

RFP for Design, Development, Installation and Maintenance of Command centre along with Vehicle Tracking system for Tamil Nadu Pollution Control Board



GOVERNMENT OF TAMIL NADU

Tamil Nadu e-Governance Agency

**Selection of System Integrator for the Design, Development,
Installation and Maintenance of Command Centre along
with Vehicle Tracking system for Tamil Nadu Pollution
Control Board**

Tender Ref No: TNeGA/OT/TNPCB/2022-2023

Tamil Nadu e-Governance Agency
807, 2nd Floor, PT Lee Chengalvarayan Naicker Building
Anna Salai, Chennai - 600 002.
Tel No: +91-44-40164907
Email: mngr1tnega@tn.gov.in
Website: www.tnega.tn.gov.in

RFP for Design, Development, Installation and Maintenance of Command centre along with
Vehicle Tracking system for Tamil Nadu Pollution Control Board

Important Notice

This Tender (RFP) process is governed by The Tamil Nadu Transparency in Tenders Act 1998 and The Tamil Nadu Transparency in Tenders Rules 2000 as amended from time to time.

In case of any conflict between the terms and conditions in the tender document and the Tamil Nadu Transparency in Tenders Act 1998 and The Tamil Nadu Transparency in Tenders Rules 2000, the Act and Rules shall prevail.

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Letter of Undertaking

To

Chief Executive Officer,

Tamil Nadu e-Governance Agency (TNeGA),

807, P.T. Lee. Chengalvarayan Naicker Maaligai,

Anna Salai, Chennai - 600 002.

Sir,

Sub: Undertaking for participating in **Selection of System Integrator for the Design, Development, Installation and Maintenance of Command centre along with Vehicle Tracking system for Tamil Nadu Pollution Control Board** - Reg.

Ref: Tender Ref: **TNeGA/OT/TNPCB/2022-2023**

I/We do hereby submit my/our bid for the **Selection of System Integrator for the Design, Development, Installation and Maintenance of Command centre along with Vehicle Tracking system for Tamil Nadu Pollution Control Board** in accordance with the Terms and Conditions of this RFP.

I/We have examined the details of the tender and have carefully noted the conditions of contract and the specification with all the stipulations of which I/We agree to comply. I/We hereby undertake to complete the assigned tasks as a System Integrator for **Design, Development, Installation and Maintenance of Command centre along with Vehicle Tracking system for TNPCB** at the places mentioned in the specification of all the articles within as per RFP & tender schedule from the date of communication of acceptance of my/our tender.

I/We further agree that the acceptance of this tender shall result in a valid and concluded contract binding on me/us the terms whereof shall be taken to be those mentioned in the form of agreement here to annexed notwithstanding the non-execution of the said agreement.

I/We hereby declare that I/We agree to do the various acts, deeds and things referred to herein including the condition relating to non-withdrawal of this tender above set out in consideration of the TNeGA and considering this my/our tender.

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I/Wehereby confirm that our Company was not blacklisted by any State Government/ Central Government/ Public Sector Undertakings during the last three years. We also hereby confirm that our EMD/SD was not forfeited by any State Government / Central Government / Public Sector Undertakings during the last three years due to our non-performance, non-compliance with the tender conditions etc.

I/Wehereby confirm that our Company has not filed for bankruptcy during the last three years.

I/Wehereby confirm that our Company has not violated / infringed on any Indian or foreign trademark, patent, registered design or other intellectual property rights any time anywhere in India.

I/We..... shall not sub-contract any works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

I/We..... have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India, as per Government of Tamil Nadu G.O.Ms.No.343, Finance (Salaries) department, dated 18.09.2020; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I certify that this bidder fulfils all requirements in this regard and is eligible to be considered.

I/Wehereby declare that all the particulars furnished by us in this Tender are true to the best of my/our knowledge and we understand and accept that if at any stage, the information furnished is found to be incorrect or false, we are liable for disqualification from this tender and also are liable for any penal action that may arise due to the above.

I/We_____ certify that we are liable and responsible for any disputes arising out of Intellectual Property Rights.

I/We_____ certify that I/we shall not form any consortium with other firms/ organizations/agencies/ companies for carrying out the tasks specified in this RFP.

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In case of violation of any of the conditions above, I/Weunderstand that I/We are liable to be blacklisted by TNeGA/Government of Tamil Nadu for a period of three years.

Note:

1. Declaration in the company's letter head should be submitted as per format given above
2. If the bidding firm has been blacklisted by any State Government/ Central Government/ Public Sector Undertakings earlier, then the details should be provided.

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List of Acronyms

Sl. No.	Acronym	Definition
1	AJAX	Asynchronous JavaScript and XML
2	BE	Budget Estimate
3	BPR	Business Process Reengineering
4	CFY	Current Financial Year
5	CM	Case management
6	CR	Change Request
7	DPR	Detailed Project Report
8	DSC	Digital Signature Certificate
9	ECS	Electronic Clearing Services
10	EMD	Earnest Money Deposit
11	FOSS	Free and open source software
12	G.O	Government Order
13	GIS	Geographic Information System
14	GoI	Government of India
15	GoTN	Government of Tamil Nadu
16	H/W	Hardware
17	HQ	Head Quarters
18	HTTP	Hypertext Transfer Protocol
19	IA	Implementing Agency
20	ICT	Information & Communications Technology
21	IPR	Intellectual Property Rights
22	ISO	International Organization for Standardization
23	IT	Information Technology
24	KT	Knowledge Transfer
25	KUA	KYC User Agency
26	LD	Liquidated Damage
27	LOA	Letter of Acceptance
28	MIS	Management Information System
29	MSA	Master Service Agreement
30	NGOs	Non-Governmental Organizations
31	O&M	Operation & Maintenance
32	OEM	Original Equipment Manufacturer
33	OS	Operating System
34	OSR	Open Space Reserve
35	PC	Personal Computer
36	PKCS	Public Key Cryptography Standards
37	PSU	Public Sector Unit
38	RBAC	Role Based Access Control

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39	RFP	Request for Proposal
40	S/W	Software
41	SD	Security Deposit
42	SDC	State Data Centre
43	SIT	System Integration Testing
44	SL	Service Level
45	SLA	Service Level Agreement
46	SMS	Short Messaging Service
47	SOA	Service Oriented Architecture
48	SOAP	Simple Object Access Protocol
49	SPOC	Single Point Of Contact
50	SRS	System Requirement Specification
51	SSL	Secure Sockets Layer
52	STQC	Standardization Testing and Quality Certification
53	SW	Social Worker
54	TNeGA	Tamil Nadu e-Governance Agency
55	TNSWAN	Tamil Nadu State Wide Area Network
56	UAT	User Acceptance Test
57	UID	Unique Identification Number
58	UIDAI	Unique Identification authority of India
59	ULB	Urban Local Body
60	URL	Uniform Resource Locator
61	VPN	Virtual Private Network
62	W3C	World Wide Web Consortium
63	TNPCB	Tamil Nadu Pollution Control Board
64	WBS	Work Breakdown Structure

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1 Introduction

1.1 Tamil Nadu e-Governance Agency(TNeGA)

- a. Tamil Nadu e-Governance Agency (TNeGA) is responsible for driving all technology initiatives for the Government of Tamil Nadu. Its primary aim is to develop low cost, technology enabled scalable solutions to impact Governance in a significant way. It aims to create an inclusive, equitable, and universally accessible G2C service delivery mechanism for barrier free access to Governance. TNeGA offers IT solutions and consultancy services to Government departments for their technology needs. Tamil Nadu e-Governance Agency is functioning under the Information Technology Department, Government of TamilNadu.
- b. The Tamil Nadu Prevention and Control of Water Pollution Board was constituted by the Government of Tamil Nadu on twenty seventh day of February, Nineteen eighty two (27-2-1982) in pursuance of the Water (Prevention and Control of Pollution) Act, 1974 (Central Act 6 of 1974). The Board was later renamed as Tamil Nadu Pollution Control Board (TNPCB) in the year 1983. It enforces the provisions of the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, & the Environment (Protection) Act, 1986.
- c. TNeGA invite bids from various established firms to act as a System Integrator for the design, development, installation and maintenance of Command Centre along with Vehicle Tracking System for Tamil Nadu Pollution Control Board which shall serve as a platform to facilitate an efficient, speedy and transparent process for disseminating information to the public and the other agencies, for providing services and for performing administrative activities. All civil infrastructure requirements/facilities required for installation & commissioning of video wall will be taken care by TNPCB. The scope of work of the bidder (non-civil works) is detailed in cl. 8 and terms & conditions of this RFP.

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2 Tender Schedule and Data Sheets

1.	Tender inviting Authority, Designation and Address	Chief Executive Officer, Tamil Nadu e-Governance Agency, 807, P.T.Lee. Chengalvarayan Naicker Maaligai, Anna Salai, Chennai - 600 002. Tel No: +91-44-40164907
2.	A) Name of the Work	Selection of System Integrator for the design, development, installation and maintenance of Command Centre along with Vehicle Tracking System for Tamil Nadu Pollution Control Board, Tamil Nadu
	B) Tender Ref No.	TNeGA/OT/TNPCB/2022-2023
3.	Earnest Money Deposit	Rs.50,000/- (Rupees Fifty thousand only) should be paid through online mode.
4.	Contract Period	17 Months (5 Months Development & Deployment Phase up to Go-Live + 12 Months Free Warranty period)
5.	Tender Document	The Tender document can be downloaded from the URL https://www.tnega.tn.gov.in https://tntenders.gov.in at FREE OF COST.
6.	Mode of Submission	e-Submission through https://tntenders.gov.in Bids cannot be submitted after the due date and time
7.	Date and Place of Pre-Bid meeting	Pre-bid meeting will be conducted online on 28.04.2022 at 11.30 hours through Video Conference (VC) and the link for the VC is given below. VC LINK: https://teams.microsoft.com/l/meetup-join/19%3ameeting_NjJiZDNhMGYtYzM3Ni00ODJmLTliYTgtOGQxYzkyZjY0Mjcjcx%40thread.v2/0?context=">

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8.	Due Date and Time for Bid Submission	On 13.05.2022 @ 16.00 hrs.
9.	Date, Time and Place of Opening of Technical Bids	On 13.05.2022 @ 16.30 hrs.
10.	Date, Time and Place of Opening of Price Bids	Price Bid opening Date & Time will be communicated to Technically qualified bidders ONLY.

Note:

Neither the TNeGA nor their representatives are obligated to inform any bidders who have not qualified in any of the stages of bid process management

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3 General Instructions

3.1 General

- a. The Bidders are requested to examine the instructions, terms and conditions and specifications given in the Request for Proposal (RFP). Failure to furnish all required information in every respect will be at the Bidder's risk and may result in the rejection of bid.
- b. It will be imperative for each Bidder(s) to familiarize itself/ themselves with the prevailing legal situations for the execution of contract. TNeGA shall not entertain any request for clarification from the Bidder regarding such legal aspects of submission of the Bids.
- c. It will be the responsibility of the Bidder that all factors have been investigated and considered while submitting the Bids and no claim whatsoever including those of financial adjustments to the contract awarded under this tender will be entertained by TNeGA. Neither any time schedule nor financial adjustments arising thereof shall be permitted on account of failure by the Bidder to appraise themselves.
- d. The Bidder shall be deemed to have satisfied itself fully before Bidding as to the correctness and sufficiency of its Bids for the contract and price quoted in the Bid to cover all obligations under this Tender.
- e. It must be clearly understood that the Terms and Conditions and specifications are intended to be strictly enforced. No escalation of cost in the Tender by the Bidder will be permitted throughout the period of Agreement or throughout the period of completion of contract whichever is later on account of any reasons whatsoever.
- f. The Bidder shall make all arrangements as part of the contract to Develop Software Applications of Government Departments and Applications to the beneficiaries at various locations at their own cost and transport.
- g. The Bidder should be fully and completely responsible to TNeGA and State Government for all the deliveries and deliverables.
- h. The Bidder shall submit the scanned copy bid document (in .pdf) and corrigendum (if any) as an acceptance of the bid.
- i. Any bidder from a country which shares a land border with India will be eligible to bid

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in this tender only if the bidder is registered with the Competent Authority.

3.2 Clarifications to the RFP

a. A prospective Bidder requiring any clarification in the RFP may notified by e-Mail to tenders.tnega@tn.gov.in. Clarifications to the queries (if any) by the bidders and corrigendum's (if any) will be published in the websites <https://www.tnega.tn.gov.in> and <https://tntenders.gov.in>

3.3 Amendments to the Tender

a. A Pre-bid meeting will be held online through video conference (VC) for addressing the clarifications on the date and time mentioned in the Tender Data Sheet or any other date to be decided by TNeGA. The Bidders are requested to participate in the Pre-bid meeting and get the clarifications. The link for the VC is given below:-

https://teams.microsoft.com/l/meetup-join/19%3ameeting_NjJiZDNhMGYtYzM3Ni00ODJmLTliYTgtOGQxYzkyZjY0MjcX%40thread.v2/0?context=%7b%22Tid%22%3a%2243ba7e2e-286a-4816-bcdc-53c0b403bc51%22%2c%22Oid%22%3a%226d28ced9-450d-4fe0-99c0-dae04e94ac35%22%7d

b. Before closing of the Tender, clarifications and corrigendum (if any) will be notified in the websites mentioned in the Tender Schedule. The Bidders shall periodically check for the amendments or corrigendum or information in the websites till the closing date of this Tender. TNeGA will not make any individual communication and will in no way be responsible for any information missed out by the bidders.

c. No clarifications would be offered within **48 hours** prior to the due date and time for submitting the Tender.

d. Before the closing of the Tender, TNeGA may amend the Tender document as per requirements or wherever it feels that such amendments are absolutely necessary.

e. Amendments also may be given in response to the queries by the prospective Bidder(s). Such amendments will be notified in the websites mentioned in the tender schedule. It is bidder responsibility to keep checking the website for any changes or clarifications or corrigendum to the tender document.

f. TNeGA at its discretion may or may not extend the due date and time for the

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submission of bids on account of any amendments.

- g. TNeGA is not responsible for any misinterpretation of the provisions of this tender document on account of the Bidder failure to update the Bid documents on changes announced through the website.

3.4 Language of the Bid

- a. The bid prepared by the Bidder as well as all correspondences and documents relating to the bid shall be in English only. The supporting documents and printed literature furnished by the Bidder may be in another language provided they are accompanied by an accurate translation in English duly notarized, in which case, for all purposes of the bid, the translation shall govern. Bids received without such translation copy are liable to be rejected.

3.5 Bid Currency

- a. Price should be quoted in Indian Rupees (INR) only and Payment shall be made in Indian Rupees only.

3.6 Contacting Tender Inviting Authority

- a. Bidders shall not make attempts to establish unsolicited and unauthorized contact with the Tender Accepting Authority, Tender Inviting Authority or Tender Scrutiny Committee after the opening of the Tender and prior to the notification of the Award and any attempt by any Bidder to bring to bear extraneous pressures on the Tender Accepting Authority shall be sufficient reason to disqualify the Bidder
- b. Not with standing anything mentioned above, the Tender Inviting Authority or the Tender Accepting Authority may seek bonafide clarifications from Bidders relating to the tenders submitted by them during the evaluation of tenders.

3.7 Force Majeure

a. Neither the Purchaser / nor the Successful Bidder shall be liable to the other for any delay or failure in the performance of their respective obligations due to causes or contingencies beyond their reasonable control such as:

- i. Natural phenomena including but not limited to earthquakes, floods and

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epidemics.

- ii. Acts of any Government authority domestic or foreign including but not limited to war declared or undeclared, priorities and quarantine restrictions.
- iii. Accidents or disruptions including, but not limited to fire, explosions, breakdown of essential machinery or equipment, power and water shortages.

3.8 Arbitration

- a. In case of any dispute, the matter will be referred to a sole Arbitrator to be appointed by the CEO, Tamil Nadu e-Governance Agency (TNeGA) under the “Arbitration and Conciliation Act 1996”. The arbitration shall be held in Chennai, Tamil Nadu, India and the language of arbitration shall be English. The Courts at Chennai alone shall have jurisdiction in the matter. Arbitration detailed in clause:7.11.

4 Minimum Eligibility Criteria (MEC) & Technical Evaluation System(TES)

- a. The Bidders should have the following MEC for participating in the Tender. The Bidders should enclose documentary evidence for fulfilling the MEC in the Technical Bid. **If a Bidder fails to enclose the documentary proof for MEC, their bid will be summarily rejected.**

4.1 Minimum Eligibility Criteria (MEC)

S.No.	MEC	Documents to be submitted
4.1.1	The bidder should be a company registered / incorporated under Indian company Act and must have 3 years of existence in India as on date of submission of bids.	Valid copy of the Certificate of Incorporation
4.1.2	The Bidder should be a System Integrator and should have experience in End System Integration Projects involving design, development, implementation of web application, installation, Commissioning of IT infrastructure and integrating the hardware & software components anywhere in India during the last 3 Years as on date of	Work order and satisfactory performance certificate from the client for proof of delivering relevant services as per the scope of work order in the last 3 years

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S.No.	MEC	Documents to be submitted
	submission of bid.	
4.1.3	The Bidder should have an average annual turnover of at least Rs.2Crores during the last three financial years (2018-2019, 2019-2020 and 2020-2021)	Audited and Certified Balance Sheet & Profit/Loss Account or CA certificate for the last 3 Financial Years. Note: For the financial year 2020-21, the provisional statement is accepted.
4.1.4	The bidder should have successfully Implemented at least one similar Real time Tracking and monitoring web application System(design, development, implementation and O&M), installation & commissioning the required IT infrastructure and integrating the software & hardware components for Government/PSU/Private Agencies in India during last 3 years as on date of submission of bids and the value of the project should be at least Rs.50 lakhs and the project should be live as on date.	Work Order / Contract Agreement along with Satisfactory Completion/performance Certificate by the client for commissioning both hardware & software components with details of project value with clear scope of project.
4.1.5	The Bidder should have at least one office in Tamil Nadu and preferably support centers /logistics for the entire state. If the Bidder is not having any office in Tamil Nadu, then bidder should submit a letter of undertaking to open an office in Tamil Nadu within 15 days from the date of issue of work order if he is awarded the work.	The copy of Property tax bill/Electricity Bill/Telephone Bill/G.S.T.-C.S.T. Registration/Lease agreement should be submitted as proof Or Undertaking Letter

- b. The bidders who have submitted required documents and meet the eligibility criteria as mentioned above and as determined by the Tender Scrutiny Committee (TSC) shall only be eligible for further technical evaluation as per clause4.2.

