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CHAPTER-1:

SALIENT FEATURES OF TAUNSA HEAD WORKS DIVISION

1.1 Location: Taunsa Barrage is located across the River Indus. It is situated at a distance of 18 km from Kot Addu Town which is the Tehsil Headquarters of Kot Addu District. Its location is 30.5ºN,

1.2 General Description: The name of Taunsa Barrage derives from famous Town of Taunsa Sharif situated on the right bank of the River Indus, 30 km upstream of the Barrage. The Barrage was designed on SVP model with vertical stony gates for regulation. This structure is one of the most important diversion structures for the arid zone of Southern Punjab.

The Barrage provides the following facilities:

i. It provides facility for diversion of 20450 cfs of irrigation water to 2.23 million acres of fertile agriculture lands in Muzaffargarh, Kot Addu, and D.G.Khan and Rajanpur Districts.

ii. It has in-built provision for including additional 0.4 million acres of culturable area of Districts DG Khan & Rajanpur, if Dajal Branch Canal extension is taken up.

iii. The Barrage also figures in the Indus Basin Replacement Project plan and provides 12000 cfs of water to the River Chenab through 38 miles long Taunsa – Panjnad Link Canal constructed in 1965-71. This Link Canal supplements supplies required at Panjnad to feed Panjnad and Abasia Link Canals in Districts Rahim Yar Khan and Bahawalpur.

iv. A head regulator has constructed to feed Kachhi Canal which will irrigate 71,3000 acres of barren lands of kachhi plains in Balochistan besides meeting with the drinking water requirement of brackish Zone

v. The Barrage structure also houses a 16”dia high pressure pipe line of PARCO Linking Karachi with their up-country storage at Mehmood Kot Terminal, besides 16” dia gas pipe line from Dhodak oil & gas field.

vi. It provides facility for crossing a telephone and two extra high voltage transmission lines.

vii. It serves as an important/ vital rail-cum-road link between Sindh and KPK

1.3. Administrative Set-Up:

Taunsa Head Works Division is comprised of the following three Sub Divisions:

A. Head Works Sub Division: This Sub Division is responsible for maintaining:

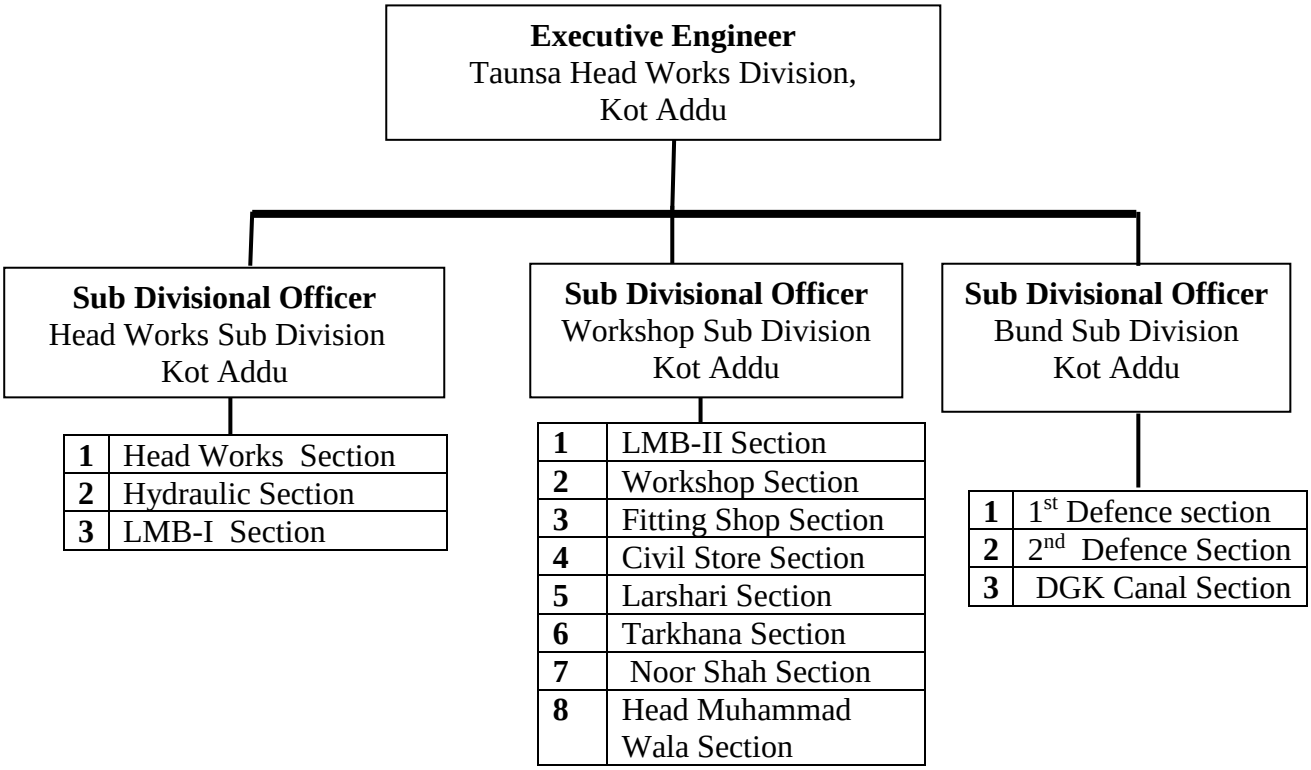
- **I.** Barrage and allied works.
- **II.** Left side training works upstream Taunsa Barrage up to Dholewala Regulator (RD 0 – 80+000 LMB)
- **III.** Left side training works downstream Taunsa Barrage upto RD 34+000 Maggasson Branch
- **IV.** DG Khan Canal RD 0 – 1+000
- **V.** Muzaffargarh Canal RD 0 – 6+785.
- **VI.** T.P. Link Canal RD 0-1+000.

B. Bund Sub Division: This Sub Division is responsible for maintaining:

- **i.** Right side training works upstream Taunsa Barrage
- **ii.** Right side training works downstream Taunsa Barrage
- **iii.** D.G.Khan Canal RD 1+000 – 40+130

C. Work Shop Sub Division: This Sub Division is responsible for m maintaining:

- **i.** Left side training works upstream Dholewala Regulator RD 80+000 to 134+700 tail of LMB.
- **ii.** TP Link Canal RD 1+000 to 191+000.(Tail)
- **iii.** Maintenance for working of Taunsa Head Work Workshop.



However following departments / institutes played their role to combat during flood season in the jurisdiction of Taunsa Headworks Division, Kot Adu with mutual cooperation amongst them: -

a) Civil Administration
b) District Government
c) Pakistan Army
d) National Highway Authority
e) Pakistan Railways
f) Police Department
g) Information Department
h) Punjab Highway Department
i) Building Department
j) Water and Power Development Authority
k) Pakistan Telecommunication Authority
l) Non-Governmental Organizations and Many other Departments

CHAPTER-2:

FLOOD PROTECTION AND RIVER TRAINING WORKS

2.1 Design Parameter of Training Work:

At Taunsa Barrage, the River Indus had three main creeks i.e. the western arm called Purana Creek, the main river in the centre and the eastern arm called Hassan Wah Creek. The Barrage was originally located and constructed on dry land outside the river towards the eastern bank. The area for construction of the Barrage was encircled by an earthen polygon to keep it dry throughout the construction period and the River was subsequently diverted to flow through the Barrage after hectic river diversion activities.

1. The River Indus is an incised river and has meandering tendency like other alluvial rivers. It always keeps on changing its course, making and breaking new and old loops. Since construction of the Barrage, the River has been flowing through the Barrage by arresting the meandering trend at this location. This intervention causes the river to change its morphology both on the upstream and downstream sides. To exercise an effective control over the main stream, training works have been constructed. All the training works are shown in the table below, along with their designed parameters:

Sr. No.	Name of River Training Work	Length (Ft)	Free Board (Ft)	Top Width (Feet)	River side slope	Country side slope
	(LEFT SIDE)					
01	Left Guide Bank	9272	7	40	2:1	2:1
02	Left Marginal Bund at RD 1+500 to 32+000	133200	7	25	2:1	2:1
	Left Marginal Bund at RD 32+000 to 134+700				3:1	2:1
03	Retired Left Marginal Bund	49000	6	20	3:1	3:1
04	Tibba Tie Bund	8900	6	20	3:1	2:1
05	Sanawan Flood Bund	42000	6	25	3:1	2:1
06	T-Head Spur No.1 up-stream Left RD 11+350 of LMB.	6700	7	30	3:1	3:1
07	T-Head Spur No.2 up-stream left RD 15+000 of LMB.	6700	7	30	3:1	3:1
08	T-Head Spur No.3 up-stream left RD19+200 of LMB.	7134	7	30	3:1	3:1

Sr. No.	Name of River Training Work	Length (Ft)	Free Board (Ft)	Top Width (Feet)	River side slope	Country side slope
09	Hockey Spur at RD 26+000 of LMB.	4500	7	30	3:1	3:1
10	Mole head Branch Spur RD 2+700 of Hockey Spur	2000	6	20	3:1	3:1
11	J-Head Spur Bait Qaim Wala at RD.3+000 D/S left of Maggasson Branch	7200	6	30	3:1	2:1
12	J-Head Spur No. 1, at RD.13+350 D/S left of Maggasson Branch	6200	6	25	3:1	2:1
13	Spur No. 2, at RD.20+000 D/S left of Maggasson Branch	2000	6	25	3:1	2:1
14	Hockey Spur at RD 22+500, D/S left Maggasson Branch	1700	6	30	3:1	2:1
15	Spur Rd 25+000 D/S left of Maggasson Branch	2200	6	25	3:1	2:1
16	Hockey Spur RD 28+000(Solid stone) of Maggasson Branch	550	6	20	3:1	2:1
17	Hockey Spur 30+750 (Solid Stone)	575	6	20	1:1	1:1
18	Concavo Convex Guide Head Spur at RD 34+000 of Maggasson Branch					
(i)	Shank Portion	2735	6	30	3:1	2:1
(ii)	Armoured Portion	1825	6	30	2:1	2:1
	(RIGHT SIDE)					
19	Right Guide Bank	9272	7	40	2:1	2:1
20	T-Head Spur No. 5	1700	5	30	2:1	2:1
21	1st Defence Bund, RD 0-23+500	23500	5	30	3:1	2:1
22	Spur No 1	5200	6	25	2:1	3:1
23	Guide Head Spur No 1-A	20162	6	30	2:1	3:1
24	Link Bund, RD 0-18+500	18500	6	25	3:1	2:1
25	T-Head Spur No 2	20000	6	30	2:1	3:1
26	Mole Head Spur No .2 RD 17+500	2000	6	20	3:1	3:1
27	Spur No. 2-A	8800	6	30	2:1	3:1
28	J-Head Spur Faqir Wali	3000	6	30	2:1	3:1
29	J-Head Spur Jarwar Wali	4500	6	30	2:1	3:1

2.2 Location Map

Location Map of Taunsa Barrages is enclosed

CHAPTER-3:

BRIEF HISTORY OF PAST FLOOD EVENTS.

Taunsa Barrage is located across River Indus. It is situated at a distance of 18 KM from Kot Addu town which is a Tehsil Headquarter of Muzaffargarh District. The construction of the barrage at its present location was started in September 1953, and on completion of barrage, the river was diverted through it on 11.4.1958. It was formally inaugurated by F.M Ayub Khan the President of Pakistan on March, 1958. Indus River in the reach of Taunsa Barrage has meandering tendency like other alluvial rivers. It always keeps on changing its course, making and breaking new and old loops. Since construction of the Barrage, the river is obliged to flow through Barrage at all cost by arresting the meandering trend at this particular location and too at a pond level of required suitability.

- During 2010, the Taunsa Barrage came under flood limits from 27th of July 2010 with discharge of 2.72 Lac Cusecs and gained peak flood on 2nd of August 2010 with discharge of 9.59 Lac Cusecs through Barrage and recorded up to normal supply on 31st of August with discharge 2.03 Lac Cusec. During this period, a number of river training works came under the threat of super floods and Department made his best efforts to fight against this flood *on* these structures and also succeeded to save them from a major loss / damage.

  Unfortunately, on 02.08.2010, when barrage received peak discharge of 10.85 Lac Cs: at about 04:00 PM. The left marginal Bund of Taunsa Barrage breached in RD 32-33. The breach speedily developed to 1000 ft and approximately 1.25 Lac Cs: diverted, which after breaching banks of Taunsa Panjnad Link Canal and Muzaffargarh Canal, Sanawan Bund and Tie Bund of left side flooded, vast area of District Muzaffargarh. The flood of such magnitude have ravaged huge swathes of land along the entire length of Indus river was staggering. This deluge has spared little and destroyed living memories and infrastructures all around and brought great: great misery. The flood has also badly damaged the railway track at various locations on Multan-Kot Addu junction, Kot Addu – D.G. Khan Section as well on Kot Addu – Bhakkar – Mianwali Section and completely suspended the railway track. This breach played havoc in thickly populated areas of Teshil Kot Addu.
- During the year 2011, maximum discharge passed through Taunsa Barrage was recorded only 227689 Cs. On 01.09.2011 resultantly no significant

damage occurred during this flood season and also no major changes of river trend was observed.

- After this, in the year 2012, maximum discharge passed through Taunsa Barrage was recorded only 243389 Cs. On 10.09.2012 which passed safely in the jurisdiction of Taunsa Head Works Division, Kot Addu. No major damages occurred to the Barrage and allied river training works.
- During the year 2013, two flood waves were experienced. The first flood wave started at 19:00 hours on 27.07.2013 and raised the only low flood limits with a peak discharge of 348296 Cs. The second flood wave which started at 15:00 hours on 07.08.2013 and rose to high flood stage at 11:00 hours on 17.08.2013 with its peak discharge of 516017 Cs. which was a peak discharge of the whole flood season 2013.
- During Flood season 2014, no flood occurred in River Indus. The maximum discharge in the River Indus received only 267412 Cs. On 18 july, 2014 which was also a peak discharge of the whole flood season. However, all the necessary protective measures were adopted timely to combat flood threats.

  By the grace of Almighty Allah, the flood season 2014 passed safely in the jurisdiction of Taunsa Head Works Division, Kot Addu. No major damages occurred to the barrage and allied river training works except the hockey spur at RD 22+500 Maggasson Branch and apron of J-head spur RD.47+500 of Shah Wala Groyne which were timely protected by flood fighting arrangements.
- During month of July – August 2017, it was medium flood in river Indus at Taunsa Barrage. Some structures were came under attack of River and by conducting extensive flood fighting activity under para 2.89 of P.W.D code and saved the structures.
- During flood season 2018, the River Indus was flowing at normal stage. Maximum discharge received as 287173 cusecs on 17.08.2018. The river attained low flood stage for 02 days only i.e. 17.08.2018 and 18.08.2018. By the grace of Almighty Allah, no major damage occurred and no emergency work was required during flood season 2018.
- During month of July – August 2019, there was medium flood in river Indus at Taunsa Barrage. Some river training structures were came under attack of River and by conducting extensive flood fighting activity under para 2.89 of

P.W.D code and saved the structures. River behavior shifted from right to left training works.

- During month of August 2021, it was medium flood in river Indus at Taunsa Barrage. Following structures were come under attack of River and by conducting extensive flood fighting activity under para 2.89 of P.W.D code and saved the structures.
- During January 2022, due to winter low water in River Indus at Taunsa Barrage, the T-3 structure came under river attack. The matter was taken up under Para 2.89 of the P.W.D. Code and the structure was protected accordingly. During Flood 2022, a prolonged high flood of about 624,000 cusecs, caused by unprecedented rainfall in the hill torrent areas, passed Taunsa Barrage through a leftward loop with a width of about 1500–2000 ft and sounding of 65–70 ft. Although the structure settled at high flood sounding depth, it served its purpose and protected the nearby area and the shank of J-Head Spur RD 34+000 from severe erosion. However, other river training structures including T-1, T-2, T-3 and 2-A were damaged during the flood. All the damages were subsequently restored after the flood.
- During Month of July 2023, the river Indus was raised to medium flood levels at Taunsa Barrage with a maximum discharge on 419895 cusecs on 28.07.2023. No major damage was occurred on Barrage and on allied structures except an Inverted Hockey Spur at RD 30+750 was Bi-sected from its key point on 31.07.2023. The Bi-sected portion was closed on 04.08.2023 with Intensive flood fighting at site.
- During the 2024 flood season at Taunsa Barrage, severe river erosion on the right bank diverted the main flow towards the left bank near the inverted hockey spur at RD 30+750, causing embayment of agricultural land and damage to the J-Head spur at RD 34+000. Emergency flood-fighting measures including stone dumping and prong launching were carried out under the supervision of departmental officers, the Zonal Technical Committee and NESPAK consultants; however, due to high discharge (about 376,755 cusecs) the restored apron collapsed and the spur breached in early August. Later, expert committees directed stabilization of the damaged spur through further stone dumping and small stone studs, and the situation was temporarily controlled while the river remained within its main channel.

