



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

WORKING PAPER FOR PDWP

1.	Project Title	Replacement of Outlived Sewer in Multan Phase II (1 st Revised)			
2.	Location	Multan			
3.	Sponsoring Agency	HUD & PHE Department			
4.	Executing Agency	Water & Sanitation Agency (WASA), Multan			
5.	Operation and Maintenance	Water & Sanitation Agency (WASA), Multan			
6	Project Cost				
		Original Approved 06-11-2019	Amended Cost (10% P.V Cushion) 09-12-2022	1 st Revised Proposed Cost	Difference
		2,223.807	2,435.610	3,147.833	712.223
7.	ADP 2024-25 (GS.NO. 3128)	Allocation: 50.000 Million Utilization: 50.000 Million			
8.	Exp. Till Date	Rs. 1,956.864 million			
9.	Gestation period	Original Approved		Proposed Extension in Gestation	
		06-11-2022		Till December, 2025	

10. HISTORY OF THE PROJECT

- i. Instant Project was originally approved by PWDP on 06-11-2019 at a cost of 2,223.807 million with gestation period up till 06-11-2022.
- ii. Amended approval was issued on 09-12-2022 at cost of 2,435.610 to incorporate 10% price variation cushion allowed by P&D Board at that time.
- iii. Now, the HUD&PHE Department submitted the 1st revised proposed PC-I for approval at a cost of 3,147.833 million with gestation period up till December, 2025.

11. DESCRIPTION OF THE PROJECT

Multan is one of the biggest and oldest City of Pakistan with a current estimated population 2.2 million. The population of Multan is rapidly increasing with a growth rate of 3.31% per annum. WASA Multan is providing sewerage facility upto 65% population of the city with 2055 Km sewer network. Remaining 35% population is still deprived from this basic facility. Furthermore, in 2055 Km network almost 1236 Km network is outlived/ undersized and causing crown failures of sewer lines, resulting into the stagnation of sewage water on

roads & streets that also creates environmental issues, other diseases. The dwellers of the above cited areas are facing serious sewerage issues. In order to resolve these issues the instant project was approved. In this scheme, sewer lines are being laid to improve the overall environment. HUD & PHE Department Design criteria / guidelines will be adopted for design, execution and completion of the scheme.

12. PROJECT OBJECTIVES:

The proposed project is designed to provide/improve basic facilities of sewerage system and to improve living environments of the Multan city, improvement of existing sewerage system and improve problematic conditions of the area. It will eliminate the wastewater problems by providing proper sewerage/drainage system. It will eliminate different diseases growing because of polluted environments and will improve general health standard of public and environments.

13. REASONS FOR REVISION:

- ✓ Adjustment in the scope of work of North, Central and South Zone due site public conflicts. However, total cost of the civil component is same.
- ✓ Increase in the price variation from Rs. 201.706 million to Rs. 844.991 million, as the estimate initiated on the basis of MRS 2nd bi-annual 2019 and huge inflation in the market prices occurred in the succeeding years.
- ✓ Increase in cost of consultancy charges from Rs. 40.341 million to Rs. 77.117 million due to increase in gestation period and contract agreement with the consultant.

14. PROJECT SCOPE:

- Replacement of outlived sewer lines in the North, Central and south Zone.

15. PROJECT COST SUMMARY

(Rs. in million)

Sr. No	Description	Originally Approved	Amended PC-I (10% Price Variation Cushion)	Proposed 1st Revised PC-I	Difference
1.	North Zone	1,231.530	1,231.530	1,000.677	-230.853
2.	Central Zone	372.738	372.738	407.216	34.478
3.	South Zone	412.797	412.797	609.173	196.376
4.	Add 2% Consultancy Charges	40.341	40.341	77.116	36.775
5.	Add 2% Contingencies	40.341	40.341	40.341	0.00
6.	Add 1.25% (1.0% Horticulture and 0.25% Awareness Charges)	25.213	25.213	25.213	0.000
7.	ADD 5% (PRA charges)	143.103	110.939	143.103	32.164
8.	Price Escalation	0.000	201.707	844.991	643.284
Total		2,223.807	2,435.610	3,147.833	712.224

16. SECTOR ISSUES AND STRATEGY

i. Sector Issues	<ul style="list-style-type: none"> Sewerage Issues Rain water and storm water management issues
ii. Sector Strategy	<ul style="list-style-type: none"> Improvement of urban Infrastructure Provision of wastewater treatment and improvement of sewerage lines Construction of water storage tanks and nullahs for better management of heavy rains and flood waters.
iii. Other Major Ongoing & Potential Projects in the Sector	<ul style="list-style-type: none"> Rainwater Management- Drainage arrangement for sore point at Qaddafi Stadium Storm water drainage system from Haji Camp to River Ravi via Laxmi Chowk, McLeod Road, Nabha Road, Chauburji and Sham Nagar Lahore
iv. Annual Recurring Expenditure	N/A
v. Annual Income after completion	N/A
vi. Total Annual O&M cost	N/A

