

## Terms of Reference

### Procurement of a web-based application for establishment of e-PMS software

#### 1. INTRODUCTION AND BACKGROUND:

Himachal Pradesh has a road network of over 38,500 Km comprising of National Highways, State Highways, Major District Roads and Rural Roads. Himachal Pradesh Public Works Department (HPPWD) looks after the construction and maintenance of National Highways, State Highways, Major District Roads and Rural Roads.

The Government of Himachal Pradesh is upgrading about 650 kms and undertaking periodic maintenance of about 1,350 kms of State Road Network (SRN) Himachal Pradesh State Road Transformation Project (Loan No. 9066-IN) under the World Bank funded. Himachal Pradesh Roads and Infrastructure Development Corporation Limited (HPRIDCL) is implementing the Project and intends to apply a part of the proceeds for procurement of a web-based application for establishment of software at HPRIDCL to enhance project planning, construction supervision, OPBMC contract, controlling and monitoring, management and contract administration of contracts of HPSRTP, including training.

The HPRIDC has awarded three civil work contract packages as of May 2021 and rest are in progress, HPRIDC intends to procure of e-PMS software (customization as per requirement) for effective and efficient management of high value contracts result from this project. Afterward this e-PMS module will be integrated with the "***Integrated Management Information System (IMIS) for HPPWD and HPRIDC***".

#### 2. CONSULTANT:

The selection of consultant for the supply of e-PMS software will be made following the CQS (Consultant Qualification Selection) mode under the World Bank Procurement Regulations as cleared procurement activity under procurement plan.

The e- PMS shall be a web-based enterprise level software solution for construction projects management comprising of all functionalities covered under planning, monitoring, contract administration and reporting.

The e-PMS shall be customised and installed for entire life cycle of a construction project from commencement to its completion. It shall help reduce routine activities and speeds up processes.

The e-PMS shall bring together the business processes into an integrated project management System which include Inspection Module, Monitoring Module, Bid Management, Resource Management, Reporting Module, and video display Facility, which guarantees interdisciplinary cooperation between the specialist's areas involved, which provide optimal support for all the business processes. Monitoring and analysis functions shall alert the users to problems and enable them to take corrective measures at any point during a project.

If require arrange for cloud computing and hosting. The cost of cloud computing and hosting shall be included in the services which shall be borne by the supplier of PMS application software Service Provider till project period of 18 months, after successful implementation.

### 3. OBJECTIVE:

- a) Conduct comprehensive As-is assessment and gap analysis of the existing e-PMS and maintenance management practices to develop the strategic Asset Management Strategy roadmap and build scope for an upgraded e-PMS for Himachal Pradesh
- b) Provide and implement a COTS (Custom of the Shelf) internet-based project Management System (e-PMS)
- c) *Deriving from the earlier As-is assessment and Gap analysis, customize the provided e-PMS to suit the needs of HPRIDC and HPPWD.*
- d) Closely work with HPRIDC/ HPPWD to ensure all objectives of the data collection process and PMS is achieved.
- e) Development and adoption of planning tools and Project management plan
- f) Transfer of skills to HPRIDC/ HPPWD staff
- g) Draft Project Management Strategy for HPRIDC/ HPPWD

### 4. PROJECT SCOPE OF WORK:

The project scope has been divided into 5 parts as mentioned below:

#### **Supply of PMS software, Design, Development, Testing, Implementation phase and Develop Mobile Platform+ supply of Mobiles**

##### A. General:

Supply, Installation, Design, Develop, Customize, Deliver, Configure and provide necessary support software on servers and/or desktops that will cater to the English language requirements of application system. Providing the specified manpower for continuing operations and maintenance of the system during the service delivery phase.

##### B. Develop Mobile Platform:

Consultant will Develop mobile platform and identify services that can be developed through mobile devices, facilitating ease of use and faster adoption. The mobile application be uploaded on play-Store & should support both Android and IOs based operating system.

The Supplier shall ensure that all the products are delivered at the sites in good condition and are free from physical damage including but not limited to crushed or broken equipment, missing seals, opened packages and incomplete shipments. Purchaser reserves the right to return the products to the Supplier at the Supplier's expense. This equipment will only be acceptable when each received item corresponds with the checklist that will be prepared by the Supplier prior to shipment. Any shortfalls in terms of number of items received may render the delivered equipment incomplete.

The purchaser will test the equipment after completion of the installation and commissioning at the site of the installation. For site preparation, the supplier should furnish all details to the purchaser sufficiently in advance so as to get the works



completed before receipt of the equipment. Complete hardware and software should be supplied, installed and commissioned properly by the supplier prior to commencement of performance tests.

