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Government of Nepal

Gosainkunda Rural Municipality

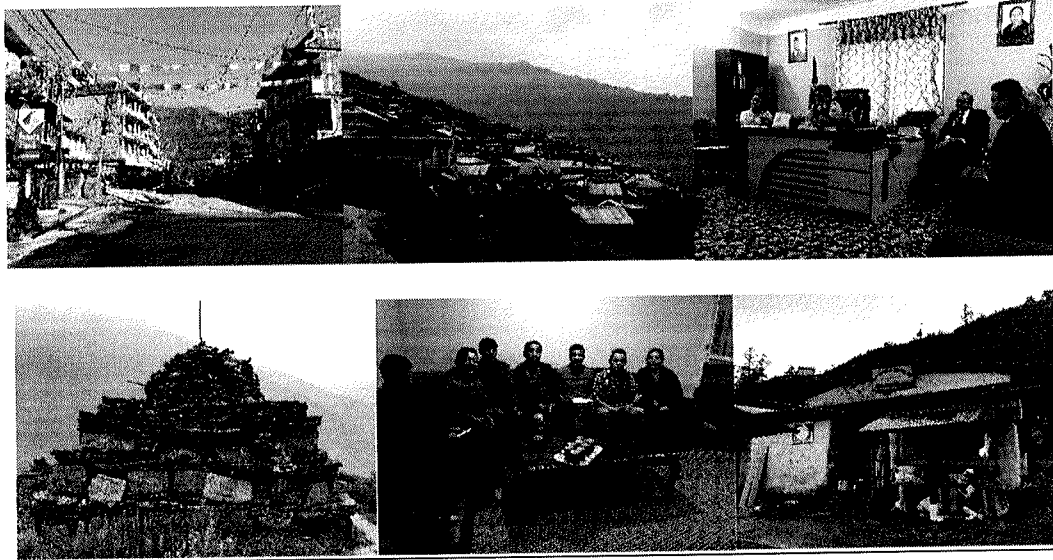
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PERIODIC PLAN OF GOSAINKUNDA RURAL MUNICIPALITY

आवधिक योजना

Inception Report

2019



Submitted By:

Next Consult Pvt. Ltd.

Kathmandu

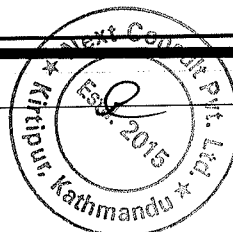


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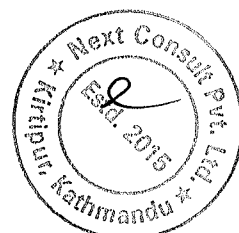
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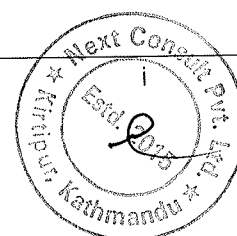
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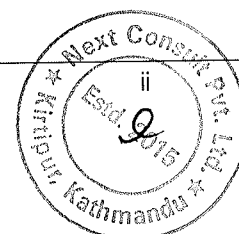


ACKNOWLEDGEMENT

We would like to express our sincere gratitude to Gosainkunda Rural Municipality for entrusting us with the project work.

We would also like to express our gratitude to Executive Officer, Engineers and all other staffs of Municipality, for their help and support for the preparation of this study report.

Last but not least, we would like to express our thanks to all the project team for their efforts in this project.



CHAPTER

Rural Municipality introduction

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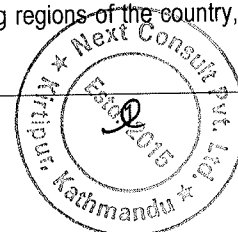
1.1 BACKGROUND

Nepal's urbanization process is rapid and imbalance compared to regional context. This trend is concentrated mainly in Kathmandu Valley and other cities of terai or fertile Valleys. The result is that the large cities are failing to cope with the demand of infrastructure services and job opportunities and are increasingly reeling under the externalities of the haphazard urbanization. Environmental degradation, congestion, urban poverty, squatter settlements, unemployment and lagging provisions of infrastructure services have become increasingly visible phenomenon in these large cities. Hence, much of the economic gains acquired from urbanization have been eroded from its negative externalities. Despite non-agricultural sector being a major contributor to gross domestic product (GDP), urban centers in the country have yet to emerge as the engines of economic growth and contribute to reduction of urban or rural poverty alike.