(PART-B)

17. DELIBERATIONS OF PRE-PDWP MEETING

The instant scheme was discussed in Pre-PDWP meeting held on 01.01.2025 under the chairmanship of Member (LG/UD), P&D Board. Observations and replies are jotted below:

Sr. No.	Observation	Reply by Department	Remarks																									
	Comments By UD Section																											
i.	<p>Comparative statement shows that scope of work has been significantly changed in the TS estimate as compared to the PC-I approved by PDWP. Comparison is given as under.</p> <table><tr><th>Sr. No.</th><th>Description</th><th>Originally Approved</th><th>As per Original TS</th><th>%</th></tr><tr><td>1.</td><td>North Zone</td><td>1,231.530</td><td>819.676</td><td>-33.44%</td></tr><tr><td>2.</td><td>Central Zone</td><td>372.738</td><td>541.009</td><td>+45.14%</td></tr><tr><td>3.</td><td>South Zone</td><td>412.797</td><td>592.724</td><td>+43.58%</td></tr><tr><td colspan="2">Total</td><td>2,017.065</td><td>1,953.409</td><td></td></tr></table> <p>Executing Agency to explain why such huge deviation in scope from approved scope made in the TS estimate. Originally approved map and as built map to be provided in this regard.</p>	Sr. No.	Description	Originally Approved	As per Original TS	%	1.	North Zone	1,231.530	819.676	-33.44%	2.	Central Zone	372.738	541.009	+45.14%	3.	South Zone	412.797	592.724	+43.58%	Total		2,017.065	1,953.409		<p>The deviation in the scope of work in TS estimates compared to PC-I occurred due to unforeseen, site conditions, public conflicts, and constraints in various zones. The deviation made as per site requirement without considering zone wise boundaries. Zone wise comparative statements are attached.</p>	<p>Such changes in the scope, involving deviations made from approved maps of sewer lines, in TS estimate by the executing agency needs answers</p>
Sr. No.	Description	Originally Approved	As per Original TS	%																								
1.	North Zone	1,231.530	819.676	-33.44%																								
2.	Central Zone	372.738	541.009	+45.14%																								
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ii.	Why the agreement of the consultant increased from Rs. 34.056 million to Rs. 45.700, keeping in view that the scope of work is same. Furthermore, Rs. 31.417 million has been proposed for additional 12 months, whereas Rs. 45.000 million has been incurred in 04 years. Cost of additional 12 months period is not proportionate to the approved/agreed on consultancy amount of 4 years. Therefore, it should be reduced accordingly.	The consultancy cost increased from Rs. 34.056 million to Rs. 45.700 million due to the extension of the gestation period and delay in execution due to funds, increase and site issues requiring prolonged involvement of the consultant and increase in salary of staff. Rs. 31.417 million proposed for the next 12 months.	Cost should be rationalized as per agreed upon rates.
iii.	Items amounting to Rs. 465.000 million have been taken as non MRS items whereas the instant project is replacement of outlived sewer lines wherein routine works are being executed. Detail of new non-MRS items added in revised PC-I to be provided.	Non-MRS items were included to address sewerage issues and challenges during execution of replacement work. These include deep trenching, dewatering equipment and left over shuttering.	Noted.
iv.	Tendering of the project was carried out in March, 2020. However, price variation has been calculated from December, 2020. Whereas, as per Clause 55, Sub-Clause 6 of the Standard Contract Agreement (SCA), the amount of price variation shall be calculated on the basis of actual quantity of the item consumed on the work during the month. Furthermore, gaps in the months of Feb. 2021, Jan. March. December 2022, Jan. Feb. March July Nov. December 2023 have also been observed. The price variation to be calculated month-wise	The price variation has been calculated for the date of original work done according to government notification. Execution depends upon availability of fund.	The price variation should be month-wise. In this regard gaps in the claim of price variation are not admissible.
v.	Agreed work scheduled/program in accordance with Clause 8 of Standard Contract Agreement may be provided. Furthermore, activity wise physical progress of the work to be provided in comparison with agreed work schedule. In this regard, price variation will be admissible if delay is not on the part of contractor.	Work schedule and physical progress are attached.	Price variation is admissible if delay is not on the part of contractor.
vi.	What was time of completion of the work as per original contract agreement. Extension of time (EOTs) granting extension to the contractor to be provided with cogent reason.	Extensions of time were granted due to unavoidable site constraints, public interventions, covid-19 and delays in material procurement during corona and funds. NOC Conflicts at key locations and acquisition delays contributed to the extended timeline.	Noted.

