

GREATER VISAKHAPATNAM MUNICIPAL CORPORATION – VISAKHAPATNAM

Expression of Interest for R & D activities related to Generation of Digital data and GIS Base maps on urban property and settlements of Greater Visakhapatnam Municipal Corporation

1. Background:

Greater Visakhapatnam Municipal Corporation has been growing exponentially in extent, due to unprecedented developments in all most all sectors with strong economic base. The growth is triggered by major developments in habitation, new and expanding industry, the emerging IT sector, and ever growing education sector. The activities associated with all these sectors including real estate has a major impact on the nature of growth and the related revenue issues that would be of great interest to GVMC. Further, in this expanding scenario, the services expected by the citizens, entrepreneurs, industrialists, policy makers and executive bodies have also been highly demanding in nature. To fulfil the varied expectations from different sections of the society and the Government, and to comply with the basic needs and amenities required for the major innovations and initiatives like Swacha Bharat, Digital India, Smart cities etc. proposed by the Government of India and Prime Minister in particular, need the generation and development of detailed digital data for use by public and government.

2. Nature and Classification of Work:

R & D activity to propose, develop and adopt geospatial technologies for planning, development and revenue improvement in GVMC.

3. Objectives:

- a. Identification and application of suitable technology to meet the objectives of digital infrastructure for GVMC
- b. To develop suitable models to address the digital data needs of GVMC
- c. Design and Development of high resolution digital database
- d. Data organization and thematic layering to meet various requirements of GVMC and its stake holders
- e. Collection and Validation of model in selected zone(s) of GVMC
- f. Detailed Project Reporting Documentation and recommendations

4. Present Status at GVMC

Currently GVMC is using multiple technological systems for the purpose of planning, property tax, water tax, vacant land tax etc.

Property Tax	Water Tax	Vacant Land Tax	Shop Lease & Rentals	D & O Trade License
Check & Pay Property Tax	Check & Pay Water Tax	Check & Pay Vacant Land Tax	Check & Pay Shop Lease Tax	Check & Pay D & O Trade Tax
Online Payment Receipt	Search by name	Search by name	Check Status	Check Status
Search by name	Check Status	Check Status		

5. Scope of the services:

The scope of the services include:

- a. Review of existing situation, collection and collation of all available data from the study area, in soft and or hard copies including municipal boundary, Town survey maps, Cadastral maps, Ward boundary maps, Slum area related data, Colony boundary maps and Environment data; data on drainage systems, water supply, advertisement hoardings, other public properties etc.;
- b. Data evaluation: Source and reliability, Positional accuracy, Attribute authenticity;
- c. Ground Control Points (GCPs) collected through Differential Global Positioning System (DGPS) survey;
- d. GIS Base mapping
 - i. Generation of Digital Aerial Photographic data with suitable swath for 3D Mapping and Processing
 - ii. Interpretation and digitization of all physical features from photographs. The digitization process shall include vectorization, symbolization, layering, edge matching, topological integrity, and database linking;
 - iii. Geo-referencing and digitization of Cadastral Maps;
 - iv. Generation of contour overlay at 0.5 meter interval with construction of Permanent Benchmarks (PBM) 2.5*2.5 km interval.
 - v. Incorporation of locality, ward, zone and municipal boundaries;
 - vi. Database structure and design;
 - vii. Integration of existing environmental, slum related and other data with base map.
 - viii. Revenue survey in selected zone(s).

6. Deliverables

- a. Raw and Processed high resolution data
- b. Data Modelling
- c. Data extraction and alleviation of data and preparation of thematic maps as per variables and attributes projected in Annexure.
- d. Digital base data along with and thematic layers as identified in Annexure
- e. Digital base map with geocoding of all individual plots
- f. Generation of systematic number code for the properties
- g. Training for GVMC staff
- h. Documentation on operation, procedures and maintenance
- i. Analysis & Reports
- j. Assessment wise studies in selected Zone(s)

Though studies pertaining to the entire GVMC area need to be covered within the framework of the elements projected in Annexure, assessment wise detailed studies need to be taken up in Zone-II. This includes geocoding of property linked to each assessment with details of property/ water/ trade/ advertisement taxes, un-assessed properties, vacant lands, government properties, etc in addition to information/data generated for entire GVMC area.

