



RAWALPINDI REGIONAL DEVELOPMENT PLAN

WATER RESOURCES AND IRRIGATION SECTION



Prepared by
Engr. Zeeshan Mustafa Maan

October, 2023



IRRIGATION DEPARTMENT - PUNJAB
SMALL DAMS ORGANIZATION
JAMMELGAL DAM
MAIN DAM

TYPE	EARTH FILL DAM
CATCHMENT AREA	4.86 SQ. MILES
LENGTH AT TOP	500 FT
WIDTH	20 FT
HEIGHT OF DAM	63 FT
LIVE STORAGE	1650 AFT
R. L.	890.81
DEAD STORAGE	1502 AFT
D. S. L.	879.25
GROSS STORAGE	7162 AFT
H. F. L.	887 FT
TOP LEVEL	903

Introduction:

Water is a prime factor in all sectors of life and has a major contribution towards survival of livelihood. For the development of urban agriculture sector, water is one of the most important contributory factors and a major issue for sustainable development. There is no scarcity of water resources in Pakistan but it needs to be conserved. The efficiency of each sector is towards declination due to the poor water management techniques. Construction of small dams is a step towards revolution in water sector development and to match water needs in the barani areas of the country. The barani area is totally dependent upon the surface water flows, and to conserve this auspicious resource there is need for construction of small dams. In Rawalpindi region, there is scarcity of water resources especially due to ground water abstraction.

The Rawalpindi region, comprising on Rawalpindi, Attock, Chakwal and Jehlum districts of the Punjab, lying between the Indus and Jehlum rivers and bounded on the north by the Hazara Hills and on the south by the Salt Range. Its elevation varies from 1,000 to 2,000 ft (300 to 600 m) in a system of residual hills and hillocks formed from glacial debris as remnants of the Ice Age. The Kala Chitta Range thrusts eastward across the plateau toward Rawalpindi; the valleys of the Haro and Soan rivers cross the plateau from the eastern foothills to the Indus.

Total Area of Potohar region is 5.55 million acres. Presently cultivated area is 35-45 per cent. Population of Potohar is 10.007 million (2017 census data). Rural Population is 70 per cent. Area equipped with irrigation system is 11 per cent. Rainfall intensity during monsoon is 60-70 per cent. Total runoff is 2.31 billion cubic meters (1.88 MAF). The land of Potohar plateau is broken and uneven. The average runoff is about 1.88 MAF, whereas only 0.26 MAF (14%) runoff has been tapped so far by 58 small to medium dam projects (Source: Small Dams Department, Irrigation Potohar Zone, 2023). The balance runoff of 1.318 MAF (Approx.) still flows towards sea, unutilized. In Potohar area two third of the total annual rain precipitates during the three monsoon months of summer i.e. July, August and September, while the remaining nine months are nearly dry. Moreover, the delayed monsoon and erratic winter rainfall which is a common feature, makes the availability of water very uncertain. On the other hand, the topography of the hilly areas, with steep ground slopes, helps the rain water to form into numerous streams running at high velocities, resulting in erosion of the fertile agricultural barani land. This drought cycle is frequent. Consequently, the only solution is to build dams, to conserve the rain runoff for agriculture and sustainable water supply for domestic water utilization.

Ground water in Potohar plateau, is generally available along the natural streams. In other areas ground water is not available even up to 300 feet depth, therefore, only sources of drinking water are mini to medium size reservoirs. The water needs of rapidly growing population of cities, towns & villages are met through existing reservoirs, mini ponds, ground water pumpage, which are also under threat in respect of future requirements.

Water Resources of Rawalpindi Region (Potohar Plateau)

The Rawalpindi region located in Barani area of the Punjab. The barani area is totally dependent upon the surface water flows, and rainfall runoff water. The Rawalpindi region is located in Potohar plateau in Punjab. The Potohar irrigation zone of Punjab irrigation department is sole custodian to develop water resources sources for drinking, irrigation, recharge, fishing, and environmental water requirements through construction of small to medium dams in region.

The Indus river basin in Pakistan is being divided into two plains i.e. upper and lower Indus plain. The upper Indus plain comprises of Himalayan piedmont, the doabs, and the Suleiman piedmont. The Punjab Irrigation consist of eight (08) irrigation field administrative zones as listed below.

- I. Lahore Zone
- II. Sargodha Zone
- III. Faisalabad Zone
- IV. Sahiwal Zone
- V. Multan Zone
- VI. Bahawalpur Zone
- VII. Dera Ghazi (D.G.) Khan Zone
- VIII. Potohar Zone.

The salient feature of irrigation zones is shown in table 1.

Table 1: Salient Features of Punjab Irrigation Zones

Descriptions	Lahore Zone	Sargodha Zone	Faisalabad Zone	Sahiwal Zone	Multan Zone	Bahawalpur Zone	Dera Ghazi Khan Zone	Potohar Zone
No of Channel	549	576	350	262	331	706	423	-
Length of main, branch, and link canals (Miles)	725	657.75	544.00	454.00	344.65	519.60	453.00	-
Outlets (No.)	12,499	9,046	8,380	6,709	6,100	7,812	8,197	-

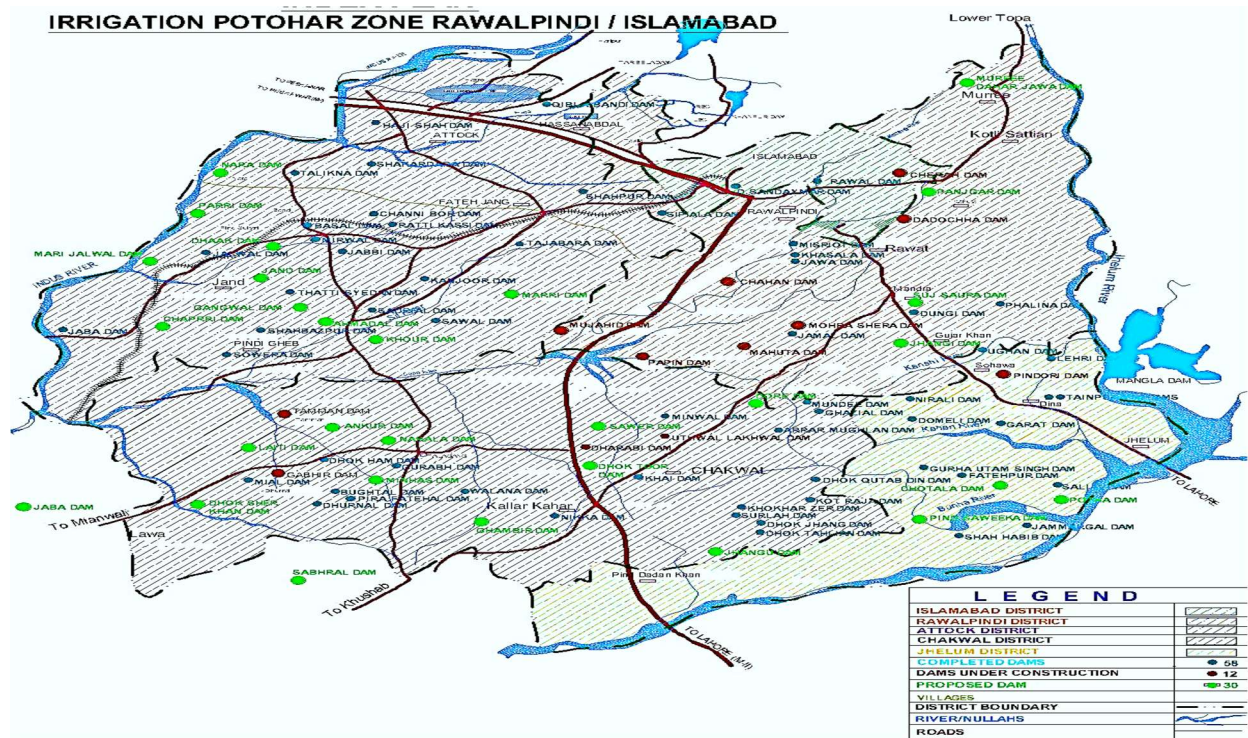


Figure 2: Layout Plan of Punjab Irrigation Potohar Zone

Irrigation and Water Resources Assessments of Rawalpindi Region:

The water resources storages developed by Potohar irrigation zones are mainly utilized for domestic use, livelihood use, agricultural irrigation, and watershed management. A detailed irrigation and water resources assessment survey was conducted by irrigation and water resources specialist. An introductory meeting was held between chief engineer (planning) and Urban unit team at Potohar



Irrigation zone Rawal dam irrigation colony, Islamabad. It was concluded in meeting that irrigation department key responsibilities are as follow in Barani areas.

- Construction and maintenance of small and medium dams for irrigation, water supply and aquaculture.
- Design and construction of irrigation network for command area development.
- Operation & maintenance of dams.
- Water management at primary / secondary level & equitable water distribution.
- Irrigation and drainage network management.

The Rawalpindi region is comprised on following four Potohar irrigation zones.

- 1. Small Dams Rawalpindi District.**
Mr. Sheikh Hamza Saeed (Executive Engineer)
- 2. Small Dams Attock District.**
Ms. Fatima Mobeen (Executive Engineer)
- 3. Small Dams Chakwal District.**
Mr. Naeem ul Hasnain Executive Engineer)
- 4. Small Dams Jhelum District.**
Mr. Fahim Fareed (Executive Engineer)

Water Resources Assessment in Rawalpindi District

The small dam Rawalpindi district develop water resources storages as primarily source of drinking water and secondly is being utilized for irrigation. The surface water resources in Rawalpindi district are shown in figure 3.

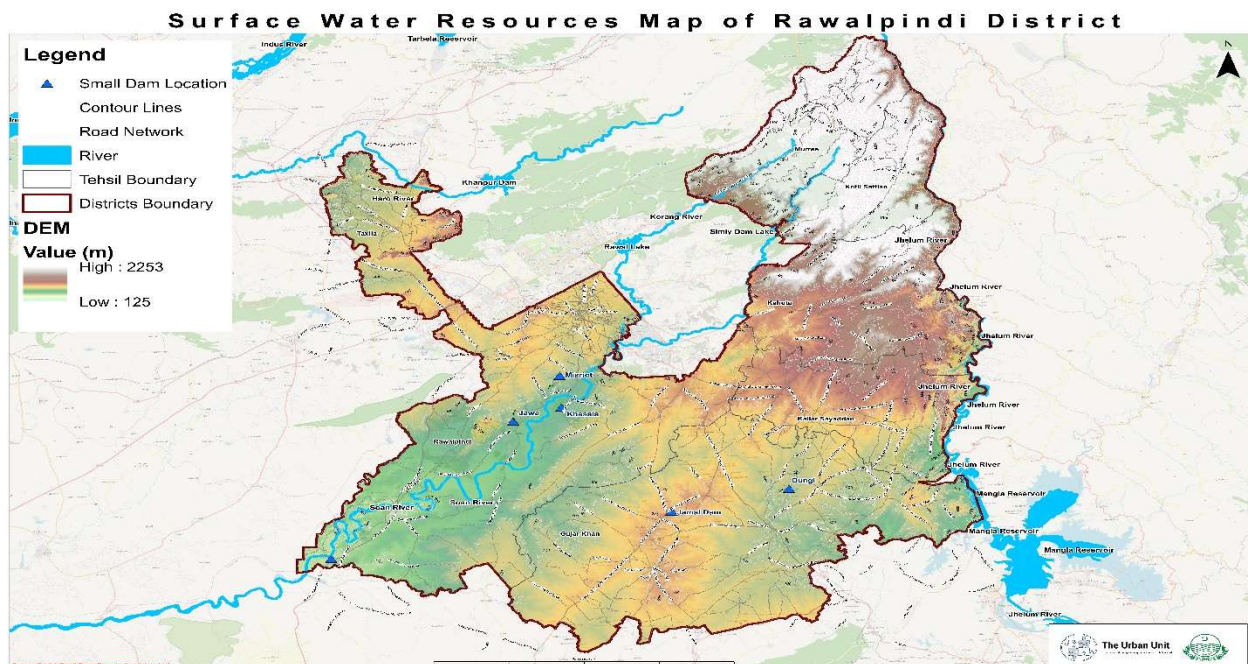


Figure 3: Surface water resources map of Rawalpindi District

A detailed discussion session was conducted between urban unit water team and executive engineer of small dams Rawalpindi district. Eleven dams existed under jurisdiction of small dam's department Rawalpindi district out of which two existed in Islamabad and nine dams are located in Rawalpindi district boundary. Only two dams, i.e. Rawal and Chahan dams, are fulfilling water supply demand of Islamabad and Rawalpindi. The total water supply of 35 MGD is being provided by these two dams. The salient features of these dams are shown in table 3.

Table 3: Salient features of Dams in Small Dams Irrigation Zone Rawalpindi

Sr. No.	Name of Dam	Location	Year of Completion	Gross Storage Capacity (A-ft)	C.C.A. (Acres)/ Drinking (MGD)	Maximum Irrigated Area (Acres)	Status
Islamabad							
1	Rawal	N33°41'37.8" E73°7'22.49"	1962	37,397	500/23	343	Operational
2	Dhok Sanday Mar	N33°39'34.21" E72°51'39.31"	1990	862	550/-	414	Operational
Grand Total				38,259	1050/23	757	
Rawalpindi							
1	Misriot	N33°30'59.95" E72°59'26.74"	1963	573	100	110	Operational
2	Nirali	N33°19'31" E73°23'50"E	1970	754	315	256	Operational
3	Dungi	N33°17'30" E73°17'52"	1971	1760	246	224	Operational
4	Khasala	N33°26'46.12" E72°58'15.04"	1985	2415	1250	740	Operational
5	Jawa	N33°25'40.47" E72°56'7.00"	1994	1575	850	734	Operational
6	Chahan	N33°27'34.00" E72°52'54.17"	2022	27,386	12000 / 12 MGD	0	Operational
7	Phalina	N33° 24'08" E73°19'38"	2007	3900	2200	203	Operational
8	Ughan	N33°17'25" E73°18'01"	2012	8100	3000	564	Operational
9	Jamal	N33°17'13" E73°07'15"	2006	1860	1488	245	Non-operational
Grand Total				48,323	21,449/12	3,076	

A site survey was also conducted with field staff of small dams of Rawalpindi for assessment of water resources infrastructure.



Figure 4: Irrigation and water resources assessment of Rawalpindi District

Major issues identified during field surveys were as follow;

- I. Depletion of storage capacity of Rawal Dam due siltation.

- II. Shortage of water resources to fulfill district water supply.
- III. Water logging issues due to deterioration of drainage infrastructure of chill drain in Chach area.

The following projects proposed are:

- A. Restoration of Rawal Lake reservoir through desilting during high flow season through flushing and low flow season through de-silting/excavation.
- B. Rehabilitation and upgradation of Chill drain in Chach area.
- C. Installation of telemetry system for regular monitoring of water storage and operation management of water inflow in Rawal Dam.

