

TECHNICAL DOCUMENTS

Request for Proposal (RFP)
for Base Map Creation, Survey, Supply,
Implementation & Post Implementation
support of Web Geographical Information
System (GIS) Solution For
New Town Kolkata Development Authority

1. Background

For providing basic civic services to the residents and other users of this township, the New Town Kolkata Development Authority (NKDA) has been constituted with effect from 1.1.2009 in accordance with the provision of The New Town Kolkata Development Authority Act, 2007 (The West Bengal Act XXX of 2007) as a transitional arrangement till the formation of a full-fledged Urban Local Body (ULB).

The west Bengal Housing Infrastructure Development Corporation (WBHIDCO) is the planning Authority of the entire township and it has earmarked 3552 hectares of land comprising in three Action Areas of the planned development of Entire Township.

At present, NKDA is creating basic infrastructure within New Town Kolkata area, viz., construction of community markets, public toilet complexes, swimming pool, bus sheds, traffic signaling system, immersion ghat, roads, restaurants, weigh bridge, car parking lots, gardens, parks, playgrounds etc. On the other hand, it is rendering some basic civic services, viz., sanction of building plans, record of title of properties, issue of trade license, registration of professionals, issue of birth and death certificates, collection of household garbage, cleaning of roads, drains and culverts, beautification of area, maintenance of roads, street lights, fee car parking system, water connection etc. It also arranges cultural events frequently for the residents of the township.

2. Project Objectives

New Kolkata Development Authority (NKDA) intends to facilitate, promote the economic growth of the city long with being a service provider. NKDA is responsible for development, repairs, operation & maintenance of services and utilities within its area of jurisdiction, which includes socio-physical & environmental infrastructure facilities. NKDA is planning to implement Enterprise Geographical Information System (GIS) to enhance the services and establish better management control.

The key objectives of the proposed Implementation of the GIS Solution at New Town Kolkata are as follows:

- Use of Satellite image and creation of final up-to-date base map after carrying out physical survey of all the properties.
- Creation of geo-spatial data of Plots, Buildings, Roads, Sewerage, Water, Drainage, Electrical OFC and other Public utilities.
- Up-to-date & user friendly maintenance of assets.
- Efficient maintenance of Public utilities like Roads, Street Light, Water Supply Network, Sewerage Network, Drainage Network, Petrol Pumps, Hospitals, Fire Stations, Schools, etc.
- Customized GIS Application to integrate spatial information with the current and proposed e-governance software solution.
- Post Implementation Software Upgradation / Customizations.

3. Scope of Work:

Collection of data by doing physical survey for various layer for data validation in the field. Mapping Polygon, Line and Point themes in the various layer of the GIS map with the Base map as reference. Capturing of 100% data on the ground and integrate on the existing base map. The maximum acceptable tolerance value is 5 error per sheet for spatial attributes and no tolerance shall be permitted for non- spatial attributes.

The scope will cover amongst others the following:

- A. Procurement, Supply, Installation and configuration of all necessary System Software for running the GIS solution.
- B. Operations and Maintenance of the GIS Solution for a period of 5 years after System –Go-Live. This would include amongst others providing technical support and maintenance of the GIS software and the underlying system software
- C. **Design, Develop, Deploy and Operationalize GIS Software as per requirements elicited in Section 4**
- D. **Design, Develop, Deploy and Operationalize Geo Portal as per requirements elicited in section 4**
- E. **Deploy Helpdesk team at NKDA premises.**

F. Description and Scope of Services

In support of the above requirement, the vendor is primarily expected to customize, install, demonstrate and operationalize relevant hardware, software and data for the Geo-portal. Access to and maintenance of the underlying master database will be done by uploading data from remotely available spatial data generating agencies and survey agencies.

Key services will be provided as per the architecture and specifications mentioned in the RFP. As is required under a SDI, the Geo-portal will be regularly upgraded to help data/ service providers publish their metadata/ data / services for access by the customers over the web.

G. Information Technology Systems

All customized applications detailed above shall leverage the Web GIS platform, which shall eventually be hosted at NKDA Server. Before starting the actual development process, detailed study of the existing system (as part of SRS) should be done. Detailed IT systems configuration, which shall include the server configuration, client configuration, peripherals, redundancy, bandwidth considerations, backup, storage systems, networking, structured cabling and power conditioning etc. including Software side study shall also be conducted which shall include the operating system, databases, security, etc.

Note 1: Procurement of hardware along with Operating System would be done by NKDA. Indicative hardware list is added in Annexure- 7.

Note 2: Satellite imagery procurement would be done by NKDA

4. Detailed Requirements - GIS Software & Geo Portal:

4.1. GIS Software Detailed Requirements

- a) Make use of existing WorldView-2 satellite imagery as the back-drop.
- b) Overlay & geo-reference existing land parcel and roads from pdf/jpeg with the satellite imagery.
- c) Attach linkable attribute information to the vector layers – so that it can be queried.
- d) Upload this GIS database into Web GIS platform.
- e) Physical survey for collection of GCP points or DGPS point for 100% mapping with jpeg/pdf drawing and satellite image. GCPs should be taken at least one per km and for DGPS it should be not less than 10.
- f) New Town Kolkata includes Action Area – 1, 2 and 3. Digitization of Action Area-1 has already been done. Validation of attribute shall be done for entire area.

