Government of Uttarakhand, Finance Department
Uttarakhand Public Financial Management Strengthening Project
Center for Training and Research in Financial Administration, (CTRFA)
UTTARAKHAND, INDIA
REQUEST FOR EXPRESSIONS OF INTEREST
(CONSULTING SERVICES – FIRMS SELECTION)

India
Uttarakhand Public Financial Management Strengthening Project
Loan No.: IBRD 8928

Assignment Title: ***Consulting services for Development of an Urban Observatory for Government of Uttarakhand***

Reference No. (As per Procurement Plan): IN-CTRFA-272378-CS-QCBS

Request for Expression of Interest for: ***Consulting services for Development of an Urban Observatory for Government of Uttarakhand***

(CONSULTING SERVICES – FIRM SELECTION)

Application Deadline:	29th January 2022
Type of Contract:	Consulting Service-Firm Selection
Nature of Contract	Lump Sum Contract
Method of Procurement:	QCBS
Expected Duration of Assignment:	24 Months

Assignment Title: ***Consulting services for Development of an Urban Observatory for Government of Uttarakhand***

Reference No.: IN-CTRFA-272378-CS-QCBS   Date 8th **January 2022**

The GoUk has received a loan from IBRD for the Uttarakhand Public Financial Management Strengthening Project (UkPFMS) and intends to apply a part of the loan proceeds for this assignment toward the Consulting services for Development of an Urban Observatory for Government of Uttarakhand

The objective of this consultancy is to develop and operationalize an Urban Observatory at state level for all ULBs. The Observatory will be at two levels one which will have data at state level and another at ULB level. The detailed TOR is attached.

The Finance Department through the Center for Training and Research in Financial Administration (CTRFA) now invites eligible consulting firms ("Consultants") to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. The minimum required qualifications/criteria are available in Annexure 1 and terms of reference of the assignment can be accessed on the website http://www.uttarakhandaudit.uk.gov.in or from CTRFA.

The attention of interested Consultants is drawn to paragraph 3.14 and 3.17 of the World Bank Procurement Regulations, July 2016 revised in November 2017 and August 2018 ("Procurement Regulations"), setting forth the World Bank's policy on conflict of interest.

Consultant may associate with other firms to enhance their qualifications, but should indicate clearly whether association in the form of Joint Venture and/or sub-consultancy. In case of a Joint Venture, all the partners in a joint venture shall be jointly of severally liable for the entire contract, if selected

A Consultant will be selected in accordance with the **Quality Cost Based Selection (QCBS)** method set out in the Procurement Regulations.

Further information can be obtained at the address below during office hours *1000 to 1700 hours IST*.

Expression of Interest in the prescribed format along with relevant annexures must be delivered in a document form (hard copy or electronic pdf) at the address or mail id given below (in person, by post or by email) latest by 29th **January 2022.**

<div align="center">

Project Director
Uttarakhand Public Financial Management Strengthening Project
91 Race Course, Near Police Line
Dehradun Pin 248001, Uttarakhand
Tel:+91-135- 4079338 (O), **Mob: +91-9358119541, 9718323174**
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Annexure 1: Minimum Required Qualifications Criteria

S. No.	Basic Requirement	Specific Requirements	Supporting Documents Required
1)	Entity	Must be a legally constituted entity	Copy of the Certificate of Incorporation and constitutional documents
2)	Turnover	Should have an Annual Turnover of at least Rs. Five Crores and positive net worth during the last three financial years (2020-21, 2019-20, and 2018-19.	Certified copy of the audited financial statements OR certificate from a Chartered Accountant in the format provided.
3)	Overall experience	Should have at least 05 years' experience of working in common measurement framework with indicators, ,Develop a dashboard, Populate indicators and prepare data for key data fields based on secondary data, Handholding and training capacity	Self-certification of details of the experience
4)	Technical Capability	Should have proven track record of having successfully carried out minimum one (1) assignments of working in common measurement framework with indicators, ,Developing a dashboard, Populating indicators and prepare data for key data fields based on secondary data, Handholding and training capacity on above in any Government Departments /Government entities in last five years	Work completion certificates from client (OR) In case of ongoing consultancy, the copy of the work order to be submitted.
5)	Staff	Should have at least 10 staff/consultants with relevant qualifications and at least 5 years' experience in any of the above areas.	Self-certification of list of such staff with qualification and experience as per format provided.

Instructions

1. Please provide the minimum details as required in the format. Non-completion of the format may lead to rejection during evaluation.
2. The consultant can add other materials about the Organization and other relevant details as annexures.
3. Please provide all documents requested as annexures.

General Particulars of Consultant

Name of the Consultant	
Registered Address	
Phone No:	
Email id:	
Name of the Contact Person for this EoI	
Phone no. of the Contact Person for this EoI	
Email id of the Contact person for this EoI	

Particulars of Consultant

Date of Consultant's establishment	
Consultants Years of experience	
Registration No. (Company/Society)	
PAN No.	
GST No.	
Number of full time staff	
Do you have a branch office in the State	Yes/No. If yes, please provide the address

If you have a JV please fill the above table for each JV partner separately.

Financial Particulars of the Consultant

Financial year	Turnover	Net worth
2020-21		
2019-20		
2018-19		

Staff Brief Profile ***

Name of Staff	Age	Years of experience	Qualification	Number of years associated with the Consultant	Name of clients handled with nature of work done

*** Please provide detail CVs separately as per format given below

Relevant assignments – Last five years***

Project Name	Funding agency Name	Client Name	Nature of work	Year of Work	Status (Completed/ Ongoing)	Fees
	Central/State/Multilateral/Bilateral funding agency					

*** Please provide detail citation of work separately in the format given below

Detailed Format for Citations

Assignment name:	Approx. value of the contract (in current US$ or Euro):
Country: Location within country:	Duration of assignment (months):
Name of Client:	Total № of staff-months of the assignment:
Address:	Approx. value of the services provided by your Consultant under the contract (in current US$ or Euro):
Start date (month/year): Completion date (month/year):	№ of professional staff-months provided by associated Consultants:
Name of associated Consultants, if any:	Name of senior professional staff of your Consultant involved and functions performed (indicate most significant profiles such as Project Director/Coordinator, Team Leader):
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

<u>*Draft Terms of Reference*</u>

<u>*Development of an Urban Observatory for Government of Uttarakhand*</u>

<u>*Background*</u>

1. India is emerging as the site of the largest urban transition that would unfold over the next two to three decades. This transition will bring not just opportunities through increased economic growth and employment but also challenges as cities will grow leading to demand of services and better planning.

