

## NOTICE INVITING TENDER (NIT) (Revised)

### 1.1 GENERAL (e-Tender)

#### 1.1.1 Name of Work:

Delhi Metro Rail Corporation (DMRC) Ltd. Invites online open e-tenders from eligible applicants, who fulfil qualification criteria as stipulated in Clause 1.1.3 of NIT, for the work **Contract No: CC-CPM-6-01:** Procurement, Fabrication, Supply, Installation (comprising all components / equipments ) and Commissioning of Water Treatment Plant of 85 m<sup>3</sup> per hour (raw water) and 65 m<sup>3</sup> per hour (final treated effluent) capacity at Mukundpur Depot.of DELHI METRO RAIL CORPORATION LIMITED

The brief scope of the work is provided in Clause A1 of ITT (Volume-1) and Employer's Requirement (Volume-3).

#### 1.1.2 Key details :

Approximate cost of work	INR 2.72 crore
Tender Security	Amount of Tender Security:-INR 2.72 Lakh Validity of Tender Security: -27.04.2017 Tender Security (in original) as per clause C18 of ITT shall be accepted only <b>up to 1500 hrs on 31.10.2016</b> in the office of CPM/6 at following address.
Completion period of the Work	4 (Four)months
Tender documents on sale	From 07.10.2016 to 28.10.2016 (up to 1100 hrs) on e-tendering portal <a href="https://eprocure.gov.in/eprocure/app">https://eprocure.gov.in/eprocure/app</a>
Cost of Tender documents	INR 21,000/- (inclusive of 5% DVAT) Non-Refundable (Demand Draft /Banker's cheque drawn on a Scheduled Commercial Bank based in India and should be in favour of "Delhi Metro Rail Corporation Ltd" payable at New Delhi) Cost of tender documents i.e, D.D. / Banker's cheque, in original, shall be accepted only upto <b>1500 hrs on 31.10.2016</b> in the office of CPM/6 at below mentioned address.
Last date of Seeking Clarifications	19.10.2016upto 2359 hrs. Queries/clarifications from bidders after due date and time shall not be acknowledged.
Pre-bid Meeting	21.10.2016 at 1100 hrs.
Last date of issuing addendum	24.10.2016 at 1500 hrs
<b>Date &amp; time of Submission of Tenderonline</b>	Tender submission start date: <b>28.10.2016 (0900 hrs)</b> Revised Tender submission end date: <b>31.10.2016 05.11.16 (1500 hrs)</b>
<b>Date &amp; time of opening of Tender online</b>	<b>04.11.2016 07.11.2016 at 1505 hrs.</b>

" ContractCC-CPM-6-01:Procurement, Fabrication, Supply, Installation (comprising all components / equipments ) and Commissioning of Water Treatment Plant of 85 m<sup>3</sup> per hour (raw water) and 65 m<sup>3</sup> per hour (final treated effluent) capacity at Mukundpur Depot of DELHI METRO RAIL CORPORATION LIMITED"

<ul style="list-style-type: none"><li>• Authority for purchase of tender documents, seeking clarifications and submission of completed tender documents</li><li>• Place of pre-bid meeting</li></ul>	<b>Office of Chief Project Manager/6 Press Enclave Road, Near Metro Station Malviya Nagar New Delhi-110017</b>
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The tender documents (non-transferable) can only be obtained after registration of tenderer on the website <https://eprocure.gov.in/eprocure/app>. All D.D. should be drawn in favour of "Delhi Metro Rail Corporation Ltd.", payable at New Delhi.

**NOTE:**

Any corrigendum, addendum etc issued shall be part of this tender document and shall be made available on DMRC website <https://eprocure.gov.in/eprocure/app>



Chief Project Manager/6

Delhi Metro Rail Corporation Ltd.