**i. Deliverables-I**

- Supply of PMS Software at site
- Supply of the Mobile Phone

**C. Requirement Gathering & Analysis:**

The Consultant MUST clearly understand the requirements of the stakeholders and propose solution to meet all the specific business functional, software requirements. The consultant MUST carry out assessment of existing IT system and the proposed solution to arrive on Gap analysis, the relevant documents like As-Is, To-Be, FRS shall be made available to the Purchaser. The entire functional requirement should meet out the purpose for both HPRIDC and HPPWD work flows.

**D. Solution Design & Solution Architecture:**

The selected Consultant will deliver the following deliverables (Indicative but not exclusive) on the basis of the provided Functional Requirement Specification HPRIDC & HPPWD will Review the As-Is, To-Be, FRS prepared by PMC, suggest changes to the Department and finalize the FRS before implementation. The Departments can also add or remove processes /modules / functionalities /items / sub-items before or during SRS finalization to achieve the overall goal of the Project. Deliverables to be submitted include but not limited to:

**ii Deliverables-II**

- Design Documents including APIs for future integration with other systems
- Data Flow Diagram
- System Design Diagram
- Entity Relationship Diagrams
- UAT scripts
- Training and Change Management Plan

**E. Solution Development:**

Develop the solution on the specifications finalized through the System Requirement Specifications and Solution design. Consultant should ensure and plan well in advance about the increase in data volume and therefore should keep provisions in the hardware and software. Developed solution/Application will be hosted on State Data Centre (Shimla). So developed solution should be compatible with the State Data Centre (Shimla). Deliverables to be submitted include but not limited to:

**iii. Deliverables-III**

- Solution Software including APIs for future integration with other systems
- Source Code,
- Operational /Technical manual
- library files,
- setup programs etc. Sign-off from Purchaser.

#### F. Testing & Acceptance:

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 Department. The acceptance test plan will be defined by the Consultant, agreed and approved by HPPWD and will include all the necessary steps to ensure complete functionality, operation and performance of the system.

Testing must demonstrate that the new systems satisfy the operational and technical performance criteria. All test cases will have to be approved by the Purchaser and the Department.

It is Consultant responsibility during the tests to evaluate and recommend any further changes to the application, at no extra cost to Purchaser. Any recommendations for change will be discussed with Purchaser and the Department. The Consultant must:

#### **iv. Deliverables-IV**

- Outline and provide testing methodology that will be used for testing. Define the various levels or types of testing that will be performed
- Provide necessary checklist/documentation that will be required for testing. The Consultant must describe how the testing methodologies will conform to requirements.
- Indicate how one will demonstrate to Purchaser and the Departments that all functions in the new system installed have been tested.
- Share test cases and results with the department

#### G. Solution Implementation & Go- Live:

With respect to Solution Development the Consultant needs to perform (but not limited to) the following activities:

- Deployment of Portal & Applications on SDC (Shimla)
- Deployment of required Servers, Storage, as proposed by the Purchaser in the Bill of Material (BOM) as per the requirements.
- Creation of logical and physical Security Plans for Application, Data Networks and Desktops
- Consultant should provide a web-based interface for data entry
- Security Policy Implementation.
- Generate graphical and statistical reports for Go- Live

#### **Go-Live**

The "Go-live" means that the system is ready in all respects i.e. design, development, testing & implementation and can be used by all the concerned Stakeholders together as per the defined scope of the project. This would mean completion of roll out of the system at all the designated locations such that all application users at these locations are able to use the centralized application, to the satisfaction of the users and purchasers and confirming to the application response time parameters as defined in the Standard Document.



## V. Deliverables-V

- All the relevant documents related to Implementation
- Set-up of Disaster Recovery solution is completed
- Integration's requirements are implemented
- Security audit requirement from Cert-IN empanelled agency
- Sign-off / Completion certificate from Purchaser

## VI. Deliverables-VI

- Final certificate from HPPWD / HPRIDCL that program is running satisfactory.
- Further, there will be Annual Maintenance Support (AMC) contract for Minor Enhancements/AMC for four Years.

The overall Software development & implementation Period is of 52 weeks (12 months), Software development is for a 26 Weeks, (6-Months) and other 26 weeks are kept for any slippage, of Module/Performance Issues of the Systems, data uploading in the system & Training needs to be completed.

### Annual Maintenance Contract (AMC):

Thus, when system is stabilized, for AMC/minor enhancement's contract will be for 4 (four) years. The Time limit for repair/rectification/ minor enhancement's etc. during AMC period will be decided against the parameter set in the Service Level Agreement (SLA).

## 5. DETAILED SCOPE OF WORK:

The following items shall be supplied by the Consultant from Branded company at MRP or lower price.