2. Among the Himalayan states, Uttarakhand has seen rapid urban transition. As per Census 2011, Uttarakhand had a population of 1.01 Crores and population growth in this decade was 18.81 percent and out of total population of Uttarakhand, 30.23% people live in urban regions. The pressure on the urban areas and the peri urban areas are increasing due to migration and it expected to increase further.

3. The Urban Local Bodies (ULBs) are going to be critical in the successful implementation of the Sustainable Development Goals (SDGs 2030) as these global goals have direct linkages to day-to- day functioning of the ULBs. Realizing the need to adopt sustainable and equitable growth, the state of Uttarakhand has been proactively progressing towards implementing the 74th constitutional amendment that talks about devolving powers and functions to the ULBs.

4. One of the core elements or foundation of any sustainable development initiative is financial sustainability of the development and any such initiative which is not financially sustainable fails to deliver its intended benefits to beneficiaries by failing much earlier than expected life thus depleting precious resources meant for other initiatives without delivering significant impact. With devolution efforts in place, ULBs intend to grow directly from diverse economic activities, economies of scale and of scope in provisioning of services and as a result would aim to be financially sustainable.

5. The Government of India has begun to acknowledge the enormity of this urban transitionchallenge through the launch of programmes such as AMRUT, Smart Cities Mission, PMAY, HRIDAY, and Swachh Bharat all aimed at transforming urban management. More than capital, the real and urgent obstacle to transforming urban India lies in inability of systems to produce robust data systems which can enable the integration, management and coordination of these disparate processes occurring in today's urbanizing settlements as well as decision making. Improved data systems and institutions will enable the city managers/administrators move towards outcome-based planning in governance. This considers not just the inputs that are reaching the citizens, but also the outcomes. This in turn realistically assess the gaps between the outcomes and the desired goals.

6. ULBs in Uttarakhand are governed under UP Municipal Corporations Act, 1959 and UP Municipalities Act, 1916 amended for the conformity legislation of 1994 following the 74th Constitutional Amendment. After creation of Uttarakhand in 2000, these acts were adopted with only minor changes. Currently, Uttarakhand has 8 Nagar Nigams or Municipal Corporations, 41 Nagar PalikaParishads and 51 Nagar Panchayats - a total of 100 up from 63 in 2001.

7. Reforms in ULBs in Uttarakhand have been done in a piecemeal manner with limited success. Availability of reliable and timely financial and other information is severely constrained in ULBs due to inadequate hardware, software, data standards, reliable data sources, automation of data flows or trained manpower. Over years, hardware availability has improved, but level of standardization / automation and related enablement has been slow due to lack of trained manpower and relevant software / digital platforms and under-utilization of available hardware. Many data sets are available in only manual forms and needs a lot of efforts to trace and assimilate and report.

8. Government of Uttarakhand is embarking on an ambitious program of creating an Urban Data Observatory at state level which will cover all ULBs and under development agencies (UUSDA and Dehradun Smart City) in the state and intends to hire aconsultant for this purpose. This Urban Data Observatory initiative will become data analysis and management hub for the state and would enable evidence-based policy formulation, capacity building of ecosystem partners on data-driven governance

and be the key entry point for fostering innovation in this sector.

9. The Government of Uttarakhand (GoUk) has received a loan from the World Bank to fund the Uttarakhand Public Financial Management Strengthening Project (UkPFMS) and intends to apply a part of the loan proceeds for this assignment. The long-term vision of the government is to improve the service delivery of the ULBs by matching decision making with data, enhance accountability and transparency, and reform the ULBs to make them sustainable. These reforms will be spearheaded and managed centrally by the Urban Development Directorate (UDD) with support from experts in these areas.

Objective of the assignment

10. The objective of this consultancy is to develop and operationalize an Urban Observatory at state level for all ULBs. The Observatory will be at two levels one which will have data at state level and another at ULB level.

11. The expected outputs of the assignment are:
    a) Establish a common measurement framework with indicators;
    b) Develop a standardize data management protocols;
    c) Define institutional structure
    d) Develop a Dashboard and software;
    e) Conduct Pilots to test the indicators and dashboard in selected ULBs – 8 Nagar Nigams
    f) Carry out Data Migration and Digitization in all ULBs
    g) Roll out indicators and dashboard in all ULBs
    h) Provide capacity building and handholding to UDD
    i) Integrate the other report initiatives undertaken by Urban Development agencies with the assistance of UKPFMS & other associate institutes.
    j) To provide avenues for individuals, research scholars, civil society's different information desired by them with feedback mechanism and complain redressal system.

12. The expected outcomes of the assignment are:
    a) Real time data availability at the state level

b)   Enable informed funding and policy decisions based on up-to-date data

c)   Promote data sharing and knowledge across stakeholders in Urban sector and other

d)   Promote good governance and associates data based smart decision making system at different levels
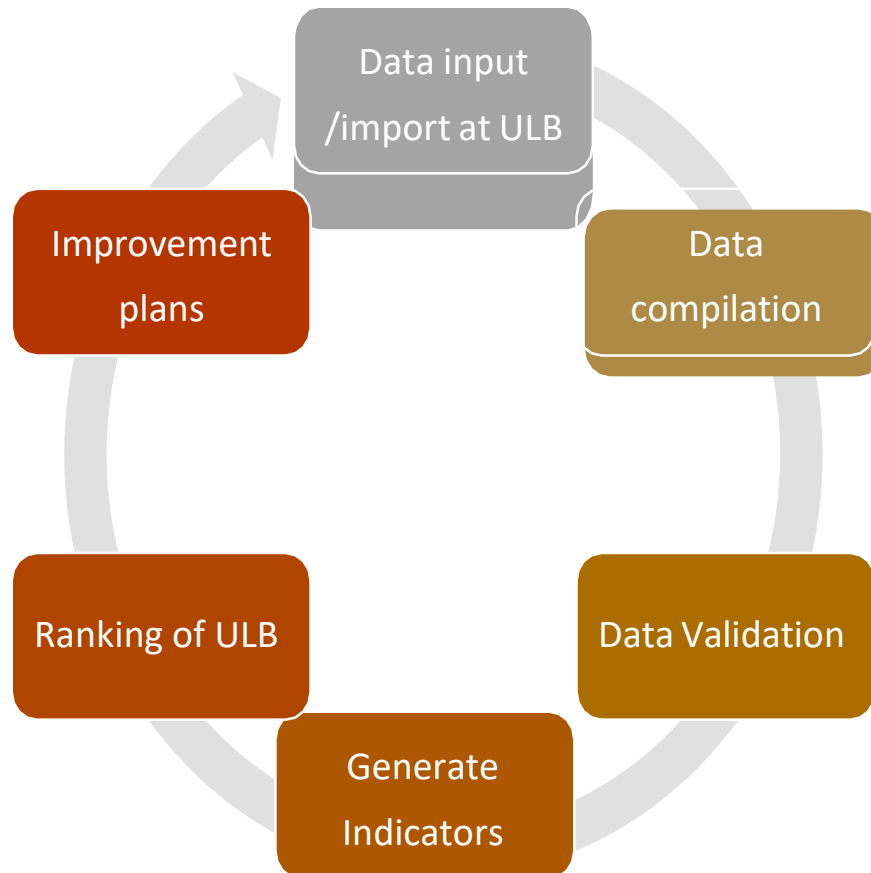
Detailed scope and activities

13. The following are the key activities and scope of work which are inclusive but not exhaustive. The consultant can suitably add other steps as required as part of the methodology. This is an assignment where the deliverable needs to be operationalized in the field and not a mere paper deliverable and consultants should provide adequate care for this aspect both at the time of proposal as well as implementation.