### 1.1.3 QUALIFICATION CRITERIA :

#### 1.1.3.1 Eligible Applicants :

- i. The tenders for this contract will be considered only from those tenderers (proprietorship firms, partnerships firms, companies, corporations, consortia or joint ventures) who meet requisite eligibility criteria prescribed in the sub-clauses of Clause 1.1.3 of NIT. In the case of a JV or Consortium, all members of the Group shall be jointly and severally liable for the performance of whole contract.
- ii. (a) A non-Indian firm is permitted to tender only in a joint venture or consortium arrangement with any other Indian firm having minimum participation interest of 26% or their wholly owned Indian subsidiary registered in India under Companies Act-1956 with minimum 26% participation.  
(b) A tenderer shall submit only one bid in the same tendering process, either individually as a tenderer or as a partner of a JV. A tenderer who submits or participates in, more than one bid will cause all of the proposals in which the tenderer has participated to be disqualified. No tenderer can be a subcontractor while submitting a bid individually or as a partner of a JV in the same bidding process. A tenderer, if acting in the capacity of subcontractor in any bid, may participate in more than one bid, but only in that capacity.
- iii. Tenderers shall not have a conflict of interest. All Tenderers found to have a conflict of interest shall be disqualified. Tenderers shall be considered to have a conflict of interest with one or more parties in this bidding process, if:
  - (a) a tenderer has been engaged by the Employer to provide consulting services for the preparation related to procurement for on implementation of the project;
  - (b) a tenderer is any associates/affiliates (inclusive of parent firms) mentioned in subparagraph (a) above; or
  - (c) a tenderer lends, or temporarily seconds its personnel to firms or organisations which are engaged in consulting services for the preparation related to procurement for on implementation of the project, if the personnel would be involved in any capacity on the same project.
- iv. A firm, who has purchased the tender document in their name, can submit the tender either as individual firm or in joint venture/Consortium. However, the lead partner in case of JV shall be one who has experience of similar nature as defined in clause 1.1.3.2 A of NIT.
- v. Any Central / State government department / public sector undertaking / other government entity or local body must not have banned business with the tenderer (any member in case of JV) as on the date of tender submission. Also no contract of the tenderer should have been rescinded / terminated by DMRC/Central or State Govt. Department / Public Sector Undertaking / Other Govt. entity or local body after award during last 5 years due to non-performance of the tenderer or any of JV/Consortium members. The tenderer should submit undertaking to this effect in **Appendix-19** of Form of Tender.

The overall performance of the tenderer (all members in case of JV/Consortium) shall be examined for all the ongoing Civil Engineering works and works completed within last one year, of value more than 40% of NIT cost of work. The tenderer shall provide list of all such works in the prescribed Performa given in Appendix-19 A of the Form of Tender. In addition the tenderer shall also submit certificate issued by the client/Employer for satisfactory performance for all these works with respect to completion of work/execution of work (for running works) failing which their tender submission shall not be evaluated and the tenderer shall be considered non-responsive and non-compliant to the tender conditions. The performance

certificate issued by the client should not be older than one month from the last day of the previous month of tender submission.

f the tenderer or any of the constituent 'substantial member(s)' of JV/Consortium does not meet the criteria stated in the Appendix 19A, the tenderer including the constituent 'substantial member(s)' of JV/Consortium shall be considered ineligible for participation in tender process and they shall be considered ineligible applicants in terms Clause 1.1.3.1 of NIT.

vi. Tenderer (any member in case of JV/consortium) must not have paid liquidated damages of 10% (or more) of the contract value in a contract due to delay or penalty of 10% (or more) of the contract value due to any other reason during last five years. The tenderer should submit undertaking to this effect in **Appendix-20** of Form of Tender.

vii. Tenderer (any member in case of JV/consortium) must not have suffered bankruptcy/insolvency during the last 5 years. The tenderer should submit undertaking to this effect in **Appendix-21** of Form of Tender.

viii. LEAD PARTNER/ NON SUBSTANTIAL PARTNERS/ CHANGE IN JV/ CONSORTIUM

- a. Lead partner must have a minimum of 26% participation in the JV/Consortium.
- b. Partners having less than 26% participation will be termed as non-substantial partner and will not be considered for evaluation which means that their financial soundness and work experience shall not be considered for evaluation of JV/Consortium.
- c. In case of JV/Consortium, change in constitution or percentage participation shall not be permitted at any stage after their submission of application otherwise the applicant shall be treated as non-responsive.
- d. The tenderer, in case of JV/Consortium, shall clearly and unambiguously define the role and responsibilities for each substantial/non-substantial partner in the JV agreement/ MOU submitted vide foot note (d) of **Appendix 6** of Form of Tender, providing clearly that any abrogation/subsequent re-assignment of any responsibility by any substantive/non-substantive partner of JV/Consortium in favour of other JV/Consortium partner or any change in constitution of partners of JV/Consortium (without written approval of Employer) from the one given in JV agreement /MOU at tender stage, will be treated, as 'breach of contract condition' and/or 'concealment of facts' (as the case may be), vide GCC clause 4.33.1 [a (ii) and (iii)] and acted accordingly.

