CHAPTER -1
SALIENT FEATURE OF THE SHUJABAD CANAL DIVISION MULTAN.

1.1 LOCATION

The Divisional Office of the Shujabad Canal Division is located on Abdali Road, opposite Parvaiz Elahi Cardiology Centre, Multan. The jurisdiction of the Division begins from Tehsil Kabirwala in District Khanewal and extends through Tehsil Multan and Tehsil Shujabad, reaching up to Tehsil Jalalpur Pirwala of District Multan.

1.2 GENERAL DESCRIPTION

The Shujabad Canal Division covers Tehsil Shujabad, a portion of Tehsil Jalalpur Pirwala, parts of Tehsil Multan in District Multan, and Tehsil Kabirwala of District Khanewal. A minor portion of Muzaffar garh Tehsil in District Muzaffar garh also falls within the jurisdiction of this Division. These areas lie on the left bank of the River Chenab downstream of the confluence with the River Ravi, forming a narrow belt that continues up to the confluence point of the Sutlej and Chenab Rivers. This belt varies in width from two to ten miles and spans a length of approximately ninety miles. Due to this location along the riverbank, floods in the River Chenab pose a serious threat to life and property in the region.

The flood-protection system in this area has evolved over the past half century. Following the destructive flood of 1973, the existing bunds were reorganized into a comprehensive network consisting of first and second lines of defence. Initially, the bunds in the first defence line were designed to withstand flood heights corresponding to medium flood discharges of around 400,000 cusecs. However, their close proximity to the river makes them vulnerable during high floods, and they cannot reliably endure exceptionally high flood levels. The major floods of 1973 and 1976 inflicted substantial damage on these bunds.

In the 50th meeting of the Punjab Flood Commission held on 19-12-1973, it was decided that the first-line bunds would not be raised or strengthened. Instead, they were to be repaired according to their original design specifications to safely sustain their intended flood-height capacity. A second line of defence was approved to manage river spills in the event of any failure in the first line under high-discharge conditions. During the 1992 flood, both lines of bunds again came under severe stress and suffered considerable damage. As a result, higher authorities recommended their restoration with an additional freeboard of 6.0 ft above the High Flood Level (HFL) of 1992.

The second line of defence has a top width of 20.0 ft and side slopes of 3:1/2:1, along with a freeboard of 5.0 ft above the HFL of 1973. The positions of the bunds and associated river-training structures are shown in the attached index plan and on page 49 of the document. The total length of channels within the Shujabad Canal Division is 368.10 miles, while the total length of flood embankments and bunds is 173.75 miles. Additionally, the Division maintains 10 J-Head Spurs for river training and flood control.

Understood. Here is your entire Chapter-3 rewritten cleanly in well-structured paragraphs (no bullets, no formatting errors, no headings changed). All technical details, RD numbers, measurements, and historical facts are preserved exactly, but the language is polished and organized into readable paragraphs.

1.3 ADMINISTRATION

EXECUTIVE ENGINEER, SHUJABAD CANAL DIVISION, MULTAN.
ABDUL RAUF

Binda Sub Division

Sub Divisional Officer
Ch Muhammad Ahmad

Sub Engineers

i) Iftikhar Ahmad (Sardarpur)
ii) Rai Nasir Ali (Binda)
iii) Usman Tabassum (Bosan)

Zilladar

Musharaf Shah (Ilampur)

Ilampur Sub Division

Sub Divisional Officer
Akram Tahir

Sub Engineers

i) Rana Sikandar Bakht (Khairpur)
ii) Muhamamd Iqbal (Muzaffarabad)
iii) Muhammad Akbar (Nawabpur)
iv) Waqas Yaseen (River Survey)

Zilladar

Musharaf Shah (Ilampur)
Haji Sikandar (Shujabad)

Shujabad Sub Division

Sub Divisional Officer
Farooq Ahmad

Sub Engineers

i) Shoaib Ul Hassan (Sikandarabad)
ii) Naseem Quareshi (Gajju Hatta)
iii) Itikhar Ahmad (Shujabad)
iv) Kamran Dil Shad (Panjani)

Zilladar

Haji Sikandar (Shujabad)

CHAPTER -2

FLOOD PROTECTION AND RIVER TRAINING WORKS

2.1 DESIGN PARAMETER OF TRAINING WORKS

Sr. No.	Name of Bund	Length Canal Miles	Top Width	Side Slopes		Free Board F/levels	
				River Face	Land Face		
1	2	3	4	5	6	7	
A. 1ST DEFENCE LINE / BUNDS (DESIGN DATA)							
	District Khanewal						
1	Fazil Shah flood bund RD.0+000 to RD10+500	2.10	25.00ft	3:1	2:1	6.0ft (1992)	
2-i	Chenab flood bund RD.0+000-94+000	18.80	25.0ft	3:1	3:1	6.0ft (1992)	
	District Multan						
2-ii	Chenab flood bund RD.94+000-157+950 Tail	12.79	25.00	3:1	2:1	6.00ft(1992)	
3	Nawabpur escape bund L&R RD.0+000-8+000x2 =16+000	3.20	16.0ft	3:1	2:1	5.0ft (1973)	
4	Nawabpur flood bund RD.0+000-17+950	3.60	25.0ft	3:1	2:1	6.0ft (1992)	
5	Akbar flood bund RD.0+000-21+710	4.30	25.0ft	3:1	2:1	6.0ft (1992)	
6	Sher Shah Flood Bund RD.0+000-20+437	4.08	25.0ft	3:1	2:1	6.0ft (1973	
7	Sher Shah Railway Flood Bund. RD.0+000-15+100	3.02	25.0ft	3:1	2:1	6.0ft (1973	
8	Right bank of Shujabad BranchRD.231+000-279+000	9.6	20.0ft	3:1	2:1	6.0ft (1976)	
9	Right bank of Gajju Hatta Branch RD.17+000-35+000	3.60	25.0ft	3:1	2:1	6.0ft (1976)	
10	Nagni flood bund RD.0+000-51+000	10.20	25.0ft	3:1	2:1	6.0ft (1973)	
11	Dhundoo flood bund RD.0+000-26+500	5.30	25.0ft	3:1	2:1	6.0ft (1973)	
12	Gardez flood bund RD.0+000-15+750	3.28	25.0ft	3:1	2:1	6.0ft (1973)	
13	Jalalpur Khaki flood bund RD.0+000-60+000	12.0	25.0ft	3:1	2:1	6.0ft (1973)	
14	Satburji Flood Bund RD.54+000-72+500 along Satburji Disty	3.70	25.0ft	3:1	2:1	6.0ft (1973)	
15	Tie Flood Bund RD.0+000-8+600	1.72	25.0ft	3:1	2:1	6.0ft (1973)	
16	Baloch wah flood bund RD.0+000-62+230.	12.44	25.0ft	3:1	2:1	6.0ft (1973)	
Total:		**116.23**					

B. 2ND DEFENSE LINE / BUNDS (DESIGN DATA)							
Sr. No.	Name of Bund	Length Canal Miles	Top Width	Side Slopes		Free Board F/levels	
				River Face	Land Face		
1	2	3	4	5	6	7	
1	Right bank of Shujabad Branch RD.54+000-197+775	27.23	20.0ft	3:1	2:1	5.0ft (1973)	
2	Muzaffarabad flood bund RD.0+000-12+710	2.50	12.0ft	3:1	2:1	4.0ft (1959)	
3	Right bank of Shujabad Branch RD.279+000-295+000	4.00	20.0ft	3:1	2:1	5.0ft (1973)	
4	Right bank of Shujabad Branch RD.210+465-231+580	3.03	20.0ft	3:1	2:1	5.0ft (1973)	
5	Right bank of Gajju Hatta Branch RD: 35+000-67+000	6.06	20.0ft	3:1	2:1	5.0ft (1973)	
6	Sutburji Disty RD: 0+000-54+000	10.22	20.0ft	3:1	2:1	5.0ft (1973)	
7	Right bank of Panjani Disty RD.87+000-120+000	6.60	20.0ft	3:1	2:1	5.0ft (1973)	
8	Right bank of Panjani Disty RD.123+000-131+000	1.60	20.0ft	3:1	2:1	5.0ft (1973)	
	Total:-	**61.24**					

C. STRUCTURE AT FLOOD BUNDS							
A. J-HEAD SPUR							
Sr. No.	Name of Bund	Length Canal Miles	Top Width	Side Slopes		Free Board F/levels	
				River Face	Land Face		
1	2	3	4	5	6	7	
1	J-Head Spur RD: 4+000 Fazil Shah Flood Bund	1.50	30.00	3:1	3:1	06 ft(1992)	
2	J-Head Spur RD: 10+000 Chenab Flood Bund	1.04	30.00	3:1	2:1	06 ft(1992)	
3	J-Head Spur RD: 151+800 Chenab Flood Bund	1.15	30.00	3:1	3:1	06ft (1992)	
4	Extended Guided Spur No.1 RD.0+920 of Nawabpur Flood Bund by converting into J-Head Spur.	0.92	30.00	3:1 2:1	3:1 2:1	6.0ft above H.F.L (1973)	
5	J-head spur No.2 oppt:RD.14+400 Akbar flood bund	1.21	25.0ft	3:1 2:1	3:1 2:1	6.0ft above H.F.L (1973)	
6	J-head spur No.3 oppt:RD.248+000 Shujabad	0.878	25.0ft	3:1 2:1	3:1 2:1	6.0ft above H.F.L (1973)	
7	Extended Guided Spur No.3-B RD.252+000 of Shujabad Branch by converting to J-Head Spur.	0.60	25.0ft	3:1 2:1	3:1 2:1	6.0ft above H.F.L (1973)	
8	J-head spur No.4 oppt: RD.263+000 Shujabad Branch.	1.08	25.0ft	3:1 2:1	3:1 2:1	6.0ft above H.F.L (1973)	
9	Elliptical Guide Bund Sher Shah Railway flood bund	0.73	25.0ft	2:1	3:1	6.0ft	

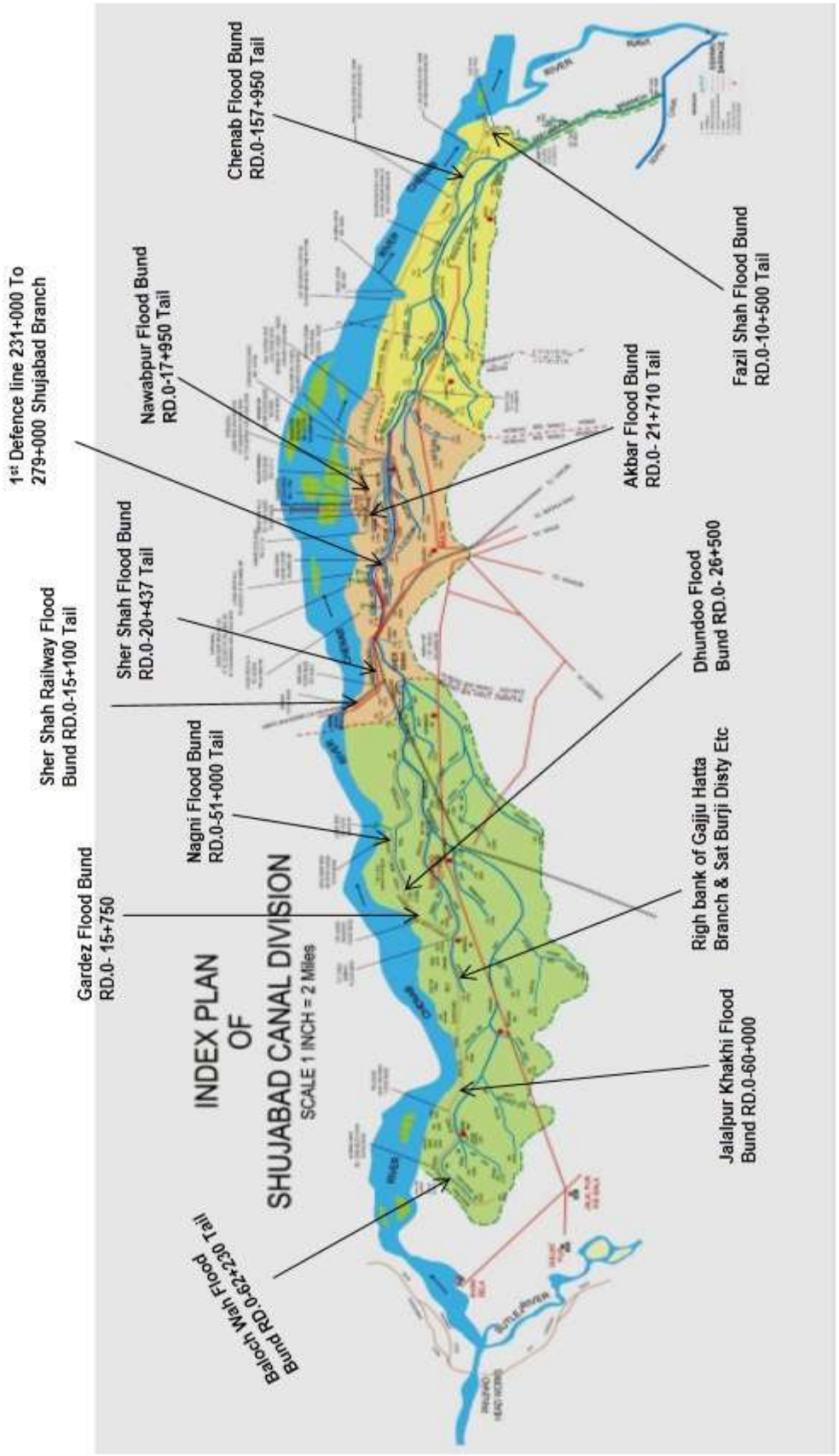
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10	J-head spur RD.42+200 Nagni flood bund (2950')	0.59	25/ 30.0ft	3:1	3:1	6.0ft (1976)	
	Total:-	**9.64**					
	B. MOLE HEAD SPUR						
Sr. No.	**Name of Bund**	**Length Canal Miles**	**Top Width**	**Side Slopes**		**Free Board F/levels**	
				River Face	**Land Face**		
1	2	3	4	5	6	7	
1	Mole Head Spur RD: 55+000 Chenab Flood Bund	0.10	30.00	3:1	3:1	06ft (1992)	
2	Mole Head Spur at RD:45+700 Nagni Flood Bund (1250ft)	0.25	30.0ft	3:1	3:1	6.0ft (1976)	
3	Sloping Spur at RD.10+000 Baloch Wah Flood Bund	0.93	25.0ft	3:1	2:1	6.0ft (1992)	
	Total:-	**1.28**					
	C. DATA OF CROSS SPURS ALONG CHENAB FLOOD BUND						
Sr. No.	**Name of Bund**	**Length Canal Miles**	**Top Width**	**Side Slopes**		**Free Board F/levels**	
				River Face	**Land Face**		
1	**2**	**3**	**4**	**5**	**6**	**7**	
1	RD.7+900	0.04	20 ft	3:1	2:1	04ft (1992)	
2	RD.10+200	0.10	20 ft	3:1	3:1	06ft (1992)	
3	RD. 11+300	0.10	20 ft	3:1	3:1	06ft (1992)	
4	RD. 15+000	0.10	20 ft	3:1	3:1	06ft (1992)	
5	RD. 16+800	0.10	20 ft	3:1	3:1	06ft (1992)	
6	RD. 20+400	0.10	20 ft	3:1	3:1	06ft (1992)	
7	RD. 22+800	0.10	20 ft	3:1	3:1	06ft (1992)	
8	RD. 25+500	0.10	20 ft	3:1	3:1	06ft (1992)	
9	RD. 26+300	0.10	20 ft	3:1	3:1	06ft (1992)	
10	RD. 28+750	0.10	20 ft	3:1	3:1	06ft (1992)	
11	RD. 30+800	0.10	20 ft	3:1	3:1	06ft (1992)	
12	RD. 33+500	0.10	20 ft	3:1	3:1	06ft (1992)	
13	RD. 48+900	0.10	20 ft	3:1	3:1	06ft (1992)	
14	RD.50+000	0.10	20 ft	3:1	3:1	06ft (1992)	
15	RD.53+500	0.10	20 ft	3:1	3:1	06ft (1992)	
16	RD. 56+000	0.10	20 ft	3:1	3:1	06ft (1992)	
17	RD. 57+000	0.10	20 ft	3:1	3:1	06ft (1992)	
18	RD. 61+500	0.10	20 ft	3:1	3:1	06ft (1992)	
19	RD. 66+000	0.10	20 ft	3:1	3:1	06ft (1992)	
20	RD. 68+500	0.10	20 ft	3:1	3:1	06ft (1992)	
21	RD. 70+000	0.10	20 ft	3:1	3:1	06ft (1992)	
22	RD. 75+000	0.10	20 ft	3:1	3:1	06ft (1992)	
23	RD. 93+000	0.13	20 ft	3:1	3:1	06ft (1992)	
24	RD. 94+500	0.10	20 ft	3:1	3:1	06ft (1992)	
25	RD. 95+500	0.10	20 ft	3:1	3:1	06ft (1992)	
26	RD.96+500	0.10	20 ft	3:1	3:1	06ft (1992)	
27	RD.97+500	0.10	20 ft	3:1	3:1	06ft (1992)	
28	RD. 103+500	0.055	20 ft	3:1	3:1	06ft (1992)	
29	RD.106+500	0.075	20 ft	3:1	3:1	06ft (1992)	
30	RD. 106+800	0.065	20 ft	3:1	3:1	06ft (1992)	

31	RD. 110+500	0.050	20 ft	3:1	3:1	04ft (1992)	
32	RD111+900	0.06	20 ft	3:1	3:1	06ft (1992)	
33	RD. 113+000	0.095	20 ft	3:1	3:1	06ft (1992)	
34	RD. 114+100	0.085	20 ft	3:1	3:1	06ft (1992)	
35	RD. 115+000	0.08	20 ft	3:1	3:1	06ft (1992)	
36	RD.131+000 (Sloping exist)	0.07	20 ft	3:1	3:1	06ft (1992)	
37	RD.132+000	0.113	20 ft	3:1	3:1	06ft (1992)	
38	RD.137+000	0.09	20 ft	3:1	3:1	06ft (1992)	
39	RD.140+000	0.09	20 ft	3:1	3:1	06ft (1992)	
40	RD.141+400	0.10	20 ft	3:1	3:1	06ft (1992)	
41	RD.141+700	0.10	20 ft	3:1	3:1	06ft (1992)	
42	RD. 142+000-143+000	0.10	20 ft	3:1	3:1	06ft (1992)	
43	RD. 143+000-144+000	0.10	20 ft	3:1	3:1	06ft (1992)	
44	RD. 144+000-145+000	0.10	20 ft	3:1	3:1	06ft (1992)	
45	RD. 145+000-146+000	0.10	20 ft	3:1	3:1	06ft (1992)	
46	RD. 147+000-148+000	0.10	20 ft	3:1	3:1	06ft (1992)	
47	RD. 148+000-149+000	0.10	20 ft	3:1	3:1	06ft (1992)	
48	RD. 149+000-150+000	0.10	20 ft	3:1	3:1	06ft (1992)	
	CROSS SPURS ALONG 1ST DEFENCE LINE SHUJABAD BRANCH						
1	RD. 251+000	0.236	20 ft	3:1	3:1	06ft (1992)	
	CROSS SPURS ALONG DUHNDOO FLOOD BUND						
1	RD.0+000	0.036	20 ft	3:1	3:1	06ft (1992)	
2	RD. 3+500	0.12	20 ft	3:1	3:1	06ft (1992)	
3	RD. 23+300	0.138	20 ft	3:1	3:1	06ft (1992)	
	CROSS SPURS ALONG BALOCHWAH FLOOD BUND						
1	RD. 9+750	0.095	20 ft	3:1	3:1	06ft (1992)	
2	RD. 17+100	0.038	20 ft	3:1	3:1	06ft (1992)	
3	RD. 17+500	0.042	20 ft	3:1	3:1	06ft (1992)	
4	RD. 18+000	0.038	20 ft	3:1	3:1	06ft (1992)	
5	RD. 19+000	0.005	20 ft	3:1	3:1	06ft (1992)	
	CROSS SPURS ALONG JALALPUR KHAKI FLOOD BUND						
1	RD. 10+000	0.08	20 ft	3:1	3:1	06ft (1992)	
2	RD. 15+000	0.05	20 ft	3:1	3:1	06ft (1992)	
3	RD. 24+500	0.043	20 ft	3:1	3:1	06ft (1992)	
4	RD. 30+000	0.043	20 ft	3:1	3:1	06ft (1992)	
5	RD. 40+000	0.043	20 ft	3:1	3:1	06ft (1992)	
6	RD. 42+500	0.043	20 ft	3:1	3:1	06ft (1992)	
7	RD. 45+000	0.054	20 ft	3:1	3:1	06ft (1992)	
8	RD. 45+500	0.044	20 ft	3:1	3:1	06ft (1992)	
9	RD. 50+000	0.08	20 ft	3:1	3:1	06ft (1992)	
10	RD.52+200	0.044	25 ft	3:1	3:1	06ft (1992)	
11	RD.55+000	0.1	20 ft	3:1	3:1	06ft (1992)	
	Total	**4.978**					

D. SOLID STONE STUDS ALONG CHENAB FLOOD BUND							
	RD. 150+000-151+000 (3 No.) 3 x .04 = 0.12	0.12	15 ft	2:1	2:1	06ft (1992)	
	RD. 151+000-152+000 (3 No) 3 x .04 = 0.12	0.12	15 ft	2:1	2:1	06ft (1992)	
	RD. 152+000-153+000 (2 No) 2 x .04 = 0.08	0.08	15 ft	2:1	2:1	06ft (1992)	
	RD. 153+000-154+000 (2 No) 2 x .04 = 0.08	0.08	15 ft	2:1	2:1	06ft (1992)	
	RD. 154+000-155+000 (3 No) 3 x .04 = 0.12	0.12	15 ft	2:1	2:1	06ft (1992)	
	Total	**0.52**					

2.2 LOCATION PLAN



CHAPTER -3

BRIEF HISTORY OF PAST FLOOD EVENTS

- In the year 1973, Baloch wah flood bund existed in very weak condition and it was breached at many places due to unprecedented high floods of 1973.
- Flood water damaged Chenab Flood Bund during super flood 1992 between RD.48+000-50+000 and RD.79+000-98+000,110+000-136+000 and 150+000-Tail.
- Dhundhoo Flood Bund was breached between RD:21+000-22+000 during flood 2006.
- Due to construction of Head Muhammad Wala bridge by National Highway Authority, serious effect of back water by heading up was observed during flood of 2010.To protect Nawabpur Flood bund from RD.3+950-17+950, work for the raising of bund was completed.
- The Muhammad Wala bridge was constructed during 2009-10 in front of RD.11+350 of Akbar Flood Bund by National Highway Authority. As per Model Study, the level will be attained 417.50 U/S of bridge at a discharge of 10.0 lac Cs and back water effect will produced upto RD.3+950 of Nawabpur Flood Bund. A scheme for raising Akbar Flood Bund RD.6+050 to 11+350 and Nawabpur Flood Bund RD.3+950 to 17+950 have been completed.
- During flood 2014, Severe leakages were observed on various flood bunds i.e. RD.270+000-272+000 1st Defence line of Shujabad Branch, RD.87+000-88+000 of Chenab Flood Bund which were controlled by adopting effective and timely protective measures.
- During flood 2014, Erosive actions were observed at RD.24+000-56+000 of Jalalpur Khakhi Flood Bund, RD.37+000-38+000 Baloach wah Flood Bund and RD.47+000-53+000 of Chenab Flood Bund during flood 2014 which were protected with tree launching, bamboo bushing and flood fighting material etc.
- During flood 2025, an exceptional high flood was faced by this Division. An exceptional high flood had encroached / raised the H.F.L. at many reaches of flood embankments at left side of river Chenab. The H.F.L. following reaches of various was raised.

i. The HFL RD.0+000 to 10+000 of Fazil Shah flood bund alongwith J-Head Spur Constructed at RD.4+000 was raised and it has been observed that less than 1.0 free board was available at some sites.

ii. The HFL from RD.134+000 to 157+900 of Chenab flood bund flood bund need to be revised as HFL 2025.