Despite all these problems, government's responses has been grossly inadequate. The responses tend to be scattered and ad-hoc rather than planned and coordinated. A weak institutional capability has been one of the leading factors in poor performance of the government agencies. Above all, lack of the long- term development perspectives or plans has led to uncoordinated actions of agencies involved in urban development. Therefore the result is poor or limited impact in urban development efforts. Consequently, economic development has not taken place in the desired manner consistent with the pace of population growth.

Whatever, Nepal has experienced some settlement planning attempts since 1944; the first city Rajbiraj was planned to resettle people from Hanuman Nagar. In 1956, first National Periodic Plan (Economic Development Plan) was originated. At present, 13th Plan is in implementation. During 1960s, many people from hill and mountain (especially displaced from natural disaster, national parks etc.) were resettled in Terai plains. In 1969, Preparation of Physical Development Plan of Kathmandu Valley was a turning point in urban planning sector of Nepal. After this, so many development plans of Kathmandu Valley were prepared but never implemented due lack of institutional/ legal mechanism and financial resources. In 70s, Regional Development concept was initiated in Nepal; master plan of four regional headquarters (Dhankuta, Pokhara, Surkhet and Dipayal) was prepared and implemented in some extent. In the late 80s, structure plan of all designated urban centers was prepared. Similarly, IAP was popular in 1990s before the self-governance act enacted by government of Nepal. In 2000 long term concept of Kathmandu valley (vision 2020) was prepared. Currently, Periodic planning of urban centers (municipalities) is in practice. Despite these attempts were made, it provided neither approved land use plan nor concrete physical plan implementation mechanism regarding the major urban centers in the country. Municipal plans prepared in the past employing integrated action planning technique or structure planning is found to focus mainly on physical aspects. Besides, IAP's overwhelming concentration on ward level problems has also led to neglect of municipal level vision and desires. As a result, though several municipalities show improvement in physical aspects, progress is still found lagging in several critical urban areas such as education and health. Issues such as social exclusion or deprivation, urban poverty, environmental conservation, economic development, financial mobilization and municipal capacity building have remained largely unattended in the previous planning efforts.

Keeping in view of this context, the Government of Nepal has already enacted and has been implementing National Urban Policy since 2007. The policy is conspicuous by prioritizing investment to the lagging regions of the country, while fostering development of regional cities and intermediate towns as well.



In the above context, the Office Of Gosainkunda Rural Municipality is preparing Periodic Plan of Gosainkunda Rural Municipality.

1.2 OBJECTIVE

The main objectives of the proposed assignment is to prepare Periodic Plan of Gosainkunda Rural Municipality. However, the specific objectives are:

1. To set out Long- term Vision and overall Goal, Objective and Strategies for Gosainkunda Rural Municipality.
2. To prepare Land Use Plan, Physical development plan, Social, Cultural, Economic, Financial, and Institutional Development Plan; Environment and Risk Sensitive Land Use Plan, Urban Transportation Plan, Multi-sectorial Investment Plan (MSIP) and other relevant plans if any in consultation with Gosainkunda Rural Municipality (DSMC), Department of Urban Development and Building Construction (MoFALD) MoFALD on the basis of Sectorial Goal, Objectives, Output and Programs.

1.3 SCOPE OF WORKS

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

Prepare/Update GIS Based Base Maps

The consultant shall collect GIS based Base Map if already prepared by Municipality, and update the GIS based Base Map of the particular Municipality area. A high resolution satellite image of the study area along with the hinterland shall be captured from open source (Google Earth, Bing Map etc) and the GIS based Base Map of particular municipality shall be updated.

Set Long term development Vision of the town

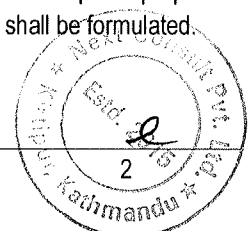
The consultant shall spell out the vision of the town. The vision shall be set through community consultations and vision workshop at Municipal level. The vision shall articulate the desires of the Town and its citizens, and will provide the guiding principles and priorities for the Plan's implementation. Consultant shall study and critically review Feasibility study of Economic Development of New Town prepared by Municipality and rigorously discuss it in local level.