The Employer in such cases, may in its sole discretion take action under clause 4.33.1 (b) and/or under clause 4.33.1(c) of GCC against any member(s) for failure in tenderer's obligation and declare that member(s) of JV/Consortium ineligible for award of any tender in DMRC or take action to terminate the contract in part or whole under clause 13 of GCC as the situation may demand and recover the cost/damages as provided in contract.

### 1.1.3.2 Minimum Eligibility Criteria:

A. **Work Experience:** The tenderers will be qualified only if they have completed work(s) during last seven years ending **31.08.2016** as given below:

(i) At least one work of value **INR 1.42 crores** or more of similar nature. The similar works means, Procurement, fabrication, supply of equipments, installation, commissioning of water treatment plant of 85 cubic mtrs per hr capacity (raw water) and 65 cubic mtrs per hour (final treat effluent) comprising the all component / equipment works and relevant experience in operation in operation and maintenance of a RO plant equivalent capacity.

If the above work of **INRN 1.42 crores** has been done by the foreign partner of JV and the work was done in the country of the foreign partner then in addition to this, the foreign partner must have done works equal to **INR 1.42 crores** outside the country of the foreign partner.

OR

(ii) At least two works each of value **INR 0.89 crores** or more of similar nature. The similar works means, Procurement, fabrication, supply of equipments, installation, commissioning of water treatment plant of 85 cubic mtrs per hr capacity (raw water) and 65 cubic mtrs per hour (final treat effluent) comprising the all component / equipment works and relevant experience in operation and maintenance of at least two RO plant of 50% of rated capacity

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If the above work of **INR 0.89 crores** has been done by the foreign partner of JV and the work was done in the country of the foreign partner then in addition to this, the foreign partner must have done works equal to **INR 0.89 crores** outside the country of the foreign partner.

OR

(iii) At least three works each of value **INR 0.71 crores** or more of similar nature. The similar works means, Procurement, fabrication, supply of equipments, installation, commissioning of water treatment plant of 85 cubic mtrs per hr capacity (raw water) and 65 cubic mtrs per hour (final treat effluent) comprising the all component / equipment works and relevant experience in operation and maintenance of at least three RO plant of 40% of rated capacity.

If the above work of **INR 0.71 crores** has been done by the foreign partner of JV and the work was done in the country of the foreign partner then in addition to this, the foreign partner must have done works equal to **INR 0.71 crores** outside the country of the foreign partner.

- If the tenderer is a JV/Consortium having foreign partner(s) and above work(s) have been executed by the foreign partner of JV and the work(s) were done in the country of the foreign partner, then in addition to this the foreign partner must have executed works of value **INR 2.72 crore** or more outside the country of the foreign partner.

#### Notes:

- The tenderer shall submit details of works executed by them in the Performa of **Appendix-17 of FOT** for the works to be considered for qualification of work experience criteria. Documentary proof such as completion certificates from client clearly indicating the nature/scope of work, actual completion cost and actual date of completion for such work should be submitted. **The offers submitted without this documentary proof shall not be evaluated.** In case the work is executed for private client, copy of work order, bill of quantities, bill wise details of payment received certified by C.A., T.D.S certificates for all payments received and copy of final/last bill paid by client shall also be submitted.
- Value of successfully completed portion of any ongoing work up to **31.08.2016** will also be considered for qualification of work experience criteria.
- For completed works, value of work done shall be updated to **31.08.2016** price level assuming 5% inflation for Indian Rupees every year and 2% for foreign currency portions per year. The exchange rate of foreign currency shall be applicable 28 days before the submission date of tender.
- In case of joint venture / Consortium, full value of the work, if done by the same joint venture shall be considered. However, if the qualifying work(s) were done by them in JV/Consortium having different constituents, then the value of work as per their percentage participation in such JV/Consortium shall be considered.
- If the above work(s) (i.e. "similar work" - Building finishing works preferably in metro construction) comprise(s) other works, then client's certificate clearly indicating the amount of work done in respect of the "similar work" shall be furnished by the tenderer in support of work experience along-with their tender submissions.

