GOVERNMENT OF THE PUNJAB
PLANNING & DEVELOPMENT BOARD
(TRANSPORT SECTOR)

WORKING PAPER FOR PDWP

Date of receipt of PC-I in P&DB: 24.01.2025

PART - A

PROJECT PROFILE:

1.	Project Title	Development of Urban Bus Depots & Allied Infrastructure, Rawalpindi	
2.	Location	Rawalpindi	
3.	Sponsoring Agency	Transport & Mass-transit Department, GoPb	
4.	Executing Agency	Rawalpindi Development Authority	
5.	Operations & Maintenance	Punjab Mass-transit Authority	
6.	Name of the Relevant department(s) and Stakeholder(s) invited in Pre-PDWP	1) Transport Department / PMA / NESPAK / RDA 2) Finance Department 3) PERI / Financial Analyst P&DB 4) DG M&E 5) Urban Unit 6) Consultancy Wing, P&D Board 7) Energy Deptt / Energy Section, P&DB, Lahore 8) Environment Deptt / Environment Section, P&DB 9) University of Engineering & Technology, Lahore	
7.	Cost	As indicated in ADP 2024-25	Rs. 600 Million
		Cost of PC-I reviewed in Pre-PDWP	Rs. 1,479.588 Million
		Cost of amended PC-I submitted by T&MD after Pre-PDWP	Rs. 1,581.222 Million
8.	Source of Financing	Annual Development Program 2024-25	
9.	ADP Allocation	Rs 181.818 Million (GS # 3471)	
10.	Gestation Period	Till October, 2025	

11. **(A) BRIEF DESCRIPTION, JUSTIFICATION AND BACKGROUND OF THE PROJECT:**

Rawalpindi, one of Pakistan's major cities, has historically been an important commercial and administrative center. However, its transport infrastructure has struggled to keep pace with rapid urbanization and population growth. The introduction of the Punjab Metro Bus System provided some relief by offering a dedicated rapid transit option that reduced congestion on major routes. However, this system has not been able to fully address the city's transport challenges, as it primarily serves specific corridor and does not cover the entire urban area. Many neighborhoods and key routes still suffer from inadequate public transport options, leading to reliance on private vehicles and informal transit services, which exacerbates traffic congestion and pollution.

To overcome the aforesaid transportation and environmental challenges, the Government of the Punjab included two schemes in ADP 2024-25 at GS # 3470 and 3471 for

induction of E-Buses and Development of Urban Bus Depots & Allied Infrastructure in Rawalpindi. The scheme for induction of e-buses (GS # 3470 of ADP 2024-25) has already been approved by the PDWP in its 39th meeting held on 25.10.2024 at the cost of Rs. 4,700 Million. Currently, the PC-I of scheme for establishment of Bus Depot along with allied infrastructure is being processed. It is stated in the PC-I that the identified land parcel of 3.35 Acres (near Chur Chowk, Main Peshawar Road, Rawalpindi **Annex-A**) for development of Depot is already property of Transport & Masstransit Department and there is no challenge related to land acquisition or transfer of possession to the extent of this scheme.

NESPAK has prepared layout of the depot, which includes facilities given in the following table. Master Plan given in PC-I is attached as **Annex-B**.

Sr. No.	Description	Numbers
1.	Admin / Operators Building	G+1
2.	Driver's Building	G+2
3.	Maintenance Store	G+1
4.	Electrical Room	Ground
5.	Pump Room (Firefighting)	Ground
6.	Pump Room (Water Supply)	Ground
7.	Guard Room	Ground
8.	Watch Tower	G+1
9.	Washing Bays	2 Number
10.	Transformers (E-Charging)	2 Number
11.	E-Charging Points	17 Slow Chargers + 5 Fast Chargers
12.	Current provision of Buses	64
13.	Future Provision of Buses	23
14.	Total provision for parking / charging bays	87
15.	Maintenance Bays	6

Electricity is one of the major cost component in the operational expenditure. In order to minimize operational subsidy, the consultant has carried out an option analysis of different charging options:-

i. Grid Only
ii. Grid + 1MW solar PV system with net metering
iii. Grid + 1 MW Solar System through Net Metering + 250kW solar PV system for charging 1.0 MWh BESS
iv. Grid + 1.25 MW solar PV system for charging 5 MWh BESS