Prepare Periodic Plan

Consultant shall prepare the Periodic Plan of the entire Municipality study area including existing and future land use plan. Such a Plan shall be prepared based on the land use plan and it shall be followed by narrative description, analysis, facts and figures. The consultant shall also study and analyze local economy and its activities based on the study completed by Municipality, and changes in the local economy brought by the change in demographics and migration trend.

The consultant shall also identify potential areas for urban development based on land suitability and other factors. Furthermore, the present and future housing needs/market, stock, conditions shall be analyzed and strategies for land acquisition, distribution of land and housing in future shall be recommended.

The consultant shall also verify Government, Guthi and Public Land identified by Municipality and assess the area required for future development and expansion of the town including land required for government and public purposes. Appropriate plan and policy to protect such land from private/public encroachment and others shall be formulated.



The consultant shall identify and assess critical, sensitive and other natural resources including parks, green belts, recreational area, along with strategies for their protection, preservation and stewardship against the adverse impact of future development and land use changes.

Prepare Land Use Plan

The consultant shall prepare the Proposed Land Use Plan based on: i) The policies enunciated for different urban activities, ii) Population to accommodate maximum one hundred thousand; iii) Requirement of additional social and physical infrastructure, iv) Transportation and work centres, v) Parks, green belts, recreational areas, vi) Cultural and historic resources, v) Others.

Within the first four month of study period the consultant shall submit draft report of Land Use map with final demarcation of land and its areas to be required for future urban development purposes.

Conduct Studies on Present and Future Demands of Infrastructures and Services

The consultant shall study the present and future (5, 10 and 20 years) demand in infrastructures (such as transportation, communication, electricity, water supply and sewerage system) and their supply. The demand analysis shall be done in different scenarios with justification of facts and figures. The recommended complete street pattern, major and minor roads, highways, arterial roads, traffic circulation, truck yard, bus bays and bus parks shall be worked out in details. Before recommending it consultant shall revise road network plan prepared by Municipality based on land use and other factors.

The consultant shall prepare the network plan of infrastructures, both existing and proposed, which shall be shown in cadastral maps with other detailed drawings and unit rate cost estimates. The consultant shall also identify and propose the development of landfill site, propose and identify treatment plant location and prepare their detail drawings and cost estimate. Consultant shall also formulate a management scheme of both water supplies, solid waste management system and landfill site.

The consultant shall study in detail the existing social infrastructure such as health/education/sports/communication/security centers within the Municipality and other existing community facilities and identify present deficiencies and predict future demands.

Identify and Assess Natural Hazards

The consultant shall study in detail the disaster vulnerability of the study Municipality and Identify and assess natural hazards, including how significant weather events have and will impact these assessments, which may cause a threat to the Vision of the Periodic Plan, along with strategies for avoidance/mitigation of such hazards in the course of future development and calculate the cost estimate on unit rate basis.

Recommend Implementation Strategy

The consultant shall also recommend an implementation strategy (including a suggested action program that generally describes the actions, costs, time frames, responsibilities, procedures and the Town's capacity to use them) necessary for implementing the Periodic Plan of the town.

The consultant shall prepare separate report by volume for each Periodic Plan, infrastructures etc. for each town, and also prepare investment and cost recovery Plan. During the course of the study period, the consultant team shall be mainly based on the study area and carry out in depth study, consultations, workshops and plan preparation on site.

1.4 OUTPUT EXPECTED

The completed Periodic Plan, will deliver the followings:

Town profile

An up to-date profile will be prepared, comprising of base-line information of the existing physical, social, economic, environment, financial and organizational state of the Municipality. Apart from the key statistics, such base line information will also include textual descriptions, maps, charts, diagram, and key problems prevailing in the settlements and the municipality/ added VDC. Base line information of at least two time points—having minimum interval of (past) five years will be included.

Analysis:

The section will contain at least of the followings:

Trend analysis: The analysis will reveal among other things growth trend of population, migration, land use, infrastructure provisions, import-export of goods, agricultural outputs, jobs, and other economic opportunities.

SWOT analysis: This will reveal potentiality of the Municipality based on its strength and opportunities. The analysis will also reveal the weaker side of the town which tends to pose threat to the future development of the Municipality.

Spatial analysis: The analysis will clearly reveal demand and supply situation of vacant land, besides including land develop-ability analysis. The analysis, therefore, will clearly show the location where the future growth can be channelized

Financial analysis: The analysis will reveal income potential and financing sources including TDC/ Municipality expenditure pattern of the Municipality for the fifteen-year plan period.