Irrigation Small Dams office, Attock District

A brainstorming session conducted between executive engineer of small dam's department Attock district.

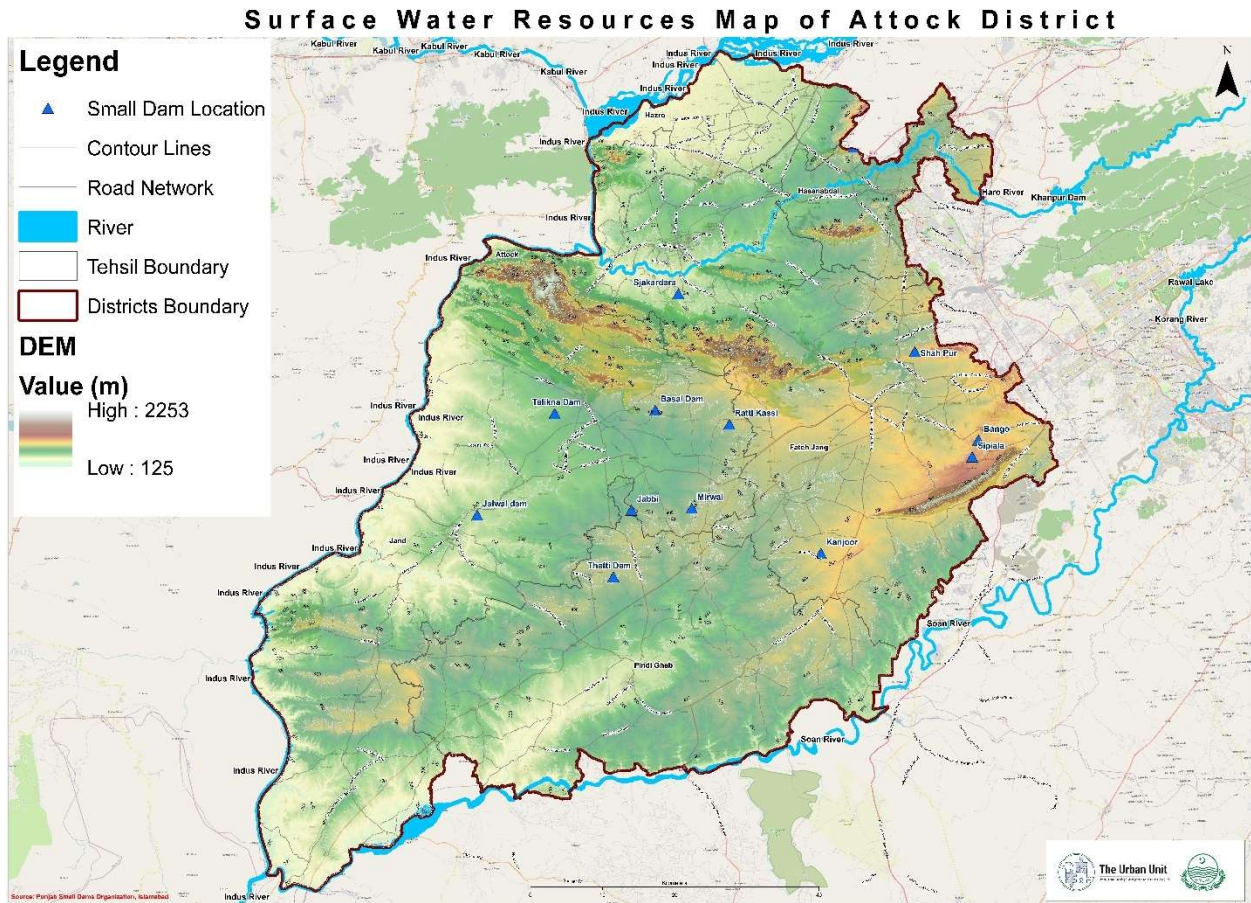


Figure 5: Surface water resources map of Attock District

The executive engineer explained about existing scheme and issue faced during field operation & maintenance. She shared that Seventeen dams existed in

Attock district which irrigated approximately 11,900 acres and fulfill water supply demand upto 3.64 MGD in Attock district. The salient features of these existing dams are given in table 4.

Table 4: Salient features of Dams in Small Dams Irrigation Zone Attock District

Sr. No.	Name of Dam	Location	Year of Completion	Gross Storage Capacity (A-ft)	C.C.A. (Acres)/ Drinking (MGD)	Maximum Irrigated Area (Acres)	Status
1	Sipiala	N 33°32'26.6'' E72°46'54.41''	1964	568	140	112	Operational
2	Ratti Kassi	N33°33'15.76'' E72°23'16.11''	1970	2116	650	965	Operational
3	Kanjoor	N33°24'34.21'' E72°32'14.97''	1978	2824	2000	725	Operational
4	Channi Bor	N33°33'32.61'' E72°20'43.79''	1979	958	1500	1237	Operational
5	Qibla Bandi	N33°53'16.54'' E72°34'51.03''	1971	3650	850	704	Operational
6	Shahpur	N33°37'09.38'' E72°40'29.60''	1986	14320	1231/3	875	Operational
7	Mirwal	N33°28'19.19'' E72°19'36.07''	1990	3765	1050	697	Operational
8	Jabbi	N33°28'33.26'' E72°13'17.77''	1991	3079	1500	794	Operational
9	Shakar Dara	N33°41'39.05'' E72°19'21.96''	1994	5679	4200	2792	Operational
10	Thatti Syedan	N33°25'47.81'' E72°12'39.55''	2006	680	300	675	Operational
11	Sawal	N33°15'10.26'' E72°34'52.35''	2006	2400	930	132	Operational
12	Talikna	N33°34'18.66'' E72°15'59.84''	2006	2050	550	708	Operational
13	Jabba	N 33°19'47.67'' E71°54'11.20''	2006	860	400	260	Operational
14	Basal	N 33°33'56.68'' E72°17'57.41''	2004	1700	400	507	Operational
15	Haji Shah	N33°52'50.30'' E72°19'8.60''	2015	2200	1520	450	Operational
16	Sowra	N33°15'39.83'' E72°09'22.59''	2021	4224	2300 /0.64	113	Operational
17	Jalwal	N33°33'10.73'' E72°00'70''	2006	5000	2364	133	Non-Operational
Grand Total				107,922	23,405/3.64	11,879	

A site survey was also conducted with field staff of small dams of Attock district for assessment of water resources infrastructure



Figure 6: Irrigation and water resources assessment of Attock District

Major issues identified during field surveys were as follow;

- I. Shortage of water resources to fulfill district water supply and irrigation.
- II. Rehabilitation/upgradation of existing Irrigation Infrastructure.
- III. Command area development

The following projects proposed are:

- A. Construction a dam on perennial stream near Jodh village.
- B. Flood protection bunds along Indus river at Khair-abad bridge, Attock to mitigate flood damages in surrounding urban areas.
- C. Installation of telemetry system for regular monitoring of water storage at newly proposed dam site.
- D. Installation of telemetry system for regular monitoring of water level at flood protection bund on Indus River.

Irrigation Small Dams office, Chakwal District

The water resources conducted a detailed water resources assessment Chakwal district. This district is most productive source of small to medium dams due to its topography and rainfall. The figure 7 shows surface water resources in Chakwal district.

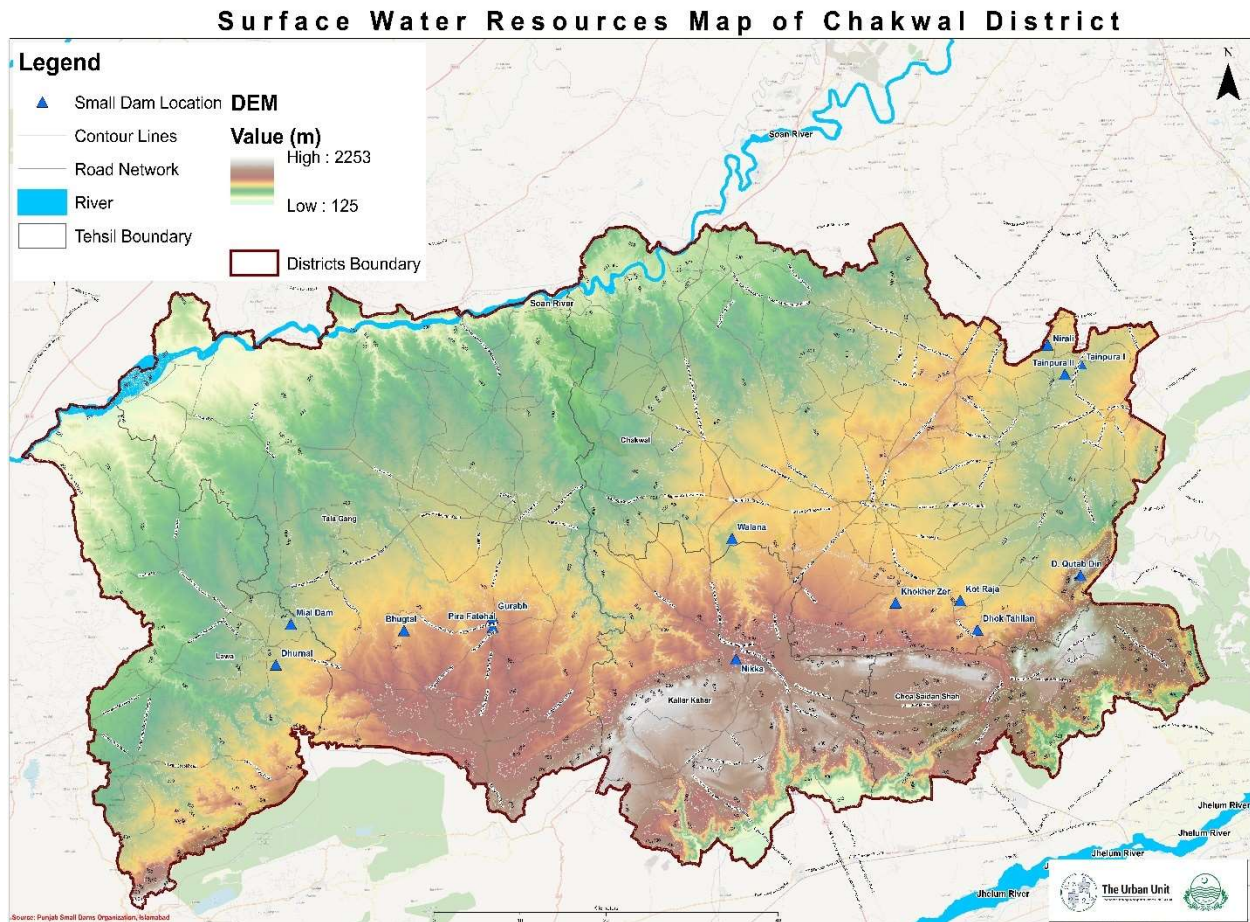


Figure 7: Surface water resources map of Chakwal District

A detailed meeting conducted with executive engineer small dam's department Chakwal district. The executive engineer and his field team explained about importance of Chakwal regarding water availability potential in area. The small dam department of Chakwal district are mainly developing water resource storages for agriculture and water supply is their second in priority. Currently, they are in process of enhancing water storage capacity of Khokhar Zai and Kot Raja dams. This increase in storage capacity of these dams will be utilized to fulfill future agricultural water demand.

The detailed descriptions of existing dams are shown in table 5.

Table 5: Salient features of Dams in Small Dams Irrigation Zone Chakwal District

Sr. No.	Name of Dam	Location	Year of Completion	Gross Storage Capacity (A-ft)	C.C.A. (Acres)/ Drinking (MGD)	Maximum Irrigated Area (Acres)	Status
1	Khokhar Zer	N32°48'24" E72°51'34"	1979	3601	2,680 / 1.29	2276	Operational
2	Surla	N32°47'20" E72°50'30"	1985	2119		0	Operational
3	Walana	N32°52'31" E72°37'32"	1984	2193	830	714	Operational
4	Nikka	N32°47'43" E72°41'17"	1990	1248	777	790	Operational
5	Dhok Qutab Din	N32°48'02" E72°57'32"	1991	1976	706	873	Operational
6	Kot Raja	N32°48'27" E72°59'48"	1991	3550	835 / 0.64	723	Operational
7	Arrar Mughlan	N32°56'31" E73°03'44"	2019	5300	1800	96	Operational
8	Ghazial	N32°58'41" E73°09'25"	2007	2000	900 / 1.29	338	Operational
9	Dhok Tahlian	N32°47'27" E72°58'39"	2002	1808	850	897	Operational
10	Mundee	N33°02'24" E73°07'22"	2012	450	400	160	Operational
11	Dhok Jhang	N32°47'47" E72°55'10"	2012	2650	1070	1238	Non-Operational
12	Minwal	N33°02'21" E72°52'03"	2007	2000	750	205	Non-Operational
13	Khai	N32°48'45" E72°45'52"	2007	5921	1800 / 1.29	713	Non-Operational
14	Gurabh	N32°51'22" E72°21'42"	1966	922	1346	1390	Operational
15	Dhurnal	N32°48'14" E72°05'54"	1971	1950	700	708	Operational
16	Dhok Hum	N33°49'58" E72°16'47"	1990	8000	1230	1400	Operational
17	Bhugtal	N32°48'54" E72°14'03"	1990	1140	680	715	Operational
18	Mial	N32°52'00" E72°06'54"	2004	3200	935	962	Operational
19	Pira Fatehal	N32°51'58" E72°19'33"	1994	7400	750	905	Operational
Grand Total				57,425	19,039/4.51	15,103	

A site survey was also conducted with executive engineer field staff of small dams of Chakwal district for assessment of water resources infrastructure and identification potential addition surface water storages.



Figure 8: Irrigation and water resources assessment of Chakwal District

Major issues identified during field surveys were as follow;

- I. Shortage of water resources to fulfill district water supply and irrigation.
- II. Rehabilitation/upgradation of existing Irrigation Infrastructure.
- III. Command area development to enhance agricultural productivity.
- IV. Electro-mechanical monitoring system to regulate water outflow for agriculture/water-supply.

The following projects proposed are:

- A. Construction a dam on perennial stream for agriculture and water supply.
- B. Installation of telemetry system for regular monitoring of water storage at newly proposed dam site.
- C. Watershed development through eco-system restoration.

Irrigation Small Dams office, Jhelum District

A brainstorming session conducted between executive engineer of small dam's department Jehlum district and water resources expert of urban unit. The water expert explain purpose of this visit and shared surface water resources map of Jhelum developed by Urban unit with intention to highlighted potential water resources options in Jhelum district.

