GOVERNMENT OF THE PUNJAB

IRRIGATION DEPARTMENT

DRAFT
FLOOD FIGHTING PLAN
2026

BALLOKI HEADWORKS DIVISION BALLOKI
LOWER BARI DOAB CANAL CIRCLE SAHIWAL

SAHIWAL IRRIGATION ZONE SAHIWAL

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FLOOD FIGHTING PLAN 2026

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Flood Fighting Plan 2026 of Balloki Headworks Division has been prepared keeping in view of the recommendations /Report of the committee for finalization of Machinery & Human Recourses requirements for flood Fighting Plan (FFP) constituted by the Administrative Department vide No. SO(Floods)VII-22/2017 dated 26.12.2025 & the SOP,s were issued vide No.SO (Floods) VII-22/2017 dated 13.02.2026 received through Chief Engineer Irrigation Sahiwal Zone letter No.CE/IRRI/SWL/D.B/2026/1790-92 dated 19.02.2026 as well as Superintending Engineer Lower Bari Doab Canal Circle Sahiwal endorsement letter No. 563-65 dated 21.02.2026. Chapter wise detail is given below.

SCHEDULE OF FLOOD PREPAREDNESS ACTIVITIES FOR FLOOD SEASON 2026

Sr. No	Description	TARGET DATES
I	**Preparation of Flood Fighting Plans.**	
	a) Submission of Draft Divisional Plans by Zonal Chiefs to Chief Engineer, Drainage and Flood (after scrutiny by SEs/CEs)	15-02-2026
	b) Review by Chief Engineer D&F.	15.03.2026
	c) Final Submission of Flood Fighting Plans.	31-03-2026
	d) Clearance by Chief Engineer D&F.	10-04-2026
II	**Inspection of Flood infrastructure.**	
	a) By XENs	10-03-2026
	b) By SEs/Ces	20-03-2026
	c) By Departmental & Army Teams.	31-03-2026
III	a. Indication of Critical Encroachments on Bunds and spurs to the Civil Administration. b. Pre-flood breaching section operation committee meeting for briefing on operation of breaching section. c. Submission of clearance of critical encroachments on bunds/spurs by Chief Engineer	31-03-2026 30.04.2026 30.04.2026
IV	**Painting Gauges, RD Marks, Data Boards and Repairs to Flood Bunds etc**	31-05-2023
V	**Replenishment of Reserve Stock of Stone and Flood Fighting Material**	
	a) Identification of needs.	28-02-2026
	b) Funding/Procurement Arrangements.	15-03-2026
	c) Procurement, Stacking, Prescribed field Checks.	31-05-2026
VI	**Installation of wireless sets**	15-06-2026
VII	**Opening of Zonal Flood Cells.**	
	a) Duty Roster	01-06-2026
	b) Operative.	15-06-2026
VIII	**Completion of Operation wetting channel.**	15.06.2026.

PART –A

CHAPTER -1

SALIENT FEATURE OF BALLOKI HEAD WORKS

1.1 LOCATION:

Balloki Headworks is located at about 42 Miles South-West of Lahore.

1.2 GENERAL DESCRIPTION:

River Ravi originates from the Himalayan Mountains at the basin of Bara Bhangal Hill and then flows through the valley into the state of Himachal Pardesh near Chamba District. It flows into South-West near Dallhousie hill before entering the Punjab plain near Modhupur, Pathankot and Gurdaspur Districts. It then flows along the Indo-Pak border for 80 km before entering Pakistan. River Ravi enters Pakistan territory at Shakargarh District Narowal. It enters Sheikhurpura District near Village Burj and then again enters Amritsar District of India. After running ten miles in India, it again enters Pakistan territory near the Village Auliapur. River Ravi reaches at Shahdara, after travelling 72 miles from Jassar and then after running for few miles' parallel to Lahore-Multan Road, it reaches Balloki Headworks with travelling distance of 54 miles. River Ravi passes through Okara, Sahiwal& Khanewal Districts and reaches at Sidhnai Barrage. Ultimately it falls into River Chenab downstream Sidhanai Barrage in Multan District.

TRIBUTARIES OF RIVER RAVI:

The River has following tributaries which contribute to its floods.

Sr.#	Name of Tributary	Length in Miles	Average Slope 100 Ft.	Catchment Area in Sq. Miles	Likely Maximum in cusecs.
1.	Ujh.	80	31.6	675	249,000
2.	Baein.	48	5.9	346	128,000
3.	Basanter.	45	6.4	224	83,000
4.	Deg Nallah.	160	7.4	458	100,000
5.	Hudiara Drain.	62	0.25	583	10,000

BALLOKI HEADWORKS:

Balloki Headworks was constructed on River Ravi during the year 1911-13 as a component of Triple Canal Project to transfer water from Upper Chenab Canal (U.C.C)to Headworks for feeding the L.B.D.C due to insufficient flow of River Ravi. The Headworks was originally constructed for a designed capacity 1,39,000 Cs but later on it was remodeled during 1963-65 for design discharge of 2,25,000 Cs. Now the Headworks has been redesigned for 3,80,000 Cs by providing sixteen additional bays under the supervision of Project Director LBDCIP Lahore. Lower Bari Doab Canal and Balloki-Sulemanki Link off-take from left bank of Balloki Barrage.

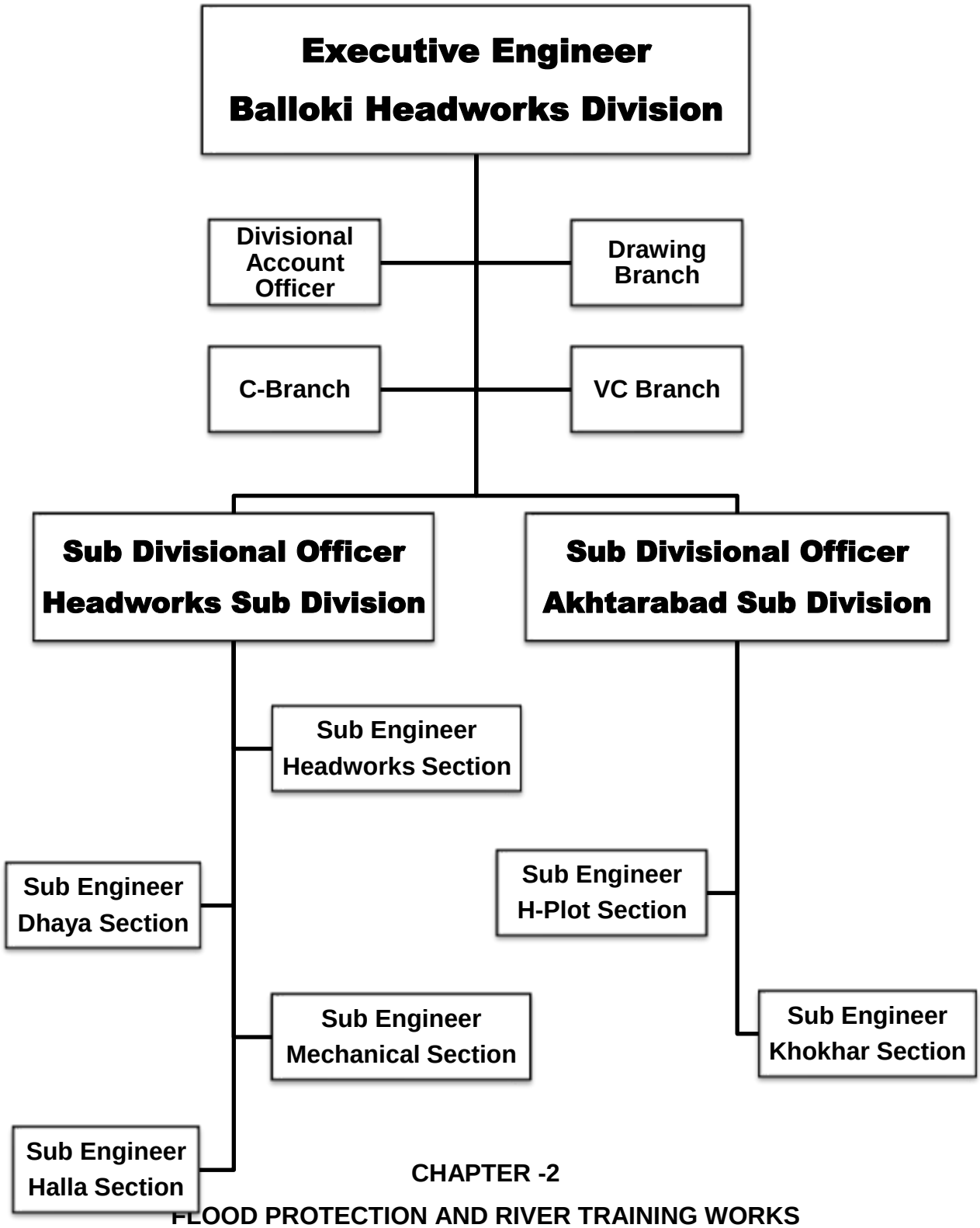
Lower Bari Doab Canal was originally constructed for a discharge of 6900 Cs subsequently raised to 8640 Cs and in 1985-88 remodeled to 9,841 Cs. It irrigates 1.88 million acres fertile land of Kasur, Okara, Sahiwal and Khanewal Districts. Balloki-Sulemanki Link was constructed in 1952-54 with a designed capacity of 15,182 Cs to feed channels off-taking from Sulemanki Headworks dueto stoppage of supplies in River Sutlej by Indian Government. B.S.Link was remodeled to 18,550 Cs in 1962-63 subsequently to 22,000 Cs capacity in 1987-88.This canal has been further remodeled to 24,500 Cs during the year 2004-2005. B.S Link is the source of supply for Pakpattan Canal, Fordwah Canal and Eastern Sadiqia Canal in Pakpattan, Vehari, Lodhran, Bahawalnagar and Bahawalpur Districts.

L.B.D.C system and B.S.Link Canal System Irrigates directly or indirectly about 4.7 million acres fertile lands of Kasur, Pakpattan, Sahiwal, Okara, Multan, Khanewal, Bahawalnagar, and Bahawalpur Districts. Balloki Barrage is thus serving about 23% of total Culturable Command Area (CCA) of Punjab (20.11 million acres) and 12.36 % of entire CCA of the country (38 Million acres) so this barrage contributes a lot in the agricultural production and economy of Pakistan.

SPILL WAY

Spillway is constructed on right side of main Barrage to enhance the discharge capacity of Balloki Headworks. Its construction was carried out during the year 2011 – 2019. It consists of 16 No. Bays having design discharge capacity of 1,20,000 Cusecs. Now the total designed capacity of the Barrage including spillway is about 3,80,000 Cusecs which is approximately equal to maximum flood discharge during 1988.

1.3 ADMINISTRATIVE SET UP



CHAPTER -2

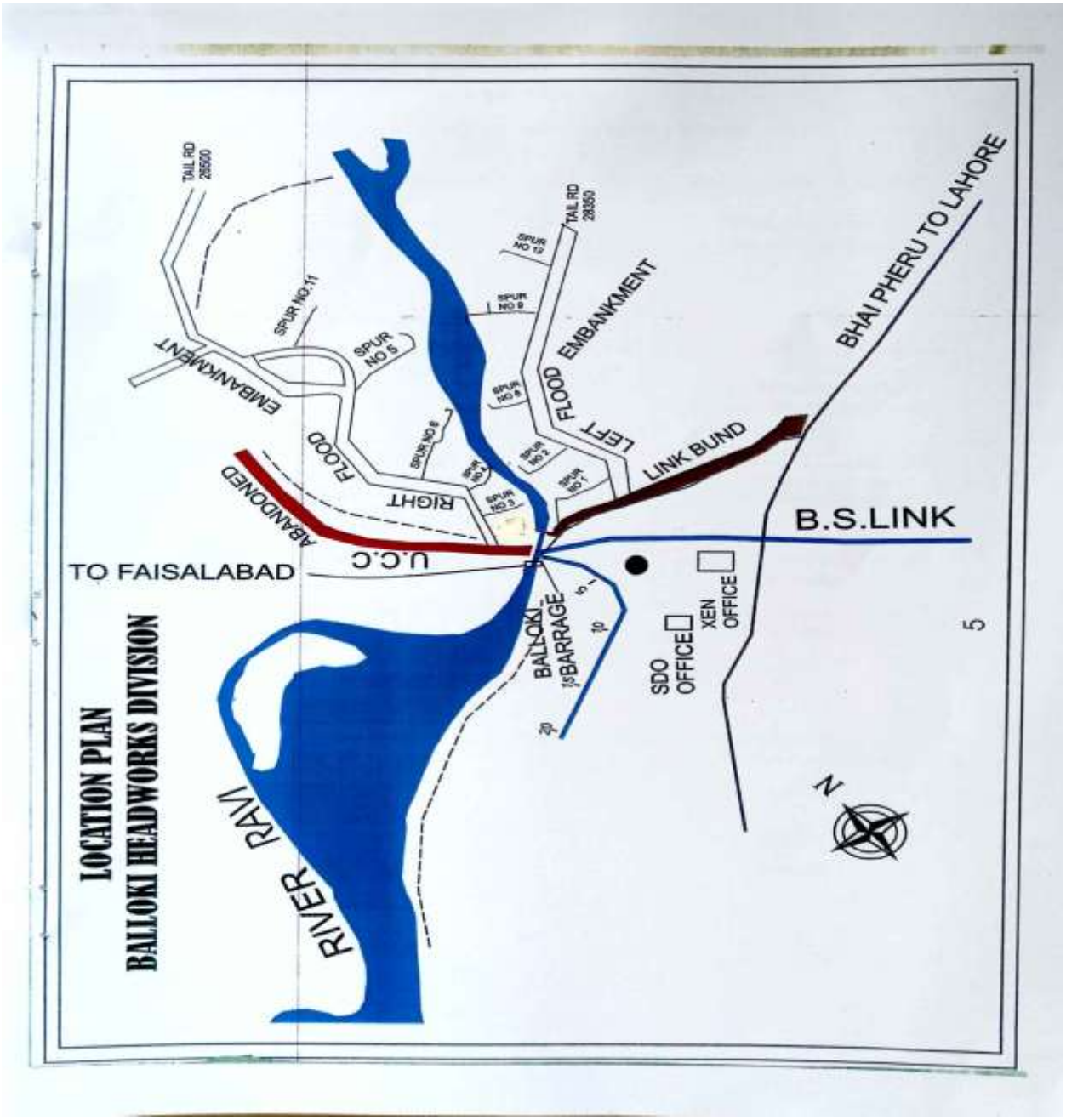
FLOOD PROTECTION AND RIVER TRAINING WORKS

2.1 DESIGN PARAMETER OF TRAINING WORKS:

S. No.	Name of Bund	Off Take RD	Type	Length	Top Width	Side Slopes	Free Board
	TEHSIL NANKANA						
1	**Right Marginal Bund**			**25,400 ft.**	**25'**	**2:1/3:1**	**5' above HFL 1988**
2	**Right Guide Bund**			**2,959 ft**	**25'**	**2:1/3:1**	**5' above HFL 1988**
a	Spur No. 3	4+279 RMB	T-Headed Now hockey	1,385 ft.	25'	2:1/3:1	5' above HFL 1988
b	Spur No. 4	5+703 RMB	J-Head	2,300 ft.	25'	2:1/3:1	5' above HFL 1988
c	Prong Spur No. 4		Mole Headed	325 ft	25'	2:1/3:1	5' above HFL 1988
d	Spur No. 6	10+113 RMB	-do-	5,320 ft.	25'	2:1/3:1	5' above HFL 1988
e	Spur No. 5	17+750 RMB	-do-	5,800 ft.	25'	2:1/3:1	5' above HFL 1988
f	Spur No. 11	21+600 RMB	-do-	453 ft	25'	2:1/3:1	5' above HFL 1988
TOTAL RMB				**43942 Ft**	**8.79 C- Miles**		
	TEHSIL PATTOKI						
3	**Left Marginal Bund**			**28,350 ft**	**25'**	**2:1/3:1**	**5' above HFL 1988**
4	**Left Guide Bund**			**3,320 ft**	**25'**	**2:1/3:1**	**5' above HFL 1988**
g	Spur No. 1	3+241 LMB	T-Head	4,000 ft	25'	2:1/3:1	5' above HFL 1988
h	Spur No. 2	8+555 LMB	-do-	3,600 ft	25'	2:1/3:1	5' above HFL 1988
i	Spur No. 8	12+644 LMB	-do-	2,963 ft.	25'	2:1/3:1	5' above HFL 1988
j	Spur No. 9	19+672 LMB	Mole Headed	5,700 ft	25'	2:1/3:1	5' above HFL 1988
k	Prong Spur No. 9	2000/spur 9	J-Head	2,800 ft.	25'	2:1/3:1	5' above HFL 1988
l	Spur No. 12	24100 LMB	Mole Headed	1,550 ft	25'	2:1/3:1	5' above HFL 1988
m	Spur No.7	9000/R LBDC	T-Headed	6,200 ft.	25'	2:1/3:1	5' above HFL 1988
n	Spur No. 7-A	19500/R LBDC	Mole Headed	5,400 ft	25'	2:1/3:1	5' above HFL 1988
o	Spur No. 7-B	22-23/R of LBDC	J-Head	9,200 ft	25'	2:1/3:1	5' above HFL 1988
p	D/S Barrage Right Side LBDC			23000 ft	25'	2:1/3:1	5' above HFL 1988
TOTAL LMB				**9083 ft**	**19.22 C-Mile**		
TOTAL BALLOKI (RMB+LMB)				**140025 Ft**	**28.01 C-Miles**		

