



**Smart City Ahmedabad Development Limited**  
CEO, Smart City Ahmedabad Development Ltd (SCADL), Ahmedabad  
Municipal Corporation, Sardar Patel Bhavan, Danapith, Ahmedabad,  
Gujarat 380001



## Corrigendum 2

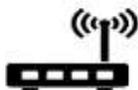
**Tender No:** 1 Smart City Ahmedabad Development Ltd (SCADL) 241853

241853- Notice Inviting RFP for Selection of Implementation Agency for Supply, Installation, Commissioning and operation & maintenance of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Ahmedabad (Gujarat) – Smart city Ahmedabad Development Ltd(SCADL)

Post due considerations to the queries received, relevant updates have been made to the RFP and this corrigendum in the form of revised RFP has been consequently released.

#	Information	Details
1	Online Price Bid Submission Date	14/03/2017 up to 17:00 Hrs
2	Technical Bid Submission (in Hard Copy) Filled-in Technical Bid along with Bid Fee, EMD and other documents	In Sealed envelope strictly by RPAD/ Postal Speed Post/ Courier on or before 15/03/2017 17:00 Hrs to CEO Smart City Ahmedabad Development Ltd (SCADL), Ahmedabad Municipal Corporation, Sardar Patel Bhavan, Danapith, Ahmedabad, Gujarat 380001 with necessary documents (Tender Fee, EMD, etc.) as mentioned in the RFP
3	Date & Time of opening of Technical & Commercial bid	To be intimated to the qualified bidders
4	Contact person and email id	smartcity@ahmedabadcity.gov.in

Consultant:



# RFP for Implementation Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Ahmedabad Smart City Project

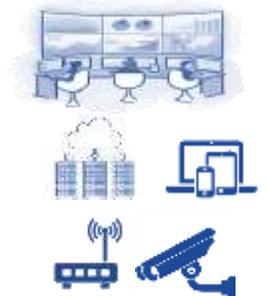
## Corrigendum II



**Bid Processing Fee: Rs. 50,000/- (Rupees Fifty Thousand only)**



Invited By:  
Smart City Ahmedabad Development Limited  
Ramanbhai Patel Bhavan, Usmanpura  
Ahmedabad  
Gujarat- 380013



## **DISCLAIMER**

The information contained in this Request for Proposal document (“**RFP**”) whether subsequently provided to the bidders, (“**Bidder/s**”) verbally or in documentary form by Smart City Ahmedabad Development Limited (henceforth referred to as “**SCADL**” in this document) or any of its employees or advisors, is provided to Bidders on the terms and conditions set out in this RFP document and any other terms and conditions subject to which such information is provided.

This RFP document is not an agreement and is not an offer or invitation to any party. The purpose of this RFP is to provide the Bidders or any other person with information to assist the formulation of their financial offers (“**Bid**”). This RFP includes statements, which reflect various assumptions and assessments arrived at by SCADL in relation to this scope. This Tender document does not purport to contain all the information each Bidder may require. This Tender document may not be appropriate for all persons, and it is not possible for the Chief Executive Officer, SCADL and their employees or advisors to consider the objectives, technical expertise and particular needs of each Bidder. The assumptions, assessments, statements and information contained in the Bid documents, may not be complete, accurate, adequate or correct. Each Bidder must therefore conduct its own analysis of the information contained in this RFP and to seek its own professional advice from appropriate sources.

Information provided in this Tender document to the Bidder is on a wide range of matters, some of which may depend upon interpretation of law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. SCADL accepts no responsibility for the accuracy or otherwise for any interpretation of opinion on law expressed herein.

SCADL and their employees and advisors make no representation or warranty and shall incur no liability to any person, including the Bidder under law, statute, rules or regulations or tort, the principles of restitution or unjust enrichment or otherwise for any loss, cost, expense or damage which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, reliability or completeness of the RFP, and any assessment, assumption, statement or information contained therein or deemed to form part of this RFP or arising in any way in this Selection Process.

SCADL also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this RFP. SCADL may in its absolute discretion, but without being under any obligation to do so, can amend or supplement the information in this RFP.

The issue of this RFP document does not imply that SCADL is bound to select a Bidder or to appoint the Selected Bidder (as defined hereinafter), for implementation and SCADL reserves the right to reject all or any of the Bidders or Bids without assigning any reason whatsoever.

The Bidder shall bear all its costs associated with or relating to the preparation and submission of its Bid including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by SCADL or any other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain with the Bidder and SCADL shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation for submission of the Bid, regardless of the conduct or outcome of the Selection process.

### Important Dates

<b>RFP for Implementation Agency for Supply, Installation, Commissioning and operation &amp; maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Ahmedabad (Gujarat)</b>		
1.	Contract Period	5 Years
2.	Delivery	Services to be offered as per schedule from the date of the Acceptance of Lol/ Work Order
3.	Bid Due date	14/03/2017 up to 17:00 Hrs
4.	Date & Time of opening of Technical & Commercial stage	Will be intimated to the qualified bidders at a later date.
5.	Venue of opening of Technical & Commercial Bid/s	2 <sup>nd</sup> Floor, Conference Hall – 1, Danapidth, Ahmedabad Municipal Corporation office, Gujarat.
6.	Bid Processing Fees (Non-refundable)	Rs. 50,000/- (Fifty Thousand Only) By Demand Draft
7.	Bid security (EMD)	EMD of Rs. 2,00,00,000 (Rupees Two Crores only) shall be either in form of Demand Draft and or Bank guarantee of any nationalized / scheduled bank
8.	SCADL Contact person	Email id : smartcity@ahmedabadcity.gov.in

**NOTE: Please address all queries and correspondence to:**

**Chief Executive Officer  
Smart City Ahmedabad Development Limited  
Ramanbhai Patel Bhavan, Usmanpura  
Ahmedabad  
Gujarat- 380013,**

**E-mail:** smartcity@ahmedabadcity.gov.in

Proposal in the form of BID is requested for the item(s) in complete accordance with the documents/attachments as per following guidelines.

- ✓ This is a Bid for Implementation Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center
- ✓ Bidder shall upload their bids on <https://www.amc.nprocure.com>.
- ✓ The Bid Security and non-refundable bid processing fees in a separate sealed envelope super scribed with the bid document number to SCADL Office.
- ✓ The bid shall specify time schedule of various activities.
- ✓ Bids complete in all respects should be uploaded on or before the BID DUE DATE.
- ✓ Services offered should be strictly as per requirements mentioned in this Bid document.
- ✓ Please spell out any unavoidable deviations, Clause/ Article-wise in your bid under the heading Deviations.
- ✓ Once quoted, the bidder shall not make any subsequent price changes, whether resulting or arising out of any technical/commercial clarifications sought regarding the bid, even if any deviation or exclusion may be specifically stated in the bid. Such price changes shall render the bid liable for rejection. However, SCADL reserve the right to revised financial offer.
- ✓ The duration of the Contract period for this activity will be of **5 years**.

**In addition to this RFP, the following sections attached are part of Bid Documents.**

Section – 1	Project Profile
Section – 2	Scope of Work
Section – 3	Eligibility Criteria
Section – 4	Instructions to the Bidders
Section – 5	Price Bid
Section – 6	Formats and Annexures
Section – 7	SLA Agreement

**Instruction to the bidders for online bid submission:**

- Tender documents are available only in electronic format which Bidders can download free of cost from the website [www.ahmedabadcity.gov.in](http://www.ahmedabadcity.gov.in) and <https://amc.nprocure.com>
- The bids have been invited through e-tendering route i.e. the eligibility criteria, technical and financial stages shall be submitted online on the website <https://amc.nprocure.com>.
- Bidders who wish to participate in this bid will have to register on <https://amc.nprocure.com>. Further bidders who wish to participate in online bids will have to procure Digital Certificate as per Information Technology Act 2000 using which they can sign their electronic bids. Bidders can procure the same from (n) code solutions – a division of GNFC Ltd., or any other agency licensed by Controller of Certifying Authority, Govt. of India. Bidders who already have a valid Digital Certificate need not procure a new Digital Certificate.
- In case of any clarifications required, please contact on email ID of SCADL at [smartcity@ahmedabadcity.gov.in](mailto:smartcity@ahmedabadcity.gov.in)

## DEFINITIONS

In this document, the following terms shall have following respective meanings:

1. "User Acceptance Test (UAT)" means the User Acceptance Testing of the ordered product and services on completion of installation and commissioning as per the requirement.
2. "Acceptance Test Document" means a document, which defines procedures for testing the installed and commissioned product and services against requirements laid down in the Agreement.
3. "Agreement" means the Service Level Agreement to be signed between the successful bidder and SCADL including all attachments, appendices, all documents incorporated by reference thereto together with any subsequent modifications/changes/corrigendum's, the RFP, the bid offer, the acceptance and all related correspondences, clarifications, presentations.
4. "Authorized Representative/ Agency" shall mean any person/ agency authorized by either of the parties.
5. "AMC" shall stand for Ahmedabad Municipal Corporation.
6. "Bidder" means any agency who fulfils the requirement laid in the RFP documents and is possess the required expertise and experience as per the RFP document. The word Bidder when used in the pre-award period shall be synonymous with Bidder, and when used after award of the Contract shall mean the successful Bidder with whom SCADL signs the Service Level Agreement for executing the project.
7. "Center" means Zonal Offices of AMC
8. "CCC" means Command and Control Center
9. "Contract" is used synonymously with Agreement.
10. "Corrupt Practice" means the offering, giving, receiving or soliciting of anything of value or influence the action of a public official in the process of Contract execution.
11. "Default Notice" means the written notice of Default of the Agreement issued by one Party to the other in terms hereof.
12. "Fraudulent Practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a Contract and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non- competitive levels and to deprive SCADL/AMC of the benefits of free and open competition.
13. "Final Acceptance Test (FAT)" means the acceptance testing of all the commissioned project components at all specified locations.
14. "Good Industry Practice" means the exercise of that degree of skill, diligence and prudence which would reasonably and ordinarily be expected from a reasonably skilled and experienced Operator engaged in the same type of undertaking under the same or similar circumstances.

15. "Go Live Date" means the date on which the FAT of all the project component's as per the Work order has been successfully completed.
16. "Gol" shall stand for Government of India.
17. "GIS" shall stand for Geographical Information Systems
18. "Implementation Period" shall mean the period from the date of signing of the Agreement and up to the issuance of Final Acceptance Certificate.
19. "Law" shall mean any act, notification, by-law, rules and regulations, directive, ordinance, order or instruction having the force of law enacted or issued by the Central Government and/ or the Government of Gujarat or any other Government or regulatory authority or political subdivision of government agency.
20. "LoI" means Letter of Intent, which constitutes the intention of the SCADL to place the Purchase Order with the successful bidder.
21. "Work order" shall mean a formal order issued by SCADL to the successful bidder covering delivery timelines, SLA and other terms and conditions.
22. "Operator" means the entity/company providing the services / executing the project under the Agreement and is used synonymous with Bidder/Successful Bidder.
23. "O&M Period" means period of 5 years starting with the successful, installation and commissioning and FAT of the project components. The date of start of O&M shall start from the (Go Live) date i.e from the date of successful FAT of all the equipment at all the site locations as per the work Order.
24. "OEM" Shall stand for Original Equipment manufacturer
25. "PoC" shall stand Proof of Concept.
26. "Period of Agreement" means 5 years' period starting with the commissioning of all Hardware and software ordered as per the Scope of work for the Ahmedabad Smart City Project.
27. Request for Proposal", means the detailed notification seeking a set of solution(s), services(s), materials and/or any combination of them.
28. "Requirements" shall mean and include schedules, details, description, statement of technical data, performance characteristics, standards (Indian as well as International) as applicable and specified in the Agreement.
29. "Site" means the location(s) for which the Contract will be signed and where the service shall be provided as per agreement.
30. "Service" means provision of Contracted service viz., operation, maintenance and associated services for Ahmedabad Smart City Project.
31. "Service Down Time" (SDT) means the time period when specified services/network segments with specified technical and operational requirements as mentioned in this document are not available to

SCADL. The network shall be operational on all days of a year and 24- hours/ day with in the uptime specified in the Service Level Agreement (SLA). The network is considered as operational when all Centers at all tiers/ levels are working, providing all/ specified services as mentioned in full capacity at all locations in the network.

32. "SCADL" means Smart City Ahmedabad Development Limited
33. "Third Party Agency" means any agency, if/as appointed by SCADL for monitoring the Ahmedabad Smart City Project during commissioning and operation.
34. "Termination Notice" means the written notice of termination of the Agreement issued by one Party to the other in terms hereof.
35. "Unplanned downtime" means an instance other than the planned down time in which ordered services are not available to SCADL.
36. "Uptime" means the time period when specified services with specified technical and service standards as mentioned in Section-5 are available to SCADL and its user organizations. The uptime will be calculated as follows:  
"Total time in a quarter (in minutes) less total Service Down time (in minutes) in the quarter"
37. "% Uptime" means ratio of 'up time' (in minutes) in a quarter to Total time in the quarter (in minutes) multiplied by 100.

# ***SECTION: 1***

## ***PROJECT PROFILE***

## **SECTION -1 PROJECT PROFILE**

### **1.1 Introduction and Background**

The City of Ahmedabad has emerged as Gujarat's core city in technological development and innovation. The city has established its position as a pioneer in implementing numerous Smart initiatives in areas ranging from transit, e-Governance, solid waste management to water supply and many more. Additionally, Ahmedabad has been selected among the top 20 smart cities in India for which it receives funding from Ministry of Urban Development (MoUD) for projects under its smart city proposal. Ahmedabad smart city proposal includes several Pan City and Area Based Development initiatives with a focus on both infrastructure and ICT advancements in the city and at strategic locations.

Most of the ICT initiatives have been identified with a predominant objective to improve public safety and surveillance, traffic management, public services quality, and real time tracking of services. SCADL envisage to implement a Pan- city ICT Infrastructure project majorly covering various components like:

- City wide network/connectivity
- Creation of city wide IT Infrastructure,
- City surveillance system,
- Smart Sensors,
- Wi-Fi hotspots and
- Digital board/panel

### **1.2 About Ahmedabad Municipal Corporation**

The Ahmedabad Municipal Corporation (AMC) is the Urban Local Body for the city of Ahmedabad and is administering its responsibilities under the BMC Act. AMC is equipping the city with high quality communication, transit and utility networks which aims to improve the quality of life of its citizens, provide ease of doing business and generally raise the level of social and economic development of its citizens. In order to meet the deficiencies of the present system, namely, lack of integrated systems, inefficient work procedures, lack of up-to-date and accurate databases, lack of data sharing, etc., ICT initiatives such as the Integrated Command and Control Center along with smart features with specific focus on traffic regulation, surveillance and real time tracking of services have been proposed by the administration of AMC.

### **1.3 About Smart City Ahmedabad Development Limited**

As per the GoI guidelines, Ahmedabad Municipal Corporation has formed a separate Special Purpose Vehicle (SPV) as Smart City Ahmedabad Development Limited (SCADL) for the implementation of projects under the smart city mission for the city of Ahmedabad. This SPV shall carry end to end responsibility for vendor selection, implementation and operationalization of various smart city projects.

### **1.4 About the Project**

One of the primary objective of SCADL under the Smart City initiative is to enhance the safety and security, improve efficiency of municipal services and promote a better quality of life for residents,

Ahmedabad desires to foster the development of a robust network infrastructure that supports digital applications and ensures network connectivity is available throughout the city and in government departments. There is an undoubted necessity to: -

- Improve the city security
- Track vital data such as pollution levels, water levels, traffic
- Integrate emergency services such as fire, police, ambulance etc.
- Be adept with intelligent solutions for disaster management and city operations.
- Ensure access to and have better tracking of all electronic public services that the city administration delivers to its citizen.

Hence, a robust pan city ICT Infrastructure backbone for ensuring high-speed access connectivity and serve these needs of the city is a must.

The city-wide network/connectivity project will not be the part of scope of work of this RFP. AMC is in the process of implementing the city-wide network in phased manner and as part of the first phase laying of own Optical Fiber Network at a stretch of around 170 km along the BRTS corridor has already begun. This OFC network will act as the backbone of the city-wide network. The primary function of city wide network is to connect all AMC offices, city civic centers, urban health centers, schools and municipal buildings, thereby reducing future bandwidth costs.

## 1.5 Project Objective:

The Pan city ICT Infrastructure is essentially intended to provide a high-speed connectivity at Government offices and public places through creation of Wi-Fi hotspots to support/implement all the smart solutions, city surveillance system, transformation of static boards to digital boards. The project objectives broadly are as follows:

- To provide inexpensive and pervasive connected infrastructure all across the city
- To provide city surveillance system for effective management of city
- To provide internet facility to the citizens across the public places through creation of Wi-Fi hotspots
- To transform static board with digital boards which allows AMC to disseminate smart information to the citizens across the city and also multifold increase in revenue generation.
- To boost digital inclusion among departments and citizens
- To provide 24\*7 uninterrupted connectivity across the city
- To establish a medium for quick data gathering from multiple sources and faster decision making
- To act as a channel for integration of all the city services
- To enable the government to have advanced communication products/platforms and better security and surveillance systems

## 1.6 Benefits envisaged:

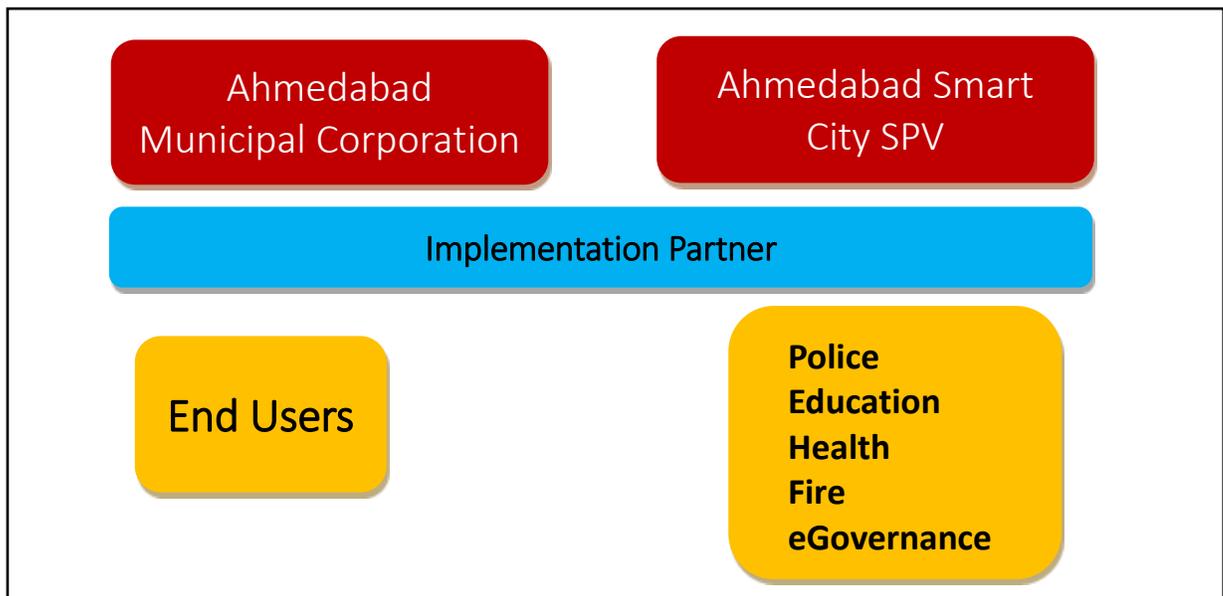
A pan city ICT infrastructure will support the inclusion of almost all digital assets onto a common platform, which will ensure confluence of data from multiple sources, applications, sensors, objects and people. The establishment of this project will provide high quality, reliable, cost effective and ICT Infrastructure to the city administration. It will be the provider of various smart solutions under the smart city mission for the city like smart surveillance system, Smart parking, smart traffic monitoring system, Sensors, Digital boards, Wi-Fi hotspots and availability of high speed connectivity. This project will have multifold benefits across the government departments and the effect will be felt by citizens. Some of the

key benefits are:

- Government will have increased operational, financial efficiency and effectiveness
- Educational institutions would have improved connectivity across schools and universities
- City and Community center facilities will have improved connectivity for providing on-line services
- Police department will have high-quality video connections allowing for a greater security and surveillance
- Traffic management will be improved with automated traffic surveillance systems
- Fire departments will have the ability to direct staff remotely and utilize the reliable communication infrastructure for quick responses
- Environmental monitoring of factors such as air pollution or rain/monsoon detection will be easier and reliable
- Healthcare services and hospitals will be able to utilize next generation applications, devices and processes such as tele-medicine to serve the citizens
- Waste water management will be made possible with SCADA connectivity

## 1.7 Stakeholders

The implementation and successful execution of this project, will require support and involvement from multiple stakeholders. The project requires collaboration between multiple stakeholders for its successful execution. It is therefore important to understand the various stakeholders envisioned to be part of this project and the role that they are expected to play. Following are the critical stakeholders whose involvement will drive the project and enable the establishment of a strong project governance:



## ***SECTION: 2***

# ***ELIGIBILITY CRITERIA***

## SECTION-2: ELIGIBILITY CRITERIA

The bidder must possess the requisite experience, strength and capabilities in providing services necessary to meet the requirements as described in the RFP document. Keeping in view the complexity and volume of the work involved, following criteria are prescribed as the eligibility criteria for the bidder interested in undertaking the project. The bidder must also possess technical know-how and financial ability that would be required to successfully provide System Integration, Operation and Maintenance services sought by the SCADL for the entire contract duration. The Bids must be complete in all respect and should cover entire scope of work as stipulated in the bid document. This invitation to bid is open to all bidders who qualify the eligibility criteria as given below:

S/N	Specific Requirements	Documents Required
1	Bidder/Lead Bidder and Consortium partner should be a company registered under Companies Act, 1956 and should have been operating for the last five years as on bid issuance date.	Certificates of incorporation & Self-Declaration Certificates
2	Bidder/Lead Bidder should be an established IT /Telecom System Integrator and should have been engaged in setting-up and Operations & Maintenance Services of Network (Active or Passive) and Data Centres for a period of at least five years as on bid issuance date.	Work Orders / Client Certificates confirming year and area of activity should be enclosed.
3	The bidder/Lead Bidder must have annual turnover of at least Rs. 500 Crores for each of the last three financial years as on 31 <sup>st</sup> March, 2016.  <i>Average Annual Turnover of the bidder generated solely from supply/service for (active and passive) Networking (setting up or O&amp;M) and Data Centre (setting up or O&amp;M) during each of the last three financial years, should be at least Rs. 250 crores.</i>  In case Bidder is a wholly owned / 100 % subsidiary, the turnover of Parent company would be considered for eligibility	Audited and Certified Balance Sheet and Profit/Loss Account of last 3 Financial Years should be enclosed.  CA certificate mentioning turnover of the bidder should be enclosed.
4	The Consortium Partner ( non-lead bidder) should have average annual turnover of at least Rs. 30 crores from ICT or ITES in last three financial years (ending 31 March 2016)  For a 100% subsidiary, parent company average annual turnover would be considered for evaluation purposes.	Audited and Certified Balance Sheet and Profit/Loss Account of last 3 Financial Years should be enclosed.  CA certificate mentioning turnover of the bidder should be enclosed.
5	The bidder/Lead Bidder must have positive net worth and should be Profit making in each of the last three financial years as on 31 <sup>st</sup> March, 2016	Audited and Certified Balance Sheet and Profit/Loss Account of last 3 Financial Years should be

S/N	Specific Requirements	Documents Required
		enclosed. CA certificate mentioning net profit of the bidder should be enclosed.
6	<p>The bidder or Any of the Consortium partner should have demonstrable expertise and experience in executing at least ONE project of Network Integration / Systems Integration/Data Centre (setting up or O&amp;M) anytime during last five years as on bid issuance date, having a minimum value of Rs. 50 crores or TWO projects having a minimum value of Rs. 25 crores each.</p> <p><b>Note:</b> In case Bidder is a wholly owned subsidiary, the experience of Parent company would be considered for eligibility</p>	<p>Details of such projects undertaken along with clients' on-going/completion certification/ letter should be enclosed.</p> <p>Undertaking from the Parent company to support its wholly owned subsidiary.</p>
7	<p>The bidder or Any of the Consortium partner should have demonstrable expertise and experience of setting up or O&amp;M of integrated control room/city wide control room/emergency response centre with One such Project having minimum 20 seating capacity</p> <p style="text-align: center;">Or</p> <p>Data Center (minimum 400 core computing capacity)/ 2000 Plus WAN Node during last three years as on bid issuance date.</p> <p><b>Note:</b> In-house projects for their own corporations executed by the bidder shall not be considered for above purpose.</p> <p><b>Note:</b> In case Bidder is a wholly owned subsidiary, the experience of Parent company would be considered for eligibility</p>	<p>Copies of work order and the client certificates for satisfactory completion of project.</p> <p>Undertaking from the Parent company to support its wholly owned subsidiary</p>
8	<p>Bidder or OEM should not be blacklisted by any Ministry of Government of India or by Government of any other State in India or by Government of Gujarat or any of the Government PSUs at the time of bidding.</p>	<p>Certificate / affidavit mentioning that the Bidder is not blacklisted by any Ministry of Government of India or by Government of any State in India or by Government of Gujarat or any of the Government PSUs. Self-Declaration Form must be submitted</p>
9	<p>OEMs of proposed equipment/components should have their own registered office in India as per the prevalent/ applicable laws of India and be in operation in India for last five years as on the bid issuance date.</p> <p><b>Registered offices by way of Joint ventures, Franchise, agency, distribution partners will not be considered.</b></p> <p>a.) OEMs for networking devices at aggregation layer and data</p>	<p>Undertaking &amp; copies of supporting documents from the Bidder confirming the compliance along with the OEM authorization.</p>

S/N	Specific Requirements	Documents Required
	<p>center layer should be one of the top five from the GARTNER list of top five companies for data center networking</p> <p>b.) OEM for other networking equipment's should be in the top Five positions in terms of market share in India as per latest available IDC report or should be present in latest Gartner magic Quadrant.</p> <p>c.) OEM for storage and servers should be from companies featuring in Gartner magic quadrant in leadership position.</p>	
10	<p>The bidder should have a Permanent Office in Ahmedabad or Should setup in 45 days from the award of Work Order.</p>	<p>Copies of any two of the followings: Property Tax / Electricity / Telephone Bill / VAT/ CST Registration /Lease agreement. Or Undertaking to open Office in Gujarat</p>

**Note:**

- ⇒ The Bidder must attach valid documents in support to their Technical and Financial capabilities/strength, as mentioned above. Without proper supporting documents, the Bid proposals are liable to be rejected.
- ⇒ The bidder should submit authorization certificate of Original Equipment Manufacturer (OEM) (or multiple OEMs) specific to the bid. The bidder should have a back-to-back support agreement/arrangement for services including supply of spare parts etc. with the OEMs of products like Networking devices, Servers, storage, Digital panel/board etc. which includes the post-sales support activities for the entire project period.
- ⇒ All the proposed equipment should not be declared End-of-Support by the OEMs for next 7 years and should not be end of production for next one year from the date of bid submission.
- ⇒ The MAF is required for Routers, Switches, Firewall, SAN, SAN Switch, NMS, Servers etc. being supplied under this project.

## ***SECTION: 3***

### ***SCOPE OF WORK***

## Section- 3: SCOPE OF WORK

Smart City Ahmedabad Development limited (SCADL) seeks proposal from the interested bidder to bid for the “RFP for Implementation Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan City ICT Infrastructure and Integrated Command and Control Center for Smart City Ahmedabad”. SCADL envisaged to create a pan city ICT infrastructure for effective and efficient implementation of Ahmedabad Smart city project. It is envisaged to implement various smart solutions like Integrated Command and Control Center, Smart surveillance system, Smart traffic management system, Public Wi-Fi hotspots, LED/Digital Display panel/boards, and various type of sensors, smart lighting etc. riding on the Pan city ICT infrastructure created under this project.

As mentioned above in project profile SCADL and Police Department, Ahmedabad are the two major stakeholders of the entire project. Wherein Police department will be utilizing video feeds for intelligent traffic management of the entire city and SCADL will be utilizing video feeds and other sensor deployed under the project for efficient and effective management of the entire city.

### 3.1 Smart City Solution Architecture

The overall Smart City solution architecture of the components envisaged under the “Pan City ICT Infrastructure” is as given below.

#### 3.1.1 Data Center Layer

The data center layer will house centralized computing power required to store, process and analyze the data to decipher actionable information. This layer includes servers, storage, ancillary network equipment elements, security devices and corresponding management tools. It will be scalable to cater to the increasing computing and storage needs in future.

#### 3.1.2 Command and Control Layer

The command center and control units will enable citizens and administrators alike to get a holistic view of city conditions. Such control units will take shape of either an exhaustive command center or control applications which can be viewed over a web browser or available in form of a mobile application. The implementation vendor will have to develop a command center at a site location determined by AMC and web/ mobile based viewing tools for understanding the ambient city conditions.

#### 3.1.3 Network Layer

The secured network layer will serve as the backbone for the project and provide connectivity to gather data from sensors and communicate messages to display devices and actuators. It will support the Wi-Fi services and other smart elements (sensors and displays) at given locations. The network layer will be scalable such that additional sensors, actuators, display devices can be seamlessly added and more Wi-Fi spots created in future. Provisioning of bandwidth will not be included in the scope of the Implementation Vendor; however, all electronics required at the edge locations to use the bandwidth will be included in the scope of the system integrator.

### 3.1.4 Smart Application and Integration Layer

The smart applications layer will contain data aggregation and management systems (rules engines, alerting systems, diagnostics systems, control systems, messaging system, events handling system), and reporting / dashboard system to provide actionable information to city administrators and citizens. It will be an evolving layer with applications added and integrated as and when new applications are developed at AMC. While aspects of ambient conditions within the city will be gathered through various sensors deployed, some city specific data will come from other government and non-government agencies. It is through the integration layer – that data will be exchanged to and from the under lying

architecture components and other data from system developed by government (such as police department, meteorological department, street lights department, water department, irrigation department, transport organizations within Ahmedabad , etc.) and non-government agencies.

### 3.1.5 Sensor Layer

The sensor layer will help the city administration gather information about the ambient city conditions or capture information from the edge level devices like, cameras, etc. Ahmedabad city is expected to have multiple environmental sensors across the city, to measure ambient conditions such as light intensity, temperature, water level (for chronic flood spots), air pollution, noise pollution and humidity.

### 3.1.6 Service Delivery and Consumption Layer

The output field devices layer will contain display devices or bi-directional (input & output) devices connected to the network which will be used by citizens to consume - and for administrators to provide - actionable information. Such field devices include digital messaging boards, environmental data displays, PA systems etc.

### 3.1.7 Security Layer

As ambient conditions, actuators and display devices are now connected through a network, security of the entire system becomes of paramount significance and the system integrator will have to provide:

- Infrastructure security- including policies for identity and information security policies
- Network security- including policies and practices adopted to prevent and monitor unauthorized access, misuse, modification, or denial of a computer network and network accessible resources, etc.
- Identity and Access Management – including user authentication, authorization, SSL & Digital Signatures for systems developed under the scope of work
- Application security- including hosting of government websites and other Cloud based services, adoption of Technical Standards for Interoperability Framework and other standards published by GoI for various e-Governance applications
- End device security, including physical security of all end devices such as display boards, kiosks etc.

Following security parameters should be included for all smart elements, but not limited to:

- Identity and access management
- User/administrator audit log activity (logon, user creation, date-time of PA announcements, voice recording etc.)
- Secured data storage (storage of video/image/voice/location/data captured by various smart elements)
- SSL/TLS encryption for web and mobile application based interfaces for sensitive data transfer
- Protection against Denial of Service (DoS) and Interference attacks to public Wi-Fi Devices and other components under scope of work

### 3.2 Broad Scope of Work

The scope of work under this RFP is broadly divided into two components:

- System Integration Component:** Design, Supply, Installation, Commissioning of IT and Non-IT Infrastructure to be deployed Pan City under the Ahmedabad Smart City project.
- Operations & Maintenance Component:** Operation and Maintenance of entire infrastructure (IT and Non-IT) installed as per the scope of work of this RFP.

#### A) System Integration Component:

As described, this is a pan city ICT infrastructure project. The bidder is responsible for design, supply, installation, commissioning of various smart solution components. In order to effectively describes the scope of work under the system integration component it is further divided into following sub-components:

- 1) Smart City Surveillance System (SCSS)
- 2) Area Traffic Control System
- 3) Wi-Fi Hotspot @ Public places
- 4) LED Display Board/Screen
- 5) Smart Sensors and Smart Parking
- 6) Smart Street Lighting
- 7) Command and Control center
- 8) IT infrastructure for City wide network

Selected Bidder is responsible for below mentioned indicative list of activities applicable for all the components/sub-components of the project but not limited to: -

- **Detailed feasibility study and actual site survey for Poles, CCTV Cameras (including Type and quantity), Wi-Fi access points, Sensors (Including Type and QTY), Digital Boards/panels, Positioning of junction box, Smart Street Lighting Poles, source of power supply, last mile cabling route, kind of coupling needed to mount cameras and other end devices etc.**
- Design, supply, installation, testing, commissioning of all the hardware (IT & Non-IT) and software inclusive of cables and all applicable accessories required for the successful completion of the entire projects as per the scope of work and technical specification of the RFP at the respective locations.
- Setting up and operations of command and control center.
- Obtaining the required permissions from the authorities/local bodies. However, AMC will provide adequate assistance/support as and when required.

- Comprehensive Last mile connectivity (including supply, installation & commissioning of required material/hardware) between utilities and nearby Junction box (connectivity medium like CAT-6/fiber as per the feasibility study report) including supply of active components and passive components within the junction box
- Civil Work (Supply, Erection and commissioning) of Non-IT infrastructure like poles/frames/fixtures/housing etc. with proper electrical earthing (as per IS-3043) wherever required based on the feasibility study report.
- Bidder has to ensure that on completion of work, site has to be restored to its original condition as per rules / provisions of respective local bodies/authorities.
- Integration of entire solutions with the various smart city components/applications/solutions for achievement of overall objective of Ahmedabad smart city project. An indicative Bill of Material (BoM) is defined in Financial Bid format However, bidder has to provision all the required hardware/software/services which may have been inadvertently missed out to successfully run the entire system.
- The Bidder will have to suitable size the PoE Switches based on the power rating of the camera (all Types) being proposed under the project.
- OEMs connected with captioned Project found indulging in attempting to influence the processes by directly contacting the Authority officials, ostensibly in order to promote/lobby their own products for selection of vendors of any kind will be considered against the spirit of Ethical Practices and Good Industry Practices & will be considered for debarring your organizations from AMC as well as in other smart cities.
- **OEM Support:**
  - ⇒ The bidder should submit authorization certificate of Original Equipment Manufacturer (OEM) (or multiple OEMs) specific to the bid. The bidder should have a back-to-back support agreement/arrangement for services including supply of spare parts etc. with the OEMs of products like Networking devices, Servers, CCTV cameras, Digital panel/board etc. which includes the post-sales support activities for the entire project period.
  - ⇒ The bidder shall furnish undertaking confirming compliance to technical specifications and complete functional requirements as stated in the bid document, interoperability and performance guarantee for the complete solution, comprising of overall proposed solutions taking complete ownership and responsibility of the complete solution and all equipment proposed from OEMs.
- Operation and maintenance of entire project (IT, Non-IT and Software) as per the scope of work for the period of 5 years from the date of Go Live.
- The IP Pool for the project will be provided by the SCADL.
- Actual power/electricity required will be provided by SCADL. However, extension till the last mile/actual utility will be in the scope of successful bidder.
- The RoW (Right of Way) permission, as required for the digging, laying and reinstatement of underground cables and foundations shall be provided by AMC and will have to be factored in and paid for by the bidder in the commercials.
- Government of Gujarat is in the process of coming up with a state-wide Government of Gujarat is in the process of coming up with a state-wide Surveillance project, successful bidder will be

responsible for integration entire solution procured under this project with any such centralized system that may come in the future.

- The system integrator will also be responsible for data migration from the existing applications/systems such as CSITMS, e- Challan as they exist in Ahmedabad city, etc. in the proposed solution.

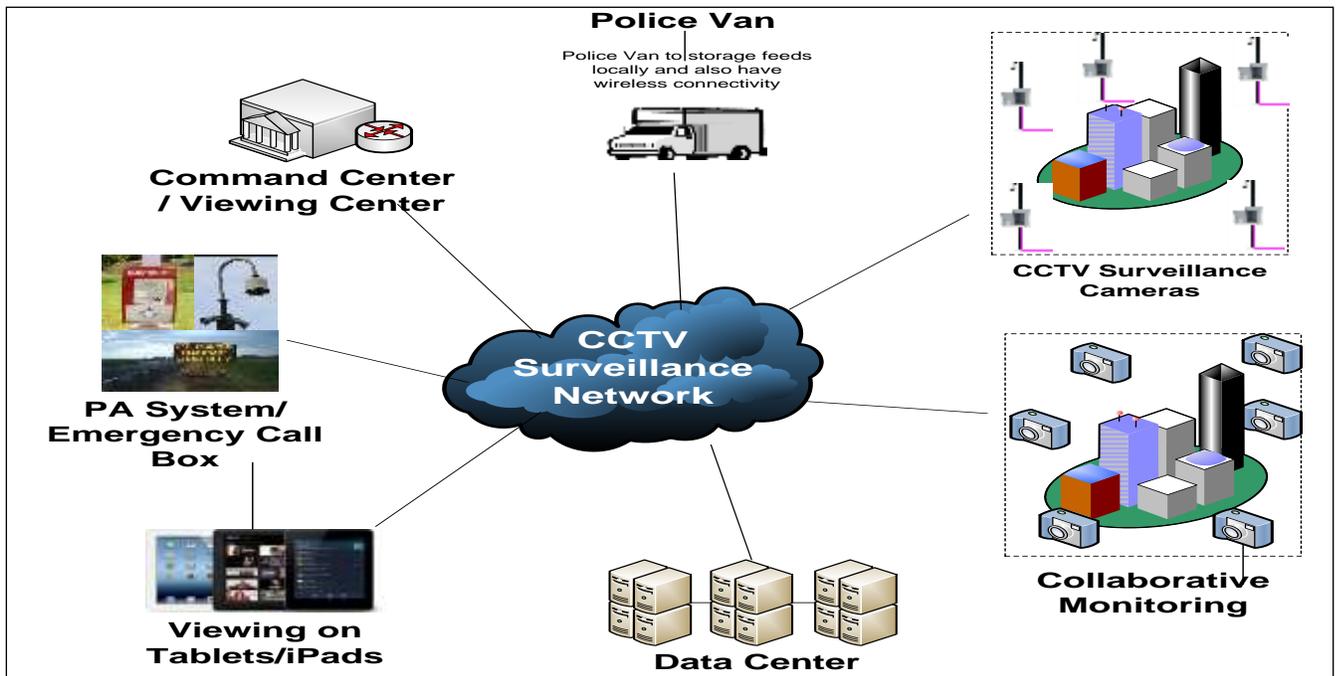
The system integrator will be responsible for integrating AMC applications such as Integrated Transit Management System (ITMS) and Automatic Fare Collection System (AFCS) for BRTS and AMTS, ERP system, GIS, complaint redressal system (CCRS), solid waste management system, SCADA system, etc.

The SI will be responsible for integrating the infrastructure that is part of scope of this tender with the existing applications of Govt. of Gujarat such as e-Gujcop, Vahan, Sarathi, e-governance application of AMC to allow business processing for following functions where in the applications mentioned above will be the data sources, along with the end devices being planned in this RFP to create business processes for following functionalities:

1. Generation of challans for violation of traffic rules
2. Smart Parking
3. Sensors based applications
4. Surveillance System
5. Other Smart City functionality leveraging Infrastructure of this bid.

### 1) Smart City Surveillance System (SCSS)

SCADL plans to build a Smart City Surveillance System (SCSS) providing city-wide CCTV surveillance infrastructure capable of feature like **Face Detection, Video based analytics**, etc. A robust city wide surveillance system will enable SCADL and Police department to keep a watch on sensitive areas of the city through a centrally integrated operations and monitoring on one application layer. Further, SCSS will provide advanced level of digital security and surveillance system.



**\*\*Feed/Message to Police Van is optional**

- Bidder is responsible for Design, supply, installation, testing, commissioning of entire smart city surveillance system including of all the components like cameras, video management system as per the technical specification and scope of work of this RFP during the contract duration.
- It is envisaged that Smart City Surveillance System should be IP based surveillance system installed at selected locations for smart traffic management system and citizen safety via surveillance.
- Detailed list of location for Ahmedabad Municipal Corporation/SCADL are mentioned in Annexure-A. Detailed list of location for Ahmedabad Police are mentioned in Annexure-B. However, while doing detailed feasibility study and site survey activity bidder is required to include type and quantities of camera required at each location.
- The proposed video surveillance system will involve setting up of IP based outdoor security cameras across various locations in the Ahmedabad City. **The video surveillance infrastructure under the project shall be created for the two project stakeholder namely SCADL and the Police Department, Ahmedabad, The Video feeds from the surveillance cameras shall be stored at their respective Control Centre i.e. CCC at Paldi for SCADL/AMC and Traffic Control center at the CP office Ahmedabad for Police Department.**
- **Further, the same data shall also be viewed their respective Control Centre i.e. CCC at Paldi and MC Viewing Center located at Municipal Commissioner Office at Danapith for SCADL/AMC and Traffic Control center at the CP office Ahmedabad for Police Department**
- **The Proposed solution should allow the storage of video feeds at various locations based on the IP addresses given to the cameras.**
- Bidder is responsible for Integration of smart city surveillance system with command and control center of SCADL and command/monitoring center of Police department and other project/solution/initiatives under the Ahmedabad smart city project.
- **Cameras:**
  - ⇒ Cameras being the core of the entire Surveillance system, it is important that their selection is carefully done to ensure suitability & accuracy of the information captured on the field and is rugged, durable & compact.
  - ⇒ These cameras need to work on 24 X 7 X 365 basis during all weather conditions and transmit video feeds to the data center and should be capable to capture the video feeds at a lower FPS during the lean period. However, Police Department may take the regular review of the requirements for video resolution, FPS and may change these numbers to suit certain specific requirements (for example, there could be a situation when certain cameras are required to be viewed at higher FPS for specific period.
  - ⇒ The cameras will have the functionality to zoom in and pan out on a specific predefined field in its viewing area, detect and track motion etc.
  - ⇒ The complete tracking of a 'wanted' vehicle identified or flagged by Police should be possible on the GIS map.
  - ⇒ Positioning of Cameras should be such that it covers the entire road/lane available at the respective locations.
  - ⇒ Cameras should be installed on proper pole/Gantry at the locations finalized by the SCADL. However, there are locations in the city where poles are already installed/available. It is

envisaged that selected bidder should cover the exact availability and requirement of setting up of new poles in their detailed feasibility status report.

- **Information security policy** Bidder is also responsible for preparing the Information security policy of the project within three months from the date of kick-off which will be further reviewed and approved by the Ahmedabad city police department.
- Proposed solution of smart city surveillance including fixed cameras, network based digital recording system and the centralized software should be from reputed and approved manufacturer which can be integrated to any other manufacturer having ONVIF supported hardware and VMS software. The bidder should submit the OEM Authorization for the same along with the technical bid.
- The proposed Video Management System shall provide a complete end-to-end solution for security surveillance application. The control center shall allow an operator to view live / recorded video from any camera on the IP Network.
- The Surveillance System should not have any limit on the number of cameras to be connected for Surveillance, Monitoring and recording.
- The Surveillance System shall support distributed viewing of any camera in the system using Video walls or big screen displays.
- The VMS should support viewing of multiple cameras in one screen or viewing of one camera feed on one screen based on user selection. Multiple camera views will support 2\*2, 3\*3, 4\*4, 5\*5, 6\*6, or alternatively 3\*2, 4\*3, 5\*4, 6\*5, 7\*6, 8\*6 camera feeds on the same screen. On a video wall, it would be possible to show up to 500 or more camera feeds on to the wall at the same time, auto sequencing to bring all feeds and then to pan in and zoom on one or more cameras simultaneously on the video wall.
- The Surveillance System shall support alarm management. The alarm management shall allow for the continuous monitoring of the operational status and event-triggered alarms from system servers, cameras and other external devices.
- It should be possible to integrate the Surveillance System with 3rd-party software, to enable the users to develop customized applications for enhancing the use of video surveillance solution. For e.g., integrating alarm management to initiate SMS, E-Mail, VoIP call, etc.
- The bidder should also confirm that the proposed solution will integrate with any supported hardware and software without any interfacing problems.
- SCADL has also envisaged to strengthen the smart city surveillance system with implementation of following systems: -
  - a) City Surveillance System:** The City surveillance system shall cover the following capabilities:
    - ⇒ Implementation of CCTV surveillance system covering entire city with focus on state of art security system covering major traffic junctions, municipal parks, tourist places and key gathering places through the Video Camera feeds at the Command and Control Centre.
    - ⇒ To receive collaborative videos from different locations (airport, railway stations, roadways, temples, malls, metro stations, fair, festivals etc.) and to display the selected videos on videos on wall and store them, if required.
    - ⇒ To have capability to display high resolution satellite imagery and vector maps. To show the camera, Wi-Fi Hotspot, LED display screen locations on the map.
    - ⇒ Detection of vehicles moving on the wrong side of the Road.

⇒ Bidder is also responsible for integration of existing CCTV cameras installed in the city by SCADL /Home department.

**b) Face Recognition System:**

- ⇒ Bidder is responsible for supply, installation and commissioning of face detection system at the Data Center/CCC.
- ⇒ Bidder is responsible for integration of the system with existing database of state and national crime records such as e-GujCop, CCTNS etc.
- ⇒ The system should be able to generate alarm, send email and SMS automatically to the authorized personnel on their registered Numbers and email ids on identification of preloaded face image(s) by the system.
- ⇒ The system should also be able to trace the blacklisted persons on the map with date and time stamp.
- ⇒ Face Recognition/identification system should be capable enough to match criminal photograph in live/stored video.

**c) Video Analytics System: -**

- ⇒ SCADL envisages to implement video analytics system on pilot basis at 10 major junctions/locations in the Ahmedabad city for live feed analytics. This is separate from the VMS based analytics for red light, over speeding, traffic rule violations etc., functionalities which have been asked as part of scope of work. This analytics layer, being separate from the functionalities sought under city surveillance solution, this will allow rule based alert generation on live feed. It will work on set of rules pre-programmed.
- ⇒ The video analytics software should be capable enough to perform following tasks:
  - Object detection: should be able to detect Un-identified/Abandoned/unattended objects.
  - Attribute based search for Objects and People such as vehicle color, cloth color, size, height etc.
  - Object Origin detection i.e. to detect the unattended object from the time it first appeared on the view of the camera.
- ⇒ The alerts generated by this video analytics system should be automatically registered in the CCC application's list of events and incidents.

**d) Signboards for CCTV camera locations:**

- ⇒ It is necessary that the CCTV Camera locations should have some standardized signs informing the public of the existence of CCTV cameras. This will bring about the transparency on installation of CCTV cameras and no one would be able to later complain for the breach of privacy. The specifications for the signboards are provided in the technical and functional specifications section.

**e) Storage/Recording Requirements:**

- ⇒ It is proposed that the storage solution should be modular enough to ensure compliance to the changes in storage/recording policy, to be evolved upon initial deployment of the system.

- ⇒ The video feeds would be kept in two storage formats i.e. primary for 15 days and secondary for 30 days. After 30 days, the video feeds would be overwritten unless it is flagged or marked by the Police/appropriate authority for investigation or any other purpose. The video feeds of all relevant cameras capturing the incident in question would be stored until the Police/appropriate authority deem it good for deletion. Further, incidents that are flagged by the Police or any court order, the video of the relevant portion from all relevant cameras should be stored/archived separately for investigation purposes.
- ⇒ Regardless of the above, the image of the License plate extracted by ANPR software, along with the timestamp and location of the image capture will be stored for a period of 3 months.
- ⇒ Full audit trail of reports to be maintained for 90 days.
- ⇒ Every CCTV feed should be retrievable using IP of the camera, based on geo-location. The storage should be configured in such a way that in future when the state government creates a state wide CCTV surveillance project (SASGUJ), the feeds of CCTV cameras should be able to be pulled in from the VMS through the camera API, the successful bidder will have to publish such API's for the SASGUJ project. This would require virtualized storage coupling with the new surveillances infrastructure that will be created under the SASGUJ Project.
- ⇒ Retrieval time for any data/video feeds stored should be max. 1 hours
- ⇒ The Recording Servers / System, once configured, shall run independently of the Video Management system and continue to operate in the event that the Management system is off-line.
- ⇒ The system shall support storage of H.264/H.265, MJPEG or better compression formats for all IP cameras connected to the system.
- ⇒ The system should not limit amount of storage to be allocated for each connected device.
- ⇒ The on-line storage capability shall be transparent and allow Clients to browse and access recordings without the need to restore the video to a local hard drive for access.

## 2) Area Traffic Control System:

Area traffic Control System (ATCS) uses a centralized algorithm based logic to regulate the traffic and identify the traffic volume based on video analytic technique to monitor the traffic behavior on various corridors of the city, based on the real-time data collected by the systems. The key objectives of the ATC system are as follows:

- I. Enhancing the traffic management capabilities of the city
- II. Reduce vehicle congestion on roads based on optimized signaling
- III. Efficiently detect red light, over speeding identify vehicle registration number
- IV. Increased travel speed through coordinated red Lights & optimized signaling
- V. Reduce violation trends
- VI. Optimize traffic signal timings for reducing travel time delayed

**Followings are the key components of (ATCS): -**

### a) Speed Detection System: -

- ⇒ This system shall be taken up as a project at 62 locations with cameras installed at identified locations on the freeways covering entire road. The list of these locations is attached in Annexure F.

- ⇒ The Vehicle Speed Detection system should be a camera based Video analytics system wherein the speed of the vehicle is automatically calculated and violations is detected based on the permissible speed limits.
- ⇒ The Automatic Speed Detection application (Including ANPR) will have to be integrated with the various application and Databases like e- Gujcop, e- challan, RTO, home/Police department etc. such that e-challans can be generated by the system through an automated process.
- ⇒ The Speed Violation system should be capable of measuring speeds up to 120 Km/Hour for both (Two & Four Wheeler's) or higher with minimum accuracy of 90% in detecting speed limit violations and photographing the incident and reading the vehicle No. plate in various formats including Gujarati font.
- ⇒ The details of limits of speed violations will be shared with the successful bidder by the traffic police department.
- ⇒ The system should be able to generate an alarms /alerts based on the vehicles status and category like "Wanted", "Suspicious", "Stolen" etc. as categorized by the database.
- ⇒ The system should be capable enough to process the speed violations activity through the raw feed at the CCC, and the details of violation like Speed Violation data, alert and videos/photo feed should be stored at the command and control center. Every violation should automatically create a challan, a report in the format to be provided and create image/ video snippets of duration to be specified and such report should be stored automatically with due indexing.

**b) Red Light Violation Detection System: -**

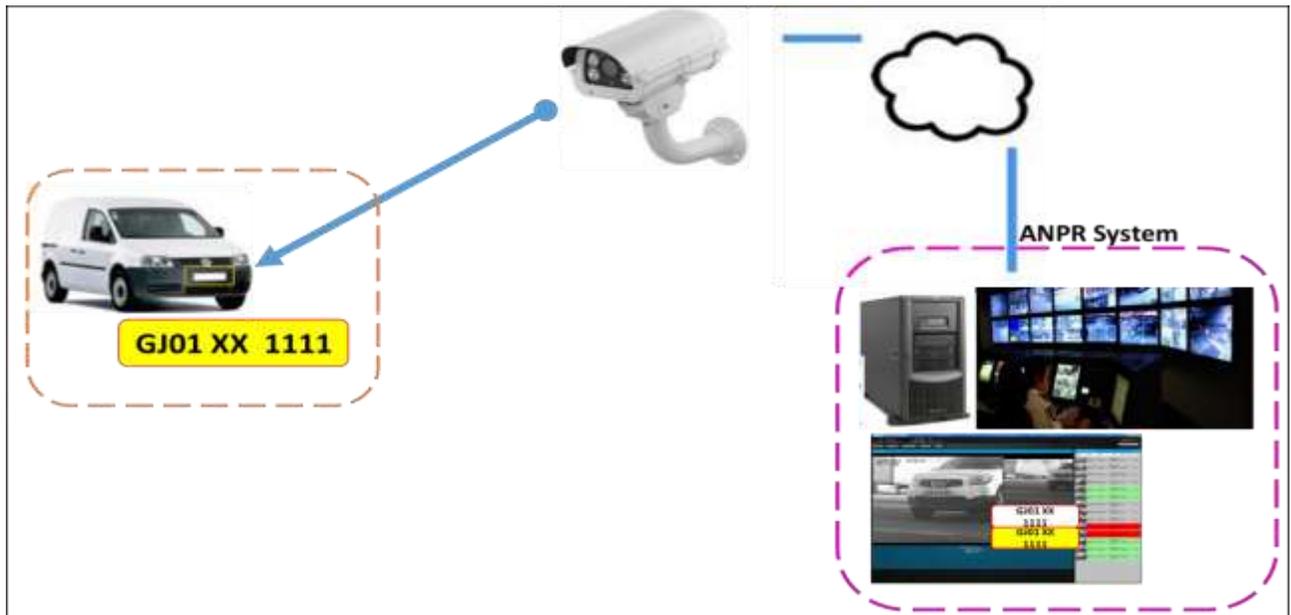
- ⇒ The RLVD system should use the Video/Image processing techniques to identify the red-light violations.
- ⇒ The RLVD system Including ANPR capabilities should be integrated with the various application and Databases like e-GujCop, VAHAN, and e-Challan application (to be developed under this project) etc. such that e-Challans can be generated by the system through an automated process.
- ⇒ The RLVD system and related videos as well as the surveillance video feed should go to the CCC, wherein the Red-Light violation and its Number plate detection shall take place in real time.
- ⇒ The system should be capable of identifying & capturing of vehicles traveling through a signalized intersection during the 'red' signal phase during 24x7 (both day and Night) and recording a series of violation images that track the whole violation event.
- ⇒ The system should be able to capture the image of the violating Vehicle along with the active Red Light (in red colour), as a proof of the violation.
- ⇒ The system should be able to perform OCR (optical character recognition) of number plates (Read and Detect) written in English, hindi, gujarati with character in standard or non-standard fonts, unusual characteristics like Different size characters, font, colors, special characters etc.
- ⇒ The system should be able to do simultaneous monitoring of multiple lanes and should be able to identify multiple Red Light Violations simultaneously within the same lane/ Road.
- ⇒ The RLVD system has to be integrated with the Red Light Signaling System controlled and should be able to sense the Red-light signal and identify violators based on it.
- ⇒ 'Scene' images will be captured the red signal in the direction of vehicle's travel.

- ⇒ The System should be able to identify and log Red Light Violations with minimum accuracy of 90%
- ⇒ The System should be able to read and identify the Registration plate of the vehicle violating the Red Light through the ANPR system.
- ⇒ The system should be able to capture and provide Video Feed from the RLVD application (Server side) for a duration for which the RED Signal is active for that section of the Road.
- ⇒ System should also have built in smart algorithm for identification of the defaulter for other types of challaning such as without Helmet, without seat belt, with 50% accuracy in first year of operation which is to increase by 10% every year etc.
- ⇒ The system should be able to generate various MIS reports like vehicle(s) made rule violations, Vehicle details, violation type along with date and time stamp, week / Month / Year wise reports.

**c) Automatic Number Plate Recognition (ANPR) System: -**

- ⇒ The proposed ANPR System shall enable monitoring of vehicle flow. The system shall support real-time detection of vehicles, reading of its number plate and conversion of the same into alphanumeric text.
- ⇒ The proposed system should be able to generate an auto alarms /alerts based on the vehicles status and category as specified by the database.
- ⇒ The proposed ANPR system has to be integrated with various Applications/ Databases of the e-GujCop application of the Police department, e- challan etc. for verification/checking and fetching the required vehicle information.
- ⇒ The proposed system should be able to store the image of vehicle, number plate and also able to create a record of vehicle no., Date & time stamp, locations etc. in DBMS.
- ⇒ The proposed ANPR system and related videos as well as the surveillance video feed should go to the command and control rooms whereas the processing and recording of the video footage of ANPR shall take place at intersection itself.
- ⇒ The proposed System should be able to detect and recognize the English alphanumeric License plate in standard fonts and formats of all the vehicles.
- ⇒ The proposed system should be capable to perform OCR (optical character recognition) of number plates (Detect and Read) written in English and Gujarati language with character in standard or non-standard fonts, unusual characteristics like different size characters, font, colors, special characters etc.
- ⇒ The Accuracy of ANPR system should be more than 90% in case of standard English Alphanumeric Font and High Security Registration plates and 75% for Hindi Devnagari and Gujarati scripts, the system should be able to capture the Registration Plate of a vehicle moving at a speed of up to 120 Km/hour with the same level of accuracy.
- ⇒ The system database should allow to advance search the database with different set of criteria while conducting post incident analysis/investigations.
- ⇒ The proposed system should be able to generate various MIS reports like vehicle flow, detected vehicle category wise reports, etc.
- ⇒ The system should be able to plot the camera locations on to the city map (open source digital Map / the Maps provided by AMC, bhulekh map etc.) in case of any stolen/suspected/wanted/Hot listed vehicle has been identified by the ANPR system at any or multi camera locations, such that the pictorial view of the data on the map along with the date

and time stamp of the event shall give meaningful insight to the alert generated and the monitoring of the same can be done in a better way.



Logical Diagram for the ANPR System

#### d) e-Challan System: -

- ⇒ The successful bidder is required to develop a “e- Challan system/solution” based on the laws/rules of Motor Vehicle Act of central/state government.
- ⇒ Successful bidder is responsible for end-to-end designing, planning, supply, implementation, testing, commissioning and maintenance of entire e-Challan system.
- ⇒ It is envisaged that successful bidder will have to submit a detailed Functional Requirement document and software requirement specification covering each and every aspect of the system required to successfully run the system.
- ⇒ e-Challan system should be able to automatically generate e-challan’s based on the laws/rules of Motor Vehicle Act of central/state government for the violations detected by the surveillance system. It should also have a provision/interface for manual e- challan generation for violations captured through video feeds and field level. Should the government makes changes in laws pertaining to traffic management during the O&M period of the contract, the bidder will have to carry out such changes without any additional cost.
- ⇒ It should be integrated with the all the required databases/systems for auto generation of e-Challan like RTO system, VMS system and other required resources.
- ⇒ The successful bidder is required to submit the SoPs, documents, FAQ along with all the patches and upgrades of the system.
- ⇒ Application development must be documented in detail and the code/script should be properly annotated with comments etc.
- ⇒ The “web based e-Challan” payment module has to be developed by the successful bidder and integrated with a Payment Gateway (to be provided by SCADL) for the online payment of the challans by the citizens through multiple mode i.e. Debit/Credit Card/Internet

Banking/wallet/Janmitra card (under the Common Card payment system program of SCADL) etc.

- ⇒ The system should also have the provision for integration of the e-challan system with an SMS gateway for Intimating the offenders/violators at the various steps such as at the time of generation of challan, Payment due, payment made etc.
- ⇒ The system should be able to generate MIS reports based on the type/ Date /time/Location of offences, as may be required for the day to day activity.
- ⇒ The bidder has to provide sufficient number of laser printer so that challan can be printed automatically.
- ⇒ Bidder has to assume that approximately 500,000 challans on monthly basis total for the sizing of the Desktops and Printers.
- ⇒ The Successful bidder will also have to publish the API's for the integration of Violation information with RTO Database (Vahan, Sarathi) /e- Gujcop application

#### e) Adaptive Traffic Signal Control System

SCADL has envisaged to implement Adaptive Traffic signal control system consist of traffic sensors (detectors), intelligent algorithm based traffic controllers for real time-adaptive traffic management. This shall be taken up as a Pilot project with initially 10 locations (crossroads with four way \*2/3 lane each traffic) and as per the results shall be replicated further across the city However, successful bidder is required to integrate the same with the proposed solution of this contract. Adaptive Traffic Control system will have the following functional features:

- ⇒ ATCS should be able to sense the volume of the Traffic automatically at each of the junction movement nodes through the means of camera based algorithms mounted on the LPU(s) at the Traffic junction
- ⇒ Accordingly, it should be able to control the Traffic signal to give way to the side of the traffic with high volumes
- ⇒ The system should have a provision of a manual override in case of use by the Traffic Police personnel in case of special VIP movement and system failures

#### f) Public Address System

- ⇒ The PA system should be integrated with the surveillance system which enables the Traffic Police at Traffic Control Center and at the Control and Command Center to make appropriate announcements to the traffic at the remote junctions through the public-address system. The PA system is integrated with surveillance system and installed in such a manner that the Traffic Police at Control and Command Center and CCC is comfortably able to announce at any of the junctions by watching the live video stream from Surveillance system installed at the Traffic junctions.
- ⇒ The list of locations where public address systems are to be deployed by are given in Annexure E.
- ⇒ The PA system will receive the signals from the Traffic Command Center and Command and Control Center and send these signals to the amplifiers and then to the speakers



connected to the amplifiers. The signals include both announcements and the control information. The PA systems at Traffic Junctions will be connected to the TCC (Traffic Control Center) and CCC through the proposed connectivity.

### 3) Wi-Fi Hotspot at Public places: -

SCADL aims at providing internet facility at public places to its citizens via setting up of Wi-Fi hotspots at the public places like Parks, Tourist Places and other public places spread across the city.

- The Bidder is responsible for setting up of Wi-Fi Hotspot including supply installation and O&M of all the required hardware and software as per the technical specification and scope of work of the RFP.
- Detailed list of locations along with the no. of Access points at each location is shared in Annexure D.
- It system should support features such as user authentication, access etc. through OTP (One Time Password) on mobile no. & email. It should be capable to put a cap on the user session and amount of data consumed, regulate bandwidth besides allowing users to buy in the extras usage access. Thereby it shall be required to be integrated with a Payment and SMS Gateway along with a centralized billing mechanism. The proposed solution should have an appropriate billing application/mechanism for the users opting for paid packages plan beyond threshold limit.
- The proposed solution should be on a “Cloud based model” inclusive of all the components like WLAN Controller, Authentication, Authorization and Accounting (AAA), RADIUS, SMS Gateway, Payment Gateway, customization and branding of services, integration with any third-party services as and when required).
- The proposed cloud based solution should be fully secured and as per WPC regulations/guidelines. The responsibility for keeping the required Logs to meet the compliance with all Regulatory and Legal guidelines issued by Department of Telecommunications/TRAI from time to time shall be with the Service Provider selected through the Network Connectivity tender by SCADL/AMC.
- The cloud enabled solution should support AP of any make or model, else the successful bidder will have to rewrite and add firmware to the Access Points and make it compatible to its controller. Bidder must note that SCADL will procure APs in future of any make and model and it will be the responsibility of the current successful bidder to integrate such with current controller and WI FI management of the network and run such.
- Also the bidder will be responsible for making future procured Access points compatible with cloud based controller and make those Access Points functional.
- Successful bidder will be responsible for O&M of Wi-Fi APs to be set up in future and will be paid an amount equal to 10% of the purchase price of AP per year for O&M responsibility.
- Future agency will work under supervision of successful bidder and the current bidder will approve the FAT for the newly added AP’s.
- The proposed solution should allow firmware/ patch upgrade and monitoring from a central location.

### 4) LED Display Boards/screen:

SCADL plans to implement Digital board (LED) across the city converting existing static boards with digital boards and identifying various new vicinities in the city where with the help of putting digital

boards SCADL able to create a vibrant night life view.

- Implementation of digital boards will generate a multifold revenue simultaneously it will also use in disseminating various key public information. These boards can be used for display of various information/data collected through Smart sensors like environmental sensor, parking sensors, surveillance cameras, and Area traffic control systems installed across the city.
- The bidder is responsible for design, supply, installation, commission and O&M of all required Hardware (outdoor Digital board/ LED Screen(s), Controller, Media Player, Indian Standard PDU, work station, etc.) and central software like Digital Media Manager, Digital Media Player required for successful implementation of the system as per the scope of work and technical specification of the RFP.
- The system should be capable to display warnings, traffic advice, route guidance and emergency messages to motorists/Citizens from the Traffic/Command and Control Center in real time.
- The Display board Media Manger at the CCC should be able to communicate with the remote controller through the network. It should send out command data to the display board controller and to confirm normal operation of the board. In return, the display Board media manager should receive status data from the Display board controller.
- The tentative list of locations is mentioned in Annexure C. However, actual size of each Digital board to be installed will depends upon the feasibility study report done by the bidder.
- The bidder is required to bring all the necessary tools and techniques required for the installation and commissioning of digital boards.
- Bidder will have to do necessary electrical earthing with adherence to the required standard like IS-3043, wherever required.
- The bidder shall ensure that the proposed digital boards/LED screens should provide best quality of resolution with clear visuals without effected from Day light & Night vision and should work in all weather conditions. The LED shall come in two formats Type 1 & Type 2 as per the specification.
- Desired sizes in meters are 9\*4.5 and 8\*3 for other locations in the city. However, actual size will have to be finalized based on the feasibility/ survey report. The successful bidder will have to bring in the complete solution pertaining to the LED display boards including its mounting structure, Pole/ Gantry inclusive of all civil/ electrical /erection work that may be required for successful commissioning of the display board.

