GOVERNMENT OF THE PUNJAB
PLANNING & DEVELOPMENT BOARD
(URBAN DEVELOPMENT SECTION)

WORKING PAPER FOR PDWP

1.	**Project Title**	Providing and Laying Trunk Sewer from Jawad Club Chowk to Chokera Disposal station Faisalabad
2.	**Location**	Faisalabad
3.	**Sponsoring Agency**	HUD & PHE Department, Govt. of the Punjab
4.	**Executing Agency**	Water & Sanitation Agency FDA
5.	**Operation and Maintenance**	Water & Sanitation Agency FDA
6	**Proposed Cost For Approval**	**Rs.949.65 Million**
7.	**Source of Financing**	Supplementary Scheme ADP (2024-25) I.D. # 7419
8.	**Gestation period**	24 months till February 2027

9. BRIEF BACKGROUND / DESCRIPTION OF THE PROJECT

The Government of Punjab has approved a comprehensive Development Package to address the longstanding sewerage challenges of Faisalabad City. The package includes a total of fourteen (14) schemes aimed at modernizing and improving the city's sewerage infrastructure. The instant scheme is part of the approved package and is integral to achieving the package's overarching goal of resolving chronic sewerage issues and ensuring sustainable urban development. The scheme is included in ADP 2024-25 (GS # 7419). The instant scheme includes the "Providing and Laying Trunk Sewer from Jawad Club Chowk to Chokera Disposal Station, Faisalabad". Furthermore, this scheme will establish a new sewerage infrastructure for Chokera Village and adjoining areas, which currently lacks sewerage infrastructure.

10. JUSTIFICATION OF THE PROJECT

Existing catchment area of Chokera Disposal Station is suffering from poor sanitation conditions due to overloading of existing trunk sewer. Additionally, Chokera village and adjoining areas upto Bypass Chowk lacks the availability of sewerage system. The new route of trunk sewer will distribute the flow more evenly, reducing the pressure on existing lines and mitigate the risk of flooding. The trunk sewer from Narwala Road Bypass Chowk will collect sewage from the surrounding unserved areas. By extending the sewer

network to Chokera Village, the project will provide safe and efficient wastewater disposal. This project will overall help in the improvement and modernization of the sewerage system of the project areas. A modernized sewerage system will reduce the risk of waterborne diseases and contamination of natural water bodies by minimizing pollution and improving water quality. An upgraded sewerage system safeguards ecosystems, biodiversity, and public health while contributing to climate resilience by mitigating flooding and stormwater runoff. These efforts build healthier, more sustainable, and resilient communities for present and future generations.

SCOPE OF THE PROJECT

i. Laying of new trunk sewer from Jawad Club Chowk to Chokera Disposal Station
ii. Laying of Trunk Sewer from Narwala Road Bypass Chowk, connecting with newly proposed Trunk sewer
iii. Development of Sewerage Network in Chokera Village

Detail of Trunk sewers and sewerage network in Chokera Village is as under:

Sr. No.	Description	Pre-PDWP Quantity (Rft)	After Pre-PDWP Quantity (Rft)
1	310 mm (12") i/d	37,122.00	41,455.72
2	380 mm (15") i/d	1,345.00	450.00
3	460 mm (18") i/d	2,790.00	377.00
4	530 mm (21") i/d	800.00	1,195.00
5	610 mm (24") i/d	-	250.00
6	690 mm (27") i/d	-	1,190.00
7	760 mm (30") i/d	7450	2,310.00
8	840 mm (33") i/d	-	-
9	910 mm (36") i/d	-	-
10	1070 mm (42") i/d	-	-
11	1220 mm (48") i/d	-	-
12	1370 mm (54") i/d	-	-
13	1520 mm (60") i/d	3,150.00	-
14	1680 mm (66") i/d	-	-
15	1830 mm (72") i/d	4540	
	Total	**57,197**	**47,227.72**

11. PROJECT OBJECTIVES:

1. To design a new trunk sewer capable of handling the increased discharge flow due to the rapid population growth in surrounding areas, ensuring the infrastructure meets future demands.
2. To provide new sewerage infrastructure in unserved areas.
3. To eliminate sewage ponding and associated public health hazards in the project areas.