### Smart Phone IOS version

| Sr. No. | Parameters   | Specifications  |
|---------|--------------|---|
| 1       | Smart Phone  | Two (02) No.  |
| 2       | Screen Size  | 6.7-inch (diagonal) all screen OLED multi-touch display   |
| 3       | Camera       | Triple 12MP Ultra Wide, Wide and Telephoto cameras  |
| 4.      | Connectivity | Gigabit-class LTE with 4x4 MIMO and LAA<br>802.11ax Wi-Fi 6 with 2x2 MIMO<br>Bluetooth 5.0 wireless technology<br>Built-in GPS/GNSS |
| 5.      | Capacity     | 256 GB & 6 GB RAM   |
| 6.      | OS           | IOS or Latest version   |

### Smart Phone Android version

| Sr. No. | Parameters       | Specifications   |
|---------|------------------|--|
| 1       | Smart Phone      | Twenty-Five (25) No. Black Colour  |
| 2       | Processor        | 2.7 GHz Octa-Core processor or higher  |
| 3       | Display          | 6.5-inch Dynamic AMOLED Infinity Display with FHD+ resolution 2280 X 1080, HDR10+ Certified                                    |
| 4       | Memory & Storage | 8GB RAM   256GB internal memory  |
| 5       | Camera           | Ultra-high resolution 64MP Main Camera, 12MP Ultra-wide, 5MP Depth camera  |
| 6       | Battery          | 5000mAh/4500mAh lithium-ion battery   Fast charging with 25W charger   |
| 7       | Sensors          | Accelerometer, Barometer, Fingerprint Sensor, Gyro Sensor, Geomagnetic Sensor, Hall Sensor, RGB Light Sensor, Proximity Sensor |
| 8       | OS               | Android 11.0 Operating system or higher  |
| 9       | Connectivity     | 2G, GSM, 3G, 4G, 5G, WCDMA, 4G, LTE, FDD, TDD, Bluetooth, Wi-Fi Hotspot, built-in GPS-GNSS                                     |
| 10      | Features         | Touchscreen Phone, Dual SIM dual-standby (4G+4G) Stylus / Pen included Earphones, Travel Adapter, USB Cable and User Manual    |

The scope of work is providing web-based software enabled with domain specific mobile application solution covering the key knowledge areas including:

- a. Project Planning
- b. Resource Planning & Monitoring
- c. Contract Management, Encumbrances & Compliance
- d. Stores & Machinery
- e. Reports
- f. Dashboard

The consultant will customize the application as per need & requirement of the client department, conduct the training at the Zonal level, successfully implement the application at one of the pilot divisions to entire satisfactions, then rollout to other division & Zonal levels. Application to be uploaded in the HP-DIT Server. The consultant will also provide implementation support for the agreed period.

The functionality in each module is mention below:



#### **a. Project Planning:**

Users should be able to manage the Master table, Plan project activity define rate analysis for the project, Plan resource for the project & manage the project organization hierarchy through planning function.

**Project Masters:** The Project Master tables are to be managed here and widely divided in to Generic, Resources and Contractual tabs.

**Cost Code:** Project Cost Codes defined for Cash in and Cash Out here with description of the Cost Code, Weightage in percentage, Sub Cost Code with Description and Weightage. Further Cost Codes can be copied from the Main master.

**Project Intervals:** Periods planned for Projects from a period of time in terms of Days and Months.

**Criticality Parameters:** Project Criticality parameters defined with Critical value and Remarks.

**Equipment Codes:** Equipment used in the Project to be added here with Equipment Code, Description, Activity, Equipment Type, Output of Machine, Output and Cost Code. Equipment Codes to be added from Main Masters.

**Material Codes:** Materials used in the Project to be added here with Material Code, Description, Group Name, Unit at Source, Unit Adapted, Conversion Factor, Cost Code and Flagged details. Material Codes to be added from Main Masters.

**Labour Codes:** Labour used in the Project is to be added here with Labour Code, Description, Labour Type and Cost Code. Labour Codes to be added from Main Masters.

**Spares Codes:** Spare Codes are to be defined here with Particulars, Part Number, Unit and Item Cost.

**Equipment Plan Interval:** Periods for Equipment Plan to be defined here. Equipment Plan to be generated for 15 Days or for a Month.

**Material Plan Interval:** Periods for Material Plan to be defined here. Material Plan to be generated for 15 days or for a Month.

**Labour Plan Interval:** Periods for Labour Plan to be defined here. Labour Plan to be generated for 15 days or for a Month.

**Supporting Equipment's:** Plant Supporting Equipment to be added here with Assigned by details, Assigned on details and Remarks.