**B. Financial Standing:** The tenderers will be qualified only if they have minimum financial capabilities as below:

- (i) **T1 – Liquidity:** It is necessary that the firm can withstand cash flow that the contract will require until payments received from the Employer. Liquidity therefore becomes an important consideration.

This shall be seen from the balance sheets of last audited year and/or from the banking reference. Net current assets and/or documents including banking reference (as per proforma given in Annexure-8 of ITT), should show that the applicant has access to or has available liquid assets, lines of credit and other financial means to meet cash flow of **INR** for this contract, net of applicant's commitments for other Contracts. Banking reference should contain in clear terms the amount that bank will be in a position to lend for this work to the applicant/member of the Joint Venture/Consortium. In case the Net Current Assets (as seen from the Balance Sheets) are negative, only the Banking references will be considered. Otherwise the aggregate of the Net Current Assets and submitted Banking references will be considered for working out the Liquidity.

The banking reference should be from a Scheduled Bank in India or (in case of foreign parties) from an international bank of repute acceptable to DMRC and it should not be more than 3 months old as on date of submission of bids.

In Case of JV- Requirement of liquidity is to be distributed between members as per their percentage participation and every member should satisfy the minimum requirement.

Example: Let member-1 has percentage participation=M and member-2 has percentage participation=N.

If minimum liquidity required is 'W' then liquidity of member-1  $\geq \frac{W \cdot M}{100}$

and liquidity of member-2  $\geq \frac{W \cdot N}{100}$ .

- (ii) **T2 - Profitability:** Profit before Tax should be **Positive in at least 2 (two) years**, out of the last five audited financial years.

In Case of JV: The profitability of only lead member shall be evaluated.

- (iii) **T3 - Net Worth:** Net Worth of tenderer during last audited financial year should be **≥INR2.02crores**.

In Case of JV- Net worth will be based on the percentage participation of each Member.

Example: Let Member-1 has percentage participation = M and Member-2 has =N. Let the Net worth of Member-1 is 'A' and that of Member-2 is 'B', then the Net worth of JV will be

$$= \frac{AM+BN}{100}$$

- (iv) **T4 - Annual Turnover:** The average annual turnover from construction of last five financial years should be **≥INR20.4crore**.

The average annual turnover of JV will be based on percentage participation of each member.

Example: Let Member-1 has percentage participation = M and Member - 2 has =N. Let the average annual turnover of Member-1 is 'A' and that of Member-2 is 'B', then the average annual turnover of JV will be

$$= \frac{AM+BN}{100}$$

Notes :

- Financial data for latest last five audited financial years has to be submitted by the tenderer in **Appendix-18 of FOT** along with audited balance sheets. The financial data in the prescribed format shall be certified by Chartered Accountant with his stamp and signature in original with membership number. In case audited balance sheet of the last financial year is not made available by the bidder, he has to submit an affidavit certifying that 'the balance sheet has actually not been audited so far'. In such a case the financial data of previous '4' audited financial years will be taken into consideration for evaluation. If audited balance sheet of any year other than the last year is not submitted, the tender may be considered as non-responsive.
- Where a work is undertaken by a group, only that portion of the contract which is undertaken by the concerned applicant/member should be indicated and the remaining done by the other members of the group be excluded. This is to be substantiated with documentary evidence.

**1.1.3.3 Bid Capacity Criteria :**

**Bid Capacity:** The tenderers will be qualified only if their available bid capacity is more than the approximate cost of work as per NIT. Available bid capacity will be calculated based on the following formula:

$$\text{Available Bid Capacity} = 2 \cdot A \cdot N - B$$

Where,

A = Maximum of the value of construction works executed in any one year during the last five financial years (updated to **30.09.2016** price level assuming 5% inflation for Indian Rupees every year and 2% for foreign currency portions per year).

N = No. of years prescribed for completion of the work

B = Value of existing commitments (**as on 30.09.2016**) for on-going construction works during period

**of 4 months w.e.f. 01.10.2016.**

Notes:

- Financial data for latest last five financial years has to be submitted by the tenderer in **Appendix-15 of FOT** along with audited financial statements. The financial data in the prescribed format shall be certified by the Chartered Accountant with his stamp and signature in original with membership number.
- Value of existing commitments for on-going construction works during period of **4 months w.e.f. 01.10.2016** has to be submitted by the tenderer in **Appendix-16 of FOT**. These data shall be certified by the Chartered Accountant with his stamp and signature in original with membership number.
- In the case of a group, the above formula will be applied to each member to the extent of his proposed participation in the execution of the work. If the proposed % participation is not mentioned then equal participation will be assumed.