7. Expression of Interest

GVMC invites Government Institutions, Universities and Academic /Research Institutions, who have experience in generation, acquisition, processing, interpretation and application of Aerial Photography to submit an Expression of Interest for the proposed R & D activity/

application related to the **Generation of Digital data and GIS Base maps on urban property and settlements of Greater Visakhapatnam Municipal Corporation**. The Government institutions, if necessary, can take the help of professional agencies for the generation of Digital Aerial Photographic data.

8. Expression of Interest Issuing Authority

This Expression of Interest (EoI) is issued by the Greater Visakhapatnam Municipal Corporation (GVMC), with an intent to identify a suitable agency for taking up the work as an R & D Project. GVMC reserves the right to reject any or all of the bids received in response to this invitation without assigning any reasons whatsoever

9. Contact Details

1) Commissioner,
Greater Visakhapatnam Municipal Corporation
Tenneti Bhavan, Ram Nagar, Visakhapatnam
Andhra Pradesh, India.
Pincode - 530002
Tel.: +91 - 891 - 2746301-7
Fax: +91-891-2568545

2) Additional Commissioner (Finance),
Greater Visakhapatnam Municipal Corporation
Tenneti Bhavan, Ram Nagar, Visakhapatnam
Andhra Pradesh, India.
Pincode - 530002
Ph: 7729995960.

3) Deputy Commissioner (Revenue)
Greater Visakhapatnam Municipal Corporation
Tenneti Bhavan, Ram Nagar, Visakhapatnam
Andhra Pradesh, India.
Pincode - 530002
Ph: 9912349437.

Visit us at website: www.gvmc.gov.in

10. Submission of proposals

The sealed Proposals in its complete form in all respects as specified in the EoI, must be submitted to GVMC either in person or by Regd. Post/Speed Post/Courier on or before 5:00 P.M. on 01-08-2016 at the following address:

Deputy Commissioner (Revenue),
Greater Visakhapatnam Municipal Corporation
Tenneti Bhavan, Ram Nagar, Visakhapatnam
Andhra Pradesh, India,
Pin code - 530002.
Ph: 9912349437.

In exceptional circumstances and at its discretion, GVMC shall extend the deadline for submission of proposals by issuing an addendum to be made available on the GVMC website.

The proposal must include:

- Brief description of the Institution/Organization
- Details of experience in handling similar projects
- Proposed Approach and Methodology along with technical details
- Work plan and schedule
- Manpower details
- Financial proposal

11. Important Dates

S.No	Milestone	Date and Time
1	Release of EOI	22-07-2016
2	Response submission	01-08-2016 before 5.00 P.M.
3	Opening of the EoI	02-08-2016 at 10.30 A.M.

12. General information

- ❖ The bids will be opened on 02-08-2016 before a Committee. The Bidders or their representatives can be present at the time of opening the bid.
- ❖ The Bidders are required to provide clarifications, if any, that are likely to be sought by the Committee. If required they may have to stay for one more extra day.
- ❖ The Commissioner, GVMC has every right to postpone the date and time of the opening of the EoI. In such circumstances the revised date of opening of the EoI will be communicated to the participating institutions.
- ❖ The GVMC reserves the right to reject any or all of the bids received in response to this invitation without assigning any reasons.