Establish a common measurement framework with indicators:

14. **Study existing systems**: Study current data management systems, assess current indicators being reported / generated across Uttarakhand in ULBs / Urban Bodies (including from national programs).

- The consultant required to study existing data management system of other states as available.

- **Prepare list of indicators:** The choice of indicators will be influenced by the overall needsin the short term and long term, and specific felt needs from the Department and ULB. The consultant will refer to the indicators used by the GOI, as well as indicators used by UDD, other cities, states, and developed countries. The indicators will cover all operational areas of the ULBs as well any aspirational areas as desired by the UDD. The indicators will cover all service areas, finance areas and revenue areas personal and general management. The detailed areas of indicators would be discussed during the Inception report and agreed. The indicators will also cover all ULB projects like AMRUT, Smart Cities, and UUSDA etc. Some illustrative areas (but not exhaustive) are as follows:

    i. Water Supply System.
    ii. Wastewater Management (sewerage and sanitation).
    iii. Solid Waste ,Plastic Waste, Legacy Waste and E Waste Management
    iv. Roads,
    v. Roadside Drains
    vi. Streetlights.
    vii. Disease Control.
    viii. Developments of Parks and Gardens.
    ix. Finances
    x. Revenue Management
    xi. Master Plan of cities

15. While such indicators will be across the categories of city characteristics, inputs, outputs and sectoral outcomes, city characteristics and outcomes are to be prioritized in the short term. This shortlist will also involve discussions with UDD, ULB, and other relevant stakeholders. It should be forward looking and include indicators which are likely to become relevant in the future (e.g., sensor generated data). The final list of indicators will be finalized by the Director UDD.

16. **Define indicators**: Each indicator should have detailed indicator definitions, frequency, and format, owner of the process, data source, and method for calculation. Special attention is to be provided to privacy

aspects to ensure that what is captured is compliant with data protection and privacy policies and laws. These will be integrated into city reporting, as well as third party reporting (e.g. Smart City projects, AMRUT, UUSDA). Some example of indicators is given just for illustration.

| N	Indicators	Formula	Unit	Benchmark	Weightages	Percentage	Evaluation scale	Periodicity of Evaluation
	Collection Efficiency (Property Tax) Current Year	Property tax collected (current year)/ property tax demand (current year)	%					
	Operation and Maintenance cost per street light	Total O & M expenditure/ total No. of street lights	Rs. Per street light					
	Number of Street Lights per Km of Road Length	Total number of street lights/ Total length of roads	nos.					
	% households under door to door collection	No. of households with door to door collection / Total No. of Households	%					

17. **Develop Benchmark for each indicator:** For each indicator a benchmark must be agreed and finalized. For e.g. in case of Water Service delivery LPCD can be kept as a benchmark and the actual performance can be compared. In case of collection efficiency, a benchmark of 90% can be kept and actual performance compared.

18. **Develop Ranking methodology:** Each indicator should have a ranking methodology. This will help in providing points for each indicator for each ULB based on actual performance. This will help in ranking the ULBs and support in devising improvement programs.

19. **Develop Case studies:** Develop a set of practical case studies which can be used for generation of these indicators and demonstration to the cities. These use cases should be for different groups of indicators, and some of these use cases should be demonstrable in the short term.

20. **Develop Data Gap analysis**: Currently most of the data are available in manual form and requires lot of

efforts to trace and assimilate and report. Also, some of the data required for indicators may not be captured currently and needs to be captured. The consultant isrequired to define the data to be captured, the person/department who is responsible for the recording the data and the form of the data either to be done manually or computerized as well as the frequency of recording.

21. **Develop indicators to be monitored at state level and ULB level:** The consultant will prepare two levels of indicators one to be monitored at the state level and one to be monitored at the ULB level. The indicators prepared should be both scalable and comparable for meaningful analysis.

22. **Finalize indicators:** The list of indicators will be finalized with the Director UDD.

23. **Deliverable for this section will be a detailed report which identifies indicators and all associated parameters**
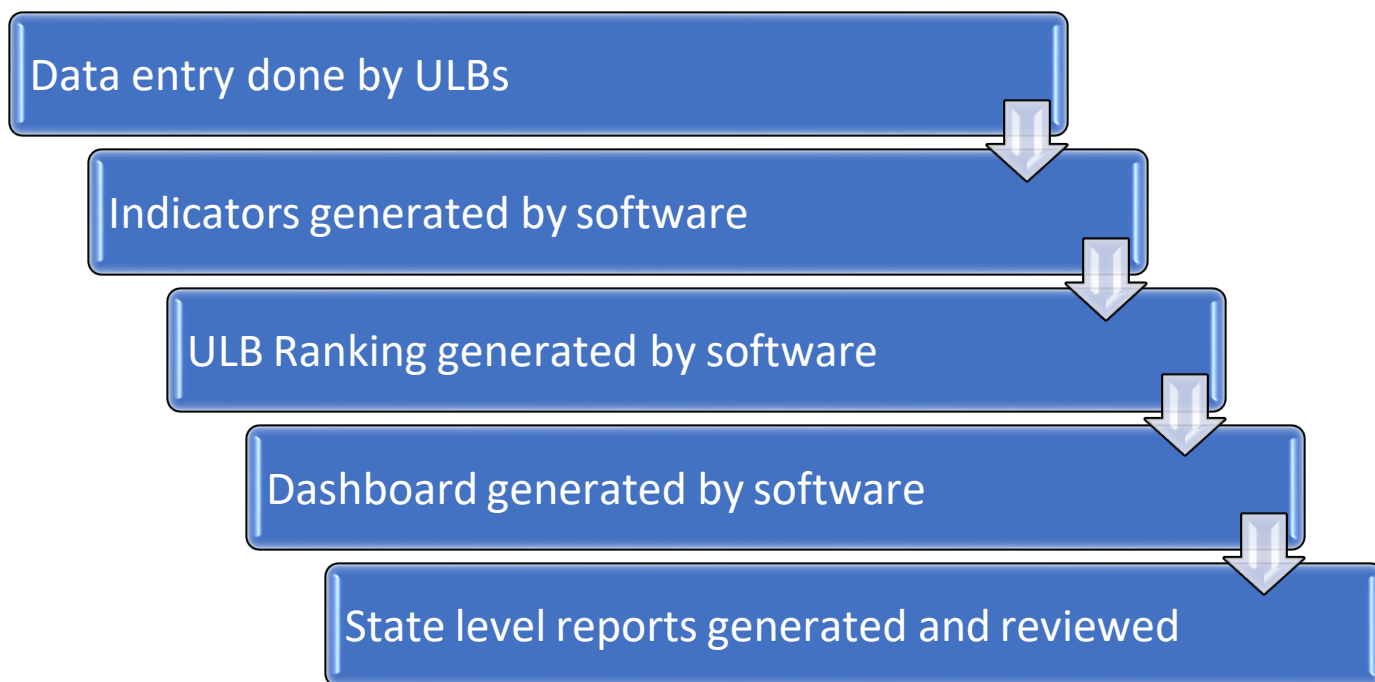
 Develop a standardize data management protocols