4. To reduce environmental pollution through the safe and systematic collection and conveyance of wastewater.
5. To enhance the quality of life for residents by improving sanitation facilities.
6. Development of Sewerage Network in Chokera Village

12. PROJECT COST SUMMARY

(Rs. in million)

Sr	Description	Cost Before Pre-PDWP	Cost After Pre-PDWP	Difference	Remarks
a)	Sewerage Network (12" - 72" dia) including provision of pump	868.48	866.87	-1.61	1. In updated PC-1, 72" dia sewer has been replaced with 60" dia sewer after pre-PDWP for design improvement. 2. The cost for Geotechnical investigation added
b)	Construction of Boundary Wall INCLUDING GATE	3.08	3.43	0.35	
c)	GEOTECHNICAL INVESTIGATION	0	0.94	0.94	
	Total	**871.56**	**871.24**	**-0.32**	
	Add 5% PRA Tax	43.58	43.56	-0.02	
	Add 2% Contingency charges	17.43	17.42	-0.01	
i	Add 2% Consultancy charges	17.43	17.42	-0.01	
	Grand Total	**950**	**949.65**	**-0.35**	

13. SECTOR ISSUES AND STRATEGY

i.	**Sector Issues**	• Sewerage Issues • Environmental Pollution
ii.	**Sector Strategy**	• The proposed project is fully aligned with the Master Plan 2018-38, which emphasizes the modernization and enhancement of the sewerage system to meet the growing demands of urban development
iii.	**Other Major Ongoing & Potential Projects in the Sector**	• Providing and Laying of HDPE Forcemain from Dawood Chowk Disposal Station to Fish Farm Satyana Road, Faisalabad • Providing and Laying of Forcemain and Development of the Sewerage System in adjacent areas of Gatti, Aslam Park, Farooq Town, Adnan Town, Bagewala Road, Azhar Town, Sufyan Town and Adjoining Areas
iv.	**Year-wise estimates of Physical activities by main components as per following:**	

Items	Year wise physical activities			Total
	2024-25	2025-26	2026-27	
Sewerage Network (12" - 72" dia)	20%	60%	20%	100%
Construction of Boundary Wall	20%	60%	20%	100%
Provision for 40 Cusec Pump	0%	100%	0%	100%
Add 5% PRA Tax	20%	60%	20%	100%
Add 2% Contingency charges	20%	60%	20%	100%
Add 2% Consultancy charges	20%	60%	20%	100%

		Total	**20%**	**60%**	**20%**	**100%**

v. Year-wise/ Component-wise Financial Phasing

Items	Unit	Year wise Financial activities			Total
		2024-25	2025-26	2026-27	
Sewerage Network (12" - 72" dia)		157.16	471.47	157.16	785.78
Construction of Boundary Wall		0.69	2.06	0.69	3.43
Provision for 40 Cusec Pump		-	82	-	82
Total		**157.85**	**555.53**	**157.85**	**871.21**
Add 5% PRA Tax		8.71	26.14	8.71	43.56
Add 2% Contingency charges		3.48	10.45	3.48	17.42
Add 2% Consultancy charges		3.48	10.45	3.48	17.42
Total		**174.00**	**602.00**	**174.00**	**950.00**

14. FINANCIAL ANALYSIS:

Financial Indicators	At 12% Discount Rate
Present Worth of Benefits (Rs million)	430.08
Present Worth of Costs (Rs million)	938.46
Net Present Value (Rs million)	(508.38)
B/ C Ratio	**0.46**
FIRR (Percent)	2.199

The results showed that project is financially viable.

