Name of Work:

"Hiring of consultancy firm for planning, hydraulic modeling, leak detection works etc. for reduction of NRW by formation of 102 DMA in phase-I in water supply network of DJB and its O&M for 2 years".

(NIT No 03 (2018-19)

Compiled replies to the queries raised by the bidders.

S.	RFP	Description	Observation/ Request for	Reply
No.	doc./		clarification	
	Clause /			
	Page No.			
1	RFP/Page	DJB Safety	Please provide the DJB	Attached
	No.25	Code	safety code.	
2	RFP/Page	Price	As the price adjustment	Consumer Price Index
	No.29	adjustment	provision applies to remuneration rates has been disallowed. However since the project duration is of 42 months, it may please be allowed.	(CPI) for industrial workers as published by RBI shall be followed for paying remuneration after 18 months. The adjustment in the remuneration rate shall be made by considering the consumer price index of the month of submission of bids i.e. September 2018, as the base value, while paying the remuneration of work done w.e.f. 19th month of the project.
3	RFP/Page No.30	EMD	We request to accept the EMD in the form of Bank Guarantee.	As per RFP
4	RFP/Page No.43	Form Tech-3	As mentioned in form that "not applicable for this RFP". Please confirm.	As per RFP
5	RFP/ Page no.44 to 52	Form Tech-4	We request to provide the following data's: 1. List of available data DMAs (102) wise 2. Availability of Base map with features 3. Availability of Consumer data with coordinate system 4. Length of network DMAs wise 5. Satellite image with high resolution And who will be	As per RFP

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		responsible for balance data required for successful completion of project. If the consultant is responsible for collection of data, It may be ideal to provide quantum for each type in order to keep all prospective bids on a common platform so that the evaluation of financial proposal could be easy.	
RFP/ Page no.53 to	Form Tech-5	We understand that we can change the sequence of work schedule.	Yes, but final decision shall be taken by DJB
RFP/ Page no.53 to 54	Form Tech-5	We understand that leakage repair is not in consultant scope. Please confirm.	Leakage repair is not in consultant scope.
RFP/Page no.72 to 104	TOR	time separate cell of DJB for data collection, verification and completion of assignment. 2. Also request to DJB to depute the team of lineman or helper dedicated for data verification & during required survey for the assignment.	
RFP / Page No.73	TOR	The scope of work clearly says that the consultant has to assess 'as is situation' by data analysis and field test which may include leak detection survey, elevation survey, utility survey (water supply/sewerage/telephone etc.), detection of unauthorised connection and sample survey of connection meters. It may be ideal to provide quantum for each type in order to keep all prospective bids on a common platform so that the evaluation of financial proposal could be easy.	
	Page no.53 to 54 RFP/ Page no.53 to 54 RFP/Page no.72 to 104 RFP / Page	Page no.53 to 54 RFP/ Page no.53 to 54 RFP/Page no.72 to 104 RFP / TOR RFP / TOR Page	data required for successful completion of project. If the consultant is responsible for collection of data, It may be ideal to provide quantum for each type in order to keep all prospective bids on a common platform so that the evaluation of financial proposal could be easy. RFP/ Page no.53 to 54 RFP/ Page no.53 to 54 RFP/Page no.72 to 104 RFP/Page TOR 1. We understand that leakage repair is not in consultant scope. Please confirm. RFP/Page no.72 to 104 RFP/Page TOR 1. We suggest setup a full time separate cell of DJB for data collection, verification and completion of assignment. 2. Also request to DJB to depute the team of lineman or helper dedicated for data verification & during required survey for the assignment. RFP/ TOR The scope of work clearly says that the consultant has to assess 'as is situation' by data analysis and field test which may include leak detection survey, elevation survey, utility survey (water supply/sewerage/telephone etc.), detection of unauthorised connection and sample survey of connection meters. It may be ideal to provide quantum for each type in order to keep all prospective bids on a common platform so that the evaluation of financial

10	RFP / Page No.73	TOR	We request that all type of survey required for the completion of	As per RFP
11	No.73		completion of	
11			1	
11			assignment may be listed	
11			(type of survey, number/	
11			unit, tentative quantities)	
11		•	& cost for the same may	·
11			be included in provisional	
11	RFP /	TOR	sum (non-competitive). Rehabilitation works in 4	Ac non DED
	i .	IOK	areas (malviya Nagar,	As per RFP
	Page No.75		Nangloli WTP, Vasant	
	140.73		Vihar & Meruali) are in	
			progress - do they form	
			part of scope?	
			The existing data of all	
			WTP including minor	
			detail would be provided	
		•	by the DJB. Please	
			confirm	
12	RFP/	Training of	We suggest setup a full	As per RFP. Training
	Page	DJB staff	time separate cell of DJB	shall be required for
	No.90		for data collection,	concerned Zonal Staff of
			verification and	respective DMAs.
			completion of assignment	
			that will be the self-	
			training of the DJB staff.	
			Please confirm that	
			separate training is needed to be conducted. If	
			training	
			is in consultant scope,	
			please confirm the number	
			of staff & number of	
			trainings.	
13	RFP/	Project Team	We feel that the team	As per RFP
	Page		mentioned in RFP	_
	No.105 to		document is not sufficient	
	107		with respect of the	
			quantum of work.	
			We suggest that project	
			team may be asked with	
			respect of clustering of	
			DMAs and all DMAs should be divided in	
			clusters.	
:			We also suggest DJB to	
			provide the office space	
			with required facilities in	
			respective clusters.	
14	RFP/BDS	Last date and	We request to provide at	Agreed. Date of
		time for receipt	least 15 days for the	submission of Technical
		(upload) of	preparation of proposal	& financial bids (offline
i		bids	after issuing clarification/	only) have been revised as



			circulating minutes of pre bid meeting.	Hrs. Opening of Technical bids shall be done on 18-09-2018 at 15:10 Hrs.
15	RFP/SCC	Limitation of consultant liability	We request to revise the 'Liability of the consultant' Clause, which is in line with the general bidding practices in India: "Notwithstanding anything contained in this Contract, RFP or any other document, the maximum amount of aggregate liability and indemnity of Consultant in any event shall not be more than the fee received by the Consultant till that date".	As per RFP