BRIEF HISTORY OF PAST FLOOD EVENTS

The Shujabad Canal Division has experienced several major floods that significantly affected its flood-protection infrastructure. In 1973, the Baloch Wah Flood Bund was in a very weak condition and suffered multiple breaches due to an unprecedented high flood. During the super flood of 1992, the Chenab Flood Bund was heavily damaged between RD 48+000–50+000, RD 79+000–98+000, RD 110+000–136+000 and from RD 150+000 to the tail. In the 2006 flood, the Dhundhoo Flood Bund was breached between RD 21+000–22+000.

In 2010, the construction of the Head Muhammad Wala Bridge by the National Highway Authority caused severe backwater effects, creating alarming heading-up conditions. To protect the Nawabpur Flood Bund from RD 3+950–17+950, raising work was completed. As per the model study, the water level upstream of the Muhammad Wala Bridge could reach elevation 417.50 ft at 10.0 lac cusecs discharge, producing backwater impacts up to RD 3+950 of the Nawabpur Flood Bund. Consequently, a scheme for raising the Akbar Flood Bund from RD 6+050 to RD 11+350 and the Nawabpur Flood Bund from RD 3+950 to RD 17+950 was completed.

During the 2014 flood, severe leakages were observed at several locations, including RD 270+000–272+000 on the first defence line of the Shujabad Branch and RD 87+000–88+000 on the Chenab Flood Bund. These were controlled through effective and timely protective measures. Erosive action was also noted between RD 24+000–56+000 of the Jalalpur Khaki Flood Bund, RD 37+000–38+000 of the Baloch Wah Flood Bund, and RD 47+000–53+000 of the Chenab Flood Bund. These areas were protected through tree launching, bamboo bushing, and the use of flood-fighting materials.

In the 2025 flood, an exceptionally high flood was faced by the Division. The high flood level (HFL) was raised at several reaches along the left bank of the River Chenab. In particular, the HFL from RD 0+000 to RD 10+000 of the Fazil Shah Flood Bund, including the J-Head Spur at RD 4+000, was observed to be extremely high, with less than one foot of freeboard at various locations. Similarly, the HFL from RD 134+000 to RD 157+900 of the Chenab Flood Bund was revised due to the extraordinary conditions.

FIRST DEFENCE LINE

a) Fazil Shah Flood Bund (RD 0+000 to 10+500)

The Fazil Shah Flood Bund, with a length of 10,500 ft, is the uppermost bund in the first line of defence. It prevents river spills from entering the pocket behind the Chenab Flood Bund near its upstream anchor. Due to its location at the confluence of the Ravi and Chenab Rivers, it is more affected by Ravi floods than Chenab spills. The bund safeguards fertile agricultural lands and serves as the sole flood protection for Sardarpur Town. It is classified as a high-height bund under the Sind Bund Manual and generally remains safe up to 4.00 lac cusecs, although vigilant monitoring becomes essential above that level. The bund was severely damaged in the 1992 super flood and was restored in 1996. Its design includes a 25 ft top width, 3:1 and 2:1 side slopes, and a 6 ft freeboard above the 1992 HFL. Backflow observed in 2010 highlighted the need to link its starting point to a higher natural ground level for improved safety. The HFL for the mentioned flood bund has been raised from RD.0+000 to 10+000 during exceptionally high flood 2025.

b) Chenab Flood Bund (RD 0+000 to 157+950)

Constructed after the 1959 flood along the left bank of the River Chenab, this bund protects Multan City, Multan Cantonment, Tehsil Kabirwala, extensive irrigation networks, and other government installations. It was originally designed for low- to medium-flood capacities with a freeboard of 4 ft above the 1973 HFL. Its total length is 31.59 miles, forming the first defence line in Binda and Ilampur Sub Divisions. As per the Sind Bund Manual, the majority of this bund is classified as high-height. Its alignment is close to the river, making it vulnerable to large spill depths and strong wave action that frequently damages river-side slopes. Several depressions exist along the river side, causing parallel flows, particularly during floods.

The bund remains safe up to 4.0 lac cusecs, but becomes vulnerable beyond that threshold. To stabilize parallel flow conditions caused by a deep creek along the bund, earthen and stone-pitched X-spurs were constructed prior to the 1997 flood. The bund performed satisfactorily during the 2013 and 2014 floods. Its design from RD 0+000 to RD 94+000 includes a top width of 25 ft, side slopes of 3:1/3:1, and a freeboard of 6 ft above the 1992 HFL. From RD 94+000 to RD 157+950, the side slopes change to 3:1/2:1 while retaining the same top width and freeboard. The HFL has been raised from RD.0+000 to 15+000 and 134+000 to 157+950 Tail during exceptionally high flood 2025.

c) Nawabpur Flood Bund (RD 0+000 to 17+950)

The Nawabpur Flood Bund is 3.6 miles long with an average height of 10 ft, increasing up to 16 ft near RD 13+300 and RD 14+100 where old creeks cross the bund. It forms one side of the Nawabpur Pocket. To counter severe river erosion opposite the bund, the guide-head spur at RD 0+920 was upgraded to a J-Head Spur. The construction of the Muhammad Wala Bridge in 2010 caused serious backwater effects, prompting the raising of the bund from RD 3+950–17+950. To protect Multan City from seepage, sheet piling was installed along this reach. The bund has a top width of 25 ft, side slopes of 3:1/2:1, and a 6 ft freeboard above the 1992 HFL.

d) Akbar Flood Bund (RD 0+000 to 21+710)

The Akbar Flood Bund, 21,710 ft long, begins at the tail of the Muzaffarabad Flood Bund and protects Multan City and Cantonment. It connects with the Nawabpur Flood Bund at RD 6+050 and anchors into high ground at RD 21+710. Spill flows enter the pocket behind this bund but are partially checked by an NHA-constructed paved road. After the construction of the Muhammad Wala Bridge in 2010, serious backwater effects were observed, leading to the raising of the bund between RD 6+050 and RD 11+350, as recommended by the IRI Hydraulic Model Study (Report No. 1317 of March 2016). The bund has sheet piling along this stretch and includes a J-Head Spur at RD 14+400. It remained safe during the 2014 flood. Its design includes a 25 ft top width, 3:1/2:1 side slopes, and a freeboard based on the 2010 HFL.

e) Muzaffarabad Flood Bund (RD 0+000 to 12+710)

This bund forms part of the Nawabpur Pocket and also acts as the right bank of the upper Muzaffarabad Distributary. It functions as the second defence line for Multan City and Cantonment. It only comes under strain when floodwaters enter the pocket following breaches in nearby structures. It has remained largely safe during previous major floods. Its design includes a 12 ft top width, 3:1/2:1 side slopes, and a freeboard of 4 ft above the 1959 HFL.

f) Shujabad Branch (RD 231+500 to 279+000)

The right bank of the Shujabad Branch was restored from RD 231+500 to RD 263+000 as part of the post-1992 flood restoration programme. Its design includes a 20 ft top width, 3:1/2:1 side slopes, and a freeboard 6 ft above the 1976 HFL. Two J-Head Spurs were built at RD 248+000 and RD 263+000, which remained safe during major floods of 1997, 2013, and 2014. Severe leakages in 2014 were effectively controlled. Sheet piling was also installed from RD 231+500–279+000 for seepage control.

g) Spur 3-B (RD 252+000)

During the 1994 flood, the river shifted its course between RD 248+000–263+000, attacking Spur 3-B. A scheme was prepared to protect this reach for the safety of Multan City and the irrigation system, and the spur was constructed before the 1997 flood. It remains intact and in satisfactory condition. The spur has a top width of 25 ft, 3:1/2:1 side slopes, a 2:1/2:1 nose portion, and a freeboard of 6 ft above the 1973 HFL.

h) Sher Shah Flood Bund (RD 0+000 to 20+437)

The Sher Shah Flood Bund extends from the left marginal bund of the Sher Shah Railway Bridge. It protects the Multan–Muzaffargarh Road and surrounding areas. The bund collapsed during the 1973 flood, causing widespread flooding. Afterward, the Highway Department constructed a separate bund, which was transferred to the Irrigation Department in 1982. The bund is not built to irrigation specifications and experienced slope damage during the 2014 flood. Its design provides a 25 ft top width, 3:1/2:1 side slopes, and 6 ft freeboard above the 1973 HFL.

i) Sher Shah Railway Flood Bund (RD 0+000 to 15+100)

Constructed by Pakistan Railways and later transferred to the Irrigation Department, this bund runs parallel to the Multan–Muzaffargarh railway line. It contains a breaching section between RD 11+000–12+000 designed to pass 55,000 cusecs. The breaching section consists of four 100-ft-long, 30-ft-wide compartments and operates when the water level reaches 393.50 ft. The bund has a 25 ft top width, 3:1/2:1 side slopes, and a freeboard of 6 ft above the 1973 HFL.

j) Elliptical Guide Bund (RD 0+000 to 38+530)

This bund joins the Sher Shah Railway Flood Bund and also runs parallel to the Multan–Muzaffargarh railway track. It was constructed by Pakistan Railways and later transferred to the Irrigation Department. Its design follows IRR Report No. 1350 (January 2018), with an HFL of 401.90 ft and 6 ft freeboard. It has a 25 ft top width and 3:1/2:1 side slopes.

k) Right Bank of Gajju Hatta Branch (RD 17+000 to 35+000)

The right bank of the Gajju Hatta Branch was upgraded into a full flood-protection bund serving as the first defence line in Shujabad Canal Division. It protects the main railway line, Basti Khokran, and Sikandarabad Town. Its design consists of a 25 ft top width, 3:1/2:1 side slopes, and 6 ft freeboard above the 1976 HFL.

l) Nagni Flood Bund (RD 0+000 to 51+000)

The Nagni Flood Bund, 51,000 ft long, protects Shujabad Town and runs parallel to the Bakhtuwa Distributary. It has a 25 ft top width, 3:1/2:1 side slopes, and a freeboard 6 ft above the 1973 HFL.

m) J-Head Spur (RD 42+200, Nagni Flood Bund)

A J-Head Spur was constructed in 1987–88 by extending the Mole Head Groyne. The severe super flood of 1988 caused deep scour, washing away 1,700 ft of the structure. Only 500 ft was restored based on recommendations of an expert committee. The structure remains critically located and sustained heavy river attack but survived the 2014 flood. The restored design includes 25–30 ft top width, 3:1/2:1 side slopes, and a 6 ft freeboard above the 1976 HFL. The HFL was raised from RD.40+000 to 50+000 during exceptionally high flood 2025.

n) Mole Head Spur (RD 45+700, Nagni Flood Bund)

The Mole Head Spur was replenished in 1987–88 and remained intact during the 1988 and 1996 floods. It performed safely in subsequent years, including the 1997 flood. Its design includes a 30 ft top width, 3:1/2:1 side slopes, and 6 ft freeboard above the 1976 HFL.

o) Dhundoo Flood Bund (RD 0+000 to 26+500)

This 26,500-ft-long bund continues from the Nagni Flood Bund and connects with the Gardez Flood Bund. The river approaches very close between RD 3+000–6+000, causing strong parallel flows and deep creeks. The bund protects fertile agricultural areas irrigated by the Bakhtuwa Distributary and Gardez Minor. Its design includes a 25 ft top width, 3:1/2:1 side slopes, and 5 ft freeboard above the 1973 HFL. Reverse flows around the tail inundate around 4,000 acres, necessitating protective improvements. The HFL was raised from RD.0+000 to 25+000 during exceptionally high flood 2025.

p) Gardez Flood Bund (RD 0+000 to 15+750)

This 3.02-mile-long bund connects the Dhundoo Flood Bund to the second defence line at RD 54+000 of the Satburji Distributary. Leakage occurred during the 2014 flood. The bund has a 25 ft top width, 3:1/2:1 side slopes, and 6 ft freeboard above the 1973 HFL. The HFL has been raised from RD.0+000 to 15+000 during exceptionally high flood 2025.

q) Right Bank of Satburji Distributary (RD 54+000 to 72+000)

Converted into a flood embankment, this bund protects Mouza Bangala, Khara, Satburji, and Bagre Town. It is 3.46 miles long and designed with a 25 ft top width, 3:1/2:1 side slopes, and 5 ft freeboard above the 1973 HFL. The HFL has been raised from RD.60+000 to 65+000 during exceptionally high flood 2025.

r) Jalalpur Khaki Flood Bund (RD 0+000 to 60+000)

This 60,000-ft bund protects areas irrigated by the Panjani Distributary in Jalalpur Pirwala. At some locations, the river is within 500 ft of the bund, making it highly vulnerable. Strong parallel flows occur particularly around RD 55. During the 2014 flood, erosive actions between RD 24+000–56+000 were mitigated through tree launching and bamboo bushing. The bund is designed with a 25 ft top width, 3:1/2:1 side slopes, and 6 ft freeboard above the 1973 HFL. The HFL has been raised from RD.0+000 to 60+000 during exceptionally high flood 2025.

s) Tie Flood Bund (RD 0+000 to 8+400)

With a total length of 8,400 ft, the Tie Flood Bund connects the tail of the Jalalpur Khaki Bund with RD 139+000 of the Panjani Distributary. It protects Jalalpur Pirwala Town, the Behli Canal Rest House, and the irrigation system. Its design includes a 20 ft top width, 3:1/2:1 side slopes, and a freeboard of 6 ft above the 1973 HFL. The HFL has been raised from RD.0+000 to 10+000 during exceptionally high flood 2025.

t) Baloachwah Flood Bund (RD 0+000 to 62+230)

The Baloachwah Flood Bund, nearly 62,230 ft long, is the final bund in the Shujabad Canal Division's flood-defence chain. Its proximity to the river exposes it to spill flows and direct attacks, especially between RD 16+000–26+000. Its flood levels are influenced by backwater from training works at the upstream Punjnad Headworks. Although rising ground levels toward the countryside moderate its importance, two villages—Shahpur Lamma and Wachha Sandila—near RD 10+000–12+000 were under severe threat. A sloping spur was approved and constructed opposite RD 10+000, providing necessary protection. The bund has a 25 ft top width, 3:1/2:1 side slopes, and a freeboard of 5 ft above the 1973 HFL. The HFL has been raised from RD.0+000 to 62+230 during exceptionally high flood 2025. The HFL has been raised from RD.0+000 to 62+230 during exceptionally high flood 2025.

Outlet, Watercourse, and Tubewell Crossings

Previous floods have shown that crossings beneath flood bunds—including outlets, watercourses, and tubewells—cause serious problems and sometimes settlement. Sufficient flood-fighting material must therefore be available at vulnerable points, and all such crossings must be closed before each flood season. Sub-Divisional Officers must certify closure, and round-the-clock watch staff must be deputed at all locations. All the private crossing must be removed immediately to ensure the safety of bund. The sanctioned must be closed prior to flood and ensure the safety of bund.

SECOND DEFENCE LINE IN SHUJABAD CANAL DIVISION

a) Shujabad Branch (RD 54+000 to 231+000)

The right bank of the Shujabad Branch was converted into a second defence line from RD 54+000 to RD 231+000. The reach is divided among three sub-divisions: Binda (RD 54+000–163+000), Ilampur (RD 163+000–197+755), Muzaffarabad Flood Bund (RD 0+000–12+710), and Shujabad Branch (RD 210+465–231+580). The embankment has a 20 ft top width, 3:1/2:1 side slopes, and 5 ft freeboard above the 1973 HFL.

b) Right Bank of Gajju Hatta Branch (RD 35+000 to 67+000)

This stretch was upgraded to serve as a second defence line, with a 20 ft top width, 3:1/2:1 side slopes, and 5 ft freeboard above the 1973 HFL.

c) Right Bank of Satburji Distributary (RD 0+000 to 54+000)

This bund also acts as a second defence line and is designed with a 20 ft top width, 3:1/2:1 side slopes, and 5 ft freeboard above the 1973 HFL.

d) Right Bank of Panjani Distributary (RD 87+000 to 120+000 & RD 123+000 to 131+000)

These reaches have been converted into a second defence line, with a total length of 8.46 miles. The design provides a 20 ft top width, 3:1/2:1 side slopes, and 5 ft freeboard above the 1973 HFL.

CHAPTER -4

DESIGNED DATA, HISTORIC PEAK FLOOD DATA AND PREVIOUS FIVE YEARS FLOOD DATA OF HEAD WORKS/ BARRAGES AND OR OTHER CONTROL POINTS.

4.1 FLOOD LIMITS IN SHUJABAD CANAL DIVISION

Description	**Flood Limits (Lac Cusec)**
Low Flood	1.5 to 3.0
Medium Flood	3.0 to 4.0
High Flood	4.0 to 4.5
Very High Flood	4.5 to 6.0
Exceptionally High Flood	Above 6.0

Flood limits upstream Gauging Station of Shujabad Canal Division

Description	**Trimmu Head Works River Chenab (Lac in Cusec)**	**Sidhnai Barrage River Ravi (Lac in Cusec)**
Low Flood	1.5 - 3.0	0.3 - 0.45
Medium Flood	3.0 - 4.0	0.45 - 0.60
High Flood	4.0 - 4.5	0.6 - 0.90
Very High Flood	4.5 - 6.0	0.9 - 1.20
Exceptionally High Flood	Above 6.0	Above 1.20

4.2 TIME LAGS OF FLOODS

TABLE OF DISTANCES AND TIME LAGS FOR FLOOD IN RIVER CHENAB AND RAVI IN SHUJABAD DIVISION.

Sr No	Stages	River Chenab					River Ravi				
		Marala to Khanki 39 -miles	Marala to Qadarabad 57-miles	Qadarabad to Trimmu 163-miles	Trimmu to Shershah 100-miles	Shershah to Punjnad 60-miles	Jassar to Shahdara 72-miles	Shahdara to Balloki 54-miles	Balloki to Sidhnai Barrage 240miles	Sidhnai Barrage to Shershah 80-miles	Shershah to Punjnad 60-miles
		Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours
1	2	3	4	5	6	7	8	9	10	11	12
1	Low flood	12	15	48	48	30	45	25	110	40	35
2	Medium flood	12	14	45	48	30	42	24	100	36	32
3	High flood	10	12	40	44	25	36	19	90	30	30
4	Exceptionally high flood	10	12	40	38	22	35	18	88	29	29

TABLE SHOWING DISTANCES AND TIME LAGS FOR FLOOD IN RIVER CHENAB IN SHUJABAD DIVISION.

River Chenab

S. No	Stages	TRIMMU BARRAGE to			RIVER RAVI-CHENAB CONFLUENCE POINT TO	Nawabpur Flood Bund RD: 0+920 at Spur No.1
		Fazil Shah Flood Bund (44.0 miles)	River Ravi Confluence point/ Opposite RD 8+000 of Fazil Shah Flood Bund (45.5 miles)	Nawabpur Flood Bund RD: 0+920 at Spur No.1 (76.0 miles)	Nawabpur Flood Bund RD: 0+920 at Spur No.1 (30.6 miles)	Sher Shah Bridge (24.0 miles)
		Hours	Hours	Hours	Hours	Hours
1	2	3	4	5	6	7
1	Low Flood	21	22	36	15	12
2	Medium Flood	21	22	36	15	12
3	High Flood	19	20	33	13	11
4	Exceptionally High Flood	17	17	29	12	09

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TABLE OF SHOWING DISTANCES AND TIME LAGS FOR FLOOD IN RIVER RAVI IN SHUJABAD DIVISION.

River Ravi

S.No	Stages	SIDHNAI BARRAGE TO			Nawabpur Flood Bund RD: 0+920 at Spur No.1
		Fazil Shah Flood Bund (24.0 miles)	Nawabpur Flood Bund RD: 0+920 at Spur No.1 (30.6 miles)	Nawabpur Flood Bund RD: 0+920 at Spur No.1 (56.0 miles)	Sher Shah Bridge (24 Miles)
		Hours	Hours	Hours	Hours
1	2	3	4	5	6
1	**Low Flood**	12	15	27	12
2	**Medium Flood**	12	15	27	12
3	**High Flood**	11	13	25	11
4	**Exceptionally High Flood**	09	12	21	09

NOTE:-

Time lags mentioned above have been calculated for stages which correspond to low floods. High discharges make more transit time due to heavy spilling enroot.

4.3 HIGHEST FLOODS

AT SIDHNAI HEAD WORKS			AT TRIMMU HEAD WORKS		
Year	**Date**	**Discharge (Cs)**	**Year**	**Date**	**Discharge (Cs)**
1972	16.07.1972	22916	1972	12.07.1972	566984
1973	16.08.1975	210339	1973	12.08.1973	963249
1992	16.09.1992	93910	1992	14.09.1992	982027
1995	12.09.1995	210320	1995	01.08.1995	859881
2014	12.09.2014	71112	2014	10.09.2014	626006
2025	03.09.2025	209320	2025	01.09.2025	550965

- Highest Flood Discharge observed during 1992 as 982027 Cs. in Shujabad Canal Division.

4.4 PEAK DISCHARGES

AT SIDHNAI HEAD WORKS			AT TRIMMU HEAD WORKS		
Year	**Date**	**Discharge (Cs)**	**Year**	**Date**	**Discharge (Cs)**
2001	07.08.2001	30585	2001	18.08.2001	85831
2002	18.08.2002	16086	2002	17.08.2002	125427
2003	-	-	2003	22.02.2003	165223
2003	09.08.2003	25486	2003	08.08.2003	137705
2004	23.08.2004	12773	2004	20.08.2004	48739
2005	23.07.2005	12078	2005	11.07.2005	171137
2006	02.08.2006	25595	2006	07.09.2006	270270

Peak Discharges

AT SIDHNAI HEAD WORKS			AT TRIMMU HEAD WORKS		
Year	**Date**	**Discharge (Cs)**	**Year**	**Date**	**Discharge (Cs)**
2007	19.08.2007	14405	2007	17.08.2007	70093
2008	24.08.2008	38691	2008	07.08.2008	67836
2009	25.08.2009	23009	2009	21.08.2009	62265
2010	11.08.2010	10378	2010	11.08.2010	333404
2011	18.09.2011	17676	2011	20.09.2011	133090
2012	10.09.2012	26086	2012	07.08.2012	67694
2013	25.08.2013	77630	2013	20.08.2013	267609
2014	12.09.2014	71112	2014	10.09.2014	626006
2015	28.07.2015	38539	2015	31.07.2015	134715
2016	10.08.2016	9806	2016	11.08.2016	153334
2017	08.08.2017	16667	2017	05.08.2017	89345
2018	08.08.2018	15570	2018	05.08.2018	87204
2019	05.09.2019	15384	2019	22.08.2019	93021
2020	01.09.2020	28214	2020	01.09.2020	196077
2021	04.08.2021	32002	2021	31.07.2021	123167
2022	29.07.2022	22843	2022	18.08.2022	122891
2023	03.08.2023	43758	2023	26.07.2023	116786
2024	30.08.2024	24711	2024	19.08.2024	87030
2025	03.09.2025	209320	2025	01.09.2025	550965

CHAPTER -5
FLOOD FIGHTING STRATEGY

Prior to the commencement of the flood season, Shujabad Canal Division, Multan, implements a comprehensive set of precautionary measures to ensure safe passage of floodwater through River Chenab within permissible limits. These measures aim to protect human lives, public infrastructure, irrigation structures, and agricultural lands by establishing an efficient and timely response mechanism.