Flood Season 2025:

During the months of July and August 2025, the discharge of the Indus River remained mostly at medium flood level at Taunsa Barrage. The river experienced four spells of medium flood and one spell of high flood during this period, with the maximum discharge recorded as 509,727 cusecs on 19.08.2025. However, the flow remained within safe limits and no major or serious river action was observed.

Regular inspections and monitoring were carried out by the field staff and officers to ensure the safety of the barrage and its allied structures. During the flood season, all hydraulic structures including the barrage, upstream and downstream spurs, guide banks, and the Left Marginal Bund were closely observed, and necessary precautionary measures were maintained at vulnerable locations.

It is reported that no significant erosion, breach, or structural damage occurred to the barrage or along the allied protective works such as bunds and spurs on both upstream and downstream sides. All structures performed satisfactorily during the flood spells and the river remained confined within its main channel.

In conclusion, the flood season during July–August 2025 passed safely at Taunsa Barrage without any major incident, and the barrage along with its allied structures remained stable and secure due to continuous monitoring and timely field supervision.

i) Flood heights as compared to the previous flood heights.

Flood heights as compared to previous floods remained same no change observed.

ii) Flood routing observed during the flood.

During flood 2025 in River Indus at Taunsa Barrage flood was routed as per approved SOP. In low flood off taking channels were kept in operation and silt observation was done to avoid excessive silt entry. In medium flood when discharge approached upto 509727 cusecs off taking channels were closed and pond level was lowered to from RL 447 ft to 445.50 ft for passing flood safely.

The flood was passed from Taunsa Barrage with equal opening of gates to avoid uneven stress.

iii) Inundated areas along both the banks of the river reaches.

The flood water remains within the banks only areas / houses within the LMB and right side banks came under water.

iv) Affects of obstruction / encroachments / zamindara bunds.

Zamindara bunds were cut before receiving flood and water spread in pond area. No any adverse impact was observed.

v) Any unique or unusual phenomenon / experience noticed by XEN.

No any unique or unusual phenomenon was experienced & noticed during flood season 2025.

vi) Weak points noticed at different components of Barrage.

At present, the weakest point related with barrage structure at Taunsa Barrage is damaged stone apron of downstream floor as well as stone apron of upstream left divide wall.

vii) Location, formation of hydraulic jumps.

Location and formation of hydraulic jump was controlled through regulation of gates of the Barrage and formation of hydraulic jump was ensured on downstream at toe of glacis of the weir.

viii) Effectiveness of efforts made during flood for removal of island existing upstream and downstream of the Barrage.

On upstream side siltation along left guide bank was excessive and through regulation washing was attempted which is partially effective. While on downstream it was tried with in permissible limits to straighten the path of river and it the said target was achieved successfully as the river approach downstream side shifted towards center and right side.

ix) Flood level attained at different stages of the river including downstream and upstream.

High flood was passed at upstream level of RL 445.50 ft and at 509727 cusecs downstream level was RL 435.90 ft while level was RL 435.90 ft on left flank and 435.80 ft on right flank downstream to sub weir.

x) Depletion of poundage.

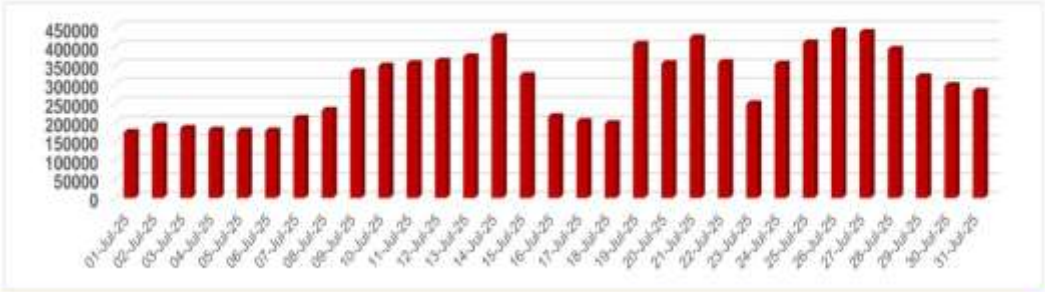
The pond was depleted as per rules and regulation to receive medium level flood at Taunsa Barrage from RL 447.00 ft to 445.50 ft.

xi) Canal operation viz pond level of the Barrage.

Canals were kept in operation below 375000 cusecs flood with observation of silt entrance to avoid excessive silt entrance. After that the channels were closed and pond level was lowered to 445.50 ft above 375000 cusecs discharge.

River Indus Peak Discharge - Year 2025

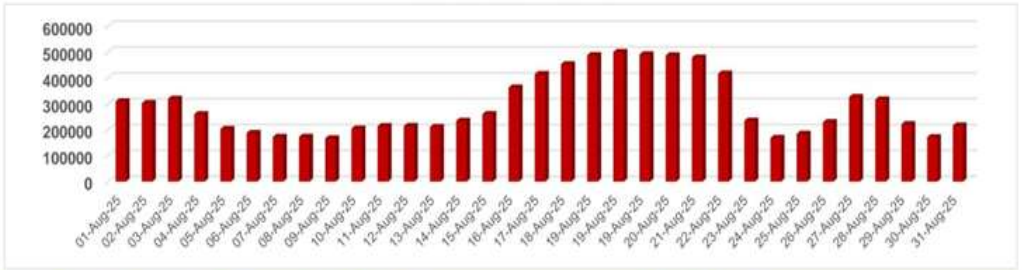
(Month of July - 2025)



Taunsa Barrage Downstream 2025																															
Increasing / Descreasin %age	8.97%	-3.52%	-2.77%	-1.24%	0.00%	15.95%	9.09%	30.71%	4.24%	1.75%	1.75%	3.21%	12.53%	-31.81%	-50.70%	-6.44%	-2.66%	51.56%	-14.25%	16.13%	-18.39%	-43.98%	29.78%	13.68%	7.22%	-0.94%	-11.45%	-22.46%	-7.90%	-5.30%	#DIV/0!
Taunsa Barrage Downstream 2025 (@6:00 Hours)	173248	190316	183850	178886	176692	176692	210218	231236	333700	348486	354685	361016	372971	426400	323499	214663	201670	196438	405532	354954	423200	357453	248274	353564	409579	**441436**	437305	392386	320415	296950	282010
Gudu Barrage U/S 2025 (@6:00 Hours)	141244	141395	148812	162546	178882	189419	173594	170048	186933	253897	269888	328881	342093	355283	375494	382117	392084	274554	239447	208938	227264	300092	340568	353432	342260	343418	389780	415466	423187	424239	419223
Date	01-Jul-25	02-Jul-25	03-Jul-25	04-Jul-25	05-Jul-25	06-Jul-25	07-Jul-25	08-Jul-25	09-Jul-25	10-Jul-25	11-Jul-25	12-Jul-25	13-Jul-25	14-Jul-25	15-Jul-25	16-Jul-25	17-Jul-25	18-Jul-25	19-Jul-25	20-Jul-25	21-Jul-25	22-Jul-25	23-Jul-25	24-Jul-25	25-Jul-25	26-Jul-25	27-Jul-25	28-Jul-25	29-Jul-25	30-Jul-25	31-Jul-25

River Indus Peak Discharge - Year 2025

(Month of August - 2025)



Taunsa Barrage Downstream 2025																															
Increasing / Descreasin %age	-2.22%	5.16%	-22.94%	-28.06%	-8.25%	-8.85%	0.00%	-3.32%	18.50%	4.40%	0.21%	-1.85%	10.26%	9.90%	28.21%	12.52%	8.32%	7.16%	2.48%	-1.90%	-0.75%	-1.79%	-14.78%	-77.28%	-39.28%	8.64%	19.54%	29.74%	-3.04%	-42.81%	-29.51%	20.90%	-
Taunsa Barrage Downstream 2025 (@6:00 Hours) (Only Max Disch date is taken 6:00, 12:00 & 18:00 Hours)	310894	304148	320699	260858	203705	188174	172878	172883	167329	205312	214751	215201	211283	235438	261305	364003	416078	453856	488859	**501312**	491947	488309	479714	417946	235756	169264	185262	230249	327697	318023	222683	171944	217382
Gudu Barrage U/S 2025 (@6:00 Hours)	365156	364499	364074	334495	321169	288050	231382	211552	193394	197663	198380	198510	230333	236640	231648	259948	282850	322801	360769	394872	394872	396327	439126	471332	513582	514799	486756	311559	312040	333361	366251	350943	318229
Date	01-Aug-25	02-Aug-25	03-Aug-25	04-Aug-25	05-Aug-25	06-Aug-25	07-Aug-25	08-Aug-25	09-Aug-25	10-Aug-25	11-Aug-25	12-Aug-25	13-Aug-25	14-Aug-25	15-Aug-25	16-Aug-25	17-Aug-25	18-Aug-25	19-Aug-25	19-Aug-25	19-Aug-25	20-Aug-25	21-Aug-25	22-Aug-25	23-Aug-25	24-Aug-25	25-Aug-25	26-Aug-25	27-Aug-25	28-Aug-25	29-Aug-25	30-Aug-25	31-Aug-25

CHAPTER-4:

DESIGN DATA, HISTORIC PEAK FLOOD DATA AND PREVIOUS FIVE YEARS FLOOD DATA OF TAUNSA BARRAGE AND OTHER CONTROL POINTS.

Taunsa Barrage was commissioned in the year 1958. It is a barrage with stony gates. SVP barrage model was adopted for its design. In the years 2006-2009, the Barrage was comprehensively rehabilitated and remodelled. A sub-weir, at a distance of 925 ft D/S was constructed to contain the hydraulic jump and to reduce up lift pressures on the downstream floor. Following are the salient features:

Description	Original Design
Designed capacity of the Barrage	1,000,000 Cs.
Maximum discharged passed (02.08.2010)	1085601 Cs.
Construction period	1953 – 1958
Date of Commissioning	03-03-1959
Width between flanks	4,346 ft.
Left under sluice	7 bays each of 60 ft
Right under sluice bays	4 bays each of 60 ft
Weir bays	53 bays each of 60 ft
Lock channel bay	1 No. 22 ft
Fish Ladder	2 No. 11 ft
Width of piers and divide wall	7.0 ft
Length of piers	85.5 ft
Length of impervious (Pacca Floor)	
(i) Under sluice bays	238 ft
(ii) Weir bays	233 ft
Length of Guide Banks Up-Stream	7292 ft
Length of Guide Banks Down-Stream	1035 ft
Road width	24 ft
Foot Paths (Left & Right)	6 ft. each
Normal Pond Level	R.L. 446.0 ft
Maximum Pond Level	R.L. 447.0 ft
Max: Head Across (Designed)	26.5 ft
Max: permissible Head Across	22 ft
Discharge of Muzaffargarh Canal	8901 cfs.
Discharge of DG Khan Canal	11549 cfs.
Discharge of T.P. Link Canal	12000 cfs.

Sub-Weir

Length	4346 ft
Crest R.L.	424.00 ft
Crest width	6 ft
Length of upstream impervious floor	40 ft
Length of downstream impervious flood	125 ft
Upstream Floor R.L.	417.00 ft
Downstream Floor R.L.	408.00 ft

4.1 Flood Limits

The flood limits of different barrages in Pakistan have been fixed by the Federal Flood Commission. At Taunsa, these are as under:

Discharge in Lac cfs

Normal	Low	Medium	High	Very High	Exceptionally High
‹ 2.50	2.50 – 3.75	3.75 – 5.00	5.00 – 6.50	6.50 – 8.00	› 8.00

4.2 Time Lags of Floods

The Time Lags from the upstream control points to Taunsa Barrage are shown as under:

Reach	Distance (KM)	Time (Hrs)
Attock – Kalabagh	169	24
Kalabagh – Chashma	058	12
Chashma – Taunsa	237	60
Taunsa – Guddu	270	84

4.3 / 4.4 Highest Floods / Peak Discharges.

Following table depicts detail of the highest flood discharge each year at Taunsa Barrage since its commissioning:

Year	Date	Month	U/Stream Gauge	D/Stream Gauge	U/Stream Discharge	D/Stream Discharge	Flood Limit
1958	21	July	441.80	441.60	760784	760784	V.H. Flood
1959	10	July	440.50	437.30	518000	518000	H. Flood
1960	21	July	444.00	434.30	515687	509309	H. Flood
1961	23	July	443.00	433.20	476374	476374	M. Flood
1962	26	July	444.00	431.88	340113	330613	Low Flood
1963	18	July	444.00	431.45	368631	354813	Low Flood
1964	15	July	443.80	432.60	504340	502340	H. Flood
1965	15	August	443.80	432.80	438257	438257	M. Flood
1966	07	July	446.50	434.48	516113	516113	H. Flood
1967	31	July	447.00	432.70	471136	457053	M. Flood
1968	18	July	446.00	432.05	446609	431179	M. Flood
1969	30	July	446.00	431.70	471105	464705	M. Flood
1970	08	July	446.00	430.00	384614	368304	Low Flood

Year	Date	Month	U/Stream Gauge	D/Stream Gauge	U/Stream Discharge	D/Stream Discharge	Flood Limit
1971	13	August	446.70	430.35	406691	392892	M. Flood
1972	02	July	445.20	430.50	399450	371212	Low Flood
1973	23	July	446.00	432.70	570087	567623	H. Flood
1974	31	August	446.20	413.50	376941	368941	L. Flood
1975	26	August	446.00	432.55	524495	524495	H. Flood
1976	07	August	445.50	433.60	677105	675233	V.H. Flood
1977	21	July	445.50	433.60	459741	443343	M. Flood
1978	14	July	446.00	431.25	508922	508422	H. Flood
1979	08	August	446.50	430.50	398069	388069	H. Flood
1980	13	August	448.80	431.85	435133	425233	M. Flood
1981	17	August	446.20	430.90	402391	392091	M. Flood
1982	20	August	447.00	432.30	391899	375499	M. Flood
1983	10	August	447.50	434.10	504189	502189	H. Flood
1984	20	August	446.80	434.50	512194	509694	H. Flood
1985	04	August	446.50	433.75	318680	306680	Low Flood
1986	10	August	447.50	435.20	512769	505069	H. Flood
1987	26	August	446.50	432.60	329204	313204	L. Flood
1988	21	July	446.50	435.40	563416	560916	H. Flood
1989	05	August	447.00	434.40	560630	558630	H. Flood
1990	02	August	446.00	434.30	517652	502152	H. Flood
1991	18	July	445.00	432.00	434147	422947	M. Flood
1992	14	September	446.00	434.70	655879	654579	H. Flood
1993	28	July	446.50	432.50	385302	381302	M. Flood
1994	19	July	444.00	436.70	574602	574602	H. Flood
1995	30	July	446.00	434.70	611937	611937	H. Flood
1996	20	August	448.00	432.30	521708	518208	H. Flood
1997	31	August	447.00	432.40	536199	534199	H. Flood
1998	18	July	447.00	431.50	528543	519881	H. Flood
1999	13	August	447.00	430.70	409720	387720	M. Flood
2000	05	August	447.40	429.40	227605	209405	Low Flood
2001	27	July	445.60	430.30	281873	281873	Low Flood
2002	17	August	447.00	430.80	335150	306150	Low Flood
2003	7	August	447.00	430.90	431277	421177	M. Flood
2004	21	August	447.60	428.65	206412	179157	Normal
2005	20	August	446.00	432.85	531177	531177	H. Flood
2006	11	August	446.80	432.70	612269	612269	H. Flood
2007	19	August	447.50	435.00	351820	333220	Low Flood
2008	08	August	447.00	430.70	279500	263177	Low Flood
2009	21	August	447.50	429.70	343369	312769	Low Flood
2010	02	August	446.20	437.20	1085601	1085601	E.H. Flood
2011	01	September	447.70	430.50	248689	227689	Low flood

Year	Date	Month	U/Stream Gauge	D/Stream Gauge	U/Stream Discharge	D/Stream Discharge	Flood Limit
2012	10	September	447.80	430.70	243389	235389	Low flood
2013	17	August	446.50	434.90	516017	516017	High flood
2014	18	July	447.30	430,60	267412	247412	Low flood
2015	05	August	445.00	436.60	604714	604714	High flood
2016	20	July	446.70	432.40	343024	282000	Low Flood
2017	07	August	445.30	434.90	424388	418388	Medium flood
2018	17	August	446.80	430.50	287173	266123	Low Flood
2019	15	August	446.50	432.20	390394	378194	Medium Flood
2020	6	September	445.50	433.50	479866	479866	Medium Flood
2021	4	August	446.80	432.90	327621	304121	Low Flood
2022	31	August	445.00	436.30	624159	624159	High Flood
2023	28	July	445.00	434.10	419895	419895	Medium Flood
2024	08	August	445.70	434.60	440296	440296	Medium Flood
2025	19	August	445.50	435.90	509727	509477	High Flood

CHAPTER-5:

FLOOD FIGHTING STRATEGY

During flood alert, all the vulnerable points will be kept under keen watching. If any damage occurs to any structure, mater will be brought to the notice of high ups of the Department by the concerned S.D.O. In case of any damage, the Standard Operation procedure (S.O.Ps) defined by the Administrative Department will be adopted.