2.2 LOCATION MAP:

Color,Legend, Boundary



CHAPTER -3

BRIEF HISTORY OF PAST FLOOD EVENTS

YEAR	DISCHARGE		BREACHED REACHES
1950	Through Barrage Through Breaches **Total**	2,25,540 Cs 50,000 Cs **2,75,540 Cs**	7 No Breaches in Madhudas Bund
1954	Through Barrage	1,75,000Cs	
1955	Through Barrage Through Breaches **Total**	1,44,360 Cs 60,000 Cs **2,04,360 Cs**	Breach occurred at junction of RMB and Abandoned UCC; and in Madhudas Bund.
1973	Through Barrage Through Breaches Through Madhudas Bund **Total**	1,83,000 Cs 40,000 Cs 75,000 Cs **2,98,000 Cs**	7 No Breaches along LMB and 10 No Breaches in Madhudas Bund.
1975	Through Barrage	1,80,205 Cs	9 No Braches occurred in Madhudas Bund
1978	Through Barrage Through LBDC Through B.S.Link **Total**	2,34,474 Cs 2000 Cs 19,500 Cs **2,55,974 Cs**	7 No Breaches occurred in Madhudas Bund
1988	Through Barrage Through Breaches **Total**	2,40,845 CS 1,40,000 Cs **3,80,845 Cs**	12 No Breaches occurred in Reach RD 0-4500/RMB
2025	Through Barrage	2,23,385Cs	On 30.08.2025 **6.0 Hours Peak Duration**

CHAPTER -4

DESIGNED DATA, HISTORIC PEAK FLOOD DATA AND PREVIOUS 05 YEARS FLOOD DATA OF HEADWORKS AND OTHER CONTROL POINTS:

4.1 FLOOD LIMITS:

Since there is a Headworks / Barrage in the jurisdiction of Balloki Headworks Division. Therefore, this Division has to become active with respect to discharge upstream and downstream Balloki Headworks in River Ravi. The terminology of different kinds of flood is Low, Medium, High, Very High and Exceptionally High will be taken as under.

Site	Flood Limits in Lac Cs.				
	Low	Medium	High	Very High	Exceptionally High
River Ravi					
Jassar Bridge	0.50	0.75	1.00	1.50	2.00
Ravi Syphon	0.40	0.65	0.90	1.35	1.80
Shahdara Bridge	0.40	0.65	0.90	1.35	1.80
Balloki H/W	0.40	0.65	0.90	1.35	1.80
Sidhnai Barrage	0.30	0.40	0.65	0.90	1.20

4.2 TIME LAGS:

Sr. No.	Site	Distance (Miles)	Time Lag (Hours)
1	Jassar to Shahdara	72	36
2	Shahdara to Balloki Barrage	54	19
3	Head Q.B Link to Balloki Barrage	80	24
4	Outfall of Deg Nullah to Balloki Barrage	35	16

4.3 HIGHEST FLOODS:

Year	Flood level		Through Headworks	Through Breaches in Embankments		Through Canals		Total
	U/S	D/S		Left Side	Right Side	LBDC	B.S. Link	
			Cusecs	Cusecs	Cusecs	Cusecs	Cusecs	Cusecs
1950	636.50	634.70	2,25,540	-	50,000	-	-	2,75,540
1955			1,44,360		60,000			2,04,360
1973	636.50	633.70	1,83,000	40,000	75,000			2,98,000
1976	636.90	633.90	2,34,476	-	19,500	2,000	-	2,55,976
1988	638.00	636.50	2,40,845	-	1,40,000	-	-	3,80,845
2025	636.50	633.60	2,23,385	-	-	-	-	2,23,385

4.4 PEAK DISCHARGE:

YEAR	DATE	DISCHARGE	
		U/S	D/S
2006	03.09.2006	67,530	41,280
2007	02.07.2007	65,365	37,865
2008	18.08.2008	90,740	67,190
2009	31.07.2009	46,000	14,000
2010	23.08.2010	69,935	41,235
2011	15.08.2011	72,642	43,942
2012	25.08.2012	62,165	30,565
2013	19.08.2013	1,17,770	97,970
2014	09.09.2014	1,31,800	1,18,000
2015	25.09.2015	73,740	57,740
2016	05.09.2016	43,465	29,740
2017	11.08.2017	69,890	36,790
2018	26.09.2018	67,560	39,310
2019	20.08.2019	53,200	34,900
2020	29.08.2020	63,250	37,250
2021	22.07.2021	59479	33,200
2022	03.08.2022	52435	35235
2023	30-07.2023	74270	58870
2024	31.08.2024	53180	31080
2025	30.08.2025	223385	223385

CHAPTER -5

FLOOD FIGHTING STRATEGY

Though all precautionary measures are adopted before flood season to face any alarming situation at Balloki Headworks, even then arrangements are necessary to avoid heavy damages and flood fighting strategy is adopted in such a way that flood water passes safely through Barrage, up to its limit.

LOW FLOOD

In low flood, river water remains within the deep channel and does not cause any problem, if regulation of gates is done as per rules. Watching establishment employed for this purpose will remain busy in removing jungle, filling gharas and porcupine holes if any.

MEDIUM FLOOD

When water increases beyond sixty thousand cusecs, it will start spreading on adjoining area and also touching the toe of bunds. Then it becomes necessary to be vigilant and watching of bunds will be started to avoid any leakage from bunds. Sub Engineers will shift their camps to sites as per duty roaster. Hourly gauges and discharges will be conveyed to civil administration and flood warning centers to inform public accordingly

HIGH FLOOD

When river water enters into high flood range, Sub Divisional Officer Akhtarabad will shift his camp at Balloki to supervise staff working on LMB and D/S spurs. In whole period, regulation will be done in such a way that silt deposit in front of canals may be washed D/S of the river to minimize silt entry in to canals. Silt contents in water will be checked thrice a day and if it exceeds the permissible limit, canals will be closed accordingly.

VERY HIGH FLOOD/EXCEPTIONALLY HIGH FLOOD

Gauges of different sites especially at RD:24+100 of LMB will be noted regularly and recorded. Executive Engineer will inform all agencies especially civil administration as well as Army about flood situation in rising position. In case of very high flood or exceptionally high flood, meeting will be held in field office with Army and Civil Administration to face the situation.

As per recommendations /Report of the committee for finalization of Machinery & Human Recourses requirements for flood Fighting Plan (FFP) constituted by the Administrative Department vide No.SO (Floods) VII-22/2017 dated 13.02.2026 received through Chief Engineer Irrigation Sahiwal Zone letter No.CE/IRRI/SWL/D.B/2026/1790-92 dated 19.02.2026 as well as Superintending Engineer Lower Bari Doab Canal Circle Sahiwal endorsement letter No. 563-65 dated 21.02.2026. that

> "At each breaching section, there should be an arrangement of two (2) excavators, one (1) dozer, and three (3) dumpers at exceptionally high flood levels "

In view of the above directions, 04 No. Excavator, 02 No. dozers & 6 No. Dumpers will be kept ready (02 No Excavator, 01 No Dozer & 3 Dumpers at RD:11-12 RMB and 02 No. Excavator, 01. No Dozer & 3 Dumpers) at RD:48-49 of Madhudas Flood Bund for making cuts and closing breaches as and when required according to the circumstances. When water touches the level 644.50 of RD:24+100/LMB and is found in rising position, it will be the duty of Deputy Commissioner Kasur District & Nankana Sahib to request Army for operation of breaching section for the safety of Headworks. When water subsides, the breaching sections will be closed (if operated) as soon as possible.

CHAPTER -6

FLOOD DAMAGES RESTORATION WORKS

During flood 2025 following structure of River training works were partially damaged

Planning Stage					Estimates TS		Bid Cost
Sr. No	Name of Division	Name of Work	No of Works	Planned Cost			
			No.	Rs.	No.	Cost	
1	Balloki	Rehabilitation of Spur No.6 of RMB at Balloki Headworks.	1	55.695	1	82.692	61.685
2	Balloki	Rehabilitation of Spur No.7 D/S Balloki Headworks.	1	45.000	1	31.664	31.584
3	Balloki	Rehabilitation of U/S RGB at Balloki Headworks.	1	20.000	1	27.046	27.046
4	Balloki	Rehabilitation of Spur No.9 of LMB at Balloki Headworks.	1	45.000	1	39.113	39.111
5	Balloki	Rehabilitation of Spur No.12 of LMB at Balloki Headworks.	1	80.000	1	53.797	39.044
6	Balloki	Rehabilitation of Spur No.4 of RMB at Balloki Headworks.	1	44.265	1	33.835	33.833
		Total =	**6**	**289.960**	**6**	**268.147**	**232.303**

. The stone apron of above structures was partially launched and being restored under M&R. All works will be completed well before the start of flood season 2026.

CHAPTER -7
FLOOD FIGHTING / WATCHING ARRANGEMENT

7.1 PRE-FLOOD ARRANGEMENT:

a) Soaking of wetting channels along LMB and RMB
b) Painting data boards and gauges along LMB and RMB
c) Strengthening weak sites of wetting channels and main embankments
d) Installation of liners at approved breaching sites

ADDITIONAL INFORMATION REGARDING RESERVE STOCK OF STONE

STRUCTURE WISE DETAIL OF RESERVE STOCK OF STONE AT BALLOKI HEADWORKS

Sr. No	Name of Structure	Sanctioned limit of reserve stock (Lac Cft)	Available quantity (in Lac Cft)	Deficient Quantity (in Lac Cft)	Remarks
1	**4**	**5**	**6**	**7(5-6)**	**9**
1	Near LGB U/S old RMB	0.50	0.378	0.122	Available at Sr.3
2	Left Guide Bank D/S	0.50	0.213	0.287	Available at Sr.3
3	Right Guide Bank U/S	0.50	1.067	-0.567	Excess
4	RGB D/S	0.50	0.221	0.279	Available at Sr.3
5	Right Marginal Bund	0.00	0.500	-0.50	Excess
6	Spur No.3 RD.4+279 RMB	0.30	0.208	0.09	Available at Sr.3
7	Spur No.4 RD.5+703 RMB	1.00	0.555	0.45	Stone Required
8	Spur No.4 Prong	0.50	0.000	0.50	Available at Sr.5
9	Spur No.6 RD.10+113 RMB	0.50	0.260	0.240	Stone Required as 27103 Cft Qty: used during flood 2025
10	Spur No.5 RD.17+750 RMB	0.50	0.526	-0.03	Excess
11	Spur No.11 RD.21+600 RMB	0.30	0.099	0.20	available at Sr.12 but No Space for stock at this Spur
12	Left Marginal Bund	0.00	0.318	-0.32	Excess
13	Spur No.1 RD.3+241 LMB	0.30	0.500	-0.20	Excess
14	Spur No.2 RD.8+555 LMB	0.50	0.298	0.202	Stone Required
15	Spur No.8 RD.12+644 LMB	0.50	0.449	0.05	Available at Sr.12
16	Spur No.9 RD.19+672 LMB	0.60	0.428	0.17	Available at Sr.12
17	Prong Spur No.9 RD 2+000 of Spur No.9			0.00	
18	Spur No.12 RD.24+100 LMB	0.30	0.296	0.00	Available at Sr.22
19	Spur No.7 RD.9+000/R LBDC	**0.30**	0.437	-0.14	Excess
20	Spur No.7A RD.19+500/R LBDC	**1.00**	0.086	0.914	Stone Required
21	Spur No.7B RD.22-23/R LBDC	**1.00**	0.558	0.442	Some Stone Required other available at Sr.22
22	Right Bank LBDC	**0.00**	0.371	-0.37	Excess
OVERALL TOTAL		**9.600**	**7.768**	**1.832**	**For 100 % Recouping**

7.2 WATCHING ESTABLISHMENT:

The watching establishment on marginal bunds is required to be employed in accordance with the SOPs for Flood Fighting plans as well as recommendations /Report of the committee for finalization of Machinery & Human Recourses requirements for flood Fighting Plan (FFP) constituted by the Administrative Department vide No.SO (Floods) VII-22/2017 dated 26.12.2025 & the SOP,s were issued vide No.SO (Floods) VII-22/2017 dated 13.02.2026.

Watching Establishment Criteria

a. General Manpower Hiring (Maintenance Phase)

Total manpower requirement for watching and maintaining the flood embankment during the flood season **from June 15 to October 15** (the entire flood season) as per the following criteria:

Normal Flood Season	1 Person/2mile	(1 Shift)
Low Flood-	1 Person/mile	(1 Shift)
Medium/High Flood	2 Person/mile/shift	(2 Shift)
Very High/Exceptionally High	5 Person/mile/shift	(3 Shift)

- Beldar should be provided with hand tools (1 scythe, 1 axe, and 1 rechargeable torch for the night shift in case of flooding above the low flood limit)

- The activities of staff during the normal flood season should include, but are not limited to:

  - Removing jungle and bushes from slopes and toes of the embankment
  - Filling of rain cuts/gharas
  - Dressing of slopes
  - Filling porcupine and rat holes
  - Keeping the track motorable

  Mate: 1 No for every gang of 12 Beldars at all flood ranges

Establishment of Camps criteria

Normal Flood Season	15 miles/ Vulnerable points
Low Flood	15 miles
Medium Flood/High flood	7 miles
Very High/Exceptionally High	5 miles

Note: The Superintending Engineer (SE) will notify all vulnerable points as per recommendations of the Executive Engineer (XEN), and if the vulnerable site falls within 15 miles of the embankment, then the camp will be established at the vulnerable site.

