

Expression of Interest
for the
Design, Development & Implementation of
‘Udaan’
Integrated Municipal e-Governance Application
(iMEGA)

Issued by

Commissioner,

Nanded Waghala City Municipal Corporation, Nanded

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EOI NOTICE

Invitation for Expression of Interest

Nanded Waghala City Municipal Corporation (NWCMC), Nanded invites reputed companies to respond to this non-qualifying Expression of Interest pertaining to the design, development, implementation, maintenance and support of Integrated Municipal eGovernance System (IMEGA) in line with the vision implicit in JnNURM, as a part of its eGovernance initiatives.

Purpose of the Eoi	NWCMC has already initiated its e Governance activities as per the mission and objectives highlighted in this document. The purpose of this Eoi is to invite reputed, capable and experienced software development companies / Solution providers to present their credentials and case studies with respect to eGovernance application development. Of special interest to NWCMC is to understand the holistic e governance municipal web based solution, capable of integration with the existing softwares or providing a de novo comprehensive solution. The proposed design/solution must address the BPR. It should also incorporate application of GIS and mobile communications platform in eGovernance. Also of interest is to learn the various open source platforms used by vendors alongwith different integration mechanisms being used. Please note that this document is only an expression of interest and not a call for tenders. The information contained herein may or may not be replicated in the actual tender document which will be issued later.
Important Dates	Date of Eoi Submission: 12 th August 2011 Date of Presentations: 16th August 2011 onwards (tentative)
Contact	All queries regarding this Eoi document should be addressed by email to dmc_reforms@nwcmc.gov.in or by post to Dy. Municipal Commissioner (Reforms), 3rd Floor, NWCMC New Administrative Building, Vazirabad, Nanded
Submission	Documents can be submitted in person to the above mentioned address by the due date of submission. A copy of the presentation should also be emailed to the email address mentioned above by the submission deadline. Documents / email submissions received after the due date will not be considered for evaluation.
Eligibility	Detailed eligibility conditions are mentioned in Section 3.7 of this document. Bidders are requested to carefully go through the same and ensure that they adhere to the criteria before submission of their response document.
Presentation	Shortlisted bidders will be invited to make presentations on specified dates. A format for important information to be highlighted during the presentation is mentioned in Section 4.2 . Bidders will present their credentials and experience as per this format.

GENERAL REQUIREMENTS AND INFORMATION

1. Prospective Firms/Consortiums are advised to study the EOI document carefully. Submission of EOI shall be deemed to have been done after careful study and examination of the EOI Document with full understanding of its implications
2. Based on the inputs from the EoIs received and from other sources, NWCMC will finalize the RFP for a tender which will be floated soon after the presentations.
3. Please note that this EoI is not a shortlisting exercise and that the terms and conditions presented in this EoI may or may not be changed at the time of the publication of the actual tender. **The main objective is to seek information about prevalent, integrated, open and interoperable technologies in eGovernance, which successfully utilise the multifaceted utility of both GIS and mobile communications.**
4. Hence, the focus during the EoI process will be on understanding the technical abilities of such solutions through the architecture and through presentation of real life case studies.
5. NWCMC will prefer to make re-engineered business processes as open knowledge for any other corporation to use under Creative Commons Shared Alike license
6. NWCMC will prefer open source software and customised applications again under permissive license like LGPL
7. There will be no payment by NWCMC for any efforts of aspiring vendors towards EOI
8. On the day of presentation, prospective bidders can seek further clarifications.
9. **GIS- Paradigm shift - NWCMC plans to base its** eGovernance model on GIS database. GIS aware data will mean location-tag to all data, plans, programmes, citizen address etc. in a standardized way. Then all events will become spatio-temporal and data will yield patterns that can drive governance. This we believe can mean a paradigm shift in eGovernance. The shift is even more obvious when combined with mobile technology becoming affordable and ever more powerful.

1. Schedule of Events

Important Events	Schedule
Release of Eol document	15 th July 2011
Last Date of Eol Submission	12 th August 2011
Tentative Date of bidder presentations	16 th August 2011 onwards or as per later intimation

2. Proposal Submittal

Bidders shall respond to this EOI with a Technical Proposal / Presentation as per the format specified in this document, by the last date of submission. Please note that responses received after this date shall not be considered for presentations.

One (1) Eol shall be submitted to NWCMC in a sealed package with hardcopy and a CD and be clearly marked: "Eol for iMEGA; submitted by (Name of the Bidder Company)".

All proposals must be submitted to NWCMC at the following address by the date and time identified as the deadline for Submitting the Eol in the Schedule of Events.

Office of the Dy. Municipal Commissioner (Reforms),

3rd Floor, NWCMC New Administrative Building, Vazirabad, Nanded

3.Proposal Preparation Costs

NWCMC shall not pay any costs associated with the preparation, submittal, or presentation of any EOI proposal.

4. EOI Amendment and Cancellation

This is only a prospective document and should not be construed as the main Tender / Request for Proposal (EOI). NWCMC reserves the unilateral right to amend this document in writing at any time. NWCMC also reserves the right to cancel or reissue the EOI at its sole discretion. Any change in the schedule of dates will be communicated on the NWCMC website.

5.Right of Rejection

NWCMC reserves the right, at its sole discretion, to reject any and all EOIs or to cancel this EOI in its entirety.

6. EOI Presentation

Shortlisted companies will be invited to make a presentation regarding their proposals, beginning 16th August 2011. The exact dates and schedules will be intimated to the companies over email / phone. Interested parties may send queries on the email: dmc_reforms@nwcmc.gov.in till 12th August 2011.

The shortlisted companies will be intimated regarding their presentation time and date over email. The presentation should be structured to be not more than 1 hour, including a question and answer session of at least 15 minutes. The presentation should mainly cover the points mentioned below.

Requirements for EOI Presentation

Sr. No.	Criterion	Description
1.	Financial Overview of the Firm	Brief snapshot of company financial including but not limited to: Turnover Earnings Profit from operations
2.	Past Experience	Case studies of two (2) similar projects implemented. A list of most relevant solutions provided detailing the

		profile of clients, including but not limited to, the area of their activity
3.	Solution for NWCMC	<p>Overview of the features and functionality of the Suggested and new solution for NWCMC. The suggested solution is to include</p> <ul style="list-style-type: none"> • Technical solution for the project. • Range of products/modules proposed • Scalability of the solution • Customisation and Ease of use • Training and hand holding during deployment • Extent of open source software and user license requirements • Upgrade requirements and schedule for the proposed solution • Applications and hosting cost (indicative) as a percentage of the total project cost.
4.	Team composition and experience	Profile of proposed team for implementation of the solution
5.	Ongoing Support and Maintenance	Overview of the ongoing maintenance and support for solution being proposed. Multiple models with potential benefits may be proposed.
6.	Modular approach	Case studies of at least two (2) projects where the party added fresh functional modules to an existing knowledge management portal developed by another party and also for own solution.
7.	License Requirements	License requirements for solution (if any)
8.	Options available vs. Impact on Costing	The prospective bidder may here outline the various options available in a modular manner and outline the implications on cost and functionality.
9	Options for payment	The prospective bidder may here outline the various options available for payments by NWCMC as per deliverables by vendor .
10	Any other relevant information	Solutions not specifically asked for, but that could add value to the proposed solution.

7. Eligibility Criteria

For participation in this EoI, NWCMC has designed the following mandatory eligibility criteria.

Eligibility Criteria	Documentary Proof Required
1. The bidder's annual average yearly turnover should be at least Rs. 5 Crores in the last 3 financial years (2010-11, 2009-10, 2008-09).	Audited financial reports for the corresponding years
2. The bidder should have experience in executing at least three eGovernance projects (for central or state governments and municipal corporations in India or international governance agencies) in the last three years, including software development & customization using open source technologies	Copies or work order / contract / completion certificate mentioning the project description and elements in detail
3. The bidder should preferably have the experience of at least one GIS based software development work in the last three years	Copies or work order / contract / completion certificate mentioning the project description and elements in detail
4. The bidder should have an ISO 9001 certification	Copy of certificate
5. The bidder should have an overall IT staff strength (staff performing duties of IT/Software Design/ Development/ Implementation and Maintenance) of at least 50 personnel as on the date of submission of the EoI.	An undertaking by an auditor on the number of personnel in the Bidders Organisation / Certificate from statutory auditor
6. The bidder should not be blacklisted in any government organisation	Certificate from a statutory auditor

PLEASE NOTE THAT THE QUALIFYING CRITERIA MENTIONED IN THE TENDER DOCUMENT MAY VARY FROM THOSE MENTIONED IN THIS EOI.