The consultant has recommended the option of "Grid + 1 MW Solar System through Net Metering" as it offers the best Benefit to Cost Ratio from amongst the evaluated options, as explained in the following lines. Detailed comparative analysis of different charging options is at **Annex-C**.

i. Option-02, brings about operational subsidy savings of PKR 761 Million (in NPV terms) for an additional capital cost of PKR 115 Million (i.e. B/C. 6.61:1).

ii. Option-03, brings about operational subsidy savings of PKR 930 Million (in NPV terms) for an additional capital cost of PKR 300 Million (i.e. B/C. 3.09:1)

iii. Option-04, brings about operational subsidy savings of PKR 812 Million (in NPV terms) for an additional capital cost of PKR 897 Million (i.e. B/C. 0.90:1)

12. **SECTOR ISSUES**

Lack of decent public transport system.

13. **SECTOR STRATEGY / MISSION**

i. Provision of decent public transport
ii. Prioritize road safety and preserve environment

14. **RELATIONSHIP OF THE PROJECT WITH THE SECTOR POLICY / GROWTH STRATEGY, 2023**

The project is linked with sectorial policy of provision of decent public transport. Furthermore, it is also linked with following goals of Punjab Growth Strategy, 2023.

i. Goal 3: Ensure healthy lives and promote well-being for all at all ages.
ii. Goal 5: Achieve gender equality and empower all women and girls.
iii. Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable.
iv. Goal 13: Take urgent action to combat climate change and its impact.

15. **ALIGNMENT WITH PUNJAB SPATIAL STRATEGY, 2047**

The project is linked with strategic objective 3 of PGS 2024:- transformation of cities into smart, competitive & livable by improvement of mobility through efficient public transport.

16. **OTHER MAJOR ONGOING & POTENTIAL PROJECTS IN THE SECTOR**

i. Pilot project regarding induction of Electric Buses in Lahore
ii. Induction of Electric Buses and Development of Depots in Lahore, Multan, Faisalabad, and Bahawalpur.

17. **COST ESTIMATES:**

				PKR Million
Sr.No	**Description**	**Before Pre-PDWP**	**After Pre-PDWP**	**Variation**
1	**Earthwork & Allied Activities**	**25.871**	**20.778**	**-5.093**
2	**Sub Base & Base**	**10.905**	**10.655**	**-0.250**
3	**Structures Rigid Pavement**	**160.721**	**145.313**	**-15.408**
4	**Structures (Works)**	**303.789**	**283.328**	**-20.461**
4.1	Operator Building	25.604	18.316	-7.289
4.2	Driver Building Area	28.177	25.440	-2.737
4.3	Toilet Block	1.171	1.139	-0.032
4.3	Fire Fighting (Pump Room)	0.903	0.873	-0.030
4.3	Fire Fighting (Under Ground Water Tank)	9.163	8.425	-0.739
4.4	Tube Well & Room	12.174	12.009	-0.165
4.5	Maintenance Store	7.234	7.399	0.165
4.6	Electric & Meter Panel Room, Generator & Transformer Pad	3.274	3.043	-0.231
4.7	Guard Room	1.614	1.580	-0.034
4.8	Parking Shed	214.474	205.105	-9.369
5	**Architecture (Buildings)**	**44.471**	**46.966**	**2.495**