Location	Action Area-I	Action Area-II	Action Area-III	CBD
Area in hectares	677	1310	783	183

- g) GIS Implementation at NKDA shall consist of creating GIS database for the following features within NKDA area:

Sl No.	Layer Name	Vector Layer
1.	Administrative Boundary	Polygon
2.	Block wise area Boundary	Polygon
3.	Town Planning Schemes	Polygon
4.	Development Plan	Polygon
5.	Canal/ Water Body	Polygon
6.	Street Network	Polygon
7.	Police station	Polygon
8.	Bridges/Flyover	Polygon
9.	Parks/Gardens	Polygon
10.	Water Pumping Stations	Polygon
11.	Bus Stand	Polygon
12.	Community Market	Polygon
13.	Cemetery	Polygon
14.	Play Ground/Sport Complex	Polygon
15.	Hospitals	Polygon
16.	Immersion Ghat	Polygon
17.	Mela Ground	Polygon
18.	Election Booth and Boundary	Polygon
19.	Petrol Pumps	Polygon
20.	Electrical Sub-stations	Polygon
21.	Electrical Network	Line
22.	Sewerage Network	Line
23.	Drainage Network	Line
24.	Water Supply Network	Line
25.	Telecom Network	Line
26.	Metro Line	Line

27.	Manholes	Points
28.	Water treatment plants	Points
29.	Fire Stations	Points
30.	Street Lights	Points
31.	Community Toilet	Point
32.	Traffic Signals	Point
33.	Bus Stops	Point
34.	Toilets and urinals	Point
35.	ATM	Point
36.	School/College	Point
37.	Milk Booth	Point
38.	Solid Waste Bins and Transfer Station	Point
39.	Shopping Complex/ Community Markets	Point
40.	Parking Zone and parking lots	Point

h) Municipal database shall be mapped with the GIS solution. Such services are

(i) Record of Title (Mutation).

- Details of Recorded data.
- Option for download of Mutation certificate.
- System should allow attaching documents of various types.
- System should generate acknowledgment receipt after submission of application.
- System should allow viewing of attached documents through the system.
- System should to communicate with payment gateway system through NKDA proposed e-Governance System.

(ii) Building Plan Sanctions.

- Application details.
- Data submitted by Technical person.
- View the Drawings sanctioned by the Department.
- System should allow viewing of attached documents through the system.

(iii) Occupancy Certificate & Partial Occupancy Certificate

- Application details.
- System should allow viewing of attached documents through the system.
- Observation if any after inspection.
- Option for download certificate.

(iv) Water, Sewerage & Drainage connections

- View the Network.
- Analysis and view different reports.

(v) Property Tax & Water Revenue Management System

The property tax and other information can be mapped on the GIS. It has following functional Features. Functional Features of Property Tax and Water Changes Management System

- Integrated with Web based GIS application.
- Define Property Master.
- Ability to create rate profile for different tax years.
- Property Tax calculations tax type wise financial year wise.
- Configurable Property tax calculation rules.
- Provision for Self-Assessment.

- Provisional Tax and Notice generation.
 - Re-Assessment of existing properties.
 - Property Tax Bill generation.
 - Collection of Water Bills.
 - Monitoring the defaulters for all types of tax collection.
- (vi) **Solid Waste Management System**
 NKDA already started Vehicle Tracking System for Solid waste Management Vehicles as well as other hired vehicles like Street Sweeping, Ambulance etc. Data shall be shared with the GIS solution. The GIS solution shall show the movement of vehicles and other features as follows:
- Identification of solid waste disposal sites within NKDA area
 - Track overall process whether all waste is collected from bins.
 - Capture of daily waste collection data into the System.
 - Quantity of waste generated is logged in after every iteration.
 - Waste weighted.
 - Flow and Tracking of the vehicles.
 - Vehicle Monitoring and attendance available online.
 - Customized reports generated on demand.
 - Removing redundancy of data at all levels.
- (vii) **Engineering Works.**
- Works details.
 - Progress work.
 - System should allow viewing of attached documents/ Pictures through the system.

4.2. GIS Software Technical Requirements

The software should be developed using Service Oriented Architecture (SOA) framework using Enterprise Service Bus (ESB) so that it can be integrated with other present and future software applications. The solution should be capable to be integrated with basic applications like MS Office and should provide interfaces through Web Services so that the functionalities can be accessed from any other applications.

The solution should support Single-Sign-On with LDAP Active Directory Authentication. It should support various metadata standards and various metadata protocols. The solution should be interoperable and support multiple RDBMS like SQL Server, Oracle, DB2 and should be capable of maintaining data history, version management and conflict detection / resolution. The solution should have open access to extensive GIS capabilities so as to enable organizations to publish and share geographic data in 2D & 3D formats, maps, analysis tools, models, mobile applications etc.