8. Proposal Format

The applicant must provide the following information

Sr. No	Particulars	Details
1	Full Name of the Prime Respondent and Consortium Details (if applicable)	
2	Proposed role of the Consortium members	
3	Mailing Address in India Telephone and Fax number Website and E-mail address (Prime Bidder)	
4	Mailing Address in India Telephone and Fax number Website and E-mail address (Consortium (if any))	
5	Name and designation of the person authorized to make commitments to the Purchaser	
7	Year of establishment and constitution of organization	

The technical proposal must contain following documents in support of the pre-qualification criteria.

- Audited Balance Sheets/P&L Accounts for the last three financial years.
- Service Tax and Income Tax Clearance Certificates (or copies of returns filed) up to March 2011.
- Certificate of Incorporation or Partnership Deed
- Copies of Work Orders/Completion Certificates for project similar in nature.
- The technical proposal should address the following at the minimum:
- Overview of the Proposed Solution that meets the requirements specified in the EOI
- Bill of material of all the components (e.g. software, hardware, etc.) along with their quantities & detailed technical specifications (Please mention Makes & Models)
- A specific description of the prior experience and expertise of the resources in the organization that enable the organization to provide a scalable, robust, and industry-standards based support services;
- Resumes of manager(s) responsible for the management of this project, highlighting pertinent experience.
- Resumes of bidder and/or sub-contracted personnel who would be directly assigned to provide services pertaining to this contract and the specific function each individual would perform;
- The technical proposal shall also provide copies of the process certifications, completion certificates, awards, references etc that shall improve the bidders' overall technical score against each of the parameters mentioned in this document.

General Requirements

Bidders must follow all formats and address all portions of the EOI set forth herein providing all information requested. Bidders may retype or duplicate any portion of this EOI for use in responding to the EOI, provided that the proposal clearly addresses all of NWCMC's information requirements.

Proposals shall be prepared on standard 8 1/2" x 11" paper. Foldouts containing charts, spread sheets, and oversize exhibits are permissible and a digital copy on a CD/DVD in .doc, ODF or PDF . All responses, as well as any

reference material presented, must be written in English. All monetary amounts, if any, must be detailed in Indian National Currency. All proposal pages must be numbered & sections appropriately cross-referenced in the Table of Contents. Wherever the amounts are mentioned, it is mandatory to include the same in words too.

Bidders shall submit their responses to this EOI by the deadline for Submitting a Proposal in the EOI Schedule of Events.

Bidders shall provide a detailed table of contents and a compliance chart for their proposals with correct references to the page numbers.

9.About Nanded

The Nanded city, with a jurisdiction of about 51.76 km, is the headquarters of the Nanded District in the Marathwada Region of Maharashtra state. It is the second largest urban center in the Marathwada region after Aurangabad.

The district of Nanded lies in the border of Maharashtra and shares boundaries with Yavatmal District in the north, Parbhani, Latur and Osmanabad Districts in the west, Bidar District of Karnataka in the south and Nizamabad & Adilabad Districts of Andhra Pradesh in the east.

Table 1 - Demographic Profile of Nanded District

Total Number of Households	523,539
Total Population	28.68 lakhs
Male	14.76 lakhs
Female	13.91 lakhs
% of Urban Population to Total Population	28.29 %
Population density	272
Literacy Rate	68.52%
Male Literacy	81.14%
Female Literacy	55.12 %

Nanded city is located at 18°30' North latitude and 77°10' East longitude at about 489 meters above mean sea level. It is about 260 km each from Aurangabad and Hyderabad and about 300 km from Nagpur.

Nanded is regionally linked by road to other urban areas by Major State Highway (MSH) 6 to Degloor in the south east towards Hyderabad, MSH 2 to Bhokar in the north east and Latur in the south east, MSH 3 to Hadgaon in the north, MSH 6 to Madgaon in the north west, SH 44 to Purna in the west, and SH 223 to Kandhar & SH 224 to Osmannagar in the south.

In terms of railway connectivity, Nanded is part of the South-Central Railway Division of the Indian Railway. It lies on the Mumbai-Secunderabad railway line. It is serviced by direct rail connectivity to Mumbai, Secunderabad and Amritsar (via Delhi).

Nanded city has an airstrip, developed and maintained by Maharashtra Industrial Development Corporation (MIDC) that is capable of handling only small private aircrafts. While there is no commercial air traffic, it is currently used for landing of private aircrafts and senior Government dignitaries visiting Nanded. Government of Maharashtra through MIDC is presently upgrading the existing infrastructure to facilitate regular commercial flights between Nanded and other important cities. The closest regular airports are at Aurangabad and Hyderabad

10. About Nanded Waghala City Municipal Corporation

Nanded Waghala City Municipal Corporation (NWCMC) was established on 26th March 1997, by merging Nanded Municipal Council and adjoining Waghala Municipal Council. The Corporation is constituted under the provisions of Bombay Provincial Municipal Corporations Act, 1949 and is also governed by the provisions of 74th Constitutional Amendments Act 1992(CAA). In addition to the Waghala Municipal Council, Vasarni Village, Kautha Village, Asarjan Village, Fatehjangpur Village, Asadwan Village and CIDCO and HUDCO colonies areas were merged with the NWCMC.

The total area under the NWCMC jurisdiction is 51.76 Sq.km, (5,176.66 Ha). Nanded City is divided in two parts i.e. Old Nanded (20.62 Sq.km) north of the Godavari river (on the left bank) and New Nanded (31.14 Sq.km) comprising of Waghala and six other newly merged villages and CIDCO area, south of the Godavari river (on the right bank).

11. NWCMC Structure

The organization structure comprises of an elected wing and an executive wing.

Elected Wing: The elected wing is represented by the General Body (GB) constituted by 73 elected members / Municipal Corporators and 5 co-opted members. The General Body together with Municipal Administrators and Departmental Heads formulate the framework for discharge of municipal functions, both obligatory and discretionary, of the Municipal Corporation. Apart from GB there are 5 Committees constituted with elected Members including Standing Committee of 16 elected Members, to address matters related to administration / provision of civic services in a most appropriate manner.

Executive Wing: The administrative or executive wing is headed by the Municipal Commissioner, appointed by the State Government. The Municipal Corporation is organized into five geographical Divisions for effective service delivery and management. Further, there are 24 multi-member electoral wards drawn for the purpose of the corporation elections, which also double up as administrative and management sub-divisions.

The executive wing is organized into functional departments that are responsible for day-to-day functioning of the Municipal Corporation, including planning, engineering, operations & maintenance and other service delivery functions.

12. e Governance at NWCMC

NWCMC has embarked upon a National E-Governance plan for introduction of IT and e-Governance in the local body. The Proposed Integrated E-Governance initiative seeks to redefine governance in municipalities with the focus on citizens. The vision of the project is to establish people centered, responsive, financially sound, well governed, viable and sustainable municipalities, touching upon the lives of the citizens. Specifically, NWCMC seeks to use the proposed E-Governance solution, as the primary delivery channel to provide a single, easy, secure, integrated, and reliable means of access to municipal information and services in order to continuously improve the quality of services provided to residents and businesses in Nanded.

The mission of the project is to provide a) transparent, timely and quality services to the citizens of Nanded b) unified information communication technology platform for transparency and participative good governance. The Mission is seen as a method of applying Information technology to sort the problems faced so far, making good the deficiencies and filling up gaps. It is also seen as a critical instrument for upgrading the quality of the service deliverables across NWCMC.

The following are the objectives of the eGovernance mission at NWCMC:

- Provision of all municipal services to citizens through the 'Avirat', the citizen facilitation centres.
- Provision of all relevant information about the rules and regulations, working of Municipal Corporation, the area specific development activities undertaken etc. to citizens through internet/mobiles
- Use of technology to facilitate various tax payment etc by the citizens
- Computerisation of all departments and their BPR
- Integration of departmental activities
- Improving the Citizen services and expanding the delivery channels
- Instituting the community system for sustaining and strengthening service delivery
- Establishing Back end system for office management and accounting
- Creating Community Information System
- Handling Standardization of data and quality of legacy data
- Building Integrated Back end database
- Creating Resource Information System and providing developmental services
- Setting up Infrastructure
- Undertaking Capacity Building
- Arriving at Business Delivery Models
- Integration with Other existing modules
- Conformance to international and Indian Standards

13. Current Status of eGovernance Initiatives

NWCMC has already undertaken various initiatives for the entire Corporation including all inter-departmental activities and all citizen interfaces.

SOFTWARE DEVELOPMENT

The following software modules are currently being implemented at NWCMC:

- Property Tax
- Water Billing
- Trade & Market Licenses
- Birth & Death
- Portal
- UWMS
- Town Planning
- Citizen Grievances

All the above modules are being currently deployed under agreement with M/s KDMC.