5.1	Operator Building	21.564	20.035	-1.529
5.2	Driver Building Area	15.130	17.427	2.296
5.3	Maintenance Store	6.996	8.646	1.650
5.4	Toilet block	0.781	0.859	0.078
6	**Ancillary Works**	**11.759**	**11.340**	**-0.419**
7	**Plumbing and Drainage works**	**14.946**	**11.184**	**-3.762**
7.1	Operator Building	2.338	1.981	-0.357
7.2	Driver Building Area	0.577	0.555	-0.023
7.3	Guard Room	0.241	0.225	-0.017
7.4	Toilet Block	0.477	0.443	-0.034
7.5	Water Supply & Sewerage Systems	2.370	2.086	-0.284
7.6	External Drain	8.942	5.895	-3.048
8	**Electrical Work**	**529.090**	**524.411**	**-4.679**
8.1	Operator Building	97.037	94.802	-2.236
8.2	Driver Building Area	3.104	3.138	0.034
8.3	Maintenance Store	2.947	2.711	-0.236
8.4	Toilet Block	1.562	1.585	0.023
8.5	Electric & Meter Panel Room, Generator & Transformer Pad	0.695	0.705	0.010
8.6	Pump Room (Fire Fighting)	0.569	0.567	-0.002
8.7	Guard Room (02 Nos.)	0.858	0.857	-0.001
8.8	Watch Tower (05 Nos)	2.073	2.073	0.000
8.9	Washing Bays	2.095	2.128	0.033
8.1	External Electrical Works	17.260	16.825	-0.435
8.11	Bus Depot (including Slow Charging Units 200kW 17Nos).	297.496	297.389	-0.106
8.12	FAST Charging Units 450kW (05 NOS.)	103.393	101.630	-1.762
9	**Fire Fighting**	**86.136**	**86.136**	**0.000**
10	**Watch Tower and Boundary Wall With Fence**	**34.897**	**30.463**	**-4.434**
11	**Dismantling of Existing Structure (Lump Sum)**	**1.000**	**1.000**	**0.000**
12	**1000 KW Solar PV system**	**103.400**	**103.400**	**0.000**
13	**Total Construction Cost**	**1,326.985**	**1,274.975**	**-52.010**
14	Consultant design @ 1%	**15.924**	**12.750**	**-3.174**
15	Consultant supervision 2%	**30.521**	**25.499**	**-5.021**
16	Contingencies Charges @ 3%	**39.810**	**38.249**	**-1.560**
17	Supply of 11 KV Grid Connection by IESCO (PS)	**0.000**	**150.000**	**150.000**
18	One (01) Toyota Hilux REVO V Automatic (including all taxes)	**0.000**	**16.000**	**16.000**
19	Add 5% Pst on Construction Cost.	**66.349**	**63.749**	**-2.601**
20	**Total Cost**	**1,479.588**	**1,581.222**	**101.634**

18. **UNIT COST:** Not indicated in PC-I.

19. **EIRR:** Not Indicated in instant PC-I. EIRR mentioned in E Buses PC-I is 13.14%

20. **BC RATIO:** Not Indicated in instant PC-I. BCC of E-Buses scheme is 1.03

21. **PERIOD OF IMPLEMENTATION:** Till October, 2025.

22. **ANNUAL OPERATING COST:** Annex-C.

23. **ANNUAL INCOME AFTER COMPLETION:** Not Applicable.

24. **REQUIREMENT OF VEHICLES / / CONSULTANCY / STAFF:**

To efficiently deliver the project, consultancy services are required. The major deliverables from the consultant are: detailed design of Depot and all allied infrastructure, preparation of Tender Documents, resident supervision of all works for Depot Development. A provision of Rs. 38.249 million have been taken in cost estimates as detailed at para 17 above. Similarly, a provision of Rs 16 million have been added by the PMA in amended PC-I for purchase of one vehicle.

PART-B

25. **TECHNICAL APPRAISAL:**

DELIBERATION BY PRE-PDWPS DATED 08.01.2025 & 13.02.2025

The original PC-I amounting to Rs. 1479.588 million and modified PC-I amounting to Rs. 1,581.222 were reviewed in two Pre-PDWP meetings held on January 08, 2025 and February 13, 2025 under the chairmanship of Chief Economist, P&DB, which was attended by representatives from all relevant departments / experts particularly from Technical, Energy and Consultancy Sections of P&DB, UET, Urban Unit, Finance Department, Energy Department, Transport & Mass-transit Department and NESPAK etc. Minutes of Pre-PDWPs are at **Annex-D** & **Annex-E**.