S.N.	Referenc e from the RFP, clause	Excerpt from RfP	Clarific ation/ request / query We understand that	Replies Agreed, but the
16	Clause 7.7 Terms of reference Detailed Scope of work Point No. 22 Monitoring of Rehabilitati on Works (Page No 99)	The Agency has to monitor the rehabilitation works required to achieve the main objective of the Contract and reduce water loss in DMA from source i.e. from UGR/direct tapping to the consumer End but the decision of EE concerned in this regard shall be final. The agency shall super wise subagencys and ensure enforcement of material and workmanship specifications. The capital works of rehabilitation shall be executed by the	these rehabilitation works will be carried out by a contractor which DJB will appoint. The Consultant will assist DJB in ensuring that the rehabilitation works are carried out in line with the option selected from the Consultant's recommendation in the earlier stages of this assignment. We therefore request the referred excerpt from the TOR to read as follows: The Agency has to monitor the rehabilitation works required to achieve the main objective of	consultant shall execute all the 23 activities as per RFP Clause No. 7.7

		Department. The	the Contract and	
		agency shall have	reduce water loss in	
			DMA from source	
			i.e. from UGR/direct	
1		monthly report	· ·	
		regarding the	tapping to the	
		progress of	consumer End but	
		rehabilitation work	the decision of EE	·
		to the Nodal	concerned in this	·
		Officers	regard shall be final.	
		(Civil/E&M/Reven	The Consultant's	
		ue) Appointed by	key activities in this	·
		DJB as well as to	stage of the	
		the concerned	assignment would	
		CEs/SEs/EEs.	be:	
			a. Monitoring of	
			the progress of	
			the works	
			making sure the	
			timeliness of	
			completion.	
			b. Materials procured	
1			for the	
			works are in line	
			with the selected	
			option	
			1	
			c. Works are in adherence to the	
		<u>,</u>		
			strategy and plan	
			recommended by the	
			Consultant to DJB	
ļ				,
			The capital works of	
		·	rehabilitation shall be	
			executed by the	
			Department. The	
			agency shall have to	
			submit the monthly	
			report regarding the	
			progress of	
			rehabilitation work to	
			the Nodal Officers	
			(Civil/E&M/Revenue)	
	1		Appointed by DJB as	
			well as to the	
			concerned	
		<u> </u>	CEs/SEs/EEs.	
17	Clause 7.8	Agency shall have to	We understand that the	As per RFP
	Scope of	achieve the target of	Consultant shall assist	_
	work during	reduction of NRW as per	DJB in achieving the	
	O&M period	the standard prescribed	target of reduction of	
]	by CPHEEO/MoUD	NRW by making sure	
		either on the completion	that the contractor(s)	:
		of rehabilitation work as	(who DJB will appoint].
		proposed by the agency	to carry out the	\
		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
	•			الما

losses) 2. Hydraulic Modeling. 3. Elevation Survey 4. Technical assistance to prepare the rehabilitation estimates 5. Monitoring of Rehabilitation work Rehabilitation work Nage to the specified limit of 15% as per CPHEEO standards: 1. Leak detection (Real losses) 2. Hydraulic Modeling. 3. Elevation Survey 4. Technical assistance to prepare the rehabilitation estimates 5. Monitoring of Rehabilitation work (in terms of time lines agreed vis-a-vis actual	Terms of reference Major Scope of work (Page No. 83, first paragraph) Terms of reference of work (Page No. 83) first paragraph) Completion of O&M period We request the referred clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to clause to read as: The agency shall have to r	Agency shall assist the DJB in monitoring the implementing contractor to achieve the target of reduction of NRW as per the standard prescribed by CPHEEO/MoUD either on the completion of rehabilitation work as proposed by the agency after the hydraulic modelling of the DMAs on finelly till the	In view of this, we request the scope of work excerpt cited to read as:	18	reference Major Scope of work (Page No. 83, first	The agency shall have to execute the following four major works for the reduction of NRW %age to the specified limit of 15% as per CPHEEO standards: 1. Leak detection (Real losses) 2. Hydraulic Modeling. 3. Elevation Survey 4. Technical assistance to prepare the rehabilitation estimates 5. Monitoring of	with the strategy and plan that the Consultant will recommend to DJB for achieving these targets. In view of this, we request the scope of work excerpt cited to read as: Agency shall assist the DJB in monitoring the implementing contractor to achieve the target of reduction of NRW as per the standard prescribed by CPHEEO/MoUD either on the completion of rehabilitation work as proposed by the agency after the hydraulic modelling of the DMAs or finally till the completion of O&M period We request the referred clause to read as: The agency shall have to execute the following five major works for the reduction of NRW %age to the specified limit of 15% as per CPHEEO standards: 1. Leak detection (Real losses) 2. Hydraulic Modeling. 3. Elevation Survey 4. Technical assistance to prepare the rehabilitation estimates 5. Monitoring of Rehabilitation work (in terms of time lines	consultant shall execute all the 23 activities as per RFP Clause No. 7.7	
In view of this, we request the scope of work excerpt cited to read as: Agency shall assist the DJB in monitoring the implementing contractor to achieve the target of reduction of NRW as per the standard prescribed by CPHEEO/MoUD either on the completion of rehabilitation work as proposed by the agency after the hydraulic modelling of the DMAs or finally till the completion of O&M period Terms of reference Major Scope of work (Page No. 83, first paragraph) The agency shall have to execute the following four major works for the paragraph) The agency shall have to execute the following five major works for the following five major works for the major works for the specified limit of per CPHEEO standards:	In view of this, we request the scope of work excerpt cited to read as: Agency shall assist the DJB in monitoring the implementing contractor to achieve the target of reduction of NRW as per the standard prescribed by CPHEEO/MoUD either on the completion of rehabilitation work as proposed by the agency after the hydraulic modelling of the	In view of this, we request the scope of work excerpt cited to				modelling of the DMAs or finally till the completion of O&M	O&M works) adhere with the strategy and plan that the Consultant will recommend to DJB for achieving		

	purchased) by the contractor appointed by the DJB to execute the NRW reduction work as per the strategic advice given by the Agency (consultant).	
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Sr. No.	Reference of RFP Document	Particulars	Comments/Query for clarification, By DRA Consultant Nagpur	Reply
19.	Section 7.0 Terms of Reference	Leak detection and repair within the DMAs: Normal	As per the mentioned clause, it is not clear who will do the leak repairs, Kindly confirm.	As per RFP
	7.6 Strategy for Calculation of NRW & Reduction of NRW	or those with latest technologies will be	Also clarify for any arrangements from DJB if there are any delays, in-Permissions, appointment of the contractor, resistances	
	Reducing Losses – Page No. 81	The NRW team will identify the connections for replacementadvantages & disadvantages	happen during Implementation of project	
20.	7.7 Terms of reference Major Scope of work Summary of Scope of Work Page - 83	Flow meters	Please clarify who shall be doing Calibration of Flow meters and how it will be made?	
21.	Detailed Scope of Work 1. DMA identification Page No. 84	shall have to be transferred on ArcGIS software's latest version available with the agency, as high quality base map of DMA is prerequisite towards good network mapping, hydraulic modeling and development of GIS.	We would like to make a note here that GIS activity itself takes 4-6 months. Please confirm if all GIS Maps are available with DJB to be transferred on Arc GIS	As per RFP
22.	Detailed Scope of Work 5. Identification of critical points and installation of pressure	Identification of critical points and installation of pressure loggers & electromagnetic flow meters etc.	We understand that the Identification of critical points and installation of pressure loggers & electromagnetic flow meters etc is under the	As per RFP