## 5) Smart Sensors:

Smart environment sensors will gather data about pollution, temperature, rains, and levels of gases in the city (pollution), air quality, water quality and any other events on a daily basis. It is for information of citizens and administration to further take appropriate actions during the daily course / cause of any event. SCADL is looking at implementation of various categories of smart sensors for effective monitoring and management of the city utilities.

- Bidder is responsible for design, supply, installation, commissioning and O&M of Hardware and software required as per the scope of work and technical specification of the RFP.
- Various environment sensors shall sense the prevailing environment conditions and send the data to the integrated control system where real time data resides and the same shall be made available to various other departments and applications for decision making.
- The list of locations will be shared with the successful bidder. However, the final list of location may vary based on the feasibility study report done by bidder.

- Sensors should be installed in a proper weather proof housing without effecting its working condition.
- Sensors should have a real time automatic data transmission mechanism at various locations like command and control center, digital boards.
- SCADL is planning to install Followings categories of sensors: -

#### **a) Smart Environmental Sensors**

- ⇒ Bidder is responsible for supply, installation, commissioning and O&M of following types of Environmental sensors:
  - Ambient Air quality
  - Temperature and
  - Humidity levels
  - Water quality
- ⇒ The sensors should be able to provide dual feed, one for local display and one for centralized command and control center
- ⇒ Proposed solution should allow to store the data from sensors in a hard disk or computer placed at command and control center or central location.

#### **b) Smart Parking Sensor & Space Availability system:**

- ⇒ **Objective:** The smart parking solution should enable SCADL to obtain real time situational awareness about the occupancy of parking lot. It will also provide real time location based view to citizens about proximity of parking lots and availability of parking lots. Further, it will enable SCADL or any other appointed third party to facilitate generation of parking receipts and tickets based on occupancy of parking lots.
- ⇒ SCADL envisages to build a software solution as a service which shall be geo layered. Users of this system will be parking owners at malls, multiplexes, cinema halls and paid parking places etc.
- ⇒ SCADL/AMC will enable the various parking owners to take up this parking solution for better utility, occupancy and revenue as well as convenience to the citizens.
- ⇒ The solution will allow creation of multiple users (parking owners), pull in their parking capacities and utilization based on real time interface. The service will be given to parking facility owners, managers who will have flexibility of either doing manual feeding for capacity at their end or set up sensors (of any make or model) and push availability / occupancy statistics automatically in to the solution so built.
- ⇒ **Broad Scope:** Bidder is also required to supply, install, commissioning and O&M of Smart Parking Sensors as per the scope of work and technical specification of the RFP.
- ⇒ The proposed sensors should be installed at the location which will be shared with the successful bidder is also responsible for development & Maintenance of Mobile Application and web portal integrated with the Smart parking sensors which will provide the real-time availability of parking space at the various parking facility.
- ⇒ The hardware for end point sensors will be open standard.
- ⇒ Bidder is required to bring required hardware for successful hosting of the mobile application and web portal.
- ⇒ Proposed solution should allow registration of Parking lot, details of parking owner and parking space inventory at the time of registration.

- ⇒ Proposed solution should be integrated with Digital Map (open source digital Map / the Maps provided by AMC, bhulekh map etc.) of the Ahmedabad City and users should be directed to the nearby available parking space through GPS navigation.
- ⇒ Developer will create either a separate mobile app as solution for parking in Ahmedabad or will integrate the parking availability – information as a service in existing mobile app of Ahmedabad city for citizens. Available parking will be displayed on map interface.
- ⇒ The said parking system developed by the successful bidder under this project, shall be taken up by Govt. of Gujarat for deployment across the state based on the success and applicability. The bidder will have to handover the source code for the said parking solution to the Govt. of Gujarat, however the support for the same shall be provided by the successful bidder.
- ⇒ The backend algorithm should then calculate the available parking space based on the simple formula as below:  
 Total Available Parking space in a parking Lot (A) = (Total Parking capacity of a particular parking Lot) (B) - (Total No. Vehicles which has entered and not exited the parking lot) (C)  
 Or  
 Total Available Parking space in a parking Lot i.e. A = B-C
- ⇒ Sensors should be installed at the entry and exit point of the parking lot.

## 6) Smart Street Lighting:

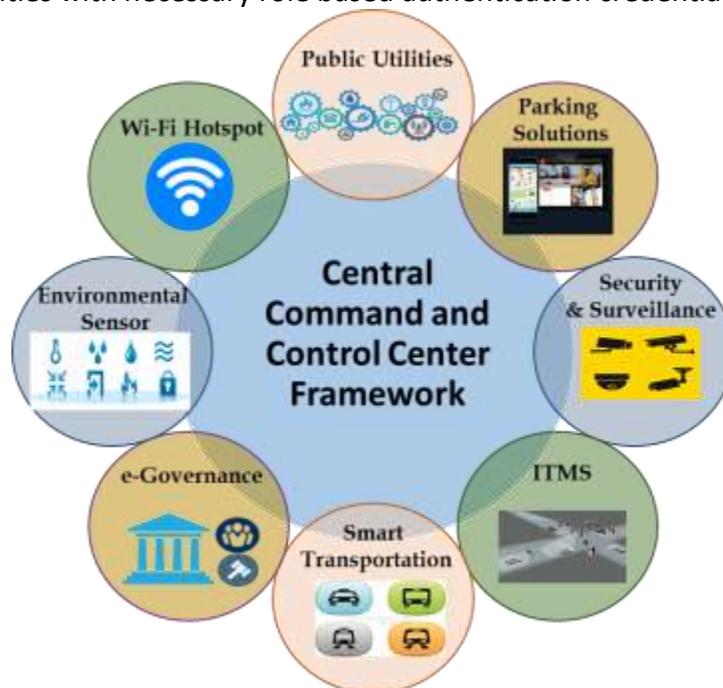
As a part of the Smart City Initiative, SCADL envisages to install Smart Street lighting across the BRTS corridor routes. The List of locations for deployment of this solution will be shared with the successful bidder. Please note that the bidder scope includes the O&M (operations and maintenance) of the Smart Street lighting solution.

Smart Street light monitoring and control system should comprise of the following:

- A luminary equipped with an external control node which will On/Off/Dim as per the command given and which can log all the critical parameters of the street light fixture connected to it.
- A Wireless Gateway unit that wirelessly collects the data from all the street light controllers in its vicinity through an open communication protocol. The gateway is placed inside the feeder pillar or on the pole and communicates it to the servers through CPU.
- The communication between the Gateway and central server is through GPRS / GSM / Ethernet / WIFI based communication.
- A very powerful yet intuitive web-based software is considered for the interface between the City managers and the Smart Lights. City managers can install this on the server and securely access it from anywhere using a web browser with proper authorization.

## 7) Command and Control Center (CCC):

- ⇒ Looking at the huge volume of information generation with the help of pan city ICT infrastructure it is envisaged to have a Centralized Integrated Command and Control Center for Ahmedabad Smart City project. All the smart solution, network, components will converge at the central command and control center.
- ⇒ Integrated Command and Control Centre (CCC) involves leveraging on the information provided by various departments and providing a comprehensive response mechanism for the day-to-day challenges across the city. CCC shall be a fully integrated, web-enabled solution that provides seamless incident – response management, collaboration and geo-spatial display.
- ⇒ The CCC shall facilitate the viewing and controlling mechanism for the selected field locations in a fully automated environment for optimized monitoring, regulation and enforcement of services. The CCC shall be accessible by operators and concerned authorized entities with necessary role based authentication credentials.



- Bidder is responsible for setting up and O&M of entire Command and Control center including all the, hardware and software, interior work for setting-up of CCC at physical space provided by SCADL, Network Cabling, Electrical Works, Video Wall, Furniture's and Fixtures, Building Management System, CCTV Surveillance system of the CCC, Access Control System etc. as per the scope of work and technical specification of RFP.
- The Command & Control solution should be implemented and complied to the industry open standards based Commercial-of-the-shelf (COTS) products.
- Activities at the CCC will comprise of monitoring services, incident management, Response as per the defined SoP's with defined escalation procedures etc. as per the requirement laid out in the RFP.
- Bidder is responsible for integration of Command Control Centre with various existing smart city solution like ITMS, CSITMS, City Dashboard and any other projects/its components that may come up during the course of the contract.

- The successful bidder will have to provide all necessary Software, Databases, Hardware, Network Infrastructure, Active and Passive Connectivity, Power Backup including all IT infrastructure that may be required for the CCC for the entire contract duration.
- The CCC will manage and monitor entire project and services. All the Information and data collected through various components of the smart city project will be viewable through a centralized VMS/Application.
- Activities at the CCC will comprise of monitoring services, incident management with defined escalation procedures, etc.
- All hardware & software procured should be from reputed OEMs with license, support and warranty for the complete project/contract period.
- Bidder should seek confirmation from SCADL before installation and commissioning of the solutions, Technical Architecture and Equipment's at CCC.
- **Training:** bidder is responsible for providing training as mentioned below:
  - ⇒ Training to the employees of SCADL or SCADL's appointed agencies on application related operations and basic troubleshooting & reports generation etc.
  - ⇒ Bidder will have to bear all the cost associated with the conducting such training programs. However, the space for such training's shall be provided by SCADL
  - ⇒ Training sessions should be conducted on a requisite mix of theory & practical operations. The trainings should be conducted in Hindi, English and Gujarati.
  - ⇒ Initially the bidder will be required to impart training to the personnel's designated (approx. 20 nos.) by SCADL/AMC for one month, thereafter a similar training will be repeated once every quarter for the contract duration.
- **Video Wall:** A state of the art LED video wall facility should be installed at CCC. Followings are the functional requirement of video wall: -
  - ⇒ The video wall shall use multi-monitor (e.g., different monitor can display different input source) and split screen (e.g., several intersections can be displayed on one monitor) display technology to provide the flexibility to accept audio and video inputs Camera system, TV signal, recorded video, and Laptop computer.
  - ⇒ Should have provision for live monitoring and control of various modules of the ITS including dashboard of CSITMS and ITMS.
  - ⇒ The system should have Integration with existing control centres in the city & other services (with provision for future scalability in terms of systems to be integrated and extent of integration with existing systems)
    - Surveillance
    - Traffic
    - AMTS / BRTS
    - Monsoon Control Centre
    - Environment / Pollution Monitoring Sensors
    - SCADA Systems
    - E-Governance (City Civic Center module, Document and Workflow Management System, Property tax module, Birth and Death Registration module, License module, Building permission module, Water connection module, Accounts module, Audit module, Solid Waste Management module,

Welfare Schemes module, Employee Self Service module, Human Resource Management System module, Legal module, Project Systems (Engineering) module, Hospital Management System, Municipal Secretary module, Asset Management module, Land & Estate Management module, Material Management module, Central Workshop module, Web portal, Procurement module, AMTS module, Medical College module) including complaint redressal system (CCRS)

- Solid waste management system
- GIS system (multiple layers such as property, over ground utilities, roads, underground utilities, etc.)

The applications stack with which the CCC is expected to integrate is as below:

#	Application Name	Software Vendor	Contract Expiry	Webserver Software (Name)	Database Software (Name)	Integration through
1	E-Governance	M/s TCS	Apr 22 (5 years O&M post go-live, Go-live expected in April 17)	DIGIGOV Framework - JSP,HTML,CSS,Javascript( COTS/Bespoke application ) with application server WebSphere	IBM DB2	API/web service
2	GIS system	M/s Nascent	Apr 22 (5 years O&M post go-live, Go-live expected in April 17)	ESRI ArcGIS Server Standard & Extensions (DIE, NA, 3D, SA)	Enterprise DB - Post Gre SQL	API/web service
3	ITMS/AFCS - BRTS	M/s (n)Code Solutions - NEC	May 24 (7 years O&M post go-live, Go-live expected in May 17)	Java based application with web server Apache Tomcat	Post Gre SQL	API/web service
4	SCADA Systems	Chetas Control Systems Private limited	O&M starts from 1 APR 2017 to 31 March 2022	Rockwell Automation – Factory talk view	MS SQL server	API/web service
5	Solid waste management	Infinium solutionz		.NET based application with web server IIS	MS SQL server	API/web service

#	Application Name	Software Vendor	Contract Expiry	Webserver Software (Name)	Database Software (Name)	Integration through
6	AMC Surveillance System	(n)Code Solutions	Nov 2016	VMS- Milestone (AMC) - VMS- Nice(Police)	MS SQL Server	API/web service
7	CSITMS	L&T		VMS- Nice(Police)	MS SQL Server	API/web service
8	Rain gauge Sensors at Monsoon Control Room at Paldi	Komoline		.NET based application in C# Sharp		API/web service

- ⇒ The system at CCC shall provide the capability for multiple web-based display consoles to configure, manage, display, and control various components of ITS solution for administrative and operations purpose.
- ⇒ All applications that are part of ITMS should be accessible from the CCC. The Work Stations will be web-enabled, provide for appropriate User Access (Role based, read only/ Read write) and other security controls.
- ⇒ Additionally, there will be video wall deployed for the Municipal Commissioner viewing at the AMC HQ at Danapidh

• **Integrated Dashboard for the Entire Project Component:** The successful bidder is required to develop a centralized dashboard for entire smart city project for the reporting and viewing of all the project components and Key performance indicators of systems such as city surveillance system, ITMS, Sensors, Smart Parking Solution, Wi-Fi Access points, etc. through a single interface with the following capabilities:

- ⇒ Should be able to integrate all the existing services/utilities currently being used by the City administration and with the capability to add and integrate upcoming smart city application/components to be brought by the SCADL.
- ⇒ Should be able to provide a distinct view of all the integrated utilities/services through a single console/interface in a clear and hassle free manner.
- ⇒ Should be able to provide all possible status and details of the end utilities/components deployed throughout the city through a single interface
- ⇒ The system should provide a mechanism to configure and monitor Service Levels for monitored key performance indicators which are used to configure the business process lifecycle.
- ⇒ The system should be able to provide a mechanism to trigger actions towards the incident management system when the Service Levels for monitored key performance indicators are breached using different color combinations. IT should also provide an easy to navigate user interface for managing incidents, events, profiles, groups, alarms, KPI's etc.

- ⇒ The system should provide the tools to assemble personalized dashboard views of information pertinent to critical incidents, emergencies and operations of command centre.
- ⇒ The system should be able to monitor live deployed event applications for performance usage and planning statistics in a graphical interface, including CPU, memory, connection and Queues etc.



- ⇒ The dashboard should provide filtering capabilities that enable end users to dynamically filter the data in their dashboard based upon criteria such as Alarm, event, status, KPIs etc. The dashboard shall have capabilities to drill down in to the datasets and visual representations.
- ⇒ The system should be implemented using industry open standards based commercial off the shelf products
- ⇒ For entire solution, there are broadly two category of user groups, in addition to the citizens who will consume information as a service. Police authorities will have access to some components of solution and municipal authorities will have access to some other components of the solution. Their access modules will overlap. The system should be designed in such a way that role based access can be created for each functionality of the solution.
- ⇒ An indicative list of use cases which the SI will be required to implement as part of the CCC system are detailed out below. As and when the system expands and more applications get added the SI is required to be open to all such subsequent additions.

#	Function	Use Case	Stakeholder for Use Case
1	Traffic	View ambient condition at a given traffic signal. The view would include: Overall 360 degree view, edge view of 180 degree and specific lane views.	Police
2	Traffic	View ambient condition at a corridor. The view would include: specific arm of carriage way across multiple signals in a corridor.	Police
3	Traffic	View cycle times for signals (where adaptive traffic control has been implemented) across all junctions in the city with a facility to drill down.	SCADL/ AMC
4	Traffic	View ambient volume count across all junctions in the city with a facility to drill down volume count on each arm.	SCADL/ AMC
5	Traffic	Track movement of a flagged vehicle (with number tagged as Wanted”, “Suspicious”, “Stolen” ) across the city on map with relevant video feeds	Police
6	Traffic	View the violations (red light, speed, etc.) per traffic signal with a facility to drill down. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	Police
7	Traffic	View the eChallans generated per traffic signal with a facility to drill down. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	Police
8	Traffic	View the list of repeat violators. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	Police
9	Traffic	View the vehicle volumes across traffic signals. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	Police
10	Traffic	View traffic violation count super imposed on the map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	Police
11	Traffic	View traffic volume count super imposed on the map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
12	Safety	View camera feeds across the city with cameras on a sample basis appearing across the video wall. The view should have provision to auto select new set of cameras after pre configured time.	Police

#	Function	Use Case	Stakeholder for Use Case
13	Safety	View all camera feeds in vicinity of selected camera based on geographical selection of the area. The geographical selection can be in terms of a polygon or could be linear.	Police
14	Safety	View and playback recording from past (based on availability in storage) of a specific camera or cameras defined in a geography.	Police
15	Safety	Identify unattended objects, baggage, vehicle in a given camera feed with help of analytics	Police
16	Safety	Perform people search based on description/sketch/full length photograph	Police
17	Safety	View network of cameras on the map, including incidents detected and resolved. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	Police
18	Safety	Auto identify a specific camera and show the feed based on data / threshold from traffic/ display/ sensor subsystems.	Police
19	Connectivity	View consumption patterns of data across Wi-Fi access points	SCADL/ AMC
20	Connectivity	View list of URLs accessed from a public IP based on a given time frame and IP address	SCADL/ AMC
21	Connectivity	View the coverage and usage patterns superimposed on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
22	Connectivity	View connectivity status of all field devices superimposed on the city map.	SCADL/ AMC
23	Connectivity	View the bandwidth utilization of all field devices superimposed on the city map.	SCADL/ AMC
24	Display	View the messages displayed at the LED display boards in a specific area of the city. The geographical selection can be in terms of a polygon or could be linear.	SCADL/ AMC
25	Display	View all the messages displayed on a given display board. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
26	Display	Change the message to be displayed on a specific display board, display board in an area or across the city.	SCADL/ AMC
27	Display	View the advertisements displayed at the LED display boards in a specific area of the city. The geographical selection can be in terms of a polygon or could be linear.	SCADL/ AMC
28	Display	View all the advertisements displayed on a given display board. The view should allow the facility to change the time scale from	SCADL/ AMC

#	Function	Use Case	Stakeholder for Use Case
		1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	
29	Sensor	View NOX levels across the city, view threshold breaches, and view data superimposed on a map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
30	Sensor	View SO2 levels across the city, view threshold breaches, and view data superimposed on a map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
31	Sensor	View CO2 levels across the city, view threshold breaches, and view data superimposed on a map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
32	Sensor	View O2 levels across the city, view threshold breaches, and view data superimposed on a map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
33	Sensor	View noise levels across the city, view threshold breaches, and view data superimposed on a map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
34	Sensor	View ambient light levels across the city, view threshold breaches, and view data superimposed on a map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
35	Sensor	View humidity light levels across the city, view threshold breaches, and view data superimposed on a map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
36	Sensor	View UV light levels across the city, view threshold breaches, and view data superimposed on a map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
37	Light	View luminaire light status across the city, view threshold breaches, and view data superimposed on a map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC

#	Function	Use Case	Stakeholder for Use Case
38	Light	View light sensor status across the city, view threshold breaches, and view data superimposed on a map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
39	Light	View luminaire outage status across the city, view threshold breaches, and view data superimposed on a map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
40	Parking	View occupied, free parking spots across all the parking lots integrated with CCC on city map with a drill down facility.	SCADL/ AMC
41	Parking	View all the 100% occupied parking lots across the city on city map with a drill down facility.	SCADL/ AMC
42	Transit	View the feeds received from ITMS system (form both BRTS and AMTS buses) on the city map.	SCADL/ AMC
43	Transit	View the feeds received from AFCS system (form both BRTS and AMTS buses) on the city map.	SCADL/ AMC
44	Transit	View in bus camera feeds, station camera feeds as received from ITMS system.	SCADL/ AMC
45	Transit	View threshold breaches and incidents from the IMTS system on the city map.	SCADL/ AMC
46	Civic Center	View the aggregate transactions performed at a given civic center on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
47	Civic Center	View the rating of civic centers based on collections, services offered and staff availability on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
48	Civic Center	View the feeds received from ERP system on the city map.	SCADL/ AMC
49	Property Tax	View the tax collected on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
50	Property Tax	View the tax to be collected and shortfall (from tax value) on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
51	Property Tax	View turnaround times for collection of property tax on the city map. The view should allow the facility to change the time	SCADL/ AMC

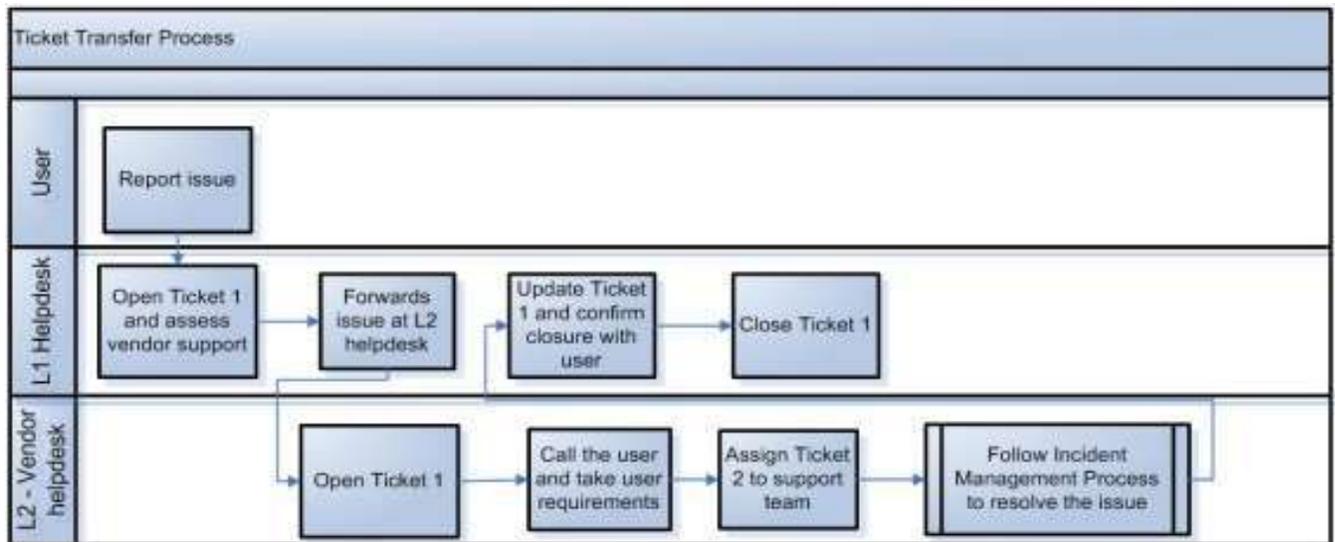
#	Function	Use Case	Stakeholder for Use Case
		scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	
52	Property Tax	View the feeds received from ERP system on the city map.	SCADL/ AMC
53	Birth Registration	View normal births registered on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
54	Birth Registration	View abnormal births on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
55	Birth Registration	View turnaround times for issuance of certificate on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
56	Birth Registration	View the feeds received from ERP system on the city map.	SCADL/ AMC
57	Death Registration	View deaths registered on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
58	Death Registration	View turnaround times for issuance of certificate on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
59	Death Registration	View the feeds received from ERP system on the city map.	SCADL/ AMC
60	License	View the licenses (unique view for each license type) expired (not renewed) on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
61	License	View the licenses (unique view for each license type) issued on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
62	License	View the license turnaround times (unique view for each license type) issued licenses on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
63	License	View the feeds received from ERP system on the city map.	SCADL/ AMC

#	Function	Use Case	Stakeholder for Use Case
64	Building Permission	View the building permissions (unique view for each license type) issued on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
65	Building Permission	View the building permission turnaround times (unique view for each license type) issued licenses on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
66	Building Permission	View the demand required (water, waste, sewerage, etc.) as a result of building permissions given in the city on the city map.	SCADL/ AMC
67	Building Permission	View the feeds received from ERP system on the city map.	SCADL/ AMC
68	Water	View water related grievances on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
69	Water	View the distribution network status on the city map.	SCADL/ AMC
70	Water	View the distribution volumes on the city map.	SCADL/ AMC
71	Water	View the feeds received from ERP system on the city map.	SCADL/ AMC
72	Water	View the feeds received from SCADA system on the city map.	SCADL/ AMC
73	Water	View the underground utility network on the map.	SCADL/ AMC
74	Accounts	View the spending pattern across the budget heads with a facility to drill down. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
75	Accounts	View area wise budget spent across the city on a city map.	SCADL/ AMC
76	Accounts	View the feeds received from ERP system on the city map.	SCADL/ AMC
77	Solid Waste	View waste related grievances on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
78	Solid Waste	View movement of pick up vehicles on the city map.	SCADL/ AMC
79	Solid Waste	View the feeds received from ERP system on the city map.	SCADL/ AMC
80	Solid Waste	View the feeds received from Solid Waste Management system on the city map.	SCADL/ AMC

#	Function	Use Case	Stakeholder for Use Case
81	Welfare Schemes	View the benefits issued (unique view for each benefit) issued on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
82	Welfare Schemes	View the feeds received from ERP system on the city map.	SCADL/ AMC
83	Project Systems	View the project status (physical completion and financial completion) for each ongoing project in the city.	SCADL/ AMC
84	Project Systems	View the feeds received from ERP system on the city map.	SCADL/ AMC
85	Hospital	View the feeds received from ERP system on the city map.	SCADL/ AMC
86	Material Management	View the feeds received from ERP system on the city map.	SCADL/ AMC
87	Procurement	View the feeds received from ERP system on the city map.	SCADL/ AMC
88	Grievances	View outstanding grievances based on number of outstanding days on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
89	Grievances	View open grievances, closed grievances, in progress grievances on the city map. The view should allow the facility to change the time scale from 1 hr. to 1 year, with daily, weekly, monthly, quarterly and yearly views available.	SCADL/ AMC
90	Sewerage	View the underground network on the map.	SCADL/ AMC
91	Storm Water	View the underground network on the map.	SCADL/ AMC
92	Assets	View geo tagged movable assets on the map based on their classification.	SCADL/ AMC
93	Assets	View non-civic infrastructure assets on the map based on their classification.	SCADL/ AMC
94	Assets	View civic infrastructure assets on map based on their classification	SCADL/ AMC

- Furniture's, Fixtures, Operator Console and CCC Infrastructure:** As mentioned above System Integrator is responsible for setting up and O&M of CCC. System Integrator is also responsible for supply, installation and O&M of various furniture's and fixtures for smooth operations of CCC. Followings is the minimum indicative list of items; However, the bidder will have to provide any other item inadvertently missed out:

- ⇒ Workstations, chairs, storage unit, adjustable monitor mounting arrangements, Power backup, network connections including patch cable. I/O boxes etc. for smooth Operations at the CCC
- ⇒ The bidder will have to make a careful assessment in terms of structure design, ergonomics, posing according to the Video Wall etc. and propose other necessary items to be supplied under the CCC setup.
- ⇒ Each operator shall be provided with one workstation with three monitors for surveillance along with one intercom line.
- **Collaborative Monitoring:** - The Bidder has to provide a solution which will have a collaborative framework for receiving video feeds from various systems and sub-systems of public and private establishments like malls, airport, railway stations, bus stands, temples, forts, local shopkeepers etc. The list of establishment shall be provided by SCADL /Police Department from time to time.
  - ⇒ As a part of the collaborative monitoring effort, the system shall also facilitate citizens after authentication (e.g. OTP) to upload video feeds to the CCTV System. This upload of video shall be subject to administrative and technical checks so that frivolous and defamatory videos are not uploaded in the system.
  - ⇒ VMS shall have provision to ensure that such video feeds are continuously streamed on one of the display of the Video Wall.
  - ⇒ Further, during fairs and festivals in the city the bidder may have to integrate the video feeds for such events for surveillance purpose on adhoc basis. The bidder is expected to enable the command and control center for live viewing and storing of the feed.
- **Centralized Helpdesk:** -
  - ⇒ The bidder under the scope of the project will have to set up a centralized helpdesk at the Command and Control Center. A minimum of 5 helpdesk personnel must be provided.
  - ⇒ It is envisaged that the centralized helpdesk, functioning as proposed below, would be managed by the bidder. The solution, including the infrastructure, shall serve following objectives:
    - Act as the Point of Contact for the users of Surveillance System
    - Own an Incident throughout its Lifecycle
    - Communicate effectively with SCADL/AMC, Police / Home Dept. Officers and IT support teams.
    - Maintain high user satisfaction levels
    - Maintain the SLA statistics & submit quarterly report to SCADL/AMC, Police / Home Department
  - ⇒ A general process flow for the helpdesk management is depicted in the flowchart given as follows bidder shall have to prepare and submit a detailed Helpdesk Policy in consultation with all the stakeholders prior to the Go Live.



## 8) IT infrastructure for City wide network

A city-wide IT infrastructure is the core backbone of any pan city/ smart city project. Looking at the volume and size of the Ahmedabad smart city project SCADL envisaged to implement pan city IT infrastructure.

- System Integrator is responsible for design, supply, installation, configure, testing, commissioning, integrate (wherever required) and operation & maintenance for 5 years of all the systems (Hardware-active & passive; Software) as per the scope of work and technical specification of the RFP.
- Carry out installation of active and passive components and accessories supplied as per standards for successful integration and implementation of the systems at each site connected under this RFP.
- Configuring and fine-tuning of subsystems to achieve overall optimal network performance and highest security.
- Bidder should have proposed a comprehensive solution for city wide IT infrastructure. However, below are indicative/minimum (but not limited to) list of components bidder is required provide as a part of entire solution: -
  - ⇒ Network equipment
  - ⇒ Wireless equipment, if required
  - ⇒ Erection of mast/poles/Gantry
  - ⇒ Video surveillance systems (VMS)
  - ⇒ LED Display Screen(s)
  - ⇒ Network, video management Controller, hardware (Server)
  - ⇒ Storage hardware
  - ⇒ Computer hardware and Accessories
- All system and application software
- The bidder shall depute adequate skilled resources to ensure that the implementation and commissioning activities are carried out on schedule.
- The bidder shall submit a detailed test plan and test cases for each solution, that will be used to carry out the UAT (user acceptance test) and FAT (final acceptance test)

- As part of the project completion documentation, the bidder shall submit the documentation, which should at least contain: -
  - ⇒ As-implemented configurations
  - ⇒ As-implemented architecture and topology diagrams
  - ⇒ Standard operating procedures for administration of the installed devices.
- Bidder needs to design network architecture as per the client requirement using industry best practices.
- Bidder should ensure availability of all the patches and updates released by OEM of the product during the contract durations.
- The bidder will have to make an assessment of the deployment of the end points switch's based on the no. of end points devices such as camera's, access points etc. to be deployed at the site locations.
- Electrical cabling from the input source and up to the equipment to be kept at each location, rack etc. as the case may be, shall be the responsibility of bidder.

## 9) Integration with Network Connectivity

- The bidder will be responsible to integrate the different network connectivity as a backbone which are as below:
  - AMC's Fiber optic network along the BRTS corridor
  - Lease circuit and internet connectivity procured through a separate tender

## 10) Implementation Timeline

### 10.1 Implementation timelines

S/N	Deliverables	Timeline
1.	a. Signing of contract agreement b. Submission of performance Bank Guarantee	<b>Within 15 calendar Days from date of issuance of LOI/ Work order</b>
2.	Feasibility study / Site Survey Report, implementation roadmap, plan and execution strategy document (including sites, fixtures, specification of end devices, coupling types etc.)	<b>Within 30 calendar days of issuance of LOI/Work order</b>
3.	Delivery of Site Infrastructure like Access Points, Cameras, Switches, LED Display Screens, Sensors, Junction Boxes, UPS etc. at central location /Vendors Warehouse or any other component required for smooth functioning of these devices . These devices can be controlled from a central software until the DC, CCC and TCC deployment	1 <sup>st</sup> Lot: 25% of the Work order – within 60 days 2 <sup>nd</sup> Lot: 50% of the Work order - within 90 days** Final Lot: 100% of the Work order – within 120 days** <b>**from the date of issuance of Lol/work order</b>
4.	Delivery of the IT and Non IT Equipment for central	Within 90 days from the date of

S/N	Deliverables	Timeline
	Infrastructure for CCC, TCC, data Center (hardware/software) at a central location/Vendors Warehouse	issuance of the Lol/Work Order
5.	Proof of concept for 50 AP and 50 CCTV cameras, with VMS detection and challan generation for speed limit violation and RLVD, ANPR (Instead of central side solution for the application, cloud based solution allowed for the POC, Will have to use CCTV camera and Aps from 3 different OEMs each), eGovernance integration ( as per scope of PoC)	<b>30 days from Lol/Work order</b>
6.	Development/Customization and testing of the proposed software / Mobile Application(s) (central side infrastructure)	Within 120 <b>calendar</b> days from the <b>date of issuance of LOI/ Work order</b>
7.	Installation and Commissioning and FAT of hardware/software at end point Locations	Within 180 <b>calendar</b> days from the <b>date of issuance of LOI/ Work order</b>

**Note: Proof of Concept (PoC):**

- **Successful bidder has to successfully demonstrate the proposed solution with in the 30 days from the date of Lol (letter of Intent). SCADL/AMC is not liable to pay/reimburse any type of cost incurred by the successful bidder pertaining to the PoC.**
- During PoC successful bidder is required to deploy at least 50 AP's, CCTV camera-50 nos. with all systems (ANPR, RLVD, Speed Violation,) at the locations specified by AMC/SCADL.
- The POC shall be done to showcase the requirements of the said system(s) as specified under the scope of work and in compliance to the technical specification as laid down in this RFP
- **However, there shall be an evaluation matrix as mentioned below for assessing the capabilities of each of the system under consideration for POC, the bidder will have to successfully qualify the POC (Minimum 80 marks out of 100 marks) based on the parameters defined below. In case if the successful bidder fails to achieve minimum benchmark as mentioned than in that case he has to re-demonstrate the PoC within next 15 days (all component's or part of the system/component) which will have to go through evaluation procedure again and successfully qualify the same.**
- Please note that if the successful bidder fails to complete Proof of concept in 30 days or perform as per the requirement of SCADL even after second attempt of 15 days, then his EMD, Performance Bank Guarantee will be forfeited, contract terminated, and work will be assigned to L2 bidder, subject to his acceptance, at cost to the successful bidder. The

successful bidder will be further blacklisted from participation in future government contracts.

- The proof of Concept will be marked based on the marking criteria on the components given below:

#	Component	Functionality to be Demonstrated	Maximum Marks
1	Wi-Fi Access Point	Range Covered: 50 meters (Marks will be given commensurate to the observed range, for example in case the range observed is 35 m then the marks given will be 70%, in case range observed is 20 meters then the marks given will be 40%. Formula used will be: Observed Range/ 50 meters (%)).In order to test Wi-Fi services devices such as mobile phone and tablets will be used.	5
2	Wi-Fi Access Point	Concurrent users: 50 (Marks will be given commensurate to the actual concurrent users supported, for example in case 20 concurrent users are supported then marks given will be 40%, in case 30 concurrent users are supported then marks given will be 60%. Formula used will be: Actual Concurrent users/ 50 (%)). The successful bidder will have to provide 50 Mbps connectivity at access point during the pilot phase for testing purposes. In order to test Wi-Fi services devices such as mobile phone and tablets will be used.	5
3	ANPR (Automatic Number Plate Recognition )System	Number plate accuracy (English during day time 11:00 am to 4:00 pm): 75% (Marks will be given commensurate to the overall accuracy observed, in case accuracy observed is 30%, then the marks given will be 40% of maximum marks. Formula used will be: Observed Accuracy (%)/ 75 (%))	5
4	ANPR (Automatic Number Plate Recognition ) System	Number plate accuracy (Gujarati or Hindi during day time 11:00 am to 4:00 pm): 60% (Marks will be given commensurate to the overall accuracy observed, in case accuracy observed is 30%, then the marks given will be 50% of maximum marks. Formula used will be: Observed Accuracy (%)/ 60 (%))	5
5	ANPR (Automatic Number Plate Recognition ) System	Number plate accuracy (English during night time 8:00 pm to 11:00 pm): 75% (Marks will be given commensurate to the overall accuracy observed, in case accuracy observed is 30%, then the marks given will be 40% of maximum marks. Formula used will be: Observed Accuracy (%)/ 75 (%))	5
6	ANPR (Automatic Number Plate	Number plate accuracy (Gujarati or Hindi during night time 8:00 pm to 11:00 pm): 60% (Marks will be given commensurate to the overall accuracy observed, in case accuracy observed is 30%, then the marks	5

#	Component	Functionality to be Demonstrated	Maximum Marks
	Recognition System	given will be 50% of maximum marks. Formula used will be: Observed Accuracy (%) / 60 (%)	
7	RLVD (Red Light Violation Detection) System	Violation detection (During day time 11:00 am to 4:00 pm post 10 seconds of signal turning red) accuracy: 70% (Marks will be given commensurate to the overall accuracy observed, in case accuracy observed is 30%, then the marks given will be 42.8% of maximum marks. Formula used will be: Observed Accuracy (%) / 70 (%))	5
8	RLVD (Red Light Violation Detection) System	Violation detection (During night time 8:00 pm to 11:00 pm post 10 seconds of signal turning red) accuracy: 70% (Marks will be given commensurate to the overall accuracy observed, in case accuracy observed is 30%, then the marks given will be 42.8% of maximum marks. Formula used will be: Observed Accuracy (%) / 70 (%))	5
9	Speed Violation	Violation detection (During day time 11:00 am to 4:00 pm) accuracy: 70% (Marks will be given commensurate to the overall accuracy observed, in case accuracy observed is 30%, then the marks given will be 42.8% of maximum marks) (For a violation speed on 60 Km/Hr.; Speeds ranging from 50 Km to 70 km will be used to measure violation. Formula used will be: Observed Accuracy (%) / 70 (%))	5
10	Speed Violation	Violation detection (During night time 8:00 pm to 11:00 pm) accuracy: 70% (Marks will be given commensurate to the overall accuracy observed, in case accuracy observed is 30%, then the marks given will be 42.8% of maximum marks) (For a violation speed on 70 Km/Hr.; Speeds ranging from 60 Km to 80 km will be used to measure violation. Formula used will be: Observed Accuracy (%) / 70 (%))	5
11	Command Center	Integration with Egovernance solution (Property Tax): Daily collection against threshold set for collections (100% marks for live API based integration; 50% marks for batch file based integration)	5
12	Command Center	Integration with Egovernance solution (Birth Certificate): Number of birth certificates provided since last 7 days (100% marks for live API based integration; 50% marks for batch file based integration)	5

#	Component	Functionality to be Demonstrated	Maximum Marks
13	Make & Model	Adherence to submitted Make & Model of all IT as well as non IT components (Marks will be given based on compliance of products from datasheet against specification in RFP, if 50% products comply, then marks provided will be 50%. The components such as Wi-Fi access points, ANPR cameras, RLVD cameras and speed gun will be tested for PoC post RFP compliance only.)	20
14	Team	Final team as per submitted manpower in proposal (Marks will be given based on vetting of manpower resources against RFP requirements, if 50% manpower resources comply, then marks provided will be 50%)	20
		<b>Total</b>	<b>100</b>
		<b>Marks required for successful pilot</b>	<b>80</b>

## 10.2 Project Deliverables

	Key Activities	Deliverables
1	Project Kick off	1. Project Plan
2	Deployment of manpower	2. Risk Management and Mitigation Plan
3	Assess the requirement of IT Infrastructure and Non IT Infrastructure	1. Functional Requirement Specification document
4	Assessment of Business processes (From an assessment perspective for CCC)	2. System Requirement Specification document
5	Assessment of requirement of Software requirements	3. Requirements Traceability Matrix
6	Assess the Integration requirement	4. Site Survey Report
7	Assess the connectivity requirement all locations (including Building)	5. Engineering Drawings for Command Center
8	Assessment of network laying requirement	6. Layout drawings for Smart Components to deployed on street
9	Assessment of training requirement	
10	Formulation of Solution Architecture	1. Location wise Bill of Quantity in detail
11	Creation of Detail Drawing	2. HLD documents
12	Detailed Design of Smart City Solutions	3. LLD documents (which include ER diagrams, database designs, GUI design, data definitions, etc.)
13	Development of test cases (Unit, System Integration and User Acceptance)	4. Application architecture documents.

	Key Activities	Deliverables
14	Preparation of final bill of quantity and material	5. Technical Architecture documents. 6. Network Architecture documents. 7. Test Plans 8. SoPs for the command center 9. Change management Plan  1. IT and Non IT Infrastructure Installation Report 2. Completion of UAT and closure of observations report 3. Training Completion report 4. Application deployment and configuration report 5. Software License documents 6. Hardware warranty documents
15	SoP preparation for command center based on extensive consultation with all stakeholders	
16	Helpdesk setup	
17	Physical Infrastructure setup	
18	Procurement of Equipment , edge devices, COTS software (if any), Licenses	
19	IT and Non IT Infrastructure Installation	
20	Development, Testing and Production environment setup	
21	Software Application customization (if any)	
22	Development of Bespoke Solution (if any)	
23	Data Migration	
24	Integration with Third party services/application (if any)	
25	Unit and User Acceptance Testing	
26	Implementation of Solutions	
27	Preparation of User Manuals , training curriculum and training materials	
28	Role based training(s) on the Smart City Solutions	
29	SoP implementation	1. Integration Testing Report
30	Integration with GIS	
31	Integration of solutions with Command and Control Centre	
32	Go Live	
33	Operation and Maintenance of IT, Non IT infrastructure and Applications	1. Detailed plan for monitoring of SLAs and performance of the overall system 2. Fortnightly Progress Report 3. Monthly SLA Monitoring Report and Exception Report
34	SLA and Performance Monitoring	
35	Logging, tracking and resolution of issues.	
36	Application enhancement	

	Key Activities	Deliverables
37	Patch & Version Updates	4. Quarterly security Report 5. Issues logging and resolution report 6. Operations manual for all components
38	Helpdesk services	

### Roles and Responsibilities Matrix

#	Key Activities	Successful Bidder	AMC	SADCL	Network Vendors	Electricity Providers	Other Utilities	Police	PMC	Existing ICT Vendors at AMC
<b>Project Inception Phase</b>										
1	Project Kick Off	R/A	C	C	I	I	I	I	C	I
2	Deployment of manpower	R/A	C	C	I	I	I	I	C	I
<b>Requirement Phase</b>										
3	Assessment and Detailing the requirement of IT Infrastructure and Non IT Infrastructure	R/A	C	C	C	C	C	C	C	C
4	Assessment and Detailing of Business processes for CCC functions	R/A	C	C	I	I	I	C	C	I
5	Assessment and Detailing of Software Requirements	R/A	C	C	I	I	I	C	C	I
6	Assessment and Detailing of the Integration requirement	R/A	C	C	C	C	I	C	C	C

#	Key Activities	Successful Bidder	AMC	SADCL	Network Vendors	Electricity Providers	Other Utilities	Police	PMC	Existing ICT Vendors at AMC
7	Assessment and Detailing of the connectivity requirement all locations	R/A	C	C	C	I	I	C	C	I
8	Assessment the Network laying requirement	C	C	C	R/A	I	I	C	C	I
9	Assessment of training needs	R/A	C	C	I	I	I	C	C	I

**Design Phase**

10	Detailing of Solution Architecture	R/A	C	C	C	I	I	C	C	I
11	Creation of Detail Engineering Drawing	R/A	C	C	C	I	I	C	C	I
12	Detailed Design of Smart City Solutions	R/A	C	C	C	I	I	C	C	I
13	Development of test cases (Unit, System Integration, User Acceptance and Load Testing)	R/A	C	C	C	I	I	C	C	I
14	Detailing of bill of quantity at location	R/A	C	C	C	C	I	C	C	I
15	SoP preparation	R/A	C	C	C	C	C	C	C	I

**Development Phase**

#	Key Activities	Successful Bidder	AMC	SADCL	Network Vendors	Electricity Providers	Other Utilities	Police	PMC	Existing ICT Vendors at AMC
16	Helpdesk setup	R/A	C	C	I	I	I	I	C	I
17	Physical Infrastructure setup	R/A	C	C	I	I	I	I	C	I
18	Procurement of Equipment , edge devices, COTS software (if any), Licenses	R/A	C	C	I	I	I	I	C	I
19	IT and Non IT Infrastructure Installation	R/A	C	C	I	I	I	I	C	I
20	Development, Testing and Production environment setup	R/A	C	C	I	I	I	I	C	I
21	Software Application customization (if any)	R/A	C	C	I	I	I	I	C	I
22	Development of Bespoke Solution (if any)	R/A	C	C	I	I	I	I	C	I
23	Data Migration	R/A	C	C	I	I	I	I	C	I
24	Integration with Third party services/applicati on (if any)	R/A	C	C	I	I	I	I	C	I
25	Unit and User Acceptance Testing	R/A	C	C	I	I	I	I	C	I

#	Key Activities	Successful Bidder	AMC	SADCL	Network Vendors	Electricity Providers	Other Utilities	Police	PMC	Existing ICT Vendors at AMC
26	Implementation of Solutions	R/A	C	C	I	I	I	I	C	I
27	Preparation of User Manuals , training curriculum and training materials	R/A	C	C	I	I	I	I	C	I
28	Role based training(s) on the Smart City Solutions	R/A	C	C	I	I	I	I	C	I
<b>Integration Phase</b>										
29	SoP implementation	R/A	C	C	C	C	C	C	C	I
30	Integration with GIS	R/A	C	C	C	C	C	C	C	I
31	Integration of solutions with Command and Control Centre	R/A	C	C	C	C	C	C	C	I
<b>Go –Live</b>										
32	Go Live	R/A	C	C	I	I	I	I	C	I
<b>Operation and Maintenance</b>										
33	Operation and Maintenance of IT, Non IT infrastructure and Applications	R/A	C	C	I	I	I	I	C	I
34	SLA and Performance Monitoring	C	C	A	I	I	I	I	R	I

#	Key Activities	Successful Bidder	AMC	SADCL	Network Vendors	Electricity Providers	Other Utilities	Police	PMC	Existing ICT Vendors at AMC
35	Logging, tracking and resolution of issues.	R/A	C	C	I	I	I	I	C	I
36	Application enhancement	R/A	C	C	I	I	I	I	C	I
37	Patch & Version Updates	R/A	C	C	I	I	I	I	C	I
38	Helpdesk services	R/A	C	C	I	I	I	I	C	I

**Note:** All decisions will be taken by AMC/SCADL which will be abided by all the stakeholders in the above matrix.

## B) Operations and Maintenance (O&M) of the Project

The bidder shall be responsible for the overall management of the IT and Non-IT Infrastructure and enabling infrastructure maintenance services / facility management services at all Site locations for ensuring adherence of SLAs. Bidder shall provide the Operations and Maintenance Services for a period of 5 years following the Go Live date. The bidder shall be responsible for following:

- The Successful bidder shall be responsible for operating, managing and monitoring the SCADL network for any fault/ issues/ failure such that the citywide network can be maintained close to 100 %. For better Network availability, preventive maintenance activity is required to be carried out at least once in a quarter which includes configuration backup and software up gradation/updation. Up gradation/Updation will be part of the back to back warranty support from the OEM.
- Successful Bidder is required to submit preventive maintenance schedule of all equipment to SCADL. After performing preventive maintenance activities, successful bidder is required to submit the report of the same. All such activities should be done preferably during non-working hours.
- As part of the Operations and Maintenance services, the bidder shall provide support for the software, hardware, and other infrastructure provided as part of this RFP. The bidder shall also provide services comprising of but not limiting to the following:
  - ⇒ Operations and maintenance services for the IT and Non-IT Infrastructure supplied or commissioned by the bidder at the designated locations as defined in this RFP document during the contract period.

- ⇒ Support for each end point where the utility such as Surveillance, Wi-Fi, Display boards, sensors etc.
  - ⇒ The services shall be rendered onsite from the designated premises. To provide the support at the locations where the infrastructure will be rolled out.
  - The scope of work under O&M is not limited to the IT and Non-IT Infrastructure components deployed by the successful bidder but it also includes O&M for any additional equipment/devices/hardware/software related to the project supposed to be procured during the contract period of 5 years by SCADL/AMC.
  - O&M charges for any such additional work shall be paid at 2% per annum of the cost of such additional equipment/devices/hardware/ software component. Further successful bidder is required to comply with the overall SLA requirement of contract for any such additional SoW.
- **Warranty Support:** - As part of the warranty services bidder shall provide:
    - ⇒ Bidder shall provide a comprehensive warranty and on-site free service warranty for 5 years from the date of FAT for all equipment supplied under the project.
    - ⇒ Bidder shall obtain the 5-year product warranty and 5 year onsite free service warranty from OEM on all licensed software, computer hardware, peripherals, networking equipment and other equipment for providing warranty support.
    - ⇒ Bidder shall provide the comprehensive manufacturer's warranty and support in respect of proper design, quality and workmanship of all hardware, equipment, accessories etc. covered by the RFP. Bidder must warrant all hardware, equipment, accessories, spare parts, software etc. procured and implemented as per this RFP against any manufacturing defects during the warranty period.
    - ⇒ Bidder shall provide the performance warranty in respect of performance of the installed hardware and software to meet the performance requirements and service levels in the RFP.
    - ⇒ Bidder is responsible for sizing and procuring the necessary hardware and software licenses as per the performance requirements provided in the RFP. During the warranty period bidder, shall replace or augment or procure higher-level new equipment or additional licenses at no additional cost in case the procured hardware or software is not adequate to meet the service levels.
    - ⇒ Mean Time between Failures (MTBF): If during contract period, any equipment has a hardware failure on four or more occasions in a period of less than three months, it shall be replaced by equivalent or higher-level new equipment by the bidder at no cost. For any delay in making available the replacement and repaired equipment for inspection, delivery of equipment or for commissioning of the systems or for acceptance tests / checks on per site basis, SCADL reserves the right to charge a penalty.
    - ⇒ The bidder will also cover the failure of the end point equipment's due to earthing or power fluctuations under this warranty/AMC. It is the responsibility of the bidder to undertake preventive maintenance of the supplied UPS and proper earthing to avoid this risk
    - ⇒ During the warranty period bidder, shall maintain the systems and repair / replace at the installed site, at no charge, all defective components that are brought to the bidders notice.
    - ⇒ The bidder shall as far as possible repair/ replace the equipment at site.

- ⇒ Warranty should not become void, if SCADL buys, any other supplemental hardware from a third party and installs it within these machines under intimation to the bidder. However, the warranty will not apply to such supplemental hardware items installed.
- ⇒ The bidder shall carry out Preventive Maintenance (PM), including cleaning of interior and exterior, of all hardware and testing for virus, if any, and should maintain proper records at each site for such PM. Failure to carry out such PM will be a breach of warranty and the warranty period will be extended by the period of delay in PM.
- ⇒ Bidder shall monitor warranties to check adherence to preventive and repair maintenance terms and conditions.
- ⇒ Bidder shall ensure that the warranty complies with the agreed Technical Standards, Security Requirements, Operating Procedures, and Recovery Procedures.
- ⇒ Bidder shall have to stock and provide adequate onsite and offsite spare parts and spare component to ensure that the uptime commitment as per SLA is met.
- ⇒ Bidder shall develop and maintain an inventory database to include the registered hardware warranties

• **Network operations, Services and Maintenance**

- ⇒ The services as per the scope of the contract shall include maintaining the network equipment; ensuring running of the services (As laid down in the Scope of Work) with availability in line with the SLA and Round-the-clock Network monitoring. This shall include:
  - Equipment Configuration Management
  - Upgrading IOS
  - Maintaining access control list for the CCC
  - Complete IP Management of the entire Network
  - Regular review of Network and its components, end point devices and nodes
  - Regular reports as required by SCADL and authorized agency
  - Regular backup of NMS server and router configurations
  - Upgrading Patches on all equipment's including NMS-Servers, network & Security Devices and hardening of network & security devices
  - The Successful bidder is required to maintain uptime of the network between the DC, Zonal office, CCC and the Junction point to meet the SLA. In case the network uptime is not maintained due to non-availability of link/Bandwidth by Service provider, bidder is required to produce documentary proof (Service Desk Complaints/Incidents or Vendor assigned Tickets) in terms of certificate of downtime of network link/b/w from the service providers. In case bidder fails to provide such documentary proof the same shall be treated as non-performance of SLA and would be liable for penalty.
  - The Successful bidder will be responsible for setting up the QoS parameters (Quality of Service) for the entire SCADL network for the various data types i.e. Voice, Video, Data, prioritize and manage them as per the requirement of the project from time to time.
  - Successful bidder will have to do operational liasoning with stake holders (link providers, state government, local bodies, third party agencies / consultants appointed/identified by SCADL) to keep the link up & running.
  - In case SCADL decides to migrate the network to IPv6, the successful bidder shall prepare the migration plan and execute the same as per the timeline mutually agreed between SCADL and successful bidder.

- Bidder has to provide UPS & Battery Health Reports in every quarter after completing proactive maintenance every quarter.
- Under the scope of this RFP, the successful bidder has to setup a Command and control center to control and monitor the project operations from a central location and the same has to be operated and maintained, as prescribed:
  - ✓ Cooling requirement of the operational equipment at DC control room need to be maintained.
  - ✓ Proper electrification along with proper earthing (Standard IS-3043) and anti-static flooring, structured cabling for proper management of cables need to be maintained at the CCC. Successful bidder has to ensure proper earthing as per IS-3043 at any point of time during O&M Operations.
  - ✓ Cabling with proper tagging as per cabling standards with network diagrams need to be maintained at CCC.
  - ✓ Bidder shall deploy Building Management System (BMS) with features of rodent repellent, fire detection and extinguisher and water leakage detection and prevention and ensure Cleanliness, hygiene and safety at CCC. BMS to be a centralized Monitoring Tool with its Hardware/Sensors
- **NMS for SLA and Performance Reporting**
  - ⇒ The Successful bidder shall operate and maintain a Network Management System (NMS) and SLA and Performance Monitoring System for the complete AMC backbone at CCC centrally.
  - ⇒ The NMS system shall be configured to automatically discover all manageable elements of the Smart City Ahmedabad Network
  - ⇒ All network components shall be configured to alert the centralized NMS server in case of any events, so as to reflect real status of all network components and links across the Smart City Ahmedabad network
  - ⇒ The NMS should also poll all network devices and other IT and Non-IT components in Smart City Ahmedabad network through IP/SNMP at regular intervals in order to determine their status and working.
  - ⇒ The functional requirements of the NMS system are as follows:
    - **Alarm Correlation & Root Cause Analysis Capabilities**
      - ✓ Solution should provide alarm correlation and facilitate reduction of total number of alarms displayed by means of intelligent alarm correlation, suppression and root cause analysis techniques built in to the system. The system must ensure reduction in MTTR by means of advanced event correlation, filtering and root cause analysis.
      - ✓ Alarm Filtering should allow flexible filtering rules for NOC staff to filter the alarms by category, severity, elements, duration, by user, by views, by geography or by end utility.
      - ✓ Ability to apply severity to alarms according to predefined rules.
      - ✓ It should be possible to add description to the alarms.
      - ✓ The system should be able to clearly identify configuration changes as root cause of network problems
      - ✓ It should be possible to convert Critical Alarms into Incidents for auto ticket generation.

- **Network Fault and Performance Management**
  - ✓ The Network Management function must monitor performance across heterogeneous networks from one end of the enterprise to the other.
  - ✓ The Network Management function should have a graphical topological display of all discovered network devices in real time.
  - ✓ The proposed Network Fault Management solution must also provide network asset inventory reports
  - ✓ The proposed Network Fault Management solution must support extensive discovery mechanisms and must easily discover new devices using mechanisms such as SNMP Trap based discovery. It must also allow for inclusion and exclusion list of IP address or devices from such discovery mechanisms
  - ✓ The proposed solution must provide sufficient reports that identify unused ports in the managed network
  - ✓ It should show live interface connections between discovered network devices and must be able to do mapping of LAN and WAN connectivity with granular visibility up to individual port levels.
  - ✓ It should be able to automatically generate a notification in the event of a link failure to ensure proper handling of link related issues.
  - ✓ The proposed solution must scale to large networks while supporting a single web interface for access to reports.
  
- **Network Performance Reporting**
  - ✓ Solution should be able to collect Key performance measurements and statistics from all network domains and store it. This data is to be used for evaluation of performance of the end to end network infrastructure/services.
  - ✓ Solution should be able to do Trend analysis from the performance data.
  - ✓ Should be able to generate web-based reports both near real time and historical data for the network.
  - ✓ It should be possible to view live report and support historical storage of aggregated data for one year and data backup.
  - ✓ Proposed solution should be able to also provide a threshold and profile capability on the KPIs monitored on the network in order to understand the impact of failures and degradations which eventually results in downtime/network unavailability.
  - ✓ Customizable Reporting should be possible without the need for additional reporting engine.
  - ✓ It should have a secured interface with role based access and privileges.
  - ✓ Should be able to present the reports through web and also generate “pdf” / CSV / reports of the same.
  - ✓ The solution should allow aggregation of historical data.
  
- **Service level Management**
  - ✓ Solution should support comprehensive SLA management platform
  - ✓ Manage service levels for delivery and support of business services

- ✓ Must allow creating and applying various operational level parameters to Incidents, Requests, Changes, and Release management modules.
  - ✓ Real-time visualization of service level targets, agreement compliance data, penalties and rewards.
  - ✓ The SLM module should integrate with incident and problem management to automate escalation, and notification activities based on response and resolution targets
  - ✓ It should also integrate with change management to provide access to service level agreement details, implementation windows, change blackout periods, and availability requirements
  - ✓ The application should have a predefined/customizable field to indicate & track the progress/status of the lifecycle of ticket(s). It should contain predefined status codes and allow defining new status codes.
  - ✓ The tool should provide an audit trail, tracking & monitoring for record information and updates from opening through fulfilment to closure For example: IDs of individuals or groups opening, updating & closing records; dates / times of status & activities updates, etc.
- **Dashboard Reporting**
    - ✓ The Solution should provide a centralized Dashboard that picks up relevant business metrics from the service management solution giving at-a-glance visibility to key operational initiatives.
    - ✓ SCADL's assigned staff members should be able to graphically view the health of their business services and its related ticket KPI's pertaining to different categories and departments configured in Service Desk.
    - ✓ These dashboards need to be dynamic that allows user to drag and drop these metrics and create custom dashboards without any coding.
    - ✓ The Dashboards should support rich formatting capabilities to represent the data in different chart formats.
  - **Successful bidder shall provide the following**
    - ✓ NMS reports including Bandwidth utilization report & Link up-time report & network equipment health check report on a monthly basis.
    - ✓ Network Device Performance Report for each zone, junction and end device and other priority offices on Weekly, Monthly basis.
    - ✓ New Location Connectivity –Weekly, Monthly
    - ✓ Asset Report Location wise – Monthly
    - ✓ Vendor SLA Violation Report – Weekly, Monthly
    - ✓ Audit Report – Quarterly
    - ✓ Network Utilization Report – Monthly
    - ✓ Network performance after Integration (with other network) Reports – every 6 month.
    - ✓ Device level incidence report- Weekly, Monthly
    - ✓ Preventive Maintenance Report – Quarterly

- Bidder should also provide on-line Dash board where; SCADL can get summary view of the entire project and its components and Connectivity and Health Status.
- Successful bidder would generate and provide Reports as stated below periodically. Bidder shall also be under obligation to provide any other reports as asked by SCADL.

- **Implementation, Operations and Services & Maintenance of New Junctions and end points**

- ⇒ In case SCADL desires to set up the new Junction points for the deployment of any of the end point utilities, the charges shall be paid to successful bidder as per the unit price quoted in the price bid. The Complete setup including supply of additional hardware, software installation, commissioning will have to be done by the successful bidder during the contract period. After implementation of the said location, Operation, Services and maintenance of new Junctions/utilities will be applicable at the quoted unit rate of operation, service and maintenance as per the rate as defined in this bid.
- ⇒ Any such new Junctions locations will have to include into the main system and discovered in the NMS, and treated as an existing node.
- ⇒ Thereafter any such locations shall be treated as part of the project and will be monitored under the same SLA's as defined for this project.

- **License Management**

- ⇒ All the software licenses should be in the name of Smart City Ahmedabad Development Limited, Ahmedabad.
- ⇒ Successful bidder shall keep the record of all the software licenses and track software usage throughout the IT setup so as to effectively manage the risk of effective usage of software's.
- ⇒ The successful bidder shall avoid the unauthorized usage of Licensed Software. In the event of any claim asserted by Third Party of Infringement of Copyright, Patent or Trademark arising from the use of IT components or software, the successful bidder shall be entirely responsible to extinguish such a claim. If the successful bidder fails to comply and the SCADL is required to pay the compensation to the Third Party resulting from such infringement, the O&M agency shall be responsible for the compensation including all expenses, court costs and lawyer fees.

- **MIS Reports**

- ⇒ The successful bidder shall submit the reports on a regular basis (the reports may be soft copy / hard copy or both, as required by SCADL from time to time) in a mutually decided format. The following is only an indicative list of MIS reports that may be submitted to the SCADL:
  - Hotspot Wise Bandwidth Utilization, total traffic, per user data log,
  - Overall Network Bandwidth Utilization.
  - Summary of resolved, unresolved and escalated issues / complaints
  - Component wise Report (Server, Network, Security devices, other utility hardware, Backup, Website Updation, etc.)
  - SLA Reports
  - Log of preventive / scheduled maintenance undertaken
  - Any other report as may be required from time to time

- **Database Administration & Management Services:** The activities shall include, but not limited to the following:
  - ⇒ End-to-end management of different database(s) to be deployed under this project on an ongoing basis to ensure smooth functioning of the same.
  - ⇒ Management of changes to database schema, disk space, storage, user roles.
  - ⇒ Conduct code and configuration reviews to provide tuning inputs to the State / User Department in order to improve the application performance or resolve bottlenecks if any. The DBA is expected to monitor the performance parameters of the database and identify bottlenecks, security flaws. etc., and suggest improvements to the developer. The DBA is also expected to troubleshoot database related issues in coordination with the developer
  - ⇒ Performance monitoring and tuning of the databases on a regular basis including, preventive maintenance of the database as required.
  - ⇒ Regular backups for all databases in accordance with the backup and archive policies and conduct recovery whenever required with appropriate permissions.
  - ⇒ Continuous monitoring and periodic review of Database Logs, to identify performance bottlenecks, suspicious activities, signs of compromise, etc.
  - ⇒ Use of DBA tools related to performing database creation, maintenance, and database monitoring tasks.
- **O&M of Physical Infrastructure:** All the devices installed as part of the physical infrastructure should be monitored and managed on a 24x7x365 basis. The physical infrastructure management and maintenance services shall include, but not limited to the following:
  - ⇒ Operation and management of Building Management System. Proactive monitoring of the entire Physical infrastructure installed at through Building Management Software.
  - ⇒ Management of Physical Access to the premises as per the policies set by the SCDAL.
  - ⇒ Monitoring, recording and reporting usual and unusual movements in and around the premises.
  - ⇒ Material inward/ outward control as per policies set by the SCDAL.
  - ⇒ Monitoring and managing safety and surveillance equipment like CCTV, Access Control, Fire detection and Suppression etc. at the CCC.
  - ⇒ Issuing access control as per approval from the SCADL.
  - ⇒ Reporting incidents to the SCADL.
  - ⇒ Co-ordinate with respective trusted personnel and communicate with authorized maintenance personnel for various utilities at the CCC as required.
  - ⇒ Manage and monitor Diesel level/ requirements at its full capacity of the DG Set. Prevent the contamination of diesel by diesel bug or any other microorganisms. Diesel is consumable item, which will be charged on actual basis.
  - ⇒ Vendor Co-ordination for various physical Infrastructure components
  - ⇒ The bidder shall install a mechanism which will generate logs for diesel consumed through the use of tamper proof automatic measurement.
  - ⇒ Component that is reported to be down on a given date should be either fully repaired or replaced by temporary substitute (of equivalent or higher configuration) within the time frame indicated in the Service Level Agreement (SLA). In case the selected bidder fails to meet the above standards of maintenance, there will be a penalty as specified in the SLA.