13. Price Bid Template

Greater Visakhapatnam Municipal Corporation – Visakhapatnam

Expression of Interest for R & D proposal related to ‘Generation of Digital data and GIS Base maps on urban property and settlements of Greater Visakhapatnam Municipal Corporation’

S. No.	Work Component	Area (approx) in sq. km. / Units	Unit Rate in INR (per Sq. km)	Cost in INR
1	Desktop study using existing GVMC data and inception report preparation.	LS		
2	Aerial Photography Acquisition and Ground Control Establishment as per EOI	600		
3	Base maps preparation and Geo-tagging with prominent features as per EOI	600		
4	Assessment wise collection of data and validation of Model in selected Zone(s) of GVMC	Approx 72,000 Assessments		
Total Cost in INR in Words :				

The above prices should be inclusive of all taxes

**Commissioner,
GVMC**

Annexure

PROPOSED LIST OF LAYERS / INFORMATION FOR GIS BASE MAP					
<i>S.No</i>	<i>Layer Name</i>	<i>S.No</i>	<i>Layer Name</i>	<i>S.No</i>	<i>Layer Name</i>
1	Municipal Boundary	20	Water treatment plant	39	Road Network
2	Ward Boundary	21	Fire Stations	40	Carriage Way
3	Zone Boundary	22	Garbage Collection Points – Secondary	41	Footpath
4	Tax Zone Boundary	23	Slaughter House	42	Sewage Treatment Plant
5	Industrial Zones/Area	24	Street Light	43	Cell Phone Tower/ Telephone Tower
6	Colony Boundary	25	Bridges / Flyover	44	Bus Shelters
7	Slum Boundary	26	Parks/Garden	45	Cadastral Map/Town Survey Maps
8	Buildings/Plots etc.	27	Tube Well	46	Dumper Bins/Open Points
9	Streams/Drainage/ Canal	28	Hand Pump	47	Garbage Transfer Stations/Parking Yards
10	Over Head Tanks	29	Community Toilet	48	Public Taps
11	Landfill Site	30	Communication Tower	49	Layouts
12	DGPS Points & Field Photos	31	Water Pumping Stations	50	Compound Walls
13	Sewerage Network / Drainage Network	32	Traffic Square	51	Parcel
14	Manholes	33	Railway Line/Station	52	Other Basic Infrastructure
15	Water Supply Network	34	Contours	53	Permanent bench mark and Field Photo
16	Vent Shaft	35	Power Supply Network	54	Sewage Pumping Station
17	Hoardings	36	Electric pole		
18	Right of Way	37	Electric Transformers		
19	Drainage Pumping Station	38	Landmarks		

Item wise description

S.No.	Layer Name	Capturing Rule
1	Municipal Boundary	All the outline area of the data pertaining to Municipal Boundaries will be delineated as closed Polygons with the help of the existing maps provided by GVMC as a reference to update the boundary using aerial photographs.
2	Ward Boundary	All the outline area of the data pertaining to Ward Boundaries will be delineated as closed Polygons with the help of the existing maps provided by GVMC as a reference to update the features using aerial photographs.
3	Zone Boundary	All the outline area of the data pertaining to Ward Boundaries will be delineated as closed Polygons with the help of the existing maps provided by GVMC as a reference to update the features using aerial photographs.
4	Tax Zone Boundary	All the outline area of the data pertaining to Ward Boundaries will be delineated as closed Polygons with the help of the existing maps provided by GVMC as a reference to update the features using aerial photographs.
5	Industrial Zone/Area	All the outline area of the data pertaining to Industrial Zone will be delineated as closed Polygons with the help of the existing maps provided by GVMC as a reference to update the features.
6	Colony boundary	All the outline area of the data pertaining to Colony Boundaries will be delineated as closed Polygons with the help of the existing maps provided by GVMC as a reference to update the features.
7	Slum boundary	All the outline area of the data pertaining to Slum Boundaries will be delineated as closed Polygons with the help of the Imagery and based on existing records and maps.
8	Buildings /Vacant Plots	All the outline area of the data pertaining to Buildings is done by interpreting their roofs / foot prints with the help of the aerial photographs and delineated them as closed polygons. & All the outline area of the data pertaining to Vacant Plots is done by interpreting the vacant slots with the help of the aerial photographs and delineated them as closed polygons.
9	Streams/Drainage/ Canal	All the outline area of the data pertaining to Streams/Canals that is visible in the aerial photographs, and delineated them as closed polygons.
10	Over Head Tanks	All the outline area of the data pertaining to Over Head Tanks that is visible in the Imagery shall be collected with the help of the aerial photographs and delineated them as Points.
11	Landfill Site/intermittent transfer station/ unauthorized dumping place	All the outline area of the data pertaining to Landfill Site/intermittent transfer station/unauthorized dumping place that is visible in the Imagery, shall be collected with the help of the aerial photography and delineated them as closed polygons.
12	DGPS Points & Field photo	All the Control Points of the GVMC Area surveyed through DGPS equipment, shall be collected with the help of the Field Survey and delineated them as Points. & All the Control Points data shall be captured with the help of DGPS Field Survey and a Table created with a Photograph of each Control Point is inserted as a Point Geometry.
13	Sewerage Network / Drainage Network	All the data pertaining to Sewerage Network shall be captured as per aerial photographs, Verified with the GVMC Officials and delineate them as Lines. GVMC should provide the respective sewerage network maps and related data for incorporation in the Digital Base Maps. & Delineate with the help of the GVMC Officials and delineated them as Lines GVMC should provide the respective Drainage network maps and related data .(especially for underground networks)
14	Manholes	All the data pertaining to Manholes shall be captured using aerial photographs, Verified with the GVMC Officials and delineated them as Points.