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4.2 Technical Evaluation System (TES)

- a. The Bidders should enclose documentary evidence for fulfilling the following TES and the Tender Scrutiny Committee will evaluate the bids as per the criteria set below:

Technical Evaluation			
S. No	Criteria		Maximum Marks
4.2.1	The bidder should have valid ISO 9001:2015 or higher certifications or CMMi Level 3/5 certifications. Copy of certification should be attached.	CMMi Level3/5 certification – 5 marks ISO 9001:2015 or higher certifications = 3marks No Certificate=0 Marks	5
4.2.2	Average annual turnover during the last three financial years (2018-2019, 2019-2020 and 2020-2021) Audited and Certified Balance Sheet & Profit/Loss Account / CA certificate for the last 3 Financial Years. Note: For the financial year 2020-21 the professional statement is accepted.	>=Rs.2 crores to upto Rs.3 crores = 3 marks >Rs.3crores=5marks	5
4.2.3	The bidder should have successfully Implemented at least One similar Real time Tracking and monitoring web application System (design, development, implementation and O&M), installation & commissioning the required IT infrastructure and integrating the software & hardware components for Government/PSU/Private Agencies in India during last 3 years as on date of	a. 1 project = 10 marks b. 2 Projects = 20 marks c. 3 or more Projects=25 marks Additional 5 marks will be awarded if the project is live and in operations for more than 1 year. The bidder has to furnish a certification from the client in this regard.	30

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Technical Evaluation			
S. No	Criteria		Maximum Marks
	<p>submission of bids and the value of the project should be at least Rs.50 Lakhs and the project should be live as on date.</p> <p>Work Order / Contract along with Satisfactory Completion / Performance Certificate by the client with details of project value with clear scope of project.</p>		
4.2.4	<p>Project Manager</p> <p>a. Should have B.Tech/B.E degree in Computer Science /Information Technology</p> <p>b. Overall IT Experience of 15 years in end to end system integration (design, development, testing, installation, commissioning and implementation of hardware & software components)</p> <p>c. At least 6 years of experience as a Project Manager in managing end to end system integration (design, development, testing, installation, commissioning and implementation of hardware & software components)</p> <p>d. Local Language proficiency</p>	<p>a. Educational Qualification= 1mark</p> <p>b. Overall IT Experience ≥ 15years = 3marks</p> <p>c. Project management experience ≥ 6 years = 4marks</p> <p>d. For lesser experience, marks will be on pro-rata basis</p>	8

RFP for Design, Development, Installation and Maintenance of Command centre along with Vehicle Tracking system for Tamil Nadu Pollution Control Board

Technical Evaluation			
S. No	Criteria		Maximum Marks
	preferable		
4.2.5	<p>Technical Lead</p> <p>a. Should have B.Tech /B.E degree in ComputerScience/Information Technology.</p> <p>b. Overall Experience of 7 years in IT</p> <p>c. Experience of 4 years or more in IT Software design, development, testing and implementation</p>	<p>a. Educational Qualifications = 1mark</p> <p>b. Overall IT Experience >= 7 years=2marks</p> <p>c. Relevant experience >= 4 years=2marks</p> <p>d. For lesser experience, marks will be on pro-rata basis</p>	5
4.2.6	<p>Quality Engineer</p> <p>a. Should have B.Tech/B.E degree in Computer Science /Information Technology.</p> <p>b. Overall Experience of 4 years in IT</p> <p>c. Experience of 3 years or more in Software testing</p>	<p>a. Educational Qualifications= 1mark</p> <p>b. Overall IT Experience >=4 years = 2marks</p> <p>c. Relevant experience >= 3 years =2marks</p> <p>d. For lesser experience, marks will be on pro-rata Basis</p>	5

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Technical Evaluation			
S. No	Criteria		Maximum Marks
4.2.7	<p>Software developer</p> <p>a. Should have B.Tech/B.E degree in Computer Science /Information Technology.</p> <p>b. Overall Experience of 4 years in IT</p> <p>c. Experience of 3 years or more in IT Software design, development, testing and implementation.</p>	<p>a. Educational Qualifications =1mark</p> <p>b. Overall IT Experience>= 4years=2marks</p> <p>c. Relevant Experience>= 3 years=2marks</p> <p>d. For lesser experience, marks will be on pro-rata basis</p>	5
4.2.8	<p>System Admin</p> <p>d. Should have B.Tech/B.E degree in Computer Science /Information Technology.</p> <p>e. Overall Experience of 5 years in IT</p> <p>f. Experience of 3 years or more in installation & commissioning of IT infra and integrating the software & hardware components .</p>	<p>e. Educational Qualifications =1mark</p> <p>f. Overall IT Experience>= 5years=3marks</p> <p>g. Relevant Experience>= 4years=3marks</p> <p>h. For lesser experience, marks will be on pro-rata basis</p>	7
	<p>Approach & Methodology</p> <p>a) Understanding of Project</p>	<p>a. Understanding& work plan=5marks</p>	15

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Technical Evaluation			
S. No	Criteria		Maximum Marks
4.2.9	requirement & work plan b) Identified project risk &Mitigation c) Proposed solution and architecture	b. Risk &Mitigation plan= 5marks c. Proposed solution & architecture= 5marks	
4.2.10	Technical presentation (solution architecture, scale, high availability, disaster recovery, O&M, security) and live demonstration of projects specified in cl. 4.2.3	Marks will be assigned based on the live demonstration of previous projects and will be assessed for solutionarchitecture,scal e,highavailability,disaste rrecovery,O&M,security, POC for Proposed Solution	15
Total marks(4.2)			100

Evaluation of technical proposal:

- a. Tender Scrutiny Committee (TSC) will evaluate whether all the requirements mentioned in the RFP are understood and addressed well.
- b. The bidder has to make a technical presentation & live demonstration (Cl.4.2.9 and 4.2.10) to the TSC.
- c. The bidder shall ensure that the candidates proposed in the bid for resources outlined in cl.4.2.4 to cl.4.2.8 are deployed in this project during implementation.
- d. To declare a bidder as technically qualified, the bidder has to score a minimum of 70 marks based on the above said cl.4.2 – TES and financial bids of those bidders who score 70 or above in the TES shall only be opened.

5 Bid Preparation and Submission

RFP for Design, Development, Installation and Maintenance of Command centre along with Vehicle Tracking system for Tamil Nadu Pollution Control Board

5.1 Cost of Bidding

- a. The Bidder should bear all costs associated with the preparation and submission of Bids. TNeGA will in no way be responsible or liable for these charges/costs incurred regardless of the conduct or outcome of the bidding process.

5.2 Earnest Money Deposit(EMD)

- a. An EMD amount as specified in the Tender Schedule should be paid through ONLINE mode. The EMD of the un-successful Bidders will be auto-refunded to their bank account within a reasonable time in consistent with the rules and regulations in this behalf. The EMD amount held by TNeGA till it is refunded to the unsuccessful Bidders will not earn any interest thereof.
- b. The EMD amount of the Successful Bidder shall be converted as part of the Security Deposit (SD) for successful execution of the work and will be returned only after the successful fulfilment of the Contract.
- c. The EMD amount will be forfeited by TNeGA, if the Bidder withdraws the bid during the period of its validity specified in the tender or if the Successful Bidder fails to sign the contract or the Successful in Bidder fails to remit Security Deposit within the respective due dates.

5.3 Letter of Authorization

- a. A letter of authorization from the Board of Directors / appropriate authority authorizing the Tender submitting authority or a Power of Attorney should be submitted in the tender; otherwise the Bids will be summarily rejected.

5.4 Two Part Bidding

- a. Bidders should examine all Instructions, Terms and Conditions and Technical specifications given in the Tender document. Failure to furnish information required by the Bid or submission of a Bid not substantially responsive in every respect will be at the Bidders risk and may result in rejection of Bids. Bidders should strictly submit the Bid as specified in the Tender, failing which the bids will be non-responsive and will be rejected.

5.4.1 Technical Bid

- a. The first part relates to technical bid submitting all the required details and documents complying with all the eligibility conditions and the other tender conditions/instructions as well as the statement of compliance consisting of the following.
 - i. A Letter of Undertaking in company's letter head in pdf
 - ii. This Technical Bid documents Copy of supporting documents for MEC and TES as rar file (Zipped) have to be submitted.

5.4.2 Financial Bid

- a. Second part relates to financial bid which should be submitted in the **Bill of Quotation (BoQ)** as given in the Tender.
- b. The rate quoted by the bidder in the financial bid should be for the cost involved in the successful implementation of scope of work mentioned and no other charges will be allowed by the TNeGA other than the cost quoted.
- c. Bill of Quotation (BoQ) should not contain any conditional offers or variation clause, otherwise the bids will be summarily rejected.
- d. The rates quoted shall be only in INDIAN RUPEES (INR) only. The tender is liable for rejection if BoQ contains conditional offers.
- e. The cost quoted by the bidder shall be kept firm for a period specified in the tender from the date of opening of the tender. The bidder should keep the rates firm during the period of contract including during the period of extension of time if any. Escalation of cost will not be permitted during the said periods or during any period while providing services whether extended or not for reasons other than increase of duties / taxes payable to the Governments in India.

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5.4.3 Details of the Documentary proofs to be uploaded in portal

Letter of Undertaking		Upload Format
A Letter of Undertaking as per the format given in this RFP in company's letterhead	1	PDF (Max 2 MB)
This Technical bid document		Upload Format
This Technical bid document RFP and corrigendum if any	1	PDF (Max 2 MB)
Minimum Eligibility Criteria (4.1)		Upload Format
1	Copy of documentary proof for clause 4.1.1 as PDF	RAR
2	Copy of documentary proofs in chronological order for clause 4.1.2 as merged PDF	
3	Copy of documentary proofs for clause 4.1.3 as merged PDF	
4	Copy of documentary proof for clause 4.1.4 as PDF	
5	Copy of documentary proof for clause 4.1.5 as PDF	
5		
Technical Evaluation System (4.2)		Upload Format
1	Copy of documentary proofs for clause 4.2.1 as merged PDF	
2	Copy of documentary proofs for clause 4.2.2 as merged PDF	
3	Copy of documentary proofs for clause 4.2.3 as merged PDF	
10		

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4	Copy of documentary proofs for clause 4.2.4 as merged PDF	(All these PDF have to be placed in a folder, and zipped as .rar file before submission)	RAR (WinRAR) (Max 30 MB) Upload Format .XLS	
5	Copy of documentary proofs for clause 4.2.5 as merged PDF			
6	Copy of documentary proofs for clause 4.2.6 as merged PDF			
7	Copy of documentary proofs for clause 4.2.7 as merged PDF			
8	Copy of documentary proofs for clause 4.2.8 as merged PDF			
9	Copy of documentary proofs for clause 4.2.9 as merged PDF			
10	Copy of documentary proofs for clause 4.2.10 as merged PDF			
Price Bid				
Bill of Quotation (BoQ)				1
Total				18

Note: Under Technical bid = 17 documents

Under Price bid = 1 document (pre-defined template)

5.5 Bid closing date and time

- a. Bids cannot be submitted not later than the date and time specified in the Tender Schedule or Corrigendum if published. Hence bidders should be cautious to submit the Bids well in advance to avoid disappointments.

5.6 Online Submission of Bids -<https://tntenders.gov.in>

- a. Bidder should read all the terms and conditions and accept the same to proceed further

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to submit bids. Tendering system will give a successful bid update message after uploading all the bid documents submitted. A print out of Bid Submission Confirmation showing the bid number, the date and time of submission of the bid with all other relevant details can be taken from the website and kept as an acknowledgement for submission of bid. This acknowledgement will act as a proof of bid submission.

- b. The bidders can resubmit the bid as many times as possible till the closing time of the bid submission. Withdrawal of the bid is also possible before the closing time of the bid submission.
- c. The time settings fixed in the server and displayed at the top of the tender site, will be valid for all actions of bid submission, bid opening etc., in E-Tender system.

6 Tender Opening and Evaluation

6.1 Technical Bid Opening

- a. The Technical Bid will be opened on the date and time as specified in the Tender schedule or in the Corrigendum issued by TNeGA (if any).

NOTE: If the date fixed for opening of the tender happens to be a Government holiday, the e-tender will be opened on the next Working day at the time specified in the Tender Schedule.

6.2 Tender Validity

- a. The offer submitted by the Bidders should be valid for a minimum period of 90 days from the date of opening of the Tender.

6.3 Initial Scrutiny

- a. Initial Bid scrutiny will be conducted and incomplete details as given below will be treated as non-responsive.
- b. If Tenders are;
 - i. received without the Letter of Undertaking with Authorization
 - ii. received without EMD amount
 - iii. found with suppression of details

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- iv. with incomplete information, subjective, conditional offers and partial offers
 - v. submitted without support documents as per the MEC and TES
 - vi. non-compliance of any of the clauses stipulated in the Tender
 - vii. lesser validity period
- c. All responsive Bids will be considered for further evaluation. The decision of TNeGA/Government will be final in this regard.

6.4 Clarifications

- a. When deemed necessary, TNeGA shall seek bona-fide clarifications on any aspect from the Bidder ONLY through <https://tntenders.gov.in> (online mode) under Short Fall of Documents sections in e-tender portal. However, that would not entitle the Bidder to change or cause any change in the substance of the Bid or price quoted. During the course of Technical Bid evaluation, TNeGA may seek additional information or historical documents for verification to facilitate decision making. In case the Bidder failed to comply with the requirements of TNeGA as stated above, such Bids may at the discretion of TNeGA, shall be rejected as technically non- responsive.

6.5 Tender Evaluation

6.5.1 Suppression of facts and misleading information

- a. During the bid evaluation, if any suppression or misrepresentation is brought to the notice of TNeGA, TNeGA shall have the right to reject the bid and if after selection, TNeGA would terminate the contract, as the case may be. Termination of the contract will be without any compensation to the Bidder and the EMD / SD, as the case may be, shall be forfeited.
- b. Bidders should note that any figures in the proof documents submitted by the Bidders for proving their eligibility is found suppressed or erased, TNeGA shall have the right to seek the correct facts and figures or reject such Bids.
- c. It is up to the Bidders to submit the full copies of the proof documents to meet out the MEC and TES. Otherwise, TNeGA at its discretion may or may not consider such documents.

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- d. The Tender calls for full copies of documents to prove the Bidder's experience and capacity to undertake the project.

6.5.2 Technical bid evaluation

(a) Minimum Eligibility Criteria(MEC):

TSC will examine the technical bids as per Cl.4.1 MEC given in the Tender document. The documents which did not meet the eligibility criteria in the first stage of scrutiny will be rejected in that stage itself and further evaluation will not be carried out for such bidders. The eligible Bidders satisfying all the criteria in cl. 4.1 alone will be considered for further evaluation as per TES (cl.4.2). The decision of TNeGA will be final in this regard.

(b) Technical Evaluation System(TES):

TSC will examine the bids as per clause 4.2 TES based on the documentary evidence enclosed by bidder in the Technical Bid. The bidder shall be informed to make a presentation to TSC as per 4.2.9 and 4.2.10. If the bidder fails to demonstrate their bid will be summarily rejected. Minimum marks to be scored by the bidders in the TES is 70 (seventy) out of 100, so as to declare the bid as technically qualified. Bidders who score 70 and above marks in the TES as per cl. 4.2 above shall be deemed technically qualified and financial bids of those bidders only will be opened.

6.5.3 Financial bid evaluation

- a. Bidders should fill price quote details ONLY in Bill of Quotation (BoQ).
- b. All the taxes indicated in the financial bid will be taken for the financial evaluation as per the Tamil Nadu Transparency in Tender Rules 2000 with latest amendments.
- c. Bidders should quote for all the items. Failure to submit the rates for all the items (including price discovery items) or partial offer will be liable for rejection of the bid itself. The decision of TNeGA will be the final.
- d. Bidders who satisfy the MEC (4.1), scored 70 or more out of 100 in TES (4.2) and has quoted the lowest rate in the financial bid will be declared as successful bidder (L1).

6.6 Negotiations

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- a. Negotiations will be conducted with the successful (L1) bidder for improvement in the scope of work, specification, further reduction in bid price and advancement of delivery schedule.

6.7 Award of Contract (through <https://tntenders.gov.in>)

- a. Award of Contract (Letter of Acceptance) shall be issued online through <https://tntenders.gov.in> to the successful (L1) bidder. After acceptance of the tender and LOA issued by TNeGA, the successful bidder shall have no right to withdraw their tender or claim higher price.
- b. No dispute can be raised by any bidder who's bid has been rejected and no claims will be entertained or paid on this account.

6.8 TNeGA reserves the right to:

- a. Modify, reduce or increase the quantity requirements to an extent of tendered quantity as per the provisions of Tamil Nadu Transparency in Tenders Act 1998 and Tamil Nadu Transparency in Tenders Rules,2000.
- b. Inspect the bidders' premises/Company before or after placement of orders and based on the inspection, reserves a right to modify the quantity ordered.
- c. Withhold any amount for the deficiency in Quality/Service aspect rendered during the contract period.
- d. Accept or reject any or all of the tenders in full or in parts without assigning any reason whatsoever. The Tender Accepting Authority may also reject all the tenders for reasons such as change in scope, specification, lack of anticipated financial resources, court orders, calamities or any other unforeseen circumstances.

7 Execution of Contract

7.1 Payment of Security Deposit (SD)

- a. The successful (L1) bidder shall have to furnish a Security Deposit (SD) for 5% of contract value by way of demand draft or banker's cheque payable at Chennai or in the form of unconditional irrevocable Bank Guarantee valid for a period of 20 months from the date of acceptance of the tender on receipt of confirmation from TNeGA. The SD shall be paid within 15 days from the date of issue Letter of Acceptance (LOA) by TNeGA. The SD furnished by the Successful Bidder in respect of the tender will be returned to them after the entire scope of work is executed by the bidder as per the RFP, Contract and as per order(s) issued by TNeGA from time to time during the execution of work and after 3 months from the completion of contract period. The Security Deposit held by TNeGA till it is refunded to the successful bidder will not earn any interest thereof.
- b. The EMD/Security Deposit will be forfeited if the successful bidder withdraws the bid during the period of bid validity specified in the tender or if the bidder fails to sign the contract.