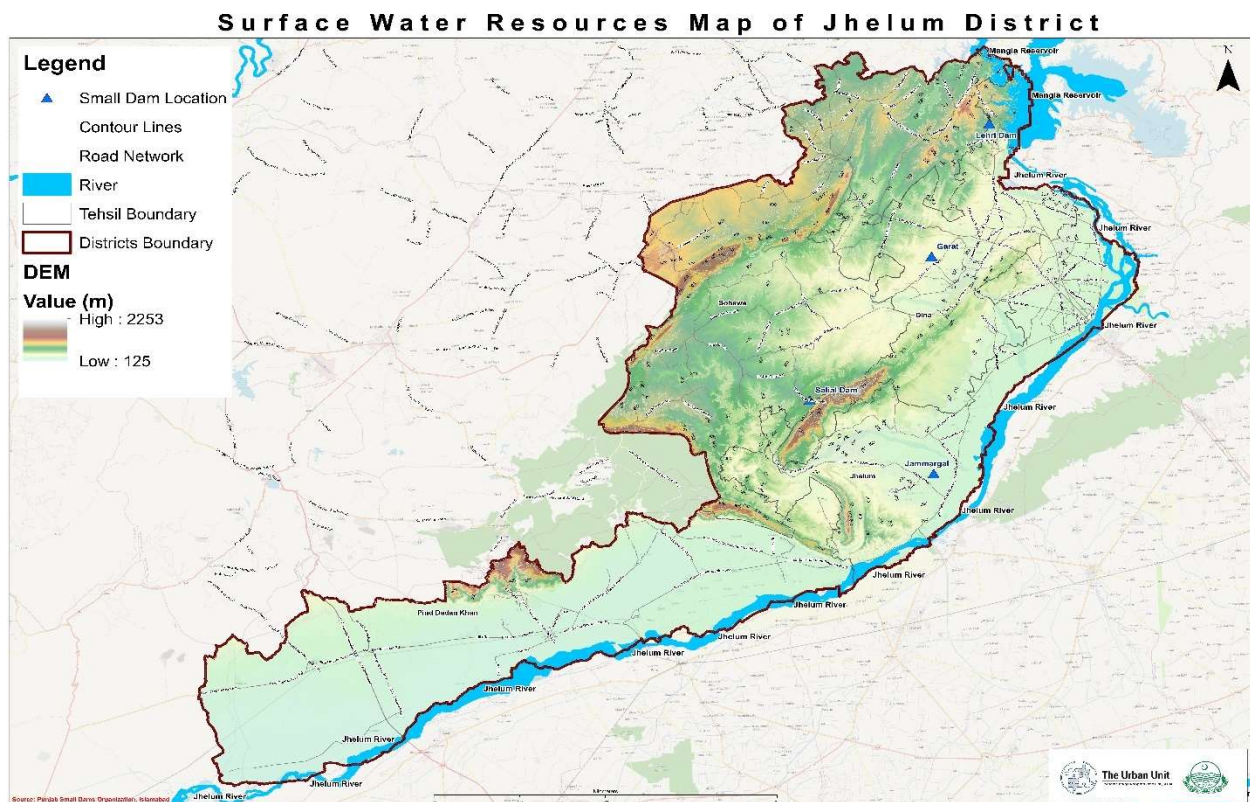


Figure 9: Surface water resources map of Jhelum District

The executive engineer field team explained about current water resources available options in Jhelum district and highlighted major issues faced by them to fulfill water demand for agriculture and water-supply. They shared a detailed description of existing dams in Jhelum which are shown in table 6.

Table 6: Salient features of Dams in Small Dams Irrigation Zone Jhelum District

Sr. No.	Name of Dam	Location	Year of Completion	Gross Storage Capacity (A-ft)	C.C.A. (Acres)/ Drinking (MGD)	Maximum Irrigated Area (Acres)	Status
1	Garat	N33°1'7.75" E73°30'57.72"	1982	2227	638	570	Operational
2	Jammargal	N32°44'40.71" E73°31'48.98"	1992	3152	925	985	Operational
3	Tain Pura I	N33° 3'25.41" E73°30'57.72"	1994	7300	3410	2412	Operational
4	Tain Pura II	N33° 4'7.50" E 73°31'59.25"	1994	1747		0	
5	Lehri	N33° 6'32.59" E73°24'27.69"	2006	5705	2220	1025	Operational
6	Salial	N32°52'41.56" E73°30'57.72"	2006	527	372	217	Operational
7	Pindori	N33°06'09.42" E73°36'16.09"	2022	3795	1500	73	Operational
8	Domeli	N33° 1'22.69" E73°19'37.97"	2007	8690	3000	1418	Operational
9	Gurrah Utam	N32°58'11.52" E73°14'20.42"	2008	2679	1500	368	Operational
10	Fateh Pur	N32°03' 59" E73°30'06"	2007	1733	315	0	Non-Operational
11	Shah Habib	N32°34'40" E73°47'15"	2007	929	450	12	Non-Operational
Grand Total				38,484	14,330	7,080	

After a detailed discussion regarding site issues and water resources storages options, the urban unit team and field staff conducted water resources assessment field visit. The team visited remote areas of Jhelum, Deena, Pind Dadun Khan, Rasul barrage, and Sohawa. This field visit investigates existing hydraulic infrastructures, potential option of water storages, command area development, irrigation network (main, link and distributary canals), and water monitoring mechanization.



TAINPURA DAM
COMPLETION YEAR 1995

1. RESERVOIR
 LIVE STORAGE 5737 AFT
 DEAD STORAGE 1552 AFT
 NORMAL RESERVOIR LEVEL 1000 FT
 DEAD STORAGE LEVEL 959 FT

2. DAM
 MAXIMUM HIGHT 92.50 FT
 LENGHT AT TOP 940 FT
 TOP WIDTH 25 FT
 TOP LEVEL OF DAM 1012 FT

3. SPILLWAY
 SPILL LEVEL 1000 FT
 CAPACITY 4671 CUSEC

4. IRRIGATION CHANNEL
 C.C-A 3410 ACRE
 CHANNEL CAPACITY 34 CUSEC
 LENGHT OF MAIN CHANNEL 3059 FT
 LENGHT OF ANOS MINOR 40500 FT

5. BENEFICIRES VILLAGES
 TAINPURA BALA, TAINPURA ZAIRIN, NUKKI JAGESSI
 PINDGATA, KURLA, HADALA, PIR BAGHAR, THEKRRIAN
 CHANNI GULJARAN, MADUKALAS, CHAK ABOL KHALIQ
 NAKHAR, JALLOCHAN, SID TAJPUR, BURA PINDI
 SHAMALA, JOJAN.

Figure 10: Irrigation and water resources assessment of Chakwal District

Major issues identified during field surveys were as follow;

- I. Shortage of water resources to fulfill district water supply and irrigation.
- II. Rehabilitation/upgradation of existing Irrigation Infrastructure.
- III. Command area development to enhance agricultural productivity.
- IV. Electro-mechanical monitoring system to regulate water outflow for agriculture/water-supply.

The following projects proposed are:

- A. Rehabilitation and upgradation of Jammargal Dam.
- B. Rehabilitation and upgradation of Teinpura Dam.
- C. Installation of telemetry system for regular monitoring of water storage at newly proposed dam site.
- D. Command area development of Jammargal Dam.

Water Resources Assessments Finding:

The detailed conditional and site assessment survey was conducted by water resources and irrigation team in Rawalpindi region. After completing the water resources assessments, following was established as overall condition and respective rating of water resources system of Rawalpindi region (Attock, Chakwal, Jehlum, and Rawalpindi).

Table 7: Water Resources Conditional Assessments in Rawalpindi Region

Asset Attribute	Rating
Civil Structures	C (Fair)
Flood Protection works	C – D (Fair to Poor)
Water Storage Potential	C (Fair)
Distribution Network	C – D (Fair to Poor)
Electro-Mechanical	D (Poor)

The condition assessment indicates that almost all the civil infrastructure in the all four districts including hydraulic structures (outlets, weirs, spillway etc.) & water storages potential developments are in fair to good conditions.

The irrigation distribution systems (cross regulator, main canal, & distributaries), drainage networks (stormwater and sewerage drainage network), and flood

protections measures during flood seasons are fair to poor condition. Most of these systems are problematic due to sectional deuteriations due to hydro-climatological and human induced impacts. There is not provision of telemetry system existed for regular flow monitoring to reduce any disaster impact. So, it is highly recommended to install solar powered telemetry in all projects proposed in this report.

Water Resources Assessments Interventions:

Afore-described gaps relating to the Water resources sources and supply facilities are filled in the planning exercise in detail. Prioritization of these gaps is also done and hence schemes are proposed based on various factors such as essence of intervention, duration required to execute them, cost required, and their impact on general public. Total cost required to uplift the current water resources sources and supply situation to enhance agriculture productivity & water supply demand is 9,750 Million, approximately.

Short Term Plans:

A fair coverage of water supply infrastructure currently exists in the Attock and Rawalpindi districts. The short-term plans required regular R&D of existing facilities along with intensive monitoring of inflows and outflows. Repairs and maintenance works are proposed as per individual needs of the infrastructure to ensure longevity and optimal performance.

Rawal Lake contributing most dominant proportion as water supply of Rawalpindi district and its water storage capacity continuously depleting due to sedimentation. Therefore, it is recommended de-silting with different alternatives such as excavation and flushing. Additionally, regular water and sediment inflow metering system through renewable source of energy (solar, preferably) is also part of this plan. Indus river is one most regular, and destructive during high flows/ flood seasons stream of Pakistan. So, it is recommended installation of solar powered telemetry system and construction of flood protection bund at Khair Abad Bridge, Attock district. Total cost required for short-erm Plan for water resources sources and supply is 711.43 Million.

Medium Term Plans:

The medium-term plan focusses on Chakwal and Jhelum districts to develop sources of water supply to unserved/ partially-served areas, and irrigation distribution efficiency to enhance agricultural productivity of the both districts. Four new potential water storage dams with total storage capacity of 68641 acre-feet are proposed to cater for the water demands of unserved areas and agricultural demands. Moreover, rehabilitation and upgradation of existing irrigation distribution system of Teinpura dam (Jhelum) to improve irrigation

efficiency and fulfill rural water supply demand. Total cost required for medium-term Plan for water resources sources and supply is 4,746.00 Million.

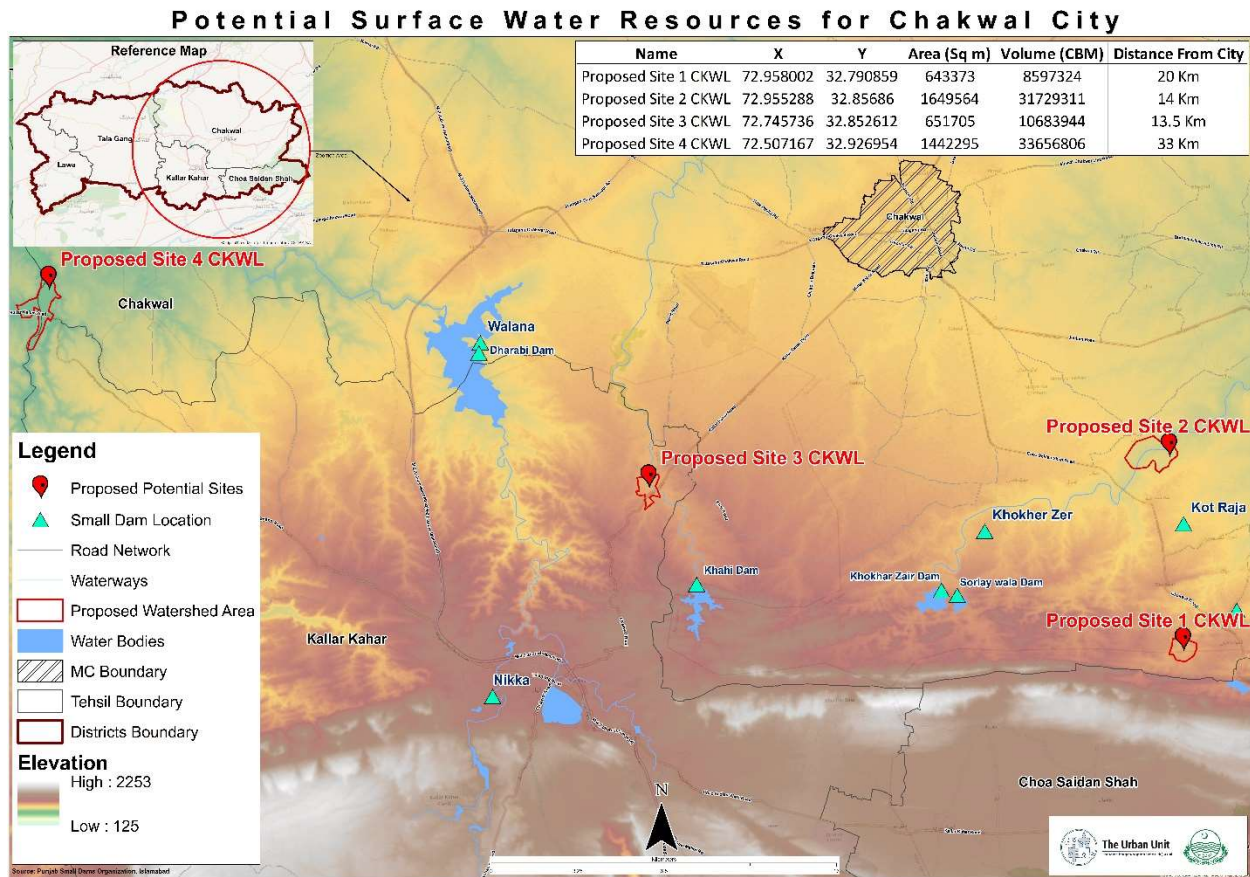


Figure 11: Irrigation and water resources potentials of Chakwal District

Long Term Plans:

The medium-term plan focusses on development of water resources sources fulfill water supply requirement to unserved/ partially-served areas, and irrigation water requirement to enhance agricultural productivity in Rawalpindi region upto 2043.

The Jammargal dam is multi-purpose dam which is equally beneficial for water supply as well as agricultural uses. There is, still, great potential to store more water to make this dam more productive. Therefore, rehabilitation and upgradation of Jammargal dam (Jehlum) is recommended through raising of existing dam and spillway upto 10 feet, access road, installation of solar powered SCADA & telemetry system at rest house on dam site, increase culturable command area (3000 acres as compare to existing upto 925 acres only), development of irrigation distribution system, and hydraulic infrastructures.