DETAIL OF ESTABLISHMENT AND FLOOD CAMPS IS GIVEN BELOW

BALLOKI HEADWORKS DIVISION BALLOKI														
7.2 Watching Establishment Details														
Sr. No.	**Structure Name**	**Length (Miles)**	**Flood Limits**											
			Normal Flood Season			**Low Flood**			**Medium/High Flood**			**Very High/ Exp. High Flood**		
			Men	**Shift**	**Mates**	**Men**	**Shift**	**Mates**	**Men**	**Shift**	**Mates**	**Men**	**Shift**	**Mates**
			1 Person/ 2 mile (1 Shift)		**1 For 12 Beldars**	**1 Person/ mile (1 Shift)**		**1 For 12 Beldars**	**2 Person/ mile (2 Shift)**		**1 For 12 Beldars**	**5 Person/ mile (3 Shift)**		**1 For 12 Beldars**
1	**Right Marginal Bund (RMB) (Allied Structures)**	5.080	**3**	**1**	**0**	**5**	**1**	**0**	**10**	**2**		**25**	**3**	
i	**Right Guide Bund(RGB)**	0.592	**0**	**1**	**0**	**1**	**1**	**0**	**1**	**2**		**3**	**3**	
ii	Spur No. 3	0.277	**0**	**1**	**0**	**0**	**1**	**0**	**1**	**2**	**2**	**1**	**3**	**6**
iii	Spur No. 4	0.460	**0**	**1**	**0**	**0**	**1**	**0**	**1**	**2**		**2**	**3**	
iv	Prong Spur No. 4	0.065	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**2**		**0**	**3**	
v	Spur No. 6	1.064	**1**	**1**	**0**	**1**	**1**	**0**	**2**	**2**		**5**	**3**	
vi	Spur No. 5	1.160	**1**	**1**	**0**	**1**	**1**	**0**	**2**	**2**		**6**	**3**	
vii	Spur No. 11	0.091	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**2**		**0**	**3**	
Total Right Marginal Bund (RMB) Alongwith allied Structures		**8.79**	**5**		**0**	**8**		**0**	**34**		**2**	**126**		**6**

XEN/BLK

Sr. No.	Structure Name	Length (Miles)	Flood Limits											
			Normal Flood Season			Low Flood			Medium/High Flood			Very High/ Exp. High Flood		
			Men	Shift	Mates	Men	Shift	Mates	Men	Shift	Mates	Men	Shift	Mates
			1 Person/ 2 mile (1 Shift)		1 For 12 Beldars	1 Person/ mile (1 Shift)		1 For 12 Beldars	2 Person/ mile (2 Shift)		1 For 12 Beldars	5 Person/ mile (3 Shift)		1 For 12 Beldars
2	**Left Marginal Bund(LMB) (Allied Structures)**	5.67	**3**	**1**		**6**	**1**		**11**	**2**		**28**	**3**	
i	**Left Guide Bund**	0.66	**0**	**1**		**1**	**1**		**1**	**2**		**3**	**3**	
ii	Spur No. 1	0.80	**0**	**1**		**1**	**1**		**1**	**2**		**4**	**3**	
iii	Spur No. 2	0.72	**0**	**1**		**1**	**1**		**1**	**2**		**4**	**3**	
iv	Spur No. 8	0.59	**0**	**1**		**0**	**1**		**1**	**2**		**3**	**3**	
v	Spur No. 9	1.14	**0**	**1**	**0**	**1**	**1**	**2**	**2**	**2**	**3**	**6**	**3**	**6**
vi	Prong Spur No. 9	0.56	**0**	**1**		**0**	**1**		**1**	**2**		**3**	**3**	
vii	Spur No. 12	0.31	**0**	**1**		**0**	**1**		**0**	**2**		**2**	**3**	
viii	Spur No.7	1.24	**0**	**1**		**1**	**1**		**2**	**2**		**6**	**3**	
ix	Spur No. 7-A	1.08	**0**	**1**		**1**	**1**		**2**	**2**		**5**	**3**	
x	Spur No. 7-B	1.84	**1**	**1**		**2**	**1**		**3**	**2**		**9**	**3**	
xi	D/S Barrage LBDC Right Side 0-23000	4.60	**2**	**1**		**5**	**1**		**9**	**2**		**23**	**3**	
	Total Left Marginal Bund(LMB) Alongwith allied Structures	**19.22**	**6**		**0**	**19**		**2**	**68**		**3**	**288**		**6**
G.TOTAL RMB+LMB OF BALLOKI		**28.01**	**11**		**0**	**27**		**2**	**102**		**5**	**414**		**12**

NOTE:- Mate , Chowkidars and permanent Regular Establishment will be deputed as and when/where required accordingly

BALLOKI HEADWORKS DIVISION BALLOKI							
7.3-Established Camps Details							
Sr. No.	**Structure Name**	**Length (Miles)**	**Vulnerable sites**		**No. of Camps Established Except Vulnerable Points**		
					Normal Flood season/Low Flood	**Medium/High Flood**	**Very High/Exp. High Flood**
			Reach	**No. of Camps**	**15 Miles**	**7 Miles**	**5 Miles**
1	**Right Marginal Bund (RMB) (Allied Structures)**	5.080	**11000-12000 & 24000 to 25000 of RMB**	**2**	**0**	**0**	**0**
i	**Right Guide Bund (RGB)**	0.592	-	-	-	-	-
ii	Spur No. 3	0.277	-	-	-	-	-
iii	Spur No. 4	0.460	-	-	-	-	-
iv	Prong Spur No. 4	0.065	-	-	-	-	-
v	Spur No. 6	1.064	-	-	-	-	-
vi	Spur No. 5	1.160	-	-	-	-	-
vii	Spur No. 11	0.091	-	-	-	-	-
Total Right Marginal Bund (RMB) Alongwith allied Structures		**8.79**		**2**	**0**	**0**	**0**

Sr. No.	Structure Name	Length (Miles)	Vulnerable sites		No. of Camps Established Except Vulnerable Points		
					Normal Flood season/Low Flood	Medium/High Flood	Very High/Exp. High Flood
			Reach	No. of Camps	15 Miles	7 Miles	5 Miles
2	**Left Marginal Bund (LMB) (Allied Structures)**	5.67	**12000-13000 Of LMB**	**1**	**0**	**2**	**3**
i	**Left Guide Bund**	0.66	**-**	**-**			
ii	Spur No. 1	0.80	**-**	**-**			
iii	Spur No. 2	0.72	**-**	**-**			
iv	Spur No. 8	0.59	**-**	**-**			
v	Spur No. 9	1.14	**-**	**-**			
vi	Prong Spur No. 9	0.56	**-**	**-**			
vii	Spur No. 12	0.31	**-**	**-**			
viii	Spur No.7	1.24	**-**	**-**			
ix	Spur No. 7-A	1.08	**-**	**-**			
x	Spur No. 7-B	1.84	**-**	**-**			
xi	D/S Barrage LBDC Right Side 0-23000	4.60	**-**	**-**			
	Total Left Marginal Bund (LMB) Alongwith allied Structures	**19.22**		**1**	**0**	**2**	**3**
G. TOTAL RMB+LMB OF BALLOKI		**28.01**		**3**	**0**	**2**	**3**

Flood Fighting Material:

Flood fighting material should be purchased based on the worst-case scenario, i.e., for exceptionally high flooding. The minimum requirement is as follows:

Minimum requirement of Flood Fighting Materials for Permanent Camp (15 miles)

FLOOD FIGHTING MATERIAL AT BAKLLOKI HEADWORKS. (FOR PERMANENT FLOOD CAMP).

Sr. No	Item	Unit	Total Required Quantity	Available Quantity	Balance Quantity
1	Shouldari/Tent	No	01	01	0
2	Chairs	No	06	0	06
3	Table	No	01	0	01
4	Generator (2-3 KVA)	No	01	0	01
5	Pedestal Fans	No	01	0	01
6	Charpois	No	02	0	02
7	Symbolic Jackets	No	50	0	50
8	Polyethylene Sheet	Kg	100	0	100
9	Bamboos (4" dia and 10 ft long)	No	100	0	100
10	Water Cooler	No	01	0	01
11	Portable Umbrella	No	02	0	02
12	Life Jackets	No	05	05	0
13	Utensils (10 person serving)	No	01	0	01
14	14. Jute/Plastic bags	No	1000	0	1000
15	Walkie Talkie Set	Sets	02	0	02
16	16. Raincoats	No	10	0	10
17	LED flood light	No	10	0	10
18	Extension Cable (10 ft)	No	02	0	02
19	Rechargeable torches	No	20	10	10
20	Kassi	Kg	20	20	0
21	Axes	No	20	20	0

22	G.I. Buckets	No	05	05	0
23	7/44 cable	Feet	500	0	500
24	Sutli	Kg	02	0	02
25	Sewing Needles	No	10	10	0
26	Emergency Medical Kit	No	1	0	01
27	Wire crates (3x3x3) (only at those camps near river action and where reserve stock exists)	No	100	0	100

Note: - A little Quantity of some items of T&P articles is available mostly items have been used during flood 2025 & balance Quantity will be purchased before flood 2026

Minimum requirement of Flood Fighting Material for the Temporary Camp:
(7 or 5 miles during medium to exceptionally high flood to be outsourced).

FLOOD FIGHTING MATERIAL AT BAKLLOKI HEADWORKS. (FOR TEMPORARY FLOOD CAMP).

Sr. No.	Items	Unit	Required Quantity	Available Quantity	Balance Quantity	Remarks
1	Shouldari / Tent	No	01	0	01	Balance Quantity will be purchased before flood 2026
2	Walke Talkie Set	Sets	01	0	01	
3	Chairs	No	06	0	06	
4	Raincoats	No	10	0	10	
5	Table	No	01	0	01	
6	LED Flood light	No	10	0	10	
7	Generator (2-3KVA)	No	01	0	01	
8	Extension Cable (10 ft)	No	02	0	02	
9	Pedestal Fans	No	01	0	01	
10	Rechargeable torches	No	20	0	20	
11	Charpoys	No	02	0	02	
12	Kassi	No	20	0	20	
13	Symbolic Jackets	No	50	0	50	
14	Axes	No	20	0	20	
15	Water Cooler	No	01	0	01	

16	G.I Buckets	No	05	0	05	
17	Portable umbrella	No	02	0	02	
18	7/44 cable	Feet	500	0	500	
19	Utensils (10 person serving)	No	01	0	01	
20	Sutli	Kg	02	0	02	
21	Jute/Plastic bags	No	500	0	500	
22	Sewing Needles	No	10	0	10	

Minimum Machinery Requirements at Breaching Section

At each breaching section, there should be an arrangement of two (2) excavators, one (1) dozer, and three (3) dumpers at exceptionally high flood levels.

Recommendations for Operation During Flood

I. The Superintendent Engineer (SE) will notify all vulnerable points of the Executive Engineer's (XEN) recommendations, and if the vulnerable site falls within 15 miles of the embankment, then a camp will be established at the vulnerable site.

II. The Superintendent Engineer shall allow the deputation of one (1) excavator and four (4) trolleys during low flood at camps/vulnerable points and LMB/RMB.

III. The Superintendent Engineer (SE) shall approve one additional shift during low to high flood based on site necessity, but shall clearly mention the range where the additional shift is allowed.

IV. For emergency situations when very high flood levels are reached at lower flood discharges, additional camps may also be established with the approval of the Superintendent Engineer.

V. The concerned division shall procure flood fighting material as required by seasonal flood fighting camps.

VI. Jackets with the official emblem of the PID should be purchased by the concerned division for use during the worst-case scenario, i.e. for exceptionally high flooding.

VII. All other camps and supplies, along with establishment personnel, i.e., Beldars and mates, shall be outsourced before the flood season for operational efficiency during flood fighting activities.

VIII. The above-mentioned yardstick of human resources includes 100% of the division's regular flood establishment at normal and low flood levels, and 50% of the division's total regular establishment and backup division for medium and above-average flood situations, as specified in the Flood Fighting Plan.

IX. The trigger point upstream of a canal division for commencing preparations shall be mentioned in the flood fighting plan and shall be such a point upstream with a lag time of 3 days/72 hours. The division shall initiate preparations corresponding to the discharge magnitude expected to be received at their jurisdiction with respect to discharge at trigger point with 2025 flood data.

X. Superintending Engineers shall approve additional resources above the approved FFP on the recommendations of the Executive Engineer based on site necessity, with a copy to TPM and the respective Chief Engineer, but must mention the scope and justify the reason for additional resources in the approval.

XI. Executive Engineers (XEN) shall decide the location and relocation of flood camps.

XII. The machinery mentioned above should be hired to remain on standby 24/7 to combat any extreme situation. The operation of deployed machinery during normal situations shall require prior approval from the Superintending Engineer.

XIII. Communication means must be arranged through the Government. It is recommended to allocate a unique frequency for the irrigation department.

XIV. In the event that water levels reach the 'High Flood' threshold, even if the recorded discharge remains below established benchmarks, all field preparations and personnel deployments must immediately escalate to Critical Level protocols.

7.3 WATCHING MATERIAL:

7.4 ARRANGEMENT FOR SOUNDING & PROBING:

The arrangement for sounding and probing will be taken up with the motor boat.

7.5 LIGHTING ARRANGEMENT:

To avoid all the chances of electricity, break down, additional light arrangements parallel to existing system i.e.WAPDA will be arranged. For generating power, there will be very reliable generating set, with 2 No. standby units. At present we have got arrangements of sodium lights. All along the Barrage and Head Regulators of the canals, our own generating set is not in a position to generate such voltage, so the only alternative left with the system is to have separate ordinary lights / circuits at the Barrage. Generating set will be arranged through MIW Division and lightening arrangement will be done after its approval.

7.6 RATION PROGRAMME:

Ration will be arranged by the local agencies and through NGO’s etc.

7.7 P.O.L ARRANGEMENT FOR VEHICLE:

The stock of the POL will be arranged in workshop at Balloki Headworks for the vehicles of the Department.

7.8. TRANSPORTATION:

During flood when the discharge is likely to increase 1,35,000 Cs. All staff will be alert to face any emergent situation. The position of Transportation is as under.

Name of Vehicle	Demanded	Available	Balance Requirement
1- Jeep	6	3	3
2- Pick up	6	0	6
3- Truck	4	-	4
4- Tractor and Trolleys	4	1	3
5- Motor Boat	3	1	2

Sub Engineer Workshop (Mechanical) will be the Incharge of this unit and all vehicles will be kept ready in the compound of Workshop. Balance requirement of vehicles will be arranged with the help of Deputy Commissioner.

7.9 LAW AND ORDER

The **Deputy Commissioner** hasto make arrangement for the evacuation of the Public withinLMB and RMB and the population coming on route of spill water. **Military Authorities** keeps ready for emergency operation. Police have to watch that no unauthorized cuts are made by public especially along LMB & RMB. **Engineers 4-Corps**is responsible for energizing the Breaching Section, when waterLevel approaches 644.50 mark at the emergency/critical gauge installed at RD 24+100 LMB.

