

TERMS OF REFERENCE (TOR)
FOR
HIRING OF CONSULTANCY SERVICES AGAINST
"3RD PARTY VALIDATION FOR FUNCTIONALITY OF MACHINERY /
VEHICLES IN O&M WING, WASA, LAHORE"

1. BACKGROUND

WASA Lahore is responsible for providing of potable drinking water and sanitation facilities to the citizens of Lahore. The functions of WASA include rehabilitation/augmentation of existing system, planning & design, construction of new water supply, sewerage & drainage and operation / maintenance of existing system. For smooth operation and maintenance of the system, agency needs to ensure operationality of all the machinery / vehicles. Disposal of silt at dumping site is also required to be done through machinery to maintain cleanliness of the area. Completion of desilting process pertaining to drains is essential, before start of monsoon to provide relief to the public.

Urban flooding in monsoon is one of the serious challenges of Lahore city usually being faced owing to under developed. Urban flooding during monsoon usually befalls due to intense rainfalls that occur more than forecasted. It's a complex global phenomenon that stems from the combination of extreme hydrological and meteorological events followed by widespread devastation, economic damages and loss of human lives. Unplanned urbanization, population sprawl, transmigration and upsurge of built-up areas with passage of time are primary causes of inundation and flooding during monsoon in city.

2. OBJECTIVES

In order to carry out operation and maintenance of its system, WASA intends to hire services of 3rd party Consultant to validate its machinery / vehicles available in O&M Wing with the following objectives:

- i) To observe the condition of machinery during execution of work and submit recommendation concerning its improvement.
- ii) To verify expertise of deployment manpower of vehicle operation.
- iii) To guide WASA staff about maintenance of machinery for increased life of machinery and vehicles.
- iv) To verify the functionality of all type machinery i.e. dewatering set, drainage machinery and sewer cleaning machinery.
- v) To verify preventive maintenance of machinery to avoid major breakdown i.e. change of mobile oil, bearings etc.

- vi) To ensure timely repair of machinery in case of non-functionality of machinery.
- vii) To submit immediate report in case of any delay from engineer In-charge for getting the machinery into operation.
- viii) To ensure use of Health, Safety equipment by drivers while operating machinery.
- ix) To verify maintenance of physical condition of vehicles.

3. SCOPE OF WORK / DUTIES AND RESONSIBILITIES OF CONSULTANT

Details of drainage machinery/vehicles are as under:

DRAINAGE MACHINERY		
Sr. No.	Type	Total
1.	Dump Truck	52
2.	Tractor Trolly	27
3.	Excavator (Wheel Mounted + Chain Mounted + Clam Shell)	12
4.	Back Hoe	11
5.	Fronnd End Loader	05
6.	Crane	01
7.	Prime Mover	01
Sub Total		109

Details of sewerage cleaning machinery are as under:

SEWER CLEANING MACHINERY		
Sr. No.	Type	Total
1.	Suction Machine (Large + Small)	36
2.	Jetting Machine (Large + Small)	40
3.	Water Bouzer	17
Sub Total		93

Details of dewatering sets are as under:

DEWATERING SETS STATUS						
Sr. No.	Description	IN FIELD	IN WORKSHOP			TOTAL
			READY IN WORKSHOP	UNDER REPAIR	UN SERVICEABLE	
1.	BBA Pumps (4-cfs)	0	02	0	0	02
2.	Deahung (3-cfs)	06	04	0	0	10

3.	Alight Primax (3-cfs)	02	03	0	0	05
4.	Deutz Engine (2-cfs)	52	04	03	0	59
5.	Lister Peter (4-cfs & 2-cfs)	03	08	01	0	12
6.	Dong Fung (1-cfs)	34	12	0	0	46
Total		97	33	04	0	134

Details of dewatering sets are as under:

ABSTRACT OF DISPOSAL / LIFT STATION GENERATORS					
Sr. No.	Capacity of Generators (kVA)	South	North	Total	
1.	1000	10	05	16	
2.	630	04	01	05	
3.	500	07	07	14	
4.	400	02	0	02	
5.	325	0	01	01	
6.	300	13	14	27	
7.	250	02	03	05	
8.	200	18	31	49	
9.	135	01	0	01	
10.	130	0	02	02	
11.	125	0	01	01	
12.	100	11	10	21	
Total		68	76	144	

Details of dewatering sets are as under:

ABSTRACT OF DISPOSAL / LIFT STATION GENERATORS					
Sr. No.	Capacity of Pumps (cfs)	South	North	Total Pumps	Total
1.	71	0	03	03	213
2.	56	0	09	09	504
3.	40	21	06	27	1080
4.	30	05	0	05	150
5.	25	57	37	94	2350
6.	20	05	05	10	200
7.	16	01	0	01	16
8.	15	23	12	35	525
9.	13	10	05	15	195
10.	12	04	0	04	48
11.	10	15	15	30	300
12.	8	04	04	08	64
13.	7.5	01	0	01	7.5
14.	6	55	67	122	732
15.	5	01	04	05	25
16.	4	15	53	69	276
17.	3	03	02	05	15
18.	2	34	52	86	172
19.	1.5	0	01	01	1.5
20.	1	01	02	03	3
21.	0.5	0	09	09	4.5
22.	0.25	0	01	01	0.25
Total		256	287	543	6881.75

4. DUTIES AND RESPONSIBILITIES OF CONSULTANT

The duties and responsibilities of the consultants will include but not limited to the following:

- i) Consultant will prepare a comprehensive and logical action to carry out the verification/validation of work and will present it to the Client.
- ii) Consultant will guide WASA staff about maintenance of machinery for increased life of machinery and vehicles.
- iii) Consultant would be required to physically verify 100% of machinery and its working.
- iv) Consultant would be required to physically verify 100% physical verification of staff and their working hours.
- v) Consultant would be required to verify 100% functionality of machinery.
- x) Consultant would be required to verify preventive maintenance of machinery to avoid major breakdown i.e. change of mobile oil, bearings etc.
- vi) Consultant would be required to ensure timely repair of machinery in case of non-functionality of machinery.
- vii) Consultant would be required to monitor the implementation of planned schedule.
- viii) Consultant would be required to prepare daily progress report.

5. ROLE OF CLIENT

- i) The Client will nominate coordinators i.e. who be authorized to approve the action plan / work plan proposed by the Consultant and receive the Consultant Inspection report.
- ii) The Client will provide all the data of its machinery / vehicles to the Consultant required for monitoring and Third Party Validation.
- iii) Client will allow the access to the Consultant to its infrastructure where the verification and Third Party Validation is required.

6. ROLE OF CLIENT

- i) Inception Report (covering all the program, methodology for the task and proposed schedule within one week)
- ii) Daily & Weekly Report
- iii) Fortnight Report alongwith presentation
- iv) Monthly Report
- v) Final Report
- vi) Evaluation Report (05 hard copies and 01 soft copy) clearly specifying his observations and findings

vii) Recommendations / Suggestions for improvement if any.

7. DURATION OF ASSIGNMENT

The Consultant will be required to complete all the activities and furnish the final report in a period of three (03) months.

8. DURATION OF ASSIGNMENT

Sr. No.	Designation	Qty.	Months	Qualification
1.	Project Manager	1	0.25	B.Sc. Mechanical Engineering with at least 15 years of relevant experience
2.	Senior Engineer (Mechanical)	1	1	B.Sc. Mechanical Engineering with at least 10 years of relevant experience
3.	Safety Engineer	1	1	B.Sc. Mechanical Engineering with at least 05 years of relevant experience
4.	Inspector / Quantity Surveyor	4	3	D.A.E in Mechanical with at least 05 years of relevant experience
5.	Cameraman / Technician	2	3	Suitable qualification
6.	Support Staff	6	3	Suitable qualification