vii.	As per clause 55, sub clause 7 of SCA, The amount payable or deductible in respect of pipes shall be calculated on the basis of the actual quantity of cement and steel bars used in the manufacture of the pipes during the month. The same to be justified with the relevant record.	The calculation of pipe quantities, including cement and steel on the basis of providing material at site not the date of manufacturing. Therefore, the material has been calculated from the date of execution.	The amount of price variation respect of sewer pipes shall be calculated on the basis of the actual quantity and rates of cement and steel bars during month of manufacturing of the pipes, rather than the time of execution, as per clause 55, sub clause 7 of Standard Contract Agreement.
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	Comments by Consultant SI, P&D Board			
SN	Page	Caption	Comments	Reply by Department
	PC-I			
1	2	Year wise financial progress	The release of funds in 2024-25 and expenditure on the project in this year should be given along with totals.	Year-wise, financial progress for 2024-25, including fund releases and expenditure, detailed is as following.
		Financial Year	Financial Progress	
			Allocation	Expenditure
				%age utilization
		2019-2020	8.694	8.694
		2020-2021	445.00	444.970
		2021-2022	275.00	275.00
		2022-2023	400.00	400.00
		2023-2024	778.2	778.2
		2024-2025	50	50
		Total	1956.894	1956.864
2	3	Scope of work	The scope of work in all the three zones has been changed. A comparative statement for this change for each zone should be prepared on the format attached at Annexure-A. The reasons for the increase or decrease in the scope of each zone should be mentioned on this format.	The deviation in the scope of work due to unforeseen site conditions, public conflicts, and constraints in various zones. The deviation made as per site requirement without considering zone wise boundaries under consultation of NESPAK.
3	5-7	Maps and drawings	The map given on this page does not serve the purpose. A complete map of the sewerage system at A0 size sheet should be provided duly marked with existing sewerage system in green. The crown failures should be shown on each sewer to be replaced. If one sheet is not adequate, more than one sheets can be used. The sewers to be replaced with sizes should be shown in red. Additional sewers to be laid with sizes should be marked in blue color The pipe bedding drawing should be annexed.No detail of the SSWL has been shown anywhere in the PC-I. Will all the sewers be laid above SSWL? If so a certificate in this regards should be	A complete A0-size map showing the existing sewerage system (in green), crown failures (marked), and areas for replacement (in red) and additional lines (blue) is annexed. Pipe bedding drawings, SSWL details (N/A), and manhole designs are also included the annexed.

			<p>annexed in the PC-I.</p> <p>If some sewers are to be laid under water then the bedding details should be provided on a drawing.</p> <p>The typical drawings of manholes should be annexed. The segment of sewers where shuttering will be left over in the ground, should be marked on the plan in different color</p>	
4	8	Period of implementation	The revised implementation period as given over here is 12 months which is incorrect.	The implementation period depend upon release of funds. Work will be completed till December 2025 as required extension in time limit.
5	14	Comparative statement	<p>The consultancy cost depicted in the statement is excessive and should be calculated @ 2% of the work outlay including the price variation.</p> <p>The horticulture charges and public awareness charges should be capped as per expenditure already incurred on these subheads.</p> <p>The contingencies should be capped to the amount provided in the 1st revised PC-I.</p> <p>Comparative statement should be revised accordingly.</p>	<p>Consultancy charges have been calculated at 2% of the work inclusive of price variation.</p> <p>Horticulture and public awareness charges are capped based on previous expenditure records.</p>
B	Cost Estimate			
a	Gulgashat Colony			
6	27	Item-5	<p>Disjointing of existing sewer has been included over here. Is it not possible to lay new pipe line at some distance from the existing sewer?</p> <p>If it is not avoidable due to space problem then the trench may contain some slush. How the trench formation will be stabilized to receive new pipe?</p> <p>Further how the water presently flowing in the sewer will be managed during the construction phase?</p>	<p>The reason for not laying parallel pipes at a slight distance from the existing sewer line is as follows:</p> <p>The existing sewer pipes have outlived their lifespan, and leaving them intact poses significant risks. Old, deteriorated pipes are prone to crown failures, which could lead to hazardous collapses, endangering both public safety and infrastructure.</p> <p>Disjointing the existing line and replacing it is</p>