7.10 **MEDICAL ARRANGEMENT FOR LABOUR:**

During flood season there is very possibility of falling sick and incidents of snake bites are of common occurrence. To control all this, an equipped medical Centre with adequate medicines and vaccine for the snake bites will be made available at site. There will be two M.B.B.S Doctors with 4 Dispensers out of which one Doctor and 2 Dispensers will perform the duty for 12 hours (with six hours interval). Their camp will be fixed at the Barrage. The **Health Department** arrange medical facilities when the discharge increases the limit of 135,000 Cs.

7.11 LIAISON WITH OTHER DEPARTMENT:

Executive Engineer, Balloki Headworks Division will keep liaison with the Civil and Army Authorities and will also keep the Superintending Engineer, LBDC, Sahiwal and Chief Engineer, Irrigation, Sahiwal Zone, Sahiwal fully apprised of the flood situation at Balloki Headworks.

7.12 ROLE OF ARMY:

There are two Breaching Sections located at RD 11-12 Right Marginal Bund and at RD 48-49 Madhudas Bund approved vide the **Secretary Irrigation & Power Department Lahore Memo No.110/F-C-75/410-15/64/75.**There is a critical gauge fixed at RD 24+100 of LMB when its level reaches to 644.50 and is in rising position, the breaching sections will be operated. These will be operated with the help of Army Headquarter 4-Corps as per standing instructions laid down in the above-mentioned letter. The flood water escaping through breaching section will flow through the old course of the River and rejoin D/S Balloki Barrage.

7.13 DUTIES OF TELEPHONE ATTENDANT:

S.No.	NAME OF PERSON	PERIOD	TIME	
1	Faiz Rasool J.C	15.06.2026 to 15.10.2026	6.00	11.00
2	Muhammad Nisar Signaler	15.06.2026 to 15.10.2026	11.00	16.00
3	Muhammad Iqbal J.C	15.06.2026 to 15.10.2026	16.00	21.00
4	Ehsan Khan J.C	15.06.2026 to 15.10.2026	21.00	2.00
5	Muhammad Faizan	15.06.2026 to 15.10.2026	2.00	6.00
6	Syed Najmul Hassan Tracer	Kept ready for Replacement		
7	M. Aqib Manzoor Tracer	Kept ready for Replacement		

The Telephone attendants will remain present round the clock turn wise. They will receive gauges from all related stations and pass on to concerned quarters for necessary action.

7.14. **WIRELESS ARRANGEMENTS:**

The wireless sets will be provided by the **Deputy Commissioner or Superintendent Police,** Kasur before the coming flood season 2026.

CHAPTER -8

DETAIL OF ENCROACHMENTS

The flood bunds and spurs are constructed to train the river and to ensure safe passage of the flood water. During flood season, inhabitants of riverian area will evacuate their houses and take shelter on the flood bunds alongwith their animals. However, no encroachments exist on the river training works / flood bunds in Balloki Headworks Division. A certificate is added in this respect.

CERTIFICATE

Certified that no encroachment exist on flood protection works in Balloki Headworks Division.

Sub Divisional Officer
Headworks Sub Division
Balloki

Executive Engineer
Balloki Headworks Division
Balloki

Superintending Engineer
Lower Bari Doab Canal Circle
Sahiwal

Chief Engineer
Irrigation, Sahiwal Zone
Sahiwal

CHAPTER -9

DUTY ROSTER / FLOOD FIGHTING PROGRAMME

Duty roaster for establishment required for watching arrangements in 3 shifts round the clock will be under the control of Incharge Sub Engineer Headworks Section & Sub Engineer Dhaya Section. S.D.O Headworks will be the overall Incharge and will exercise/surprise/check in their respective jurisdiction.

DUTY ROASTER FOR WATCHING OF BUNDS AND SPURS AT BALLOKI HEADWORKS

(Left Marginal Bund and Allied Spurs)

(i)	Reach A	RD: 0- 13000 , LGB , Spur No. 1,2 & 8.	= 5.38 C- Miles
(ii)	Reach B	RD: 13000-28350 Spur No. 9 &Prong Spur RD:2000	= 5.08 C-Miles
(iii)	Reach C	Spur No. 7, Spur No. 7-A and Spur No. 7-B	= 8.76 C-Miles
		LBDC/R 0-23000	= **19.22 C- Miles**

Sub Divisional Officer	Sub Engineer H/Quarter	Mate/ Mistary	Reach	**NORMAL FLOOD (BELOW 40000 Cs)**		
				Watching Gang (Pt= permanent) (TY= Temporary)		
				1 Shift		
				Pt:	**Ty**	**TOTAL Ty**
Sub Divisional Officer H/works Sub Division.	Sub Engineer Dhaya Section.	Mistary Dhaya Section	Camp (i) Vulnerable	1	6	**6**
			Total	**1**	**6**	**6**
1 No Chowkidar during Normal flood level						
				LOW FLOOD 40000-65000 Cs		
Sub Divisional Officer H/works Sub Division.	Sub Engineer Dhaya Section.	Mistary Dhaya Section	Camp (i) Vulnerable	2	19	19
			Total	**2**	**19**	**19**
2 No Mate & 1 No Chowkidar during Low flood level						

Sub Divisional Officer H/works Sub Division.	Sub Engineer Dhaya Section.	Mistary Dhaya & Halla Sections	**MEDIUM TO HIGH FLOOD 65000-135000 Cs**					
				Shift-1		Shift-2		
			No of Camp	Pt	Ty	Pt	Ty	**Total Ty**
			Camp (i. V ii+iii-E)	4	34	4	34	**68**
			Total	**4**	**34**	**4**	**34**	**68**
3-No.Mate & 3 No. Chowkidar during Medium to High flood level								

Sub Divisional Officer	Sub Engineer H/Quarter	Mate/ Mistary	Reach	**VERY HIGH (135000-18000) TO EXCEPTIONALLY HIGH FLOOD (ABOVE) 180000 Cs** .						
				Watching Gang (Pt= permanent) (TY= Temporary)						
				1st Shift		**2nd Shift**		**3rd Shift**		**Total Ty**
			No of Camp	**Pt:**	**Ty**	**Pt:**	**Ty:**	**Pt:**	**Ty:**	
Sub Divisional Officer Akhtarabad Sub Division	SBE H/Plot Section SBE Hallah Section SBE Pakhi Section	Mistary & Halla Sections	Camp (i-V ii+iii+iv -E)	5	96	5	96	5	96	**288**
			Total	**5**	**96**	**5**	**96**	**5**	**96**	**288**
6 No. Mate & 4 No. Chowkidar during very High to Exceptionally High flood level										

DUTY ROASTER FOR WATCHING OF BUNDS AND SPURS AT BALLOKI HEADWORKS

(Right Marginal Bund and Allied Spurs)

Reach A RD:0-15000 , RGB, Spur No.,3 , 4& Prong 4. = 4.39 C- Miles

Reach B RD:15000-25400 Spur No. 6 ,5 &11 = 4.40 C- Miles

= **8.79 C- Miles**

Sub Divisional Officer	Sub Engineer H/Quarter	Mate/ Mistary	Reach	**NORMAL FLOOD (BELOW 40000 Cs)**		
				Watching Gang (Pt= permanent) (TY= Temporary)		
				1-Shift		
				Pt:	**Ty**	**TOTAL Ty**
Sub Divisional Officer H/works Sub Division.	Sub Engineer Headworks Section.	Mistary Dhaya Section	Camps V-(I +II)	1	5	**5**
			Total	1	5	**5**
02 No Chowkidar during Normal flood level						
				LOW FLOOD 40000-65000 Cs		
Sub Divisional Officer H/works Sub Division.	Sub Engineer Headworks Sec.	Mistary Dhaya Section	Camps V-I+II	2	8	8
			Total	**2**	**8**	**8**
02 No Chowkidar during Low flood level						
Sub Divisional Officer Akhtarabad Sub Division	SBE Khokhar Sec: SBE Bellewla Sec: SBE H.Plot Sec:	Mistary Dhaya Section	**MEDIUM TO HIGH FLOOD 65000-135000 Cs**			
			Camps V-I+II	Shift-1		Shift-2		
				Pt	Ty	Pt	Ty	**Total Ty**
				4	17	4	17	**34**
			Total	**4**	**17**	**4**	**17**	**34**
3 No. Mate & 2 No. Chowkidar during Medium to High flood level						

Sub Divisional Officer	Sub Engineer H/Quarter	Mate/ Mistary	Reach	**VERY HIGH (135000-18000) TO EXCEPTIONALLY HIGH FLOOD (ABOVE) 180000 Cs** .						
				Watching Gang (Pt= permanent) (TY= Temporary)						
				1st Shift		**2nd Shift**		**3rd Shift**		
			No of Camp	**Pt:**	**Ty**	**Pt:**	**Ty:**	**Pt:**	**Ty:**	**Total Ty**
TySub Divisional Officer Akhtarabad Sub Division	SBE Khokhar Sec: HQ at RD:5900 SBE Bellewala Sec: HQ at RD:9250 SBE H/Plot Sec: HQ at RD:17750 SBE Bellewala Sec: HQ at RD:19750	Mistary Dhaya Section	Camps V-I+II	5	42	5	42	5	42	126
			Total	**5**	**42**	**5**	**42**	**5**	**42**	**126**
6 No. Mate & 2 No. Chowkidar during Very High to Exceptionally High flood level										

Note:-

1. All the Sub Engineers will perform their duties assigned above alongwith their establishment and necessary T & P.
2. Executive Engineer, Balloki Headworks Division will be the overall Incharge of the whole operation during very high and exceptionally high flood.
3. However, the duties of remaining Sub Engineers of Balloki Headworks Division with their establishment will be called any time anywhere and at any point as desired and required by the SDO Incharge under intimation to Executive Engineer, Balloki Headworks Division; the Incharge of whole operation.

Sub Divisional Officer ,
Headworks Sub Division,
Balloki

Executive Engineer,
Balloki Headworks Division
Ballok

DETAIL & GOOGLE LOCATION OF FLOOD INFRASTRUCTURES IN BALLOKI HEDAWORKS DIVISION.

S. No.	Name of Structure	Off Take RD	Type	Goggle Coordinates	
				Longitude (In Decimals)	Latitude (In Decimals)
TEHSIL PATTOKI, DISTRICT KASUR					
BALLOKI HEADWORKS				**73.86000000**	**31.22000000**
TEHSIL NANKANA SAHIB, DISTRICT NANKANA SAHIB					
1	**Right Marginal Bund**			**73.85833333**	**31.22805556**
2	**Right Guide Bund**			**73.86215766**	**31.22603000**
a	Spur No. 3	4+279 RMB	T-Headed Now hockey	**73.86444444**	**31.23388889**
b	Spur No. 4	5+703 RMB	J-Head	**73.86944444**	**31.23916667**
c	Prong Spur No. 4		Mole Headed	**73.87472222**	**31.23611111**
d	Spur No. 6	10+113 RMB	-do-	**73.88305556**	**31.24916667**
e	Spur No. 5	17+750 RMB	-do-	**73.87861111**	**31.26611111**
f	Spur No. 11	21+600 RMB	-do-	**73.88361111**	**31.27222222**
TEHSIL PATTOKI, DISTRICT KASUR					
3	**Left Marginal Bund**	**0-13000**	**13000-28350**	**73.87583333**	**31.21194444**
4	**Left Guide Bund**			**73.85584900**	**31.22351600**
g	Spur No. 1	3+241 LMB	T-Head	**73.88305556**	**31.21861111**
h	Spur No. 2	8+555 LMB	-do-	**73.88888889**	**31.23111111**
i	Spur No. 8	12+644 LMB	-do-	**73.89638889**	**31.24027778**
j	Spur No. 9	19+672 LMB	Mole Headed	**73.91250000**	**31.25611111**
k	Prong Spur No. 9	2000/spur 9	J-Head	**73.91250000**	**31.25611111**
l	Spur No. 12	24100 LMB	Mole Headed	**73.93027778**	**31.24416667**
m	Spur No.7	9000/R LBDC	T-Headed	**73.84583333**	**31.20777778**
n	Spur No. 7-A	19500/R LBDC	Mole Headed	**73.82000000**	**31.20000000**
o	Spur No. 7-B	22-23/R of LBDC	J-Head	**73.80888889**	**31.19777778**
p	D/S Barrage LBDC Right side 0-23000			**73.85391800**	**31.19948400**

CHAPTER -10
EMERGENCY TELEPHONE NUMBERS

S.#	Description	Mobile	Office/Residence
A	**LAHORE D.D.CODE -042**		
	Secretary IRR: Lahore		99212118 99212117
	Additional Secy: Admin:		99212119 99212120
	Chief Engineer Drainage &Flood		99230602
	Director Flood Lahore		99231614 5431649
	Flood Warning Centre		99205368 9900139,153
B	**SAHIWAL (DD CODE 040)**		
	Chief Engineer, Irrigation, Sahiwal Zone, Sahiwal. Malik Sarfraz Khalid	0300-5459697	040-9200221
	Superintending Engineer LBDC Circle Sahiwal. Rana Tariq Saif	0333-4218413	040-9200210
	Executive Engineer (OP), Sahiwal Irrigation Zone,Sahiwal. Abdul Raheem Wattu	0300-7972382	
C	**KASUR (DD CODE 049)**		
	Executive Engineer, Headworks Balloki Zeeshan Abubakar	0335-7106238	4610300 4610399
	S.D.O. Headworks Sub Division Muhammad Afzal	0331-5017081	
	Deputy Commissioner, Kasur		9250143
	Superintendent Police, Kasur		9250137
	Add. District Commissioner: (G)		9250099
	Superintendent D.C. Office		9250120
	Executive Engineer Irrigation Kasur		9250201
	Assistant Commissioner, Pattoki		4424646
D	**NANKANA DD CODE -056**		
	Deputy Commissioner, Nankana		2877018
	Assistant Commissioner, Nankana		2877117
	Superintendent Police Nankana		2870101
	Superintendent D.C. Office		2877043
	District Officer (Rev)		2875582
E	**OKARA DD CODE- 044**		
	Deputy Commissioner, Okara		9200028
	Assistant Commissioner, Okara		9200255
	Superintendent Police, Okara		9200353
	Superintendent D.C. Office		9200257
	District Flood Relief Officer		9200251
	Executive Engineer LBDC Okara Division irrigation		9200147
F	**MISCELLANEOUS**		
	Chief Engineer Irrigation Multan		061-9200144
	Executive Engineer, Sidhnai		065-2441041
	SDO Akhtarabad at Renala Tariq Abbas	0322-4979689	0442-636018

CHAPTER -11

STANDARD OPERATING PROCEDURES (SOP) FOR BREACHING SECTIONS

11.1 HISTORY OF THE BREACHING SECTION:

There are two number of approved breaching sections. First one located between RD:48-49 of Madhudas Bund and 2nd at RD 11-12 of R.M.B. 2 No Sections having a length of 50 Ft at 200 Ft interval is to be ballast at each Breaching Section and will be breached when water level at RD:24+100 of LMB reaches 644.50 with reference to mean sea level and in rising position. There is shattered populated area just opposite the Breaching Section up to the outfall into River Ravi.

The operation of Breaching Section has to be done very carefully with prior warning to the inhabitants of the area.These breaching sections were operated during the year 1950, 1955, 1973, 1975, 1978 and 1988.First of all, the spill water passing through the breaching section will cross through the existing cut made in abandoned UCC, then it will cross Balloki-More Khunda Road at 3-4 places in reach RD 0-1, 1-2 and 2-3 Km. The top RL of this road is higher than the R.L of N.S.L varying from 8-10 feet.