7.2 Execution of Contract

- a. The successful bidder should execute a Contract in the INR 100 non-judicial stamp paper bought in Tamil Nadu in the name of the TNeGA within 10 working days from the date of letter of acceptance issued by TNeGA with such changes/modifications as may be indicated by TNeGA at the time of execution on receipt of confirmation from TNeGA.
- b. The successful bidder shall not assign or make over the contract, the benefit or burden thereof to any other person or persons or body corporate for the execution of the contract or any part thereof without the prior written consent of TNeGA. TNeGA reserves its right to cancel the LoA either in part or full, if this condition is violated. If the Successful Bidder fails to execute the agreement within the stipulated period of 15 days, the SD of the Successful Bidder will be forfeited and their tender will be held as non-responsive.

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- c. The expenses incidental to the execution of the agreement should be borne by the successful bidder.
- d. The conditions stipulated in the agreement should be strictly adhered to and violation of any of the conditions will entail termination of the contract without prejudice to the rights of TNeGA and also TNeGA have the right to recover any consequential losses from the Successful Bidder.

7.3 Release of Work Order

- a. After the payment of Security Deposit and execution of the Contract by the successful bidder, TNeGA will issue the Work Order to the successful bidder for commencement of the work.

7.4 Refund of EMD

- a. The EMD amount paid by the Successful Bidder will be adjusted towards security deposit payable by them. If the Successful Bidder submits security deposit for the stipulated value, the EMD will be refunded. The EMD amount of the unsuccessful bidder(s) will be auto-refunded upon finalization and issue of LoA to the successful bidder.

7.5 Forfeiture of EMD and SD

- a. If the successful Bidder fails to act according to the tender conditions or backs out, after the tender has been accepted, the EMD will be forfeited.
- b. If the successful bidder fails to remit the SD, the EMD remitted by him will be forfeited to TNeGA and the tender will be held void.
- c. If the successful bidder fails to act up on to the tender conditions or backs out from the contract, the SD mentioned above will also be forfeited by TNeGA.

7.6 Termination of Contract

7.6.1 Termination for default

- a. TNeGA may without prejudice to any other remedy for breach of contract, by written notice of default with a notice period of 30 days, sent to the successful bidder, terminate the contract in whole or part, (i) if the successful bidder fails to deliver any or all of the service within the time period(s) specified in the contract, or fails to supply the items as per the delivery schedule or within any extension thereof granted by TNeGA; or (ii) if the successful bidder fails to perform any of the obligation(s) under the contract; or (iii) if the successful bidder, in the judgment of TNeGA, has engaged in fraudulent and corrupt practices in competing for or in executing the Contract.
- b. In the event TNeGA terminates the Contract in whole or in part, TNeGA may procure, upon terms and in such manner as it deems appropriate, the goods and services similar to those and delivered and the successful bidder shall be liable to TNeGA for any additional costs for such similar goods and service. However, the successful bidder shall continue the performance of the contract to the extent not terminated.

7.6.2 Termination for Insolvency

- a. TNeGA may at any time terminate the Contract by giving written notice with a notice period of 7 days to the successful bidder, if the successful bidder becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the successful bidder, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to TNeGA.

7.6.3 Termination for Convenience

- a. TNeGA may by written notice, with a notice period of 30 days sent to the successful bidder, TNeGA may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for TNeGA's convenience, the extent to which performance of work under the

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Contract is terminated, and the date upon which such termination becomes effective. Services rendered by the bidder, as assessed by TNeGA, would be paid for. On termination, the successful bidder is not entitled to any compensation whatsoever.

7.7 Project Lead

- a. The successful bidder should nominate and intimate TNeGA, a Project Lead who should be responsible for effective delivery of work complying with all the terms and conditions. The successful bidder should ensure that the Project Lead fully familiarizes with the RFP, Contract and deliverables.

7.8 Assigning of Tender whole or in part

- a. The successful bidder shall not assign or make over the contract, the benefit or burden thereof to any other person or persons or body corporate. The successful bidder should not under-let or sublet to any person(s) or body corporate for the execution of the contract or any part thereof, without the written consent of TNeGA.

7.9 Liquidated Damages (LD)

- a. The successful bidder must strictly adhere to the implementation schedule, specified in the RFP & Contract / Work Order and any delay attributable to the successful bidder will enable TNeGA to resort to any or both of the following:
 - i. Claim liquidated damages at 0.5% of the contract value for delayed performance per week and the maximum LD applicable is 10% of the contract value. When the LD reaches 10% of the contract, TNeGA may terminate the contract due to the non-performance of the successful bidder. However LD shall not be levied if the delay is attributable to the successful bidder.
 - ii. In case of the termination of the contract by TNeGA due to non- performance of the successful bidder, the Security Deposit will be forfeited.
 - iii. In addition, TNeGA reserves the right to award the work to any other party / parties and the loss / expenses incurred thereafter will be recovered from the successful bidder.

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- b. The RFP, bid submitted by the successful bidder, negotiated offer of the successful bidder, contract and the work orders will form part of this contract. Wherever the offer conditions furnished by the successful bidder are at variance with conditions of this contract or conditions stipulated in the work order, the latter shall prevail over the offer conditions furnished by the successful bidder.
- c. Notwithstanding anything contained in this clause, TNeGA reserves the right to blacklist the successful bidder from taking part in any of the procurement operations of TNeGA for a minimum period of three years from the date of blacklisting for their failure to execute the work as per the agreed terms and conditions of the RFP, Contract and Work Order.

7.10 Other Conditions

TNeGA reserves the right not to accept lowest price, to reject any or all the tenders without assigning any reason, to relax or waive any of the conditions stipulated in the terms and conditions of tender as deemed necessary in the best interest of TNeGA for good and sufficient reasons.

7.11 Arbitration and Jurisdiction

- a. Except as otherwise provided elsewhere in the contract, if any dispute, difference, question or disagreement arises between the parties hereto or their respective representatives or assignees, at any time in connection with construction, meaning, operation, effect, interpretation or out of the contract or breach thereof, the same shall be decided by Sole Arbitrator to be appointed by the CEO, TNeGA.
- b. If the sole arbitrator so appointed dies, resigns, incapacitated or withdraws for any reason from the proceedings, another Sole Arbitrator shall be appointed by the CEO, TNeGA. The Sole Arbitrator so appointed shall proceed with the reference from the stage, where his predecessor had left if both parties consent for the same.
- c. It is a term of the contract that the party invoking arbitration shall specify all disputes to be referred to arbitration at the time of invocation of arbitration and not thereafter. Neither party to the contract shall be entitled to seek interest and the arbitrator should not grant interest.

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- d. The Sole Arbitrator shall give reasoned award and the same shall be final, conclusive and binding on the parties.
- e. The venue of the arbitration shall be Chennai and language English. The fees of the sole arbitrator and expenses incidental to the arbitration proceedings shall be borne equally by the parties.
- f. Subject to as aforesaid, the provisions of the Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment in lieu thereof shall apply to the arbitration proceedings under this Clause.
- g. Subject to the above, the Courts in Chennai alone shall have jurisdiction in this matter.

8 Scope of the Project

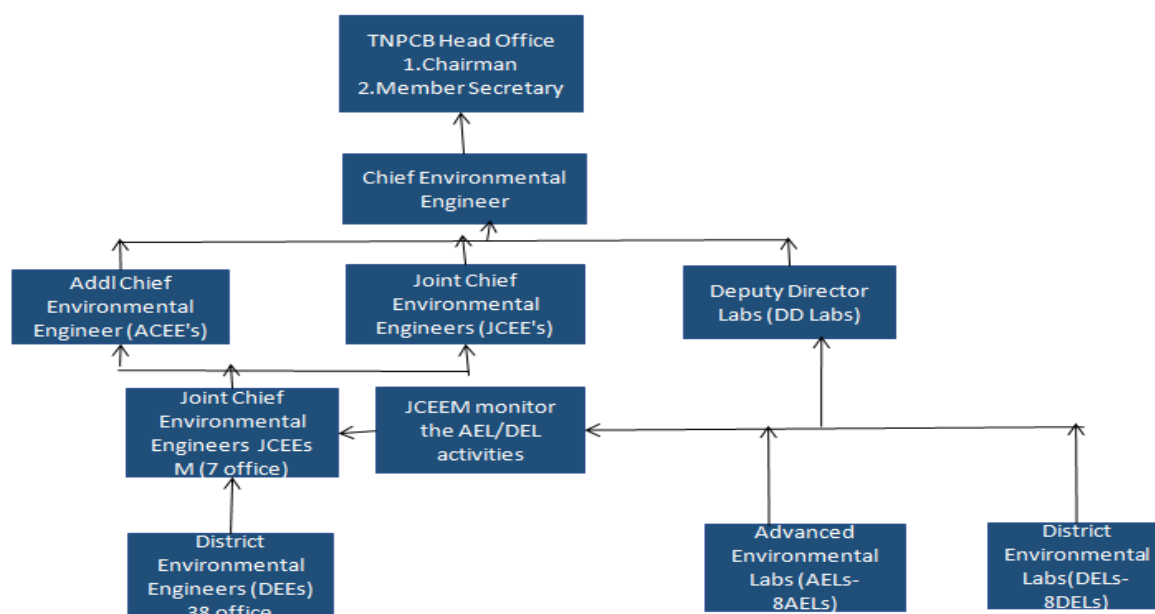
8.1 About the Department

- a. The Tamil Nadu Prevention and Control of Water Pollution Board was constituted by the Government of Tamil Nadu on twenty seventh day of February, Nineteen eighty two (27-2-1982) in pursuance of the Water (Prevention and Control of Pollution) Act, 1974 (Central Act 6 of 1974). The Board was later renamed as Tamil Nadu Pollution Control Board (TNPCB) in the year 1983. It enforces the provisions of the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the rules made under these Acts, which includes.
 - 1. The Water (Prevention and Control of Pollution) Act, 1974
 - 2. The Tamil Nadu Water (Prevention and Control of Pollution) Rules, 1983.
 - 3. The Air (Prevention and Control of Pollution) Act, 1981
 - 4. The Tamil Nadu Air (Prevention and Control of Pollution) Rules, 1983.
 - 5. The Environment (Protection) Act, 1986
 - 6. The Environment (Protection) Rules, 1986
 - 7. Manufacture, Storage and Import of Hazardous Chemical Rules, 1989
 - 8. Fly Ash Utilization Notification 1999
 - 9. The Batteries (Management and Handling) Rules, 2001
 - 10. The Environment Impact Assessment Notification, 2006

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11. The Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016
12. The Bio-Medical Waste Management Rules, 2016
13. The Solid Waste Management Rules, 2016
14. The Plastic Waste Management Rules, 2016
15. The E-Waste Management Rules, 2016
16. The Construction and Demolition Waste Management Rules, 2016

8.2 Organization Structure



8.3 Objective of the Project

- a. The aim of the project is to identify a System Integrator (SI) to Design and develop dashboard for Vehicle Tracking System and deployment, commissioning of Video wall with the Analytical dashboard for the department of Tamil Nadu Pollution Control Board.
- b. The successful bidder / SI shall install and integrate a fully functional and operational video wall display system and ancillary hardware, software within the conference room in the Pollution Control Board.
- c. The proposed design shall include all facets of video wall set-up and installation including all technical details, device interfaces, design drawings and control software specifications as per the site conditions.
- d. To provide Analytical Dashboard and MIS for better decision making
- e. To provide customized reports with drill down options at all levels

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- f. To enable customized alert & notification
- g. Proposed solution's software should be upgradable to meet the future requirement without any degradation in the quality of command centre/Video Wall.
- h. The Command Centre should be able to integrate with various utility systems such as Water Quality, AQI, Bio-Medical Waste, Hazardous Waste, E-Waste, Solid Waste, Plastic Waste, Construction, Demolition Waste, Legal Case Management System and not limited to.

8.4 As-Is Process

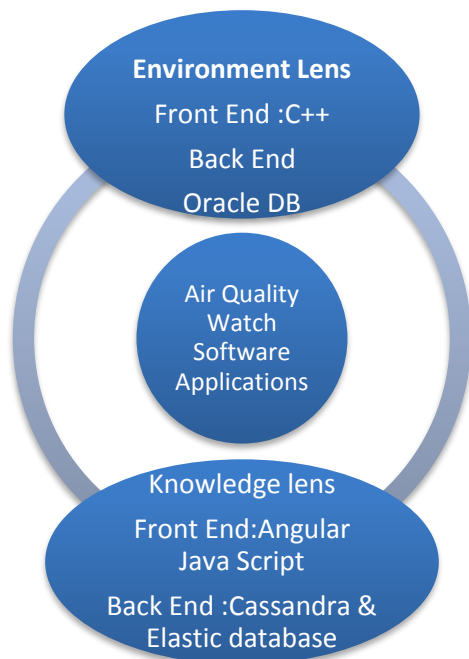
The existing details of data sets available in the department are given below.



1. Air Quality Watch
2. Water Quality Watch
3. AQI
4. AQI of 25 CAAQMS
5. Online Consent Management and Monitoring System (OCCMS)
6. Online Grievance Petition Redressal System (OLGPRS)
7. Online Biomedical Waste Management System (OBMWMS)
8. Online Hazardous Waste Manifest Application(OHWMA)
9. Online Legal Case Management and Monitoring System (OLMMS)
10. Vehicle Tracking System (Bio Medical Waste and Hazardous Waste) and Not Limited to

8.4.1 Air Quality Watch

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- a. The Care Air Centre is established for assessing real time Air Quality Information. The main purpose is to monitor all the industrial emissions both ambient and stack in Tamil Nadu on real time basis.
- b. The Care Air Centre will receive online real time data from the industries of different districts in Tamil Nadu.
- c. The Real time data is being validated by Environment Scientists according to the CPCB norms and being reported in the form of Trend Charts with a note regarding the number of exceedance and industry status to TNPCB officials.
- d. In Air Quality Watch, the following categories are monitored:
- e. Aluminium, Cement, Chlor Alkali, Copper Smelter, Distillery, Drugs and Pharmaceuticals, Dye and Dye intermediates, Fertilizer, Iron and Steel, Pesticide, Petrochemicals, Petroleum refinery, Pulp and Paper, Sugar, Tannery, Thermal Power, Zinc Smelter
- f. Presently the Air Quality Watch is monitored via four applications.
 1. M/s Environment S.A
 2. M/s Knowledge lens
 3. M/s. Endistriyal Mesur Technologies Pvt Ltd
 4. M/s.Vasthi Instrument Pvt Ltd

8.4.2 Air Quality Watch

Parameters monitored are:

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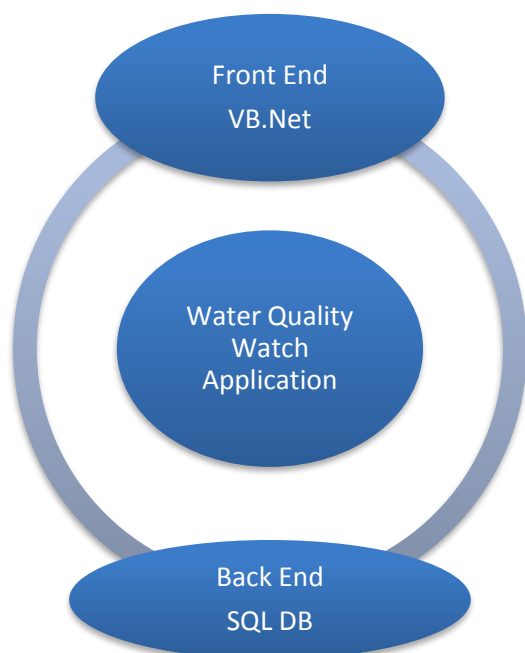
i. Source Emission:

PM, SO₂, NO, NO₂, NO_x, TVOC, HC, CO, Cl₂, CO₂, H₂S, NH₃, HCl, VCM, HF, O₂, Velocity, Mercapton, TOC, Flow, Temperature.

ii. Ambient parameters:

PM₁₀, PM_{2.5}, SO₂, NO, NO₂, NO_x, CO, C₆H₆, Fluorine, Cl₂, HC, HCl, VOC, NH₃, CH₄, HCNM, HCT, VCM, O₃, H₂S, Bromine, Hydrogen, Barometric Pressure, Relative Humidity, Temp, Wind Speed, Wind Direction.

8.4.3 Water Quality Watch Centre



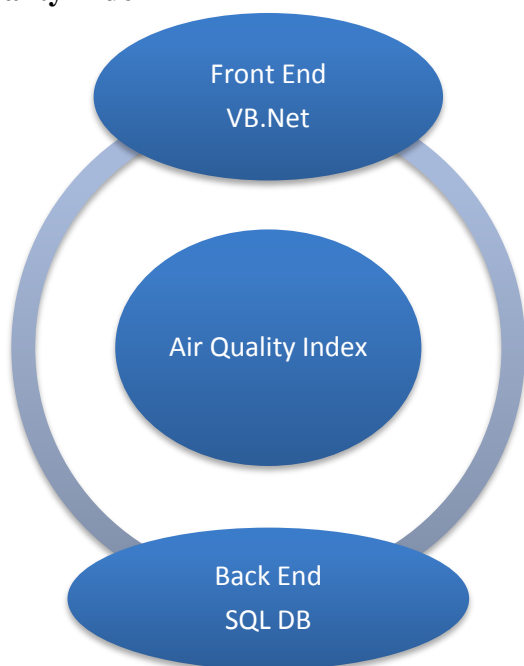
- a. The Water Quality Watch is to monitor the Industrial effluent Water Quality, Quantitatively and Qualitatively through IETP's, CETP's and River Bodies in Tamil Nadu on real time basis.
 - b. The Water Quality watch Centre will receive online real time data from the industries of different districts of Tamil Nadu.
 - c. The real time data is being validated by Environmental Scientists according to the CPCB norms and being reported in the form of Trend Charts with a note regarding number of exceedance and Industry status to TNPCB officials.
 - d. In Water Quality Watch, the following categories are monitored:
 - i. River and Water Bodies, Tannery-Cetp, Textiles Cetp.
- Parameters monitored:**
- i. **ZLDS Monitoring:**
Flow, TDS, pH, Energy, Differential Pressure, Steam, Water Tank level, Dissolved Oxygen and Camera monitoring.