Municipality vision

To make the -vision operational, necessary development principles to guide the sectoral activities will also be outlined. Vision and principles will be formulated with broadly participated TD committee meeting.

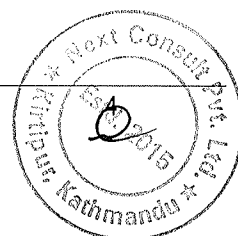
Sectoral goals, objectives, output, programs

These will be formulated mainly using Logical Framework Approach (LFA), and will be supplemented by performance indicators and means of verification of such indicator as far as practicable. Sectors, which are required to be included, will include at least physical, environmental management, social, economic development, disaster management, Climate Change, financial mobilization, and organization development. Such Sectoral plans and programs will be formulated by forming Sub-Steering Committees. Sectoral plans and programs will be prepared giving due attention to national concerns such as poverty reduction and social inclusion.

Long-term physical development plan (PDP)

Such physical plan (can be termed as physical master plan) will essentially reveal the future desired urban form of the Municipality, keeping in view of planning horizon of 20 years and also classify the Town land revealing broadly urban areas, urban expansion areas, natural resource areas and also calamity prone area. Such physical plan will be separately supplemented by the relevant data and thematic maps of existing land use, environmentally sensitive areas, and infrastructure services such as road network, water supply and drainage system, sewerage network, telecommunication network and electricity distribution network. Also hierarchy of the open space will also be justified within Municipality areas. There will be strategic steps/ suggestions to make available land for Municipality urban infrastructures. The master plan will be supported by some critical local area plans especially of CBD of the Town.

Social Development Plan



Social development plan significantly contributes to bring qualitative improvement in the lives of the common people. Attention will be given focus on social development programme when social development programme is getting priority in the present context. Plan will be formulated on the basis of the analysis of social condition of municipal area. Such plan will essentially cover the following aspect:

- Education
- Public health
- Security (physical as well as social)
- Main streaming GESI: Inclusion of women, in-advantage groups, child, elder, physically challenged etc.
- Cultural and Sports
- Hierarchy of Parks & open spaces
- Other urban social service centres (information, library, and space for social gathering...)
- Others as per Municipality requirements

Cultural & Tourism Development Plan

Culture makes a distinct identity of the place and people, way of life and level of civilization. Cultural development plan significantly contributes to bring qualitative improvement in the conservation of local cultural heritage, art and architecture. Similarly, more attention will be given to the preservation of tangible and intangible cultures. Cultural planning will be integrated with other planning. Such plan will essentially cover the following aspect:

- Identification and preservation of important Cultural heritage sites within the Municipality area and hinterland
- Identification of specific non-material cultures in the area
- Plan for conservation of both material and non-material cultures and linked them to tourism development plan
- Culture center (local craft, paint, architecture, museum, culture exchange, exhibition).

Economic Development Plan

Such plan will essentially include: An Economic development plan which directly contributes in economic activities of the town and support in the development of the Municipality is also main component of the study. It will be based on the proposed town potentiality or by adding new features for its identity eg. Sport city or IT City or Tourism City or Commercial city etc. The proposed Periodic Plan will support to have the Municipality with identity based on its potentiality. This will be the vision for the new town. Such plan will essentially cover the following aspect:

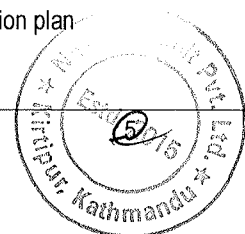
- Economic development plan: Area of comparative analysis
- Industry development (as per comparative advantage of the Municipality/ hinterland): Trade promotion, Tourism development
- Employment generation, poverty reduction
- Agricultural development (commercialization of agro-forestry products-cold storage, vegetable market ...)
- Rural urban linkage- strategic location of different market center/ product collection centres
- Micro/small industry and entrepreneurship/ business promotion
- Possible EZs based on local economic growth potentials (driving forces)
- Others as per Municipality requirements

Financial Development Plan

Such plan will essentially include:

The work is to formulate, identification and mobilization of resources required during the period of Periodic Plan implementation. The following things/ subjects needs to be considered while formulation the financial plan.