RIVER INDUS

STAGE -1:-

When the discharge of River Indus is below than 2.5 Lac Cs: which is considered as normal flood. The Sub Divisional Officer, Taunsa Head Works Sub Division & Bund Sub Division will be incharge of overall flood operation and the Sub Engineer In-charge of their Section will perform watching duties in their respective jurisdictions. No special watching is required.

STAGE -2:-

When the discharge of River Indus in between 2.5 Lac Cs: to 3.75 Lac Cs: which is considered as Low flood. The Sub Divisional Officer, Taunsa Head Works Sub Division & Bund Sub Division will be incharge of overall flood operation and the Sub Engineer In-charge of their Section will perform watching duties in their respective jurisdictions. Continuous watching of LMB and allied river training structures on both the upstream and downstream sides of the barrage is required. Deployment of machinery and establishment of watching camps with regular and work charge establishment are also necessary on both the upstream and downstream sides of the barrage.

STAGE -3:-

When the discharge of River Indus in between 3.75 Lac Cs: to 5.00 Lac Cs: which is considered as Medium flood. The Executive Engineer, Taunsa Head Works Division, Kot Addu and Sub Divisional Officer, Taunsa Head Works Sub Division & Bund Sub Division will be incharge of overall flood operation and the Sub Engineer In-charge of their Section will perform watching duties in their respective jurisdictions. Continuous watching of LMB and allied river training structures on both the upstream and downstream sides of the barrage is required. Deployment of machinery and establishment of watching camps with regular and work charge establishment are also necessary on both the upstream and downstream sides of the barrage.

STAGE -4:-

When the discharge of River Indus in between 5.00 Lac Cs: to 6.50 Lac Cs: which is considered as High flood. The Executive Engineer, Taunsa Head Works Division, Kot Addu will be incharge of overall flood operation. In addition the Sub Divisional Officers will be in charge of watching operation of flood bund s along with supervisory staff and Sub Engineer concerned along with their watching teams as listed in duty roster. Continuous watching of LMB and allied river training structures on both the upstream and downstream sides of the barrage is required. Deployment of machinery and establishment of watching camps with regular and work charge establishment are also necessary on both the upstream and downstream sides of the barrage.

STAGE -5:-

When the discharge of River Indus is between 6.5 Lac Cs: to 8.00 Lac Cs: which is considered as very High flood. The Executive Engineer, Taunsa Head Works Division, Kot Addu will be incharge of overall flood operation. In addition the Sub Divisional Officers will be in charge of watching operation of flood bund s along with supervisory staff and Sub Engineer concerned along with their watching teams as listed in duty roster. Continuous watching of LMB and allied river training structures on both the upstream and downstream sides of the barrage is required. Deployment of machinery and establishment of watching camps with regular and work charge establishment are also necessary on both the upstream and downstream sides of the barrage.

STAGE -6:-

When the discharge of River Indus is above 8.00 Lac Cs: which is considered as exceptionally high flood. The Executive Engineer, Taunsa Head Works Division, Kot Addu will be incharge of overall flood operation. In addition the Sub Divisional Officers will be in charge of watching operation of flood bund s along with supervisory staff of all the Sub Engineers will also be responsible for the flood operation. Continuous watching of LMB and allied river training structures on both the upstream and downstream sides of the barrage is required. Deployment of machinery and establishment of watching camps with regular and work charge establishment are also necessary on both the upstream and downstream sides of the barrage.

Responsibility of the Staff:-

1. Executive Engineer, Taunsa Head Works Division, Kot Addu will be responsible for watch and ward of Taunsa Head Works Division. The Executive Engineer, will have an overall control over the flood preparedness and should have clarity in mind how to control and avert any grievous situation developing at any point around Taunsa Head works Division. He should also apprise himself and alert other concerned about weather report and flood forecast.
2. Sub Divisional Officers along with their supervisory staff of all the concerned Sub Engineers will also be responsible for watch and ward of flood operations.

LIAISON OTHER DEPARTMENT:-

Executive Engineer, Taunsa Head Works Division, Kot Addu and Sub Divisional Officer will keep liaison at their counter parts in other Departments, Higher authorities of other Department will be approached through Superintending Engineer, Taunsa Canal Circle, Kot Addu and Chief Engineer, Irrigation D.G.Khan Zone, Dera Ghazi Khan if any need arises. At site, Sub Engineers will conduct inspections with the visiting officers of Civil Administration and Army if no higher officers are available on spot.

CHAPTER-6:

FLOOD DAMAGES RESTORATION WORKS

During flood season 2025, the River Indus was raised to High flood with Maximum discharge received at Taunsa Barrage 509477 cusecs on 19.08.2025. During flood 2025, partially damaged T-1, T-2, T-3, loose Stone Apron, Hockey Spur RD 26+000 LMB-I. However, the work was taken up in the on-going scheme and restored after flood 2025.

However, the following structures works occurred for which following restoration works have been proposed to complete before flood 2026.

M&R Works

Sr.#	Name of Work	Cost in Million	Remarks / Status
1	Restoration of loose Stone Apron D/S Taunsa Barrage to its Design Parameters.	98.331	Works in progress and will be completed before coming flood season
2	Strengthening and maintaining Sanawan flood bund from RD 0+000 - 41+500.	95.491	
3	Restoration of T-Head spur No. 1 RD 11+350 of LMB damaged during flood 2025.	75.584	
4.	Restoration of T-Head spur No. 2 RD 15+000 of LMB damaged during flood 2025.	73.638	

ADP Works

Sr.#	Name of Work	Cost in Millions	Remarks / Status
1	Providing river training structures / spurs D/S of Taunsa Barrage to protect Maggasson branch in reach RD 30+000-34+000 by incorporating Model Study of D/S of Taunsa Barrage post flood 2024	724.882	Work in progress and will be completed before coming flood season

CHAPTER-7:

FLOOD FIGHTING WATCHING ARRANGEMENT

The Executive Engineer, Taunsa Head Works Division is Officer In-charge for overall control of the flood watching arrangement. The Sub Divisional Officers, Head works Sub Division, Bund Sub Division, Workshop Sub Division and sub-ordinate staff of the three Sub Divisions, have to work under his control. They are primarily responsible for the flood fighting, protective and preventive measures for safety of the structures.

During floods, in case of absence of Executive Engineer, Sub Divisional officers will monitor the protective measures for safety of the Bunds and Head Works in real emergency under intimation to higher hierarchy, through quickest means of communication. Similarly, in case of absence of the Sub Divisional Officers, Sub Engineers will act accordingly.

7.1 Pre-Flood Arrangements: Following pre-flood arrangements will be made:

i. During the month of May-June, the watching establishment will work for making pre-flood arrangements till the River spills out.

ii. For flood bunds in the 2nd defence line, the same pre-flood arrangements will continue throughout the flood season unless any of these bunds comes under action.

iii. Flood watching material will be arranged in ample quantities. Particular care will be taken to ensure that adequate quantity of the required material is distributed and placed at all the Flood watching Campus especially at all critical sites. All the articles and material will be in good condition. The scale of watching material is given in the following table.

iv. The Sub Engineers will inspect all the bunds under their charge. They will walk along the river side, the toes of the bund on both sides and locate the rat or porcupine holes on the slope and get these opened, refilled and compacted in their presence.

v. Sub Divisional officer will inspect all the vulnerable reaches of the bunds and act in a similar way.

vi. The Executive Engineer is also expected to see certain reaches of the bunds to ensure that no rat / porcupine hole is left un-attended. He will personally check the LMB, Sanawan Bund and Loop Bund.

vii. The Sub Divisional Officers will personally ensure by July 01, 2026 that:

a) All generators, lamps, patromax, actuator and torches, kassies and baskets etc. are in good working condition and lightening arrangements at important points of the Head works and at vulnerable reaches of the bunds, are satisfactory.

b) Adequate arrangements are made for communication of urgent messages from any part of the bund or spur to the Executive Engineer in case of any emergency. If telephonic, mobile telephone, telegraphic or wireless links fail, special messenger will be kept ready at all time for this purpose. He will also ensure that all the members of the staff must keep their mobile phone open 24 hours. List of the concerned officers / officials along with their phone numbers is given in Chapter-10.

c) All the watching establishment is properly trained. Sub Divisional Officer will arrange dry rehearsals for flood fighting by the end of June and any short coming thus noticed will immediately be got rectified. It will be seen by the Chief Engineer and other senior officers. A check list will be prepared by the Executive Engineer and during rehearsal, senior officers will verify it.

viii. During pre-flood period, the watching staff will be engaged for the following assignments:

a) All jungle growth from the outer and inner toe of all bunds up to five feet width will be cleared.

b) Rats/ porcupines, and other burrowing animals will be killed and holes will be closed after opening and puddling thoroughly.

c) Gul-Abassi will be grown in a width of 10 ft along slope of the bunds for protection against wave wash action etc.

ix. Temporary watching huts will be repaired.

x. Any other work which is deemed necessary will be executed. In case of bunds of 1st Defence line, rolls of pilchi will also be necessary in certain reaches. These rolls will be arranged and placed on the slopes of earthen embankments to guard against wave wash. Special attention will be paid to LMB RD 0-80, Bunds and Shank Portion of Spurs.

xi. Temporary flood watching camps will be constructed for storing flood fighting material and are normally to be located at the important sites as given below:

Position of Reserve stock limit in Taunsa Headwork Division ,Kot Addu				
Sr NO.	**Name of Structure**	**sanction Limit (Lac Cft)**	**Available Qty**	**Remaining QTY**
Left Side of River				
1	Left Guide Bank	5.00	5.00	0.00
2	Right Guide Bank	5.00	5.00	0.00
3	Spur T-1 RD . 11+350 of LMB	1.00	0.62	0.38
4	Spur T-2 RD . 15+000 of LMB	1.00	0.74	0.26
5	Spur T-3 RD. 19+200 of LMB	1.00	0.80	0.20
6	Hockey Spur Rd. 26+000	1.50	1.38	0.12
7	J-Head Spur Bait Qaim Wala Rd .3000 Maggasson Branch	1.50	1.17	0.33
8	J-Head Spur No.1 D/S Rd:13+350 Maggason Branch	1.50	1.05	0.45
9	J-Head Spur No.2 D/S Rd 20+000 Magasson Branch	1.50	1.05	0.45
10	Hockey Spur Rd 22+500 Maggasson Branch	1.00	0.70	0.30
New Structure				
11	J-Head Spur No.3 Rd.25+000 Maggasson Branch	1.50	0.00	1.50
12	Inverted Hockey Spur Rd 28+000 Maggasson Branch	0.50	0.00	0.50
13	Inverted Hockey Spur Rd 30+750 Maggasson Branch	0.50	0.00	0.50
14	Concavo-Convex Guide Head Spur at Rd 34+000 Maggasson Branch	1.50	0.19	1.31
Right Side of River				
15	T-Head Spur No.5 along RGB	1.50	0.00	1.50
16	J-Head Spur 2-A at Rd 9+250 of link bund	1.50	1.32	0.18
17	T-Head Spur No.2	1.50	1.50	0.00
18	J-Head Spur No.1	1.50	0.94	0.56
19	Guide Head Spur 1-A	1.50	0.98	0.52
20	J-Head Faqir wali	1.50	1.31	0.19
21	J-Head Spur Jarwar Wala	1.50	1.50	0.00
Total		**34.50**	**25.25**	**9.25**

CURRENT STATUS OF RESERVE STOCK OF STONE						
Sr No.	**Name of Division**	**Reserve Stock Limit (as per yard Stick)**	**Minimum requirement 70%**	**Quantity available**	**Balance Quantity required**	**Remarks**
1	TAUNSA HEAD WORKS DIVISION, KOT ADDU	**34.50**	**24.15**	**25.25**	**9.25**	Funds are available for the work, but we do not need any more

As soon as the River spills out of the banks and water touches toe of the flood bunds, active watching is taken up. This is the most crucial period. Everyone has to be vigilant and alert. Watching beldars will move along the downstream toe of the bunds to locate leakages. They will work on the inner slope when there is wave or settlement. They will work on top of the bund when there is inadequate normal free board. However, watching of entire section of the bunds is required.

7.2 Watching Establishment:

Watching depends upon presence of the watching establishment on each embankment and training work. It has been experienced that it is impossible to adjust number of watching personnel instantaneously in conformity with the flood stages. During high flood, the local population is busy to safeguard themselves along with their families and is not available for employment. It is now decided that by 15th of May, watching establishment, commensurate with the high flood situation, will be employed for 5 months, after advertising in the press, by a committee headed by the Executive Engineer, Taunsa Head Works Division and comprising Sub Divisional Officers of Head Works, Bund & Workshop Sub Divisions. The watching establishment will be paid through regular payrolls, not through muster rolls. This establishment will primarily perform the following functions:

- Earthwork on all training works including gharas filling, strengthening of local weak sites, repairing ramps etc. will be carried out by this establishment.

  As the establishment would have already checked and repaired the training works all along, it will be in a much better position to keep under watch the critical reaches throughout the flood season. For reaches other than vulnerable reaches, the watching establishment shall be employed as under to maintain and up keep the banks to become motorable.

Watching Establishment Details										
Sr. No.	Structure Name	Length (Miles)	Flood Limits							
			Normal Flood Season		Low Flood		Medium/High Flood		Very High/ Exp. High Flood	
			Men	Shift	Men	Shift	Men	Shift	Men	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)	
Left Side										
1	Left Guide Bank Rd 0-9292	1.85	1		2		4		10	
2	Right Guide Bank Rd 0-9292	1.85	1		2		4		10	
3	Left Marginal Bund at RD 1500 – 80+000 Left Marginal Bund RD 80+000 – 134+700	26.64	13		26		52		130	
4	Retired Left Marginal Bund	9.8	5		10		20		50	
5	Tibba Tie Bund RD 0-8900	1.78	1		2		4		10	
6	Sanawan Flood Bund RD 0 – 42000	8.4	4		8		16		40	
7	T-Head Spur T-1 up-stream Left RD 11350 of L.M.B RD 0-6600	1.34	0		1		2		5	
8	T-Head Spur T-2 up-stream left RD 15+000 of L.M.B RD 0-6700	1.34	0		1		2		5	
9	T-Head Spur T-3 up-stream left RD19+200 of L.M.B RD 0-7134	1.42	0		1		2		5	
10	Hockey Cum T-Head Spur RD 26+000 of L.M.B RD 0-4500	0.9	0		1		2		5	
11	Mole head Branch Spur RD 2700 of Hockey Spur RD 0-2000	0.4	0		0		0		0	
12	J-Head Spur Bait Qaim Wala at RD.3+000 downstream left Maggasson Branch RD 0-5685	1.44	0		1		2		5	
13	J-Head Spur No. 1, at RD.13+350 downstream left Maggasson Branch RD 0-7100	1.24	0		1		2		5	
14	J-Head Spur No. 2, at RD.20+000 downstream left Maggasson Branch	0.4	0	1	0	1	0	2	0	3
15	Hockey Spur at RD 22+500, downstream left Maggasson Branch	0.34	0		0		0		0	
16	J-Head spur Rd 25+000 downstream left Maggasson Branch	0.44	0		0		0		0	
17	Hockey Spur RD 28+000 Maggasson Branch	0.11	0		0		0		0	
18	Hockey Spur 30+750	0.11	0		0		0		0	
19	Concavo Convex Guide Head Spur at Rd 34+000 of Maggason Branch	0.91	0		1		2		5	
Right Side										
20	T-Head Spur No. 5 RD 0-1000	0.34	0		0		0		0	
21	1st Defence Bund, RD 0-23500	4.7	2		4		8		20	
22	Guide Head Spur 1-A RD 0-1000	4.03	2		4		8		20	
23	T-Head Spur No. 2 RD 0-20000	4	2		4		8		20	
24	Link Bund, RD 0-18500	3.7	2		4		8		20	
25	Mole Head of Spur No. 2 RD 0-2000	0.4	0		0		0		0	
26	Spur No. 1 RD 0-5000	1.04	0		1		2		5	
27	Spur No. 2-A RD 0-7800	1.76	1		2		4		10	
28	J-Head Spur Faqir Wali RD 0-3585	0.6	0		0		0		0	
29	J-Head Spur Jarwar Wali RD 0-4560	0.9	0		1		2		5	
TOTAL Per Shift :-			**34**		**77**		**154**		**385**	
Total			**34**		**77**		**346**		**1155**	
No. of Mates			**3**		**6**		**29**		**96**	

7.3 Arrangements at Sensitive Sites:

At all vulnerable reaches/sites such as RD 9+600 of shank of Spur 1-A, Spur No. 1 and Link Bund on the upstream right side of the barrage, Hockey Spur at RD 26 of LMB-I, RD 46 of LMB-I, T-1, T-2, T-3 and J-Spur Faqir Wali, additional emergency gangs each comprising five men will be employed when the river rises above the medium flood stage and will be maintained till the end of the flood season. In case of very high or exceptionally high flood, this scale may be increased by the Executive Engineer in consultation with the Director Technical/Chief Engineer. If additional labour is required at high discharge, it will be arranged through the civil authorities as provision already exists in the District Flood Protection Schemes of District Kot Addu. The status of reserve stock of stone at each structure is given below for ready reference.