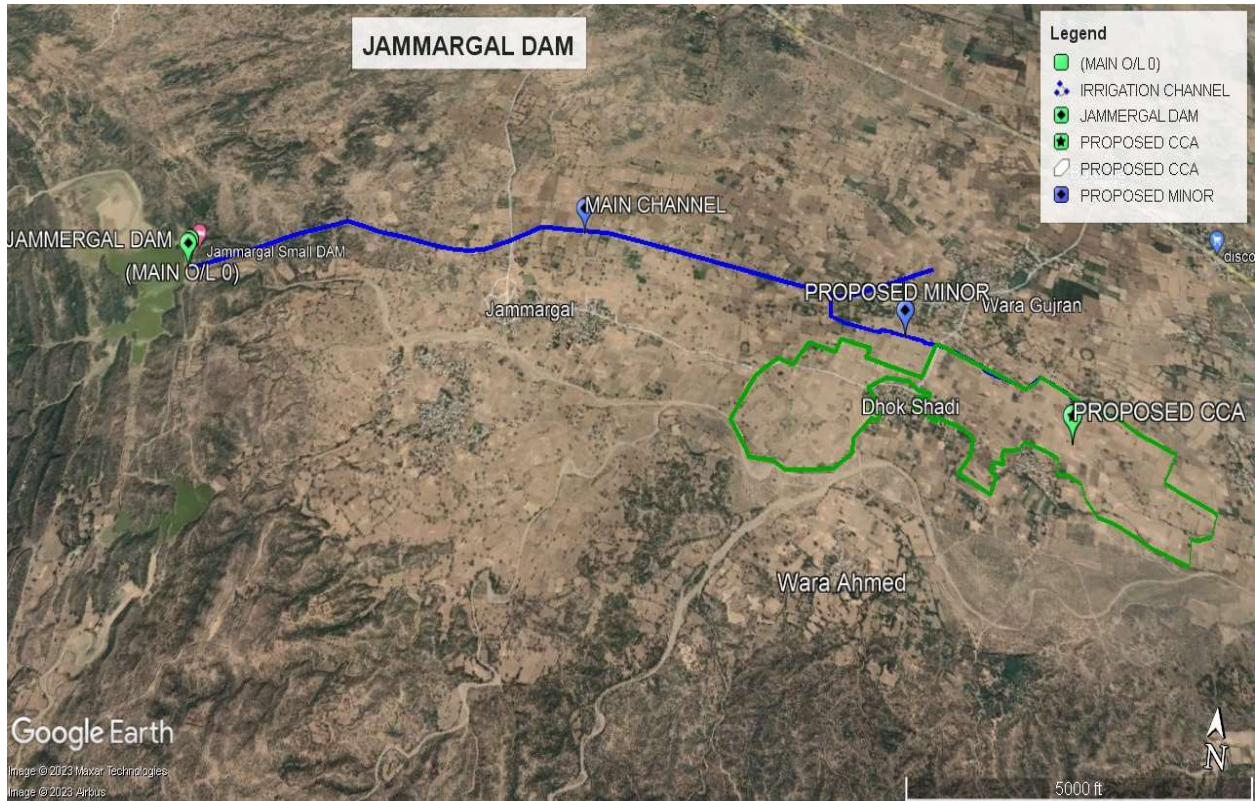


Figure 12: Layout Plan of Jammargal Dam of Jhelum District

The water resources team identified a very much productive water resource storage potential in Bahadur Khas, Johd village of Attock district. The proposed site is situated on run-off river with perennial channel as shown in figure 13. Its watershed consists of vast hilly terrain starting from Margalla range. It was proposed to conduct hydro-climatological feasibility study including irrigation network, command area development, and solar powered SCADA system. Total cost required for Long-term Plan for water resources sources and supply is 4,301.00 Million.



Figure 13: Existing condition of Potential Bahadur Khas Dam Johd Attock District

Potential Surface Water Resources for Attock District

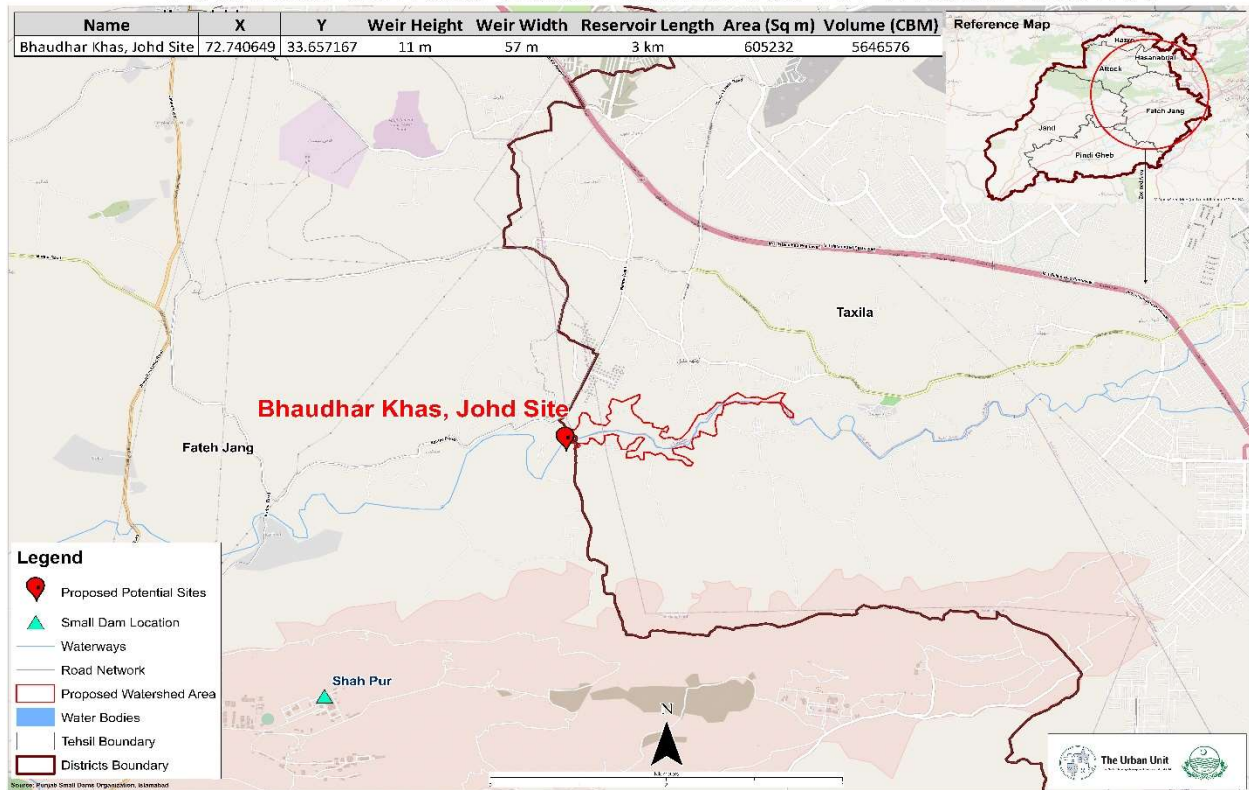


Figure 14: Layout Plan of Potential Bahadur Khas Dam Johd Attock District

The proposed short, medium, and long-term schemes with their summary cost is given in table 8.

Table 8: Proposed Water Resources Schemes in Rawalpindi Region

Proposed Schemes	Scope	Cost (Million)
<u>1. Rehabilitation and Construction of River protection works at Khair-Abad Bridge Attock</u>		
<ul style="list-style-type: none"> <input type="checkbox"/> Construction of flood protection works (height: 20 meter, and length: 4500 meter) at left side of Indus River upto Khair-abad Bridge, in Attock. <input type="checkbox"/> Construction of eco-system park for re-recreational activity and revenue source. <input type="checkbox"/> Installation of Solar-powered SCADA system at bridge for efficient flow measurement for protection of settlement from floods in future. 	<ul style="list-style-type: none"> <input type="checkbox"/> Effective water level monitoring <input type="checkbox"/> Mitigation of flood impacts on settlement, environment, and historical place. <input type="checkbox"/> Re-recreational park to attract public and generate revenue for Irrigation Department 	<ul style="list-style-type: none"> <input type="checkbox"/> 419.00 <input type="checkbox"/> 50.00 <input type="checkbox"/> 52.00

<p><u>2. Restoration of Rawal Lake Reservoir</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> De-silting of sediment through flushing and/or mechanical removal with machinery. <input type="checkbox"/> Development of spoil bank area in Lake vicinity. <input type="checkbox"/> Eco-system restoration through revival of Rawal lake reservoir. 	<ul style="list-style-type: none"> <input type="checkbox"/> Removal sediment deposition along as well as bed of Rawal Lake. <input type="checkbox"/> Land acquisition for disposal of soil removed from lake. <input type="checkbox"/> Development of re-creational park in spoil bank area to protect environment. 	<ul style="list-style-type: none"> <input type="checkbox"/> 80.00 <input type="checkbox"/> 75.00 <input type="checkbox"/> 35.00
<p>Short Term – Rawalpindi Regional Plan: PKR. 711.43 Million</p>		
<p>Medium Term Schemes</p>		
<p><u>1. Restoration / upgradation of irrigation network of Teinpura Dam, Jhelum</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Upgradation of irrigation network and structures (syphon, aqueduct, outlet etc.) from RD 0+000 to RD 19+000. <input type="checkbox"/> Installation of solar powered SCADA system. 	<ul style="list-style-type: none"> <input type="checkbox"/> Replace pipes/masonry works sections with HDPE pipes <input type="checkbox"/> Surface water level monitoring <input type="checkbox"/> Develop alternative livelihood revenue options 	<ul style="list-style-type: none"> <input type="checkbox"/> 932.00 <input type="checkbox"/> 56.00
<p><u>2. Planning of water supply and sanitation options in Chakwal</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Hydrological and Hydraulic assessment of four potential sites identified in Chakwal district. <input type="checkbox"/> Conduct feasibility studies for development water supply conveyance and distribution to fulfill future water demand of Chakwal city. 	<ul style="list-style-type: none"> <input type="checkbox"/> Construction of head/cross regulator to regulate flow. <input type="checkbox"/> Conservation of head regulator from back flood water during flood season. 	<ul style="list-style-type: none"> <input type="checkbox"/> 3758.00
<p>Medium Term – Rawalpindi Regional Plan: PKR 4,746.00 Million</p>		

Long-term Schemes		
<p>1. <u>Rehabilitation/ upgradation of Jammargal Dam to enhance agricultural productivity of command area, Jammargal Jhelum.</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Upgradation/ enhancement of weir and spillway. <input type="checkbox"/> Construction access road of 5 km upto dam location. <input type="checkbox"/> Installation of solar power SCADA system. <input type="checkbox"/> Rehabilitation/ upgradation of existing and new irrigation network of additional command area. 	<ul style="list-style-type: none"> <input type="checkbox"/> Increase water pond level to meet agricultural irrigation demand. <input type="checkbox"/> Improve surface water monitoring system. <input type="checkbox"/> Develop irrigation network of additional command area. <input type="checkbox"/> Rehabilitation of access road and rest house 	<ul style="list-style-type: none"> <input type="checkbox"/> 105.00 <input type="checkbox"/> 72.00 <input type="checkbox"/> 52.00 <input type="checkbox"/> 54.00
<p>2. <u>Construction of Bahadur Khas Dam and irrigation network system, Johd village, Fatehjang Attock.</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Hydrological, hydraulic, and geological investigation studies of potential site for irrigation and water supply of area. <input type="checkbox"/> Construction of dam, spillway, access road and rest-house. <input type="checkbox"/> Construction of irrigation network for command area development. <input type="checkbox"/> Installation of solar power SCADA system. 	<ul style="list-style-type: none"> <input type="checkbox"/> Develop water storage to enhance water storage to fulfill future water supply and agricultural water demand. <input type="checkbox"/> Command area development of barren land due to non-availability of irrigated water 	<ul style="list-style-type: none"> <input type="checkbox"/> 3726.00 <input type="checkbox"/> 105.00 <input type="checkbox"/> 8.00 <input type="checkbox"/> 72.00 <input type="checkbox"/> 54.00 <input type="checkbox"/> 52.00
<p>Long Term – Rawalpindi Regional Plan: PKR 4,301.00 Million</p>		

For Rough Cost Estimation MRS, 2nd BI-ANNUAL-2023 District Attock, Chakwal, Jhelum, and Rawalpindi have been Applied. The 2% Contingencies and 5% PST are also added in estimates. This is further subject to Detail Design of the proposed schemes upon PC-1 formation. The detailed cost estimates are attached as annexure-I with this report.

Annexure-I: Bill of Quantities

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD)								
RAWALPINDI REGIONAL DEVELOPMENT PLAN								
SUMMARY OF ROUGH COST ESTIMATE								
SR #	DESCRIPTION OF ITEM	COST	Add 2% Contingencies	Add 2% Consultancy	Add 5% PST	COST	MILLIONS	REMARKS
	Short Term Plan							
1	Rehabilitation and Construction of River protection works at Khair-Abad Bridge Attock							
a	Construction of flood protection works (height: 20 meter, and length: 4500 meter) at left side of Indus River upto Khair-abad Bridge, in Attock	384,686,810.94	7,693,736.22	7,693,736.22	19,234,340.55	419,308,623.92	419	
b	Construction of eco-system park for re-recreational activity and revenue source	46,000,000.00	920,000.00	920,000.00	2,300,000.00	50,140,000.00	50	
c	Installation of Solar-powered SCADA system at bridge for efficient flow measurement for protection of settlement from floods in future	48,000,000.00	960,000.00	960,000.00	2,400,000.00	52,320,000.00	52	
2	Restoration of Rawal Lake Reservoir							
a	De-silting of sediment through flushing and/or mechanical removal with machinery.	73,000,000.00	1,460,000.00	1,460,000.00	3,650,000.00	79,570,000.00	80	
b	Development of spoil bank area in Lake vicinity.	69,000,000.00	1,380,000.00	1,380,000.00	3,450,000.00	75,210,000.00	75	
c	Eco-system restoration through revival of Rawal lake reservoir.	32,000,000.00	640,000.00	640,000.00	1,600,000.00	34,880,000.00	35	
Total Amount R.s of Short Term Plan		652,686,810.94	13,053,736.22	13,053,736.22	32,634,340.55	711,428,623.92	711.43	