- Financial analysis and assessment of possible financial resources for the implementation of Periodic Plan in each Municipality.
- Analysis and projection of town income and expenditure, Revenue improvement action plan



- Allocation of Development budget (for coming five year), cost sharing, sharing among sectoral agencies, and expenditure management action plan
- Promotional strategy of private sector and civil society (PPP)
- Financial and economic analysis of proposed priority sub-projects
- Others as per Municipality requirements

Institutional Development Plan

Human Resources Development plan and organizational development planned are the areas of the institutional development plan. Following things will be considered in the formulation of institutional development plan.

- Decentralization, good governance and mobilization of people's participation
- Appropriate and optimum use of local resource Institutional coordination and establishment of network
- Organizational capacity and capacity building
- Others as per Municipality requirements

Environmental Management Plan

The environmental management has remained as the major problem of the Municipality. The environmental management plan will be formulated by studying and analyzing in detail. Such plan will essentially cover the following aspect:

- Solid waste Management: 3R promotion- reduce/ reuse/ recycle, Sanitary land fill site
- Waste water Management
- Air, water, visual and Noise pollution
- Urban Greenery (forestry, Agriculture), park, garden etc.
- Control and management of built environment
- Conservation of environmental sensitive areas
- Assessment of requirement of EIA/ IEE of major sub-projects
- Others (such as emergence of low carbon city, food green city, garden city etc. concepts) as per requirements

Disaster management Plan

The Risk Sensitive Land use Planning/ Mapping of the Municipality due to the following Disaster causes will include whenever seems necessary;

Landslide/ soil erosion, Floods, Earthquake, Fire

The vulnerability mitigation plan through the vulnerability mapping/ geological study of the area, a proper strategy will be adopted to formulate the action plan for Disaster management. This formulated plan may be of;

- Pre- Disaster Plan
- Action Plan for During or immediate after disaster
- Post- Disaster Plan
- Disaster/calamity occurred previously in that area will be overlapped in the updated geological and disaster event maps (overlays of historic events)

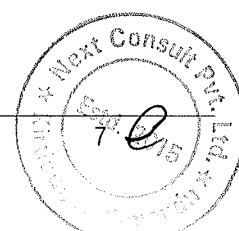
Climate Change Adaptation Plan

The Climate Change perspective study will cover;

- Hydrological and metrological study of the area.
- Scope/ area of CC in the context of particular Municipality
- Vulnerability Assessment, analysis of impact of CC, its trends, projection
- Adaptation Plan/ Measures
- Main streaming CC in Planning and implementation of Municipality projects

Multi-sectoral investment plan (MSIP):

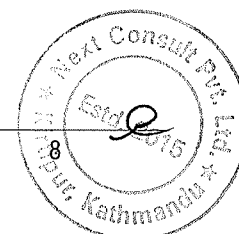
Such plan will reveal short and long-term programs/projects, cost estimate, and probable financing sources prioritized in sequential manner for the planning period of each five years. Such programs/projects will be to cater to both the short-term and long-term needs of the Municipality and the community, and will be consistent with the long-term development plan, sectoral goals and objectives, and the vision. Furthermore, MSIP will clearly reveal programs/projects for each fiscal year for the first five years. Such MSIP will be pragmatic, and be consistent with the financial resource plan. The city level plan/projects (Mega project) and the projects that can be implemented exclusively by Municipality also will be clearly mentioned in MSIP. It is suggested that the plan/projects that have to implement by different line agency in MSIP, included after thoroughly consultation with the concern offices. The cost estimate of the projects will be done according to the approved district rate of the Municipality.



Different Thematic Maps

The thematic maps of these all development plans will be prepared in A-CAD drawing format in colour A3 paper size. For the additional advantage on the utilization of the maps, it is recommended to present those thematic maps in GIS environment. The study will contain but not necessarily limited to following maps and drawings of agreed scale and information with required explanation.

- Index Map/ Location Map
- Hinterland Map
- Existing and proposed Land use and zoning.
- Urban expansion area map: total land area required for future town development will be identified and demarcated. The planned area will have network plan with contour map, detail drawings.
- Existing and proposed Road Network Map, road sections, bus bays/stop, bus park (inter/ intra city), truck yards, and location of underground infrastructures etc
- Existing and proposed water sources Map
- Existing and proposed Sewerage/Drainage network Map
- Existing and proposed of electricity network Map
- Existing and proposed communication network Map
- Proposed Solid Waste Disposal /Landfill Site Map with an overlay of contour line of agreed intervals.
- Environmental Sensitive Map
- Geological sensitive area map
- Map showing government/ public/ guthi land, with an overlay of contour line of agreed intervals and other details etc
- Map showing proposed location, site plan and tentative sketch/size of social/ cultural/ economic infrastructures such as City Hall/ convention center, public parks, sport complex, security center, public toilets/ urban service centers, museum, zoo, cold store/ dry port etc.