- ⇒ The selected bidder shall also maintain records of all maintenance of the system and shall maintain a logbook on-site that may be inspected by SCDAL or authorized authority.
- ⇒ CCTV footage is to be kept to meet legal, regulatory, ISO Policies compliance requirements. The record retention period shall be as per policies of SCDAL.
- ⇒ Ensure availability of the physical Infrastructure including Power, Cooling, CCTV, Access Control, Intelligent Racks, Fire detection and suppression systems, Rodent Repellent systems, Water leak Detection Systems and other components included as part of physical Infrastructure related services for the CCC.
- ⇒ For the Physical infrastructure installed at site locations such as Junction boxes, Poles, Towers, casings etc. the Successful bidder will have to keep a check of such items and maintain the same from weather conditions, rodents etc. for the entire duration of the contract.
- ⇒ Proactive and reactive maintenance, repair or replacement of defective components (IT and Non-IT/ Hardware and Software) related to Physical Infrastructure systems and sub-systems. The cost of repair and replacement shall be borne by the selected bidder. IT and Non-IT hardware here refers to systems such as IT and non-IT hardware and software being used for maintaining and monitoring Physical Infrastructure e.g. BMS, Access control, etc.
- ⇒ The selected bidder shall have back-to-back arrangement with the OEMs and shall provide a copy of the service level agreement signed with respective OEMs.
- ⇒ The Bidder shall maintain documentation for installation, testing, commissioning of any system/sub-systems that is installed or upgraded.
- ⇒ Acceptance test shall be carried out for any system that is installed and/or upgraded.
- ⇒ The bidder shall carry out comprehensive fire drills as per Policy/Guidelines specified by SCDAL and submit drill reports to SCDAL on regular intervals.
- ⇒ Bidder shall record all the incidents/issues related to physical infrastructure services, security, systems and Sub-systems.
- ⇒ The bidder shall carry out Risk assessment of the Physical Infrastructure as per Policy/Guidelines specified by SCDAL and provide a Risk Assessment report including recommendations.
- ⇒ The bidder shall provide training to resources deployed at periodically.
- ⇒ Full compliance to all the policies, procedures, processes, guidelines, Government- Acts, Rules & Regulations, etc. The bidder shall provide full compliance/adherence of all activities performed by them, to the aforementioned statutes, without any additional cost to SCDAL.
- ⇒ The successful bidder will be responsible for the integration of the Cameras with the recording servers and ensure that at least 15 days on primary and 30 days on the secondary storage units.

● **Manpower Requirement:**

- ⇒ The minimum requirement of manpower resources, their qualification and responsibility of each resource is given below. The bidder has to ensure that appropriate qualified manpower with requisite skill sets is deputed for the project.
- ⇒ The bidder shall depute the resources as per the requirements for carrying out the O&M Activity and maintaining the SLA. This is minimum indicative list of resources and based on actual requirements, the bidder may deploy any number of resources to meet the SLA. The SCDAL shall not pay any cost for additional resources required to operate, maintain, monitor & manage the project as per the SLA.

- ⇒ In case deputed employee/staff is not available or is on leave, the bidder is required to provide the alternative personnel with same or higher technical capabilities of the non-available personnel.
- ⇒ The manpower deployment for the project should only be done after a proper written approval/permission from SCADL. The bidder will have to replace any person, if not found suitable for the job.
- ⇒ The manpower to be deployed under this project should be without any criminal background / record. SCADL/AMC reserves the right to carry out background check of the personnel proposed on the Project for verification of criminal record, at the beginning of deployment or during deployment.
- ⇒ All the manpower shall have to undergo training from the successful bidder for at least 15 working days on the working, understanding and Operations of project components. Training should also cover dos & don'ts and will have few sessions from the SCADL and Police Department officers on right approaches for monitoring the feeds & providing feedback to SCADL, Police Personnel and other associated government agencies.

S/N	Designation	Qty	Roles & Responsibilities	Desired Qualification
1	Nodal officer/ Project Manager- Operations	1	<ul style="list-style-type: none"> <li>• Overall in-charge of Project Implementation, O&amp;M of the complete project infrastructure.</li> <li>• Coordinating with third party agencies, bandwidth operators and software/equipment's vendors.</li> <li>• Should be the single point contact (SPOC) for managerial responsibilities and direct interface with SCADL.</li> <li>• Responsible for ensuring timely delivery of deliverables for each of the project components.</li> </ul>	<ul style="list-style-type: none"> <li>• BE /B. Tech (CS or IT) with M.Tech/MBA/ PMP</li> <li>• 10+ Years of Post Qualification Experience in large scale ICT infrastructure projects.</li> <li>• <b>Relevant Exp.:</b> 5+ Years of experience as a project manager of large scale ICT infrastructure or WAN/MAN Projects.</li> </ul>

S/N	Designation	Qty	Roles & Responsibilities	Desired Qualification
2	Technical Manager cum Network Expert	1	<ul style="list-style-type: none"> <li>Responsible for overall management of the IT Infrastructure of the project</li> <li>Should be responsible for effective Technical Resource management, System &amp; Resource planning, based on business forecast</li> <li>Responsible for overall deployment, Integration, upkeep and maintenance of all the IT components including hardware, software, Databases etc.</li> </ul>	<ul style="list-style-type: none"> <li>BE /B. Tech (EC) with CCNP or higher certification</li> <li>7+ Years of Post Qualification Experience in large scale ICT infrastructure projects.</li> <li>Relevant Exp.: 3+ Years of experience as a network manager of large scale ICT infrastructure WAN/MAN Projects.</li> </ul>
3	In-Charge Command & Control Center	01	<ul style="list-style-type: none"> <li>Overall In-charge Operation and Maintenance of CCC.</li> <li>Co-ordination with various stakeholders / agencies for resolution of issues/problems etc.</li> <li>Responsible for end to end functioning and uptime of CCC and its related infrastructures</li> </ul>	<ul style="list-style-type: none"> <li>BE /B. Tech (EC/IT) with MBA</li> <li>7+ Years of Post Qualification Experience in large scale ICT infrastructure projects.</li> <li>Relevant Exp.: Must have an experience of managing command and control center</li> </ul>
4	Manager Operations- CCC & TCC	02	<ul style="list-style-type: none"> <li>Managing day-to-day activity and operations of CCC</li> <li>Technical expertise in managing</li> </ul>	<ul style="list-style-type: none"> <li>BE /B. Tech (EC/IT)</li> <li>5+ Years of Post Qualification Experience in ICT infrastructure projects.</li> <li>Should have working experience of proposed or similar OEM technology of CCC system</li> </ul>

S/N	Designation	Qty	Roles & Responsibilities	Desired Qualification
5	VMS software Expert	03	<ul style="list-style-type: none"> <li>Responsible for managing the end to end Video Management software and services.</li> <li>Expert in generation of various MIS reports on regular basis or on demand.</li> <li>Should act as a technical software expert handholding employees working on software and perform required trouble shooting activities</li> <li>Need to configure/re-configure smart utilities on the software and dashboard</li> </ul>	<ul style="list-style-type: none"> <li>BE /B. Tech (EC/CS/IT)</li> <li>5+ Years of Post Qualification Experience in surveillance projects.</li> <li>Should have working experience of proposed or similar VMS Software</li> </ul>
6	Video analytics software expert at TCC	02	<ul style="list-style-type: none"> <li>Responsible for working on different modules of smart surveillance system i.e. RLVD, Face Detection, Speed Detection etc.</li> <li>Need to work pro-actively and generate various MIS report on demand or regularly</li> </ul>	<ul style="list-style-type: none"> <li>BE /B. Tech (EC/CS/IT)</li> <li>3+ Years of Post Qualification Experience in surveillance projects.</li> <li>Should have working experience of proposed or similar system/software</li> </ul>
7	Network cum security Administrator	2	<ul style="list-style-type: none"> <li>The resource should be able to administrate and manage the NMS Tools</li> <li>Managing and monitoring Network operations</li> <li>Responsible for monitoring of adherence to defined SLA by vendors by making effective utilization of deployed NMS tools</li> </ul>	<ul style="list-style-type: none"> <li>BE /B. Tech (EC) with CCNP or higher certification</li> <li>4+ Years of Post Qualification Experience in large scale ICT infrastructure projects.</li> <li>Relevant Exp.: 2+ Years of experience of working of NMS Tool</li> </ul>

S/N	Designation	Qty	Roles & Responsibilities	Desired Qualification
8	Storage and Backup Engineer	02	<ul style="list-style-type: none"> <li>• Backup of operating system, database and application as per stipulated policies.</li> <li>• Monitoring and enhancement of the performance of scheduled backups, schedule regular testing of backups and ensure adherence to related retention policies.</li> <li>• Ensuring prompt execution of on-demand backups of volumes, files and database applications whenever required.</li> <li>• Real-time monitoring, log maintenance and reporting of backup status on a regular basis. Prompt problem resolution in case of failures in the backup processes.</li> <li>• Media management including, but not limited to, tagging, cross-referencing, storing, Retrieving, archival logging, testing, and vaulting in fire proof cabinets.</li> </ul>	<ul style="list-style-type: none"> <li>• BE/B.Tech/MCA in computer science/IT</li> <li>• 5+ years of Post Qualification experience</li> <li>• 3+ years of experience in NAS/SAN or TMS backup environment</li> </ul>
9	Network Engineers	07	<ul style="list-style-type: none"> <li>• Installation, commissioning, Troubleshooting, of all the network equipment available in the area of a zonal office</li> <li>• Maintenance, Monitor &amp; Support for network equipment of zonal, ward, Junctions/locations offices.</li> <li>• Regular update of software patches, antivirus etc.</li> <li>• Any other activities as and when required.</li> </ul>	<ul style="list-style-type: none"> <li>• BE /B. Tech with CCNA or higher certification</li> <li>• 2+ years of similar type post qualification experience</li> </ul>

S/N	Designation	Qty	Roles & Responsibilities	Desired Qualification
10	Engineer – Server Management	02	<ul style="list-style-type: none"> <li>Managing server infrastructure installed under the project</li> <li>Responsible for system configuration, scalability, performance, load balancing, OS administration / management, troubleshooting &amp; Debugging and monitoring of servers.</li> <li>Implement the back-up plan for storing and retrieving of data, maintain servers, machines and also responsible in resolving the real time (RT) requests as per SLA.</li> </ul>	<ul style="list-style-type: none"> <li>BE /B. Tech (IT/CS)</li> <li>2+ years of similar type post qualification experience</li> </ul>
11	Database Administrator	02	<ul style="list-style-type: none"> <li>Responsible for database administration, and application change management procedure.</li> <li>Responsible for management of database repository, creation, deletion, modification, backup and restore of databases and their tables.</li> </ul>	<ul style="list-style-type: none"> <li>BE /B. Tech (IT/CS)</li> <li>2+ years of similar type post qualification experience</li> </ul>
12	Operators for CCC/Helpdesk	5	<ul style="list-style-type: none"> <li>Responsible for performing Day to day operator job of CCC/helpdesk</li> <li>Any other activities as and when required and instructed.</li> </ul>	<ul style="list-style-type: none"> <li>Any Graduate with proficiency of handling computer operator job</li> <li>Proficient in English, Hindi and Gujarati language</li> <li>2+ Years of Experience of working as a Computer Operator for any centralized Operations center/ Helpdesk/Customer Support</li> </ul>

S/N	Designation	Qty	Roles & Responsibilities	Desired Qualification
13	Manpower at Traffic Command Centre (At least 5 in shift 1 and for other shift SI can decide on no but not less than 2)	5	<ul style="list-style-type: none"> <li>Responsible for performing Day to day operator job of Traffic Command Centre</li> <li>Any other activities as and when required and instructed.</li> </ul>	<ul style="list-style-type: none"> <li>Any Graduate with proficiency of handling computer operator job</li> <li>Proficient in English, and Gujarati language</li> <li>2+ Years of Experience of working as a Computer Operator for any centralized Operations center</li> </ul>
14	Software Developers	3	<ul style="list-style-type: none"> <li>Application development during the O&amp;M phase of the solution, for additional functionalities, variation in existing functionalities</li> </ul>	<ul style="list-style-type: none"> <li>Minimum 6 years of experience as developer in the programming language used for the applications</li> </ul>

**Note:**

These are the minimum indicative list of type and quality of resources required. However, bidder is free to put additional manpower wherever required for the necessary Operations, maintenance and support to comply with the required service levels as per the RFP/contract agreement with no extra cost to the SCDAL.

### 3.3 Detailed Scope of work and key design considerations

#### 3.3.1. Inception Phase

The SI will be responsible for preparation of detailed project plan. The plan shall address at the minimum the following:

- i. Define an organized set of activities for the project and identify the interdependence between them.
- ii. Resource planning and loading for each phase/activity. This must also indicate where each resource would be based during that phase, i.e. onsite at the AMC office or off site at SI premises.
- iii. Establish and measure resource assignments and responsibilities
- iv. Highlight the milestones and associated risks
- v. Communicate the project plan to stakeholders with meaningful reports.
- vi. Measure project deadlines and performance objectives.

- vii. Project Progress Reporting. During the implementation of the project, the SI should present weekly reports. This report will be presented in the steering committee meeting to AMC. The report should contain at the minimum the under mentioned:
  - a. Results accomplished during the period (weekly)
  - b. Cumulative deviations from the schedule date as specified in the finalized Project Plan
  - c. Corrective actions to be taken to return to planned schedule of progress
  - d. Plan for the next week
  - e. Proposed revision to planned schedule provided such revision is necessitated by reasons beyond the control of SI
  - f. Support needed
  - g. Issues/Concerns
  - h. Risks/Show stoppers along with mitigation
- viii. Identify the activities that require the participation of client personnel (including AMC, the Program Management Unit etc.) and communicate their time requirements and schedule early enough to ensure their full participation at the required time.

### 3.3.2. Requirement Phase

The SI must perform the detailed assessment of the business requirements and IT Solution requirements as mentioned in this RFP. Based on the understanding and its own individual assessment, SI shall develop & finalize the Requirement Specifications (RS) in consultation with AMC and its representatives. While doing so, SI at least is expected to do following:

- a. SI shall study and revalidate the requirements given in the RFP with AMC and submit as an exhaustive Requirement Specifications document.
- b. SI shall develop the FRS and SRS documents.
- c. SI shall develop and follow standardized template for requirements capturing and system documentation.
- d. SI must maintain traceability matrix from SRS stage for the entire implementation.
- e. SI must get the sign off from user groups formed by AMC.
- f. For all the discussion with AMC team, SI shall be required to be present at AMC office with the requisite team members.
- g. Prior to starting the site clearance, the SI shall carry out survey of field locations as for buildings, structures, fences, trees, existing installations, etc.
- h. The infrastructure of street ICT infrastructure may need to be dismantled and replaced with the new systems which are proposed and required under the scope of the project. The infrastructure like poles, cantilevers, cabling, aspects, electronics at junctions – switches and routers, etc. should be reused to derive economies for the project with prior approval of AMC. The dismantled infrastructure shall be delivered at the AMC designated location without damage at no extra cost.

- i. All existing road signs which are likely to be effected by the works are to be carefully taken down and stored. Signs to be re-commissioned shall be cleaned, provided with new fixings where necessary and the posts re-painted in accordance with AMC guidelines. Road signs, street name plate, etc. damaged by the SI during their operation shall be repaired or replaced by SI at no additional cost.
- j. The SI shall directly interact with electricity boards for provision of mains power supply at all desired locations for field solution. AMC shall facilitate the same. The recurring electricity charges will be reimbursed by AMC as per actual consumption.

### 3.3.3. Design Phase

The SI shall build the solution as per the Design Considerations. The solution proposed by SI should comply with the design considerations requirements as mentioned therein.

### 3.3.4. Development Phase

The SI shall carefully consider the scope of work and provide a solution that best meets the project's requirements. Considering the scope set in this RFP, the SI shall carefully consider the solutions it proposes and explicitly mention the same in the technical proposal. The implementation of the application software will follow the procedure mentioned below:

- a. Software Products (Configuration and Customization): In case SI proposes software products the following need to be adhered:
  - i. SI will be responsible for supplying the application and licenses of related software products and installing the same so as to meet project requirements.
  - ii. The SI shall perform periodic audits to measure license compliance against the number of valid End User software licenses consistent with the terms and conditions of license agreements, volume purchase agreements, and other mutually agreed upon licensed software terms and conditions. The SI shall report any exceptions to license terms and conditions at the right time to AMC. However, the responsibility of license compliance solely lies with the SI. Any financial penalty imposed on AMC during the contract period due to license non-compliance shall be borne by SI.
  - iii. SI shall also supply any other tools & accessories required to make the integrated solution complete as per requirements. For the integrated solution, the SI shall supply:
    - a) Software & licenses.
    - b) Supply tools, accessories, documentation and provide a list of the same. Tools and accessories shall be part of the solution.
    - c) System Documentation: System Documentation both in hard copy and soft copy to be supplied along with licenses and shall include but not limited to following. Documentation to be maintained, updated and submitted to AMC regularly :

- Functional Requirement Specification (FRS)
- High level design of whole system
- Low Level design for whole system / Module design level
- System Requirements Specifications (SRS)
- Any other explanatory notes about system
- Traceability matrix
- Technical and product related manuals
- Installation guides
- User manuals
- System administrator manuals
- Toolkit guides and troubleshooting guides
- Other documents as prescribed by AMC
- Quality assurance procedures
- Change management histories
- Version control data
- SOPs, procedures, policies, processes, etc. developed for AMC
- Programs :
  - 
  - All programs must have explanatory notes for understanding
  - Version control mechanism
  - All old versions to be maintained
- Test Environment :
  - Detailed Test methodology document
  - Module level testing
  - Overall System Testing
  - Acceptance test cases

(These documents need to be updated after each phase of project and to be maintained updated during entire project duration. The entire documentation will be the property of AMC.)

### **3.3.5. Integration & Testing Phase**

The Command and control center should be integrated with feeds of all tracks/component deployed under this Ahmedabad Project. The SI shall provide the testing strategy including traceability matrix, test cases and shall conduct the testing of various components of the software developed/customized and the solution as a whole. The testing should be comprehensive and should be done at each stage of development and implementation.

### **3.3.6. Go-Live Preparedness and Go-Live**

- a. SI shall prepare and agree with AMC, the detailed plan for Go-Live (in-line with AMC's implementation plan as mentioned in RFP).
- b. The SI shall define and agree with AMC, the criteria for Go-Live.

- c. The SI shall ensure that all the data migration is done from existing systems.
- d. SI shall submit signed-off UAT report (issue closure report) ensuring all issues raised during UAT are being resolved prior to Go-Live.
- e. SI shall ensure that Go –Live criteria as mentioned in User acceptance testing of Project is met and SI needs to take approval from AMC team on the same.
- f. Go-live of the application shall be done as per the finalized and agreed upon Go-Live plan.

### **3.3.7. Project Management & Facilities Management Services**

The SI will be required to provide facilities management services to support the AMC and Police Department officials in performing their day-to-day functions related to this system. SI is required to depute a dedicated, centralised project management and technical team for the overall project management and interaction with AMC and Police Department.

#### **3.3.7.1. Basic Infrastructure Services**

Following services shall be provided by the SI under the basic infrastructure services:

1. Ensure availability of the infrastructure (both physical and IT) including but not limited to Power, Cooling, Racks, Storage and other peripheral equipment installed at the time of Project commissioning as per the SLAs.
2. Ensure scalability in terms of availability of racks and supporting infrastructure.
3. Proactive and reactive maintenance, repair and replacement of defective components (physical and other peripheral IT infrastructure) installed for the Project through this RFP. The cost for repair and replacement shall be borne by the SI.
4. Any component (Physical & IT installed at the time of Project commissioning) that is reported to be faulty / non-functional on a given date should be either fully repaired or replaced by temporary substitute (of equivalent configuration) within the time frame agreed upon in the Service Level Agreement (SLA).
5. Proactive monitoring of the entire basic infrastructure installed.
6. SI shall maintain records of the maintenance of the basic infrastructure and shall maintain a logbook on-site that may be inspected by the AMC and Traffic Police at any time.

#### **3.3.7.2. Network Monitoring Services**

The activities shall include:

1. SI shall provide services for management of project to maintain performance at optimum levels on a 24 x 7 basis.
2. SI shall monitor and administer the network.
3. SI shall create and modify VLAN, assignment of ports to appropriate applications and segmentation of traffic.
4. SI shall carry out break fix maintenance of the LAN cabling or maintenance work requiring civil work.

### 3.3.7.3. Integration Testing

This shall be a black-box testing role primarily to ensure that the application to be deployed does not disrupt the Ahmedabad operations and affect other Ahmedabad infrastructure in terms of performance and security. The technical tasks to be carried out shall be as follows:

1. Functional Testing: Ensuring that the application functionality as described by the AMC and Traffic Police works adequately. The functional testing of application will necessarily be minimal as this is a core responsibility of the Supplier.
2. Performance Testing: Ensuring that the application meets expressed performance requirements on the Ahmedabad servers by using performance test tools and performance monitoring tools.
3. Security Testing: Testing for exploitable application security weaknesses that undermine the application security or the security of the infrastructure.

### 3.3.7.4. Vendor Management Services

The activities shall include:

1. Coordination with all the project stakeholders to ensure that all project activities are carried out in a timely manner.
2. SI shall coordinate and follow-up with all the relevant vendors to ensure that the issues are resolved in accordance with the SLAs agreed upon with them.
3. SI shall also ensure that unresolved issues are escalated to respective departments.
4. SI shall maintain database of the various vendors with details like contact person, telephone nos., escalation matrix, response time and resolution time commitments etc.
5. SI shall draw a consolidated quarterly SLA performance report across vendors for consideration of the AMC and Traffic Police.

### 3.3.7.5. Network Management

The objective of this service is to ensure continuous operation and upkeep of the LAN & WAN infrastructure of the project including all active and passive components. The selected SI shall be responsible to coordinate with Network Service Provider for network related issues between CCC, DC, and Traffic Junctions.

### 3.3.7.6. Physical Infrastructure Management and Maintenance Services

All the devices that will be installed in the project as part of the physical infrastructure should be SNMP enabled and shall be centrally and remotely monitored and managed on a 24x7x365 basis. Industry leading infrastructure management solution should be deployed to facilitate monitoring and management of the Infrastructure on one integrated console. The physical infrastructure management and maintenance services shall include:

1. Proactive and reactive maintenance, repair and replacement of defective components (IT and Non-IT/ Hardware and Software). The cost for repair and replacement shall be borne by the SI.

2. The Successful Bidder shall have to stock and provide adequate (not less than 5 % of the quantity deployed) onsite and offsite spare parts and spare component to ensure that the uptime commitment as per SLA is met. To provide this service it is important for the SI to have back to back arrangement with the OEMs. The SI needs to provide a copy of the service level agreement signed with the respective OEMs.
3. Component that is reported to be down on a given date should be either fully repaired or replaced by temporary substitute (of equivalent configuration) within the time frame indicated in the Service Level Agreement (SLA). In case the selected SI fails to meet the above standards of maintenance, there will be a penalty as specified in the SLA.
4. The selected SI shall also maintain records of all maintenance of the system and shall maintain a logbook on-site that may be inspected by the AMC and Traffic Police at any time.

### **3.3.8. Exit Management**

- a. This sets out the provisions, which will apply on expiry or termination of the Master Service Agreement, the Project Implementation, Operation and Management SLA.
- b. In the case of termination of the Project Implementation and/or Operation and Management, the Parties shall agree at that time whether, and if so during what period, the provisions of this Schedule shall apply.
- c. The Parties shall ensure that their respective associated entities carry out their respective obligations set out in this Exit Management Schedule.

#### **3.3.8.1.1. Cooperation and Provision of Information**

During the exit management period:

- a. The SI will allow the *AMC* or its nominated agency access to information reasonably required to define the then current mode of operation associated with the provision of the services to enable the *AMC* to assess the existing services being delivered;
- b. Promptly on reasonable request by the *AMC*, the SI shall provide access to and copies of all information held or controlled by them which they have prepared or maintained in accordance with this agreement relating to any material aspect of the services (whether provided by the System integrator or sub-contractors appointed by the SI). The *AMC* shall be entitled to copy of all such information. Such information shall include details pertaining to the services rendered and other performance data. The SI shall permit the *AMC* or its nominated agencies to have reasonable access to its employees and facilities, to understand the methods of delivery of the services employed by the SI and to assist appropriate knowledge transfer.

#### **3.3.8.1.2. Confidential Information, Security and Data**

- a. The SI will promptly on the commencement of the exit management period supply to the *AMC* or its nominated agency the following:

- information relating to the current services rendered and customer and performance data relating to the performance of sub-contractors in relation to the services;
  - documentation relating to Intellectual Property Rights;
  - documentation relating to sub-contractors;
  - all current and updated data as is reasonably required for purposes of *AMC* or its nominated agencies transitioning the services to its Replacement *SI* in a readily available format nominated by the *AMC*, its nominated agency;
  - all other information (including but not limited to documents, records and agreements) relating to the services reasonably necessary to enable *AMC* or its nominated agencies, or its Replacement *SI* to carry out due diligence in order to transition the provision of the Services to *AMC* or its nominated agencies, or its Replacement *System integrator* (as the case may be).
- b. Before the expiry of the exit management period, the *SI* shall deliver to the *AMC* or its nominated agency all new or up-dated materials from the categories set out in Schedule above and shall not retain any copies thereof, except that the *SI* shall be permitted to retain one copy of such materials for archival purposes only.

#### 3.3.8.1.3. **Transfer of Certain Agreements**

On request by the *AMC* or its nominated agency the *SI* shall effect such assignments, transfers, licenses and sub-licenses *AMC*, or its Replacement *SI* in relation to any equipment lease, maintenance or service provision agreement between *SI* and third party lessors, vendors, and which are related to the services and reasonably necessary for the carrying out of replacement services by the *AMC* or its nominated agency or its Replacement *SI*.

#### 3.3.8.1.4. **General Obligations of the SI**

- a. The *SI* shall provide all such information as may reasonably be necessary to effect as seamless a handover as practicable in the circumstances to the *AMC* or its nominated agency or its Replacement *SI* and which the *SI* has in its possession or control at any time during the exit management period.
- b. For the purposes of this Schedule, anything in the possession or control of any *SI*, associated entity, or sub-contractor is deemed to be in the possession or control of the *SI*.
- c. The *SI* shall commit adequate resources to comply with its obligations under this Exit Management Schedule.

#### 3.3.8.1.5. **Exit Management Plan**

- a. The *SI* shall provide the *AMC* or its nominated agency with a recommended exit management plan ("Exit Management Plan") which shall deal with at least the following aspects of exit management in relation to the MSA as a whole and in relation to the Project Implementation, and the Operation and Management SLA.

- A detailed program of the transfer process that could be used in conjunction with a Replacement SI including details of the means to be used to ensure continuing provision of the services throughout the transfer process or until the cessation of the services and of the management structure to be used during the transfer;
  - plans for the communication with such of the SI's sub-contractors, staff, suppliers, customers and any related third party as are necessary to avoid any material detrimental impact on the AMC's operations as a result of undertaking the transfer;
  - (if applicable) proposed arrangements for the segregation of the SI's networks from the networks employed by AMC and identification of specific security tasks necessary at termination;
  - Plans for provision of contingent support to AMC, and Replacement SI for a reasonable period after transfer.
- b. The SI shall re-draft the Exit Management Plan annually thereafter to ensure that it is kept relevant and up to date.
  - c. Each Exit Management Plan shall be presented by the SI to and approved by the AMC or its nominated agencies.
  - d. The terms of payment as stated in the Terms of Payment Schedule include the costs of the SI complying with its obligations under this Schedule.
  - e. In the event of termination or expiry of MSA, and Project Implementation, each Party shall comply with the Exit Management Plan.
  - f. During the exit management period, the SI shall use its best efforts to deliver the services.
  - g. Payments during the Exit Management period shall be made in accordance with the Terms of Payment Schedule.
  - h. This Exit Management plan shall be furnished in writing to the AMC or its nominated agencies within 90 days from the Effective Date of this Agreement.

### 3.4. Compliance to Standards & Certifications

- a. For a large and complex set up such as the Project, it is imperative that the highest standards applicable are adhered to. In this context, the SI will ensure that the entire Project is developed in compliance with the applicable standards.
- b. During project duration, the SI will ensure adherence to prescribed standards as provided below:

#.	Component/Application/System	Prescribed Standard
1.	Information Security	ISO 27001
2.	IT Infrastructure Management	ITIL specifications
3.	Service Management	ISO 20000 specifications
4.	Project Documentation	IEEE/ISO/CMMi (where applicable) specifications for documentation

- c. Apart from the above the SI need to ensure compliance of the project with Government of India IT security guidelines including provisions of:
- The Information Technology Act, 2000” and amendments thereof and
  - Guidelines and advisories for information security published by Cert-In/MeitY (Government of India) issued till the date of publishing of tender notice. Periodic changes in these guidelines during project duration need to be complied with.
- d. While writing the source code for application modules the SI should ensure high-quality documentation standards to improve the readability of the software module. An illustrative list of comments that each module contained within the source file should be preceded by is outlined below:
- The name of the module
  - The date when module was created
  - A description of what the module does
  - A list of the calling arguments, their types, and brief explanations of what they do
  - A list of required files and/or database tables needed by the module
  - Error codes/Exceptions
  - Operating System (OS) specific assumptions
  - A list of locally defined variables, their types, and how they are used
  - Modification history indicating who made modifications, when the modifications were made, and what was done.
- e. Apart from the above SI needs to follow appropriate coding standards and guidelines inclusive of but not limited to the following while writing the source code -
- Proper and consistent indentation
  - Inline comments
  - Structured programming
  - Meaningful variable names
  - Appropriate spacing
  - Declaration of variable names
  - Meaningful error messages
- f. Quality Audits
- AMC, at its discretion, may also engage independent auditors to audit any/some/all standards/processes. The SI shall support all such audits as per calendar agreed in advance. The result of the audit shall be shared with the SI who has to provide an effective action plan for mitigations of observations/non-compliances, if any.

### **3.5. Project Management and Governance**

#### **3.5.1. Project Management Office (PMO)**

A Project Management office will be set up during the start of the project. The PMO will, at the minimum, include a designated full time Project Manager from SI. It will also include key persons from other relevant stakeholders including members of AMC and other officials/representatives by invitation. The operational aspects of the PMO need to be handled by the SI including maintaining weekly statuses, minutes of the meetings, weekly/monthly/project plans, etc.

PMO will meet formally on a weekly basis covering, at a minimum, the following agenda items:

- i. Project Progress
- ii. Delays, if any – Reasons thereof and ways to make-up lost time
- iii. Issues and concerns
- iv. Performance and SLA compliance reports;
- v. Unresolved and escalated issues;
- vi. Project risks and their proposed mitigation plan
- vii. Discussion on submitted deliverable
- viii. Timelines and anticipated delay in deliverable if any
- ix. Any other issues that either party wishes to add to the agenda.

During the development and implementation phase, there may be a need for more frequent meetings and the agenda would also include:

- i. Module development status
- ii. Testing results
- iii. IT infrastructure procurement and deployment status
- iv. Status of setting up/procuring of the Helpdesk, DC hosting
- v. Any other issues that either party wishes to add to the agenda.

Bidder shall recommend PMO structure for the project implementation phase and operations and maintenance phase.

#### **3.5.2. Steering Committee**

The Steering Committee will consist of senior stakeholders from AMC, its nominated agencies and SI. SI will nominate its Smart City vertical head to be a part of the Project Steering Committee.

The SI shall participate in monthly Steering Committee meetings and update Steering Committee on Project progress, Risk parameters (if any), Resource deployment and plan, immediate tasks, and any obstacles in project. The Steering committee meeting will be a forum for seeking and getting approval for project decisions on major changes etc.

All relevant records of proceedings of Steering Committee should be maintained, updated, tracked and shared with the Steering Committee and Project Management Office by SI.

During the development and implementation phase of the project, it is expected that there will be at least fortnightly Steering Committee meetings. During the O&M phase, the meetings

will be held at least once a quarter. Other than the planned meetings, in exceptional cases, AMC may call for a Steering Committee meeting with prior notice to the SI.

### **3.5.3. Project Monitoring and Reporting**

The SI shall circulate written progress reports at agreed intervals to AMC and other stakeholders. Project status report shall include Progress against the Project Management Plan, status of all risks and issues, exceptions and issues along with recommended resolution etc.

Other than the planned meetings, in exceptional cases, project status meeting may be called with prior notice to the Bidder. AMC reserves the right to ask the bidder for the project review reports other than the standard weekly review reports

### **3.5.4. Risk and Issue management**

The SI shall develop a Risk Management Plan and shall identify, analyse and evaluate the project risks, and shall develop cost effective strategies and action plans to mitigate those risks.

The SI shall carry out a Risk Assessment and document the Risk profile of AMC based on the risk appetite and shall prepare and share an Enterprise Risk Register. The SI shall develop an issues management procedure to identify, track, and resolve all issues confronting the project. The risk management plan and issue management procedure shall be done in consultation with AMC.

The SI shall monitor, report, and update the project risk profile. The risks should be discussed with AMC and a mitigation plan be identified during the project review/status meetings. The Risk and Issue management should form an agenda for the Project Steering Committee meetings as and when required.

### **3.5.5. Governance procedures**

SI shall document the agreed structures in a procedures manual.

### **3.5.6. Planning and Scheduling**

The SI will prepare a detailed schedule and plan for the entire project covering all tasks and sub tasks required for successful execution of the project. The SI has to get the plan approved from AMC at the start of the project and it should be updated every week to ensure tracking of the progress of the project.

The project plan should include the following:

1. The project break up into logical phases and sub-phases;
2. Activities making up the sub-phases and phases;
3. Components in each phase with milestones;
4. The milestone dates are decided by AMC in this RFP. SI cannot change any of the milestone completion dates. SI can only propose the internal task deadlines while keeping

the overall end dates the same. SI may suggest improvement in project dates without changing the end dates of each activity.

5. Key milestones and deliverables along with their dates including those related to delivery and installation of hardware and software;
6. Start date and end date for each activity;
7. The dependencies among activities;
8. Resources to be assigned to each activity;
9. Dependency on AMC

### **3.5.7. License Metering / Management**

The SI shall track software usage throughout the IT setup so as to effectively manage the risk of unauthorized usage or under-licensing of software installed at the CCC, and DC. This may be carried out through the use of standard license metering tools.

## **3.6. Change Management & Control**

### **3.6.1. Change Orders / Alterations / Variations**

- a. The SI agrees that the requirements given in the Bidding Documents are minimum requirements and are only indicative. The vendor would need to etch out the details at the time of preparing the design document prior to actual implementation. It shall be the responsibility of the SI to meet all the requirements of technical specifications contained in the RFP and any upward revisions and/or additions of quantities, specifications sizes given in the Bidding Documents required to be made during execution of the works, shall not constitute a change order and shall be carried out without a change order and shall be carried out without any time and cost effect to Purchaser.
- b. Further upward revisions and or additions required to make SI's selected equipment and installation procedures to meet Bidding Documents requirements expressed and to make entire facilities safe, operable and as per specified codes and standards shall not constitute a change order and shall be carried out without any time and cost effect to Purchaser.
- c. Any upward revision and/or additions consequent to errors, omissions, ambiguities, discrepancies in the Bidding Documents which the SI had not brought out to the Purchaser's notice in his bid shall not constitute a change order and such upward revisions and/or addition shall be carried out by SI without any time and cost effect to Purchaser.

### **3.6.2. Change Order**

- a. The Change Order will be initiated only in case (i) the Purchaser directs in writing the SI to include any addition to the scope of work covered under this Contract or delete any part of the scope of the work under the Contract, (ii) SI requests to delete any part of the work which will not adversely affect the operational capabilities of the facilities and if the deletions proposed are agreed to by the Purchaser and for which cost and time benefits

- shall be passed on to the Purchaser, (iii) the Purchaser directs in writing the SI to incorporate changes or additions to the technical specifications already covered in the Contract.
- b. Any changes required by the Purchaser over and above the minimum requirements given in the specifications and drawings etc. included in the Bidding Documents before giving its approval to detailed design or Engineering requirements for complying with technical specifications and changes required to ensure systems compatibility and reliability for safe operation (As per codes, standards and recommended practices referred in the Bidding Documents) and trouble free operation shall not be construed to be change in the Scope of work under the Contract.
  - c. Any change order as stated in Clause 2 a. comprising an alteration which involves change in the cost of the works (which sort of alteration is hereinafter called a “Variation”) shall be the Subject of an amendment to the Contract by way of an increase or decrease in the schedule of Contract Prices and adjustment of the implementation schedule if any.
  - d. If parties agree that the Contract does not contain applicable rates or that the said rates are inappropriate or the said rates are not precisely applicable to the variation in question, then the parties shall negotiate a revision of the Contract Price which shall represent the change in cost of the works caused by the Variations. Any change order shall be duly approved by the Purchaser in writing.
  - e. Within ten (10) working days of receiving the comments from the Purchaser or the drawings, specification, purchase requisitions and other documents submitted by the SI for approval, the SI shall respond in writing, which item(s) of the Comments is/are potential changes(s) in the Scope of work of the RFP document covered in the Contract and shall advise a date by which change order (if applicable) will be submitted to the Purchaser.
  - f. Any integrations with future systems at AMC (not listed as a part of current scope) will be done through the change management process. The SI will have to quote man month efforts for each of the integration components and the same will be vetted by AMC/ SCADL or its appointed PMC.

### 3.7. Testing and Acceptance Criteria

- a. SI shall demonstrate the following mentioned acceptance criteria prior to acceptance of the solution as well as during project operations phase, in respect of scalability and performance etc. The SI may propose further detailed Acceptance criteria which the AMC will review. Once AMC provides its approval, the Acceptance criteria can be finalized. In case required, parameters might be revised by AMC in mutual agreement with bidder and the revised parameters shall be considered for acceptance criteria. A comprehensive system should be set up that would have the capability to log & track the testing results, upload & maintain the test cases and log & track issues/bugs identified.

b. The following table depicts the details for the various kinds of testing envisaged for the project:

Type of Testing	Responsibility	Scope of Work
System Testing	SI	<ol style="list-style-type: none"> <li>SI to perform System testing</li> <li>SI to prepare test plan and test cases and maintain it. AMC may request the SI to share the test cases and results</li> <li>Should be performed through manual as well as automated methods</li> <li>Automation testing tools to be provided by SI. AMC doesn't intend to own these tools</li> </ol>
Integration Testing	SI	<ol style="list-style-type: none"> <li>SI to perform Integration testing</li> <li>SI to prepare and share with AMC the Integration test plans and test cases</li> <li>SI to perform Integration testing as per the approved plan</li> <li>Integration testing to be performed through manual as well as automated methods</li> <li>Automation testing tools to be provided by SI. AMC doesn't intend to own these tools</li> </ol>
Performance and load Testing	SI AMC / Project Management Consultant	<ol style="list-style-type: none"> <li>SI to do performance and load testing.</li> <li>Various performance parameters such as transaction response time, throughput, page loading time should be taken into account.</li> <li>Load and stress testing of the Project to be performed on business transaction volume</li> <li>Test cases and test results to be shared with AMC.</li> <li>Performance testing to be carried out in the exact same architecture that would be set up for production.</li> <li>SI need to use performance and load testing tool for testing. AMC doesn't intend to own these tools. <ul style="list-style-type: none"> <li>AMC or appointed PMC to monitor/validate the performance testing. Cost for such audits to be paid by AMC.</li> </ul> </li> </ol>
Security Testing (including Penetration and Vulnerability testing)	<ul style="list-style-type: none"> <li>SI</li> <li>AMC</li> </ul>	<ol style="list-style-type: none"> <li>The solution should demonstrate the compliance with security requirements as mentioned in the RFP including but not limited to security controls in the application, at the network layer, network, data centre(s), security monitoring system deployed by the SI</li> <li>The solution shall pass vulnerability and penetration testing for rollout of each phase. The solution should pass web</li> </ol>

Type of Testing	Responsibility	Scope of Work
		<p>application security testing for the portal, mobile app and other systems and security configuration review of the infrastructure.</p> <ol style="list-style-type: none"> <li>3. SI should carry out security and vulnerability testing on the developed solution.</li> <li>4. Security testing to be carried out in the exact same environment/architecture that would be set up for production.</li> <li>5. Security test report and test cases should be shared with AMC</li> <li>6. Testing tools if required, to be provided by SI. AMC doesn't intend to own these tools</li> <li>7. During O&amp;M phase, penetration testing to be conducted on yearly basis and vulnerability assessment to be conducted on half-yearly basis.</li> </ol> <p>AMC will also involve PMC to perform the audit/review/monitor the security testing carried out by SI. Cost for such auditors to be paid by AMC.</p>
User Acceptance Testing of Project	<ul style="list-style-type: none"> <li>• AMC</li> </ul>	<ol style="list-style-type: none"> <li>1. AMC to perform User Acceptance Testing</li> <li>2. SI to prepare User Acceptance Testing test cases</li> <li>3. UAT to be carried out in the exact same environment/architecture that would be set up for production</li> <li>4. SI should fix bugs and issues raised during UAT and get approval on the fixes from AMC before production deployment</li> <li>5. Changes in the application as an outcome of UAT shall not be considered as Change Request. SI has to rectify the observations.</li> </ol>

Note:

- a. Bidder needs to provide the details of the testing strategy and approach including details of intended tools/environment to be used by SI for testing in its technical proposal. AMC does not intend to own the tools.
- b. The SI shall work in a manner to satisfy all the testing requirements and adhere to the testing strategy outlined. The SI must ensure deployment of necessary resources and tools during the testing phases. The SI shall perform the testing of the solution based on the approved test plan, document the results and shall fix the bugs found during the testing. It is the responsibility of SI to ensure that the end product delivered by the SI

meets all the requirements specified in the RFP. The SI shall take remedial action based on outcome of the tests.

- c. The SI shall arrange for environments and tools for testing and for training as envisaged. Post Go-Live; the production environment should not be used for testing and training purpose. If any production data is used for testing, it should be masked and it should be protected. Detailed process in this regard including security requirement should be provided by the SI in its technical proposal. The process will be finalized with the selected bidder.
- d. All tools/environment required for testing shall be provided by the SI.
- e. SI needs to prepare and provide all requisite information/documents to AMC and ensure that there is no delay in overall schedule.
- f. The cost of rectification of non-compliances shall be borne by the SI.

### **3.7.1. Final Acceptance Testing**

The final acceptance shall cover a representative sample of goods supplied, after successful testing by the AMC and Traffic Police or its PMU; a Final Acceptance Test Certificate (FAT) shall be issued by the AMC and Traffic Police to the SI.

Prerequisite for Carrying out FAT activity:

1. Detailed test plan shall be developed by the SI and approved by AMC. This shall be submitted by SI before FAT activity to be carried out.
2. All documentation related to Ahmedabad Project and relevant acceptance test document (including IT Components, Non IT Components etc.) should be completed & submitted before the final acceptance test to the AMC and Traffic Police.
3. The training requirements as mentioned should be completed before the final acceptance test.
4. Successful hosting of Application, NMS and MIS Software.
5. For both IT & Non-IT equipment's / software manuals / brochures / Data Sheets / CD / DVD / media for all the Ahmedabad Project supplied components.

The FAT shall include the following:

1. All hardware and software items must be installed at respective sites as per the specification.
2. Availability of all the defined services shall be verified.
3. The SI shall be required to demonstrate all the features / facilities / functionalities as mentioned in the RFP.
4. The SI shall arrange the test equipment required for performance verification, and will also provide documented test results.
5. The SI shall be responsible for the security audit of the established system to be carried out by a certified third party as agreed by AMC.

Any delay by the SI in the Final Acceptance Testing shall render him liable to the imposition of appropriate Penalties. However, delays identified beyond the control of SI shall be

considered appropriately and as per mutual agreement between AMC and SI. In the event the SI is not able to complete the installation due to non-availability of bandwidth from the bandwidth service providers, the Supplier and AMC may mutually agree to redefine the Network so the SI can complete installation and conduct the Final Acceptance Test within the specified time.

### 3.8. Smart City-Design Consideration

#### 3.8.1. Key Design Considerations

Key design considerations taken into account are as follows –

- Designed for 24x7 online availability of application.
  - Scalable solution on open protocols
  - API based architecture for Integration with other web applications and Mobile applications
- The key guiding principles considered for building the integrated solution are the following:
- **Continuous adoption of rapidly evolving Technology** - Technology evolves too fast and Government projects similar to Smart City with its long procurement cycles do not align naturally to adapt to this trend. Also, any changes to existing implementations require contract changes, new RFP (Request for Proposal), etc. Hence the entire system would be built to be open (standards, open API, plug-n-play capabilities), components coupled loosely to allow changes in sub-system level without affecting other parts, architected to work completely within a heterogeneous compute, storage, and multi-vendor environment.
  - **Selection of best solution at best rate as and when required** - Large integrated systems of Smart City operations should be designed to get best cost and performance advantages of natural technology curve (constant increase of speed and decrease of cost) and still aligned to open procurement practices of the Government. For this to happen, architecture should be open and vendor neutral, use commodity hardware, and designed for horizontal scale. This allows buying of commodity compute, storage, etc. only when needed at best price.
  - **Distributed Access and Multi-channel service delivery** -With high penetration of mobile devices and very large percentage of internet usage using mobile devices, it is imperative that the Smart City applications provide multiple channels of service delivery to its stakeholders. An important consideration is that the access devices and their screen capabilities (including browser variations) are numerous and constantly evolve. Hence, it is imperative to design the system such that the ecosystem of Smart City-integrated mobile apps also evolves.
  - **Security and privacy of data** - Security and privacy of data within the integrated Project will be foundational keeping in view of the sensitivity of data and critical nature of the infrastructure envisioned to be built for Smart City operations. Security and privacy of data should be fundamental in design of the system without sacrificing utility of the system. When creating a system of this scale, it is imperative that handling of the sensitivity and criticality of data are not afterthoughts, but designed into the strategy of the system from day one.
  - **Provision of a Sustainable, Scalable Solution**- The motive of the technological

enhancements to provide a system that would be sustainable for the next few years. The expectation is that the system should sustain at least 7 years from GO-Live. The solution would be done keeping in mind the scalability of the system.. Every component of AMC system needs to scale horizontally to very large volume of data. The Recovery Point Objective for Disaster Management Solution will be 1 Hr, and Recovery Time Objective for Disaster Management Solution will be 4 Hrs.

- **API Approach-** AMC has decided to adopt Open API as the guiding paradigm to achieve the above goals. Though AMC system would develop a portal but that would not be the only way for interacting with the AMC system as the stakeholders via his choice of third party applications, which will provide all user interfaces and convenience via desktop, mobile, other interfaces, will be able to interact with the AMC system. These applications will connect with the AMC system via secure AMC system APIs. This architectural approach has been taken as the UI based integration through a ubiquitous web portal requires manual interaction and does not fit most consumption scenarios. The following benefits are envisaged from API based integration,
  - Consumption across technologies and platforms(mobile, tablets, desktops, etc.) based on the individual requirements
  - Automated upload and download of data
  - Ability to adapt to changing taxation and other business rules and end user usage models
  - Integration with customer software (GIS, Accounting systems).
- **Business Rule Driven Approach-**All configurations including policy decisions, business parameters, rules, etc. shall be captured in a central place within the system. The system shall provide facility to the decision makers to add new or edit/delete existing policies or make changes with appropriate permission control and audit trace. Managing these in a central repository ensures only once source of truth is used across many application servers and reduces issues of inconsistent application behaviour. Decoupling of the business parameters/rules/master data from the rest of the solution architecture and making them configurable allows for a great deal of flexibility.
- **Data Distribution Service-**As a future roadmap it is envisaged that the functionalities provided by the AMC Project should be available as services that could be offered to other stakeholders on request. Keeping this in mind the system shall be able to provide data on subscription-publication basis. The organization of the information exchange between modules is fundamental to publish-subscribe (PS) systems. The PS model connects anonymous information producers (publishers) with information consumers (subscribers). The overall distributed application (the PS system) is composed of processes. The goal of the DDS architecture is to facilitate efficient distribution of data in a distributed system. Participant using DDS can 'read' or 'write' data efficiently and naturally with a typed interface. Underneath, the DDS middleware will distribute the data so that each reading participant can access the 'most current' values.

### 3.8.2. Guiding Architecture Principle

The IT architecture principles defined in this section are the underlying general rules and guidelines that will drive the subsequent development, use and maintenance of architectural standards, frameworks and future state target architecture.

AMC system will be built on the following core principles:

#### 3.8.2.1. Platform Approach

It is critical that a platform based approach is taken for any large scale application development, to ensure adequate focus and resources on issues related to scalability, security and data management. Building an application platform with reusable components or frameworks across the application suite provides a mechanism to abstract all necessary common features into a single layer. Hence the AMC system is envisaged as a faceless system with 100% API driven architecture at the core of it. AMC portal will be one such application on top of these APIs, rather than being fused into the platform as a monolithic system.

Open APIs designed to be used form the core design mechanism to ensure openness, multi-user ecosystem, specific vendor/system independence, and most importantly providing tax payers and other ecosystem players with choice of using innovative applications on various devices (mobile, tablet, etc.) that are built on top of these APIs.

#### 3.8.2.2. Openness

Adoption of open API, open standards and wherever prudent open source products are of paramount importance for the system. This will ensure the system to be lightweight, scalable and secure. Openness comes from use of open standards and creating vendor neutral APIs and interfaces for all components. All the APIs will be stateless. Data access must be always through APIs, no application will access data directly from the storage layer or data access layer. For every internal data access also (access between various modules) there will be APIs and no direct access will be there.

#### 3.8.2.3. Data as an enterprise asset

Information is a high value asset to be leveraged across the organization to improve performance and decision making. Accurate information would ensure effective decision making and improved performance

Effective and careful data management is of high importance and top priority should be placed on ensuring where data resides, that its accuracy can be relied upon, and it can be obtained when and where needed.

#### 3.8.2.4. Performance

A best of breed solution using the leading technologies of the domain should be proposed in the solution ensuring the highest levels of performance. It will also ensure that the performance of various modules should be independent of each other to enhance the overall performance and also in case of disaster, performance of one module should not impact the performance other modules.

The solution should be designed in a manner that the following can be achieved:

- Modular design to distribute the appropriate system functions on web and app server
  - Increase in-memory Operations (use static operations)

- Reduce number of I/O operations and N/w calls using selective caching
- Dedicated schemas for each function making them independent and avoiding delays due to other function accessing the same schema.
- Solution should provide measurable and acceptable performance requirements for users, for different connectivity bandwidths.
- The solution should provide optimal and high performance Portal Solution satisfying response time for slow Internet connections and different browsers.

#### 3.8.2.5. Scalability

The component in the architecture will be capable of being scaled up to more user requests or handling more no. of input resources in various modules. Even inclusion of additional application functionalities can be catered to by upgrading the software editions with minimal effort.

Forward and backward integration (in terms of functions - components, applications, devices, geographical coverage and volume) with all smart city components across the 7+1 layers defined in the overall solution architecture. Such forward or backward integration could take place at any of the layers defined in the over architecture viz. sensor and actuator layer, network layer, data center layer, application layer, integration layer, service delivery layer, command center layer, visualisation layer and security layer.

The design of the system to consider future proofing the systems for volume handling requirements

- The application functions to be divided logically and developed as Modular solution.
- The system should be able to scale horizontally & vertically.
- **Data Volume**- Ability to support volume growth in content post system implementation & content migration.
- **Functionality** – Ability to extend functionality of the solution without significant impact to the existing functional components and infrastructure.
- **Loose coupling through layered modular design and messaging** - The architecture would promote modular design and layered approach with clear division of responsibility and separation of concerns at the data storage, service and integration layer in order to achieve desired interoperability without any affinity to platforms, programming languages and network technologies. The architecture has to be scalable, maintainable and flexible for modular expansion as more citizen and business services are provided through the Project.

Each of the logical layers would be loosely coupled with its adjacent layers

- **Data partitioning and parallel processing** - Project functionality naturally lends itself for massive parallel and distributed system. For linear scaling, it is essential that entire system is architected to work in parallel within and across machines with appropriate data and system partitioning. Choice of appropriate data sources must be made to ensure there is absolutely no “single point of bottleneck” in the entire system including at the database and system level to scale linearly using commodity hardware.
- **Horizontal scale for compute, Network and storage** – Project architecture must be such that

all components including compute, network and storage must scale horizontally to ensure that additional resources (compute, storage, network etc.) can be added as and when needed to achieve required scale.

### 3.8.2.6. **No Vendor lock-in and Replace-ability**

Specific OEM products may only be used when necessary to achieve scale, performance and reliability. Every such OEM component/service/product/framework/SI pre-existing product or work must be wrapped in a vendor neutral API so that at any time the OEM product can be replaced without affecting rest of the system. In addition, there must be at least 2 independent OEM products available using same standard before it can be used to ensure system is not locked in to single vendor implementation.

### 3.8.2.7. **Security**

The security services will cover the user profile management, authentication and authorization aspects of security control. This service run across all the layers since service components from different layers will interact with the security components. All public contents should be made available to all users without authentication. The service will authenticate users and allows access to other features of the envisaged application for which the user is entitled to.

The system should be designed to provide the appropriate security levels commiserate with the domain of operation. Also the system will ensure data confidentiality and data integrity.

The application system should have the following

- A secure solution should be provided at the hardware infrastructure level, software level, and access level.
- Authentication, Authorization & Access Control: 3 factors (User ID & Password, Biometric, and Digital Signature) security mechanisms should be implemented to enable secure login and authorized access.
- Encryption Confidentiality of sensitive information and data of users and portal information should be ensured.
- Appropriate mechanisms, protocols, and algorithms necessary to protect sensitive and confirmation data and information both during communication and storage should be implemented.
- Data security policies and standards to be developed and adopted across the Smart City departments and systems
- In order to adequately provide access to secured information, security needs must be identified and developed at the data level. Database design must consider and incorporate data integrity requirements.
- Role based access for all the stake holders envisaged to access and use the system
- Appropriate authentication mechanism adhering to industry good practice of Password Policies etc.
- Ability to adopt other authentication mechanism such as Electronic Signature Certificates

- Authorization validity to be ensured for the users providing the Data to the system. Data should be accepted only from the entity authorized
- Data should be visible only to the authorized entity
- Audit trails and Audit logging mechanism to be built in the system to ensure that user action can be established and can be investigated if any can be aided (e.g. Logging of IP Address etc.)
- Data alterations etc. through unauthorized channel should be prevented.
- Industry good practice for coding of application so as to ensure sustenance to the Application Vulnerability Assessment

System must implement various measures to achieve this including mechanisms to ensure security of procurement data, spanning from strong end-to-end encryption of sensitive data, use of strong PKI national standards encryption, use of HSM (Hardware Security Module) appliances, physical security, access control, network security, stringent audit mechanism, 24x7 monitoring, and measures such as data partitioning and data encryption.

Activities such as anti-spoofing (no one should be able to masquerade for inappropriate access), anti-sniffing (no one should be able to get data and interpret it), anti-tampering (no one should be able to put/change data which was not meant to be put/changed) should be taken care for data in transit, as well as data at rest, from internal and external threats.

#### 3.8.2.8. **User Interface**

The architecture and application solutions to be designed should promote simplicity and ease of use to the end users while still meeting business requirements. It should provide a simpler and more cost-effective solution. Reduces development time and makes the solution easier to maintain when changes in requirements occur.

This will be accomplished by the implementation of rich User Interfaces along with its integration with the DMS, Relational Data Store, Messaging and other external applications.

- Efficient and layout design are the key considerations that enhance usability which should be factored in while designing the application. Standard and consistent usability criteria must be defined. An intuitive, user friendly, well-articulated navigation method for the applications greatly enhances the usability of the application.
- Effective information dissemination
- Enhanced functionalities including personalized delivery of content, collaboration and enriching GUI features
- Ability to perform a simple search within 10 seconds on 1 mbps connectivity and a complex search (combining four terms) within 15 seconds regardless of the storage capacity or number of files and records on the system.
- Mobile Application Platform
  - Applications and services including all appropriate channels such as SMS/USSD/IVRS and development of corresponding mobile applications to the applications and services leveraging the Mobile Service Delivery Gateway (MSDG) and Mobile App Store.
  - Application platform should support the following smart phone mobile OS (Android 4.0 and above, iOS 4, 5 and above, Windows Phone OS 8.0 and above, Mobile Web App)

- Support the target packaging components like (Mobile Website, Hybrid App, Native App, Web App and Application Development, Eclipse tooling platforms)
- Support the ability to write code once and deploy on multiple mobile operating systems
- Support integration with native device API
- Support utilization of all native device features
- Support development of applications in a common programming language
- Support integration with mobile vendor SDKs for app development and testing
- Support HTML5, CSS3, JS features for smartphone devices
- Support common protocol adapters for connection to back office systems (i.e. HTTP, HTTPS, SOAP, XML for format)
- Support JSON to XML or provide XHTML message transformations
- Support multi-lingual and language internalization
- Support encrypted messaging between server and client components

#### 3.8.2.9. **Reliability**

This is a very crucial system and data are of high sensitivity, the data transfer and data management should be reliable to keep the confidence of the stakeholders. The system should have appropriate measures to ensure processing reliability for the data received or accessed through the application.

It may be necessary to mainly ensure the following

- Prevent processing of duplicate incoming files/data
- Unauthorized alteration to the Data uploaded in the AMC system should be prevented
- Ensure minimum data loss(expected zero data loss)

#### 3.8.2.10. **Manageability**

It is essential that the application architecture handles different failures properly; be it a hardware failure, network outage, or software crashes. The system must be resilient to failures and have the ability to restart, and make human intervention minimal.

All layers of the system such as application, infrastructure must be managed through automation and proactive alerting rather than using 100's of people manually managing.

The entire application must be architected in such a way that every component of the system is monitored in a non-intrusive fashion (without affecting the performance or functionality of that component) and business metrics are published in a near real-time fashion. This allows data centre operators to be alerted proactively in the event of system issues and highlight these issues on a Network Operations Centre (NoC) at a granular level. The solution should be envisaged to utilize various tools and technologies for management and monitoring services. There should be management and monitoring tools to maintain the SLAs.

#### 3.8.2.11. **Availability**

The solution design and deployment architecture will ensure that the application can be deployed in a centralized environment offering system High Availability and failover.

The solution should meet the following availability requirements

- Load Balanced across two or more Web Server avoiding single point of failure

- Deployment of multiple application instances should be possible
- Distributed or load balanced implementation of application to ensure that availability of services is not compromised at any failure instance.
- Network, DC, DR should be available as per the SLAs.

#### 3.8.2.12. **SLA driven solution**

Data from connected smart devices to be readily available (real-time), aggregated, classified and stored, so as not to delay the business processes of monitoring and decision making, and will enable appropriate timely sharing across the Smart City organization.

Readily available and consumed device data will facilitate timely access of analytics reports at every level and department of the Smart City and provide timely analysis of data as well as monitoring of KPIs through SLAs resulting in effective service delivery and improved decision making.

#### 3.8.2.13. **Reconstruction of truth**

System should not allow database/system administrators to make any changes to data. It should ensure that the data and file (data at rest) that is kept in the systems has tamper resistance capacity and source of truth (original data of invoices and final returns) could be used to reconstruct derived data such as ledgers and system generated returns. System should be able to detect any data tampering through matching of hash value and should be able to reconstruct the truth.

- Services/solutions should be flexible and extensible to respond to, accommodate and adapt to changing business needs and unanticipated requirements easily. Consolidate and simplify technology applications wherever possible to minimize complexity. Ongoing application, database and server consolidation may be required.
- Software should use meta-data to configure itself (using declarations rather than coding).
- The infrastructure should support an environment that allows applications to start small, grow quickly, and operate inexpensively. An adaptable infrastructure provides the capability to add to the current infrastructure with minimum inconvenience to the user.
- The IT architecture should be designed to support the overall SLA requirements around scalability, availability and performance.
- Each application should be performance tested to identify performance issues. The potential performance bottlenecks need to be identified and cost-effective paths for performance improvements should be provided for these identified problem areas.
- The system infrastructure should be architected considering failover requirements and should ensure that a single server or network link failure does not bring down the entire system.
- The system should be reliable handling every request and yield a response. It should handle error and exception conditions effectively

#### 3.8.2.14. **Street ICT Infrastructure**

- The SI shall comply with lightning-protection and anti –interference measures for system structure, equipment type selection, equipment earthing, power, signal cables laying. The SI shall describe the planned lightning-protection and anti –interference measures in the feasibility report. Corresponding lightning arrester shall be erected for the entrance cables of power line, video line, data transmission cables. All crates shall have firm, durable shell. Shell shall have dustproof, antifouling, waterproof function & should capable to bear certain mechanical external force. Signal separation of low and high frequency; equipment’s protective field shall be connected with its own public equal power bodies; small size/equipment signal lightning arrester shall be erected before the earthling. The Internal Surge Protection Device for Data Line Protection shall be selected as per zone of protection described in IEC 62305, 61643-11/12/21, 60364-4/5. Data line protection shall be used for security system, server data path and other communication equipment. Data line protection shall be installed as per zone defined in IEC 62305.Type 1 device shall be installed between zone 0B and zone 1. Type 2 devices shall be installed before the equipment in zone 2 and 3
- All electrical components are to be earthen by connecting two earth tapes from the frame of the component ring and will be connected via several earth electrodes. The cable arm will be earthen through the cable glands. The entire applicable IT infrastructure i.e. signal junction or command centre shall have adequate earthing. Further, earthling should be done as per Local state national standard in relevance with IS standard.
- Earthing should be done for the entire power system and provisioning should be there to earth UPS systems, Power distribution units, AC units, etc. so as to avoid a ground differential. AMC shall provide the necessary space required to prepare the earthing pits.
- All metallic objects on the premises that are likely to be energized by electric currents should be effectively grounded.
- There should be enough space between data and power cabling and there should not be any cross wiring of the two, in order to avoid any interference, or corruption of data.
- The earth connections shall be properly made.
- A complete copper mesh earthing grid needs to be installed for the server farm area, every rack need to be connected to this earthing grid. A separate earthing pit needs to be in place for this copper mesh.
- Provide separate earthing pits for Servers, & UPS as per the standards.
- The System Integrator shall provide the Junction Boxes, poles and cantilever to mount the field sensors like the cameras, traffic sensors, traffic light aspects, active network components, controller and UPS at all field locations, as per the specifications given in the RFP.
- The Junction Box needs to be appropriately sized in-order to accommodate the systems envisaged at the Junctions.
- The Junction Box for UPS with Battery bank needs to be considered separately
- It should be noted that the SI would have designed the Junction box keeping in mind the scalability requirements of project

- The junction box should be designed in a way that, separate compartment will be available for separate system (i.e. Controller, Mini server, Active component, etc.). Each compartments shall have lock & key facility. There should be provision made to integrate the systems if required.
- The System Integrator shall provide standardized cabling for all devices and subsystems in the field and Command Center. The SI shall study the reusability of existing cables already being used at the sites and submit a cable reusability report to AMC and identify which cables may be utilized and which ones require replacement to ensure successful operations of the system as per the SLAs defined. The report will also contain the cable migration plan.
- SI shall ensure the installation of all necessary cables and connectors between the field sensors /devices assembly, outstation junction box, for pole mounted field sensors /devices the cables shall be routed down the inside of the pole and through underground duct to the outstation cabinet.
- All cables shall be clearly labelled with indelible indications that can clearly be identified by maintenance personnel. The proposed cables shall meet the valid directives and standards.
- Cabling must be carried out per relevant BIS standards. All cabling shall be documented in a cable plan by the SI.
- Ensure redundancy at critical points
- Support peak loads
- SI will not procure Infrastructure including Hardware, COTS Software licenses and other system software etc. at the start of the project, but will procure as per the prescribed schedule.
- SI shall optimize procurement of ICT infrastructure i.e. the equipment shall not be procured earlier than its requirement.
- Virtualization technologies to be used to reduce the physical space required for hosting
- ICT infra deployed should be dedicated for the project and SI shall not use the same for any other purpose.
- SI to ensure warranties/AMCs are procured for all the hardware components for entire duration of the project. For software components the support from OEM to be obtained for prescribed components. There should be a mechanism to verify these details on annual basis.

### 3.8.2.15. Integration Architecture

This section recommends the proposed integration architecture aligning with the overarching architectural principles.

The following are the integration specifications for the various integration scenarios -

#### Real-time integration

All the Smart City applications will be deployed in the Data Center while any external application of the Smart City ecosystem will reside in outside premises.

The need for a Service Oriented Architecture (SOA) is felt that will facilitate AMC in defining an enterprise integration platform. An SOA platform will help in data exchange across applications in real-time mode (both synchronous and asynchronous), promote loose coupling with

ease of maintenance and change, facilitate rapid composition of complex services, achieve scalability through modularity, and improved business visibility.

SOA is an architectural style that allows the integration of heterogeneous applications & users into flexible service delivery architecture. Discrete business functions contained in enterprise applications could be organized as layers of interoperable, standards-based shared "services" that can be combined, reused, discovered and leveraged by other applications and processes.