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ii. Parameters monitored for Effluent Discharge:

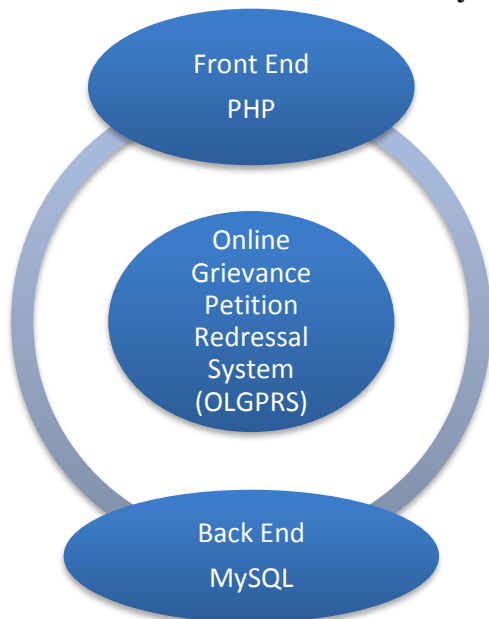
pH, TDS, Flow, Temperature, BOD, COD, TSS, Chromium.

8.4.4 Air Quality Index



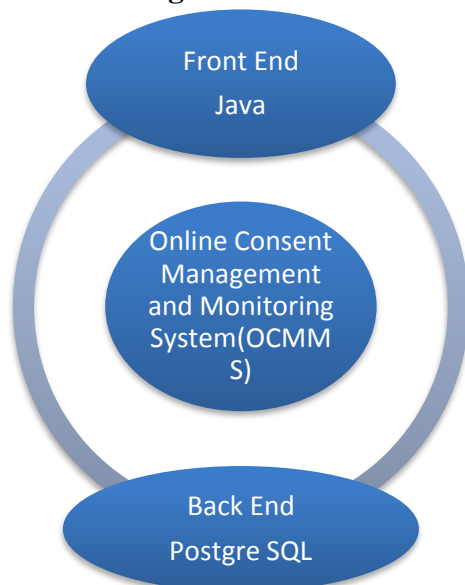
- a. In order to extend the ambient air quality monitoring on real-time basis programme throughout the State by covering major cities and Industrial areas, the Board has installed additionally twenty five CAAQMS at twenty five locations.
- b. The stations also has weather monitoring station to measure wind direction, wind speed, ambient temperature, relative humidity, solar radiation, rainfall, barometric pressure etc.
- c. The AQI data is being collected from all the CAAQM Stations and reported mentioning prominent pollutants, AQI Value and Pollution Levels including meteorological data of respective locations to TNPCB Officials.

8.4.5 Online Grievance Petition Redressal System (OLGPRS)



- a. The portal facilitates monitoring and time-bound resolution of issues faced by the public. Anyone can file online complaints pertaining to TNPCB. The status of the overall complaints, online complaints, offline complaints, DEEO complaints, zone wise complaints can be viewed from this portal.

8.4.6 Online Consent Management and Monitoring System (OCMMS)

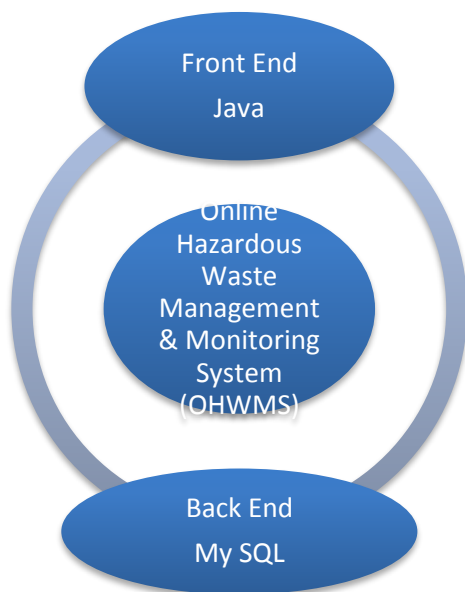


- a. The OCCMS software is to expedite the processing the applications for consent and authorization which makes the system transparent for the industries and public to know the status of the application.

8.4.7 Online Hazardous Waste Management and Monitoring System (OHWMS)

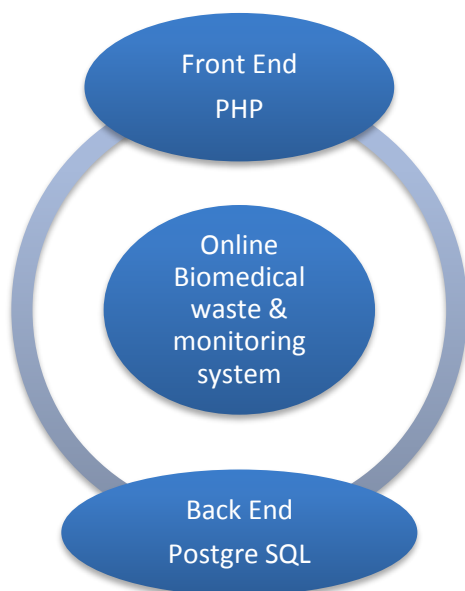
The software facilitates to keep track of the hazardous waste generation, collection and disposal through Manifest

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8.4.8 Online Bio-Medical Waste and Monitoring System (OBWMS)

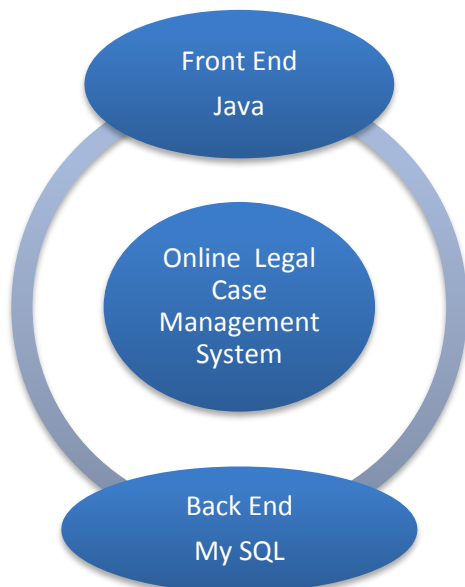
The Software facilitates to keep track of the Bio Medical Waste generation, collection and disposal



8.4.9 Online Legal Case and Monitoring System (OLCMS)

The Software Facilitates to keep track the legal case details of the Pollution Control Board.

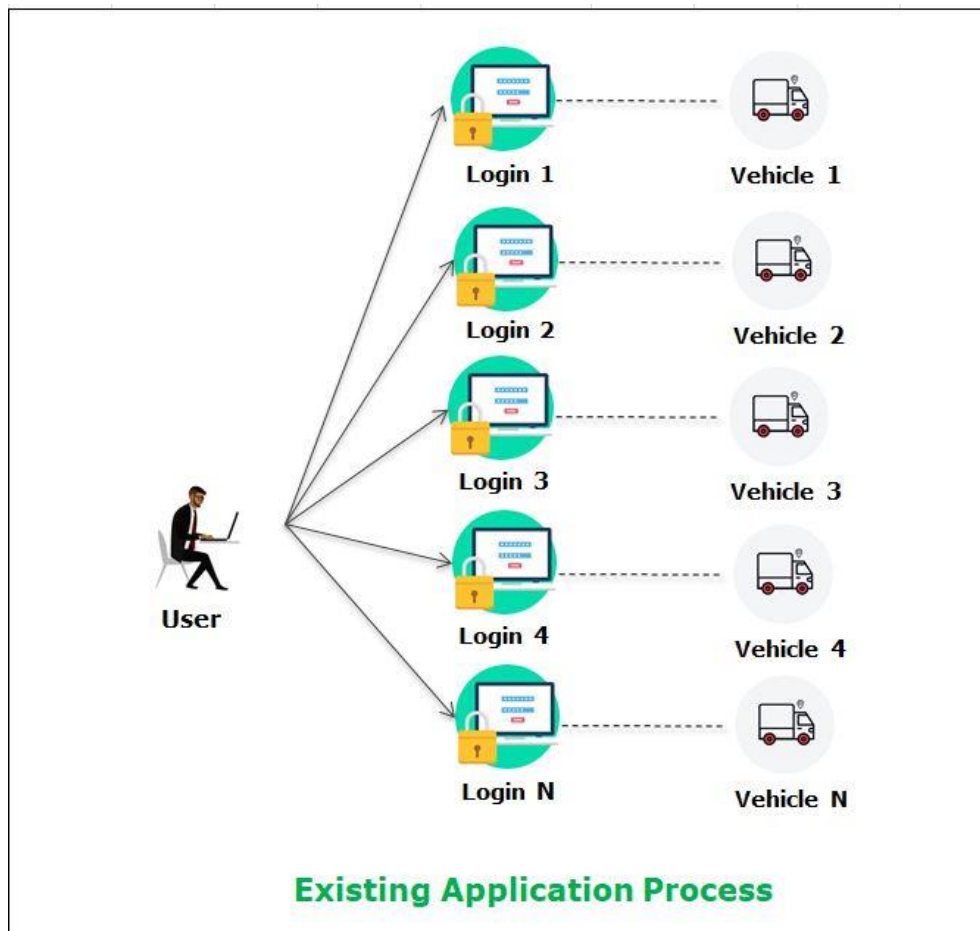
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8.4.10 Vehicle Tracking System

- a. In the Existing system of TNPCB’s Vehicle Tracking System 17 Facilities (Hazardous + Bio-medical) was available for monitoring 100 vehicles (approx). The Facilities involved various applications for tracking the e-waste vehicles. There were inadequate data in the applications developed for vehicle tracking system also the IT Infrastructure available is obsolete. Hence TNPCB has proposed to develop a robust solution for the Vehicle Tracking System.

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8.5 Proposed System

8.5.1 Stakeholders



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8.5.2 Scope of the Project

- a. The following section illustrates the scope of work to be performed by Successful bidder. The Successful bidder shall be responsible for successful completion/execution of the activities as specified in this section for the department of Tamil Nadu Pollution Control Board. The areas of work of the Successful bidder are outlined in the table below :

S.No	Area of Work	Description
1.	Design, Development, Installation and Maintenance of Command centre along with Vehicle Tracking system	<ul style="list-style-type: none"> a. Preparation of SRS b. Software development (including but not limited to, interface with other applications/gateways) c. Installation, Configuration and Commissioning of various equipment's, components, systems d. Preparation of Test Plan and Test Cases e. Unit and Integration Testing
2.	Project Acceptance	<ul style="list-style-type: none"> a. Preparation of UAT test cases b. Support UAT execution
3.	System Requirements	<ul style="list-style-type: none"> a. Hardware sizing and software requirements
4.	Training	<ul style="list-style-type: none"> a. Training to department officials b. Submission of Application User manuals
5.	Implementation and Go-Live	<ul style="list-style-type: none"> a. Support Application security audit by Cert-IN certified agency b. Implementation Plan c. Deployment of Application in Infrastructure of PCB / SDC as prescribed d. Implementation of infrastructure in DR & Replication of data in DR e. Project Go-Live
6.	Free warranty	<ul style="list-style-type: none"> a. Software Support and Maintenance b. Issue Tracker and Resolution

8.5.3 Scope of Work

- a. The scope of work is to design, develop and maintain the Command Centre along with

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the Vehicle Tracking System for Tamil Nadu Pollution Control board. All civil infrastructure requirements/facilities required for installation & commissioning of video wall will be taken care by TNPCB.

8.5.3.1 Vehicle Tracking System

- a. To design and develop a integrated indigenous Vehicle Tracking System, with integrated feeds and inputs from multiple vehicles and transport partner
- b. Real time Vehicle monitoring system feeds
- c. Route Monitoring and alert system integration from VTS service providers in a single dashboard
- d. To improve, monitor the efficiency, utilize the resources and services by implementing the GIS and vehicle tracking waste collection system
- e. The Department should be able to monitor every vehicle to be tracked with GPS Vehicle Tracking Device with GPRS connection
- f. The Successful bidder would Design, Develop and maintain the Vehicle Tracking System and other components as described in sections below: -

1. Online waste management systems

a) Hazardous Waste

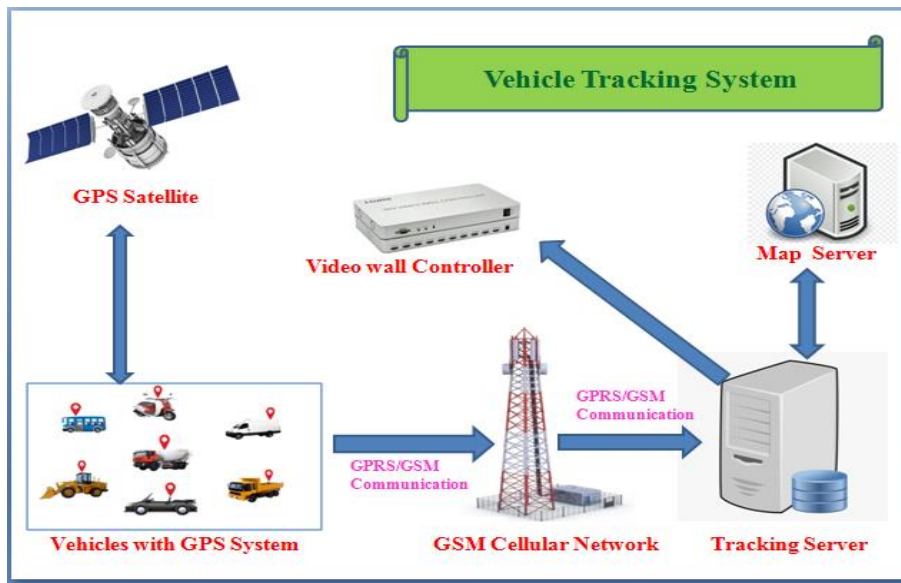
- a. Hazardous waste means any waste which by reason of characteristics such as physical, chemical, biological, reactive, toxic, flammable, explosive or corrosive, causes danger or is likely to cause danger to health or environment. The Hazardous and Other Waste (Management & Transboundary Movement) Rules, 2016 prescribes that the hazardous waste generators shall follow the steps namely prevention, minimization, reuse, recycling, recovery, utilization including co-processing and safe disposal of the hazardous wastes. The two common hazardous waste “Treatment, Storage and Disposal Facilities” (TSDF) established at Gummidipoondi and Virudhunagar are in operation.

b) Bio medical Waste

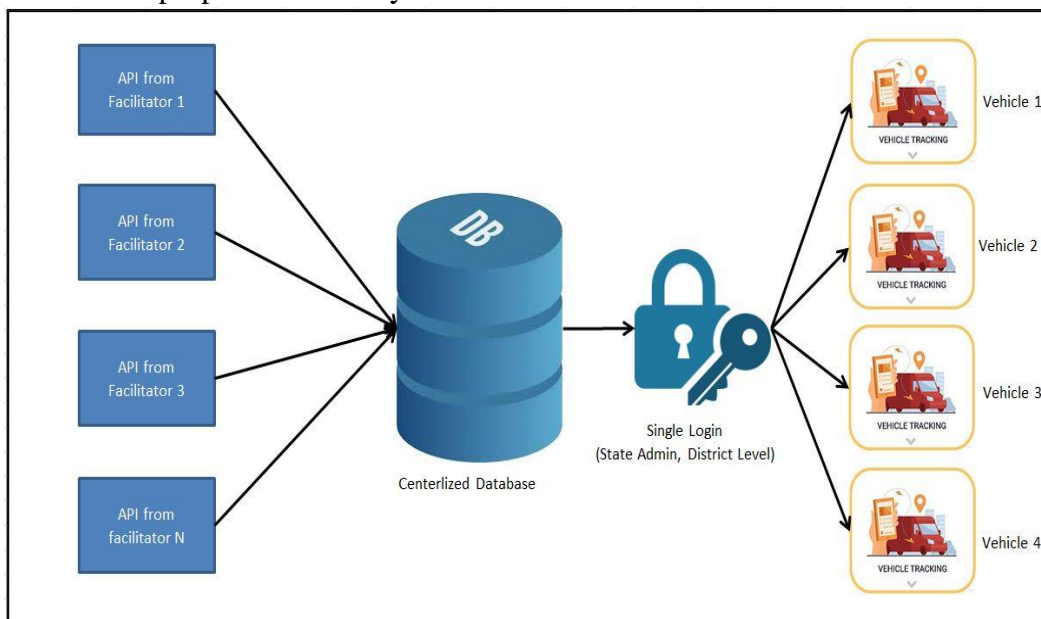
- a. Bio-medical waste is the waste generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in the production or testing in biological labs. The Bio-Medical Waste Management Rules prescribes the responsibility of the waste generators and the operators of the Common Bio-Medical Waste Treatment and Disposal facilities (CBMWTFs) for safe handling and disposal of the bio-medical wastes.
- b. The biomedical will operate on daily basis

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2. System Architecture for Vehicle Tracking System (VTS)



1. The web based application has to be designed and developed to facilitate, monitor, and track the movement of vehicles in-order to ensure real time route adherence using the data feeds received from GPS devices installed in e-waste vehicles.
2. All the facilities data (database, API, feeds from VTS partners) will be provided by Tamil Nadu Pollution Control board through API's to selected successful bidder.
3. The web application tracks the fleet of vehicles by displaying the location and distance travelled for each vehicle on geo locating Maps, on a real time basis.
4. The Web Portal must have Web Syndication (RSS/Atoms) and mobile Responsive web design (RWD)
5. The proposed system should like as follows:



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6. The Successful bidder should combine all the facilitators data's to create a centralized database and Successful bidder should design and implement the data's though single dashboard.
7. In this regard, PCB can able to monitor all the facilities vehicles details (such as, Vehicle movement (moving, idle, high speed, parked, towed, ignition on, etc.), Driver Management, Manifest Management, GPS Tracking, Trip Schedule, Fuel details and supplier management, etc., in a single dashboard



8. The web application is to provide vehicle tracking management system with dashboard and reports.
9. The web application tracks the fleet of vehicles by displaying the location and distance travelled for each vehicle on geo locating Maps, on a real time basis.
10. The web application while displays the location of vehicles should indicate the following for vehicle tracking



- i. Red for Switch off indication
- ii. Green with Red for High Speed
- iii. Green for Moving vehicles
- iv. Green with mustered yellow for Ignition on
- v. Yellow for Parked
- vi. Red with mustered yellow for Towed

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- vii. Notification etc.
11. The web application should have name and contact details of the officials who are assigned to the vehicle on all 3 shifts and system must have option to send notification to the concerned drivers and officials as and when required.
 12. The Web Application should have option to play back, fast forward the vehicle movement for any date & time period of any vehicle from the date of installation till the date of removal
 13. The web application should provide a Dashboard with summary of vehicles for each status, seizure data, etc.
 14. The Protocol of the GPS Application from various vehicles has to be shared with the application or new device has to be procured by the TNPCB.
 15. Monitoring of routes and stoppages of waste lifting vehicles and keeping a record of the trip they have made route wise and vehicle wise.
 16. The System should display the live position of the vehicle on a map, display the route, stops and live position of the vehicle along that route on a map simultaneously.
 17. The details of the GPS installed vehicles are as follows:

Total No of Facilities	17(Bio Medical Waste Facility & Hazardous Waste Disposal Facility)
Total No of Vehicles	100 (approx)

18. A variation of the above total figure should be considered by the Bidder.
19. The system shall track each and every vehicle from Source to destination. The tracking shall be real time and web based.
20. The GPS co-ordinates have to be collected for the stop points of the vehicles.
21. Trip Tracking: The system shall track each and every vehicle carrying the waste from source to destination. The entire tracking shall be real time and web based with feeds from VTS partner.
22. Tampering Alert: In case of tampering of any equipment, component of vehicle tracking system etc., alert should be given through SMS/ On-screen Pop Up Alert with Sound on or any latest feature as suggested by PCB, with feeds from VTS partner.