CHAPTER LITERATURE REVIEW

2

2.1 BRIEF OVERVIEW OF PLANNING HISTORY

2.1.1 Ancient Cities

The first true urban settlements appeared around 3,000 B.C. in ancient Mesopotamia, Egypt, and the Indus Valley. Ancient cities displayed both "organic" and "planned" types of urban form. These societies had elaborate religious, political, and military hierarchies. Two typical features of the ancient city are the wall and the citadel: the wall for defense in regions periodically swept by conquering armies, and the citadel - a large, elevated precinct within the city - devoted to religious and state functions.

Greek cities did not follow a single pattern. Cities growing slowly from old villages often had an irregular, organic form, adapting gradually to the accidents of topography and history. Colonial cities, however, were planned prior to settlement using the grid system.

The Romans engaged in extensive city-building activities as they consolidated their empire. Rome itself displayed the informal complexity created by centuries of organic growth, although particular temple and public districts were highly planned. In contrast, the Roman military and colonial towns were laid out in a variation of the grid.

2.1.2 Medieval Cities

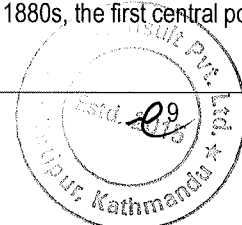
During the Renaissance, architects began to systematically study the shaping of urban space, as though the city itself were a piece of architecture that could be given an aesthetically pleasing and functional order. Many of the great public spaces of Rome and other Italian cities date from this era. Responding to advances in firearms during the fifteenth century, new city walls were designed with large earthworks to deflect artillery, and star-shaped points to provide defenders with sweeping lines of fire.

Baroque cities were the culmination of the emergence of great nation-states between 1600 and 1750. Ambitious monarchs constructed new palaces, courts, and bureaucratic offices. The grand scale was sought in urban public spaces: long avenues, radial street networks, monumental squares, geometric parks and gardens. Versailles is a clear expression of this city-building model; Washington, D.C. is an example from the United States.

2.1.3 Cities after Industrial Revolution

Cities have changed more since the Industrial Revolution than in all the previous centuries of their existence. Millions of rural dwellers no longer needed on farms flocked to the cities, where new factories churned out products for the new markets made accessible by railroads and steamships. In the United States, millions of immigrants from Europe swelled the urban populations. Increasingly, urban economies were being woven more rightly into the national and international economies.

Technological innovations poured forth, many with profound impacts on urban form. Railroad tracks were driven into the heart of the city. Internal rail transportation systems greatly expanded the radius of urban settlement: horse-cars beginning in the 1830s, cable cars in the 1870s, and electric trolleys in the 1880s. In the 1880s, the first central power



plants began providing electrical power to urban areas. The rapid communication provided by the telegraph and the telephone allowed formerly concentrated urban activities to disperse across a wider field.

The industrial city still focused on the city center, which contained both the central business district, defined by large office buildings, and substantial numbers of factory and warehouse structures. Both trolleys and railroad systems converged on the center of the city, which boasted the premier entertainment and shopping establishments. The working class lived in crowded districts close to the city center, near their place of employment.

2.1.4 The City Beautiful Movement: Garden Cities of Tomorrow

Setting up a series of small industrial villages in the manner of the small English mill or mining towns was only partially successful because the enormous scale of industrial production required, or encouraged, ever larger cities as centers of production and consumption. While elaborate sewage systems and public health services went a long way to curbing the worst problems, many challenging problems remained. Big industrial cities were deemed to be inhuman in scale, reducing human beings to mere cogs in a machine. Big industrial cities were still decried as filthy, polluted and congested.

