

Consulting Service for Preparation of

GIS Based Base Map

Of

PanchkhalMunicipality

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ANNEX A: TERMS OF REFERENCE AND SCOPE OF SERVICES

1. Introduction:

The municipality office of Panchkhal Municipality, (herein after referred as "the Municipality" or as "Office"), intends to utilize services of engineering consulting firms well experienced in the fields of Planning and GIS-based Studies for providing Planning consulting services for Preparation of GIS-based Digital Base Map of Panchkhal Municipality of Kavre District.

The municipality office of Panchkhal Municipality intends to carry out Preparation of GIS-based Digital Base Map of Panchkhal Municipality Area of Kavre District, in the current F.Y. 2072/73.

National Urban Policy 2007 has also advocated the necessity of prioritizing investment to lagging regions of the country, while fostering development of regional cities, intermediate towns, and small towns as well as emerging market centers. The utilization of digital geographic information has been growing fast worldwide in all sectors of society, which is still lacking in Nepal. The lacking of digital geographic information, particularly large scale has been results an ineffective and inefficiency planning activities in urban development. The creation and development of large scale digital geographic information of actively growing urban areas, by both in private and government sector, has become very crucial.

In this urban context, for making proper database and spatial profile of important urbanizing settlements within its municipal boundaries, Office of Panchkhal Municipality seeks to have consulting services for Preparation of GIS-based Digital Base Map of Panchkhal Municipality. GIS-based Digital Base Map of Panchkhal Municipality will support to monitor infrastructure development, update households, identify various needs of urban areas, knows the forms and trends of urban development and to collect revenue. The preparation of GIS-based Digital Base Map of Panchkhal Municipality area is also one step ahead to foster initiatives for the development of "Urban Information Management System".

2. Objective

As per the terms of reference the objectives of the study are enlisted as follows -

- To prepare GIS-based Base Map of Panchkhal Municipality in 1:2500 scale for the urban area with 2m contour interval and 1:5000 scale for the remaining areas with 10 m contour interval.
- Update the above map using High Resolution (higher than 0.62m resolution) natural colour/ Panchromatic archive satellite imagery, not older than 7 months prior to the commencement of GIS base map preparation works..

3. Scope of Works

The Consultant will, under these Times of Reference (TOR) carry out activities and deliver services and documents as follows:

1. Study the existing topographical maps, aerial photos, orthophoto etc. and identify the features to be captured.
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2. Conduct Land Suitability Analysis for development and designate land for Urban Development.
3. Study and propose the best method to capture features and store in digital form.
4. Specify the accuracy, reliability and consistencies of the map
5. Verify the base map in the field for better accuracy
6. Submit the report along with the maps as mentioned in the ToR.

4. Project Area

The project area shall consist of the current municipal boundary of Panchkhal Municipality, Kavre District.

5. Methodology

- Collect and review of the existing topographical maps, aerial photos, orthophoto etc. and identify the features to be captured and collect data on field as per the necessity of the preparation of GIS based Basemap.
- Field Visit/appraisal and field Work
- Preliminary meeting/ interaction with the local stakeholders and representatives from concerned sectoral agencies within the Municipality and the surrounding VDCs, political parties, social organizations, NGOs and INGOs etc. to create an understanding for the preparation of GIS basemap of Panchkhal Municipality
- Conduct Land Suitability Analysis for development and designate land for Urban Development. The consultant shall also update cadastral map of delineated urban area from the survey office.
- Digitize these cadastral maps and superimpose to the Base Map with their attribute information.
- Study and propose the best method to capture features and store digital form.
- Specify the accuracy, reliability and consistencies of the map.
- Verify the Base map in the field for better accuracy.
- Draft Report presentation and collection of feedback from local stakeholders and concerned agencies.
- Final Report Submission

6. Knowledge and skill Transfer

The consultant team shall work in close coordination with Panchkhal Municipality. The Consultant team shall involve a technical personnel from the municipality in its study team and shall transfer the knowledge regarding the preparation of GIS based Basemap during the course of completion of the assigned task.