The following strategy is proposed to combat the flood situation in case the breaching section is operated:

11.2 LOCATION, DESIGN, QUANTITY, AND VARIETY OF THE EXPLOSIVE REQUIRED FOR DETONATION:

Design of Breaching Section has been revised due to rehabilitation work on Right Marginal Bund and Madhudas Bund. Available and required quantity as per new revised breaching scheme is as under: -

Sr. NO.	Name of Explosive/Accessories	Unit	QTY Required	QTY Available	Balance QTY required	Remarks
1	Wax box	Kg	4124	4124	0	Required material is already procured and available for flood season 2026.
2	EI Cable	Mtr	6400	6400	0	
3	Detonator No.8(Plain)	No.	36	36	0	
4	Delay Detonator MS 5M	No.	12	12	0	
5	Lehr Detonator GD /MS 5M	No.	16	16	0	
6	Safety FuseNo.11	Mtr	455	455	0	
7	Detonating Cord	Mtr	4400	4400	0	
8	Blasting machine	No.	02	02	0	

11.3 ARRANGEMENT OF EXPLOSIVES AND SECURITY OF EXPLOSIVE STORES:

Explosive store is located at Lahore in the supervision of Army Authority, which will be shifted at site (Balloki Headworks) during the flood season as per schedule.

11.4 LIST OF SECURITY STAFF ALONGWITH DETAIL OF THE TRAINING ETC.

Sub Divisional Officer, Headworks Sub Division alongwith Sub-Engineer;

Headworks Section has got the training for the operation of Breaching section.

11.5 DETAIL OF MECHANICAL MEANS AS A STANDBY ARRANGEMENTS IN CASE OF DETONATION FAILURE:

Minimum Machinery Requirements at Breaching Section

As per recommendations /Report of the committee for finalization of Machinery & Human Recourses requirements for flood Fighting Plan (FFP) constituted by the Administrative Department vide No.SO (Floods) VII-22/2017 dated 13.02.2026 received through Chief Engineer Irrigation Sahiwal Zone letter NoCE/IRRI/SWL/D.B/2026/1790-92 dated 19.02.2026 as well as Superintending Engineer Lower Bari Doab Canal Circle Sahiwal endorsement letter No. 563-65 dated 21.02.2026. that

"At each breaching section, there should be an arrangement of two (2) excavators, one (1) dozer, and three (3) dumpers at exceptionally high flood levels "

Name of Vehicle	Demanded	Available	Remarks
Excavator	2	2	Available on hiring through contractor keeping in the flood levels
Dozer	1	1	
Dumper	3	3	

2 Nos. Mechanics and 4 No Helpers will be engaged when the discharge increases, beyond 1,35,000 Cs for as under machineries.

11.6 DUTY ROSTER IN CASE OF CRITICAL SITUATION:

As above chapter No.9

11.7 BREACHING COMMITTEE WITH THEIR ACTION PLAN:

For the activation of Breaching Section, critical gauge is fixed at RD 24+100 of LMB when the water level reaches the level of 644.50 and is in rising position. The first breaching section at Madhudas bund located at RD:48-49 is operated. If the first breach fails to give the relief then 2nd breaching section located at RD 11-12 of R.M.B is operated.

- It is estimated that a discharge of about 1.0 Lac Cs will pass through the breaching sections if operated.
- These breaching sections were operated during the year 1950, 1955, 1973, 1975, 1978 and 1988.

The committee comprising of the following members vide Notification No.SO(FLOODS)VI-33/97 Dated 15.07.2015 will give the signal to activate the Breaching Section.

- Deputy Commissioner (Convener)
- Representative of the Army. (Member)
- Executive Engineer Irrigation (Balloki Headworks Division) (Member)
- Executive Engineer C&W (Member)

This committee on attaining the critical level i.e 644.50 at RD:24+100 LMB will inform the Zonal Committee constituted as under for activation of Breaching Section:

- Chief Engineer, Irrigation, Sahiwal Zone, Sahiwal (Chairman)
- Commander Engineer 4-Corps (Member)
- Deputy Commissioner, District Nankana Sahib (Member)

On receipt of Signal from Zonal Committee, the Breaching Operating Committee will implement the decision.

11.8 LIST OF THE VILLAGES LIKELY TO BE INUNDATED IN CASE OF BREACH:

Name of village	District	Tehsil	Area in Acres	Population
Maliwal	**Nankana Sahib**	Nankana Sahib	1392	1027
Haft Madar	**Nankana Sahib**	Nankana Sahib	4801	3678
Wazir Pur	**Nankana Sahib**	Nankana Sahib	663	1829
Khakh	**Nankana Sahib**	Nankana Sahib	997	1207
Dhuddian	**Nankana Sahib**	Nankana Sahib	1133	1518
Shouket Abad	**Nankana Sahib**	Nankana Sahib	997	927
Qilla Noor Pur	**Nankana Sahib**	Nankana Sahib	1310	1539
Jatri	**Nankana Sahib**	Nankana Sahib	1565	2327
Kot Tahir	**Nankana Sahib**	Nankana Sahib	4351	3056
Chained pur	**Nankana Sahib**	Nankana Sahib	4804	4540
		Total	**21,903**	**21,048**

11.9 ANNOUNCEMENT AND DETAIL OF EVACUATION ARRANGEMENTS:

Executive Engineer, Balloki Headworks Division will inform

- The **D.C's** to make arrangement for the evacuation of the Public withinLMB and RMB and the population coming on route of spill water.
- **Military Authorities** to keep ready for emergency operation.
- **Police Authorities** to watch that no unauthorized cuts are made by public especially along LMB & RMB.
- **Engineers 4-Corps** for energizing the Breaching Section, when water Level approaches 644.50 Mark at the emergency gauge installed at RD 24+100 LMB

11.10 DETAILS OF COORDINATION WITH CIVIL/ARMY AUTHORITIES:

There are two no. of breaching sections located at RD:11-12 Right Marginal Bund and at RD:48-49 Madhudas Bund approved vide the **Secretary Irrigation & Power Department Lahore Memo No.110/F-C-75/410-15/64/75.**There is a critical gauge fixed at RD:24+100 of LMB when its level reaches to 644.50 and is in raising position, the breaching sections will be operated. These will be operated with the help of Army as per standing instructions laid down in the above-mentioned letter. The floodwater escaping through breaching section will flow through the old course of the River and rejoin D/S Balloki Barrage. With the operation of Breaching Section following communication will be disrupted.

1. Metaled Road linking Balloki Headworks to More Khunda will be dis-connected. Lahore – Sharqpur – Jaranwala and Faisalabad Road can be disconnected.
2. Towers of High Transmission Lines are likely to be affected.
3. Telephones in between Balloki Headworks to More Khunda are likely to be disrupted.

First priority for operation of Breaching Sections will be given to Site at RD:48-49 Madhudas Bund and then Breaching Site at RD:11-12 of R.M.B will be operated.

It is the duty of the Executive Engineer, Balloki Division to inform the following Officers before operating the Breaching Section: -

1. The Secretary, Government of the Punjab, Irrigation Department, Lahore.
2. The Project Director, PMU, LBDC-IP Lahore.
3. The Chief Engineer, Irrigation, Sahiwal Zone, Sahiwal.
4. The Chief Engineer, Irrigation, Multan Zone, Multan.
5. The Chief Engineer, Irrigation, Lahore Zone, Lahore.
6. The Chief Engineer, Irrigation, Faisalabad Zone, Faisalabad.
7. The Flood Relief Commissioner, Lahore.
8. The Chief Engineer, Drainage and Flood Zone, Lahore.
9. The Commander, Headquarter Engineers, 4- Corps, Lahore.
10. The Commanding Officer, 173- Engineers, Lahore Cantt.
11. The Director Floods, Lahore.
12. The D.C, Kasur.
13. The D.C, Nankana.
14. The D.C, Okara.
15. The D.P.O, Kasur.
16. The D.P.O, Sheikhupura.
17. The D.P.O, Okara.

18. The A.C, Pattoki.
19. The A.C, Nankana Sahib.
20. The A.C, Jaranwala.
21. The Executive Engineer, Okara Division LBDC, Okara.
22. The Executive Engineer, Sahiwal Division LBDC, Sahiwal.
23. The Executive Engineer, Khanewal Division LBDC, Khanewal.
24. All Sub Divisional Officers, on watching.
25. All Sub Engineers on duty at Balloki Headworks.
26. The Executive Engineer, Electricity (LESCO), Chunian.
27. The Executive Engineer, Highway Division Bridges,Okara.
28. Telephone and Telegraph Department, Kasur.
29. The District Health Officer, Kasur.
30. Pakistan Broadcasting Corporation.

11.11 PARALLEL COMMUNICATION ARRANGEMENTS:

In addition to installation of Wireless Set at Balloki Headworks, some temporary connection will be arranged at right side of the Barrage as well as at field office where all the Officers/Officials generally will meet together to chalk out further programs. One supervisor of T & T Department will remain available at the site for proper control and operation of all this system.

TIME LAG FROM BREACHING SECTIONS FOR SPILLING OUT OF WATER:

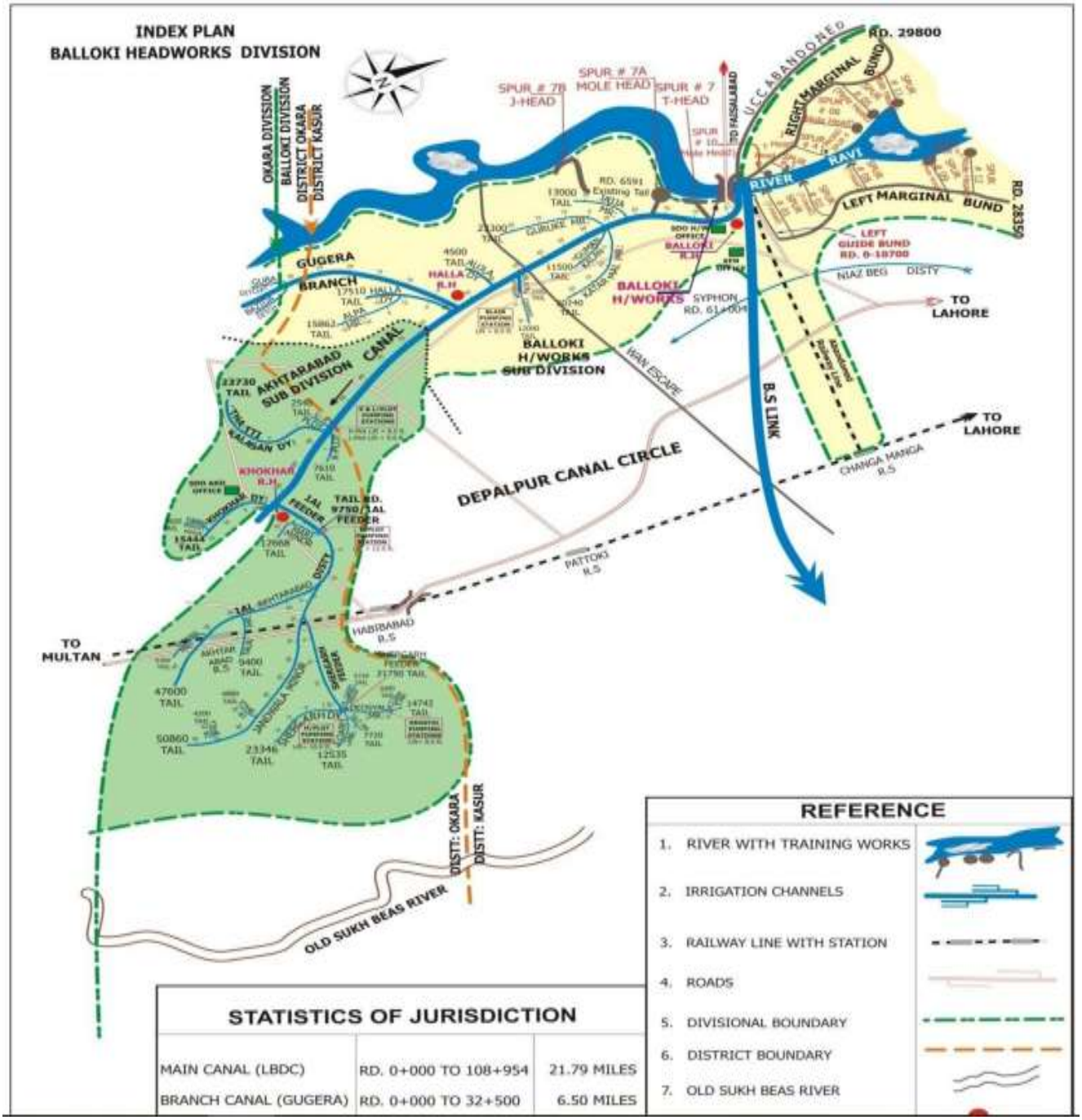
There are two number of breaching sections. One at RD:48-49 of Madudas Bund and second at RD:11-12 of RMB. Firstly, the Breaching Section of Madudas Bund is operated and then the second at R.M.B will be operated as per requirement. Time Lag from first Breaching Section is about 2 Hours and from second it is almost 1 hour.

Sub Divisional Officer
Headworks Sub Division
Balloki.

,

Executive Engineer
Balloki Headworks Division
Balloki.

11.12 INDEX PLAN:



PLAN OF BREACHING SECTION
RD 48-49 MADHU DAS BUND
U/S OF BALLOKI HEADWORKS
3 NO. SECTIONS OF 50 FT. LENGTH AT 200 FT. INTERVAL
5" DIA. PIPE 5' LONG
5" DIA. PIPE 7' LONG
5" DIA. PIPE 7' LONG
5" DIA. PIPE 5' LONG
8 ft.
8 ft.
TOP OF BUND
20 FT.
TOP WIDTH
37 FT. &
BED WIDTH
3 FT.
WETTING CHANNEL
50 ft

PART - B

CHAPTER-12

VULNERABLE SITES ON FLOOD BUNDS /STRUCTURES

12.1 APPREHENDED BREACHES IN FLOOD BUNDS/STRUCTURES:

The following reaches are under direct hit of parallel flow that required extra arrangements of watching of Flood Fighting Material at the following sites.

1. RD 11000-12000 OF RMB
2. RD 24000-25000 OF RMB
3. RD 12000-13000 OF LMB

12.2 OPERATION OF BREACHING SECTION

Breaching section will be operated by Engineers 4 Corps.

12.3 BREACHES DUE TO RISE OF FLOOD WATER, DETERIORATION OF FLOOD BUNDS

Breaches due to rise of Flood of water, deterioration of flood bunds will be controlled and maintained by the Department.