15	Water Supply Network	All the data pertaining to water supply Network shall be captured as per aerial photographs, Verified with the GVMC Officials and delineated them as Lines. GVMC should provide the respective water supply network maps and related data for incorporation in the Digital Base Maps.
16	Vent Shaft	All the data pertaining to Vent Shaft shall be captured using aerial photographs, Verified with the GVMC Officials and delineated them as Points. The locations need to be pointed by GVMC for inclusion in the map.
17	Hoardings/Lollypops	All the data pertaining to Hoardings/Lollypops shall be captured using aerial photographs, Verified with the GVMC Officials and delineated them as Points.
18	Right of way	All the data pertaining to Right of Way shall be captured using aerial photographs to update and delineated them as Line.
19	Drainage Pumping Station	All the Outline data pertaining to Drainage Pumping Station shall be captured using aerial photographs, Verified with the GVMC Officials and delineated them as Polygons.
20	Water treatment plant	All the Outline data pertaining to Water treatment plant shall be captured using aerial photographs, Verified with the GVMC Officials and delineated them as Polygons.
21	Fire Stations	All the Outline data pertaining to Fire Stations shall be captured using aerial photographs, Verified with the GVMC Officials and delineated them as Polygons.
22	Garbage Collection Points –secondary	All the data pertaining to Garbage Collection Points shall be captured using aerial photographs, Verified with the GVMC Officials and delineated them as Points.
23	Slaughter House	All the Outline data pertaining to Slaughter House shall be captured using aerial photographs and Verified with the GVMC Officials and delineated them as Polygons.
24	Street Light	All the data pertaining to Street Light shall be captured using aerial photographs, Verified with the GVMC Officials and delineated them as Points.
25	Bridges / Flyover	All the Outline data pertaining to Bridges / Flyover shall be physically Surveyed with the help of the aerial photographs, Verified with the GVMC Officials and delineated them as Line.
26	Parks/Garden	All the Outline data pertaining to Parks/Garden shall be captured with the help of the aerial photographs and delineated them as Polygons.
27	Tube Well	All the data pertaining to Tube Wells shall be provided by GVMC Officials and they will delineate them as Points.
28	Hand Pump	All the data pertaining to Hand Pump shall be captured using aerial photographs, Verified with the GVMC Officials and delineated them as Points.
29	Community Toilet	All the data pertaining to Community Toilet shall be captured using aerial photographs, Verified with the GVMC Officials and delineated them as Points.
30	Communication Towers	All the data pertaining to Communication Tower captured using aerial photographs, Verified with the GVMC Officials and delineated them as Points.
31	Water Pumping Stations	All the Outline data pertaining to Water Pumping Stations shall be captured with aerial photographs Verified with the GVMC Officials and delineated them as Points.
32	Traffic Square	All the data pertaining to Traffic Square shall be captured with the help of the Aerial Imagery and delineated them as Points.
33	Railway lines/ stations	All the data pertaining to Railway shall be captured with the help of the Aerial Imagery and delineated them as Line.
34	Contours	All the data pertaining to Contours shall be generated using the DEM generated from aerial photographs and validated on ground
35	Power Supply Network	All the data pertaining to Power Supply Network shall be captured with the help of the aerial photographs, Verified with the GVMC Officials and delineated them as Lines.
36	Electric pole	All the data pertaining to Electric Pole shall be captured with the help of the aerial photographs and delineated them as Points.
37	Electric Transformers	All the data pertaining to Electric Transformers shall be physically Surveyed with the help of the aerial photographs, Verified with the GVMC Officials and delineated them as Points.