24. **Data sourcing and Collection:**
    a) Define a protocol for collecting data for indicators on availability, quality, reliability etc. The protocol should include data governance framework (ownership, existing data, policies, resources, processes etc.).
    b) Explicitly define sourcing of the data in terms of technical nature of data (data types involved,

layout of tables at source and other defining characteristics) as well as current ownership and location of raw source data

    c) Assess gap between current and ideal state of data quality and availability for priority indicators, both in terms of lack of technology and lack of administrative process

    d) While defining a protocol for obtaining data from various sources protocol should account for procedures involved in the requesting and provision of data, as well as the mechanical modifications like elimination of Personal Identifiable Information (PII) and adjusting data to the central ontology. For any data which is breaching PII protocol, Consultant should build a consensus with relevant stakeholders

    e) Prepare a standardized data management protocol which will support in collection of data in future period.

25. **Deliverable for this section will include a detailed report highlighting protocols as above and aspects to operationalize them**

    Define Institutional structure:

26. Propose an institutional structure to support implementation of data governance at State and City levels

27. This should include definition of roles and responsibilities, eligibility and evaluation criteria for selection, organizational structure, institution-institution linkages and job description.

28. Data centric roles newly created should be distinguished from additional data responsibilities given to existing personnel and tied to capacity building

29. Requirements for Core State PMU Team and ULB team needed to run Urban Data Observatory needs to be presented along with recommendation of capacity building requirements if any.

30. **Deliverable for this section will include a detailed report on institutional structure and roles and responsibilities**

    Develop a software and dashboard:

31. **Develop a comprehensive dashboard which include the following**

    a) Develop an interface plan for the platform for both the Department, and other users

    b) For the indicators identified, based on the use cases at Department and City

Government levels, create a set of visual elements for the representation of data/ analysis. This could include spatial maps, heat maps, charts, and correlations etc. which enhance the ability of the users to comprehend data and use it for decision making.

c) Create an input interface for the data at respective data owner levels. The input interfaces need to be aligned to the current reporting practices to make the reporting as effortless as possible and should include intelligent elements such as live error checking, instructions to uploaders, troubleshooting features and access controls.

d) Dashboard should be operational both at state level and ULB level. The Dashboard should undergo user acceptance testing at various stages and all modules should be tested.

e) Dashboard should be easy to navigate and should have drill down facility as well aggregation facility so that details from state level to ULB level and vice versa can be reviewed.

f) Certain reports and features of the dashboard would be made available in public domain. Dashboard should be able to export data to other standard software like excel/PDF which can be used for further analysis.

g) Carry out the benchmarking for the reference group cities and assess the gap between ideal state and the current state. The benchmarking exercise should culminate in a transparent rating of cities on data maturity, along with identification of specific areas of improvement for cities.

h) Develop the platform on a web-portal (with mobile interface capacities) and onboard a first wave of cities/ indicators and show proof of concept of all platform elements

i) Develop prototypes / samples of visualizations that are to be propagated to state and city administrations, as well as a subset of data visualizations that are to be opened up for public consumption and scrutiny

j) Dashboards should be operational both at state level and ULB level and should

be robust and configurable to cater to various stakeholders some of which can be:

  i. ULB In-charge (Municipal Commissioners / Executive Officers).
  ii. District level.
  iii. Urban Development Department Leadership (Secretary/Director).
  iv. Finance Department Leadership (Secretary Finance).