The following are the various integration modes and techniques that could be leveraged -

- SOAP web service based interfacing technique (or other equivalent techniques) could be leveraged as the real-time point to point synchronous integration mode with external or third party systems. The following integration points could be considered for interfacing -
  - Payment gateway of the authorized banks to enable authorized users make financial transactions for the Smart City services availed by them. This should support a unified interface to integrate with all Payment Service Providers using web services over secured protocols.
  - SMS application, acting as the SMS Gateway, will make use of APIs for SMS communication to GSM network using the GSM modem, which can be both event-driven as well as time-driven. The API will be exposed to initiate the broadcasting or alert notification.
  - Social Media Apps and data stores to exchange photos, videos and message feeds, based on interactions with Citizens and Business as well as comments/posts to inform stakeholders
  - IVR/Customer Support solution with ERP and Transactional Data Repository to exchange citizen and business demographic, registration and payment data as well as transactional data related to citizen services and municipal operations.
- Message based interfacing technique could be leveraged for real-time asynchronous integration mode. The following integration points could be considered for message based interfacing -
  - Central LDAP with ERP to synchronize data
  - Payment solution and ERP to exchange payment data for tracking of beneficiary's payment transactions against different services (citizen, workers, transporter, vendor), master data (employee, vendor/supplier, location, facilities, price table)
  - Employee attendance data with ERP (HR Module) to capture data pertaining to employee location and attendance
  - Departmental applications with ERP (Asset Management module) to exchange data for procurement and maintenance of any assets or infrastructure items for each department.
  - Municipal operations application with ERP (Material Management module) to capture materials related transaction and inventory data for public works
  - Other government applications with Smart City application to exchange data for government procurement, public health schemes, welfare schemes, citizen health, etc.
- RESTful API service based interfacing technique will be leveraged for the following integration areas-
  - Access and use of various services provided by the different departments for citizens and business community will be done through a RESTful, stateless API layer.

- Access and use of various internal functions related to operations and administration of Smart City for departmental and AMC employees will be done through a RESTful, stateless API layer
- Data integration in batch mode will be through ETL. The following integration points could be considered for ETL based data integration -
  - Initial data migration to cleanse, validate and load the data extracted from source systems into target tables
  - Data load from all the individual transactional systems like ERP, Grievance Redressal to central enterprise data warehouse solution for aggregation, mining, dashboard reporting and analytics.

Process Integration layer of the AMC solution will automate complex business processes or provide unified access to information that is scattered across many systems. Process Integration will provide a clean separation between the definition of the process in the process model, the execution of the process in the process manager, and the implementation of the individual functions in the applications. This separation will allow the application functions to be reused in many different processes.

An enterprise service bus (ESB) is a software architecture model used for designing and implementing the interaction and communication between mutually interacting software applications in Service Oriented Architecture. As software architecture model for distributed computing it is a variant of the more general client server software architecture model and promotes strictly asynchronous message oriented design for communication and interaction between applications. Its primary use is in Enterprise Application Integration of heterogeneous and complex landscapes. Following are the requirement for an ESB system:

- The solution should support static/deterministic routing, content-based routing, rules-based routing, and policy-based routing, as applicable in various business cases.
- The solution should have capabilities to receive input message in heterogeneous formats from various different systems, interpret those messages, process and transform those messages to generate output and feed them to various different clients as per formats applicable.
  - The solution should have features to communicate across different services, process them and expose as single aggregate service to facilitate business functionality
  - ESB should support SOA standards such as XML, XSLT, BPEL, web services standards and messaging standards.
  - ESB should support all industry standards interfaces for interoperability between different systems

There are four integration gateways envisaged as part of the solution design. The key requirements with respect to each of these are mentioned below:

**SMS Gateway:** SMS services are envisaged to be made available as part of the solution design. The service provider may integrate the solution with MSDG, and use the services available through it, or deploy its own SMS Gateway services at no extra charge to AMC, but it is a mandatory requirement that all the SMS based services (alerts and notifications) should

be available as part of the solution. Following are some of the key requirements for the SMS services through the solution:

- Should contain required details/information and targeted to the applicant or designated officers of tax departments and other stakeholders and users as per prevailing TRAI norms
- Facilitate access through access codes for different types of services
- Support automated alerts that allows to set up triggers that will automatically send out reminders
- Provide provision for International SMS
- Provide provision to receive messages directly from users
- Provide provision for personalized priority messages
- Resend the SMS in case of failure of the message
- Provide messaging templates

**Email Services:** Email services are envisaged to be made available as part of the solution design to send alerts/intimations/automated messages to registered email ids, based on preferences set up/opted by individual users. An authenticated SMTP mail service (also known as a SMTP relay or smart host) is envisaged to be integrated with the solution for sending mail from the solution, and delivered to intended inbox. Support antispam features.

**Payment Gateway & Common City Card (CCPS):** The solution is envisaged to have integration with payment gateways, to enable authorized Users make financial transactions, as per rights and privileges provided to him/her. The service provider is required to make the provisions for integration with such third party gateways and provide payment services, as per requirement of the AMC. Some of the key features of payment gateway are mentioned below:

- Should support secure integration with Payment Service Providers
- Should support a unified interface to integrate with all Payment Service Providers
- Should support integration with Payment Service Providers using web services and over HTTP/S protocol
- Should manage messages exchange between UI and payment service providers
- Should support beneficiary's payment transactions tracking against various services
- Should support bank accounts reconciliation
- Should provide logs for all transactions performed through the Payment Gateway for future financial dispute resolution that might arise between entities and either beneficiaries or Payment Service Providers
- Should maintain and keep transactions logs for time period required and specified by the financial regulations followed in country
- Should support redundant Payment Discovery
- Should submit Periodic Reconciliation Report to government entities
- Should support transaction reports to monitor and track payments
- Should support real-time online credit card authorization for merchants
- Should support compliance with emerging trends and multiple payment options such debit card, credit card, cash cards and other payment gateways

- Should provide fraud screening features
- Should support browser based remote administration
- Should support multicurrency processing and settlement directly to merchant account
- Should support processing of one-time or recurring transactions using tokenization
- Should support real time integration with SMS and emails

**IVR Services:** IVR services are envisaged as part of Call Centre facility, which will be integrated with the solution, to provide information and services to the people who would contact the Call Centre: Some of the key features of the IVR services are mentioned below:

- Should provide multi-lingual content support
- Should facilitate access through access codes for different types of services
- Should support Web Service Integration
- Should support Dual Tone Multi Frequency (DTMF) using telephone touchpad - in-band and out-of-band
- Should support for Voice Extensible Markup Language (VoiceXML)
- Should support speech recognition that interprets spoken words as texts (Advanced Speech Recognition).
- Should support playing of pre-recorded sounds
- Should support redirection to human assistance, as per defined rules
- Should be able to generate Data Records – (CDRs) and have exporting capabilities to other systems
- Should provide provision for voice mailbox and voice recognition

There are multiple ways of integration of the solution with other systems is envisaged. These may be through Web Services, Message Queuing, File based or API based. The integration and data sharing mechanism may be either in Batch Mode or Needs basis (synchronous or asynchronous). Some of the key requirements of the interface/integration are mentioned below:

- Interface Definition
- Interface Owner
- Interface Type
- Interface Format
- Frequency
- Source System
- API/Service/Store Procedure
- Entitlement Service
- Consuming System
- Interface Layout (or) Schema
- Should have provision for exceptional scenarios
- Should have syntax details such as data type, length, mandatory/option, default values, range values etc.
- Error code should be defined for every validation or business rule

- Inputs and outputs should be defined
- Should be backward compatible to earlier datasets
- Data exchange should provide transactional assurance
- Response time and performance characteristics should be defined for data exchange
- The failover scenarios should be identified
- Data exchange should be auditable

### 3.9. Security

Data exchange should abide by all laws on privacy and data protection Security Architecture

This section recommends the proposed security architecture aligning with the overarching architectural principles. The basic tenets of Smart City security architecture are the design controls that protect confidentiality, integrity and availability of information and services for all the stakeholders.

#### 3.9.1.1. User Security and Monitoring

##### ***Authentication & Authorization***

A strong authentication mechanism should be considered to protect unauthorized access to the Smart City applications. Consider use of at least two of the following forms of authentication mechanism:

- Something you know, such as a password, PIN etc.
- Something you have, such as a smart card, hardware security token etc.
- Something you are, such as a fingerprint, a retinal scan, or other biometric methods

##### ***Levels of Authentication***

Based on the security requirements the following levels of authentication should be evaluated.

- For applications handling sensitive data it is recommended that in the least one factor authentication key in the form of a password is essential. Strong password complexity rules should be enforced to ensure confidentiality and integrity of the data
- For applications handling highly sensitive data it is recommended that two factor authentication mechanisms should be considered. The first line of defence is the password conforming to the password complexity rules'. Along with the password next user has to provide a one-time password which varies for each session. One time passwords are valid for each session and it is not vulnerable to dictionary, phishing, interception and lots of other attacks. A counter synchronized One-Time Password (OTP) solution could be used for this purpose.

##### **Authorization**

Authorization of system users should be enforced by access controls. It is recommended to develop access control lists. Consider the following approach for developing access control list -

- Establish groups of users based on similar functions and similar access privilege.
- Identify the owner of each group
- Establish the degree of access to be provided to each group

#### 3.9.1.2. Data Security

##### ***Traditional Structured Enterprise Data***

SI should protect Integrated Project information against unauthorized access, denial of service, and both intentional and accidental modification. Data security, audit controls and integrity must be ensured across the data life cycle management from creation, accessed, viewed, updated and when deleted (or inactivated). This provides a proactive way to build defences against possible security vulnerabilities and threats, allowing errors to be corrected and system misuse to be minimized.

The implications for adhering to an effective data security and integrity guideline related to the Project are the following –

- Data security policies and standards to be developed and adopted across AMC Smart City applications and stakeholders
- Data security controls to be put in place to restrict access to enterprise data based on roles and access privileges. Data audit logs should be maintained for audit trail purposes. Security controls will be able to be reviewed or audited through some qualitative or quantitative means for traceability and to ensure that risk is being maintained at acceptable levels.
- In order to adequately provide access to secured information, security needs must be identified and developed at the data level, not the application level. Database design must consider and incorporate data integrity requirements.
- Procedures for data sharing need to be established. Data integrity during data synchronization needs to be ensured across the enterprise.
- *Audit Capabilities:* The system provides for a system-wide audit control mechanism that works in conjunction with the RDBMS.
- *Maintaining Date/Time Stamp and User Id:* Every transaction, with a date and time and User ID, is captured. The system allows generating various audit reports for verification.
- *Access Log:* The AMC Project should have extensive inbuilt security and access control mechanisms. Based on this, the system keeps track of the various functions accessed by any users.

#### **Audit Trail & Audit Log**

Audit trails or audit logs should be maintained. Log information is critical in identifying and tracking threats and compromises to the environment.

There are a number of devices and software that should be logged which include hardware & software based firewalls, web servers, authentication servers, central/domain controllers, database servers, mail servers, file servers, routers, DHCP servers etc.

It is essential to decide what activities and events should be logged. The events which ideally should be captured include

- Create, read, update and delete of confidential information;
- User authentication and authorization activities in the system, granting, modification or revoking of user access rights;
- Network or service configuration changes;

- Application process start up, shutdown or restart, abort, failure or abnormal terminations, failure of network services;
- Detection of suspicious activities such as from Intrusion Detection and Prevention system, anti-virus, anti-spyware systems etc.

### 3.9.1.3. **Application Security**

- Project must comply with the Application Security Plan and security guidelines of Government of India as applicable
- Secure coding guidelines should be followed. Secure coding guidelines should include controls against SQL injection, command injection, input validation, cross site scripting, directory traversal, buffer overflows, resource exhaustion attacks etc. OWASP Top 10 standard should be mapped in the secure coding guidelines to cover all major vulnerabilities.
- Validation checks should be incorporated into the application to detect any corruption of information through processing errors or deliberate acts.
- Data output from an application should be validated to ensure that the processing of stored information is correct and appropriate to the circumstances
- Should implement secure error handling practices in the application
- Project should have Role based access, encryption of user credentials. Application level security should be provided through leading practices and standards including the following:
  - Prevent SQL Injection Vulnerabilities for attack on database
  - Prevent XSS Vulnerabilities to extract user name password (Escape All Untrusted Data in HTML Contexts and Use Positive Input Validation)
  - Secure Authentication and Session Management control functionality shall be provided through a Centralize Authentication and Session Management Controls and Protect Session IDs from XSS
  - Prevent Security Misconfiguration Vulnerabilities (Automated scanners shall be used for detecting missing patches, misconfigurations, use of default accounts, unnecessary services, etc. maintain Audits for updates
  - Prevent Insecure Cryptographic Storage Vulnerabilities (by encrypt off-site backups, ensure proper key storage and management to protect keys and passwords, using a strong algorithm)
  - Prevent Failure to Restrict URL Access Vulnerabilities (By providing authentication and authorization for each sensitive page, use role-based authentication and authorization and make authentication and authorization policies configurable
  - Prevent Insufficient Transport Layer Protection Vulnerabilities (enable SSL for all sensitive pages, set the secure flag on all sensitive cookies and secure backend connections
  - Prevent Id Redirects and Forwards Vulnerabilities

- For effective prevention of SQL injection vulnerabilities, SI should have monitoring feature of database activity on the network and should have reporting mechanism to restrict or allow the traffic based on defined policies.

#### 3.9.1.4. **Infrastructure Security**

The following focused initiatives to discover and remedy security vulnerabilities of the IT systems of AMC Smart City should be considered to proactively prevent percolation of any threat vectors

- Deploy anti-virus software to all workstations and servers to reduce the likelihood of security threats;
- Deploy perimeter security technologies e.g. enterprise firewalls to reduce the likelihood of any security threat;
- Deploy web content filtering solutions to prevent threats from compromised websites to help identify and block potentially risky web pages;
- Perform periodic scanning of the network to identify system level vulnerabilities
- Establish processes for viewing logs and alerts which are critical to identify and track threats and compromises to the environment. The granularity and level of logging must be configured to meet the security management requirements.
- Deploy technology to actively monitor and manage perimeter and internal information security.
- Deploy network Intrusion Detection System (IDS) on the perimeter and key points of the network and host IDS to critical systems. Establish process to tune, update, and monitor IDS information.
- Deploy security automation techniques like automatic provisioning of firewall policies, privileged accounts, DNS, application identity etc.

#### **Network Security for Smart Devices**

The core principles of security for any smart device network rest on the three most important data security concerns of confidentiality, integrity and authentication. Hence the security for smart device networks should primarily focus on the protection of the data itself and network connections between the nodes. From a network perspective, following are to be considered for designing the smart devices network -

- Protection of fair access to communication channels (i.e. media access control)
- Concealing of physical location of the nodes
- Defence against malicious resource consumption, denial of service, node capturing and node injection
- Provision for secure routing to guard the network from the effects of bad nodes
- Protection of the mobile code

Smart devices have a triple role in most networks - data collectors, processors and traffic forwarders for other devices in the network. The typical attacks for which countermeasures are to be defined and implemented are: Radio Jamming, Nodes Reporting Wrong Data, Data Aggregation Attacks and Battery Attacks.

The following guidelines need to be considered for security enhancement of smart devices and their networks:

- Use of IP-based network for smart devices
- Use of Link Layer Security for password-based access control and encryption
- Protection of smart devices nodes behind a firewall for carrying out SSL-based application data transfer and mechanism to avoid distributed DoS attacks
- Public-key-based authentication of individual devices to the network and provisioning them for secure communications
- Conformance of the security solution to the standards of IETF, IEC and IEEE to ensure maximum security and interoperability, with support for the following commonly used protocols at a minimum - IPSec/IKE, SSH and SSL/TLS

### **3.10. Software Development Lifecycle**

#### **Continuous Build**

The Ahmedabad Project should be highly modular and parallel development should be carried out for faster execution using industry's best Software Development Lifecycle practices. All application modules within the same technology platform should follow a standardized build and deployment process.

A dedicated 'development / customization' environment should be proposed and setup. The SI must provision separate development and testing environment for application development and testing. Any change, modifications in any module must follow industry standard processes like change management, version control and release management in large and complex application development environment.

Application source code could be maintained in source control and could be broken up into a number of projects. Source control projects are created to abstract related set of modules or feature that can be independently included in another application.

It is a mandatory to create, update and maintain all relevant documentation throughout the contract duration. Also it should be ensured that a bug tracking tool is maintained for proper tracking of all bugs fixes as per various tests conducted on the application.

#### **3.11. Quality Assurance**

A thorough quality check is proposed for the Ahmedabad Project and its modules, as per standard Software Development Life Cycle (SDLC). SI is expected to lay down a robust Quality Assurance program for testing of the developed application for its functionality, performance and security before putting in production environment. The program must include an overall plan for testing and acceptance of system, in which specific methods and steps should be clearly indicated and approved by AMC. SI is required to incorporate all suggestions / feedback provided after the elaborate testing of the system, within a pre-defined, mutually agreed timeline. SI must undertake the following:

- Outline the methodology that will be used for testing the system.

- Define the various levels or types of testing that will be performed for system.
- Provide necessary checklist/documentation that will be required for testing the system.
- Describe any technique that will be used for testing the system.
- Describe how the testing methodology will conform to the requirements of each of the functionalities and expected outcome.
- Indicate / demonstrate to AMC that all applications installed in the system have been tested.

### 3.11.1. Performance and Load Testing

SI is expected to implement performance and load testing with following features:

- Testing workload profiles and test scenarios based on the various functional requirements should be defined. Application as well as system resource utilization parameters that need to be monitored and captured for each run also needs to be defined.
- Should support application testing and API testing including HTTP(s), web services, mobile applications and different web 2.0 frameworks such as Ajax/Flex/HTML5.
- SI should perform the load testing of Ahmedabad Project for multiple workload profiles, multiple scenarios, and user loads to handle the envisaged users of the system.
- Different activities before load testing i.e. identification of work load profiles, scenarios, information capturing report formats, creation of testing scripts, infrastructure detailing and workload profile should be prepared before the start of actual load testing exercise.
- Solution parameters needs to be tuned based on the analysis of the load testing reports. The tuning process could be iterative until the issues are closed. Multiple load runs needs to be executed for users to simulate different scenarios, such as peak load (year end, quarter end, etc.), load generation within the LAN, Load generation across WAN or mobile network simulator while introducing configurable latency/jitter/packet loss etc.
- Should eliminate manual data manipulation and enable ease of creating data-driven tests.
- Should provide capability to emulate true concurrent transactions.
- Should identify root cause of performance issues at application or code level. Include code performance analysis to quickly pinpoint component-level bottlenecks: Slowest classes and methods, most frequently called methods, most costly (aggregate time spent for each method), response time variance etc.
- Should be able to monitor various system components e.g. Server (OS, Web, Application & Database) Monitoring, Network (between Client & Server) Delay Monitoring, Network Devices (Firewall, Switch & Router) Monitoring during the load test without having to install any data capturing agents on the monitored servers/components
- Should correlate response times and system performance metrics to provide quick insights in to root cause of performance issues.
- Reports on following parameters (but not limited to) such as transaction response time, transaction per second (Passed), user interface rendering time, transaction per second (Failed),

web transaction breakdown graphs, hits per second, throughput, HTTP responses per Second, pages downloaded per second, system infrastructure performance metrics etc.

- Should provide End-to-End system performance analysis based on defined SLAs. Should monitor resource utilization including memory leakage, CPU overload and network overload. Should have the ability to split end-to-end response time for Network & Server(s) and provide drill-down capability to identify and isolate bottlenecks.

### **3.12. Common guidelines regarding compliance of systems/equipment**

1. The specifications mentioned for various IT / Non-IT components are indicative requirements and should be treated for benchmarking purpose only. SIs are required to undertake their own requirement analysis and may propose higher specifications that are better suited to the requirements.
2. In case of addition/update in number of license for the Integrated Command and Control Center (CCC) software and VMS licenses for Cameras, the SI is required to meet of technical specifications contained in the RFP and for the upward revisions and/or additions of licenses are required. The software licenses provided should be perpetual and at enterprise level such that SCADL or AMC (or any entity as determined by SCADL) can use the software products irrespective of number of users and number of field devices (Sensors, cameras, etc.) or number of cores of computer. Additions to users or field devices or number cores will have to be done at no additional cost.
3. Any manufacturer and product name mentioned in the Tender should not be treated as a recommendation of the manufacturer / product.
4. None of the IT / Non-IT equipment's proposed by the SI should be End of Life product. It is essential that the technical proposal is accompanied by the OEM certificate in the format given in Volume I of this Tender, where-in the OEM will certify that the product is not end of life product & shall support for at least 6 years from the date of Bid Submission.
5. All IT Components should support IPv4 and IPv6
6. Technical Bid should be accompanied by OEM's product brochure / datasheet. SIs should provide complete make, model, part numbers and sub-part numbers for all equipment/software quoted, in the Technical Bid.
7. SI should ensure that only one make and model is proposed for one component (for each line item) in Technical Bid.
8. SIs should ensure complete warranty and support for all equipment from OEMs. All the back-to-back service agreements should be submitted along with the Technical Bid.
9. All equipment, parts should be original and new.
10. The user interface of the system should be a user friendly Graphical User Interface (GUI).
11. Critical core components of the system should not have any requirements to have proprietary platforms and should conform to open standards.

12. For custom made modules, industry standards and norms should be adhered to for coding during application development to make debugging and maintenance easier. Object oriented programming methodology must be followed to facilitate sharing, componentizing and multiple-use of standard code. Before hosting the application, it shall be subjected to application security audit (by any of the CERTIN empaneled vendors) to ensure that the application is free from any vulnerability; and approved by the AMC/ SCADL / Police Department.
13. All the Clients Machines / Servers shall support static assigned IP addresses or shall obtain IP addresses from a DNS/DHCP server.
14. The Successful SI should also propose the specifications of any additional servers / other hardware, if required for the system.
15. The indicative architecture of the system is given in this volume. The Successful SI must provide the architecture of the solution it is proposing.
16. The system servers and software applications will be hosted in Data Centers as specified in the Bid. It is important that the entire set of Data Center equipment are in safe custody and have access from only the authorized personnel and should be in line with the requirements & SLAs defined in the Tender.
17. The Data Center is required to adhere to uptime requirements and service levels of a Tier – 3 Data Center (DC).
18. Additionally the DR would be required to be managed by the SI line with the requirements & SLAs defined in the Tender.
19. The Servers provided should meet industry standard performance parameters (such as CPU Utilisation of 60 percent or less, disk utilisation of 75 percent or less). In case any non-standard computing environment is proposed (such as cloud), detail clarification needs to be provided in form of supporting documents, to confirm (a) how the sizing has been arrived at and (b) how SLAs would be met.
20. SI is required to ensure that there is no choking point / bottleneck anywhere in the system (end-to-end) and enforce performance and adherence to SLAs. SLA reports must be submitted as specified in the Bid without fail.
21. All the hardware and software supplied should be from the reputed Original Equipment Manufacturers (OEMs). SCADL reserves the right to ask replacement of any hardware / software if it is not from a reputed brand and conforms to all the requirements specified in the tender documents.
22. Cameras and the Video Management / Video Analytics Software should be ONVIF Core Specification '2.X' or 'S' compliant and provide support for ONVIF profiles such as Streaming, Storage, Recording, Playback, and Access Control.
23. System Integrator shall place orders on various OEMs directly and not through any sub-contractor / partner. All licenses should be in the name of the AMC

***SECTION: 4***

***INSTRUCTION TO BIDDER'S***

***&***

***GENERAL TERMS AND CONDITIONS***

## SECTION- 4:

### **PART-I: Instruction to Bidder's**

#### **1) COST OF BIDDING**

- 1.1 The Bidder shall bear all costs associated with the preparation and submission of the Bid and Ahmedabad Municipal Corporation will in no case be responsible for those costs, regardless of the conduct or outcome of the bidding process.
- 1.2 Bidder is requested to pay Rs. 50,000 as a bid processing fee (Non-refundable) in the form of demand draft in favor of "SCADL" payable at Ahmedabad along with the EMD cover. In case of non-receipt of bid processing fees & EMD the bid will be rejected by SCDAL as non-responsive.

#### **2) BIDDING DOCUMENTS**

Bidder can download the bid document and further amendment if any freely available on <https://www.ahmedabadcity.gov.in> and <https://www.amc.nprocure.com> and upload the same on <https://www.amc.nprocure.com> on or before due date of the tender. Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or submits a Bid not substantially responsive to the bidding documents in every respect may result in the rejection of the Bid. Under no circumstances physical bid will be accepted.

#### **3) CLARIFICATION ON BIDDING DOCUMENTS**

- 3.1 A prospective Bidder requiring any clarification of the bidding documents may seek clarifications by submitting queries on "email Id: smartcity@ahmedabadcity.gov.in\_" prior to the date of Pre-Bid Meeting.
- 3.2 SCDAL will discuss the queries received from the interested bidders in the Pre-Bid Meeting and respond the clarifications by uploading on the website <https://www.ahmedabadcity.gov.in>
- 3.3 No further clarification what so ever will be entertained after the pre- bid meeting.
- 3.4 The interested bidder should send the queries as per the following format:

<b>Bidder's Request For Clarification</b>			
Name of Organization submitting request		Name & position of person submitting request:	Address of organization including phone, fax, email points of contact
S/N	Bidding Document Reference (Clause /page)	Content of RFP requiring clarification	Points of Clarification required
1			
2			

#### **4) CONSORTIUM CLAUSE**

- Consortium of up to 2 members (lead bidder plus one additional consortium members) is allowed with fulfilment of Serial No. 1 (Company Registration), and Serial no. 8 (Backlisting) of the Section-2 i.e. Eligibility Criteria of the RFP/Bid.
- Further, Bidder is required to submit the Consortium agreement and other supporting documents along with the Bid.

#### **5) AMENDMENT OF BIDDING DOCUMENTS**

- 5.1 At any time prior to the deadline for submission of bids, SCDAL for any reason, whether at its own initiative or in response to the clarifications requested by prospective bidders may modify the bidding documents by amendment & put on our websites.

- 5.2 All prospective bidders are requested to browse our website & any amendments/ corrigendum/ modification will be notified on our website and such modification will be binding on them.
- 5.3 In order to allow prospective bidders a reasonable time to take the amendment into account in preparing their bids, SCDAL at its discretion, may extend the deadline for the

## 6) LANGUAGE OF BID

The Bid prepared by the Bidder, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and SCDAL shall be in English. Supporting documents and printed literature furnished by the bidder may be in another language provided they are accompanied by an accurate translation of the relevant pages in English. For purposes of interpretation of the bid, the translation shall govern.

## 7) DOCUMENT COMPRISING THE BID

6.1 The Bid prepared by the Bidder shall comprise of the following documents:

- (a) **Bid Security/EMD and Bid Processing Fee:** The bid security of EMD of Rs. 2,00,00,000 (Rupees Two Crores only) shall be either in form of Demand Draft and or Bank guarantee of any nationalized / scheduled bank and bid processing fee of Rs. 50,000/- (Rupees Fifty Thousand only) by Demand Draft in favor of “SCADL” are to be submitted physically in sealed envelope clearly mentioning that “EMD and Bid Processing Fee for at SCDAL on the address mentioned on cover page of this RFP document.
- (b) **Pre-qualification Bid:** In support of eligibility, a bidder must submit the following documents:
- 1) Format 1: Pre-qualification Bid Letter
  - 2) Format 2: General information about the Bidder
  - 3) Format 3: Detailed checklist for Eligibility dully filled in along with the supporting documents
  - 4) Format 4: Declaration Regarding Blacklisting
  - 5) Format 5: Undertaking for Acceptance of Terms and Conditions of RFP
  - 6) Format 6: Annual Sales Turnover Statement
  - 7) Format 7: Completion of Projects of Prescribed Nature and Size
- (c) **Technical Bid:** The Technical Bid besides the other requirements of the RFP, shall comprise:
- 1) Format 8: Technical Bid Letter
  - 2) Format 9: Technical Compliance Sheet
  - 3) Format 10: Relationship with OEM
  - 4) Format 11: Proposed Technical Solution
  - 5) Format 12: Project Management Plan
  - 6) Format 13: Core Project Team
- (d) **Financial Bid:** The Financial Bid, besides the other requirements of the RFP, shall comprise of the following:
- 1) Format 14: Financial Bid Letter
  - 2) Format-15: Price Bid

6.2 The Pre-Qualification Bid, Technical Bid and Financial Bid must be submitted online through the e-tendering website of <http://amc.nprocure.com> using digital signature.

## 8) BID FORMS

7.1 Wherever a specific form is prescribed in the Bid document, the Bidder shall use the form to provide relevant information. If the form does not provide space for any required information, space at the end

of the form or additional sheets shall be used to convey the said information. Failing to upload the information in the prescribed format, the bid is liable for rejection.

7.2 For all other cases, the Bidder shall design a form to hold the required information.

7.3 SCDAL shall not be bound by any printed conditions or provisions in the Bidder's Bid Forms

## 9) FRAUDULENT & CORRUPT PRACTICE

8.1 Fraudulent practice means a misrepresentation of facts in order to influence a procurement process or the execution of a Contract and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non-competitive levels and to deprive the SCDAL of the benefits of free and open competition.

8.2 "Corrupt Practice" means the offering, giving, receiving or soliciting of anything of value, pressurizing to influence the action of a public official in the process of Contract execution.

8.3 SCDAL will reject a proposal for award and may forfeit the E.M.D. and/or Performance Guarantee if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for, or in executing, contract(s).

## 10) LOCAL /SITE CONDITIONS

9.1 It will be incumbent upon each Bidder to fully acquaint itself with the local conditions and other relevant factors of Project which would have any effect on the performance of the contract and / or the cost. The Bidders are advised to visit the locations like AMC Zonal offices, ward offices, junctions etc. (at their own cost) and due-diligence should be conducted before the pre-bid meeting/ bid-submission.

9.2 The Bidder is expected to make a site visit to obtain for itself all information that may be necessary for preparing the bid and entering into contract.

9.3 Failure to obtain the information necessary for preparing the bid and/or failure to perform activities that may be necessary for providing the services before entering into contract will in no way relieve the Successful Bidder from performing any work in accordance with the RFP documents.

9.4 It will be imperative for each Bidder to fully inform themselves of all legal conditions and factors which may have any effect on the execution of the contract as described in the RFP Documents. SCADL shall not entertain any request for clarification from the Bidder regarding such conditions.

9.5 It is the responsibility of the Bidder that such factors have properly been investigated and considered while submitting the bid proposals and that no claim whatsoever including those for financial adjustment to the contract awarded under the RFP Documents will be entertained by SCADL and that neither any change in the time schedule of the contract nor any financial adjustments arising thereof shall be permitted by SCADL on account of failure of the Bidder to appraise themselves of local laws and site conditions.

## 11) LACK OF INFORMATION TO BIDDER

The Bidder shall be deemed to have carefully examined all contract documents to his entire satisfaction. Any lack of information shall not in any way relieve the Bidder of his responsibility to fulfil his obligation under the Contract.

## 12) CONTRACT OBLIGATIONS

If after the award of the contract the Bidder does not sign the contract or ***fails to furnish*** the Performance Bank Guarantee (***PBG***) ***within fifteen working days*** from the date of award and if the ***operations are not started within fifteen working days after submission of PBG***, SCADL reserves the right to cancel the contract and apply all remedies available under the terms and conditions of this contract.

## 13) BID PRICE

12.1 The priced bid should indicate the prices in the format/price schedule only.

- 12.2 Offered prices should be exclusive of VAT/Sales Tax/Service Tax and inclusive of levies such as Excise, Insurance, FOR destination (anywhere in the Gujarat state).
- 12.3 Prices shall be written in both words and figures. In the event of difference, the price in words shall be valid and binding.
- 12.4 If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If the Bidder does not accept the correction of the errors, its bid will be rejected.
- 12.5 Any discrepancy relating to prices quoted in the offer across different sections of the bid, only prices given in the prescribed format given at Price Schedule of this RFP shall prevail.
- 12.6 Discount if offered, should not be mentioned separately. It should be included in Price Bid.
- 12.7 Any effort by a bidder or bidder's agent / consultant or representative howsoever described to influence the SCADL in any way concerning scrutiny / consideration / evaluation / comparison of the bid or decision concerning award of contract shall entail rejection of the bid.
- 12.8 Unit rates should be quoted separately for each item. Quantities can be increased or decreased by SCADL and bidder has to supply deviated quantities at the rates prescribed and approved by the SCADL in the tender document.

#### 14) BID CURRENCY

The prices should be quoted in Indian Rupees. Payment for the supply, installation and commissioning of leased line & Raw Internet bandwidth as specified in the agreement shall be made in Indian Rupees only.

#### 15) BID SECURITY / EARNEST MONEY DEPOSIT (EMD)

- 14.1 The Bidder shall furnish, as part of the Bid, a Bid security for the amount of EMD of Rs. 2,00,00,000 (Rupees Two Crores only) shall be either in form of Demand Draft and or Bank guarantee of any nationalized / scheduled bank which shall be submitted in the form of Demand Draft OR in the form of an unconditional Bank Guarantee (which should be valid for 9 months from the last date of bid submission) of any Nationalized Bank (issued by Ahmedabad branches only) in the name of "Ahmedabad Municipal Corporation." payable at Ahmedabad (as per prescribed format given at Format 14) and must be submitted along with the covering letter. The un-priced bid will be opened subject to the confirmation of valid Bid security.
- 14.2 Unsuccessful Bidder's Bid security will be refunded within thirty (30) days from the award of work to the successful bidder.
- 14.3 The successful Bidder's Bid security will be discharged upon the Bidder signing the Contract/Agreement, and furnishing the Performance Bank Guarantee.
- 14.4 The Bid security may be forfeited at the discretion of SCADL, on account of one or more of the following reasons if:
- a. The Bidder withdraws their Bid during the period of Bid validity specified on the Bid letter form.
  - b. Bidder does not respond to requests for clarification of their Bid.
  - c. Bidder fails to co-operate in the Bid evaluation process, and
  - d. In case of a successful Bidder, the said Bidder fails:
    - To sign the Agreement in time
    - To furnish Performance Bank Guarantee

#### 16) PERIOD OF VALIDITY OF BIDS

- 15.1 Bids shall remain valid for 180 days after the date of Bid opening prescribed by MC. A Bid valid for a shorter period shall be rejected as non-responsive.

15.2 In exceptional circumstances, SCADL may solicit Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. The Bid security shall also be suitably extended. A Bidder's request to modify the Bid will not be permitted.

#### **17) BID DUE DATE**

16.1 Bid must be received by the SCADL at the address specified in the Request for Proposal (RFP) not later than the date specified in the RFP.

16.2 The SCADL may, as its discretion, on giving reasonable notice by fax, cable or any other written communication to all prospective bidders who have been issued the bid documents, extend the bid due date, in which case all rights and obligations of the SCADL and the bidders, previously subject to the bid due date, shall thereafter be subject to the new bid due date as extended.

#### **18) LATE BID**

Bidder would not be able to upload or submit the bid after the bid due date/time.

#### **19) MODIFICATION AND WITHDRAWAL OF BID**

18.1 The Bidder may modify or withdraw its Bid before the due date and time of Bid's submission on e-tendering website <https://amc.nprocure.com>

18.2 Bidders are not allowed to modify the bids submitted subsequent to the deadline of bid submission.

#### **20) OPENING OF BIDS BY SCADL**

19.1 Bids will be opened in the presence of Bidder's representatives, who choose to attend. The Bidder's representatives who are present shall sign a register evidencing their attendance.

19.2 The Bidder's names, bid modifications or withdrawals, discounts and the presence or absence of relevant Bid security and such other details as the SCADL officer at his/her discretion, may consider appropriate, will be announced at the opening.

19.3 Immediately after the closing time, the SCADL contact person shall open the Un-Priced Bids and list them for further evaluation.

#### **21) CONTACTING SCADL**

20.1 Bidder shall not approach SCADL/AMC officers outside of office hours and/ or outside SCALDAMC office premises, from the time of the Bid opening to the time the Contract is awarded.

20.2 Any effort by a bidder to influence SCADL /AMC officers in the decisions on Bid evaluation, bid comparison or contract award may result in rejection of the Bidder's offer. If the Bidder wishes to bring additional information to the notice of the SCADL/AMC, it should do so in writing.

#### **22) REJECTION OF BIDS**

21.1 Besides other conditions and terms highlighted in the RFP document, bids may be rejected under the following circumstances:

##### **(a) Pre-qualification Rejection Criteria**

- 1) Bids submitted without or with improper Bid Security (EMD) and Bid Processing fee.
- 2) Bids which do not conform to unconditional validity of the bid as prescribed in the bid.
- 3) If the information provided by the Bidder is found to be incorrect / misleading at any stage / time during the Tendering Process.
- 4) Any effort on the part of a Bidder to influence the bid evaluation, bid comparison or contract award decisions.
- 5) Bids without proper documents/evidences as asked for in the pre-qualification bid as mentioned in the RFP Document.

(b) **Technical Rejection Criteria**

- 1) Technical Bid containing financial details.
- 2) Revelation of Prices in any form or by any reason before opening the Financial Bid.
- 3) Failure to furnish all information required by the RFP Document or submission of a bid not substantially responsive to the Bid Document in every respect.
- 4) Bidders not quoting for the complete scope of Work as indicated in the Bid documents, addendum (if any) and any subsequent information given to the Bidder.
- 5) Bidders not complying with the Technical and General Terms and conditions as stated in the RFP Documents.
- 6) Bidders not conforming to unconditional acceptance of full responsibility of providing services in accordance with the Scope of work and Service Level Agreements of this RFP.
- 7) If the bid does not confirm to the timelines indicated in the RFP Document.

(c) **Financial Rejection Criteria**

- 1) Incomplete Price Bid
  - 2) Price Bids that do not conform to the Bid's price bid format.
- (d) SCADL reserves the right to reject any Bid, and to annul the bidding process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder(s) or any obligation to inform the affected Bidder(s) of the grounds for such decision.

## 23) EVALUATION METHODOLOGY

**23.1** SCADL will form a Committee which will evaluate the proposals submitted by the bidders for a detailed scrutiny. During evaluation of proposals, SCADL, may, at its discretion, ask the bidders for clarification of their Proposals.

**23.2 Pre-Qualification evaluation:**

- Bidders who have submitted the valid EMD and non-refundable bid processing fee shall be considered for further evaluation. If bidders fail to submit the bid security and non-refundable bid processing fee as per this RFP document, the Bid shall be out rightly rejected.

**23.3 Financial Bid evaluation:**

- The Financial Bids of Eligible bidder (As per the Eligibility Criteria) only would be opened and evaluated to determine the L1 (lowest) bidder. All other Commercial bids will be returned un-opened.

## 24) AWARD OF CONTRACT

24.1 Award Criteria: The Criteria for selection will be the lowest cost to the SCADL amongst the eligible bidders. SCADL may negotiate the prices with L1 Bidder, under each item/head offered by Bidder.

24.2 SCADL's right to vary requirements at time of award: SCADL reserves the right at the time of award to increase or decrease quantity for the requirements originally specified in the document without any change in Bid rate or other terms and conditions.

24.3 Upon the selection of the successful bidder, Lol will be released to successful bidder within 7 calendar days In case, if lowest bidder does not accept the award of contract or found to be involved in corrupt and/or fraudulent practices, the next lowest bidder will be awarded the contract. In such scenario, the lowest bidder has to borne the difference between lowest prices and next lowest prices.

## 25) NOTIFICATION OF AWARD AND SIGNING OF CONTRACT

25.1 Prior to expiration of the period of Bid validity, SCADL will notify the successful Bidders and issue Lol.

25.2 The contract Performance Bank Guarantee (**PBG**) has to be submitted **within fifteen (15) working days**

of receipt of Lol. The PBG shall be equal to the 10% of total contract value as per the clause no. 33 of this section.

## 26) FORCE MAJEURE

26.1 Force Majeure shall mean any event or circumstances or combination of events or circumstances that materially and adversely affects, prevents or delays any Party in performance of its obligation in accordance with the terms of the Agreement, but only if and to the extent that such events and circumstances are not within the affected party's reasonable control, directly or indirectly, and effects of which could have prevented through Good Industry Practice or, in the case if construction activities through reasonable skill and care, including through the expenditure of reasonable sums of money.

26.2 Any events or circumstances meeting the description of the Force Majeure which have same effect upon the performance of any contractor shall constitute Force Majeure with respect to the Service Provider. The Parties shall ensure compliance of the terms of the Agreement unless affected by the Force Majeure Events. The Service Provider shall not be liable for forfeiture of its implementation / Performance guarantee, levy of Penalties, or termination for default if and to the extent that it's delay in performance or other failure to perform its obligations under the Agreement is the result of Force Majeure.

26.3 **Force Majeure Events:** The Force Majeure circumstances and events shall include the following events to the extent that such events or their consequences (it being understood that if a causing event is within the reasonable control of the affected party, the direct consequences shall also be deemed to be within such party's reasonable control) satisfy the definition as stated above. Without limitation to the generality of the foregoing, Force Majeure Event shall include following events and circumstances and their effects to the extent that they, or their effects, satisfy the above requirements:

- a) Natural events ("Natural Events") to the extent they satisfy the foregoing requirements including:
  - 1) Any material effect on the natural elements, including lightning, fire, earthquake, cyclone, flood, storm, tornado, or typhoon;
  - 2) Explosion or chemical contamination (other than resulting from an act of war);
  - 3) Epidemic such as plague;
  - 4) Any event or circumstance of a nature analogous to any of the foregoing.
- b) Other Events ("Political Events") to the extent that they satisfy the foregoing requirements including:

Political Events which occur inside or Outside the State of Gujarat or involve directly the State Government and the Central Government ("Direct Political Event"), including:

  - 1) Act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, revolution, riot, insurrection, civil commotion, act of terrorism or sabotage;
  - 2) Strikes, work to rules, go-slows which are either widespread, nation- wide, or state-wide or are of political nature;
  - 3) Any event or circumstance of a nature analogous to any of the foregoing.

26.4 **FORCE MAJEURE EXCLUSIONS:** Force Majeure shall not include the following event(s) and/or circumstances, except to the extent that they are consequences of an event of Force Majeure:

- a. Unavailability, late delivery
- b. Delay in the performance of any contractor, sub-contractors or their agents;

26.5 **PROCEDURE FOR CALLING FORCE MAJEURE:** The Affected Party shall notify to the other Party in writing of the occurrence of the Force Majeure as soon as reasonably practicable, and in any event within 5 (five) days after the Affected Party came to know or ought reasonably to have known, of its occurrence and that the Force Majeure would be likely to have a material impact on the performance of its obligations under the Agreement.

## **27) CONTRACT OBLIGATIONS**

- 27.1 Once a contract is confirmed and signed, the terms and conditions contained therein shall take precedence over the Bidder's bid and all previous correspondence.
- 27.2 Amendments to the Contract may be made by mutual agreement by both the Parties. No variation in or modification in the terms of the contract shall be made except by written amendment signed by both the parties. All alterations and changes in the contract will take into account prevailing rules, regulations and laws applicable in the State of Gujarat.

## **28) USE OF CONTRACT/AGREEMENT DOCUMENTS AND INFORMATION**

- 28.1 The successful bidder shall not without prior written consent from SCADL disclose the Agreement or any provision thereof or any specification, plans, drawings, pattern, samples or information furnished by or on behalf of SCADL in connection therewith to any person other than the person employed by the successful bidder in the performance of the Agreement. Disclosure to any such employee shall be made in confidence and shall extend only as far as may be necessary for such performance.
- 28.2 The Successful bidder shall not without prior written consent of SCADL make use of any document or information made available for the project except for purposes of performing the Agreement.
- 28.3 All project related documents issued by SCADL other than the contract/Agreement itself shall remain the property of SCADL and Originals and all copies shall be returned to SCADL on completion of the successful bidder's performance under the Agreement, if so required by the SCADL.

## **29) REPRESENTATIONS AND WARRANTIES**

### **29.1 Representations and Warranties by the Successful bidder:**

- It is a company duly organized and validly existing under the laws of India and has all requisite legal power and authority and corporate authorizations to execute the Agreement and carry out the terms, conditions and provisions hereof. It has in full force and effect all requisite clearances, approvals and permits necessary to enter into the Agreement and perform its obligations hereof.
- The Agreement and the transactions and obligations hereof do not contravene its constitutional documents or any law, regulation or government directive and will not contravene any provisions of, or constitute a default under, any other Agreement or instrument to which it is a party or by which it or its property may be bound or any of its obligations or undertakings by which it or any of its assets are bound or cause a limitation on its powers or cause it to exceed its authorized powers.
- There is no pending or threatened actions, suits or proceedings affecting the Successful bidder or its affiliates or any of their respective assets before a court, governmental agency, commission or arbitrator or administrative tribunal which affects the Successful bidder's ability to perform its obligations under the Agreement; and neither successful bidder nor any of its affiliates have immunity from the jurisdiction of a court or from legal process (whether through service of notice, attachment prior to judgment, attachment in aid of execution or otherwise).
- The Successful bidder confirms that all representations and warranties of the Operator set forth in the Agreement are true, complete and correct in all respects.
- No information given by the Successful bidder in relation to the Agreement, project documents or any document comprising security contains any material wrong-statement of fact or omits to state as fact which would be materially averse to the enforcement of the rights and remedies of SCADL or which would be necessary to make any statement, representation or warranty contained herein or therein true and correct.
- All equipment including replacement parts, spares and any other material to be installed, used by the successful bidder in the Smart City Ahmedabad Network shall be new. All equipment shall conform to the codes, standards and regulations applicable to networking facilities and benefit from the usual manufacturer's guarantees.

## 29.2 Representations and Warranties by SCADL

- It has full legal right; power and authority to execute the Ahmedabad smart city project and to enter into and perform its obligations under the Agreement and there are no proceedings pending.
- The Agreement has been duly authorized, executed and delivered by SCADL and constitutes valid, legal and binding obligation of SCADL.
- The execution and delivery of the Agreement with the Successful bidder does not violate any statutory judgment, order, decree, regulation, right, obligation or rule of any court, government authority or arbitrator of competent jurisdiction applicable in relation to SCADL, its assets or its administration.

## 30) RESOLUTION OF DISPUTES

- 30.1 If any dispute arises between the Parties hereto during the subsistence or thereafter, in connection with the validity, interpretation, implementation or alleged material breach of any provision of the Agreement or regarding a question, including the questions as to whether the termination of the Contract Agreement by one Party hereto has been legitimate, both Parties hereto shall endeavor to settle such dispute amicably.
- 30.2 The attempt to bring about an amicable settlement is considered to have failed as soon as one of the Parties hereto, after reasonable attempts [which attempt shall continue for not less than 30 (thirty) days], give 15 days' notice thereof to the other Party in writing.
- 30.3 In the case of such failure the dispute shall be referred to a sole arbitrator or in case of disagreement as to the appointment of the sole arbitrator to three arbitrators, two of whom will be appointed by each Party and the third appointed by the two arbitrators. The place of the arbitration shall be Ahmedabad, Gujarat.
- 30.4 The Arbitration proceeding shall be governed by the Arbitration and Conciliation Act of 1996 as amended. The proceedings of arbitration shall be in English language. The arbitrator's award shall be substantiated in writing. The arbitration tribunal shall also decide on the costs of the arbitration procedure.
- 30.5 The Parties hereto shall submit to the arbitrator's award and the award shall be enforceable in any competent court of law.

## 31) TAXES & DUTIES

Successful bidder shall fully familiarize itself about the applicable Domestic taxes (such as VAT, Sales Tax, Service Tax, Income Tax, duties, fees, levies, etc.) on amount payable by SCADL under the contract. The successful bidder shall pay such domestic tax, duties, fees and other impositions (wherever applicable) levied under the applicable law. The billing should be done in Gujarat only.

## 32) BOOKS & RECORDS

Successful bidder shall maintain adequate Documents Related to project's physical materials & equipment for inspection and audit by SCADL during the terms of Contract until expiry of the performance guarantee.

## 33) PERFORMANCE BANK GUARANTEE OF THE CONTRACT

- 33.1 The Performance Bank Guarantee (PBG) has to be submitted within 15 (fifteen) working days of receipt of award.
- 33.2** The contract Performance Bank Guarantee (**PBG**) has to be submitted **within fifteen (15) calendar days** of receipt of LoI. The PBG shall be equal to the 10% of total contract value **valid up to 180 days beyond the expiry of contract**.
- 33.3 The performance guarantee will be in the form of bank guarantee towards faithful performance of the contract obligation, and performance of the services during contract period. In case of poor and unsatisfactory field services, SCADL shall invoke the PBG.
- 33.4 The Performance Guarantee shall be valid for a period of 180 days beyond Contract period and shall be denominated in Indian Rupees and shall be in the form of an unconditional Bank Guarantee issued by all Public-sector banks and private banks such as IDBI Bank, UTI Bank, HDFC Bank, ICICI Bank having branch in Ahmedabad in the format provided, to be submitted Within 15 working days of receipt of

award.

33.5 The Performance Guarantee shall be discharged by SCADL and returned to the Successful bidder within 30 days from the date of expiry of the Performance Bank Guarantee.

## **PART-II: General Terms and Conditions:**

### **34) PAYMENTS TERMS**

#### *34.1 Payment Schedule*

<b>S/N</b>	<b>Activity</b>	<b>Payment (%)</b>
	<b>Hardware/Material component as per Schedule I of financial bid</b>	
	Successful Installation, commissioning & FAT of the Central Infrastructure (CCC, TCC and Data Center)	20% of the sum total of schedule I of financial bid
1	Successful Installation, commissioning & FAT of each 25% the Site equipment (camera, Wi-Fi Hotspot, LED Display screens etc.)	15% of the sum total of schedule I of financial bid
	Successful Installation, commissioning & FAT of 100 % the Site equipment (camera, Wi-Fi Hotspot)	10% of the sum total of schedule I of financial bid
	Balance 10% as part of Quarterly Payments along with the payment's for O&M	10% of the sum total of schedule I of financial bid to be divided and paid as 20 equated quarterly installments along with O&M Payment
	<b>Operations &amp; Maintenance as per Schedule II of financial bid</b>	
2	Operational & Maintenance support during the contract period of 5 years	20 equal Quarterly Installments after the end of each quarter.

*Note: Payment milestones are independent of each individual activity.*

#### **34.2 Payment Procedure**

##### a) Hardware/Material Component

- 1) The successful bidder shall raise the component wise invoice against the milestones achieved (as mentioned above in the payment schedule) and submit the invoice to SCADL.
- 2) The successful bidder shall submit 2 original copies of invoices along with the necessary supporting documents confirming milestone achieved and other documents as required by SCADL for processing of invoices. Invoice should be raised in English language only.
- 3) SCADL shall verify the Invoices raised against the milestone achieved and shall make the payment.

##### b) O&M Component

- 1) The payments to the successful bidder will be made quarterly at the end of each quarter on acceptance of the invoice by the SCADL or its designated agency.
- 2) The invoice would be processed for release of payment within 45 days after due verification of the invoice and other supporting documents by SCADL or its designated agency.

- 3) In case the processing of the invoice gets delayed beyond 45 days from the date of acceptance of invoice, the successful bidder would be paid an adhoc amount of 50% of invoice value and the remaining amount would be released after getting clarifications, due verification and imposition of penalty, if any.

34.3 Payment shall be made in Indian Rupees. While making payment, necessary income tax and service tax deductions will be made.

### **35) SERVICE TERMS**

35.1 The entire scope of the work depends on the technical skill and experience in management of the same level or kind of infrastructure. It is mandatory for Bidder to deploy qualified professional to install, commission & maintain the Circuits, as defined under scope of work. The Bidder has to submit regular schedule of technical man power availability & get it approved by SCADL, before deployment.

35.2 The Bidder need to manage & maintain various records related to the services extended to the Government.

35.3 If required, the Bidder may need to coordinate and approach various agencies working for SCADL.

35.4 The Bidder needs to maintain the required security of the network as per the DIT/TRAI Security guidelines.

35.5 The Bidder is responsible to maintain documentation on the progress of the work and will have to update the same on regular basis. Service Provider will have to submit the progress reports regularly, as per the guide line issued by SCADL.

35.6 The Bidder need to make its own arrangement for establishing outside/field communication. SCADL will not provide any external / outgoing facility to another network.

### **36) SUCCESSFUL BIDDER'S OBLIGATIONS**

36.1 The Successful bidder would be required to Supply, Install, Commission, maintain and manage the assets created under this project under the Ahmedabad Smart City Mission on behalf of SCADL. It will be the successful bidder's responsibility to ensure compliance to the requirements in accordance with and in strict adherence to the terms of the RFP and the Contract.

36.2 In addition to the aforementioned, the successful bidder shall:

- a) Perform the Services specified by SCADL and make available the necessary equipment / facilities / services as may be necessary to comply with the 'Scope of work' requirements as specified in the bid and changes thereof.
- b) The Successful bidder shall ensure that its team is competent, professional and possesses the requisite qualifications and experience appropriate to the task they are required to perform under this Contract. The Successful bidder shall ensure that the Services are performed in accordance with the terms hereof and to the direction given by SCADL and as per the requirements stated in the contract and bid document. Nothing in this Contract relieves the Successful bidder from its liabilities or obligations under this Contract to provide the Services in accordance with SCADL directions and requirements as stated in the Contract and the Bid to the extent accepted by SCADL and the Successful bidder shall be liable for any non-performance, non-compliance, breach or other loss and damage resulting either directly or indirectly by or on account of its team.
- c) The Successful bidder's representatives shall have all the powers requisite for the performance of services under this contract. The Successful bidder's representatives shall liaise with SCADL's representatives for the proper coordination and timely completion of the works and on any other matters pertaining to the works. The Successful bidder will extend full co-operation to SCADL's representatives in the manner required by them for supervision / inspection / observation of the facilities, equipment / material, procedures, performance, reports and records pertaining to the works.

Successful bidder shall also have complete charge of the Successful bidder's personnel engaged in the performance of the works and to ensure internal discipline, compliance of rules, regulations and safety practices. Successful bidder shall also co-ordinate and co-operate with the other Service Providers / Vendors of SCADL working at the site/offsite for activities related to planning, execution of scope of work and providing services under this contract.

### 36.3 Reporting Progress:

- a) The Successful bidder shall monitor progress of all the activities specified in the contract and submit monthly progress report about various aspects of the work to SCADL as per Scope of Work. SCADL on mutual agreement between both parties may change the periodicity of such reports. Extracts of the progress report to be termed, as "Executive Summary" shall be submitted in 3 copies, along with 3 copies of monthly progress report. The same is required to be submitted in soft copy as well. Formats for such reporting shall be discussed at the Kick-off meeting.
- b) The facilities / services and / or Labour to be provided by the Successful bidder under the Contract and the manner and speed of execution and maintenance of the work are to be conducted in a manner to the directions given by SCADL and as per the requirements stated in the contract and bid document in accordance with the Contract. Should the rate of progress of the work compliance to the requirements of the SCADL or their facilities or any part of them at any time fall behind the stipulated time for completion or is found to be too slow to ensure completion of the works or insufficient for satisfactory operations of the project, SCADL shall so notify the Successful bidder in writing.
- c) The Successful bidder shall reply to the written notice giving details of the measures they propose to take to expedite the progress so as to complete the works by the prescribed time. The Successful bidder shall not be entitled to any additional payment for taking such steps. If at any time it should appear to SCADL that the actual progress of work does not conform to the approved plan the Successful bidder shall produce at the request of SCADL a revised plan showing the modification to the approved plan necessary to ensure completion of the works within the time for completion or steps initiated to ensure compliance/improvement to the stipulated requirements.

### 36.4 Knowledge of Site Conditions:

- a) The Successful bidder's undertaking of this Contract shall be deemed to mean that the Successful bidder possesses the knowledge of entire project and O&M related requirements as stipulated in the RFP.
- b) The Successful bidder shall be deemed to have understood the requirements and have satisfied itself with the data contained in the RFP Document, the quantities and nature of the works and materials necessary for the completion of the works, etc. and in-general to have obtained itself all necessary information of all risks, contingencies and circumstances affecting its obligations and responsibilities therewith under the Contract and its ability to perform it.
- c) Successful bidder shall be deemed to have satisfied itself as to the correctness and sufficiency of the Contract Price for the works. The consideration provided in the Contract for the Successful bidder undertaking the works shall cover all the Successful bidder's obligation and all matters and things necessary for proper execution and maintenance of the works in accordance with the Contract and for complying with any instructions which SCADL may issue in accordance with the connection therewith and of any proper and reasonable measures which Successful bidder takes in the absence of specific instructions from SCADL.

## 37) APPLICATION OF THE TERMS AND CONDITIONS

These general conditions shall apply to the extent that they are not superseded by provisions in other parts of the contract. For interpretation of any clause in the RFP or Contract Agreement, the interpretation of the SCADL shall be final and binding on the bidders.

### 38) STANDARDS

The successful bidder shall give the services and carry out their obligations under the Contract with due diligence, efficiency and economy in accordance with generally accepted professional standards and practices. The successful bidder shall always act in respect of any matter relating to this contract as faithful advisor to SCADL. The successful bidder shall abide by all the provisions/Acts/Rules etc. of Information Technology prevalent in the country as on the date of the requirements and design submissions. The equipment's and services supplied under this contract shall conform to the standards mentioned in the requirement specifications.

### 39) PATENT RIGHTS

The successful bidder shall indemnify SCADL /AMC against all third-party claims of infringement of patent, trademark or industrial design rights arising from the use of the equipment's and services or any part thereof.

**40) INCIDENTAL SERVICES:** The successful bidder may be required to provide any or all of the following services related to the scope of this RFP:

- 40.1 Furnish detailed manuals for each appropriate unit of the supplied equipment and services.
- 40.2 Perform or supervise or maintain and/ or repair the supplied equipment and services, for a period of time agreed by SCADL and the successful bidder, provided this service shall not relieve the successful bidder of any warranty obligations under this contract.

### 41) DELIVERY AND DOCUMENTATION

- 41.1 The successful bidder shall submit all the deliverables on due date as per the delivery schedule agreed between parties.
- 41.2 No party shall, without the other party's prior written consent, disclose contract, drawings, specifications, plan or other documents to any person other than an entity employed by the affected party for the performance of the contract.
- 41.3 In case of the termination of the contact, all the documents prepared by the successful bidder under this contract shall become the exclusive property of SCADL. The successful bidder may retain a copy of such documents, but shall not use anywhere, without taking permission, in writing, from SCADL.
- 41.4 SCADL reserves right to grant or deny such permission. Delivery of the equipment's and services and associated documents shall be made by the successful bidder in accordance with the terms specified by SCADL in RFP.

### 42) CHANGE ORDERS

- 42.1 *Hardware/Material Component:* SCADL may at any time, by a written order given to the successful bidder make changes within the general scope of the contract in any one or more of the following:
  - a) Configuration or specifications of the equipment.
  - b) Change in address for delivery of equipment.
- 42.2 *During the O&M period:* SCADL may at any time, by a written order given to the successful bidder make changes within the general scope of the contract in any one or more of the following during the contract period:
  - a) Change in address of Junctions/Locations for providing O&M services.
  - b) The services to be provided by the successful bidder.
  - c) Change in QoS parameters at any office location or across all locations.

**Any changes in application will be treated as a part of continuous O&M and will not be paid for. However, procurement of new devices will be at a cost as repeat order, and in case of procurement of devices / software from other agency for integration with this solution, the bidder will be responsible for O&M of**

such. For the additional work for such later procurement, the successful bidder will be paid 2% for the central side infrastructure and at the rate of 10% per annum for the end point devices.

**43) ASSIGNMENT**

The successful bidder shall not assign, in whole or in part, his obligations to perform under the contract, to any other party or persons, except with SCADL's prior written consent. The permission, if any, of SCADL has to be taken before award of the contract.

**44) SUB CONTRACT**

The successful bidder would provide the services on its own and no back-to-back sub-contracting shall be allowed. However, if sub-contracting for specialized work is required, the successful bidder will take prior permission from SCADL.

**45) PROJECT TAKEOVER**

SCADL or any agency authorized by SCADL has the right to take over the operations and management even before the expiry of 5 years in case the successful bidder fails to perform any obligations under the contract.

**46) INAPPROPRIATE UDE OF NETWORK**

The successful bidder shall not use the network facilities/ equipment installed for any other purpose/ use than that of the functions assigned by the SCADL.

**47) TERMINATION FOR DEFAULT**

47.1 SCADL may, without prejudice to any other remedy for breach of contract can terminate the contract, in whole or in part after giving 30 day's prior written notice of default sent to the successful bidder:

- a) If the successful bidder fails to deliver any or all of the equipment's and services within the time periods specified in the contract, or any extension thereof granted by SCADL OR
- b) If the successful bidder fails to perform any obligations under the contract.

**48) TERMINATION FOR INSOLVENCY**

48.1 SCADL may at any time terminate the contract by giving written notice to the successful bidder, without compensation to the successful bidder, if the successful bidder becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to SCADL.

48.2 In the event of termination as per clause above (47 & 48), SCADL reserves the right to take suitable action against successful bidder against their default including revoking the PBG and risk purchase clause etc.

**49) GOVERNING LANGUAGE**

The contract shall be written in English. All correspondence and other documents pertaining to the contract, which are exchanged by the parties, shall be written in the same language.

**50) APPLICABLE LAW**

Applicable Law means the laws and any other instruments having the force of law in India as they may be issued and in force from time to time. The contracts shall be interpreted in accordance with the laws of the Union of India and that of the State of Gujarat.

**51) NOTICES**

Any notice by one party to the other pursuant to the contract shall be sent in writing by registered post only to the addresses as defined under this contract. A notice shall be effective when delivered or on the notice's effective date, whichever is later.

**52) BACK UP SUPPORT**

Successful bidder shall furnish details of the back-up engineering and network support that will be available to SCADL. If the maintenance of the equipment, after expiry of the contract period, is taken over either by SCADL or any other person/ agency to be nominated by SCADL, the Successful bidder shall be responsible for provisioning of spare parts and back-up maintenance support required by SCADL or that

agency, and shall continue to make available the spare parts.

### **53) INSURANCE**

The equipment's supplied under this contract shall be fully insured by the successful bidder against loss or damage incidental to manufacture or acquisition, transportation, storage, delivery and installation. The successful bidder will have to procure insurance for all the assets supplied/installed under this RFP/contract on behalf of SCADL C within six months form the date of kick-off meeting. SCADL shall provide authorization to the successful bidder to procure insurance.

### **54) MANUALS, DATA AND INFORMATION**

Complete information relating to installation, maintenance, service, support, and troubleshooting of equipment and services should be supplied by the successful bidder.

### **55) INSPECTION AND TESTING**

- 55.1 The bidder will have to offer the inspection after delivering and installing the equipment at the locations specified in the RFP.
- 55.2 Any deviation found in the specification of the delivered equipment after inspection from the tender specifications will lead to the cancellation of the order, forfeiture of PBG and prohibition in the participation in the future purchases of SCADL.
- 55.3 The SCADL's right to inspect, test and, where necessary, reject the Goods after the Goods arrival at Customer Sites shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.

### **56) LIMITATION OF LIABILITY**

- 56.1 Successful bidder's cumulative liability for its obligations under the contract shall not exceed the contract value and the successful bidder shall not be liable for incidental, consequential, or indirect damages including loss of profit or saving.
- 56.2 If the contract is partially completed, then in such case successful bidder's cumulative liability will not exceed the contract value of remaining/pending work of the contract.

### **57) CONFIDENTIALITY**

- 57.1 Successful bidder should understand and agrees that all materials and information marked and identified by SCADL as 'Confidential' are valuable assets of SCADL and are to be considered SCADL's proprietary information and property. Successful bidder will treat all confidential materials and information provided by SCADL with the highest degree of care necessary to ensure that unauthorized disclosure does not occur. Successful bidder will not use or disclose any materials or information provided by SCADL without SCADL's prior written approval.
- 57.2 Successful bidder shall not be liable for disclosure or use of any materials or information provided by SCADL or developed by successful bidder which is:
  - a) possessed by successful bidder prior to receipt from SCADL, other than through prior disclosure by SCADL, as documented by successful bidder's written records;
  - b) published or available to the general public otherwise than through a breach of Confidentiality; or
  - c) Obtained by successful bidder from a third party with a valid right to make such disclosure, provided that said third party is not under a confidentiality obligation to SCADL or
  - d) Developed independently by the successful bidder.
- 57.3 In the event that successful bidder is required by judicial or administrative process to disclose any information or materials required to be held confidential hereunder, successful bidder shall promptly notify SCADL and allow SCADL a reasonable time to oppose such process before making disclosure.
- 57.4 successful bidder understands and agrees that any use or dissemination of information in violation of this Confidentiality Clause will cause SCADL irreparable harm, may leave SCADL with no adequate remedy at law and SCADL is entitled to seek to injunctive relief.
- 57.5 SCADL does not wish to receive the Confidential Information of successful bidder, and

successful bidder agrees that it will first provide or disclose information which is not confidential. Only to the extent that SCADL requests Confidential Information from successful bidder, then successful bidder will furnish or disclose Confidential Information.

57.6 Nothing herein shall be construed as granting to either party any right or license under any copyrights, inventions, or patents now or hereafter owned or controlled by the other party. The requirements of use and confidentiality set forth herein shall survive the expiration, termination or cancellation of this RFP. Confidential Information disclosed under this contract shall be subject to confidentiality obligations for a period of two years following the initial date of disclosure. Nothing contained in this contract shall limit the successful bidder from providing similar services to any third parties or reusing the skills, know-how, and experience gained by the employees in providing the services contemplated under this contract.

#### **58) SEVERABILITY**

If any term, clause or provision of the agreement shall be judged to be invalid for any reason whatsoever such invalidity shall not affect the validity or operation of any other term, clause or provision of the agreement and such invalid term clause or provision shall be deemed to have been deleted from the agreement and if the invalid portion is such that the remainder cannot be sustained without it, both parties shall enter into discussions to find a suitable replacement to the clause that shall be legally valid.