5.1 Flood Categories and Response Strategy

Flood situations are classified into five categories, each requiring a specific level of monitoring, communication, and flood-fighting readiness.

i) Low Flood (1.50 – 3.00 lac cusecs)

During low flood conditions, the river remains confined within its deep channel. The situation remains safe if gate operations at headworks are performed strictly according to operational rules. Pre-flood works—such as clearance of jungle, filling of depressions, animal burrows (gharas), and porcupine holes—are completed through contractors before the arrival of floods. The low flood at Trimmu Barrage is considered for deployment of Labour and Machinery as per detail mentioned in chapter 14.

ii) Medium Flood (3.00 – 4.00 lac cusecs)

As discharge increases, water begins spreading over adjoining low-lying areas and may touch the toes of flood bunds. The medium flood at Trimmu Barrage is considered for deployment of Labour and Machinery as per detail mentioned in chapter 14.

Key actions include:

- Intensified patrolling and watch-and-ward activities along bunds.
- Close observation to detect leakages, boils, or weak spots.
- Sub-Engineers shifting their flood camps to designated duty points according to approved rosters.
- Hourly communication of gauge readings and discharges to Civil Administration and Flood Warning Centres for timely public alerts.

iii) High Flood (4.00 – 4.50 lac cusecs)

At this stage, the situation becomes sensitive. The High flood at Trimmu Barrage is considered for deployment of Labour and Machinery as per detail mentioned in chapter 14.

- Sub Divisional Officers (SDOs) shift their field camps to bund-side for continuous supervision.
- Round-the-clock monitoring is initiated, especially at erosion-prone reaches, seepage points, and vulnerable embankment sections.

iv) Very High Flood (4.50 – 6.00 lac cusecs)

This stage demands maximum preparedness. The Very High flood at Trimmu Barrage is considered for deployment of Labour and Machinery as per detail mentioned in chapter 14.

- The Executive Engineer (XEN) remains on-site with SDOs to supervise bund patrolling and coordinate flood fighting operations.
- All critical gauges are monitored continuously.
- In case of rising trends, breaching sections are inspected and kept ready for operation in consultation with Civil Administration and Pakistan Army.

v) Exceptionally High Flood (Above 6.00 lac cusecs)

Special vigilance is required, especially at RD 11+350 of Akbar Flood Bund, identified as a critical gauge point. The Exceptionally High flood at Trimmu Barrage is considered for deployment of Labour and Machinery as per detail mentioned in chapter 14.

- Immediate alerts are issued to Civil Administration, Pakistan Army, Rescue 1122, and all emergency agencies.
- If the gauge reaches 417.50 ft and continues to rise, the Executive Engineer formally requests Pakistan Army to operate the breaching section to save protected areas.
- After water recedes, closure of the breaching section is undertaken on priority.

5.2 Reaches Prone to Parallel Flow and Damages

Certain reaches of the flood bunds are vulnerable to parallel flows and spill conditions, posing threats to embankment safety. These critical reaches are enlisted in Appendix–I (Pages 28–29) and require enhanced vigilance during medium to exceptionally high floods.

5.3 Vulnerable Sites

Locations that become critical during high floods and require continuous monitoring, night patrolling, and immediate response readiness are listed in Appendix–II (Page 30).

5.4 Danger Gauges

Because the general public may not understand flood discharges in cusecs, specially designed danger (red band) gauges have been installed at selected bund locations.

- The red band is 3 inches wide and marks the danger level.
- When water touches or surpasses this mark, evacuation becomes mandatory.
- If the river is rising while the danger mark is crossed, immediate warnings are issued to the local population.

Details are provided in Appendix–III (Page 30).

5.5 Extent of Flooding

Flood spread depends on discharge intensity and levels of the floodplain.

- At medium flood, river-side areas become submerged.
- Spill from the tail of Akbar Flood Bund may inundate areas behind the first defense line.
- Higher discharges cause unpredictable expansion of inundated zones.

To reduce future risk, a scheme has been prepared to connect the tail of Akbar Flood Bund with Shujabad Branch, thereby minimizing spill-over impact on agricultural and residential areas.

5.6 Relief Cuts

When the first defense line breaches, water accumulates between the first and second defense bunds, creating excessive head pressure toward the tail. To avoid panic-driven or random cuts, pre-determined relief cut locations are approved:

1. Chenab Flood Bund: RD 151+000 to 157+000
2. Escape Link Bund (Right & Left): RD 5+500 to 7+300
3. Nawabpur Flood Bund: RD 16+000 to 17+000

These controlled cuts release accumulated water safely and prevent damage to protected areas.

5.7 Machinery for Relief Cuts & Emergency Repairs

a) Machinery for Relief Cuts

Relief cuts require substantial earthwork using dozers, excavators, or—in extreme conditions—blasting.

- A minimum of three dozers and four excavators will be arranged from Agriculture Engineering Department or other sources.
- Machinery will be stationed at Nawabpur Regulator and Satburji Rest House.
- If machinery is unavailable, assistance from Pakistan Army Engineers may be requested for blasting operations.
- Additional support (liners, equipment) may be arranged from Trimmu or Sidhnai Barrage Divisions.

b) Machinery for Emergency Repairs

The following machinery will remain deployed at vulnerable sites for immediate flood fighting response:

1. Fazil Shah Flood Bund
    - One No Excavator along with three Tractor Trolley will remain between RD 0+000 to 10+000.
2. Chenab Flood Bund:
    - Two dozers two No Excavator with three tractor Trolleys with each excavator at RD 28+000–30+000 and RD 30+000–86+000
3. Akbar Flood Bund
    - One Excavator and Three Tractor Trolleys will remain between RD 0+000 to 17+000 of Akbar Flood Bund.
4. Nawabpur Flood Bund:
    - One Excavator and Three Tractor Trolleys will remain between RD 0+000 to tail of Akbar Flood Bund.
5. Shujabad Branch:
    - One dozer and one excavator along with three Tractor Trolleys between RD 231+000 to 279+000 of Shujabad Branch.
6. Jalalpur Khaki Flood Bund:
    - One Excavator and three Trolleys will remain between RD 30-45 OF Jalalpur Khaki Flood Bund.
7. **Baloachwah Flood Bund:**
    - One dozer along with 1 Excavator and Tractor Trolleys will remain between RD 14+000–17+000
8. **Nagni Flood Bund:**
    - One dozer at RD 49+000
9. Kund Sargana
    - One Excavator and Three Trolleys will remain at guide Head Spur at Kund Sargana.

The bulldozers will be arranged through Agriculture Engineering Department, office of Deputy Commissioner, or Pakistan Army and Excavators will be arranged through local bidding.

5.8 Counter-Sabotage Measures

During extreme flood conditions, residents may attempt unauthorized cuts to protect their lands, while anti-state elements may attempt sabotage.

Therefore:

- Close coordination with Civil Administration, Police, and other law-enforcement agencies is required.
- Bunds must be patrolled continuously—especially during night hours and peak flood levels.
- All suspicious activity must be reported immediately to the SDO and Executive Engineer.

5.9 Health Measures: Mobile / Field Dispensary

Floodwater carries venomous snakes, scorpions, insects, and disease vectors that pose health risks to field staff and residents.

The District Health Officer is requested to provide:

- Mobile dispensaries
- Emergency medicines
- Anti-snake venom and anti-tetanus serum
- Vaccination teams for prevention of waterborne epidemics

5.10 Flood Inundation Factors

Flood levels have progressively increased over the years due to factors such as:

1. Aggradation of river channels
2. Reduction in effective waterway, caused by:

- Proliferation of permanent structures (houses, tubewells, orchards, etc.)
- Cultivation of tall crops like sugarcane and jantar within riverbelt

These activities must be discouraged to prevent further narrowing of the river floodplain.

5.11 Flood Stages and Limiting Discharges

Since no discharge measurement station exists directly opposite the flood bunds within Shujabad Division, flood categorization is based on effective total discharges below Trimmu and Sidhnai Barrages.

Flood limits revised by the Punjab Flood Commissioner in the 55th Meeting held on 17.06.1974 are still applicable:-

Flood Categories

1. Low Flood: 1.50 – 3.00 lac cusecs
2. Medium Flood: 3.00 – 4.00 lac cusecs
3. High Flood: 4.00 – 4.50 lac cusecs
4. Very High Flood: 4.50 – 6.00 lac cusecs
5. Exceptionally High Flood: ≥ 6.00 lac cusecs

These limits are applicable to effective total discharges below Trimmu and Sidhnai Barrage.

STATEMENT SHOWING THE REACHES OF FLOOD BUNDS & DISCHARGES AT WHICH SPILL TOUCHES AND POSITION OF PARALLEL FLOW. APPENDIX-I

Sr No.	Name of Flood Bund	Discharge at Which Spill Touches	Reaches of the Bund Touched	Position of Parallel Flow	Remarks
1	2	3	4	5	6
1	Fazal Shah flood bund	2.0 Lac Cs	6+000-10+500	Tail Mild	The parallel flow intensities beyond 4.0 lac Cs. Earthen and No. of pitched x-spurs have been constructed to check parallel flow in addition.7 No. sloping spur and 14 No. stone studs have also been constructed.
		3.0 Lac Cs	3+000- Tail	Moderate	
		4.0 Lac Cs	3+000- Tail	Severe	
		Above			
		4.0 Lac Cs	0+000- Tail	Severe to intense	
2	Chenab flood bund	2.0 Lac Cs	40+000-65+000	Mild	
			120+000- Tail	Mild	
		3.0 Lac Cs	0+000- Tail	0+000-40+000 Moderate	
				40-55 Severe	
				4859 Severe	
				90-91 Severe	
				103-104 Severe	
				120 Tail	
		4.0 Lac Cs	0+000- Tail	Intensive	
		Above			
3	Nawabpur flood bund	2.0 Lac Cs	0+000- Tail	Mild	
		3.0 Lac Cs	0+000- Tail	Moderate	
		4.0 Lac Cs	0+000- Tail	Severe	
		above4.0 Lac Cs	0+000- Tail	Intensive5-6,10-11 &17-Tail	
4	Akbar flood bund	2.0 Lac Cs	6+000- Tail	Mild	
		3.0 Lac Cs	6+000- Tail	Severe	
		4.0 Lac Cs	6+000- Tail	Severe intensive	
		above4.0 Lac Cs	6+000-Tail	Intensive RD.12-14	
5	RD.17-35 Gajju Hatta Branch Nagni flood bund	2.0 Lac Cs	25+000-40+000,48+000-52+000	Normal	The portion of flood bund comes under action when Sher Shah Railway flood bund is breached.
		3.0 Lac Cs	33+000-40+000	Mild	
		4.0 Las Cs	33+000-51+000	Moderate	
		above 4.0 Lac Cs	2+000-51+000	Severe intensive	
		3.0 Lac Cs	21+000-24+000	Mild	
		4.0 Lac Cs	20+000-26+000	Moderate	
		above4.0 Lac Cs	0+000-26+000	Severe intensive	

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6	Dhundoo flood bund	2.0 Lac Cs	0+000-23+000	Normal	Spill water touches. Five earthen cross spurs have also been constructed to check parallel flow.
		3.0 Lac Cs	21+000-24+000	Mild	
		4.0 Lac Cs	20+000-26+000	Moderate	
		above4.0 Lac Cs	0+000-26+000	Severe intensive	
7	Jalalpur Khaki flood bund	3..0 Lac Cs	40+000-45+000	Moderate	Spill water and also creates emergency in reach RD.16+000-20+000 due to parallel flow
		4.0 Lac Cs	30+000-Tail	Severe	
		4.5 Lac Cs	10+000-Tail	Severe intensive RD.45-Tail	
8	Gardezpur flood bund Tie bund	2.25 Lac Cs	0+000-2+000	Normal	Four earthen cross spurs have already been constructed to check this parallel flow
		2.0 Lac Cs	0+000-13+000	Moderate	
		3.0 Lac Cs	0+000-13+000	Severe	
		4.0 Lac Cs	0+000-13+000	Intensive	
9	Balochwah flood bund	2.0 Lac Cs	5+000-14+000	Moderate	Spill water touches, Reach RD.16+000-20+000 is very sensitive and usually creates alarming situation during flood.
		3.0 Lac Cs	0+000-18+000	Severe	
		4.0 Lac Cs	0+000-18+000	Severe	
		above4.0 Lac Cs	0+000-18+000	Intensive	

(Appendix-II)

STATEMENT SHOWING VULNERABLE REACHES/SITES ON FLOOD BUNDS IN SHUJABAD CANAL DIVISION MULTAN WHICH REQUIRE SPECIAL ATTENTION.

Sr.No.	Name of Flood Bund	Vulnerable Reach/Sites
BINDA CANAL SUB DIVISION		
1	Fazil Shah flood bund RD.0+000-10+500	RD.0+000 to 4+000
2	Kund Sargana RD.0+000-6+300	RD.2+000, 4+000
3	Chenab flood bund RD.0+000-140+000	RD.3+000, 9+000, 10+000 , 50+000-52+000 & 87+000,117+000,134+000,137+000 Chenab Flood Bund
ILAMPUR CANAL SUB DIVISION		
4	Chenab Flood Bund RD.140+000-157+950	RD.150+000-157+000
5	Nawabpur Flood Bund RD.0+000-17+950.	RD.0+000-5+000
6	Akbar Flood Bund RD.0+000-21+710	RD.6+000-11+000 Akbar Flood Bund
7	Right bank of Shujabad Branch RD.231+000-279+000.	Shujabad Branch RD:245+000 ,248+000, 252+000, 270+000-279+000
8	Sher Shah Flood Bund RD.0+000-20+437	Sher Shah Flood Bund RD. 9+000,10+000, 12+000,13+000,18+000-19+000
9	Sher Shah Railway Flood Bund RD.0+000-15+100.	Sher Shah Railway Flood Bund RD. 4+000,5+000 (Crossing Sher Shah disty) RD.14+000-15+000
10	Elliptical Guide Bund	RD.0+000-1+000 (Crossing SNGPL)
SHUJABAD CANAL SUB DIVISION		
11	Nagni Flood Bund RD.0+000-51+000	RD.40+000-50+000 Nagni Flood Bund
12	Dhundoo Flood Bund RD.0+000-26+500	RD.16+000-26+000 of Dhundoo Flood Bund
13	Jalalpur Khakhi Flood Bund RD.0+000-60+000	RD. 7+000-11+000, 45+000 -55+000
14	Balochwah Flood Bund RD.0+000-62+130	RD.10+000-18+000, 33+000-38+000 40+000-42+000, .60+000-62+000

NOTE:-

A site becomes vulnerable when it is expected to face.

(i) Wave action.
(ii) Direct attack by a River creek.
(iii) Intense parallel flow or contains bed soil with large depth and head across.

(APPENDIX-III)

TABLE SHOWING THE DANGER GAUGES FOR FLOOD BUNDS IN SHUJABAD CANAL DIVISION MULTAN.

Sr No.	Name of Flood Bund	Danger Flood Mark River Rising	Site	Remarks
1	Chenab flood bund.	431.60	RD.50+000	
2	Chenab flood bund.	418.50	RD.130+000	
3	Chenab flood bund.,	413.30	RD.157+950	
4	Nawabpur flood bund.	410.30	RD.10+000	
5	Akbar flood bund.	417.50	RD.11+350	
6	Sher Shah Railway Bridge	393.10	RD.15+100	
7	Nagni flood bund.	378.50	RD.45+000	
8	Dhundoo flood bund	373.50	RD.20+000	
9	Jalalpur Khaki flood bund.	359.80	RD.55+000	
10	Baloachwah flood bund.	355.70	RD.10+000	

The above danger gauges have been proposed in consideration of the site conditions contained during high flood(when the danger levels on these gauges are touched). The people will automatically know that they have to evacuate immediately.

CHAPTER -6

FLOOD DAMAGES RESTORATION WORKS

Sr. No.	Name of Division	Estimate Amount	Bid Cost
1	Restoration of Cross Studs at RD.251+000 (3-A) Shujabad Branch	1.769	-
2	Restoration of Lower Muzaffarabad Disty RD.0+000 to 37+190	7.448	-
3	Restoration / Strengthening Sher Shah flood bund	13.488	-
4	Restoration of damaged earthen slopes of spurs in panjani section	14.497	5.649
5	Restoration / Strengthening of J-Head Spur No.03 at RD.248+000 Shujabad Branch	2.144	-
6	Restoration of extended Guided Spur No.3-B RD.252+000 of Shujabad Branch	6.354	-
7	Restoration of extended Guided Spur No.04 at RD.263+000 of Shujabad Branch	1.867	-
8	Restoration of X-Spur RD.57+000 Chenab flood bund	9.066	5.642
9	Restoration of Cross Spurs along Chenab flood bund RD.0+000 to 157+950	24.317	11.497
10	Restoration of Damaged slopes & Nose of X-Spurs RD.4+000 of Dhundoo flood bund in Shujabad Section	3.595	1.415
11	Restoration of J-Head Spur RD.42+000 Nagni flood bund	13.066	8.448

CHAPTER -7

FLOOD FIGHTING / WATCHING ARRANGEMENT

7.1 PRE-FLOOD ARRANGEMENT

The pre-flood period will be counted as the period starting from the start of flood season upto the time the flood water rises upto 1.00ft, above general N.S.L. along bunds. During this period two watch men per mile per shift will be employed for two shifts during 24 hours. This will apply to Marginal Bund and other flood bunds. Now as decided during Zonal Office meeting dated.03/04/2000that work charge establishment be allowed at the rate of one man per two miles for Pre-flood preparation.

Sr. No.	Zone	Division	Name of Structure	Sanctioned Limit of Reserve Stock	Available Quantity	Deficient Quantity
				(in lac Cft)	(in lac Cft)	(in lac Cft)
1	2	3	4	5	8	7 (5-6)
1	Multan	Shujabad	Chenab Flood Bund RD.21+000-26+000	0.15	0.02	0.13
2	"	"	Chenab Flood Bund RD.28+000-33+000	0.15	0.00	0.15
3	"	"	Chenab Flood Bund RD.47+000-50+000	0.15	0.00	0.15
4	"	"	Chenab Flood Bund RD.61+000-63+000	0.15	0.13	0.02
5	"	"	Chenab Flood Bund RD.80+000-96+000	0.15	0.13	0.02
6	"	"	Chenab Flood Bund RD.96+000-110+000	0.15	0.12	0.03
7	"	"	Chenab Flood Bund RD.113+000-117+000	0.15	0.00	0.15
8	"	"	Chenab Flood Bund RD.118+000-129+000	0.15	0.00	0.15
9	"	"	Chenab Flood Bund RD.131+000-140+000	0.15	0.00	0.15
10	"	"	Guide Bank Spur No.1 RD.0+920 Nawabpur Flood Bund	2.00	0.03	1.97
11	"	"	J-Head Spur No.2 RD.14+400 Akbar Flood Bund	1.00	0.30	0.70
12	"	"	J-Head Spur RD.248+000 1st defence line Shujabad Branch	1.00	0.30	0.70
13			J-Head Spur RD.252+000 1st defence line Shujabad Branch	1.00	0.20	0.80
14	"	"	J-Head Spur RD.263+000 1st defence line Shujabad Branch	1.00	0.30	0.70
15	"	"	Mole Head Spur at RD.42+200 Nagni flood Bund	1.00	0.50	0.50
16	"	"	Mole Head Spur at RD.45+700 Nagni Flood Bund	1.00	0.50	0.50
17	"	"	Slopping Spur RD.10+000 at Baloch wah flood bund	0.50	0.15	0.35
			Total	**11.85**	**2.680**	**7.17**

Note:- Estimate is sanctioned procurement is under process funds required Rs.131.866 Million.

7.2 Watching Establishment

The watching establishment will be deployed according to recommendations of committee constituted by administrative department vide No. S.O (Flood) VII 22/2017 Dated: 26.12.2025 for finalization of machinery and human resources requirements for flood fighting Plan and the flood stage. The following Establishment depicts strength of establishment required during flood season in addition to regular establishment.

Flood Embankment	Length in Canal Mile	Flood Limits							
		Normal Flood		Low Flood		Medium / High Flood		Exceptionally High Flood	
		Man	Shift	Man	Shift	Man	Shift	Man	Shift
		(1 person / 2 Mile / Shift (1 Shift)		1 person / mile / Shift (1 Shift)		2 Person Mile/ Shift (2 Shift)		5 Person / mile / Shift (3 Shift)	
Fazil Shah flood bund RD.0+000 to RD10+500	2.10	1	1	2	1	4	2	10	3
Chenab flood bund RD.0+000-157+950	31.59	16		32		64		160	
Nawabpur escape bund L&R RD.0+000-8+000x2 =16+000	3.20	2		3		6		16	
Nawabpur flood bund RD.0+000-17+950	3.60	2		4		7		18	
Akbar flood bund RD.0+000-21+710	4.30	2		4		9		22	
Sher Shah Flood Bund RD.0+000-20+437	4.08	2		4		8		20	
Sher Shah Railway Flood Bund. RD.0+000-15+100	3.02	2		3		6		15	
Right bank of Shujabad BranchRD.231+000-279+000	9.6	5		10		20		50	
Right bank of Gajju Hatta Branch RD.17+000-35+000	3.60	2		4		7		18	
Nagni flood bund RD.0+000-51+000	10.20	5		10		20		50	
Dhundoo flood bund RD.0+000-26+500	5.30	3		5		10		16	
Gardez flood bund RD.0+000-15+750	3.28	2		3		7		16	
Jalalpur Khaki flood bund RD.0+000-60+000	12.0	6		12		24		60	
Satburji Flood Bund RD.54+000-72+500 along Satburji Disty	3.70	2		4		8		18	
Tie Flood Bund RD.0+000-8+600	1.72	1		2		3		8	
Baloch wah flood bund RD.0+000-62+230.	12.44	6		12		25		61	
TOTAL Per Shift		**59**	**1**	**114**	**1**	**228**	**2**	**558**	**3**
TOTAL		**59**		**114**		**456**		**1674**	
NO. OF MATES		**5**		**10**		**38**		**140**	

Note :- 01 No. Mate is for every 12 No. Beldars.