The solution should enable web application developers to build responsive, easy-to-use applications that leverage the latest AJAX and Web control technologies. The solution should support a series of open APIs and standards that will allow virtually any other client (e.g., CAD, GIS, image processing, and SQL-based applications) to interact with and use the mapping, spatial analysis, and data management services of GIS Server. The hosted services should get integrated with other Web

Services using standard Web Services protocols such as SOAP (Simple Object Access Protocol) and XML(Extensible Markup Language).

The solution should provide Multi-tier Security (Data level, Service level and Application level).

Geo Portal Detailed Requirements

A Geo-portal is a web site that provides a view into a universe of spatial content and activity through a variety of links to other sites, communication and collaboration tools, and special features geared towards the community served by the Geo-portal. As an open Web resource, a geo-portal should connect through open interfaces to data and services with similar interfaces.

The Geo Portal shall be the layer through which the various users will interact and transact business with the underlying GIS Software.

Different categories of users and their high level roles are elicited below:

End Users:

They must be able to login, create/change passwords and browse ‘relevant’ parts of the portal. They should be able to discover information using key words. They should be able to access objects/features using key words/coordinates. They should be able to check the status of ongoing queries created by them. They should be able to create new queries and modify the rules of predefined queries before it has started. They should be able to define new query formats. They should be able to browse a Data catalogue.

Data Providers:

They should be able to put metadata for users, browse the list of requests made by the users. The data of data providers shall be OGC compatible. They should be able to provide catalogue services. They should be able to restrict the end users for specified Information. They should be able to check the status of the user requests.

System Administrator:

The System Administrator sets up profiles for end users and data providers. They should have control over data access by users. They should be able to add new data products to the existing Catalogue. They should be able to remove data products from the Catalogue. They should be able to restrict user accessing classified information.

Whenever the System Administrator creates the profiles of users and data providers, the System should notify the corresponding user/data providers about his account information. During the query set up by the user, the system should send notification (reply for queries) to the Data Providers. The system frequently notifies the users of any relevant information about the queries.

5. Departments of NKDA

Broad level functional requirements pertaining to activities of stake holder departments are as under:

Sl No	Department	Activity	Functional Requirement
1	Town Planning Dept.	Development Plan regulations, Land use planning. Town Planning Schemes to manage the master plan and monitor the development of the city as per master plan.	Digitization of Development Plan
2	Building Plan Approval	Building plan approval status. Validate the status of plot. Occupancy status.	Integration of Building Plan and OC/POC approval with GIS
3	Assessment and Taxation	Record of Title details. Collection and Assessment of Properties. Management of data regarding the properties. Collection Details. Defaulter details.	Integration of Record of Title (Mutation) and Property Tax department with GIS
4	Solid Waste Management Department	Cleaning of Solid Waste community bins and sanitation. Tracking Vehicle for Solid Waste Vehicles. Collection details.	Integration of Vehicle Tracking System and Bin monitoring system with GIS.
5	Municipal hired other Vehicles	Tracking of Street Sweeping vehicles. Tracking of Ambulance.	Integration of Vehicle Tracking System.
6	Water Supply	Maintenance of Water supply Network. Reports regarding Collection of Water tax.	Digitization of the water pipeline data. Integration of water tax collection system.
7	Electrical Department	Street lights, Sub Station, Traffic Signals.	Digitization of Street lights, Sub Station, Traffic Signals
8	Sewerage and Drainage	Development and maintenance of the Sewerage and Drainage network.	Digitization of Sewerage and Drainage Network.
9	OFC	Development and maintenance of the fiber optics network.	Digitization of OFC Network.
10	Engineering	Assign of work. Monitoring progress of work.	Attachment of related information.

6. Implementation Methodology:

The implementation of the GIS based e-Governance Applications Suite typically involves the phases as described below. The Implementation typically includes following:

The vendor shall provide in their proposal their implementation plan along with the set of deliverables

6.1 Development location:

Collection of GPS/ DGPS points and Digitization of Map with satellite image to done at NKDA premises.

Selected vendor will have to setup temporary infrastructure at NKDA. NKDA will provide space only. Development and Customizations of web GIS application shall be done at the selected vendor premises. After successful delivery of the whole system, any changes during the Acceptance Testing shall be done at NKDA.

6.2 Deliverables and Milestones

Deliverables different stage:

1. Project Plan, Detailed Project Report & System Requirement Specifications.
2. Architecture Documentation including Software Design Documentation & User Manuals.
3. Detailed list of layers of GIS information with detailed metadata.
4. Test Plan and Test Cases.
5. Build and Deployment Instructions and source code.
6. Unit and Integration Tests Reports
7. UAT reports.
8. Pilot Run Report
9. Quality Report.
10. STQC Report.