#### **59) CONTRACT PERIOD**

The O&M contract shall remain valid for a period of five years from the date of commissioning of O&M operations and end with the date of completion of five years of service. However, SCADL reserves a right to terminate the contract in accordance with the termination provision contained in the contract by sending a notice to the bidder in the events of non-performance, security violations and non-compliance.

#### **60) SUCCESSFUL BIDDER'S TEAM**

- 60.1 The successful bidder shall submit an organization chart showing the proposed organization / manpower not less than the proposal made in the proposed technical solution of the RFP, to be established by the successful bidder for execution of the work / facilities including the identities and Curriculum-Vitae of the key personnel to be deployed during Kick-off meeting. The successful bidder shall promptly inform SCADL in writing of any revision or alteration in such organization chart.
- 60.2 The successful bidder shall be responsible for the deployment, transportation, accommodation and other requirements of all its employees required for the execution of the work and for all costs / charges in connection thereof.
- 60.3 The successful bidder shall provide and deploy manpower on the Site for carrying out the work, only those manpower resources who are skilled and experienced in their respective trades and who are competent to execute or manage / supervise the work in a proper and timely manner as per the RFP.
- 60.4 SCADL may at any time object to and ask successful bidder to remove/replace an employee (supervisor/authorized representative/any subordinate) from the site or any persons deployed by its sub-contracted agency, if in the opinion of SCADL, the person for professional incompetence or negligence, has misconducted himself or his deployment is otherwise considered undesirable by SCADL, the successful bidder shall forthwith remove and shall not again deploy that person in question at the work site of SCADL.
- 60.5 SCADL shall state to the successful bidder in writing its reasons for any request or requirement pursuant to this clause.
- 60.6 The successful bidder shall maintain backup personnel and shall promptly provide replacement of every person removed pursuant to this section with an equally competent substitute from the pool of backup personnel.
- 60.7 In case of change in its team composition owing to attrition the successful bidder shall ensure a reasonable amount of time-overlap in activities to ensure proper knowledge transfer and handover/takeover of documents and other relevant materials between the outgoing and the new member.

#### **61) CONTRACT ADMINISTRATION**

- 61.1 Either party may appoint any individual / organization as their authorized representative through a written

notice to the other party. Each representative shall have the authority to:

- a) Exercise all of the powers and functions of his / her Party under this Contract other than the power to amend this Contract and ensure the proper administration and performance of the terms hereof and
- b) Bind his or her Party in relation to any matter arising out of or in connection with this Contract.
- c) The successful bidder along with the members of sub-contracted agency / third party shall be bound by all undertakings and representations made by the authorized representative of the successful bidder and any covenants stipulated hereunder with respect to this Contract for and on their behalf.
- d) For the purpose of execution or performance of the obligations under this Contract SCADL's Representative would act as an interface with the nominated representative of the successful bidder.
- e) Successful bidder shall comply with any instructions that are given by SCADL's Representative during the course of this Contract in relation to the performance of its obligations under the terms of this Contract and the RFP.
- f) A Committee comprising of representatives from SCADL and the successful bidder shall meet on a mutually agreed time or quarterly basis to discuss any issues / bottlenecks being encountered.

## **62) RIGHT OF MONITORING, INSPECTION AND PERIODIC AUDIT**

- 62.1 SCADL or its designated agency reserves the right to inspect and monitor / assess the progress / performance / maintenance of the project/various activities as per the SoW at any time during the course of the Contract. SCADL may demand and upon such demand being made SCADL shall be provided with any document, data, material or any other information which it may require to assess the progress of the project/delivery of services.
- 62.2 SCADL shall also have the right to conduct, either itself or through its designated agency/representative as it may deem fit, an audit to monitor the performance of the successful bidder of its obligations / functions in accordance with the standards committed to or required by SCADL and the successful bidder undertakes to cooperate with and provide to SCADL or its designated agency, all the required documents and other details for this purpose. Any deviations or contravention identified as a result of such audit/assessment would need to be rectified by the successful bidder failing which SCADL may without prejudice to any other rights that it may have issued a notice of default.

## **63) INFORMATION SECURITY**

- 63.1 The Successful bidder shall not carry and / or transmit any material, information, layouts, diagrams, storage media or any other goods / material in physical or electronic form, which are proprietary to or owned by SCADL, without prior written permission from SCADL.
- 63.2 The Successful bidder shall adhere to the Information Security policy developed by Central government as well as state government or any other competent authority as described by them.
- 63.3 Successful bidder acknowledges that SCADL business data and other SCADL proprietary information or materials, whether developed by SCADL or being used by SCADL pursuant to a license agreement with a third party (the foregoing collectively referred to herein as "proprietary information") are confidential and proprietary to SCADL and Successful bidder agrees to use reasonable care to safeguard the proprietary information and to prevent the unauthorized use or disclosure thereof, which care shall not be less than that used by Successful bidder to protect its own proprietary information.
- 63.4 Successful bidder recognizes that the goodwill of SCADL depends, among other things, upon Successful bidder keeping such proprietary information confidential and that unauthorized disclosure of the same by Successful bidder could damage SCADL and that by reason of Implementation Agency's duties hereunder. Successful bidder may come into possession of such proprietary information even though Successful bidder does not take any direct part in or furnish the services performed for the creation of said proprietary information and shall limit access thereto to employees with a need to such access to perform the services required by this agreement. Successful bidder shall use such information only for the purpose of performing the said services.
- 63.5 Successful bidder shall, upon termination of this agreement for any reason or upon demand by SCADL, whichever is earlier return any and all information provided to Successful bidder by SCADL including any

copies or reproductions, both hard copy and electronic.

#### 64) RELATIONSHIP BETWEEN THE PARTIES

- 64.1 Nothing in this Contract constitutes any fiduciary relationship between SCADL and Successful Bidder's Team or any relationship of employer-employee, principal and agent, or partnership, between SCADL and Successful bidder.
- 64.2 No Party has any authority to bind the other Party in any manner whatsoever except as agreed under the terms of this Contract.
- 64.3 SCADL has no obligations to the Successful Bidder's Team except as agreed under the terms of this Contract.

#### 65) SPECIAL TERMS AND CONDITIONS

- 65.1 Second hand Equipment: Any proposed equipment's shall be new and no second-hand equipment shall be accepted. Occurrence of such an event, will amount to mischief and fraudulence and the Bidder shall be liable for penal action which may be to the extent of termination of contract and forfeiture of PBG.
- 65.2 *Acceptance Test*: A Testing Committee shall be constituted comprising of officers duly authorized by SCADL and/or any third-party agency appointed by it. The acceptance tests shall be carried at each site by the committee.

#### 66) FINAL ACCEPTANCE TEST (FAT)

- 66.1 The Equipment shall be deemed to be commissioned, subject to successful FAT. Availability of all the defined services shall be verified. The Successful bidder shall be required to demonstrate all the features/facilities/functionalities as mentioned in the RFP for each site.
- 66.2 The FAT for the ANPR, RLVD, Speed Detections, Video Analytics applications shall only be considered done when the minimum accuracy percentage as mentioned in the Scope of work is met by the said systems during the FAT.
- 66.3 The discovery of the equipment on EMS/NMS tool would be part of FAT.
- 66.4 All documentation as defined should be completed before the final acceptance test.
- 66.5 On successful completion of the final acceptance and on satisfaction of SCADL with the working of the system, the acceptance certificate signed by SCADL will be issued to the Successful bidder.
- 66.6 The date on which final acceptance certificate is issued shall be deemed to be date of successful commission of the equipment. Any delay by the Successful bidder in commissioning of equipment's shall render the Successful bidder liable to the imposition of appropriate liquidated damages.

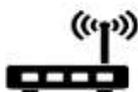
#### 67) DELAY IN IMPLEMENTATION

- 67.1 The timeline for implementation ***of entire Project including Hardware procurement, installation, commissioning and successful FAT is 180 Days*** from the date of signing of the contract. The Successful bidder is expected to convene kick-off meeting within 15 working days of award of contract.
- 67.2 Successful Implementation shall be certified by the SCADL after carrying out Final acceptance test as mentioned earlier.
- 67.3 If the Successful bidder fails to comply with the time schedule, the Successful bidder shall be liable to pay penalty as mentioned in Section-5 of RFP/Bid document.
- 67.4 The delay due to force majeure situation shall be excluded from the calculation of delay.

#### 68) SLA MONITORING

- 68.1 SCADL may designate any agency/team for SLA management and monitoring. This agency shall monitor the SLA parameters and generate reports on regular basis. SCADL reserves the right to periodically change the measurement points and methodologies used.
- 68.2 The Successful bidder shall establish an Enterprise/Network Management System for monitoring and measurement of the SLA parameters prescribed as per this RFP/contract document.

#### 69) EXIT MANAGEMENT



### 69.1 Purpose

- a) This clause sets out the provisions which will apply upon completion of the contract period or upon termination of the agreement for any reasons. The Parties shall ensure that their respective associated entities, in case of SCADL, any third party appointed by SCADL and in case of the Successful bidder, the sub-contractors, carry out their respective obligations set out in this Exit Management Clause.
- b) The exit management period starts 3 months before the expiry of contract or in case of termination of contract, the date on which the notice of termination is sent to the Successful bidder.
- c) The exit management period ends on the date agreed upon by SCADL or one year after the beginning of the exit management period, whichever is earlier.
- d) The Parties shall ensure that their respective associated entities, authorized representative of or its nominated agencies and the vendor carry out their respective obligations set out in this Exit Management Clause.
- e) Before the expiry of the exit management period, the Successful bidder shall deliver to SCADL or its nominated agencies all new or up-dated materials from the categories, and shall not retain any copies thereof, except that the Successful bidder shall be permitted to retain one copy of such materials for archival purposes only.

### 69.2 Cooperation and Provision of Information

#### a) ***During the exit management period:***

- (i) The Successful bidder will allow SCADL or any third party appointed by SCADL, access to information reasonably required to define the then current mode of operation associated with the provision of the services to enable SCADL or any third party appointed by SCADL to assess the existing services being delivered;
- (ii) Promptly on reasonable request by SCADL or any third party appointed by SCADL, the Successful bidder shall provide access to and copies of all information held or controlled by them which they have prepared or maintained in accordance with the "Contract", the Project Plan, SLA and Scope of Work, relating to any material aspect of the services. SCADL or any third party appointed by SCADL shall be entitled to copy all such information. Such information shall be limited to the details pertaining to the scope under the contract. The successful bidder shall permit SCADL or any third party appointed by SCADL to have reasonable access to its employees and facilities as reasonably required by SCADL or any third party appointed by SCADL to understand the methods of delivery of the services employed by the Successful bidder and to assist appropriate knowledge transfer.
- (iii) Before the end of exit management period, the Successful bidder will ensure a successful trial run of Network administration, Facility management including helpdesk management etc. by SCADL or by any third party appointed by SCADL.

#### b) ***Confidential Information, Security and Data***

- (i) The Successful bidder will promptly, on the commencement of the exit management period, supply to SCADL or any third party appointed by SCADL the following:
  - Information relating to the current services rendered and performance data relating to the performance of sub-contractors/ bandwidth providers in relation to the services.
  - Documentation related to Intellectual Property Rights.
  - All confidential information related to SCADL.
  - Documentation relating to sub-contractors.

- All current and updated SCADL data as is reasonably required by SCADL or any third party appointed by SCADL for purposes of transitioning the services to SCADL or any third party appointed by SCADL, in a format prescribed by SCADL or any third party appointed by SCADL.
  - All other information (including but not limited to documents, records and agreements) relating to the services reasonably necessary to enable SCADL or any third party appointed by SCADL, to carry out due diligence in order to transition the provision of the Services to SCADL or any third party appointed by SCADL, (as the case may be).
- (ii) Before the expiry of the exit management period, the Successful bidder shall deliver to SCADL or any third party appointed by SCADL all new or up-dated materials from the categories set out above and shall not retain any copies thereof.
- (iii) Before the expiry of the exit management period, unless otherwise provided under the “Contract”, SCADL or any third party appointed by SCADL shall deliver to the Successful bidder all forms of “Successful bidder’s” confidential information which is in the possession or control of SCADL or any third party appointed by SCADL.
- c) Right of Access to Premises**
- (i) At any time during the exit management period, where Assets are located at the Successful bidder’s premises, the Successful bidder will be obliged to give reasonable rights of access to (or, in the case of Assets located on a third party's premises, procure reasonable rights of access to) SCADL or any third party appointed by SCADL in order to take stock of the Assets.
- (ii) The Successful bidder shall also give SCADL or any third party appointed by SCADL, right of reasonable access to its premises and shall procure SCADL or any third party appointed by SCADL, rights of access to relevant third party premises during the exit management period and for such period of time following termination or expiry of the “Contract” as is reasonably necessary to migrate the services to SCADL or any third party appointed by SCADL.
- d) General Obligations of the Successful bidder**
- (i) The Successful bidder shall provide all such information as may reasonably be necessary to bring into effect seamless handover as practicable in the circumstances to SCADL or any third party appointed by SCADL and which the Successful bidder has in its possession or control at any time during the exit management period.
- (ii) For the purposes of this Clause, anything in the possession or control of any Successful bidder, associated entity, or sub-contractor is deemed to be in the possession or control of the Successful bidder.
- (iii) The Successful bidder shall commit adequate resources to comply with its obligations under this Exit Management Clause.

### 69.3 Exit Management Plan

- (a) The Successful bidder shall provide SCADL or any third party appointed by SCADL with a recommended exit management plan ("Exit Management Plan") which shall deal with at least the following aspects of exit management in relation to the “Contract” as a whole and in relation to the Project Plan, SLA and Scope of Work.
- (b) A detailed programme of the transfer process that could be used in conjunction with SCADL or any third party appointed by SCADL including details of the means to be used to ensure continuing provision of the services throughout the transfer process and of the management structure to be used during the transfer.

- (c) Plans for the communication with such of the Successful bidder's sub-contractors, staff, suppliers, customers and any related third party as are necessary to avoid any material detrimental impact on SCADL's operations as a result of undertaking the transfer.
- (d) Identification of specific security tasks necessary at termination.
- (e) Plans for provision of contingent support to SCADL or any third party appointed by SCADL for a reasonable period after transfer for the purposes of seamlessly replacing the Services.
  - (i) The Successful bidder shall re-draft the Exit Management Plan annually to ensure that it is kept relevant and up to date.
  - (ii) Each Exit Management Plan shall be presented by the Successful bidder to and approved by SCADL or any third party appointed by SCADL.
  - (iii) In case of expiry or termination of contract, each Party shall comply with the Exit Management Plan.
  - (iv) During the exit management period, the Successful bidder shall use its best efforts to deliver the services.
  - (v) Payments during the Exit Management period shall be made in accordance with the Terms of Payment Clause.
  - (vi) This Exit Management plan shall be furnished in writing to SCADL or any third party appointed by SCADL within 90 days from the Effective Date of "Contract".

#### **70) INDEMNITY**

Successful Bidder will defend and/or settle any claims against SCADL that allege that Bidder branded product or service as supplied under this contract infringes the intellectual property rights of a third party. Successful Bidder will rely on Customer's prompt notification of the claim and cooperation with our defense. Bidder may modify the product or service so as to be non-infringing and materially equivalent, or we may procure a license. If these options are not available, we will refund to Customer the amount paid for the affected product in the first year or the depreciated value thereafter or, for support services, the balance of any pre-paid amount or, for professional services, the amount paid. Bidder is not responsible for claims resulting from any unauthorized use of the products or services. This section shall also apply to deliverables identified as such in the relevant Support Material except that Bidder is not responsible for claims resulting from deliverables content or design provided by Customer.

#### **71) RISK PURCHASE**

SCADL on identifying any material breach of contract by Bidder, shall give Bidder a cure period of 90 days to correct the breach. If Bidder fails to cure the breach in the said time duration and accept its inability to correct, SCADL may terminate the part of the contract that is breached and employ a third party to do the work on behalf of SCADL. Bidder shall not be liable for any compensation for the work executed this way. Bidder shall execute the balance part of work as agreed under the contract.

#### **72) APPROVALS / CLEARANCES**

- 72.1 Necessary approvals/ clearances concerned authorities, for establishing the proposed project are to be obtained by the Bidder, in case if any assistance is required from SCADL the same shall be extended accordingly after due consideration.
- 72.2 Necessary approvals / clearances from concerned authorities, as required, for fire protection, government duties / taxes are to be obtained by the Bidder.
- 72.3 Necessary approvals / clearances, from concerned authorities (like Nagarpalikas, Public Works Department (PWD), Department of Irrigation, State Electricity Board etc. for "Right of way"), as required, are to be obtained by the bidder for to meet the system requirements. However, SCADL will help in getting such grants and approvals from the concerned government departments.
- 72.4 Necessary approvals/ clearances from DoT/TEC/TRAI/ Concerned authorities/BSNL/any service provider,

for establishing the network and connecting different Network elements/ports to BSNL/ any service provider's circuits, shall be obtained by the Bidder.

### 73) PROJECT IMPLEMENTATION

- 73.1 SCADL or its designated agency will be responsible for project monitoring and all inspection, installation, commissioning and acceptance of work will be undertaken by them. All Invoices, Vouchers, Bills for supplied goods and services by the Service Provider under the scope of the work will be verified measured and accepted by such designated agency, for release of payment.
- 73.2 As part of implementation the successful bidder shall provide details of equipment that will be incorporated in the proposed system, material and manpower as required. The location for storing spare parts and quantity, if any, there on should also be clearly indicated.
- 73.3 The successful bidder will implement the project strictly as per the plan approved by SCADL. The successful bidder shall install and implement the proposed system at such locations as may be selected by SCADL within 16 weeks from the date of kick-off meeting. The successful bidder will have to complete provisional Acceptance Test of the equipment to the satisfaction of SCADL. This period may be extended depending upon the fulfilment of Conditions Precedent.
- 73.4 The successful bidder shall provide the necessary technical support, Standard Operating Procedure (SOP) and other information to SCADL and its user organizations in implementing the proposed system applications. SCADL at any time during the currency of the Agreement should have access to the proposed sites.
- 73.5 The successful bidder shall arrange to obtain all statutory permission (If any) at no cost to the SCADL.
- 73.6 The successful bidder may have to work during Holidays and Sundays, according to the urgency of work. The Service Provider will obtain such permission on his own in consultation with the SCADL. It will be the responsibility of the Service Provider to co-ordinate with all other stakeholders working with SCADL in order to obtain NOC required to execute the job.
- 73.7 The successful bidder shall not disturb or damage the exiting network of communication. If in case any damage to the network is done, the same shall be corrected with no extra cost. The agency shall also be responsible for paying penalty, as imposed by the service owner to which the damage is incurred.
- 73.8 In case of the material/solution supplied and installed is rejected owing to its non-conformity to the specification or due to the poor quality of workmanship, the same shall be replaced promptly.
- 73.9 Any damage caused to the property of SCADL while executing the job shall be solely responsibility of successful bidder's. In case any damage to the property is caused, the same will be recovered from the successful bidder. No extra cost shall be paid to the successful bidder for such reasons.
- 73.10 The successful bidder shall have to furnish the documentation of the work undertaken in consultation with SCADL representative. 3 sets of such documentation should be provided before the issue of completion certificate.
- 73.11 It is a turnkey project. The successful bidder shall be fully responsible for implementing the Project in totality and should include the items and their prices, if not included in Schedule of Requirement to complete the project on turnkey basis. Any claim whatsoever in this regard will not be entertained later on.
- 73.12 In the event of the delay in delivery of contracted services or services is not satisfactory the SCADL may procure goods/ services from else ware as prescribed in bid and successful bidder shall be liable without limitations for the difference between the cost of such substitution and the price set forth in the contract for the goods involved i.e. at the risk and cost of the successful bidder.
- 73.13 SCADL or its representatives reserves the right to visit any working site of the successful bidder with prior intimation. The concern successful bidder has to make necessary arrangement for the same.
- 73.14 The successful bidder shall be responsible and take required insurance for all of their representations working on the site at their own cost. SCADL will not be responsible for any loss or damage to any of the representatives of the successful bidder during the said contract.
- 73.15 All work shall be performed and executed by the successful bidder in strict conformity

with the engineer-in-charge / representative from SCADL and any relative instruction issued to the Service Provider by the SCADL from time to time.

73.16 SCADL shall associate few engineers / technicians during installation and commissioning work. The successful bidder shall ensure proper participation of the nominated personnel from SCADL and train them on the related system.

73.17 The successful bidder, will have to coordinate with the various stakeholder and Operators engaged with SCADL for execution of Ahmedabad Smart City Project for timely completion & commissioning of sites.

#### **74) THIRD PARTY AGENCY**

SCADL appointed PMC would monitor the project during implementation, commissioning and operation. The Agency will also conduct Final Acceptance Test as per the technical requirement of the Agreement and will issue the Certificate of Completion of each proposed site. Third Party Agency will verify the services provided by the successful bidder under the Agreement. The successful bidder will have to coordinate and co-operate with such agency.

#### **75) PROVISION OF SPACE / UTILITIES**

75.1 Necessary Raw electrical AC power supply at every site will be provided by the SCADL.

75.2 SCADL may decide at its discretion to change the location of sites during implementation or after implementation but during the Agreement period. The services shall be operational within a period of 15 days from the date the said request is made by SCADL.

75.3 SCADL shall reimburse the actual cost of relocation incurred by the successful bidder as verified by the designated Agency.

75.4 The entry and exit to the site for the equipment and personnel of the successful bidder shall be in accordance with Security Rules and Regulations that may apply to the Government Campus where the site is located.

75.5 SCADL shall allow or obtain the required permission to enable the successful bidder employees or its authorized personnel to enter in the premises where the Services are provided for related activities. This shall be in accordance with Security Rules and Regulations that may apply to the Government Campus where the site is located.

#### **76) WORK/SUB CONTRACT TO START-UPS AS PER POLICY GUIDELINES OF DEPT. OF S&T, GOVT. OF GUJARAT**

As per the provision in Electronics & IT/ITeS Start-up Policy Resolution No. ITS/10/2015/5284/IT dated 6th June, 2016 issued by Department of Science & Technology; in e-Governance project undertaken by Government Departments or its Boards, Corporations or parastatal bodies getting grants from the Government, the chosen solution provider or system integrator will pass on job work or will outsource part of the work of a value ranging between 5% to 10% of the Service components of the project such as Installation of equipment, service and repair etc. to the eligible start-ups/SME's and to students of short listed Technical Colleges in Gujarat with their firm registered in the state of Gujarat . In such arrangements, the responsibility of meeting SLAs (Service Level Agreements) will continue to belong to the solution provider or the system integrator.

**SECTION: 5**

**Service Level Agreement (SLA's)**

**&**

**Penalties**

## Section 5: SLA & Penalties

- SLA defines the terms of the successful bidder's responsibility in ensuring the performance of the network based on the agreed performance indicators as detailed in the agreement. Successful bidder has to co-ordinate with ISP and get the complaint closed and also has to produce documentary evidence regarding failure of Bandwidth by ISP & not by Network equipment's.
- The table below summarizes the performance indicators for the services to be offered by the bidder-

S/N	SLA Terms	Description
1	Network Backbone	'Network Backbone' refers to Internet Protocol (IP) based routing infrastructure at which, successful bidder has installed network devices for city Wide Area Network.
2	Uptime	'Uptime' refers to network backbone availability across various segments of City wide area network i.e. between Zonal office and ward offices and ward offices and junction/locations. "%Uptime" means ratio of 'up time' (in minutes) in a month to Total time (in minutes) in the month multiplied by 100.
3	Latency	'Latency' refers to the average time required for round-trip packet transfers between Selected Junctions/locations on the selected portions of the network Backbone during a calendar month.
4	Packet Loss	'Packet Loss' refers to the average percentage of IP packets transmitted between Selected Junctions/locations during a calendar month that are not successfully delivered.
5	Planned Network Outage	'Planned Network Outage' refers to unavailability of network services due to infrastructure maintenance activities such as configuration changes, up gradation or changes to any supporting infrastructure. Details related to such planned outage shall be approved by the SCADL or authorized authority and shall be notified to all the concerned stakeholder in advance (at least five working days). It is desirable that such outage shall be taken on Sundays or other Government holidays to the extent possible.
6	Unplanned Network Outage	'Unplanned Network Outage' refers to an instance in which no traffic can pass in or out through which users are connects to the network Backbone
7	Not keeping manpower	If successful bidder does not deploy the required specified quantity & quality of manpower as per RFP or a person deployed is not reporting to the duty, there would be a penalty per person per day as defined in below table and will be deducted from the quarterly payment
8	Accuracy of ANPR/RLVD/Speed Detection/Face Recognition System	a) SCADL or its nominated agency shall once in a month visit the CCC to check the accuracy of the said systems on random basis and mark out the difference if found lower than the accuracy level as per the SoW. Each such instance of accuracy lower than the defined limit shall be counted as an "instance" for penalty calculation
9	Incidence Resolution (Network)	The network outage, security or performance related issues impacting the network availability/performance and leading to unavailability of the services. Resolution of incidence as per below priority Levels: <ul style="list-style-type: none"> <li>• <b>L1 Level Severity:</b> Impacting DC or Command &amp; Control Center.</li> <li>• <b>L2 Level Severity:</b> impacting one or more Zones.</li> <li>• <b>L3 Level Severity:</b> Impacting one or Junctions/ Endpoints/ Offices</li> <li>• <b>L4 Level Severity:</b> Impacting one or more end devices/utilities</li> </ul>

S/N	SLA Terms	Description			
		#	Severity	Initial Response Time	Issue Resolution Time
		1	Level 1	15 Mins	1 Hour
		2	Level 2	30 Mins	2 Hours
		3	Level 3	60 Mins	6 Hours
		4.	Level 4	240 Mins	24 Hours
10	Incidence Resolution (DC)	<ul style="list-style-type: none"> <li>• Priority Level 1 Incident - Within 1 hr.</li> <li>• Priority Level 2 Incident - Within 12 hr.</li> <li>• Priority Level 3 Incident - Within 24 hr.</li> <li>• <b>Note:</b> Incidents will be logged in the Helpdesk and the O&amp;M Agency will have to resolve the incident and provide necessary updates through the Help Desk Portal and co-ordinate with the stakeholders. Root Cause should be identified for all incidents; if root cause is not identified then additional penalties will be levied.</li> </ul>			
11	Security Breach	<ul style="list-style-type: none"> <li>• Detection of security Breach - within 30 minutes</li> <li>• Mitigation of Security Breach - within 1 hr. from the time of Breach</li> <li>• <b>Note:</b> The security breach will include but not limited to successful penetration of any Virus, trojan, malwares, zero-day attacks, intrusion, Denial of Service Attacks, etc., up to the server level. In case of any compromise of data due to the Security Breach then double penalty will be levied (this will not be counted within the maximum penalty cap limit).</li> </ul>			
12	Request Resolution (DC)	<ul style="list-style-type: none"> <li>• Priority Level 1 Incident - Within 2 hr.</li> <li>• Priority Level 2 Incident - Within 24 hr.</li> <li>• Priority Level 3 Incident - Within 36 hr.</li> <li>• <b>Note:</b> Requests (like password reset, firewall port opening, hardening, etc.) will be logged in the Helpdesk and the successful bidder will have to resolve the request and provide necessary updates through the Help Desk Portal and co-ordinate with the stakeholders.</li> </ul>			

- Appropriate Penalties will be recovered from the quarterly payment if successful bidder is not able to achieve required Service levels as mentioned below:

S/N	SLA	Target	Penalties
1	Delay in Delivery of Hardware	As per Implementation Time Lines	<ul style="list-style-type: none"> <li>• 0.5% of Contract value of undelivered/delayed Items (as per Schedule-I &amp; II of Price BID) per week or part thereof for delay in delivery</li> <li>• Delay beyond 90days SCADL may terminate the contract and Forfeit the PBG.</li> </ul>
2	Delay in Implementation: Installation and Commissioning and FAT of hardware/software at Central and Site Location	As per Implementation Time Lines	<ul style="list-style-type: none"> <li>• 0.75% of Contract value of delayed part (as per Schedule-I &amp; II of Price BID) per week or part thereof for delay in implementation</li> <li>• Delay Beyond 150 days SCADL may terminate the contract and Forfeit the PBG)</li> </ul>

- The Overall Penalty for Schedule I & II shall be capped at 10 % of the contract value or 20 %

of the unpaid item, whichever is less. However maximum cap is 10 % of the contract value (Schedule I & II )

S/N	SLA	Target	Penalties
1	Network availability between Zonal and Junctions/locations	99.74%	<ul style="list-style-type: none"> <li>• 99.74% or Better= NIL</li> <li>• 99.50% to 99.73%=0.25% of QP</li> <li>• 99.00 to 99.49% = 0.50% of QP</li> <li>• less than 99% = 0.75% of QP</li> </ul>
2	Availability/Uptime of End Points like CCTV camera/ Wi-Fi APs/ Sensors/LED Display panel/ etc.	99.00%	<ul style="list-style-type: none"> <li>• 99.00% or Better= NIL</li> <li>• 98.50% to 98.99%=0.50% of QP</li> <li>• 98.00 to 99.49% = 1.00% of QP</li> <li>• less than 98% = 1.50% of QP</li> </ul>
3	Not keeping required Manpower	As per SLA	<ul style="list-style-type: none"> <li>• <b>Management level staffs like PM/ Manager:</b> 5000/- per day per person for un-sanctioned/ non-reporting</li> <li>• <b>All other staffs other than computer operator:</b> 1000/- per day per person for un-sanctioned/ non-reporting</li> <li>• <b>Computer operator:</b> Rs. 500/- per day per person for un-sanctioned/ non-reporting</li> <li>• <b>Above charges are in addition to deduction of actual wages for the period of absence based on the rate schedule</b></li> </ul>
4	Accuracy of ANPR/RLVD/Speed Detection/Face Recognition System	As per SLA	<ul style="list-style-type: none"> <li>• Rs. 100,000/- per "Instance" per month</li> </ul>
5	Delay in resolution of support/incidents for the devices installed by the bidder	As per SLA	<ul style="list-style-type: none"> <li>• Level 1: 0.25% of QP for every 2 Hours Delay in resolution.</li> <li>• Level 2: 0.25% of QP for every 3 Hours delay in resolution;</li> <li>• Level 3: 0.25% of QP for every 6 Hours delay in resolution</li> <li>• Level 4: 0.25% of QP for every 8 Hours delay in resolution</li> </ul>
6	Time Line for Retrieval from the Storage	Maximum 4 Hours for per request is allowed	<ul style="list-style-type: none"> <li>• 0.50 % of the QP for every instance of delay beyond 4-hours</li> <li>• Note: Data Retrieval Request Through a Request Log Mechanism</li> </ul>
7	Uptime of all IT components & services under scope	99.741% (at each individual component level)	<ul style="list-style-type: none"> <li>• For each component 99.241-99.741 - 1.0% of QP; 98.741-99.241 - 2.0% of QP</li> <li>• And so on If the uptime goes below 96.741, additional</li> </ul>

S/ N	SLA	Target	Penalties
			penalty of 1% will be charged on QP for each slab 1% downtime.
8	Uptime of all non-IT Components & services under scope	99.741% (at each individual component level)	<ul style="list-style-type: none"> <li>99.249-99.749 - 0.5% of QP; 98.749-99.249 - 1.0% of QP</li> <li>And so on If the uptime goes below 96.749%, additional penalty of 0.5% will be charged on QP for a slab of 1%.</li> </ul>
9	Security Breach	As per SLA	<ul style="list-style-type: none"> <li>3% Of QP for every 30 Minutes delay in detection and additional 1% for every 1 hr. delay in the mitigation of security breach</li> </ul>
10	Request Resolution (DC)	As per SLA	<ul style="list-style-type: none"> <li><b>Level 1</b> Incident 0.25% of QP for every 2 hr. delay in resolution; <b>Level 2</b> Incident 0.25% of QP for every 12 Hr. delay in resolution; <b>Level 3</b> Incident 0.25% of QP for every 18 hrs. delay in resolution</li> </ul>
11	Incident Resolution (DC)	As per SLA	<ul style="list-style-type: none"> <li><b>Level 1</b> Incident 0.25% of QP for every 2 hr. delay in resolution; <b>Level 2</b> Incident 0.25% of QP for every 6 Hr. delay in resolution; <b>Level 3</b> Incident 0.25% of QP for every 12 hrs. delay in resolution</li> </ul>

- Successful Bidder shall be paid Quarterly Payment (QP) as per the services provided to SCADL. The overall penalty would be generally capped at 10% of QP amount. If the cap of overall penalty is reached in two consecutive quarters, the penalty cap for the third quarter onwards, for each quarter will increase by 5% over the penalty cap for the preceding quarter till it reaches 25% of the QP. In addition to the applicable penalty and the provisions pertaining to closure/termination of contract, the SCADL shall be within its rights to undertake termination of contract if or anytime the penalty increases by 20 % of the QP. Once the penalty cap has increased beyond 10%, if the bidder through better performance delivery for any quarter, brings the leviable penalty below 10% then the computation of the 1st of the 2 consecutive quarters as referred above will reset and will begin afresh. Availability will be calculated on a quarterly basis.

**Note:** The above clause for penalties due to delay in FAT shall only be applicable for the delay attributed solely to the successful bidder as per his roles and responsibilities, delay due to other reasons shall not be considered.

## ***SECTION: 6***

# ***FORMATS & ANNEXURES***

## Format 1 – Pre-Qualification Bid Letter

To,  
CEO, SCADL  
Smart City Ahmedabad Development Limited  
Ramanbhai Patel Bhavan, Usmanpura  
Ahmedabad  
Gujarat- 380013.

Sir/Madam,

Sub: **“Selection of Implementing Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Ahmedabad, Gujarat”**

**Reference: RFP No: <Bid REFERENCE NUMBER> Dated <DD/MM/YYYY>**

We, the undersigned Bidder, having read and examined in detail the entire Bid documents do hereby propose to provide the services as specified in the above referred Bid document number along with the following:

- 1. Earnest Money Deposit (EMD):** We have enclosed an EMD in the form of a Demand Draft/ Bank Guarantee no. \_\_\_\_\_ dated xx/xx/xxxx for Rs. -----drawn on \_\_\_\_\_. This EMD is liable to be forfeited in accordance with the provisions of this RFP.
- 2. Contract Performance Bank Guarantee:** We hereby declare that in case the contract is awarded to us, we shall submit the contract performance bank guarantee in the form and General terms Conditions mentioned in this RFP and Contract document.
- 3.** We hereby declare that our bid is made in good faith, without collusion or fraud and the information contained in the bid is true and correct to the best of our knowledge and belief.
- 4.** We understand that our bid is binding on us and that you are not bound to accept a bid you receive.

Thanking you,

faithfully,

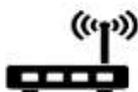
Yours

(Signature of the Bidder)

Seal Date:

Name & Designation:

BusinessAddress:



## Format 2 – General Information about the Bidder

Details of the Bidder			
1	Name of the Bidder & Address of the Bidder		
2	Status of the Company (Public Ltd/ Pvt. Ltd)		
3	Details of Incorporation of the Company	Date:	
		Ref. #	
4	Details of Commencement of Business	Date:	
		Ref. #	
5	Company Identification Number (CIN)		
6	Registered Office of the Company:		
7	Composition of the Board of Directors of the Company. Please furnish Name, Designation and their DIN.		
8	Name of Company Secretary of the Company and his/her Membership No.		
9	Name and address of the Statutory Auditors of Company for the Financial years 2013-14, 2014-15 and 2015-16.		
10	Valid Value Added Tax Registration No. & Date		
11	Valid Service Tax Registration No. & Date		
12	Permanent Account Number (PAN)		
13	Name & Designation of the contact person to whom all references shall be made regarding this tender		
14	Telephone No. (with STD Code)		
15	E-Mail of the contact person:		
16	Fax No. (with STD Code)		
17	Website		
	<b>Financial Details (as per audited Balance Sheets) (in Crore)</b>		
	<b>Year</b>	<b>2013-2014</b>	<b>2014-2015</b>
18	Net Worth		
	Total Turnover		
	PAT		

**Format 3 – Compliance & Eligibility Criteria Check list**

S/N	Specific Requirements	Documents Required	Compliance Yes/No	Supporting Documents Attached or Not
1				
2				

-----XXX-----

#### **Format 4 – Declaration Letter regarding Black listing**

To,  
CEO, SCADL  
Smart City Ahmedabad Development Limited  
Ramanbhai Patel Bhavan, Usmanpura  
Ahmedabad  
Gujarat- 380013.

Sir/Madam,

I have carefully gone through the Terms & Conditions contained in the RFP Document [No \_\_\_\_\_] regarding **“Selection of Implementing Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Ahmedabad, Gujarat”** for a period of five years. I hereby declare that my company has not been blacklisted by any Ministry of Government of India or by Government of any State in India or by Government of Gujarat or any of the Government PSUs.

I further certify that I am the Director/Company Secretary and am therefore, competent in my Company to make this declaration.

Yours faithfully,

(Signature of the Bidder)

Name & Designation  
Seal  
DIN/Membership No.  
Date:  
Business Address:

-----XXX-----

**Format 5 – Unconditional Acceptance of RFP terms and conditions**

To,  
CEO, SCADL  
Smart City Ahmedabad Development Limited  
Ramanbhai Patel Bhavan, Usmanpura  
Ahmedabad  
Gujarat- 380013.

Sir/ Madam,

I have carefully gone through the Terms & Conditions contained in the RFP Document [No \_\_\_\_\_] regarding “**Selection of Implementing Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Ahmedabad, Gujarat**” for a period of five years. I declare that all the terms and conditions and provisions of this RFP Document including Scope of Work and SLAs are acceptable to my company.

I further certify that I am the Director/Company Secretary and am therefore, competent in my Company to make this declaration.

Yours faithfully,

(Signature of the Bidder)

Name & Designation:

Seal DIN/Membership No.:

Date:

Business Address:

-----XXX-----

## **Format 6 – Annual Sales Turnover Statement**

(On Applicant's Statutory Auditor's letterhead)

Date: \_\_/\_\_/\_\_\_\_

This is to certify that we M/s \_\_\_\_\_ are the statutory Auditors of M/s \_\_\_\_\_ and that the below mentioned calculations are true as per the Audited Financial Statements of M/s \_\_\_\_\_ for the below mentioned years.

S/N	Turnover	2013-2014	2014-2015	2015-2016
1	Annual Turnover as per Profit and Loss Account			
2	Net worth as per Audited Balance Sheet			
3	Turnover generated solely from Networking (setting up or O&M) and Data Centre (setting up or O&M)			
4	Net Profit as per Profit & Loss Account			

**Note:** Please upload the Copy of the audited Annual Accounts of the company for the last three years including Balance sheet, Profit & Loss A/c, Directors' Report and Statuary Auditor's Report.

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### **Format 7 – Statement of Projects completed of Prescribed Nature & Size**

Please fill one separate form for each project according to pre-qualification criteria/eligibility criteria:

-

S/N	Criteria	Project
1	Implementer Company	
2	Customer's Name	
3	Scope of the Project	Please provide scope of the project, highlight Key Result Areas expected and achieved
4	Value of Project	
5	Did the project involve implementation and/or maintenance of WAN or Data Centre	Yes/No
6	Total No. of nodes	
7	Completion certificate	Yes/No
9	Customer Contact Person's detail	
A	Name	
B	Designation	
C	Email	
D	Phone	
E	Fax	
F	Mailing address	

Note:

1. The Copies of work order and the client certificates for satisfactory completion of the project and showing the order value and cost.
2. Completion certificate of prescribed nature and size as mentioned to be uploaded

-----XXX-----

## **Format 8 – Technical Bid Letter**

(Shall be submitted on Bidder's letterhead duly signed by Authorized signatory)

Date: \_\_/\_\_/\_\_

To,

CEO, SCADL  
Smart City Ahmedabad Development Limited  
Ramanbhai Patel Bhavan, Usmanpura  
Ahmedabad  
Gujarat- 380013.

Sir/ Madam,

**Sub: "Selection of Implementing Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Ahmedabad, Gujarat"**

Reference: RFP No: <Bid REFERENCE NUMBER> Dated <DD/MM/YYYY>

We, the undersigned Bidder, having read and examined in detail the entire Bid documents do hereby propose to provide the services as specified in the above referred Bid document number along with the following:

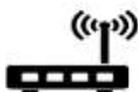
1. We declare that all the services shall be performed strictly in accordance with the bid documents. Further we agree that additional conditions or assumptions, if any, found in the RFP documents shall not be given effect to.
2. We agree to abide by this bid for a period of 180 days from the date of financial bid opening or for any further period for which bid validity is extended and it shall remain binding upon us and Bid may be accepted at any time before the expiration of that period.
3. We hereby declare that our bid is made in good faith, without collusion or fraud and the information contained in the bid is true and correct to the best of our knowledge and belief.
4. We understand that our bid is binding on us and that you are not bound to accept a bid you receive.

Thanking you,

Yours faithfully,

(Signature of the Bidder)

Seal Date:  
Name & Designation:  
Business Address:



-----XXX-----

**Format 9 – Technical Compliance Sheet**

S/N	Name of Item	Make	Model	Supporting Documents (uploaded or Not)
1				
2				
3				
4				

-----XXX-----

### **Format 10 – Relationship with OEM**

Bidder needs to enclose the authorization on OEM's letterhead for direct OEM support for major critical equipment's like routers, switch network device etc. During the contract period, if OEM declares any equipment as end of support for any reasons, OEM has to replace that equipment with better or equivalent products without any cost to SCADL. OEM has to also submit on their letter head, complete details on the support available for the equipment, their end of support dates and replacement model if any. Format enclosed:

#### **"Format for Certificate of Support from OEM"**

To,

Dated: \_\_/\_\_/\_\_

CEO, SCADL  
Smart City Ahmedabad Development Limited  
Ramanbhai Patel Bhavan, Usmanpura  
Ahmedabad  
Gujarat- 380013.

Subject: Support for "<Name of OEM>" Inventory installed and in use for"  
\_\_\_\_\_

Reference: RFP No: <Bid Ref. NUMBER> Dated <DD/MM/YYYY>

Certified that the hardware / software proposed by M/s \_\_\_\_\_, for which our company, "Name of OEM" is the OEM, has been quoted for support in the bid.

Subject to existence of valid pre-purchased support contract with "<Name of OEM>" we undertake to provide the following:

1. TAC Support for operation, maintenance and upgrade of the quoted product on 24 x 7 basis up to \_\_\_\_\_.
2. RMA replacement when required identified and approved by "Name of OEM" Technical Team (with an equivalent or upgrade model)
3. Full support towards migration to IPV6 for the \_\_\_\_\_ network by studying, planning, designing and recommending the migration path and methodology.

We also certify that the Bidder and "Name of OEM" have agreed to execute agreement in the above respect subject to the Bidder being selected for the Project and Bidder loading support order on "Name of OEM", a copy of same shall be shared with you, with in 1 month of ordering of support by Bidder.

For Partner  
OEM

Authorized signatory of Bidder

For

Authorized signatory of OEM

<<BILL OF MATERIAL>>-----XXX-----

## **Format 11 – Proposed Technical Solution**

1. The Bidder is required to describe the proposed Technical Solution in this section. Following should be captured in the explanation:
  - ⇒ Clear articulation and description of the design and technical solution and various components including Infrastructure architecture, Application architecture, data Architecture and physical street layer architecture
  - ⇒ Extent of compliance to functional and technical requirements specified in the scope of work
  - ⇒ Technical Design and clear articulation of benefits to Govt. of various components of the solution vis-à-vis other options available.
  - ⇒ Strength of the Bidder to provide services including examples or case-studies of similar solutions deployed for other clients.
  - ⇒ Clearly articulate the Strategy and Approach and Methodology for Design, Installation, Configuration and Maintenance of hosted components, data recovery, hosting infrastructure of the project.
  - ⇒ Approach and Methodology for Management of SLA Requirements specified in the bid. Bidder is required to clearly articulate how the SLA requirements would be adhered.
  - ⇒ Detailed Project Plan with timelines, resource allocation, milestones etc. for supply, installation and commissioning of the various project components.
  - ⇒ Strength of the Bidder to provide services including examples or case-studies of similar solutions deployed for other clients
  - ⇒ Integration approach with existing Infrastructure
  - ⇒ Bidder shall provide a detailed project plan with timelines, handing over and taking over process, resource allocation, milestones etc. for setting up of required ICT infrastructure and its Operations & Maintenance.
  
2. The Bidder should provide detailed design and sizing calculation for the following listing all assumptions that have been considered:
  - ⇒ Supply, Installation and commissioning of ICT Infrastructure
  - ⇒ Operations & Maintenance
    - Help Desk Services
    - Escalation Plan
    - Training Content and Schedules
    - System Maintenance & Management
    - Network / Security Administration
    - Backup & Restoration
  
3. Bill of Material: This document should give details of all the proposed IT and Non-IT components, without specifying the costs. Please note that the bid shall get disqualified if

Bidder gives price details in the technical document.

4. Make & Model of all IT as well as non IT components along with datasheets highlighting the Technical Specification parameters in each datasheet for compliances
5. CVs of the Key Manpower proposed

-----XXX-----

## **Format 12 – Project Management Plan**

The Bidder shall give a detailed description of Project Management Plan it plans to implement as part of the Project “\_\_\_\_\_”.

Any Best practices that it would use could also be mentioned. Typical questions that would need to be answered include:

1. What kind of hierarchy for Project Management does the Bidder propose?
2. What issues generally arise with regard to Project management of WAN and Data Centre Projects?
3. How the Bidder plans to mitigate any risks with regard to project management?
4. How Bidder proposes to deploy manpower for Upgradation and O&M Operations?
5. Take Over Plan

-----XXX-----

**Format 13 – Core Project Team**

Bidder shall provide a detailed description of the proposed Core Project Team to be deployed for the O&M of project “\_\_\_\_\_”. The description should include details about the Project Team hierarchy and a detailed explanation of the role to be played by each individual that would be part of the O&M team.

-----XXX-----

## **Format 14 – Financial Bid Letter**

To,

CEO, SCADL  
Smart City Ahmedabad Development Limited  
Ramanbhai Patel Bhavan, Usmanpura  
Ahmedabad  
Gujarat- 380013.

Sir/ Madam,

Subject: **“Selection of Implementing Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Ahmedabad, Gujarat”**

Reference: RFP No: <Bid REFERENCE NUMBER> Dated <DD/MM/YYYY>

We, the undersigned Bidder, having read and examined in detail all the Bid documents in respect of **“Selection of Implementing Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Ahmedabad, Gujarat”** do hereby propose to provide services as specified in the Tender documents number <Bid REFERENCE NUMBER> Dated <DD/MM/YYYY>

### 1. PRICE & VALIDITY

- All the prices mentioned in our Bid are in accordance with the terms as specified in the Bid documents. All the prices and other terms and conditions of this Bid are valid for a period of 180 calendar days from the date of opening of the financial Bids.
- We hereby confirm that our Bid prices are exclusive all taxes. However, all the applicable taxes are quoted separately under relevant sections.
- We have studied the clause relating to Indian Income Tax and hereby declare that if any Income Tax, surcharge on Income Tax, Professional and any other corporate Tax is altered under the law, we shall pay the same.

### 2. UNIT RATES

- We have indicated in the relevant schedules enclosed the unit rates for the purpose of on account of payment as well as for price adjustment in case of any increase to / decrease from the scope of work under the contract.

### 3. DEVIATIONS

- We declare that all the services shall be performed strictly in accordance with the

Bid Documents Further we agree that additional conditions, if any, found in the bid documents, shall not be given effect to.

4. TENDERPRICING

- We further confirm that the prices stated in our bid are in accordance with your Instruction to Bidders included in RFP document.

5. QUALIFYINGDATA

- We confirm having submitted the information as required by you in your Instruction to Bidders. In case you require any other further information/documentary proof in this regard before evaluation of our bid, we agree to furnish the same in time to your satisfaction.

6. BID PRICE

- We declare that our Bid Price is for the entire scope of the work as specified in the Schedule of Requirements and RFP documents. These prices are indicated in Price Bid of this Section attached with our bid as part of the RFP.

7. CONTRACT PERFORMANCE GUARANTEE BOND

- We hereby declare that in case the contract is awarded to us, we shall submit the contract performance guarantee bond in the form prescribed in Format 16- Proforma and as per Section 25 - General Terms and Conditions.

8. We hereby declare that our Bid is made in good faith, without collusion or fraud and the information contained in the Tender is true and correct to the best of our knowledge and belief.

9. We understand that our Bid is binding on us and that you are not bound to accept a bid you receive.

10. We confirm that no Technical deviations are attached here with this Financial offer.

Thanking you,

Yours faithfully,

(Signature of the Bidder)

Name & Designation:

Seal Date:

BusinessAddress:

## Format 15

### **Format of Earnest Money Deposit in the form of Bank Guarantee**

Ref:

Bank Guarantee No.

Date:

To,

CEO, SCADL  
Smart City Ahmedabad Development Limited  
Ramanbhai Patel Bhavan, Usmanpura  
Ahmedabad  
Gujarat- 380013.

Whereas ----- (here in after called "the Bidder") has submitted its bid dated ----- in response to" **RFP for Selection of Implementing Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Ahmedabad, Gujarat**" the KNOW ALL MEN by these presents that WE ----- having our registered office at ----- (hereinafter called "the Bank") are bound unto the Ahmedabad Municipal Corporation in the sum of ----- for which payment well and truly to be made to Ahmedabad Municipal Corporation, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this -----day of ----- --2016.

#### **THE CONDITIONS of this obligation are:**

1. The E.M.D. may be forfeited:
  - a. if a Bidder withdraws its bid during the period of bid validity
  - b. Does not accept the correction of errors made in the tender document;
  - c. In case of a successful Bidder, if the Bidder fails:
    - i. To sign the Contract as mentioned above within the time limit stipulated by purchaser or
    - ii. To furnish performance bank guarantee as mentioned above or
    - iii. If the bidder is found to be involved in fraudulent practices.
    - iv. If the bidder fails to submit the copy of purchase order & acceptance thereof.

We undertake to pay to the Purchaser up to the above amount upon receipt of its first written demand, without SCADL/ Purchaser having to substantiate its demand, provided that in its demand SCADL will specify that the amount claimed by it is due to it owing to the occurrence of any of the abovementioned conditions, specifying the occurred condition or conditions.

This guarantee will remain valid up to 9 months from the last date of bid submission. The Bank undertakes not to revoke this guarantee during its currency without previous consent of the OWNER/PURCHASER and further agrees that the guarantee herein contained shall continue to be enforceable till the OWNER/PURCHASER discharges this guarantee

The Bank shall not be released of its obligations under these presents by any exercise by the OWNER/PURCHAER of its liability with reference to the matters aforesaid or any of them or by reason or any other acts of omission or commission on the part of the OWNER/PURCHASER or any other indulgence shown by the OWNER/PURCHASEor by any other matter or things.

The Bank also agree that the OWNER/PUCHASER at its option shall be entitled to enforce this Guarantee against the Bank as a Principal Debtor, in the first instance without proceeding against the SELLER and not withstanding any security or other guarantee that the OWNER/PURCHASER may have in relation to the SELLER's liabilities.

Dated at \_\_\_\_\_ on this \_\_\_\_\_ day of \_\_\_\_\_ 2017.

\_\_\_\_\_

Signed and delivered by

\_\_\_\_\_

For & on Behalf of

Name of the Bank &  
Branch & Its official  
Address

Approved Bank: Any Nationalized Bank operating in India having branch at Ahmedabad.

**Format 16: Format for Performance Bank Guarantee**

Ref:

Bank Guarantee No.

Date:

To,

CEO, SCADL  
Smart City Ahmedabad Development Limited  
Ramanbhai Patel Bhavan, Usmanpura  
Ahmedabad  
Gujarat- 380013.

Dear Sir,

WHEREAS..... (Name of Bidder) hereinafter called "the Bidder" has undertaken, in pursuance of Agreement dated, (hereinafter referred to as "the Agreement for **RFP for Selection of Implementing Agency for Supply, Installation, Commissioning and operation & maintenance for of Pan city ICT Infrastructure and Integrated Command and Control Center for Smart City Ahmedabad, Gujarat** ", for the M/s Smart City Ahmedabad Development Limited ("SCADL")

AND WHEREAS it has been stipulated in the said Agreement that the Bidder shall furnish a Bank Guarantee ("the Guarantee") from a scheduled bank for the sum specified therein as security for implementing PROJECT.

1. WHEREAS we \_\_\_\_\_ ("the Bank", which expression shall be deemed to include its successors and permitted assigns) have agreed to give the Gujarat ISP Services Limited ("GISL") the Guarantee:

THEREFORE the Bank hereby agrees and affirms as follows:

The Bank hereby irrevocably and unconditionally guarantees the payment of all sums due and payable by the Bidder to SCADL under the terms of their Agreement dated \_\_\_\_\_. Provided, however, that the maximum liability of the Bank towards SCADL under this Guarantee shall not, under any circumstances, exceed \_\_\_\_\_ in aggregate.

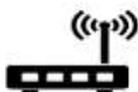
2. In pursuance of this Guarantee, the Bank shall, immediately upon the receipt of a written notice from SCADL in that behalf and without delay/demur or set off, pay to SCADL any and all sums demanded by SCADL under the said demand notice, subject to the maximum limits specified in Clause 1 above. A notice from SCADL to the Bank shall be sent by Registered Post (Acknowledgement Due) at the following address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Attention Mr. \_\_\_\_\_.

3. This Guarantee shall come into effect immediately upon execution and shall remain in force for a period of \_\_ months from the date of its execution. The Bank shall extend the Guarantee for a further period which may mutually be decided by the bidder and SCADL.

The liability of the Bank under the terms of this Guarantee shall not, in any manner whatsoever, be modified, discharged, or otherwise affected by:



- Any change or amendment to the terms and conditions of the Contract or the execution of any further Agreements.
  - Any breach or non-compliance by the Bidder with any of the terms and conditions of any Agreements/credit arrangement, present or Future, between Bidder and the Bank.
4. The BANK also agrees that SCADL at its option shall be entitled to enforce this Guarantee against the Bank as a Principal Debtor, in the first instance without proceeding against the BIDDER and not withstanding any security or other guarantee that SCADL may have in relation to the Bidder's liabilities.
  5. The BANK shall not be released of its obligations under these presents by reason of any act of omission or commission on the part of SCADL or any other indulgence shown by SCADL or by any other matter or thing whatsoever which under law would, but for this provision, have the effect of relieving the BANK.
  6. This Guarantee shall be governed by the laws of India and the courts of Ahmedabad shall have jurisdiction in the adjudication of any dispute which may arise hereunder.

Dated this ..... Day of .....,2017

Witness

(Signature)

(Signature)

(Name)

Bank Rubber Stamp

(Official Address)

(Name)

Designation with Bank Stamp  
Plus Attorney as per Power of  
Attorney No.

Dated:

**Draft Contract Agreement**

This **AGREEMENT** is made at \_\_\_\_\_, Ahmedabad, Gujarat, on this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_,  
BETWEEN

-----, hereinafter referred to as "**Client**", or "**SCADL**" (*which expression unless repugnant to the context therein shall include its administrator and permitted assignees*) of the **FIRST PART**;

**AND**

-----, a company registered under the Companies Act, 1956, having its registered office at -----, hereinafter referred to as "**Systems Integrator**" or "**SI**" or "**Vendor**", (which expression unless repugnant to the context therein, shall include its successors, administrators, executors and permitted assignees), of the **SECOND PART**.

Whereas SCADL has envisaged to implement **COMMAND AND CONTROL CENTER AND SMART FEATURES IN AHMEDABAD CITY**

And whereas SCADL published the RFP to seek services of a reputed IT firm as a System Integrator for Design, Development, Implementation & Maintenance of **COMMAND AND CONTROL CENTER AND SMART FEATURES IN AHMEDABAD CITY**

And whereas M/s. ----- has submitted its proposal for "**SELECTION OF IMPLEMENTATION AGENCY FOR INTEGRATED COMMAND AND CONTROL CENTER AND SMART FEATURES IN AHMEDABAD CITY**";

*AND whereas SCADL has selected M/s.....as successful bidder and issued Letter of Intent dated .....to the successful bidder who in turn signed and returned the same as a token of acceptance of Letter of Intent.*

And whereas SCADL and M/s. ----- have decided to enter into this Agreement on the terms and conditions stipulated hereinafter.

NOW, THEREFORE, in consideration of the premises covenants and promises contained herein and other good and valuable considerations, the receipt and adequacy of which is hereby acknowledged, the parties intending to be bound legally, IT IS HEREBY AGREED between the Parties as follows:

**1. Definitions**

In this Agreement, the following terms shall be interpreted as indicated, -

- (a) "SCADL" means Smart City Ahmedabad Development Limited;
  
- (b) "Contract" means this Agreement entered into between SCADL and the Systems Integrator including all attachments and annexure thereto and all documents incorporated by reference therein;

- (c) "Systems Integrator" means M/s. ----- interchangeably referred to as "SI" in the contract; and
- (d) "RFP" means the Tender Published by SCADL (Ref. No. -----) and the subsequent Corrigenda / Clarifications issued.
- (e) "Go Live or successful completion of implementation of the project" date means the 16<sup>th</sup> day after the date on which the proposed project stream becomes operational after successful conclusion of all acceptance tests to the satisfaction of SCADL.
- (f) "Deliverable" means any action / output generated by the SI while discharging their contractual obligations. This would include information and all the other services rendered as per the scope of work and as per the SLAs.
- (g) "Assets" refer to all the hardware / Software / furniture / data / documentations / manuals / catalogs / brochures / or any other material procured, created or utilised by the SI for the Ahmedabad City 'Smart Elements' Project.

## 2. Interpretation

The documents forming this Agreement are to be taken as mutually explanatory of one another. The following order shall govern the priority of documents constituting this Agreement, in the event of a conflict between various documents, the documents shall have priority in the following order:

- this Agreement;
- Scope of Services for the Systems Integrator (hereby annexed as **Annexure I**)
- Detail Commercial proposal of the Systems Integrator accepted by SCADL (hereby annexed as **Annexure II**)
- Clarification & Corrigendum Documents published by SCADL subsequent to the RFP for this work (hereby annexed as **Annexure III**)
- RFP Document of SCADL for this work (hereby annexed as **Annexure IV**)
- LoI issued by the SCADL to the successful bidder (hereby annexed as **Annexure V**); and
- Successful bidder's "Technical Proposal" and "Commercial Proposal" submitted in response to the RFP (hereby annexed as **Annexure VI**).

## 3. Term of the Agreement

The term of this agreement shall be a period of 5 years from the date of Go-Live of all Project Components.

In the event of implementation period getting extended beyond implementation timelines, for reasons not attributable to the Systems Integrator, SCADL reserves the right to extend the term of the Agreement by corresponding period to allow validity of contract for 5 years from the date of successful completion of implementation of all the project components. (Note: Delay caused due to any reason not in control of the SI would not be attributed to the project period.)

SCADL also reserves the right to extend the contract at its sole discretion for additional duration, beyond the 5 years of post-implementation period. Terms and conditions of such an extension shall be prepared by SCADL and finalized in mutual discussion with the SI.

#### 4. Work Completion timelines and Fees

##### Milestones and Payment Schedules for Implementation Phase

Based on findings of the Feasibility Study done by the SI, the SI may propose a change in the number of sites or individual units to be deployed in each phase as well as overall scope and a consequent change in phasing. AMC also retains the right to suo-moto change the number of sites or individual units to be deployed for each scope item. The final decision on change in phasing and related change in payment schedules shall be at the discretion of AMC.

#### 77) PAYMENTS TERMS

##### 34.4 *Payment Schedule'*

S/N	Activity	Payment (%)
1	<b>Hardware/Material component as per Schedule I of financial bid</b>	
	Successful Installation, commissioning & FAT of the Central Infrastructure (CCC, Data Center)	20% of the sum total of schedule I of financial bid
	Successful Installation, commissioning & FAT of each 25% the Site equipment (camera, Wi-Fi Hotspot, LED Display screens etc.)	15% of the sum total of schedule I of financial bid
	Successful Installation, commissioning & FAT of 100 % the Site equipment (camera, Wi-Fi Hotspot)	10% of the sum total of schedule I of financial bid
	Balance 10% as part of Quarterly Payments along with the payment's for O&M	10% of the sum total of schedule I of financial bid to be divided and paid as 20 equated quarterly installments along with O&M Payment
2	<b>Operations &amp; Maintenance as per Schedule II of financial bid</b>	
	Operational & Maintenance support during the contract period of 5 years	20 equal Quarterly Installments after the end of each quarter.

*Note: Payment milestones are independent of each individual activity.*

### 34.5 Payment Procedure

#### c) Hardware/Material Component

- 4) The successful bidder shall raise the component wise invoice (based on Work order) against the milestones achieved (as mentioned above in the payment schedule) and submit the invoice to SCADL.
- 5) The successful bidder shall submit 2 original copies of invoices (based on Work order) along with the necessary supporting documents confirming milestone achieved and other documents as required by SCADL for processing of invoices. Invoice should be raised in English language only.
- 6) SCADL shall verify the Invoices raised against the milestone achieved and shall make the payment.

#### d) O&M Component

- 4) The payments to the successful bidder will be made quarterly at the end of each quarter on acceptance of the invoice by the SCADL or its designated agency.
- 5) The invoice would be processed for release of payment within 45 days after due verification of the invoice and other supporting documents by SCADL or its designated agency.
- 6) In case the processing of the invoice gets delayed beyond 45 days from the date of acceptance of invoice, the successful bidder would be paid an adhoc amount of 50% of invoice value and the remaining amount would be released after getting clarifications, due verification and imposition of penalty, if any.

34.6 Payment shall be made in Indian Rupees. While making payment, necessary income tax and service tax deductions will be made.

## 5. Scope Extension

SCADL reserves right to extend the scope of services for the price & timelines as given in Annexure II & Annexure III to this Agreement. The SLAs applicable to this Contract shall be liable for the additional items too.

## 6. Service Level Agreement (SLA)

SCADL is looking at a very professional approach in the project implementation and its operations. System Integrator is expected to match these expectations of the service levels given in Annexure IV of this agreement. Any non-adherence to the SLAs would lead to the penalty, to be calculated as per the details given in Annexure III to this agreement.

## 7. Use & Acquisition of Assets during the term

System Integrator shall

- Take all reasonable & proper care of the entire hardware & software, network or any other information technology infrastructure components used for the project & other facilities leased/owned by the system integrator exclusively in terms of the delivery of the services as per this Agreement (hereinafter the “Assets” which include all the hardware / Software / furniture / data / documentations / manuals / catalogs / brochures / or any other material procured, created or utilized by the SI or the SCADL for the Ahmedabad City Surveillance Project in proportion to their use & control of such Assets which will include all upgrades/enhancements & improvements to meet the needs of the project arising from time to time; Note: Hardware upgrades outside the RFP scope would not be part of the original contract and would be catered through change request. Assets would be owned by the SCADL however, the System Integrator would be custodian of the same during the entire contract period and would take care of all wear-tear, insurance, theft etc. so that the SLAs are not affected.
- Maintain sufficient spare inventory at all times, for all items of importance;
- Keep all the tangible Assets in good & serviceable condition (reasonable wear & tear excepted) &/or the intangible Assets suitably upgraded subject to the relevant standards as stated in of the RFP to meet the SLAs mentioned in the contract & during the entire term of the Agreement.
- Ensure that any instructions or manuals supplied by the manufacturer of the Assets for use of Assets & which are provided to the system integrator will be followed by the System integrator & any person who will be responsible for the use of the Asset;
- Take such steps as may be recommended by the manufacturer of the Assets & notified to the system integrator or as may be necessary to use the Assets in a safe manner;
- Provide a well-prepared documentation for users in the manual, a clear plan for training, education & hand holding the users & shall form part of hand holding phase until bringing up the users to use software solution with speed & efficiency;
- To the extent that the Assets are under the control of the system integrator, keep the Assets suitably housed & in conformity with any statutory requirements from time to time applicable to them,
- Provide and facilitate access to SCADL or its nominated agencies & any persons duly authorized by him/her to enter any land or premises on which the Assets are for the time being sited so as to inspect the same, subject to any reasonable requirements;
- Not, knowingly or negligently use or permit any of the Assets to be used in contravention of any statutory provisions or regulation or in any way contrary to law;
- Use the Assets exclusively for the purpose of providing the Services as defined in the contract;
- Use the Assets only in accordance with the terms hereof & those contained in the SLAs;

- Maintain standard forms of comprehensive insurance including liability insurance, system & facility insurance & any other insurance for the Assets, data, software, etc. in the joint names of SCADL & the System Integrator, where SI shall be designated as the 'loss payee' in such insurance policies; SI shall be liable to pay premium for the insurance policy & shall ensure that each & every policy shall keep updated from time to time.
- Ensure the integration of the software with hardware to be installed and the current Assets in order to ensure the smooth operations of the entire solution architecture to provide efficient services to SCADL of this Project in an efficient and speedy manner; &
- Obtain a sign off from SCADL or its nominated agencies at each stage as is essential to close each of the above considerations.