Established Camps Details							
Sr. No.	Structure Name	Length (Miles)	Vulnerable sites		No. of Camps Established Except Vulnerable Points		
					Normal Flood season/Low Flood	Medium/High Flood	Very High/Exp. High Flood
			Reach	No. of Camps	15 Miles	7 Miles	5 Miles
1	LEFT MARGINAL BUND (LMB) (1500-134700)	26.64	12+000 - 19+000 23+000 - 30+000 35+000- 46+000 52+000-60+000	4	0	0	1
2	SPUR NO.2-A	4.7	At Shank Rd 10+000	-	0	0	0
3	Concavo Convex Guide Head Spur at RD 34+000 of Maggasson Branch	0.91	at Shank 3+000	1	0	0	0
4	J-Head Spur Faqir Wali	0.6	at Shank 3+000	1	0	0	0
Total				**6**	**0**	**0**	**1**

7. 4 Watching Material:

Watching material will be arranged in ample quantities. Particular care will be taken to ensure that adequate quantity of required material is distributed at all the centres carefully and that it is available particularly at critical sites. For guidance, the scale given in para-7.1 is normally sufficient. This can be increased by the Executive Engineer in consultation with Director Technical / Chief Engineer as per site condition. However, the available / required flood fighting material in this Division is as under: -

7.4 (A) Minimum Requirement of flood Fighting Materials for Permanent Camps

Sr. No.	Item	Unit	Total Required Quantity	Available Quantity	Balance Quantity	Remarks
1	Shouldari / Tent	No.	01	0	01	Will be Purchased before coming of Flood Season 2026
2	Chairs	No.	06	0	06	
3	Table	No.	01	0	01	
4	Generator (2-3 KVA)	No.	01	0	01	
5	Pedestal Fans	No.	01	0	01	
6	Charpois	No.	02	0	02	
7	Symbolic Jackets	No.	50	0	50	
8	Polythene Sheets	Kg	100	0	100	
9	Bamboos (4" dia and 10 ft long)	No.	100	0	100	
10	Water Cooler	No.	01	0	01	
11	Portable Umbrella	No.	02	0	02	
12	Life Jackets	No.	05	0	05	
13	Utensils (10 person serving)	No.	01	0	01	
14	Jute / Plastic Bags	No.	1000	0	1000	
15	Walke Talkie Set	Set	02	0	02	
16	Raincoats	No.	10	0	10	
17	LED Flood Light	No.	10	0	10	
18	Extension Cable (10 ft)	No.	02	0	02	
19	Rechargeable Torches	No.	20	0	20	
20	Kassi	No.	20	0	20	
21	Axes	No.	20	0	20	
22	G.I Buckets	No.	05	0	05	
23	7/44 cable	Feet	500	0	500	
24	Sutli	Kg	02	0	02	
25	Sewing Needles	No.	10	0	10	
26	Emergency Medical Kit	No.	1	0	1	
27	Wire crates (3x3x3) (at only those camp near river action and reserve stock exists)	No.	100	0	100	

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

Sr. No.	ITEM	UNIT	Total Required Qty	Sr. No.	ITEM	UNIT	Total Required Qty
1	Shouldari / Tent	No.	01	2	Walke Talkie Set	Set	01
3	Chairs	No.	06	4	Raincoats	No.	10
5	Table	No.	01	6	LED Flood Light	No.	10
7	Generator (2-3	No.	01	8	Extension Cable	No.	02

	KVA)				(10 ft)		
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 Cooler	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

7.5 Arrangement for Sounding / Probing:

Continuous sounding / probing would be observed for the period June 01, 2025 to September 16, 2025 with the help of the ordinary boats and the staff.

7.6 Lighting Arrangement:

Sufficient stock of dry cell torches, lanterns and petromaxes etc. will be kept available in the stores along with generating sets. Sub Engineer, Mechanical assisted by electricians will be responsible to keep these items in working condition. Detail of the items is given in para-7.1. These items will be shifted to the temporary huts when required.

7.7 Ration Arrangements:

The establishment and supervisory staff will make their own food arrangement. DC, Kot Addu and District Food Controller, Kot Addu will be requested to keep a reserve stock of the following articles at Taunsa Barrage Colony for supply to the labourers whenever a flood emergency arises:

1. Flour 50 Maunds, per week of emergency period
2. Gur, 20 Maunds per week of emergency period
3. Onions 10 Maunds per week emergency period
4. Sugar 10 Maunds per week of emergency period
5. Rice 30 Maunds per week of emergency period

7.8 POL Arrangements for Vehicles:

Reserve stock of POL for vehicles will be kept by Taunsa Head Works Division at Taunsa Barrage Work Shop on the following scale:

Petrol = 3500 Litres
Diesel = 4000 Litres
K. Oil = 1000 Litres

7.9 Transportation Arrangements:

Following vehicles are available at Taunsa:

GBA-455 (Double Cabin)
VRC-3448(Suzuki Potohar Jeep)
LXE-8283 (Suzuki Margalla Car)
MHC-3757 (Double Cabin)

In addition, the following vehicles will be temporarily shifted to the Taunsa Head Works Division by July 01, 2017 from the other Divisions less important from flood point of view:

Double Cabin = 3 No. (one for each Sub Division)
Single Cabin = 3 No. (one for each Sub Division)

7.10 Law and Order:

Law and order situation may arise if a breach occurs in a flood embankment. In such a situation, Army, Civil Administration and Police will be contacted to control law and order situation.

7.11 Medical Arrangement for Labour:

District Health Officer, Muzaffargarh will set up a mobile dispensary on the Barrage with sufficient medical staff and medicines required against epidemics, snake bites, cholera, Dysenteries etc. In case of any eventuality, a mobile dispensary will be kept on wheels at short notice. Executive Engineer, Taunsa Head Works Division will inform Civil Administration as well as District Health Officer in such case.

7.12 Liaison with Other Departments:

Executive Engineer, Taunsa Head Works Division, and Sub Divisional Officer, Head works will keep close liaison with their counter parts in other Departments. Higher Authorities of other Departments will be approached if needed through Director Technical / Chief Engineer. At site, SDO Head Works along with Sub Engineers head Works and Sub Engineer, L.M.B. 1st will attend inspections of the visiting Army and Civil officers if an Irrigation officer is not available at site.

7.13 Role of the Army:

In case of extreme emergency i.e. when discharge at Chashma exceeds 7.0 lac cusec, Army will be requisitioned by the Executive Engineer, through DC Kot Adu. 100 Army jawans will station at the Barrage, and in case of any emergency, including fear of breach, or occurrence breach, will help the staff of Irrigation Department.

7.14 Duties of Telephone Attendants and Signallers:

The Telephone and Telegraph offices are located at TP Link Colony, Kot Addu. Telephone Attendants and Signallers will remain available round the clock at Telephone No. 066-2550261 to receive, record, and disseminate information regarding the flood situation and river conditions to the concerned

authorities throughout the flood season. The Head Jamadar will also remain available at the Barrage with a mobile phone. All officers and officials have been directed to keep their mobile phones operational during emergencies and not to switch them off. The names and contact numbers of the concerned officials are given below:

Sr. No	Name of official	Contact No.	Period
01	Ghulam Abbas	0343-8717849	15-06-2026 To 15-10-2026
02	Ahmad Masood	0315-4315966	
03	Abdul Samad	0300-6863466	

7.15 Communication Arrangements:

The wireless station will be installed at the Barrage by the Telecommunication Wing of the Punjab Police Department before the flood season. Two mobile wireless sets will be provided in the vehicles of the Executive Engineer and the Sub Divisional Officer of Head Works. Flood warnings, gauge readings, discharge data, and other flood related information are received from and transmitted through the Flood Warning Station at Lahore. The mobile wireless units in the vehicles enable touring and inspecting officers to remain in constant communication with the Flood Offices.

CHAPTER-8:

DETAIL OF ENCROACHMENTS.

The flood bunds and spurs are constructed to train the river and to ensure safe passage of the flood water. But during flood season, the inhabitants of the riverian area evacuate their houses and take shelter at the flood bunds along with their animals. This is a wide spread menace and cannot be curbed out. However, there are temporary encroachments on the bunds in the jurisdiction of Taunsa Barrage. There are no seasonal encroachments along the flood bunds of Taunsa Head Works. However, locals have made temporary shops, stalls, and katcha houses, which need to be removed with the help of the PERA Force of District Kot Addu.

Critical Encroachments of Taunsa Barrage			
Total Encroachments (No)	**Encroachments Removed (No)**	**Encroachments yet to be Removed (No)**	**Remarks**
Nil	Nil	Nil	-

CHAPTER-9:

DUTY ROASTER / FLOOD FIGHTING PROGRAMME

	DUTY WATCHING STAFF	HEAD WORKS GUIDE BANKS	SPUR T-1	SPUR T-II	SPUR T-III	HOCKEY SPUR	LEFT MARGINAL BUND RD 0-50000
WHEN WATER DOES NOT TOUCH THE BUND	Executive Engineer Incharge	Executive Engineer , Taunsa Headworks Division Kot Addu H/Q at Kot Addu					
	SDO H/ W Incharge with H/Q	S.D.O Head Works at Barrage Colony					
	SUB Engineer Incharge H/Q	Sub Engineer Head works	SBE LMB-I H/Q AT HOCKEY SPUR				
	Beldars	BELDARS PER MILE PER SHIFT OF 12 HOURS					
	Observatory Staff	6 Nos . GAUGE READERS 1 NO TELEPHONE ATTENDED	GAGUE TO OBSERVED BY THE ABOVE BELDER				
IF WATER TOUCHED THE BUND	Executive Engineer Incharge	Executive Engineer , Taunsa Headworks Division Kot Addu H/Q at Kot Addu					
	SDO H/ W Incharge with H/Q	S.D.O Head Works at Barrage Colony					
	SUB Engineer Incharge H/Q	SBE HEAD WORKS	SBE LMB-I H/Q AT HOCKEY SPUR				
	Beldars / Chowkidar	2 NO BELDAR PER MILE PER SHIFT 8 HOURS & 2 NO CHOWKIDAR PER FLOOD FIGHTING CAMPUS					
	Observatory Staff	6 Nos . GAUGE READERS 1 NO TELEPHONE ATTENDED	GAGUE TO OBSERVED BY THE ABOVE BELDER				
MEDIUM FLOOD	Executive Engineer Incharge	Executive Engineer , Taunsa Headworks Division Kot Addu H/Q at Kot Addu					
	SDO H/ W Incharge with H/Q	S.D.O Head Works at Barrage Colony					
	SUB Engineer Incharge H/Q	SBE HEAD WORKS	SBE LMB-I H/Q AT HOCKEY SPUR				ADDITIONAL SBE H/Q AT RD 50000 LMB
	Beldars / Chowkidar	3 MEN/ MILE /SHIFT 8 HOURS	ON SHANK 2 Men /per Mile / of 2 shift				
	Observatory Staff	6 Nos . GAUGE READERS 1 NO TELEPHONE ATTENDED REGULAR STAFF	GAGUE TO OBSERVED BY THE ABOVE BELDER				
HIGH FLOOD	Executive Engineer Incharge	Executive Engineer , Taunsa Headworks Division Kot Addu H/Q at TAUNSA BARRAGE					
	SDO H/ W Incharge with H/Q	S.D.O Head Works at H/Q TAUNSA BARRAGE					
	SUB Engineer Incharge H/Q	SBE HEAD WORKS	ADDITIONAL SBE H/Q AT T-1 SBE LMB-I AT HOCKEY SPUR				ADDITIONAL SBE H/Q AT RD 50000 LMB
	Beldars /chowkidar	3 MEN/ PER MILE /PER SHIFT 8 HOURS	2 Men /per mile / of 2 shift				2 men /per mile / of 2 shift
	Observatory Staff	6 NO GAUGE READER 1 NO T.A	2 NO. BOATMAN WITH BOAT & SOUNDING MISTRI 6 NO COLLAEGE				
VERY HIGH FLOOD	Executive Engineer Incharge		ADDITONAL ENGINEER KOT ADU H/Q AT TAUNSA BARRAGE				
	SDO H/ W Incharge with H/Q		S.D.O HEAD WORKS H/Q AT TAUNSA BARRAGE				
	SUB Engineer Incharge H/Q	SBE HEAD WORKS	SBE LMB-I H/Q T-HEAD SPUR T-II & ADDITIONAL SBE H/Q HOCKEY SPUR & ADDITIONAL SBE H/Q AT RD 40000 LMB				
	Beldars / Chowkidar	8 MEN /MILE / SHIFT 8 HOURS 300 PERSON	On shank 5 men /per mile / of 3 shift			T-HEAD 2 MEN	5 MEN /MILE/ of shift
	Observatory Staff	6 NOS GUAGE READER T.A TO BE REGUALR STAFF	2 NO BOAT MAN WITH BOAT SOUNDING MISTAI WITH 6 NOS COLLIES				
EXCEPTIONALLY HIGH FLOOD	Executive Engineer Incharge	XEN TSA BARRAGE DIVISION KOT H/Q AT TAUNSA BARRAGE	ADDITIONA XEN KOT ADDU CANAL DIVISION H/Q AT TAUNSA BARRAGE				
	SDO H/ W Incharge with H/Q	S.D.O HEAD WORKS H/Q AT TAUNSA BARRAGE					
	SUB Engineer Incharge H/Q	SBE HEAD WORKS	ADDITIONAL SBE H/Q T-I ADDITIONAL SBE H/Q HEAD T-II +T-II & SBE LMB-I H/Q HOCKY SPUR & ADDITIONAL SBE H/Q AT TD 40000 OF LMB				
	Beldars /Chowkidar	10 MEN /PER MILE /SHIFT 8 HOURS 500 PERSON EMERGENCY	On shank 5 men /per mile / of 3 shift				
	Observatory Staff	6 NO GAUGE READER 1 NO T.A FROM REGULAR ESTABLISHMENT	2 NO BOAT MAN WITH BOAT & SOUNDING MISTRI WITH 6 NOS COLLIES				
		RD	1 2 3 4 5 6 =6500	1 2 3 4 5 6 =6500	1 2 3 4 5 6 =7000	1 2 3 4 =4500	5 10 15 20 25 30 35 40 =50000