38	Landmarks	All the data pertaining to Landmarks shall be captured with the help of the aerial photographs, Verified with the GVMC Officials and delineated them as Points.
39	Road Network	All the Outline data pertaining to Road Network are identified and captured as Polygons with the help of Aerial Imagery and delineated them as Line.
40	Carriage Way	All the Outline data pertaining to Carriage Way shall be captured as Polygons with the help of the Aerial Imagery and delineated them as Line.
41	Footpath	All the Outline data pertaining to Footpath shall be captured as Polygons with the help of the Aerial Imagery and delineated them as Line.
42	Sewage Treatment Plant	All the Outline data pertaining to Sewage Treatment Plant shall be captured with the help of the aerial photographs and delineated them as Polygons.
43	Telephone Towers/Cell Phone Tower	All the data pertaining to Cell Phone Tower captured using aerial photographs, Verified with the GVMC Officials and delineated them as Points.
44	Bus Shelters	All the data pertaining to Bus Shelters shall be captured with the help of the aerial photographs and delineated them as Points.
45	Cadastral Map/Town Survey Maps with survey numbers Map/Town Survey Maps with survey numbers	All the data pertaining to Cadastral Map shall be updated based on existing Village Maps provided by GVMC as a reference to update and delineated them as Polygons.
46	Dumper Bins/Open Points	All the data pertaining to Dumper Bins/Open Points shall be captured with the help of the aerial photographs and delineated them as Points.
47	Garbage Transfer Stations/Parking Yards	All the Outline data pertaining to Garbage Transfer Stations/Parking Yards shall be captured with the help of the aerial photographs and delineated them as Polygons.
48	Public Taps	All the data pertaining to Public Taps shall be captured with the help of the aerial photographs and delineated them as Points and validation by GVMC
49	Layouts	All the Outline data pertaining to Layouts shall be captured with the help of the aerial photographs and delineated them as Polygons.
50	Compound Walls	All the Outline data pertaining to Compound Walls shall be captured with the help of the aerial photographs and delineated them as Polygons.
51	Parcel	All the data pertaining to Parcel shall be captured with the help of the Aerial Imagery and delineated them as Polygons.
52	Other Basic Infrastructure	All the data pertaining to Other Basic Infrastructure shall be captured with the help of the Aerial Image, Field Survey and existing maps provided by GVMC as a reference to update the features, Verified with the GVMC Officials and delineated them as Point/Line/Polygons.
53	Permanent bench mark & BM field - photo	All the data pertaining to Permanent bench mark shall be captured with the help of the Field Survey and delineated them as Points. & All the Bench Marks data shall be captured with the help of Field Survey and a Table created with a Photograph of each Bench Mark is inserted as Point Geometry.
54	Sewage Pumping Station	All the Outline data pertaining to Sewage Pumping Station shall be captured with the help of the aerial photographs and delineated them as Polygons.
	Detailed Property Assessment	All the Properties Information is Physically Surveyed including Floor details, Multi Storied Buildings, Verified with the GVMC Officials and delineated them as Polygons for selected Zone(s) of GVMC

**Commissioner,
GVMC.**