The first signs of this new response to the ugliness of the industrial city come in the form of several late 19th century plans for new "ideal" cities laid out in an entirely different pattern. In 1898 Ebenezer Howard published his landmark book "To-Morrow, A Peaceful Path to Social Reform" - later renamed and republished in the USA as "Garden Cities of To-Morrow". Here the ideal of the self-contained and modestly scaled city is laid out with precision. Howard believed that this style of urban planning was really only possible with socialistic or communal property laws. Nevertheless, Unwin & Parker, two early 20th century British urban planners, picked up on Howard's ideas and put many of them into practice with traditional private property holdings. The most notable example is Letchworth in England, a "garden-city" commuter town served by rail from London. In the 1920's & 30's, many of these "garden-city" inspired commuter suburbs were built all over England, France and North America, surrounded by green-belts of parkland

2.1.5 The Modernist City

Developed around the same time as the ideas of Garden Cities, and in response to the same problems of the industrial monster city, Modernism in urban planning goes in the opposite direction as that of the Garden Cities. Modernism celebrated the density, excitement and egalitarianism of the modern city and strove to improve upon it with new ways of urban living. Many noted modernist architects criticised the 'old' European cities as tradition-bound and inefficient for modern living. Modernism required new open spaces to showcase modern skyscrapers and an efficient traffic network. Le Corbusier (a notable French modernist architect) made many practical suggestions for a graduated road-network (fast traffic on arterial roadways, local traffic on smaller side streets and a network of pathways to serve pedestrian traffic) to serve the needs of modern living. Modernism in urban planning also came to be associated with large scale renewal projects after WWII in both Europe and North America. Many large bombed out cities or decrepit industrial slums were bulldozed and laid down as if new - with huge blocks of residential buildings and efficient road networks.

2.1.6 Cities of Today

The one thing that is most notable in many of today's larger cities is that all of the styles described here are often all present together and co-existing. Certainly the "City Beautiful" movement admired several aspects of the "Grand Manner" - as well as having its roots in "The Gothic Revival" movement. Modernism has placed its stamp with a network of highways and system of graduated roads, along with forests of glass skyscrapers and odd-shaped cantilevered buildings. And once again, there is a 'gothic revival' of sorts going on with a popular movement towards preserving older buildings, building on a smaller or more 'human' scale and mixed-use zoning laws with less reliance (and favoritism) upon automobiles for inner city transportation. One thing is certain - large urban cities remain as popular as

ever with major cities continuing to grow ever larger as more and more people are attracted to the bright lights of the big city.

2.2 OVERVIEW OF URBAN PLANNING IN NEPAL

Urbanization is a global phenomenon. Nepal is at the early state of urbanization. At present 17% (about 4.5 million) of total population of about twenty six and a half million live in urban areas of the country (CBS 2011). The rapid pace of urbanization has exerted tremendous pressure on the limited resources and already scarce urban infrastructure. Whatever development has taken place could not meet the growing demand for infrastructure and housing. Poverty, employment and scarcity of infrastructure, immigration from the rural area, characterize Nepal's urbanization. The rapid urbanization in the country is due to the growing number of rural migration. Over the years housing needs have increased and urban development process has become complex.

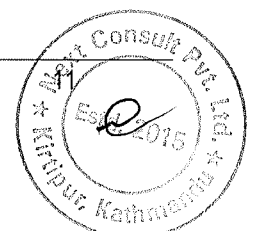
2.2.1 Chronology of Urban Development in Nepal

The chronological history of planned development in Nepal cannot be traced back to a particular era or rule. However, due to the strategic location of Nepal between India and China, it can be speculated that the settlement development in Nepal coincides with the developments in India and China. During the Malla rule, cities of the valley developed as both administrative as well as entrepot trade centers (small settlements such as Sankhu and Panauti etc. developed along the trade route to Tibet). The settlements grew in a systematic and planned manner and old traditional cores of these towns represented town planning in its finest tradition of utilization of space and form. Small trading centers like Olanchungola, Marpha, and Mustang grew as small traditional settlements along the trade route near the Tibet border, but they were completely cut off from the rest of the country.

During the Rana regime that settlements started developing in places where the ruling regime established their district level administrative headquarters and built the offices and residences for high level officials. Dhankuta in the eastern hill, Plapa Tansen in the western hill and Siliguri Doti in the far-western hills became the main Rana administrative centers called Gauda and township grew in these places and became major market towns in the later years. There were other smaller district administrative headquarters like Illam, Bhojpur, Okaldhunga, Dolakha, Nuwakot, Gorkha, Bandipur, Pokhara, Baglung etc. which also grew up as important administrative and trading centers. But these were small settlements situated in places with topographical constraints for further expansion.