CHAPTER-13

EMERGENCY CONTINGENCY PLAN FOR VULNERABLE SITES LISTED ABOVE.
EMERGENCY CONTINGENCY PLAN MUST INCLUDE

PLAN NO 1

RD 11000-12000 OF RMB

13.1 PLAN SHOWING ROUTE OF FLOOD WATER COMING OUT OF THE BREACH SUPPORTED WITH LEVELS:

PLAN ATTACHED

13.2 DETAIL OF VILLAGES ABBADEIS LIKELY TO BE AFFECTED AND THIS SHOULD ALSO BESHOWN ON THE PLAN:

1 Showkat abad colony
2 Jatri
3 Thatta
4 chitti

13.3 STRATEGY AND ACTION TAKEN BE EXPLAINED IN DETAIL

THIS MAY INCLUDE:

The following arrangements /strategy will be adopted. Though all precautionary measures are adopted before flood season to face any alarming situation at Balloki Headworks, even then arrangements are necessary to avoid heavy damages and flood fighting strategy is adopted in such a way that flood water passes safely through Barrage, up to its limit. In low flood, river water remains within the deep channel and do not cause any problem, if regulation of gates is done as per rules. Watching establishment employed for this purpose will remain busy in removing jungle, filling gharas and porcupine holes if any. When water increases beyond sixty thousand cusecs it will start spreading on adjoining area and also touching the toe of bunds. Then it becomes necessary to be vigilant and watching of bunds will be started to avoid any leakage from bunds. Sub Engineers will shift their camps to sites as per duty roaster. Hourly gauges and discharges will be conveyed to civil administration and flood warning centers to inform public accordingly. When river water enters into high flood range, Sub Divisional Officer Akhtarabad will shift his camp at Balloki to supervise staff working on LMB and D/S spurs. In whole period regulation will be done in such a way that silt deposit in front of canals may be washed D/S of the river to minimize silt entry in to canals. Silt contents in water will be checked thrice a day and if it exceeds the permissible limit, canals will be closed accordingly. Gauges of different sites especially gauge at RD:24+100 of LMB will be noted regularly and recorded. Executive Engineer, Balloki Headworks Division will inform all agencies especially civil administration as well as Army about flood situation in rising position. In case of very high flood or exceptionally high flood, meeting will be held in field office with Army and Civil Administration to face the situation. 2 Nos. dozers will be kept ready each site at RD 11-12, 24-25 RMB and RD 12-13/LMB for making cuts and closing breaches as and when required according to the circumstances.

13.3.1 ARRANGEMENTS:

The following arrangements will be made

13.3.2 ESTABLISHMENT OF FLOOD FIGHTING CAMPS:

Flood fighting camp will be established at RD 10+000-11+000 of RMB.

13.3.3 DUTIES OF OFFICERS/OFFICIALS AND THEIR CAMP SITES:

Sub Engineer Headworks section will be Incharge of the camp site.
The following staff will be at the camp site

Camp No.	Location	Officer Name & Designation	Official Name & Designation
1	RMB RD:11-12	M.Afzal ,SDO H/W Sub Divn: Balloki Contact No. (0331-5017081)	Tariq Mehmood SBE at H/W Section (0345-7516082)
2	RMB RD:24-25	M.Afzal ,SDO H/W Sub Divn: Balloki Contact No. (0331-5017081)	Tariq Mehmood SBE at H/W Section (0345-7516082)
3	LMB RD:12-13	M.Afzal ,SDO H/W Sub Divn: Balloki Contact No. (0331-5017081)	Shahzad Umar SBE Dhaya Section (0345-6405013)

13.3.4 DEPARTMENTAL MACHINERY AVAILABLE:

Not available

13.3.5 MACHINERY AVAILABLE FROM PRIVATE SOURCE:

The following machinery can be made available Jamshed Construction Company maintaining his office at Balloki village. The detail of machinery is as under:-

A: Excavator
B: Tractors with Trolleys
C: Dozers.

13.3.6 FLOOD FIGHTING MATERIAL REQUIRED

13.3.7 FLOOD FIGHTING MATERIAL AVAILABLE

Minimum requirement of Flood Fighting Materials for Permanent Camp (15 miles)

Sr. No	Item	Unit	Total Required Quantity	Available Quantity	Balance Quantity
1	Shouldari/Tent	No	01	0	01
2	Chairs	No	06	0	06
3	Table	No	01	0	01
4	Generator (2-3 KVA)	No	01	0	01
5	Pedestal Fans	No	01	0	01
6	Charpois	No	02	0	02
7	Symbolic Jackets	No	50	0	50
8	Polyethylene Sheet	Kg	100	0	100
9	Bamboos (4" dia and 10 ft long)	No	100	0	100
10	Water Cooler	No	01	0	01
11	Portable Umbrella	No	02	0	02
12	Life Jackets	No	05	0	05
13	Utensils (10 person serving)	No	01	0	01

14	14. Jute/Plastic bags	No	1000	0	1000
15	Walkie Talkie Set	Sets	02	0	02
16	16. Raincoats	No	10	0	10
17	LED flood light	No	10	0	10
18	Extension Cable (10 ft)	No	02	0	02
19	Rechargeable torches	No	20	10	10
20	Kassi	Kg	20	10	10
21	Axes	No	20	0	20
22	G.I. Buckets	No	05	05	0
23	7/44 cable	Feet	500	0	500
24	Sutli	Kg	02	0	02
25	Sewing Needles	No	10	0	10
26	Emergency Medical Kit	No	1	0	01
27	Wire crates (3x3x3) (only at those camps near river action and where reserve stock exists)	No	100	0	100

Note:- A little Quantity of some items of T&P articles is available mostly items have been used during flood 2025 & balance Quantity will be purchased before flood 2026

XEN/BLK

PLAN NO 1

Color

PLAN NO 1
RD 11000-12000 OF RMB
DISTRICT KASUR
DISTRICT NANKANA SAHIB
BALLOKI BARRAGE
LEGEND
33

PLAN NO 2
RD 24000-25000 OF RMB

13.1 PLAN SHOWING ROUTE OF FLOOD WATER COMING OUT OF THE BREACH, SUPPORTED WITH LEVELS:

PLAN ATTACHED

13.2 DETAIL OF VILLAGES ABBADEIS LIKELY TO BE AFFECTED AND THIS SHOULD ALSO BE SHOWN ON THEPLAN:

1 Dhudian
2 Killa mohkam Singh
3 Hafat Maddar

13.3 STRATEGY AND ACTION TAKEN BE EXPLAINED IN DETAIL. THIS MAY INCLUDE:

The following arrangements /strategy will be adopted. Though all precautionary measures are adopted before flood season to face any alarming situation at Balloki Headworks, even then arrangements are necessary to avoid heavy damages and flood fighting strategy is adopted in such a way that flood water passes safely through Barrage, up to its limit. In low flood, river water remains within the deep channel and do not cause any problem if regulation of gates is done as per rules. Watching establishment employed for this purpose will remain busy in removing jungle, filling gharas and porcupine holes if any. When water increases beyond sixty thousand cusecs it will start spreading on adjoining area and also touching the toe of bunds. Then it becomes necessary to be vigilant and watching of bunds will be started to avoid any leakage from bunds. Sub Engineers will shift their camps to sites as per duty roaster. Hourly gauges and discharges will be conveyed to civil administration and flood warning centers to inform public accordingly. When river water enters into high flood range, Sub Divisional Officer Akhtarabad will shift his camp at Balloki to supervise staff working on LMB and D/S spurs. In whole period regulation will be done in such a way that silt deposit in front of canals may be washed D/S of the river to minimize silt entry in to canals. Silt contents in water will be checked thrice a day and if it exceeds the permissible limit, canals will be closed accordingly. Gauges of different sites especially gauge at RD:24+100 of LMB will be noted regularly and recorded. Executive Engineer, Balloki Headworks Division will inform all agencies especially civil administration as well as Army about flood situation in rising position. In case of very high flood or exceptionally high flood, meeting will be held in field office with Army and Civil Administration to face the situation. 2 Nos dozers will be kept ready each site at RD:11-12, 24-25 RMB and RD:12-13/LMB for making cuts and closing breaches as and when required according to the circumstances.

13.3.1 ARRANGEMENT:

The following arrangements will be made

13.3.2 ESTABLISHMENT OF FLOOD FIGHTING CAMPS:

Flood fighting camp will be established at RD 23000-24000 of RMB.

13.3.3 DUTIES OF OFFICERS / OFFICIALS AND THEIR CAMP SITES:

Sub Engineer Headworks Section will be Incharge of the camp site. Sub Divisional Officer and Executive Engineer will watch this camp site regularly along with other camp sites. The following staff will be at the camp site: -

Sector	Officer In-charge	Staff	Reach to be controlled /Location
1	**Muhammad Afzal** SDO Headworks Sub Division Cell: 0331-5017081	**Rao Tariq Mehmood** SBE at H/W Sec: (0345-7516082)	RMB RD:11-12
		Muhammad Arif SBE at Halla Sec: (0300-2288085)	RMB RD:24-25
		Shahzad Umar SBE Dhaya Sec: (0345-6405013)	LMB RD:12-13

13.3.4 DEPARTMENTAL MACHINERY AVAILABLE:

Not available

13.3.5 MACHINERY AVAILABLE FROM PRIVATE SOURCE:

The following machinery can be made available Jamshed Construction Company maintaining his office at Balloki village is reliable source for hiring the Machinery. The detail of machinery is as under: -

A: Excavators
B. Trolleys
C. Dumpers
D: Tractors with front blade
C: Dozers

13.3.6 FLOOD FIGHTING MATERIAL REQUIRED

13.3.7 FLOOD FIGHTING MATERIAL AVAILABLE

Minimum requirement of Flood Fighting Materials for Permanent Camp (15 miles)

Sr. No	Item	Unit	Total Required Quantity	Available Quantity	Balance Quantity
1	Shouldari/Tent	No	01	0	01
2	Chairs	No	06	0	06
3	Table	No	01	0	01
4	Generator (2-3 KVA)	No	01	0	01
5	Pedestal Fans	No	01	0	01
6	Charpois	No	02	0	02
7	Symbolic Jackets	No	50	0	50
8	Polyethylene Sheet	Kg	100	0	100
9	Bamboos (4" dia and 10 ft long)	No	100	0	100
10	Water Cooler	No	01	0	01
11	Portable Umbrella	No	02	0	02
12	Life Jackets	No	05	0	05
13	Utensils (10 person serving)	No	01	0	01
14	14. Jute/Plastic bags	No	1000	0	1000
15	Walkie Talkie Set	Sets	02	0	02
16	16. Raincoats	No	10	0	10
17	LED flood light	No	10	0	10
18	Extension Cable (10 ft)	No	02	0	02
19	Rechargeable torches	No	20	10	10
20	Kassi	Kg	20	10	10
21	Axes	No	20	0	20
22	G.I. Buckets	No	05	05	0
23	7/44 cable	Feet	500	0	500
24	Sutli	Kg	02	0	02
25	Sewing Needles	No	10	0	10

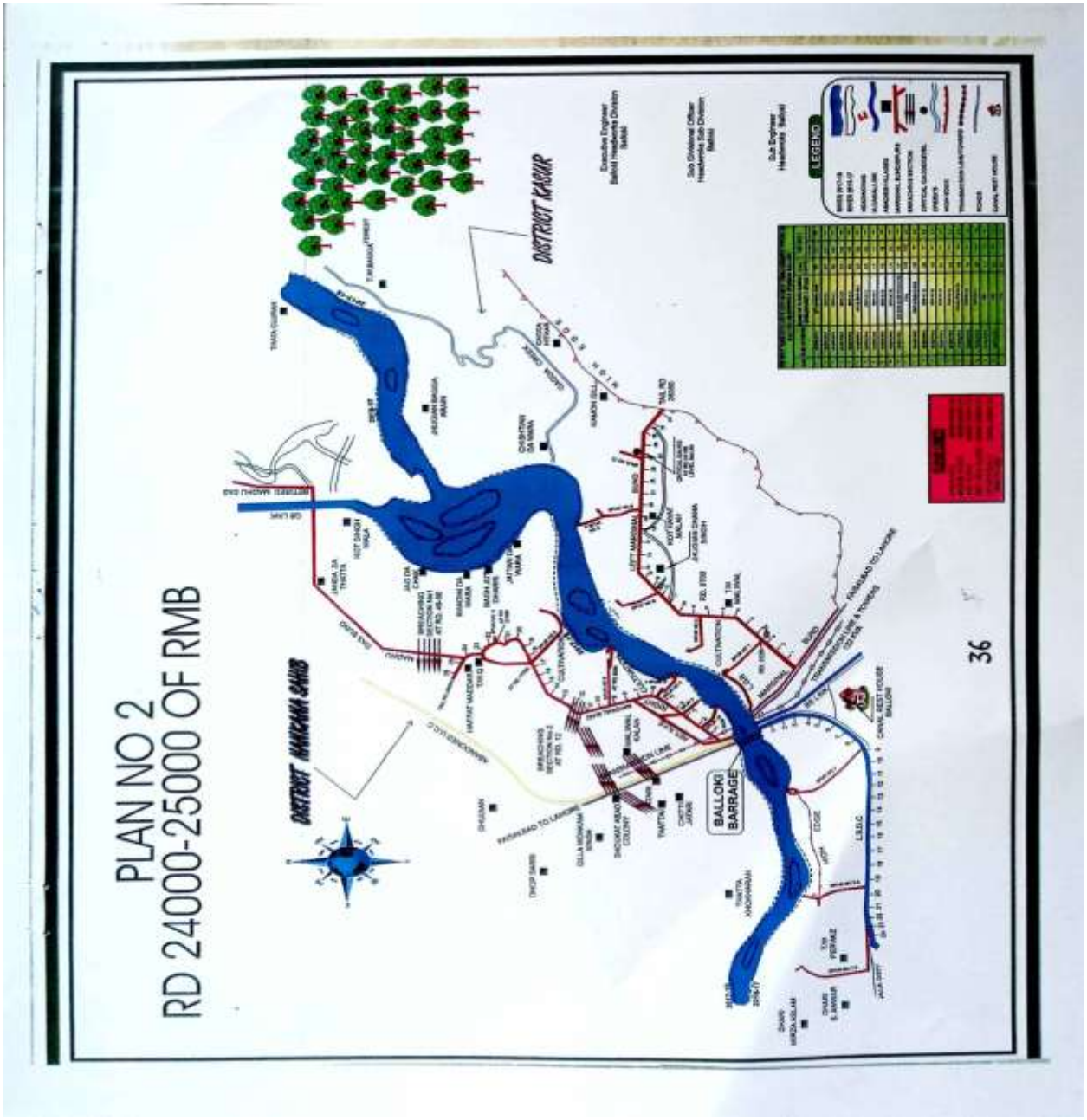
26	Emergency Medical Kit	No	1	0	01
27	Wire crates (3x3x3) (only at those camps near river action and where reserve stock exists)	No	100	0	100

Note:- A little Quantity of some items of T&P articles is available mostly items have been used during flood 2025 & balance Quantity will be purchased before flood 2026

XEN/BLK

PLAN NO 2

Color



PLAN NO.3
RD 12000-13000 OF LMB

13.1 PLAN SHOWING ROUTE OF FLOOD WATER COMING OUT OF THE BREACH, SUPPORTED WITH LEVELS:

PLAN ATTACHED

13.2 DETAIL OF VILLAGES ABBADEIS LIKELY TO BE AFFECTED AND THIS SHOULD ALSO BE SHOWN ON THE PLAN:

1 Kot Hayat Malah
2 Jhugian Dhana singh
3 Maliwal

13.3 STRATEGY AND ACTION TAKEN BE EXPLAINED IN DETAIL. THIS MAY INCLUDE:

The following arrangements /strategy will be adopted. Though all precautionary measures are adopted before flood season to face any alarming situation at Balloki Headworks, even then arrangements are necessary to avoid heavy damages and flood fighting strategy is adopted in such a way that flood water passes safely through Barrage, up to its limit. In low flood, river water remains within the deep channel and do not cause any problem if regulation of gates is done as per rules. Watching establishment employed for this purpose will remain busy in removing jungle, filling gharas and porcupine holes if any. When water increases beyond sixty thousand cusecs it will start spreading on adjoining area and also touching the toe of bunds. Then it becomes necessary to be vigilant and watching of bunds will be started to avoid any leakage from bunds. Sub Engineers will shift their camps to sites as per duty roaster. Hourly gauges and discharges will be conveyed to civil administration and flood warning centers to inform public accordingly. When river water enters into high flood range, Sub Divisional Officer Akhtarabad will shift his camp at Balloki to supervise staff working on LMB and D/S spurs. In whole period regulation will be done in such a way that silt deposit in front of canals may be washed D/S of the river to minimize silt entry in to canals. Silt contents in water will be checked thrice a day and if it exceeds the permissible limit, canals will be closed accordingly. Gauges of different sites especially gauge at RD:24+100 of LMB will be noted regularly and recorded. Executive Engineer, Balloki Headworks Division will inform all agencies especially civil administration as well as Army about flood situation in rising position. In case of very high flood or exceptionally high flood, meeting will be held in field office with Army and Civil Administration to face the situation. 2 Nos dozers will be kept ready each site at RD 11-12,24-25 RMB and RD:12-13/LMB for making cuts and closing breaches as and when required according to the circumstances.