Ownership of the Assets shall vest with SCADL on Go Live of the project. Ownership of any asset, created during the contractual period after go Live, shall also vest with SCADL upon creation of such asset. System Integrator shall not use SCADL data to provide services for the benefit of any third party, as a service bureau or in any other manner. Six months prior to the expiry of the contract (of the respective work streams), there shall be joint inspection by a team of SCADL and SI to assess the damages to the assets, if any. If damage to the assets is found unacceptable to the SCADL, then corresponding penalty/liquidated damages shall be recovered from SI from the fees payable.

## 8. Security and safety

- The System Integrator will comply with the directions issued from time to time by SCADL and the standards related to the security and safety in so far as it applies to the provision of the Services.
- System Integrator shall also comply with the SCADL Project's information technology security and standard policies in force from time to time as applicable.
- System Integrator shall use reasonable endeavors to report forthwith in writing to all the partners / contractors about the civil and criminal liabilities accruing due to by unauthorized access (including unauthorized persons who are employees of any Party) or interference with SCADL's data, facilities or Confidential Information.
- The System Integrator shall upon reasonable request by SCADL or his/her nominee(s) participate in regular meetings when safety and information technology security matters are reviewed.
- System Integrator and its partners / sub-contractors shall promptly report in writing to each other and SCADL any act or omission which they are aware that could have an adverse effect on the proper conduct of safety and information technology security at SCADL's Facilities.

## 9. Indemnity

The System Integrator agrees to indemnify and hold harmless SCADL, its officers, employees and

agents(each a "Indemnified Party") promptly upon demand at any time and from time to time, from and against any and all losses , claims, damages, liabilities, costs (including reasonable attorney's fees and disbursements) and expenses (collectively, "Losses") to which the Indemnified Party may become subject, in so far as such losses directly arise out of, in any way relate to, or result from

- i. Any mis-statement or any breach of any representation or warranty made by the System Integrator or
- ii. The failure by the System Integrator to fulfil any covenant or condition contained in this Agreement, including without limitation the breach of any terms and conditions of this Agreement by any employee or agent of the System Integrator. Against all losses or damages arising from claims by third Parties that any Deliverable (or the access, use or other rights thereto), created System Integrator pursuant to this Agreement, or any equipment, software, information, methods of operation or other intellectual property created by System Integrator or sub-contractors pursuant to this Agreement, or the SLAs (I) infringes a copyright, trade mark, trade design enforceable in India, (II) infringes a patent issued in India, or (III) constitutes misappropriation or unlawful disclosure or use of another Party's trade secretes under the laws of India (collectively, "Infringement Claims"); provided, however, that this will not apply to any Deliverable (or the access, use or other rights thereto) created by (A) "Implementation of Project by itself or through other persons other than System Integrator or its sub-contractors; (B) Third Parties (i.e., other than System Integrator or sub-contractors) at the direction of SCADL, or
- iii. any compensation / claim or proceeding by any third party against SCADL arising out of any act, deed or omission by the System Integrator or
- iv. Claim filed by a workman or employee engaged by the System Integrator for carrying out work related to this Agreement. For the avoidance of doubt, indemnification of Losses pursuant to this section shall be made in an amount or amounts sufficient to restore each of the Indemnified Party to the financial position it would have been in had the losses not occurred.
- v. Any payment made under this Agreement to an indemnity or claim for breach of any provision of this Agreement shall include applicable taxes.

## 10. Third Party Claims

- a. Subject to Sub-clause (b) below, the System Integrator (the "Indemnified Party") from and against all losses, claims litigation and damages on account of bodily injury, death or damage to tangible personal property arising in favor or any person, corporation or other entity

(including the Indemnified Party) attributable to the Indemnifying Party's performance or non-performance under this Agreement or the SLAs.

- b. The indemnities set out in Sub-clause (a) above shall be subject to the following conditions:
- i) The Indemnified Party, as promptly as practicable, informs the Indemnifying Party in writing of the claim or proceedings and provides all relevant evidence, documentary or otherwise;
  - ii) The Indemnified Party shall, at the cost and expenses of the Indemnifying Party, give the Indemnifying Party all reasonable assistance in the defense of such claim including reasonable access to all relevant information, documentation and personnel. The indemnifying party shall bear cost and expenses and fees of the Attorney on behalf of the Indemnified Party in the litigation, claim.
  - iii) if the Indemnifying Party does not assume full control over the defense of a claim as provided in this Article, the Indemnifying Party may participate in such defense at its sole cost and expense, and the Indemnified Party will have the right to defend the claim in such manner as it may deem appropriate, and the cost and expense of the Indemnified Party will be borne and paid by the Indemnifying Party.
  - iv. The Indemnified Party shall not prejudice, pay or accept any proceedings or claim, or compromise any proceedings or claim, without the written consent of the Indemnifying Party;
  - v. system integrator hereby indemnify & hold indemnified the SCADL harmless from & against any & all damages, losses, liabilities, expenses including legal fees & cost of litigation in connection with any action, claim, suit, proceedings as if result of claim made by the third party directly or indirectly arising out of or in connection with this agreement.
  - vi. all settlements of claims subject to indemnification under this Article will: (a) be entered into only with the consent of the Indemnified Party, which consent will not be unreasonably withheld & include an unconditional release to the Indemnified Party from the claimant for all liability in respect of such claim; & (b) include any appropriate confidentiality agreement prohibiting disclosure of the terms of such settlement;
  - Viii. The Indemnified Party shall take steps that the Indemnifying Party may reasonably require to mitigate or reduce its loss as a result of such a claim or proceedings; &
  - ix. In the event that the Indemnifying Party is obligated to indemnify an Indemnified Party pursuant to this Article, the Indemnifying Party will, upon payment of such indemnity

in full, be subrogated to all rights & defenses of the Indemnified Party with respect to the claims to which such indemnification relates;

- x. In the event that the Indemnifying Party is obligated to indemnify the Indemnified Party pursuant to this Article, the Indemnified Party will be entitled to invoke the Performance Bank Guarantee, if such indemnity is not paid, either in full or in part, & on the invocation of the Performance Bank Guarantee, the Indemnifying Party shall be subrogated to all rights & defenses of the Indemnified Party with respect to the claims to which such indemnification relates.

## 11. Publicity

Any publicity by the SI in which the name of SCADL is to be used should be done only with the explicit written permission of the CEO, SCADL.

## 12. Warranties

a. The System Integrator warrants and represents to SCADL that:

- i. It has full capacity and authority and all necessary approvals to enter into and to perform its obligations under this Agreement;
- ii. This Agreement is executed by a duly authorized representative of the System Integrator;
- iii. It shall discharge its obligations under this Agreement with due skill, care and diligence so as to comply with the service level agreement.

b. In the case of the SLAs, the System Integrator warrants and represents to SCADL, that:

- the System Integrator has full capacity and authority and all necessary approvals to enter into and perform its obligations under the SLAs and to provide the Services;
- The SLAs have been executed by a duly authorized representative of the System Integrator;
- The System Integrator is experienced in managing and providing works similar to the Services and that it will perform the Services with all due skill, care and diligence so as to comply with service level agreement;
- The Services will be provided and rendered by appropriately qualified, trained and experienced personnel as mentioned in the RFP;
- System Integrator has and will have all necessary licenses, approvals, consents of third Parties free from any encumbrances and all necessary technology, hardware and software to enable it to provide the Services;

- The Services will be supplied in conformance with all laws, enactments, orders and regulations applicable from time to time;
- System Integrator will warrant that the goods supplied under the contract are new, unused, of the most recent higher version /models and incorporate all recent improvements in design and materials unless provided otherwise in the contract. The System Integrator further warrants that the goods supplied under this contract shall have no defects arising from design, materials or workmanship.
- The overall system design shall be such that there is no choking point / bottleneck anywhere in the system (end-to-end) which can affect the performance / SLAs.

Subject to the fulfillment of the obligations of the System Integrator as provided for in sub clause (viii) above, in the event that such warranties cannot be enforced by SCADL, the System Integrator will enforce such warranties on behalf of SCADL and pass on to SCADL, the benefit of any other remedy received in relation to such warranties.

- c. Notwithstanding what has been stated elsewhere in this Agreement and the Schedules attached herein, in the event the System Integrator is unable to meet the obligations pursuant to the implementation of the Project, Operations and Maintenance Services and any related scope of work as stated in this Agreement and the Schedules attached herein, SCADL will have the option to invoke the Performance Guarantee after serving a written notice of thirty (30) days on the system Integrator.

### 13. Force Majeure & Vandalism

In the event that any Damages to items due to Vandalism (physical Majeure attack by public, tampering of equipment by AMC / SCADL staff or traffic police staff and damage due to accidents) or due to Force Majeure events (such as earthquake, fire, natural calamities, war, act of God) of any kind during Warranty Period and Maintenance Period shall be the liability of SCADL. In such case, SCADL/Authority shall request the successful Bidder to repair/replace the damaged unit and reinstall the same. All costs towards the same shall be reimbursed by SCADL/Authority to the successful Bidder less of insurance proceeds if need of replacement so arise then replacement shall be on tender rates only.

The System Integrator shall not be liable for forfeiture of its Performance Guarantee, imposition of liquidated damages or termination for default, if and to the extent that it's delay in performance or other failure to perform its obligations under the contract is the result of an event of Force Majeure. For purposes of this Clause, "Force Majeure" means an event beyond the "reasonable" control of the System Integrator, not involving the System Integrator's fault or negligence and not foreseeable. Such events may include Acts of God & acts of Government of

India in their sovereign capacity.

For the SI to take benefit of this clause it is a condition precedent that the SI must promptly notify the SCADL, in writing of such conditions and the cause thereof within 2 calendar days of the Force Majeure event arising. SCADL, or the consultant / committee appointed by the SCADL shall study the submission of the SI and inform whether the situation can be qualified one of Force Majeure. Unless otherwise directed by the SCADL in writing, the SI shall continue to perform its obligations under the resultant Agreement as far as it is reasonably practical, and shall seek all reasonable alternative means for performance of services not prevented by the existence of a Force Majeure event.

In the event of delay in performance attributable to the presence of a force majeure event, the time for performance shall be extended by a period(s) equivalent to the duration of such delay. If the duration of delay continues beyond a period of 30 days, SCADL and the SI shall hold consultations with each other in an endeavor to find a solution to the problem.

Notwithstanding anything to the contrary mentioned above, the decision of the SCADL shall be final and binding on the SI.

#### **14. Resolution of Disputes**

The SCADL and the SI shall make every effort to resolve amicably, by direct informal negotiation, any disagreement or dispute arising between them under or in connection with the Agreement. If after 30 days from the commencement of such informal negotiations, the SCADL and the SI are unable to resolve amicably such dispute, the matter will be referred to the Chairman, SCADL, and his / her opinion shall be taken.

If the SI doesn't agree with the opinion of the Chairman, SCADL, matter shall be referred to two Arbitrators: one Arbitrator to be nominated by SCADL and the other one to be nominated by the SI. In the case of the said Arbitrators not agreeing, then the matter will be referred to an umpire to be appointed by the Arbitrators in writing before proceeding with the reference. The award of the Arbitrators, and in the event of their not agreeing, the award of the Umpire appointed by them shall be final and binding on the parties. Proceedings under this clause shall be subject to applicable law of the Arbitration and Reconciliation Act, 1996 and the venue of such arbitration shall be Ahmedabad. Cost of arbitration shall be borne by each party proportionately. However, expenses incurred by each party in connection with the preparation, presentation shall be borne by the party itself. The provisions of this clause shall survive termination of this Agreement.

#### **15. Limitation of Liability towards SCADL**

The SI's liability under the resultant Agreement shall be determined as per the Law in force for the time being. The SI shall be liable to the SCADL for loss or damage occurred or caused or likely to occur on account of any act of omission on the part of the SI and its employees, including loss caused to AMC / SCADL on account of defect in goods or deficiency in services on the part of SI or his agents or any person / persons claiming through or under said SI. However, such

liability of SI shall not exceed the total contract value.

This limitation of liability shall not limit the SI's liability, if any, for damage to Third Parties caused by the SI or any person or firm acting on behalf of the SI in carrying out the scope of work envisaged herein.

#### **16. Conflict of Interest**

A conflict of interest is any situation that might cause an impartial observer to reasonably question whether SI actions are influenced by considerations of your firm's interest at the cost of Government.

The SI shall disclose to the SCADL in writing, all actual and potential conflicts of interest that exist, arise or may arise (either for the Systems Integrator or its Team) in the course of performing Services as soon as it becomes aware of such a conflict. However, I shall hold SCADL's interest paramount, without any consideration for future work, and strictly avoid conflict of interest with other assignments.

#### **17. Data Ownership**

All the data created as the part of the project shall be owned by SCADL. The SI shall take utmost care in maintaining security, confidentiality and backup of this data. Access to the data / systems shall be given by the SI only as per the IT Security Policy, approved by SCADL. SCADL / its authorized representative(s) shall conduct periodic / surprise security reviews and audits, to ensure the compliance by the SI Vendor to data / system security.

#### **18. Intellectual Property Rights**

- (A) For the customized solution developed for the project, IPR of the solution would belong exclusively to the SCADL.. SI shall also submit all the necessary instructions for incorporating any modification / changes in the software and its compilation into executable / installable product. SCADL may permit the SI, right to use the customized software for any similar project being executed by the same SI, with payment of reasonable royalty to SCADL for the same.
- (B) Deliverables provided to SCADL by System Integrator during the course of its performance under this Agreement, all rights, title and interest in and to such Deliverables, shall, as between System Integrator and SCADL, immediately upon creation, vest in SCADL. To the extent that the System Integrator Proprietary Information is incorporated within the Deliverables, System Integrator and its employees engaged hereby grant to SCADL a worldwide, perpetual, irrevocable, non-exclusive, transferable, paid-up right and license to use, copy, modify (or have modified), use and copy derivative works for the benefit of and internal use of SCADL.

#### **19. Fraud and Corruption**

SCADL requires that SI must observe the highest standards of ethics during the execution of the contract. In pursuance of this policy, SCADL defines, for the purpose of this provision, the terms set forth as follows:

- a. "Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of SCADL in contract executions.
- b. "Fraudulent practice" means a mis-presentation of facts, in order to influence a procurement process or the execution of a contract, to SCADL, and includes collusive practice among bidders (prior to or after Proposal submission) designed to establish Proposal prices at artificially high or non-competitive levels and to deprive SCADL of the benefits of free and open competition.
- c. "Unfair trade practices" means supply of services different from what is ordered on, or change in the Scope of Work.
- d. "Coercive Practices" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the execution of contract.

If it is noticed that the SI has indulged into the Corrupt / Fraudulent / Unfair / Coercive practices, it will be a sufficient ground for SCADL for termination of the contract and initiate black-listing of the vendor.

## **20. Exit Management**

### **(i) Exit Management Purpose**

This clause sets out the provisions, which will apply during Exit Management period. The Parties shall ensure that their respective associated entities carry out their respective obligations set out in this Exit Management Clause.

The exit management period starts, in case of expiry of contract, at least 6 months prior to the date when the contract comes to an end or in case of termination of contract, on the date when the notice of termination is sent to the SI. The exit management period ends on the date agreed upon by the SCADL or Six months after the beginning of the exit management period, whichever is earlier.

### **(ii) Confidential Information, Security and Data**

Systems Integrator will promptly on the commencement of the exit management period, supply to the SCADL or its nominated agencies the following:

- a) Information relating to the current services rendered and performance data relating to the performance of the services; Documentation relating to Surveillance Project, Project's Intellectual Property Rights; any other data and confidential information related to the Project;
- b) Project data as is reasonably required for purposes of the Project or for transitioning of the services to its Replacing Successful Bidder in a readily available format.

c) All other information (including but not limited to documents, records and agreements) relating to the services reasonably necessary to enable the SCADL and its nominated agencies, or its Replacing Vendor to carry out due diligence in order to transition the provision of the Services to SCADL or its nominated agencies, or its Replacing Vendor (as the case may be).

**(iii) Employees**

Promptly on reasonable request at any time during the exit management period, the Successful Bidder shall, subject to applicable laws, restraints and regulations (including in particular those relating to privacy) provide to SCADL a list of all employees (with job titles and communication address) of the Successful Bidder, dedicated to providing the services at the commencement of the exit management period; To the extent that any Transfer Regulation does not apply to any employee of the Successful Bidder, SCADL or Replacing Vendor may make an offer of contract for services to such employee of the Successful Bidder and the Successful Bidder shall not enforce or impose any contractual provision that would prevent any such employee from being hired by the SCADL or any Replacing Vendor.

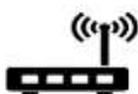
**(iv) Rights of Access to Information**

At any time during the exit management period, the Successful Bidder will be obliged to provide an access of information to SCADL and / or any Replacing Vendor in order to make an inventory of the Assets (including hardware / Software / Active / passive), documentations, manuals, catalogs, archive data, Live data, policy documents or any other material related to the Surveillance Project.

**(v) Exit Management Plan**

Successful Bidder shall provide SCADL with a recommended exit management plan ("Exit Management Plan") within 90 days of signing of the contract, which shall deal with at least the following aspects of exit management in relation to the SLA as a whole and in relation to the Project Implementation, the Operation and Management SLA and Scope of work definition.

- a) A detailed program of the transfer process that could be used in conjunction with a Replacement Vendor including details of the means to be used to ensure continuing provision of the services throughout the transfer process or until the cessation of the services and of the management structure to be used during the transfer;
- b) Plans for the communication with such of the Successful Bidder, staff, suppliers, customers and any related third party as are necessary to avoid any material detrimental impact on Project's operations as a result of undertaking the transfer;
- c) Plans for provision of contingent support to the Surveillance Project and Replacement Vendor for a reasonable period (minimum one month) after transfer.



- d) Successful Bidder shall re-draft the Exit Management Plan annually to ensure that it is kept relevant and up to date.
- e) Each Exit Management Plan shall be presented by the Successful Bidder to and approved by SCADL or its nominated agencies.
- f) The terms of payment as stated in the Terms of Payment Schedule include the costs of the Successful Bidder complying with its obligations under this Schedule.
- g) During the exit management period, the Successful Bidder shall use its best efforts to deliver the services.
- h) Payments during the Exit Management period shall be made in accordance with the Terms of Payment Schedule.

**(vi) Transfer Cost**

On premature termination of the contract for reasons other than those mentioned in section 23.a (Termination for Default), the Successful Bidder shall be paid the depreciated book value of the infrastructure cost and the other assets (as per the Asset Register). The depreciation rates and method followed will be as per Income Tax Rules.

Note: Amount to be payable by SI on premature termination of contract =  
 Pending amount to be paid against services delivered + Depreciated Book Value of the Assets as per Income Tax Rules – Applicable Penalty / Liquidated Damages

**21. Termination of Contract**

SCADL may, without prejudice to any other remedy under this Contract and applicable law, reserves the right to terminate for breach of contract by providing a written notice of 30 days stating the reason for default to the SI and as it deems fit, terminate the contract either in whole or in part:

- If the SI fails to deliver any or all of the project requirements / operationalization / go-live of the project within the time frame specified in the contract; or
- If the SI fails to perform any other obligation(s) under the contract.

Prior to providing a notice of termination to the SI, SCADL shall provide the SI with a written notice of 30 days instructing the SI to cure any breach/ default of the Contract, if SCADL is of the view that the breach may be rectified.

On failure of the SI to rectify such breach within 30 days, SCADL may terminate the contract by providing a written notice of 30 days to the SI, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to SCADL. In such event the SI shall be liable for penalty/liquidated damages imposed by the SCADL. The performance Guarantee shall be forfeited by the SCADL

**Consequences of Termination**

In the event of termination of this contract, SCADL is entitled to impose any such

obligations and conditions and issue any clarifications as may be necessary to ensure an efficient transition and effective continuity of the services which the SI shall be obliged to comply with and take all available steps to minimize the loss resulting from that termination/ breach, and further allow and provide all such assistance to SCADL and/ or succeeding vendor, as may be required, to take over the obligations of the SI in relation to the execution / continued execution of the requirements of this contract.

### **Plans and drawings**

All plans, drawings, specifications, designs, reports and other documents prepared by the Vendor in the execution of the contract shall become and remain the property of SCADL and before termination or expiration of this contract the SI shall deliver all such documents, prepared under this contract along with a detailed inventory thereof, to SCADL.

## **22. Miscellaneous**

### **a) Confidentiality**

"Confidential Information" means all information including Project Data (whether in written, oral, electronic or other format) which relates to the technical, financial and operational affairs, business rules, citizen information, video footages, alert information, any police department data, products, processes, data, crime / criminal secrets, design rights, know-how and personnel of each Party and its affiliates which is disclosed to or otherwise learned by the other Party or its consortium partners or subcontractors (whether a Party to the contract or to the SLA) in the course of or in connection with the contract (including without limitation such information received during negotiations, location visits and meetings in connection with the contract or to the SLA) or pursuant to the contract to be signed subsequently.

Except with the prior written permission of SCADL, the Systems Integrator (including all consortiums or partners) and its Personnel shall not disclose such confidential information to any person or entity not expected to know such information by default of being associated with the project, nor shall the Systems Integrator and it's Personnel make public the recommendations formulated in the course of, or as a result of the Project.

- a. The System Integrator recognizes that during the term of this Agreement, sensitive data will be procured & made available to it, its Sub contractors & agents & others working for or under the System Integrator. Disclosure or usage of the data by any such recipient may constitute a breach of law applicable causing harm not only to SCADL / AMC whose data is used but also to its stakeholders. System Integrator, its Subcontractors & agents are required to demonstrate utmost care, sensitivity & strict confidentiality. Any breach of this Article will result in SCADL & its nominees receiving a right to seek injunctive relief & damages from the System Integrator.

- b. Each Party agrees as to any Confidential Information disclosed by a Party to this Agreement (the "Discloser") to the other Party to this Agreement (the "Recipient") &
  - i. to take such steps necessary to protect the Discloser's Confidential information from unauthorized use, reproduction & disclosure, as the Recipient takes in relation to its own Confidential Information of the same type, but in no event less than reasonable care;
  - ii. to use such Confidential Information only for the purposes of this Agreement or as otherwise expressly permitted or expressly required by this Agreement or as otherwise permitted by the Discloser in writing; &
  - iii. not, without the Discloser's prior written consent, to copy the Confidential Information cause or allow it to be copied, directly or indirectly, in whole or in part, except as otherwise expressly provided in this Agreement, or as required in connection with Recipient's use as permitted under this Article, or as needed for the purposes of this Agreement, or as needed for the purposes of this Agreement, provided that any proprietary legends & notices (whether of the Discloser or of a Third Party) are not removed or obscured; &
  - iv. Not, to disclose, transfer, publish or communicate the Confidential Information in any manner, without the Discloser's prior written consent, to any person except as permitted under this Agreement.
  
- c. The restrictions of this Article shall not apply to confidential information that:
  - i. is or becomes generally available to the public through no breach of this Article by the Recipient; &
  - ii. Was in the recipient's possession free of any obligation of confidence prior to the time of receipt of it by the Recipient hereunder; &
  - iii. Is developed by the Recipient independently of any of discloser's Confidential Information; &
  - iv. Is rightfully obtained by the Recipient from third Parties authorized at that time to make such disclosure without restriction; &
  - v. is identified in writing by the Discloser as no longer proprietary or confidential; or vi. Is required to be disclosed by law, regulation or Court Order, provided that the recipient gives prompt written notice to the Discloser of such legal & regulatory requirement to disclose so as to allow the Discloser reasonable opportunity to contest such disclosure.
  
- d. to the extent that such disclosure is required for the purposes of this Agreement, either Party may disclose Confidential Information to:
  - i. its employees, agents & independent contractors & to any of its affiliates & their respective independent contractors or employees; &

- ii. its professional advisors & auditors, who require access for the purposes of this Agreement, whom the relevant Party has informed of its obligations under this Article & in respect of whom the relevant Party has informed of its obligations under this Article has used commercially reasonable efforts to ensure that they are contractually obliged to keep such Confidential Information confidential on terms substantially the same as set forth in this Article. Either Party may also disclose confidential Information or any entity with the other Party's prior written consent.
- e. The provisions of this Article shall survive three years post expiration or any earlier termination of this Agreement.
- f. confidential Information shall be & remain the property of the Discloser & nothing in this Article shall be construed to grant either Party any right or license with respect to the other Party's confidential Information otherwise than as is expressly set out in this Agreement.
- g. Subject as otherwise expressly provide in this Agreement all Confidential information in tangible or electronic form under the control of the Recipient shall either be destroyed, erased or returned to the Discloser promptly upon the earlier of: (i) the written request of the Disclose, or, (ii) termination or expiry of this Agreement or, in respect of the SLAs, the termination or expiry of the SLAs. Notwithstanding the forgoing, both Parties may retain, subject to the terms of this Article, reasonable number of copies of the other Party's Confidential Information solely for confirmation of compliance with the confidentiality obligations of this Agreement.
- h. Neither Party is restricted by the provisions of this clause from using (including using to provide products or perform services on behalf of third Parties) any ideas, concepts, know-how & techniques that are related to the Recipient's employees or agents (and not intentionally memorized for the purpose of later recording or use) (collectively, the "residuals"). This Article shall not permit the disclosure or use by either Party or any financial (including business plans), statistical, product, personnel or customer data or the other Party. Each party agrees not to disclose the source of the Residuals.
- i. Both Parties agree that monetary damages would not be a sufficient remedy for any breach of this clause by the other Party & that SCADL & system integrator, as appropriate, shall be entitled to equitable relief, including injunction & specific performance as a remedy for any such breach. Such remedies shall not be deemed to be the exclusive remedies for a breach by a Party of this clause, but shall be in addition to all other remedies available at law or equity to the damaged Party.
- j. in connection with the Services, System Integrator may from time to time undertake one or more quality assessment reviews for the purpose of improving the SCADL Project. In order for such reviews to be frank & candid, for the greatest benefit to both SCADL & System Integrator, they shall be kept confidential to the greatest extent possible. The Parties agree that any documentation created in connection with such quality

assessment reviews shall be confidential Information of System Integrator which is licensed to SCADL for any internal use except that in no event shall such documentation or the results of such reviews be discoverable or admissible (or used for any purpose) in any arbitration or legal proceedings against System integrator related to this Agreement or the Services.

A Non-disclosure agreement shall be signed separately between the Systems Integrator and SCADL.

**b) Standards of Performance**

The SI shall provide the services and carry out their obligations under the Contract with due diligence, efficiency and professionalism/ethics in accordance with generally accepted professional standards and practices. The SI shall always act in respect of any matter relating to this contract. The SI shall abide by all the provisions/Acts/Rules/Regulations, Standing orders, etc. of Information Technology as prevalent in the country. The SI shall also conform to the standards laid down by AMC or SCADL or Government of Gujarat or Government of India from time to time.

**c) Sub Contracts**

All the personnel working on the project and having access to the Servers / data should be on payroll of the Systems Integrator. Sub-contracting / out sourcing would be allowed only for work like

- Passive Networking & Civil Work during implementation,
- FMS staff for non- IT support during post-implementation
- Services of professional architect for design of command / viewing centers
- Services delivered by the respective Product Vendors / OEMs

The bidder is expected to provide details of the sub-contractors for the work which is allowed as mentioned in the clause. Use of personnel not on payroll of the SI shall be considered as sub-contracting.

The SI shall take prior approval from SCADL for sub-contracting any allowed work as mentioned in clause, if not already specified in the proposal and approved by SCADL. Such sub-contracting shall not relieve the SI from any liability or obligation under the Contract. The SI shall solely responsible for the work carried out by subcontracting under the contract.

**d) Care to be taken while working at Public Place**

SI should follow instructions issued by *concerned Competent Authority and SCADL* from time to time for carrying out work at public places. SI should ensure that there is no damage caused to any private or public property. In case such damage is caused, SI shall immediately bring it to the notice of concerned organization and SCADL in writing and pay necessary charges towards fixing of the damage. SI should also ensure that no traffic *congestion/public inconvenience* is caused while carrying out work at public places.

SI shall ensure that its employees/representatives don't breach privacy of any citizen or establishment during the course of execution or maintenance of the project.

**e) Compliance with Labor regulations**

The SI shall pay fair and reasonable wages to the workmen employed by him, for the contract undertaken by him and comply with the provisions set *forth* under the Minimum wages Act and *the Contract Labor Act 1970*.

**f) Independent Contractor**

Nothing in this Agreement shall be construed as establishing or implying any partnership or joint venture or *employment relationship* between the Parties to this Agreement. Except as expressly stated in this Agreement nothing in this Agreement shall be deemed to constitute any Party as the agent of any other Party or authorizes either Party (i) to incur any expenses on behalf of the other Party, (ii) to enter into any engagement or make any representation or warranty on behalf of the other Party, (iii) to pledge the credit of or otherwise bind or oblige the other Party, or (iv) to commit the other Party in any manner whatsoever in each case without obtaining the other Party's prior written consent.

**g) Waiver**

A waiver of any provision or breach of this Agreement must be in writing and signed by an authorized official of the Party executing the same. No such waiver shall be construed to affect or imply a subsequent waiver of the same provision or subsequent breach of this Agreement.

**h) Notices**

Any notice or other document, which may be given by either Party under this Agreement, shall be given in writing in person or by pre-paid recorded delivery post.

In relation to a notice given under this Agreement, any such notice or other document shall be addressed to the other Party's principal or registered office address as set out below

**SCADL:**

CEO, SCADL

Smart City Ahmedabad Development Limited



Ramanbhai Patel Bhavan, Usmanpura  
Ahmedabad  
Gujarat- 380013

**Systems Integrator:**

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Tel: -----

Fax: -----

Any notice or other document shall be deemed to have been given to the other Party when delivered (if delivered in person) if delivered between the hours of 9.30 am and 5.30 pm at the address of the other Party set forth above or on the next working day thereafter if delivered outside such hours, and 7 calendar days from the date of posting (if by letter).

**i) Performance Guarantee**

The SI shall submit performance guarantee which is unconditional & irrevocable equal to 10% of the order value of the contract in the format prescribed in RFP issued by any of the Nationalized Banks Only. The performance guarantee shall be valid for the term agreement & shall be renewed & maintained by the SI for the term of the agreement & extension, if any. The performance guarantee shall be forfeited / liquidated by the SCADL as a penalty in the event of failure to complete obligations or breach of any of the conditions by the SI.

**j) Personnel/Employees**

- i. Personnel/employees assigned by System Integrator to perform the services shall be employees of System Integrator or its sub-contractors, & under no circumstances will such personnel be considered as employees of SCADL. System Integrator shall have the sole responsibility for supervision & control of its personnel & for payment of such personnel's employee's entire compensation, including salary, legal deductions withholding of income taxes & social security taxes, worker's compensation, employee & disability benefits & the like & shall be responsible for all employer obligations under all laws as applicable from time to time. The SCADL shall not be responsible for the above issues concerning to personnel of System Integrator.
- ii. System Integrator shall use its best efforts to ensure that sufficient System Integrator personnel are employed to perform the Services, & that, such personnel have appropriate qualifications to perform the Services. SCADL or its nominated agencies shall have the right to require the removal or replacement of any system Integrator personnel performing work under this Agreement. In the event that SCADL requests that any System Integrator personnel be replaced, the substitution of such personnel

shall be accomplished pursuant to a mutually agreed upon schedule & upon clearance of the personnel based on profile review & upon schedule & upon clearance of the personnel based on profile review & personal interview by SCADL or its nominated agencies, within not later than 30 working days. System Integrator shall depute quality team for the project & as per requirements, SCADL shall have the right to ask System Integrator to change the team.

- iii. Management (Regional Head / VP level officer) of System Integrator needs to be involved in the project monitoring & should attend the review meeting at least once in a month.
- iv. The profiles of resources proposed by System Integrator in the technical proposal, which are considered for Technical bid evaluation, shall be construed as 'Key Personnel' & the System Integrator shall not remove such personnel without the prior written consent of SCADL. For any changes to the proposed resources, System Integrator shall provide equivalent or better resources (in terms of qualification & experience) in consultation with SCADL.
- v. Except as stated in this clause, nothing in this Agreement will limit the ability of System Integrator freely to assign or reassign its employees; provided that System Integrator shall be responsible, at its expense, for transferring all appropriate knowledge from personnel being replaced to their replacements. SCADL shall have the right to review & approve System Integrator's plan for any such knowledge transfer. System Integrator shall maintain the same standards for skills & professionalism among replacement personnel as in personnel being replaced.
- vi. Each Party shall be responsible for the performance of all its obligations under this Agreement & shall be liable for the acts & omissions of its employees & agents in connection therewith.

#### **k) Variations & Further Assurance**

- a. No amendment, variation or other change to this Agreement or the SLAs shall be valid unless made in writing & signed by the duly authorized representatives of the Parties to this Agreement.
- b. Each Party to this Agreement or the SLAs agree to enter into or execute, without limitation, whatever other agreement, document, consent & waiver & to do all other things which shall or may be reasonably required to complete & deliver the obligations set out in the Agreement or the SLAs.

#### **l) Severability & Waiver**

- a. if any provision of this Agreement or the SLAs, or any part thereof, shall be found by any court or administrative body of competent jurisdiction to be illegal, invalid or unenforceable the illegality, invalidity or unenforceability of such provision or part

provision shall not affect the other provisions of this Agreement or the SLAs or the remainder of the provisions in question which shall remain in full force & effect. The relevant Parties shall negotiate in good faith in order to agree to substitute any illegal, invalid or unenforceable provision with a valid & enforceable provision which achieves to the greatest extent possible the economic, legal & commercial objectives of the illegal, invalid or unenforceable provision or part provision within 7 working days.

- b. No failure to exercise or enforce & no delay in exercising or enforcing on the part of either Party to this Agreement or the SLAs of any right, remedy or provision of this Agreement or the SLAs shall operate as a waiver of such right, remedy or provision in any future application nor shall any single or partial exercise or enforcement of any right, remedy or provision preclude any other or further exercise or enforcement of any other right, remedy or provision.

**m) Entire Agreement**

This MSA, the SLAs & all schedules appended thereto & the contents & specifications of the of the RFP subsequent corrigenda issued thereon & clarification (undertakings) accepted by the SCADL constitute the entire agreement between the Parties with respect to their subject matter.

**n) Survivability**

The termination or expiry of this Agreement or the SLAs for any reason shall not affect or prejudice any terms of this Agreement, or the rights of the Parties under them which are either expressly or by implication intended to come into effect or continue in effect after such expiry or termination.

- o) The stamp duty payable for the contract shall be borne by the Systems Integrator.

- p) Deliverables will be deemed to be accepted by SCADL if no communication from the department is made to the SI after 30 days of delivery, provided the delivery is made to the designated officer and clearly highlighted in at least 3 weekly project progress reports

**23. Applicable Law**

The contract shall be governed by the laws and procedures prescribed by the Laws prevailing and in force in India, within the framework of applicable legislation and enactment made from time to time concerning such commercial dealings/processing. All legal disputes are subject to the jurisdiction of Ahmedabad courts only.

**IN WITNESS** whereof the parties hereto have signed this on the day, month and year first herein above written.

Signed, sealed and delivered

By -----

-----,

For and on behalf of the **Governor of the  
State of Gujarat**

Signed, sealed and delivered

By -----

For and on behalf of the "Systems Integrator",

-----

Witnesses:

(1)

(2)

**Attachments to the Agreement:**

- 1) Scope of Services for the Systems Integrator (Annexure I)
- 2) Detail Commercial proposal of the Systems Integrator accepted by SCADL (Annexure II)
- 3) Corrigendum Document published by SCADL subsequent to the RFP for this work (Annexure III)
- 4) RFP Document of SCADL for this work (Annexure IV)
- 5) Lol issued by the SCADL to the successful bidder (Annexure V)

The successful bidder's "Technical Proposal" and "Commercial Proposal" submitted in response to the RFP (Annexure VI)

**Annexure A - Locations for AMC/SCADL Cameras**

#	Zone	Entity Type	Location	Latitude	Longitude
1	South	Ward Office	DANILIMDA	As per KMZ file	As per KMZ file
2	North	Ward Office	INDIA_COLONY	As per KMZ file	As per KMZ file
3	East	Ward Office	NIKOL	As per KMZ file	As per KMZ file
4	East	Ward Office	RAMOL_HATHIJAN	As per KMZ file	As per KMZ file
5	Central	Ward Office	SHAHIBAG	As per KMZ file	As per KMZ file
6	South	Ward Office	LAMBHA	As per KMZ file	As per KMZ file
7	North	Ward Office	THAKKARBAPANAGAR	As per KMZ file	As per KMZ file
8	Central	Ward Office	KHADIA	As per KMZ file	As per KMZ file
9	West	Ward Office	NAVRANGPURA	As per KMZ file	As per KMZ file
10	Central	Ward Office	JAMALPUR	As per KMZ file	As per KMZ file
11	North	Ward Office	SAIJPUR_BOGHA	As per KMZ file	As per KMZ file
12	North	Ward Office	KUBERNAGR	As per KMZ file	As per KMZ file
13	West	Ward Office	VASNA	As per KMZ file	As per KMZ file
14	West	Ward Office	PALDI	As per KMZ file	As per KMZ file
15	New West	Ward Office	MAKTAMPURA	As per KMZ file	As per KMZ file
16	East	Ward Office	BHAIPURA	As per KMZ file	As per KMZ file
17	South	Ward Office	MANINAGAR	As per KMZ file	As per KMZ file
18	New West	Ward Office	THALTEJ	As per KMZ file	As per KMZ file
19	East	Ward Office	KHOKHRA	As per KMZ file	As per KMZ file
20	New West	Ward Office	GHATLODIA	As per KMZ file	As per KMZ file
21	West	Ward Office	RANIP	As per KMZ file	As per KMZ file
22	New West	Ward Office	GOTA	As per KMZ file	As per KMZ file
23	New West	Ward Office	BODAKDEV	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
24	New West	Ward Office	SARKHEJ	As per KMZ file	As per KMZ file
25	New West	Ward Office	VEJALPUR	As per KMZ file	As per KMZ file
26	New West	Ward Office	JODHPUR	As per KMZ file	As per KMZ file
27	West	Ward Office	S_P_STADIUM	As per KMZ file	As per KMZ file
28	West	Ward Office	NEW_WADAJ	As per KMZ file	As per KMZ file
29	West	Ward Office	SABARMATI	As per KMZ file	As per KMZ file
30	West	Ward Office	CHANDKHEDA	As per KMZ file	As per KMZ file
31	Central	Ward Office	DARIYAPUR	As per KMZ file	As per KMZ file
32	North	Ward Office	Runway	As per KMZ file	As per KMZ file
33	South	Ward Office	ISANPUR	As per KMZ file	As per KMZ file
34	South	Ward Office	INDRAPURI	As per KMZ file	As per KMZ file
35	South	Ward Office	VATVA	As per KMZ file	As per KMZ file
36	South	Ward Office	BAHERAMPURA	As per KMZ file	As per KMZ file
37	East	Ward Office	GOMTIPUR	As per KMZ file	As per KMZ file
38	East	Ward Office	AMRAIWADI	As per KMZ file	As per KMZ file
39	North	Ward Office	BAPUNAGAR	As per KMZ file	As per KMZ file
40	East	Ward Office	VASTRAL	As per KMZ file	As per KMZ file
41	East	Ward Office	ODHAV	As per KMZ file	As per KMZ file
42	North	Ward Office	NARODA	As per KMZ file	As per KMZ file
43	Central	Ward Office	ASARWA	As per KMZ file	As per KMZ file
44	North	Ward Office	SARASPUR_RAKHIYAL	As per KMZ file	As per KMZ file
45	West	Ward Office	NARANPURA	As per KMZ file	As per KMZ file
46	New West	Ward Office	SHAHPUR	As per KMZ file	As per KMZ file
47	New	Ward Office	CHANDLODIA	As per KMZ	As per KMZ

#	Zone	Entity Type	Location	Latitude	Longitude
	West			file	file
48	East	Ward Office	VIRATNAGAR	As per KMZ file	As per KMZ file
49	North	Zonal Office	North Zone	As per KMZ file	As per KMZ file
50	South	Zonal Office	South Zone	As per KMZ file	As per KMZ file
51	East	Zonal Office	East Zone	As per KMZ file	As per KMZ file
52	Central	Zonal Office	Central Zone	As per KMZ file	As per KMZ file
53	West	Zonal Office	West zone	As per KMZ file	As per KMZ file
54	New West	Zonal Office	New West Zone	As per KMZ file	As per KMZ file
55	New West	UHC	B J MEDICAL COLLEGE	As per KMZ file	As per KMZ file
56	North	UHC	BAPUNAGAR GENERAL HOSPITAL	As per KMZ file	As per KMZ file
57	South	UHC	L G HOSPITAL	As per KMZ file	As per KMZ file
58	South	UHC	RUKSHMANI HOSPITAL	As per KMZ file	As per KMZ file
59	North	UHC	SHARDABEN HOSPITAL	As per KMZ file	As per KMZ file
60	West	UHC	V S HOSPITAL	As per KMZ file	As per KMZ file
61	East	UHC	VIRATNAGAR	As per KMZ file	As per KMZ file
62	East	UHC	BHAIPURA	As per KMZ file	As per KMZ file
63	East	UHC	GOMTIPUR	As per KMZ file	As per KMZ file
64	East	UHC	RAJPUR	As per KMZ file	As per KMZ file
65	East	UHC	RAKHIAL	As per KMZ file	As per KMZ file
66	East	UHC	VASTRAL	As per KMZ file	As per KMZ file
67	East	UHC	RAMOL	As per KMZ file	As per KMZ file
68	North	UHC	BAPUNAGAR	As per KMZ file	As per KMZ file
69	East	UHC	AMRAIWADI	As per KMZ file	As per KMZ file
70	East	UHC	NIKOL	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
71	Central	UHC	DARIAPUR	As per KMZ file	As per KMZ file
72	Central	UHC	MADHUPURA	As per KMZ file	As per KMZ file
73	Central	UHC	KALUPUR	As per KMZ file	As per KMZ file
74	Central	UHC	KHADIA	As per KMZ file	As per KMZ file
75	Central	UHC	RAIKHAD	As per KMZ file	As per KMZ file
76	Central	UHC	JAMALPUR	As per KMZ file	As per KMZ file
77	New West	UHC	SHAHPUR	As per KMZ file	As per KMZ file
78	Central	UHC	DUDHESHWAR	As per KMZ file	As per KMZ file
79	Central	UHC	GIRDHARNAGAR	As per KMZ file	As per KMZ file
80	South	UHC	BEHRAMPURA	As per KMZ file	As per KMZ file
81	South	UHC	DANILIMDA	As per KMZ file	As per KMZ file
82	South	UHC	KANKARIA	As per KMZ file	As per KMZ file
83	South	UHC	LAMBHA	As per KMZ file	As per KMZ file
84	South	UHC	VATVA	As per KMZ file	As per KMZ file
85	South	UHC	INDRAPURI	As per KMZ file	As per KMZ file
86	South	UHC	MANINAGAR	As per KMZ file	As per KMZ file
87	South	UHC	GHODASAR	As per KMZ file	As per KMZ file
88	South	UHC	ISANPUR	As per KMZ file	As per KMZ file
89	South	UHC	KHOKHARA	As per KMZ file	As per KMZ file
90	West	UHC	PALDI	As per KMZ file	As per KMZ file
91	West	UHC	VASNA	As per KMZ file	As per KMZ file
92	West	UHC	AMBAVADI	As per KMZ file	As per KMZ file
93	West	UHC	NAVRANGPURA	As per KMZ file	As per KMZ file
94	West	UHC	STADIUM	As per KMZ	As per KMZ

#	Zone	Entity Type	Location	Latitude	Longitude
				file	file
95	West	UHC	NARANPURA	As per KMZ file	As per KMZ file
96	West	UHC	OLD WADAJ	As per KMZ file	As per KMZ file
97	West	UHC	NAVA WADAJ	As per KMZ file	As per KMZ file
98	West	UHC	SABARMATI	As per KMZ file	As per KMZ file
99	West	UHC	CHANDKHEDA	As per KMZ file	As per KMZ file
100	New West	UHC	GHATLODIA	As per KMZ file	As per KMZ file
101	New West	UHC	CHANDLODIA	As per KMZ file	As per KMZ file
102	West	UHC	RANIP	As per KMZ file	As per KMZ file
103	New West	UHC	THALTEJ	As per KMZ file	As per KMZ file
104	New West	UHC	VEJALPUR	As per KMZ file	As per KMZ file
105	New West	UHC	BODAKDEV	As per KMZ file	As per KMZ file
106	New West	UHC	JODHPUR	As per KMZ file	As per KMZ file
107	New West	UHC	SARKHEJ	As per KMZ file	As per KMZ file
108	West	UHC	KALI	As per KMZ file	As per KMZ file
109	New West	UHC	GOTA	As per KMZ file	As per KMZ file
110	North	UHC	SARASPUR	As per KMZ file	As per KMZ file
111	Central	UHC	ASARWA	As per KMZ file	As per KMZ file
112	North	UHC	SARDARNAGAR	As per KMZ file	As per KMZ file
113	North	UHC	THAKKARNAGAR	As per KMZ file	As per KMZ file
114	North	UHC	SAIJPUR	As per KMZ file	As per KMZ file
115	North	UHC	NARODA MUTHIYA	As per KMZ file	As per KMZ file
116	North	UHC	KRISHNANAGAR	As per KMZ file	As per KMZ file
117	North	UHC	KUBERNAGAR	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
118	North	UHC	NARODA ROAD	As per KMZ file	As per KMZ file
119	North	UHC	INDIA COLONY	As per KMZ file	As per KMZ file
120	North	UHC	NOBALNAGAR	As per KMZ file	As per KMZ file
121	South	UHC	VATVA	As per KMZ file	As per KMZ file
122	North	UHC	NARODA MUTHIYA	As per KMZ file	As per KMZ file
123	New West	UHC	SHAHPUR	As per KMZ file	As per KMZ file
124	Central	UHC	MADHUPURA	As per KMZ file	As per KMZ file
125	East	UHC	GOMTIPUR	As per KMZ file	As per KMZ file
126	New West	UHC	SARKHEJ CHC	As per KMZ file	As per KMZ file
127	West	UHC	CHANDKHEDA CHC	As per KMZ file	As per KMZ file
128	East	Dumping Ground	Gomtipur DR Pumping Station	As per KMZ file	As per KMZ file
129	Central	Dumping Ground	Shaiking Tower DR.Pumping Station	As per KMZ file	As per KMZ file
130	East	Dumping Ground	Rakhial Drainage Pumping Staion	As per KMZ file	As per KMZ file
131	South	Dumping Ground	Bag E Firdos Drainage Pumping Station	As per KMZ file	As per KMZ file
132	East	Dumping Ground	Nikol Drainage Pumping Station	As per KMZ file	As per KMZ file
133	East	Dumping Ground	Odhav_B Drainage Pumping Station	As per KMZ file	As per KMZ file
134	East	Dumping Ground	Odhav-E Drainage Pumping Station	As per KMZ file	As per KMZ file
135	East	Dumping Ground	Odhav-A Drainage Pumping Station	As per KMZ file	As per KMZ file
136	West	BRTS Depot	Chandkheda,	As per KMZ file	As per KMZ file
137	South	BRTS Depot	ITO	As per KMZ file	As per KMZ file
138	South	BRTS Depot	Chandola Talab	As per KMZ file	As per KMZ file
139	East	BRTS Depot	Odhav	As per KMZ file	As per KMZ file
140	New West	Fire Stations	Bodakdev Fire Station	As per KMZ file	As per KMZ file
141	East	Fire Stations	Gomtipur Fire Station	As per KMZ	As per KMZ

#	Zone	Entity Type	Location	Latitude	Longitude
				file	file
142	Central	Fire Stations	Jamalpur Fire Station	As per KMZ file	As per KMZ file
143	South	Fire Stations	Jasodanagar Fire Station	As per KMZ file	As per KMZ file
144	South	Fire Stations	Maninagar Fire Station	As per KMZ file	As per KMZ file
145	South	Fire Stations	Memnagar Fire station	As per KMZ file	As per KMZ file
146	Central	Fire Stations	Danapith Fire Station	As per KMZ file	As per KMZ file
147	North	Fire Stations	Naroda Fire Station	As per KMZ file	As per KMZ file
148	East	Fire Stations	Odhav Fire Station	As per KMZ file	As per KMZ file
149	Central	Fire Stations	Panchkuva Fire Station	As per KMZ file	As per KMZ file
150	West	Fire Stations	Sabarmati Fire Station	As per KMZ file	As per KMZ file
151	Central	Fire Stations	Shahpur Fire Station	As per KMZ file	As per KMZ file
152	Central	Municipal Parks	lokmanya tilak garden	As per KMZ file	As per KMZ file
153	Central	Municipal Parks	tirthankar udhyan	As per KMZ file	As per KMZ file
154	Central	Municipal Parks	late jethabhai parmar	As per KMZ file	As per KMZ file
155	Central	Municipal Parks	hitendra desai	As per KMZ file	As per KMZ file
156	Central	Municipal Parks	rajendra park	As per KMZ file	As per KMZ file
157	Central	Municipal Parks	dariyakhan ghumat garden	As per KMZ file	As per KMZ file
158	West	Municipal Parks	River front Garden	As per KMZ file	As per KMZ file
159	Central	Municipal Parks	Astodiya garden	As per KMZ file	As per KMZ file
160	Central	Municipal Parks	jagannath temple	As per KMZ file	As per KMZ file
161	Central	Municipal Parks	Asavalli garden	As per KMZ file	As per KMZ file
162	Central	Municipal Parks	madhubaugh	As per KMZ file	As per KMZ file
163	Central	Municipal Parks	hajipura garden	As per KMZ file	As per KMZ file
164	Central	Municipal Parks	raghnathji purohit garden	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
165	East	Municipal Parks	late ramlal rupala	As per KMZ file	As per KMZ file
166	North	Municipal Parks	bhimrav garden	As per KMZ file	As per KMZ file
167	North	Municipal Parks	soneria garden	As per KMZ file	As per KMZ file
168	East	Municipal Parks	late manubhai parmar	As per KMZ file	As per KMZ file
169	North	Municipal Parks	bapunagar post office garden	As per KMZ file	As per KMZ file
170	East	Municipal Parks	hathikhai garden	As per KMZ file	As per KMZ file
171	East	Municipal Parks	Madhuvan Garden, Nr.Sugyan School, Viratnagar	As per KMZ file	As per KMZ file
172	East	Municipal Parks	Gayatri Vatika Udhyan, Opp.Ambica Nagar School	As per KMZ file	As per KMZ file
173	East	Municipal Parks	Shree Public Park, Nr.Khodiar Mandir	As per KMZ file	As per KMZ file
174	East	Municipal Parks	Shrijee Public Park	As per KMZ file	As per KMZ file
175	East	Municipal Parks	Sad Guru Garden, Nikol	As per KMZ file	As per KMZ file
176	East	Municipal Parks	Dhruv Public Park, Vastral gate	As per KMZ file	As per KMZ file
177	East	Municipal Parks	Kailash Van, Nr.Gor na Kuva, Maninagar (East)	As per KMZ file	As per KMZ file
178	East	Municipal Parks	Nr. Jain Derasar Garden	As per KMZ file	As per KMZ file
179	West	Municipal Parks	Sheth T B Park (Parimal garden), Nr.Chadavad Police chowki	As per KMZ file	As per KMZ file
180	West	Municipal Parks	Dus Bungla Garden, Gulbai Tekra	As per KMZ file	As per KMZ file
181	West	Municipal Parks	Dr.Vanikar Udhyan (Mithakhali garden), Mithakhali Gam	As per KMZ file	As per KMZ file
182	West	Municipal Parks	Sheth B G Park (Bhikhabhai garden), Nr.Ellisbridge	As per KMZ file	As per KMZ file
183	West	Municipal Parks	Sachivalay Garden, Gulbai Tekra	As per KMZ file	As per KMZ file
184	West	Municipal Parks	Prahladbhai Patel Joggers Park, Ishvar Bhuvan	As per KMZ file	As per KMZ file
185	West	Municipal Parks	Gitabaug, Nr.Gitabaug Tubewell St.	As per KMZ file	As per KMZ file
186	West	Municipal Parks	Late Atmaram Mancharam Gujjar Udhyan (Fatehpura garden), Nr.Fatehpura Tubewell St.	As per KMZ file	As per KMZ file
187	West	Municipal Parks	Sheth Manjulal S Udhyan, Paldi	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
			Char Rasta, Paldi	file	file
188	West	Municipal Parks	Sharda Mandir Garden, Sharda Mandir Road, Paldi	As per KMZ file	As per KMZ file
189	West	Municipal Parks	Dhanvantari Aruvedic Udhyan, Opp.Prashan Park Soc.	As per KMZ file	As per KMZ file
190	West	Municipal Parks	Chandra Shekhar Azad Garden, Nr.Azad Soc.	As per KMZ file	As per KMZ file
191	West	Municipal Parks	Saurabh Garden, Nr.St.Xavier Loyla School	As per KMZ file	As per KMZ file
192	West	Municipal Parks	Late Popatlal Chotalal Dani Udhyan, Shreyas Crossing	As per KMZ file	As per KMZ file
193	West	Municipal Parks	Bansidhar Garden, Nr.Bansidhar Soc.	As per KMZ file	As per KMZ file
194	West	Municipal Parks	Prof.Chaitanya Khambholja Udhyan (Prajapati garden), Nr.Vasna Bus-Stand	As per KMZ file	As per KMZ file
195	West	Municipal Parks	Vasna Telephone Exchange Garden	As per KMZ file	As per KMZ file
196	West	Municipal Parks	Usmanpura Garden, Nr.Usmanpura Zonal Off.	As per KMZ file	As per KMZ file
197	West	Municipal Parks	Maharshi Arvind Ghosh Udhyan, Kameshvar Mahadev, Ankur	As per KMZ file	As per KMZ file
198	West	Municipal Parks	Pragatinagar Garden, Opp.Guj.Housing Board Off.	As per KMZ file	As per KMZ file
199	West	Municipal Parks	Vande Matram Udhyan, Nr.Swastik School	As per KMZ file	As per KMZ file
200	West	Municipal Parks	Senior Citizen Park, Bhimjipura	As per KMZ file	As per KMZ file
201	West	Municipal Parks	Lalabhai Chaganbhai Patel Udhyan, Nr.Tiger Flats	As per KMZ file	As per KMZ file
202	West	Municipal Parks	Late Shyamaldas Lallubhai Patel Udhyan, Ramnagar	As per KMZ file	As per KMZ file
203	West	Municipal Parks	Motera Lake	As per KMZ file	As per KMZ file
204	North	Municipal Parks	Sant Shree Santram Das Udhyan, B/h. Urvashi Bunglow,	As per KMZ file	As per KMZ file
205	North	Municipal Parks	Madhav Udhyan, Nr.Payalnagar Soc.	As per KMZ file	As per KMZ file
206	North	Municipal Parks	Sardar Patel Udhyan, Nr.Saurashtra Soc.	As per KMZ file	As per KMZ file
207	North	Municipal Parks	Oxizon Park,Behind Satyam Drainage Pumping Station	As per KMZ file	As per KMZ file
208	North	Municipal Parks	Garden Nr. Vraj Bhumi Soc. Nr. Kubernagar ITI Under Bridge	As per KMZ file	As per KMZ file
209	North	Municipal Parks	Sant Shree Kanvararam Saheb Mu. Udhyan	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
210	North	Municipal Parks	Late Revabhai Parmar Garden (Manchani Masjid garden), Opp.Ambar Cinema	As per KMZ file	As per KMZ file
211	Central	Municipal Parks	Sumel-5, Under Chamunda Bridge, Nr. Chamanpura Cross Road	As per KMZ file	As per KMZ file
212	South	Municipal Parks	Behrampura Udhyan, Nr. S.T.Workshop	As per KMZ file	As per KMZ file
213	South	Municipal Parks	Garden Nr.Ghodasar Smruti Mandir	As per KMZ file	As per KMZ file
214	South	Municipal Parks	Garden Opp. Pandit Din Dayal Circle	As per KMZ file	As per KMZ file
215	South	Municipal Parks	Garden Opp. Pandit Din Dayal Circle	As per KMZ file	As per KMZ file
216	South	Municipal Parks	Late Ramniklal V Bhatt Udhyan, Gordhanwadi Tekra	As per KMZ file	As per KMZ file
217	South	Municipal Parks	Dr.Baba Saheb Ambedkar Udhyan, Nr.Jogni Mata Mandir, Majur Gam	As per KMZ file	As per KMZ file
218	South	Municipal Parks	Chandubhai Bhavsar Muni. Udhyan Nr.Best High School	As per KMZ file	As per KMZ file
219	South	Municipal Parks	Rashmi Shukla Udhyan, Gordhanwadi	As per KMZ file	As per KMZ file
220	South	Municipal Parks	Tusharbai Deshmukh Muni. Udhyan, Opp.Sakriba Party Plot, Nr.C.T.M.Char Rasta	As per KMZ file	As per KMZ file
221	South	Municipal Parks	Garden Opp. Girivar Bunglows, Nr. CTM	As per KMZ file	As per KMZ file
222	South	Municipal Parks	Late Shambhubhai Jagabhai Udhyan	As per KMZ file	As per KMZ file
223	South	Municipal Parks	Laxminarayan Garden	As per KMZ file	As per KMZ file
224	South	Municipal Parks	Garden Nr. Partheshvar Appt. Nr. Sitabaug Soc.	As per KMZ file	As per KMZ file
225	New West	Municipal Parks	Sadipani Public Park, Opp. Chayaghar Chavni	As per KMZ file	As per KMZ file
226	New West	Municipal Parks	Chitra Public Park, Opp.Ghoyel Plaza	As per KMZ file	As per KMZ file
227	New West	Municipal Parks	Rohini Public Park, B/h.Jude Bunglows	As per KMZ file	As per KMZ file
228	New West	Municipal Parks	Ashvini Public Park, Nr.Simandhar Tower	As per KMZ file	As per KMZ file
229	New West	Municipal Parks	Sarvan Public Park, Nr.Shrijee dairy	As per KMZ file	As per KMZ file
230	New West	Municipal Parks	Panchamrut Public Park, Nr.Soham Tower	As per KMZ file	As per KMZ file
231	New	Municipal Parks	Surbhi Public Park, Ghoyal	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
	West		Tower, Nr.Sandesh Press	file	file
232	New West	Municipal Parks	Swastik Public Park, Ghoyal Tower, Nr.Sandesh Press	As per KMZ file	As per KMZ file
233	New West	Municipal Parks	Indra Public Park, Sarkari Vasahat	As per KMZ file	As per KMZ file
234	New West	Municipal Parks	Bodakdev Garden	As per KMZ file	As per KMZ file
235	New West	Municipal Parks	Nova Village Lake	As per KMZ file	As per KMZ file
236	New West	Municipal Parks	Saptrushi Public Park, B/h.I.O.C. Petrol Pump	As per KMZ file	As per KMZ file
237	New West	Municipal Parks	Keval Public Park, B/h.Bhagyoday Bank	As per KMZ file	As per KMZ file
238	New West	Municipal Parks	Utsav Public Park, Nr.Rahul Tower	As per KMZ file	As per KMZ file
239	New West	Municipal Parks	Parth Public Park, Nr.Hetvi Tower	As per KMZ file	As per KMZ file
240	New West	Municipal Parks	Varahi Public Park, Riddhi Tower	As per KMZ file	As per KMZ file
241	New West	Municipal Parks	Visvamitra Public Park, B/h.Vasraj Tower	As per KMZ file	As per KMZ file
242	New West	Municipal Parks	Dhyan Public Park, Opp.Malav Talav	As per KMZ file	As per KMZ file
243	New West	Municipal Parks	Vidur Public Park, Opp.Malav Talav	As per KMZ file	As per KMZ file
244	New West	Municipal Parks	Kirtan Public Park, Revti Tower, Ramdev Nagar Cross Rd.	As per KMZ file	As per KMZ file
245	New West	Municipal Parks	Pujan Public Park, B/h.Rudra Bunglows, Nr.Ashish School	As per KMZ file	As per KMZ file
246	New West	Municipal Parks	Mukta Public Park, Nr.Ashvamegh Bunglows No.6	As per KMZ file	As per KMZ file
247	New West	Municipal Parks	Swami Public Park	As per KMZ file	As per KMZ file
248	New West	Municipal Parks	Amrut Public Park	As per KMZ file	As per KMZ file
249	New West	Municipal Parks	Pacha Lake	As per KMZ file	As per KMZ file
250	New West	Municipal Parks	Bhairavi Public Park, Visramnagar	As per KMZ file	As per KMZ file
251	New West	Municipal Parks	Pandav Public Park, Nr.Nand Bunglows	As per KMZ file	As per KMZ file
252	New West	Municipal Parks	Kautilya Public Park, Nr.Water Tank	As per KMZ file	As per KMZ file
253	New West	Municipal Parks	Sadhna Public Park, Nr.Nalanda School	As per KMZ file	As per KMZ file
254	New West	Municipal Parks	Sargam Public Park, Nr.Nalanda School	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
255	New West	Municipal Parks	Meghanand Public Park, Nr.K.K.Nagar	As per KMZ file	As per KMZ file
256	New West	Municipal Parks	Kalptaru Public Park, Nr.Mandir	As per KMZ file	As per KMZ file
257	New West	Municipal Parks	Parijat Public Park, Vasoya Park	As per KMZ file	As per KMZ file
258	New West	Municipal Parks	Vivekanand Public Park, Viveka Chowk	As per KMZ file	As per KMZ file
259	New West	Municipal Parks	Memnagar Lake	As per KMZ file	As per KMZ file
260	New West	Municipal Parks	R.C.Technical Garden (Transist Pond)	As per KMZ file	As per KMZ file
261	New West	Municipal Parks	Sarathi Public Park, Nr.Memnagar Lake	As per KMZ file	As per KMZ file
262	New West	Municipal Parks	Upasna Public Park, Opp.Shiv Temple	As per KMZ file	As per KMZ file
263	New West	Municipal Parks	Chandan Public Park, Nr.Umang School	As per KMZ file	As per KMZ file
264	New West	Municipal Parks	Palas Public Park, Nr.Lov-Kush Tower	As per KMZ file	As per KMZ file
265	New West	Municipal Parks	Tulshi Public Park, Nr.Surdhara Bungalows	As per KMZ file	As per KMZ file
266	New West	Municipal Parks	Kandarb Public Park, Nr.Jay Ambe Nagar	As per KMZ file	As per KMZ file
267	New West	Municipal Parks	Vaman Public Park, Gulab Tower Road	As per KMZ file	As per KMZ file
268	New West	Municipal Parks	Lake Garden on Sola-Science City Rd.	As per KMZ file	As per KMZ file
269	New West	Municipal Parks	Altiyas Garden	As per KMZ file	As per KMZ file
270	New West	Municipal Parks	Virat Public Park, Nr.Balolnagar	As per KMZ file	As per KMZ file
271	New West	Municipal Parks	Vaibhai Public Park, Nr.School	As per KMZ file	As per KMZ file
272	New West	Municipal Parks	Vedant Public Park, Nr.Nagar Palika Off.	As per KMZ file	As per KMZ file
273	New West	Municipal Parks	Vidhata Public Park, Nr.Kamdhanu Soc.	As per KMZ file	As per KMZ file
274	New West	Municipal Parks	Varun Public Park, Nr.Railway Track	As per KMZ file	As per KMZ file
275	New West	Municipal Parks	Vedant Public Park, Opp.Jivandhara Soc.	As per KMZ file	As per KMZ file
276	New West	Municipal Parks	Mahara Public Park, Nr.Keshav Bungalows	As per KMZ file	As per KMZ file
277	New West	Municipal Parks	Vasisth Public Park, Nr.Novex Soc.	As per KMZ file	As per KMZ file
278	New	Municipal Parks	Marichi Public Park, Nr.Maulik	As per KMZ	As per KMZ