**Example for calculation of bid capacity in case of JV / Group**

Suppose there are 'P' and 'Q' members of the JV / group with their participation in the JV / group as 70% and 30% respectively and available bid capacity of these members as per above formula individually works out 'X' and 'Y' respectively, then Bid Capacity of JV / group shall be as under:

$$\text{Bid Capacity of the JV / group} = 0.7X + 0.3Y$$

**1.1.3.4** The tender submission of tenderers, who do not qualify the minimum eligibility criteria & bid capacity criteria stipulated in the clauses 1.1.3.2 to 1.1.3.3 above, shall not be considered for further evaluation and therefore rejected. The mere fact that the tenderer is qualified as mentioned in sub clause 1.1.3.2 to 1.1.3.3 shall not imply that his bid shall automatically be accepted. The same should contain all technical data as required for consideration of tender prescribed in the ITT.

**1.1.4 The Tender documents consist of :**

**Volume 1**

- Notice Inviting Tender
- Instructions to Tenderers (including Annexures)
- Form of Tender (including Appendices)

**Volume 2**

- General Conditions of Contracts
- Special Conditions of Contract (including Schedules)
- Condition of Contract on Safety, Health & Environment (SHE) Ver. 1.2

**Volume 3**

Employer's Requirements including appendices

**Volume 4**

- Technical Specifications

**Volume 5**

- Tender drawings



## Volume 6

### Bill of Quantities

- 1.1.5 The Tenderers may obtain further information/ clarification, if any, in respect of these tender documents from the office of Chief Project Manager/6, Press Enclave Road, Near Malviya Nagar Metro Station, New Delhi-110017.
- 1.1.6 All Tenderers are hereby cautioned that tenders containing any material deviation or reservations as described in Clause **E 4.4** of "Instructions to Tenderers" and/or minor deviation without quoting the cost of withdrawal shall be considered as non-responsive and is liable to be rejected.
- 1.1.7 The intending tenderers must be registered on e-tendering portal <https://eprocure.gov.in/eprocure/app>. Those who are not registered on the e-tendering portal shall be required to get registered beforehand. After registration, the tenderer will get user id and password. On login, tenderer can participate in tendering process and can witness various activities of the process.
- 1.1.8 The authorized signatory of intending tenderer, as per Power of Attorney (POA), must have valid **class-II** or **class-III** digital signature. The tender document can only be downloaded from e-tendering portal using class-II or class-III digital signature. However, the tenderer shall upload their tender on <https://eprocure.gov.in/eprocure/app> using class-II or class-III digital signature of the authorized signatory only.
- 1.1.9 Tender submissions shall be done online on <https://eprocure.gov.in/eprocure/app> after uploading the mandatory scanned documents towards cost of tender documents (in the form of Demand Draft or Pay Order or Banker's Cheque from a Scheduled commercial bank based in India) and towards Tender Security (in the form of Bank Guarantee or Demand Draft, Pay Order, Banker's Cheque or FDR from a Scheduled commercial bank based in India) and other documents as stated in the tender document. Instructions for on-line bid submission are furnished hereinafter.
- 1.1.10 Submission of Tenders shall be closed on e-tendering website of DMRC at the date & time of submission prescribed in NIT after which no tender shall be accepted.
- It shall be the responsibility of the bidder / tenderer to ensure that his tender is submitted online on e-tendering website <https://eprocure.gov.in/eprocure/app> before the deadline of submission. DMRC will not be responsible for non-receipt of tender documents due to any delay and/or loss etc.
- 1.1.11 Tenders shall be valid for a period of **180 days** (both days inclusive i.e. the date of submission of tenders and the last date of period of validity of the tender) from the date of submission of Tenders and shall be accompanied with a tender security of the requisite amount as per clause C18 of ITT.
- 1.1.12 DMRC reserves the right to accept or reject any or all proposals without assigning any reasons. No tenderer shall have any cause of action or claim against the DMRC for rejection of his proposal.
- 1.1.13 Tenderers are advised to keep in touch with e-tendering portal <https://eprocure.gov.in/eprocure/app> for updates.

  
Chief Project Manager/6

Delhi Metro Rail Corporation Ltd.