In case of extreme emergency due to swirl action or due to parallel flow, the Executive Engineer, Shujabad Canal Division should be authorized to engage Labour and material upto extent in consultation with the Superintending Engineer, Haveli Canal Circle Multan.

Note :- Payment for work charge labour subject to verification by TPM Consultants.

7.3 Arrangement at sensitive sites

(i) For all spots, sufficient quantity of flood fighting material with manpower will be made available in all these camps. Engagement of work charge establishment to supplement the efforts through regular establishment will be made in accordance with the demand of the situation.

Sr. No.	Flood Embankment	Length in Canal Mile	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	Chenab flood bund RD.0+000-157+950	31.59	RD 9 - 10 RD 85 - 87 RD 150 - 151+800	3	-	1	3
2	Akbar flood bund RD.0+000-21+710	4.30	RD 0+000 - 11+350	1	-	-	-
3	Sher Shah Flood Bund RD.0+000-20+437	4.08	RD 6 - 7 RD 19 - 20	2	-	-	-
4	Sher Shah Railway Flood Bund. RD.0+000-15+100	3.02	RD 11 - 12	1	-	-	-
5	Right bank of Shujabad BranchRD.231+000-279+000	9.6	RD 248 - 252	1	-	1	1
6	Nagni flood bund RD.0+000-51+000	10.20	RD 35+000 – 42+200	1	-	1	1
7	Dhundoo flood bund RD.0+000-26+500	5.30	RD 18 - 25	1	-	-	-
8	Jalalpur Khaki flood bund RD.0+000-60+000	12.0	RD 35 - 45	1	-	1	1
9	Baloch wah flood bund RD.0+000-62+230.	12.44	RD 22 - 44	1	-	1	1
	TOTAL			**12**	-	**5**	**7**

7.4 Watching Material

Watching material will be placed at different camp sites, an additional material will also be required in order to meet with extraordinary worst situation and to recoup the site situation. Hence the following material will be kept ready in the Workshop for this purpose.

Minimum requirement of flood fighting materials for permanent Camp (15 Miles)

Sr. No.	Name of articles	Unit	Quantity Required	Quantity Available	Balance Quantity Required	Remarks
1	Shouldari / Tent	No.	12	-	12	Balance quantity of watching Material would be purchased before the onset of flood 2026 subject to approval of competent authority.
2	Chair	No.	72	-	72	
3	Table	No.	12	-	12	
4	Generator (2 - 3 KVA)	No.	12	-	12	
5	Pedestal Fans	No.	12	-	12	
6	Charpois	No.	24	-	24	
7	Symbolic Jackets	No.	600	-	600	
8	Polyethene Sheet	No.	1200	400	800	
9	Bamboo (4" dia and 10 ft long)	No.	1200	350	850	
10	Water Cooler	No.	12	-	12	
11	Portable umbrella	No.	24	-	24	
12	Life Jackets	No.	60	-	60	
13	Utensils (10 person serving)	No.	12	-	12	
14	Jute /Plastic bags	No.	12000	3000	9000	
15	Walke Talkie Set	Set	24	-	24	
16	Raincoats	No.	120	-	120	
17	LED flood light	No.	120	-	120	
18	Extension Cable (10 ft)	No.	24	-	24	
19	Recharge torches	No.	240	-	240	
20	Kassi	No.	240	-	240	
21	Axes	No.	240	-	240	
22	G.I. Buckets	No.	60	-	60	
23	7/44 Cable	Feet	6000	1500	4500	
24	Sutli	Kg	24	-	24	
25	Sewing Needles	No.	120	-	120	
26	Emergency Medical	No.	12	-	12	
27	Wire crates (3x3x3) at only those camp near river action and reserve stock exists)	No.	1200	-	1200	

Minimum requirement of flood fighting materials for temporary Camp (7 or 5Miles during medium to exceptionally high flood to be outsourced)

Sr. No.	Name of articles	Unit	Quantity Required	Remarks
1	Shouldari / Tent	No.	1	**Minimum requirement of flood fighting materials for temporary Camp will be outsource.**
2	Walke Talkie	Sets	1	
3	Chair	No.	6	
4	Raincoats	No.	10	
5	Table	No.	1	
6	LED flood light	No.	10	
7	Generator (2 - 3 KVA)	No.	1	
8	Extension Cable (10 ft)	No.	2	
9	Pedestal Fans	No.	1	
10	Rechargeable torches	No.	20	
11	Charpois	No.	2	
12	Kassi	No.	20	
13	Symbolic Jackets	No.	50	
14	Axes	No.	20	
15	Water Cooler	No.	1	
16	G.I Buckets	No.	5	
17	Portable umbrella	No.	2	
18	7/44 cable	feet	500	
19	Utensils (10 person serving)	No.	1	
20	Sutli	Kg	2	
21	Jute /Plastic bags	No.	500	
22	Sewing Needles	No.	10	

Note :- Material will be purchased before onset of flood season 2026 subject to approval of competent authority.

7.5 Arrangement for Sounding & probing

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

7.6 Lighting Arrangement

On very dangerous locations like depressions or old breach sites, electric lighting would be provided with portable generating sets, if possible, low tension electric supply line would be got installed in dangerous reaches of flood bunds, as generating sets and regular transmission line facilities may not be normally possible; available resources may be utilized. However, efforts to obtain portable electric generating sets of about 2.5 K.V. capacities will be continued 5 No, such generating sets are be required.

7.7 Ration Arrangement

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

7.8 P.O.L Arrangement for vehicle

P.O.L facilities / arrangement will be made by the Irrigation Department & chargeable to flood embankments during flood.

7.9 Transportation

Provision for at least one jeep for each Sub Divisional Officer plus one for the Executive Engineer, will be aimed at. If these cannot be provided from departmental resources, requisition will be placed with civil authorities well in time for arrangement in terms of District Flood Protection Scheme.

One motor truck or pick up will also be provided in each Sub Division to handle carriage of materials. The truck may be hired direct or requested through Civil Authorities. Special vehicles would be arranged in each Sub Division through private sources in order to combat any vigorous situation. This vehicles comprises of special flood fighting arrangements along with establishment.

7.10 Law and order

Law and order situation will be tackled by the Civil Administration with the help of Police Department

7.11 Medical Arrangement for Labour

Health Department will be responsible for mobilizing their sources to carry out necessary operation for providing medical facilities to the labour.

7.12 Liaison with other Department

Executive Engineer Shujabad Canal Division Multan will keep liaison with the Civil and Army Authorities and will also keep the Superintending Engineer Haveli Canal Circle Multan and Chief Engineer, Irrigation Multan Zone Multan fully apprised of the flood situation in Shujabad Canal Division Multan.

7.13 Role of Army

Commander, Engineer 2-Corps, Multan will perform activities to fight flood emergency During Flood 2026.

7.14 Duties of telephone Attendant

Sr.No.	Name of Person	Period	Time	
			From	To
1	Muhammad Aslam	15.06.2025 to 15.10.2025	06:00	14:00
2	Muhammad Umair	15.06.2025 to 15.10.2025	06:00	14:00
3	Muhammad Amnan	15.06.2025 to 15.10.2025	06:00	14:00
4	Muhammad Tariq	15.06.2024 to 15.10.2024	14:00	22:00
5	Muhammad Akram	15.06.2025 to 15.10.2025	14:00	22:00
6	Muhammad Waqas	15.06.2025 to 15.10.2025	14:00	22:00
7	Muhammad Asim	15.06.2025 to 15.10.2025	22:00	6:00
8	Muhammad Amnan	15.06.2025 to 15.10.2025	22:00	6:00
9	Muhammad Zeshan	15.06.2025 to 15.10.2025	22:00	6:00

The Telephone attendants will be present 24 hours turn wise .They will receive gauges from all related stations and pass on to concerned quarter for necessary action.

7.15 Wireless arrangements

The wireless sets will be provided by the Deputy Commissioner concerned before the coming flood

DETAIL OF VEHICLES WHERE WIRELESS SET INSTALLED

Sr.No.	Vehicle Name	Designation	Remarks
1	GBA-547	Executive Engineer, Shujabad Canal Division, Multan	Wireless set will be installed before flood season.
2	LEG-07-2847	Sub Divisional Officer, Ilampur Canal Sub Division, Multan	----do----
3	BRB-7794	Sub Divisional Officer, Binda Canal Sub Division, Binda	----do----
4	MNM-3200	Sub Divisional Officer, Shujabad Canal Sub Division, Shujabad	----do----

Note:- Telegraph office will act as base station.

CHAPTER -8

DETAIL OF ENCROACHMENTS

A- LIST OF UNAUTHORIZED ENCROACHES ON FLOOD BUNDS IN SHUJABAD CANAL DIVISION.

Sr. No.	Name of Flood Bund	Total No. Encroachments	No of Encroachments Removed	No of Encroachments to be Removed	Remarks
	TEHSIL KABIRWALA & DISTRICT KHANEWAL				
1	Fazil Shah Flood Bund RD.0+000 to 10+500	13	8	5	Operation for removal of encroachments is under process.
2	Chenab Flood Bund RD:0+000-94+000	100	84	16	
	TOTAL	**113**	**92**	**21**	
	TEHSIL SADAR MULTAN & DISTRICT MULTAN				
1	Chenab Flood Bund RD:94+00-157+950 Tail	221	221	0	
2	Nawabpur Flood Bund	103	103	0	
3	Akbar Flood Bund	7	7	0	
4	Sher Shah Flood Bund	42	38	4	
5	1st Defence Shujabad Branch	44	44	0	
	TOTAL	**417**	**413**	**04**	
	TEHSIL SHUJABAD & DISTRICT MULTAN				
6	Gajju Hatta Flood Bund	18	18	0	
7	Nagni Flood Bund	99	99	0	
8	Dhundu Flood Bund	124	124	0	
9	Gardez Flood Bund	30	30	0	
10	Jalalpur Khakhi Flood Bund	112	112	0	
	TOTAL	**383**	**383**	**0**	
	TEHSIL JALALPUR PIR WALA & DISTRICT MULTAN				
10	Jalalpur Khakhi Flood Bund	112	112	0	
11	Balochwah Flood Bund	78	78	0	
12	Sat Burji Flood Bund	38	38	0	
13	Tie Flood Bund	57	56	1	
	TOTAL	**285**	**284**	**1**	
	G-TOTAL	**1198**	**1172**	**26**	

Sr. No.	Name of Division	Type / Name of Encroachment	Location	Name of encroacher	Status Whether Removed or not				Remarks
					Category		Status of Encroachments		
					Commercial	Residential	Removed	Not Removed	
		FAZIL SHAH FLOOD BUND							
1	Shujabad Canal Division	House	RD.1-2	Muhamamd Iqbal S/o Ahmed Nawaz	-	Residential	-	To be Removed	Removal of encroachments is being under process.
2		House	RD.3-4	Ghulam S/o Qasim	-	Residential	-	To be Removed	"
3		House	RD.6-7	Iqbal S/o Shafi	-	Residential	-	To be Removed	"
4		House	RD.8-9	bakir S/o Ziarat	-	Residential	-	To be Removed	"
5		House	RD.9-10	Hayat S/o Sher	-	Residential	-	To be Removed	"

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		CHENAB FLOOD BUND							
1		Shop	RD.0-1	Haq Nawaz S/o Ghulam Muhammad	-	Residential	-	To be Removed	"
2		House	RD.3-4	Fazil S/o ALLAH Bakhsh	-	Residential	-	To be Removed	"
3		House	RD.4-5	Falak Sher S/o Nawaz	-	Residential	-	To be Removed	"
4		House	RD.5-6	Jamshaid S/o Khuda Bakhsh	-	Residential	-	To be Removed	"
5		House	RD.10-11	Haq Nawaz S/o Sardar	-	Residential	-	To be Removed	"
6		House	RD.11-12	Noor S/o Ramzan	-	Residential	-	To be Removed	"
7		House	RD.12-13	ALLAH Ditta S/o Rajab	-	Residential	-	To be Removed	"
8		House	RD.13-14	Haji S/o Muhammad Nawaz	-	Residential	-	To be Removed	"
9		House	RD.15-16	Sarfaraz S/o Slabat	-	Residential	-	To be Removed	"
10		House	RD.16-17	Ghulam Shabir S/o Salabat	-	Residential	-	To be Removed	"
11		House	RD.19-20	Ghulam S/o ALLAH Wadhaya	-	Residential	-	To be Removed	"
12		House	RD.20-21	Riaz S/o Haq Nawaz	-	Residential	-	To be Removed	"
13		House	RD.24-25	Haq Nawaz S/o Ghulam	-	Residential	-	To be Removed	"
14		House	RD.26-27	Mukhtiar S/o Shameer	-	Residential	-	To be Removed	"
15		House	RD.27-28	Zafar S/o ALLAH Ditta	-	Residential	-	To be Removed	"
16		House	RD.28-29	Nazar S/o Ameer	-	Residential	-	To be Removed	"
		SHER SHAH FLOOD BUND							
1		2 Houses	RD.2-3/L	Manzoor S/o Ghulam Muhammad	-	Residential	-	To be Removed	"
2		1 House Kacha	RD.2-3/L	Nazim S/o Muhamamd Shareef	-	Residential	-	To be Removed	"
3		3 Shops 1 House	RD.4-5/L	Shoukat Shah S/o Yazdan Shah	-	Residential	-	To be Removed	"
4		Boundary Wall	RD.4-5/L	Fazal Ahmed S/o Muhammad Bakhsh	-	Residential	-	To be Removed	"
		TIE FLOOD BUND							
1		House	RD.1-2/R	Haji Mulazim S/o Khuda Bakhsh	-	Residential	-	To be Removed	"

B- CURRENT STATUS OF ENCROACHMENTS

Sr. No.	***Total Encroachment***	***Encroachment Removed***	***Balance Encroachment***	***Remarks***
1	*1198*	*1172*	*26*	*Removal of encroachments is under process.*

Note: List of Encroachments have already been reported to Civil Administration for vacation of unauthorized encroachments vide this office letter No.821-22/7-L dated 04.04.2020, No. 389-90/7-L dated 04.03.2021, No.1464-65/7-L dated 19.03.2023, No.234-35/7-L dated 28.02.2024 & No.221-22/7-L dated 13.02.2025 Civil Department has vigorously approached for removal of encroachments.

Note:- There is no critical encroachment in Shujabad Canal Division.

CHAPTER -9

DUTY ROSTER / FLOOD FIGHTING PROGRAM

9.1 Executive Engineer, Shujabad Canal Division, Multan:

The Executive Engineer is the overall in-charge of flood protection activities within the jurisdiction of Shujabad Canal Division, covering Districts Khanewal and Multan. He is responsible for supervising and maintaining flood protection measures during the flood season and coordinating with civil and military authorities, as well as the Superintending Engineer, Haveli Canal Circle.

9.2 Sub Divisional Officer, Binda Canal Sub Division:

Responsible for the left Bank of Chenab River from Fazil Shah from RD.0+000-10+500 (Tail) & Chenab Flood Bund RD 0+000- 140+000. Oversees critical Fazil Shah from RD.0+000-4+000, Chenab flood bund Reach RD.3+000, 9+000, 10+000 RD.50+000-52+000 & 87+000, 117+000, 134+000,137+000. .

Primary Camp: Binda Canal Rest House, Binda
Field Camp RD.10+000 & 87+000 of Chenab Flood Bund
Communication Base: Police Frequency, Khanewal

9.3 Sub Divisional Officer, Ilampur Sub Division:

Responsible for the left Bank of Chenab River from Chenab Flood Bund RD 140+000- 157+950. Nawabpur Flood Bund RD.0-17+950, Akbar Flood Bund RD.0-21+710, Right bank of Shujabad Branch RD.231+000-279+000, Sher Shah Flood Bund RD.0-20+437, Breaching Section Sher Shah Railway Flood Bund. Oversees critical Chenab flood bund Reach RD. 150+000-155+000, 155+000-157+000, Nawabpur Flood Bund, RD.0+000-5+000, 6+000-11+000 Akbar Flood Bund, Shujabad Branch RD:245+000, 248+000, 252+000, 270+000-279+000, Sher Shah Flood Bund RD.9+000, 10+000, 12+000, 13+000, 18+000-19+000, SherShah Flood Bund RD4+000, 5+000 (Crossing Sher Shah disty) RD.14+000-15+000 Breaching Section RD.0+000-1+000 (Crossing SNGPL).

Primary Camp: Nawabpur Canal Rest House, Multan
Field Camp RD 11+350 of Akbar Flood Bund
Communication Base: Police Frequency, Multan Saddar

9.4 Sub Divisional Officer, Shujabad Sub Division:

Responsible for the left Bank of Right bank of Gajju Hatta Branch RD.17+000-25+000, Right bank of Gajju Hatta Branch RD.25+000-35+000, Nagni Flood Bund RD.0-51+000, Dhundoo Flood Bund RD.0-26+500, Jalalpur Khakhi Flood Bund RD.0-60+000, Balochwah Flood Bund RD.0-62+130. Oversees critical Chenab flood bund Reach RD.40-50 Nagni Flood Bund, RD.16-26 of Dhundoo Flood Bund RD.7+000-11+000,45+000-55+000,10+000-18+000,33+000-38+000, 40+000-42+000,60+000-62+000, Baloch wah Flood Bund.

Primary Camp: Jalalpur Khakhi Flood Bund
Field Camp RD.45+000 of Jalalpur Khakhi Flood Bund
Communication Base: Police Frequency, Shujabad

9.4 Sub Engineers

Attached at Headquarters (For Emergency Response):

Sub Engineer Sub Engineer Sahu Sec :I.

Field Assignments

Fazal Shah F/B RD.0+000-10+500 and its allied structures.

Sub Engineer Sub Engineer Sardarpur Sec :II.

Field Assignments

Chenab F/B RD.0+000-38+000 and its allied structures.

Sub Engineer Sub Engineer Kukarhatta Sec :III.

Field Assignments

Chenab F/B RD. 38+000-60+000 and its allied structures.

Sub Engineer Sub Engineer Rashida Sec :IV.

Field Assignments

Chenab F/B RD.60+000-80+000 and its allied structures.

Sub Engineer Sub Engineer Binda Sec :V.

Field Assignments

Chenab F/B RD.80+000-100+000 and its allied structures.

Sub Engineer Sub Engineer Bosan Sec :VI.

Field Assignments

Chenab F/B RD. 100+000-135+000 and its allied structures.

Sub Engineer Sub Engineer Chawen Sec :VII.

Field Assignments

Chenab F/B RD. 135+000-150+000 and its allied structures.

Sub Engineer Sub Engineer Nawabpur Sec :VIII.

Field Assignments

Chenab F/B RD. 150+000-157+950 and its allied structures.

Sub Engineer Sub Engineer River survey Sec :IX.

Field Assignments

RD.0-Tail Akbar F/B and its allied structures.

Sub Engineer Sub Engineer Muzaffar abad Sec :X.

Field Assignments

RD.245+000-279+000 Shujabd Branch and its allied structures.

Sub Engineer Sub Engineer Mubarakpur Sec :XI.

Field Assignments

RD.210+000-245+000 Shujabd Branch and its allied structures.

Sub Engineer Sub Engineer Qasba Sec :XII.

Field Assignments

RD.17+000-35+000 Gajju Hatta branch RD.0+000-33+000 Nagni F/B and its allied structures.

Sub Engineer Sub Engineer Gajju Hatta Sec :XIII.

Field Assignments

RD.33+000-51+000 Nagni F/B and its allied structures.

Sub Engineer Sub Engineer Shujabad Sec :XIV.

Field Assignments

Dhundoo and Gardez F/B and its allied structures.

Sub Engineer Sub Engineer Rawan Sec :XV.

Field Assignments

RD.0-60+000 Jalalpur Khaki F/B and its allied structures.

Sub Engineer Sub Engineer Sikandarabd Sec :XVI.

Field Assignments

RD.0-30 Baloachwah F/B and its allied structures.

Sub Engineer Sub Engineer Panjani Sec :XVII.

Field Assignments

RD.30+000-62+230 Bloachwah RD.131+000-139+000 Panjani Disty and its allied structures.

CHAPTER -10

EMERGENCY TELEPHONE NUMBERS

Sr. No	Designation of Officer	H/Q	Office Phone	Residence / Mobile Phone	Addressed
1.	Executive Engineer Shujabad Canal Division Multan Abdali Road Multan.	Multan	061-9200699	0300-6371952	Residence No.02 in officer canal colony old Bwp road, Multan.
2.	Sub Divisional Officer Ilampur Sub Division Multan.	Multan		0301-7496498	
3.	Sub Divisional Officer Binda Canal Sub Division Binda.	Binda	-	0301-8683610	Residence No.12 in officer canal colony old Bwp road, Multan.
4.	Sub Divisional Officer Shujabad Canal Sub Division Shujabad.	Shujabad		0301-3888809 0333-3888809	Residence No.04-A in officer canal colony old Bwp road, Multan.
5.	Executive Engineer Operation Multan Irrigation Zone Multan.	Multan	061-9200139 Fax061-9200133	0304-7032344	Residence No.09 in officer canal colony, old BWP road Multan
6.	Chief Engineer Irrigation Multan Zone Multan.	Multan	061-9200144	0303-7713303	Residence No.04 in officer canal colony old Bwp road, Multan
7.	Superintending Engineer Haveli Canal Circle Multan.	Multan	061-9200136	0333-7638416 0300-1238418	Residence No.03 in officer canal colony old Bwp road, Multan
8.	Deputy Commissioner	Multan	061-200042/43 Fax061-200725	061-9200045	District Court Multan.
9.	Deputy Commissioner	Khanewal	065- 9200032 Fax065-200033	065-9200031	District Courts Khanewal
10.	Flood center 531-2353-Major Qazi Saleem	Multan	061-5312353	061-5312354	Multan.
11.	H/Q Engineer 2-Crops Multan Cantt Multan.	Multan	061-5312360	061-5312362	Multan.
12.	313 Assault Engineer Battalion Multan Cantt.	Multan	061-5315188	061-5315189	Multan.