#	Zone	Entity Type	Location	Latitude	Longitude
	West		Tenament	file	file
279	New West	Municipal Parks	Jodhpur Plot	As per KMZ file	As per KMZ file
280	New West	Municipal Parks	Garden Opp. Vidhyanagar School, Nr. Vraj Dham, Prerna Tirth Drasar Road	As per KMZ file	As per KMZ file
281	New West	Municipal Parks	Bhakti Public Park, Taranga Hill Soc.	As per KMZ file	As per KMZ file
282	New West	Municipal Parks	Pancham Public Park, Nr.Chandlodia bridge	As per KMZ file	As per KMZ file
283	New West	Municipal Parks	Chandlodia Public Park-I, Nr.Chandlodia Nagar Palika	As per KMZ file	As per KMZ file
284	New West	Municipal Parks	Sarkhej Roja Garden, Nr.Roja Lake	As per KMZ file	As per KMZ file
285	New West	Municipal Parks	Lake Garden Nr.Dev City	As per KMZ file	As per KMZ file
286	New West	Municipal Parks	Garden Nr. SIMS Hospital, Scince City Road	As per KMZ file	As per KMZ file
287	North	Bus Depot (GSRTC)	Bapunagar	As per KMZ file	As per KMZ file
288	South	Bus Depot (GSRTC)	Chandola	As per KMZ file	As per KMZ file
289	South	Bus Depot (GSRTC)	Bareja	As per KMZ file	As per KMZ file
290	Central	Bus Depot (GSRTC)	Geeta Mandir GSRTC Bus Depots	As per KMZ file	As per KMZ file
291	West	Bus Depot (GSRTC)	Ranip GSRTC Bus Depots	As per KMZ file	As per KMZ file
292	North	Bus Depot (GSRTC)	Krishnanagar GSRTC Bus Depots	As per KMZ file	As per KMZ file
293	South	Bus Depot (GSRTC)	Maninagar GSRTC Bus Depots	As per KMZ file	As per KMZ file
294	West	Bus Depot (GSRTC)	Paldi GSRTC Bus Depots	As per KMZ file	As per KMZ file
295	West	Bus Depot (GSRTC)	Nehru Nagar GSRTC Bus Depots	As per KMZ file	As per KMZ file
296	Central	Railway Station	Kalupur Railway station	As per KMZ file	As per KMZ file
297	West	Railway Station	Sabarmati Railway station	As per KMZ file	As per KMZ file
298	South	Railway Station	Maninagar Railway station	As per KMZ file	As per KMZ file
299	Central	Railway Station	Ahmedabad Junction, Laxmi Bazar, Khadia, Ahmedabad, Gujarat 380002	As per KMZ file	As per KMZ file
300	North	Sensors-Water:WDS	Bhilvas (Old)	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
301	New West	Sensors-Water:WDS	Vaishnodevi MBR	As per KMZ file	As per KMZ file
302	South	Sensors-Water:WDS	Moni Hotel	As per KMZ file	As per KMZ file
303	New West	Sensors-Water:WDS	Nava Vanzar	As per KMZ file	As per KMZ file
304	South	Sensors-Water:WDS	Vatva-EWS	As per KMZ file	As per KMZ file
305	South	Sensors-Water:WDS	Lambha-Indira Nagar_V-2	As per KMZ file	As per KMZ file
306	South	Sensors-Water:WDS	Lambha-Gamtal	As per KMZ file	As per KMZ file
307	North	Sensors-Water:WDS	Shrenam Resi.	As per KMZ file	As per KMZ file
308	South	Sensors-Water:WDS	Sohang Hills	As per KMZ file	As per KMZ file
309	South	Sensors-Water:WDS	Danilimda-Jalghar	As per KMZ file	As per KMZ file
310	East	Sensors-Water:WDS	Vivekanand Nagar	As per KMZ file	As per KMZ file
311	East	Sensors-Water:WDS	Hattijan	As per KMZ file	As per KMZ file
312	East	Sensors-Water:WDS	Vinoba Bhave Nagar	As per KMZ file	As per KMZ file
313	East	Sensors-Water:WDS	Vinzol	As per KMZ file	As per KMZ file
314	East	Sensors-Water:WDS	Ramol-Sattalvdi	As per KMZ file	As per KMZ file
315	East	Sensors-Water:WDS	Odhav-FB-81	As per KMZ file	As per KMZ file
316	East	Sensors-Water:WDS	Odhav-Jogeshwar	As per KMZ file	As per KMZ file
317	East	Sensors-Water:WDS	Odhav-Panchayat	As per KMZ file	As per KMZ file
318	North	Sensors-Water:WDS	New Potaliya	As per KMZ file	As per KMZ file
319	New West	Sensors-Water:WDS	Mahatma Gandhi	As per KMZ file	As per KMZ file
320	New West	Sensors-Water:WDS	Science City	As per KMZ file	As per KMZ file
321	New West	Sensors-Water:WDS	Bhadaj	As per KMZ file	As per KMZ file
322	New West	Sensors-Water:WDS	Shilaj	As per KMZ file	As per KMZ file
323	New West	Sensors-Water:WDS	Bodakdev Torrent	As per KMZ file	As per KMZ file
324	New	Sensors-Water:WDS	Mamtpura	As per KMZ	As per KMZ

#	Zone	Entity Type	Location	Latitude	Longitude
	West			file	file
325	West	Sensors-Water:WDS	Narmanpura	As per KMZ file	As per KMZ file
326	New West	Sensors-Water:WDS	Fatehwadi	As per KMZ file	As per KMZ file
327	New West	Sensors-Water:WDS	Royal	As per KMZ file	As per KMZ file
328	New West	Sensors-Water:WDS	Muskan Garden	As per KMZ file	As per KMZ file
329	New West	Sensors-Water:WDS	TP. 204	As per KMZ file	As per KMZ file
330	South	Sensors-Water:WDS	J.Gaonthan	As per KMZ file	As per KMZ file
331	New West	Sensors-Water:WDS	Satellite	As per KMZ file	As per KMZ file
332	New West	Sensors-Water:WDS	Sayona City	As per KMZ file	As per KMZ file
333	New West	Sensors-Water:WDS	Gajraj	As per KMZ file	As per KMZ file
334	New West	Sensors-Water:WDS	Vande Mataram	As per KMZ file	As per KMZ file
335	West	Sensors-Water:WDS	BAPS	As per KMZ file	As per KMZ file
336	West	Sensors-Water:WDS	Akash	As per KMZ file	As per KMZ file
337	New West	Sensors-Water:WDS	Jagatpura	As per KMZ file	As per KMZ file
338	West	Sensors-Water:WDS	AMC (Sadar Patel)	As per KMZ file	As per KMZ file
339	North	Sensors-Water:WDS	Kalapi Nahar	As per KMZ file	As per KMZ file
340	Central	Sensors-Water:WDS	Civil	As per KMZ file	As per KMZ file
341	Central	Sensors-Water:WDS	MES	As per KMZ file	As per KMZ file
342	Central	Sensors-Water:WDS	Barfiwala Bhavan (Shahpur)	As per KMZ file	As per KMZ file
343	North	Sensors-Water:WDS	Noble Nagar	As per KMZ file	As per KMZ file
344	North	Sensors-Water:WDS	Naroda Memco	As per KMZ file	As per KMZ file
345	East	Sensors-Water:WDS	Odhav-2 (Fire)	As per KMZ file	As per KMZ file
346	East	Sensors-Water:WDS	Odhav-Varigruh	As per KMZ file	As per KMZ file
347	East	Sensors-Water:WDS	Odhav-1 (Ambika)	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
348	East	Sensors-Water:WDS	Muktidham	As per KMZ file	As per KMZ file
349	East	Sensors-Water:WDS	Nikol-Krishna Park	As per KMZ file	As per KMZ file
350	North	Sensors-Water:WDS	Bapunagar-Anand Flat	As per KMZ file	As per KMZ file
351	North	Sensors-Water:WDS	Bapu Nagar	As per KMZ file	As per KMZ file
352	North	Sensors-Water:WDS	Thakarbappa Nagar	As per KMZ file	As per KMZ file
353	East	Sensors-Water:WDS	Nikol-102	As per KMZ file	As per KMZ file
354	East	Sensors-Water:WDS	Nikol-101	As per KMZ file	As per KMZ file
355	North	Sensors-Water:WDS	Naroda TP-2	As per KMZ file	As per KMZ file
356	North	Sensors-Water:WDS	Naroda Jalpa	As per KMZ file	As per KMZ file
357	North	Sensors-Water:WDS	Hanspura	As per KMZ file	As per KMZ file
358	West	Sensors-Water:WDS	Vyaswadi	As per KMZ file	As per KMZ file
359	North	Sensors-Water:WDS	Naroda Gam	As per KMZ file	As per KMZ file
360	North	Sensors-Water:WDS	Saijpur Old	As per KMZ file	As per KMZ file
361	North	Sensors-Water:WDS	Krisna Nagar	As per KMZ file	As per KMZ file
362	East	Sensors-Water:WDS	Nikol Lilanagar	As per KMZ file	As per KMZ file
363	North	Sensors-Water:WDS	Asarva Housing	As per KMZ file	As per KMZ file
364	North	Sensors-Water:WDS	Sonariya	As per KMZ file	As per KMZ file
365	North	Sensors-Water:WDS	Potliya	As per KMZ file	As per KMZ file
366	North	Sensors-Water:WDS	Naroda-TP 12	As per KMZ file	As per KMZ file
367	North	Sensors-Water:WDS	Naroda Fire	As per KMZ file	As per KMZ file
368	North	Sensors-Water:WDS	Meghaninagar	As per KMZ file	As per KMZ file
369	North	Sensors-Water:WDS	Gurukrupa Nagar	As per KMZ file	As per KMZ file
370	North	Sensors-Water:WDS	Saijpur New	As per KMZ file	As per KMZ file
371	North	Sensors-Water:WDS	Bangla Area	As per KMZ	As per KMZ

#	Zone	Entity Type	Location	Latitude	Longitude
				file	file
372	North	Sensors-Water:WDS	C-Ward	As per KMZ file	As per KMZ file
373	North	Sensors-Water:WDS	G-Ward	As per KMZ file	As per KMZ file
374	Central	Sensors-Water:WDS	Batata Mill Dariapur	As per KMZ file	As per KMZ file
375	Central	Sensors-Water:WDS	Krishna Cinema (Relief Road)	As per KMZ file	As per KMZ file
376	Central	Sensors-Water:WDS	Jaganath	As per KMZ file	As per KMZ file
377	Central	Sensors-Water:WDS	Madhubag	As per KMZ file	As per KMZ file
378	Central	Sensors-Water:WDS	Aastodia	As per KMZ file	As per KMZ file
379	Central	Sensors-Water:WDS	Prem Darwaja	As per KMZ file	As per KMZ file
380	Central	Sensors-Water:WDS	Lal Darwaja	As per KMZ file	As per KMZ file
381	Central	Sensors-Water:WDS	Ranchhodpura	As per KMZ file	As per KMZ file
382	Central	Sensors-Water:WDS	Shahibag	As per KMZ file	As per KMZ file
383	South	Sensors-Water:WDS	Saptrushi	As per KMZ file	As per KMZ file
384	South	Sensors-Water:WDS	Kankria Football Ground	As per KMZ file	As per KMZ file
385	South	Sensors-Water:WDS	Jashoda Nagar	As per KMZ file	As per KMZ file
386	South	Sensors-Water:WDS	Rajeshwari	As per KMZ file	As per KMZ file
387	South	Sensors-Water:WDS	Prakash Nagar	As per KMZ file	As per KMZ file
388	South	Sensors-Water:WDS	Ram Rahim Tekra	As per KMZ file	As per KMZ file
389	South	Sensors-Water:WDS	New Suburban	As per KMZ file	As per KMZ file
390	South	Sensors-Water:WDS	Dhor Bazar	As per KMZ file	As per KMZ file
391	South	Sensors-Water:WDS	Meera Pragati	As per KMZ file	As per KMZ file
392	South	Sensors-Water:WDS	Pilot Dairy	As per KMZ file	As per KMZ file
393	Central	Sensors-Water:WDS	Kantodia Vas	As per KMZ file	As per KMZ file
394	North	Sensors-Water:WDS	Saraspur S.C.L. Housing	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
395	North	Sensors-Water:WDS	Chamanpura	As per KMZ file	As per KMZ file
396	North	Sensors-Water:WDS	Asarva Village	As per KMZ file	As per KMZ file
397	West	Sensors-Water:WDS	Panchasheel	As per KMZ file	As per KMZ file
398	West	Sensors-Water:WDS	Vasana Shahvadi	As per KMZ file	As per KMZ file
399	West	Sensors-Water:WDS	Keshavnagar	As per KMZ file	As per KMZ file
400	West	Sensors-Water:WDS	Dharamnagar	As per KMZ file	As per KMZ file
401	West	Sensors-Water:WDS	Navarangpura	As per KMZ file	As per KMZ file
402	West	Sensors-Water:WDS	Sharda	As per KMZ file	As per KMZ file
403	West	Sensors-Water:WDS	Azad Society	As per KMZ file	As per KMZ file
404	West	Sensors-Water:WDS	Nagari	As per KMZ file	As per KMZ file
405	West	Sensors-Water:WDS	Ellisbridge	As per KMZ file	As per KMZ file
406	West	Sensors-Water:WDS	Fatehpura	As per KMZ file	As per KMZ file
407	West	Sensors-Water:WDS	Sahidvan	As per KMZ file	As per KMZ file
408	West	Sensors-Water:WDS	Jawahar Nagar	As per KMZ file	As per KMZ file
409	West	Sensors-Water:WDS	Niyojan Nagar	As per KMZ file	As per KMZ file
410	New West	Sensors-Water:WDS	Mem Nagar	As per KMZ file	As per KMZ file
411	West	Sensors-Water:WDS	S.P. Stadium	As per KMZ file	As per KMZ file
412	New West	Sensors-Water:WDS	Sola Road	As per KMZ file	As per KMZ file
413	West	Sensors-Water:WDS	Ankur	As per KMZ file	As per KMZ file
414	West	Sensors-Water:WDS	Pragati Nagar	As per KMZ file	As per KMZ file
415	West	Sensors-Water:WDS	Usmanpura	As per KMZ file	As per KMZ file
416	West	Sensors-Water:WDS	Nava Vadaj	As per KMZ file	As per KMZ file
417	West	Sensors-Water:WDS	Sreenath	As per KMZ file	As per KMZ file
418	West	Sensors-Water:WDS	Harijanashram	As per KMZ	As per KMZ

#	Zone	Entity Type	Location	Latitude	Longitude
				file	file
419	West	Sensors-Water:WDS	Gitabaug	As per KMZ file	As per KMZ file
420	West	Sensors-Water:WDS	Gulbaitekra	As per KMZ file	As per KMZ file
421	East	Sensors-Water:WDS	Odhav-Arbuda Nagar	As per KMZ file	As per KMZ file
422	East	Sensors-Water:WDS	Kasiba Nagar	As per KMZ file	As per KMZ file
423	East	Sensors-Water:WDS	Bhaipura-Jogeshwari	As per KMZ file	As per KMZ file
424	South	Sensors-Water:WDS	Isanpur-Gulkomasol	As per KMZ file	As per KMZ file
425	South	Sensors-Water:WDS	Narol TCIDS	As per KMZ file	As per KMZ file
426	South	Sensors-Water:WDS	Vatva Rly Crossing	As per KMZ file	As per KMZ file
427	South	Sensors-Water:WDS	Bag-E-firdos-CTM	As per KMZ file	As per KMZ file
428	East	Sensors-Water:WDS	Bag-E-Firdos (Vastral)	As per KMZ file	As per KMZ file
429	South	Sensors-Water:WDS	Narol-Gam	As per KMZ file	As per KMZ file
430	South	Sensors-Water:WDS	Shahvadi	As per KMZ file	As per KMZ file
431	South	Sensors-Water:WDS	Vatva Gam	As per KMZ file	As per KMZ file
432	South	Sensors-Water:WDS	Vatva Nigam	As per KMZ file	As per KMZ file
433	South	Sensors-Water:WDS	Smurti Mandir	As per KMZ file	As per KMZ file
434	South	Sensors-Water:WDS	Ghodaser	As per KMZ file	As per KMZ file
435	North	Sensors-Water:WDS	Sardar Nagar (Hansol)	As per KMZ file	As per KMZ file
436	North	Sensors-Water:WDS	Bhilvas New	As per KMZ file	As per KMZ file
437	East	Sensors-Water:WDS	Gomtipur-Rajpur	As per KMZ file	As per KMZ file
438	East	Sensors-Water:WDS	Daxini Society	As per KMZ file	As per KMZ file
439	East	Sensors-Water:WDS	Gomtipur-Drainage	As per KMZ file	As per KMZ file
440	East	Sensors-Water:WDS	Khokhra	As per KMZ file	As per KMZ file
441	East	Sensors-Water:WDS	Silver Cotton Mill	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
442	East	Sensors-Water:WDS	Sukhram Nagar	As per KMZ file	As per KMZ file
443	East	Sensors-Water:WDS	TP.10	As per KMZ file	As per KMZ file
444	East	Sensors-Water:WDS	Gomtipur-Hathikhai	As per KMZ file	As per KMZ file
445	East	Sensors-Water:WDS	Rakhiyal Housing	As per KMZ file	As per KMZ file
446	East	Sensors-Water:WDS	Laxmi Narayan	As per KMZ file	As per KMZ file
447	East	Sensors-Water:WDS	Subhash Market	As per KMZ file	As per KMZ file
448	East	Sensors-Water:WDS	Satyam Nagar	As per KMZ file	As per KMZ file
449	East	Sensors-Water:WDS	Rakhiyal Village	As per KMZ file	As per KMZ file
450	West	Sensors-Water:WDS	Chand-GHB	As per KMZ file	As per KMZ file
451	West	Sensors-Water:WDS	Sailganga	As per KMZ file	As per KMZ file
452	West	Sensors-Water:WDS	Chand-Sreenath	As per KMZ file	As per KMZ file
453	West	Sensors-Water:WDS	Chand-Motera	As per KMZ file	As per KMZ file
454	New West	Sensors-Water:WDS	Vejalpur-Devas	As per KMZ file	As per KMZ file
455	New West	Sensors-Water:WDS	Vejalpur-Sharddha	As per KMZ file	As per KMZ file
456	New West	Sensors-Water:WDS	Jodhpur-Pramukh	As per KMZ file	As per KMZ file
457	New West	Sensors-Water:WDS	Vejalpur-Suryanagar	As per KMZ file	As per KMZ file
458	New West	Sensors-Water:WDS	Ambli-ADB	As per KMZ file	As per KMZ file
459	New West	Sensors-Water:WDS	Jhodhpur-ADB	As per KMZ file	As per KMZ file
460	New West	Sensors-Water:WDS	Bodakdev ADB	As per KMZ file	As per KMZ file
461	New West	Sensors-Water:WDS	Thaltej ADB	As per KMZ file	As per KMZ file
462	New West	Sensors-Water:WDS	Sola ADB	As per KMZ file	As per KMZ file
463	New West	Sensors-Water:WDS	Ghatlodiya-Jantanagar	As per KMZ file	As per KMZ file
464	New West	Sensors-Water:WDS	Gota Bandhan (Sola_Fb-91)	As per KMZ file	As per KMZ file
465	New	Sensors-Water:WDS	Sarkhej-Khumbharvas	As per KMZ	As per KMZ

#	Zone	Entity Type	Location	Latitude	Longitude
	West			file	file
466	New West	Sensors-Water:WDS	Sanklit Nagar	As per KMZ file	As per KMZ file
467	New West	Sensors-Water:WDS	Vejalpur-Baldevnagar	As per KMZ file	As per KMZ file
468	New West	Sensors-Water:WDS	Vejalpur-Shaivali	As per KMZ file	As per KMZ file
469	New West	Sensors-Water:WDS	Vejalpur-Salpara	As per KMZ file	As per KMZ file
470	New West	Sensors-Water:WDS	Vejalpur-Gamtal	As per KMZ file	As per KMZ file
471	New West	Sensors-Water:WDS	Vejalpur-Sarabhai	As per KMZ file	As per KMZ file
472	New West	Sensors-Water:WDS	Vejalpur-Prahaladnagar	As per KMZ file	As per KMZ file
473	New West	Sensors-Water:WDS	Anandnagar	As per KMZ file	As per KMZ file
474	New West	Sensors-Water:WDS	Jhodhpur-Gokulwas	As per KMZ file	As per KMZ file
475	New West	Sensors-Water:WDS	Vastrapur (Payal)	As per KMZ file	As per KMZ file
476	New West	Sensors-Water:WDS	Bodakdev Zonal Office	As per KMZ file	As per KMZ file
477	New West	Sensors-Water:WDS	Bodakdev Trilok	As per KMZ file	As per KMZ file
478	West	Sensors-Water:WDS	Memnagar	As per KMZ file	As per KMZ file
479	New West	Sensors-Water:WDS	Sola LT (Chanakyapuri)	As per KMZ file	As per KMZ file
480	New West	Sensors-Water:WDS	Thaltej Nilkanth Mahadev	As per KMZ file	As per KMZ file
481	New West	Sensors-Water:WDS	Ghatlodiya-Sattadhar	As per KMZ file	As per KMZ file
482	New West	Sensors-Water:WDS	Ghatlodia-Gamtal	As per KMZ file	As per KMZ file
483	New West	Sensors-Water:WDS	Ghatlodiya-Vidhata	As per KMZ file	As per KMZ file
484	New West	Sensors-Water:WDS	Gota KCT	As per KMZ file	As per KMZ file
485	New West	Sensors-Water:WDS	Kali Gamtal	As per KMZ file	As per KMZ file
486	New West	Sensors-Water:WDS	Nirnaynagar-Chandlodia	As per KMZ file	As per KMZ file
487	West	Sensors-Water:WDS	New Ranip-Balolnagar	As per KMZ file	As per KMZ file
488	New West	Sensors-Water:WDS	Kali-Santosh Nagar	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
489	New West	Sensors-Water:WDS	Kali-Bhut Bangla	As per KMZ file	As per KMZ file
490	East	Sensors-Water:Pumping Station	Gomtipur DR Pumping Station	As per KMZ file	As per KMZ file
491	Central	Sensors-Water:Pumping Station	Shaiking Tower DR.Pumping Station	As per KMZ file	As per KMZ file
492	East	Sensors-Water:Pumping Station	Rakhial Drainage Pumping Staion	As per KMZ file	As per KMZ file
493	South	Sensors-Water:Pumping Station	Bag E Firdos Drainage Pumping Station	As per KMZ file	As per KMZ file
494	East	Sensors-Water:Pumping Station	Nikol Drainage Pumping Station	As per KMZ file	As per KMZ file
495	East	Sensors-Water:Pumping Station	Odhav_B Drainage Pumping Station	As per KMZ file	As per KMZ file
496	East	Sensors-Water:Pumping Station	Odhav-E Drainage Pumping Station	As per KMZ file	As per KMZ file
497	East	Sensors-Water:Pumping Station	Odhav-A Drainage Pumping Station	As per KMZ file	As per KMZ file
498	North	Sensors-Water:Pumping Station	Naroda Muthiya Sewage Pumping Station	As per KMZ file	As per KMZ file
499	North	Sensors-Water:Pumping Station	Naroda GIDC Sewage Pumping Station	As per KMZ file	As per KMZ file
500	North	Sensors-Water:Pumping Station	Naroda Gayatri Sewage Pumping Station	As per KMZ file	As per KMZ file
501	North	Sensors-Water:Pumping Station	Naroda Satyam Sewage Pumping Station	As per KMZ file	As per KMZ file
502	North	Sensors-Water:Pumping Station	Saijpur Sewage Pumping Station	As per KMZ file	As per KMZ file
503	West	Sensors-Water:Pumping Station	Meghaninagar Sewage Pumping Station	As per KMZ file	As per KMZ file
504	Central	Sensors-Water:Pumping Station	Chamanpura Sewage Pumping Station	As per KMZ file	As per KMZ file
505	North	Sensors-Water:Pumping Station	Kubernagar G ward Sewage Pumping Station	As per KMZ file	As per KMZ file
506	North	Sensors-Water:Pumping Station	Kubernagar Maya Cenema Sewage Pumping Station	As per KMZ file	As per KMZ file
507	North	Sensors-Water:Pumping Station	Sardar Nagar Sewage Pumping Station	As per KMZ file	As per KMZ file
508	West	Sensors-Water:Pumping Station	Ambavadi (Bhadreshwar) Sewage Pumping Station	As per KMZ file	As per KMZ file
509	North	Sensors-Water:Pumping Station	Chiloda Sewage Pumping Station	As per KMZ file	As per KMZ file
510	East	Sensors-Water:Pumping Station	East Zone	As per KMZ file	As per KMZ file
511	East	Sensors-Water:Pumping Station	Odhav(new ) Sewage Pumping Station	As per KMZ file	As per KMZ file
512	East	Sensors-Water:Pumping	Odhav Ambikanagar Sewage	As per KMZ	As per KMZ

#	Zone	Entity Type	Location	Latitude	Longitude
		Station	Pumping Station	file	file
513	East	Sensors-Water:Pumping Station	Odhav Rabarivasahat Sewage Pumping Station	As per KMZ file	As per KMZ file
514	East	Sensors-Water:Pumping Station	Odhav Chhotalal Sewage Pumping Station	As per KMZ file	As per KMZ file
515	East	Sensors-Water:Pumping Station	Arbudanagar Sewage Pumping Station	As per KMZ file	As per KMZ file
516	East	Sensors-Water:Pumping Station	Amraivadi Sewage Pumping Station	As per KMZ file	As per KMZ file
517	North	Sensors-Water:Pumping Station	Rakhiyal Sewage Pumping Station	As per KMZ file	As per KMZ file
518	East	Sensors-Water:Pumping Station	Gomtipur Sewage Pumping Station	As per KMZ file	As per KMZ file
519	East	Sensors-Water:Pumping Station	Hathijan Sewage Pumping Station	As per KMZ file	As per KMZ file
520	East	Sensors-Water:Pumping Station	Viratnagar Sewage Pumping Station	As per KMZ file	As per KMZ file
521	East	Sensors-Water:Pumping Station	Nikol(New) Jivanvadi Sewage Pumping Station	As per KMZ file	As per KMZ file
522	East	Sensors-Water:Pumping Station	South Zone	As per KMZ file	As per KMZ file
523	South	Sensors-Water:Pumping Station	Bagefirdosh Sewage Pumping Station	As per KMZ file	As per KMZ file
524	South	Sensors-Water:Pumping Station	Indrapuri Sewage Pumping Station(New)	As per KMZ file	As per KMZ file
525	South	Sensors-Water:Pumping Station	Vatva Nigam Sewage Pumping Station	As per KMZ file	As per KMZ file
526	South	Sensors-Water:Pumping Station	Vatva Navana Sewage Pumping Station	As per KMZ file	As per KMZ file
527	South	Sensors-Water:Pumping Station	Isanpur (1)Mony Hotel Sewage Pumping Station	As per KMZ file	As per KMZ file
528	South	Sensors-Water:Pumping Station	Isanpur (2)Sewage Pumping Station	As per KMZ file	As per KMZ file
529	South	Sensors-Water:Pumping Station	Maninagar Sewage Pumping Station	As per KMZ file	As per KMZ file
530	South	Sensors-Water:Pumping Station	Baherampura Sewage Pumping Station	As per KMZ file	As per KMZ file
531	South	Sensors-Water:Pumping Station	New Suburban Sewage Pumping Station	As per KMZ file	As per KMZ file
532	South	Sensors-Water:Pumping Station	Narol Shahvadi Suburban Sewage Pumping Station	As per KMZ file	As per KMZ file
533	South	Sensors-Water:Pumping Station	Danilimda Sewage Pumping Station	As per KMZ file	As per KMZ file
534	East	Sensors-Water:Pumping Station	Central Zone	As per KMZ file	As per KMZ file
535	Central	Sensors-Water:Pumping Station	Jamalpur Sewage Pumping Station	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
536	Central	Sensors-Water:Pumping Station	Dariyapur Sewage Pumping Station	As per KMZ file	As per KMZ file
537	Central	Sensors-Water:Pumping Station	Girdharnagar Sewage Pumping Station	As per KMZ file	As per KMZ file
538	Central	Sensors-Water:Pumping Station	Shahpur Sewage Pumping Station	As per KMZ file	As per KMZ file
539	Central	Sensors-Water:Pumping Station	Shahibag Sewage Pumping Station	As per KMZ file	As per KMZ file
540	West	Sensors-Water:Pumping Station	West Zone	As per KMZ file	As per KMZ file
541	West	Sensors-Water:Pumping Station	Keshavnagar Sewage Pumping Station	As per KMZ file	As per KMZ file
542	West	Sensors-Water:Pumping Station	Shantivan Sewage Pumping Station, Paldi	As per KMZ file	As per KMZ file
543	West	Sensors-Water:Pumping Station	Sharda Sewage Pumping Station, Paldi	As per KMZ file	As per KMZ file
544	West	Sensors-Water:Pumping Station	Terminal Pumping	As per KMZ file	As per KMZ file
545	West	Sensors-Water:Pumping Station	Vasana Terminal Sewage Pumping Station(for 78 MLD STP)	As per KMZ file	As per KMZ file
546	West	Sensors-Water:Pumping Station	Vasana Terminal Sewage Pumping Station(for 126 MLD STP)	As per KMZ file	As per KMZ file
547	West	Sensors-Water:Pumping Station	Pirana Terminal Sewage Pumping Station (For 181 MLD Lagun STP)	As per KMZ file	As per KMZ file
548	West	Sensors-Water:Pumping Station	Pirana Terminal Sewage Pumping Station (For 180 MLD ASB STP)	As per KMZ file	As per KMZ file
549	South	Sensors-Water:Pumping Station	Vinzol Terminal Sewage Pumping Station (For 70 MLD STP)	As per KMZ file	As per KMZ file
550	West	Sensors-Water:Pumping Station	Vasana Terminal Sewage Pumping Station (For 240 MLD STP)	As per KMZ file	As per KMZ file
551	West	Sensors-Water:Pumping Station	Pirana Terminal Sewage Pumping Station (For GIDC)	As per KMZ file	As per KMZ file
552	New West	UHC	Gota	As per KMZ file	As per KMZ file
553	West	UHC	S.P.Stadium	As per KMZ file	As per KMZ file
554	East	UHC	vastral	As per KMZ file	As per KMZ file
555	West	UHC	Paldi	As per KMZ file	As per KMZ file
556	South	UHC	lambha	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
557	South	UHC	baherampura	As per KMZ file	As per KMZ file
558	West	UHC	kali	As per KMZ file	As per KMZ file
559	North	UHC	Sardarnagar	As per KMZ file	As per KMZ file
560	East	UHC	khokhra	As per KMZ file	As per KMZ file
561	South	UHC	arbudanagar	As per KMZ file	As per KMZ file
562	New West	UHC	bodakdev	As per KMZ file	As per KMZ file
563	South	UHC	lambha	As per KMZ file	As per KMZ file
564	South	UHC	lambha	As per KMZ file	As per KMZ file
565	South	UHC	vatva	As per KMZ file	As per KMZ file
566	East	UHC	amraiwadi	As per KMZ file	As per KMZ file
567	New West	UHC	ambawadi	As per KMZ file	As per KMZ file
568	South	UHC	baherampura	As per KMZ file	As per KMZ file
569	West	UHC	naranpura	As per KMZ file	As per KMZ file
570	West	UHC	vasna	As per KMZ file	As per KMZ file
571	Central	UHC	DUDHESHWAR	As per KMZ file	As per KMZ file
572	West	UHC	SABARMATI	As per KMZ file	As per KMZ file
573	South	UHC	BEHRAMPURA	As per KMZ file	As per KMZ file
574	South	UHC	DANILIMDA	As per KMZ file	As per KMZ file
575	East	UHC	Vastral	As per KMZ file	As per KMZ file
576	East	Sensors-Water:WDS	Adinath Nagar (Bhavani Nagar)	As per KMZ file	As per KMZ file
577	Central	Sensors-Water:WDS	Dudheshwar	As per KMZ file	As per KMZ file
578	East	Sensors-Water:WDS	Vastral	As per KMZ file	As per KMZ file
579	South	Sensors-Water:WDS	FP. 204	As per KMZ file	As per KMZ file
580	Central	Sensors-Water:WDS	Jamalpur	As per KMZ	As per KMZ

#	Zone	Entity Type	Location	Latitude	Longitude
				file	file
581	South	Sensors-Water:WDS	Behrampura	As per KMZ file	As per KMZ file
582	South	Tourist Spot	Kankaria Lake	As per KMZ file	As per KMZ file
583	West	Tourist Spot	Gandhi Ashram	As per KMZ file	As per KMZ file
584	New West	Tourist Spot	Science City	As per KMZ file	As per KMZ file
585	New West	Schools	CHANDLODIYA - 1 PRIMARY SCHOOL	23.0807027 78	72.5508166 67
586	New West	Schools	GHATLODIYA - 1 PRIMARY SCHOOL	23.0685131 08	72.5401444 44
587	New West	Schools	GHATLODIYA - 2 PRIMARY SCHOOL	23.0685152 76	72.5402305 56
588	South	Schools	GYASPUR PRIMARY SCHOOL	22.9682500 00	72.5381611 11
589	South	Schools	GYASPUR BHATHA PRIMARY SCHOOL	22.9873141 92	72.5230234 10
590	New West	Schools	JODHPUR PRIMARY SCHOOL - 1	23.0161611 11	72.5209444 44
591	New West	Schools	JODHPUR PRIMARY SCHOOL - 2	23.0161166 67	72.5209722 22
592	New West	Schools	RAMDEVNAGAR PRIMARY SCHOOL	23.0270527 78	72.5204388 89
593	New West	Schools	MEMADPURA PRIMARY SCHOOL	23.0178111 11	72.4940472 22
594	New West	Schools	MAKARABA PRIMARY SCHOOL - 2	22.9958111 11	72.5077027 78
595	New West	Schools	NEHRUNAGAR PRIMARY SCHOOL	22.9904000 00	72.5060194 44
596	New West	Schools	MAKTAMPUR PRIMARY SCHOOL	22.9936666 67	72.5232777 78
597	West	Schools	MEMNAGAR PRI. SCHOOL - 2	23.0486388 89	72.5387722 22
598	West	Schools	NIRYANNAGAR PRIMARY SCHOOL]	23.0762805 56	72.5605888 89
599	South	Schools	PIPALJ PRIMARY SCHOOL	22.9556639 73	72.5494722 69
600	West	Schools	RANIPI PRI. SCHOOL - 2	23.0811916 67	72.5771916 67
601	West	Schools	RANIP PRI. SCHOOL - 8	23.0838138 89	72.5786666 67
602	West	Schools	RANIPI PRI. SCHOOL - 3	23.0852236 74	72.5807865 09
603	West	Schools	RANIPI PRI. SCHOOL - 4	23.0778924 21	72.5731278 72

#	Zone	Entity Type	Location	Latitude	Longitude
604	West	Schools	SABARMATI JAIL PRIMARY SCHOOL	23.0780222 22	72.5851055 56
605	New West	Schools	SARKHEJ BRANCH SCHOOL - 2	22.9795777 78	72.5049611 11
606	New West	Schools	SARKHEJ KANYA SCHOOL - 2	22.9797888 89	72.5038777 78
607	New West	Schools	SARKHEJ KUMAR SCHOOL - 1	22.9797805 56	72.5037666 67
608	New West	Schools	GHELJIPURA PRI. SCHOOL -	23.0015833 33	72.4794611 11
609	North	Schools	SAIJPUR PRIMARY SCHOOL	22.9607055 56	72.5587555 56
610	New West	Schools	SARKARI VASAHAT VASTRAPUR PRI	23.0431467 62	72.5325284 93
611	New West	Schools	VASTRAPUR PRI. SCHOOL - 2	23.0365939 52	72.5310527 78
612	New West	Schools	PAY CENTER SCHOOL VEJALPUR	23.0040500 00	72.5162583 33
613	New West	Schools	VASTRAPUR RAILWAY STATION	23.0060444 44	72.5157333 33
614	New West	Schools	VEJALPUR PRIMARY SCHOOL 2	23.0039694 44	72.5163138 89
615	New West	Schools	RAVINAGAR PRIMARY SCHOOL - 2	23.0033916 67	72.5318277 78
616	New West	Schools	SANKLITNAGAR PRIMARY SCHOOL -2	22.9930027 78	72.5187666 67
617	New West	Schools	SANKLITNAGAR URDU PRI.SCH-18	22.9930388 73	72.5194666 67
618	East	Schools	NIKOL PRI.SCHOOL	23.0420555 56	72.6643444 44
619	East	Schools	VIDHYANAGAR PRI SCHOOL	23.0139972 22	72.6590861 11
620	East	Schools	NAVA NARODA GUJ PRI SCHOOL	23.0718805 56	72.6657833 33
621	East	Schools	NAVA NARODA HINDI PRI SCHOOL	23.0718611 11	72.6657694 44
622	East	Schools	ADINATH NAGAR PRI SCHOOL	23.0160861 11	72.6616083 33
623	Central	Schools	KHADIYA-2	23.0246583 33	72.5960055 56
624	Central	Schools	KHADIYA-10	23.0217333 33	72.5971444 44
625	Central	Schools	KHADIYA-14	23.0210083 33	72.5945333 33
626	Central	Schools	KHADIYA-28	23.0218166 67	72.5967250 00
627	Central	Schools	MUNICIPLE GIRLS HIGH SCHOOL	23.0227888	72.5879277

#	Zone	Entity Type	Location	Latitude	Longitude
				89	78
628	Central	Schools	JAMALPUR-2	23.0225194 44	72.5882305 56
629	Central	Schools	JAMALPUR-24	23.0227250 00	72.5881388 89
630	Central	Schools	MADHABAG-1	23.0208222 22	72.6013083 33
631	Central	Schools	KALUPUR-2	23.0321027 78	72.5900388 89
632	Central	Schools	KALUPUR-6	23.0307500 00	72.5908750 00
633	Central	Schools	KALUPUR-19	23.0317222 22	72.5884694 44
634	Central	Schools	KALUPUR-22	23.0295444 44	72.5917916 67
635	Central	Schools	KALUPUR H.2	23.0317277 78	72.5884694 44
636	Central	Schools	KALUPUR-17	23.0321000 00	72.5900305 56
637	Central	Schools	DARIYAPUR -U 2	23.0340611 11	72.5970722 22
638	Central	Schools	DARIYAPUR-8	23.0350500 00	72.5878138 89
639	Central	Schools	DARIYAPUR-16	23.0333944 44	72.5915500 00
640	Central	Schools	DARIYAPUR-18	23.0355361 11	72.5910333 33
641	Central	Schools	SHAHPUR U-4	23.0279972 22	72.5830416 67
642	Central	Schools	SHAHPUR U-5	23.0355027 78	72.5810861 11
643	Central	Schools	SHAHPUR-1	23.0382777 78	72.5851416 67
644	Central	Schools	SHAHPUR-4	23.0360305 56	72.5813250 00
645	Central	Schools	SHAHPUR-5	23.0391861 11	72.5791500 00
646	Central	Schools	SHAHPUR-7	23.0377750 00	72.5796250 00
647	Central	Schools	SHAHPUR-11	23.0307250 00	72.5794666 67
648	Central	Schools	SHAHPUR-15	23.0387972 22	72.5813527 78
649	Central	Schools	SHAHPUR-U-1-	23.0361361 11	72.5812277 78
650	Central	Schools	SHAHPUR-U-10-	23.0306388 89	72.5779777 78

#	Zone	Entity Type	Location	Latitude	Longitude
651	Central	Schools	RAIKHAD-4	23.0154833 33	72.5826027 78
652	Central	Schools	RAIKHAD-8	23.0196111 11	72.5784888 89
653	Central	Schools	RAIKHAD-10	23.0148000 00	72.5797305 56
654	Central	Schools	BAHERAMPURA-5	23.0127972 22	72.5794666 67
655	Central	Schools	RAIKHAD U.6	23.0157888 89	72.5805888 89
656	Central	Schools	MAHALAXMI PRAYOGIK SCHOOL	23.0201222 22	72.5828305 56
657	Central	Schools	JAMALPUR PRIMARY SCHOOL - 4	23.0193166 67	72.5876638 89
658	Central	Schools	JAMALPUR PRIMARY SCHOOL - 7	23.0159111 11	72.5882888 89
659	Central	Schools	JAMALPUR PRIMARY SCHOOL - 16	23.0160277 78	72.5878305 56
660	Central	Schools	JAMALPUR URDU - 1	23.0126305 56	72.5818416 67
661	Central	Schools	JAMALPUR URDU - 4	23.0121500 00	72.5852527 78
662	Central	Schools	JAMALPUR URDU - 6	23.0169833 33	72.5898777 78
663	Central	Schools	JAMALPUR URDU - 8	23.0175888 89	72.5843944 44
664	Central	Schools	JAMALPUR URDU - 10	23.0120750 00	72.5851111 11
665	Central	Schools	JAMALPUR URDU - 14	23.0157222 22	72.5869833 34
666	Central	Schools	JAMALPUR GUJ SCHOOL - 9	23.0162861 11	72.5847833 33
667	Central	Schools	JAMALPUR GUJ SCHOOL - 11	23.0178111 11	72.5845944 44
668	West	Schools	ELISBRIDGE - 2	23.0153916 67	72.5593055 56
669	West	Schools	ELISBRIDGE - 6	23.0136250 00	72.5676166 67
670	West	Schools	ELISBRIDGE -12	23.0079944 44	72.5586833 33
671	West	Schools	ELISBRIDGE -14	23.0184194 44	72.5679527 78
672	West	Schools	ELISBRIDGE - 22	23.0114916 67	72.5668166 67
673	West	Schools	ELISBRIDGE - 28	23.0060361 11	72.5650583 33
674	West	Schools	VASANA -1	23.0030194	72.5472694

#	Zone	Entity Type	Location	Latitude	Longitude
				44	44
675	West	Schools	VASANA -3	23.0054222 22	72.5446916 67
676	West	Schools	VASANA -5	23.0033638 89	72.5473527 78
677	West	Schools	VASANA SCHOOL NO 7	As per KMZ file	As per KMZ file
678	West	Schools	VEJALPUR GUJ PUBLIC SCHOOL		
679	West	Schools	ELISBRIDGE - 17	23.0240277 78	72.5468916 67
680	West	Schools	ELISBRIDGE - 26	23.0178833 33	72.5548305 56
681	West	Schools	ELLISBRIDGE - 29		
682	West	Schools	ELISBRIDGE - 4	23.0304333 33	72.5677416 67
683	West	Schools	ELISBRIDGE - 7	23.0289305 56	72.5546972 22
684	West	Schools	ELISBRIDGE - 10	23.0367555 56	72.5647888 89
685	West	Schools	NARANPURA GUJ - 4	23.0509777 78	72.5625277 78
686	West	Schools	NARANPURA HINDI 1	23.0507722 22	72.5626083 33
687	West	Schools	NARANPURA HINDI 3	23.0564638 89	72.5405027 78
688	West	Schools	NARANPURA - 1	23.0536472 22	72.5539611 11
689	West	Schools	NARANPURA - 6	23.0563555 56	72.5402166 67
690	West	Schools	NAVA VADAJ - 1	23.0619666 67	72.5655583 33
691	West	Schools	NAVA VADAJ - 3	23.0624111 11	72.5654083 33
692	West	Schools	NAVA VADAJ - 9	23.0700861 11	72.5653944 44
693	West	Schools	NAVA VADAJ HINDI - 1	23.0701083 33	72.5651944 44
694	West	Schools	GANDHINAGAR GUJ - 2	23.0567638 89	72.5635361 11
695	West	Schools	SABARMATI - 2	23.0776555 56	72.5929388 89
696	West	Schools	SABARMATI - 3	23.0836111 11	72.5947777 78
697	West	Schools	SABARMATI - 5	23.0907333 33	72.5852250 00
698	West	Schools	SABARMATI - 7	23.0854805 56	72.5912888 89

#	Zone	Entity Type	Location	Latitude	Longitude
699	West	Schools	SABARMATI - 10	23.0809222 22	72.5926861 11
700	West	Schools	SABARMATI HINDI - 1	23.0906805 56	72.5852277 78
701	West	Schools	SABARMATI HINDI - 3	23.0809583 33	72.5925222 22
702	West	Schools	SABARMATI TAMIL - 2	23.0905861 11	72.5852805 56
703	Central	Schools	DUDHESHWAR - 3	23.0443083 33	72.5822833 33
704	Central	Schools	DUDHESHWAR - 6	23.0474027 78	72.5780222 22
705	Central	Schools	DUDHESHWAR - HINDI 1	23.0442055 56	72.5824444 44
706	Central	Schools	DUDHESHWAR - URDU - 1	23.0476222 22	72.5781333 33
707	West	Schools	VADAJ - 1	23.0540916 67	72.5736583 33
708	West	Schools	VADAJ - 3	23.0539944 44	72.5737333 33
709	West	Schools	MAHATMA GANDHI - 1	23.0622555 56	72.5805027 78
710	West	Schools	KESHAVNAGAR - 1	23.0664277 78	72.5841944 44
711	West	Schools	USMANPURA - 2	23.0471333 33	72.5709972 22
712	West	Schools	VADAJ HINDI 1		
713	West	Schools	RAMDEVPRJI TEKARA SCHOOL	23.0586277 78	72.5747472 22
714	Central	Schools	SHAHIBAUG - 1	23.0513027 78	72.5867388 89
715	Central	Schools	SHAHIBAUG - 4	23.0551638 89	72.5936583 33
716	Central	Schools	SHAHIBAUG - 6	23.0493611 11	72.5912111 11
717	Central	Schools	BARDOLPURA - 1	23.0411416 67	72.5927222 22
718	Central	Schools	SHAHIBAUG HINDI - 1	23.0493500 00	72.5913166 66
719	Central	Schools	AMARPURA HINDI - 1	23.0405611 11	72.5917305 56
720	Central	Schools	SHAHIBAUG URDU - 1	23.0511277 78	72.5864500 00
721	Central	Schools	PRITAMPURA - 1	23.0475777 78	72.5993305 56
722	Central	Schools	JAHANGIRPURA GUJ - 1	23.0491805 56	72.6024444 44

#	Zone	Entity Type	Location	Latitude	Longitude
723	Central	Schools	MEGHANINAGAR HINDI - 1	23.0571416 67	72.6207416 67
724	Central	Schools	ASARWA HINDI 5	23.0485416 67	72.6163972 22
725	Central	Schools	PRITAMNAGAR GUJ - 3	23.0518527 78	72.5990250 00
726	Central	Schools	ASARWA HINDI 9	23.0450083 33	72.6084166 67
727	Central	Schools	PRITAMPURA HINDI - 1	23.0516138 89	72.5989833 33
728	Central	Schools	ASARWA - 4	23.0423250 00	72.6044277 78
729	Central	Schools	ASARWA - 8	23.0442527 78	72.6152583 33
730	Central	Schools	ASARWA - 11	23.0491055 56	72.6087944 44
731	Central	Schools	ASARWA - 15	23.0488944 44	72.6089777 78
732	Central	Schools	ASARWA - 18	23.0433944 44	72.6068388 89
733	Central	Schools	ASARWA PRI SCHOOL-3	23.0422833 33	72.6041972 22
734	Central	Schools	ASARWA GUJRATI SCHOOL NO 23	23.0486694 44	72.6162166 67
735	North	Schools	ASARWA - 9	23.0503305 56	72.6206583 33
736	North	Schools	ASARWA HINDI - 1	23.0444527 78	72.6151944 44
737	North	Schools	ASARWA MARATHI - 2	23.0490305 56	72.6217888 89
738	North	Schools	MEGHANINAGAR - 1	23.0576194 44	72.6164111 11
739	North	Schools	MEGHANINAGAR - 3	23.0575222 22	72.6164111 11
740	North	Schools	NARODA ROAD - 1	23.0509111 11	72.6267916 67
741	Central	Schools	SARASPUR - 1	23.0321388 89	72.6097972 22
742	Central	Schools	SARASPUR - 3	23.0296277 78	72.6121333 33
743	Central	Schools	SARASPUR - 9	23.0319250 00	72.6094393 45
744	Central	Schools	SARASPUR - 13	23.0332731 03	72.6086154 26
745	Central	Schools	AMDUPURA - 1	23.0345416 67	72.6042416 67
746	Central	Schools	SARASPUR URDU - 1	23.0345194	72.6041027

#	Zone	Entity Type	Location	Latitude	Longitude
				44	78
747	Central	Schools	SARASPUR URDU - 3	23.0287305 56	72.6113416 67
748	Central	Schools	SARASPUR URDU - 5	23.0374722 22	72.6124750 00
749	Central	Schools	SARASPUR - 19	23.0294194 44	72.6121944 44
750	Central	Schools	SARASPUR - 6	23.0287305 56	72.6113611 11
751	Central	Schools	SARASPUR -7	23.0353472 22	72.6189527 78
752	Central	Schools	SARASPUR -11	23.0396527 78	72.6217805 56
753	Central	Schools	SARASPUR -21	23.0353527 78	72.6189222 22
754	Central	Schools	SARASPUR HINDI - 4	23.0299361 11	72.6119166 67
755	Central	Schools	SARASPUR HINDI - 6	23.0396472 22	72.6216138 89
756	North	Schools	KUBERNAGAR AMB G - 1	23.0720916 67	72.6366500 00
757	North	Schools	KUBERNAGAR AMB H - 1	23.0664722 22	72.6312666 67
758	North	Schools	KUBERNAGAR AMB M - 1	23.0665000 00	72.6314555 56
759	North	Schools	KUBERNAGAR ENGLISH - 1	23.0762777 78	72.6415694 44
760	North	Schools	KUBERNAGAR GUJ 4	23.0763972 22	72.6436027 78
761	North	Schools	KUBERNAGAR ENGLISH - 4	23.0692500 00	72.6431444 44
762	North	Schools	KUBERNAGAR HINDI SHALA NO 4	23.0759944 44	72.6419666 67
763	North	Schools	SARDAR HINDI SHALA NO - 1	23.0797583 33	72.6322666 67
764	North	Schools	HANSOL GUJ SH NO-1	23.0833944 44	72.6226833 33
765	North	Schools	SARDAR ENG NO - 1	23.0796583 33	72.6315472 22
766	North	Schools	SADARNAGAR GUJ-1	23.0797388 89	72.6321888 89
767	North	Schools	KOTARPUR SHALA NO. 1	As per KMZ File	As per KMZ File
768	North	Schools	SAIJPUR GUJ SHALA NO 1	23.0664361 11	72.6386500 00
769	North	Schools	SAIJPUR GUJ SHALA NO 5	23.0598444 44	72.6393527 78

#	Zone	Entity Type	Location	Latitude	Longitude
770	North	Schools	SAIJPUR GUJ SHALA NO 6	23.0599227 18	72.6403076 45
771	North	Schools	SAIJPUR HINDI SHALA NO1	23.0537527 78	72.6281305 56
772	North	Schools	THAKKARBAPA GUJ SHALA - 1	23.0422861 11	72.6435694 44
773	North	Schools	KRUSHNANAGAR GUJ SHALA 1	23.0545083 33	72.6440583 33
774	North	Schools	KRUSHNANAGAR HINDI SHALA 1	23.0580666 67	72.6441555 56
775	North	Schools	S.R.P. MA. S.N. 1	23.0582777 78	72.6496888 89
776	North	Schools	THAKKARBAPA NAGAR ENG 1	23.0421416 67	72.6435083 33
777	North	Schools	S.R.P. GUJ. SCH. NO. 1	23.0581638 89	72.6497638 89
778	North	Schools	CHHARA GUJ SHALA 1	23.0692722 22	72.6435388 89
779	North	Schools	NARODA GUJ 1	23.0742916 67	72.6564250 00
780	North	Schools	MUTHIYA GUJ 1	23.0955111 11	72.6786194 44
781	North	Schools	NOBAL NAGAR GUJ 1	23.0880388 89	72.6576888 89
782	North	Schools	NOBAL NAGAR GUJ 3	23.0857972 22	72.6547111 11
783	North	Schools	NARODA GUJ 4	23.0712666 67	72.6543083 33
784	North	Schools	NOBALNAGAR HINDI SCHOOL 2	23.0877567 60	72.6594886 91
785	North	Schools	BAPUNAGAR - 1	23.0329055 56	72.6280666 67
786	North	Schools	BAPUNAGAR - 3	23.0340444 44	72.6327750 00
787	North	Schools	BAPUNAGAR - 7	23.0317833 33	72.6353555 56
788	North	Schools	BAPUNAGAR - 9	23.0315638 89	72.6299583 33
789	North	Schools	BAPUNAGAR - 13	23.0357777 78	72.6263861 11
790	North	Schools	BAPUNAGAR HINDI - 4	23.0314111 11	72.6299222 22
791	North	Schools	BAPUNAGAR HINDI - 5	23.0356750 00	72.6263750 00
792	North	Schools	BAPUNAGAR HINDI - 8	23.0314638 89	72.6356638 89
793	North	Schools	RAKHIYAL - 1	23.0230527	72.6194388

#	Zone	Entity Type	Location	Latitude	Longitude
				78	89
794	North	Schools	SARASPUR HINDI - 1	23.0257222 22	72.6127250 00
795	North	Schools	BAPUNAGAR HINDI - 1	23.0288694 44	72.6229777 78
796	North	Schools	BAPUNAGAR URDU - 5	23.0238138 89	72.6278666 67
797	North	Schools	BAPUNAGAR URDU - 7	23.0237805 56	72.6280611 11
798	North	Schools	BAPUNAGAR URDU - 9	23.0236611 11	72.6333388 89
799	North	Schools	RAKHIYAL ENGLISH - 1	23.0254111 11	72.6213555 56
800	North	Schools	BAPUNAGAR - 5	23.0290361 11	72.6232972 22
801	North	Schools	RAKHIYA HINDI SCH NO. 1	23.0254666 67	72.6213638 89
802	East	Schools	GOMTIPUR - 2	23.0190333 33	72.6142694 44
803	East	Schools	GOMTIPUR - 4	23.0221500 00	72.6042305 56
804	East	Schools	GOMTIPUR - 6	23.0168500 00	72.6142750 00
805	East	Schools	RAJPUR - 1	23.0151861 11	72.6064972 22
806	East	Schools	RAJPUR - 3	23.0140583 33	72.6129194 44
807	East	Schools	RAJPUR - 9	23.0163500 00	72.6086888 89
808	East	Schools	GOMTIPUR H - 1	23.0190166 67	72.6142972 22
809	East	Schools	GOMTIPUR U - 1	23.0143722 22	72.6121361 11
810	East	Schools	GOMTIPUR U - 3	23.0221250 00	72.6041083 33
811	East	Schools	RAJPUR - 7	23.0135333 33	72.6210388 89
812	East	Schools	RAJPUR - 11	23.0167583 33	72.6142722 22
813	East	Schools	RAJPUR - 17	23.0167166 67	72.6355194 44
814	East	Schools	RAJPUR -H - 1	23.0192444 44	72.6075111 11
815	East	Schools	RAJPUR H - 2	23.0165555 56	72.6084611 11
816	East	Schools	RAJPUR H - 5	23.0133111 11	72.6208444 44

#	Zone	Entity Type	Location	Latitude	Longitude
817	East	Schools	RAJPUR U - 1	23.0163555 56	72.6125583 33
818	East	Schools	RAJPUR U - 3	23.0162944 44	72.6084472 22
819	East	Schools	RAJPUR U - 7	23.0161500 00	72.6125833 33
820	East	Schools	RAKHIYAL URDU - 1	23.0218111 11	72.6213833 33
821	East	Schools	SUNDARAMNAGAR URDU SCHOOL NO 2		
822	East	Schools	AMRAIWADI - 1	23.0055250 00	72.6257916 67
823	East	Schools	AMRAIWADI - 5	23.0056638 89	72.6258416 67
824	East	Schools	AMRAIWADI - 9	23.0102694 44	72.6341861 11
825	East	Schools	AMRAIWADI - 11	23.0060722 22	72.6257138 89
826	East	Schools	AMRAIWADI - 16	23.0099527 78	72.6312638 89
827	East	Schools	AMRAIWADI HINDI - 5	23.0059305 56	72.6259333 34
828	East	Schools	AMRAIWADI HINDI - 7	23.0102555 55	72.6310138 89
829	East	Schools	KHOKHARA HINDI - 4	22.9915888 89	72.6182083 33
830	East	Schools	KHOKHARA GUJ - 12	22.9918222 22	72.6183944 44
831	East	Schools	KHOKHARA MARATHI - 3	22.9927055 56	72.6164472 22
832	East	Schools	AMRAIWADI HINDI - 4	23.0020805 56	72.6254750 00
833	East	Schools	AMRAIWADI TAMIL - 1	23.0021777 78	72.6252388 89
834	East	Schools	AMRAIWADI MARATHI - 4	23.0060361 11	72.6259361 11
835	East	Schools	AMRAIWADI GUJ - 7	23.0022111 11	72.6251444 44
836	East	Schools	PURUSHO. NAGAR HINDI - 1	23.0318333 33	72.6453500 00
837	East	Schools	THAKKAR HI SCHOOL - 1	23.0399861 11	72.6429472 22
838	East	Schools	PURSHOTTAM PRI SCHOOL 1	23.0318277 77	72.6455722 23
839	East	Schools	ODHAV GUJ SHALA NO 1	23.0266166 67	72.6633916 67
840	East	Schools	ODHAV GUJ SHALA NO 4	23.0297055	72.6648750

#	Zone	Entity Type	Location	Latitude	Longitude
				56	00
841	East	Schools	KARSANNAGAR GUJ - 1	23.0198944 44	72.6465805 56
842	East	Schools	G.I.D.C. GUJ SCHOOL NO - 2	23.0207861 11	72.6590555 56
843	East	Schools	AMBIKA GUJ SCH. NO - 1	23.0297000 00	72.6543305 56
844	East	Schools	ODHAV HINDI 1	23.0296222 22	72.6647388 89
845	East	Schools	G.I.D.C. HINDI SCHOOL NO - 1	23.0207166 67	72.6590611 11
846	East	Schools	AMBIKA HINDI SCHOOL NO - 1	23.0298138 89	72.6545750 00
847	East	Schools	ODHAV GUJ. SCHOOL - 3	23.0129444 44	72.6517527 78
848	East	Schools	KARSHANNAGAR HINDI SCH 1	23.0197527 78	72.6468388 89
849	East	Schools	ODHAV HINDI-3	23.0128722 22	72.6518472 22
850	East	Schools	KARSHAN NAGAR GUJ-3	23.0196777 78	72.6467638 89
851	South	Schools	KHOKHARA - 2	23.0013000 00	72.6196750 00
852	South	Schools	KHOKHARA - 4	22.9998388 89	72.6183972 22
853	South	Schools	KHOKHARA HINDI - 2	23.0012777 78	72.6198083 33
854	South	Schools	KHOKHARA MARATHI - 2	22.9998500 00	72.6186333 33
855	South	Schools	KHOKHARA TAMIL - 1	22.9998388 89	72.6184666 67
856	South	Schools	AMRAIWADI HINDI - 1	23.0067500 00	72.6361416 67
857	South	Schools	MANINAGAR - 1	22.9945388 89	72.6081000 00
858	South	Schools	MANINAGAR - 4	22.9899555 56	72.6146166 67
859	South	Schools	MANINAGAR - 6	22.9989000 00	72.6069416 67
860	South	Schools	KANKARIA - 4	23.0126111 11	72.5958500 00
861	South	Schools	MILLATNAGAR GUJ - 1	22.9936444 44	72.5967111 11
862	South	Schools	KANKARIYA-1	23.0100750 00	72.5956555 56
863	South	Schools	KANKARIYA-6	23.0055638 89	72.5933805 56

#	Zone	Entity Type	Location	Latitude	Longitude
864	South	Schools	KANKARIYA-8	23.0038305 56	72.5936277 78
865	South	Schools	KANKARIYA-9	23.0122305 56	72.5916277 78
866	South	Schools	KANKARIYA URDU-3	22.9937750 00	72.5966888 89
867	South	Schools	KANKARIYA URDU- 5	22.9937333 33	72.5966694 44
868	South	Schools	BAHERAMPURA-1	23.0080916 67	72.5867333 33
869	South	Schools	BAHERAMPURA-3	23.0083138 89	72.5824666 67
870	South	Schools	BAHERAMPURA-9	23.0043611 11	72.5839750 00
871	South	Schools	BAHERAMPURA-11	23.0078416 67	72.5867944 44
872	South	Schools	BAHERAMPURA-13	22.9913555 56	72.5697527 78
873	South	Schools	BAHERAMPURA-15	23.0042583 33	72.5772888 89
874	South	Schools	BAHERAMPURA-17	23.0042583 33	72.5777277 78
875	South	Schools	BAHERAMPURA H-1	23.0081027 78	72.5824666 67
876	South	Schools	BAHERAMPURA URDU-1	23.0040861 11	72.5840222 22
877	South	Schools	BAHERAMPURA URDU-5	23.0044027 78	72.5776000 00
878	South	Schools	DANLIMDA-1	22.9964916 67	72.5842972 22
879	South	Schools	DANLIMDA-3	22.9964638 89	72.5840500 00
880	South	Schools	MILLATNAGAR URDU-1	22.9936833 33	72.5969027 78
881	South	Schools	DANLIMDA URDU-1	22.9968194 44	72.5841333 33
882	South	Schools	CHANDOLA URDU SCH 1	22.9803916 67	72.5853722 22
883	South	Schools	CHANDOLA GUJ SCH 1	22.9802166 67	72.5853194 44
884	South	Schools	DANILIMDA GUJ SCH 5	22.9926944 45	72.5774694 44
885	South	Schools	DANILIMDA URDU SCH 3	22.9927305 56	72.5776194 44
886	South	Schools	BAGEPHIRDOSH-1	23.0014500 00	72.6442333 33
887	South	Schools	AMRAIWADI-4	23.0069055	72.6361833

#	Zone	Entity Type	Location	Latitude	Longitude
				56	33
888	South	Schools	GHODASAR-2	22.9866777 78	72.6142916 67
889	South	Schools	AMRAIWADI-H.9	23.0005361 11	72.6294527 78
890	South	Schools	BAGEPHIRDOSH-H.1	23.0016472 22	72.6442083 33
891	South	Schools	BAGEPHIRDOS M.2	23.0015083 33	72.6442250 00
892	South	Schools	AMRAIWADI GUJ SCH -13	23.0006611 11	72.6294638 89
893	South	Schools	JASODANAGAR GUJARATI-1	22.9795055 56	72.6270777 78
894	South	Schools	VIVEKA NAGARGUJARTI-1	22.9392805 56	72.6663416 67
895	South	Schools	HATHIJAN GUJARATI S.N.2	22.9430611 11	72.6684694 44
896	South	Schools	VINZOL-2	22.9459861 11	72.6689583 34
897	South	Schools	VINOABHAVE-1	22.9302666 67	72.6230222 22
898	South	Schools	VINOABHAVE M.2	22.9302638 89	72.6229861 11
899	South	Schools	VINOABHAVE H.1	22.9302777 78	72.6232666 67
900	South	Schools	SHAHVADI-2	22.9824664 16	72.5543775 54
901	South	Schools	RANIPUR-2	22.9694444 44	72.5759916 67
902	South	Schools	ISHANPUR-1	22.9777944 44	72.5968111 11
903	South	Schools	VATAVA-1	22.9522750 00	72.6139888 89
904	South	Schools	VATAVA H-1	22.9530944 44	72.6132388 89
905	South	Schools	VATAVA URDU-2	22.9530638 89	72.6132805 56
906	South	Schools	NAROL GUJ SCH NO. 1	22.9620027 78	72.5940666 67
907	South	Schools	VATVA SCHOOL NO. 5	22.9521361 11	72.6138888 89
908	South	Schools	VATVA SCHOOL NO. 3	22.9640777 78	72.6246416 67
909	South	Schools	GANESHNAGAR PIPALAJ GUJ SCHOOL NO 1	22.9746555 56	72.5607694 44
910	South	Schools	KUMARI HINA VORA PRI. SCHOOL	22.9729861 11	72.6199222 22

#	Zone	Entity Type	Location	Latitude	Longitude
911	South	Schools	VATVA HINDI SCHOOL NO.4	22.9750051 45	72.6023777 78
912	South	Schools	ISHANPUR PUBLIC SCHOOL	As per KMZ file	As per KMZ file
913	North	BRT Route Traffic Signal	Ashirwad Estate	As per KMZ file	As per KMZ file
914	West	BRT Route Traffic Signal	Avani Bhavan	As per KMZ file	As per KMZ file
915	Central	BRT Route Traffic Signal	Bahucharaji Mataji nu Mandir	As per KMZ file	As per KMZ file
916	South	BRT Route Traffic Signal	Bhairavnath	As per KMZ file	As per KMZ file
917	West	BRT Route Traffic Signal	Bhavasara Hostel	As per KMZ file	As per KMZ file
918	East	BRT Route Traffic Signal	Bhikshuk Gruh	As per KMZ file	As per KMZ file
919	South	BRT Route Traffic Signal	Brahmakumari Chowk	As per KMZ file	As per KMZ file
920	North	BRT Route Traffic Signal	Chamunda	As per KMZ file	As per KMZ file
921	West	BRT Route Traffic Signal	Chandranagar	As per KMZ file	As per KMZ file
922	East	BRT Route Traffic Signal	Chotalal ni Chali	As per KMZ file	As per KMZ file
923	West	BRT Route Traffic Signal	Dada Saheb na Pagla	As per KMZ file	As per KMZ file
924	Central	BRT Route Traffic Signal	Dhal ni Pol	As per KMZ file	As per KMZ file
925	West	BRT Route Traffic Signal	Dharninagar	As per KMZ file	As per KMZ file
926	Central	BRT Route Traffic Signal	Dudheshwar Bridge	As per KMZ file	As per KMZ file
927	West	BRT Route Traffic Signal	Dungarshi Nagar	As per KMZ file	As per KMZ file
928	West	BRT Route Traffic Signal	Ganesh Bunglow	As per KMZ file	As per KMZ file
929	South	BRT Route Traffic Signal	Gokulnath/ Mira Cinema	As per KMZ file	As per KMZ file
930	East	BRT Route Traffic Signal	Gomtipur	As per KMZ file	As per KMZ file
931	Central	BRT Route Traffic Signal	Hanumanpura	As per KMZ file	As per KMZ file
932	East	BRT Route Traffic Signal	Haraniyawas	As per KMZ file	As per KMZ file
933	West	BRT Route Traffic Signal	Himmatlal Park	As per KMZ file	As per KMZ file
934	New	BRT Route Traffic Signal	Hotel Landmark	As per KMZ	As per KMZ