GIS

NWCMC will be acquiring the spatial data base as per our requirement. Currently, MRSAC has been approached for undertaking the comprehensive task of one time generation of spatial database from satellite image and link the same to all corresponding non-spatial info we have

ESTABLISHMENT OF CFCS 'AVIRAT'

As a part of the eGovernance initiative at NWCMC, Citizen Facilitation Centers (CFCs Avirats) have been set up with the objective of becoming a convenient point of interaction between Citizens and NWCMC. CFCs are located at important locations across the city [Annexure 1] with a provision for connectivity to other establishment for providing more and more contents on CFC.

The CFCs are intended to provide easy access to citizens for municipal services such as B&D certificates, Trade Licenses, through active collaboration with respective departments. The CFCs are expected to improve the operational efficiency and provide a pleasant environment for visiting citizens.

ALL THE CITIZEN CENTRIC SERVICES OF MUNICIPAL CORPORATION ARE INTENDED TO BE EVENTUALLY PROVIDED THROUGH THE CFCs AVIRAT.

. This CFC is proposed to have a chamber for NWCMC Officer-in-Charge, a Help Desk & as many counters as required.

Besides these CFCs at the Corporation HO/Zonal offices, the Municipal Services are also being extended to Setus which are purely privately run to extend outreach of Municipal Services.

These CFCs are currently being run by the Municipal Corporation only. However we are also exploring the possibility of running these on a BOT basis.

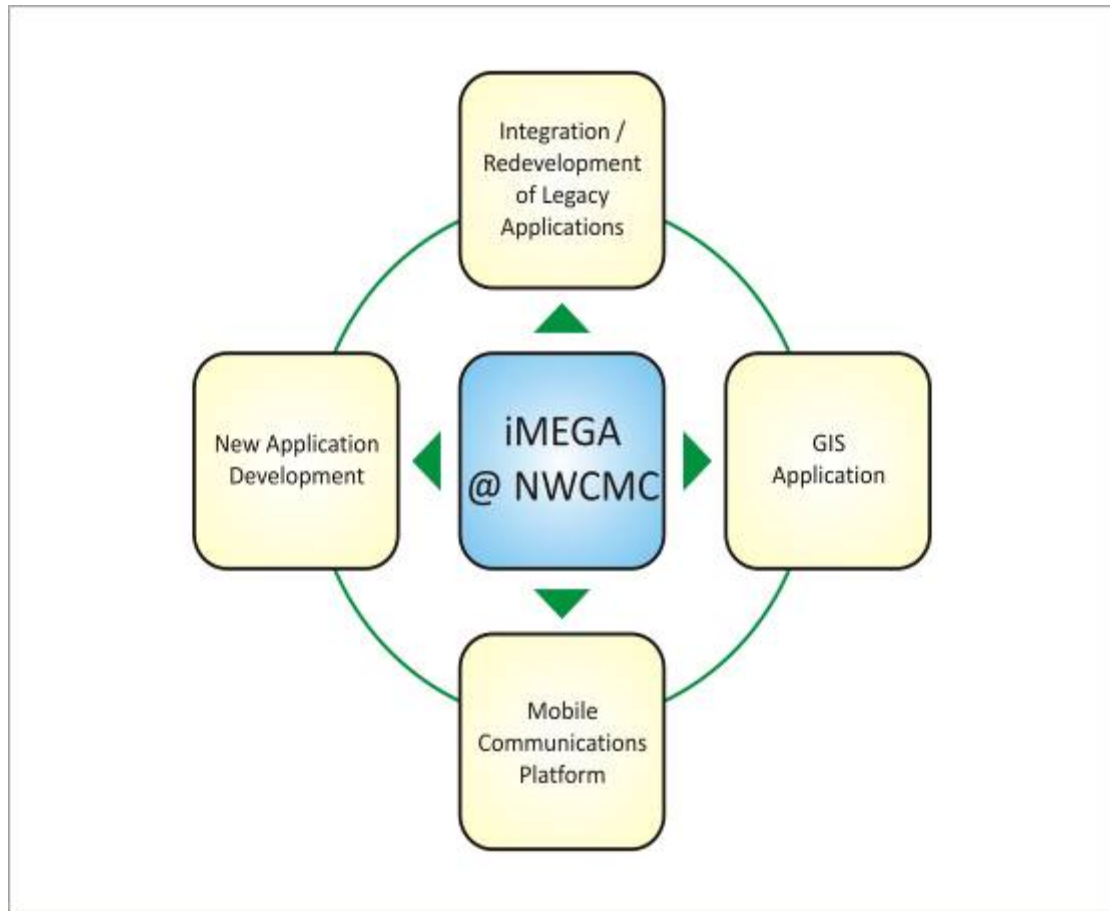
14. Project Scope

In continuation with the implementation of various eGovernance initiatives, Commissioner Nanded has now called for EOI proposals for the design, development and implementation of the Integrated Municipal eGovernance Application (iMEGA) for Nanded Waghala Municipal Corporation. This section lays out the scope & deliverables of the project.

The broad scope of iMEGA shall be as follows:

- Business Process Reengineering of various departments of NWCMC
- Based on BPR, design, develop, deploy and maintain various software modules as mentioned in this document and create an integrated web interface with appropriate dynamic zoom level of interactive geographical map using the GIS Database with internet and intranet with due access permissions.
- Propose enhancement / redevelopment of or integration with existing software modules
- Supply, install and maintain the required hardware as per this tender
- Supply, install and maintain the required networking elements as per this tender
- Conduct software training for municipal staff and officers on an ongoing basis
- Annual Operation and Maintenance for 2 years after defect liability period which will be of one year after successful implementation of the project

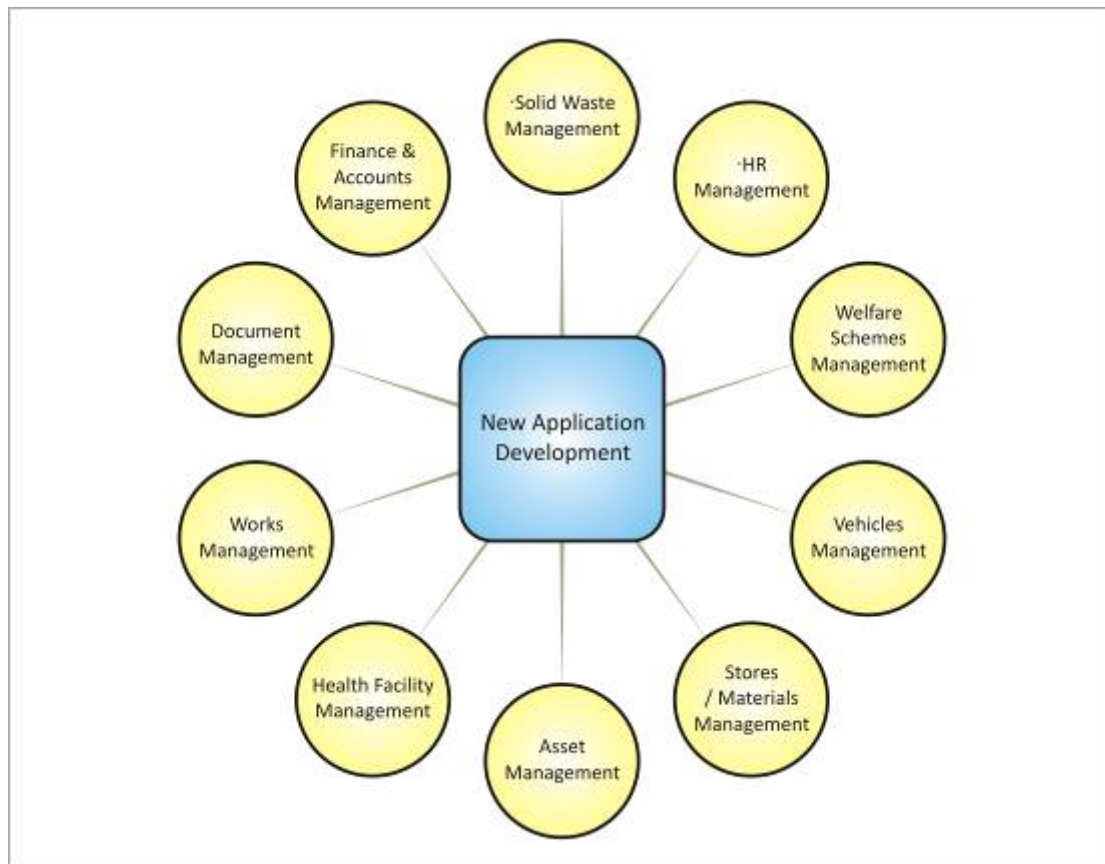
15. Proposed Solution



On a broad level, the software scope includes the following:

- BPR for various departments of the NWCMC (concerned with iMEGA suite)
- Design and Development of the iMEGA application suite for NWCMC
- Integration of iMEGA with the KDMC applications deployed at NWCMC (or other options such as de novo development of KDMC undelivered softwares in case of default by KDMC)
- Making iMEGA citizen centric modules functional through the CFC
- The solution should be GIS based and incorporate GIS structures (currently being developd by MRSAC for NWCMC) Practically this will amount to using intelligently the spatial data in eGovernance. See **Annexure 3**, an indicative list of functionalities and outputs where spatial data matters in Municipal management. (“**GIS based Mun Assets/services Management**)

16. iMEGA Suite of Applications



The indicative structure for IMEGA SOFTWARE MODULES IS GIVEN IN Annexure 2. Please note that the modules are only indicative.