FLOOD FIGHTING PROGRAMME

FOR TAUNSA BARRAGE & RIVER TRAINING WORKS LEFT SIDE DURING 2026

DUTY WATCHING STAFF	SANAWAN FLOOD BUND	TIE BUND	LEFT MARGINAL BUND RD 80+000 -134+700	SPUR NO.1 D/S LEFT MAGASSON BRANCH AT RD 13+350 DARI CHAKKAR	J-HEAD SPUR BAIT QAIM WALA RD 3+000 MAGASSON BRANCH	HOCKEY SPUR AT RD 20+000	HOCKEY SPUR RD 22+500	J-HEAD SPUR RD 25+000	INVERTED HOCKEY SPUR 28+000	INVERTED HOCKEY SPUR AT RD 30+750	J-HEAD SPUR AT RD 34+000	
EXECITIVE ENGINEER TAUNSA HEADWORKS DIVISION KOT ADDU H/Q KOT ADDU												
SDO HEADWORKS H/Q AT BARRAGE COLONY												
			SBE LMB-II H/Q AT RD 80+000	SBE HYD H/Q AT RD 28+000								
	BELDAR PER MILE /SHIFT OF 12 HOURS											
	GAUGE TO OBSERVED BY THE ABOVE BELDAR											
	EXECITIVE ENGINEER TAUNSA HEADWORKS DIVISION KOT ADDU H/Q KOT ADDU											
SDO HEADWORKS H/Q AT BARRAGE COLONY												
SBE LMB -II H/Q AT RD 80+000				SBE HYD H/Q AT RD 22+500								
1 Men/Mile / of 1 shift												
GAUGE TO BE OBSERVED BY THE ABOVE BELDAR												
EXECITIVE ENGINEER TAUNSA HEADWORKS DIVISION KOT ADDU H/Q KOT ADDU												
SDO KOT ADDU SUB DIVISION H/Q AT DHOLE WALA												
ADDITIONAL SBE H/Q AT RD 18+000			SBE LMB-II H/Q AT DHOLE WALA	SBE HYD H/Q AT RD 30+750 HOCKEY SPUR								
2 MEN/MILE/ OF 2 SHIFT												
GAUGE TO BE OBSERVED BY THE ABOVE BELDAR												
ADDITIONAL EXECUTIVE ENGINEER KOT ADDU CANAL DIVISION H/Q AT TAUNSA BARRAGE												
ADDITIONAL SDO ON SPECIAL DUTY H/Q AT RD 80+000 DHOLE WALA												
ADDITIONAL SBE H/Q AT RD 18 SANAWAN BUND			SBE LMB-II & ADDITIONAL SBE H/Q AT RD 80+000	SBE HYDRAULIC H/Q AT RD 30+750 OF MAGGASSON BRANCH								
	2 MEN/MILE/OF 2 SHIFT		2 MEN/ MILE /OF 2 SHIFT	2 MILE /MILE /OF 2 SHIFT								
GAUGE TO BE OBSERVED BY THE ABOVE GANG & 4 NO BOATS MAN WITH BOAT												
ADDITIONAL EXECUTIVE ENGINEER KOT ADDU CANAL DIVISION H/Q AT TAUNSA BARRAGE												
ADDITIONAL SDO ON SPECIAL DUTY H/Q AT RD 80+000 DHOLE WALA												
ADDITIONAL SBE H/Q AT RD 18+000 SANAWAN BUND			SBE LMB- II, ADDITIONAL SBE H/Q DHOLE WALA	SBE HYDRAULIC H/Q AT RD 34+000 MAGGASSON BRANCH								
5 MEN/MILE /OF 3 SHIFT			5 MEN/MILE/OF 3 SHIFT	5 MEN/MILE/OF 3 SHIFT								
GAUGE TO BE OBSERVED BY THE ABOVE GANG												
ADDITIONAL EXECUTIVE ENGINEER KOT ADDU CANAL DIVISION H/Q AT TAUNSA BARRAGE												
SDO ADDITIONAL DUTY H/Q AT RD 18+000 & ADDITIONAL SDO SPECIAL DUTY H/Q RD 50+000 & 1 NO SDO WORKSHOP H/Q AT RD 13+350 DARI CHARKARI												
SBE LMB -II H/Q AT RD 18 SANAWAN FLOOD BUND			SBE LMB-II H/Q DHOLE WALA & ADDITIONAL SBE H/Q AT RD 50+000 LMB	SBE HYDRALIC H/Q AT RD 34+000 1 NO ADDITIONAL SBE H/Q RD 13+350 DARI CHAKKARI								
5 MEN/MILE/ OF 3 SHIFT			5 MEN/MILE/ OF 3 SHIFT	5 MEN/MILE/OF 3 SHIFT								
RD	5000 1000 1500 2000 25000 30000 35000 42000	0-8+900	55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 =134+700	1 2 3 4 5 6 =7000	1 2 3 4 =5000						1 2 3 4 5000	

FLOOD FIGHTING PROGRAMME
FOR TAUNSA BARRAGE & RIVER TRAINING WORKS LEFT SIDE DURING 2026

DUTY WATCHING STAFF	1ST DEFENCE BUND	SHANK OF SPUR NO.1 1-A	SHANK OF T-HEAD SPUR NO.2
Executive Engineer Incharge	EXCUTIVE ENGINEER TAUNSA HEAD WORKKS DIVISION KOT ADDU H/Q AT KOT ADDU		
SDO H/ W Incharge with H/Q	SDO WORKSHOP H/Q AT T.P LINK COLONY		
SUB Engineer Incharge H/Q	SBE CIVIL STORE H/Q T.P LINK	SBE 1ST DEFENCE H/Q T.P LINK	SBE LASHARI H/Q AT T.P LINK
Beldars	1 MEN / MILE /OF 1 SHIFT		
Executive Engineer Incharge	EXCUTIVE ENGINEER TAUNSA HEADWORKS DIVISION KOT ADDU H/Q AT KOT ADDU		
SDO H/ W Incharge with H/Q	SDO WORKSHOP H/Q AT T.P LINK COLONY		
SUB Engineer Incharge H/Q	SBE 1ST DEFENCE H/Q OF LINK BUND		
Beldars / Chowkidar	1 MEN / MILE /OF 1 SHIFT		
Executive Engineer Incharge	EXCUTIVE ENGINEER TAUNSA HEAD WORKS DIVISION KOT ADDU H/Q AT KOT ADDU		
SDO H/ W Incharge with H/Q	SDO WORKSHOP SUB DIVISION H/Q AT RD 0 - LINK BUND		
SUB Engineer Incharge H/Q	SBE CIVIL STORE H/Q AT RD 23+000	SBE 1ST DEFENCE 1 ADDITIONAL SBE KAD DIVISION H/Q AT LINK BUND	
Beldars / Chowkidar	2 MEN / MILE / 2 SHIFT	2 MEN/MILE/OF 2 SHIFT	
Observatory Staff	2 NO BOATS WITH BOAT MAN 2 SOUNDER AND 6 COOLIES		
Executive Engineer Incharge	EXCUTIVE ENGINEER TAUNSA DIVISION KAD & XEN KOT ADDU H/Q AT TAUNSA BARRAGE		
SDO H/ W Incharge with H/Q	SDO WORKSHOP SUB DIVISION	1 NO SDO ADDITIONAL KAD SUB DIVISION H/Q RD 0 LINK BUND	
SUB Engineer Incharge H/Q	SBE 1ST DEFENCE & ONE ADDITIONAL SBE KOT ADUU CANAL H/Q AT LINK BUND		
Beldars /chowkidar	2 MEN / MILE / 2 SHIFT		
Observatory Staff	2 BOATS WITH BOAT MAN, 2 SOUNDER & 6 COOLIES		
Executive Engineer Incharge	EXCUTIVE ENGINERR TAUNSA HEADWORKS DIVISION & XEN KOT ADDU CANAL DIVISION H/Q AT TAUNSA BARRAGE		
SDO H/ W Incharge with H/Q	SDO WORKSHOP SUB DIVISION & 1 ADDITIONAL SDO KOT ADDU CANAL DIVISION H/Q AT RD 0 LINK BUND		
SUB Engineer Incharge H/Q	SBE CIVIL STORE AND SBE ADDITIONAL KOT ADDU CANAL DIVISION	SBE 1ST DEFENCE & ADDITIONAL SBE KOT ADDU CANAL DIVISION H/Q AT LINK BUND	
Beldars / Chowkidar	5 MEN/MILE/ OF 3 SHIFT		
Observatory Staff	2 NO BOATS WITH BOAT MAN , 2 SOUNDER 6 NO COOLIES		
Executive Engineer Incharge	EXCUTIVE ENGINERR TAUNSA HEADWORKS DIVISION & XEN KOT ADDU CANAL DIVISION H/Q AT SPUR NO 1		
SDO H/ W Incharge with H/Q	SDO WORKSHOP SUB DIVISION & 1 ADDITIONAL SDO KOT ADDU CANAL DIVISION H/Q AT RD 0 LINK BUND		
SUB Engineer Incharge H/Q	SBE CIVIL STORE H/Q AT RD 1ST DEFENCE	SBE 1ST DEFENCE AND ADDITIONAL SBE KOT ADDU CANAL DIVISION H/Q RD 0 LINK BUND	
Beldars /Chowkidar	5 MEN/MILE/ OF 3 SHIFT		
Observatory Staff	2 BOATS WITH BOAT MAN, 2 SOUNDER & 6 COOLIES		
RD	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20

FLOOD FIGHTING PROGRAMME

FOR TAUNSA BARRAGE & RIVER TRAINING WORKS LEFT SIDE DURING 2026

DUTY WATCHING STAFF	LINK BUND RD 0+18500	T- HEAQD SPUR NO 1-A	GUIDE HEAD SPUR	SHANK OF SPUR 2-A	J-HEAD SPUR FAQIR WALA	J-HEAD SPUR JARWAR WALA
Executive Engineer Incharge	EXCUTIVE ENGINEER TAUNSA HEADWORKS DIVISION H/Q KOT ADDU					
SDO H/ W Incharge with H/Q	SDO BUND SUB DIVISION H/Q AT T.P LINK COLONY					
SUB Engineer Incharge H/Q	SBE LASHARI SECTION H./Q AT T.P LINK & SBE INCHARGE 2NS DEFENCE SECTION H/Q T-HEAD SPUR NO 1-A					
Beldars	1 MEN/ MILE / OF 1 SHIFT					
Executive Engineer Incharge	EXCUTIVE ENGINEER TAUNSA HEADWORKS DIVISION H/Q KOT ADDU					
SDO H/ W Incharge with H/Q	SDO BUND SUB DIVISION H/Q AT T.P LINK COLONY					
SUB Engineer Incharge H/Q	SBE 2ND DEFENCE H/Q AT SPUR NO 1-A & SBE D.G KHAN CANAL H/Q AT SHANK OF 2-A					
Beldars / Chowkidar	1 MEN/ MILE / OF 1 SHIFT					
Executive Engineer Incharge	EXCUTIVE ENGINEER TAUNSA HEADWORKS DIVISION H/Q TAUNSA BARRAGE					
SDO H/ W Incharge with H/Q	SDO BUND SUB DIVISION H/Q AT LINK BUND					
SUB Engineer Incharge H/Q	SBE LASHARI SECTION & SBE 2ND DEFENCE RD 5000 LINK BUND % SBE D.G KHAN CANAL H/Q AT SHANK SPUR NO 2-A					
Beldars / Chowkidar	2 MEN/MILE/OF 2 SHIFT					
Observatory Staff	2 BOATS WITH BOAT MAN 2 SOUNDER AND 6 COOLIES					
Executive Engineer Incharge	EXCUTIVE ENGINEER TAUNSA HEADWORKS DIVISION H/Q KOT ADDU & ONE XEN ADDITIONAL CRBC DIVISION TAUNSA SHARIF					
SDO H/ W Incharge with H/Q	SDO WORKSHOP SUB DIVISION H/Q AT RD 0 LINK BUND AND ADDITIONAL SDO CRBC SUB DIVISION NO 1 H/Q AT SPUR 1-A					
SUB Engineer Incharge H/Q	SBE LASHARI SECTION H/Q AT RD 5000 LINK BUND & SBE 2ND DEFENC3E SECTION, SBE D.G KHAN CANAL H/Q AT T-HEAD SPUR NO 1-A					
Beldars / Chowkidar	2 MEN/MILE/OF 2 SHIFT					
Observatory Staff	2 BOATS WITH BOAT MAN 2 SOUNDING MISTRY AND 6 COOLIES					
Executive Engineer Incharge	EXCUTIVE ENGINEER TAUNSA HEADWORKS DIVISION H/Q KOT ADDU & ONE XEN ADDITIONAL CRBC DIVISION TAUNSA SHARIF					
SDO H/ W Incharge with H/Q	SDO WORKSHOP SUB DIVISIION & 1 NO ADDITIONAL SDO CRBC SUB DIVISION NO 1 H/Q AT T- HEAD SPUR NO 1-A					
SUB Engineer Incharge H/Q	SBE LASHARI SECTION AND 1 NO ADDITIONAL SBE CRBC DIVISION TAUNSA SHARIF					
Beldars / Chowkidar	5 MEN/MILE/ OF 3 SHIFT					
Observatory Staff	2 BOATS WITH BOAT MAN 2 SOUNDING MISTRY AND 6 COOLIES					
Executive Engineer Incharge	EXCUTIVE ENGINEER TAUNSA HEADWORKS DIVISION H/Q KOT ADDU & ONE XEN ADDITIONAL CRBC DIVISION TAUNSA SHARIF					
SDO H/ W Incharge with H/Q	SDO WORKSHOP AT H/Q LINK BUND RD 5000 & SDO ADDITIONAL CRBC DIVISION NO 1 H/Q AT SPUR 1-A & ADDITIONAL SDO CRBC SUB DIVISION NO 2					
SUB Engineer Incharge H/Q	SBE LASHARI SECTION & ONE ADDITIONAL SBE CRBC & SBE 2ND DEFENCE BUND & SBE D.G KHAN CANAL H/Q AT SPUR NO 1					
Beldars / Chowkidar	5 MEN/MILE/ OF 3 SHIFT					
Observatory Staff	2 BOATS WITH BOAT MAN 2 SOUNDING MISTRY AND 6 COOLIES					
RD	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18 18500					

CHAPTER-10:

EMERGENCY TELEPHONE NUMBERS

Telephone numbers of officers from local authorities and irrigation department are as under:

Sr: #	Name of Officers	Telephone Numbers	
		Offices	Residence
LAHORE			
1	Secretary Irrigation Department Lahore	042-99212117-18	-
2	Head PMO Lahore	042-9250351	-
3	Chief Engineer, Drainage & Flood Lahore	042-99230602	-
4	Additional Secretary, Technical	042-99212128	-
5	Executive Engineer, Discharge Division, Lahore	042-99250196	-
6	Director Hydrology, Lahore	042-9230368	-
7	Director Floods, Lahore	042-99231614	-
8	Flood Warning Centre Lahore	042-99212134	-
9	Director Regulation, Lahore.	042-99212147-49	-
10	Director Gauges Lahore (PMIU)	042-99213596	
11	Deputy Secretary Development, Lahore	042-99212128	-
LOCAL & CIVIL AUTHORITIES			
1	Chief Engineer, Irrigation Zone, DG Khan	064-9260245	-
2	Superintending Engineer, Muzaffargarh Canal Circle, Multan	061-9200090 Fax #. 061-9200088	-
3	Superintending Engineer, Taunsa Canal Circle, Kot Addu	066-2242796 066-2240296 (Fax)	-
4	Executive Engineer, Taunsa Head Works Division, Kot Addu	066-2550261 066-2550262 (Fax)	
5	Sub Divisional Officer Head Works Sub Division, Kot Addu.	0331-7744636	-
6	Executive Engineer, Kot Addu Canal Division, Kot Addu	066-2550261 03316306140	-
7	Telegraph Office, Kot Addu Canal Division, Kot Addu.	+92 66 2242926	-
8	Telegraph Office, at Taunsa Barrage Colony	0334-6921308	-
9	Deputy Commissioner, Kot Addu	066-2550395	-
10	Deputy Commissioner, Muzaffargarh	+92 66 9200251-52	-
11	Deputy Commissioner, DG Khan	+92 64 9260340	-
12	Deputy Commissioner, Layyah	+92 606 920103-4	-
13	District Police Officer, Muzaffargarh / Kot Addu	066 9200311-12. +92 66 2243451	-
14	District Police Officer, Layyah	+92 606 920151	-
15	District Police Officer DG Khan	064-9260100-101	
16	District Health Officer, Muzaffargarh / Kot Addu	+92 66 9200236	-
17	District Food Control officer, Muzaffargarh / Kot Addu	+92 66 2551650	-
18	Divisional Superintendent, Railway, Multan	+92 61 9330822	-