7. Academic qualification for Team Leader and other experts

The consultant team shall be led by an individual having completed minimum Master's Degree in Urban Planning/Regional Planning, Geography, or Sociology with adequate knowledge and experience in GIS mapping and allied environment. Regarding the qualification of other key experts,

they should at least have graduate degree in their respective field of expertise. The following is the requirement for the consultant team to carry out the assigned task:

Qualification

- **Urban Planner/ Team Leader**
The individual must be Masters in Urban Planning, Urban Management study with 5 years of experience. Project related working knowledge in preparing GIS based Base map, Urban Base map, Periodic plan, Master Plan, Land Use Plan, strategic plan and perspective Plan etc.
- **GIS Expert**
The individual must be graduate in Geo-informatics engineering or science/ Geomatic Engineering/ or Geography with minimum 2 years of experience. Project related working knowledge in preparing GIS based Base map, Urban Base map, Periodic Plan, Physical Development Plan, etc.
- **Surveyor**
The individual must be Graduate in Civil Engineering/Geomatic Engineering with at least 2 years of experience. Project related working knowledge in conducting topographic field surveys of different types would be an added advantage.
- **GIS technician/Digitizer**
The individual must be at least intermediate with at least 3 months of training in GIS related environment or 6 month experience in working in GIS based projects.

8. Report and Works Schedule

The reports will be prepared and submitted as specified below. Computer Software viz. GIS will be used to prepare all drawings and maps, and other software may be used as per the need. All reporting will be in English and in the metric system except as otherwise mentioned. Interim, draft and final reports will be submitted to Panchkhal Municipality as specified below.

Field/Interim Report:

Field/Interim report will contain the detailed methodology of the assigned task, data collected from field and the analysis of collected data. Two sets of the report will be submitted within 1 month after the work order. This report will be presented in Panchkhal Municipality in presence of professional and concerned officials comprising experts for discussion, comments and suggestions.

Draft Final Report:

Draft final report will contain all the major work completed during the preparation of GIS based Basemap of Panchkhal Municipality. Two sets of the report will be submitted within two months after the work order. This report will be presented in the Panchkhal Municipality in presence of professional and concerned officials comprising experts for discussion, comments and suggestions.

Final Report:

The final report will incorporate all the comments and suggestions on the draft final report. The consultant should also submit three sets to CDS with final report including aforementioned maps and drawings. Three sets of final report (one set original and two sets in duplicate) within 2 weeks after the acceptance of draft report. This will include two sets of final drawing in A1 size.

9. Time Schedule

Reports Submission Schedule

- | | |
|------------------------|---------------------------------------------------|
| A. Interim Report | Within 1- months after signing agreement |
| B. Draft Design Report | Within 2 - months after signing agreement |
| C. Final Design Report | Within 2 - weeks after acceptance of draft report |

10. Payment Schedule

Payments will be made by Panchkhalunicipality based on the Consultant's invoices according to the following schedule:

- | | |
|-------------------------------|-------------------------------------------------------------------------------------|
| a) 1 st Instalment | After Contract Agreement
30% of total contract Price. |
| a) 2nd. Instalment | After submission of draft report
40% of total contract Price. |
| b) Final Instalment | After the submission of final version of the Report
30% of total contract Price. |

Tax and security deposit will be deducted as per prevailing local governance financial rules and regulation.

11.Data, Local Services, and Facilities to be provided by the Client.

On the request of consultant related data, drawing, working space shall be provided by the Client during the design.

Annex B : Consultant Personal

S. No.	Particulars	Name of Personal
1	Urban Planner/ Team Leader	
2	GIS Expert	
3	Surveyor	
4	GIS Technician/Digitizer	

ANNEX C – CONSULTANT’S REPORTING OBLIGATION

The reports shall be in English and in metric system, except otherwise agreed upon by the Consultant and the Panchkhal Municipality office. The reports shall be prepared in A4 size with maps and drawings on A3 size. Three Electronic Copies of the Final Report including the maps and GIS data shall also be submitted to the concerned authorities. The reporting obligation and schedule is detailed below:

Report	Nos.	Submission	Time
Interim/ Field Report	2	PanchkhalMunicipality	1 month after the work order
Draft Report	2	PanchkhalMunicipality	2 months after the work order
Final Report	3	PanchkhalMunicipality	2 weeks after acceptance of Draft Final Report

Annex D : Cost Sheet**Panchkhal Municipality Office****Panchkhal, Kavre District****COST SHEET**Consulting services for Preparation of Byelaws of Panchkhal Municipality Office

Name of the Consultant :

Address:

S. No.	Particulars	Name of Personnel	Month	Rate		Total
				In Figure	In Word	
1	Urban Planner/ Team Leader		3			
2	GIS Expert		2			
3	Surveyor		2			
4	GIS Technician/Digitizer		2			
5	Transportation and communication		LS			
6	Stationery and Printing		LS			
	Reporting					
7	Interim/Field Report		LS			
8	Draft Report		LS			
9	Final Report		LS			
	Total					
	VAT (13%)					
	Total with VAT					