13.3.1 ARRANGEMENT:

The following arrangements will be made.

13.3.2 ESTABLISHMENT OF FLOOD FIGHTING CAMPS:

Flood fighting camp will be established at RD 23000-24000 of RMB.

13.3.3 DUTIES OF OFFICERS / OFFICIALS AND THEIR CAMP SITES:

Sub Engineer Halla Section will be Incharge of the camp site.

The following staff will be at the camp site

Sr. No.	Designation	No.
1	Sub Engineer Roa Tariq Ali	1 No.
2	Mate Muhammad Ali	1 No.
3	Beldar	40 No's

13.3.4 DEPARTMENTAL MACHINERY AVAILABLE:

Not available

13.3.5 MACHINERY AVAILABLE FROM PRIVATE SOURCE:

The following machinery can be made available Jamshed Construction Company maintaining his office at Balloki village. The detail of machinery is as under:-

A: Excavator
B: Tractors with Trolleys
C: Dozers

13.3.6 FLOOD FIGHTING MATERIAL REQUIRED

13.3.7 *Flood fighting material available*:

Minimum requirement of Flood Fighting Materials for Permanent Camp (15 miles)

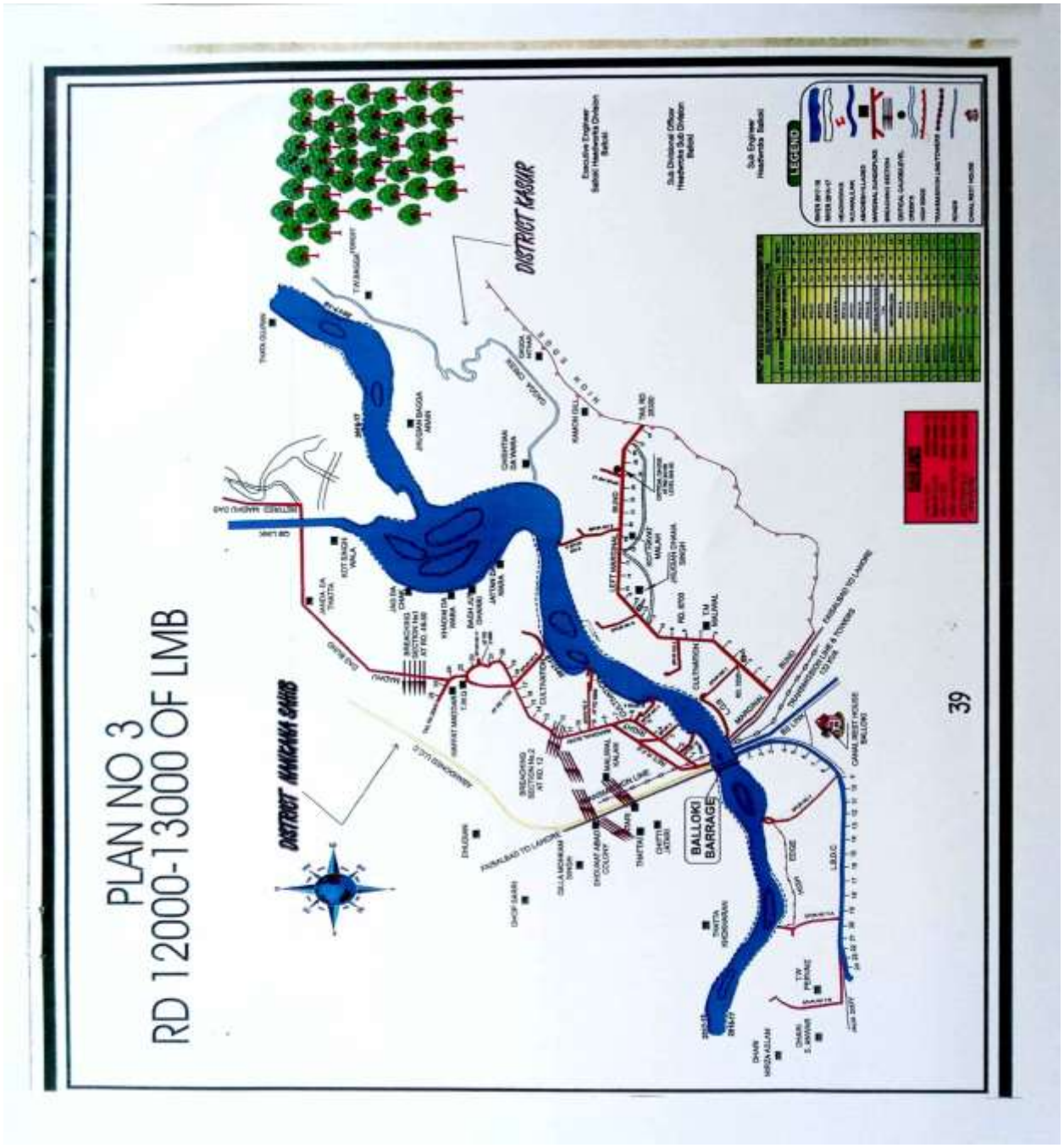
Sr. No	Item	Unit	Total Required Quantity	Available Quantity	Balance Quantity
1	Shouldari/Tent	No	01	0	01
2	Chairs	No	06	0	06
3	Table	No	01	0	01
4	Generator (2-3 KVA)	No	01	0	01
5	Pedestal Fans	No	01	0	01
6	Charpois	No	02	0	02
7	Symbolic Jackets	No	50	0	50
8	Polyethylene Sheet	Kg	100	0	100
9	Bamboos (4" dia and 10 ft long)	No	100	0	100
10	Water Cooler	No	01	0	01
11	Portable Umbrella	No	02	0	02
12	Life Jackets	No	05	0	05
13	Utensils (10 person serving)	No	01	0	01
14	14. Jute/Plastic bags	No	1000	0	1000
15	Walkie Talkie Set	Sets	02	0	02
16	16. Raincoats	No	10	0	10
17	LED flood light	No	10	0	10

18	Extension Cable (10 ft)	No	02	0	02
19	Rechargeable torches	No	20	10	10
20	Kassi	Kg	20	10	10
21	Axes	No	20	0	20
22	G.I. Buckets	No	05	05	0
23	7/44 cable	Feet	500	0	500
24	Sutli	Kg	02	0	02
25	Sewing Needles	No	10	0	10
26	Emergency Medical Kit	No	1	0	01
27	Wire crates (3x3x3) (only at those camps near river action and where reserve stock exists)	No	100	0	100

Note:- A little Quantity of some items of T&P articles is available mostly items have been used during flood 2025 & balance Quantity will be purchased before flood 2026

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PLAN NO 3


PLAN NO 3
RD 12000-13000 OF LMB
DISTRICT KASUR
DISTRICT NANKANA SAHIB
BALLOKI BARRAGE
LEGEND
39

13.4 DETAIL OF OTHER INFRASTRUCTURE LIKE ELECTRIC, SUIGAS, TELEPHONE INSTALLATION, ROAD NETWORK, OTHER BUILDING, CANAL AND DRAINAGE NETWORK:

ROUTE PLAN NO. 1
RD:11000-12000 OF RMB

i Phool Nagar –More Khunda Road
ii. Electric Transmission Line
. iii Pipeline of SuiGas

ROUTE PLAN NO. 2
RD:24000-25000 OF RMB

i Phool Nagar –More Khunda Road
ii. Electric Transmission Line
. iii Pipeline of Sui Gas

ROUTE PLAN NO. 3
RD:12000-13000 OF LMB

i Phool Nagar –More Khunda Road
ii. Electric Transmission Line = 02 Nos.
. iii Pipeline of Sui Gas 36" = 02 Nos.

Sub Divisional Officer
Headworks Sub Division
Balloki

Executive Engineer
Balloki Headworks Division
Balloki

Superintending Engineer
Lower Bari Doab Canal Circle
Sahiwal

Chief Engineer
Irrigation, Sahiwal Zone
Sahiwal

Chapter-14
ACTION PLAN

14.1 Re-shuffling/Recouping plan of reserve stone departmentally

Detail of Re-shuffling/Recouping plan is as under:

Sr. No	Name of Structure	Sanctioned limit of reserve stock (Lac Cft)	Available quantity (in Lac Cft)	Deficient Quantity (in Lac Cft)	Remarks
1	**2**	**3**	**4**	**5 (3-4)**	**6**
1	Near LGB U/S old RMB	0.50	0.378	0.122	Available at Sr.3
2	Left Guide Bank D/S	0.50	0.213	0.287	Available at Sr.3
3	Right Guide Bank U/S	0.50	1.067	-0.567	Excess
4	RGB D/S	0.50	0.221	0.279	Available at Sr.3
5	Right Marginal Bund	0.00	0.500	-0.50	Excess
6	Spur No.3 RD.4+279 RMB	0.30	0.208	0.09	Available at Sr.3
7	Spur No.4 RD.5+703 RMB	1.00	0.555	0.45	Stone Required
8	Spur No.4 Prong	0.50	0.000	0.50	Available at Sr.5
9	Spur No.6 RD.10+113 RMB	0.50	0.260	0.240	Stone Required as 27103 Cft Qty: used during flood 2025
10	Spur No.5 RD.17+750 RMB	0.50	0.526	-0.03	Excess
11	Spur No.11 RD.21+600 RMB	0.30	0.099	0.20	available at Sr.12 but No Space for stock at this Spur
12	Left Marginal Bund	0.00	0.318	-0.32	Excess
13	Spur No.1 RD.3+241 LMB	0.30	0.500	-0.20	Excess
14	Spur No.2 RD.8+555 LMB	0.50	0.298	0.202	Stone Required
15	Spur No.8 RD.12+644 LMB	0.50	0.449	0.05	Available at Sr.12
16	Spur No.9 RD.19+672 LMB	0.60	0.428	0.17	Available at Sr.12
17	Prong Spur No.9 RD 2+000 of Spur No.9			0.00	
18	Spur No.12 RD.24+100 LMB	0.30	0.296	0.00	Available at Sr.22
19	Spur No.7 RD.9+000/R LBDC	**0.30**	0.437	-0.14	Excess
20	Spur No.7A RD.19+500/R LBDC	**1.00**	0.086	0.914	Stone Required
21	Spur No.7B RD.22-23/R LBDC	**1.00**	0.558	0.442	Some Stone Required other available at Sr.22
22	Right Bank LBDC	**0.00**	0.371	-0.37	Excess
OVERALL TOTAL		**9.600**	**7.768**	**1.832**	**For 100 % Recouping**

XEN/BLK

14.2 Detail of inlet/outlet crossing alongwith closing methodology

There is no inlet/outlet crossing in River Training works of Balloki Headworks Divisio

DEPLOYMENT OF MACHINERY

Machinery Camps and Watching Establishment Requirements by Flood Level:

As per recommendations /Report of the committee for finalization of Machinery & Human Recourses requirements for flood Fighting Plan (FFP) constituted by the Administrative Department vide No.SO (Floods) VII-22/2017 dated 13.02.2026 following criteria will be adopted in Flood Fighting plan.

<table>
<tr><th>Flood Level</th><th>Flood Camp</th><th>Excavators</th><th>Trolleys</th><th>Dumpers</th><th>Tractor with Front Blade</th><th>Beldars (per mile)</th><th>Mate</th></tr>
<tr><td>Normal</td><td rowspan="2">1 per 15 mile reach</td><td colspan="2" rowspan="2">As per recommendations (ii)</td><td rowspan="2">-</td><td rowspan="2">1 per 15 mile reach</td><td>1 person/2 mile (1 shift)</td><td rowspan="4">1 mate per 12 beldars</td></tr>
<tr><td>Low</td><td>1 person/ mile (1 shift)</td></tr>
<tr><td>Medium</td><td rowspan="2">1 per 7 mile reach</td><td rowspan="2">1 per 7 mile reach</td><td rowspan="2">4 per 7 mile reach</td><td rowspan="2">2 per 7 mile reach</td><td rowspan="2">1 per 7 mile reach</td><td rowspan="2">2person/mile/ shift (2 shift)</td></tr>
<tr><td>High</td></tr>
<tr><td>Very High</td><td rowspan="2">1 per 5 mile reach</td><td>1 per 5 mile reach</td><td rowspan="2">4 per 5 mile reach</td><td rowspan="2">2 per 5 mile reach</td><td>1 per 5 mile reach</td><td rowspan="2">5 person / mile /Shift (2 shift)</td></tr>
<tr><td>Exp. High</td><td>2 per 5 mile reach</td><td>2 per 5 mile reach</td></tr>
</table>

- **Chowkidar:1** per flood camp (24/7) for all flood levels.

Keeping in view of the recommendations /Report of the committee for finalization of Machinery & Human Recourses requirements for flood Fighting Plan (FFP) constituted by the Administrative Department vide No.SO (Floods) VII-22/2017 dated 13.02.2026 received through Chief Engineer Irrigation Sahiwal Zone letter No.CE/IRRI/SWL/D.B/2026/1790-92 dated 19.02.2026 as well as Superintending Engineer Lower Bari Doab Canal Circle Sahiwal endorsement letter No. 563-65 dated 21.02.2026, as per recommendation for operation during flood at serial ii “The Superintendent Engineer shall allow the deputation of one (1) excavator and four (4) trolleys during low flood at camps/vulnerable points and LMB/RMB”

14.3- Deployment of Machinery (Normal to Low Flood)						
Sr. No.	**Structure Name**	**Length (Miles)**	**Excavators**	**Trolleys**	**Dumpers**	**Tractor with Front blade (1 per 15-mile reach)**
1	**Right Marginal Bund(RMB) (Allied Structures)**	4.811	S.E shall allow deputation of one (1) excavator & four (4) Trolleys during low flood at camps/vulnerable points & LMB / RMB.		-	0
i	**Right Guide Bund(RGB)**	0.560				
ii	Spur No. 3	0.277				
iii	Spur No. 4	0.460				
iv	Prong Spur No. 4	0.065				
v	Spur No. 6	1.064				
vi	Spur No. 5	1.160				
vii	Spur No. 11	0.091				
Total Right Marginal Bund(RMB) Alongwith allied Structures		**8.79**			**0**	**0**

Sr. No.	Structure Name	Length (Miles)	Excavators	Trolleys	Dumpers	Tractor with Front blade (1 per 15 mile reach)
2	**Left Marginal Bund (LMB) (Allied Structures)**	5.67	S.E shall allow deputation of one (1) excavator & four (4) Trolleys during low flood at camps/vulnerable points & LMB / RMB.		**-**	**1**
i	**Left Guide Bund**	0.66				
ii	Spur No. 1	0.80				
iii	Spur No. 2	0.72				
iv	Spur No. 8	0.59				
v	Spur No. 9	1.14				
vi	Prong Spur No. 9	0.56				
vii	Spur No. 12	0.31				
viii	Spur No.7	1.24				
ix	Spur No. 7-A	1.08				
x	Spur No. 7-B	1.84				
xi	D/S Barrage LBDC Right Side 0-23000	4.60				
	Total Left Marginal Bund (LMB) Alongwith allied Structures	**19.22**			**0**	**1**
G.TOTAL RMB+LMB OF BALLOKI		**28.01**	-	-	**0**	**1**

Sub Engineer,
Headworks Section

Sub Divisional Officer,
Headworks Sub Division,
Balloki.