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23. Route Deviation/Excess Stoppage Alert: In case of deviation of vehicle from pre-defined routes or excess stoppage of vehicle beyond a specified time duration alert should be given through SMS, On-screen Pop up alert with sound on or any latest feature as suggested by PCB, with feeds from VTS partner.
24. The Geographical boundaries of PCB and the boundaries has to be updated if new administrative entities are created by the Government.
25. Dynamic Route Management must be able to create and assign routes based on the landmarks and stoppages with option to assign single or multiple vehicles on the routes created.

3. Functional Details:

a.	Setup and maintain web portal for live tracking of vehicles on GIS-based route maps
b.	Mapping and creating each route including sequencing all the stops for the route both initially and subsequently as route changes or when new routes are added
c.	Maintaining master mapping of vehicle number
d.	In case of loss of data connection the system must have adequate data storage to store all the vehicle locations with time stamps for at least 6 hours and transmit them upon re-connection of the data network
e.	Digitize and store fleet schedules
f.	Ensure and build a mechanism to capture in real-time the vehicle route mapping i.e. the system should know which vehicle is running on which route all the time.
g.	Provide position of the vehicle at any given point of time
h.	Time taken to complete a trip by specific vehicle, route based, at time slots in a day

4. Parameters to be visualized in the Command Centre

1. The Command centre should project the tracking of the GPS fitted vehicles carrying the Bio Medical Waste, Hazardous Waste etc.
2. The Command centre should be enabled with the Zoom in feature and drill down feature.
3. The Command center should visualize the data dashboard for the real time fetching of data.

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4. The Command Centre is to monitor/ track the fleet of vehicles by displaying the location and distance travelled for each vehicle on geo locating Maps, on a real time basis.
5. while displaying the location of vehicles the command centre should indicate the following for vehicle tracking
 - a. RED for Switch off indication
 - b. GREEN for moving vehicles
 - c. Yellow for Parked Vehicles
6. The web-based software should provide real-time tracking information for the vehicles where a tracking System is installed.
7. The Following reports should get projected in the command centre
 - a. Daily report on the status of vehicle movement
 - b. Speed Analysis report
 - c. Distance report
 - d. Entry Exit Report
 - e. Other reports sought by PCB
8. Any vehicle travelling outside its jurisdiction will be notified in the command centre.
9. The Command Centre should automatically refresh the tracking information at regular intervals. Alarm should be notified in the command centre during the over speed of vehicles, Ignition Alert etc

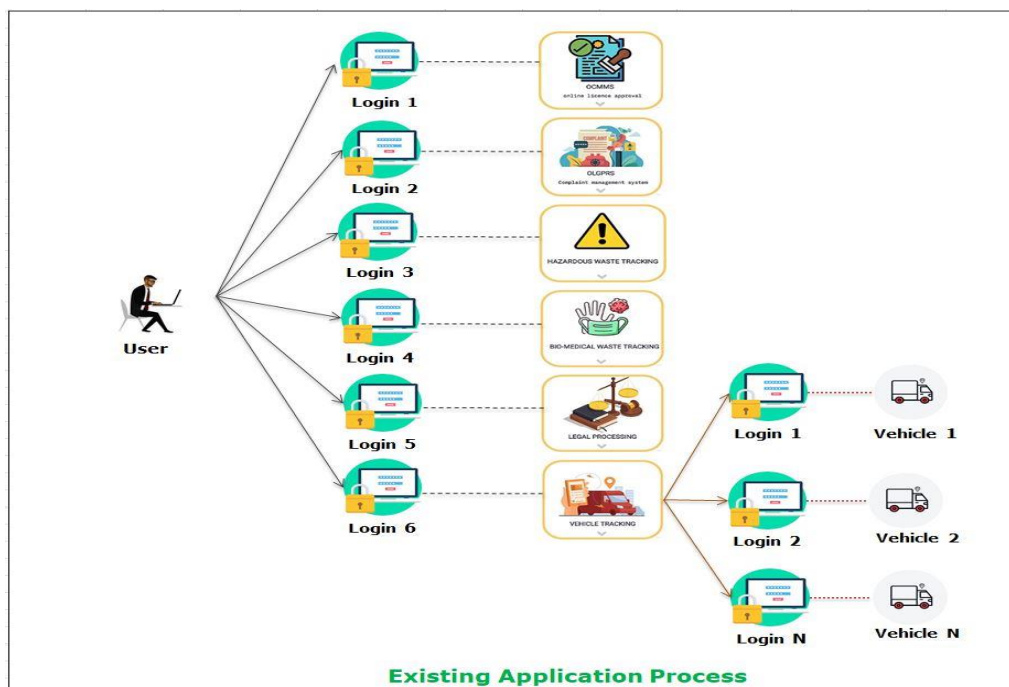
8.5.3.2 Video Wall

1. The Vision of Command Centre is to have a integrated solution of all the e-initiatives undertaken by Tamil Nadu Pollution Control Board (TNPCB) with focussed to serve as a support engine in day to day operations or during exigency situations.
2. A Command Centre is an integrated solution with an array of high-resolution displays driven by a powerful processing and computing system called a video wall controller
3. A Command Centre is essentially a grouping of display screens, they can be used to create one whole image or dissected into different parts so multiple images can be seen on each individual screen
4. The Command Centre is a high performance, high resolution, and visualization system. The Command centre's software architecture applies latest techniques to overcome the performance limitation. It is a collaborative visualization platform that is designed to visualize enormous data sets and the same is configured according to the needs of the

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user. The platform would help TNPCB harmonize and synchronize their data such that they have a unified view. The broad areas of work of the selected successful bidder are outlined below

5. The successful bidder should integrate the video wall controlling software with the centralized database. The system should feed the real-time input from multiple sources.
6. The real-time input from the following applications will be collected and stored in the centralized database.
 - a. Air Quality Watch
 - b. Water Quality Watch
 - c. AQI
 - d. AQI of 25 CAAQMS
 - e. Online Consent Management and Monitoring System (OCCMS)
 - f. Online Grievance Petition Redressal System (OLGPRS)
 - g. Online Biomedical Waste Management System(OBMWMS)
 - h. Online Hazardous waste manifest application(OHWMA)
 - i. Online Legal Management and Monitoring System (OLMMS)
 - j. Vehicle Tracking System
 - k. Not limited to.



7. The proposed system should contain the “Centralized Database” to store the selective information from the databases of various applications’ databases available with the department as mentioned above.
8. The successful bidder should be synchronizing the centralized database with the

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databases of various applications' based on the requirement of the TNPCB (E.g. Real-time & Periodically).

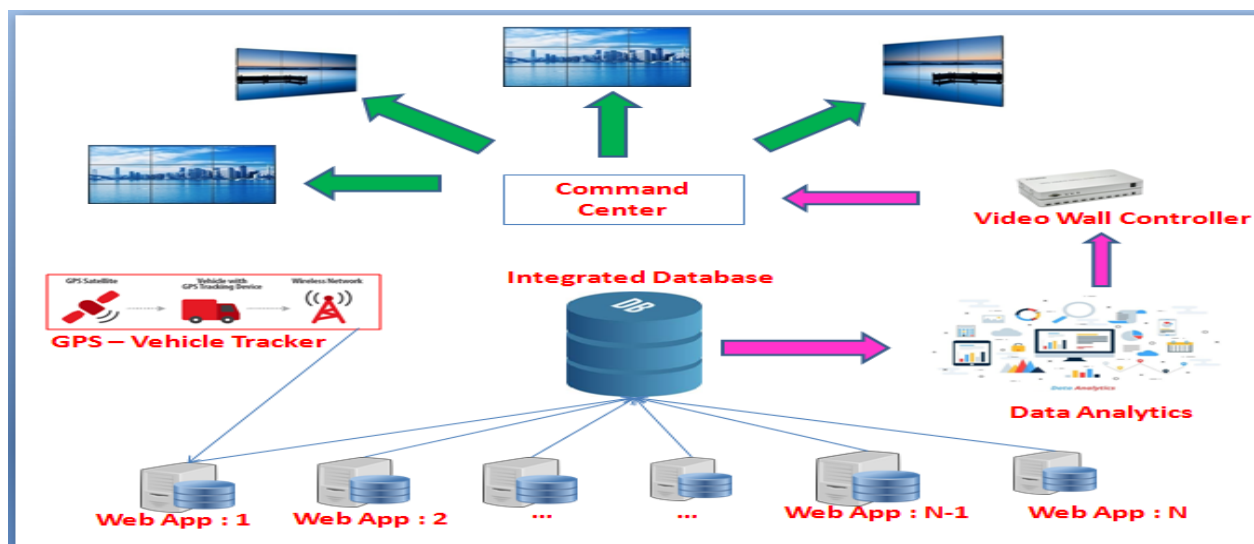
9. The proposed system shall implement the “Single Sign On feature” for all the applications. Single sign-on (SSO) is a technology which combines several different application login screens into one. With SSO, a user only has to enter their login credentials (username, password, etc.) one time on a single page to access all of their applications and to avoid multiple credentials and their login time consumption will be reduced.



i. Database Ingestion Framework

10. The Database Ingestion Framework involves several libraries and tools to enable the initialization of participating databases. The Participating Databases can publish the data to the centralized database by using an API. This Framework allows creation of multiple pipelines using external API'S. More participating database gets integrated with the centralized database after enriching the data. The Successful bidder would develop necessary techniques to avoid data duplication.
11. The command centre should be configured with easily accessible front access for maintenance and troubleshooting. If one or more components are turned off (for troubleshooting/maintenance) the remaining displays of the command centre will continue its operation.
12. A Comprehensive Data Integration System enables the Pollution Control Board to connect data from different heterogeneous sources including real time data, tracking etc.
13. This Platform automates the integration between various databases. The accuracy of data mapping at every step of the transformation process in real time has to be executed

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ii. **Functions to be supported in Command Centre**

- a. Support several video input signal, DVI, HDMI and VGA signals. Should freely adjust the image position, set the image stitching.
- b. Settings such as image brightness, contrast, saturation, position should be possible – uniformly to all the units on the wall
- c. Single-channel signal can be set to a variety of display combinations.
- d. Support a variety of output formats including VGA, DVI, HDMI etc.
- e. A variety of control methods. Including RS232 serial port as well as Ethernet remote control.
- f. The Controller can also be easily to switch the display mode by using a scene saved.
- g. Support matrix control and large-screen direct control.
- h. Through configuration for matrix and large screen in the controller software, should directly simultaneous operate the matrix, the stitching controller and the large screen.
- i. The matrix control should support linkage switch, and the large screen control
- j. Support start up, shutdown, bulb switch auto-adjust, channel switching and built splicing functions.
- k. Support source list management according to the specific situation; set a variety of different types of signal source, including the matrix input, network screen capture, IP video source and the controller input signal source, into a list tree.
- l. Shall have capability to directly select the corresponding input from the list tree to create a new window or switch the signal.
- m. Several RGB signal real-time parallel processing. High processing capacity and excellent stability.
- n. Automatic switching between Input sources and automatic switching to the active input.

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- o. The unit shall support the use of DVI-D to HDMI cables or adapters for HDMI.
- p. Support horizontal and vertical bezel compensation for flat panel displays.
- q. Impose no source window positioning restrictions including overlay and overlap.

iii. Hardware Specification for Video Wall System

- b. The Successful bidder has to provide the required BOQ for the Command Centre to TNPCB/TNeGA.
- c. Based on the Technical Specification submitted by the Successful bidder, TNeGA will procure the hardware through ELCOT and the installation & implementation have to be taken care by the Successful bidder.
- d. All civil infrastructure requirements/facilities required for installation & commissioning of video wall will be taken care by TNPCB and the Successful bidder has to only install & commission the IT hardware (procured by TNPCB based on the sizing provided by the bidder) and integrate with the software application at the civil infrastructure provided by the TNPCB..

8.5.3.3 Analytical Dashboard

- a. The Successful bidder should create the centralized database, which will provide the information for various kinds of “dashboards” such as Operational dashboard, Analytical Dashboard, Statistical dashboards, Data Dashboard etc
- b. Analytics tools aid the management in quicker decision making by presenting the data in a much simpler, easier and coherent form. All the valuable information can be obtained through a single glance at the dashboard. Furthermore, various kinds of filters are available to sort the data according to the user specific requirements
- c. Operational Dashboard is a reporting tool used to monitor the processes that frequently change and to track performance of key metrics and KPI's. Compared to other dashboards the data will be updated very frequently.
- d. Analytical Dashboard should be able to analyze the large volumes of data and Data Dashboard helps to visually track, analyze and display key performance indicators.
 - 1. The command centre should be configured with easily accessible front access for maintenance and troubleshooting. If one or more components are turned off (for troubleshooting/maintenance) the remaining displays of the command centre will continue its operation.
 - 2. The Successful bidder should provide the provision for user can drill down into each vehicle utilization details.
 - 3. The successful bidder should develop an analytical dashboard for the following

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types of widgets are detailed below;

- a. To capture real time data of the applications
 - b. Timeline - Should displays a graph of the selected metric over time
 - c. Geomap – Should provide the provision for selected region, with specific metric plotted on the map
 - d. Table – Should provide the provision for displays up to two metrics describing the selected dimension, laid out in tabular format
 - e. Pie – Displays a pie chart of the selected metric grouped by a dimension
 - f. Bar – Should provide the provision for displays a bar chart of the selected metric grouped by up to two dimension
4. MIS reports is restricted based on user role(s) and access control(s)
5. The primary dashboard items are as follows: -
- a. Daily report on the status of vehicle movement
 - b. Speed Analysis report
 - c. Distance report
 - d. Entry Exit Report
 - e. Other reports sought by PCB
 - f. Vehicle off-road reports
6. Visual Reports in graphs and charts
7. The dashboard must provide
- i. Instant access to reports on: trips on different routes, break downs and its duration, vehicles offline, accidents – types, impact, losses etc., average speed point to point, travel time analysis, improper stops, deviation in routes, speed violations, at different locations and at different points of time , (not limited to)
 - ii. Preparation of standard reports and charts to measure performance related to vehicle operations
 - iii. Other standard reports to give a snapshot view to the TNPCB on daily, monthly, quarterly, basis

8.6 User Management & Administration

- a. The administration module is the core for the entire application which enables the system administrator to create the user, their roles and access control list, manages the master data, configures the application for the business.
- b. User management function shall provide the functionality to define, add, modify and delete user/permissions to the systems. Also, the system administrator shall monitor the

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activities of each user.

- i. User Creation, edit and delete(logical delete)
- ii. User Logs & Tracking
- iii. The solution must be comprehensive with user provisioning, de-provisioning and password management tools.
- iv. To maintain accountability and enforce access restrictions, the solution must map the user access requirements to roles and the provisioning tool must provide “Role” based provisioning and de-provisioning capabilities.
- v. The solution must support “Delegated” model of administration to support user administration based on department, type of user (intranet/ internet), location etc.
- vi. The solution must provide capabilities to define “Time based Actions” so that provision / de-provision, enable, disable and delete actions to be driven by date attributes

8.7 Master Data Management

- a. Master data is nothing but the core and supplementary data for any application. User interfaces should be designed to manage all the master data for the following activities: -
 - i. Create/Manage Profile, Organization Hierarchy and etc.
 - ii. Create/Manage any other relevant master information

8.8 Configuration System

- a. The configuration module is primarily to configure
 - i. Workflow Management
 - ii. All the variable items that can be set for the entire system
 - iii. Dynamic parameters for reports like label and their values
 - iv. Run time inputs values for expressions etc.,
 - v. Application and system variable can be defined here. Alert and notifications messages, SMS, reporting templates, labels and other configuration parameters are defined in this module.
 - vi. The generated report should be in a prescribed format and proper int mode.

8.9 Third Party Integration

- a. System can communicate with various External System. However, this section is further analysed and updated during the requirement gathering and software development phase.

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- b. API's will be provided by the TNPCB. Providing API and support is the responsibility of the respective department/ Agency and their Successful bidder.

8.10 Deployment of technical resource during free warranty

The successful bidder has to deploy one technical resource on full time basis at TNPCB to provide required support during the free warranty period of 1 year and the bidder has to quote the rate for this deployment in item No. 1.02 of price bid BOQ.

9.0 Key Application and Design Principles

The section contains the description of the key design principles which are expected to provide indicative measures to define the functional requirements for the services. The following architecture principles which have been considered while designing the proposed solution

Application Design Principles	Detail
Interoperability	<ul style="list-style-type: none"> a) Software solutions and hardware infrastructure should conform to the defined industry standards that promote interoperability of data, applications and technology. b) Keeping in view the evolving needs of interoperability, especially the possibility that the solution would become the focal point of delivery of services, and may also involve cross-functionality with the e-Government projects of other departments / businesses in future, the solution should be built on Open Standards.
Extensibility & Scalability	<ul style="list-style-type: none"> a) Applications must evolve to support new business requirements and make use of new technologies .The system shall be extensible and scalable to allow additional capacity/ bandwidth / volume of users in future. b) The infrastructure elements such as Data Center, Disaster Recovery infrastructure and network infrastructure have been designed keeping this principle in mind.