**Plant Templates:** Plant Templates to be defined here according to the mechanism of each Plant.

**Tax Types:** Tax Types to be added here with Description and percentage. Tax Types to be added from Masters.

**Advance Types:** Advance Types to be added here with description. Advance Types to be added from Masters.

**Define Royalty:** Royalty items to be defined here with Name, Rate, Unit and Updated On details. Royalty Item Rate History can be viewed for individual Items. Royalty Items to be added from Masters.

**Overheads:** Overhead expenses of a Project to be defined in terms of Salary Overhead of Camp Staff, Salary Overhead of Camp Workers, Other Overhead Percentage, Other Overhead Expenses and Infrastructural Facilities Overhead.

**Quality Control Tests:** Quality Control Tests to be defined here for Structure and Pavement with Test names, Test Standard, Frequency and Minimum Tests required.

**Rate Masters:** Rates for Labour, Material and Equipment are to be added here, Rates also to be added from Masters. Individual Rate history to be viewed for each labour, Material and equipment code.

**Activity Planning:** Project Activity Planning is to be done here

**Edit/Delete Project:** Project details to be edited or deleted here with specific user login Id & password with change log.

**Calendar:** Calendar for work is to be defined here. with holiday as per HPPWD

**Manage BOQ:** BOQ Items to be added, edited or deleted here. Sections in BOQ to be listed. Advances paid to be defined. BOQ to be uploaded directly through excel using excel template.

**Baseline BOQ:** Baseline Bill of Quantity to be viewed here.

**Milestone:** Schedule Phases in the Project to be defined with Milestones.

**Road Design:** Road Design specifications are to be given here.

**Chainages:** Chainages are to be added, edited and removed here. Chain ages to be imported through excel through excel template.

**Chainages in Milestones & Area:** Grouping of Chainages by Milestones is to be done here. Chainages in area Grouping of Chain ages by Area is to be done here

**Chainage Quantities:** Planning of Quantity for each Chain age is to be done here. Planning to be imported from excel through excel template.

**Structures:** Structures are to be added, edited or deleted here. Structures to be imported from excel through excel template.

**Structure Quantities:** Planning of Structure are to be done here. Planning to be imported from excel through excel template.

**Escalation factors:** Escalation Items factors are to be added, edited and removed here.

**Escalation Applicable Section:** To List out Escalation applicable Items section wise. Royalty: Royalty for Jobs is to be defined here.

**Currency Component:** Foreign Currency Component is to be defined here.

**Project Organogram:** Project Organization Hierarchy is to be managed here.

**b. Resource Planning & Monitoring:**

Resource Planning is to be done here in terms of Cash Flow, Budgeted Equipment Hours, Total Materials required for Project, Total Labour required for Project, Cash Flow forecasting, Equipment Planning, Material Planning, Labour Planning and Plant Production Planning.



**Cash Budget:** Initial Cash Flow is to be estimated here.

**Equipment Budget:** Budgeted equipment Hours in Project is to be defined here.

**Material Budget:** Total Materials required for Project is to be defined here.

**Labour Budget:** Total Labours required for Project is to be defined here.

**Cash Flow:** Cash Flow forecasting is to be done here.

**Equipment Planning:** Equipment Planning is to be done here.

**Material Planning:** Material Planning is to be done here.

**Labour Planning:** Labour Planning is to be done here.

**Plant Planning:** Plant Production Planning is to be done here.

#### **MOB-DEMOBILIZATION:**

Users should be able to Mobilize Staff, Equipment and Demobilize Staff and equipment through Mobilized-Demobilized function.

**Staff Mobilization:** Employees mobilized to a Project with Position with mobilization details.

**Staff Demobilization:** Employees demobilized from a Project with demobilization details.

**Equipment Mobilization:** Equipment is mobilized to a Project with Equipment Number, Equipment Type, Subcontracted details, date mobilized, mobilization cost details.

**Equipment Demobilization:** Equipment demobilized from a Project with demobilization details.

#### **Resource Monitoring**

Users should be able to enter Daily activities, Enter Quality Control Tests, Upload Project Progress Videos, Approve Daily Entries and Store related Approvals, Upload Progress Photos, and check status of Reports through Monitoring function

**Daily Entries:** All the Daily activities as in Request for Inspection (RFI), Labour Log, Material Consumption, Equipment Log, Dumper Log, Hot Mix Plant Log, Wet Mix Plant Log, Crusher Log, Batching Plant Log and Weather Log are to be entered in Daily Entries.

**Quality Control Tests:** The Quality Control Tests details for Pavements and Structures under various Test Types and Test Names are to be mapped here. Test Standard, Frequency of Tests, Total Quantity of Tests, Quantity of Tests done and Quantity of Tests done in Current Month are to be Mapped.