## **SITE INFORMATION & SCOPE OF WORK**

### **1.1 Requirement Basis:**

Delhi Metro Rail Corporation Ltd. (DMRC) requires treated water for use in ventilation system (water cooled Chiller units) for three underground stations of Line 7 namely, Azadpur, Shalimar Bagh, and NetajiSubhas Place and staff quarters near Majlis park Staion. The raw water will be derived from four borewells( to be dig at mukundpur depot), stored in a raw water tank of designed capacity, treated (to desired quality for Chillar units) through Reverse Osmosis based Water Treatment Plant (Under scope of this Contract), Stored in final treated/ clear water tank. The treated water will be supplied to individual water reservoirs in above mentioned stations through a network of Mild steel Pipe line.

The aim of this Tender is to install a Water Treatment Plant 65 m<sup>3</sup> per hour (final treated effluent) capacity to bring down the Total Dissolved Solids (TDS) and Hardness to a desired level as required for the Cooling Tower/Chiller units located at each metro station.

#### **1.1.1 SCOPE OF WORK**

The Scope of Work is to makeProcurement, Fabrication, Supply, Installation (comprising all components &Equipments ) and Commissioning of Water Treatment Plant of 85 m<sup>3</sup> per hour (raw water) and 65 m<sup>3</sup> per hour (final treated effluent) capacity including comprehensive operation and maintenance for 1 years at Mukundpur Depot of DELHI METRO RAIL CORPORATION LIMITED. The scope includes installation of Water treatment plant including all instruments and equipments for in house testing and analysis, operation and maintenance of plant for 1 years. Vendor shall provide necessary technical support in getting No Objection Certificatess from concerned Govt. Departments for discharging reject water to the nearby drain.

#### **1.1.2 SITE DETAILS**

The proposed site is located at Mukundpur area in the Civil Lines Tehsil of North District of NCT Delhi. The proposed Water Treatment Plant at Mukundpur Metro Depot is to be constructed in a plot area of 200 sqm. Raw water is proposed to be drawn from bore wells located near the WTP site and will be treated to produce water for the chillers. The proposed Plant lay out plan is attached in this tender as Annexure.

#### **1.1.3 SPECIFICATIONS**

The specifications cover the minimum requirements for the Project for design, engineering, procurement, supply of all mechanical, electrical, instruments such as equipments, vessels, Laboratory instruments and equipments, chemicals dosing system, valves, piping, PLC based control panel, and complete with necessary instrumentation & controls and with all accessories, inspection, packing, dispatch and erection/ installation, testing & commissioning of the Water Treatment Plant at Mukundpur (Delhi) including supply of all the consumables, chemicals, membranes, cartridges, spares etc. required for Operation and Maintenance of the entire plant for the period of 36 months after installation as per the Technical Specifications given in this document.

#### **1.1.4 DESIGN BASIS**

The Water quantity of 790 m<sup>3</sup>/day or 65 m<sup>3</sup>/hour is to be made for use in process/utility application of chilling plant /cooling towers located in underground station. The input to the plant will be approximately

85 m<sup>3</sup>/hour to take care of the reject water quantity and the desired output quality. The proposed water treatment plant will process the raw water from bore-wells for approximately 12 hours per day. The raw water will be pumped to the first unit of the treatment plant from a separate concrete raw water underground tank of 100 m<sup>3</sup> capacity ( to be done through a separate contract)

- a) Basic Filtration to remove the turbidity using Standard Sand Filtration followed by Bag Filtration Plants. The water will be dosed with Coagulants/flocculants prior to Filtration using higher capacity automatised Dosing Systems.
- b) The water thus filtered will be diverted in two streams;
  1. The Filtered water stream A
  2. The Filtered water stream B.
- c) The Filtered water stream B will be processed for further reduction of TDS/TH as per the requirement using Reverse Osmosis technology.
- d) The treated water after Reverse Osmosis treatment will be mixed with the filtered water stream A and stored in an underground concrete Blended Water Tank.
- e) The Water from stream B and stream A will be blended in a ratio of 70-30 or as required to achieve the desired TDS of below 2500 ppm and a hardness of 700 ppm.
- f) To reduce the hardness further from this blended water of 700 ppm to less than 50 ppm, a softener is proposed.
- g) After Softening of the Blended water, the same will be stored in the main underground reservoir for the utility applications.



Chief Project Manager/6

Delhi Metro Rail Corporation Ltd.