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Design for performance and reliability measurement	a) Applications and technology components (processors, network, etc.) should be implemented in such a manner that Service levels required like a sub-second response to beneficiary authentication are complied with. b) The application must allow efficient utilization and performance of underlying compute, network and security infrastructure. The deployment architecture must allow for fault tolerance and load balancing, and enable horizontal scaling of servers and storage upgrades with out affecting Solution uptime
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9.1 Proposed System

- a. The proposed application would be an internet-based application running from a centralized location. The application would follow a modular architecture where in different modules would interact and share data between themselves.

9.2 Application Components

- a. The solution must be accessible over the various Network platforms including Internet, Internet through Broadband and Mobile Networks, using devices such as Desktop Computers, Laptop Computers, Tablet PCs and Smart Phones for Data Entry, Download / Upload, Viewing and other applicable forms of access.
- b. The Solution shall be governed and supported by the Standard Operating Procedures, which includes Security Audits, established Policies, Maintenance components such as SLA etc., System Administration and Database Administration support, besides the infrastructure maintenance support for the Application Server, Database Server, OS and Middleware, Security Systems, Network Monitoring, Replication /Backup, Disaster Recovery Setup, etc
- c. The Application must interface with the external applications and systems as follows:
 - i. Other Applications/portal/APIs
 - ii. Exporting Options (in PDF and Excel formats)
 - iii. SMS Gateway(for sending reminders and alerts from the Application)

9.3 Data Principles

- a. The data strategy needs to be founded on clear, agreed-upon principles, such as the following:

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Sl.No.	Data Principle	Rationale	Implication to proposed Solution
1	Data Availability	Data should be readily available to those with a Legitimate need for it.	Data will be organized and managed so as to maximize its value.
2	Data simplicity	Enhance intuitiveness and minimize change management with respect to data interpretation and Usage	The way of storing data in database should be simple
4	Data Update Processes that update a given data item should be standard across the Department	Ease of tracking of data update	Ensure that there is a known method of data update and tracking subsequently.
5	Data duplication Data should not be duplicated unless Duplication is essential for practical reasons.	Data duplication leads to loss to data integrity over a period of time and must be minimized.	Data duplicated from the primary data source to be clearly identified as copies.
6	Data Security	Minimize losses due to inappropriate usage of sensitive data	Adequate data security standards to be adhered to.

9.4 Requirements on Adherence to Standards

- a. The proposed solution should be designed based on open source technology such as PHP(Front end) & MYSQL/POSTGRE SQL (Backend) and open standards, to the extent feasible and in line with overall system requirements, in order to provide interoperability with multiple platforms and avoid any technology or technology provider lock-in
- b. The list of standards is indicated for reference but may not to be treated as exhaustive:
 - i. GIGW guidelines as per Government of India
 - ii. W3C standards for Web pages
 - iii. SOAP, HTTP/HTTPS for information access / transfer protocol

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- iv. SOA and other Open standards for Web Services Interoperability
 - v. RSA standards for Digital Signature
 - vi. PKCS specifications for encryption
 - vii. SSL protocols for secure communication
 - viii. ISO 27001 for Information Security
 - ix. IEEE/ ISO/ CMMI specifications of Documentation
 - x. Open Source for Software Development & Deployment
- a. Architecture should be built on Internet involving n-Tier and should not be based on any proprietary standards. Application should be developed using web-based technology and run independent of Operating System and web browsers. Architecture should support multi-tenancy and should be compatible to host in any environment.
 - b. The coding and documentation should be compliant with the standards for quality of software and services as prescribed by the State Government and Government of India.
 - c. The application must support standard browsers like Firefox, Chrome, IE, and also compatible with prevalent mobile browsers.
 - d. The solution must support complete scaling and growth without performance deterioration.
 - e. The response time to open / load a page should not exceed 06seconds.
 - f. The time taken to complete a database transaction should not exceed 5seconds.
 - g. Generation of MIS reports shall not take more than 15 to 30 seconds to display the same.
 - h. In addition to above, the proposed architecture must be scalable and flexible for modular expansion. It should ensure ease of integration with software / applications developed using common industry standards since the solution would be linked and connected to other sources (websites, contents, portals, systems of other Agencies).
The proposed system must also adhere to any standards defined by GoI.

9.5 Compliance with Open Standards

- a. The proposed solution shall be compliant with industry standards, wherever applicable.
This will apply to all the aspects of solution including but not limited to design, development, security, installation and testing.

10. Application

10.1 Application Study and Analysis of Requirements

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- The Successful Bidder would be required to study the existing application and functioning of the Department in a manner that will enable the Successful Bidder to meet all the requirements of this RFP. The gaps have to be analysed from the existing process and successful bidder has to suggest a re-engineering process (if required).
- The Successful Bidder shall analyse these requirements to ensure the requirements are complete, accurate, consistent and unambiguous.
- Post the detailed study, the functionality of the proposed application would be agreed with two major boards before beginning the design of the system.

10.2 Solution Design

- Based on the completion of requirements study, the design of the Solution would be done by the selected Successful bidder. An indicative list of documentation to be prepared as part of this phase:
 1. Detailed Design document detailing Technical architecture (application, network, and security)
 2. Data Architecture, interface architecture and integration architecture, appropriate load balancing and clustering techniques should be adopted by the Successful Bidder in the Solution design for meeting the requirements of the RFP.
 3. SRS document shall be prepared and validated with Tamil Nadu Pollution Control Board / TNeGA and to meet the standards specified in this RFP. The SRS Validated and approved by Tamil Nadu Pollution Control Board / TNeGA for all subsequent phases of application development and deployment from an Application requirements perspective.
 4. The Successful Bidder is required to keep all such documentation up to date to reflect the latest enhancements/modifications made to the application.

10.3 Application Development

- The Successful Bidder would be responsible for developing, testing and implementing the end-to-end application. The application developed would be evaluated against the SRS as approved by the Tamil Nadu Pollution Control Board &TNeGA.
- The Successful Bidder would be required to deliver the overall application along with all the services of Tamil Nadu Pollution Control Board and documentation in

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line with best standards.

- The successful Bidder should consider appropriate open source technology stack for the development & production environment
- The site has to be best viewed with standard web browsers such as IE, Firefox, mozilla, Chrome,etc.,
- Web application shall have single view of all contact and basic information related to Tamil Nadu Pollution Control Board. The basic information related to Tamil Nadu Pollution Control Board shall be updated on regular basis whenever required using content management system.
- All interface/pages performing similar functionality will have consistent look and feel. Appropriate titles will be given to each page. The titles will specify the functionality of the Page.
- Access to the functionality of the application will be controlled based on the user type.
- Navigation facilities will be provided to navigate from one page to another page with minimum number of clicks.
- The Administration module is the core for the entire application which enables the system administrator to create the user, their roles and access control list, configures the application for the business.
- User management function shall provide the functionality to define, add, modify and logical delete user/permissions to the systems. Also, the system administrator shall monitor the activities of each user.
 1. The system must allow to create / update / soft-delete user and user profile.
 2. The system must allow the user to limit access to cases to specified users or user groups.
 3. The system should provide for role-based control for the functionality within the system.
 4. The system must allow only admin-users to set up user profiles and allocate users to groups.
 5. The system must allow changes to security attributes for groups or users (such as access rights, security level, privileges, password allocation and management) to be made only by super-admin.
 6. System should allow the user to access only those functionalities that he/she is authorized to access.

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7. System should allow a maximum of three attempts to login in case of failed to login. This should be followed by a period of non-access.
8. System should allow the user to regenerate a lost password/reset password with set of hint questions.
9. System should allow creation of new users, change of roles and any other actions that affect their authentication and authorization settings.

10.4 Application Testing & User Acceptance Testing(UAT)

Once the application development has been completed by the Successful Bidder, the Successful Bidder will thoroughly test the application at his end. Selected Successful Bidder should carryout Unit Testing, Integration Testing, System Testing and Performance / Load testing. The inputs for this activity will be the design documents approved by the Tamil Nadu Pollution Control Board and TNeGA The successful bidder should have the ability to troubleshoot the errors and submit the test cases based on whichever scenarios the application has been tested.

Unit Testing

Unit Testing will be done in parallel to the development by successful bidder also the test cases, test matrix and the snapshots of the test results will be submitted to Tamil Nadu Pollution Control Board and TNeGA.

Integration Testing

The successful bidder shall thoroughly test the Web Application at successful bidder's premises for functional testing and integrated testing as per the standards and proven methodologies. A test report of the integration testing with snapshots shall be submitted to the Tamil Nadu Pollution Control Board and TNeGA at the time of submission of UAT Test cases.

Performance Testing/Load Testing

- The successful bidder shall enable to conduct performance testing on many performance test parameters (industry standard parameters). At the time of requirement sign off the successful bidder may provide their study results for the proposed system and plan the Performance & Load Testing accordingly.
- The successful bidder shall incorporate the changes/suggestion given by the load testing agency.

UAT server Installation

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The successful bidder shall install the Web Application along with services in a Department staging server for the purpose of UAT.

User Acceptance Testing (UAT)

- a. The Successful Bidder will design detailed procedures for User Acceptance and also develop the UAT plan.
- b. UAT shall be done at Tamil Nadu Pollution Control Board. Module wise bugs report shall be submitted to the Tamil Nadu Pollution Control Board and TNeGA. The bugs shall be resolved and retested by Successful Bidder. The test cases for UAT will be given by the Successful Bidder and validated by TNeGA and approved by the Tamil Nadu Pollution Control Board / TNeGA. The Department would inform the defects identified in each round of UAT to the Successful Bidder. The Successful Bidder will be required to troubleshoot or resolve the defects and resubmit the application to Department. This process of UAT will continue in an iterative manner **till zero defects are shown by the Successful Bidder for the test cases developed.**
- c. The Successful Bidder also needs to ensure that errors/ defects detected in previous round of tests do not get repeated in successive tests.
- d. The changes if any at this stage shall be made in the software without any additional cost and it shall be updated in SRS. The UAT shall be completed and signoff shall be obtained from the Tamil Nadu Pollution Control Board and TNeGA.

10.5 Release Management

The successful bidder should maintain the source code and other artifacts in a repository system. Every release the release build along with its release note should be maintained in the repository. Anytime, the production environment can be rolled back to any of its previous versions without any difficulty.

10.6 Capacity Building and Training

Comprehensive planning of Capacity Building Program for implementation of online services for User department is fundamental as it has direct association with the success of the overall implementation. For training to be considered effective, a number of high level objectives need to be set that need to be monitored at periodic intervals. An overall plan for Capacity Building across the Districts has to be prepared based on the training objectives. The major components of capacity building and training programs are Identification training objectives

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- i. Planning and Scheduling
 - ii. Preparation of training materials, help files and etc.
 - iii. Provide the required training materials, manuals, help files in both soft and hard copies during the training session for all trainees.
 - iv. Conduct the training programme
 - v. Address the user issues and resolve if required.
 - vi. Get feedback and close the feedback loop
- The venue, refreshments and other facilities will be provided by the Tamil Nadu Pollution Control Board.

10.7 Software freezing

After UAT and Pilot testing, the software shall be finalized for all the standardized parameters. The Web Application shall be ready for rollout.

10.8 Rollout and Hand-holding

Data Center and DR installation

- The successful bidder shall size the hardware and software requirements for hosting & deployment and install the application in the production servers. The successful bidder shall finalize the architecture and server configuration and submit to Tamil Nadu Pollution Control Board / TNeGA for validation and approval. The successful bidder shall install the Operating System, Database and Web services, Web Application, DB servers and other required components and services. The web server/middle ware servers shall be configured for the parameters standardized during the UAT and pilot. The application shall be replicated from staging server.
- Any modification or corrections in the Web Application should be done in the staging server and pushed into the production server after testing. The application should comply with all the standardized parameters.

Roll out

- The finalized software should be rolled out in Tamil Nadu Pollution Control Board / units of Department. The successful bidder shall discuss phased approach with Tamil Nadu Pollution Control Board and shall ensure that all the user locations are rolled out within the agreed time frame. After successful rollout, the developed web Application/software applications must be handed over to Tamil Nadu Pollution Control Board &TNeGA (Preferably in an encrypted Pen drive) for back-up purpose.

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10.9 IT Infrastructure

- The Successful Bidder shall be responsible for hosting the Web Application (responsive) for Tamil Nadu Pollution Control Board. The Tamil Nadu Pollution Control Board will buy the H/W & licenses and the successful bidder will support the installation, commissioning and other deployment activities with the OEMs and other stakeholders.
1. The proposed Hosting solution should be centralized on ASP (Application Successful bidder) ALL Hosted Solution Model
 2. The proposed Application solution should provide followings without compromising in the quality & performance of the services:
 - High Reliability
 - High Availability (24*7*365) i.e. >99% ServerUptime
 - High Scalability (500 concurrent users) with Load Balancing & Clustering as per the need.
 - High Performance (The proposed solution should work even in low bandwidth like 128 Kbps using dialup connection)
 - It should not take more than 6 seconds for responding to the users
- The Successful Bidder shall deploy commission and configure the Software, Servers and Networks for the staging and production environment. Also the environment should test before Go-Live by the successful Bidder. The Successful Bidder should support the content management and training activities. The bidder shall ensure that the deployment strategy and solution for Application is vendor neutral and not specific to any hardware.

10.10 Implementation and Support

- The selected Successful bidder's responsibilities during this phase would include:
 1. Implementation and commissioning of the application.
 2. Provide technical support to resolve any issues logged by internal and external stakeholders through the internet /Helpdesk.
 3. Engage in patch management, testing and installation of software upgrades issued by the OEM/vendors from time to time.

10.11 Software Change Management

- Making enhancements / modifications to the application including Web- Application arising from changes in legislation or regulations or change in user requirements or any other factors.
- Any change to the application from the System Requirements specification document

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agreed and signed-off by the Department. The Successful Bidder is expected to adopt the relevant procedures, protocols and standards of a mature Software Development Life Cycle (SDLC) including (but not limited to) the following for any enhancement / amendment done to the application during the course of the Project.

1. Feasibility study / Proposal for change
 2. Requirement study
 3. Design
 4. Development
 5. Unit and Integration testing
 6. User acceptance testing
 7. Rollout
- Before proceeding to the next phase, the Successful Bidder shall ensure that formal approval of the Tamil Nadu Pollution Control Board / TNeGA for deliverables (including documentation) is obtained.
 - Even for enhancements/amendments to the application, the Successful Bidder will be required to prepare all documentation applicable as otherwise done for the Application as per industry standards. This includes but not limited to
 1. Change request logs
 2. Design documents
 3. Test documents
 - Preparing at-least the following documentation as per industry standards at the implementations stage:
 1. Software installation guide
 2. Application release documents
 3. User manuals & Training manuals
 4. Detailed documentation of any changes to the application including proposed changes, impact to the system in terms of functional outcomes/additional features added to the systematic.
 - All documentation should incorporate necessary version control mechanism.

10.12 Software Documentation

- An indicative list of documents to be developed and maintained by the Successful Bidder is mentioned with various activities above. All documentation should be prepared as per latest Government standards and should incorporate necessary version control mechanism.

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11. Non Functional Requirements

- a. Bug fixes and updates to the asset or the underlying software stack.
- b. Bidder is required to provide scheduled operations 24 hrs. a day, 7 days a week, for the Application.
- c. The bidder is required to provide 99% system availability uptime measured over a calendar month based on Service Hours of 24/7/365 for the core modules.
- d. The bidder shall provide SLA metrics for database backup, recovery and maintenance.
- e. The bidder shall support resolution times for reported incidents as follows:-
 - i. Level 1 Severity - 4hours
 - ii. Level 2 Severity - 8hours
 - iii. Level 3 Severity - 16hours
 - iv. Level 4 Severity – Next release
- f. The Technical & Functional requirements of Tamil Nadu Pollution Control Board's application have been categorized into following table:

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S. No	Description	Specification
1	Design	Web based with capability to work on both intranet and internet
2	Architecture	Should support built-in fault tolerance, load balancing and high availability. Should have capability of providing caching functionality.
3	Platform	Platform independent/ capable of running on all major system environments both on 32 bit and 64 bit architecture
4	Database	All data (Spatial & Non-Spatial) and metadata should support standard RDBMS portability like MS SQL, MySQL, PostgreSQL
5	Integration	It should support integration based on standards such asXML
6	File Format	a. Support for latest file formats SHP / JPEG / PDF
7	User Directory	a. Should support standard LDAP Services like MS Active Directory etc.
8	Search facility for records	<ul style="list-style-type: none"> a. Search should base on the following: b. Keyword Based Search on the metadata fields c. Nested Searches based on OR, AND, NOT operators d. Content based search e. Thesaurus Based Search f. Provision for automatic saving (through a log) all searches so as to track the usage pattern. g. Should mandatorily support Wildcard searching. h. Search within search feature i. Extensive search facility to retrieve documents or Folders/Files j. Should support sorting of search results based on relevance, submission date etc. k. Advanced searches like misspelled words, typographical errors, phonetic searching, Word stem searching, etc. is preferred

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9	Performance Benchmarks	<ul style="list-style-type: none"> a. User Login: User should be able to login within a maximum time of 5seconds b. User Logout: User should be able to log out within a maximum time of 5seconds c. Pages: ALL pages must open (on Archives intranet) within a maximum time of 5seconds. d. (Navigation: Users should be able to navigate from one to other page in maximum time of 5 seconds. Ability to go back on the previous pages by clicking back button in maximum time of 5 seconds e. Search: Searches must return results within a maximum time of 5seconds f. Idle Time: Users should be logged out if application is not used more than 5minutes g. Test Report: Third party test reports certifying the above benchmarks should be submitted by SI before Go Live of the application
10	Access Rights	<ul style="list-style-type: none"> a. Allows Multiple User Access levels and Authorization of Users depending on Roles. b. Users shall not be able to delete records. c. Any changes in record shall be appended to the original record d. Secure access providing features like View Records, View Metadata, Update Records, Update Record Metadata, Modify Record etc. should be configurable by the administrator. e. Security definable at folder, sub-folder and document level f. Security must conform to US DoD standards of records management

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11	Security	<ul style="list-style-type: none"> a. The viewing of the PDF/A on Internet and Intranet should be secure. b. Application should provide alerts in case of security breaches. The system requirement for security breaches is to be finalized during requirement analysis. c. Should have the ability to automatically remove temporary role assignments after a predefined period. d. Should provide security levels for classifying records as confidential, classified, public access etc.
12	Certification	<ul style="list-style-type: none"> a. Website Quality certification from STQC b. Security Auditing from Cert-in empanelled auditor.
13	Audit	<ul style="list-style-type: none"> a. Log all the actions done by individual users with user name with the following functions (not limited to): b. Action which is carried out by the user c. Object to which action is applied d. User carrying out the action e. Date and time for the action f. Audit Trail Report g. Should support both database and file system based audit logs h. Audit trail should record changes made to metadata associated with any folder or record i. Provide statistics to evaluate usage of repository
14	Reports and alerts	<ul style="list-style-type: none"> a. Provide statistical report on activity and status of all process flows b. Customizable dashboard view based on user rights. Provide the capability for end-users to create ad-hoc reports, to run "on-the-fly" c. Audit trail reports
15	Data Backup	<ul style="list-style-type: none"> a. Support automated backup and recovery facility for all records in tape library

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16	Software Development Kits	a. Provision of all applicable software development kit and web services for interoperability for developing customized software on top of core software
17	Workflow module	a. Customization of workflows as per the required modules in the functional requirement of the application b. System should have the ability of creating ad-hoc workflows
18	Viewing of records	a. Server based Inbuilt Document Image Viewer for displaying image document without native viewer. b. Viewer should be browser independent c. PDF documents when opened should be viewed with visible watermarks with print & download/save disabled. d. In case of images with printed English text, the output PDF document should be searchable. In this case the PDF should also be reflow able such that the text readjusts itself on the basis of the size of the screen.
19	Administration	a. It should provide web-based and desktop administration module. b. It should support multiple level of access rights like read, create, modify, soft / logical delete etc. on records and folders c. It should have inbuilt health and monitoring tool for proactive monitoring of application and services like No of active users, no of concurrent users, idle session time out etc. d. It should provide ability of doing database schema migration ability to easily migrate to new versions eliminating lengthy version upgrades.
20	Help	a. Proposed solution should provide context sensitive 'Help' operation.