**Videos:** Progress Videos of Project are to be uploaded with Section details, Chainage details, Video Date, Distance and Place are to be added and to be viewed here. Video taken through Drone Camera are also be converted/uploaded in the system & can be viewed as required.

**Approvals:** Approvals of All Daily Entries, Materials Returned from Store, Materials Rejection from Store, Materials Received from Store, Materials Requisitions, Material Reconciliation Lists and Materials Issued lists are to be mapped here.

**Photos:** Progress Photos of Project are to be uploaded with Section details, Milestone details, Area Code details, Chainage details, Image Name, Distance, Unit, Place and Date are to be added and to be viewed here. Further filtering of Progress Photos to be done using the above parameters. Photos captured through Mobile applications will have GPS map with photo attributes.

**Mobile Application for reporting:** This mobile application will enable for near real time monitoring of works from site.

**Mobile Application for day-to-day data entry:** here physical progress, quality control test details, work photo graphs can be captured and entered into the application. Once installed, this mobile application does not need internet connectivity to use or to enter data.

**Report Update Status:** Report Status are to be updated here with Report Name, Report Updated till Date for Employees responsible for entering data.

### **c. Contract Management:**

Users should be able to have a repository of Contract Documents, List of Extension of Time Claims, Correspondence mapping, List of Encumbrances, Bill Creation and view List of Bills, List of Design Issues, List of Variation Order, Traffic and Environment Compliance, Process the registered complaint, Assign Complaint, Process the Registered Instruction and Assign Instruction through Contract Administration Function.

**Contract Documents:** Repository of Contract Documents Folder Wise.

**Correspondence:** Trace incoming and outgoing correspondence here

**Encumbrance:** Lists out all the Encumbrances Type wise. New encumbrance to be added here. Encumbrance with Type, Total Quantum, Total Released and Remaining Quantum is to be maintained here. Quantum of Release History is to be maintained.

**Billing/IPC:** Bills are to be prepared here and list out all the previous bills. Tool has technologic al enabling to link it to payment systems for fund transfer.

**Design Issues:** List out all the Design Issues and to add new Design Issues. Compliance: Traffic, Environment and Safety Compliance are to be entered here. Complaints: Registered Complaints are to be processed here.

**Bio-Engineering:** ways & techniques used to restore the vegetation affected during work.

**Debris Disposal:** Management of these sites during & post construction.

**Land Slides:** details of landslides & its status.

**Land Acquisitions:** Land Acquisition status along the road with chainage & status

**Arbitration & Disputes:** package wise details will be recorded.



- **Rehabilitation & Resettlement (R & R):** details of R & R and its status is captured.  
Assign Complaints: Processed complaints to be assigned to individuals here.  
Instructions: Registered Instructions are to be processed here.

**ESMP monitoring:** Details of Environmental and Social Management Plan (ESMP) and its monitoring is to be done here.

**Assign Instructions:** Processed instructions to be assigned to individuals here

**Variation Order:** Users should be able to add additional Quantity or modify the existing BOQ item here after the BOQ is approved if there is additional quantity added to the BOQ.

**Extension of Time Claims:** Users should be able to register the Claim for Extension of Time if there is a change in existing Project schedule because of Constraints.

#### **d. Stores & Machinery:**

Users should be able to View Status of Inventory items, Return Material from Vendor, inter location Transfer of Stock, Receive Procured material, Create Requisition for Material, Material rejection, Issue material, Purchase order List Material Reconciliation list to be done through Stores function.

**Inventory Status:** The Current Status of Inventory to be viewed here. Items to be added to inventory.

**Returned Material:** The store keeper to prepare a return note (list of items returned from site) of materials against an issue note here,

**Inter Location Transfer:** The Stock to be transferred from one Place to another in a site. Documentation of the transfer to be done here.

**Receive Material:** Material supplied by the vendor is documented here.

**Material Requisition:** Place a Requisition for a Material from Store. The User to View the Status of the Requisition.

**Material Rejection:** Materials rejected details to be documented here.

**Issue Material:** The Storekeeper to prepare Issue Note for Materials against Requisition by the Authorized User.

**Purchase Order List:** The Authorized User to Create New Purchase Order, view Approved purchase Orders and Approve Submitted Purchase Orders.

**Material Reconciliation:** Material Reconciliation to be done here. If there are any additions or deductions in store then that to be documented here.

**Machinery:** Users should be able to document Equipment Maintenance Cost details and Equipment breakdown details through Maintenance function.