19	SE (Works), Muzaffargarh	066-9200069	-
20	SE (Works), DG Khan	064-9260115	-
21	Sub Divisional Police Officer, Kot Addu	066-2243452	-
22	DC Kot Addu	+92 66 2550395	-
23	Headquarter Engineer, 2 – Corps, Multan Cantt:	061-53135179 061-53132364	-

Taunsa Head Works Division Staff (Mobile Phone Number)

1.	**Noman Baig** Executive Engineer of Taunsa Head Works Division	0331-6306140
2.	**Engr. Talat Habib** Sub Divisional Officer of Head Works Sub Division	0331-7744636
3.	**Engr. Talat Habib** Sub Divisional Officer of Bund Sub Division	0331-7744636
4.	**Engr. Talat Habib** Sub Divisional Officer of Workshop Sub Division	0331-7744636
5.	**Muhammad Yaseen** Sub Engineer of Head Works Section	0333-7104543
6.	**Muhammad Suleman** Sub Engineer of Hydraulic Section	0333-2683333
7.	**Mahar Riaz Hussain** Sub Engineer of LMB-I Section	0333-7906800
8.	**Sajjad Ahmad** Sub Engineer of D.G. Khan Canal Section	0335-8636086
9.	**Shahzad Ahsan** Sub Engineer of 1st Defence Section	0341-6313562
10	**Asif Ali** Sub Engineer of 2nd Defence Section	0331-7042816
11	**Muhammad Hasnain** Sub Engineer of LMB-II Section	0301-7882186
12	**Mirza Murtaza** Sub Engineer of Workshop Section	0300-7306106
13	**Muhammad Shoaib Raza** Fitting shop Section	03331301122
14	**Rana Tahir** Sub Engineer of Lashari Section	0333-7776364
15	**Ejaz Hussain** Sub Engineer Tarkhana Section	0300-6190678
16	**Kamran Nasir** Sub Engineer Noor Shah Section	0334-6447915
17	**Mehboob Ahmad** Sub Engineer of Muhammad wala Section	0304-3900515
18	**Abdul Samad** Head Jamadar	0300-6863466 0332-6863466
19	**Muhammad Zubair** Naib Jamadar	0342-7018699
20	**Ghulam Abbas** Signaller	0343-8717849
21	**Ahmad Masood** Telephone Operator	0315-4315966

CHAPTER-11:

STANDARD OPERATION PROCEDURE (SOP) OF BREACHING SECTIONS

11.1 History of the Breaching Section:

The Breaching Sections are provided in the Marginal Bunds when barrage structure is endangered during floods. No regular breaching section has been provided at Taunsa Barrage because 04 No. Main canals off-take from both flanks and as well as road, railway track and Gas / Oil Pipe Line along the Barrage. Any breach, accidental or deliberate, on either side will result in colossal damage to the private & public property. If it is inevitable to deliberately make a breach, two sites are recommended on right side. ***It is at RD 1+000 of spur 2-A and in between RD 1 & 2 of Link Bund***. These sites are located at 7 and 5 miles upstream of the barrage respectively. It is to be noted that such a breach will be extremely damaging to the lives, private and public infrastructure. The right arm of the river might adopt the old river course and that will be extremely dangerous. The same has been discussed during the Expert Committee Meeting of Irrigation Department held on 26.04.2013 where all the participants unanimously decided that location of breaching section should be finalized on the basis of Model Study. All the relevant record / data in this regard has already been submitted to the Director / PRO(Hydraulic) Irrigation Research Zone, Lahore vide this office letter No. 1808-09/48-W dated:-13-07-2013 which is since lying pending.

Temporary Breaching Section when to operate:-

Keeping in view, the flood levels and breach to LMB at RD 32 during flood 2010, the strategy to operate the breaching section has been planned as under:-

- W.L. at RD 32 at the time of breach = 458.69
- Top level of LMB at RD 32 at the time of breach. = 463.10
- Top level of LMB at RD 32 at present. = 464.69
- Last Design H.F.L at RD 32 LMB at = 456.47
  Last highest discharge flood 1976. = 7.50 Lac Cs:
- W.L. at proposed breaching site on R/S = 456.00

When the discharge exceeds 8.0 Lac Cs: i.e exceptionally high stage, the breaching arrangement / plans will have to be taken in hand. Before taking decision of breach, the following things will be minutely observed.

- Monitoring of gauge (R.L) at RD 32 of LMB that should not be exceed RL 459.00.
- Monitoring of gauge (R.L) at proposed at breach site that should not be exceed R.L. 456.00.
- Closely observe minor rising trend.
- Closely see and collect the data of upper barrages.
- Rain falls trend and climate condition specially Hill Torrents discharge falling just U/S of Taunsa Barrage into river. After minute observation of above data if inevitable, the temporary breaching section will be operated by the decision of the Committee.

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

Not Applicable

11.3 Arrangement of explosive and security of explosive stores

Not Applicable

11.4 List of the security staff along with the detail of their training etc.

Not Applicable

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

Not Applicable

11.6 Duty Roster in case of critical situation

Already explained in chapter No. 9.

11.7 Breaching Committee with their action plan

(a) Responsibility for the maintenance and operation of each breaching section shall rest upon the department owning the structure at which the breaching section is located.

(b) Breaching section shall be operated on the orders of following committee: -

(i) Deputy Commissioner of the District in which the breaching section is located, who shall also be the convener of the committee;

(ii) Deputy Commissioner of the district likely to be affected by the operation of breaching section or his representative (in case the area affected falls outside the district in which the breaching section is located);

(iii) Representative of the department owning the structure at which the breaching section is located (not less than the rank of an Executive Engineer or equivalent);

(iv) Representative from C&W Department not below the rank of an Executive Engineer;

(v) Executive Engineer concerned of the Irrigation Department;

(vi) Representative from Pakistan Army not below the rank of Lt. Colonel.

(c) The decision to operate a breaching section shall be taken by the committee keeping in view the technical advice of the Executive Engineer concerned of the Irrigation Department. In case of any difference opinion among the members, the final decision shall rest with the Deputy Commissioner

(d) In case of unavailability of the Deputy Commissioner or his inability to take decision, or in case of a difference of opinion between the Deputy Commissioner of the District in which the breaching section is located and the district which is likely to be affected by the operation of the breaching section, the decision to operate a breaching section shall be taken by the respective Commissioner;

(e) Breaching section shall be operated when one or more of the following conditions are met: -

(i) The discharge capacity of the structure for which breaching section is located is exceeded and the safety of structure is threatened;

(ii) The critical gauge as indicated in the relevant Flood Fighting Plan is achieved or exceeded and is rising;

(iii) The safety of major population center-(s) is threatened due to high flood levels and in view of the Executive Engineer concerned of the Irrigation Department, operation of breaching section can help in reduction of flood levels.

(f) Where, in view of the Executive Engineer concerned of the Irrigation Department or the representative of the department owing the structure at which the breaching section is located, the aforesaid criteria is expected to be met after due consideration of all available technical and hydrological conditions, the aforesaid committee may operate the breaching section before the critical gauge is achieved or exceeded. In every such case, the view of the Executive Engineer concerned of Irrigation Department or the representative of the department owning the structure shall be expressed in writing and shall be based on flood forecast by Pakistan Meteorological Department or other reliable sources, the trend of discharges in the relevant river at upstream locations, the lag times, estimated attenuation and expected inflows from tributaries, nullahs and streams en-route. Where advance

(g) breaching is planned, the committee may also consult professional experts and seek advice from the Superintending Engineer or the Chief Engineer concerned of the Irrigation Department.

(h) Breaching section shall be operated by the contingent deputed by the Engineering-in-Chief; Pakistan Army as indicated in the Flood Fighting Plan, Explosive method shall be preferred method for operation of breaching section. However, the department owning the structure on which the breaching section is located, and in case of their failure to do so, Irrigation Department shall make available, in advance, necessary earth moving machinery and other equipment for affecting the breach through mechanical means in the shortest possible time.

(i) The Deputy Commissioner concerned and all other relevant agencies shall ensure all necessary arrangements for the safety and if required evacuation of population likely to be affected by the operation of breaching section.

Action Plan:

The committee will meet when the W.L. exceeds RL 454.00 ft at breaching site and is in rising trend for which a close liaison will be made to reach any decision and wait for raising of W.L. up to critical stage RL 456.00 ft. However, in Chapter-12, methodology has been described when the discharge approaches the Barrage exceeds design parameter.

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

Basti Kanju Wala	Natkani Wala
Shah wala	Basti Gurmani
Taunsa Barrage Canal Colony	Gadi Wala
Abbas wala	Basti Aliani
Basti Bohar	Basti Rind
Basti Malana	Basti Sarai
Pichar wala	Basti Wad
Basti Kand wala	Basti Usman rid
Basti Shah Jamal	Basti Pirhar
Basti Bukhari	Bati Sumandari
Basti Janu	Basti Khai
Basti Hanjrai	D.D. Panah

11.9 Announcement and detail of evacuation arrangement

When the discharge exceeds 8.0 Lac Cs: i.e. exceptionally high stage, the evacuation arrangements will be taken in hand through help of Administrative, Civil / Army Authorities.

11.10 Details of coordination with Civil / Army Authorities

The telephone numbers / cell numbers have been exchanged with Civil authorities and there is a close coordination with the authorities.

11.11 Parallel communication arrangements

The wireless sets will also be installed in the vehicles of Executive Engineer and Sub Divisional Officers.

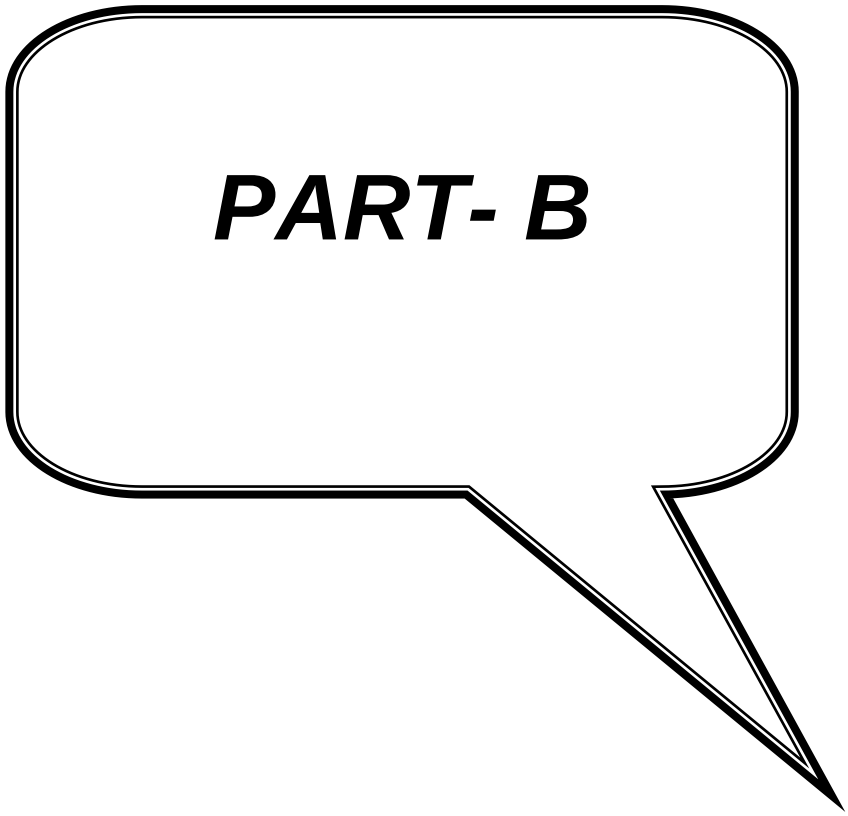
11.12 Index Plan

Attached at Page No. 43

Note:- **It is certified that I am satisfied about the correctness of this <u>Flood Fighting Plan.</u>**

Executive Engineer	**Superintending Engineer**
Taunsa Head Works Division	**Taunsa Canal Circle**
Kot Addu	**Kot Addu.**

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PART- B

CHAPTER-12:

VULNERABLE STIES ON FLOOD BUNDS / STRUCTURES

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12.1 Apprehended Breaches in flood bunds/Structures.

Sr #	Name of Vulnerable site	Location of vulnerable sites	Reference of contingency plan
1	Left Marginal Bund (1500-134700)	12+000 - 19+000 23+000 - 30+000 35+000- 46+000 52+000-60+000	Plan -1
	Sanawan Bund	0-40000	
	Left Bank of T.P Link Canal	9000-19000	
2	J-Head Spur Faqir wala	0-3000	Plan -2
3	Concavo Convex Guide Head Spur RD 34+000	3000-52000	Plan-3

12.2 Operation of Breaching Section.

Breaching section has not yet been approved from the Government.

12.3 Breaches due to rise of flood water, deterioration of flood bunds.

The following Breaches occurred only during the super flood of 2010.

1. LMB Breach RD 32-40 during flood 2010.
2. Sanawan flood bund breach RD 15-22, RD 28-31 & RD 34-35.
3. T. P. Link Canal breach RD 9-1/L, RD 15-16/R, RD 19/L, RD 21-22/R, RD 23/L, RD 27 & RD 28-30/L, RD 30580 Railway bridge & RD 35-36/L.RD 36/R, RD 51/R & RD 176-77/R
4. Muzaffargarh canal breach RD 4-5/R,
5. Tibba Tie Bund breach RD 2-3 & RD 6-9.

Chapter: - 13 (PLAN -1)

Emergency Contingency Plan for Vulnerable Sites on LMB.

The reach of Left Marginal Bund (LMB) from RD 0 to RD 60+000 contains several critical structures which have been identified as vulnerable based on past flood behavior, flow alignment, and structural exposure to river attack. These include: **T-Head Spur No. 1 at RD 11+350, T-Head Spur No. 2 at RD 15+000, Hockey Spur at RD 26+000, RD 46+000 and RD 60+000 of Left Marginal Bund.** These sites are susceptible to high-velocity currents, scouring at the noses of spurs, and erosion along the shanks, especially during peak flood discharges. Due to their location and interaction with the main river flow, any damage to these structures may pose a serious threat to the safety of the LMB and adjoining areas.

Therefore, these vulnerable points require special attention during the flood season. Continuous monitoring, timely deployment of flood fighting materials, and immediate strengthening measures are essential to prevent erosion, breaching, or structural failure.

All necessary arrangements, including availability of stone, sandbags, machinery, and manpower, shall be ensured in advance so that these sites remain fully protected during flood fighting operations.

When the Discharge downstream Chashma Barrage is more than 7.00 Lac Cusecs, it usually takes about 60 hours to reach Taunsa Barrage. During this period the following advance measures will be taken.

- Evacuation of pocket between LMB will be made with the help of Civil Administration. Day and night watching of these vulnerable sites of LMB (1st Defence Section), Sanawan Flood Bund (2nd Defence Section) by deputing the staff and establishing watching camps at RD 11+350, RD 19+200, RD 26+000, RD46+000 & RD 60+000 with patrolling staff 124 in numbers. Further following mauzas will be inundated which lies with in flood plan i.e. inside LMB, as the flood limits exceeds low flood.

Sr. No	LOCATION RD	Mauza
01	11+000	Gharbi Khai
02	15+000	Lombar Wala, Jannu Wala
03	26+000	Tibba Ghair Mustaqil, Ghair Mustaqil Hanjrai
04	35+000	Chjray Wala
05	50+000	Bhedaan Wali, Karlu
06	60+000	Bait Wasawa
07	79+000	Khan Wala

- Ample quantity of watching / flood fighting material will be arranged at each camp throughout flood season. 200 No. filled sands (plastic bags) will also be available at each camp. Machinery will also be deployed. Generator and search lights will be arranged at each camp site. An Army contingent with 100 Jawan will also patrol along LMB, Sanawan Bund and loop bund. All crossing / culverts on all bunds will be closed thoroughly and in addition, a ring bund with 15 ft top and 1:3 side slopes will be provided on river side.
- Earth work required for gunda bunds in T.P. Link and Muzaffargarh Canal will be stacked at RD 11-12 T.P. Link. If despite taking all these precautions, the structure fails, plan will come in action as described below:-

(1) When LMB breaches

(2) When Sanawan Bund breach

(3) T.P. Link & Muzaffargarh Canals breach

13.1 PLAN SHOWING ROUTE OF FLOOD WATER COMING OUT OF THE BREACH:-

Attached at Page 48

13.2 DETAIL OF VILLAGES ABADIES LIKELY TO BE AFFECTED.

Basti Kanju Wala	Taunsa Barrage Canal Colony
Shah wala	Pichar wala
Natkani Wala	Basti Wala
Basti Gurmani	Basti Pirhar
Abbas wala	Basti Usman wala
Basti Bohar	Basti Bukhari
Basti Malana	Basti Khadi

13.3. STRATEGY AND ACTION TAKEN BE EXPLAINED :-

In case of flood emergency / breaches, strategy and action taken is as under:-

13.3.1 ARRANGEMENTS:-

In case of LMB breaches,

The flood water will first hit the 2nd defence line including Sanawan Bund and will be impounded between pocket of LMB, Sanawan Bund and left bund of T.P. Link Canal RD 6-18. The area between the pockets is about 6000 acres.