PLEASE ALSO NOTE THAT NWC MC IS INTERESTED MORE IN UNDERSTANDING THE COMPETENCE OF THE APPLICANT AS FAR AS BPR, GIS- BASED SOLUTIONS AND M-GOVERNANCE BESIDES THE SOFTWARE DEVELOPMENT SKILLS.

Integration with legacy systems:

The vendor shall have the responsibility of integrating the following legacy systems with the eGovernance Application. Alternatively the vendor may also propose enhancement or redevelopment of these systems.

- KDMC Applications such as
 - Property Tax
 - Water Tax
 - Birth & Death
 - Town Planning
 - Grievances & Redressal system

- User Workflow Management System
- Trade Licenses
- CFCs
- Web Portal
- Other third party systems such as
 - AutoDCR being used in the Town Planning Department &
 - LBT software
 - Call centre

The responsibilities of the vendor with regard to the integration tasks shall be:

- The vendor is required to integrate various system components such as the system hardware, network equipments, firewall, system & application software & NWCMC legacy systems & third-party systems.
- The design and development of adaptors for this integration shall be carried out by the vendor.
- The vendor will manage the integration effort for systems interfacing including the following:
 - Manage the design & development of all interfaces, including the development of Interface Control Documents (ICDs) for the new and legacy systems. The vendor will manage and control all ICD until sign off by all interfacing parties.
 - Coordinate and manage meetings/workshops, to ensure all parties have a clear understanding of the interfacing requirements and the information to be provided from each party.
 - Be responsible for developing and managing all interface test procedures until full integration is satisfactorily signed off.
 - The integration work will include the provision of all necessary hardware and software, operational/production licenses, software development kits and any additional license required for the implementation, in order to undertake full integration between the new and the legacy systems.
- The vendor shall be responsible for:
 - Ensuring all operating systems and software purchased under their contract shall be compatible with and capable of implementation with the Integration Architecture.
 - Attending all workshop meetings and contributing to the development of the ICD and provide any other information required for the system integration.
 - Installing any additional interfacing software required for successful integration with the legacy systems. The vendor shall be responsible for the procurement and installation and commissioning of such software.

- Providing equipment and system software for testing within the Integrated Test Facility (ITF).
- Providing all necessary support and attendance for interface testing within the ITF, on site testing and commissioning and Project Operational Trials.
- The vendor shall develop, and shall contribute to and implement, the following Plans and Procedures: i) Risk Management ii) Interface Management iii) Project wide Programme Management iv) QA Management v) Configuration Management vi) Test Management vii) Systems Engineering and Design Management (SEDM)
- The vendor shall create, manage and implement the systems specific procedures for: i) Systems Programme/Schedule ii) QA Management iii) Risk Management iv) Systems Engineering and Design Management (SEDM)

Alternatively, the vendor may propose better systems to satisfy all functions performed by the existing modules, suitable data migration mechanisms. The data from the current systems will be made available to the vendor..

17. M-Governance

NWCMC believes that the service delivery framework based on internet & mobile technologies shall benefit the citizens. The penetration of internet in Maharashtra, particularly in cities like Nanded, is yet to attain maturity. The full benefits of website as an interface will have to wait to attain a certain level. In contrast to this, the telephone penetration is sizable. With about 800 million mobile phone connections, tele-density of about 70%, monthly cell phone addition of over 20 million & projected density of over 85% by 2012, India is the third largest telecommunication network in the world and the second largest in terms of number of wireless connections. With a subscriber base of nearly 95 million & a wireless density of nearly 85%, Maharashtra is on the second position in the list of India Top 10.

Further, it has been estimated that Maharashtra State will reach 100% tele-density levels in 2012.

NWCMC has thus decided to use the mobile technology (with its “always-on” nature of connectivity) for effective utilization of the strength of mobile penetration for service delivery. The services that shall be made available to citizens (in english and as far as possible in Marathi text and voice): is given in Annexure 4

Scope of Services for the vendor with respect to m-governance

- The vendor shall integrate the necessary SMS engine/gateway with the eGovernance application.

- Providing necessary GSM modem, software for handling incoming & outgoing SMS, database integration etc required for building the application shall be the responsibility of the vendor.
- It shall also be the responsibility of the vendor to coordinate with the SMS/mobile service provider for availing the required services & support.
- The charges payable to the service provider shall be borne by NWCMC.
- NWCMC may decide to add more services through mobile technology delivery model. It shall be the duty of the vendor to provide support for all such additions.
- The service delivery shall be available on basic handsets (AHAN-Any Handset Any Network) afap not requiring smart/feature mobile phones or any specific network.

18. Hardware

The vendor shall indicate the minimum server architecture and configuration required for running the IMEGA application. NWCMC shall suitably decide to procure the required hardware / source a reliable managed hosting service.

19. Deliverables

- Approach Paper : Technology options, project plan and schedule (approximate timelines)
- High level Software Design document including Software Architecture design, logical and Physical Database Design etc, as far as possible
- Data requirements: specifically what spatial data will be needed
- Outline of BPR and change management needed to fully utilize the advantages of technology (based on experiences of the bidder)
- Approach for Testing and Test cases (including Unit Test Plan. System/Integration Test Plan, User Acceptance Test Plan, Security Test Plan, load Test Plan)
- Outline of NWCMC Application Software (iMEGA Application Suite)
- outline of Software Testing Documentation
- Approach towards Training
- Budgetary estimates
- case presentation : where prospective bidder has direct experience as participant in software development
- Recommendations of specifications for RFP (preferably with justification)

20. Technical and Architectural Requirements

The technical and architectural requirements are given in Annexure 5

Annexure 1: List of CFCs

CFCs at Zonal Offices

NWCMC area has been divided in 6 Zones, with one CFC per zone. Each of these CFCs has a chamber for NWCMC Officer-in-Charge, a Help Desk & counters as per need. The zonal offices are based in the following areas:

- Ganesh Nagar
- Workshop Corner
- Wazirabad
- Itwara
- Taroda
- CIDCO

CFC at Administrative Office

The main CFC has been commissioned at the Administrative office (New Building)

Annexure 2: IMEGA SUITE OF SOFTWARE MODULES

Human Resource Management Module

The HRM module shall handle the entire employee & his service lifecycle. The specific tasks the module shall be required to support shall include:

- Recruitment, deputations, contracts & manpower management
- Service Records maintenance
- Time & leave management, through integration with existing biometric system
- Promotions & transfers
- Disciplinary actions, confidential reports, departmental enquiries, demotions, suspensions
- GPF
- Payroll Management
- Medical reimbursements
- Loans, advances & deductions management
- Pensions
- Employee grievance management
- Performance Appraisals
- The HRM module shall provide employee self-help features for all the information display & transactions regarding the employee.
- The module shall integrate with the accounts, meetings & third-party Time & Attendance systems and access control systems.
- The module shall handle all the statutory reporting/requirements in an automated manner.

Education Management

Managing the primary education: schools , mid-day meals, RTE and necessary functionalities.

Solid Waste Management System

- The SWM Module shall perform all the tasks related to the garbage collection scheduling, assignment of cleaning staff, vehicle trips & routes management, garbage dumping & disposal. The module shall integrate with GIS, third party GPS & VTS systems, weigh-bridge and accounts module for billing.

Welfare Schemes Management Module

The WSM module shall support management of various special welfare schemes implemented by NWCMC. The module can also be considered as a sub-system of the accounts module.

The specific tasks the WSM module is required to perform shall be:

- Maintenance of scheme-related records
- Maintenance of beneficiary database
- Grants/funds-based accounting
- Grants/funds-based projects & expenditure management
- Preparation of fund-based budgets

The WSM module shall be integrated with the accounts, works, eTendering & GIS modules.

Health Facility Management Module

The HFM module shall manage the functioning & monitoring of various nursing homes, dispensaries & hospitals under NWCMC.

The module shall support the following functionalities:

- Registration of patients
- Appointments scheduling
- Case tracking
- OPD/IPD management
- Bed & Occupancy management
- Doctors' & nurses' duty & shifts management
- Certificates management for employees
- Ambulances/vehicles management
- Special disease case trackings
- Medicines & supplies management
- The HFM module shall be integrated with the HRM module, accounts module & the vehicles module
- pulse polio and similar campaigns management
- epidemic control and management

Asset Management Module

- The asset management module shall manage the various tasks related to the acquisition, recording & management of the lifecycle of various movable/non-movable municipal assets.