Major decisions of Pre-PDWPs and their compliance status is as under:-

SR #	DECISION	STATUS / REMARKS
1.	The provision for residences, for officers of PMA, on the second floor of the operator's building shall be deleted.	The provision for residences from cost estimates have been deleted. However, Department will include the correct layout in PC-I.
2.	The provision for consultancy shall be restricted to 3% (1% for Design and 2% for Supervision). The Terms of Reference (TORs) for the consultancy shall be vetted by the Consultancy Wing of P&DB after approval of provision of consultancy by PDWP.	The provision for consultancy, which was earlier 3.5%, has now been restricted to 3%. However, Department will get the TORs for the consultancy vetted by the Consultancy Wing of P&DB after approval of provision of consultancy by PDWP.
3.	The cost estimates shall be recalculated based on the 1st Bi-annual MRS 2025 notified by the Finance Department and shall be incorporated in the PC-I.	The cost estimates has been recalculated on applicable MRS i.e. 1st Bi-annual MRS 2025.
4.	PDWP in its 39th meeting held on 25.10.2024, while approving the linked scheme regarding induction of electric	Transport & Mass-transit Department has shared a letter of Punjab Energy Efficiency &

	buses had decided that T&MD shall consult the Energy Department and devise a plan for optimal utilization of Depots and lands in terms of generation of electricity and charging of buses using solar energy sources with the objective of minimizing the electricity cost in order to reduce the operational cost and subsidy during the life-cycle of the buses. In line with ibid decision of the 39th PDWP meeting held on 25.10.2024, the department shall consult the Energy Department. The PC-I of the scheme shall be shared with the Energy Department for their input.	Conservation Agency, Energy Department, Govt. of the Punjab, Lahore whereby the PEECA has endorsed the Energy Solution proposed by the NESPAK.
5.	The T&MD shall provide a response to the observation on designing the depot to accommodate at least 102 buses, as per the study conducted by NESPAK. The matter shall subsequently be presented before the PDWP.	T&MD has responded that The department is currently operating a Vehicle Inspection and Certification System (VICS) unit on this land. The department intends to expand VICS operations at the same place due to its prime location and require additional area of land. The area after accommodating future VICS plan remains to 3.35 acres with maximum parking capacity of 87 buses. A separate land parcel will be required for development of deport for buses in addition to 87.

The other decisions / recommendations of Pre-PDWPs are as under:-

i. Provision of Rs. 16 Million for purchase of one 2800 CC vehicle, incorporated by the department in amended PC-I, shall be deleted.

ii. Traffic Impact Assessment shall be conducted by the executing agency to ensure that the proposed development does not negatively impact nearby schools, hospitals, and general traffic flow.

iii. Guidance of the PDWP shall be sought regarding the increased cost of the PC-I compared to its indicated cost in the ADP 2024-25.

26. **SUBMISSIONS / RECOMMENDATIONS:-**

The scheme is placed before PDWP with following submissions / recommendations:-

i. The provision of Rs. 16 million regarding purchase of one Toyota Hilux REVO V Automatic shall be deleted from cost estimates.

ii. Transport & Mass-transit Department may secure approval of Provincial Cabinet regarding enhanced cost of scheme vis-à-vis cost of the scheme indicated in ADP 2024-25.

iii. Traffic Impact Assessment shall be conducted by the executing agency to ensure that the proposed development does not negatively impact nearby schools, hospitals, and general traffic flow.