15. ECONOMIC ANALYSIS:

Economic Indicators	At 12% Discount Rate
Present Worth of Benefits (Rs million)	3881.79
Present Worth of Costs (Rs million)	905.93
Net Present Value (Rs million)	2975.87
B/ C Ratio	**2.64**
EIRR (Percent)	36.01

The EIRR calculated is above the economic opportunity cost of capital (12%) in Pakistan. The results of NPV and B/C ration also proved that project is economically viable.

(PART-B)

TECHNICAL APPRAISAL

16. Pre-PDWP Deliberations:

Instant project was discussed in Pre-PDWP meeting held on 06.02.2025 under the Chairmanship of Member (LG/UD), P&D Board. The observations raised by the P&D Board and replies of sponsors are juxtaposed as under:

Sr. No.	Observations	Reply	Remarks of Pre-PDWP
A.	**Comments of UD Wing, P&D Board**		

Sr. No.	Observations	Reply	Remarks of Pre-PDWP
1.	A bigger picture of the whole package highlighting the major issues pertaining to various regions of the city, should be plotted on a single map for holistic understanding.	Updated maps are attached.	Noted.
2.	As per nomenclature of the scheme trunk sewer from Jawad Chowk to Chokera disposal station has to be laid. Whereas, in the PC-I following scope has been proposed: **a.** 30" and 60" sewer lines have been proposed from bypass road to Jawad Chowk **b.** 72" sewer line has been proposed from Narwala road to Chokera disposal station via Ibrahim Town. **c.** 12" to 21" sewer network has been proposed in the Ibrahim town. In this regard, in prima facie it is observed that the entire project scope is not in accordance with the nomenclature of the project. The proposed route will benefit the private housing societies on the north side of Narwala road	There is no existing sewerage in western side of Jawad Club Chowk on Narwala road and this area experiences permanent ponding and environmental hazards. Therefore, development of western side is mandatory along with trunk sewer.	Nomenclature of the project should be get corrected from the cabinet as per scope included in the project. approval of the project may be considered subject to change of nomenclature from cabinet.
3.	As per project map there is an existing trunk sewer of 30" from Jawad Chowk to Chokera disposal station. The executing agency to explain why a new trunk sewer line has been proposed in the instant project. Further, if there is requirement for replacement of the existing sewer line word "replacement" should have been mention in the nomenclature. Furthermore, this replacement should made along with already existing short and straight route (3000 ft approx.). The proposed route via Ibrahim Town (4100 ft approx.) is not justifiable in this regard.	The 27" and 30" sewers are proposed sewers and currently no sewer exists in this area	
4.	It has been observed that trunk sewer	Updated map is attached and	Noted.

Sr. No.	Observations	Reply	Remarks of Pre-PDWP
	line will cater the discharge from populated eastern side of Jawad Chowk. Whereas, in the instant project, 36" and 60" sewer lines have been proposed on the western side, where either there are private housing societies or barren / vet land. Sewer map of eastern side should be provided for better understanding and informed decision making.	details are incorporated	
5.	Total population served, per capita water consumption and planning horizon to be provided to substantiate the proposed design of the sewer lines. Hydraulic statement may also be provided.	Details are incorporated	Noted.
6.	In the project objectives replacement of old and deteriorated is mention which against the nomenclature of the scheme.	Rectified	Noted.
7.	Alignment of instant project with master plan of Faisalabad to be explained. Master plan may be shared in this regard.	Proposed scheme is aligned with sewerage master plan of the city.	Noted.
8.	Proper justification and project objectives are not provided in PC-I. Rather, generic statement related to sewerage and sanitation are mentioned. In this regard, executing agency should provide specific justification like condition and life of existing trunk sewer line etc. Similarly, quantifiable objectives should be mentioned.	Incorporated	Noted.
9.	Various section of PC-I including risk assessment and mitigation, social and environmental analysis and result based management needs to be filled properly. These sections should be filled	Incorporated	Noted.
10.	Provision of the 40 cusec pump at a cost of Rs. 82 million is not admissible as per project nomenclature. The provision should be justified.	This is taken for under construction new disposal station at Chokera due to increased catchment area.	Noted.