11.1 Security Audit

- The security audit shall be carried out by the empanelled vendors of TNeGA. The successful bidder should clear the issues (Non-Conformity) reported by the IT security audit agency. After the compliance certificate issues by the IT security audit agency, the Web Application will be deployed in the TNPCB environment. The cost of Security Audit shall be paid by TNeGA.
- The SSL to be obtained from ELCOT /vendor, the generation of CSR and other

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related activities pertaining to installation & maintenance of SSL certificate belongs to successful bidder. The payment for the procurement of SSL will be made by the concerned department i.e. Tamil Nadu Pollution Control Board.

11.2 Warranty

- The successful bidder should maintain the web Application during the free warranty period of 12 months after Go-Live. The scope of work for warranty consists of the comprehensive regular timely operations, maintenance, CR implementation, H/W and S/W installation & support, commissioning of H/W and S/W components, managing the system alerts & events, SSL implementation and maintenance, UIDAI license/key management support (if required) etc.,
- Apart from the above, the following detailed activities should be performed one or more times based on the requirement:
 1. Bug fixes and updates to the asset or the underlying software stack.
 2. Addition/Removal/Update of content (static or dynamic) or layers including its authoring; where content includes, but is not limited to: Web pages, Style sheets, Images, Audio, Video, Maps, Animation, Scripting, AJAX interfaces, Flash interfaces/content etc. and authoring includes but is not limited to: capturing, development, testing, processing etc.
 3. Server side activities required for proper functioning, but not limited to: configuration, fine-tuning, optimization, scripting, and addition/soft deletion/updation of features for the applicable web server(s), application server(s), database server(s)etc.
 4. Replacing any content (photos, videos, text etc.) derived from public domain with the official content as and when they are developed or made available for a given asset.
 5. Feedback-based continuous improvement.
 6. Identification of Preventive and corrective measures with the respect to the changes occurring.
 7. Maintain a log for the operations being done which can be used for further action.
 8. BCP management

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11.3 Implementation Timeline

Milestone	Timelines (in month)
Award of Contract (LOA)	T1
Provide performance Bank guarantee, signing of contract and issue of work order	T2=T1+15 days
SRS Sign off & Submission of Technical Specification(BOQ)	T3= T2 + 1 Month
Development& Integration Testing	T4= T3 + 2 Months
UAT Sign Off & Security Audit completion for VHS & implementation of Video Wall	T5= T4 + 1 Month
Training, & Go-Live	T6=T5 + 1 Month
Warranty	T7= T6 + 12 Months

Note: Penalty/Liquidated damages will be levied for any delay as per clause.7.9.

12. Deliverables

- i. The selected agency shall deliver the following:
 1. Project Plan and Schedule along with Project implementation timeline
 2. Design Documents
 3. Solution method and approach
 4. Software Requirement Specifications(SRS)
 5. BOQ For Video Wall
 6. Work Breakdown Structure
 7. Customized dashboard and MIS Reports
 8. Requirement Traceability matrix
 9. Test reports
 10. Release Management Plan
 11. User Manuals, Help files, training materials and Trainings
 12. Application Deployment Plan
 13. Backup, restore procedure
 14. SOP (Standard Operating Procedures)
 15. Source code (complete source code with versions and latest version used in the Go-Live system)
 16. Minutes of Meetings

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12.1 Milestone Deliverable Matrix

Sl. No.	Mile Stone	Deliverable(s)	Approval/Sign-off Authority
1	SRS	SRS document, Use Cases, Test Cases & CRs	Tamil Nadu Pollution Control Board and TNeGA
2	BOQ	Technical Specification to implement video wall	TNeGA
3	Design	Design Documents, Updated Plans, updated SRS & CRs, Technical Design to implement video wall	Tamil Nadu Pollution Control Board and TNeGA
4	Development	Unit report, CRs & latest Source code version	Tamil Nadu Pollution Control Board and TNeGA
5	System Testing (including Integration)	Test report, Action taken Report on Issues & CRs	Tamil Nadu Pollution Control Board and TNeGA
6	UAT sign off	UAT report, Action Taken Report on Issues & CRs	Tamil Nadu Pollution Control Board
7	Security Audit	Audit Report & Certificate	Tamil Nadu Pollution Control Board and TNeGA
8	Training	Training materials, Participation list & Feedback form	Tamil Nadu Pollution Control Board and TNeGA
9	Implementation	Server Logs for successful deployment and configuration of command centre, Screen shots of the Application, reports from the Live system and Source code of entire system (latest version deployed in the Go-Live system)	Tamil Nadu Pollution Control Board and TNeGA
10	Release Notes	Information on Build versions along with its relevant source code files and its related versions	Tamil Nadu Pollution Control Board and TNeGA
11	Warranty Support	Bug fixing report, system Tuning report & Patch update. Incident and resolution report, Support personnel attendance if required (in case of T&M payments), SLA compliance report, CRs, production support details report, Monthly task completion report.	Tamil Nadu Pollution Control Board and TNeGA

13. SLA Monitoring and Warranty

13.1 Service Level Agreement

- The Web Application should be developed, deployed and hosted at the central server. Necessary application level support should be mainly at the server side. However, client level support shall be required when the issues are reported by department.
- The successful bidder shall ensure system uptime more than 99%. The uptime will be monitored on a quarterly basis.
- The initial contract is for a period of 17 months (5 months for development & deployment, 12 months as free warranty). The SLA will be monitored during this period.
- The onsite support persons shall handle the service calls and comply with the SLA. Any bugs or errors beyond the level of onsite support, the service shall be escalated to the back office team for rectification.
- The successful bidder will maintain logs for the entire contract period.

Sl. No.	Service	Expected service Level target	Penalty
1	System support - System Availability	99% uptime	a) 95% to 98.99%: 1% of milestone payment amount for every week from the date of SL slippage with a cap of 10% of milestone amount. b) Less than 95%: 2% of milestone payment amount for every week from the date of SL slippage with a cap of 10% of milestone amount. c) Beyond 10% penalty for the milestone, the Department may take a decision as per the exit clause.
2	Concurrent users	500	a) For < 500 and > 350 concurrent users: 1% of milestone payment amount for every week from the date of SL slippage with a cap of 10% of milestone amount. b) For < 350 concurrent users: 2% of milestone payment amount for every week from the date of SL slippage with a cap of 10% of milestone amount. c) Beyond 10% penalty for the milestone, the Department may take a decision as per the exit clause.

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3	Response Time for the Forms in Application	1 second	<p>a) For < 2.00 second: Nopenalty</p> <p>b) For > 2.00 sec and < 3.00 seconds: 1% of milestone payment amount for every week from the data of SL slippage with a cap of 5% of milestone amount</p> <p>c) For >3.00 seconds: 2% of milestone payment amount for every week from the data of SL slippage with a cap of 10% of milestone amount</p>
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13.2 Warranty Period

- **Free Warranty** should be covered for the duration of 12 months from date of Successful Roll Out(Go-live).

14. Change Request

- a. All change requests that may be required for any reason by the Department shall be made in accordance with the procedures to be established by the Department in this regard. The Bidder shall ensure nil downtime of software, prompt execution of customization and enhancement requirements, version control mechanism and also to develop smooth upgrades and version changes, ongoing training and feedback mechanism. Change requests shall be considered only up to 25% of the contract value for any increase in scope of work. For finalizing the cost implications of the change requests, rates specified in the price discovery of the price bid format will be considered.

15. Intellectual Property Rights (IPR)

- a. The ownership and IPR of the deliverables made under this Contract would always rest with Tamil Nadu Pollution Control Board and TNeGA. The ownership and IPR of the Proprietary tools and/or other tools used by the successful bidder or third party or parties for the purpose of making the deliverables would always rest with the respective parties. The successful bidder would disclose such tools to be used under this Contract to Tamil Nadu Pollution Control Board and TNeGA.

16. Review and Monitoring

- a. The successful bidder should be accountable to Tamil Nadu Pollution Control Board for successful implementation of the Web Application. TNeGA / Tamil Nadu Pollution Control Board will hold scheduled review meeting and the Successful Bidder should report the progress to Tamil Nadu Pollution Control Board and adhere to the decisions made during the review meeting.

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17. Exit Clause

- a. At the time of expiry of contract period, as per the contract between the parties, the successful bidder should ensure a complete knowledge transfer to the new professional replacing them within a period of 4 weeks. The successful bidder at the time of exit process will supply the following.
 - i. All information relating to the work rendered
 - ii. Project data and confidential information
 - iii. All other information including but not limited to documents, records and agreements relating to the services reasonably necessary to Tamil Nadu Pollution Control Board or any other agency identified to carryout due diligence in order to transition the provision of services to Tamil Nadu Pollution Control Board or any other agency identified.
 - iv. All properties provided by Tamil Nadu Pollution Control Board shall be returned.
 - v. Before the date of exit, the successful bidder shall deliver to Tamil Nadu Pollution Control Board all new and updated deliverables and shall not retain any copy thereof.

18. Payment Terms

- a. No advance payment will be paid. Stage-wise payment will be released based on the milestone deliverables completed and approved by Tamil Nadu Pollution Control Board..
- b. The payment will be released in stages on achieving the following milestones.

S. No	Milestone	% of Total Fee	Basis of Approval
I	Total project cost (R)		
1	SRS Sign Off	10%	On approval of Tamil Nadu Pollution Control Board and TNeGA
2	a) UAT Sign off and b) Security Audit clearance c) Video Wall Implementation d) Installation & commissioning of required IT 8nfra and integration of software & hardware components	40%	On approval of Tamil Nadu Pollution Control Board and TNeGA Copy of Security and Performance Testing Certification

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3	Training & Pilot Roll out	5%	On approval of Tamil Nadu Pollution Control Board and TNeGA
4	Go-Live	30%	On approval of Tamil Nadu Pollution Control Board and TNeGA
5	On completion of warranty period of 12 months	10%	On approval of Tamil Nadu Pollution Control Board and TNeGA
7	Total cost	95%	

- c. 5% of the contract value will be paid after successful completion of exit management clause as per cl. 17 of RFP
- d. Any payment due to the successful bidder will be released within 30 days from the date of receipt of bills along with acceptance from Tamil Nadu Pollution Control Board/ TNeGA.
- e. The TDS amount, Penalty if any, will be deducted from the payment of successful bidder.
- f. The Taxes as applicable during the contract period as specified in the Tender will be paid by TNeGA. In case, the Taxes have been reduced retrospectively, the successful bidder shall be liable to return the same to TNeGA.
- g. The successful bidder shall have full and exclusive liability for payment of all Taxes and other statutory payments payable under any or all of the Statutes/Laws/Acts etc., now or hereafter imposed to the respective statutory authorities. TNeGA Tamil Nadu Pollution Control Board will not be responsible or liable for default on payment of Taxes to the statutory authorities.

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1 APPENDIX – I: Bank Guarantee Format

(To be executed in Rs.100/- Stamp Paper)

To
The Chief Executive Officer,
Tamil Nadu e-Governance Agency,
807,2nd floor, PT Lee ChengalvarayanNaicker Building,
Anna Salai,
Chennai – 600002

Bank Guarantee No:

Amount of Guarantee:

Guarantee covers from:

Last date for lodgement of claim:

This Deed of Guarantee executed by(Bankers Name & Address) having our Head Office at(address) (hereinafter referred to as “the Bank”) in favour of CEO, TNeGA, registered under Societies Act and wholly owned by Government of Tamil Nadu and having its Registered office at No.807, 2nd Floor, PT Lee Chengalvarayan Naicker Building, Anna Salai, Chennai- 600 002 (hereinafter referred to as “the Beneficiary”) for an amount not exceeding Rs._____/-(Rupees_____)Only) as per the request of M/s. _____having its office address at_____ (hereinafter referred to as “Successful Bidder”) against Letter of Acceptance reference__dated // of M/s. Tamil Nadu e-Governance Agency for the design, development and maintenance of Command Centre along with Vehicle Tracking System for Tamil Nadu Pollution Control Board (Tender Reference Number: TNeGA/OT/TNPCB/2022-2023). This guarantee is issued subject to the condition that the liability of the Bank under this guarantee is limited to a maximum Rs._____/-(Rupees_____)Only) and the guarantee shall remain in full force upto months from the date of Bank Guarantee and cannot be invoked otherwise by a written demand or claim by the beneficiary under the Guarantee served on the Bank before months from the date of Bank Guarantee.

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AND WHEREAS it has been stipulated by you in the said ORDER that the Successful Bidder shall furnish you with a Bank Guarantee by a Scheduled / Nationalized Bank for the sum specified therein as security for compliance with the Successful Bidder performance obligations for a period in accordance with the contract.

AND WHEREAS we have agreed to give the Successful Bidder a Guarantee.

THEREFORE, we(Bankers address)... .., hereby affirm that we are Guarantors and Responsible to you on behalf of the Successful Bidder upto a total of Rs._____/-(Rupees _____Only) and we undertake to pay you, upon your first written demand declaring the Successful Bidder to be in default under the contract and without any demur, cavil or argument, any sum or sums within the limit of Rs._____/-(Rupees_____Only) as aforesaid, without your needing to prove or show grounds or reasons for your demand or the sum specified therein. We will pay the guaranteed amount notwithstanding any objection or dispute whatsoever raised by the Successful Bidder.

This Guarantee is valid until months from the date of Bank Guarantee. Notwithstanding, anything contained herein, our liability under this guarantee shall not exceed Rs._____/-(Rupees_____Only). This Bank Guarantee shall be valid up to months from the date of Bank guarantee and we are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before_ _____.

In witness whereof the Bank, through its authorized Officer, has set its, hand and stamp on this.....at

Witness:

(Signature)

(Name in Block Letters)

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2 APPENDIX – II: Model Form of Contract

(To be executed on a Rs. 100/- Non-Judicial Stamp Paper bought in Tamil Nadu by the Successful Bidder)

(NO FIGURES IN NUMERALS OR WORDS SHALL BE FILLED UP IN THIS SAMPLE FORM AT THE TIME OF SUBMISSION OF TENDER)

This CONTRACT is made at Chennai on the.....day of2022

BETWEEN

Tamil Nadu e-Governance Agency, registered under the Tamil Nadu Societies Registration Act 1975 and having its Registered Office at 807, P.T.Lee. ChengalvarayanNaickerMaaligai, Anna Salai, Chennai - 600 002 , being the Service recipient (hereinafter referred to as “TNeGA” which expression shall unless repugnant to the context mean and include its successors and assigns) on behalf of Government of Tamil Nadu of the FIRST PART.

AND

....., a firm represented herein by, agedyears and having its Registered office at..... (hereinafter referred to as “Successful Bidder” which expression shall unless repugnant to the context mean and include its successors and assigns) of the SECOND PART.

Whereas, TNeGA invited a tender vide **Tender Ref: TNeGA/OT/TNPCB/2022-2023 for Selection of System Integrator for the design, development and maintenance of Command Centre along with Vehicle Tracking System for Tamil Nadu Pollution Control Board, Tamil Nadu** as per the Scope of Work Clause 8 prescribed in the Tender document.

Whereas TNeGA and the Successful Bidder in pursuance thereof have arrived at the following terms and conditions.

NOW THEREFORE

In consideration of the mutual protection of information herein by the parties hereto and such additional promises and understandings as are hereinafter set forth, the parties agree as follows:

RFP for Design, Development, Installation and Maintenance of Command centre along with Vehicle Tracking system for Tamil Nadu Pollution Control Board

1) Purpose

- a. The purpose of this Agreement is to maintain in confidence the various Confidential Information, which is provided between TNeGA and Successful bidder to perform the considerations (hereinafter called "Purpose") set forth inbelow:

2) Definition

- a. For purposes of this Agreement, "Confidential Information" means the terms and conditions, and with respect to either party, any and all information in written, representational, electronic, verbal or other form relating directly or indirectly to the Purpose (including, but not limited to, information identified as being proprietary and/or confidential or pertaining to, pricing, marketing plans or strategy, volumes, services rendered, customers and suppliers lists, financial or technical or service matters or data, employee/agent/ consultant/officer/director related personal or sensitive data and any information which might reasonably be presumed to be proprietary or confidential in nature) excluding any such information which (i) is known to the public (through no act or omission of the Successful Bidder in violation of this Agreement)
- i. is lawfully acquired by the Successful Bidder from an independent source having no obligation to maintain the confidentiality of such information
 - ii. was known to the Successful Bidder prior to its disclosure under this Agreement
 - iii. was or is independently developed by the Successful Bidder without breach of this Agreement
 - iv. is required to be disclosed by governmental or judicial order, in which case Successful Bidder shall give the TNeGA prompt written notice, where possible, and use reasonable efforts to ensure that such disclosure is accorded confidential treatment and also to enable the TNeGA to seek a protective order or other appropriate remedy at TNeGA's sole costs.
- b. Confidential Information disclosed orally shall only be considered Confidential Information if: (i) identified as confidential, proprietary or the like at the time of disclosure, and (ii) confirmed in writing within Seven (7) days of disclosure.