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            State
            Report
          Region report
         District report
          ULB report
```
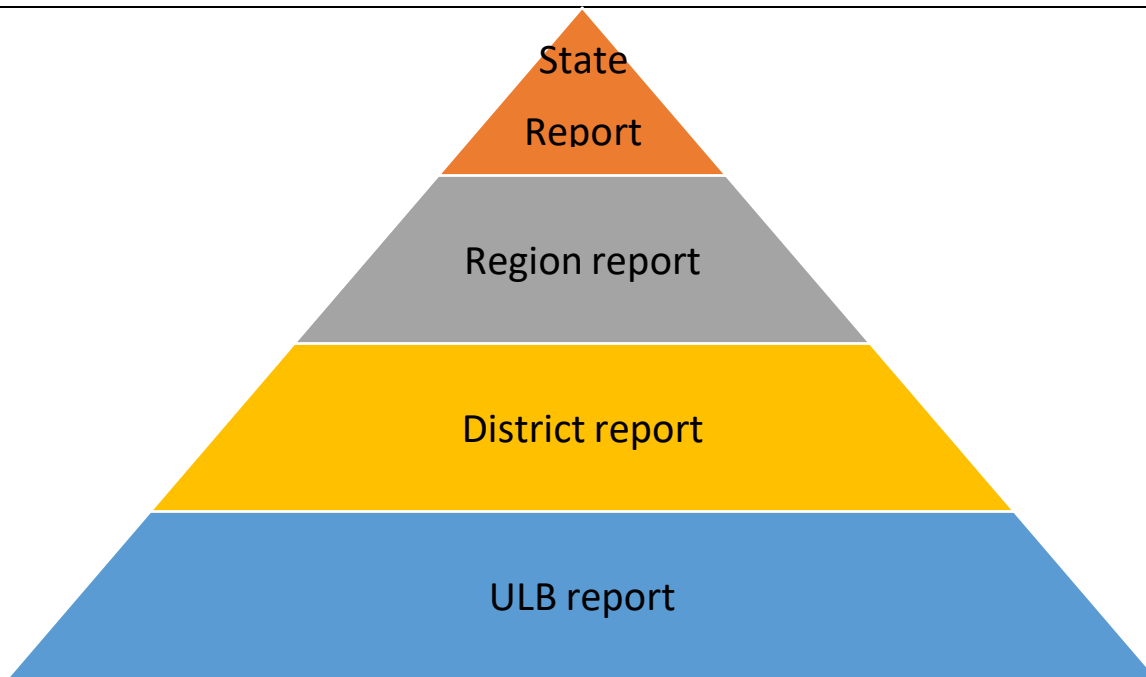
32. **Deliverable for this section will include functional specifications of the application and dashboards which will capture required data. Software and dashboards prototype should be delivered during this phase.**
    Technological solution for software

33. **Open source platform:** The Government of Uttarakhand is implementing DIGIT platform for certain modules. The consultants can either use DIGIT platform which is an open source platform or can suggest any other open source platform which can be used for data collection, analysis as well as providing dashboards. The consultant is required to develop the end to end solution from data entry, to indicators generation to final dashboard and reports generation. The proposed solution should ensure that all data points available in other software's can be imported through APIs while data available on manual records

should be allowed to be entered in the system.

34. The platform architecture should emphasize open data principles, and should have metadata definitions, data standards, and a data catalogue (title, description, keywords, grouping, sector, jurisdiction etc.) for each section/ collection/ theme. It should also have mechanisms to trigger alerts for regular updates of data, and preferably also triangulation mechanisms to compare similar/ related data and provide validation of quality/ identification of inconsistencies

35. The platform should have a separate analytics layer for the collected data. Such layers can be added by the UO, by specific cities/ users or by third parties, through a transparent assessment process.

36. Define standards for third party use of data, contribution of applications and analytics layers and mechanisms to support the same. Citizens, researchers, private sector and think tanks should be at minimum users of this. It is expected some part of Dashboard will be available for Public Access viewing and downloading of reports .UDD will inform the consultant the areas of data which can be given as public access.

37. The platform would be hosted at the Urban Development Directorate (UDD) at State Data Center

38. **Web based application:** As the application will be implemented across the state in all ULBs with multiple users, the application should be able to work on the web. This will support the ULBs to enter the data as well as generate reports.

39. **Digital Solution Implementation**

    a) **Requirement Gathering**

    i. The consultant shall understand the DIGIT platform, along with key features and functionalities.

    ii. The consultant shall carry out a detailed study of the functional requirements of the Solution to formulate the Solution Design Document (SDD)

    iii. The consultant shall visit at least 3 Municipal Corporations, 3 Nagar Palika Parishads and 3 Nagar Palikas to understand the process and shall work with the stakeholders to get a

comprehensive understanding of the gaps as part of the assessment. The Consultant will visit those ULBs as directed by UDD.

iv. The consultant shall conduct workshops with relevant users of the systems wherever necessary, to obtain more details on the requirements of the project

v. The consultant shall compare the prevailing processes and any planned changes to these processes with the Platform / product

vi. The SDD preparation shall consider the Business Process Reengineering (BPR) changes identified during the Requirement gathering stage

    vii. The consultant shall identify the configurations, extensions and integration requirements for the implementation. Any changes required in the proposed processes will have to be explicitly discussed and agreed with UDD and relevant stakeholders.

    viii. Based on the requirements study, consultant shall submit an SDD which should be agreed upon with Director UDD through a formal sign off

    ix. Once the SDD is approved, the consultant would create a High-Level Design (HLD) which should be agreed upon with UDD through a formal sign off. The HLD would consist of deployment design, coding standards, architectural requirements etc.

b) Solution Configuration

i. The consultant shall configure and deploy the solution for delivering all theservices and management functions detailed in SDD

ii. The Solution shall be hosted at the State Data Centre (SDC) on the basis of evaluation of SDC.

iii. The Solution should be able to integrate with the other e-Governance applications if any as determined during the study phase and necessary APIs should be developed for integration

iv. The consultant will procure the SSL Certificates wherever required. The number of SSL certificates will depend on the number of domains.

v. The consultant needs to procure all third-party services like plugins, Google Play store / IOS Store account etc. and handover to UDD post implementation

c) Acceptance Testing, Audit, Certification

i. The consultant must build up an overall plan for testing and acceptance of system, in which specific methods and steps should be clearly indicated and approved by UDD. The acceptance test plan will be defined by the consultant, agreed and approved by Director UDD and will include all necessary steps to ensure complete functionality, operation and performance of the system.

ii. Primary goal of Testing and Acceptance would be to ensure that the project meets requirements, standards, specifications and performance prescribed by the RFP by ensuring that the following are associated with clear, quantifiable metrics for accountability:

      a.   Functional Requirements

      b.   Availability

      c.   Performance

      d.   Security

      e.   Manageability

      f.   Project Documentation

      g.   Data Quality

iii. UAT shall be done centrally. Installation and operation testing have to be done at all installation sites.

iv. It is consultant's responsibility during the tests to evaluate and recommend any further changes to the infrastructure and application, at no extra cost to UDD. Any recommendations for change will be discussed with UDD.

v. Director UDD reserves the right to conduct Third Party Audit for functional, System, process, performance, security, SLA monitoring, hardware & infrastructure, etc.

vi. System would be accepted in a phased manner. The consultant has to ensure the delivery of the system as per Implementation Plan. UDD will accept the system only when the system is up as per implementation plan

(along with data digitization & migration requirement for the respective sub system/module) and the shortlisted Services are getting delivered via the same.

vii.   Functional Requirements: The system developed/customized by consultant shall be reviewed and verified by the UDD and select internal department users (i.e. User Acceptance Testing) against the Functional Requirements signed-off. Any gaps, identified as severe or critical in nature, shall be addressed by consultant immediately prior to Go-live of the system

viii.   Security: Security is the aspect of the service of providing confidentiality and non-repudiation by authenticating the parties involved, encrypting messages, and providing access control. The applications can have different approaches and levels of providing security, depending on the service requester. Security Process will include:

a. Audit of Network, Server and Application security mechanisms

b. Assessment of authentication mechanism in application / components / module.

c. Assessment of data encryption mechanism

d. Assessment of data access privileges, retention period and archival mechanism

e. Assessment for tools provided by consultant for Vulnerability assessment and automated policy compliance tools, Log Correlation, end to end data encryption and various other security tools.

f. Final outcome of this process would be a comprehensive audit report including all Network, Server and Application security features incorporated in this project.

ix.   Project Documentation: UDD shall review the project documents

developed by consultant including requirements, design, source code, installation, training and administration manuals, version control, Layout Plan, etc. Any issues/gaps identified by the UDD, in any of the above areas, shall be addressed to the complete satisfaction of Director UDD. Documentation requirement (but not limited to) are as follows:

a. Technical, Operational and User Manuals for operation of deployed solution

b. All policy documents such as Security Policy, Backup and Recovery Policy, Business Continuity Plan (BCP), etc.

c. Source Code and solution design documents

d. Maintenance manuals for equipment at SDC, Networks, server and other hardware

e. Network Diagrams

f. Documentation of IP and Subnet Scheme, Routing Tables and ACL etc. deployed for Intranet

g. Documentation of device configurations such as firewall, routers, servers etc.

h. Details of IT infrastructure required

i. All the relevant documents related to Implementation and any other document which may be necessary.

j. Data Quality: UDD shall perform the Data Quality Assessment for the data digitized/ migrated by consultant. The errors/gaps identified during the Data Quality Assessment shall be addressed by consultant before moving the data into production environment, which is a key milestone for Go-live of the solution.

40. Data Repository and Infrastructure

a) Define a protocol based on the available technological ecosystem across the state to determine standards of data storage, retrieval, and maintenance over time

b) Plan for necessary infrastructure to create a data repository assisting in its deployment

c) Create and implement standard operating procedures for key processes

(E.g. data validation, evaluation, access control, API approval etc.)

d) Define which parts of the solution will be internal (State/City governments) and which will be global, along with access and security protocols to implement the same. This should be in cognizance of data privacy and protection norms and laws. Such architecture shall be consistent with global practices and Indian regulations on data sharing and use

41. **Deliverable for this section will include a detailed report on technological solution along with infrastructure requirements and SOP. The end to end software along with dashboard will be provided in this phase.**

 Conduct Pilot test in selected ULBs:

42. The Consultant should carry out Pilot testing at two Nagar Nigams, and two Nagar palika, and two Nagar panchayat. The consultant should deploy the software, run these pilots and showcase results for all indicators. The ULBs will be decided by Director UDD for Pilot Study

43. For a pilot set of roles/ stakeholders, provide training and hand hold them during the pilot process.

44. Populate the data from the various owners in a time bound process. Demonstrate the outputs to various users (Department, City Governments) and provide proof of the concept to trigger commitment across user groups in developing the UO further. This first version dashboard should include views on fund use, outcome achievement across service areas across cities, ranking of cities on various indicators, and compliance with directives, data quality and robustness. This first version should also have an exchange section where City managers can share good practices on data management and data use cases.

45. Enter data based on the available secondary data. The consultant is required to prepare forms in which ULB is required to provide data.

46. Critically evaluate the barriers to data sharing on the identified indicators, especially where the data is reported by the City Governments. Such evaluation should include

in depth assessment ofincentive misalignment and approval layers in data collection and disclosure and privacy/data protection concerns of data owners. All data collection and sharing efforts will be fully compliant with the National Data sharing and Access Policy (NDSAP)

47. **Deliverable for this stage would be report on pilot providing the changes needed in the indicators as well as the software. A report on final list of indicators would be provided at this stage. The final software and dashboard will be provided during this phase.**

 Carry out Data Migration and Digitization:

48. The consultant would be responsible for digitization of data currently available in the databases of the existing IT systems to the new Database implemented for the proposed project. The procedure for Data digitization and Migration activities is covered in subsequent paragraphs.

49. Data Migration Requirements: The consultant will ensure that the data migration task is completed before shifting to new application. For data migration activity consultant will:

   a) Procure and maintain any hardware, software, tool or plug-in required for performing data migration and related tasks at no additional cost to UDD

   b) Design data migration plan including acceptance methodology and get it approved from Director UDD. Data Migration plan should also highlight prioritization for data migration based on locations, modules and/or sub-phase

   c) Migration of location/ULB specific data must be completed at least one week prior to start of implementation in that location/ULB

   d) UDD will provide the available data to the consultant for migration purposes in the format as available with UDD/ULB. Consultant will convert to suitable format if required and migrate existing data. Consultant will provide data dump / on-line view access of the migrated data to UDD for verification purposes

e) The consultant will provide checklists for migrated data to UDD for verification, including number of records, validations (where possible) and other controls.

f) The consultant will submit a report on the quality assurance/control and the process adopted duly ensuring the accuracy in the migrated data (100% accuracy is required). Further, UDD/ULB will verify the data digitization on a random sampling basis.

g) Any corrections as identified in the migrated data during Data Quality Assessment and Review shall be addressed by consultant at no additional cost to UDD. Consultant shall berequired to make corrections identified as soon as possible and maximum in a week fromdate of notifying by UDD or timeline as agreed with Director UDD.

50. Data Digitization Requirements: The consultant will be responsible for the data entry and / or digitization of the existing paper-based records / physical files. The consultant shall develop / procure and maintain all the software / hardware / tool / plug-in required for the purpose of digitization / scanning of documents as appropriate. The consultant will formulate the datadigitization plan and the resource plan, in consultation with UDD/ULB.

Roll out

51. Prepare a roll out plan and agree with Director UDD: Based on the success of pilot the consultant is required to prepare a time bound roll out action plan and agree with Director UDD. The plan should be detailed as how roll out would be achieved.

52. Roll out the dashboard across all ULBs. The consultant is required to ensure that the dashboard isrolled out across the state. The consultant is required to prepare forms in which ULB is required to provide data and ensure it is entered in the system. If there are any data issues it needs to be brought to notice of the Director UDD and resolved at the earliest.

53. **Deliverable for this stage would be roll out plan and the actual achievement of roll out in all ULBs with data being populated from the software**.

Capacity building and hand holding

54. Create a training plan across levels. These will include both technical and managerial aspects, and be relevant for government officials, as well as external data users. Convergence with global resources (e.g. MOOCs) will be preferable. UDD will host the core team which advanced data management and analytics capabilities who will in-turn be involved in building capacities of other stakeholders.

55. Provide training to identified staff of UDD

   a) Create Training Plans at following levels:
      i. Training Users of the Urban Data Observatory
      ii. Training Contributors of the Urban Data Observatory (Both ULB and External Stakeholders)
      iii. Training Urban Data Observatory Management, Maintenance and Support Team

   b) The consultant must impart training to the personnel from UDD and ULBs in the operation of the application software, generation of MIS reports, maintenance of User Logins and operations of the backend servers, policies and procedures. All the personnel selected shall be trained on all the modules of the concerned ULB. For all these training programs the consultant should provide necessary course material, manuals for troubleshooting and system admin to the trainees etc. Training Room / Premises, whiteboard, furniture for training would be provided by respective ULBs. However, anyOther infrastructure required such as IT hardware etc. shall be the responsibility of the consultant.