- The functions supported by assets management module shall include recording & maintaining the asset details, acquisition & disposal of assets, insurance management etc.
- The module shall integrate with GIS, accounts, works & etendering modules.

Stores/ Inventory Management Module

The inventory management system shall manage the entire stores, inventory, procurement & distribution management for NWCMC.

The module shall support the following functionalities:

- Indent preparation & approvals
- Indent processing, forecasting, Preparation/finalization of requirements & approvals
- E-Tendering
- Post-tender processes, PO & agreement generation
- Material receipt, acceptance/rejections recording
- Distribution
- Disposal of dead stock
- Rate contracts management

The IM module shall integrate with the meetings, accounts & etendering modules.

Vehicles Management Module

The vehicles management module shall manage all the affairs related to the vehicles owned/rented by NWCMC.

The VM module shall support the following tasks:

- Vehicle records maintenance
- Vehicle scheduling & fuel management
- Maintenance
- Drivers' duty management
- Vehicle Tracking

The module is required to integrate with GPS & VTS systems. It shall also integrate with the accounts & HRM modules.

Works Management Module including e-Procurement

The functional requirements for the works management module shall be as follows:

While using the extensive GIS Database available , the module shall allow the users to map the entire project life-cycle including project preparation, estimation, sanctions, tendering, comparative analysis (qualitative as well as quantitative), work order, agreement, project management including web-based monitoring using webGIS, interim as well as final billing & project closure.

- Project Preparation stage shall include the project conceptualization, preliminary estimation, pre-sanction, estimations based on the user selectable DSRs, project stage definitions & the administrative approval. There shall be integration with the vendor registration, budget & meetings management modules at the appropriate points.
- The bid management shall have user-selectable options for single, double or three-envelop bids & shall also have integration with eTendering module.
- The post-tender management features shall include preparation of comparative analysis, negotiations management, administrative sanctions, work order & agreement generation & integration with accounts & meeting modules.
- The project management module shall have features of recording the project progress, generation of bills (running or final) based on the stages completed & weightages against the pre-defined stage-wise weightages, generation of work completion certificates & integration with the accounts.
- The works management module shall also manage other sub-systems such as vendor management, architects/consultants' management etc.
- The module shall have all the features of work-flow management that shall allow the users to define the work-flow.
- The module shall offer event-based alarms & notifications management features (using SMS & email) at each stage of the process & shall be customizable by the users.
- The works related documents shall be managed using the DMS appropriately integrated with the module.

E- Procurement:

E- Procurement is a centralized purchasing action which is generally executed after communication of material for the project or zone work. The goods procurement process comprise of following sub processes.

- Indent management
- Competitive Bidding
- Dynamic pricing
- Contract management
- RC catalogue management
- Order management
- Supplier Management

Meetings Management Module

The GB & Standing Committee govern the entire functioning of NWCMC. The subjects discussed during the meetings & the resolutions passed shall be managed with the help of the Meetings module.

The module shall support the following features:

- Subject list preparation
- Meeting scheduling
- Agenda finalization
- Meetings attendance recording
- Minutes of the meetings & recording resolutions

The module shall integrate with almost all the modules & sub-systems. The subjects list shall mainly be populated from the respective modules. The resolutions against the respective subjects shall automatically govern the processes within the respective modules.

The meetings module shall also integrate with the DMS & accounts module (for management of corporator's honoraria & allowances)

Document Management System

NWCMC wishes to build a robust document management repository to manage its internally generated documents and documents received from external sources. The DMS shall support the following functional requirements:

- The users should be able to use DMS with secured login. The password shall be encrypted and supported with audit trail feature at folder, user and cabinet level.
- The DMS shall have user creation facility based on group and all access rights shall be maintained based on the user group. The access right should not be limited to creation and access and shall support delete/EDIT/view/None.
- The DMS shall support Digital signature or digitally signing of documents. It shall support standard 3rd party digital signature softwares.
- The DMS shall support verification of digital signature for opening of document with cross verification. The signature mechanism must be totally platform and application independent i.e. any file format supported in DMS can be digitally signed and the native application need not be invoked to view the signatures
- The DMS shall support complete document life cycle management for managing online, offline, near online documents and for document archival.
- The DMS solution should support Marathi localization in addition to English.
- The scanning software shall have facility of scanning the documents from web interface. The scanning software shall support multiple pages in batch mode or manual mode and the facility to scan different pages of document at different DPI resolution.
- The DMS shall support wide variety of scanners from low speed to high speed production scanners, flat bed and page feed scanners. It shall support high volume scanning up to 25,000 pages per day.
- The DMS should be able to conduct standard Image Operations such as de-skew, de-speckle, rotate, invert, zoom-in/ zoom-out, zoom percentage etc.
- Automatic segregation of batch of dockets based on Barcode, Blank page, fixed page and auto Form recognition.
- Simplified Export of scanned batches into DMS with Auto folder/Subfolder creation document filing & indexing on user defined fields
- Extensive Reports & Audit trail like Report on total records scanned along with associated indexes, Records exported or not exported to EDMS etc.
- Supports document capture through Print and Email redirection.
- Scanning software must support data entry in multiple languages
- Shall support basic workflow to move the documents through a set of users for approval and corrections.
- Shall support Version control for document versions. Image and electronic document versions. Support Check in and check out for collaborative working environment. The DMS shall support Cross referencing of related documents.

- The DMS shall support OCR capabilities in English. i.e ability to search the content within a text image.
- The DMS shall support strong search capabilities in english like search on single document or entire repository. Search based on the document attributes such as creation, created by, modified, modified by, key words, owner etc, Boolean search and complex logical searches
- The DMS shall support viewing of Non image document like MS word, Excel, Powerpoint and ODF without native application support. Support document view through browser based plug in.
- The DMS should have the ability to support for annotations like highlighting, marking text, underlining, pointing arrows, putting sticky notes on documents, and support for text and image stamps. Ability to Supports creating, viewing, printing, deletion and other manipulation of “sticky notes” on documents, pages and folders without altering content of documents, including “read-only” documents and images.
- If and when possible the facilities may be extended to Marathi.

Financial and Accounting System

Key objectives of the Finance & Accounting initiatives are:

- Creation of chart of accounts as per the national accounting manual for the Municipal Corporation.
- Managing Day-to-day financial transactions covering receipts and payments.
- Bank Reconciliation
- Budget Approvals
- Finalization of accounts based on the financial year.
- Managing the fixed assets and calculation of Depreciation
- Creation of various MIS based on the National accounting Manual
- Use of payment gateways (internet as well as mobile) for receipts and expenses

The key functionalities associated with Finance & Accounting Module are

- Accounting Transaction
- Payments
- Receipts
- Fixed Assets
- Budgets.

- MIS Reports

Accounting System:

The Accounting system shall support the Chart of accounts (COA) as specified in the National Accounting manual for Municipalities (NMAM). This COA shall have five groups namely Funds, Functions, Functionaries, Field & Accounting Code. Each group shall be further subdivided into layers to capture the data at a Granular level. The structure of the COA shall follow the NMAM account coding structure covering the entire above group and the layers.

Cash Collections:

The cash collections shall cover all forms of collections across the “Avirat” and “Setu” centers and shall present the same in the form of a daily collection register. The collections at various collection centers and against services shall be consolidated and daily cash collection register is prepared. The cash book module shall keep track of cheque deposits and dishonors if any. The cash collections shall handle and link the collections against various demand/Bills raised by the corporation. The cash collection module shall also cover the collections against other functions such as sale of tender, sale of forms, other services, on- account from debtors etc.

Journal Entry:

The applications shall support posting journal entries. All entries pertaining to payable and receivable shall be recorded in the form of journal entry. The journal entry posting shall have validations and checks to ensure proper recording.

Consolidation and Finalization:

The accounting shall have feature to consolidate and finalize the transaction on periodical basis and generate various MIS reports as per the NMAM manual.

Bank Reconciliation:

The system shall have feature to reconcile the bank entries against the book entries. The system shall have manual reconciling feature (Applicable for banks which cannot spare the account transaction in electronic format) and also the auto reconciliation feature.

Vouchers:

The system shall have separate vouchers for payments, receipts, contra and Journal voucher. The system shall also have feature to reset the voucher number on monthly or yearly basis.

Control Features:

The system shall have proper security along with roles and privileges to the individual user. The system shall have make checker feature to authenticate any transaction.

Payments:

The payment process in the Municipality are broadly classified as

- Salary & Wages
- Contractor and suppliers
- Administrative Expense
- Statutory Payments like Provident Fund, Professional Tax, Tax deducted at source (TDS).