Sr. No.	Reference of RFP Document	Particulars	Comments/Query for clarification, By DRA Consultant Nagpur	Reply
	loggers & electromagnetic flow meters etc. Page No. 86		scope of consultant, kindly confirm who shall be responsible for procurement of Loggers & electromagnetic flow meters etc	
23.	Section 9.0 Mode / Terms of Payments	Payment Terms (i) 60% in Capital works/rehabilitation period and (ii) 40% in O&M period.	We have read the proposed payment terms in the RFP and found them quite complicated. We request to make Payment Terms more Feasible & simpler for both Client & Consultants Sides. We suggest (i) Period of 18 Months of Design to be Delivery Based and (ii) O&M Period of 24 Months – Man-month Based.	As per RFP
24.	Instruction to the Consultant E. Data Sheet Mode of Submission of Technical Document Page No. 30	Submission of Technical & Financial Proposal	Please clarify for Consultants Empanelled under MOUD need to submit their proposal in Hard format & Soft format both.	technical and financial bids shall be in manual/offline
25.	Instruction to the Consultant E. Data Sheet	Method of selection: Lump Sum Contract to be decided by Least Cost (L1) Method after negotiations if required	of the project and scope of work we suggest considering QCBS	

26.	Section 2. Instruction to Consultant s (ITC) and Data	A price adjustment provision applies to remuneration rates:	Please confirm that this clause is to be read as "YES", as the Contract period is 18 months + 24 months and the Instruction to Consultants, Clause 16.2 says: "For assignments with a duration exceeding 18	Consumer Price Index for industrial workers as published by RBI shall be followed for paying remuneration after 18 months. The adjustment in the remuneration rate has to be made by considering the
27.	Sheet , Claus e 16.2, Page 29 Secti on 2. Instructio	The Consultants shall submit their Proposals in hardenies kent in	months, a price adjustment provision for foreign / local inflation for remuneration rates applies" Please clarify this clause, as the Instruction to consultants Clause	consumer price index of the month of submission of bids i.e. September 2018, as the base value, while paying the remuneration of work done w.e.f. 19 th month of the project. RFP submission mode is manual/offline only
	n to Cons ultant s (ITC) and Data Sheet , Claus e 17.1, Page 30	hardcopies kept in sealed envelope with the soft copy (scanned originals) of technical proposal at the email address dmacelldjb@gmail.com	17.1 says: "The mode submission of RFP shall be submitted offline (manually) only"	

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28.			110000	Yes
	on 2.	the evaluation, the	"Service Tax" is to be	
	Instr	Client will exclude:	read as "GST".	
	uctio	(a) all identifiable		
	n to	indirect taxes such		
	Cons	as Service Tax		
	ultant	levied on the		
	s	Consultant's		
	(ITC)	'		
	and	All applicable		
	Data	taxes shall be paid		
	Sheet			
		firm.	·	
	Claus			
	e	reimburse the		
	25.1,	Service Tax to the		
	Page	consultant as per		
	32	the applicable		
	32	rates		
	İ	rates		
20	Sagt:	Expected data for	Please specify the	As per RFP
29.	Secti	Expected date for the	tentative Month / Year.	1 and bear and a
	on 2.	commencement of		
	Instr			
	uctio	the Services: [Shall		
	n to	be as per work		i ·
	Cons	order]		
	ultant			
	S			·
1	(ITC)			
	and			
	Data			·
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	Claus			
	e			
	30.2,			
	Page			
	34			
1 22	10	Cl 1-12-4	Please specify the page	As per RFP
30.	Secti		limit for the Technical	_
	on 3.	Required Forms		
	Page		Proposal – Standard	,
	s 35		Forms.	· \
	& 36.		,	\
L				1
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31.	Secti	FORM TECH-3:	Please clarify if TECH-3	As per RFP
	on 3.	NOT	is to be submitted, since	
ĺ	Tech	APPLICABLE	Data sheet Clause 10.1	
	nical	FOR THIS RFP	says:	
	Prop		"The Proposal shall	
	osal		comprise the	
			following:	
	Stand		For FULL	
	ard		TECHNICAL	
	Form		PROPOSAL (FTP):	·
	_s,		1 st Inner	
	Page		Envelope with the	
	43		Technical Proposal:	·
			(1) Power of	
			Attorney to sign the	
			Proposal	
•			(2) TECH-1	
			(3) TECH-2	
			(4) TECH-3"	
32.	Secti	FORM TECH-6	We understand that the	1
	on 3.	TEAM	Remuneration rate is	working hours referred in
	Tech	COMPOSITION,	based on normal	RFP are minimum duration
	nical	ASSIGNMENT,	working of 8 hours per	required for completion of
	Prop	AND KEY	day and 5 days per	project work within
	osal	EXPERTS'	week. Bidder's	stipulated time. No extra
	_	INPUT	personnel shall be	payment shall be given if
	Stand	2. Months are	eligible for weekend	extra days/hours have to be
	ard	counted from the	holidays, national	consumed by the consulting
	Form	start of	holidays and holidays as	firm to completion project
	s,	assignment/mobiliz	observed at the place of	work. As this is a lump sum
	Page	ation. One (1)	work/deputation.	contract.
	57	month equals	Î	
		twenty two (22)		
		working (billable)		
		days. One working		
		(billable) day shall		
		be not less than (8)		
		working (billable)		
		hours		
33.	Claus	Team Leader	We understand this	As per RFP
	e		qualification is	F
	7.9.1		applicable also for	
	Core		O&M Period for 24	
	Team		Months, Please clarify?	
	Page			l ·
	105			
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34.	Do	NRW	We understand this	As per RFP
		Management/Leak	qualification for	*
		Detection Specialist	Planning, Hydraulic	
			modeling, Leak	
			detection works etc. is	
			applicable also for 18	
			months, Please clarify?	
35.	Page	Proposed minimum		For Hydraulic modeler,
	No	qualification for	minimum numbers of	minimum experience of 2
	106	Non Key experts	experience required for	years in hydraulic modeling
	&	from Sl. no. 1 to 4	non key experts during	
	107	in page no 106 and		l
		Sl. no. 1 to 3 in	O&M phase?	experts minimum
		page no 107.		experience of 2 years as
				working on ArcGIS
				software etc. Civil Engineer
	1			(Degree holder) minimum
	İ			experience of 2 years in
				relevant field for 18+24
				months period.
				F. Civil Engineer(Diploma
				For Civil Engineer(Diploma
				holder) minimum
				experience of 2 years in
				relevant field for 18+24
				months period \