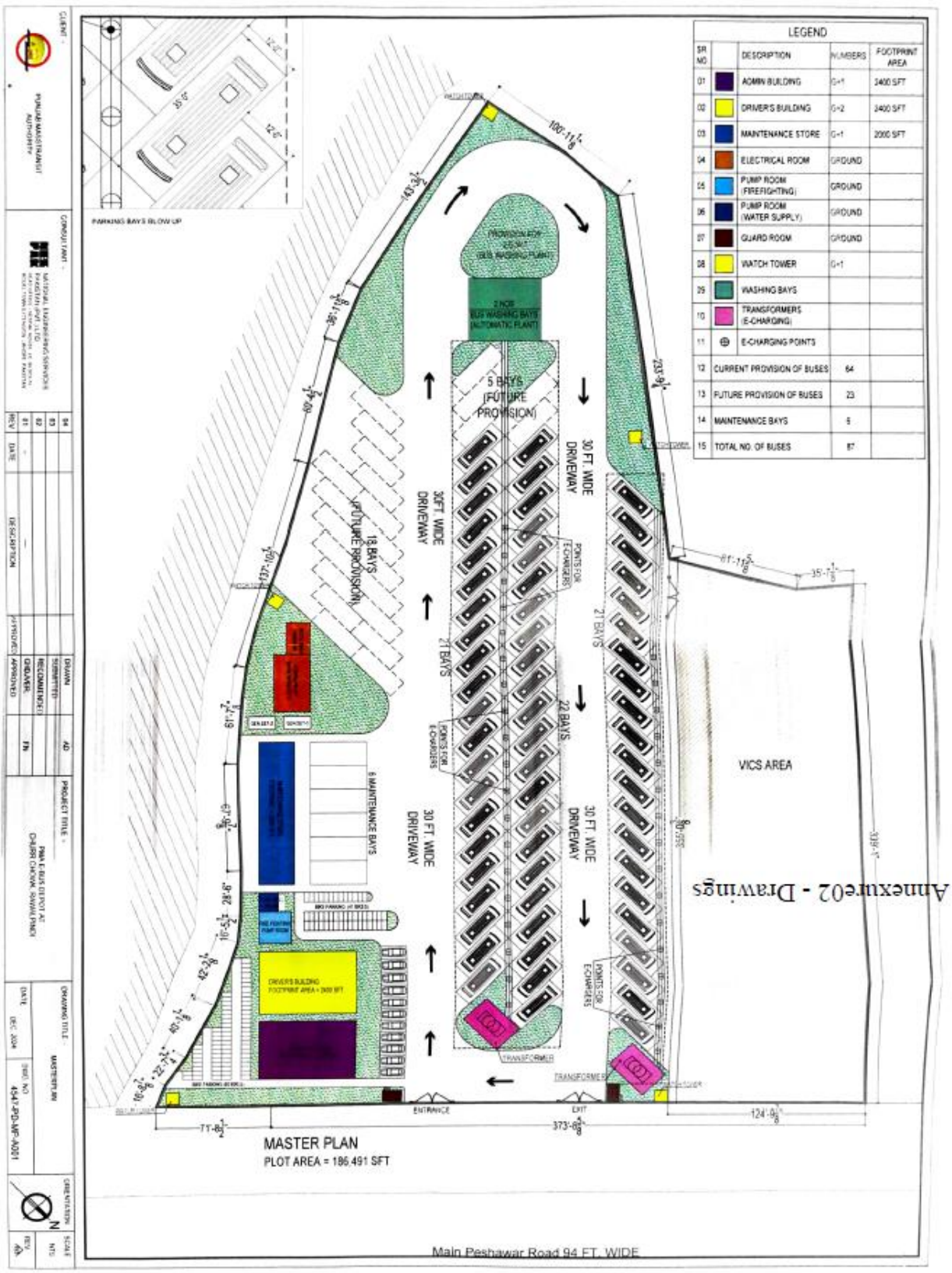
iv. TORs of the consultancy shall be got vetted by the department from consultancy section of P&DB.

v. The correct layout plan of operators building shall be incorporated in the PC-I.

vi. The correct object codes, in line with cost components decided in PDWP, shall be incorporated in the PC-I.

ANNEX-A: LOCATION MAP

ANNEX-B: MASTER LAYOUT



ANNEX-C: OPTION ANALYSIS OF DIFFERENT CHARGING OPTIONS

Amount in PKR Million

S #	Options	Nominal Value (Operational Subsidy)	Difference (Operational Subsidy)	NPV (Operational Subsidy)	NPV Difference (Operational Subsidy)	CAPEX	Difference (CAPEX)	Operational Subsidy Per Rider (12 Years)	NPV of Operational Subsidy Per Rider (12 Years)	Benefit to Cost (B/C)
1	Expense of Electricity from Grid	(9,735)		(3,931)	-	5,858	-	73	30	
2	Expense of Electricity from Grid + 1 MW Solar System (GRID-TIED)	(7,824)	1,911	(3,169)	761	5,974	115	59	24	6.610
3	EXPENSE OF ELECTRICITY FROM GRID + 1 MW NET METERED SOLAR SYSTEM & 250 KW OFF-GRID SYSTEM (1 MWH BATTERY BACKUP)	(7,399)	2,336	(3,000)	931	6,159	301	56	23	3.090
4	EXPENSE OF ELECTRICITY FROM GRID + 1.25 MW SOLAR SYSTEM FOR BESS (5 MWH BATTERY BACKUP)	(7,698)	2,037	(3,119)	812	6,756	897	58	23	0.900