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD)							
RAWALPINDI REGIONAL DEVELOPMENT PLAN							
MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT ATTOCK							
S. No.	Item Code	Description	Unit	Quantity	Unit Rate (Rs)	Total Amount (Rs)	Remarks
SCHEDULE ITEMS							
Construction of flood protection works (height: 20 meter, and length: 4500 meter) at left side of Indus River upto Khair-abad Bridge, in Attock							
Flood Protection Bund (Abstract of Cost Sub Head)							
1	Ch:-3/10-i	Earthwork excavation in irrigation channels, drains, etc. to designed section, grades and profiles, excavated material disposed off and dressed within 50 ft. (15 m) lead:- i) ordinary:-	1000 Cft.	25,187,552	10,412.15	262,256,569.42	
2	Ch:-16/15-a	Supplying and dumping of stone at site without boat, i/c handling of material within three chain a) stone or boulder	100Cft.	590,551	4,161.30	24,574,607.09	
3	N.s	Providing and laying graded bajri 1/8" to 1/2" size on slope	Cft	489,275	91.00	44,523,979.50	
4	N.s	Providing and laying graded bajri 1/8" to 1/2" size on Level	Cft	14,764	85.00	1,254,921.30	
5	N.s	Providing and laying graded bajri 1/2" to 2" size on slope	Cft	489,275	74.00	36,206,313.00	
6	N.s	Providing and laying graded bajri 1/2" to 2" size on level	Cft	14,764	69.00	1,018,700.82	
7	Ch:-16/29-a	Providing and Laying stone pitching for top layer only on slope	100Cft.	1,467,824	10,342.80	151,814,048.96	
8	Ch:-16/29-b	Providing and Laying stone pitching for top layer only on Level	100Cft.	44,291	9,531.00	4,221,407.62	
9	Ch:-16/27	Providing and laying stone pitching/filling, dry hand packed, as filling behind retaining walls or in pitching and aprons.	100Cft.	1,541,956	6,327.60	97,568,807.86	
10	Ch:-1/1	Carriage of 100 cft of all material like stone aggergate spawl, kankar, lime (unsoaked) surkhi etc or 150 cft of timber truck or by any other means owned by the contractor from Sakhi Sarwer quarry Average Lead 191KM Including 11 km hilly	100Cft.	368,367	6,380.60	23,504,024.80	
(Total Sum of Sub Hea) Amount R.s						384,686,810.94	

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD)								
RAWALPINDI REGIONAL DEVELOPMENT PLAN								
SUMMARY OF ROUGH COST ESTIMATE IRRIGATION SECTOR								
SR #	DESCRIPTION OF ITEM	Cost	Add 2% Contingencies	Add 2% Consultancy	Add 5% PST	Total Cost	Millions	Remarks
	Medium Term Intervention							
1	Restoration / upgradation of irrigation Network of Teinpura Dam, Jhelum							
a	Upgradation of irrigation network and structures (syphon, aqueduct, outlet etc.) from RD 0+000 to RD 19+000	855,170,223	17,103,404.46	17,103,404.46	42,758,511.15	932,135,543.07	932	
b	Installation of solar power SCADA system.	51,086,788	1,021,735.77	1,021,735.77	2,554,339.42	55,684,599.29	56	
2	Planning of water supply and sanitation options in Chakwal							
a	Hydrological and Hydraulic assessment of potential sites identified in Chakwal district. Conduct feasibility studies for development water supply conveyance and distribution to fulfill future water demand of Chakwal city.	3,448,012,673	68,960,253.45	68,960,253.45	172,400,633.63	3,758,333,813.03	3,758	
	Total Amount of Medium Term Plan	4,354,269,684	87,085,393.68	87,085,393.68	217,713,484.19	4,746,153,955.39	4,746	

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD							
RAWALPINDI REGIONAL DEVELOPMENT PLAN							
MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT JEHLUM							
S. No.	Item Code	Description	Quantity		Rate	Unit	Total Amount (Rs)
SCHEDULE ITEMS							
Medium Term Intervention							
Upgradation of irrigation network and structures (syphon, aqueduct, outlet etc.)							
OUTLET STRUCTURE							
1		Dismantling	1	Ls	300,000.00	1	300,000
1	C-3/10ii	Excavation in irrigation channel, drains etc. to designed section, grades and profiles, excavated material disposed off and dressed within 50' lead, Hard soil.	221429	Cft	12490.35	1000	2,765,729
2	C-6/5f	Cement concrete plain Including placing, compacting, finishing and curing complete Including screening and washing of stone aggregate (1:2:4)	14430	Cft	42411.60	100	6,120,047
3	C-6/6aii3	Reinforced cement concrete in slab of raft / strip foundation, base slab of column and retaining walls etc and other structural members other than those mentioned in 6(a) (i) above not requiring form work)i.e horizontal shuttering) complete in all respects: Type C (1:2:4) (nominal Mix 1:2:4)	2240	Cft	518.25	1	1,160,880
4	C-6/6ai3	Reinforced cement concrete in roof slab, beams, columns, lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ complete in all respects: Type C (nominal Mix 1:2:4).	13034		654.20	1	8,526,843
5	C-6/12b	Fabrication of mild steel reinforcement for cement concrete Including cutting, bending laying in position, making joints and fastening Including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars) (Deformed bars, G-40) (9b/C)(Hollow Column outlet structure)	55538	Kg	34680.10	100	19,260,634
6	C-18/14	Providing and fixing G.I. Pipe railing as per standard drawings (3 rows of pipe)	4812	Rft	2385.95	1	11,481,191
7	C-23/43-c	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE 100) working presure pipe, Beta/Dadex/Popular/ IIL or equivalent including the cost of specials, intrenches, as approved & directed by the engineer incharge, complete in all respects." 800 mm	4750	Rft	31902.40	1	151,536,400
8	C-10/3	Supplying sand under floors or plugging wells	14430	Cft	2941.20	100	424,419
		Outlet Chamber Iron Work					

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD							
RAWALPINDI REGIONAL DEVELOPMENT PLAN							
MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT JEHLUM							
S. No.	Item Code	Description	Quantity		Rate	Unit	Total Amount (Rs)
SCHEDULE ITEMS							
Medium Term Intervention							
Upgradation of irrigation network and structures (syphon, aqueduct, outlet etc.)							
OUTLET STRUCTURE							
9	N.S	Providing and fixing sluice valve of BSS quality and weight for M.S pipe line with joints , ring collar Including cost of jointing material dia best quality (42" dia)	10	No	2400000.00	1	24,000,000
10	N.S	Providing and fixing outlet machine with specified cost of all material like bracket holder etc. also Including the labour charges and carriage of all accessories	10	No	900000.00	1	9,000,000
11	C-25/38	Providing and fixing M.S. angle iron 1½"x1½"x¼" (40x40x6 mm) edge protector nozing of steps of stairs, having holdfast or 3/8" (10 mm) dia M.S. bars 8" (200 mm) long welded at 2' (600 mm) centre to centre and embedded in cement concrete on steps, complete in all respects	32	Rft	456.35	1	14,603
12	C-25/32	Making & fixing grating in opening, i/c fixing at site with flate Iron 2"x3/8" & 3/4" square bars at 4" c/c.	147	Sft	1139.85	1	167,558
13	C-21/13	Providing & fixing 1.25" x 1.25" x 3/16" angle iron steps in manhole chambers i/c carriage & setting the same in correct lines & levels.	39	No.	700.50	1	27,320
					Total	Rs.	234,785,624
SYPHON							
1	C-3/10ii	Excavation in irrigation channel, drains etc. to designed section, grades and profiles, excavated material disposed off and dressed within 50' lead, Hard soil.	1140000	Cft	12490.35	1000	14,238,999
7	C-23/43-c	Providing, laying, cutting, jointing, testing and disinfecting High Density Polyethylene Pipe (HDPE 100) working presure pipe, Beta/Dadex/Popular/ IIL or equivalent including the cost of specials, intrenches, as approved & directed by the engineer incharge, complete in all respects." 800 mm	19000	Rft	31902.40	1	606,145,600
					Total	Rs.	620,384,599
					Total	Rs.	855,170,223

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

SUMMARY OF ROUGH COST ESTIMATE SYSTEM IMPROVEMENT-TELEMETRY

Medium Term Intervention					
Restoration / upgradation of irrigation network of Teinpura Dam, Jhelum					
Sr No.	Component Description	Per Unit Cost	No of Units	Total Cost	Total Cost
1	Data Logger		3	4,912,650	14,737,950
2	Range Finder (non contact ultrasonic range finder (water level sensor)				
3	GSM/GPRS Telemetry data transmission modems/ SIM cards				
4	Rechargeable Battery 12 V				
5	Solar Panel 100 W				
6	Charging Regulator 12 V				
7	Pressure Transducer				
8	Control system + Motor				
9	Water Quality meter				
10	Allied Cables, Mountings, Surge Suppressors				
11	Master Control Room		1	33,006,712	33,006,712
			Sub Total Amount R.s		47,744,662
				Add 2% contingencies	954,893.24
				Add PST 5%	2,387,233.10
				G-Total Amount R.s	51,086,788.34

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD)								
RAWALPINDI REGIONAL DEVELOPMENT PLAN								
SUMMARY OF ROUGH COST ESTIMATE IRRIGATION SECTOR (DISTRICT CHAKWAL)								
SR #	DESCRIPTION OF ITEM	Cost	Add 2% Contingencies	Add 2% Consultancy	Add 5% PST	Total Cost	Millions	Remarks
	Medium Term Intervention							
	Hydrological and Hydraulic assessment of potential sites identified in Chakwal District							
GENERAL ABSTRACT OF COST								
1	Main Dam	1,203,036,763	24,060,735	24,060,735	60,151,838	1,311,310,072	1,311.31	
2	Outlet Structure	40,606,837	812,137	812,137	2,030,342	44,261,452	44.26	
3	Spillway	1,796,523,762	35,930,475	35,930,475	89,826,188	1,958,210,901	1,958.21	
4	Buildings	14,827,838	296,557	296,557	741,392	16,162,343	16.16	
5	Irrigation Channel	373,017,473	7,460,349	7,460,349	18,650,874	406,589,046	406.59	
6	Approach Road	20,000,000	400,000	400,000	1,000,000	21,800,000	21.80	
	Total Amount R.s	3,448,012,673	68,960,253	68,960,253	172,400,634	3,758,333,813	3,758.33	

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT CHAKWAL

SCHEDULE ITEMS					
Medium Term Intervention					
Hydrological and Hydraulic assessment of potential sites identified in Chakwal District					

ABSTRACT OF COST

(MAIN DAM)

Sr. #	Description	Ref-Item	Quantity		Rate	Unit	Amount (Rs.)
	<u>Dewatering</u>						
1	Bailing out water by pump (35b/Mis)	C-26/35b	10368000	Cft	1037.95	1000	10761466
	<u>Main Embankment</u>						
	<u>Stripping</u>						
2	Excavation in shingle or gravel formation and rock not requiring blasting undressed lead up to 100' (For stripping) (dry) extra lead 1/4 mile	C-3/9i, 17a	3775198	Cft	29610.90	1000	111787010
	Excavation in rock dressed to designed section, grades profiles excavated material disposed off within 100' and lift up to 5' Soft Rock, extra lead 1/4 mile	C-3/11a, 17a	2265119	Cft	29716.50	1000	67311409
3	Excavation in rock dressed to designed section, grades profiles excavated material disposed off within 100' and lift up to 5'. Medium hard rock, requiring occasional blasting, extra lead 1/4 mile	C-3/11b, 17a	1510079	Cft	45924.00	1000	69348868
	<u>Filling</u>						
	<u>Impervious Material</u>						
4	Earth work in ordinary soil for embankment lead upto 100' i/c ploughing and mixing with blade, grade or disc harrow or other suitable equipment & compaction by mechanical means at O.M.C & dressing to design section, complete in all respects 95% max, modified AASHO dry density.	C-3/5i	18743000	Cft	11572.80	1000	216908990
5	Transportation of earth all types when the total distance, i/c the lead covered in the item of work, is more than 1000 ft. extra lead 5.0 km a) Up to 400 m = b) For every 1200 m = 12 x 85.80 = c) For remaining 3400 m = 8.5 x 161.65 =	C-3/17a,b,c	18743000	Cft	5330.66	1000	99912560

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT CHAKWAL

SCHEDULE ITEMS					
Medium Term Intervention					
Hydrological and Hydraulic assessment of potential sites identified in Chakwal District					

ABSTRACT OF COST
(MAIN DAM)

Sr. #	Description	Ref-Item	Quantity	Rate	Unit	Amount (Rs.)
	<u>Random Fill</u>					
6	Earth work in ordinary soil for embankment lead upto 100' i/c ploughing and mixing with blade, grade or disc harrow or other suitable equipment & compaction by mechanical means at O.M.C & dressing to design section, complete in all respects 95% max, modified AASHO dry density.	C-3/5i	9942360 Cft	11572.80	1000	115060944
7	Transportation of earth all types when the total distance, i/c the lead covered in the item of work, is more than 1000 ft. extra lead 1.6 km a) Up to 400 m = b) For every 1200 m = 12 x 87.20	C-3/17a,b,c	9942360 Cft	6360.26	1000	63235995
	<u>Filter</u>					
	<u>Chenab Fine Sand</u>					
8	Supplying clean and screened river or pit sand with 5 chains	C-3/41	1512310 Cft	1248.45	100	18880434
9	Laying sand under floor or plugging in wells (labor rate)	C-10/3	1512310 Cft	541.20	100	8184622
10	Carriage of sand lead 125 km	C1/1	1512310 Cft	8525.00	100	128924428
11	Compaction of earthwork with power road roller, including ploughing, mixing, moistening earth to optimum moisture content in layers, etc. complete, 95% to 100% maximum modified AASHO dry density.	C-3/25i	1512310 Cft	1664.75	1000	2517618
	<u>Coarse Lawrencepur Sand</u>					
12	Supplying clean and screened river or pit sand with 5 chains	C-3/41	546655 Cft	1248.45	100	6824714
13	Laying sand under floor or plugging in wells (labor rate)	C-7/30	546655 Cft	541.20	100	2958497
14	Carriage of sand lead 148 km	C-1/1	546655 Cft	8525.00	100	46602339

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD					
RAWALPINDI REGIONAL DEVELOPMENT PLAN					
MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT CHAKWAL					
SCHEDULE ITEMS					
Medium Term Intervention					
Hydrological and Hydraulic assessment of potential sites identified in Chakwal District					

ABSTRACT OF COST
(MAIN DAM)

Sr. #	Description	Ref-Item	Quantity		Rate	Unit	Amount (Rs.)
15	Compaction of earthwork with power road roller, including ploughing, mixing, moistening earth to optimum moisture content in layers, etc. complete, 95% to 100% maximum modified AASHO dry density.	C-3/25i	546655	Cft	1664.75	1000	910044

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT CHAKWAL

SCHEDULE ITEMS					
Medium Term Intervention					
Hydrological and Hydraulic assessment of potential sites identified in Chakwal District					

ABSTRACT OF COST
(MAIN DAM)