   c) In addition to the trainings conducted centrally for the ULB and the UDD staff, consultant may introduce 'Train the Trainer' Concept for effectiveness and continuity of training for future in-consultation with UDD. For this purpose, consultant may select potential trainers from various ULB staff/UDD staff and grade them as certified trainers. This is a recognition certificate. ULBs may use these selected trainers for conducting their internal trainings.

   d) consultant shall take the feedback from trainees at the end of each trainee

and submit a report to Director UDD

 e) Training shall be imparted in English and Hindi

 f) Consultant shall develop documents, videos, e-contents in English and the local language (maximum 5-15 minutes) and upload on the portal so that users can do self-learning. E- Contents should be prepared for:

  1. Registration into application

  2. Password change

  3. Application/Portal Navigation

  4. Broad functionalities/features of all modules

  5. Walk through of each functionality enabled in the system

 g) Subsequently, on the job trainings/handholding shall have to be provided by the consultant during the O&M period of the project

 h) Provide handholding to UDD through a PMU cell as part of the roll out phase and till 24months

 i) Provide handholding to ULBs through helpdesk and support as part of the roll out phase and till 24 months

Centralized Help-desk Setup

56. UDD requires a helpdesk enabled with IVRS and required software and call management service that will automate processes to consolidate, log, track, manage and escalate incidents and problems. The Service will act as a single point of contact Helpdesk for all ULB employees / users who will record an incident. It will help UDD to accelerate detection and problem resolution, maintain accurate configuration details, and minimize the risk caused by any change

57. Consultant is required to set up, operationalize and run this centralized helpdesk, accessible through telephone, the web portal, mobile phone where the users of the portal can call to register complaints and / or make suggestions (Ticketing System)

58. Minimum 03 helpdesk staffs are expected under this project. However, consultant shall be required to provide satisfactory response to all calls received at helpdesk. Based on number of calls, Director UDD may increase or decrease the number of

helpdesk seats. Resources for helpdesk operation shall be dedicatedly deployed on this project for full time basis. Payment to consultant will be made based on actual number of helpdesk seats.

59. The centralized helpdesk would also facilitate resolution of day to day technical issues faced by the technical coordinators at the ULB level through call ticket management system

60. The centralized helpdesk will :

    a) Track each incident / call to resolution

    b) Escalate the calls to the appropriate levels

    c) Coordinate with respective stakeholders for closure of calls

    d) Analyze the incident / call statistics and provide monthly reports including but not limited to - type

Operation and Maintenance – 10 months to 24 months

61. The consultant will operate and maintain all the components of the proposed solution during handholding period up to 24 months.

62. During the O&M phase, consultant shall customize, implement and manage the Solution in accordance with the service level defined for the project

63. Consultant shall provide operational support and maintenance services for the term of the Project including but not limited to the overall system stabilization, IT infrastructure solution maintenance, system administration, security administration, database administration, network administration and end-user problem resolution. The consultant will have to ensure that the solution is functioning as intended and attending to all problems associated in operation of the application system.

64. Application Solution Management

    a) The consultant will provide full support to ensure that the Solution implemented under this Contract shall have no defect arising from development / customization / configuration.

    b) This support should also cover adapting the Solution for any additional requirement that might come to the notice of UDD at the time of actual use of the

same

c) During the Project term, the consultant shall be completely responsible for defect-free functionality of the Solution implemented under this Contract and shall resolve any related issues (including bug-fixing, etc.) within the duration agreed between the Director UDD and the consultant, at no additional cost to UDD

d) Since it has been considered that application may undergo changes post-go live of application, hence consultant shall deploy required resources during operation and maintenance period. Consultant shall make all the customization in the Application during Operation and Maintenance period as per requirement of UDD without any additional cost / change request to UDD for all the services / modules mentioned in this RFP.

e) The consultant shall provide latest updates, patches/ fixes, version upgrades relevant for the Solution implemented under this Contract.

f) Consultant shall be responsible for Version Management and its documentation reflecting changes or enhancements made in the application including features and functionality. Consultant shall update the Application in form of 'Releases' for any change made post application security audit. Each release will be tested thoroughly by consultant including unit testing, system testing, performance testing and regression testing. Consultant shall submit UAT test cases to UDD with Requirement Traceability Matrix (RTM) for UAT by UDD. All the releases are subject to security audit by Director UDD.

g) All planned or emergency changes to any component of the system shall be through the approved Change Management process.

65. **Deliverables:** The deliverables expected form the consultant shall include,

Deliverables	Timeline from start of the Assignment	Payment after approval from TRC
1. An inception report	Four Weeks	5%
2. Initial indicators report	10 Weeks	5%
3. Final indicators report	16 Weeks	7.5 %

4. Institutional structure report and Data management protocols	16 Weeks	
5. Functional Requirement of Dashboard and software	20 Weeks	7.5%
6. Technological solution along with infrastructure requirements and SOP	20 Weeks	
7. Dashboard and software prototype	24 Weeks	10%
8. Pilot testing (including training for pilot sites) and report on Pilots	32 Weeks	5%
9. Final software and dashboard	36 Weeks	15 %
10. Training, data migration and roll out across all ULBs	Continuous - Tenth month to 24 Months	20 %(3% for every quarter) 8% for last quarter as final payment
11. operations and maintenance period	Continuous - Tenth month to 24 Months	30 % (5 % for every quarter) 10% last quarter as final payment with closure report

Key Experts:

66. The professional requirements of personnel to be provided by the consultant for the Task are given in the following table detailing type of expertise, required skills and experience. The consultant needs to provide CVs of its proposed team for the Key Positions listed in the Table, in the prescribed format. **The team of key professionals shall be adequately supported by junior non-key support functionaries in requisite disciplines including urban reforms and IT. The team will work in close liaison with the local ULB office and respective UDD office.**

67. An indication of the expertise required (full time during the project Implementation) for undertaking this task is given in the table below. The CVs of key experts only would be evaluated.Additional staff may be added as required by the consultants.

S.No	Key Experts	Qualification	Experience
1	Team Leader(one)	• Master's in urban planning OR MBA OR A Officer level in MOUD/State UDD/ULB • Fluent in Hindi& English	• Minimum of 10 years' post qualification experience. • Experience of leading, designing / deploying decision support systems in at least two projects , one of them in government sector whether Department ,PSUs commission/Board /Society under Government • Experience of creating indicator frameworks at least two projects , one of them in government sector whether Department ,PSUs commission/Board /Society under Government • Sound knowledge of working of ULB / City Administration.