The payments process shall have interface with workflow system to support various approvals involved in the payment system. Once the cheques are paid, the system shall have feature to map/link the cheque numbers with the voucher or manually capture the cheque number with a validation for the cheque number entered. The system shall have facility to map the Bill Number/Invoice Number applicable against the payment transaction along with cost center if any.

- Payments of Salary & Wages:

All calculations associated with salary, wages, statutory payment shall be maintained by the Personnel/Pay roll management system. The accounting system shall capture the payments transaction as a part of salary on a departmental basis. Upon final processing of the salary calculations by the personnel management/payroll management, the Personnel management/payroll management shall post liability entry in to accounting system in the form Journal voucher. And the respective payments entries shall be posted at the time of payment.

- Payments of Contractor & Suppliers:

The accounting system shall maintain the supplier/contractor wise details in the form of ledger. The accounting system shall create the respective contractor ledgers based on the status of the vendor. The contractor/supplier ledger shall capture additional information's like TDS Type and section applicable, all registration number like VAT

(Value Added Tax), CST (Central Sales Tax), Service Tax along with PAN (Permanent Account Number). The TDS shall be deducted at the time of posting the liability entry.

- Payment of Administrative Expense:

All payments associate with Administrative expenses such as telephone expense, electricity expense shall be booked by creating the liability and linking with cost center if any. Respective payment entry shall be posted based on the accounting principle.

- Statutory Payments:

Statutory payment associated with employee such as provident Fund, Professional Tax and TDS shall be calculated by the Personnel /payroll management system. The accounting system shall create liability entry based on the inputs from personnel/payroll management system and the respective payments entries shall be posted at the time of payment of the same to the respective treasury or authority.

Statutory payments associated with Contractor and suppliers shall be calculated by the financial system at the time capturing the bill details and the respective payments entries shall be posted at the time of payment of the same to the respective treasury or authority.

Receipts:

The receipt process in the Municipality are broadly classified as

- Property Tax, Water tax, LBT
- Grants
- Security and Earnest Money deposits
- Other Collections

- Property Tax, Water Tax Receipts, LBT receipts:

- Receipts associated with property tax, water tax or LBT, against an assessee will be recorded in the respective systems.

- Grants:

- Receipts associated with grants are recorded on receipt information along with bank deposit details. The grants can be monitored through the respective ledgers.

- Security and earnest Money Deposits (Interest Free):
 - The collections under these categories are posted without raising a bill. The liability entry is created in the accounting system against the Security and earnest Money deposit against a vendor or supplier and the same shall be adjusted against the payments.

- Other Collections:
 - Other collections such as Hall fees, Garden and park fees are created as and when the actual collections are received. And the respective entries are posted as per the principles of Double entry accounting system.

Fixed Assets:

Accounting System should be able to maintain the Fixed Asset register with due geo-tags. Details like asset number, location and person responsible pertaining to the asset should be captured in the register. It should be ensured that all Fixed Assets are correctly entered in the Fixed Assets Register. During purchase of any fixed asset, the account code selected will hit the General Ledger. Other details entered in the voucher will only be reflected in the Fixed Asset Register of Accounting System. During the sale of any fixed asset, the account code selected for the specific asset along with profit/ loss on sale of the asset shall be posted in the General Ledger. Other details entered in the voucher will only be reflected in the Fixed Asset Register of Accounting System. Accounting System should be able to calculate the Depreciation of Assets, based on useful life calculation and straight line method. Accounting System should have the provision of revaluation, scrap, write-off and sale of assets.

Budgeting:

- The Accounting System should have a provision for budgeting.
- The budgets shall be prepared as per the Chart of Accounts (COA) in the Accounting System.
- The Accounting System shall raise alerts messages in case the budgetary limits are exceeded.
- The Accounting System shall have the provision for variance analysis between budget and actual with percentage.

- The Accounting System shall have the provision to capture ward-wise budgets.
- The Accounting System shall have provision to monitor the budget on a timely basis.
- The Accounting System should allow for multiple budget periods and provide for monthly/quarterly/half-yearly break-up of the actual/ budget forecasts.

MIS Reports:

The accounting system shall have facility to generate following list of reports in addition to the list of reports and formats specified in the National accounting manual for Municipalities (NMAM).

- Trial Balance
- Balance sheet
- Income and Expenditure statement
- Cash Flow
- Abstract register for payments and receipts
- Advance ledger
- Register of Adjustment
- Register of Investments
- Advance Ledger
- Deposit Ledger
- Loan Register
- Fixed Assets Register
- Appropriation Register
- Register of unpaid bills
- Budget
- Ward wise Accounts
- Ageing Reports for both debtor and creditor, (Ageing report should be user defined)
- Variance Analysis of Budget Vs Actual
- Party wise Statement
- Ratio analysis reports
- Revenue trend analysis statement
- Bank Reconciliation Statement

Annexure 3: Municipal services where spatial data is relevant

GIS Based Municipal Assets Management

The following are the services that a Municipal Corporation provides to its citizens through departments and where GIS is needed. The high level scope of work includes developing application for the following list of utilities:

1. Property Tax
2. Estate Management: The listing and verification of all Municipal Corporation assets along with photos will be provided with the vendors.
3. Disaster Management including Fire Brigade, Hospital-Health care units
4. Education
5. Parks and Gardens, Open Spaces
6. Water Supply including Water bodies
7. Sewage
8. Roads and Traffic including Transportation (bus stands, taxi stands, petrol pumps)
9. Storm Water Drains

Utility/ Service	Input	Output
Property details Management of detailed information regarding plot	1. Details of each property a) Use Type (residential, commercial, industrial, ancillary user, MIX, Municipal*, state government, Central Government, etc) Trust, Temple, Dharmasala b) Plot, plinth and built areas, c) Building type (Single/ Multiple) (Number of floor/units, no of car parks) d) Type of structure – chawl, RCC, Load bearing e) Owner / Occupier Details f) Property Tax details – Integration with property tax registers 2. Service availability and details such as water connections (metered / un-metered), Size of connection, Sewerage facility, Telephones etc. 3. Plot and building boundaries measured up to 0.1 meter 4. Building height approximated to the nearest meter with number of floors	1. Properties paying tax 2. Properties with *** FSI (Floating and TDR) 3. Dangerous properties (depending on inspection report and building age) 4. Area having particular (Residential/ Non residential) type of property 5. Properties with particular type of construction 6. Properties with number of stories and above 7. Properties with age *** and above 8. Properties having carpet area more than *** Sqm and above 9. Properties involved in court cases 10. Display properties as and when they are assessed for tax

	<ul style="list-style-type: none"> 5. Building age, name, locality and street no. 6. Inspection report 7. Zonal division of lands with ready reckoner rates 8. Survey Number, CTS No, CS no, Assessment code and Account number 9. Ward No and AC no. 10. Ratable value of each property 11. 1st date of assessment for each property 12. Carpet area for each property 13. Year wise rate of property taxes 14. Arrears with action 15. Gates/Entrance 16. Tree/Bushes 17. Cellular transmission antenna / cabins/Solar Equipment / Rain Water harvesting 18. Parameters pertaining to Building Proposal 	
Estate Management Management of Mun. Corp. estates' information	<ul style="list-style-type: none"> 1. Municipal plot details 2. City survey number/ village details 3. Built up area, plinth area, floor wise details, use category, plot dimensions with margin, date of possession 4. Landmarks of plots with nature of land 5. Details of encroachment 6. Legal information of plots 7. Ready reckoner rates 8. Details of heritage structure and buffer 9. Slum details 10. Land and village zoning 11. Ward boundaries 12. Election wards 	<ul style="list-style-type: none"> 1. Area under slum 2. Location of Municipal Corporation owned vacant lands
Disaster Management (including Fire Brigade, Hospital-	<ul style="list-style-type: none"> 1. Road plans including lanes/by lanes in each sector/ ward. 2. Positions of water hydrants 	<p>In the event of disaster</p> <ul style="list-style-type: none"> 1. Rapidly locate and visually display incident locations