In case of LMB breach and Sanawan Bund also breach.

The Sanawan Flood Bund and flood embankment along left bank of T. P. Link Canal RD 6+700 to 18+200 acts as 2nd defence line of LMB. During flood 2010, these bunds were overtopped and not sustained against flood water of breach of LMB. Now these flood bunds have been raised and strengthened under ADP scheme "**Raising & strengthening of Sanawan Flood Bund RD. 0-42+000 and Embankment along T.P.Link Canal RD.6+700 to 18+500"** according to HFL 2010 with 6.0 ft free board. In case of breach of LMB, the flood water will restrained between the pocket LMB, Sanawan Flood Bund and T. P. Link Canal. However the inlet at RD 14+700 T. P. Link Canal will be closed up to some extent by filling earth work.

In case of T.P. Link & Muzaffargarh Canals breach between RD 7-18.

In case left bank of TP Link Canal breaches between RD 7-18, the water will further breach Muzaffargarh Canal and Railway line. The Sanawan Bund downstream will not be allowed to be cut by the people living between Downstream Sanawan Bund and the River. The water will be routed this way back to the River downstream of the Barrage. But it is only possible, if the Kot Addu Bypass is watched and banks of Lower Kot Sultan are strengthened. Chief Engineer, DG Khan will ensure strengthening banks of Lower Kot Sultan.

To minimize flow towards Kot Addu City, Sheikh Umer Town, Sanawan Town, Qasba Gurmani, Qasba Gujrat, KAPCO, PARCO installation, and other important infrastructures, the following cuts will be made to the channels in consultation with Executive Engineer, Kot Addu Canals Division, with the help of Army and civil administration. This will route the flood water back to the River on the downstream side.

Upper Sardar Disty between RD 0-10

Maggasson Branch between RD 22-23, RD 27-28 and RD 40-41.

13.3.2. Establishment of Flood Fighting Camps:-

Camps will be Established at RD T-Head Spur No. 1 RD 11+350, Hockey Spur RD 26+000, RD 46+000 and RD60+000 of LMB.

Camp No.	Location	Structures
1	RD 22	Sanawan Bund
2	RD 9-10	T.P. Link Canal.

13.3.3 Duties of Officers / Officials and their camp site.

Camp No.	Location	Officer	Officials
1	RD 22 Sanawan Bund	SDO Head Works	-
2	RD 10 Sanawan Bund	-	Sub Engineer LMB I , Mate & beldars
3	RD 9-10 T.P. Link	-	Sub Engineer Lashari Section Mate & beldars

Superintending Engineer / Executive Engineer of other Division will be over all in-charge of these camp sites. 100 patrols (Patrolling staff) will be at 3 No. camps.

13.3.4 DEPARTMENTAL MACHINERY AVAILABLE:-

Departmental Machinery will be available during flood season.

Ghazi Tractor with Trolley (Fiat) = 2 No.
Massy tractor with small trolley = 2 No.
Master truck = 2 No.
Sand filling machine = 2 No.
Tadano Crane capacity 55 ton = 1 No.

13.3.5 MACHINERY AVAILABLE FROM PRIVATE SOURCE :

The following machinery will be deployed from private sources on Sanawan bund.

Excavator 2 No.
Dumper 6 No.
Tractor with trolley 4 No.

The following machinery will be deployed on T.P. Link Canal.

Excavator 2 No.
Dumper 1 No.
Tractor with trolley 4 No.

13.3.6 FLOOD FIGHTING MATERIAL REQUIRED: -

13.3.7 FLOOD FIGHTING MATERIAL AVAILABLE (Plan-I)

Sr. No.	Item	Unit	Total Required Quantity	Available Quantity	Balance Quantity	Remarks
1	Shouldari / Tent	No.	01	0	01	Will be Purchased before coming of Flood Season 2026
2	Chairs	No.	06	0	06	
3	Table	No.	01	0	01	
4	Generator (2-3 KVA)	No.	01	0	01	
5	Pedestal Fans	No.	01	0	01	

Sr. No.	Item	Unit	Total Required Quantity	Available Quantity	Balance Quantity	Remarks
6	Charpois	No.	02	0	02	
7	Symbolic Jackets	No.	50	0	50	
8	Polythene Sheets	Kg	100	0	100	
9	Bamboos (4" dia and 10 ft long)	No.	100	0	100	
10	Water Cooler	No.	01	0	01	
11	Portable Umbrella	No.	02	0	02	
12	Life Jackets	No.	05	0	05	
13	Utensils (10 person serving)	No.	01	0	01	
14	Jute / Plastic Bags	No.	1000	0	1000	
15	Walke Talkie Set	Set	02	0	02	
16	Raincoats	No.	10	0	10	
17	LED Flood Light	No.	10	0	10	
18	Extension Cable (10 ft)	No.	02	0	02	
19	Rechargeable Torches	No.	20	0	20	
20	Kassi	No.	20	0	20	
21	Axes	No.	20	0	20	
22	G.I Buckets	No.	05	0	05	
23	7/44 cable	Feet	500	0	500	
24	Sutli	Kg	02	0	02	
25	Sewing Needles	No.	10	0	10	
26	Emergency Medical Kit	No.	1	0	1	
27	Wire crates (3x3x3) (at only those camp near river action and reserve stock exists)	No.	100	0	100	

The balance quantity of flood fighting material will be arranged before the onset of flood season 2026.

13.4 DETAIL OF OTHER INFRASTRUCTURES LIKE ELECTRIC, SUI GAS, TELEPHONE INSTALLATION , ROAD NETWORK , OTHER BUILDINGS , CANAL AND DRAINAGE WORK.

Roads

D.D.Panah – Bait Nishanwala
Kot Addu – Layyah
Kot Addu – Byepass
Kot Addu – chowk Qureshi
Kot Addu – Sheikh Umer

Railways

Kot Addu – Layyah
Kot Addu – Multan

Schools

Primary School Kanju Wala
High School – Abbas wala
High School – Saleh wala
PrimarySchool-Janoo Nashaib
Primary school – Shahwala
Primary School – Chajreewala

Canals

Tibba Minor
Upper Kot Sultan
Upper Hazara Disty
Maggasson Branch
Upper Sardar
Kesho Minor
Qaim wala Disty
MM Links
Isan Minor
Ghulam Wah Minor
Drain Kot Sulta

Chapter: - 13 (PLAN -2)

Emergency Contingency Plan for J-Head Spur Faqir wali D/S right Side.

Right site training works comprise J-Head Spur Faqir Wali only 100ft far from nose. More than 80% flow approaches the barrage through right side main creek. This structure remains under direct hit of the river Indus specially due to the fact that creek curved and the spurs are on outside of the loop and thus are subject to huge scour During flood 2025, severe scouring action and also may be destroyed the apron/Pitching in coming flood 2026. Intensive care watching will be carried out.

13.1 PLAN SHOWING ROUTE OF FLOOD WATER COMING OUT OF THE BREACH :-

Attached at Page 52.

13.2 DETAIL OF VILLAGES ABADIES LIKELY TO BE AFFECTED.

Basti Faqir Wali only

13.3 STRATEGY AND ACTION TAKEN BE EXPLAINED: -

In case of flood emergency / breaches, strategy and action taken is as under:-

13.3.1 ARRANGEMENTS:-

In case Link bund or Shank of Spur T-2 on upstream right side of barrage breaches, the water touches Indus Highway and right bank of Kacchi Canal. The small scattered abadies in area will be evacuated well before time.

In case, flood persists then right bank of Kachhi Canal and D.G. Khan will be cut at RD 22-23 and water will be routed back to River side.

In case Shank of Spur T-2 breaches or J-head Spur 2-A is eroded; the river will capture the back old creek of River. The Link Bund will be cut between RD 1-2 and the river water will be impounded between Indus Highway and right bank of Kacchi Canal.

In case of persistent pressure, Kacchi Canal and D.G. Khan Canal will be breached at RD 22-23 to route back the water in to River on downstream side.

13.3.2 Establishment of Flood Fighting Camps:-

Camp No.	Location	Structures
1.	At Faqir wali	D/S right side Spur , D.G. Khan Canal

13.3.3. Duties of Officers / Officials and their camp site.

Camp No.	Officer	Officials
1.	SDO Bund	-
	-	Sub Engineer D.G. Canal Section

Executive Engineer (Other Division) will be the overall in-charge with 50 No. Patrolling staff distributed among 4 sites, 50 jawans from Army will also patrol along J-Head Spur Faqir Wali and its allied structures.

13.3.4. DEPARTMENTAL MACHINERY AVAILABLE :-

Departmental Machinery will be available during flood season.

13.3.5. MACHINERY AVAILABLE FROM PRIVATE SOURCE :-

The following machinery will be deployed from private sources on J-Head Spur.

Excavator	1 No.
Dumper truck	2 No.
Tractor with trolley	2 No.

13.3.6. FLOOD FIGHTING MATERIAL REQUIRED :-

13.3.7. FLOOD FIGHTING MATERIAL AVAILABLE (Plan-2)

Sr. No.	Item	Unit	Total Required Quantity	Available Quantity	Balance Quantity	Remarks
1	Shouldari / Tent	No.	01	0	01	Will be Purchased before coming of Flood Season 2026
2	Chairs	No.	06	0	06	
3	Table	No.	01	0	01	
4	Generator (2-3 KVA)	No.	01	0	01	
5	Pedestal Fans	No.	01	0	01	
6	Charpois	No.	02	0	02	
7	Symbolic Jackets	No.	50	0	50	
8	Polythene Sheets	Kg	100	0	100	
9	Bamboos (4" dia and 10 ft long)	No.	100	0	100	
10	Water Cooler	No.	01	0	01	
11	Portable Umbrella	No.	02	0	02	
12	Life Jackets	No.	05	0	05	
13	Utensils (10 person serving)	No.	01	0	01	
14	Jute / Plastic Bags	No.	1000	0	1000	
15	Walke Talkie Set	Set	02	0	02	
16	Raincoats	No.	10	0	10	
17	LED Flood Light	No.	10	0	10	
18	Extension Cable (10 ft)	No.	02	0	02	

Sr. No.	Item	Unit	Total Required Quantity	Available Quantity	Balance Quantity	Remarks
19	Rechargeable Torches	No.	20	0	20	
20	Kassi	No.	20	0	20	
21	Axes	No.	20	0	20	
22	G.I Buckets	No.	05	0	05	
23	7/44 cable	Feet	500	0	500	
24	Sutli	Kg	02	0	02	
25	Sewing Needles	No.	10	0	10	
26	Emergency Medical Kit	No.	1	0	1	
27	Wire crates (3x3x3) (at only those camp near river action and reserve stock exists)	No.	100	0	100	

The balance quantity of flood fighting material will be arranged before the onset of flood season 2026.

13.4. DETAIL OF OTHER INFRASTRUCTURES LIKE ELECTRIC, SUI GAS, TELEPHONE INSTALLATION , ROAD NETWORK , OTHER BUILDINGS , CANAL AND DRAINAGE WORK.

Roads	Kot Addu – D.G. Khan
Railways	Kot Addu – D.G. Khan
Gas Pipe Line	Dhodhak- Kot Addu
Oil Pipe Line	Parco Main line.

Chapter: - 13 (PLAN -3)

Emergency Contingency Plan Concavo Convex Guide Head Spur at RD 34+000 of Maggasson Branch .

When the downstream discharge at Taunsa Barrage exceeds 4.00 lac cusecs, the river enters a highly aggressive regime, posing a serious threat to the armored reach of between RD 30+700 and RD 34+000 D/s Maggasson Branch. Under such extreme flow conditions, hydraulic forces intensify considerably, resulting in severe toe scouring, undermining of stone pitching, and an elevated risk of structural instability. Any damage or breach in this critical reach could expose nearby abadies to imminent flooding and associated risks.

During the 2024 flood season at Taunsa Barrage, pronounced right bank erosion diverted the main current toward the left bank near the inverted hockey spur at RD 30+750. This shift caused embayment of agricultural land and damage to the J-head spur at RD 34+000. Under a high discharge of approximately 376,755 cusecs, the spur breached in early August. Subsequently, expert committees recommended stabilization through additional stone dumping and installation of small stone studs. These remedial measures temporarily restored stability while the river remained confined within its main channel.

The concavo-convex guide wall along the left bank at RD 34+000 of Maggasson Branch has performed satisfactorily under low to moderate discharges. However, when the flow exceeds about 4.00 lac cusecs, the river tends to realign, directing the current toward and impinging forcefully on the concave face of the structure. This direct attack concentrates energy along the outer curve, accelerating erosion and increasing vulnerability of the spur, particularly at the nose and junction points. Without timely reinforcement and effective flood-fighting measures, the structure is at considerable risk of progressive damage and possible failure during high flood events.

13.1 PLAN SHOWING ROUTE OF FLOOD WATER COMING OUT OF THE BREACH :-

Attached at Page 56.

13.2 DETAIL OF VILLAGES ABADIES LIKELY TO BE AFFECTED.

Basti Khattak
Basti Khokhar
Basti Lashari
Basti gurchani
Basti Mochi wala
Basti Rastamani
Basti Sheikh

13.3 STRATEGY AND ACTION TAKEN BE EXPLAINED:-

In case of flood emergency / breaches, strategy and action taken is as under:-

13.3.1 ARRANGEMENTS:-

In the event of any breach or damage to this structure, the river is likely to exhibit a pronounced shift in its course towards the left bank, thereby altering its flow pattern in a highly unpredictable and aggressive manner. Such a shift would place critical infrastructure, including the Maggasson Canal and the adjoining road network, under serious and immediate threat of erosion and inundation. Moreover, the small and scattered local abadies situated within the vulnerable site, as previously identified, would face significant flood risk; therefore, their timely evacuation well in advance of peak flood conditions is imperative to safeguard lives and property.

13.3.2 Establishment of Flood Fighting Camps:-

Camp No.	Location	Structures
1.	RD 34+000	Guide Wall

13.3.3. Duties of Officers / Officials and their camp site.

Camp No.	Officer	Officials
1.	SDO Headwork	-
2.	-	Sub Engineer Hydraulic Section

Executive Engineer (Other Division) will be the overall in-charge with 50 No. Patrolling staff distributed among 4 sites, 50 jawans from Army will also patrol along Guide Wall RD 34+000 and its allied structures.

13.3.4. DEPARTMENTAL MACHINERY AVAILABLE :-

Departmental Machinery will be available during flood season.

13.3.5. MACHINERY AVAILABLE FROM PRIVATE SOURCE :-

The following machinery will be deployed from private sources on RD 34+000.

Excavator	1 No.
Dumper truck	2 No.
Tractor with trolley	2 No.

13.3.6. FLOOD FIGHTING MATERIAL REQUIRED :-

13.3.7. FLOOD FIGHTING MATERIAL AVAILABLE (Plan-3)

Sr. No.	Item	Unit	Total Required Quantity	Available Quantity	Balance Quantity	Remarks
1	Shouldari / Tent	No.	01	0	01	Will be Purchased before coming of Flood Season 2026
2	Chairs	No.	06	0	06	
3	Table	No.	01	0	01	
4	Generator (2-3 KVA)	No.	01	0	01	
5	Pedestal Fans	No.	01	0	01	
6	Charpois	No.	02	0	02	
7	Symbolic Jackets	No.	50	0	50	
8	Polythene Sheets	Kg	100	0	100	
9	Bamboos (4" dia and 10 ft long)	No.	100	0	100	
10	Water Cooler	No.	01	0	01	
11	Portable Umbrella	No.	02	0	02	
12	Life Jackets	No.	05	0	05	
13	Utensils (10 person serving)	No.	01	0	01	
14	Jute / Plastic Bags	No.	1000	0	1000	
15	Walke Talkie Set	Set	02	0	02	
16	Raincoats	No.	10	0	10	
17	LED Flood Light	No.	10	0	10	
18	Extension Cable (10 ft)	No.	02	0	02	
19	Rechargeable Torches	No.	20	0	20	
20	Kassi	No.	20	0	20	
21	Axes	No.	20	0	20	
22	G.I Buckets	No.	05	0	05	
23	7/44 cable	Feet	500	0	500	
24	Sutli	Kg	02	0	02	
25	Sewing Needles	No.	10	0	10	
26	Emergency Medical Kit	No.	1	0	1	
27	Wire crates (3x3x3) (at only those camp near river action and reserve stock exists)	No.	100	0	100	

The balance quantity of flood fighting material will be arranged before the onset of flood season 2026.