#	Zone	Entity Type	Location	Latitude	Longitude
	West			file	file
935	New West	BRT Route Traffic Signal	ISRO Colony	As per KMZ file	As per KMZ file
936	New West	BRT Route Traffic Signal	ISRO Gate	As per KMZ file	As per KMZ file
937	South	BRT Route Traffic Signal	Jay hind	As per KMZ file	As per KMZ file
938	West	BRT Route Traffic Signal	Jay Mangal	As per KMZ file	As per KMZ file
939	New West	BRT Route Traffic Signal	Jodhpur Char Rasta	As per KMZ file	As per KMZ file
940	East	BRT Route Traffic Signal	Jogeshwari Road	As per KMZ file	As per KMZ file
941	New West	BRT Route Traffic Signal	Jyantilal Park (Adiraj Bunglow)	As per KMZ file	As per KMZ file
942	East	BRT Route Traffic Signal	Kalindri Masjid	As per KMZ file	As per KMZ file
943	New West	BRT Route Traffic Signal	Kalupur Bank	As per KMZ file	As per KMZ file
944	South	BRT Route Traffic Signal	kankaria 2	As per KMZ file	As per KMZ file
945	West	BRT Route Traffic Signal	Keshavbaug	As per KMZ file	As per KMZ file
946	East	BRT Route Traffic Signal	Kharikat Canal	As per KMZ file	As per KMZ file
947	South	BRT Route Traffic Signal	Khodiyarnagar	As per KMZ file	As per KMZ file
948	South	BRT Route Traffic Signal	Krishna bhaug	As per KMZ file	As per KMZ file
949	New West	BRT Route Traffic Signal	Labour Colony	As per KMZ file	As per KMZ file
950	Central	BRT Route Traffic Signal	Majur Gam	As per KMZ file	As per KMZ file
951	West	BRT Route Traffic Signal	Manekbag Hall	As per KMZ file	As per KMZ file
952	South	BRT Route Traffic Signal	Maninagar Char Rasta	As per KMZ file	As per KMZ file
953	South	BRT Route Traffic Signal	Maninagar Railway Crossing	As per KMZ file	As per KMZ file
954	Central	BRT Route Traffic Signal	Mehndi Kuva	As per KMZ file	As per KMZ file
955	West	BRT Route Traffic Signal	Motera Cross Road	As per KMZ file	As per KMZ file
956	South	BRT Route Traffic Signal	Mukesh Industry	As per KMZ file	As per KMZ file
957	North	BRT Route Traffic Signal	Naroda Fire Station	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
958	South	BRT Route Traffic Signal	National Cloth Factory	As per KMZ file	As per KMZ file
959	Central	BRT Route Traffic Signal	NR Patel Park	As per KMZ file	As per KMZ file
960	East	BRT Route Traffic Signal	Odhav Fire Station	As per KMZ file	As per KMZ file
961	South	BRT Route Traffic Signal	Pasabhai ni Chali	As per KMZ file	As per KMZ file
962	East	BRT Route Traffic Signal	Patel Mill	As per KMZ file	As per KMZ file
963	South	BRT Route Traffic Signal	Pir Kamal Masjid	As per KMZ file	As per KMZ file
964	West	BRT Route Traffic Signal	PRL	As per KMZ file	As per KMZ file
965	Central	BRT Route Traffic Signal	Ramapir no tekro	As per KMZ file	As per KMZ file
966	East	BRT Route Traffic Signal	Ramrajya Nagar	As per KMZ file	As per KMZ file
967	South	BRT Route Traffic Signal	Ranipur Paitya	As per KMZ file	As per KMZ file
968	Central	BRT Route Traffic Signal	Raykhad	As per KMZ file	As per KMZ file
969	West	BRT Route Traffic Signal	Sahjanad Char Rasta	As per KMZ file	As per KMZ file
970	New West	BRT Route Traffic Signal	Satadhar Char Rasta	As per KMZ file	As per KMZ file
971	South	BRT Route Traffic Signal	Shah Alam	As per KMZ file	As per KMZ file
972	New West	BRT Route Traffic Signal	Shivanand Ashram	As per KMZ file	As per KMZ file
973	East	BRT Route Traffic Signal	Soma Textile	As per KMZ file	As per KMZ file
974	West	BRT Route Traffic Signal	St. Xaviers Corner	As per KMZ file	As per KMZ file
975	East	BRT Route Traffic Signal	Sulekhram Mill	As per KMZ file	As per KMZ file
976	West	BRT Route Traffic Signal	Supath Bunglow	As per KMZ file	As per KMZ file
977	East	BRT Route Traffic Signal	Tejendra Complex	As per KMZ file	As per KMZ file
978	South	BRT Route Traffic Signal	Vallabhwadi	As per KMZ file	As per KMZ file
979	Central	Junctions/Cross Roads	ACB Cut	As per KMZ file	As per KMZ file
980	West	Junctions/Cross Roads	Acher Cross road	As per KMZ file	As per KMZ file
981	North	Junctions/Cross Roads	Airport Colony	As per KMZ	As per KMZ

#	Zone	Entity Type	Location	Latitude	Longitude
				file	file
982	West	Junctions/Cross Roads	Ambawadi Circle	As per KMZ file	As per KMZ file
983	North	Junctions/Cross Roads	Ambikamil Cross road	As per KMZ file	As per KMZ file
984	South	Junctions/Cross Roads	Amikunj Cross Road	As per KMZ file	As per KMZ file
985	South	Junctions/Cross Roads	Amraiyawadi Cross road	As per KMZ file	As per KMZ file
986	West	Junctions/Cross Roads	Ankur Cross Road	As per KMZ file	As per KMZ file
987	South	Junctions/Cross Roads	Anmol Tower Cut	As per KMZ file	As per KMZ file
988	South	Junctions/Cross Roads	Anupan Cross Road	As per KMZ file	As per KMZ file
989	Central	Junctions/Cross Roads	APMC Junction	As per KMZ file	As per KMZ file
990	South	Junctions/Cross Roads	Apsara Cinema Cross road	As per KMZ file	As per KMZ file
991	North	Junctions/Cross Roads	Asarwa Chakla	As per KMZ file	As per KMZ file
992	West	Junctions/Cross Roads	Ashok vihar circle	As per KMZ file	As per KMZ file
993	South	Junctions/Cross Roads	Avkar Hall Cross road	As per KMZ file	As per KMZ file
994	North	Junctions/Cross Roads	Badiyakaka Cross road	As per KMZ file	As per KMZ file
995	North	Junctions/Cross Roads	Bajrang Ashram Teen rasta	As per KMZ file	As per KMZ file
996	South	Junctions/Cross Roads	BB lake Cross road	As per KMZ file	As per KMZ file
997	East	Junctions/Cross Roads	Bhadbanjan Cross Road	As per KMZ file	As per KMZ file
998	North	Junctions/Cross Roads	Bhagav Cross Road	As per KMZ file	As per KMZ file
999	West	Junctions/Cross Roads	Bhimjipura Junction	As per KMZ file	As per KMZ file
1000	South	Junctions/Cross Roads	Bhulabhai Park Cross road	As per KMZ file	As per KMZ file
1001	Central	Junctions/Cross Roads	BJ Medical College T	As per KMZ file	As per KMZ file
1002	West	Junctions/Cross Roads	C N Vidhalaya/ Excise Chowki Junction	As per KMZ file	As per KMZ file
1003	Central	Junctions/Cross Roads	Canton Mant Junction	As per KMZ file	As per KMZ file
1004	North	Junctions/Cross Roads	Chamanpur Chakla	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
1005	New West	Junctions/Cross Roads	Chanakyapuri Bridge	As per KMZ file	As per KMZ file
1006	New West	Junctions/Cross Roads	Chirag auto/ Kargil Cross road Junction	As per KMZ file	As per KMZ file
1007	Central	Junctions/Cross Roads	Civil Chawki Teen rasta	As per KMZ file	As per KMZ file
1008	South	Junctions/Cross Roads	Cozy Hotel Cross road	As per KMZ file	As per KMZ file
1009	Central	Junctions/Cross Roads	CP Office Shahibag Junction	As per KMZ file	As per KMZ file
1010	North	Junctions/Cross Roads	CSD Depo T	As per KMZ file	As per KMZ file
1011	Central	Junctions/Cross Roads	Dadhichi Bridge In	As per KMZ file	As per KMZ file
1012	Central	Junctions/Cross Roads	Dadhichi Bridge Out	As per KMZ file	As per KMZ file
1013	West	Junctions/Cross Roads	Darpan Academy Tran Rasta (Riverfront Entry)	As per KMZ file	As per KMZ file
1014	East	Junctions/Cross Roads	Dmart Cross Road	As per KMZ file	As per KMZ file
1015	East	Junctions/Cross Roads	Everest Cinema Cross Road	As per KMZ file	As per KMZ file
1016	West	Junctions/Cross Roads	Excise Chowki	As per KMZ file	As per KMZ file
1017	West	Junctions/Cross Roads	Flower Garden In	As per KMZ file	As per KMZ file
1018	West	Junctions/Cross Roads	Flower Garden Out	As per KMZ file	As per KMZ file
1019	South	Junctions/Cross Roads	Football ground Cross road	As per KMZ file	As per KMZ file
1020	Central	Junctions/Cross Roads	FSL Cross Road	As per KMZ file	As per KMZ file
1021	North	Junctions/Cross Roads	Galaxy Cross Road	As per KMZ file	As per KMZ file
1022	Central	Junctions/Cross Roads	Gandhi Bridge In	As per KMZ file	As per KMZ file
1023	Central	Junctions/Cross Roads	Gandhi Bridge Out	As per KMZ file	As per KMZ file
1024	West	Junctions/Cross Roads	Ganthiyad Chandkheda	As per KMZ file	As per KMZ file
1025	South	Junctions/Cross Roads	Gautamnagar cross road	As per KMZ file	As per KMZ file
1026	South	Junctions/Cross Roads	Gayatri Dairy Teen rasta	As per KMZ file	As per KMZ file
1027	Central	Junctions/Cross Roads	Gevar Circle	As per KMZ file	As per KMZ file
1028	Central	Junctions/Cross Roads	Girdhar nagar Junction	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
8				file	file
1029	West	Junctions/Cross Roads	Girish Colddrinks Junction	As per KMZ file	As per KMZ file
1030	South	Junctions/Cross Roads	Govindwadi Cross road	As per KMZ file	As per KMZ file
1031	West	Junctions/Cross Roads	GST Railway Crossing Cross road	As per KMZ file	As per KMZ file
1032	North	Junctions/Cross Roads	Gujarat Bottling Cross road	As per KMZ file	As per KMZ file
1033	New West	Junctions/Cross Roads	Gurudwara Teen Rasta	As per KMZ file	As per KMZ file
1034	North	Junctions/Cross Roads	Hansol Lavadi	As per KMZ file	As per KMZ file
1035	East	Junctions/Cross Roads	Haribhai Gopani Cross road	As per KMZ file	As per KMZ file
1036	West	Junctions/Cross Roads	Havmore Cross Road	As per KMZ file	As per KMZ file
1037	New West	Junctions/Cross Roads	Hebatpur Circle	As per KMZ file	As per KMZ file
1038	New West	Junctions/Cross Roads	Himalaya Mall Junction	As per KMZ file	As per KMZ file
1039	West	Junctions/Cross Roads	Indra residency Junction	As per KMZ file	As per KMZ file
1040	West	Junctions/Cross Roads	IOC Junction	As per KMZ file	As per KMZ file
1041	Central	Junctions/Cross Roads	Jamalpur ST Depo, Cross road opposite BSNL Office	As per KMZ file	As per KMZ file
1042	South	Junctions/Cross Roads	Jayamala Junction	As per KMZ file	As per KMZ file
1043	New West	Junctions/Cross Roads	Judges Bunglow cross road Junction	As per KMZ file	As per KMZ file
1044	South	Junctions/Cross Roads	Kabristan Circle	As per KMZ file	As per KMZ file
1045	East	Junctions/Cross Roads	Kalidas Cross Road	As per KMZ file	As per KMZ file
1046	South	Junctions/Cross Roads	Kankariya -3 Junction	As per KMZ file	As per KMZ file
1047	East	Junctions/Cross Roads	Keshavnagar Railway Bridge	As per KMZ file	As per KMZ file
1048	North	Junctions/Cross Roads	Keval Kantha Cross Road	As per KMZ file	As per KMZ file
1049	South	Junctions/Cross Roads	Khodiyar Mandir Cross road	As per KMZ file	As per KMZ file
1050	South	Junctions/Cross Roads	Khokhra Circle	As per KMZ file	As per KMZ file
1051	North	Junctions/Cross Roads	Kotarpur Waterworks teen rasta	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
105 2	West	Junctions/Cross Roads	Lakhudi Lavadi	As per KMZ file	As per KMZ file
105 3	South	Junctions/Cross Roads	Little Star Junction	As per KMZ file	As per KMZ file
105 4	West	Junctions/Cross Roads	Lodge Cross Road	As per KMZ file	As per KMZ file
105 5	East	Junctions/Cross Roads	Manchani Masjid	As per KMZ file	As per KMZ file
105 6	New West	Junctions/Cross Roads	Mansi Cross Road Junction	As per KMZ file	As per KMZ file
105 7	East	Junctions/Cross Roads	Mariyam BB Cross Road	As per KMZ file	As per KMZ file
105 8	Central	Junctions/Cross Roads	Master Colony In	As per KMZ file	As per KMZ file
105 9	Central	Junctions/Cross Roads	Master Colony Out	As per KMZ file	As per KMZ file
106 0	New West	Junctions/Cross Roads	Mehmadpura T Junction	As per KMZ file	As per KMZ file
106 1	West	Junctions/Cross Roads	Memnagar Fire station	As per KMZ file	As per KMZ file
106 2	North	Junctions/Cross Roads	Mohan Cinema Cross Road	As per KMZ file	As per KMZ file
106 3	West	Junctions/Cross Roads	Motera Stadium Cross road	As per KMZ file	As per KMZ file
106 4	West	Junctions/Cross Roads	Mount Carmel Junction	As per KMZ file	As per KMZ file
106 5	North	Junctions/Cross Roads	Nana Chiloda Gam Cross road	As per KMZ file	As per KMZ file
106 6	West	Junctions/Cross Roads	Naranpura Gaon Teen Rasta (Mata Mandir ke pas)	As per KMZ file	As per KMZ file
106 7	North	Junctions/Cross Roads	Naroda Gam Circle	As per KMZ file	As per KMZ file
106 8	West	Junctions/Cross Roads	Navrangpura Cross Road	As per KMZ file	As per KMZ file
106 9	West	Junctions/Cross Roads	Navrangpura railway crossing cross road	As per KMZ file	As per KMZ file
107 0	South	Junctions/Cross Roads	Neel Telecom T	As per KMZ file	As per KMZ file
107 1	South	Junctions/Cross Roads	New Cotton Cross Road	As per KMZ file	As per KMZ file
107 2	New West	Junctions/Cross Roads	NFD Cross Road Junction	As per KMZ file	As per KMZ file
107 3	West	Junctions/Cross Roads	NID Junction	As per KMZ file	As per KMZ file
107 4	South	Junctions/Cross Roads	Nikol SP Ring Road	As per KMZ file	As per KMZ file
107	East	Junctions/Cross Roads	Odhav Ring road Cross road	As per KMZ	As per KMZ

#	Zone	Entity Type	Location	Latitude	Longitude
5				file	file
107 6	Central	Junctions/Cross Roads	Old High Court	As per KMZ file	As per KMZ file
107 7	West	Junctions/Cross Roads	opposite Chadawad Chowki	As per KMZ file	As per KMZ file
107 8	South	Junctions/Cross Roads	Opposite RAF Camp	As per KMZ file	As per KMZ file
107 9	North	Junctions/Cross Roads	Palm Hotel SP Ring Road	As per KMZ file	As per KMZ file
108 0	West	Junctions/Cross Roads	Panchshil Cross Road Junction	As per KMZ file	As per KMZ file
108 1	West	Junctions/Cross Roads	Parasnagar Teen Rasta	As per KMZ file	As per KMZ file
108 2	Central	Junctions/Cross Roads	Picnic House Tran Rasta	As per KMZ file	As per KMZ file
108 3	South	Junctions/Cross Roads	Pirana Cross road	As per KMZ file	As per KMZ file
108 4	Central	Junctions/Cross Roads	Prem Darwaja	As per KMZ file	As per KMZ file
108 5	North	Junctions/Cross Roads	Raghunath Party Plot. Bajrang Supermarket Cross Road	As per KMZ file	As per KMZ file
108 6	New West	Junctions/Cross Roads	Rahul Tower Junction	As per KMZ file	As per KMZ file
108 7	East	Junctions/Cross Roads	Raipur Mill Cross Road	As per KMZ file	As per KMZ file
108 8	Central	Junctions/Cross Roads	Rajashana Hospital	As per KMZ file	As per KMZ file
108 9	East	Junctions/Cross Roads	Rajpur Toll naka cross road	As per KMZ file	As per KMZ file
109 0	Central	Junctions/Cross Roads	Raksha Shakti Circle	As per KMZ file	As per KMZ file
109 1	Central	Junctions/Cross Roads	Rameshwar Junction	As per KMZ file	As per KMZ file
109 2	East	Junctions/Cross Roads	Ramol SP Ring Road(Adani Circle)	As per KMZ file	As per KMZ file
109 3	New West	Junctions/Cross Roads	Ratnasagar Junction	As per KMZ file	As per KMZ file
109 4	West	Junctions/Cross Roads	Riverfront Walkway (Both Sides of River) Entries	As per KMZ file	As per KMZ file
109 5	West	Junctions/Cross Roads	Sabarmati Police Station Cut	As per KMZ file	As per KMZ file
109 6	New West	Junctions/Cross Roads	Sachin Tower Junction	As per KMZ file	As per KMZ file
109 7	Central	Junctions/Cross Roads	Sarkari litho Press Junction	As per KMZ file	As per KMZ file
109 8	West	Junctions/Cross Roads	Saurabh Cross Road	As per KMZ file	As per KMZ file

#	Zone	Entity Type	Location	Latitude	Longitude
109	Central	Junctions/Cross Roads	Shahibaug Chowki	As per KMZ file	As per KMZ file
110	Central	Junctions/Cross Roads	Sheela Lekh Cross road	As per KMZ file	As per KMZ file
110	East	Junctions/Cross Roads	Silver Mill Cross road	As per KMZ file	As per KMZ file
110	New West	Junctions/Cross Roads	Silver Star Cross Road	As per KMZ file	As per KMZ file
110	South	Junctions/Cross Roads	Sonal Cinema cross road	As per KMZ file	As per KMZ file
110	New West	Junctions/Cross Roads	Subhash Chowk Cross Road	As per KMZ file	As per KMZ file
110	East	Junctions/Cross Roads	Sukharam Nagar Cross road	As per KMZ file	As per KMZ file
110	New West	Junctions/Cross Roads	Suradhara cross road Junction	As per KMZ file	As per KMZ file
110	West	Junctions/Cross Roads	Swastik Cross Road Junction	As per KMZ file	As per KMZ file
110	North	Junctions/Cross Roads	Thakkar nagar cross road	As per KMZ file	As per KMZ file
110	West	Junctions/Cross Roads	Thakor Bhai Hall Cross road	As per KMZ file	As per KMZ file
111	East	Junctions/Cross Roads	Topi Mill dhal Cross Road	As per KMZ file	As per KMZ file
111	West	Junctions/Cross Roads	Towards Subhas Bridge to Keshavnagar Road	As per KMZ file	As per KMZ file
111	New West	Junctions/Cross Roads	Ujala Circle	As per KMZ file	As per KMZ file
111	Central	Junctions/Cross Roads	Under Bridge circle	As per KMZ file	As per KMZ file
111	East	Junctions/Cross Roads	Untwadi Chali ST Stand Road near Water tank	As per KMZ file	As per KMZ file
111	West	Junctions/Cross Roads	Usmanpura Garden Tran Rasta	As per KMZ file	As per KMZ file
111	West	Junctions/Cross Roads	Vadaj Samshangruh Riverfront Entry	As per KMZ file	As per KMZ file
111	East	Junctions/Cross Roads	Vaikunth Dham Cross road	As per KMZ file	As per KMZ file
111	New West	Junctions/Cross Roads	Valinath Chowk Junction	As per KMZ file	As per KMZ file
111	East	Junctions/Cross Roads	vastral Cross Road	As per KMZ file	As per KMZ file
112	West	Junctions/Cross Roads	Vijayanagar Cross Road	As per KMZ file	As per KMZ file
112	West	Junctions/Cross Roads	Vishwakarma college	As per KMZ file	As per KMZ file
112	Central	Junctions/Cross Roads	Vithalanagar Junction	As per KMZ	As per KMZ

#	Zone	Entity Type	Location	Latitude	Longitude
2				file	file
112 3	New West	Junctions/Cross Roads	YMCA Cut	As per KMZ file	As per KMZ file
112 4	Central	Riverfront Police Locations	Gandhi Bridge In	As per KMZ file	As per KMZ file
112 5	Central	Riverfront Police Locations	Gandhi Bridge Out	As per KMZ file	As per KMZ file
112 6	Central	Riverfront Police Locations	Master Colony In	As per KMZ file	As per KMZ file
112 7	Central	Riverfront Police Locations	Master Colony Out	As per KMZ file	As per KMZ file
112 8	Central	Riverfront Police Locations	Dadhichi Bridge In	As per KMZ file	As per KMZ file
112 9	Central	Riverfront Police Locations	Dadhichi Bridge Out	As per KMZ file	As per KMZ file
113 0	Central	Riverfront Police Locations	Picnic House Tran Rasta	As per KMZ file	As per KMZ file
113 1	East	Riverfront Police Locations	Keshavnagar Railway Bridge	As per KMZ file	As per KMZ file
113 2	West	Riverfront Police Locations	Vadaj Samshangruh Riverfront Entry	As per KMZ file	As per KMZ file
113 3	West	Riverfront Police Locations	Towards Subhas Bridge to Keshavnagar Road	As per KMZ file	As per KMZ file
113 4	West	Riverfront Police Locations	Darpan Academy Tran Rasta (Riverfront Entry)	As per KMZ file	As per KMZ file
113 5	West	Riverfront Police Locations	Usmanpura Garden Tran Rasta	As per KMZ file	As per KMZ file
113 6	West	Riverfront Police Locations	Riverfront Walkway (Both Sides of River) Entries	As per KMZ file	As per KMZ file
113 7	West	Riverfront Police Locations	Flower Garden In	As per KMZ file	As per KMZ file
113 8	West	Riverfront Police Locations	Flower Garden Out	As per KMZ file	As per KMZ file

**Annexure B - List of locations for Police Cameras (Zero Tolerance)**

#	Zone	Location Type	Locations Name	Latitude	Longitude
1	West	BRT Route Traffic Signal	AEC	As per KMZ file	As per KMZ file
2	North	Junctions/Cross Roads	Airport Circle	As per KMZ file	As per KMZ file
3	East	BRT Route Traffic Signal	Ajit Mill	As per KMZ file	As per KMZ file
4	West	BRT Route Traffic Signal	Akhbarnagar	As per KMZ file	As per KMZ file
5	New West	Junctions/Cross Roads	Ambli Circle	As per KMZ file	As per KMZ file
6	South	Junctions/Cross Roads	Anandwadi Circle	As per KMZ file	As per KMZ file
7	West	BRT Route Traffic Signal	Andhjanmamdal	As per KMZ file	As per KMZ file
8	West	Camera: CSITMS	Anjali Cross Roads	As per KMZ file	As per KMZ file
9	South	Camera: CSITMS	Aslali Circle	As per KMZ file	As per KMZ file
10	Central	BRT Route Traffic Signal	Astodia Darwaja	As per KMZ file	As per KMZ file
11	North	Junctions/Cross Roads	Bapunagar cross road Junction	As per KMZ file	As per KMZ file
12	East	Junctions/Cross Roads	Barcelona Circle	As per KMZ file	As per KMZ file
13	New West	Camera: CSITMS	Bopal Circle	As per KMZ file	As per KMZ file
14	West	BRT Route Traffic Signal	Chandkheda	As per KMZ file	As per KMZ file
15	South	Camera: CSITMS	CTM	As per KMZ file	As per KMZ file
16	Central	Junctions/Cross Roads	Dadhichi Bridge U-Turn	As per KMZ file	As per KMZ file
17	North	Camera: CSITMS	Dastan Circle	As per KMZ file	As per KMZ file
18	North	Camera: CSITMS	Dehgam Circle	As per KMZ file	As per KMZ file
19	Central	BRT Route Traffic Signal	Delhi Darwaja	As per KMZ file	As per KMZ file
20	West	Junctions/Cross Roads	Delight cross road Junction	As per KMZ file	As per KMZ file
21	West	Junctions/Cross Roads	Dhodka Badarkha Circle	As per KMZ file	As per KMZ file
22	Central	Junctions/Cross Roads	Ellisbridge River Front T	As per KMZ file	As per KMZ file
23	Central	Junctions/Cross Roads	Ellisbridge U-Turn	As per KMZ file	As per KMZ file

#	Zone	Location Type	Locations Name	Latitude	Longitude
24	South	BRT Route Traffic Signal	Express Highway Junction	As per KMZ file	As per KMZ file
25	East	Junctions/Cross Roads	Garibanagar Junction	As per KMZ file	As per KMZ file
26	Central	Camera: CSITMS	Geeta mandir ST Stand	As per KMZ file	As per KMZ file
27	Central	Junctions/Cross Roads	Ghee kanta Junction	As per KMZ file	As per KMZ file
28	Central	BRT Route Traffic Signal	Gol Limda (AMC Office)	As per KMZ file	As per KMZ file
29	East	Camera: CSITMS	Hatkeshwar Circle	As per KMZ file	As per KMZ file
30	New West	Junctions/Cross Roads	Hebatpur Circle	As per KMZ file	As per KMZ file
31	West	BRT Route Traffic Signal	Helmet	As per KMZ file	As per KMZ file
32	West	Junctions/Cross Roads	Income Tax Junction	As per KMZ file	As per KMZ file
33	North	Camera- Police Surveillance	Indira Bridge Circle	As per KMZ file	As per KMZ file
34	South	BRT Route Traffic Signal	Isanpur	As per KMZ file	As per KMZ file
35	New West	Camera: CSITMS	Iscon Cross Road	As per KMZ file	As per KMZ file
36	Central	Junction/Cross Road	Jamalpur U Turn	As per KMZ file	As per KMZ file
37	West	Camera: CSITMS	Janpath T	As per KMZ file	As per KMZ file
38	South	BRT Route Traffic Signal	Jashodanagar	As per KMZ file	As per KMZ file
39	West	Junctions/Cross Roads	Juna Vadaj Circle	As per KMZ file	As per KMZ file
40	Central	Junctions/Cross Roads	Kadgdapith Police Station T	As per KMZ file	As per KMZ file
41	Central	Camera- Police Surveillance	Kalupur Railway Station Entry-Exit Gate	As per KMZ file	As per KMZ file
42	Central	Junctions/Cross Roads	Kalupur railway station Junction	As per KMZ file	As per KMZ file
43	South	Camera: CSITMS	Kamod Circle	As per KMZ file	As per KMZ file
44	New West	Junctions/Cross Roads	Kargil Cross road Junction	As per KMZ file	As per KMZ file
45	North	Junctions/Cross Roads	Katwada GIDC Circle	As per KMZ file	As per KMZ file
46	Central	Camera: CSITMS	Khamasa Circle - Khamasa	As per KMZ file	As per KMZ file
47	Central	Junctions/Cross Roads	Khanpur darvaja	As per KMZ	As per KMZ

#	Zone	Location Type	Locations Name	Latitude	Longitude
	I			file	file
48	North	BRT Route Traffic Signal	Krishna nagar	As per KMZ file	As per KMZ file
49	South	Junctions/Cross Roads	Lal Gebi Hathijan Circle	As per KMZ file	As per KMZ file
50	North	Junctions/Cross Roads	Limbadiya Gam Circle	As per KMZ file	As per KMZ file
51	Centra I	Junctions/Cross Roads	Madhupura Dhobighat T	As per KMZ file	As per KMZ file
52	West	Junctions/Cross Roads	Mahalakshmi Cross Road Junction	As per KMZ file	As per KMZ file
53	North	Camera: CSITMS	Mother Dairy Circle	As per KMZ file	As per KMZ file
54	East	Junctions/Cross Roads	Nagar well hanuman Junction	As per KMZ file	As per KMZ file
55	Centra I	Junctions/Cross Roads	Naran Ghat	As per KMZ file	As per KMZ file
56	North	BRT Route Traffic Signal	Naroda Paitya	As per KMZ file	As per KMZ file
57	South	Junctions/Cross Roads	Narol Junction	As per KMZ file	As per KMZ file
58	West	Junctions/Cross Roads	Nehru Bridge Junction	As per KMZ file	As per KMZ file
59	West	BRT Route Traffic Signal	New CG Road	As per KMZ file	As per KMZ file
60	New West	Camera: CSITMS	Ognaj Circle	As per KMZ file	As per KMZ file
61	New West	Camera: CSITMS	Pakwan Cross Road	As per KMZ file	As per KMZ file
62	West	Junctions/Cross Roads	Paldi Junction	As per KMZ file	As per KMZ file
63	West	Junctions/Cross Roads	Panchwati Junction	As per KMZ file	As per KMZ file
64	West	Junctions/Cross Roads	Pari Cross Road Junction	As per KMZ file	As per KMZ file
65	West	Junctions/Cross Roads	Powerhouse Circle	As per KMZ file	As per KMZ file
66	North	Junctions/Cross Roads	Prabodra Raval Circle	As per KMZ file	As per KMZ file
67	West	BRT Route Traffic Signal	Pragati Nagar	As per KMZ file	As per KMZ file
68	New West	Junctions/Cross Roads	Prahalanagara T. Points Junction	As per KMZ file	As per KMZ file
69	East	BRT Route Traffic Signal	Rabari Colony	As per KMZ file	As per KMZ file
70	Centra I	Camera: CSITMS	Raipur Cross Road	As per KMZ file	As per KMZ file

#	Zone	Location Type	Locations Name	Latitude	Longitude
71	Central	Junctions/Cross Roads	Revdi Bajar Char Rasta	As per KMZ file	As per KMZ file
72	New West	Camera: CSITMS	Sanand Circle	As per KMZ file	As per KMZ file
73	New West	Camera: CSITMS	Sanathal Circle	As per KMZ file	As per KMZ file
74	Central	Camera: CSITMS	Sarangpur Circle	As per KMZ file	As per KMZ file
75	West	Junctions/Cross Roads	Sarkehj Circle	As per KMZ file	As per KMZ file
76	New West	Camera: CSITMS	Science City Circle	As per KMZ file	As per KMZ file
77	Central	Camera: CSITMS	Shahibaug under Bridge T	As per KMZ file	As per KMZ file
78	Central	Camera- Police Surveillance	ShahibaugDafnala Cross Road	As per KMZ file	As per KMZ file
79	Central	Junctions/Cross Roads	Shantipura Circle	As per KMZ file	As per KMZ file
80	West	BRT Route Traffic Signal	Sharstri nagar	As per KMZ file	As per KMZ file
81	West	BRT Route Traffic Signal	Shivranjini	As per KMZ file	As per KMZ file
82	West	Junctions/Cross Roads	Shyamal Cross road Junction	As per KMZ file	As per KMZ file
83	New West	Junctions/Cross Roads	Sola Bhagvat Circle	As per KMZ file	As per KMZ file
84	East	Camera: CSITMS	Soni ni Chali Cross Road	As per KMZ file	As per KMZ file
85	West	Junctions/Cross Roads	Stadium Junction	As per KMZ file	As per KMZ file
86	Central	Junctions/Cross Roads	Subhash Bridge Circle	As per KMZ file	As per KMZ file
87	West	Junctions/Cross Roads	Swastik Cross Road Junction	As per KMZ file	As per KMZ file
88	East	Junctions/Cross Roads	T.B. Nagar Circle	As per KMZ file	As per KMZ file
89	West	Camera: CSITMS	Tapovan Circle	As per KMZ file	As per KMZ file
90	New West	Camera: CSITMS	Thaltej Circle	As per KMZ file	As per KMZ file
91	West	Junctions/Cross Roads	Usmanpura Junction	As per KMZ file	As per KMZ file
92	New West	Camera: CSITMS	Vaishnodevi Circle	As per KMZ file	As per KMZ file
93	West	Junctions/Cross Roads	Vasna Junction	As per KMZ file	As per KMZ file
94	Central	Junctions/Cross Roads	Vijli Ghar Junction	As per KMZ	As per KMZ

#	Zone	Location Type	Locations Name	Latitude	Longitude
	I			file	file
95	East	BRT Route Traffic Signal	Virat Nagar	As per KMZ file	As per KMZ file
96	West	Camera: CSITMS	Visat teen Rasta	As per KMZ file	As per KMZ file
97	West	Junctions/Cross Roads	Vishala Junction	As per KMZ file	As per KMZ file
98	West	BRT Route Traffic Signal	Vyas Vadi	As per KMZ file	As per KMZ file
99	West	Junctions/Cross Roads	Zundal Circle	As per KMZ file	As per KMZ file
100	Central	Camera: CSITMS	Jamalpur Circle	As per KMZ file	As per KMZ file

**Annexure C – List of locations for Display Board/Panels**

#	Zone	Location Type	Locations Name	Latitude	Longitude	Display Board (VMS)	
						Qty	Remarks
1	North	UHC	BAPUNAGAR GENERAL HOSPITAL	23.027753	72.625613	1	Monopole 9x4.5
2	West	UHC	V S HOSPITAL	23.020676	72.571017	1	Monopole 9x4.5
3	East	UHC	VIRATNAGAR	23.025872	72.635873	1	Monopole 9x4.5
4	West	UHC	SABARMATI	23.083155	72.590605	1	Monopole 9x4.5
5	West	UHC	KALI	23.103989	72.56832	1	Monopole 9x4.5
6	Central	Hospital	V S HOSPITAL	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
7	South	Hospital	L G HOSPITAL	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
8	Central	Bus Depot (GSRTC)	Geeta Mandir GSRTC Bus Depots	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
9	Central	Railway Station	Kalupur Railway station	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
10	North	Junctions/Cross Roads	Airport Road Sadarbajar	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
11	East	BRT Route Traffic Signal	Ajit Mill	As per KMZ file	As per KMZ file	2	Gantry 8x3
12	West	BRT Route Traffic Signal	Akhbarnagar	As per KMZ file	As per KMZ file	2	Gantry 8x3
13	West	BRT Route Traffic Signal	Andhjanmamdal	As per KMZ file	As per KMZ file	1	Gantry 8x3
14	West	Camera: CSITMS	Anjali Cross Roads	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
15	West	Junctions/Cross Roads	Asharm Road Bata	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
16	North	BRT Route Traffic Signal	Ashok Mill	As per KMZ file	As per KMZ file	1	Gantry 8x3
17	Central	BRT Route Traffic Signal	Astodia Darwaja	As per KMZ file	As per KMZ file	1	Gantry 8x3
18	East	BRT Route Traffic Signal	Bapunagar Approach	As per KMZ file	As per KMZ file	2	Gantry 8x3
19	New West	BRT Route Traffic Signal	Bhuyang Dev Char Rasta	As per KMZ file	As per KMZ file	1	Gantry 8x3
20	West	Junctions/Cross Roads	Body Line Cross Road Junction	As per KMZ file	As per KMZ file	2	Gantry 8x3
21	West	BRT Route Traffic Signal	Chandkheda	As per KMZ file	As per KMZ file	2	Gantry 8x3
22	Central	Camera: CSITMS	Civil Hospital, Shahibaug	As per KMZ file	As per KMZ file	1	Monopole 9x4.5

#	Zone	Location Type	Locations Name	Latitude	Longitude	Display Board (VMS)	
						Qty	Remarks
23	West	Junctions/Cross Roads	Commerce cross road/ AG Chowki Junction	As per KMZ file	As per KMZ file	2	Gantry 8x3
24	Central	Junctions/Cross Roads	CP Office Shahibag Junction	As per KMZ file	As per KMZ file	2	Gantry 8x3
25	Central	Junctions/Cross Roads	Dafnala Junction	As per KMZ file	As per KMZ file	1	Gantry 8x3
26	South	BRT Route Traffic Signal	Danilimda	As per KMZ file	As per KMZ file	2	Gantry 8x3
27	Central	Junctions/Cross Roads	Dariyapur Darwaja	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
28	South	BRT Route Traffic Signal	Express Highway Junction	As per KMZ file	As per KMZ file	2	Gantry 8x3
29	Central	Junctions/Cross Roads	GayatriMandir	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
30	Central	Junctions/Cross Roads	Ghee kanta Junction	As per KMZ file	As per KMZ file	2	Gantry 8x3
31	South	BRT Route Traffic Signal	Ghodasar	As per KMZ file	As per KMZ file	1	Gantry 8x3
32	Central	BRT Route Traffic Signal	Gol Limda (AMC Office)	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
33	West	Junctions/Cross Roads	Gujarat Uni. Bus Stand	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
34	New West	BRT Route Traffic Signal	Gulab Tower	As per KMZ file	As per KMZ file	2	Gantry 8x3
35	West	BRT Route Traffic Signal	Gulbai Tekra	As per KMZ file	As per KMZ file	2	Gantry 8x3
36	New West	Junctions/Cross Roads	Gurukul Junction	As per KMZ file	As per KMZ file	1	Gantry 8x3
37	West	BRT Route Traffic Signal	Helmet	As per KMZ file	As per KMZ file	2	Gantry 8x3
38	South	Junctions/Cross Roads	Hirabhai Tower Junction	As per KMZ file	As per KMZ file	2	Gantry 8x3
39	North	Camera- Police Surveillance	Indira Bridge Circle	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
40	New West	Camera: CSITMS	Iscon Cross Road	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
41	South	BRT Route Traffic Signal	Jawahar Chowk	As per KMZ file	As per KMZ file	2	Gantry 8x3
42	New West	Junctions/Cross Roads	Jivaraj Park cross road Junction	As per KMZ file	As per KMZ file	2	Gantry 8x3
43	Central	Junctions/Cross Roads	Kalupur railway station Junction	As per KMZ file	As per KMZ file	2	Gantry 8x3
44	South	BRT Route Traffic Signal	Kankaria 1	As per KMZ file	As per KMZ file	1	Gantry 8x3

#	Zone	Location Type	Locations Name	Latitude	Longitude	Display Board (VMS)	
						Qty	Remarks
45	New West	Junctions/Cross Roads	Kargil Cross road Junction	As per KMZ file	As per KMZ file	2	Gantry 8x3
46	North	BRT Route Traffic Signal	Krishna nagar	As per KMZ file	As per KMZ file	1	Gantry 8x3
47	West	Junctions/Cross Roads	Law Garden Junction	As per KMZ file	As per KMZ file	2	Gantry 8X3
48	South	BRT Route Traffic Signal	Maninagar Railway Station	As per KMZ file	As per KMZ file	1	Gantry 8x3
49	North	BRT Route Traffic Signal	Memco	As per KMZ file	As per KMZ file	2	Gantry 8x3
50	West	Junctions/Cross Roads	Mithakali Six roads	As per KMZ file	As per KMZ file	2	Gantry 8x3
51	North	Junctions/Cross Roads	Naroda Bethak	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
52	North	BRT Route Traffic Signal	Naroda Paitya	As per KMZ file	As per KMZ file	2	Gantry 8x3
53	South	Junctions/Cross Roads	Narol Junction	As per KMZ file	As per KMZ file	2	Gantry 8x3
54	West	BRT Route Traffic Signal	Nehru Circle	As per KMZ file	As per KMZ file	1	Gantry 8x3
55	New West	Junctions/Cross Roads	Ognaj UHC	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
56	West	BRT Route Traffic Signal	ONGC	As per KMZ file	As per KMZ file	2	Gantry 8x3
57	New West	Camera: CSITMS	Pakwan Cross Road	As per KMZ file	As per KMZ file	1	Gantry 8x3
58	West	Junctions/Cross Roads	Paldi Junction	As per KMZ file	As per KMZ file	2	Gantry 8x3
59	West	UHC	kali	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
60	West	UHC	SABARMATI	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
61	West	Junctions/Cross Roads	Panchwati Junction	As per KMZ file	As per KMZ file	2	Gantry 8x3
62	West	Junctions/Cross Roads	Panjara pol Cross road	As per KMZ file	As per KMZ file	2	Gantry 8x3
63	East	BRT Route Traffic Signal	Rabari Colony	As per KMZ file	As per KMZ file	1	Gantry 8x3
64	Central	Camera: CSITMS	Raipur Cross Road	As per KMZ file	As per KMZ file	1	Gantry 8x3
65	East	BRT Route Traffic Signal	Rakhiyal	As per KMZ file	As per KMZ file	1	Gantry 8x3
66	South	BRT Route Traffic Signal	Rambaug	As per KMZ file	As per KMZ file	1	Gantry 8x3
67	New West	BRT Route Traffic	Ramdev Nagar	As per	As per	1	Gantry

#	Zone	Location Type	Locations Name	Latitude	Longitude	Display Board (VMS)	
						Qty	Remarks
		Signal		KMZ file	KMZ file		8x3
68	West	Junctions/Cross Roads	RTO office gate	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
69	New West	Junctions/Cross Roads	Sal Hospital Junction	As per KMZ file	As per KMZ file	2	Gantry 8x3
70	Central	Camera: CSITMS	Sarangpur Circle	As per KMZ file	As per KMZ file	1	Gantry 8x3
71	New West	Camera: CSITMS	Science City Circle	As per KMZ file	As per KMZ file	2	Gantry 8x3
72	West	BRT Route Traffic Signal	Sharstri nagar	As per KMZ file	As per KMZ file	2	Gantry 8x3
73	West	BRT Route Traffic Signal	Shivranjini	As per KMZ file	As per KMZ file	2	Gantry 8x3
74	Central	Junctions/Cross Roads	St. Xavier's School, Mirzapur	As per KMZ file	As per KMZ file	2	Gantry 8x3
75	West	Junctions/Cross Roads	Stadium Junction	As per KMZ file	As per KMZ file	2	Gantry 8x3
76	New West	BRT Route Traffic Signal	Star Bajar	As per KMZ file	As per KMZ file	1	Gantry 8x3
77	Central	Junctions/Cross Roads	Subhash Bridge Circle	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
78	West	Junctions/Cross Roads	Swastik Cross Road Junction	As per KMZ file	As per KMZ file	1	Gantry 8x3
79	North	BRT Route Traffic Signal	Thakkarbapa nagar	As per KMZ file	As per KMZ file	1	Gantry 8x3
80	New West	Camera: CSITMS	Thaltej Circle	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
81	West	Junctions/Cross Roads	Town Hall Junction	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
82	South	BRT Route Traffic Signal	Trupti Hotel	As per KMZ file	As per KMZ file	2	Gantry 8x3
83	West	Junctions/Cross Roads	University	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
84	West	BRT Route Traffic Signal	Vadaj	As per KMZ file	As per KMZ file	2	Gantry 8x3
85	West	Junctions/Cross Roads	Vasna Junction	As per KMZ file	As per KMZ file	2	Gantry 8x3
86	East	Junctions/Cross Roads	vatva GIDC	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
87	West	Municipal Parks	Law Garden	As per KMZ file	As per KMZ file	1	Monopole 9x4.5
88	Central	BRT Route Traffic Signal	Victoria Garden	As per KMZ file	As per KMZ file	1	Gantry 8x3
89	West	Junctions/Cross Roads	Vijay Cross road Junction	As per KMZ file	As per KMZ file	2	Gantry 8x3

## Annexure D - List of locations for Wi-Fi hotspots

#	Zone	Location Type	Location Name	Latitude	Longitude
1	North	Zonal Office	North Zone, Office	As per KMZ file	As per KMZ file
2	South	Zonal Office	South Zone, Office	As per KMZ file	As per KMZ file
3	East	Zonal Office	East Zone, Office	As per KMZ file	As per KMZ file
4	Central	Zonal Office	Central Zone, Office	As per KMZ file	As per KMZ file
5	West	Zonal Office	West zone, Office	As per KMZ file	As per KMZ file
6	New West	Zonal Office	New West Zone, Office	As per KMZ file	As per KMZ file
7	Central	Hospital	V S HOSPITAL	As per KMZ file	As per KMZ file
8	South	Hospital	L G HOSPITAL	As per KMZ file	As per KMZ file
9	Central	Municipal Parks	sardar baugh	As per KMZ file	As per KMZ file
10	East	Municipal Parks	Madhuvan Garden, Nr.Sugyan School, Viratnagar	As per KMZ file	As per KMZ file
11	East	Municipal Parks	Gayatri Vatika Udhyan, Opp.Ambica Nagar School	As per KMZ file	As per KMZ file
12	East	Municipal Parks	Shree Public Park, Nr.Khodiar Mandir	As per KMZ file	As per KMZ file
13	East	Municipal Parks	Sad Guru Garden, Nikol	As per KMZ file	As per KMZ file
14	East	Municipal Parks	Dhruv Public Park, Vastral gate	As per KMZ file	As per KMZ file
15	East	Municipal Parks	Kailash Van, Nr.Gor na Kuva, Maninagar (East)	As per KMZ file	As per KMZ file
16	West	Municipal Parks	Sheth T B Park (Parimal garden),	As per KMZ file	As per KMZ file
17	West	Municipal Parks	Motera Lake	As per KMZ file	As per KMZ file
18	North	Municipal Parks	Madhav Udhyan, Nr.Payalnagar Soc.	As per KMZ file	As per KMZ file
19	South	Municipal Parks	Garden Nr.Ghodasar Smruti Mandir	As per KMZ file	As per KMZ file
20	New West	Municipal Parks	Vastrapur Lake Garden, Vastrapur Gam	As per KMZ file	As per KMZ file
21	West	Municipal Parks	River front Garden (West)	As per KMZ file	As per KMZ file
22	West	Municipal Parks	River front Garden (East)	As per KMZ file	As per KMZ file
23	South	Municipal Parks	Kamla Nehru Udhyan, Uttamnagar	As per KMZ file	As per KMZ file

#	Zone	Location Type	Location Name	Latitude	Longitude
24	West	AMTS Terminal	Juna Vadaj AMTS Terminal	As per KMZ file	As per KMZ file
25	Central	AMTS Terminal	Lal Darwaja AMTS Terminal	As per KMZ file	As per KMZ file
26	West	AMTS Terminal	University Bus stop	As per KMZ file	As per KMZ file
27	South	College	Khokhara Dental College	As per KMZ file	As per KMZ file
28	West	College	Nagari Hospital college	As per KMZ file	As per KMZ file
29	West	College	NHL Medial College	As per KMZ file	As per KMZ file
30	North	College	SCL Nursing College	As per KMZ file	As per KMZ file
31	South	College	Swanim Medical Cllege	As per KMZ file	As per KMZ file
32	East	Municipal Parks	Beti Bachao Garden, Nikol	As per KMZ file	As per KMZ file
33	West	Municipal Parks	Flower Garden, riverfront	As per KMZ file	As per KMZ file
34	West	Municipal Parks	Law Garden	As per KMZ file	As per KMZ file
35	North	Municipal Parks	Neharu Park Kubernagar Ward	As per KMZ file	As per KMZ file
36	New West	Hall	Bodakdev Auditorium	As per KMZ file	As per KMZ file
37	South	Hall	Mangal Pande Auditorium	As per KMZ file	As per KMZ file
38	West	Hall	Tagor Hall	As per KMZ file	As per KMZ file
39	West	Hall	Town Hall	As per KMZ file	As per KMZ file
40	North	Hospital	SCL Hospital	As per KMZ file	As per KMZ file
41	South	Lake	Kankariya Lake	As per KMZ file	As per KMZ file
42	West	Library	MJ Library	As per KMZ file	As per KMZ file
43	West	Office	River Front House	As per KMZ file	As per KMZ file
44	West	Sports Complex	Sardar patel Stedium	As per KMZ file	As per KMZ file
45	North	Sports Complex	Vir Savarkar Sports Complex	As per KMZ file	As per KMZ file

**Annexure E - List of locations for Public Address system**

#	Zone	Location Type	Location Name	Latitude	Longitude
1	Central	BRT Route Traffic Signal	Victoria Garden	As per KMZ file	As per KMZ file
2	New West	BRT Route Traffic Signal	Bhuyang Dev Char Rasta	As per KMZ file	As per KMZ file
3	New West	BRT Route Traffic Signal	Gulab Tower	As per KMZ file	As per KMZ file
4	New West	BRT Route Traffic Signal	Patel Dairy	As per KMZ file	As per KMZ file
5	New West	BRT Route Traffic Signal	Sola Bus Stop	As per KMZ file	As per KMZ file
6	North	BRT Route Traffic Signal	Ashok Mill	As per KMZ file	As per KMZ file
7	North	BRT Route Traffic Signal	Dhanushdhari Mandir	As per KMZ file	As per KMZ file
8	North	BRT Route Traffic Signal	Krishna nagar	As per KMZ file	As per KMZ file
9	North	BRT Route Traffic Signal	Memco	As per KMZ file	As per KMZ file
10	North	BRT Route Traffic Signal	Naroda Paitya	As per KMZ file	As per KMZ file
11	North	BRT Route Traffic Signal	Naroda UHC	As per KMZ file	As per KMZ file
12	North	BRT Route Traffic Signal	Vijay Park	As per KMZ file	As per KMZ file
13	West	BRT Route Traffic Signal	Dharam Nagar	As per KMZ file	As per KMZ file
14	West	BRT Route Traffic Signal	Helmet	As per KMZ file	As per KMZ file
15	West	BRT Route Traffic Signal	Maenkbaug Society	As per KMZ file	As per KMZ file
16	West	BRT Route Traffic Signal	Nehru Circle	As per KMZ file	As per KMZ file
17	West	BRT Route Traffic Signal	Ramnagar	As per KMZ file	As per KMZ file
18	West	BRT Route Traffic Signal	Ranip	As per KMZ file	As per KMZ file
19	West	BRT Route Traffic Signal	Vadaj	As per KMZ file	As per KMZ file
20	Central	Camera- Police Surveillance	JillaPanchayat Cross Road, KaranjBhavan	As per KMZ file	As per KMZ file
21	New West	Camera- Police Surveillance	Below Sola Over Bridge	As per KMZ file	As per KMZ file
22	Central	Camera: CSITMS	Jamalpur circle	As per KMZ file	As per KMZ file
23	Central	Camera: CSITMS	Khamasa Circle - Khamasa	As per KMZ file	As per KMZ file
24	Central	Camera: CSITMS	Sarangpur Circle	As per	As per KMZ

#	Zone	Location Type	Location Name	Latitude	Longitude
				KMZ file	file
25	New West	Camera: CSITMS	Ognaj Circle	As per KMZ file	As per KMZ file
26	New West	Camera: CSITMS	Pakwan Cross Road	As per KMZ file	As per KMZ file
27	New West	Camera: CSITMS	Sanand Circle	As per KMZ file	As per KMZ file
28	New West	Camera: CSITMS	Vaishnodevi Circle	As per KMZ file	As per KMZ file
29	North	Camera: CSITMS	Ruby T	As per KMZ file	As per KMZ file
30	Central	Hospital	V S HOSPITAL	As per KMZ file	As per KMZ file
31	Central	Junctions/Cross Roads	Badiya Limbdi Junction	As per KMZ file	As per KMZ file
32	Central	Junctions/Cross Roads	Cama Hotel near Khanpur	As per KMZ file	As per KMZ file
33	Central	Junctions/Cross Roads	Khanpur darvaja	As per KMZ file	As per KMZ file
34	Central	Junctions/Cross Roads	Relief Cinema Junction	As per KMZ file	As per KMZ file
35	Central	Junctions/Cross Roads	Relief Road, Kalupur police station	As per KMZ file	As per KMZ file
36	Central	Junctions/Cross Roads	Rentiyavadi Shahpur	As per KMZ file	As per KMZ file
37	Central	Junctions/Cross Roads	Rupali Junction	As per KMZ file	As per KMZ file
38	Central	Junctions/Cross Roads	Shahpur Junction	As per KMZ file	As per KMZ file
39	Central	Junctions/Cross Roads	Shantipura Circle	As per KMZ file	As per KMZ file
40	Central	Junctions/Cross Roads	St. Xavier's School, Mirzapur	As per KMZ file	As per KMZ file
41	Central	Junctions/Cross Roads	Vijli Ghar Junction	As per KMZ file	As per KMZ file
42	New West	Junctions/Cross Roads	Boot Bhawani Bus stand	As per KMZ file	As per KMZ file
43	New West	Junctions/Cross Roads	Gota Bridge Neeche Char rasta	As per KMZ file	As per KMZ file
44	New West	Junctions/Cross Roads	Himalaya Mall Junction	As per KMZ file	As per KMZ file
45	New West	Junctions/Cross Roads	Jivaraj Park cross road Junction	As per KMZ file	As per KMZ file
46	New West	Junctions/Cross Roads	Juhanpura cross road	As per KMZ file	As per KMZ file
47	New West	Junctions/Cross Roads	Kargil Cross road Junction	As per KMZ file	As per KMZ file

#	Zone	Location Type	Location Name	Latitude	Longitude
48	New West	Junctions/Cross Roads	Makraba Dhal (Opposite Reliance Petrol Pump Teen rasta)	As per KMZ file	As per KMZ file
49	New West	Junctions/Cross Roads	Mukti Dham Teen Rasta	As per KMZ file	As per KMZ file
50	New West	Junctions/Cross Roads	Opposite Amber Tower Cross road	As per KMZ file	As per KMZ file
51	New West	Junctions/Cross Roads	Sarkhej Dhal	As per KMZ file	As per KMZ file
52	New West	Junctions/Cross Roads	Sims Hospital Cross Road (Science City Road)	As per KMZ file	As per KMZ file
53	New West	Junctions/Cross Roads	Sindhubhawan Cross Road Near Jhampadi Mata Mandir	As per KMZ file	As per KMZ file
54	New West	Junctions/Cross Roads	Teen Rasta over Chandlodiya Bridge	As per KMZ file	As per KMZ file
55	New West	Junctions/Cross Roads	Umiya Hall Teen rasta	As per KMZ file	As per KMZ file
56	North	Junctions/Cross Roads	Bajrang Ashram Teen rasta	As per KMZ file	As per KMZ file
57	North	Junctions/Cross Roads	Hansol Cross Road	As per KMZ file	As per KMZ file
58	North	Junctions/Cross Roads	Hansol Lavadi	As per KMZ file	As per KMZ file
59	North	Junctions/Cross Roads	Hari darshan teen rasta	As per KMZ file	As per KMZ file
60	North	Junctions/Cross Roads	Indika pava Teen rasta	As per KMZ file	As per KMZ file
61	North	Junctions/Cross Roads	Nirmalpura Cross Road near chamunda bridge	As per KMZ file	As per KMZ file
62	North	Junctions/Cross Roads	Potaliya Cross Road	As per KMZ file	As per KMZ file
63	North	Junctions/Cross Roads	Rajavir Circle	As per KMZ file	As per KMZ file
64	North	Junctions/Cross Roads	Surna Karkhana Teen rasta	As per KMZ file	As per KMZ file
65	North	Junctions/Cross Roads	Suvidha Park Junction	As per KMZ file	As per KMZ file
66	North	Junctions/Cross Roads	Vora na rosa pase	As per KMZ file	As per KMZ file
67	West	Junctions/Cross Roads	Ambawadi Circle	As per KMZ file	As per KMZ file
68	West	Junctions/Cross Roads	Pari Cross Road Junction	As per KMZ file	As per KMZ file
69	West	Junctions/Cross Roads	Sardar Patel statue Junction	As per KMZ file	As per KMZ file
70	West	Junctions/Cross Roads	Vasna Junction	As per KMZ file	As per KMZ file
71	Central	Public Address System	Drurani nagar Junction	As per KMZ file	As per KMZ file

#	Zone	Location Type	Location Name	Latitude	Longitude
72	Central	Public Address System	University Circle Shahapur	As per KMZ file	As per KMZ file
73	Central	Public Address System	Shahapur Bhahai Center	As per KMZ file	As per KMZ file
74	Central	Public Address System	Shahapur Torrent Power	As per KMZ file	As per KMZ file
75	Central	Public Address System	Tran Khuniya Mirzapur	As per KMZ file	As per KMZ file
76	Central	Public Address System	Pankor Naka	As per KMZ file	As per KMZ file
77	Central	Public Address System	JP Khan Chowk	As per KMZ file	As per KMZ file
78	Central	Public Address System	Bhadra Plaza	As per KMZ file	As per KMZ file
79	Central	Public Address System	Tran Darwaja	As per KMZ file	As per KMZ file
80	Central	Public Address System	Law Garden Gymkhana	As per KMZ file	As per KMZ file
81	Central	Public Address System	Bhai Kaka Hall	As per KMZ file	As per KMZ file
82	Central	Public Address System	Baliyadev Temple Char Rasta	As per KMZ file	As per KMZ file
83	New West	Public Address System	HebTpur Cross road Junction	As per KMZ file	As per KMZ file
84	New West	Public Address System	Joy Books	As per KMZ file	As per KMZ file
85	New West	Public Address System	Kalgi Circle	As per KMZ file	As per KMZ file
86	New West	Public Address System	Didi Dining Hall	As per KMZ file	As per KMZ file
87	New West	Public Address System	TV 9 Char Rasta	As per KMZ file	As per KMZ file
88	West	Public Address System	Kocharbaug Ashram	As per KMZ file	As per KMZ file
89	West	Public Address System	Mahedi-Navaj Hall	As per KMZ file	As per KMZ file
90	West	Public Address System	Pravin Nagar	As per KMZ file	As per KMZ file
91	West	Public Address System	Jivraj Mehta Hospital Char Rasta	As per KMZ file	As per KMZ file
92	West	Public Address System	Dinesh Chamber Cross Road	As per KMZ file	As per KMZ file
93	West	Public Address System	V S HOSPITAL	23.020676	72.571017
94	New West	Public Address System	Sola bus stop Junction	As per KMZ file	As per KMZ file
95	West	Public Address System	Zilla Panchayat	As per KMZ file	As per KMZ file

Annexure F - List of locations for Speed Violation detection system

#	Zone	Location Type	Location Name	Latitude	Longitude
1	North	Junctions/Cross Roads	Airport Circle	As per KMZ file	As per KMZ file
2	East	BRT Route Traffic Signal	Ajit Mill	As per KMZ file	As per KMZ file
3	Central	Junctions/Cross Roads	APMC Junction	As per KMZ file	As per KMZ file
4	South	Camera: CSITMS	Aslali Circle	As per KMZ file	As per KMZ file
5	West	BRT Route Traffic Signal	Avani Bhavan	As per KMZ file	As per KMZ file
6	South	Junctions/Cross Roads	Avkar Hall Cross road	As per KMZ file	As per KMZ file
7	North	Junctions/Cross Roads	Bajrang Ashram Teen rasta	As per KMZ file	As per KMZ file
8	New West	Camera- Police Surveillance	Below Sola Over Bridge	As per KMZ file	As per KMZ file
9	South	BRT Route Traffic Signal	Bhairavnath	As per KMZ file	As per KMZ file
10	Central	Junctions/Cross Roads	Cama Hotel near Khanpur	As per KMZ file	As per KMZ file
11	West	BRT Route Traffic Signal	Chandranagar	As per KMZ file	As per KMZ file
12	West	Camera: CSITMS	Chiman bhai Bridge	As per KMZ file	As per KMZ file
13	South	Junctions/Cross Roads	Cozy Hotel Cross road	As per KMZ file	As per KMZ file
14	South	Camera: CSITMS	CTM	As per KMZ file	As per KMZ file
15	South	BRT Route Traffic Signal	Danilimda	As per KMZ file	As per KMZ file
16	West	BRT Route Traffic Signal	Dharninagar	As per KMZ file	As per KMZ file
17	South	BRT Route Traffic Signal	Ghodasar	As per KMZ file	As per KMZ file
18	South	BRT Route Traffic Signal	Gokulnath/ Mira Cinema	As per KMZ file	As per KMZ file
19	New West	Junctions/Cross Roads	Gota Bridge Neeche Char rasta	As per KMZ file	As per KMZ file
20	South	Junctions/Cross Roads	Govindwadi Cross road	As per KMZ file	As per KMZ file
21	North	Junctions/Cross Roads	Hansol Lavadi	As per KMZ file	As per KMZ file
22	New West	Junctions/Cross Roads	Hebatpur Circle	As per KMZ file	As per KMZ file
23	West	BRT Route Traffic Signal	Helmet	As per KMZ file	As per KMZ file

#	Zone	Location Type	Location Name	Latitude	Longitude
24	South	BRT Route Traffic Signal	Isanpur	As per KMZ file	As per KMZ file
25	New West	BRT Route Traffic Signal	ISRO Gate	As per KMZ file	As per KMZ file
26	South	BRT Route Traffic Signal	Jawahar Chowk	As per KMZ file	As per KMZ file
27	New West	BRT Route Traffic Signal	Jodhpur Char Rasta	As per KMZ file	As per KMZ file
28	New West	Junctions/Cross Roads	Juhanpura cross road	As per KMZ file	As per KMZ file
29	South	Junctions/Cross Roads	Kankariya -3 Junction	As per KMZ file	As per KMZ file
30	New West	Junctions/Cross Roads	Kargil Cross road Junction	As per KMZ file	As per KMZ file
31	West	BRT Route Traffic Signal	Manekbag Hall	As per KMZ file	As per KMZ file
32	South	BRT Route Traffic Signal	Maninagar Char Rasta	As per KMZ file	As per KMZ file
33	New West	Junctions/Cross Roads	Mehmadpura T Junction	As per KMZ file	As per KMZ file
34	North	BRT Route Traffic Signal	Memco	As per KMZ file	As per KMZ file
35	South	BRT Route Traffic Signal	Mukesh Industry	As per KMZ file	As per KMZ file
36	North	BRT Route Traffic Signal	Naroda Paitya	As per KMZ file	As per KMZ file
37	South	Junctions/Cross Roads	Narol Junction	As per KMZ file	As per KMZ file
38	West	Junctions/Cross Roads	NID Junction	As per KMZ file	As per KMZ file
39	New West	Camera: CSITMS	Ognaj Circle	As per KMZ file	As per KMZ file
40	New West	Camera: CSITMS	Pakwan Cross Road	As per KMZ file	As per KMZ file
41	West	Junctions/Cross Roads	Panchwati Junction	As per KMZ file	As per KMZ file
42	South	Junctions/Cross Roads	Pirana Cross road	As per KMZ file	As per KMZ file
43	New West	Junctions/Cross Roads	Prahalanagara T. Points Junction	As per KMZ file	As per KMZ file
44	South	Camera: CSITMS	Pushpakunj Circle , Maninagar	As per KMZ file	As per KMZ file
45	West	BRT Route Traffic Signal	Ranip	As per KMZ file	As per KMZ file
46	North	Camera: CSITMS	Ruby T	As per KMZ file	As per KMZ file
47	New	Camera: CSITMS	Sanathal Circle	As per KMZ	As per KMZ

#	Zone	Location Type	Location Name	Latitude	Longitude
	West			file	file
48	Central	Camera: CSITMS	Sarangpur Circle	As per KMZ file	As per KMZ file
49	South	BRT Route Traffic Signal	Shah Alam	As per KMZ file	As per KMZ file
50	New West	Junctions/Cross Roads	Sindhubhawan Cross Road Near Jhampadi Mata Mandir	As per KMZ file	As per KMZ file
51	New West	Junctions/Cross Roads	Sola Bhagvat Circle	As per KMZ file	As per KMZ file
52	East	Camera: CSITMS	Soni ni Chali Cross Road	As per KMZ file	As per KMZ file
53	West	BRT Route Traffic Signal	Vadaj	As per KMZ file	As per KMZ file
54	New West	Camera: CSITMS	Vaishnodevi Circle	As per KMZ file	As per KMZ file
55	East	Junctions/Cross Roads	vatva GIDC	As per KMZ file	As per KMZ file
56	Central	BRT Route Traffic Signal	Victoria Garden	As per KMZ file	As per KMZ file
57	New West	Junctions/Cross Roads	YMCA Cut	As per KMZ file	As per KMZ file
58	South	Junction/Cross Road	Niketube Cross Road	As per KMZ file	As per KMZ file
59	South	Junction/Cross Road	Chandola Barrel Market	As per KMZ file	As per KMZ file
60	North	Junction/Cross Road	Bwteen Camp Sadar – Golden Cattar Darwaja Army Cantonment	As per KMZ file	As per KMZ file
61	Central	Junction/Cross Road	Between Vallabhsadan cut 0-Gujarat Sahitya Parishad cut (river front west road)	As per KMZ file	As per KMZ file
62	South	Junction/Cross Road	Apparel park (at the end of Khokhara bridge)	As per KMZ file	As per KMZ file

**End of Document**