<p>Health care) Planning of all possible disasters to control the situation effectively</p>	<p>along with all building plans. 3. Maintenance schedule of the water hydrants. 4. Building plans with each floor plan/ details and fire extinguisher positions. 5. Tall raised buildings in a particular sector/ward. 6. River/canal flow route. 7. Location of Fire station, ward office, municipal and Govt offices, school buildings and educational institutes. 8. Traffic signal positions with time duration of each signal. 9. High tide and low tide levels and timings, 10. Average rainfall in each area in mm. 11. Water logging areas, drainages system lines and position. 12. Contours of each area with height above sea levels 13. Identifying residential and commercial areas separately along with open spaces and gardens. 14. Overhead electric cables, position of transformer, electric stations and gas line. 15. Bus station, bus stops, railway stations, airports, highways, bridges and seaports. 16. Communication antennas and towers 17. Power generation plants, national security sites, and disaster prone areas along with the type of threat. 18. Areas with specific communal colonies. Details of the hospitals 1. Type (General/ Specialty), (Hospital, Maternity Home,</p>	<p>2. Display transportation routes for responding equipments (Are these roads commutable for fire tenders?) 3. Identify appropriate medical care facility closet to incident location 4. Visual display of current project status</p> <p>Fire Brigade 1. Location of nearest fire brigade in case of fire. 2. Reach of optimal number of fire fighting vehicles in the event of fire 3. Requirement of length of hose 4. Requirement of length of staircase 5. Location of hazmaps</p> <p>Hospital-Health care 1. Locating all the hospitals and health care units in the area 2. Locating hospital with number of beds *** and above</p>
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	<p>Cardiac, Nursing Home, Pediatric, Municipal, Private, Trust, Health posts, post partum center, Dispensary etc</p> <p>2. Location details</p> <p>3. Plot area</p> <p>4. Built up area</p> <p>5. No of Rooms and Beds</p> <p>6. Cemetery- (private/ Municipal), (Hindu, Muslim, Christian), Maintained by</p> <p>Fire Brigade</p> <p>1. Location of fire brigade</p> <p>2. Service area for each fire brigade (Jurisdiction details)</p> <p>3. Type of center (Regional, Command Center, Workshop, Training, Control Center)</p> <p>4. Record of the vehicles used for fire fighting</p> <p>a. No of vehicles</p> <p>b. Vehicle make and year of purchase</p> <p>c. Type of vehicle</p> <p>d. Use of vehicle</p> <p>e. Length and width of vehicle</p> <p>4. Condition of hose</p> <p>5. Length of hose mounted on each vehicle</p> <p>6. Length of stair mounted on the vehicle</p> <p>7. Details of special gears including hydraulic, pneumatic, manual etc</p> <p>8. Details of breathing apparatus</p> <p>9. Details of lifeboats</p>	
<p>Education Effective management of schools</p>	<p>1. Name of owner/trust</p> <p>2. TYPE (Nursery, Play School, Primary , Secondary, College ETC) (Attached PG, Play area)</p> <p>3. Municipal schools details</p>	<p>1. Municipal schools with (a)owned (b) rented premises</p> <p>2. Municipal schools with rented premises having not paid rent</p>

	<p>4. Co-ed, Public, Convent, ICSE, CBSE, HSC/SSC (State board) Medium, No. Of Students)</p> <p>5. Type of structure and Number of classrooms</p> <p>6. Number of floors</p> <p>7. Outline area of building</p>	<p>since xx/xx/xx date</p> <p>3. Municipal schools which have infrastructure status as "bad"</p> <p>4. Schools which have been covered in the inspection zone of person named xxx</p> <p>5. Schools with more than xx no of untrained teachers</p> <p>6. The wards where the ratio of the ward population to the no of Municipal schools is more than xxx.</p> <p>7. Municipal schools where the no. of students is less/greater than xxx</p> <p>8. Municipal schools, where the student/teacher ratio is more than xx</p>
<p>Parks and Gardens including open spaces Management of development sheet with the garden department.</p>	<p>1. Details of property</p> <ul style="list-style-type: none"> - Name of garden - Location details - Plot and built areas - Building type - Construction Type - Garden area - Number of trees - Planted - Recreation area - Internal pathway - Boundary wall details - Maintained by <p>2. Service availability and details such as water connections (metered/ unmetered), size of connection, sewerage facility, telephone, play apparatus, fountain, .light etc)</p> <p>3. Shopping area details</p> <p>4. Details of water bodies inside the garden</p> <p>5. Details of stadium (ownership, number of viewers, type of sports)</p> <p>6. Details of</p> <ul style="list-style-type: none"> - Lease period/adoption 	<p>1. Locating all parks and gardens in the area</p> <p>2. Number of public taps provided to concerned Park/Garden</p> <p>3. Locating all the open spaces in the area</p>

	<ul style="list-style-type: none"> - period - Expiry date/lease or adoption <p>Details of open spaces</p> <ol style="list-style-type: none"> 1. Details of the property 2. Location details 3. Plot boundaries measured up to 0.1 meter 	
Water supply including Water Bodies <ol style="list-style-type: none"> 1. Water supply mains of all the dimensions up to water meter for every property 2. Management and future planning of Water works / supply 3. Developing On line Complaint Redressal System 	Leakage rectification data	<ol style="list-style-type: none"> 1. Detection of spots where leakage in the pipes have occurred 2. Pipe line which exceeds *** number of leakage spots
	<ol style="list-style-type: none"> 1. Data relating to existing public taps 2. Data relating to requests registered for additional taps 	1. Distribution of public taps in the suitable location to overcome the water problem
	<ol style="list-style-type: none"> 1. Data relating to complaints received regarding unpotable water 2. Residual chlorine sample data 	Identifying the zones of intermixing of pipeline with sewage water
	<ol style="list-style-type: none"> 1. E-coli sampling data from Ward Health Officer 2. Municipal analysis data 3. History of epidemic and kind of treatment given to water 	Treatment for water during epidemics
	Customer complaints	1. Complaint related area Segregation of certain type of complaint area
	<ol style="list-style-type: none"> 1. Data relating to new development, new line laid 2. Details of water line like diameter, length, depth etc 	Identifying nearest water line to tap the water
	<p>Database for</p> <ol style="list-style-type: none"> 1. Location of pumping station 2. Raw water mains 3. Treatment plant built 4. Location and structural details of reservoir tanks including balancing tanks 5. Location details of water sources 6. Location details of pump station and water bodies. <p>Database on the distribution system should include following</p>	<ol style="list-style-type: none"> 1. Distribution network 2. Shortest route from source to the pump station 3. Selection of the diameter of pipeline based on the population statistics of the area 4. Lines of **** dia and above/ below 5. Position of valves in the above lines 6. Flow and pressure at junction upto *** dia. 7. Depth of pipeline from road level and invert level

	<p>details</p> <ol style="list-style-type: none"> 1. Diameter 2. Age 3. Material and condition of pipe 4. Depth from ground level with respect to any permanent bench mark 5. Location of valves and meters 6. House service connections 7. Public stand posts 8. Interconnection and valves on each line 9. Transmission mains including pressure main, along with the identification of sources of water bodies 10. Population of the area 11. Details and age of air valves 12. Maintenance record <p>Details of the water bodies</p> <ol style="list-style-type: none"> 1. Type <ol style="list-style-type: none"> a. Lakes b. Open wells c. Borewells 2. Width 3. Maintained by 	<ol style="list-style-type: none"> 8. Pipeline/Valves above ***age (based on year of installation) 9. Pipeline showing ***types of material of construction 10. Repairs/ replacement history 11. Location of valves with select material of construction. <p>Locating all the water bodies in the area</p>
<p>Sewerage system: Collection, treatment and disposal of sewerage</p>	<p>Database for</p> <ol style="list-style-type: none"> 1. Type of sewer, year laid 2. Details of pipe <ul style="list-style-type: none"> • Shape • Dimension • Material • Lining coating 3. Invert level 4. Details of manhole <ul style="list-style-type: none"> • Number • Location • Cover shape • Cover design • Lock provision • Hinge provision • Cover type • No of steps in manhole 5. Type of pumping station, and installed capacity 6. Sub main sewers 	<ol style="list-style-type: none"> 1. Lines of *** dia and above/ below 2. Position of manholes including depth and size 3. Pipelines with select material of construction 4. Details of Bypass line- Direction of flow 5. Slippages in maintenance schedule 6. Position details of ventilation columns 7. Flow, capacity and current status of pumping mains 8. Status of shutdown 9. Affected area due to plugging of line 10. Sewer line trace 11. Sewer mains profile 12. Engineering drawing

	<p>7. Center to center distance from upstream manhole and from downstream manholes</p> <p>8. House service connection</p> <p>9. The diameter, age, material and condition of pipe, length of pipeline, slope of pipeline</p> <p>10. Maintenance record (location, no of people involved in the process, nature of job etc)</p> <p>11. Details of ventilation columns</p> <p>12. Details of pumping arrangement</p> <p>13. Details of sewerage treatment plant (layout, capacity)</p> <p>14. Road details (Accessibility, width etc)</p>	<p>13. Present capacity of sewer line</p>
<p>Road and Traffic including Transportation (Bus stands, Taxi stands, Petrol Pumps)</p> <p>Maintenance of Roads of all the widths and all the types, bus stands, taxi stands and petrol pumps</p>	<p>Data base for</p> <ol style="list-style-type: none"> 1. Length and width of road 2. Details of road dividers 3. Road carpet details 4. Year of construction and resurface of road 5. Details of crust 6. Resurfacing cycle 7. Central verge details of roads 8. Position of catch pit, water entrants and manholes 9. Road levels 10. Details of footpath, footpath surface details 11. Traffic island and signal details 12. Bridge details 13. Tree plantation details on road side 14. Partition details for heavy and light vehicle 15. Complaint record <p>Details of speed breaker</p> <p>Details of Bus Stands</p> <ol style="list-style-type: none"> 1. Location details 2. Plot and building boundaries measured upto 0.1 meter 	<ol style="list-style-type: none"> 1. Identifying position of road dividers 2. Identifying position of U-Turn boards and speed breakers to prevent accidents 3. Identifying position of road partition for the heavy and light vehicles 4. Identifying roads with number of street lights less than ** per km 5. Number of speed breakers on stretch of a road <p>Bus Stands</p> <ol style="list-style-type: none"> 1. Identifying location of bus stand 2. Identifying bus routes 3. Modifying the routes in case of Jam, emergency or certain festivals <p>Petrol Pumps/Gas stations</p> <ol style="list-style-type: none"> 1. Identifying Location information about petrol pumps 2. Identifying all storage station locations 3. Identifying routes of all petrol filling vehicle