Sr. #	Description	Ref-Item	Quantity		Rate	Unit	Amount (Rs.)
	<i>Protection Work</i>						
16	Providing and laying stone pitching for top layer only On slope of main dam	C-16/29a	298503	Cft	10342.80	100	30873517
17	Providing and laying stone or spawl filling On slope (spawl under pitching)	C-16/30b	198458	Cft	4077.35	100	8091807
18	Carriage of 100 Cft all materials like stone, aggregate spawl etc. (Un slaked surkhi etc.) from Sangjani quarry lead 115 Km	C-1/1	556661	Cft	8784.00	100	48897058
19	Turfing slopes of banks or lawns i/c plowing, laying, setting and watering and maintenance for 15 days	C-3/32	286195	Sft	2164.80	100	6195549
	<i>Wave Wash Wall</i>						
20	Excavation in irrigation channel, drains etc. to designed section, grades and profiles, excavated material disposed off and dressed within 50' bed, Hard soil	C-3/10ii	11400	Cft	10412.15	1000	118699
21	Cement concrete plain including placing, compacting, finishing and curing complete (1:4:8)	C-6/5-i	5700	Cft	31160.40	100	1776143
22	Conc. Plain including placing, compacting, finishing and curing complete including screening and washing of stone aggregate (1:2:4)	C-6/5f	25650	Cft	41144.40	100	10553539
23	Coarse rubble masonry hammer dressed in foundation and plinth (1:4)	C-8/2dii	51300	Cft	31256.70	100	16034687
24	Carriage of stone from Sangjani quarry to site of work lead within 115 km.	C-1/1	51300	Cft	8784.00	100	4506192
	<i>Catch Water Drain</i>						
25	Excavation in irrigation channel, drains etc. to designed section, grades and profiles, excavated material disposed off and dressed within 50' lead, Hard soil	C-3/10ii	254250	Cft	10412.15	1000	2647289
26	Cement plaster (1:6) up to 20' height 1 1/2" thick						
	In Bed	C/14/5a	67500	Sft	5449.70	100	3678548
	On Slope	C/14/5b	164372	Sft	6196.80	100	10185804

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT CHAKWAL

SCHEDULE ITEMS					
Medium Term Intervention					
Hydrological and Hydraulic assessment of potential sites identified in Chakwal District					

ABSTRACT OF COST

(MAIN DAM)

Sr. #	Description	Ref-Item	Quantity		Rate	Unit	Amount (Rs.)
27	Bitumen coating to plastered or cement concrete surface, 14 lbs. per 100 Sft. (6.35 Kg per Sq.m)	C-13/9ii	11595	Sftt	1688.40	100	195770
28	Cement concrete lining 1:2:4						
I)	In bed	C-14/10a	17719	Cft	41144.40	100	7290376
II)	On slope	C-14/10b	43148	Cft	43131.00	100	18610013

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT CHAKWAL

SCHEDULE ITEMS					
Medium Term Intervention					
Hydrological and Hydraulic assessment of potential sites identified in Chakwal District					

**ABSTRACT OF COST
(MAIN DAM)**

Sr. #	Description	Ref-Item	Quantity		Rate	Unit	Amount (Rs.)
29	Providing and filling cement, sand and bitumen joint sealant of ratio 1:2:3, in expansion joint of 1" wide and 1" deep.	N.S	23187	Rft	30.21	1	700485
30	Filling expansion joints with bitumen. sand & saw dust in ratio 1:2:2.	C-6/33	2319	Rft	137.30	1	318360
	<i>Toe Wall</i>						
30	Excavation in irrigation channel, drains etc. to designed section, grades and profiles, excavated material disposed off and dressed within 50' lead, Hard soil	C-3/10ii	27000	Cft	10412.15	1000	281128
31	Providing and weaving G.I. Wire netting for wire crates, 4" mesh & 8 SWG wire	C-16/ 13biii	66600	Sft	15001.20	100	9990799
32	Providing and filling in wire crates stone or boulders	C-16/19i	45000	Cft	7135.90	100	3211155
34	Carriage of stone from Sangjani quarry to site of work lead within 115 km.	C-1/1	49500	Cft	8784.00	100	4348080
	<i>Fencing</i>						
35	P/F barbed wire fencing, with 4 horizontal and two cross wires with R.C.C 1:2:4 posts, 5.5'x6"x9" at 8 ft. centre to centre, reinforced with 4 No. 3/8" dia verticle bars and 1/8" dia strripus 12" centre to centre complete in all respects in cement concrete 1:4:8 base of size 12"x12"x21"	C-26/42ii	4000	Rft	66006.55	100	2640262
	<i>Shingle on Top of Dam</i>						
36	P/L shingle on top of bund i/c handling of material within 3 chains	C-16/14	22800	Cft	3207.60	100	731333
37	Carriage of shingle and gravel lead 45 Km	C-1/1	22800	Cft	2932.50	100	668610
	<i>Toe Drain</i>						
	<i>Fine Chenab Sand</i>						
38	Supplying clean and screened river or pit sand with 5 chains	C-3/41	67600	Cft	1248.45	100	843952
39	Laying sand under floor or plugging in wells (labor rate)	C-7/30	67600	Cft	541.20	100	365851
40	Carriage of sand lead 125 km	C1/1	67600	Cft	8525.00	100	5762900

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD					
RAWALPINDI REGIONAL DEVELOPMENT PLAN					
MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT CHAKWAL					
SCHEDULE ITEMS					
Medium Term Intervention					
Hydrological and Hydraulic assessment of potential sites identified in Chakwal District					

ABSTRACT OF COST
(MAIN DAM)

Sr. #	Description	Ref-Item	Quantity		Rate	Unit	Amount (Rs.)
41	Compaction of earthwork with power road roller, including ploughing, mixing, moistening earth to optimum moisture content in layers, etc. complete, 95% to 100% maximum modified AASHO dry density.	C-3/25i	67600	Cft	1664.75	1000	112537

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT CHAKWAL

SCHEDULE ITEMS					
Medium Term Intervention					
Hydrological and Hydraulic assessment of potential sites identified in Chakwal District					

ABSTRACT OF COST

(MAIN DAM)

Sr. #	Description	Ref-Item	Quantity		Rate	Unit	Amount (Rs.)
	<i>Coarse Lawrencepur Sand</i>						
42	Supplying clean and screened river or pit sand with 5 chains	C-3/41	54600	Cft	1248.45	100	681654
43	Laying sand under floor or plugging in wells (labor rate)	C-7/30	54600	Cft	541.20	100	295495
44	Carriage of sand lead 148 km	C-1/1	54600	Cft	8525.00	100	4654650
45	Compaction of earthwork with power road roller, including ploughing, mixing, moistening earth to optimum moisture content in layers, etc. complete, 95% to 100% maximum modified AASHO dry density.	C-3/25i	54600	Cft	1664.75	1000	90895
46	Providing and laying stone or spawl filling (on level)	C-16/30a	41600	Cft	3591.60	100	1494106
47	Supply and dumping at site without boat i/c handling of material within 3 chains (stone or bolder)	C-16/15a	104000	Cft	4293.30	100	4465032
48	Carriage of stone from Sangjani quarry to site of work lead within 115 km.	C1/1	120000	Cft	8784.00	100	10540800
	<u>Camping Facility</u>						
49	Camping facility at site including, swiss cottage, tents, briefing tents, utensils, sets of chairs and tables, carts, large umbrellas, briefing / presentation equipments, steel almirah, computers, multimedia, printers, search lights etc	L.S	1	Job	5000000.00	1	5000000
	<u>Water Gauge</u>						
50	Providing and fixing enameled steel plate gauge 4" wide 1/8" thick (including painting and lettering)	N.S	50	Rft	1075.00	1	53750
	<u>Instruments</u>						
51	Instruments for dams safety monitoring including, stand pipe & vibrating wire piezometer, rain gauges, current meter, plumb line. Tilt meter, inclino meter, joint meter, settlement gauges etc.)	L.S	1	Job	6000000.00	1	6000000

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD					
RAWALPINDI REGIONAL DEVELOPMENT PLAN					
MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT CHAKWAL					
SCHEDULE ITEMS					
Medium Term Intervention					
Hydrological and Hydraulic assessment of potential sites identified in Chakwal District					

OUTLET STRUCTURE

Abstract of Cost

Sr #	Description	Ref-Item	Quantity		Rates	Unit	Amount
1	Excavation in irrigation channel, drains etc. to designed section, grades and profiles, excavated material disposed off and dressed within 50' lead, Hard soil.	C-3/10ii	12568	Cft	12490.35	1000	156,979
2	Cement concrete plain Including placing, compacting, finishing and curing complete Including screening and washing of stone aggregate (1:2:4)	C-6/5f	1861	Cft	41144.40	100	765,697
3	Reinforced cement concrete in slab of raft / strip foundation, base slab of column and retaining walls etc and other structural members other than those mentioned in 6(a) (i) above not requiring form work)i.e horizontal shuttering) complete in all respects: Type C (1:2:4) (nominal Mix 1:2:4)	C-6/6aii3	2240	Cft	505.60	1	1,132,544
4	Reinforced cement concrete in roof slab, beams, columns, lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ complete in all respects: Type C (nominal Mix 1:2:4).	C-6/6ai3	13034		641.55	1	8,361,963
5	Fabrication of mild steel reinforcement for cement concrete Including cutting, bending laying in position, making joints and fastening Including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars) (Deformed bars, G-40) (9b/C)(Hollow Column outlet structure)	C-6/12b	55538	Kg	34694.40	100	19,268,576
6	Providing and fixing G.I. Pipe railing as per standard drawings (3 rows of pipe)	C-18/13	310	Rft	2696.25	1	835,838
7	Providing and Laying M.S blind pipe i/d 42"	N.S	248	Rft	15739.75	1	3,903,458
8	Supplying sand under floors or plugging wells	C-10/3	2240	Cft	2941.20	100	65,883
	<u>Outlet Chamber Iron Work</u>						
9	Providing and fixing sluice valve of BSS quality and weight for M.S pipe line with joints , ring collar Including cost of jointing material dia best quality (42" dia)	N.S	2	No	2000000.00	1	4,000,000

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD					
RAWALPINDI REGIONAL DEVELOPMENT PLAN					
MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT CHAKWAL					
SCHEDULE ITEMS					
Medium Term Intervention					
Hydrological and Hydraulic assessment of potential sites identified in Chakwal District					

OUTLET STRUCTURE

Abstract of Cost

Sr #	Description	Ref-Item	Quantity		Rates	Unit	Amount
10	Providing and fixing outlet machine with specified cost of all material like bracket holder etc. also Including the labour charges and carriage of all accessories	N.S	2	No	1000000.00	1	2,000,000
11	Providing and fixing M.S. angle iron 1½"x1½"x¼" (40x40x6 mm) edge protector nozing of steps of stairs, having holdfast or 3/8" (10 mm) dia M.S. bars 8" (200 mm) long welded at 2' (600 mm) centre to centre and embedded in cement concrete on steps, complete in all respects	C-25/37	32	Rft	1122.35	1	35,915
12	Making & fixing grating in opening, i/c fixing at site with flate Iron 2"x3/8" & 3/4" square bars at 4" c/c.	C-25/32	147	Sft	358.20	1	52,655
13	Providing & fixing 1.25" x 1.25" x 3/16" angle iron steps in manhole chambers i/c carriage & setting the same in correct lines & levels.	C-21/13	39	No.	700.75	1	27,329
					Total	Rs.	40,606,837

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD)								
RAWALPINDI REGIONAL DEVELOPMENT PLAN								
SUMMARY OF ROUGH COST ESTIMATE								
SR #	DESCRIPTION OF ITEM	COST	Add 2% Contingencies	Add 2% Consultancy	Add 5% PST	Total Cost	Millions	Remarks
	Long Term Intervention							
	Rehabilitation/ upgradation of Jammargal Dam to enhance agricultural productivity of command area, Jammargal Jhelum.							
a	Upgradation/ enhancement of weir and spillway.	96,759,404	1,935,188.08	1,935,188.08	4,837,970.20	105,467,750.36	105	
b	Construction access road of 5 km upto dam location.	65,954,272	1,319,085.44	1,319,085.44	3,297,713.60	71,890,156.48	72	
c	Installation of solar power SCADA system.	47,744,662	954,893.24	954,893.24	2,387,233.10	52,041,681.58	52	
d	Rehabilitation/ upgradation of existing and new irrigation network of additional command area.	49,965,000	999,300.00	999,300.00	2,498,250.00	54,461,850.00	54	
2	Construction of Bahadur Khas Dam and irrigation network system, Johd village, Fatehjang Attock.							
a	Hydrological, hydraulic, and geological investigation studies of potential site for irrigation and water supply of area.	3,418,012,673	68,360,253.45	68,360,253.45	170,900,633.63	3,725,633,813.03	3,726	
b	Construction of spillway	96,759,404	1,935,188.08	1,935,188.08	4,837,970.20	105,467,750.36	105	
c	Coonstruction of rest-house	6,908,800	138,176.00	138,176.00	345,440.00	7,530,592.00	8	
d	Construction access road of 5 km upto dam location.	65,954,272	1,319,085.44	1,319,085.44	3,297,713.60	71,890,156.48	72	
e	Installation of solar power SCADA system.	47,744,662	954,893.24	954,893.24	2,387,233.10	52,041,681.58	52	
f	Construction of irrigation network for command area development	49,965,000	999,300.00	999,300.00	2,498,250.00	54,461,850.00	54	
	Total Amount R.s of Long Term Plan	3,945,768,149	78,915,363	78,915,363	197,288,407	4,300,887,282	4,301	

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD)						
RAWALPINDI REGIONAL DEVELOPMENT PLAN						
MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT JEHLUM						
S. No.	Item Code	Description	Quantity	Rate	Unit	Total Amount (Rs)
SCHEDULE ITEMS						
Long Term Intervention						
Upgradation/ enhancement of weir and spillway.						