Sr. No.	Observations	Reply	Remarks of Pre-PDWP
11.	Rate of pump @ Rs. 82 million should be supported with 3 quotations. Proposed 40 cusec discharge seems over estimated. The same should be explained.	Quotation attached.	Noted.
12.	Proposed design of sewer lines and pump to be shared. Planning horizon may also be shared.	Incorporated	Noted.
13.	Provision for removing of slush amounting to Rs. 5.8 million to be deleted/reduced as sewer lines are being proposed.	Rationalized as per actual	Noted.
14.	Disjoining and removing of old pipes included in cost estimates is not justifiable, as no existing sewer line/old is shown in the drawings.	Rectified.	Noted.
15.	Significant cost of earth work (Rs. 105 million) is involved in instant project. In this regard, proposed depths of pipes to be substantiated with level sheets.	Incorporated	Noted.
16.	Item No. 11 of sewer network related to sewer pipes RCC sewer pipes, seems to be in duplication with item No. 10. The same to be clarified.	Rectified.	Noted.
17.	Transportation of earth work with land up to 5km to be reduced as there is open area are in the vicinity.	Updated as per actual.	Noted.
18.	Approximately Rs. 76 million has been proposed for restoration of road. In this regard, it is proposed that sewer may be laid on side of road without dismantling the road, map showing right ways may be provided. Tuff pavers may be provided on the road sides accordingly.	Updated as per actual	Noted.
19.	Cost of hard barrications for diversion of traffic amounting to Rs. 9.5 million should be reduced. It salvage value may be considered	Updated this item after taking salvage value.	Noted.

Sr. No.	Observations	Reply	Remarks of Pre-PDWP
20.	Boundary wall cost amounting to Rs. 3 million to be justified	This is taken for new disposal station.	Noted.
21.	It has be observed that quantity of crushed stone in road restoration works has been over estimated. In this regard in the portion of 60" to 72" sewer lines, width is taken 20.5 feet and 23.5 feet respectively; whereas, the excavation width is 13 to 16 ft. Furthermore, the thickness is also seems to be on higher side.	Rectified	Noted.
22.	Thickness of asphaltic layer is only 1 inch. The same should be revisited. Quantity of base layer of crush stone should be rationalized and asphaltic base course may be provided if suitable.	Rectified	Noted.
23.	What measures are taken to prevent crown failures. Whether, SR cement is being used in sewer pipes? Further, what is the distance between proposed ventilating shafts? The Administrative Department should device research-based measures in this regard.	Ventilating shafts are proposed as per criteria. Moreover, Epoxy coating will be done on RCC pipe to enhance the life.	Noted.
B.	**Comments of Consultant (SI), P&D Board**		
24.	**Sewer map:** 1) A complete and separate map showing the existing sewerage system in green color with sizes and direction of flow marked on the plan should be included to assess the existing conditions. 2) The plan does not explain if the proposed sewers are the replacement to the existing sewers or new sewers which should be indicated on the plan.	1)Incorporated. A separate existing sewerage system map is also attached. 2)In existing system, 02 nos. 72-inch sewers are joining on Jawad Club chowk and meeting in 90" manhole that is laid upto Chokera Disposal Station. 90" sewer is unable to cater the flows from both 72" sewers in peak seasons and results in overflows. Therefore, additional flow (from Jawad Club chowk side) will be carried to alternate route through 72-inch sewer by constructing a combined manhole at Jawad Club Chowk,	Noted.