13.	Haveli Telegraph Office/Emergency flood center.	Multan	061-9200922	-	Old BWP road Multan near Chief Engineer Office.
14.	Town Administrator	Kabirwala	065-2411192	065-585500	Municipal Committee Kabirwala
15.	Town Administrator	Bosan Town	061-9201030	061-4595111	Near M.D.A. Chwok Multan
16.	Town Administrator	Sher Shah Town	061-9200344	-	Near M.D.A. Chwok Multan
17.	Town Administrator	Musa Pak Town	061-9201448	-	Mumtazabad Multan
18.	Town Administrator	Shah Rukne Alam Town	061-9200345	-	Near M.D.A. Chwok Multan
19.	Tehsil Municipal officer	Kabirwala	065-2411587	-	Municipal Committee Kabirwala
20.	Tehsil Municipal officer	Khanewal	065-2556001	-	Municipal Committee Khanewal
21.	Tehsil Municipal officer	Shujabad	061-4396670/ 396715	-	Municipal Committee Shujabad
22.	Tehsil Municipal officer	Jalal pur Pirwala	061-4210334	-	Municipal Committee Jalalpur Pirwala
23.	Tehsil Municipal officer	Sher Shah Town	061-9200777	-	Near M.D.A. Chwok Multan
24.	Tehsil Municipal officer	Musa Pak Town	061-9201446	-	Mumtazabad Multan
25.	Tehsil Municipal officer	Bosan Town	061-9200056	-	Near M.D.A. Chwok Multan
26.	Tehsil Municipal officer	Shah Rukne Alam Town	061-9200685	-	Near M.D.A. Chwok Multan
27.	District Police officer	Multan	061-9200437	-	Near S.P. Chowk Multan
28.	District Police officer	Khanewal	065-9200175	-	District Court, Khanewal
29.	Deputy Superintendent Police	Shujabad	0614-396503	-	Thana Chowk Shujabad
30.	Deputy Superintendent Police	Jalalpur Pirwala	0614-210235 0614-210020	-	Khan Bela Road, Jalalpur Pirwala

31.	Chief Engineer Drainage & Flood Zone, Lahore	Flood Emergency cell	0429-9230602 Fax042-35862081	0309-9970999	Government Engineering Academy Thokhar Niaz Baig Lahore.
32.	General Staff Officer Grade-2 (Operation & Planning) Lahore Cantt.	Lahore	042-66992360	-	-
33.	Rescue Operation (Internal Security) (Flood Relief Operation) Responsibility 5-Brigade 51-Lancers Duty Clerk	Shujabad Jalalpur Pir Wala	NR 531-5120 NR 531-4304 NC 531.4306	531.4305	-
34.	Additional Deputy Commissioner (Revenue)	Khanewal.	065-9200069	-	-
35.	Assistant Commissioner	Khanewal	065-9200242	-	-
36.	Assistant Commissioner	Kabirwala	065-2410611	-	Tehsil Office, Kabirwala
37.	Additional Deputy Commissioner Revenue,	Multan	061-9200073	-	District Court, Multan
38.	Additional Deputy Commissioner / Revenue, City Multan.	Multan	061-9200089	-	District Court, Multan
39.	Additional Deputy Commissioner (Revenue) Sadar Multan	Mutltan	061-9200784	-	District Court, Multan
40.	Assistant Commissioner	Jalalpur Pir Wala	0614-210232	-	Tehsil Office, Jalalpur Pirwala
41.	Assistant Commissioner	Shujabad	061-4396480	-	Thana Chowk Shujabad
42.	Flood Section Irrigation Secretariat, Lahore	Lahore	0429-9212134 0429-6857141 Fax 0429-9012132	-	Old Anarkali, Lahore
43.	Incharge Police Wireless Set Multan. Police Control Call Sign	Multan	15	-	Police Line, Multan
44.	Forecasting Deptt:		061-9200763 531-2016	-	Cant: Multan
45.	Radio Pakistan Security Incharge		061-9200795 061-9200221	-	Near S.P. Chowk, Multan
46.	PTV. News		061-9220227	-	Old Shujabad Road, Multan
47.	Executive Engineer, WAPDA, Cantt.		061-551226 061-9200520	-	Sher Shah Road, Multan
48.	Executive Engineer, WAPDA, City.		061-553348 061-9200518	065-932-552065	Khanewal Road, Multan
49.	Chief Engineer D&F Lahore.		042-99230602	0309-9970999	Government

			Fax 042-35862081		Engineering Academy Thokar Niaz Baig Lahore.
50.	Director Flood & Flood warning Centre		042-99231614	0334-4669308	
51.	Major 51- Lancers Multan Cantt incharge Flood Monitoring Unit.		061-531-5120	-	Multan Cantt:
52.	Major 53-Cavellary Multan.		061-531-5112	-	Multan Cantt:

CHAPTER -11

STANDARD OPERATING PROCEDURE (SOP) FOR BREACHING SECTIONS

11.1 History of the Breaching section

There are two breaching sections:

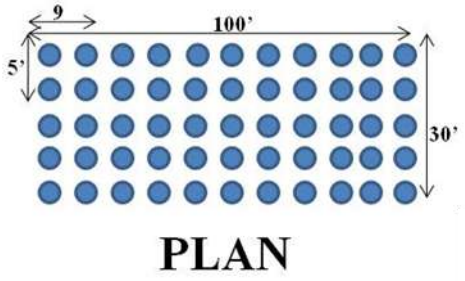
i- Railway Flood Bund near Sher Shah Bridge which is being maintained by Irrigation Department.

ii- Head Muhammad Wala approach road maintained by National Highway Authority.

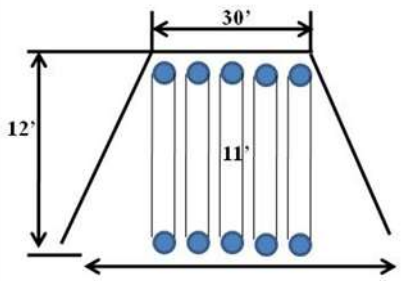
SHER SHAH RAILWAY BREACHING SECTION

The Breaching Section of Railway Flood Bund is exist between RD:11000 to RD:12000 with maximum discharge capacity of 55000 Cs. The Breaching Section has 4 No. of sets. The length of each set is 100ft and width 30ft. The spacing between two consecutive sets is 100ft. Making total length of Breaching Section as 700ft. There are 11 Rows of liners in each sets. The depth of each liner is 11ft and dia 6 inches. The total No of liners in 4 No. set of Breaching Section is 55*4=220Nos. The Breaching Section is operated on attaining flood level 393.50 ft, The gauge for operating of Breaching Section of right pier of Railway Sher Shah Bridge. The Breaching Section is operated on 12/9/2014 with discharge 55000cs.

The Designed detail of set of Breaching Section is as under between RD:11000 to RD:12000 on Sher Shah Railway Flood bund.



PLAN



The Statistic data of Breaching Section is as under:-

➢ Length of liner		= 11 Ft
➢ Breaching Sec		= 30 x 100 Ft
➢ No. of Breaching Set		= 4 No.
➢ No. of Rows		= 11 No.
➢ No. of Liners Per Row		= 5 No.
➢ No. of Liner per Sec		= 55 No.
➢ Distance of Breaching Section from Sher Shah Railway Bridge		= 4600 Ft
➢ Dia of liner		= 6"
➢ Total liners	55x4	= 220 No.

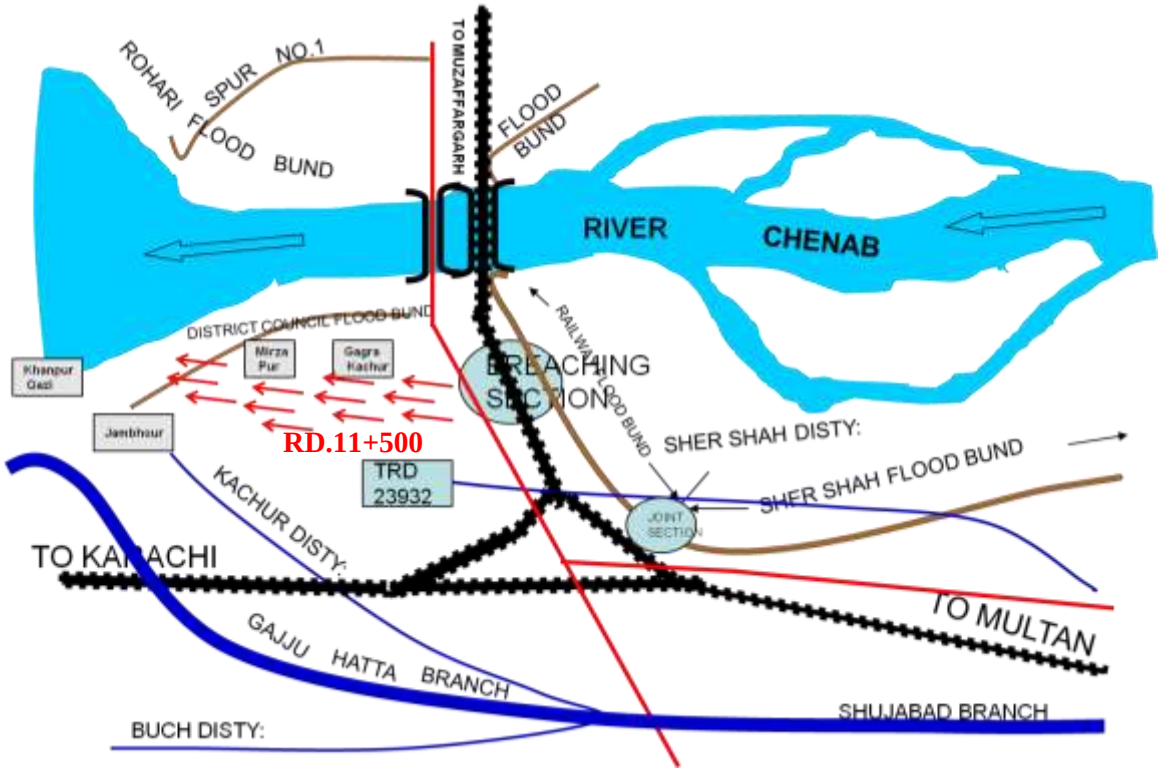
Upon operation of breaching Section, the following village/abadies will be affected.

1. *Gagra kachoor*
2. *Mirza Pur*
3. *Jambhour*
4. *Khan pur Qazi*

Plan showing route of flood water coming out of the breach supported with levels

PLAN ATTACHED

BREACHING SECTION AT SHER SHAH RAILWAY FLOOD BUND BETWEEN RD.11+500



Xen SJD

11.2 Location ,Design ,Quantity, and Variety of the explosive required for detonation

STATUS OF EXPLOSIVE /ACCESSORIES

Sr.No.	*Name of Explosive*	*A/U*	*Quantity Required*	*Quantity Available*	*Deficient Quantity*	*Outstanding Dues if any*
1	Wabox / Eulite (PE-3A)	**Kgs**	**14740**	**14740**	**-**	**-**
2	Wabocord	**M**	**1000**	**1000**	**-**	**-**
3	Safety Fuze No.11	**“**	**150**	**250**	**-**	**-**
4	Det No.8,27,&33 (Elec/ Non Elect/Plain)	**Nos**	**60**	**60**	**-**	**-**
5	Det No.8 Elec	**Nos**	**23**	**23**	**-**	**-**
6	Elect Det No.6 (MS 25 Delay) / Det 25 Micro Sec	**“**	**16**	**16**	**-**	**-**
7	Det MS Elect Delay	**“**	**6**	**6**	**-**	**-**
8	Firing Cable	**M**	**1000**	**1000**	**-**	**-**
9	Primer CE	**Nos**	**500**	**560**	**-**	**-**

Pak Army is responsible for explosive material.

11.3 Arrangement of explosives and security of explosive stores

Kept under safe custody of Pakistan Army.

11.4 List of Security staff along with detail of their training etc.

Security staff done through Pakistan Army.

11.5 Detail of mechanical means as a standby arrangements in case of detonation failure

Minimum requirement of Machinery at Breaching Sections

There are two breaching sections:

i- Head Muhammad Wala at Akbar Flood Bund RD.11+500

Sr. No.	*Detail of Machinery*	*No. of Machinery*
1	*Excavator*	*02*
2	*Dozer*	*01*
3	*Dumper*	*03*

ii- Sher Shah Railway Flood Bund at RD.11+000 to 12+000.

Sr. No.	*Detail of Machinery*	*No. of Machinery*
1	*Excavator*	*02*
2	*Dozer*	*01*
3	*Dumper*	*03*

Machinery including excavator 02 Nos. dozer 01 No. would be placed at site of Breaching Section along with 25 No. of establishment during operation of Breaching Section.

11.6 Duty Roster in case of critical situation

As above chapter No.9

11.7 Breaching committee with their action plan

(A) **BREACHING OPERATION COMMITTEE**. (**Sher Shah Breaching Section)**

Breaching section shall be operated on the orders of the following committee constituted by Government of the Punjab Irrigation Department vide Notification No.SO(FLOODS) VI-33-97 dated 15.07.2015.

1- Deputy Commissioner , Multan = Convener
2- Deputy Commissioner, Muzaffar Garh = Member
3- Executive Engineer, Shujabad Canal Division, Multan = Member
4- Executive Engineer, Highway Department (C&W), Multan = Member
5- Representative from Pak Army not below the rank of a Lt. Colonol = Member

11.8 List of the villages likely to be inundated in case of breach.

i) VILLAGES LIKELY TO BE IN-UNDATED DURING FLOOD.

S.NO.	DISTRICT MULTAN.	S.NO.	DISTRICT KHANEWAL.
1	Nawabpur	1	Binda Sargna.
2	Bakir Abad	2	Chiragh Bela
3	Jalalabad.	3	Choki Mohan
4	Rana Wahin	4	Salar Wahin Nau
5	Akbar Pur	5	Chak Mani
6	Jalalpur Khakhi	6	Chiragh Wali

ii) VILLAGES LIKELY TO BE IN-UNDATED DURING VERY HIGH FLOOD.

S.NO.	DISTRICT MULTAN.	S.NO.	DISTRICT KHANEWAL.
1	Khor Sajra Wahin	1	Gagra Qalandar
2	Bargain	2	Ahar Bela
3	Bait Qaiser	3	Binda Sargana.
4	Karmon Wali.	4	Chiragh Wali.
5	Almadi sura	5	Salar Wahin Kona
6	Jhangi	6	Jamal-ke-charbi
7	Wacha Sandila	7	Mumdal Gharbi
8	Lakshmi Narain	8	Muhammad Pur Nashaib.

iii) VILLAGES LIKELY TO BE IN-UNDATED DURING EXCEPTIONALLY HIGH FLOOD.

S.NO.	DISTRICT MULTAN.	S.NO.	DISTRICT KHANEWAL.
1	Nawabpur	1	Binda Sargana
2	Al Madi Sura	2	Chiragh Bela
3	Akbar Pur	3	Salar Wahin
4	Khanpur	4	Jamal-ke-Garbi
5	Sohman	5	Chiragh Wali
6	Wains	6	Muhammad Pur Nashaib
7	Choti Sharif	7	Salar Wahin Nau
8	Baqir Abad.	8	Ahar Bela
9	Lutaf Abad.	9	Mumdal Gharbi
10	Binda Sandila		
11	Lakshmi Narain		
12	Chak Mani		
13	Mochi Pura		
14	Mahra		
15	Agar Afani.		
16	Tahir Pur		
17	Rana Wahin.		

LIST OF VILLAGES TO BE MAROONED AS A CONSEQUENCE OF ACTIVATION OF BREACHING SECTION.

S.NO.	DISTRICT MULTAN.
1	Sultan Pur Hammar
2	Kachoor
3	Jai
4	Gagra
5	Khan Pur Qazi.

11.9 Announcement and detail of evacuation arrangements

Deputy Commissioner, Multan performs the announcement and he is responsible for evacuation arrangements.

11.10 Details of coordination with Civil/Army authorities.

During flood, several Civil Departments and agencies as well as Army authorities Coordinate with Irrigation Department in the jurisdiction of Shujabad Canal Division. Pre-Flood Joint visits of flood infrastructures are arranged with Army authorities. To Combat with flood situations, meeting are arranged with the following authorities.

a. The Divisional Superintendent Railway, Multan.
b. The Chief Engineer, Irrigation Multan Zone, Multan.
c. The Deputy Commissioner, Multan.
d. The Chief Engineer, Irrigation D.G.Khan Zone, D.G.Khan.
e. The Deputy Commissioner, Muzaffargarh.
f. Representative of WAPDA.
g. Superintending Engineer, Highway Multan.
h. Representative of National Highway Authority.
i. The Commander, Engineer 2-Crops, Multan.
j. The Executive District Officer, Health Multan.

(B) **BREACHING OPERATION COMMITTEE.(Head Muhammad Wala Breaching Section)**

1- Deputy Commissioner Representative of DC Multan = Convener
2- CO 313 Assault Engineering Battalion Multan = Member
3- Deputy Director (Maintenance) NHA Multan = Member
4- Executive Engineer, Shujabad Canal Division, Multan = Member
5- Executive Engineer, Highway C&W Department Multan = Member

11.11 Parallel communication arrangements

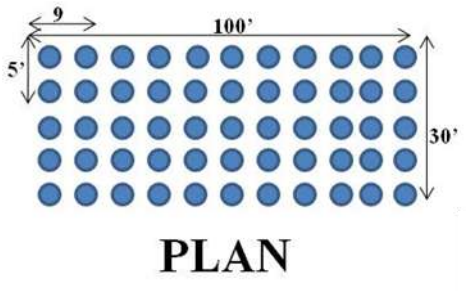
In Shujabad Canal Division communication arrangement about flood run parallel at different forums / departments. Pakistan Meteorological Department Displays the forecast flood situation on its website. Punjab Disaster Management Authority, (PDMA) warns about flood in anticipation. Signaling system of Irrigation Department Army authorities, Police Department as well as print and electronic media play important role in commination arrangements.

Superintending Engineer,
Haveli Canal Circle,
Multan.

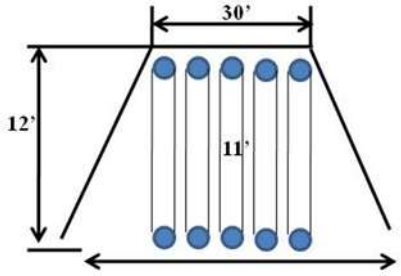
Executive Engineer,
Shuajabad Canal Division,
Multan.

11.12. Index Plan (Plan of Breaching Section)

The Designed detail of set of Breaching Section is as under between RD:11000 to RD:12000 on Sher Shah Railway Flood bund.



PLAN



The Statistic data of Breaching Section is as under:-

➢ Length of liner		= 11 Ft
➢ Breaching Sec		= 30 x 100 Ft
➢ No. of Breaching Set		= 4 No.
➢ No. of Rows		= 11 No.
➢ No. of Liners Per Row		= 5 No.
➢ No. of Liner per Sec		= 55 No.
➢ Distance of Breaching Section from Sher Shah Railway Bridge		= 4600 Ft
➢ Dia of liner		= 6"
➢ Total liners	55x4	= 220 No.

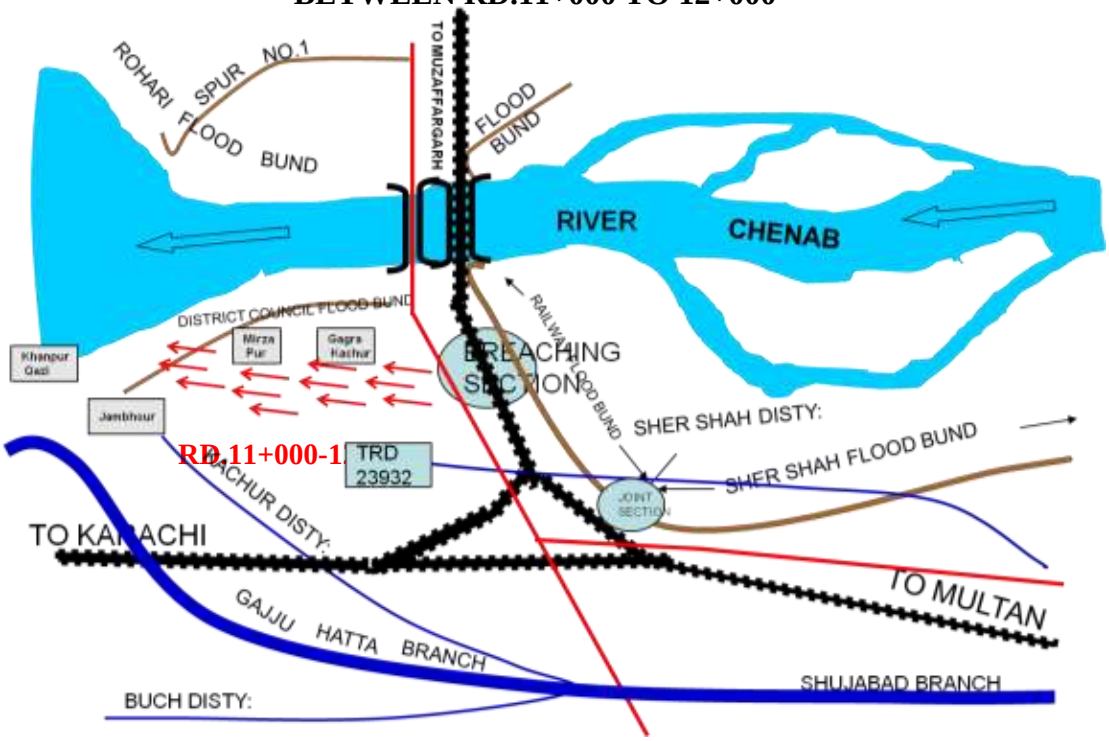
Upon operation of breaching Section, the following village/abadies will be affected.

1. *Gagra kachoor*
2. *Mirza Pur*
3. *Jambhour*
4. *Khan pur Qazi*

Plan showing route of flood water coming out of the breach supported with levels

PLAN ATTACHED

BREACHING SECTION AT SHER SHAH RAILWAY FLOOD BUND BETWEEN RD.11+000 TO 12+000



CHAPTER-12

Vulnerable sites on flood Bund /Structures:

12.1 Apprehended breaches in flood bunds/structures:

Following Flood Bunds at following reaches can be vulnerable.

Sr. No.	Flood Embankment	Length in Canal Mile	Vulnerable sites	
			Reach	No. of Camps
1	Chenab flood bund RD.0+000-157+950	31.59	RD 9 - 10 RD 85 - 87 RD 150 - 151+800	3
2	Akbar flood bund RD.0+000-21+710	4.30	RD 0+000 - 11+350	1
3	Sher Shah Flood Bund RD.0+000-20+437	4.08	RD 6 - 7 RD 19 - 20	2
4	Sher Shah Railway Flood Bund. RD.0+000-15+100	3.02	RD 11 - 12	1
5	Right bank of Shujabad Branch RD.231+000-279+000	9.60	RD 248 - 252	1
6	Nagni flood bund RD.0+000-51+000	10.20	RD 35+000 – 42+200	1
7	Dhundoo flood bund RD.0+000-26+500	5.30	RD 18 - 25	1
8	Jalalpur Khaki flood bund RD.0+000-60+000	12.00	RD 35 - 45	1
9	Baloch wah flood bund RD.0+000-62+230.	12.44	RD 22 - 44	1
	TOTAL			**12**

12.2 Operation of Breaching sections:

The Breaching section of Head Muhammad Wala was approved vide Secretary Irrigation Department letter No.SO(Flood)vi-33/97 dated 15.07.2015 on left approaching road of the bridge in front of the deep river creek plugged by the road embankment when the Critical gauge achieved as RL 417.50.

Year	Head Muhammad Wala	Through Relief Cut	Sher Shah Railway	Through Relief Cut
1992	-	-	982027	205000
2014	626006	85000	626006	55000

12.3 Breaches due to rise of flood water, deterioration of flood bunds etc:

Sher Shah Railway Route plans attached at Page-61.

Sr. No.	Name of Flood Bund	Reach		Page No.
		From RD	To RD	
1	Sher Shah Railway flood bund	11+000	12+000	61

CHAPTER-13

Emergency contingency Plan for vulnerable site (sites) listed above. Emergency Contingency Plan Must include:-

Emergency contingency plan No.1

SITE NO.1

CHENAB FLOOD BUND

(9+000 to 10+000 , 85+000 to 87+000 & 150+000 to 151+800)

13.1 *Plan showing route of flood water coming out of the breach supported with levels*

Note:- There is no breaching Section in above site.