**Equipment Maintenance:** The Periodic Maintenance is to be captured under different Cost Heads. Each Cost Head to have its own Cost Sub Types. The Maintenance Cost is to be captured under different Sub Cost Type for a Cost Head. Further details such as Total Kilometers Covered, Total Hours Worked are to be captured.

**Breakdown details:** User should be able to enter and list Break Down Maintenance details and Equipment repaired details here, Further with Equipment under breakdown,

User to enter the Repair or Service details like Breakdown duration, Repair Date, Repair Details, Repaired by and Repair Cost.

**Tools:**

User should be able to document the lesson learnt, maintain a drawing register and define the check list here.

**Checklist:** User to prepare checklist of Pre-constructive Activities, Project Closure activity, Contractual Obligation activity, Quality Control Obligation activity, and client approval of Material here.

**Drawing Register:** User to store Drawing used in the Project here.

**Lesson Learnt:** User to document & track of all the lesson learnt during the course of the project.

**Alerts**

Users should be able to subscribe for alerts through emails or SMS. The Schedule slippage, cost escalation, percentage of test failed, quantity +/- over and above certain margin, etc, the alert frequency, actions to be taken, the protocol to close the alert, etc shall be discussed with the developer while customizes software during negotiations.

*The alerts will be mutually discussed and agreed during negotiations with the system developer.*

**Claim Tracking**

User should be able to assign Extension of Time Claims to responsible individuals of the organization who can approve the assigned claim and view the status of the claim.

User should be able to assign Variation Order to responsible Individuals of the organization who can approve the assigned Variation order and view the status of the Variation Order.

**To Do:** Claims or Variation Orders assigned to a User to be listed here after they login. They should be able, to approve or take necessary action by assigning claims or Variation Order to a different user.

**e. REPORTS:**

Engineers Views and reports, Contractors Views and Reports and Project Data Entry Status can be seen her. Printable reports in excel & pdf format.

**Engineers Reports:**

- Physical Progress reports
- Work progress reports
- Work Measured & Work Certified
- Project Progress
- Daily Progress
- Request for Inspection (RFI) List
- **Financial Progress reports**
- List of interim Payment Certificates (IPC)
- IPC summary & S curve
- Bill Summary & Bill Details
- Payment Received
- Escalation Bill Items



- Bills Status & Bills Ageing
- **Holds & Encumbrance**
- Design Issues & Compliance Reports
- Traffic, Safety & Environmental
- Quality Control Tests
- Pavements & Structures
- **Miscellaneous**
- Bill of Quantity
- Variation Order
- Extension of Time (EOT) Claims
- Weather Details
- PAC Report
- Customized reports with defined fields & formats

#### **Contractor's Reports:**

- Progress reports
- Daily Progress reports
- Monthly Progress reports
- Executive Summary
- Budget and Work reports
- Monthly Budget
- Variance Analysis & Variance Summary
- Work budgets & Work Details
- Monthly Consumption Reports
- Labour Utilization
- Material Utilization
- Equipment Productivity
- Inventory reports
- Inventory Age Analysis
- Material Inventory
- Subcontracts
- Payment Note & details
- Customized reports with defined fields & formats

#### **f. DASHBOARD:**

Dashboard shall summarize the Project giving a view of Project Physical position (Time), Financial Position (Money), Budget, Resources, Quality, Constraints, Compliance and Visuals. This dashboard will differ as need of the Senior Executive.

##### **Time**

- Overall Project Physical Progress is to be shown in terms of Planned and Actual Achieved.
- Milestone Progress is to be shown in terms of delay forecast in days.
- Schedule Variance is to be shown.
- Milestone wise Physical Progress is to be shown in terms of Actual and Planned
- Area Wise Physical Progress is to be shown in terms of Actual and Planned
- Major Activity Group Wise Physical Progress is to be shown in terms of Actual and Planned.

- Activity Progress is to be shown Section Wise, Job Code wise in terms of BOQ Quantity, Planned Quantity and Quantity Done

### **Money**

- Overall Billing Progress is to be shown in terms of Planned and Actual
- Cost Variance to be is shown
- Milestone wise financial progress to be shown as of Actual and Planned
- Area Wise Financial Progress is to be shown in terms of Actual and Planned
- Major Activity Group Wise Financial Progress is to be shown in terms of Actual and Planned
- Activity Progress is to be shown Section Wise, Job Code wise in terms of BOQ Amount, Work Done Amount and Billed Amount

### **Quality**

- Overall Quality in terms of Percentage Passed and Failed is to be shown.
- Areas/reach-wise Quality is to be shown
- Total tests Conducted, Passed and Failed is to be shown
- NCR Analysis
- Type of Test s & Name of Tests as per defined standards

### **Constraints**

- Total Pending Constraints are to be shown
- Constraints are to be shown with Constraint Type, Total Quant um, Quantum Released and Quantum Pending. Quantum Release History is to be maintained.