				essential to prevent future failures and ensure the safety of surrounding structures.
7	27	Item-5 & 7	The sewers being disjointed are up to 36 inches dia whereas new pipe proposed to be laid are up to maximum of 18" dia. This should be explained.	For the particular site only 18" i/d was disjointed and also no disjointing made against 36" i/d at Gulgasht Colony (Zikriya).
8	27	Item-9 & 10	It is assumed that PVC "B&D" class pipes have been proposed to be laid due to their damages during excavation. What for D class pipe will be used as distribution systems comprises of B class pipes.	PVC Class B and D pipes were selected based on traffic conditions in different areas. Class D pipes were used in heavy-traffic zones to ensure durability and withstand heavy loads, while Class B pipes were laid in areas with low to moderate traffic.
9	28	Item -15	Earth has been proposed to be transported through a distance of 5 Km. Sewers and water supply pipes will be laid in the original trenches and there will be no surplus earth. Hence this item	Transportation of surplus earth calculated at specific site where sand filling was necessary.
	30	Item-31		
10	30	Item-30	The restoration of road has been included at item-14 at page-28. Hence this item should be deleted from here and a complete item including all quantities in one sub estimate should be included in that item.	The material for road restoration is based on the site condition of road depends upon the availability of sub base.
11	31	Item-34	The dismantled materials from the roads should be used as sub base instead of new material. The item should be corrected.	
12	31	Item-38	What for the item of dry sinking has been included, should be justified.	Dry sinking was executed to avoid massive sliding in confined situation in order to stable the existing structure
13	32	Item-42	Very small lengths of the HDPE pipes have been proposed to be replaced. The inclusion of new sluice valves should be justified.	Provision of HDPE Pipe and Sluice is in corporate for water supply.
14	32	Item-47-47	The restoration of road has been included at item-14 at	The material for road restoration is based on

			page-28. The quantities restoration of roads should be summed up for each sub estimate and included as one item.	the site condition of road depends upon the availability of existing material.
15	33	Item-2-4	These items have been included already in the cost estimate and should be deleted from here. All quantities of this type in a sub estimate, should be summed up and included as one item.	
16	34	Hydraulic statement	The hydraulic statement of pipes to be laid in all sub estimates is missing which should be provided for each sewer.	Hydraulic statements size sewerage maps is annexed in revised PC-I
17	35-36 and other similar pages	Back up quantities	How the following quantities of all different size of sewers can be totaled; Average depth Wall thickness Total depth Width of trenches Manhole diameter Manhole dia for excavation Width of dismantling Thickness of dismantling	Calculation of quantities individually made with respect to at site measurements and sum up on the basis of common variation.
18	78,135, 183,184	Tables	These tables contain no information and should be deleted.	Blank tables has been uploaded mistakenly, deleted from hard copies.
19	79	Calculation for manholes	The thickness of stone is greater in case of 15" dia sewers and lesser in all other sizes which requires explanation. Similarly the depth of excavation seems to be incorrect for all sizes of manholes. The tables in all sub estimates should be checked again and redundant tables removed from the PC-I	Crush Stone under manhole is taken 300 mm but previously uploaded 150 mm other than 15" i/d mistakenly. Corrected in hard copies as per standard criteria. 12" to 18" i/d = 225mm , 21" to 72" i/d = 300mm
20	212	Standard data tables	Repetitions of this table has been observed almost in all sub estimates. One table should be enough and the others should be deleted.	Deleted surplus tables from hard copies
21	241	Pipe class	Class-III pipes have been proposed to be used for sizes of 12, 15, 18 & 21 inches. It looks to be some standard table. This class should be justified by load factor. How class-III can be generalized for all sizes?	Classification of pipe depends upon the depth from NSL to Crown of Pipe.

TABLE -4				
CLASSIFICATION OF CONCRETE PIPE FOR DIFFERENT DEPTH				
SR. NO.	PIPE DIA. (IN)	DEPTH OF SEWER CROWN (ft)		
		CLASS-II	CLASS-III	CLASS-IV
1	12"	UPTO 7'	8'-11'	>11'
2	15"	UPTO 8'	9'-11'	>11'
3	18"	UPTO 8'	9'-13'	>13'
4	21"	UPTO 9'	10'-14'	>14'
5	24"	UPTO 9'	10'-14'	>14'
6	27"	UPTO 10'	11'-16'	>16'
7	30"	UPTO 10'	11'-15'	>15'
8	36"	UPTO 12'	13'-17'	>17'
9	42"	UPTO 14'	14'-20'	>20'
10	48"	UPTO 14'	14'-20'	>20'
11	54"	UPTO 13'	13'-18'	>18'
12	60"	UPTO 13'	13'-19'	>19'
13	66"	UPTO 13'	13'-19'	>19'
14	72"	UPTO 13'	13'-19'	>19'