13.4. DETAIL OF OTHER INFRASTRUCTURES LIKE ELECTRIC, SUI GAS, TELEPHONE INSTALLATION , ROAD NETWORK , OTHER BUILDINGS , CANAL AND DRAINAGE WORK.

Roads Kot Addu bypass

Note :-

Besides above narrated plans, it is pertinent to mention here that keeping in view, the frequency of flood, river trend and to minimize the scale of damages, the actual decisions may vary with day to day inventory of flood events. Another aspect which is specific on Taunsa Barrage and can change the entire flood scenario with in barrage zone is hill torrents i.e. Khad Buzdar, Vohova, Sanghar. We shall keep in touch the rain fall data / weather impact.

Note :- It is certified that I am satisfied about the correctness of this Flood Fighting Plan.

Executive Engineer **Taunsa Head Works Division** **Kot Addu**	**Superintending Engineer** **Taunsa Canal Circle** **Kot Addu**	**Chief Engineer** **Irrigation D.G. Khan Zone** **Dera Ghazi Khan**

CHAPTER - 14

ACTION PLAN

14.1 RE-SHUFFLING / RECOUPING PLAN OF RESERVE STOCK OF STONE DEPARTMENTALLY.

Reserve stock limit in Taunsa Headwork Division ,Kot Addu				
Sr NO.	**Name of Structure**	**sanction Limit (Lac Cft)**	**Avaible Qty**	**Remaining QTY**
Left Side of River				
1	Left Guide Bank	5.00	5.00	0.00
2	Right Guide Bank	5.00	5.00	0.00
3	Spur T-1 RD . 11+350 of LMB	1.00	0.62	0.38
4	Spur T-2 RD . 15+000 of LMB	1.00	0.74	0.26
5	Spur T-3 RD. 19+200 of LMB	1.00	0.80	0.20
6	Hockey Spur Rd. 26+000	1.50	1.38	0.12
7	J-Head Spur Bait Qaim Wala Rd .3000 Maggasson Branch	1.50	1.17	0.33
8	J-Head Spur No.1 D/S Rd:13+350 Maggason Branch	1.50	1.05	0.45
9	J-Head Spur No.2 D/S Rd 20+000 Magasson Branch	1.50	1.05	0.45
10	Hockey Spur Rd 22+500 Maggasson Branch	1.00	0.70	0.30
New Structure				
11	J-Head Spur No.3 Rd.25+000 Maggasson Branch	1.50	0.00	1.50
12	Inverted Hockey Spur Rd 28+000 Maggasson Branch	0.50	0.00	0.50
13	Inverted Hockey Spur Rd 30+750 Maggasson Branch	0.50	0.00	0.50
14	Concavo-Convex Guide Head Spur at Rd 34+000 Maggasson Branch	1.50	0.19	1.31
Right Side of River				
15	T-Head Spur No.5 along RGB	1.50	0.00	1.50
16	J-Head Spur 2-A at Rd 9+250 of link bund	1.50	1.32	0.18
17	T-Head Spur No.2	1.50	1.50	0.00
18	J-Head Spur No.1	1.50	0.94	0.56
19	Guide Head Spur 1-A	1.50	0.98	0.52
20	J-Head Faqir wali	1.50	1.31	0.19
21	J-Head Spur Jarwar Wala	1.50	1.50	0.00
Total		**34.50**	**25.25**	**9.25**

Special fund application has been submitted to Administrative Department and stone will be recouped subject to availability of funds.

Note:- In case of emergency, stone will be recouped through resourceful Govt. Contractor.

14.2 DETAIL OF INLET AND OUTLET CROSSING ALONGWITH CLOSING METHODOLOGY.

Sr.	Name of Bund / Spur	RD	Outlet / Inlet	Existing position	Closing Methodology
1	Sanawan Flood Bund	14+283	Outlet / from canal water supply for irrigation purpose	Canal water supply for private land.	Will be closed on receipt of Flood Emergency with regulation karries, groves are provided in the structure.
2	Sanawan Flood Bund	15+160	Outlet / from canal water supply for irrigation purpose	Canal water supply for private land.	Will be closed on receipt of Flood Emergency with regulation karries, groves are provided in the structure.
3	Sanawan Flood Bund	17+300	Outlet / from canal water supply for irrigation purpose	Canal water supply for private land.	Will be closed on receipt of Flood Emergency with regulation karries, groves are provided in the structure.
4	Sanawan Flood Bund	21+550	Outlet / from canal water supply for irrigation purpose	Canal water supply for private land.	Will be closed on receipt of Flood Emergency with regulation karries, groves are provided in the structure.
5	Sanawan Flood Bund	28+000	Outlet / from canal water supply for irrigation purpose	Canal water supply for private land.	Will be closed on receipt of Flood Emergency with regulation karries, groves are provided in the structure.
6	Sanawan Flood Bund	31+025	Outlet / from canal water supply for irrigation purpose	Canal water supply for private land.	Will be closed on receipt of Flood Emergency with regulation karries, groves are provided in the structure.
7	Sanawan Flood Bund	34+400	Outlet / from canal water supply for irrigation purpose	Canal water supply for private land.	Will be closed on receipt of Flood Emergency with regulation karries, groves are provided in the structure.

14.3 DEPLOYMENT OF MACHINERY (Normal to Low Flood).

Deployment of Machinery (Normal to Low Flood)						
Sr. No.	**Structure Name**	**Length (Miles)**	**Excavators**	**Trolleys**	**Dumpers**	**Tractor with Front blade (1 per 15 mile)**
(Left Side Upstream)						
1	1). LGB Rd 0-9292 (9272)	1.86	S.E shall allow deputation of one (1) excavator & four (4) Trolleys during low flood at camps/vulnerable points & LMB / RMB.			0
2	1). T-Head Spur No.1 at RD 11+350 (6700) 2). T-Head Spur No.2 at RD 15000 (6700) 3). T-Head Spur No.3 at RD 19+200 (7134) 4). Hockey Spur at RD 26+000 (4500)	5				2
3	1). Left Marginal Bund from Rd 1500- 134700 (133200)	26.64				
(Left Side DownStream)						
4	1). J-Head Spur Bait Qaim Wala at RD 3+000 of Maggasson Branch (7200) 2). J-Head Spur No.1 at RD 13+350 of Maggason Branch (6200) 3). Spur No.2 at RD 2+000 of Maggasson Branch (2000) 4). Hockey Spur at RD 22+500 of Maggasson Branch (1700) 5). Spur at RD 25+000 of Maggasson Branch (2200) 6). Hockey Spur at RD 28+000 (Solid Stone) of Maggasson Branch (550) 7). Hockey Spur 30+750 (Solid Stone) of Maggasson Branch (575) 8). Concavo- Convex Guide Head Spur at RD 34+000 of Maggasson Branch (4560)	5				1
(Right Side Up stream/ Down stream)						
5	1). RGB 0-9292 (9272) 2). T-Head Spur No. 5 (1700) 3). 1st Defence Bund, RD 23+500 (23500) 4). Spur No 1 (5200) 5). Guide Head Spur No 1-A (20162) 6). Link Bund, at RD 18+500 (18500) 7). T-Head Spur No 2 (20000) 8). Mole Head Spur No .2 at RD 17+500 (2000) 9). Spur No. 2-A (8800) 10). J-Head Spur Faqir Wala (3000) 11). J-Head Spur Jarwar Wala (4500)	20.16				
Total		**58.66**				**3**

NOTE: Payment of machinery & work charge employees is subject to verification of TPM/ Consultant

14.4 DEPLOYMENT OF MACHINERY (Medium to High Flood).

Deployment of Machinery (Medium to High Flood)						
Sr. No.	Structure Name	Length (Miles)	Excavators	Trolleys	Dumpers	Tractor with Front blade
			1 per 7 mile	4 per 7 mile	2 per 7 mile	1 per 7 mile
(Left Side Upstream)						
1	1). LGB Rd 0-9292 (9272)	**1.86**	**1**	**4**	**2**	**1**
2	1). T-Head Spur No.1 at RD 11+350 (6700) 2). T-Head Spur No.2 at RD 15000 (6700) 3). T-Head Spur No.3 at RD 19+200 (7134) 4). Hockey Spur at RD 26+000 (4500)	**5**				
3	1). Left Marginal Bund from Rd 1500- 134700 (133200)	26.64	**3**	**12**	**6**	**3**
(Left Side DownStream)						
4	1). J-Head Spur Bait Qaim Wala at RD 3+000 of Maggasson Branch (7200) 2). J-Head Spur No.1 at RD 13+350 of Maggason Branch (6200) 3). Spur No.2 at RD 2+000 of Maggasson Branch (2000) 4). Hockey Spur at RD 22+500 of Maggasson Branch (1700) 5). Spur at RD 25+000 of Maggasson Branch (2200) 6). Hockey Spur at RD 28+000 (Solid Stone) of Maggasson Branch (550) 7). Hockey Spur 30+750 (Solid Stone) of Maggasson Branch (575) 8). Concavo- Convex Guide Head Spur at RD 34+000 of Maggasson Branch (4560)	**5**	**1**	**2**	**1**	**1**
(Right Side Up stream/ Down stream)						
5	1). RGB 0-9292 (9272) 2). T-Head Spur No. 5 (1700) 3). 1st Defence Bund, RD 23+500 (23500) 4). Spur No 1 (5200) 5). Guide Head Spur No 1-A (20162) 6). Link Bund, at RD 18+500 (18500) 7). T-Head Spur No 2 (20000) 8). Mole Head Spur No .2 at RD 17+500 (2000) 9). Spur No. 2-A (8800) 10). J-Head Spur Faqir Wala (3000) 11). J-Head Spur Jarwar Wala (4500)	20.16	**3**	**12**	**6**	**3**
Total:-		**58.66**	**8**	**30**	**15**	**8**

NOTE: Payment of machinery & work charge employees is subject to verification of TPM/ Consultant.

14.5 DEPLOYMENT OF MACHINERY (Very High to Exceptionally High Flood).

Deployment of Machinery (Very High to Exceptionally High Flood)								
Sr. No.	Structure Name	Length (Miles)	Excavators		Trolleys	Dumpers	Tractor with Front blade	
			Very High Flood	Exp. High Flood	4 per 5 mile	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
(Left Side Upstream)								
1	1). LGB Rd 0-9292 (9272)	1.86	0	0	0	0	0	0
2	Retired Left Marginal Bund (49000)	9.8	2	4	8	4	2	4
3	Tibba Tie Bund (8900)	1.78	2	4	8	4	2	4
4	Sanawan Flood Bund (42000)	8.4						
2	1). T-Head Spur No.1 at RD 11+350 (6700) 2). T-Head Spur No.2 at RD 15000 (6700) 3). T-Head Spur No.3 at RD 19+200 (7134) 4). Hockey Spur at RD 26+000 (4500)	5	1	2	4	2	1	2
3	1). Left Marginal Bund from Rd 1500- 134700 (133200)	26.64	5	10	20	10	5	10
(Left Side DownStream)								
4	1). J-Head Spur Bait Qaim Wala at RD 3+000 of Maggasson Branch (7200) 2). J-Head Spur No.1 at RD 13+350 of Maggason Branch (6200) 3). Spur No.2 at RD 2+000 of Maggasson Branch (2000) 4). Hockey Spur at RD 22+500 of Maggasson Branch (1700) 5). Spur at RD 25+000 of Maggasson Branch (2200) 6). Hockey Spur at RD 28+000 (Solid Stone) of Maggasson Branch (550) 7). Hockey Spur 30+750 (Solid Stone) of Maggasson Branch (575) 8). Concavo- Convex Guide Head Spur at RD 34+000 of Maggasson Branch (4560)	5	1	2	4	2	1	2
(Right Side Up stream/ Down stream)								
5	1). RGB 0-9292 (9272) 2). T-Head Spur No. 5 (1700) 3). 1st Defence Bund, RD 23+500 (23500) 4). Spur No 1 (5200) 5). Guide Head Spur No 1-A (20162) 6). Link Bund, at RD 18+500 (18500) 7). T-Head Spur No 2 (20000) 8). Mole Head Spur No .2 at RD 17+500 (2000) 9). Spur No. 2-A (8800) 10). J-Head Spur Faqir Wala (3000) 11). J-Head Spur Jarwar Wala (4500)	20.16	4	8	16	8	4	8
Total		**78.64**	**15**	**30**	**60**	**30**	**15**	**30**

NOTE: Payment of machinery & work charge employees is subject to verification of TPM/ Consultant.

LIST OF LOCAL CONTRACTORS

Name of Govt. Contractor	Contact Number	Remarks
M/S Rana Traders	0333-4000662 0300-4000662	Excavators and other machinery may be made available through these contractors.
M/S Sparco Construction	0321-8437629	
M/S Shafqat Mansoor Khan	0345-7137666	

14.6 POLICE DEPLOYMENT PLAN

Proforma – 1

Sr.	Site of Breaching Section	Concerned Canal Division	Concerned Police Station and District	Police Persons Deployed		Remarks (if any)
				Inspector / Sub Inspector / A.S.I	Constable	
1	LMB RD. 32+000	Taunsa Barrage	Dara Din Panah Police Station	ASI=1	4	--
2.	Link Flood Bund RD 9+000 to 10+000	Taunsa Barrage	Taunsa Sharif Police Station	ASI=1	4	--
3.	Sanawan Flood bund RD 21+000	Taunsa Barrage	Dara Din Panah Police Station	ASI=1	4	--

Proforma – 2

Sr.	Vulnerable sites used for illegal cuts during floods	Concerned Canal Division	Concerned Police Station and District	Police Persons Deployed		Remarks (if any)
				Inspector / Sub Inspector / A.S.I	Constable	
1	RD 1 of spur No. 2-A & Link Bund on right side.	Taunsa Barrage	Nil	Nil	Nil	The breaching section not yet approved however two sites are temporarily recommended by the Govt.

Proforma – 3

Sr.	Name of Barrage	Concerned Canal Division	Concerned Police Station and District	Police Persons Deployed		Remarks (if any)
				Inspector / Sub Inspector / A.S.I	Constable	
1	Taunsa Barrage	Taunsa Barrage	Taunsa Sharif Police Station	ASI=1	4	--

14.7. DETAIL OF SYNTHETIC BAGS WITH CAPACITY OF 50 KG AND 100 KG.

Kg	Required	Existing	Balance	Remarks
50	200	0	200	The balance quantity will be recouped up to 31.05.2026.
100	100	0	100	

14.8 DETAIL OF POLYTHENE SHEETS OF BLACK COLOUR TO PROTECT UPSTREAM SLOPE AGAINST WAVE ACTION AND TO CONTROL SEEPAGE THROUGH EMBANKMENTS.

Name of item	Required	Existing	Balance	Remarks
Polythene sheets	40000 Sft	0	40000 Sft	The balance quantity will be recouped up to 31.05.2026.

14.9 Recommendation for operation during 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 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.

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

(Zeeshan Ali)
Member/ SE, Project Circle DG Khan

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

(Imtiaz Hussain)
Member / SE, Bahawalpur Canal Circle

(Sammar Iqbal)
Member / SE, LCC(West) Canal Circle, Faisalabad

(Hafiz Ijaz Ahmed)
Member / SE, Mandi Bahauddin Canal Circle

(Mudassar Rehan)
Member / SE Link Circle, Lahore

(Khurram Amin)
Convener / Chief Engineer, Drainage & Flood Zone, Lahore.

CHAPTER - 15

BACK UP DIVISIONS
(IN CASE OF BREACH)

In case of emergency CRBC Division Taunsa Sharif will be back-up Division for Right Flank of River Indus at Taunsa Barrage while Layyah Canal Division Layyah of Thal Canal Circle, Mianwali & Kot Addu Canal Division Kot Addu will be back-up Divisions for Left Flank of River Indus at Taunsa Barrage.

Executive Engineer
Taunsa Head Works Division
Kot Addu