3) No Licenses

- a. This Agreement does not obligate either party to disclose any particular proprietary information; to purchase, sell, license, transfer, or otherwise dispose of any

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technology, services, or products; or to enter into any other form of business, contract or arrangement. Furthermore, nothing contained hereunder shall be construed as creating, conveying, transferring, granting or conferring by one party on the other party any rights, license or authority in or to the Confidential Information disclosed under this Agreement.

4) Disclosure

- a. Successful Bidder agrees and undertakes that it shall not, without first obtaining the written consent of the TNeGA, disclose or make available to any person, reproduce or transmit in any manner, or use (directly or indirectly) for its own benefit or the benefit of others, any Confidential Information save and except both parties may disclose any Confidential Information to their Affiliates, directors, officers, employees or advisors of their own or of Affiliates on a "need to know" basis to enable them to evaluate such Confidential Information in connection with the negotiation of the possible business relationship; provided that such persons have been informed of, and agree to be bound by obligations which are at least as strict as the recipient's obligations hereunder. For the purpose of this Agreement, Affiliates shall mean, with respect to any party, any other person directly or indirectly Controlling, Controlled by, or under direct or indirect common Control with, such party. "Control", "Controlled" or "Controlling" shall mean, with respect to any person, any circumstance in which such person is controlled by another person by virtue of the latter person controlling the composition of the Board of Directors or owning the largest or controlling percentage of the voting securities of such person or by way of contractual relationship or otherwise.
- b. The Successful Bidder shall use the same degree of care and protection to protect the Confidential Information received by it from the TNeGA as it uses to protect its own Confidential Information of a like nature, and in no event such degree of care and protection shall be of less than a reasonable degree of care.
- c. The TNeGA shall not be in any way responsible for any decisions or commitments made by Successful Bidder in relying on the TNeGA's Confidential Information.

5) Return or Destruction Of Confidential Information

- a. The parties agree that upon termination/expiry of this Agreement or at any time during its currency, at the request of the TNeGA, the Successful Bidder shall promptly deliver to the TNeGA the Confidential Information and copies thereof in its possession or under its direct or indirect control, and shall destroy all memoranda, notes and other writings prepared by the Successful Bidder or its Affiliates or

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Directors, officers, employees or advisors based on the Confidential Information and promptly certify such destruction.

6) Independent Development and Residuals

- a. Both parties acknowledge that the Confidential Information coming to the knowledge of the other may relate to and/or have implications regarding the future strategies, plans, business activities, methods, processes and or information of the parties, which afford them certain competitive and strategic advantage. Accordingly, nothing in this Agreement will prohibit the Successful Bidder from developing or having developed for it products, concepts, systems or techniques that are similar to or compete with the products, concepts, systems or techniques contemplated by or embodied in the Confidential Information provided that the Successful Bidder does not violate any of its obligations under this Agreement in connection with such development.

7) Injunctive Relief

- a. The parties hereto acknowledge and agree that in the event of a breach or threatened breach by the other of the provisions of this Agreement, the party not in breach will have no adequate remedy in money or damages and accordingly the party not in breach shall be entitled to injunctive relief against such breach or threatened breach by the party in breach.

8) Non-Waiver

- a. No failure or delay by either party in exercising or enforcing any right, remedy or power hereunder shall operate as a waiver thereof, nor shall any single or partial exercise or enforcement of any right, remedy or power preclude any further exercise or enforcement thereof or the exercise of enforcement of any other right, remedy or power.

9) This Contract shall remain in force during the Contract period of 17 months as per the Deliverables and Scope of work from the date of signing of this contract. TNeGA may renew/extend the contract for a further period as may be agreed between the parties.

10) The Successful Bidder agrees to deliver the services as per the scope indicated in the Tender Scope of Work Clause 8 of this Tender within the stipulated period prescribed by TNeGA at the cost arrived at in the PRICE BID. This cost is firm and not subject to enhancement.

11) The Contract or any part share of interest in it shall not be transferred or assigned by the Successful Bidder directly or indirectly to any person or persons whomsoever without the prior written consent of TNeGA.

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12) Neither TNeGA nor the Successful Bidder shall be liable to the other for any delay or failure in the performance of their respective obligations due to causes, contingencies beyond their reasonable control such as:

- a) Natural phenomena including but not limited to earthquakes, floods and epidemics.
- b) Acts of any Government authority domestic or foreign including but not limited to war declared or undeclared.
- c) Accidents or disruptions including, but not limited to fire and explosions.

13) The RFP document in relation with this RFP shall be deemed to form and be read and construed as part of this Contract. The Tender enclosures, the offer submitted by the Successful Bidder, the finalized Terms and Conditions and the LoA/Work Order respectively will form part of this contract. Wherever the offer conditions furnished by the Successful Bidder are at variance with conditions of this contract or conditions stipulated in the RFP document, the final negotiated offer conditions shall prevail over the tender conditions furnished by the Successful Bidder.

14) Liquidated Damages(LD)

- i. The Bidder must strictly adhere to the implementation schedule, specified in the work order issued by TNeGA to the successful Bidder for performance of the obligations arising out of the Work order and any delay will enable TNeGA to resort to any or both of the following:
 - a) Claim liquidated damages at 0.5% of the contract Value for delayed performance per week of such delay and the Maximum LD applicable is 10% of the contract value. However, LD clause will not be applicable if the delay is not due to issues related to the vendor.
 - b) In case of the termination of the work order by TNeGA due to non- performance of the obligations arising out of the work order, the Earnest Money Deposit / Security Deposit will be forfeited.
- ii. In addition, TNeGA reserves the right to award the work to any other party / parties and the loss / expenses incurred thereafter will be recovered from the Successful Bidder.
- iii. Penalty will be levied if the Assigned work has not been completed in full within the stipulated period subject to Force Majeure conditions.
- iv. The Tender Schedule enclosures, the detailed final offer of the Successful Bidder and

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the LoA/Work Order will form part of this contract. Wherever the offer conditions furnished by the Successful Bidder are at variance with conditions of this contract or conditions stipulated in the work order, the latter shall prevail over the offer conditions furnished by the Successful Bidder.

- v. Notwithstanding anything contained in the penalty clause, TNeGA reserves the right to blacklist the Successful Bidder from taking part in any of the procurement operations of TNeGA for a minimum period of three years from the date of blacklisting for failure to carry out supply in time or according to the quality and quantity prescribed or any such similar reasons. This penalty shall be over and above all other penalties. Such bidders would be automatically banned for 3 years from taking part in TNeGA's Tenders. As mentioned in the RFP Document in Clause7.12.

15) Service Level Agreement

- a) The Web Application should be developed, deployed and hosted at the central server. Necessary application level support should be mainly at the server side. However, client level support shall be required when the issues are reported by department.
- b) The successful bidder shall ensure system uptime more than 99%. The uptime will be monitored on a quarterly basis.
- c) The initial contract is for a period of 17 months (5 months for development& deployment, 12 months as free warranty after Go-live). The SLA will be monitored during this period.
- d) The onsite support persons shall handle the service calls and comply with the SLA. Any bugs or errors beyond the level of onsite support, the service shall be escalated to the back office team for rectification.
- e) The successful bidder will maintain logs for the entire contract period.

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Sl. No.	Service	Expected service Level target	Penalty
1	System support - System Availability	99% uptime	<p>a) 95% to 98.99%: 1% of milestone payment amount for every week from the date of SL slippage with a cap of 10% of milestone amount.</p> <p>b) Less than 95%: 2% of milestone payment amount for every week from the date of SL slippage with a cap of 10% of milestone amount.</p> <p>c) Beyond 10% penalty for the milestone, the Department may take a decision as per the exit clause.</p>
2	Concurrent users	500	<p>a) For < 500 and > 350 concurrent users: 1% of milestone payment amount for every week from the date of SL slippage with a cap of 10% of milestone amount.</p> <p>b) For < 350 concurrent users: 2% of milestone payment amount for every week from the date of SL slippage with a cap of 10% of milestone amount.</p> <p>c) Beyond 10% penalty for the milestone, the Department may take a decision as per the exit clause.</p>
3	Response Time for the Forms in Application	1 second	<p>a) For < 2.00 second: No penalty</p> <p>b) For > 2.00 sec and <3.00 seconds: 1% of milestone payment amount for every week from the data of SL slippage with a cap of 5%of milestone amount</p> <p>c) For > 3.00 seconds: 2% of milestone payment amount for every week from the data of SL slippage with a cap of 10% of milestone amount</p>

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16) Milestones & Deliverables

a. The selected agency shall deliver the following:

- Project Plan and Schedule along with Project implementation timeline
- Design Documents
- Solution method and approach
- Software Requirement Specifications(SRS)
- BOQ For Video Wall
- Work Breakdown Structure
- Customized dashboard and MIS Reports
- Requirement Traceability matrix
- Test reports
- Release Management Plan
- User Manuals, Help files, training materials and Trainings
- Application Deployment Plan
- Backup, restore procedure
- SOP (Standard Operating Procedures) for O&M
- Source code (complete source code with versions and latest version used in the Go-Live system)
- Minutes of Meetings

Milestone Deliverable Matrix

Sl. No.	Mile Stone	Deliverable(s)	Approval/Sign-off Authority
1	SRS	SRS document, Use Cases, Test Cases & CRs	Tamil Nadu Pollution Control Board and TNeGA
2	BOQ	Technical Specification to implement video wall	TNeGA
3	Design	Design Documents, Updated Plans, updated SRS & CRs, Technical Design to implement video wall	Tamil Nadu Pollution Control Board and TNeGA
4	Development	Unit report, CRs & latest Source code version	Tamil Nadu Pollution Control Board and TNeGA
5	System Testing (including Integration)	Test report, Action taken Report on Issues & CRs	Tamil Nadu Pollution Control Board and TNeGA
6	UAT sign off	UAT report, Action Taken Report on Issues & CRs	Tamil Nadu Pollution Control Board

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7	Security Audit	Audit Report & Certificate	Tamil Nadu Pollution Control Board and TNeGA
8	Training	Training materials, Participation list & Feedback form	Tamil Nadu Pollution Control Board and TNeGA
9	Implementation	Server Logs for successful deployment and configuration of command centre, Screen shots of the Application, reports from the Live system and Source code of entire system (latest version deployed in the Go-Live system)	Tamil Nadu Pollution Control Board and TNeGA
10	Release Notes	Information on Build versions along with its relevant source code files and its related versions	Tamil Nadu Pollution Control Board and TNeGA
11	Warranty Support	Bug fixing report, system Tuning report & Patch update. Incident and resolution report, Support personnel attendance if required (in case of T&M payments), SLA compliance report, CRs, production support details report, Monthly task completion report.	Tamil Nadu Pollution Control Board and TNeGA

Implementation Timeline

Milestone	Timelines (in month)
Award of Contract (LOA)	T1
Provide performance Bank guarantee, signing of contract and issue of work order	T2=T1+15 days
SRS Sign off & Submission of Technical Specification(BOQ)	T3= T2 + 1 Month
Development& Integration Testing	T4= T3 + 2 Months
UAT SignOff& SecurityAudit completion for VHS & implementation of Video Wall	T5= T4 + 1 Month
Training, & Go-Live	T6=T5 + 1 Month
Warranty	T7= T6 + 12 Months

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Note: Penalty/Liquidated damages will be levied for any delay as per clause. 7.9.

17) Payment Terms

- a) No advance payment will be paid. Stage-wise payment will be released based on the milestone deliverables completed and approved by TNeGA.
- b) The payment will be released in stages on achieving the following milestones.

S. No	Milestone	% of Total Fee	Basis of Approval
I	Total project cost (R)		
1	SRS Sign Off	10%	On approval of Tamil Nadu Pollution Control Board and TNeGA
2	a) UAT Sign off b) Security Audit clearance c) Video Wall Implementation d) Installation & commissioning of required IT 8nfra and integration of software & hardware components	40%	On approval of Tamil Nadu Pollution Control Board and TNeGA Copy of Security and Performance Testing Certification
3	Training & Pilot Roll out	5%	On approval of Tamil Nadu Pollution Control Board and TNeGA
4	Go-Live	30%	On approval of Tamil Nadu Pollution Control Board and TNeGA
5	On completion of warranty period of 12 months	10%	On approval of Tamil Nadu Pollution Control Board and TNeGA
7	Total cost	95%	

- c) 5% of the contract value will be paid after successful completion of exit management clause as per cl. 17 of RFP
- d) Any payment due to the successful bidder will be released within 30 days from the date of receipt of bills along with acceptance from Tamil Nadu Pollution Control Board/ TNeGA.

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- e) The TDS amount, Penalty if any, will be deducted from the payment of successful bidder.
- f) The Taxes as applicable during the contract period as specified in the Tender will be paid by TNeGA. In case, the Taxes have been reduced retrospectively, the successful bidder shall be liable to return the same to TNeGA.
- g) The successful bidder shall have full and exclusive liability for payment of all Taxes and other statutory payments payable under any or all of the Statutes/Laws/Acts etc., now or hereafter imposed to the respective statutory authorities. TNeGA/ Tamil Nadu Pollution Control Board will not be responsible or liable for default on payment of Taxes to the statutory authorities.
- h) The successful bidder shall have full and exclusive liability for payment of all Taxes and other statutory payments payable under any or all of the Statutes/Laws/Acts etc., now or hereafter imposed to the respective statutory authorities. TNeGA/ Tamil Nadu Pollution Control Board will not be responsible or liable for default on payment of taxes to the statutory authorities.
- i) Payment will be processed only after receipt of the Invoices from the Bidder.
- j) All taxes and other levies imposed by Governments of India will be paid at actual as applicable.
- k) **Income Tax:**As per the Income Tax Act and Rules, Income Tax, Surcharge, Educational Cess etc., and any other appropriate levy to Govt. as may be notified from time to time will be deducted from each bill towards Income Tax Deducted at Source(TDS).
- l) The Successful Bidder hereby agrees to get the refund of incentive and pay back to TNeGA such incentive, if the Government or any other appropriate agency reduces the Excise duty or Service/Sales tax or give incentive of any type retrospectively after releasing the Payment. Failing which action will be taken to recover the above referred amount from the Successful Bidder under the Revenue Recovery Act or any other relevant act.
- m) Penalty amount if any will be adjusted in the payment due to the Successful Bidder.
- n) All Payments shall be made in Indian Rupees Only
- o) The TDS amount, Penalty if any, will be deducted in the payment due to the successful bidder.
- p) The Taxes as applicable during the contract period as specified in the Tender will be paid by Department. In case, the Taxes have been reduced retrospectively, the

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successful bidder shall be liable to return the same to Department.

- q) The successful bidder shall have full and exclusive liability for payment of all Taxes and other statutory payments payable under any or all of the Statutes/Laws/Acts etc now or hereafter imposed to the respective statutory authorities. The Department will not be responsible or liable for default on payment of taxes to the statutory authorities.
- r) **Warranty** should be covered for the duration of 12 months from date of Go live.
- 18)** The Successful Bidder shall be liable and / or responsible for the compliance of all Statutory Provisions, especially those relating to Labour Laws in respect of this Contract.
- 19)** Any notice from one party to the other given or required to be given hereunder shall be given by either:
- a) Mailing the same by registered mail, postage prepaid, return receipt requested; or
 - b) Having the same delivered by courier with receipt acknowledged at the address set forth above or with other addresses and to the attentions of such other person or persons as may hereafter be designated by like notice hereunder and any such notice shall be deemed to have been served if sent by post on the date when in the ordinary course of post, it would have been delivered at the addresses to which it was sent or if delivered by courier on the date of acknowledgement of receipt.
- 20)** In case of breach of any of the conditions of the contract by the Successful Bidder during the contract period, TNeGA reserves the right to recover costs/liabilities arising directly due to such breach from the Successful Bidder.

21) Termination of Contract

21.1 Termination for Default

- a) TNeGA may without prejudice to any other remedy for breach of contract, by written notice of default with a notice period of 30 days, sent to the Successful Bidder, terminate the contract in whole or part, (i) if the Successful Bidder fails to complete any or all of the works within the time period(s) specified in the Contract, or fails to complete the items of work as per the Completion Schedule or within any extension thereof granted by TNeGA; or (ii) if the Successful Bidder failstoperformanyoftheobligation(s)underthecontract;or(iii)iftheSuccessful Bidder, in the judgment of TNeGA, has engaged in fraudulent and corrupt practices in competing for or in executing the Contract.
- b) In the event of TNeGA terminating the Contract in whole or in part, TNeGA may procure the maintenance services upon terms and in such manner as it deems appropriate at the risk and cost of the successful bidder shall be liable to TNeGA for any additional costs for such similar services. However, the Successful Bidder

RFP for Design, Development, Installation and Maintenance of Command centre along with Vehicle Tracking system for Tamil Nadu Pollution Control Board

shall continue the performance of the contract to the extent not terminated.

21.2 Termination of Insolvency

- c. TNeGA may at any time terminate the Contract by giving written notice with a notice period of 7 days to the Successful Bidder, if the Successful Bidder becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Successful Bidder, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to TNeGA.

21.3 Termination of Convenience

- d. TNeGA may be written Notice, with a Notice period of 30 days sent to the Successful Bidder, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for TNeGA's convenience, the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective. Services rendered by the bidder, as assessed by TNeGA, would be paid for. On termination, the Successful Bidder is not entitled to any compensation whatsoever.

- 22)** Any notice to the successful Bidder shall be deemed to be sufficiently served, if given or left in writing at their usual or last known place of abode or business.

IN WITNESS WHEREOF the Parties have by duly authorized Representatives set their respective hands and seal on the date first above

Signed by:

(Name and designation) For and on behalf of TNeGA
(FIRST PARTY)

Signed by:

(Name and designation) For and on behalf of Implementation Partner
(SECOND PARTY)

WITNESSES:

1. (for FIRST PARTY)

2. (for SECOND PARTY)