1	C-26/35b	Bailing out water by pump (35b/Mis)	720000	Cft	1037.95	1000	747324
2	C-3/11b, 17a	Excavation in rock dressed to designed section, grades and profiles, excavated material disposed off within 100' and lift up to 5' (extra lead 1/4 mile) MEDIUM HARD ROCK	106389	Cft	45924.00	1000	4,885,793
3	C-4/19-c	Dismantling cement concrete 1:2:4 plain.	11500	Cft	14287.70	100	1,643,086
4	C-6/21-a	Nicking concrete surface:Cement concrete surface.	11520	Sft	844.80	100	97,321
5	C-6/18	Drilling/ Making holes of 1.5" dia in cement concrete upto 5' deep	2880	No	933.90	1	2,689,632
6	C-4/20	Dismantling cement concrete reinforced separating reinforcement from concrete, cleaning and straightening the same..	613	Cft	23379.85	100	143,396
7	C-6/5f	Cement concrete plain Including placing, compacting, finishing and curing complete Including screening and washing of stone aggregate (1:2:4)	36425	Cft	42411.60	100	15,448,227
8		Apoxy Treatment (N.S.)					
a	N.S	Chemdur=32	535	Kg	2839.00	1	1,519,802
b	N.S	Chemdur = 42	5097	Kg	918.50	1	4,681,898
9	N.S	Special Skilled Labour required for Chemdur-32	1	Job	66800.00	1	66,800
10	N.S	Special Skilled Labour required for Chemdur-42	1	Job	83500.00	1	83,500
11	C-6/6ai3	Reinforced cement concrete in roof slab, beams, columns, lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ complete in all respects: Type C (nominal Mix 1:2:4).	6952	Cft	654.20	1	4,547,998
12	C-6/ 6aii3	Reinforced cement concrete in slab of raft / strip foundation, base slab of column and retaining walls etc and other structural members other than those mentioned in 6(a) (i) above not requiring form work)i.e horizontal shuttering) complete in all respects: Type C (1:2:4) (nominal Mix 1:2:4)	24118	Cft	518.25	1	12,499,154
13	C-6/12b	Fabrication of mild steel reinforcement for cement concrete Including cutting, bending laying in position, making joints and fastening Including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars) (Deformed bars, Grade-40)	112984	Kg	34680.10	100	39,182,964
14	C-6/31Aii	Providing and mbedding 10" (250mm) wide PVC water stopperinexpansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect. ii) 10" wide 10 mm thick	768.33	Rft	916.80	1	704,405
15	C-6/33	Filling expansion joints with bitumen	768.33	Rft	137.30	1	105,492

16	N.S	Providing, laying, cutting, jointing, testing and disinfecting G.I. pipeline in trenches, with socket joints, using G.I pipes of B.S.S. 1387-1967 complete in all respects ii) Medium Quality 2" i/d (50 mm) 3.65mm thick	1536.17	Rft	916.50	1	1,407,900
17	C-16/ 13biii	Providing and weaving G.I. Wire netting for wire crates, 4" mesh & 8 SWG wire	21666.67	Sft	15001.20	100	3,250,261
18	C-16/19i	Providing and filling in wire crates stone or boulders	21666.67	Cft	7135.90	100	1,546,112
19	C-1/1	Carriage of 100 Cft all materials like stone, aggregate spawl etc. (Un slaked surkhi etc.) lead 51 km	23833	Cft	3234.34	100	770,852
20	N.S	Providing and fixing enameled steel plate gauge 4" wide 1/8" thick (including painting and lettering)	5	Rft	1000.00	1	5,000
21	C-18/14	Providing and fixing G.I. Pipe railing as per standard drawings (3 rows of pipe)	307	Rft	2385.95	1	732,487
					Total	Rs.	96,759,404

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT JEHLUM

S. No.	Item Code	Description	Quantity		Rate	Unit	Total Amount (Rs)
SCHEDULE ITEMS							
Long Term Intervention							
Construction access road of 5 km upto dam location.							
1	C-3/11a	Excavation in rock dressed to designed section, grades and profiles, excavated material disposed off within 100' and lift up to 5' Soft rock, slate, shale, schist laterite work, with pick and crow bar.	256,328.13	Cft	24784.30	1000	6,352,913
2	C-18/4a	P/L base course of crushed stone aggregate of approved quality and grades and supply and spreading of stone screening i/c placing mixing spreading and compaction of base course material required depth camber and grade to achieve 100% AASHO dry density i/c carriage of all materials to site of work except gravel and aggregate	98430	Cft	12,877.75	100	12,675,569
3	C1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor.Upto 51 Kilometers Distance	98430	Cft	3234.34	100	3,183,563
4	C-18/5	P/L road edging of 3" wide and 9" deep brick oon end complete in all respect	32810	Rft	60.85	1	1,996,489
5	C-6/5f	Cement concrete plain Including placing, compacting, finishing and curing complete Including screening and washing of stone aggregate (1:2:4)	98430	Sft	42411.60	100	41,745,738
Total						Rs.	65,954,272

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

SUMMARY OF ROUGH COST ESTIMATE SYSTEM IMPROVEMENT-TELEMETRY

Long Term Intervention					
Rehabilitation/ upgradation of Jammargal Dam to enhance agricultural productivity of command area, Jammargal Jhelum					
Sr No.	Component Description	Per Unit Cost	No of Units	Total Cost	Total Cost
1	Data Logger		3	4,912,650	14,737,950
2	Range Finder (non contact ultrasonic range finder (water level sensor)				
3	GSM/GPRS Telemetry data transmission modems/ SIM cards				
4	Rechargeable Battery 12 V				
5	Solar Panel 100 W				
6	Charging Regulator 12 V				
7	Pressure Transducer				
8	Control system + Motor				
9	Water Quality meter				
10	Allied Cables, Mountings, Surge Suppressors				
11	Master Control Room		1	33,006,712	33,006,712
				Sub Total Amount R.s	47,744,662

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT JEHLUM

S. No.	Item Code	Description	Quantity		Rate	Unit	Total Amount (Rs)
SCHEDULE ITEMS							
Long Term Intervention							
Rehabilitation/ upgradation of existing and new irrigation network of additional command area							
1		Lining of watercourses (cement concrete base 1:3:6 brick masonry i/c earthwork	40,000.00	Rft	1244.75	1	49,790,000
2		Supply of Plants	500	Cft	350.00	1	175,000
						Total	Rs. 49,965,000

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

SUMMARY OF ROUGH COST ESTIMATE IRRIGATION SECTOR

SR #	DESCRIPTION OF ITEM	COST	Add 2% Contingencies	Add 2% Consultancy	Add 5% PST	Total Cost	Millions	Remarks
	Long Term Intervention							
	Construction of Bahadur Khas Dam and irrigation network system, Johd village, Fatehjang Attock							
1	Hydrological, hydraulic, and geological investigation studies of potential site for irrigation and water supply of area.	3,418,012,673	68,360,253	68,360,253	170,900,633.63	3,725,633,813.03	3,726	
2	Construction of spillway	96,759,404	1,935,188.08	1,935,188.08	4,837,970.20	105,467,750.36	105	
3	Coonstruction of rest-house	6,908,800	138,176.00	138,176.00	345,440.00	7,530,592.00	8	
4	Construction access road of 5 km upto dam location.	65,954,272	1,319,085.44	1,319,085.44	3,297,713.60	71,890,156.48	72	
5	Installation of solar power SCADA system.	47,744,662	954,893.24	954,893.24	2,387,233.10	52,041,681.58	52	
6	Construction of irrigation network for command area development	49,965,000	999,300.00	999,300.00	2,498,250.00	54,461,850.00	54	
	Total Amont of Long Term Plan	3,685,344,811	73,706,896.21	73,706,896.21	184,267,240.53	4,017,025,843.45	4,017	

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD)							
RAWALPINDI REGIONAL DEVELOPMENT PLAN							
MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT ATTOCK							
S. No.	Item Code	Description	Quantity	Rate	Unit	Total Amount (Rs)	
SCHEDULE ITEMS							
Long Term Intervention							
Upgradation/ enhancement of weir and spillway.							
1	C-26/35b	Bailing out water by pump (35b/Mis)	720000	Cft	1037.95	1000	747324
2	C-3/11b, 17a	Excavation in rock dressed to designed section, grades and profiles, excavated material disposed off within 100' and lift up to 5' (extra lead 1/4 mile) MEDIUM HARD ROCK	106389	Cft	45924.00	1000	4,885,793
3	C-4/19-c	Dismantling cement concrete 1:2:4 plain.	11500	Cft	14287.70	100	1,643,086
4	C-6/21-a	Nicking concrete surface:Cement concrete surface.	11520	Sft	844.80	100	97,321
5	C-6/18	Drilling/ Making holes of 1.5" dia in cement concrete upto 5' deep	2880	No	933.90	1	2,689,632
6	C-4/20	Dismantling cement concrete reinforced separating reinforcement from concrete, cleaning and straightening the same..	613	Cft	23379.85	100	143,396
7	C-6/5f	Cement concrete plain Including placing, compacting, finishing and curing complete Including screening and washing of stone aggregate (1:2:4)	36425	Cft	42411.60	100	15,448,227
8		Apoxy Treatment (N.S.)					
a	N.S	Chemdur=32	535	Kg	2839.00	1	1,519,802
b	N.S	Chemdur = 42	5097	Kg	918.50	1	4,681,898
9	N.S	Special Skilled Labour required for Chemdur-32	1	Job	66800.00	1	66,800
10	N.S	Special Skilled Labour required for Chemdur-42	1	Job	83500.00	1	83,500
11	C-6/6ai3	Reinforced cement concrete in roof slab, beams, columns, lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ complete in all respects: Type C (nominal Mix 1:2:4).	6952	Cft	654.20	1	4,547,998
12	C-6/ 6aii3	Reinforced cement concrete in slab of raft / strip foundation, base slab of column and retaining walls etc and other structural members other than those mentioned in 6(a) (i) above not requiring form work).i.e horizontal shuttering) complete in all respects: Type C (1:2:4) (nominal Mix 1:2:4)	24118	Cft	518.25	1	12,499,154
13	C-6/12b	Fabrication of mild steel reinforcement for cement concrete Including cutting, bending laying in position, making joints and fastening Including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars) (Deformed bars, Grade-40)	112984	Kg	34680.10	100	39,182,964
14	C-6/31Aii	Providing and mbedding 10" (250mm) wide PVC water stopperinexpansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect. ii) 10" wide 10 mm thick	768.33	Rft	916.80	1	704,405
15	C-6/33	Filling expansion joints with bitumen	768.33	Rft	137.30	1	105,492

16	N.S	Providing, laying, cutting, jointing, testing and disinfecting G.I. pipeline in trenches, with socket joints, using G.I pipes of B.S.S. 1387-1967 complete in all respects ii) Medium Quality 2" i/d (50 mm) 3.65mm thick	1536.17	Rft	916.50	1	1,407,900
17	C-16/ 13biii	Providing and weaving G.I. Wire netting for wire crates, 4" mesh & 8 SWG wire	21666.67	Sft	15001.20	100	3,250,261
18	C-16/19i	Providing and filling in wire crates stone or boulders	21666.67	Cft	7135.90	100	1,546,112
19	C-1/1	Carriage of 100 Cft all materials like stone, aggregate spawl etc. (Un slaked surkhi etc.) lead 51 km	23833	Cft	3234.34	100	770,852
20	N.S	Providing and fixing enameled steel plate gauge 4" wide 1/8" thick (including painting and lettering)	5	Rft	1000.00	1	5,000
21	C-18/14	Providing and fixing G.I. Pipe railing as per standard drawings (3 rows of pipe)	307	Rft	2385.95	1	732,487
					Total	Rs.	96,759,404

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT ATTOCK

S. No.	Item Code	Description	Quantity		Rate	Unit	Total Amount (Rs)
SCHEDULE ITEMS							
Long Term Intervention							
Construction access road of 5 km upto dam location.							
1	C-3/11a	Excavation in rock dressed to designed section, grades and profiles, excavated material disposed off within 100' and lift up to 5' Soft rock, slate, shale, schist laterite work, with pick and crow bar.	256,328.13	Cft	24784.30	1000	6,352,913
2	C-18/4a	P/L base course of crushed stone aggregate of approved quality and grades and supply and spreading of stone screening i/c placing mixing spreading and compaction of base course material required depth camber and grade to achieve 100% AASHO dry density i/c carriage of all materials to site of work except gravel and aggregate	98430	Cft	12,877.75	100	12,675,569
3	C1/1	Carriage of 100 Cft. (2.83 cu.m) of all materials like stone aggregate, spawl, kankar lime (unslaked), surkhi, etc. or 150 Cft. (4.25 cu.m) of timber, by truck or by any other means owned by the contractor.Upto 51 Kilometers Distance	98430	Cft	3234.34	100	3,183,563
4	C-18/5	P/L road edging of 3" wide and 9" deep brick oon end complete in all respect	32810	Rft	60.85	1	1,996,489
5	C-6/5f	Cement concrete plain Including placing, compacting, finishing and curing complete Including screening and washing of stone aggregate (1:2:4)	98430	Sft	42411.60	100	41,745,738
Total						Rs.	65,954,272

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

SUMMARY OF ROUGH COST ESTIMATE SYSTEM IMPROVEMENT-TELEMETRY

Long Term Intervention					
Rehabilitation/ upgradation of Jammargal Dam to enhance agricultural productivity of command area, Jammargal Jhelum					
Sr No.	Component Description	Per Unit Cost	No of Units	Total Cost	Total Cost
1	Data Logger		3	4,912,650	14,737,950
2	Range Finder (non contact ultrasonic range finder (water level sensor)				
3	GSM/GPRS Telemetry data transmission modems/ SIM cards				
4	Rechargeable Battery 12 V				
5	Solar Panel 100 W				
6	Charging Regulator 12 V				
7	Pressure Transducer				
8	Control system + Motor				
9	Water Quality meter				
10	Allied Cables, Mountings, Surge Suppressors				
11	Master Control Room		1	33,006,712	33,006,712
				Sub Total Amount R.s	47,744,662

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT ATTOCK

S. No.	Item Code	Description	Quantity		Rate	Unit	Total Amount (Rs)
SCHEDULE ITEMS							
Long Term Intervention							
Rehabilitation/ upgradation of existing and new irrigation network of additional command area							
1		Lining of watercourses (cement concrete base 1:3:6 brick masonry i/c earthwork	40,000.00	Rft	1244.75	1	49,790,000
2		Supply of Plants	500	Cft	350.00	1	175,000
						Total	Rs. 49,965,000

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD)								
RAWALPINDI REGIONAL DEVELOPMENT PLAN								
SUMMARY OF ROUGH COST ESTIMATE IRRIGATION SECTOR (DISTRICT ATTOCK)								
SR #	DESCRIPTION OF ITEM	Cost	Add 2% Contingencies	Add 2% Consultancy	Add 5% PST	Total Cost	Millions	Remarks
	Long Term Intervention							
	Construction of Bahadur Khas Dam and irrigation network system, Johd village, Fatehjangh Attock							
GENERAL ABSTRACT OF COST								
1	Main Dam	1,203,036,763	24,060,735	24,060,735	60,151,838	1,311,310,072	1,311.31	
2	Outlet Structure	40,606,837	812,137	812,137	2,030,342	44,261,452	44.26	
3	Spillway	1,796,523,762	35,930,475	35,930,475	89,826,188	1,958,210,901	1,958.21	
4	Buildings	12,827,838	256,557	256,557	641,392	13,982,343	13.98	
5	Irrigation Channel	350,017,473	7,000,349	7,000,349	17,500,874	381,519,046	381.52	
6	Approach Road	15,000,000	300,000	300,000	750,000	16,350,000	16.35	
	Total Amount R.s	3,418,012,673	68,360,253	68,360,253	170,900,634	3,725,633,813	3,725.63	

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT ATTOCK

SCHEDULE ITEMS					
Long Term Intervention					
Construction of Bahadur Khas Dam and irrigation network system, Johd village, Fatehjang Attock					

ABSTRACT OF COST

(MAIN DAM)

