabad">https://mausam.imd.gov.in/ahmedabad</a>	
<a href="https://mausam.imd.gov.in/mumbai/">https://mausam.imd.gov.in/mumbai/</a>	
<a href="https://www.mosdac.gov.in">https://www.mosdac.gov.in</a>	
<a href="http://en.allmetsat.com/images/asia.php">http://en.allmetsat.com/images/asia.php</a>	
<a href="http://en.allmetsat.com/images/met5_cimss_irc.php">http://en.allmetsat.com/images/met5_cimss_irc.php</a>	
<a href="https://tropic.ssec.wisc.edu/real-time/windmain.php?&amp;basin=indian&amp;sat=wm5&amp;prod=vvir&amp;zoom=&amp;time=">https://tropic.ssec.wisc.edu/real-time/windmain.php?&amp;basin=indian&amp;sat=wm5&amp;prod=vvir&amp;zoom=&amp;time=</a>	

**Forecasting Stations under Mahi Tapi Basin Organization, C.W.C.**

<b>Sr. No.</b>	<b>Basin/River</b>	<b>Forecasting Station</b>
1	Tapi river basin	Inflow forecast for Ukai Dam
2	Tapi river basin	Inflow forecast for Hathnur Dam
3	Tapi river basin	Level forecast for Surat city
4	Lower Narmada river basin	Level forecast for Garudeshwar
5	Lower Narmada river basin	Level forecast for Bharuch
6	Lower Narmada river basin	Inflow forecast for Sardar Sarovar Dam
7	Damanganga river basin	Inflow forecast for Madhuban Dam
8	Damanganga river basin	Level forecast for Vapi
9	Damanganga river basin	Level forecast for Daman
10	Mahi river	Level forecast for Wanakbori Weir
11	Mahi river	Inflow forecast for Kadana Dam
12	Mahi Basin	Inflow forecast for Mahi-Bajaj-sagar Dam
13	Mahi Basin	Inflow forecast for Som Kamla Amba Dam
14	Mahi Basin	Inflow forecast for Panam Dam
15	Sabarmati river	Level forecast for Subhash Bridge
16	Sabarmati river	Inflow forecast for Dharoi Dam
17	Banas river	Inflow forecast for Dantiwada Dam
18	Banas Basin	Level forecast - Abu road
19	Shetrunji Basin	Inflow forecast - Shetrunji Dam

Note: - Inflow Forecast is issued on basis of Advisory.

List of the Officers of Central Water Commission				
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			Office	Residence
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			Office	Residence
Shri Pushpendu Majumdar	Executive Engineer, Tapi Divn., CWC, Surat	Tapi Division, CWC, Opp. Kshetrapal Health Centre, Sangram pura, Surat -395002. <b>Email : ee.tapi-cwc@gov.in</b>	0261-2478569 026-2478569(F)	9717262760
Smt Gravita Jaiswal	Scientific Assistant (HM), Tapi Divn., CWC, Surat	Tapi Division, CWC, Opp. Kshetrapal Health Centre, Sangram pura, Surat -395002. <b>Email : ee.tapi-cwc@gov.in</b>	0261-2977452	7877578778
Shri Shakeel Ahmad (A/C)	Sub Divisional Engineer LTSD,CWC, Surat	Lower Tapi Sub Dn. , CWC, Opp. Kshetrapal Health Centre, Sangram pura, Surat -395002. <b>Email : ae.ltstdsurat@yahoo.com, sdelsd-cwc@gov.in</b>	0261-2476187	9012238357
Shri Shashi Ranjan Shrivastava	Sub Divisional Engineer MTSD,CWC, Dhule	Middle Tapi Sub-Division, CWC, Sinchai Bhavan, Sakri Road, Dhule-424001 (Maharashtra) <b>Email : sde.mtsd-cwc@gov.in</b>	0256-2276147	9420663145
Shri Aman Rawat	Sub Divisional Engineer UTSD,CWC, Bhusawal	Upper Tapi Sub-Division, CWC, Nr. Yawal Road Tapi Nagar, Bhusawal – 425201 (Maharashtra) <b>Email : sde.utsd-cwc@gov.in</b>	02582-222913	9713679200
Shri Shakeel Ahmed	Sub Divisional Engineer LNSD,CWC, Bharuch	Lower Narmada Sub Dn. , CWC, Opp. Pritam Society-II, Maktampur Road, Bharuch – 392001 <b>Email : sde.lnsd-cwc@gov.in</b>	02642-249848(F)	9012238357
Shri Shashi Ranjan Shrivastava (A/C)	Sub Divisional Engineer, Damanganga Sub Division, Silvassa	Damanganga Sub Division, CWC, Opp. Police Line, Silvassa – 396230 <b>Email : sde.dgsd-cwc@gov.in</b>	0260-2640204(F)	9420663145

## Contact details of Focal Officers for Interstate basins (Out of Gujarat)

Sr. No.	Basin	Name and designation of Focal Officer	Name of Office	Contact Nos.
1	Tapi	Shri J.D.Borkar Chief Engineer	Tapi Irrigation Development Corporation, Jalgaon	09422286001(M) 0257-2221290 0257-2217169 0257-2221605 (Fax)
2	Damanganga	Shri P. B. Misal, Chief Engineer	North Maharashtra Region, Nasik, Dist. Nasik	0888807650 (M) 0253-2575667
3	Mahi	Shri Dheeraj Johari Additional Chief Engineer	Water resources Zone, Banswara	9414444097 (M) 8003390165 (M)
		Shri Anil Kumar Gupta Superintending Engineer	Construction Circle, Mahi Project, Banswara	7073115408 (M) 02962-243238(O)
4	Sabarmati (Sei Dam)	Shri Amar Singh Chief Engineer	Water resources Zone, Jodhpur	9414435030 (M) 0291-2570681 (O) 9414435030 (M)
		Shri Ganga Ram Suthar Executive Engineer	Jawai Canals Division, Sumerpur	9956854448 (M) 02933-252928 (O)
5	Sabarmati	Shri Rajesh Kumar Tepan Additional Chief Engineer (A/C)	Water Resources Zone, Udaipur	9414249194 (M) 8209165837 (M) 0294-2414794 (O)
		Shri Rajesh Kumar Tepan Superintending Engineer	Water Resources Circle, Udaipur	9414249194 (M) 8209165837 (M) 0294-2414168 (O)
6	Banas	Shri Amar Singh Chief Engineer	Water Resources Zone, Jodhpur	9414435030 (M) 0291-2570681 (O)
		Shri Dharmesh Singhvi Executive Engineer	Water Resources Division, Sirohi	9413972455 (M) 02972-222336 (O)



## Flood Control Cell

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