	<p>3. Bus route details</p> <p>4. Intermediate bus stop locations for all the routes.</p> <p>5. Alternate route details for every possible jams or emergency</p> <p>6. Maintenance record</p> <p>Details of Petrol Pumps/Gas filling stations</p> <p>1. Location details</p> <p>2. Plot and building boundaries measured up to 0.1 meter</p> <p>3. Storage capacity of each petrol pump</p> <p>4. Companies main petrol storage station</p> <p>5. Route of the petrol filling vehicle</p>	
<p>Storm water drain Management of storm water drains</p>	<p>Data base should include</p> <p>1. Details of main town level drains with final disposal points, water entrances and property connection</p> <p>2. Drain types (nalla, outfall)</p> <ul style="list-style-type: none"> • Size • Shape • Slope • Material <p>3. Condition of drain, manhole and culvert</p> <p>4. Location of bypasses</p> <p>5. Details of outfalls in the river</p> <p>6. Maintenance schedule</p> <p>7. De-silting schedule and actual dates of achievement</p> <p>8. Details of culvert, manhole</p> <p>9. Details of pumps in pumping station, motors, dry wells and wet wells</p>	<p>1. The intermediate and all other drains</p> <p>2. Cross section of all drains with clear width and depth levels</p> <p>a. Information about type of drain</p>

Note: * is any parametric figure**

Annexure 4: List of Possible m- Governance services

1. Details of various municipal Taxes & charges
2. List of development works in their areas
3. Complaints & grievances reporting
4. Application/Complaints status checking
5. Alerts for bills generated
6. Vaccination Scheduling based on registered Births
7. Acknowledgements & notifications of case status
8. Transaction alerts
9. Tender alerts
10. NWCMC meeting alerts
11. Infocasts (Broadcasting civic messages)
12. Various alerts, e.g. escalation, for pending cases for NWCMC officers
13. Keywords information

(List only indicative)

Annexure 5: Technology and Architecture Specifications

- The IMEGA application shall be based on open standards and open source technologies. The computing and the operating environment for the application shall be based on open source technologies. This includes application platform, server side and client side operating systems, database server and client environment like browser.

- The IMEGA application shall be a web based application with Web 2.0 capabilities. The application should support Ajax and other new client side technologies and controls which constitutes Web 2.0 usability experience. The application should be as far as possible, browser agnostic. The “Browser” shall be the primary and the key user interface for all the modules in the IMEGA application. Bidders may propose best approach with justification.

- The IMEGA application may be based on multi-tier application platform with support for web layer, application layer and data storage layer as opposed to client-server platform and thus ensuring separation of concerns. The n-tier approach also makes sure that each layer can be scaled separately; either horizontally or vertically.

- Some of the important parameters for consideration with respect to technology include:
 - Open Standards & open source technology
 - Open source solution (preferred though not mandatory)
 - Portability or platform independence
 - Scalability
 - Performance
 - Vendor-neutrality
 - Conformance to international application & web standards
 - Ease of deployment
 - Maintainability
 - standards of documentation

- NWCMC prefers to use Linux for the server side deployment of the IMEGA application. The vendor shall specify which LINUX flavor is recommended for running the proposed solution. However, the

IMEGA application may be portable so that it can run on Windows environment also.

- NWCMC will use both Linux based and Windows desktops with Mozilla Firefox and / or Internet Explorer/ Chrome as the client for the IMEGA application. Prospective bidders may suggest suitable specifications for Mobile interfaces.

- The IMEGA application should be database agnostic. This shall be achieved with the use of any open source Java based object relational mapping tool. The database server used by the application shall be an open source, relational database. This will eliminate the need for any licensing fees for NWCMC. Some of the required features of the database include:
 - Support for spatial data storage for GIS applications.
 - Transactional capabilities and clustering support.
 - Fine-grained access control mechanisms to define access restrictions on databases of different modules/applications.
 - Indian language enabled for input, display and search
 - Support for Unicode standard.
 - Capability of handling the future storage requirements of the application.
 - Support for easy backup and restore.
 - Capable of using high performance computing environments
 - Capable of being hosted on managed service

Data Integration and Interoperability

- All the modules in the IMEGA application shall be from a single vendor so that the problems associated with interoperability and data integration can be mitigated.
- Data Integration and MIS reporting for combining data from various sources is mandatory for the IMEGA application.
- All the modules have to integrate to the Financial Application.
- Most of the modules will need to integrate with the GIS application and will also need citizen and land information.
- All the modules and applications of the IMEGA application should be built on a single application platform with data integration achieved mainly through the database layer with proper schema design.

- Uniform Database Model for storing, managing and reporting of information based on the uniform data models of different entities.
- Framework for ensuring online and batch data flow between the applications. Some use cases are payroll information flowing to Financial Application every month, Demand and Collection summary in the Financial Application.
- Framework for authentication and authorization for data retrieval and data manipulation for shared data like citizen information.

Identity Management and Security

- The proposed solution should be capable for dealing with authentication, authorization, access log, data protection, identity theft and privacy.
- Single Sign-on across all the applications and modules in the IMEGA application platform.
- Application should allow the creation of security groups and assignment of administrator role for the security groups so that management of users within the security groups can be done by the administrator of the security group.
- Users with System Administrator Role should have provision to manage the users under them.
- Application should enforce password strength with features such as forced password changes in configurable interval and prevention of password reuse.
- Storage and transmission of passwords and other confidential information related to the users should be done in a secured manner. Standard methodologies like SSL to be adopted.
- Access Logging and Provision to log and de-activate user accounts in case of 'n' number of failed login attempts.
- All the application pages should be protected and should be accessed only after authentication and authorization procedures.
- All access attempts (successful and unsuccessful) to the application shall be tracked and checked for authentication and authorization requirements.

Audit Logs

- Application should support Audit Trail for key data fields and business processes.
- Support for audit logging into database.
- Support Audit Log Viewer for easy and searchable interface.
- Application should prevent any modification to the audit information and access to audit information should be role based.

Alerts and Notifications

- The application platform should support alerts and notifications to the configurable channels like Email, SMS (english/Marathi) , voicemail or application alerts for the business events defined in the functional requirements.
- Support for setting the severity of the alert based on the parameters of the business event.

Data Integration, Interoperability and Interconnectivity

- An application integration platform for IMEGA applications with support for interoperability between the NWCMC applications and interconnectivity between other national, state and local body IMEGA applications outside/within NWCMC. This framework should support integration of disparate applications based on the workflows and rules of NWCMC and combined reporting from various application data.
- Identifying and designing key data models such as citizen, land etc. and establishing relationships between the data models to be used in the different IMEGA modules.
- Providing standard inbound interfaces and adapters for receiving messages for interconnectivity between other E GOVERNANCE platforms as described in the Functional specifications.
- Providing standard outbound interfaces for sending messages for interconnectivity between other E GOVERNANCE platforms as described in the Functional specifications.

Deployment Architecture

The application will run in 3-tier architecture with the following configuration:

- Web Servers running the website.
- Applications servers with the business logic
- Database server running on RDBMS system

There will also be an ancillary tier for:

- Administrative purposes
- Data Backup

The application may run in a private cloud or on IaaS.

Training

Training is an important aspect of this project, and NWCMC expects the successful bidder to undertake it in a very professional manner. Multimedia training material with Screenshots and voice overs will be created for every important function for each module for offline training. NWCMC would like to implement Train the Trainer (1T) concept. Such trained staff will be responsible for implementation of the respective modules. These Master Trainers then would train the remaining NWCMC staff as well.

For all these training programs, the bidder has to provide necessary course material and reference manuals (user, maintenance, administration).

Trainings would be of two types:

- Functional Training - This training would focus on the usage of application software so that the users are aware of all the operations of the application systems

- Administrative Training- This training would focus on the administration of the respective modules for the identified staff.