13.2 Detail of villages abbadeies likely to be affected and this should also be shown on the plan.

1 *Chiragh Bela*

2 *Muhammad Nashib*

3 *Salar wahin Now*

4 *Ahar Bela*

5 *Mumdal Gharbi*

6 *Jamal keh Gharbi*

13.3 Strategy and action taken be explained in detail. This may include:

Special watching will be exercised during flood season and strengthening of the site will be ensured before coming flood.

13.3.1 Arrangement

Special watching of flood infrastructure will be exercised during flood season. Strengthening / Repairing of flood bunds will be made before flood. All flood restoration works will be completed well before flood. Flood camps will be established at Significant sites. Flood fighting material will be made ready to fight with the flood. Machinery will be made available through private sources. The reserve Stock of Stone to the minimum required limit is available at site. Any other arrangement to meet the urgency of flood situation.

13.3.2 Establishment of flood fighting camps

Detail of Flood fighting camp attached Chapter No.14 at page No.72-74.

Sr. No.	Flood Embankment	Camp Location RD:
1	Chenab flood bund RD.0+000-157+950	RD:10+000, RD:87+000 & RD:151+800 Chenab Flood Bund

13.3.3 Duties of officers/ officials and their camp site.

Detail of Flood fighting camp attached Chapter No.14.

Sr. No.	Flood Embankment	Length in Canal Mile	Vulnerable sites			Officer name designation / Mobile No.	Official Name designation Mobile No.
			Reach	RD:	No. of Camps		
1	Chenab flood bund RD.0+000-157+950	31.59	9 to 10 , 85 to 87 & 150 to 151800	RD:10+000 & RD:87+000 of Chenab Flood Bund	2	Muhammad Ahmad / Sub Divisional Officer/ 0301-8683610	Iftikhar Ahmad/ Sub Engineer/ (0300-6383404)
				Chenab Flood Bund RD:151+800	1	Akram Tahir Sub Divisional Officer/ 0301-7496498	Sub Engineer Nawabpur Section

13.3.4 Departmental Machinery available.

1- Placement of sand filling machine.
2- Front Blade Tractor
3- Tractor Trolley

Note:-No Departmental Machinery available contractor will provide Machinery during emergency.

13.3.5 Machinery available from private source

To be hired from Government Contractors.

Following Government contractors undertaking for provide Machinery in emergency during flood 2026.

1- Al-Siddique Enterprise.
2- Syed Nasir Hassan Shah
3- Muhammad Iqbal
4- Suleman Services.
5- Fareed Builders and Restoration.
6- Saddat Engineers.
7- Ali Ali Engineers.

13.3.6 Flood fighting material Required

Minimum requirement of flood fighting materials for permanent Camp (15 Miles)

Sr. No.	Name of articles	Unit	Quantity Required	Quantity Available	Balance Quantity Required	Remarks
1	Shouldari / Tent	No.	3	-	1	Balance quantity of watching Material would be purchased before the onset of flood 2026 subject to approval of competent authority.
2	Chair	No.	18	-	6	
3	Table	No.	3	-	1	
4	Generator (2 - 3 KVA)	No.	3	-	1	
5	Pedestal Fans	No.	3	-	1	
6	Charpois	No.	6	-	2	
7	Symbolic Jackets	No.	150	-	50	
8	Polyethene Sheet	No.	300	99	201	
9	Bamboo (4" dia and 10 ft long)	No.	300	87	213	
10	Water Cooler	No.	3	-	1	
11	Portable umbrella	No.	6	-	2	
12	Life Jackets	No.	15	-	5	
13	Utensils (10 person serving)	No.	3	-	1	
14	Jute /Plastic bags	No.	3000	750	2250	
15	Walke Talkie Set	Set	6	-	2	
16	Raincoats	No.	30	-	10	
17	LED flood light	No.	30	-	10	
18	Extension Cable (10 ft)	No.	6	-	2	
19	Recharge torches	No.	60	-	20	
20	Kassi	No.	60	-	20	
21	Axes	No.	60	-	20	
22	G.I. Buckets	No.	15	-	5	
23	7/44 Cable	Feet	1500	375	1125	
24	Sutli	Kg	6	-	2	
25	Sewing Needles	No.	30	-	10	
26	Emergency Medical	No.	3	-	1	
27	Wire crates (3x3x3) at only those camp near river action and reserve stock exists)	No.	300	-	100	

13.3.7 Flood fighting material Available (for each Camp)

Detail of flood fighting material Available has also been mentioned in section 13.3.6 of the site.

13.4. Detail of other information like electric sui gas telephone installation, road network, other building , canal and drainage network.

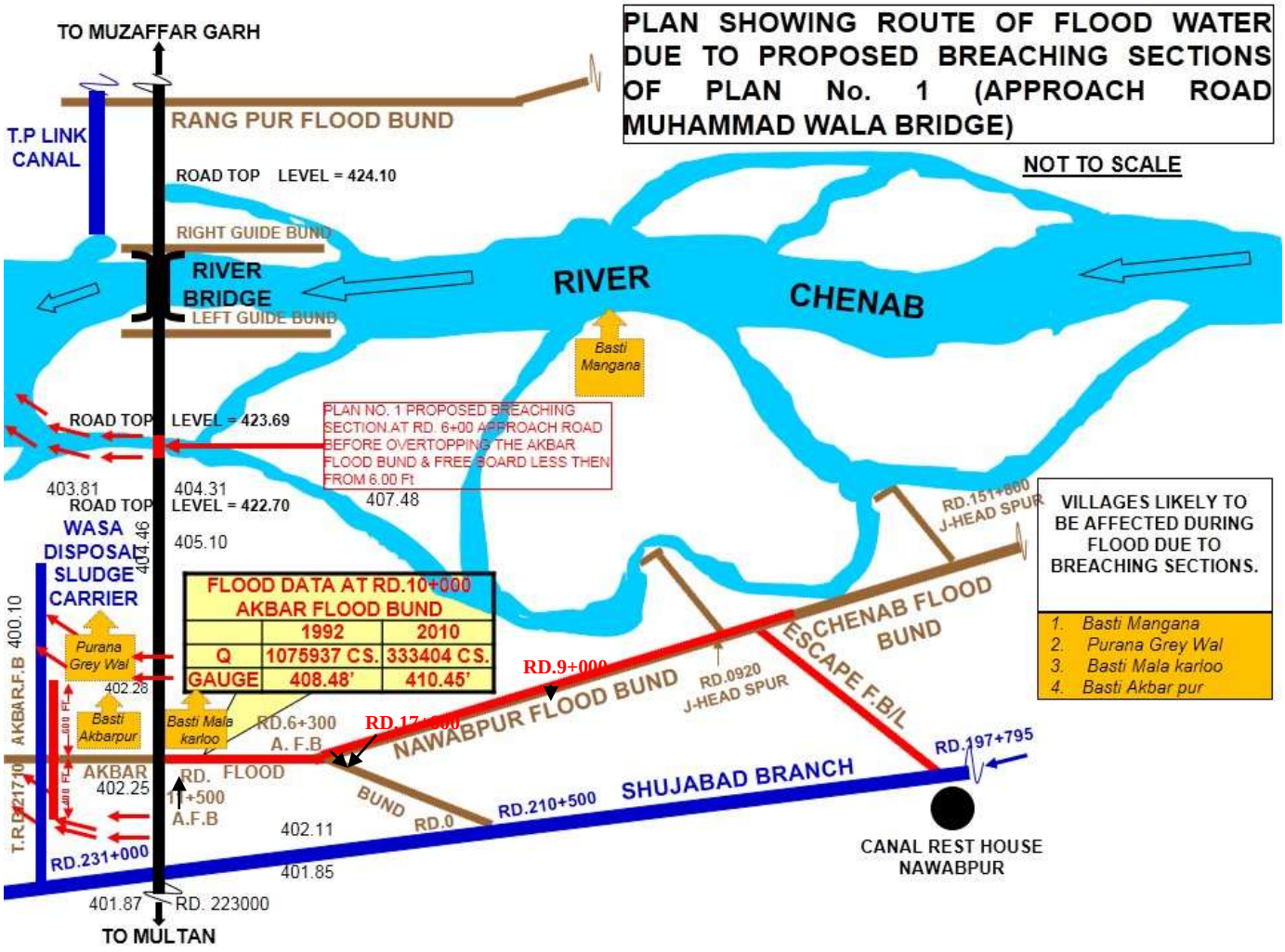
1. Electric Supply Lines.

SITE NO.2
AKBAR FLOOD BUND (RD 0+000 - 11+350)

APPROACH ROAD OF MUHAMMAD WALA BRIDGE

13.1 *Plan showing route of flood water coming out of the breach supported with levels*

PLAN ATTACHED



Xen SJD

13.2 Detail of villages abbadeies likely to be affected and this should also be shown on the plan.

7 Basti Mangana

8 Purana Grey Wal

9 Basti Mala karloo

10 Basti Akbar pur

13.3 Strategy and action taken be explained in detail. This may include:

Special watching will be exercised during flood season and strengthening of the site will be ensured before coming flood.

13.3.2 Arrangement

Special watching of flood infrastructure will be exercised during flood season. Strengthening / Repairing of flood bunds will be made before flood. All flood restoration works will be completed well before flood. Flood camps will be established at Significant sites. Flood fighting material will be made ready to fight with the flood. Machinery will be made available through private sources. The reserve Stock of Stone to the minimum required limit is available at site. Any other arrangement to meet the urgency of flood situation.

13.3.2 Establishment of flood fighting camps

Detail of Flood fighting camp attached Chapter No.14 at page No.72-74.

Sr. No.	Flood Embankment	Camp Location RD:
1	Akbar flood bund RD.0+000-21+710	RD:11+350 Akbar flood bund

13.3.3 Duties of officers/ officials and their camp site.

Detail of Flood fighting camp attached Chapter No.14.

Sr. No.	Flood Embankment	Length in Canal Mile	Vulnerable sites			Officer name designation / Mobile No.	Official Name designation Mobile No.
			Reach	RD:	No. of Camps		
1	Akbar flood bund RD.0+000-21+710	4.30	0 to 11350	RD:11+350 Akbar flood bund	1	Akram Tahir Sub Divisional Officer/ 0301-7496498	Sub Engineer Nawabpur Section

13.3.4 Departmental Machinery available.

1- Placement of sand filling machine.
2- Front Blade Tractor
3- Tractor Trolley

13.3.5 Machinery available from private source

To be hired from Government Contractors.

Following Government contractors undertaking for provide Machinery in emergency during flood 2026.

1- Al-Siddique Enterprise.
2- Syed Nasir Hassan Shah
3- Muhammad Iqbal
4- Suleman Services.
5- Fareed Builders and Restoration.
6- Saddat Engineers.
7- Ali Ali Engineers.

13.3.6 Flood fighting material Required

Minimum requirement of flood fighting materials for permanent Camp (15 Miles)

Sr. No.	Name of articles	Unit	Quantity Required	Quantity Available	Balance Quantity Required	Remarks
28	Shouldari / Tent	No.	1	-	1	Balance quantity of watching Material would be purchased before the onset of flood 2026 subject to approval of competent authority.
29	Chair	No.	6	-	6	
30	Table	No.	1	-	1	
31	Generator (2 - 3 KVA)	No.	1	-	1	
32	Pedestal Fans	No.	1	-	1	
33	Charpois	No.	2	-	2	
34	Symbolic Jackets	No.	50	-	50	
35	Polyethene Sheet	No.	100	33	67	
36	Bamboo (4" dia and 10 ft long)	No.	100	29	71	
37	Water Cooler	No.	1	-	1	
38	Portable umbrella	No.	2	-	2	
39	Life Jackets	No.	5	-	5	
40	Utensils (10 person serving)	No.	1	-	1	
41	Jute /Plastic bags	No.	1000	250	750	
42	Walke Talkie Set	Set	2	-	2	
43	Raincoats	No.	10	-	10	
44	LED flood light	No.	10	-	10	
45	Extension Cable (10 ft)	No.	2	-	2	
46	Recharge torches	No.	20	-	20	
47	Kassi	No.	20	-	20	
48	Axes	No.	20	-	20	
49	G.I. Buckets	No.	5	-	5	
50	7/44 Cable	Feet	500	125	375	
51	Sutli	Kg	2	-	2	
52	Sewing Needles	No.	10	-	10	
53	Emergency Medical	No.	1	-	1	
54	Wire crates (3x3x3) at only those camp near river action and reserve stock exists)	No.	100	-	100	

13.3.7 Flood fighting material Available (for each Camp)

Detail of flood fighting material Available has also been mentioned in section 13.3.6 of the site.

13.4. Detail of other information like electric sui gas telephone installation, road network, other building , canal and drainage network.

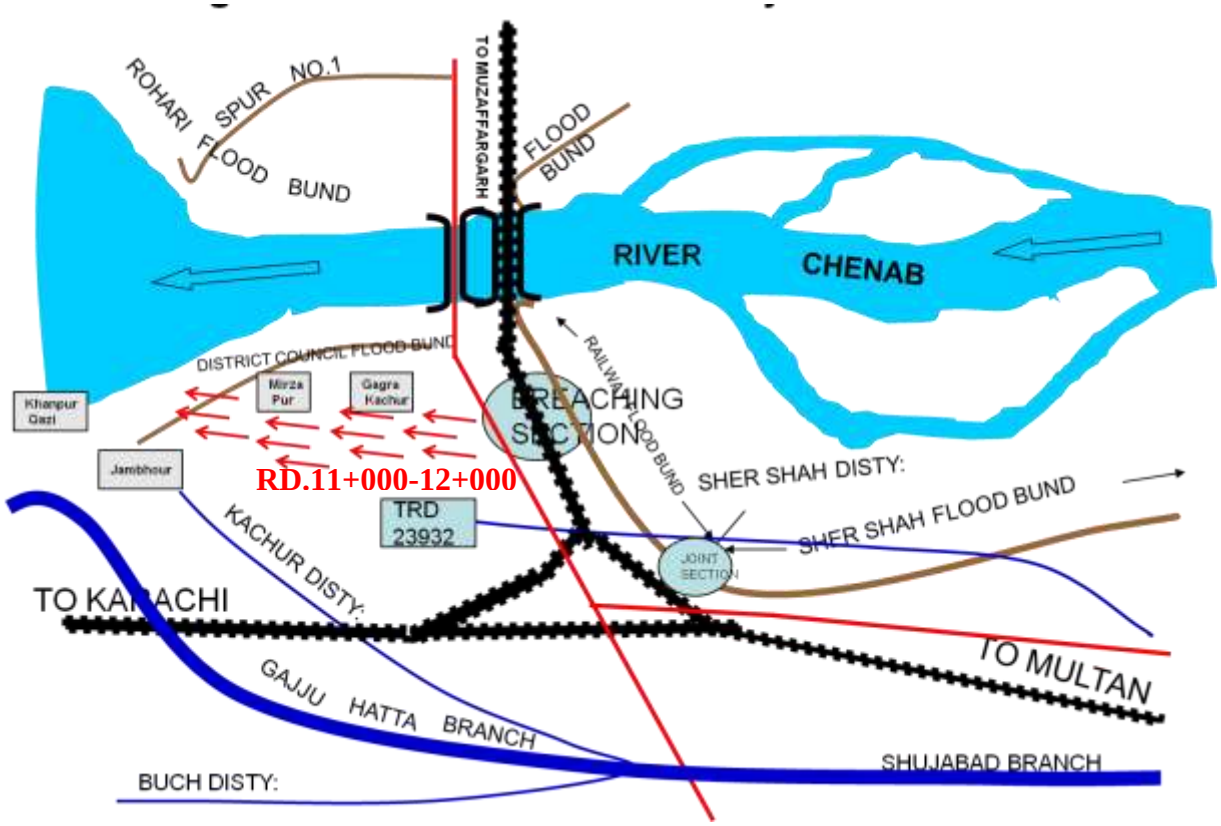
2. Approach Road to Bridge Muhammad Wala.
3. Electric Supply Lines.

SITE NO.3
SHER SHAH RAILWAY FLOOD BUND (RD. 11+000 - 12000)

13.1 *Plan showing route of flood water coming out of the breach supported with levels*

PLAN ATTACHED

BREACHING SECTION AT SHER SHAH RAILWAY FLOOD BUND BETWEEN RD.11+000 TO 12+000



13.2 Detail of villages abbadeis likely to be affected and this should also be shown on the plan.

1. *Gagra kachoor*
2. *Mirza Pur*
3. *Jambhour*
4. *Khan pur Qazi*

13.3 Strategy and action taken be explained in detail. This may include:

The following arrangements / strategy will be adopted.

13.3.1 Arrangement

Special watching of flood infrastructure will be exercised during flood season. Strengthening / Repairing of flood bunds will be made before flood. All flood restoration works will be completed well before flood. Flood camps will be established at Significant sites. Flood fighting material will be made ready to fight with the flood. Machinery will be made available through private sources. The reserve Stock of Stone to the minimum required limit is available at site. Any other arrangement to meet the urgency of flood situation.

13.3.2 Establishment of flood fighting camps

Flood fighting camps would be placed at designated vulnerable sites.

Sr. No.	Flood Embankment	Camp Location RD:
1	Sher Shah Railway Flood Bund. RD.0+000-15+100	RD.11+500 Breaching Section of Sher Railway flood bund

13.3.3 Duties of officers/officials and their camp sites

Sr. No.	Flood Embankment	Length in Canal Mile	Vulnerable sites			Officer name designation / Mobile No.	Official Name designation Mobile No.
			Reach	RD:	No. of Camps		
1	Sher Shah Railway Flood Bund. RD.0+000-15+100	3.02	11 to 12	RD.11+500 Breaching Section of Sher Railway flood bund	1	Akram Tahir Sub Divisional Officer/ 0301-7496498	Rana Muhammad Iqbal Sub Engineer / (03007389494)

13.3.4 Departmental Machinery available.

1- Placement of sand filling machine.
2- Front Blade Tractor.
3- Tractor Trolley .

Note:-No Departmental Machinery available contractor will provide Machinery during emergency.

13.3.5 Machinery available from private source

To be hired from Government Contractors.

Following Government contractors undertaking for provide Machinery in emergency during flood 2026.

1- Al-Siddique Enterprise.
2- Syed Nasir Hassan Shah
3- Hassan Sarwar Associates
4- Rana Traders.

13.3.6 Flood fighting material required

13.3.7 Flood fighting material Available

Detail of Flood fighting material required and Available is same as mentioned in section 13.3.6 of site No.01

13.4. Detail of other information like electric sui gas telephone installation, road network, other building , canal and drainage network.

1. Approach Multan to Muzaffargarh road
2. Electric transmission line.

SITE NO.04
SHER SHAH FLOOD BUND
(RD. 6+000 - 7+000 & 19+000 - 20+000)

13.1 *Plan showing route of flood water coming out of the breach supported with levels*

Note:- There is no breaching Section in above site.

13.2 Detail of villages abbadeis likely to be affected and this should also be shown on the plan.

1. *Gagra kachoor*
2. *Mirza Pur*
3. *Jambhour*
4. *Khan pur Qazi*

13.3 Strategy and action taken be explained in detail. This may include:

The following arrangements / strategy will be adopted.

13.3.1 Arrangement

Special watching of flood infrastructure will be exercised during flood season. Strengthening / Repairing of flood bunds will be made before flood. All flood restoration works will be completed well before flood. Flood camps will be established at Significant sites. Flood fighting material will be made ready to fight with the flood. Machinery will be made available through private sources. The reserve Stock of Stone to the minimum required limit is available at site. Any other arrangement to meet the urgency of flood situation.

13.3.2 Establishment of flood fighting camps

Flood fighting camps would be placed at designated vulnerable sites.

Sr. No.	Flood Embankment	Camp Location RD:
1	Sher Shah Flood Bund RD.0+000-20+437	RD.6+500 & 20+000 Sher flood bund

13.3.3 Duties of officers/officials and their camp sites

Sr. No.	Flood Embankment	Length in Canal Mile	Vulnerable sites			Officer name designation / Mobile No.	Official Name designation Mobile No.
			Reach	RD:	No. of Camps		
1	Sher Shah Flood Bund RD.0+000-20+437	4.08	RD. 6 - 7 RD19 - 20	RD.6+500 & 20+000 Sher flood bund	2	Akram Tahir Sub Divisional Officer/ 0301-7496498	Rana Muhammad Iqbal Sub Engineer / (03007389494)

13.3.4 Departmental Machinery available.

1- Placement of sand filling machine.
2- Front Blade Tractor.
3- Tractor Trolley .

Note:-No Departmental Machinery available contractor will provide Machinery during emergency.

13.3.5 Machinery available from private source

To be hired from Government Contractors.

Following Government contractors undertaking for provide Machinery in emergency during flood 2026.

1- Al-Siddique Enterprise.
2- Syed Nasir Hassan Shah
3- Hassan Sarwar Associates
4- Rana Traders.

13.3.6 Flood fighting material required

Sr. No.	Name of articles	Unit	Quantity Required	Quantity Available	Balance Quantity Required	Remarks
1	Shouldari / Tent	No.	2	-	2	Balance quantity of watching Material would be purchased before the onset of flood 2026 subject to approval of competent authority.
2	Chair	No.	12	-	12	
3	Table	No.	2	-	2	
4	Generator (2 - 3 KVA)	No.	2	-	2	
5	Pedestal Fans	No.	2	-	2	
6	Charpois	No.	4	-	4	
7	Symbolic Jackets	No.	100	-	100	
8	Polyethene Sheet	No.	200	66	134	
9	Bamboo (4" dia and 10 ft long)	No.	200	54	146	
10	Water Cooler	No.	2	-	2	
11	Portable umbrella	No.	4	-	4	
12	Life Jackets	No.	10	-	10	
13	Utensils (10 person serving)	No.	2	-	2	
14	Jute /Plastic bags	No.	2000	500	1500	
15	Walke Talkie Set	Set	4	-	4	
16	Raincoats	No.	20	-	20	
17	LED flood light	No.	20	-	20	
18	Extension Cable (10 ft)	No.	4	-	4	
19	Recharge torches	No.	40	-	40	
20	Kassi	No.	40	-	40	
21	Axes	No.	40	-	40	
22	G.I. Buckets	No.	10	-	10	
23	7/44 Cable	Feet	1000	250	750	
24	Sutli	Kg	4	-	4	
25	Sewing Needles	No.	20	-	20	
26	Emergency Medical	No.	2	-	2	
27	Wire crates (3x3x3) at only those camp near river action and reserve stock exists)	No.	200	-	200	

13.3.7 Flood fighting material Available

Detail of Flood fighting material required and Available is same as mentioned in section 13.3.6 of site No.01

13.4. Detail of other information like electric sui gas telephone installation, road network, other building , canal and drainage network.

1. Approach Multan to Muzaffargarh road
2. Electric transmission line.

SITE NO.05
RIGHT BANK OF SHUJABAD BRANCH (RD. 248+000 - 252+000)

13.1 *Plan showing route of flood water coming out of the breach supported with levels*

Note:- There is no breaching Section in above site.