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36.	Secti on 7. Term s of Refer ence, Claus e 7.9.1, Page 107	Penalty: Penalty @ maximum 100% of salary per month of the staff in addition to salary not payable, as quoted by the agency in its financial bid document shall be deducted from the payments of the agency, if any of the staff of the agency are found to be	clause is applicable only when the employee has	Yes. No extra payment shall be given if extra/additional
		absent from his/her duty. The decision of the engineer-in-charge shall be final in this regard.	above working period	days/hours have to be consumed by the consulting firm to completion project work. As this is a lump sum contract.
			Also, the amount to be deducted as penalty shall be calculated as: (No. of days absent) * (100% of salary per month) / (No. of working days in the month)	key experts are regularly found absent from duty without any information/permission of the nodal officer, then
37.	Secti on 9. Mod e/Ter	(I) Planning, hydraulic modeling, leak detection works etc. Period fee (18	modify this Payment Clause for this Time	As per RFP
	Paym ents, Page 113	months): @ 60% of fee during capital works period shall be paid on execution of 23 activities as per their weightages/activitie s completed in	capital works period shall be paid on	
		number of DMAs on pro-rata basis		h

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38.	Page 115	O&M Cost @40%of awarded cost shall be divided in two parts	We request you to modify this payment clause that payment shall be paid in 24 equal monthly installments only during O&M period	As per RFP
39.	Gene ral	Mode of Billing and Payment.	We request you to make our (Monthly installments) payments within 15 days of submitting invoice / bills with supporting documents and Final Stage payment within 30 days of submitting invoice. Please confirm.	As per RFP
40.	Gene ral	Liability of the Consultant.	We request you to consider the maximum Liability under this Consultancy contract shall be limited to 5% of the Consultancy Contract amount.	As per RFP
41.	Gene ral	Advance Payment.	We request you to consider advance payment of 10% of the contract amount to enable the consultant to balance out initial expenditure of project opening activities with positive cash flow. Please consider.	
42.	Gene ral	Project Sites Visits.	We request you to arrange for Site visit of project components to familiarize with the project and site conditions. Please intimate the scheduled date in advance.	their concerned CEs, SEs and EEs alongwith DMA Area name have already been attached. The phone No. alongwith the office

43.	Gene	-	We understand that	As per RFP
	ral		Project end date for	·
}			construction phase is	
		·	for 18 months and	
			O&M phase is for 24	·
			months, please clarify.	

S. No	Page No in RFP and Clause No/Section no of RFP	Subject in RFP	Queries	Reply
44	54, Form Tech-5	Detection of Unauthorized water consumption (Apparent Losses) Leak detection to find out hidden leakages in distribution system (Real Losses) S.No:07	Please clarify if bidder has to provide quantum of apparent loss caused by unauthorized connection OR total apparent loss of the system. Since apparent loss can be of various reasons unauthorised connections, meter inefficiency, unmetered water connection etc.	As per RFP
45	54, Form Tech-5	Randomly testing of Consumer Water meters & Replacement of defective water meter. S.No:12	Please clarify 1) From our NRW project experience, we suggest for meter ageing analysis instead of random water meter testing. Since random testing will only be able to judge the meter accuracy of 1% meters only. To achieve desired NRW levels of 15%, apparent loss need to studied in holistic manner. 2) Please clarify, if any meter found defective then who will replace the water meter. Also, new meter installed will be AMR or Non	As per RFP
46	54, Form Tech-5	Collecting the flow meter data by making online data submission form. S.No:13	AMR. Kindly clarify 1) How many flow meter available per DMA. 2) Do flow meter data has to be collected manually? 3)Please explain what is meant by online data submission form.	As per RFP

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47	Section:7.	current monthly levels of NRW with breakup of apparent and real losses and evaluated the economic loss to utility	Please clarify if meter reading data will be available on bimonthly basis or monthly basis. Since it will be impossible to calculate NRW levels without consumption data at the consumer end. Also, please clarify if the economic loss to the utility due to existing level of NRW has to be bifurcated in apparent and real losses. The scope of work and payment	As per RFP Please refer Scope
48	72to74, Section:7.	Scope of work	conditions is not matching -kindly clarify	of work at Section 7.7 and Section 9
49	74, Section:7. 0	The consultant will broadly undertake the following key activities (sl.no.ii)	Kindly provide the percentage of sample survey for determining the customer consumption volumes	As per RFP
50	74, Section:7. 0	The consultant will broadly undertake the following key activities (sl.no.iv)	Energy audit is the part of this consultancy project. If so the same didn't mentioned in the work schedule & payment terms-kindly clarify	key activities (sl.no.iv), may be deleted
51	74, Section:7.	The consultant will broadly undertake the following key activities (sl.no.ix)	Preparation of performance based contract document doesn't match with the scope &payment termskindly clarify	key activities (sl.no.ix), may be deleted
52	79, Clause 7.5	So far, the boundaries and network of 102 DMAs have been affirmed by the concerned divisions by "walk the line" survey. Mechanical flow meter have been installed in these DMAs	meter mentioned here do not have any pulse output. To study flow pattern and do MNF analysis these flow meter shall have data loggers with pulse output. Please confirm whose scope it is.	As per RFP
53	72 & 83, Section 7 and section 7.7	Terms of reference	There are two Terms of reference (TOR) available in the RFP (Section & 7.7). Kindly clarify which one to be followed	•