2	Data Architect**(1)**	• BE/B.Tech/MCA/ M. Tech/MSc Mathematic / MSc Statistics / MSc Computer Science • Data Architects related Certification would be extra advantage. • Fluent in Hindi &English	• Minimum of 10 years' post qualification experience. • Experience of data transformation projects and Expertise in establishing and governing an enterprise data governance implementation roadmap at least two projects , preference to government sector whether Department ,PSUs commission/Board /Society under Government • Experience of developing data architecture and Expertise in designing scalable architecture at least two projects , preference to government sector whether Department ,PSUs commission/Board /Society under Government • Experience in devising and implementing efficient and secure procedures for data handling and analysis with attention to all technical aspects at least two projects , preference to government sector whether

			Department ,PSUs commission/Board /Society under Government • Expertise in designing and implementing effective solutions and models to store, retrieve, analyses and dashboard varied data at least two projects , preference to government sector whether Department ,PSUs commission/Board /Society under Government
3	ITExpert **(One)**	• BE/B.Tech/MTech/ MCA • Any technology related Certification would be extra advantage. • Fluent in Hindi & English	• Minimum of 10 years' post qualification experience. • Experience of technical designs, code development at least two projects , preference to government sector whether Department ,PSUs commission/Board /Society under Government • Expertise in configuration management and integration / build automation tools to lead and deploy code • Experience in at least two projects, preference to government sector whether Department, PSUs commission/Board /Society under Government working with relevant architecture frameworks. • Experience in performing code reviews, testing, debugging, fixes and improvements at least two projects , preference to government sector whether Department ,PSUs commission/Board /Society under Government
4	Domain Expert(1)	• MoUD/UDD/ULBs senior administrative level (Minimum Grade Pay 5400) officer OR • consultant in MoUD/UDD/ ULBs	• Minimum of 10 years' post qualification experience of working with any Urban Development Department or ULBs. • Experience in schemes of Urban Governance like AMRUT, Smart City Mission, Housing for All, Swachh Bharat Mission etc. would be advantageous. • Knowledge of MoUD service indicators • Understands data sets and data availability in the ULBs / public bodies.

5	Infra /DevOps	• BE/B.Tech/MTech / MCA • Any DevOps related Certification would be extra advantage. ▪ Fluent in Hindi & English	• Minimum of 5 years' post qualification experience. • Expertise in designing and implementing information systems and enterprise-wide infrastructure of large organization at least two projects , preference to government sector whether Department ,PSUs commission/Board /Society under Government • Experience with web technologies and building enterprise architecture roadmaps. • Experience designing, integrating and managing complex infrastructure solutions at least two projects , preference to government sector whether Department ,PSUs commission/Board /Society under Government • Experience in providing technical system solutions, determining overall design direction and providing hardware recommendations for complex data transformation projects at least two projects , preference to government sector whether Department ,PSUs commission/Board /Society under Government
6	Field staff, as required	• BCA /BSC IT/ BE/B.Tech/MCA • Fluent in Hindi and English	• At least two year's post qualification experience. • Should be adapt in software maintenance, debugging and supporting in solving issues in applications. • Experience in data gathering, MIS and related activities

68. **Technical Review Committee:** A Technical review committee headed by the Director (UrbanDevelopment) and comprising of representatives of the ULBs will carry out the review of all the outputs and provide comments which will be shared with the consultant for incorporation. The TRC will endeavor to review and provide the comments at the earliest, but not later than 4 weeksof submission of the reports and will inform the consultant in case of any delays.

69. **Services & Support to be provided by Client**
   a) The assignment will be administratively coordinated by the Project Director UkPFMS.

b) Technical coordination will be done by the Director (Urban Development).

c) The Urban Development Directorate will coordinate with departments for the workshops/training and to designate staff for training and facilitate meetings with the stakeholders. For training, GoUK will provide the venue fooding and lodging, training infrastructure. The cost of trainee travel including TA/DA by UDD but all other requirements training materials stationary will be arranged by the Consultant.

NOTE: We expect the Key experts to be stationed in Dehradun for at least 90% of the man monthsshown in the table. Work from home base is not encouraged

About DIGIT Platform

Overview

The Products provided through the DIGIT platform are:

A. Public Grievance Redressal : PGR System is an application in which citizens can lodge complaints and track them, whereas employees can track, and address grievance incidents raised by the citizens. The platform is available for use in both mediums as web and mobile app.

B. Property Tax: The Property Tax System (PT) provides a digital interface to make property assessments, pay property tax, generate payment receipts and monitor tax collection.

C. Trade License: The Trade License product provides a digital interface, allowing citizens to apply for the Trade License and subsequently make the payment online.

D. Online Building Permission System: The OBPS enables citizens and architects to apply for building permits, online scrutiny of the building plans and issue of certificates and permits

E. Accounting System: The Accounting System is an NMAM compliant application which can be integrated with all the other relevant modules (both internal as well as third party system) with budgetary controls in place. The complete books of accounts can be maintained at one place which enables the creation of financial statements.

F. Water and Sewerage Management : The Water and Sewerage (W&S) module provides a digital interface to apply for water and sewerage connections and, pay the water and sewerage charges for connection/s.

Technologies used for DIGIT Platform

Category	Area	Description
DevOps	SysOps.	(Linux admin (Ubuntu), SSH, Package management, SSL, security, Firewall Rules, Troubleshooting)
	AWS/Azure	(Kubernetes, Instances/VMs, LB, VPC, DB, Volumes, Autoscaling VMs, DNS Routing)
	Dockers	(Create Docker file, understanding docker file, install docker, push, pull, registry)
	Kubernetes 1.12 &Kubectl	(Creating k8s cluster using EKS/AKS/or manual, deploying, scaling & monitoring, troubleshooting the cluster
	Jenkins & CI Pipelines	(Plugins, configurations, Jobs, credentials, scripted CI/CD Pipelines)
	Python and Jinja2 templates	(Install python, pip installation, encode, decode, Jinja2 templates)
	CI/CD Pipeline	(Git Commit => validation => CI Test => Build => Bake Docker Image => Push Image =>DeployTo k8s)
	GitOps	GitBranching, PullRequests, Tagging, Repo Forking, etc

Engg.	Microservice Architecture	https://medium.com/free-code-camp/how-to-scale-microservices-with-message-queues-spring-boot-and-kubernetes-f691b7ba3acf
	Build a REST API	1. React + SpringBoot API + Push to Kafka + Consume & Persist data to PostGres
		2. React + Node API + Push to Kafka + Consume & Persist data to PostGres
	ElasticSearch&Kibana	
	JDBC Query	
	Zuul, Zuul Filters	https://medium.com/@jegasingamjeyanthasingam/zuul-functionality-routing-proxy-and-filters-285f911146ea
	OAuth2	https://medium.com/tech-tajawal/microservice-authentication-and-authorization-solutions-e0e5e74b248a
	Java (OBPS Stack)	Hibernate, Spring JPA, JSP, Jasper Reports, Elastic search, JQuery, Python, Postgres (database), Kibana Dashboard