6.3 Development Stages:

A. System Requirement Study (SRS):

SRS shall be conducted in 3 stages:

a) Stage-1:

To be started within 07 days of acceptance of Work order

- Selected Vendor shall conduct 15 days of Systems Requirement Study for the entire system.
- Requirements shall be gathered from all stakeholders on the GIS database as well as on the functionalities of the applications.

b) Stage-2:

- Stage-2 shall be for 15 days.
- SRS report shall be presented to NKDA.
- Detailed document on the number of GIS layers, co-ordinate system to be adopted, method of collection and creation of GIS database and mechanism of storage of GIS database in RDBMS.
- Gap Analysis (stated objectives versus expected objectives) shall be documented and presented to the NKDA.
- Project Implementation Plan shall be presented & Change Management decisions shall be sought from the NKDA.
- NKDA data centre requirements shall also be presented so as to start the procurement process.

c) Stage-3:

Finalization of SRS report within 30 days from the date of starting of **Stage-1**.

B. Data Development - Digitization of MAP

- Suitable ground control points shall be located using Differential Global Positioning System (DGPS) for accurately geo-referencing all the maps with the available satellite imagery. This will ensure that all features are positionally accurate and shall also serve as future benchmarks for NKDA. Industry standard DGPS equipment's shall be used for the survey.
- Conversion of AutoCAD drawings into GIS format:
- All available AutoCAD drawings (in softcopy) shall be digitized and converted into GIS format so that it can be integrated.
NKDA will provide following AutoCAD maps:
 - Plot Details.
 - Water Distribution Network.
 - Sewerage Network.
 - Drainage Network.
 - Electrical Distribution Network.
 - Telecomm Distribution Network.
- GIS Data Processing:
 - Define proper metadata for each GIS layer. The proposed metadata standards shall be in line with the standards defined by the NSDI and/or FGDC standards.
 - The system should ensure that all GIS databases are edge matched and its topology is built appropriately and all data layers are geo-referenced with the high resolution satellite imagery.
 - Perform Quality Check & Quality Assurance to ensure data consistency and appropriateness.
- The time period allotted is within 02 months after finalization and submission of SRS report.

C. Data Base Creation

- Creation of spatial data base
- GIS Database shall be prepared for NKDA area which includes Action Area -1, 2 & 3 using the existing high resolution satellite imagery. Digitization of Action Area-I has already being completed. Attribute entry and other validation will be done for total area of New Town Kolkata.
- Perform Quality Check & Quality Assurance to ensure data consistency and appropriateness.
- GIS database shall be uploaded into Web GIS server and hosted from the test / deployment server of NKDA to facility for view, query & testing purposes.
- The time period shall be within 01 month after completion of Phase-2 (Digitization of MAP).

D. Overall Solution Architecture:

The vendor will make a solution architecture of the envisaged GIS solution eliciting the various components jointly making the overall solution.

The vendor shall provide in their proposal the functional and the technical architecture of the GIS Solution. The vendor shall also clearly show how the solution can integrate and interoperate with software solutions of NKDA (both current and future).

The overall solution should adhere to the design policies amongst others such as availability, reliability, scalability, interoperability, security and manageability

E. Integration with e-governance

To be completed within 03 (Three) months after Data Base creation. It is stated in most clear terms that the GIS Solution developed should be integrated with the existing e-Governance software and application running in NKDA. In this regard it is made clear that the GIS solution should be interoperable so that it can integrate with future e-governance application as well. List of indicative service to be enabled is the GIS System.

- **Record of Title (Mutation).**
- **Building Plan Sanctions.**
- **Occupancy Certificate & Partial Occupancy Certificate.**
- **Water, Sewerage & Drainage connections.**
- **Property Tax & Water Revenue Management System.**
- **Solid Waste Management System.**
- **Engineering Works.**

It is made clear that the vendor shall be responsible for integrating the existing and proposed e-Governance software with the GIS Solution

F. Pilot run

The complete end-to-end functionality of above-cited applications shall be demonstrated to the Technical Committee along with NKDA / HIDCO officials. This activity shall be undertaken and completed within 01 month from the completion of Phase-2 (GIS database creation).

G. Customization

The vendor shall collect the feedback from the Technical Committee and incorporate the changes in the GIS Solution. Technical Committee shall evaluate the Pilot run amongst others in terms of completeness of the solution vis a vis the requirements, ease of usability of the solution etc.

Gaps, if any, shall be communicated to the vendor and the accordingly changes shall be made in the solution.

H. System - Go Live:

On completion of the suggested changes made by the Technical Committee, Implementation and Data Porting; final testing of the application and data consistency shall be conducted after which the application can go-live after duly accepted by Technical committee. The entire web application will be deployed in to Server of NKDA.

***An indicative list of hardware which would be procured by NKDA is provided in Annexure -7
The solution shall be hosted in the hardware as indicatively listed in the Annexure -7.**

7. Technical Requirements

The proposed web-based geo-portal has to be developed using Web based Server based on OGC/ ISO standards. The web portal should allow the users spread across the internet, to view and query the spatial information and the related maps. This information shall be picked from a central server repository. The Central repository will be on standard RDBMS package. The component should be an integral part of the system and users will access this component through the portal. The portal should cater to WMS/WFS/WCS/CSW and other Portal services. Post implementation services and support on all software products in the solution based on the latest versions of OGC/ ISO technical specifications should be provided by the vendor free of cost for a minimum period of five years. Map services must also be created to access the spatial data from the repository. Based on the security features of the Web portal, users will be allowed to access the various services.