Executive Engineer,
Balloki Headworks Division,
Balloki

14.4- Deployment of Machinery (Medium to High Flood)						
Sr. No.	**Structure Name**	**Length (Miles)**	**Excavators**	**Trolleys**	**Dumpers**	**Tractor with Front blade**
			1 per 7 mile reach	**4 per 7 mile reach**	**2 per 7 mile reach**	**1 per 7 mile reach**
1	**Right Marginal Bund (RMB) (Allied Structures)**	4.811				
i	**Right Guide Bund (RGB)**	0.560				
ii	Spur No. 3	0.277				
iii	Spur No. 4	0.460	**1**	**4**	**2**	**1**
iv	Prong Spur No. 4	0.065				
v	Spur No. 6	1.064				
vi	Spur No. 5	1.160				
vii	Spur No. 11	0.091				
Total Right Marginal Bund(RMB) Alongwith allied Structures		**8.79**	**1**	**4**	**2**	**1**

Sr. No.	Structure Name	Length (Miles)	Excavators	Trolleys	Dumpers	Tractor with Front blade
			1 per 7 mile reach	4 per 7 mile reach	2 per 7 mile reach	1 per 7 mile reach
2	**Left Marginal Bund(LMB) (Allied Structures)**	5.67	**3**	**10**	**5**	**3**
i	**Left Guide Bund**	0.66				
ii	Spur No. 1	0.80				
iii	Spur No. 2	0.72				
iv	Spur No. 8	0.59				
V	Spur No. 9	1.14				
vi	Prong Spur No. 9	0.56				
vii	Spur No. 12	0.31				
viii	Spur No.7	1.24				
Ix	Spur No. 7-A	1.08				
X	Spur No. 7-B	1.84				
xi	D/S Barrage LBDC Right Side 0-23000	4.60				
	Total Left Marginal Bund(LMB) Alongwith allied Structures	**19.22**	**3**	**10**	**5**	**3**
G.TOTAL RMB+LMB OF BALLOKI		**28.01**	**4**	**14**	**7**	**4**

Sub Engineer,
Headworks Section

Sub Divisional Officer,
Headworks Sub Division,
Balloki.

Executive Engineer,
Balloki Headworks Division,
Balloki

14.5-Deployment of Machinery (Very High to Exceptionally High Flood)								
Sr. No.	Structure Name	Length (Miles)	Excavators		Trolleys	Dumpers	Tractor with Front blade	
			Very High Flood	Exp. High Flood	4 per 5 mile reach	2 per 5 mile reach	Very High Flood	Exp. High Flood
			1 per 5 mile reach	2 per 5 mile reach			1 per 5 mile reach	2 per 5 mile reach
1	**Right Marginal Bund (RMB) (Allied Structures)**	5.080	**2**	**3**	**6**	**2**	**2**	**4**
I	**Right Guide Bund (RGB)**	0.592						
Ii	Spur No. 3	0.277						
Iii	Spur No. 4	0.460						
Iv	Prong Spur No. 4	0.065						
V	Spur No. 6	1.064						
Vi	Spur No. 5	1.160						
Vii	Spur No. 11	0.091						
Total Right Marginal Bund (RMB) Alongwith allied Structures		**8.79**	**2**	**3**	**6**	**2**	**2**	**4**

Sr. No.	Structure Name	Length (Miles)	Excavators		Trolleys	Dumpers	Tractor with Front blade	
			Very High Flood	Exp. High Flood	4 per 5 mile reach	2 per 5 mile reach	Very High Flood	Exp. High Flood
			1 per 5 mile reach	2 per 5 mile reach			1 per 5 mile reach	2 per 5 mile reach
2	**Left Marginal Bund (LMB) (Allied Structures)**	5.67						
I	**Left Guide Bund**	0.66						
Ii	Spur No. 1	0.80						
Iii	Spur No. 2	0.72						
Iv	Spur No. 8	0.59						
V	Spur No. 9	1.14	**4**	**8**	**15**	**8**	**4**	**8**
Vi	Prong Spur No. 9	0.56						
Vii	Spur No. 12	0.31						
Viii	Spur No.7	1.24						
Ix	Spur No. 7-A	1.08						
X	Spur No. 7-B	1.84						
Xi	D/S Barrage LBDC Right Side 0-23000	4.60						
	Total Left Marginal Bund (LMB) Alongwith allied Structures	**19.22**	**4**	**8**	**15**	**8**	**4**	**8**
G. TOTAL RMB+LMB OF BALLOKI		**28.01**	**6**	**11**	**21**	**10**	**6**	**12**

Sub Engineer,
Headworks Section

Sub Divisional Officer,
Headworks Sub Division,
Balloki.

Executive Engineer,
Balloki Headworks Division,
Balloki

NOTE:- Keeping in view the Flood limits and rising trend as well as emergency, hiring of the establishment as well as Machinery will be arranged at Divisional Level through Government Contractor after full all codal formalities under PPRA-2014.

Payment to the machinery will be made after the verification of NESPAK TPM Consultants.

14.6 Police deployment plan.

A request will be made to the District Police Officer Kasur for providing adequate services of police Department in all Sectors/Relief Centers/Flood affected areas, during any flood emergency, for security purpose and to maintain any law-and-order situation as per following plan:

S.No	NAME OF SPUR	VOULNERABLE REACH	REQUIRED No. OF POLICEMAN		REQUIRED No. OF RANGER
1	RIGHT MAGINAL BUND	11000-12000	ASI =1 No Constable =10	SHO =1 No	10 No
2	RIGHT MAGINAL BUND	24000-25000	ASI =1 No Constable =10		10 No
3	LEFT MAGINAL BUND	12000-13000	ASI =1 No Constable =10		10 No

14.7 Detail of synthetic bags with capacity of 50 Kg and 100 Kg.

Sufficient quantity of synthetic bags will be managed / purchased as per site requirements, if needed.

14.8 Details of polythene sheet of black color to protect upstream slope against wave action and to control seepage through embankments.

Polythene sheet of black color will be purchased for upstream protection against waving action and controlling the seepage, if needed.

Chapter-15

Back up Divisions (in case of breach)

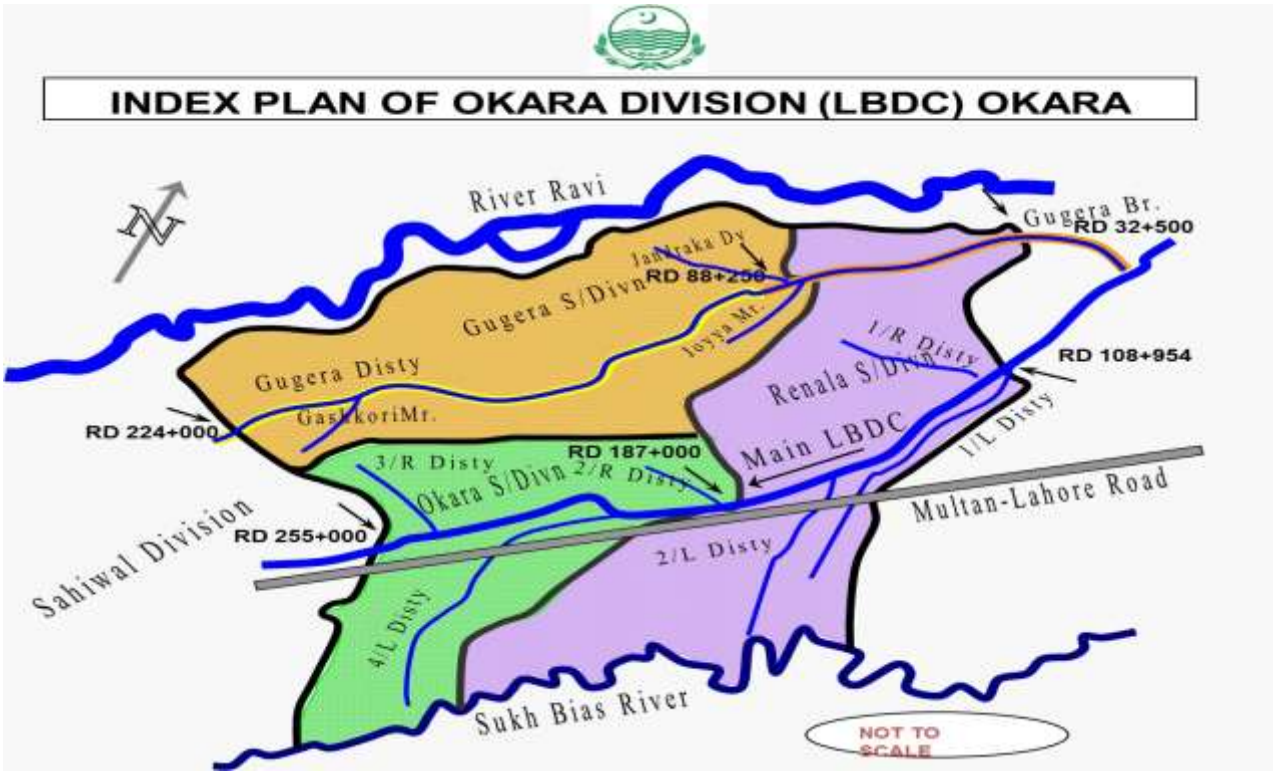
Okara Canal Division LBDC will work as Back up Division for Balloki Headworks Division in case of breach.

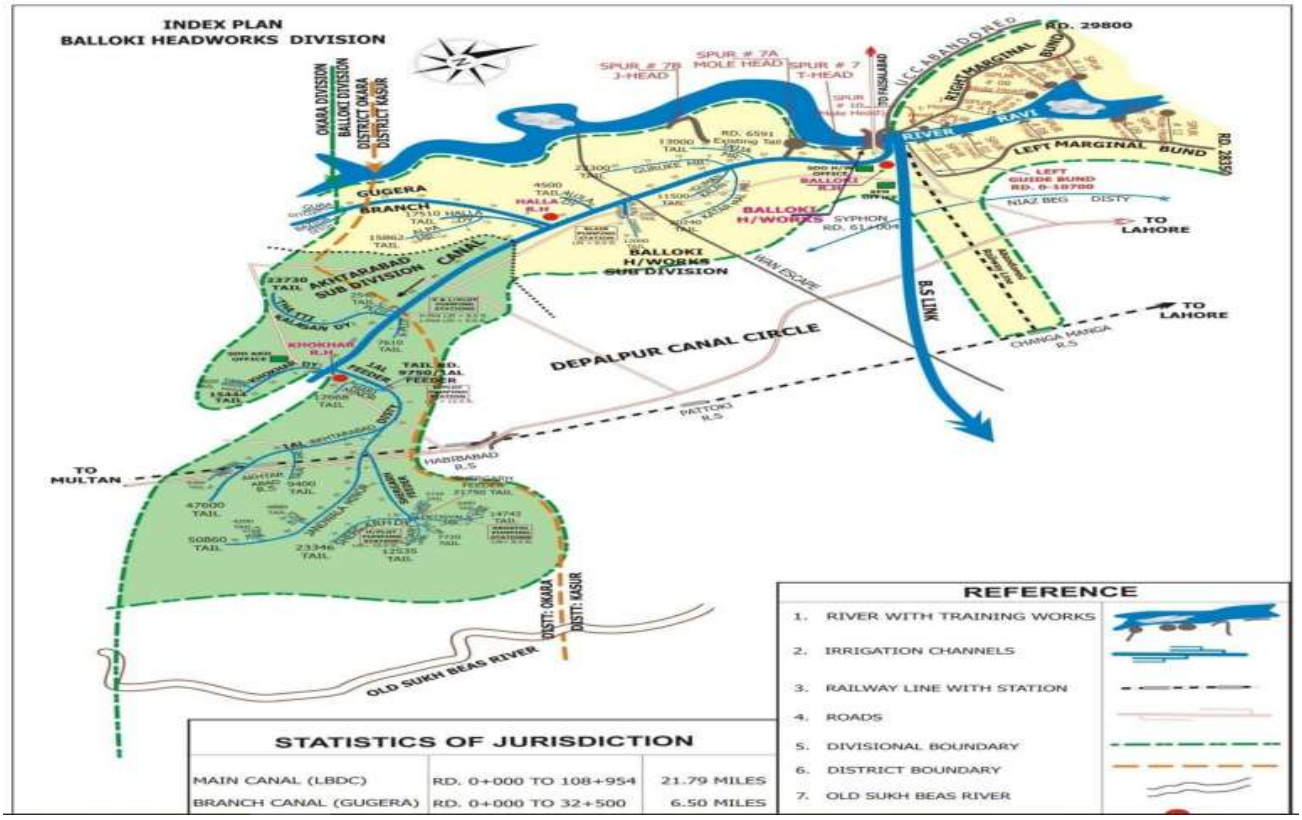
Sub Divisional Officer,
Headworks Sub Division,
Balloki.

Executive Engineer,
Balloki Headworks Division,
Balloki.

Superintending Engineer,
Lower Bari Doab Canal Circle,
Sahiwal.

Chief Engineer,
Irrigation, Sahiwal Zone,
Sahiwal.


INDEX PLAN OF OKARA DIVISION (LBDC) OKARA
River Ravi
Guggera Br.
RD 32+500
Gugera S/Divn
Gugera Disty
Gas/koriMr.
RD 224+000
RD 88+256
Ioyya Mr.
1/R Disty
Renala S/Divn
RD 108+954
Main LBDC
1/L Disty
RD 187+000
3/R Disty
Okara S/Divn
2/R Disty
Multan-Lahore Road
Sahiwal Division
RD 255+000
2/L Disty
4/L Disty
Sukh Bias River
NOT TO SCALE


INDEX PLAN
BALLOKI HEADWORKS DIVISION
OKARA DIVISION
BALLOKI DIVISION
DISTRICT OKARA
DISTRICT KASUR
GUGERA BRANCH
AHMADABAD SUB DIVISION
BALLOKI H/WORKS
BALLOKI H/WORKS SUB DIVISION
DEPALPUR CANAL CIRCLE
RIVER RAVI
LEFT MARGINAL BUND
RIGHT MARGINAL BUND
TO LAHORE
TO MULTAN
OLD SUKH BEAS RIVER
DISTT: OKARA
DISTT: KASUR
REFERENCE
1. RIVER WITH TRAINING WORKS
2. IRRIGATION CHANNELS
3. RAILWAY LINE WITH STATION
4. ROADS
5. DIVISIONAL BOUNDARY
6. DISTRICT BOUNDARY
7. OLD SUKH BEAS RIVER
STATISTICS OF JURISDICTION
MAIN CANAL (LBDC) RD. 0+000 TO 108+954 21.79 MILES
BRANCH CANAL (GUGERA) RD. 0+000 TO 32+500 6.50 MILES