23	329 & other pages	Additional sewer lines	The title of the project is Replacement of Outlived Sewers. The additional sewer lines cannot be laid under this title.	Additional Sewer lines are basically in domain of replaced sewer line where change of route involves and interlinked.
24	597	EIA	It has been stated that EIA has been prepared but it is not included in the PC-I which should be annexed over here.	The Environmental Impact Assessment (EIA) for the project has been conducted in accordance with the guidelines of the Punjab Environmental Protection Agency (EPA). The assessment addresses potential environmental impacts during the construction and operational phases, including: Mitigation of excavation-related pollution (dust, noise, and air quality). Waste management protocols to ensure proper disposal of debris and sewer materials. Water quality protection measures to prevent contamination during sewer replacement activities. Community safety protocols to safeguard public health and minimize disruptions.

25	598	RBM indicators	The standard format included in the template PC-I should be completed and inserted over here.	project framework to track progress and assess performance throughout the execution phases. These indicators focus on: Reduction in crown failures and sewage overflows. Improvement in sewage disposal efficiency across the project zones. Enhanced public health outcomes through reduced exposure to stagnant wastewater. Community feedback mechanisms to ensure ongoing engagement and responsiveness.
26	598	Procurement plan	The procurement plan is missing in the PC-I.	The Procurement Plan for the project aligns with the Public Procurement Regulatory Authority (PPRA) guidelines, ensuring transparency and competitive bidding for materials and services. Key components of the procurement strategy include: Stage-wise procurement of pipes, manholes, and equipment to avoid delays and ensure supply chain continuity. Engagement with pre-qualified contractors experienced in urban sewerage infrastructure. Incorporation of local suppliers to reduce transportation costs and promote local economic activity. The Risk Mitigation Plan has been formulated to address project-specific risks, including: Risk of delays due to public conflicts – Mitigated by early stakeholder engagement and public awareness
27	598	Risk mitigation plan	The Risk Mitigation Plan should be included in the PC-I.	

				campaigns. Traffic disruptions – Addressed by phased construction and alternate route planning. Price variation calculations are provided for transparency, reflecting market rates and exact quantities consumed.
28	General		The above observations apply to all sub estimates included in this PC-I as these all are similar in nature. It has been assumed that for every sewer line in all colonies / locations /sub estimates, water supply pipe lines of PVC and HDPE will be encountered in the route of sewers & damaged which will require replacement including bailing out of water. This assessment may not be correct. WASA should have known the exact quantities through a long gestation period of the project. Exact quantities should be assessed and provision made accordingly.	Detail of price variations has already been submitted along with Revised PC-I.
29	Price variation		The detailed calculations of the price variation have not been annexed which should be provided for justification of the amount provided in the abstract of cost.	Same as above.

18. DELIBERATIONS OF PREVIOUS PDWP

The project was considered by 59th PDWP Meeting Held on 24.01.2025, wherein the project was deferred with following decisions:

- i. Executing Agency and Administrative Department will review and rationalize the project cost in North, South & Central Zones.
- ii. HUD & PHE Department will certify that changes proposed by the WASA Multan in Central & South Zones from original scope are inevitable and of emergent nature.

19. COMPLIANCE BY THE DEPARTMENT AGAINST THE DECISIONS IN PDWP

In compliance of the PDWP decisions HUD&PHE Department vide Letter No SO(UD)5-11/2017(P) Dated 13.02.2025 has submitted the certificate regarding the emergent nature of the addition scope in the central & South zones. Furthermore, it is also certified that Ventilation shafts have been installed at various points of the sewerage infrastructure under the instant Scheme. However, WASA Multan will assess the need for additional provisions based upon the inspection of the gas-composition in the manholes. If deemed necessary, further installations will be carried out using the O&M budget to ensure optimal system-performance and safety. It is also certified that the instant scheme will be completed up to June-2025, subject to the availability of funds provided by the Government of the Punjab.

Deliberations were made with Administrative Department and executing agency regarding rationalization of scope. However, they have responded that there is no additional cost impact in the total work outlay in the revised PC-I and there is no cushion for reduction in the project scope.

20. RECOMMENDATIONS:

The 1st revised project is placed before PDWP at a cost of Rs. **3,147.833** Million for consideration / Approval keeping in view of the response submitted by the Admin Department against the directions of 59th PDWP.