8. System Architecture:

The proposed system will be a web based system built to serve the users spread over the Internet and intranet. The software should be Service Oriented Architecture. In the proposal the vendor shall clearly show the various layers of the software. The server-side will host the web enabled database for serving spatial data already existing with NKDA. NKDA will be able to run the web applications for different geo-web services on web browsers. Typically, the NKDA will request information from an Internet server holding the data repository. Then the server will process the request and send the information back to the NKDA viewer. The server components, i.e., the web server/application server and the data server will form a part of the server architecture. Only authorized/registered NKDA and other departmental staffs will have access to the server application/ database. External users i.e. citizens/ stakeholders/ General Viewers will view the GIS application at certain level.

This architecture will have to be developed specifically for Internet applications for publishing spatial data. It should also meet server capacity needs as web site access demand increases.

The Web Server will host HTTP server and perform content caching, etc. while application server will host the applications for providing portal services. The database servers will host RDBMS. A hardware firewall will check all the dataflow between the Web Server and the database server. The users of the system will access the web application. The database will be accessed by the web application only. This will provide a clear segregation of three different layers such as user interface, application & business logic and database layers.

9. Training

Selected Vendor shall conduct 10-days training on the GIS solution and the customized application.

- Conduct Change Management Workshops / training for the staffs.
- Detailed trainings to end users in multiple batches department-wise.
- Training to IT staffs for system administration and management.
- The Vendors are required to propose a training plan as a part of their proposal.

10. Project Management and Governance

The vendor shall deploy a team of resources to successfully execute the project. It is expected that vendor shall ensure continuity in the team composition. The Vendor in the proposal shall provide the team members who would be working in the project.

Project Progress Reporting

The Vendor has to submit weekly work progress and reports to the NKDA. They should include but not be limited to the following:

- Design, plans and schedules.
- Minutes of project related meetings.
- Project Progress Reports.
- Monthly Highlight Reports.
- Quality Assurance Plan and Report.
- Project Evaluation Review and Report.
- Post Implementation Review Plan.

At the time of project development a detailed project shall be prepared based the requirements study, priorities of NKDA and its dependencies. Each software application listed above shall have iterative customization and development timeframe followed by a User Acceptance Test (UAT). The UAT shall comprise of Training to the users.

11. Project Implementation Timelines:

Completion time for the entire work is 8 months from the date of issuing the formal work order. Timeline for deliverables for phase wise.

Sl No.	Work to be Carried out	Time period for completion of work
01	System Requirement Study (SRS) (a) Stage-1 (b) Stage-2 (c) Stage -3	01 month
02	Data Development Phase (Phase-2) (Digitization of MAP)	02 months
03	Data Base Creation	01 months
04	Integration with e-governance	03 months
05	Pilot run, Testing, Go-live, customization, acceptance	01 month

The time period provided in the table above for the different deliverables are sacrosanct for NKDA. The vendor may however choose to perform some of the above work in parallel. The project management plan should clearly elicit the work activities, resources / man power deployed and deliverables w.r.t to time period to NKDA.

12. Testing and Acceptance Criteria:

Acceptance Criteria Pre-UAT:

The Pre-UAT carried out by user will be used as acceptance criteria. All Blocking bugs will be fixed before delivering the next iteration. The delivery of the iteration will be accepted if there are no blocking bugs.

Acceptance Criteria UAT as final delivery:

The UAT will be carried out by users will be used as acceptance criteria. All Blocking and Major bugs from all iterations are required to be fixed to accept the complete delivery.

A defect tracking system will be installed to have access for both the parties for defect management.

13. Intellectual Property Rights:

All the Software along with the data that has been developed for NKDA shall remain the exclusive Intellectual Property of the NKDA and the vendor shall not disclose it to any other party. However NKDA shall be entitled to fully use the software thus created at any number of location of NKDA without any royalty or license fees.

Before the System –Go – Live the Vendor shall handover the source code in two copies in CDs to NKDA for their exclusive use.

The O&M period for the solution is 5 years after System – Go –Live. At the end of each O&M year, the vendor shall submit the source code in two copies in CDs to NKDA

14. Service Levels and Agreement Validity:

The service level agreement shall be effective from the date of execution by the two parties and shall remain valid for the period starting from the date of signing of this agreement and sealing of the same till the date of the deliveries within the scope of agreement. All the terms and conditions mentioned in the offer proposal shall be part and parcel of the agreement. Any addendum or corrigendum shall also be an integral part of the agreement.

a) Performance Requirements

The system is expected to respond to the initial user input within 5 seconds. This response should be measured by reference to the time between initial input, and the subsequent response, at the interface between the network and the web server, of the server infrastructure.