### **Compliance**

- Traffic, Environment and Safety compliance are to be shown.

### **Project Visuals**

- Project Progress photos are to be shown with google map location /GPS details
- Slideshow of work photos

### **Project Videos**

Project Progress Videos are to be shown, Video taken through Drone Camera are also be converted/uploaded in the system & can be viewed as required.

The web enabled PMS application software shall also generate the Monthly Report, Quarterly Progress Report & Final Completion Report as per Department's needs.

### **Monthly Reports:**

A progress report summarizing the component wise progress vis-à-vis targets,

- constraints/problems encountered (administrative, technical or financial),
- expenditure statement,
- variation orders proposed and approved, status of claims or time extensions requested by Contractors,
- status of EMP, removal of encumbrances, plantation, bioengineering, safety precautions and traffic diversion during construction,
- Status of mobilization/deployment of men, machineries and plants, functioning of Crusher, HMP, WMM plant, Pavers and Rollers etc.



**Quarterly Progress Report:**

A comprehensive report summarizing all activities as cited above at the end of each quarter.

**Final Completion Report:**

A comprehensive final completion report within 90 days after issuance of Completion Certificate of the last Construction contract.

**6. TRAINING:**

Quarterly hand-holding and trainings of all license users in the Project Implementation Unit (HPRIDCL) at Shimla HQ shall commence within 7 days of supply and customization of the e-PMS.

Implementation, Hand-holding and on-site training shall be done as and when required and over the project period preferably in time slots of 3 days at a time. Twelve visits to the site by the on-site trainers over the project period with one week stay at site.

The training at site shall be hands-on. Cost of boarding, lodging and travel within Himachal Pradesh and elsewhere shall be included in the total cost and shall not be paid separately.

**7. INTELLECTUAL PROPERTY RIGHT (IPR) & KNOWLEDGE TRANSFER:**

The HPRIDC shall have sole proprietorship and copyright over all the documentation and if any, custom software developed by the consultant as part of service including legally acceptable perpetual user license in the name of the organization.

Transfer of all software, programs, data collected etc. by the consultant including legally acceptable perpetual user license in the name of the organization shall be part of deliverables. All secondary data collected during the duration of this assignment in soft copy (CD media) shall be the property of HPRIDC.

Copies of all documents collected from various agencies during the duration of this assignment shall be the property of HPRIDC and handed over upon completion of the project.

**Maintenance and Upgrades to the Software:**

The annual maintenance and the upgrades to the software shall be included in the license fees and shall cover the project period of 48 months, *after successful implementation of Software.*

**8. CONSULTANT TEAM:**

The team size is to be negotiated at the time of project award, the best option is that team to be deploy in the range of 60:40 ratio (60% offsite & 40% on-site), any change in location of team personnel in a variation of 15% shall be acceptable to consultant at no addition cost. For Software development, Consultant will use their own Laptop/PC, Space for sitting in Office premises will be given by client. Consultant has to make own arrangements for boarding/lodging and other logistics.

## **9. RESOURCE DEPLOYMENT TEAM:**

Total Man-months of Key Expert = 52 man-months.

### **Key Experts:**

#### **Project Manager:** Nos. 1

Essential Requirements:

B.E. / B. Tech./ M, Tech/MCA in the field of computer science/IT

Minimum 10 year of experience as Project Manager in IT projects, Experience in e-Governance Projects.Relevant Certification (either of PMP /PMI/Prince2) added advantage

#### **Domain Specialist:** Nos. 1

Essential Requirements:

B.E. / B. Tech. /M.Tech Civil Engineering

Minimum 10 Year experience, out of which minimum 4 years in public works domain

Proven professional experience in e- Governance projects with preference in the Public Works Domain

#### **Network Administrator:** Nos. 1

Essential Requirements:

B.E. / B. Tech./ MCA. in the field of computer science/IT

Minimum 5-year experience as Network Administrator

Certification in Network field (CCIE, CCNA, CCNP) added advantage

#### **Team Lead Cum Sr. Developer:** Nos.1

Essential Requirements:

B.E. / B. Tech./ MCA in the field of computer science

Minimum 7-year experience as application lead in IT projects

#### **Sr. Developer (web Application):** Nos.3

Essential Requirements:

B.E. / B. Tech./ MCA in the field of computer science

Minimum 3–5-year experience as applications developer in IT projects

#### **Sr. Developer (Android/IOs):** Nos.2

Essential Requirements:

B.E. / B. Tech./ MCA in the field of computer science

Minimum 3–5-year experience as Mobile applications developer in IT projects

#### **Database Administrator:** Nos.1

Essential Qualifications

B.E./ B. Tech./ MCA in the field of computer science

Minimum 5 years' experience as database administrator for IT projects

Certification Database field (Oracle, SQL Server) added advantage

#### **Training and Testing Expert:** Nos.1

Essential Qualifications

B.E./ B. Tech./ MCA in the field of computer science

MBA with specialization in HR / Change Management

Minimum 7-year experience as Master Trainer for IT projects



Note: The above list of Key Experts and estimated man month is for reference only. The Consultant is responsible to review the required services and may propose own requirements for the Key Experts and other support staff required to complete the proposed services in a satisfactory manner. This is clarified that Support Staff and Non-Key Expert CV's shall not be evaluated. Only Key Expert CVs shall be evaluated.

#### 10.DELIVERABLES & SUGGESTED PAYMENT SCHEDULE:

T = Project Start date + weeks, Numbers copies of Deliverables =5

| Deliverables  | Schedule     | Payment in percentage  |
|---|--------------|--|
| <b>Deliverables-I</b><br>Supply of Mobile Phone e-Based PMS Application Software:<br>goods shall be made on delivery of PMS application on activation of user licenses and supply of one user manual soft copy.   | T +3 weeks   | Ten (10) percent of the Contract Price.<br>Should be made upon approval of nodal officer appointed by HPRIDC issuing acceptance certificate within 7 days. |
| <b>Deliverables-II</b> <ul style="list-style-type: none"> <li>• Design Documents</li> <li>• Data Flow Diagram</li> <li>• System Design Diagram</li> <li>• EntityRelationship Diagrams</li> <li>• UAT scripts Training and Change Management Plan.</li> </ul>  | T + 6 Weeks  | Ten (10) percent of the Contract Price. All the deliverable document approved from the department for further development of program.                      |
| <b>Deliverables-III</b> <ul style="list-style-type: none"> <li>• Solution Software including</li> <li>• Source Code,</li> <li>• Operational/Technical manual</li> <li>• library files,</li> <li>• setup programs etc.</li> <li>Sign-off from Purchaser.</li> </ul>  | T + 16 Weeks | Twenty (20) percent of the Contract Price.<br>After getting Source code, Operational /Technical Manual and Setup program.                                  |
| <b>Deliverables-IV</b> <ul style="list-style-type: none"> <li>• Outline and provide testing methodology that will be used for testing. Define the various levels or types of testing that will be performed</li> <li>• Provide necessary checklist/documentation that will be required for testing. The Consultant must describe how the testing methodologies will conform to requirements.</li> <li>• Indicate how one will demonstrate to Purchaser and the</li> </ul> | T + 20 Weeks | Ten (10) percent of the Contract Price:<br>After getting Certificate from the department that test run made on the program are correct                     |

| <b>Deliverables</b>   | <b>Schedule</b> | <b>Payment in percentage</b>  |
|---|-----------------|---|
| <p>Departments that all functions in the new system installed have been tested.</p> <ul style="list-style-type: none"> <li>Share test cases and results with the department.</li> </ul>   |                 |   |
| <p><b>Deliverables-V</b></p> <ul style="list-style-type: none"> <li>All the relevant documents related to Implementation</li> <li>Set-up of DR is Completed</li> <li>Integration's requirements are implemented</li> <li>Security audit requirement from Cert-IN empanelled agency</li> <li>Sign-off / Completion certificate from Purchaser</li> </ul> | T + 26 Weeks    | <p>Twenty (20) percent of the Contract Price:</p> <p>goods shall be made on after getting the certificate from Zonal Heads that software licenses of the mobile app has been delivered and deployed on google play store for downloading on Android/IOS phones, one user manual in soft copy for every user license purchased has been supplied and approval by the Review Committee.</p> |
| <p><b>Deliverables-VI</b></p> <ul style="list-style-type: none"> <li>Final certificate from HPPWD / HPRIDCL that program is running satisfactory.</li> <li>Further contract for Minor Enhancements/AMC for four Year to be sign Off.</li> </ul>   | T + 52 Weeks    | <p>Twenty (20) percent of the Contract Price</p> <p>Final Certificate Copy. +B.G</p> <p>Contract copy for Minor Enhancements/AMC for four Year to be sign Off.</p>  |

### **Annual Maintenance Contract (AMC):**

After 52 weeks deliverable the consultant will provide Annual Maintenance Support (AMC) for 4 (four) years. Final Payment of 10% of the Contract Price shall be made on pro-rata basis (1.25% semi-annually) after completion of each semi-annually maintenance support period.