5	54	84,	•	NRW calculation to be carried out	As per RFP
İ		Section	scope of work	by monthly-kindly clarify	
		7.7	(sl.no:17)		·
	55	85, Clause	Network	The civil work such as trail pits and	All works related
		no 2	marking &	exposing of buried valves, cleaning	to network
-			mapping	of valve chambers related to	marking and
				confirmation of the network	mapping shall
				&mapping shall be done DJB	have to be done by
				agency based on consultancy	the consultant. The
				recommendation & supervision-	activity shall be as
		-		kindly clarify. If it is the scope	per RFP
				includes restoration?	
				Also the verification of available	
				network drawings based on	
-				percentage of samples? If so kindly	
L				provide the percentage value.	
1	56	86 & 87,	Identification	It is understood that the	As per RFP
		Clause no	of Critical	procurement and installation of all	
		5	points and	pressure loggers and	
			installation of	electromagnetic flow meters etc.	
			pressure	shall be done by DJB-Please	
			loggers and	confirm	
			electromagnet	•	
			ic flow meters		
\perp		00 03	etc.	77' 11 1 10 1	4 555
3	57	88, Clause	Leak detection	Kindly clarify the scope of leak	As per RFP
		no 8	(Real losses)	detection & NRW reduction. It is	
İ				understood that the scope will begin after the DMA inlet meters	
				(which will be measuring for NRW	
				calculation). Hence water supply	
				network before the DMA inlet	
				meter ie-transmission pipe lines,	
				carriers pipe lines, UGR, ESR etc.	
				excludes from the project scope-	
				kindly clarify	
1	58	91, Clause	Leak detection	Kindly clarify the scope for	Yes. DJB shall do
		no 8	(Real losses)	procurement and installation of step	procurement/instal
				test valves along the DMA	
				wherever required. It is understood	suggestions of
				that the same will be carried out by	
				DJB-kindly confirm	consultant shall be
					responsible for
					checking proper
					installation,
				·	working and data
				•	collection and its
					proper usage in
					NRW reduction
					works during
					O&M period as
			:		per RFP
Ц					<u> </u>

	·			All lub and stoff
59	91, Clause	1	Dabour 104	All labour, staff,
	no 8	(Real losses)	detection for lifting manholes &	material and
			storm water drain slaps etc. shall be	complete execution of the
			provided by DJB kindly clarify	activity for Leak
		ļ		detection shall be
	.			
				carried by Agency. Balance as per
			·	Balance as per RFP
ļ			1 1 1 1 1 1	Works related to
60	92, Clause	Isolation of	It is understood that the	isolation of DMAs
	no 9	DMA	procurement and installation of	i.e. execution of
1	!		boundary valve and capping, interlink work for isolation of	ZPT etc. shall be
	,			done by DJB as
!			DMA shall be done by DJB, based on the consultancy	per the advice/
			recommendation- kindly confirm.	suggestions of
į			recommendation-kindry commin.	consultant.
	-			However
				consultant will be
			·	responsible for
				completing the
				ZPT test
				successful.
61	98, Clause	Elevation	The survey of all the underground	The survey of all
01	no 20	survey	utilities shall be carried out or	the underground
	110 20		consultancy to be verified the	utility shall not be
			available GIS network map-kindly	carried out, the
			clarify	consulting firm
ļ				shall have to do
	i			elevation survey of
ĺ			1	the DMAs
				inclusive of Depth of Center line of
		,		the water pipe
				distribution
	1			network and
				prepare contour
	İ			plan of 0.5
1				interval.
62	104 &	Expertise &	Kindly provide the option for civil	
02	104 &	Inputs, core		-
	Clause no	1 -	NRW reduction is a unique and	
	: 7.9 &		different subject, hence it may be	
	7.9.1		considered. Also in leak detection	
			and NRW management	
			professional, the professional	
			experience shall be reduced to	
		1	minimum 5 years, since the leak	
			detection become full- fledged	l l
			practical in recent year in India-	
-	100	Work	kindly confirm It is understood that as per schedule	Refer page 85, Cl.
63	3 109, Section: 8		1 1 1 0	
	clause 8.2	'		1
<u> </u>	Olduse 6.	- P		The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s

		deliverables sl.no:03	DMA 100% digitised including new service connections- kindly confirm	
64	111, Section: 8, clause no 8.2	Work schedules and planning for deliverables sl.no:20	Elevation survey is prerequisites for hydraulic modelling as mentioned in schedules both are to be done from 4 to 6 months, which difficult to complete the medeling in said time frame –kindly clarify	As per RFP
65	111, Section:8, clause no 8.2	Work schedules and planning for deliverables sl.no:16	It is understood that 95% of billing shall be done in 15 months- kindly clarify. Also it is understood that 95% billing efficiency that is 95% of total no of connection- kindly clarify	As per RFP As per RFP
66	113-115, Section:9	Mode & terms of payment	DJB shall consider the performance based amount for O&M period in pro-rata basis based of percentage of NRW reduced against base level.	As per RFP
67	After 116, Annexure- 1	Terms of payment		Penalty shall be imposed w.e.f. (on the activity no.) 1. 3 rd month 2. 4 th month 3. 4 th month 4. 4 th month 5. 6 th month 6. 2 nd month 7. 3 rd month 9. 7 th month 10 11 12. 2 nd month 13. 3 rd month 14. 3 rd month 15. 2 nd month 16. 16 th month 17. 3 rd month 18 19. 9 th month 20. 7 th month 21. 9 th month 22. 13 th month 23. 2 nd month
68	G	eneral	What is the population density of the proposed DMA's?	
69	G	eneral	Kindly provide the percentage of pipeline materials such as CI,DI,PVC,AC etc.	Bidders may visit the respective DMAs and seek these details from EEs concerned



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70	General	Kindly provide the average age of the distribution network of the proposed DMAs	Bidders may visit the respective DMAs and seek these details from EEs concerned
71	General	Kindly provide the type/class of consumer meters installed in the proposed DMAs such as class A,B/AMR &AMI etc.	Mixed
72	General	Kindly provide the type of meter installed along DMA inlet (DMA meters) to monitor the daily inflow.	Mechanical flow meters
73	General	It is understood that all the civil/ancillary works related to NRW reduction such as installation of all valves, loggers, all meters, rehabilitation work, replacement of HSC etc. shall be carried out by DJB. In case any considerable delay occurred, the same shall be considered for extension of time of project without any penalty-kindly confirm	All the works related to leak detection, isolation of DMA, elevation survey, hydraulic modelling shall have to carried out by the consulting firm whereas the installation of sluice valves, capping etc. for the ZPT test and rehabilitation work proposed by the consultant have to be executed by the contractor to whom the rehabilitation work will be awarded as per RFP, the decision of concerned EE shall be final and binding on the consultant in this regard
74	General	Kindly confirm the vintage of the available network mapping GIS and Hydraulic modelling report.	Bidders may visit the respective DMAs and seek these details from EEs concerned
75	General	The NRW shall not be sustained permanently, which required continuous monitoring every month. In this case what will be the terms of performance based payment during 1 st phase. The payment shall be released based on the particular month the NRW	As per RFP