Sr. No.	Observations	Reply	Remarks of Pre-PDWP
		not disturbing the existing arrangement. Moreover, along the proposed route, provision is provided for some unserved areas and future connections.	
	3) 30" dia and 60" dia proposed sewers have been shown on Narwala road. Wherefrom these sewers are collecting the waste water is not shown anywhere. The sewers contributing waste water to these sewers should be explicitly shown.	3)As explained in point 02.	
	4) In a chowk near Drug Care Formacy, the 60" sewers has been shown to draw water from two sewers marked in black whereas water from this chowk is also flowing directly to the Chokera disposal station. The map should be corrected to explain the true direction of flow.	4)As explained in 02. Map is updated.	
	5) The caption of the project explains that the proposed trunk sewer will start from Jawad Chowk and end at Chokera pumping station but Jawad Chowk is not mentioned anywhere in the map.	5)Incorporated.	
	6) All laterals are 12" dia and even in very small streets this size has been proposed. The reason for not including 9" sewers in small streets should be explained and appropriate sizes of small sewers should be proposed.	6)12" dia is the smallest diameter as per WASA criteria and ASTM standards.	
	7) The name of colony / muhallah where new sewers have been proposed is not mentioned.	7)Incorporated.	
	8) At page-18 a provision of 1764 Rft of	8)Rectified.	

Sr. No.	Observations	Reply	Remarks of Pre-PDWP
	9" dia sewer has been made but this length of sewers could not be traced in the map.		
25.	**Replacement of sewers:** On pages 4&5, it has been mentioned that the existing sewers are old and outlived which will be replaced and extension of the system will also be carried out but the map does not show any existing sewers to be replaced.	Rectified.	Noted.
26.	Project design The design of the following components of the system is missing which should be included in the PC-I; 1) Population to be served by Chokera pumping station with reference to the census report and design period. 2) Total quantity of sewage to be handled by the Chokera disposal works determined from the population served. 3) Hydraulic statement of newly proposed sewers. 4) Ultimate disposal of waste water from Chokera pumping station. 5) Design of the pumping machinery of Chokera pumping station 6) Existing Nos of pumping units, their capacity and year of installation in Chokera disposal station and their future use. 7) Justification of new pumping unit of 40 cusecs.	1) Existing and projected population is attached. 2) Newly constructed Chokera disposal station shall have the capacity to cater 200 cusecs flow. 3) Hydraulic statement of trunk sewers is attached. 4) Wastewater Treatment Plant (West) 5) Centrifugal vertical non clogging pumps are installed at chokera 6) There are two drywells at chokera disposal station, one is old which was built in 1998 and has 6 No. of pumps. 2 pumps of 40 cusecs and 4 pumps of 25 cusecs. These pumps are 27 years old. 7) New dry well was built in 2024 which has capacity of 6 no. of vertical pumps but only two 40 cusecs pumps are installed remaining 4 slots are empty. In future total 240 cusecs pumping capacity is required at chokera. Four new pumps are required at chokera but only one is taken in this scheme due to cost constraints 8) The flow of proposed sewerage	Noted.

Sr. No.	Observations	Reply	Remarks of Pre-PDWP
	8) Adequacy of the screening chamber and collecting tanks in Chokera disposal station after addition of the proposed sewerage system. 9) Drawing of the Chokera pumping station including all components. 10) Where the new pumping units will be installed?	system was incorporated in newly built screening chamber in chokera disposal station. 9) Drawings of existing disposal station attached 10) New pumps will be installed in recently built dry well.	
27.	**Back up quantities:** The units of back up quantities are missing. Quantities without units are just numbers.	incorporated	Noted.
28.	**Item-2:** The rate of cutting pavements (Rs150 per foot) is on higher side and should be rationalized.	incorporated	Noted.
29.	**Item-6 on page no. 10:** The provision of disjointing of sewers has been made in this item but the map does not show any such sewer to be replaced in the original trench.	incorporated	Noted.
30.	**Item-10 & 11 on page no. 10:** Different rates for same class of sewers and same diameters have been applied in both of these items which should be justified.	incorporated	Noted.
31.	**Item-17 on page no. 10:** Where this PCC will be used?	This PCC has been used in road restoration. However, the quantities are updated	Noted.
32.	**Item-20 on page no. 11:** Sand has been provided with a thickness of 4.0 feet in a length of 19025 feet. Where this will be used and its justification should be provided.	This quantity has been used under the road. However, the quantities are updated in cost estimate.	Noted.
33.	**Item-28 on page no. 11:** As proved from the experience, the maximum life of epoxy paint is 10 years beyond which it peels off. Hence this will not prove effective in elimination of crown failures. The item should be deleted and instead of that Sulphate Resisting Cement should be used in the manufacture of	Sulphate Resisting Cement (SRC) is used to reduce the impact of sulphate content present is soil, not to be used against crown failure. Epoxy paint is used to enhance the life of sewers.	Noted.