13.2 Detail of villages abbadeis likely to be affected and this should also be shown on the plan.

1. *Neloot*
2. *Jakhari*
3. *Qasim Bela*
4. *Old Suraj Miani*

13.3 Strategy and action taken be explained in detail. This may include:

The following arrangements / strategy will be adopted.

13.3.1 Arrangement

Special watching of flood infrastructure will be exercised during flood season. Strengthening / Repairing of flood bunds will be made before flood. All flood restoration works will be completed well before flood. Flood camps will be established at Significant sites. Flood fighting material will be made ready to fight with the flood. Machinery will be made available through private sources. The reserve Stock of Stone to the minimum required limit is available at site. Any other arrangement to meet the urgency of flood situation.

13.3.2 Establishment of flood fighting camps

Flood fighting camps would be placed at designated vulnerable sites.

Sr. No.	Flood Embankment	Camp Location RD:
1	Right bank of Shujabad Branch RD.231+000-279+000	RD. 252+000 Shujabad Branch

13.3.3 Duties of officers/officials and their camp sites

Sr. No.	Flood Embankment	Length in Canal Mile	Vulnerable sites			Officer name designation / Mobile No.	Official Name designation Mobile No.
			Reach	RD:	No. of Camps		
1	Right bank of Shujabad Branch RD.231+000-279+000	9.60	RD 248 - 252	RD:252+000 Shujabad Branch	1	Akram Tahir Sub Divisional Officer/ 0301-7496498	Rana Muhammad Iqbal Sub Engineer / (03007389494)

13.3.4 Departmental Machinery available.

1- Placement of sand filling machine.
2- Front Blade Tractor.
3- Tractor Trolley .

Note:-No Departmental Machinery available contractor will provide Machinery during emergency.

13.3.5 Machinery available from private source

To be hired from Government Contractors.

Following Government contractors undertaking for provide Machinery in emergency during flood 2026.

1- Al-Siddique Enterprise.
2- Syed Nasir Hassan Shah
3- Hassan Sarwar Associates
4- Rana Traders.

13.3.6 Flood fighting material required

13.3.7 Flood fighting material Available

Detail of Flood fighting material required and Available is same as mentioned in section 13.3.6 of site No.01

13.4. Detail of other information like electric sui gas telephone installation, road network, other building , canal and drainage network.

1. Electric transmission line.

SITE NO.06
NAGNI FLOOD BUND (RD. 35+000 – 42+200)

13.1 *Plan showing route of flood water coming out of the breach supported with levels*

Note:- There is no breaching Section in above site.

13.2 Detail of villages abbadeis likely to be affected and this should also be shown on the plan.

1. *Khanpur Qazai*
2. *Jai*
3. *Chajju Shah*
4. *Toddar pur*

13.3 Strategy and action taken be explained in detail. This may include:

The following arrangements / strategy will be adopted.

13.3.1 Arrangement

Special watching of flood infrastructure will be exercised during flood season. Strengthening / Repairing of flood bunds will be made before flood. All flood restoration works will be completed well before flood. Flood camps will be established at Significant sites. Flood fighting material will be made ready to fight with the flood. Machinery will be made available through private sources. The reserve Stock of Stone to the minimum required limit is available at site. Any other arrangement to meet the urgency of flood situation.

13.3.2 Establishment of flood fighting camps

Flood fighting camps would be placed at designated vulnerable sites.

Sr. No.	Flood Embankment	Camp Location RD:
1	Nagni flood bund RD.0+000-51+000	Nagni Flood Bund RD.42+200

13.3.3 Duties of officers/officials and their camp sites

Sr. No.	Flood Embankment	Length in Canal Mile	Vulnerable sites			Officer name designation / Mobile No.	Official Name designation Mobile No.
			Reach	RD:	No. of Camps		
1	Nagni flood bund RD.0+000-51+000	10.20	35 to 42200	RD.42+200 Nagni Flood Bund	1	Rana Muhammad Farooq Sub Divisional Officer/ 0333-3888809	Naseem Akhtar Qureshi/ Sub Engineer Gajju Hatta/ (0311- 0255382)

13.3.4 Departmental Machinery available.

1- Placement of sand filling machine.
2- Front Blade Tractor.
3- Tractor Trolley .

Note:-No Departmental Machinery available contractor will provide Machinery during emergency.

13.3.5 Machinery available from private source

To be hired from Government Contractors.

Following Government contractors undertaking for provide Machinery in emergency during flood 2026.

1- Al-Siddique Enterprise.

2- Syed Nasir Hassan Shah

3- Hassan Sarwar Associates

4- Rana Traders.

13.3.6 Flood fighting material required

13.3.7 Flood fighting material Available

Detail of Flood fighting material required and Available is same as mentioned in section 13.3.6 of site No.01

13.4. Detail of other information like electric sui gas telephone installation, road network, other building , canal and drainage network.

1. Electric transmission line.

SITE NO.07

DHUNDOO FLOOD BUND (RD. 18+000 - 25+000)

13.1 *Plan showing route of flood water coming out of the breach supported with levels*

Note:- There is no breaching Section in above site.

13.2 Detail of villages abbadeis likely to be affected and this should also be shown on the plan.

1. *Mochi pur*
2. *Ponta*
3. *Soman*
4. *Rukan Hatti*

13.3 Strategy and action taken be explained in detail. This may include:

The following arrangements / strategy will be adopted.

13.3.1 Arrangement

Special watching of flood infrastructure will be exercised during flood season. Strengthening / Repairing of flood bunds will be made before flood. All flood restoration works will be completed well before flood. Flood camps will be established at Significant sites. Flood fighting material will be made ready to fight with the flood. Machinery will be made available through private sources. The reserve Stock of Stone to the minimum required limit is available at site. Any other arrangement to meet the urgency of flood situation.

13.3.2 Establishment of flood fighting camps

Flood fighting camps would be placed at designated vulnerable sites.

Sr. No.	Flood Embankment	Camp Location RD:
1	Dhundoo flood bund RD.0+000-26+500	Dhundoo Flood Bund RD.21+000

13.3.3 Duties of officers/officials and their camp sites

Sr. No.	Flood Embankment	Length in Canal Mile	Vulnerable sites			Officer name designation / Mobile No.	Official Name designation Mobile No.
			Reach	RD:	No. of Camps		
1	Dhundoo flood bund RD.0+000-26+500	5.30	18 to 25	RD.21+000 of Dhundoo Flood Bund	1	Rana Muhammad Farooq Sub Divisional Officer/ 0333-3888809	Iftikhar Ahmad/ Sub Engineer/ (0300-6383404)

13.3.4 Departmental Machinery available.

1- Placement of sand filling machine.
2- Front Blade Tractor.
3- Tractor Trolley .

Note:-No Departmental Machinery available contractor will provide Machinery during emergency.

13.3.5 Machinery available from private source

To be hired from Government Contractors.

Following Government contractors undertaking for provide Machinery in emergency during flood 2026.

1- Al-Siddique Enterprise.

2- Syed Nasir Hassan Shah

3- Hassan Sarwar Associates

4- Rana Traders.

13.3.6 Flood fighting material required

13.3.7 Flood fighting material Available

Detail of Flood fighting material required and Available is same as mentioned in section 13.3.6 of site No.01

13.4. Detail of other information like electric sui gas telephone installation, road network, other building , canal and drainage network.

1. Electric transmission line.

SITE NO.08
JALALPUR KHAKI FLOOD BUND (RD. 35+000 TO 45+000)

13.1 *Plan showing route of flood water coming out of the breach supported with levels*

Note:- There is no breaching Section in above site.

13.2 Detail of villages abbadeis likely to be affected and this should also be shown on the plan.

1. *Jhangi*
2. *Jalalpur Khakhi*
3. *Soman*
4. *Panjani*

13.3 Strategy and action taken be explained in detail. This may include:

The following arrangements / strategy will be adopted.

13.3.1 Arrangement

Special watching of flood infrastructure will be exercised during flood season. Strengthening / Repairing of flood bunds will be made before flood. All flood restoration works will be completed well before flood. Flood camps will be established at Significant sites. Flood fighting material will be made ready to fight with the flood. Machinery will be made available through private sources. The reserve Stock of Stone to the minimum required limit is available at site. Any other arrangement to meet the urgency of flood situation.

13.3.2 Establishment of flood fighting camps

Flood fighting camps would be placed at designated vulnerable sites.

Sr. No.	Flood Embankment	Camp Location RD:
1	Jalalpur Khaki flood bund RD.0+000-60+000	Jalalpur Khaki Flood Bund RD.45+000

13.3.3 Duties of officers/officials and their camp sites

Sr. No.	Flood Embankment	Length in Canal Mile	Vulnerable sites			Officer name designation / Mobile No.	Official Name designation Mobile No.
			Reach	RD:	No. of Camps		
1	Jalalpur Khaki flood bund RD.0+000-60+000	12.00	35 to 45	RD.45+000 of Jalalpur Khakhi Flood Bund	1	Rana Muhammad Farooq Sub Divisional Officer/ 0333-3888809	Kamran Dil Shad/ Sub Engineer Panjani/ (0301-7343500)

13.3.4 Departmental Machinery available.

1- Placement of sand filling machine.
2- Front Blade Tractor.
3- Tractor Trolley .

Note:-No Departmental Machinery available contractor will provide Machinery during emergency.

13.3.5 Machinery available from private source

To be hired from Government Contractors.

Following Government contractors undertaking for provide Machinery in emergency during flood 2026.

1- Al-Siddique Enterprise.

2- Syed Nasir Hassan Shah

3- Hassan Sarwar Associates

4- Rana Traders.

13.3.6 Flood fighting material required

13.3.7 Flood fighting material Available

Detail of Flood fighting material required and Available is same as mentioned in section 13.3.6 of site No.01

13.4. Detail of other information like electric sui gas telephone installation, road network, other building , canal and drainage network.

1. Electric transmission line.

SITE NO.09
BALOCH WAH FLOOD BUND (RD. 22+000 TO 44+000)

13.1 *Plan showing route of flood water coming out of the breach supported with levels*

Note:- There is no breaching Section in above site.

13.2 Detail of villages abbadeis likely to be affected and this should also be shown on the plan.

1. *Manak Wali*
2. *Shahpur Lamha*
3. *Bait Qasir*
4. *Wacha Sandila*

13.3 Strategy and action taken be explained in detail. This may include:

The following arrangements /strategy will be adopted.

13.3.1 Arrangement

Special watching of flood infrastructure will be exercised during flood season. Strengthening / Repairing of flood bunds will be made before flood. All flood restoration works will be completed well before flood. Flood camps will be established at Significant sites. Flood fighting material will be made ready to fight with the flood. Machinery will be made available through private sources. The reserve Stock of Stone to the minimum required limit is available at site. Any other arrangement to meet the urgency of flood situation.

13.3.2 Establishment of flood fighting camps

Flood fighting camps would be placed at designated vulnerable sites.

Sr. No.	Flood Embankment	Camp Location RD:
1	Baloch wah flood bund RD.0+000-62+230	Baloch wah Flood Bund RD.23+000

13.3.3 Duties of officers/officials and their camp sites

Sr. No.	Flood Embankment	Length in Canal Mile	Vulnerable sites			Officer name designation / Mobile No.	Official Name designation Mobile No.
			Reach	RD:	No. of Camps		
1	Baloch wah flood bund RD.0+000-62+230.	12.44	22 to 44	RD.23+000 Baloch Wah Flood Bund	1	Rana Muhammad Farooq Sub Divisional Officer/ 0333-3888809	Kamran Dil Shad/ Sub Engineer Panjani/ (0301-7343500)

13.3.4 Departmental Machinery available.

1- Placement of sand filling machine.
2- Front Blade Tractor.
3- Tractor Trolley .

Note:-No Departmental Machinery available contractor will provide Machinery during emergency.

13.3.5 Machinery available from private source

To be hired from Government Contractors.

Following Government contractors undertaking for provide Machinery in emergency during flood 2026.

1- Al-Siddique Enterprise.

2- Syed Nasir Hassan Shah

3- Hassan Sarwar Associates

4- Rana Traders.

13.3.6 Flood fighting material required

13.3.7 Flood fighting material Available

Detail of Flood fighting material required and Available is same as mentioned in section 13.3.6 of site No.01

13.4. Detail of other information like electric sui gas telephone installation, road network, other building , canal and drainage network.

1. Electric transmission line.

CHAPTER-14

Action Plan.

14.1 Re-shifting/ Recouping plan of reserve stone departmentally

STATUS OF RESERVE STOCK OF STONE IN THE VULNERABLE LOCATION/FLOOD PROTECTION STRUCTURE

Sr. No.	Zone	Division	Name of Structure	Sanctioned Limit of Reserve Stock	Available Quantity	Deficient Quantity
				(in lac Cft)	(in lac Cft)	(in lac Cft)
1	2	3	4	5	8	7 (5-6)
1	Multan	Shujabad	Chenab Flood Bund RD.21+000-26+000	0.15	0.02	0.13
2	"	"	Chenab Flood Bund RD.28+000-33+000	0.15	0.00	0.15
3	"	"	Chenab Flood Bund RD.47+000-50+000	0.15	0.00	0.15
4	"	"	Chenab Flood Bund RD.61+000-63+000	0.15	0.13	0.02
5	"	"	Chenab Flood Bund RD.80+000-96+000	0.15	0.13	0.02
6	"	"	Chenab Flood Bund RD.96+000-110+000	0.15	0.12	0.03
7	"	"	Chenab Flood Bund RD.113+000-117+000	0.15	0.00	0.15
8	"	"	Chenab Flood Bund RD.118+000-129+000	0.15	0.00	0.15
9	"	"	Chenab Flood Bund RD.131+000-140+000	0.15	0.00	0.15
10	"	"	Guide Bank Spur No.1 RD.0+920 Nawabpur Flood Bund	2.00	0.03	1.97
11	"	"	J-Head Spur No.2 RD.14+400 Akbar Flood Bund	1.00	0.30	0.70
12	"	"	J-Head Spur RD.248+000 1st defence line Shujabad Branch	1.00	0.30	0.70
13	"	"	J-Head Spur RD.252+000 1st defence line Shujabad Branch	1.00	0.20	0.80
14	"	"	J-Head Spur RD.263+000 1st defence line Shujabad Branch	1.00	0.30	0.70
15	"	"	Mole Head Spur at RD.42+200 Nagni flood Bund	1.00	0.50	0.50
16	"	"	Mole Head Spur at RD.45+700 Nagni Flood Bund	1.00	0.50	0.50
17	"	"	Slopping Spur RD.10+000 at Baloch wah flood bund	0.50	0.15	0.35
			Total	**11.85**	**2.680**	**7.17**

Note:- Estimate is sanctioned procurement is under process funds required Rs.131.866 Million.

1.2 Detail of inlet/ outlet crossing along with closing methodology

Sr. No.	Name of Bund	Spur	Name of Structure with Location RD:	Location of Crossing RD:
	Binda Canal Sub Division			
1	Chenab Flood Bund	-	Shah Din Disty 7470/R	14-15
2	"	-	Shah Din Disty 9183/R	16-17
3	"	-	Shah Din Disty 14461/R	21-22
4	"	-	Shah Din Disty 21040/R	24-25
5	"	-	Shah Din Disty 26338/R	32-33
6	"	-	Shah Din Disty 29200/R	35-36
7	"	-	Tail Shah Din Disty 63015	79000
8	"	-	"	82500
9	"	-	6938/R Inayatpur Disty	86500
	Ilampur Canal Sub Division			
10	Akbar Flood Bund	-	Akbar Minor 6080/R	6080
11	"	-	6600/R	6600
12	"	-	8350/R	8350
13	"	-	12410/R	12410
14	"	-	17000/R	17000
15	Sher Shah Flood Bund	-	1090/L	1090
16		-	6850/L	6850
17		-	11828/L	11828
18		-	15780/L	15780
	Shujabad Canal Sub Division			
19	Nagni Flood Bund	-	Bakhtu Wah Disty 1000/R	1000
20	"	-	11142/R	11143
21	"	-	14238/R	14238
22	"	-	33350/R	33350
23	"	-	44000/R	40000
24	"	-	48943/R	50943
25	Gardez Flood Bund	-	Gardez Minor 16338/R	1-2
26	"	-	Sat burji Disty RD.52377/R	13-14
27	Sat Burji Flood Bund	-	54000/R	0
28	"	-	56400/R	3-4
29	"	-	Tubewell Water Course crossing RD.57-58/R	7-8
30	"	-	60000/R	5-6
31	"	-	66300/R	11-12
32	"	-	57-58/R	7-8
33	Baloch Wah Flood Bund	-	Baloch Wah Minor 4260/R	4260
34	"	-	Baloch Wah Minor 16200/R	16200
35	"	-	Baloch Wah Minor 19090/R	19090
36	"	-	Baloch Wah Minor 21930/R	21930
37	"	-	Baloch Wah Minor 24100/R	24100
38	"	-	Baloch Wah Minor 28440/R	28440
39	"	-	Baloch Wah Minor 34300/T.R	34300
40	"	-	Baloch Wah flood Bund RD.3+600	3600
41	"	-	Baloch Wah flood Bund RD.4+100 (Old Pipe crossing of shifted outlet)	4100
42	"	-	Baloch Wah flood Bund RD.16+200 (Pipe crossing with outlet)	16200
43	"	-	Baloch Wah flood Bund RD.26+600 (Tub well Pipe Crossing)	26600
44	"	-	Baloch Wah flood Bund RD.28+400 (Tub well Pipe Crossing with outlet)	28400

45	"	-	Baloch Wah flood Bund RD.32+800 (Tub well Pipe Crossing with outlet)	32800
46	"	-	Baloch Wah flood Bund RD.35+000 (Tail water Course Crossing)	35000
47	"	-	Baloch Wah flood Bund RD.36+000 (Tub well Pipe Crossing)	36000
48	"	-	Baloch Wah flood Bund RD.36+500 (Tub well Pipe Crossing)	36500
49	"	-	Baloch Wah flood Bund RD.38+300 (Tub well Pipe Crossing)	38300
50	"	-	Baloch Wah flood Bund RD.44+000 (Tub well Pipe Crossing)	44000
51	"	-	Baloch Wah flood Bund RD.45+000 (Tub well Pipe Crossing)	45000
52	"	-	Baloch Wah flood Bund RD.46+000 (Tub well Pipe Crossing)	46000
53	"	-	Baloch Wah flood Bund RD.47-48 (Tub well Pipe Crossing)	47-48
54	"	-	Baloch Wah flood Bund RD.48-49 (Tub well Pipe Crossing)	48-49
55	"	-	Baloch Wah flood Bund RD.51+000 (Tub well Pipe Crossing)	51000
56	"	-	Baloch Wah flood Bund RD.52+000 (Tub well Pipe Crossing)	52000
57	"	-	Baloch Wah flood Bund RD.53+500 (Tub well Pipe Crossing)	53500
58	"	-	Baloch Wah flood Bund RD.54+000 (Tub well Pipe Crossing)	54000
59	"	-	Baloch Wah flood Bund RD.54+500 (Tub well Pipe Crossing)	54500
60	"	-	Baloch Wah flood Bund RD.55+000 (Tub well Pipe Crossing)	55000
61	"	-	Baloch Wah flood Bund RD.55+500 (Tub well Pipe Crossing)	55500
62	"	-	Baloch Wah flood Bund RD.57+200 (Tub well Pipe Crossing)	57200
63	"	-	Baloch Wah flood Bund RD.59+000 (Tub well Pipe Crossing)	59000
64	"	-	Baloch Wah flood Bund RD.61+000 (Tub well Pipe Crossing)	61000
65	Tie Flood Bund	-	Panjani Disty 134500/R	134500
66	"	-	Panjani Disty 13700/R	103700
67	Jalalpur Khakhi flood bund	-	Jalalpur Khakhi flood Bund RD.7-8 (Tub well Pipe Crossing)	7-8

Methodology:-

After receipt of warning of flood, each crossing will be closed through gunny bags or any alteration method which consider to necessary well in time and certificate of closing will be taken from Sub Engineer and Sub Divisional Officer concerned.

14.3 Deployment Machinery (Normal to Low flood)

The base of Low flood will be considered when Trimmu Barrage gauge attain Low Flood.

Sr. No.	Name of Structure	Length/ Width	Excavator	Trolley	Dumpers	Tractor with front blade (1 per 15 mile)
1	Fazil Shah flood bund RD.0-10500	2.10	S.E shall allow deputation of one (1) excavator & four (4) Trolleys during low flood at camps/vulnerable points.		-	1
2	J-Head Spur RD.4+000 Fazil Shah flood bund	1.50				
3	Kund Sargana RD.0-6300	1.19			-	
4	Chenab flood bund RD.0-50+000	9.47			-	
5	J-Head Spur RD: 10+000 Chenab Flood Bund	1.04				
	Total length	**15.30**				
1	Chenab flood bund RD.50+000-100+000 Mole Head Spur at RD.55+000	9.47	S.E shall allow deputation of one (1) excavator & four (4) Trolleys during low flood at camps/vulnerable points.		-	1
2	Chenab flood bund RD.100+000-140+000	7.58			-	
	Total length	**17.04**				
1	Chenab Flood Bund RD.140-157+950	3.59	S.E shall allow deputation of one (1) excavator & four (4) Trolleys during low flood at camps/vulnerable points.		-	1
2	Escape Flood Bund RD.0-8+000/L&R	3.20			-	
3	Nawabpur Flood Bund RD.0-17+950.	3.59			-	
4	Akbar Flood Bund RD.0-21+710	4.34			-	
	Total length	**14.72**				
1	Right bank of Shujabad Branch RD.231+000-279+000.	9.60	S.E shall allow deputation of one (1) excavator & four (4) Trolleys during low flood at camps/vulnerable points.		-	1
2	3 No. J-Head Spur at RD.248,252,263	2.39			-	
3	Sher Shah Flood Bund RD.0-20+437	4.09			-	
4	Sher Shah Railway Flood Bund RD.0-15+100.	3.00			-	
5	Breaching Section Sher Shah Railway Flood Bund				-	
6	Elliptical Guide Bund Sher Shah Railway Flood Bund	0.80			-	
	Total length	**19.88**				

1	Right bank of Gajju Hatta Branch RD.17+000-25+000	1.52	S.E shall allow deputation of one (1) excavator & four (4) Trolleys during low flood at camps/vulnerable points.	-	1
2	Right bank of Gajju Hatta Branch RD.25+000-35+000	1.89		-	
3	Nagni Flood Bund RD.0-51+000	10.20		-	
4	J-Head Spur RD.42+000 Nagni flood bund			-	
5	Mole Head Spur at RD.45+700			-	
	Total length	**13.61**			
1	Dhundoo Flood Bund RD.0-26+500	5.30	S.E shall allow deputation of one (1) excavator & four (4) Trolleys during low flood at camps/vulnerable points.	-	1
2	Gardez Flood Bund RD.0-15+750	3.15		-	
3	Jalalpur Khakhi Flood Bund RD.0-60+000	12.00		-	
4	Satburji Flood Bund RD.54+000-72+000 along Sat Burji Disty	3.60		-	
	Total length	**24.05**			
1	Tie Flood Bund RD.0-8600	1.72	S.E shall allow deputation of one (1) excavator & four (4) Trolleys during low flood at camps/vulnerable points.	-	1
2	Balochwah Flood Bund RD.0-62+130	12.43		-	
3	Sloping Spur at RD.10+000 Balochwah Flood Bund			-	
	Total length	**14.15**			
Total					**7**

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14.4 Deployment Machinery (Medium to High flood)

The base of Medium flood will be considered when Trimmu Barrage gauge attain Medium Flood.