		achieved as per target- kindly clarify	
76	General	Kindly confirm the availability of Web based GIS & SCADA system for the proposed DMA for regular monitoring of DMA inflow & pressure. If not available, then what will be the scope lest to implement	Refer Cl. 5, page- 86 of RFP
77	General	It is understood the DJB will provide the night time supply & extended hour supply for leak detection and step testing based on consultancy requirement as and when required throughout the project phases 1&2 -kindly confirm	As per RFP
78	General	Kindly confirm any improvement project such as of HSC replacement and rehabilitation of distribution network is ongoing along the proposed DMAs	Yes. The rehabilitation of 10 DMAs out of 102 DMAs inclusive of replacement of HSCs have been in tendering process.
79	General	It is understood that all the ZPT related work to be carried out by DJB along with only supervision of consultancy team- Kindly confirm	The consultant agency shall have to verify at site, the locations of all inlets and outlets inclusive of hidden and to ensure that the flow meters are being installed at all inlets and outlets. The flow meters, sluice valves, capping etc. if required for the isolation of DMA shall have to be installed by the concerned EEs. The consultant agency shall have to complete successful isolation of DMAs. Balance as per RFP.
80	General	The clause for provision for extension of project time didn't mentioned in the RFP- kindly clarify	The extension of time may be considered only if
L	<u>. </u>	Citality	there was \ any

			delay occur in the completion of rehabilitation
			works but the decision of EEs concerned shall be final in this regard.
81	General	The calculation of NRW for performance payment shall be in the method for summation of all the DMA's NRW value or individual DMA's NRW to be considered-kindly clarify	As per RFP
82	General	In NRW calculation authorised un billed consumption such as freebies, tanker services, free slum areas etc. shall be considered as a consumption-kindly clarify	As per RFP
83	General	In NRW calculation the margins for meter error (since when meters getting old meter didn't provide the accuracy value), bill reading errors.	The consultant shall have to suggest suitable remedial measure as per experience of consultant to achieve objective of project. This will not relieve agency of its prime objective of reduction of NRW
84	General	If the boundary valve installed on the pipelines crossing DMA boundary and it is operated by DJB due to some reasons which is not attributable, how will be this supply quantity to be accounted-kindly clarify	achieve objective of project. The will not relieve consultant of it prime objective of reduction of NRW
85	General	The efficiency of water meter shall be reduced over a period of time from the date of installation, whether the meter inaccuracy shall be considered in NRW calculation-kindly confirm	shall have

			reduction of NRW.
86	General	In case the billing error due to	The consultant
		variance between billing cycle &	shall have to
		DMA inflow (no of days), shall be	suggest suitable
		considered in NRW calculation -	remedial measures
		kindly confirm	as per experience
			of agency to
		·	achieve objective
			of project. This
			will not relieve
			consultant of its
			prime objective of
			reduction of NRW.
87	General	Kindly clarify, the water which is	Yes
		used for flushing & scouring by	
		O&M inside the distribution	
		network shall be considered in	
t	1	NRW calculation.	1

EH (DMA)

Name of Work:

"Hiring of consultancy firm for planning, hydraulic modeling, leak detection works etc. for reduction of NRW by formation of 102 DMA in phase-I in water supply network of DJB and its O&M for 2 years".

NIT No.:

03 (2018-19) issued on: 30th July, 2018

RFP/NIT No.:

03 (2018-19) issued on: 30th July, 2018

Client

Delhi Jal Board, New Delhi.

Pre-bid meeting held on:

10.08.2018

Last date of offline Submission of Bids: 10.09.2018 at 15:00 hrs. (As per NIT)

Opening of Technical Bid:

10.09.2018 at 15:10 hrs. (As per NIT)

Corrigendum

Revised date of offline submission of Bids: 18.09.2018 at 15.00 hrs. Revised date of opening of Technical Bid: 18.09.2018 at 15:10 hrs.

Amendments made in the RFP

S N	Page No.	Point No.	Description given as in RFP	Amendments
1	17	16.5	Payment under the contract shall be made in the currency or currencies in which the payment is requested in the Proposal	The payment shall be made in Indian National Rupees (INR)
2	17	17.2	Those agencies which are registered with DJB/Delhi government, may download the RFP document from the website: http://govtprocurement.delhi. gov.in, and they have to submit their technical bid, complete Proposal comprising the documents and forms in accordance with Clause 10 & 17.4 (Documents Comprising Proposal), online, on or before the last date and time of submission of bids.	at 15:00 Hrs. Opening of Technical bids shall be done on 18-09-2018 at 15:10 Hrs. Also

Sheet works/awarded works in the field of reduction of NRW. Leakage control/DMAs to be attached along with RFP (In technical bid) List only previous similar assignments successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded successfully suwarded sumarded sumarded successfully suwarded sumarded sum		evaluation committee in the presence of those Consultants whose proposals have been selected for opening the financial bid. At the opening, the names of the Consultants, shall be read aloud. The Financial Proposals will then be inspected to confirm that they have remained sealed and unopened. These Financial Proposals shall be then opened, and the total prices read aloud and recorded. Copies of the record shall be sent to all Consultants who submitted Proposals to the DJB.	
Tech- assignments successfully awarded/on-going/completed awarded in the last 7 (seven) alongwith the performance cert issued by the employer / department department on, awarded in the last 7 (seven) awarded in the last 7 (seven) alongwith the performance cert issued by the employer / department on on on the main activities of this Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs as per the boundaries actually on ground. If needed the Agency has to redefine the boundaries. The total numbers of DMAs as per the site conditions. In the last 7 (seven) alongwith the performance cert issued by the employer / department on the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs agency has to redefine the boundaries. The total numbers of DMAs as per the site conditions. In the last 7 (seven) awarded in the last 7 (seven) alongwith the performance cert issued by the employer / department on the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs agency has to redefine the boundaries. The total numbers of DMAs as per the site conditions. In the last 7 (seven) alongwith the performance cert issued by the employer / department on the last 7 (seven) alongwith the performance cert issued by the employer / department on the last 7 (seven) alongwith the performance cert issued by the employer / department on the last 7 (seven) alongwith the performance cert issued by the employer / department on the last 7 (seven) alongwith the performance cert issued by the employer / department on the last 7 (seven) alongwith the performance cert issued by the employer / departm	31 Shee /17.4	Sheet works/awarded works in the /17.4/ field of reduction of NRW. 4 Leakage control/DMAs to be attached along with RFP (In	successfully completed / on-going / awarded in the last 7 (seven) years alongwith the performance certificates
Detai led Contract is the Creation of 102 Scop e of Work 1. DMA identi ficati on, First Contract is the Creation of 102 DMAs. The Agency has to confirm and define DMA boundaries. The total number of DMAs as per the site conditions. If the number of DMAs increase, due to Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs. The Contract is the Creation of 102 DMAs is the Creation of 102 DMAs as per the Soundaries. The total numbers of DMAs as per the site conditions. The Contract is the Creation of 102 DMAs as per the Soundaries actually on grou	Tech 2	Tech- assignments successfully awarded/on-going/completed ¹	successfully completed ¹ / on-going / awarded in the last 7 (seven) years alongwith the performance certificates
shall be paid to the agency. If any/some of the given 102 DMA(s) are not feasible for establishment, then alternative DMA(s) shall be provided by DJB to the agency. Agency may revise the same as per site and being taken-up by DJB in an project then alternative DMA(s) s provided by DJB to the consultant having approximately the same number of water connections in 102 is approximately 1100 to 1200. If the	led Scop e of Work , DMA ident ficati on, First	led Scop e of Work 1. DMA identi ficati on, First para. Contract is the Creation of 102 DMAs. The Agency has to confirm and define DMA boundaries actually on ground. If needed the Agency has to redefine the DMA boundaries. The total number of DMAs are 102 & the agency may restructure the DMAs as per the site conditions. If the number of DMAs increase, due to restructuring, no extra payment shall be paid to the agency. If any/some of the given 102 DMA(s) are not feasible for establishment, then alternative DMA(s) shall be provided by DJB to the agency. Agency may revise the same as per site	One of the main activities of this Contract is the Creation of 102 DMAs. The Consultant Agency has to confirm and define DMA boundaries actually on ground. If needed the Agency has to redefine the DMA boundaries. The total numbers of DMAs are 102 & the agency may re-structure the DMAs as per the site conditions. If the number of DMAs increase, due to restructuring, no extra payment shall be paid to the agency. If any/some of the given 102 DMA(s) are not feasible for establishment or already being taken-up by DJB in any other project then alternative DMA(s) shall be provided by DJB to the consultant agency having approximately the same number of water connections. As presently the average number of water connections in 102 DMAs is approximately 1100 to 1200. If the DMA