Sr. No.	Observations	Reply	Remarks of Pre-PDWP
	pipes which will resist crown failures to some extent.		
34.	**Item-31 & 32 on page no. 11:** The dismantling of road includes the sub base, base and pavement which will be laid as a sub base. This should make entire quantity of the sub base and no new stone metal should be used for this purpose. The correction should be made accordingly after calculation of the materials dismantled and sub base quantity required	Incorporated.	Noted.
35.	**Item-5 on page no. 12:** Why this hard barricade with RCC base and corrugated sheet is being provided through a length of 6900 Rft? Some cheaper option should be adopted as in case the MS pipes are being erected then corrugated sheets are not required.	The corrugated sheets provide a physical barrier that can improve security. The rate of the barification is reduced from 1389.62 to 550 per Rft. The impact of corrugated sheet is only Rs 12-15 per Rft.	Noted.
36.	**Item-7 on page no. 13:** The lump sum provision of Rs 5.0 million for shifting of unforeseen services is excessive. The cost should be rationalized or detailed cost estimate should be provided.	The item is updated and details of cost of each service will be given by respective authority during construction.	Noted.
37.	**Pumping unit on page no. 13:** Instead of one No pumping unit of 40 cusecs will it not be better to install 2 pumping units of 20 cusecs each which will have staggered pumping in case of reduced discharge from the system? The option should be considered, merits and demerits studied and most feasible option adopted.	The existing disposal station is newly constructed, and only one (01) of the designed pumps has been taken as per requirements.	Noted.
38.	**Rate analysis for cutting of pavement on page no. 16:** The length proposed to be cut in one day has been taken as 100 Rft which is not realistic. The cost should be rationalized by increasing the length to realistic	Incorporated in revised estimate.	Noted.

Sr. No.	Observations	Reply	Remarks of Pre-PDWP
	figure.		
39.	**MS casing on page no. 32**: The thickness of MS sheet proposed (25mm) is totally unrealistic and unimaginable. Do you mean that one-inch-thick sheet will be used for this purpose? Only 6-8 mm thick sheet should be used and rate analysis and cost estimate corrected accordingly.	Rectified and updated to 12mm as per previous experience of similar works.	Noted.
40.	**Item-17 on page no. 33:** Where this PCC will be used?	This PCC has been used in road restoration. However, the quantities are updated	Noted.
41.	**Table on page no. 41:** This table should be completed.	Incorporated	Noted.
Comments of Technical Section:			
42.	Rate analysis for N.S item may be provided.	Attached	Noted.
43.	Utility service charges taken as lumpsum provision may be substantiated with RD wise maps / drawings	Incorporated	Noted.
44.	Master plan of city's drainage facilities and disposal stations may be provided	Provided	Noted.
45.	Department may provide RD wise detail for sewage pipes replacement and new lying works.	Attached	Noted.
46.	Site reports surveys regarding non-functional, old sewage systems may be provided.	Provided	Noted.
47.	It is observed that both RCC and HDPE pipes are being used in various schemes. Sponsor may explain	Provided	Noted.
48.	Rs. 3 Million under boundary wall may be justified with existing facility	It is taken for under construction new disposal station	Noted.

17. RECOMMENDATION:

Instant project is placed before PDWP at the cost of **Rs.949.65 million** for consideration & approval with nomenclature as ***"Providing and Laying Trunk Sewer along Narwala Road (Western side of Jawad Club Chowk) to Chokera Disposal station and Development of***

Sewerage system in the adjoining area of Chokera, Faisalabad" subject to change of nomenclature from the Cabinet.