Sr. #	Description	Ref-Item	Quantity		Rate	Unit	Amount (Rs.)
	<u>Dewatering</u>						
1	Bailing out water by pump (35b/Mis)	C-26/35b	10368000	Cft	1037.95	1000	10761466
	<u>Main Embankment</u>						
	<u>Stripping</u>						
2	Excavation in shingle or gravel formation and rock not requiring blasting undressed lead up to 100' (For stripping) (dry) extra lead 1/4 mile	C-3/9i, 17a	3775198	Cft	29610.90	1000	111787010
	Excavation in rock dressed to designed section, grades profiles excavated material disposed off within 100' and lift up to 5' Soft Rock, extra lead 1/4 mile	C-3/11a, 17a	2265119	Cft	29716.50	1000	67311409
3	Excavation in rock dressed to designed section, grades profiles excavated material disposed off within 100' and lift up to 5'. Medium hard rock, requiring occasional blasting, extra lead 1/4 mile	C-3/11b, 17a	1510079	Cft	45924.00	1000	69348868
	<u>Filling</u>						
	<u>Impervious Material</u>						
4	Earth work in ordinary soil for embankment lead upto 100' i/c ploughing and mixing with blade, grade or disc harrow or other suitable equipment & compaction by mechanical means at O.M.C & dressing to design section, complete in all respects 95% max, modified AASHO dry density.	C-3/5i	18743000	Cft	11572.80	1000	216908990
5	Transportation of earth all types when the total distance, i/c the lead covered in the item of work, is more than 1000 ft. extra lead 5.0 km a) Up to 400 m = b) For every 1200 m = 12 x 85.80 = c) For remaining 3400 m = 8.5 x 161.65 =	C-3/17a,b,c	18743000	Cft	5330.66	1000	99912560

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT ATTOCK

SCHEDULE ITEMS					
Long Term Intervention					
Construction of Bahadur Khas Dam and irrigation network system, Johd village, Fatehjang Attock					

ABSTRACT OF COST
(MAIN DAM)

Sr. #	Description	Ref-Item	Quantity	Rate	Unit	Amount (Rs.)	
	<u>Random Fill</u>						
6	Earth work in ordinary soil for embankment lead upto 100' i/c ploughing and mixing with blade, grade or disc harrow or other suitable equipment & compaction by mechanical means at O.M.C & dressing to design section, complete in all respects 95% max, modified AASHO dry density.	C-3/5i	9942360	Cft	11572.80	1000	115060944
7	Transportation of earth all types when the total distance, i/c the lead covered in the item of work, is more than 1000 ft. extra lead 1.6 km a) Up to 400 m = b) For every 1200 m = 12 x 87.20	C-3/17a,b,c	9942360	Cft	6360.26	1000	63235995
	<u>Filter</u>						
	<u>Chenab Fine Sand</u>						
8	Supplying clean and screened river or pit sand with 5 chains	C-3/41	1512310	Cft	1248.45	100	18880434
9	Laying sand under floor or plugging in wells (labor rate)	C-10/3	1512310	Cft	541.20	100	8184622
10	Carriage of sand lead 125 km	C1/1	1512310	Cft	8525.00	100	128924428
11	Compaction of earthwork with power road roller, including ploughing, mixing, moistening earth to optimum moisture content in layers, etc. complete, 95% to 100% maximum modified AASHO dry density.	C-3/25i	1512310	Cft	1664.75	1000	2517618
	<u>Coarse Lawrencepur Sand</u>						
12	Supplying clean and screened river or pit sand with 5 chains	C-3/41	546655	Cft	1248.45	100	6824714
13	Laying sand under floor or plugging in wells (labor rate)	C-7/30	546655	Cft	541.20	100	2958497
14	Carriage of sand lead 148 km	C-1/1	546655	Cft	8525.00	100	46602339

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD					
RAWALPINDI REGIONAL DEVELOPMENT PLAN					
MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT ATTOCK					
SCHEDULE ITEMS					
Long Term Intervention					
Construction of Bahadur Khas Dam and irrigation network system, Johd village, Fatehjhang Attock					

ABSTRACT OF COST

(MAIN DAM)

Sr. #	Description	Ref-Item	Quantity		Rate	Unit	Amount (Rs.)
15	Compaction of earthwork with power road roller, including ploughing, mixing, moistening earth to optimum moisture content in layers, etc. complete, 95% to 100% maximum modified AASHO dry density.	C-3/25i	546655	Cft	1664.75	1000	910044

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT ATTOCK

SCHEDULE ITEMS					
Long Term Intervention					
Construction of Bahadur Khas Dam and irrigation network system, Johd village, Fatehjang Attock					

ABSTRACT OF COST

(MAIN DAM)

Sr. #	Description	Ref-Item	Quantity	Rate	Unit	Amount (Rs.)
	<i>Protection Work</i>					
16	Providing and laying stone pitching for top layer only On slope of main dam	C-16/29a	298503	Cft	10342.80	100 30873517
17	Providing and laying stone or spawl filling On slope (spawl under pitching)	C-16/30b	198458	Cft	4077.35	100 8091807
18	Carriage of 100 Cft all materials like stone, aggregate spawl etc. (Un slaked surkhi etc.) from Sangjani quarry lead 115 Km	C-1/1	556661	Cft	8784.00	100 48897058
19	Turfing slopes of banks or lawns i/c plowing, laying, setting and watering and maintenance for 15 days	C-3/32	286195	Sft	2164.80	100 6195549
	<i>Wave Wash Wall</i>					
20	Excavation in irrigation channel, drains etc. to designed section, grades and profiles, excavated material disposed off and dressed within 50' bed, Hard soil	C-3/10ii	11400	Cft	10412.15	1000 118699
21	Cement concrete plain including placing, compacting, finishing and curing complete (1:4:8)	C-6/5-i	5700	Cft	31160.40	100 1776143
22	Conc. Plain including placing, compacting, finishing and curing complete including screening and washing of stone aggregate (1:2:4)	C-6/5f	25650	Cft	41144.40	100 10553539
23	Coarse rubble masonry hammer dressed in foundation and plinth (1:4)	C-8/2dii	51300	Cft	31256.70	100 16034687
24	Carriage of stone from Sangjani quarry to site of work lead within 115 km.	C-1/1	51300	Cft	8784.00	100 4506192
	<i>Catch Water Drain</i>					
25	Excavation in irrigation channel, drains etc. to designed section, grades and profiles, excavated material disposed off and dressed within 50' lead, Hard soil	C-3/10ii	254250	Cft	10412.15	1000 2647289
26	Cement plaster (1:6) up to 20' height 1 1/2" thick					
	In Bed	C/14/5a	67500	Sft	5449.70	100 3678548
	On Slope	C/14/5b	164372	Sft	6196.80	100 10185804

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT ATTOCK

SCHEDULE ITEMS					
Long Term Intervention					
Construction of Bahadur Khas Dam and irrigation network system, Johd village, Fatehjang Attock					

ABSTRACT OF COST

(MAIN DAM)

Sr. #	Description	Ref-Item	Quantity		Rate	Unit	Amount (Rs.)
27	Bitumen coating to plastered or cement concrete surface, 14 lbs. per 100 Sft. (6.35 Kg per Sq.m)	C-13/9ii	11595	Sftt	1688.40	100	195770
28	Cement concrete lining 1:2:4						
I)	In bed	C-14/10a	17719	Cft	41144.40	100	7290376
II)	On slope	C-14/10b	43148	Cft	43131.00	100	18610013

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT ATTOCK

SCHEDULE ITEMS					
Long Term Intervention					
Construction of Bahadur Khas Dam and irrigation network system, Johd village, Fatehjang Attock					

ABSTRACT OF COST

(MAIN DAM)

Sr. #	Description	Ref-Item	Quantity		Rate	Unit	Amount (Rs.)
29	Providing and filling cement, sand and bitumen joint sealant of ratio 1:2:3, in expansion joint of 1" wide and 1" deep.	N.S	23187	Rft	30.21	1	700485
30	Filling expansion joints with bitumen. sand & saw dust in ratio 1:2:2.	C-6/33	2319	Rft	137.30	1	318360
	<u>Toe Wall</u>						
30	Excavation in irrigation channel, drains etc. to designed section, grades and profiles, excavated material disposed off and dressed within 50' lead, Hard soil	C-3/10ii	27000	Cft	10412.15	1000	281128
31	Providing and weaving G.I. Wire netting for wire crates, 4" mesh & 8 SWG wire	C-16/ 13biii	66600	Sft	15001.20	100	9990799
32	Providing and filling in wire crates stone or boulders	C-16/19i	45000	Cft	7135.90	100	3211155
34	Carriage of stone from Sangjani quarry to site of work lead within 115 km.	C-1/1	49500	Cft	8784.00	100	4348080
	<u>Fencing</u>						
35	P/F barbed wire fencing, with 4 horizontal and two cross wires with R.C.C 1:2:4 posts, 5.5"x6"x9" at 8 ft. centre to centre, reinforced with 4 No. 3/8" dia verticle bars and 1/8" dia strripus 12" centre to centre complete in all respects in cement concrete 1:4:8 base of size 12"x12"x21"	C-26/42ii	4000	Rft	66006.55	100	2640262
	<u>Shingle on Top of Dam</u>						
36	P/L shingle on top of bund i/c handling of material within 3 chains	C-16/14	22800	Cft	3207.60	100	731333
37	Carriage of shingle and gravel lead 45 Km	C-1/1	22800	Cft	2932.50	100	668610
	<u>Toe Drain</u>						
	<u>Fine Chenab Sand</u>						
38	Supplying clean and screened river or pit sand with 5 chains	C-3/41	67600	Cft	1248.45	100	843952
39	Laying sand under floor or plugging in wells (labor rate)	C-7/30	67600	Cft	541.20	100	365851
40	Carriage of sand lead 125 km	C1/1	67600	Cft	8525.00	100	5762900

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD					
RAWALPINDI REGIONAL DEVELOPMENT PLAN					
MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT ATTOCK					
SCHEDULE ITEMS					
Long Term Intervention					
Construction of Bahadur Khas Dam and irrigation network system, Johd village, Fatehjhang Attock					

ABSTRACT OF COST

(MAIN DAM)

Sr. #	Description	Ref-Item	Quantity		Rate	Unit	Amount (Rs.)
41	Compaction of earthwork with power road roller, including ploughing, mixing, moistening earth to optimum moisture content in layers, etc. complete, 95% to 100% maximum modified AASHO dry density.	C-3/25i	67600	Cft	1664.75	1000	112537

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD

RAWALPINDI REGIONAL DEVELOPMENT PLAN

MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT ATTOCK

SCHEDULE ITEMS

Long Term Intervention

Construction of Bahadur Khas Dam and irrigation network system, Johd village, Fatehjang Attock

ABSTRACT OF COST

(MAIN DAM)

Sr. #	Description	Ref-Item	Quantity		Rate	Unit	Amount (Rs.)
	<i>Coarse Lawrencepur Sand</i>						
42	Supplying clean and screened river or pit sand with 5 chains	C-3/41	54600	Cft	1248.45	100	681654
43	Laying sand under floor or plugging in wells (labor rate)	C-7/30	54600	Cft	541.20	100	295495
44	Carriage of sand lead 148 km	C-1/1	54600	Cft	8525.00	100	4654650
45	Compaction of earthwork with power road roller, including ploughing, mixing, moistening earth to optimum moisture content in layers, etc. complete, 95% to 100% maximum modified AASHO dry density.	C-3/25i	54600	Cft	1664.75	1000	90895
46	Providing and laying stone or spawl filling (on level)	C-16/30a	41600	Cft	3591.60	100	1494106
47	Supply and dumping at site without boat i/c handling of material within 3 chains (stone or bolder)	C-16/15a	104000	Cft	4293.30	100	4465032
48	Carriage of stone from Sangjani quarry to site of work lead within 115 km.	C1/1	120000	Cft	8784.00	100	10540800
	Camping Facility						
49	Camping facility at site including, swiss cottage, tents, briefing tents, utensils, sets of chairs and tables, carts, large umbrellas, briefing / presentation equipments, steel almirah, computers, multimedia, printers, search lights etc	L.S	1	Job	5000000.00	1	5000000
	Water Gauge						
50	Providing and fixing enameled steel plate gauge 4" wide 1/8" thick (including painting and lettering)	N.S	50	Rft	1075.00	1	53750
	Instruments						
51	Instruments for dams safety monitoring including, stand pipe & vibrating wire piezometer, rain gauges, current meter, plumb line. Tilt meter, inclino meter, joint meter, settlement gauges etc.)	L.S	1	Job	6000000.00	1	6000000

THE URBAN UNIT (URBAN SECTOR PLANNING & MANAGEMENT SERVICES UNIT PVT.LTD					
RAWALPINDI REGIONAL DEVELOPMENT PLAN					
MRS, 2nd BI-ANNUAL-2023 (01.07.2023 to 31.12.2023) DISTRICT ATTOCK					
SCHEDULE ITEMS					
Long Term Intervention					
Construction of Bahadur Khas Dam and irrigation network system, Johd village, Fatehjang Attock					

OUTLET STRUCTURE

Abstract of Cost

Sr #	Description	Ref-Item	Quantity		Rates	Unit	Amount
1	Excavation in irrigation channel, drains etc. to designed section, grades and profiles, excavated material disposed off and dressed within 50' lead, Hard soil.	C-3/10ii	12568	Cft	12490.35	1000	156,979
2	Cement concrete plain Including placing, compacting, finishing and curing complete Including screening and washing of stone aggregate (1:2:4)	C-6/5f	1861	Cft	41144.40	100	765,697
3	Reinforced cement concrete in slab of raft / strip foundation, base slab of column and retaining walls etc and other structural members other than those mentioned in 6(a) (i) above not requiring form work)i.e horizontal shuttering) complete in all respects: Type C (1:2:4) (nominal Mix 1:2:4)	C-6/6aii3	2240	Cft	505.60	1	1,132,544
4	Reinforced cement concrete in roof slab, beams, columns, lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ complete in all respects: Type C (nominal Mix 1:2:4).	C-6/6ai3	13034		641.55	1	8,361,963
5	Fabrication of mild steel reinforcement for cement concrete Including cutting, bending laying in position, making joints and fastening Including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars) (Deformed bars, G-40) (9b/C)(Hollow Column outlet structure)	C-6/12b	55538	Kg	34694.40	100	19,268,576
6	Providing and fixing G.I. Pipe railing as per standard drawings (3 rows of pipe)	C-18/13	310	Rft	2696.25	1	835,838
7	Providing and Laying M.S blind pipe i/d 42"	N.S	248	Rft	15739.75	1	3,903,458
8	Supplying sand under floors or plugging wells	C-10/3	2240	Cft	2941.20	100	65,883
	<u>Outlet Chamber Iron Work</u>						
9	Providing and fixing sluice valve of BSS quality and weight for M.S pipe line with joints , ring collar Including cost of jointing material dia best quality (42" dia)	N.S	2	No	2000000.00	1	4,000,000