			increased or decreased at sole discretion of DJB.	of 1100 to 1200 water connections. However if the number of water connections increased in the given DMA due to construction of new dwelling unit or due to new construction or by any reason no extra payment shall be to the consulting agency on this ground.
7	109	3	Verification of digitization all HSCs on GIS map in 84 DMAs.	a. Verification of digitization all HSCs on GIS map in 39 DMAs.b. Digitization of all HSCs on GIS map in 63 DMAs.

EE (DMA)

Delhi Jal Board Safety Code

- 1.0 Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well suitable footholds and hand-hold shall be provided on the ladder and the ladder shall be given an inclination not steeper than % to 1 (% horizontal and 1 vertical.)
- 2.0 Scaffolding of staging more than 3.6 m (12ft.) above the ground or floor, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached or bolted, braced and otherwise secured at least 90 cm. (3ft.) high above the floor, or platform of such scaffolding or staging and extending along the entire length of the outside and ends there of with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
- 3.0 Working platforms, gangways and stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the gangway or the stairway is more than 3.6 m (12ft.) above ground level or floor level, they should be closely boarded; should have adequate width and should be suitably fastened as described in (2) above.
- 4.0 Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of person or materials by providing suitable fencing or railing whose minimum height shall be 90 cm. (3ft.)
- 5.0 Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9m. (30 ft.) in length while the width between side rails in rung ladder shall in no case be less than 29 cm. (1 11/2") for ladder up to and including 3 m. (10 ft.) in length. For longer ladders this width should be increased at least 1/4" for each additional 30 cm. (1 foot) of length. Uniform step spacing of not more than 30 cm shall be kept. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites or work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall provide all necessary fencing and lights to protect the public from accident and shall be bound to bear the expenses of defense of every suit, action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit, action or proceedings to any such person or which may, with the consent of the contractor, be paid to compensate any claim by any such person.
- 6.0 Excavation and Trenching All trenches 1.2 m. (4ft.) or more in depth, shall at all times be supplied with at least one ladder for each 30 m. (100 ft.) in length or fraction thereof Ladder shall extend from bottom of the trench to at least 90 cm. (3ft.) above the surface of the ground. The sides of the trenches which are 1.5 m. (5ft.) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5 m. (5ft) of the edges of the trench or half of the depth of, the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.

- 7.0 Demolition Before any demolition work is commenced and also during the progress of the work.
 - All roads and open areas adjacent to the work site shall either be closed or suitably protected
 - ii) No electric cable or apparatus which is liable to be a source of danger ore cable or apparatus used by the operator shall remain electrically charged.
 - iii) All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.
- 8.0 All necessary personal safety equipment as considered adequate by the Engineer-in-Charge should be kept available for the use of the person employed on the site and maintained in a condition suitable for immediate use, and the contractor should take adequate steps to ensure proper use of equipment by those concerned: The following safety equipment shall invariably be provided.
 - Workers employed on mixing asphalt materials, cement and lime mortars shall be provided with protective footwear and protective goggles.
 - ii) Those engaged in white washing and mixing or stacking of cement bags or any material which is injurious to the eyes shall be provided with protective goggles.
 - iii) Those engaged in welding works shall be-provided with welder's protective eye.
 - iv) Stone breaker shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
 - v) When workers are employed in sewers and manholes, which are in active use, the contractors shall ensure that the manhole covers are opened and ventilated at least for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public, in addition, the contractor shall ensure that the following safety measure are adhered to
 - Entry for workers into the line shall not be allowed except under supervision of the JE or any other higher officer.
 - b) At least 5 to 6 manholes upstream and downstream should be kept open for at least 2 to 3 hours before any man is allowed to enter into the manhole for working inside.
 - c) Before entry presence of Toxic gases should be tested by inserting wet lead acetate paper which changes colour in the presence of such gases and gives indication of their presence.
 - d) Presence of Oxygen should be verified by lowering a detector lamp into the manhole. In case, no Oxygen is found inside the sewer line, workers should be sent only with Oxygen kit.
 - e) Safety belt with rope should be provided to the workers. While working inside the manholes such rope should be handled by two men standing outside to enable him to be pulled out during emergency.
 - f) The area should be barricaded or cordoned off by suitable means to avoid mishaps of any kind. Proper warning signs should be displayed for the safety of the public whenever cleaning works are undertaken during night or day.
 - g) No smoking or open flames shall be allowed near the blocked manhole being cleaned.