Conditions	Coverage Hours	Baseline Performance	Measurement and Reporting	Penalty
PORTAL APPLICATIONS & SERVICES				
Portal and GIS Solution Availability	24 X 7 X 365	99.7%	Measure Daily Report Monthly/ Quarterly Using an automated tool with no manual intervention.	Less than 99.7% but more than 95%: penalty 3 % of Equated Annual Installments (EAI) Less than 95%: penalty 15 % of EAI

Condtions	Coverage Hours	Baseline Performance	Measurement and Reporting	Penalty
Performance	24 X 7 X 365	99.7%	Measure Daily Report Monthly/ Quarterly	Less than 99.7% but more than 95%: penalty 3% of EAI Less than 95%: penalty 15% of EAI
Security	24 X 7 X 365	0	Measure Daily Report Monthly/ Quarterly	More than 0 and Less than 3 Security Breaches: penalty 10% of EAI for each Security Breach More than 3 Security Breaches: penalty 25% of EAI for each additional Security Breach
System Backup	24 X 7 X 365	0 Data Loss	Measure Daily Report Monthly/ Quarterly	Penalty of 10% of EAI for each data loss case.
Helpdesk Service Availability	Business Hours (BH)	99%	Measure Daily Report Monthly and Annually	Less than 99% but more than 95%: penalty 1% of EAI Less than 95%: penalty 10% of EAI.
SLA REPORTING				
Generate Monthly Operations and Performance Reports a. Weekly Report b. Monthly Report	Business Hours (BH)	2nd business working day of respective subsequent week or/ month	Measured Weekly & Monthly	Penalty of 1% of EAI for each non-compliance

b) Penal Action:

If the Successful Vendor is not able to complete the entire work with in the time frame than 0.25% of total work value as per work order will be deducted for each extra day subject to a maximum of 10%.

15. Documentation and User Support

Three set of the following documentation shall be provided both in Hard and Soft copy.

- System Design Document.
- Operational Manual.
- Database Dictionary and Schema.
- Training Manual (Bengali & English) etc.

Vendor must provide details of the documentation, which they will provide, as part of their proposed solution. Details of any arrangements for the provision of user support must also be provided.

16. Help Desk Support

- The vendor is required to set up helpdesk facility at the Department. This Helpdesk should be manned by two technically competent resources. The Help Desk would start operating after System Go Live.
- The Help Desk team shall provide technical support, handholding support and training services as part of the post implementation services on a scheduled basis as well as on a need basis for a complete period of defect liability and the support for next five years.
- The working hours for the Help Desk team shall align with NKDA office hours uptime for the entire contract period.
- The help-desk personnel must have good understanding of the project, the technical, functional and operational details of the technologies involved, including a very good understanding of the application software. Personnel at the help desk must comprise of at least one person who can able to update GIS map.
- Vendor shall ensure that the services and performance adhere to SLAs regarding the required uptime for maintaining the quality of service. A monthly, quarterly and yearly summary must also be submitted to NKDA.

17. Operation and Maintenance of Software

The Vendor is required to provide support service on planning, implementation, fault diagnosis and resolution, consultation, and updating services on:

- All the proposed software for the development, implementation and operation of the System.
- The online applications.
- The online supporting applications developed for updating the servers.
- Cost of any change request (CR) or patches in the Application Software will be handled separately depending upon the severity impact of the CR and this will be decided by NKDA at that time.
- Maintenance Charges will include Warranty Period of five years.
- The Vendor shall upgrade the application software, interfaces, system software, browser and any other supporting software to their new releases and versions within the quoted price within the project duration of five years and subsequent AMC, if any.
- The Vendor shall monitor system performance and capacity.
- The Vendor shall process ad hoc requests.
- The Vendor shall perform change management and quality assurance.
- The Vendor shall update document to reflect changes.

○ The Vendor shall make recommendations on system changes.

Support and maintenance of the proposed solution during implementation and in live running is included in the scope of this RFP. Vendors must therefore provide details of how they would provide with a comprehensive support and maintenance package for their proposed solution.

Support and maintenance methods must address the Software, Modifications, Interfaces, and future enhancements. Vendors should therefore indicate how they propose to address tasks such as:

- Resolution of Application faults.
- Maintenance of application documentation.
- Application of future upgrades and standard releases.
- Logical design for enhancements to the system.
- Physical design.
- Configuration Management.
- Integration.
- Construction.
- Application Testing.
- System Testing and Installation.

18. STQC Testing and Certifications

Vendor is required to follow DIT standards & should ensure that under go with STQC testing. Vendor should proposed detailed description about. The Vendor shall go with STQC test before Go-Live.

Vendor shall undertake an exercise of Testing, Acceptance and Certification of systems implemented for the project through a third party agency (referred to as Quality Assurance/Certification Consultant or consultant) for Software, Hardware, Networking and Security. As soon as the Agency declares the system to be ready for the exercise. The following methodology will be adopted:

- a) Vendor shall co-ordinate with Third party for testing & Certification.
- b) Vendor shall nominate a suitable neutral and technically competent consultant for conducting acceptance testing and certification.
- c) Vendor shall abide the laid down set of guidelines & accepted norms for GIS application, for the testing and certification in all aspects of project development and implementation covering software, hardware and networking including the processes relating to the design of solution architecture, design of systems and sub-systems, coding, testing, business process description, documentation, version control, change management, security, service oriented architecture, performance in relation to compliance with SLA metrics, interoperability, scalability, availability and compliance with all the technical and functional requirements of the RFP and the agreement.
- d) Vendor shall ensure that the guidelines are being followed and all documentations are maintained from the early project development phase to avoid large-scale modifications/errors.
- e) Vendor shall establish appropriate processes for notifying the concerned department in case of any deviations from the norms, standards or guidelines at the earliest instance after noticing the same to enable the Agency to take corrective action.