Sr. No.	Name of Structure	Length/ Width	Machinery Deployed			
			Excavator	Trolleys	Dumpers	Tractor with front blade
			1 per 7 mile	4 per 7 mile	2 per 7 mile	1 per 7 mile
1	Fazil Shah flood bund RD.0-10500	2.10	2	8	4	2
2	J-Head Spur RD.4+000 Fazil Shah flood bund	1.50				
3	Kund Sargana RD.0-6300	1.19				
4	Chenab flood bund RD.0-50+000	9.47				
5	J-Head Spur RD: 10+000 Chenab Flood Bund	1.04				
	Total length	**15.30**	**2**	8	4	2
1	Chenab flood bund RD.50+000-100+000	9.47	2	10	5	2
	Mole Head Spur at RD.55+000					
2	Chenab flood bund RD.100+000-140+000	7.58				
	Total length	**17.04**	**2**	**10**	**5**	**2**
1	Chenab Flood Bund RD.140-157+950	3.59	2	8	4	2
2	Escape Flood Bund RD.0-8+000/L&R	3.20				
3	Nawabpur Flood Bund RD.0-17+950.	3.59				
4	Akbar Flood Bund RD.0-21+710	4.34				
	Total length	**14.72**	**2**	**8**	**4**	**2**
1	Right bank of Shujabad Branch RD.231+000-279+000.	9.60	3	10	5	3
2	3 No. J-Head Spur at RD.248,252,263	2.39				
3	Sher Shah Flood Bund RD.0-20+437	4.09				
4	Sher Shah Railway Flood Bund RD.0-15+100.	3.00				
5	Breaching Section Sher Shah Railway Flood Bund					
6	Elliptical Guide Bund Sher Shah Railway Flood Bund	0.80				
	Total length	**19.88**	**3**	**10**	**5**	**3**

1	Right bank of Gajju Hatta Branch RD.17+000-25+000	1.52	2	8	4	2
2	Right bank of Gajju Hatta Branch RD.25+000-35+000	1.89				
3	Nagni Flood Bund RD.0-51+000	10.20				
4	J-Head Spur RD.42+000 Nagni flood bund					
5	Mole Head Spur at RD.45+700					
	Total length	**13.61**	**2**	**8**	**4**	**2**
1	Dhundoo Flood Bund RD.0-26+500	5.30	3	14	7	3
2	Gardez Flood Bund RD.0-15+750	3.15				
3	Jalalpur Khakhi Flood Bund RD.0-60+000	12.00				
4	Satburji Flood Bund RD.54+000-72+000 along Sat Burji Disty	3.60				
	Total length	**24.05**	**3**	**14**	**8**	**4**
			2	8	4	2
1	Tie Flood Bund RD.0-8600	**1.72**				
2	Balochwah Flood Bund RD.0-62+130	**12.43**				
3	Sloping Spur at RD.10+000 Baloch wah Flood Bund					
	Total length	**14.15**	**2**	**8**	**4**	**2**
			16	**66**	**34**	**17**

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14.5 Deployment Machinery (Very High to Exceptionally High flood)

The base of Very High flood will be considered when Trimmu Barrage gauge attain Very High to Exceptionally High flood.

Sr. No.	Name of Structure	Length (Mile)	Machinery Deployed					
			Excavator		Trolleys	Dumpers	Tractor With front blade	
			Very High Flood	Exp. High Flood	4 per 5 mile	2 per 5 mile	Very High Flood	Exp. High Flood
			1 per 5 mile	2 per 5 mile			1 per 5 mile	2 per 5 mile
1	Fazil Shah flood bund RD.0-10500	2.10						
2	J-Head Spur RD.4+000 Fazil Shah flood bund	1.50						
3	Kund Sargana RD.0-6300	1.19	**3**	**6**	**12**	**6**	**3**	**6**
4	Chenab flood bund RD.0-50+000	9.47						
5	J-Head Spur RD: 10+000 Chenab Flood Bund	1.04						
	Total length	**15.30**	**3**	**6**	**12**	**6**	**3**	**6**
1	Chenab flood bund RD.50+000-100+000	9.47	3	6	13	7	3	7
	Mole Head Spur at RD.55+000							
2	Chenab flood bund RD.100+000-140+000	7.58						
	Total length	**17.04**	**3**	**7**	**13**	**7**	**3**	**7**
1	Chenab Flood Bund RD.140-157+950	3.59						
2	Escape Flood Bund RD.0-8+000/L&R	3.20						
3	Nawabpur Flood Bund RD.0-17+950.	3.59	3	6	12	6	3	6
4	Akbar Flood Bund RD.0-21+710	4.34						
	Total length	**14.72**	**3**	**6**	**12**	**6**	**3**	**6**
1	Right bank of Shujabad Branch RD.231+000-279+000.	9.60						
2	3 No. J-Head Spur at RD.248,252,263	2.39						
3	Sher Shah Flood Bund RD.0-20+437	4.09						
4	Sher Shah Railway Flood Bund RD.0-15+100.	3.00	4	8	16	8	4	8
5	Breaching Section Sher Shah Railway Flood Bund							
6	Elliptical Guide Bund Sher Shah Railway Flood Bund	0.80						
	Total length	**19.88**	**4**	**8**	**16**	**8**	**4**	**8**

1	Right bank of Gajju Hatta Branch RD.17+000-25+000	1.52	2	5	10	5	2	5
2	Right bank of Gajju Hatta Branch RD.25+000-35+000	1.89						
3	Nagni Flood Bund RD.0-51+000	10.20						
4	J-Head Spur RD.42+000 Nagni flood bund							
5	Mole Head Spur at RD.45+700							
	Total length	**13.61**	**2**	**5**	**10**	**5**	**2**	**5**
1	Dhundoo Flood Bund RD.0-26+500	5.30	5	10	20	10	5	10
2	Gardez Flood Bund RD.0-15+750	3.15						
3	Jalalpur Khakhi Flood Bund RD.0-60+000	12.00						
4	Satburji Flood Bund RD.54+000-72+000 along Sat Burji Disty	3.60						
	Total length	**24.05**	**5**	**10**	**20**	**10**	**5**	**10**
1	Tie Flood Bund RD.0-8600	**1.72**	3	6	11	6	3	6
2	Balochwah Flood Bund RD.0-62+130	**12.43**						
3	Sloping Spur at RD.10+000 Balochwah Flood Bund							
	Total length	**14.15**	**3**	**6**	**11**	**6**	**3**	**6**
			23	**48**	**94**	**48**	**23**	**48**

Payment for Machinery & work change employees subject to verification by Third Party Monitoring Consultants.

14.6 Police deployment plan

Sr. No.	Site of Breaching Section	Concerned Canal Division	Concerned Police Station District	Police Persons Deployed Inspector			Remarks
				Sub Inspector	A.S.I.	Constable	
1	Head Muhammad Wala	Shujabad	Sadar District Multan	1	1	4	-
2	Sher Shah	Shujabad	Sadar District Multan	1	1	4	-

14.7 Details of synthetic bags with capacity of 50 kg and 100kg

SR. NO.	NAME OF EMBANKMENT	BAGS CAPACITY 50 KG		BAGS CAPACITY 100 KG		Remarks
		Required		Required		
1	Fazil Shah flood bund	100 No.		50 No.		Required Quantity available in each site, so no material required.
2	Chenab flood bund	700 No.		500 No.		
3	Nawabpur flood bund	200 No.		100 No.		
4	Akbar flood bund	200 No.		200 No.		
5	1st Defence Line shujabad branch (including J-Head Spurs)	5000 No.		250 No.		
6	Sher Shah flood bund	2500 No.		100 No.		
7	Sher Shah Railway flood bund	2500 No.		100 No.		
8	Elliptical Guide Bund	1500 No.				
9	Nagni flood bund	150 No.		150 No.		
10	Right Bank of Gajju Hatta Branch	1500 No.		50 No.		
11	Dhundoo flood bund	1000 No.		50 No.		
12	Gardez flood bund	1000 No.		50 No.		
13	Sat Burji flood bund	1000 No.		50 No.		
14	Jalalpur Khakhi flood bund	2000 No.		150 No.		
15	Tie flood bund	500 No.		50 No.		
16	Baloch wah flood bund	2000 No.		150 No.		
	TOTAL	**11050 No.**		**2000 No.**		

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

SR. NO.	NAME OF EMBANKMENT	LENGTH
1	Fazil Shah Flood Bund RD:0+000 TO 10+500	10500
2	Chenab Flood Bund RD:0+000 TO 140+000	140000
	Chenab Flood Bund RD:140+000 TO 157+950	17950
3	Nawabpur Flood Bund RD:0+000 TO 17+500 x 2	35000
4	Akbar Flood Bund RD:0+000 TO 21+500 x 2	43000
5	1st Defence line Shujabad Branch RD:231+000 TO 279+000 x 2	96000
6	Sher Shah flood Bund RD:0+000 TO 20+437 x 2	40874
7	Sher Shah Railway Flood Bund RD:0+000 TO 15+100 x 2	30200
8	Nagni Flood Bund RD:0+000 TO 51+000	51000
9	Right Bank of Gajju Hatta Branch RD:17+000 TO 35+000	18000

10	Dhundoo Flood Bund RD:0+000 TO 26+500	26500
11	Gardez Flood Bund RD:0+000 TO 16+400	16400
12	Sat Burji Flood Bund RD:54+000 TO 72+000	18000
13	Jalalpur Khakhi Flood Bund RD:0+000 TO 60+000	60000
14	Tie Flood Bund RD:0+000 TO 8+600	8600
15	Baloch Wah Flood Bund RD:0+000 TO 62+200	62200
	TOTAL	**674224**

14.9 Any other details as per SOPs approved by the Administrative Department

SOPs shared vide No. SO(FLOODS)VII-22/2017 DATED 26-12-2025 shall be strictly followed.

CHAPTER-15
Back up Divisions (In case of breach)

Executive Engineer, Multan Canal Division will act as backup Division in case of emergency.

Superintending Engineer,
Haveli Canal Circle,
Multan.

Executive Engineer,
Shujabad Canal Division,
Multan.

Chief Engineer,
Irrigation Multan Zone,
Multan.

SOP's FOR FLOOD FIGHTING PLANS

PART-A

Chapter-1 Salient feature of the concerned Division

1.1 Location
1.2 General Description
1.3 Admininstration

Chapter-2 Flood Protection and River Training Works

2.1 Design parameter of Training Works
2.2 Location Map

Chapter-3 Brief History of past flood events

Chapter-4 Design Data, Historic peak flood data and previous five years flood data of Head Works / Barrages and or other control points

4.1 Flood Limits
4.2 Time Lags of Floods
4.3 Highest Floods
4.4 Peak discharges

Chapter-5 Flood Fighting Strategy

Chapter-6 Flood Damages Restoration Works

Chapter-7 Flood Fighting Watching Arrangement

7.1 Pre-Flood Arrangement
7.2 Watching Establishment
7.3 Arrangement at Sensitive Sites
7.4 Watching Material
7.5 Arrangement for sounding & probing
7.6 Lighting Arrangement
7.7 Ration Arrangement
7.8 P.O.L Arrangement for vehicle
7.9 Transportation
7.10 Law & Order
7.11 Medical arrangement for labour
7.12 Liaison with other Department
7.13 Role of the Army
7.14 Duties of Telephone attendant
7.15 Wireless Arrangements

Chapter-8 Detail of Encroachment

Chapter-9 Duty Roster / Flood Fighting Program

Chapter-10 Emergency Telephone Nos

Chapter- 11 Standard operating procedure (SOP) for Breaching Sections

11.1 History of breaching Section
11.2 Location, Design, Quantity and Variety of the explosive required for detonation.
11.3 Arrangement of explosive and security of explosive stores.
11.4 List of Security Staff alongwith detail of their training etc.
11.5 Detail of mechanical means as a stand by arrangements in case of detonation failure.
11.6 Duty Roaster in case of critical situation.
11.7 Breaching Committee with their action plan.
11.8 List of the villages likely to be in undated in case of breach.
11.9 Announcement and detail of evacuation arrangement.

11.10 Details of coordination with Civil / Army Authorities
11.11 Parallel communication arrangements
11.12 Index Plan

PART-B

Chapter- 12 Vulnerable Sites on Flood Bund / Structures

12.1 Apprehended breaches in Flood Bunds/Structures.
12.2 Operation of breaching sections.
12.3 Breaches due to rising of flood water, deterioration of flood bunds etc.

Chapter- 13 Emergency Contingency Plan for vulnerable site (sites)

13.1 Plan showing route of Flood Water coming out of the breach supported with levels.
13.2 Detail of villages, abadies likely to be affected and this should also be shown on the plan.
13.3 Strategy and action taken be explained in detail. This may include :
13.3.1 Arrangements
13.3.2 Establishment of Flood Fighting Camps.
13.3.3 Duties of Officers/Officials and their camp sites.
13.3.4 Departmental Machinery available.
13.3.5 Machinery available from Private Source.
13.3.6 Flood Fighting Material required.
13.3.7 Flood Fighting Material available.

13.4 Detail of other infrastructure like electric, Sui-gas, Telephone installation, road network, other building canals and drainage network.

Additional Information

Chapter- 14 Action Plan

14.1 Re-shifting / Recouping plan of reserve stone departmentally.

14.2 Detail of inlet / outlet crossing alongwith closing methodology.

14.3 Deployment machinery (Medium to high flood).

14.4 Deployment Machinery (High to very High Flood)

14.5 Deployment Machinery (High to exceptionally high flood)

14.6 Police Deployment Plan

14.7 Details of synthetic bags with capacity of 500 Kg & 1000 Kg

14.8 Details of polythene sheet of black colour to protect upstream slope against wave action and to control seepage through embankments.
14.9 Any other details as per SOPs approved by the Admininstrative Department.

Chapter-15 Backup Divisions (In case of breach)

Last page of Part-A & Part-B be signed by the concerned Superintending Engineer and Chief Engineer in token of correctness of the Flood Fighting Plan.

SCHEDULE OF FLOOD PREPAREDNESS ACTIVITIES FOR FLOOD SEASON 2026

Sr: #	Activities	Target Dates
I.	**Preparation of Flood Fighting Plans**	
	a) Submission of Draft Divisional Plans by Zonal Chiefs to Chief Engineer, D&F (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.**	31.05.2026
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

Subject: - **REPORT OF COMMITTEE FOR FINALIZATION OF MACHINERY & HUMAN RESOURCE REQUIREMENTS FOR FLOOD FIGHTING PLAN (FFP)**

A committee was constituted by the Administrative Department vide No.SO(Floods)VII-22/2017 dated 26.12.2025 to standardize emergency response protocols and optimize the deployment of machinery and human resources across various irrigation infrastructures (river-wise) for the Flood Fighting Plan (FFP). The composition of the committee was as follow:

Chief Engineer, D&F Zone, Lahore.	**Convener**
Superintending Engineer, Project Circle DG Khan.	**Member / Rep. of DG Khan Zone**
Superintending Engineer, Bahawalpur Canal Circle.	**Member / Rep. of Bahawalpur Zone**
Superintending Engineer, Mailsi Canal Circle, Multan.	**Member / Rep. of Multan Zone**
Superintending Engineer, Sukhrawa Canal Circle, Sahiwal.	**Member / Rep. of Sahiwal Zone**
Superintending Engineer, LCC(West) Canal Circle, Faisalabad.	**Member / Rep. of Faisalabad Zone**
Superintending Engineer, Mandi Bahauddin Canal Circle	**Member / Rep. of Sargodha Zone**
Superintending Engineer, Link Circle, Lahore.	**Member / Rep. of Lahore Zone**

2. The TORs of the committee are as follows:

i. The committee shall set the benchmark point relative to which the machinery and human resources will be deployed in case of flood for each river.

ii. The committee shall determine the specific number of human resources required per mile to ensure 24/7 monitoring for embankments / structures against different flood levels (low, medium, high, V.High & Ex-High) and immediate breach response.

iii. The committee shall define minimum number of work charge / manpower for watch and ward that must be hired via outsourcing for flood season.

iv. The committee shall determine the machinery requirement (excavators, dumpers, tractors with trolleys) for different irrigation infrastructures (embankments / structures), including standby locations against different flood levels (low, medium, high, V.High & Ex-High).

SE BWP

SE SCC

SE MCC

Accordingly, a meeting of the committee was convened online on 30.12.2025. The meeting primarily focused on the criteria for deployment of human resources and machinery for effective flood fighting operations. During the discussion, it was emphasized on the importance of proper assessment and coordination at all levels. During the first meeting, it was decided that all SEs shall discuss the requirement of manpower, labor, equipment, and machinery with Executive Engineers of their zones of different rivers to assess the actual requirements for flood fighting plans. It was decided that the consolidated requirements, after due consultation, shall be submitted for further deliberations.

The second meeting was held on 12.01.2026 to deliberate on requirements gathered by the Superintending Engineers for developing a singlecriteria for the flood fighting plan. After detailed deliberations, the following criteria for establishment of camps, deployment of machinery and human resources, and material for each camp across various irrigation infrastructures (river-wise) for the Flood Fighting Plan (FFP) were agreed upon:

1. General Manpower Hiring (Maintenance Phase)

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

1.1 Watching Establishment Criteria

Normal Flood Season -	1 person/2 mile	(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 Kassie, 1 Axe and 1 Rechargeable Torch for night shift in case of flood above low flood limit)
- The activities of staff during normal flood season should be included but not limited to:
  - Removing Jungle and bushes from slopes and toe of 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.

1.2 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 Executive Engineer (XEN) and if the vulnerable site falls within 15 miles of embankment, then camp will be established at vulnerable site.

2. Flood Fighting Material:

Flood Fighting Material should be purchased on the basis of the worst-case scenario, i.e. for exceptionally high flood. The minimum requirement is as follows:

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

SR. #	ITEM	UNIT	Total Required Qty	Available Qty	Balance Qty	Remarks
1.	Shouldari / Tent	No	01			
2.	Chairs	No	06			
3.	Table	No	01			
4.	Generator (2-3 KVA)	No	01			
5.	Pedestal Fans	No	01			
6.	Charpois	No	02			
7.	Symbolic Jackets	No	50			
8.	Polyethene Sheet	Kg	100			
9.	Bamboos (4" dia and 10 ft long)	No	100			
10.	Water Coller	No	01			
11.	Portable umbrella	No	02			
12.	Life Jackets	No	05			

SR. #	ITEM	UNIT	Total Required Qty	Available Qty	Balance Qty	Remarks
13.	Utensils (10 person serving)	No	01			
14.	Jute/Plastic bags	No	1000			
15.	Walke Talkie Set	Sets	02			
16.	Raincoats	No	10			
17.	LED flood light	No	10			
18.	Extension Cable (10 ft)	No	02			
19.	Rechargeable torches	No	20			
20.	Kassi	No	20			
21.	Axes	No	20			
22.	G.I Buckets	No	05			
23.	7/44 cable	Feet	500			
24.	Sutli	Kg	02			
25.	Sewing Needles	No	10			
26.	Emergency Medical Kit	No	1			
27.	Wire crates (3x3x3) (at only those camp near river action and reserve stock exists)	No	100			

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

SR. #	ITEM	UNIT	Total Required Qty	SR. #	ITEM	UNIT	Total Required Qty
1.	Shouldari / Tent	No	01	2.	Walke Talkie Set	Sets	01
3.	Chairs	No	06	4.	Raincoats	No	10
5.	Table	No	01	6.	LED flood light	No	10

7.	Generator (2-3KVA)	No	01	8.	Extension Cable (10 ft)	No	02
9.	Pedestal Fans	No	01	10.	Rechargeable torches	No	20
11.	Charpois	No	02	12.	Kassi	No	20
13.	Symbolic Jackets	No	50	14.	Axes	No	20
15.	Water Coller	No	01	16.	G.I Buckets	No	05
17.	Portable umbrella	No	02	18.	7/44 cable	Feet	500
19.	Utensils (10 person serving)	No	01	20.	Sutli	Kg	02
21.	Jute/Plastic bags	No	500	22.	Sewing Needles	No	10

Machinery, Camps and Watching Establishment Requirements by Flood Level:

Flood Level	Flood Camp	Excavators	Trolleys	Dumpers	Tractor with Front blade	Beldars (per mile)	Mate
Normal	1 per 15 mile reach	As per recommendations (ii)		-	1 per 15 mile reach	1 person/2 mile (1 Shift)	1 mate per 12 beldars
Low						1 person/mile (1 Shift)	
Medium	1 per 7 mile reach	1 per 7 mile reach	4 per 7 mile reach	2 per 7 mile reach	1 per 7 mile reach	2 person/mile/shift (2 Shift)	
High							
Very High	1 per 5 mile reach	1 per 5 mile reach	4 per 5 mile reach	2 per 5 mile reach	1 per 5 mile reach	5 person/mile/shift (3 Shift)	
Exp. High		2 per 5 mile reach			2 per 5 mile reach		

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

Minimum Requirement of Machinery at Breaching Section

At each breaching section there should be arrangement of two (2) Excavators, one (1) Dozer and three (3) Dumpers at Exceptionally high flood.

Recommendations for Operation During Flood

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

ii. Superintending Engineer shall allow deputation of one (1) excavator and four (4) Trolleys during low flood at Camps/ vulnerable points and LMB/RMB.

iii. The Superintending Engineer (SE) shall approve one additional shift during low to high flood based on necessity of site but he shall clearly mention the reach where additional shift is allowed.

iv. For emergent situation when very high flood levels are attained at lower flood discharges, additional camps may also be established with the approval of Superintending Engineer.

v. The concerned division shall procure flood fighting material as per requirement of seasonal flood fighting camps.

vi. Jackets with official emblem of the PID should be purchased by the concerned Division, to be used during the worst-case scenario, i.e., for exceptionally high flood.

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

viii. The above mentioned yard stick of human resource is inclusive of 100% of regular flood establishment of the division at normal and low flood and for medium and above flood situation 50% of total regular establishment of the division and backup division in Flood Fighting Plan.

ix. The **Trigger Point** upstream of a Canal Division for commencing preparations shall be mentioned in the flood fighting plan and it shall be such point upstream with lag time of 3 days / 72 hours. The division shall initiate preparation corresponding to discharge magnitude expected to receive at their jurisdiction with respect to discharge at trigger point with 2025 flood data.

SE SCC

19/01/26
SE BWP

SE KLCW1

SE LWLC

19/01/26
SE MCL

SE MBN

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

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

xii. The machinery mentioned above should be hired to remain standby for 24/7 to fight any extreme situation. The working of deployed machinery during normal situation shall be with prior approval of Superintending Engineer.

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

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Member/ SE, Project Circle DG Khan

(Abdul Qayyum Qadume)
Member / SE, Mailsi Canal Circle, Multan

19/01/2026
(Mohib Ullah Ali)
Member / SE, Sukhrawa Canal Circle, Sahiwal

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(Imtiaz Hussain)
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