- h) The malba obtained on account of cleaning of blocked manholes and sewer lines should be immediately removed to avoid accidents on account of slippery nature of the malba.
- i) Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. The Engineer-in-Charge may decide the time up to which a worker may be allowed to work continuously inside the manhole.
- Gas masks with Oxygen Cylinder should be kept at site for use in emergency.
- k) Air-blowers should be used for flow of fresh air through the manholes. Whenever called for portable air blowers are recommended for ventilating the manholes. The Motors for these shall be vapour proof and of totally enclosed type. Non sparking gas engines also could be used but they should be placed at least 2 meters away from the opening and on the leeward side protected from wind so that they will not be a source of friction on any inflammable gas that might be present.
- The workers engaged for cleaning the manholes/sewers should be properly trained before allowing working in the manhole
- m) The workers shall be provided with Gumboots or non sparking shoes bump helmets and gloves non sparking tools safety lights and gas masks and portable air blowers (when necessary). They must be supplied with barrier cream for anointing the limbs before working inside the sewer lines.
- Workmen descending a manhole shall try each ladder stop or rung careful before putting his full weight on it to guard against insecure fastening due to corrosion of the rung fixed to manhole well.
- If a man has received a physical injury, he should be brought out of the sewer immediately and adequate medical aid should be provided to him.
- p) The extents to which these precautions are to be taken depend on individual situation but the decision of the Engineer-in-Charge regarding the steps to be taken in this regard in an individual case will be final.
- vi) The Contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following precaution should be taken:-
 - No paint containing lead or lead products shall be used except in the form of paste or readymade paint.
 - b) Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scraped.
 - a) Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painters to wash during and on the cessation of work.
- 9.0 Contractor shall not employ women and men below the age of 18 on the work of painting with product containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following: principles must be observed for such use:
 - White lead, sulphate of lead or product containing these pigment, shall not be used in painting operation except in the form of pastes or paint ready for use.
 - Measures shall be taken, wherever required in order to prevent danger arising from the application of paint in the form of spray.
 - Measures shall be taken, wherever practicable, to prevent danger arising out of from dust caused by dry rubbing down and scraping

- Adequate facilities shall be provided to enable working painters to wash during and on cessation of work.
- Overall shall be worn by working painters during the whole of working period.
- vi) Suitable arrangement shall be made to prevent clothing put off during working hours being spoiled by painting materials.
- vii) Cases of lead poisoning and suspected lead poisoning shall be notified and shall be subsequently verified by medical man appointed by competent authority of DJB
- viii) DJB may require, when necessary medical examination of workers.
- ix) Instructions with regard to special hygienic precautions to be taken in the painting.
- 10.0 When the work is done near any place where there is risk of drowning, all necessary equipments should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision, should be made for prompt first aid treatment of all injuries likely to be obtained during the course of the work.
- 11.0 Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following standards or conditions
 - These shall be of good mechanical construction, sound materials and adequate strength and free from patent defects and shall be kept repaired and in good working order.
 - Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent detects.
 - Every crane driver or hoisting appliance operator shall be properly qualified and no
 person under the age of 21 years should be in charge of any hoisting machine
 including any scaffolding winch or give signals to operator.
 - 4. In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or as means of suspension the safe working load shall be ascertained by adequate means. Every hoisting machine and all pears referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load each safe working load and the condition under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.
 - 5. In case of departmental machines, the safe working load shall be notified by the Electrical Engineer-in-charge. As regards contractors machines the contractors shall notify the safe working load of the machine to the Engineer-in-charge whenever he brings any machinery to site of work and get it verified by the Electrical Engineer concerned.
- 12.0 Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards. Hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load. Adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations, which are already energized, insulating mats, wearing apparel, such as, gloves, sleeves and boots as may be necessary should be provided. The worker should not wear any rings, watches and carry keys or other materials, which are good conductors of electricity.
- 13.0 All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or

removed while it is in use. Adequate washing facilities should be provided at or near places of work.

- 14.0 These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at work spot. The person responsible for compliance of the safety code shall be named therein by the contractor.
- 15.0 To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the contractor shall be open to inspection by the Labour Officer or Engineer-in-Charge of the department or their representatives.
- 16.0 Notwithstanding the above clauses from (1) to (15) there is nothing in these to exempt the contractor from the operations of any other Act or Rule in force in the Republic of India

SAFETY GUIDELINES AS PER DJB circular dated 12.06.09

Following guideline /instructions should be adhered to in true spirit:-

- The door may be fixed at the entry of the stair case and the open portion of the stair case of sump well should be protected by grill up to the height of 7 feet and compartments of the sump well should be covered with jallis/grating or should be barricaded property. Sewage pumping station should be secured by providing and fixing barbed wire fencing over the boundary wall.
- An inspection register should be placed at the sewage pump house in which all the inspecting officers may record their observations. No unauthorized entry should be allowed.
- 3. Caution board showing the restricted entry area and name of components and moving mechanical part should be displayed.
- 4. The entry to all DJB infrastructures should be restricted to the person /persons authorized by DJB or having I.D cards issued by the chief security officer.
- 5. Just after entering the premises do's and don'ts should be displayed at prominent places in all four languages.
- Even authorized visitors should be provided proper uniform /visitor badges helmet and relevant safety gear and given instruction before showing such infrastructure.

No person below 18 years age should be allowed on the premises where chances of emission of toxic gases are extensive.

NHRC GUIDELINES

NHRC issued guidelines on safety code for operation/maintenance of sewerage system vide letter No.1069/30/2001-2002/F.C. dated 18.11.02. Same shall form part of agreement and has to be strictly followed during execution of work.

Direction given by Hon'ble Supreme Court in the matter of National Campaign for Dignity & Right of Sewerage & Allied workers.

- The medical examination and medical treatment will be given free of charge to sewer workers and the treatment will continue for all such workers found to be suffering from an occupational disease, ailment or accident until the workman is cured or until death.
- The services of the sewer workers are not to be terminated, either by the respondents or the contractors engaged by them during the period of illness and they shall be treated as if on duty and will be paid their wages.
- 3. The respondents shall pay on the death of any worker including any contract worker, an immediate ex-gratia solatium of ₹ One lakh with liberty to recover the same from contractors, if permissible in law.
- 4. The respondents shall pay/insure payment of all statutory dues such as Provident Fund, Gratuity and Bonus to all the sewer workers including contract workers, as applicable in law.
- The respondents shall provide as soon as possible modern protective equipments to all the sewer workers in consultation with the petitioner organization.
- 6. The respondents shall provide soap and oil to all the workmen according to the present quota but on monthly basis and not at the end of the year.
- The respondents shall provide all workmen including contract workmen with an accidentcard-cum-wage-slip as set out in clause 8 of the CPWD/PWD(DA)/Delhi Jal Board Contractors Labour Regulations (for short "Labour Regulations").
- 8. The respondents shall authenticate by signing the payment of wages register for contract workers in terms of clause 5 of the Labour Regulations.
- The Delhi Jal Board is directed to ensure that the ex-gratia payment in case of deaths of sewer workers has been paid to the families of deceased workmen and in case such compensation is not paid, release the same within a period of eight weeks.