- f) Such an involvement of and guidance by the agencies will not, however, absolve the Agency of the fundamental responsibility of designing, developing, installing, testing and commissioning the various components of the project to deliver the services in perfect conformity with the SLAs.

19. Technical Evaluation Matrix

Technical Score - Max. Marks 100; Min. Qualifying Marks 70. The Vendor has to score a minimum 50% (Except Section. 1) of maximum marks for each section in addition to score aggregate 70.				
Sl. No	Parameter	Unit/Scale	Max. Marks	Marks obtained by Vendors
Section .1			Section 1. Max Marks - 5	
	Company Quality Certifications:	1. ISO Certification 9001:2008/ CMM Level 3 or higher	5	
Section. 2			Section 2. Max Marks - 20	
	Experience in Digitization of Map	For >5 nos	20	
		For >2 and <=5	15	
		For>1	5	
Section.3	Completion of Web GIS application		Section 3. Max Marks – 20	
		Web GIS application municipal corporation/ Govt. department.	10	
		Above Software Successfully in use for 2+ years	10	
Section.4			Section 4. Max Marks - 10	
	Average Annual turnover of Lead Vendor for the last 3 years	Rs. 10 to 20 Crore	5	
		Above Rs.20 Crore	10	
			Section.5 - Max Marks 20	
Section.5	Functional fitment to Requirements		5	
	Ability to Interoperate with other System		5	
	Capability to integrate with existing and future e-Gov application		5	
	Project Implementation Approach		5	
Section .6			Section Max Marks - 20	
	Technical Presentation		20	

	Total		100 Mark	
--	-------	--	----------	--

(Supporting documents to be annexed for each parameter)

N.B : All Bidders have to submit a Brief Write Up on Section.5 indicating the Functional fitment to Requirements, Ability to Interoperate with other System, Capability to integrate with existing and future e-Governance application, Project Implementation Approach. In Technical Presentation section bidders have to highlight these points.

Financial bid of only the Vendors securing 70 qualifying marks in technical evaluation, shall be opened for financial evaluation.

Presentation of Proposed Work:

Vendor will have to present a Demo proposed work. NKDA will provide sample Map and corresponding dummy data and related files. Within Two days as mentioned in important dates Vendors have to demonstrate the work. Technical Committee will check the result and output. Maximum Time for each Vendor will be 20 min.

ANNEXURE –1**Experience in Digitization of Map on Municipal Corporation / Other Govt. Dept.**

Sl No	Period / Date	Agency for whom it is prepared	Total Area	Detail Scope of Digitization	Project Cost Rs. Lacs	Remark

Pl. attach proofs / Work Order/ Completion certificates.

Signature

Name

Seal

ANNEXURE-2**Experience in Web GIS Solution on Municipal Corporation / Other Govt. Dept.**

Sl No	Scope of the GIS Solution	Total Area (in Sq Km)	Agency for whom it is prepared	Go Live date	Running Status	Remark

Pl. attach proofs / Work Order/ Completion certificates.

Signature

Name

Seal

ANNEXURE-3**Other Project Details**

Sl No	Scope of the Solution	Total Area (in Sq Km)	Agency for whom it is prepared	Go Live date	Running Status	Remark

Signature**Name****Seal**

ANNEXURE-4**Bidder Details**

1. Name of the Bidder :
2. Address :
3. Chief Responsible Person
and his qualifications :
4. Telephone No. :
5. Fax No. :
6. E-mail :
7. Status of Co-registration :
8. Date of Incorporation :
9. Date of starting Business :
10. Field of Professional Experts :
11. Total experience in(years)
Digitization of Map in Corporation and
Other Govt. Dept. Project :
12. Total experience in(years)
Web GIS in Corporation and
Other Govt. Dept. Project :
13. Total number of GIS Project
on hand :
14. Number of key personnel (Technical) :

Signature**Name****Seal**

ANNEXURE –5**LIST OF KEY PERSONNEL & QUALIFICATION TO BE DEPLOYED FOR
THIS PROJECT**

Field of specialization	Qualification	Experience No. of Years	No. of Projects handled

Signature**Name****Seal**

GUIDE LINE FOR BIDDERS:

1. Bidders are requested to seek and obtain clarification, within specified time during the pre-bid meeting. Tender Selection committee shall aggregate all such clarifications and shall prepare a response, which shall be published in the official website of NKDA.
2. Bidders are requested to inspect and read whole document before offering their Bids.
3. No claim for revision of inputs, on any ground after submission of the offers, shall be entertained by NKDA.
4. Participation by any agency / firm / concern who intend to work under Joint Venture with other agencies / firms / concerns, are not allowed.
5. Evaluation of Technical Bid criteria as set in the RFP document submitted in response to information submitted by the agency / firm / organisation/institution in the Input sheets.
6. The Bidder should designate one person (“Contact Person” cum “Authorised Representative and Signatory”) authorized to represent the Bidder in its dealings with New Town Kolkata Development Authority . This designated person should hold the Power of Attorney and be authorized to perform all tasks including but not limited to providing information, responding to enquiries, entering into contractual commitments on behalf of the Bidder etc.
7. New Town Kolkata Development Authority reserves the right to reject any or all of the bids (at any stage) including the lowest one without assigning any reason whatsoever.
8. Mere submission of information does not entitle the Bidder to meet eligibility criterion. New Town Kolkata Development Authority reserves the right to vet and verify any or all information submitted by the Bidder.
9. If any claim made or information provided by the Bidder in the bids or any information provided by the Bidder in response to any subsequent query by New Town Kolkata Development Authority, is found to be incorrect or is a material misrepresentation of facts, then the Bid will be liable for rejection. Mere clerical errors or bona-fide mistakes may be treated as an exception to ignore at the sole discretion of New Town Kolkata Development Authority.
10. The Bidder shall be responsible for all the costs associated with the preparation of the bids. New Town Kolkata Development Authority shall not be responsible in any way for such costs, regardless of the conduct of outcome or this process.

GUIDE LINES FOR BIDDERS REGARDING E-TENDERING:

The Instructions/ Guidelines for electronic submission of the tenders have been elucidated in this section for assisting the contractors to participate in e-Tendering.

1. Registration of Contractor

Any contractor willing to take part in the process of e-Tendering will have to be enrolled & registered with the Government e-Procurement system, through logging on to <https://wbtenders.gov.in> (the web portal of public works department) the contractor is to click on the link for e-Tendering site as given on the web portal.

2. Digital Signature certificate (DSC)

Each contractor is required to obtain a class-II or Class-III Digital Signature Certificate (DSC) for submission of tenders, from the approved service provider of the National Informatics Centre (NIC) on payment of requisite amount. **Details are available at NIC (National Informatics Centre) Web Site and are stated in Clause 2 of Guideline to Tenderer. DSC is given as a USB e-Token.**

3. Search & Download

The contractor can search & download NIT & Tender Documents electronically from computer once he logs on to the website mentioned as above in Clause 2 using the Digital Signature Certificate. This is the only mode of collection of Tender Documents.

4. Submission of Tenders.

Tenders are to be submitted through online to the website stated in Cl. 2 in two folders at a time for each work, one as Technical Proposal & the other as Financial Proposal before the prescribed date & scanned and Digitally Signed. The documents will get encrypted (transformed into non readable formats).

5. Technical proposal

The Technical proposal should contain scanned and digitally signed copies of the following further two covers (folders).

A-1. Statutory Cover Containing:-

- a) Demand Draft mentioned in the RFP, in favour of “New Town Kolkata Development Authority” payable at Kolkata.
- b) RFP document with all addenda and

A-2. Non-statutory Cover Containing:-

Click the check boxes beside the necessary documents in the My Document list and then click the tab “Submit Non Statutory Documents” to send the selected documents to Non-Statutory folder. Next Click the tab “Click to Encrypt and upload” and then click the “Technical” Folder to upload the Technical Documents.

Sl No.	Category Name	Sub-Category Description	Detail (s)
A	Certificate(s)	Certificate(s)	Company Registration Certificate. PAN. P Tax (Challan) Service Tax TIN /TAN Import / Export License (if any) Latest IT Receipt. Auditor Certificates for business turn over in last 3 financial years. Other certificate as mentioned in REF document.
B	Company Detail(s)	Company Detail	Proprietorship Firm (<i>Trade License</i>) Partnership Firm (Partnership Deed, Trade License) Ltd. Company (Incorporation Certificate, Trade License) Society (Society Registration Copy, Trade License) Power of Attorney. Proof of address from any Govt. Department, local authority, MLA, Councilor of the area with telephone no. etc.
C	Input sheets for the bidders	All supporting documents in support of the information stated in the input sheets are to be submitted.	ANNEXURE – 1 to ANNEXURE – 5.

B. Financial proposal:-

- i. The financial proposal should contain the following documents in one cover (folder) i.e. Bill of quantities (BOQ). The contractor is to quote lump sum rate online through computer in the space marked for quoting rate in the BOQ.
- ii. Only downloaded copies of the above documents are to be uploaded virus scanned & Digitally Signed by the contractor.

6. The following shall be submitted digitally signed by the bidders without which the tender is liable to be rejected.

R.F.P with subsequent corrigenda issued thereon, if any.

Tender document consisting Scope of Work, Terms and Conditions, Technical Specifications, Maintenance Contracts, RDBMS specification, Working and User Diagrams, Hardware Details and Time Schedule etc.

- i. Schedule of work / BOQ

**Superintendent Engineer
New Town Kolkata Development Authority**