During the late nineteenth century when the British Colonial power extended railway transport system all over India, several points along the 800 km India-Nepal Border were touched by the railway lines which ended at the borders and became railheads. Places situated near the railheads started developing a small trading settlements and they at that time functioned as entry points for goods from India and outside and exit point for nepali produce mostly timber and food grains. Bhadrapur, Biratnagar, Janakpur, Birgunj, Bhairawa and Nepalgunj were the major towns that grew near the railheads. During this time, two trading centers Dharan in the east and Butwal in the west started growing at the foothills from where the Terai started. Both these settlements were located where all the routes from the hills converged. These towns have retained their trading importance even now despite the fact that they have lost their hinterland because of development of transport and communication network in their respective hinterland.

Until, 1951, Tarai was largely a forest area without any roads and infrastructure but full of malarial diseases. After the eradication of malaria in 1951, Tarai became an attractive place for migrants from hills with increasing population pressure on the limited arable land. The rapid hill to Tarai migration accelerated the process of urbanization in Tarai. Every year 54,000 rural people migrate to urban areas of Nepal. Half of them move to Kathmandu Valley and rest half to major Tarai Towns (Urban Development through Local Efforts, 1998).



In 1935 a development agency Udhog Parishad (Development Board) was formed, with an objective to help in the growth and expansion of the agricultural, economic and industrial sector of the country. The district headquarters of Saptari, Rajbiraj was the earliest planned township in the country. Systematically designed in 1938, it is said to be modeled on the city of Jaipur in India. It was built after the old district headquarters of Hanumannagar was badly affected by flooding in the nearby Koshi River. It was the first township in Nepal to have urban planning; it had one of the first airfields in the tarai. It was declared a municipality in 1959.

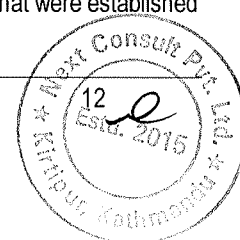
There seems to be a consensus here that the construction of the east-west highway which by-passed played a major role in the town's decline. Many people in Rajbiraj believe that Rajbiraj would be a thriving economic centre if the road had passed the town, instead it went through the tiny village of Lahan, to its north. Lahan has now sprung up as a major township and highway junction.

With the end of Rana Regime in 1950, Nepal entered the modern era in the real sense of economic development as the country came in close touch with the outside world. When Nepal embarked upon planned development in 1950 and onwards, the priority was given to build national highways to integrate a physically and socially fragmented nation. This was coupled with malaria eradication in the Terai, increasing population pressure in the hills and closure of Tibet-Nepal trade regime from 1960's with the annexation of Tibet by China. This created a massive surge of people moving out of the mountain and hills region towards Terai.

From the Second Five Year Plan, the government began to adopt a conscious policy of resettling households from the Hills in the Terai. If existing trade centers were dislocated by new highways, they also induced commercial potentials in other places. Old towns like Banepa, Bhimphedi and Bandipur yielded to new economic centers like Butwal, Narayanghat and Hetauda. It was in 1961 after the country was divided into 14 administrative zones and seventy five districts that new townships were planned and built as administrative headquarters of zonal administration and other purpose. Masterplan of for regional headquarters (Dhankuta, Pokhara, Surkhet and Dipayal) was prepared and implemented in some extent.

With the surge of government offices in district and zonal centers and later on newly created regional centers in the 1970s and 1980s, sleeping villages like Surkhet and Pokhara got boost to their growth. With the construction of Siddhartha Highway (1965-1969), Pokhara was linked to the border town of Butwal and Bhairahawa to the south in 1969 and with the construction of Prithvi Rajmarga, Pokhara was connected with Kathmandu in 1971. These roads facilitated the quick movement of goods and people and in integrating Pokhara and its hinterland with the world economy

In the late eighties, structure plan of all the designated urban centers was prepared. In the middle fifties there was unprecedented rainfall in the catchment area of Rapti river in the Makwanpur district and heavy floods in the river Rapti washed away parts of Bhimphedi, the then district headquarter of Makwanpur and many settlements along the river, upto the present Chitwan district. Fertile agricultural lands were washed away and large numbers of people were made homeless. This led to, for the first time in Nepal, formulation and execution of an integrated resettlement project called Rapti Valley Development Project. Under the project, over 1500 sq. km of forest was cleared, about 50000 families were settled, schools, hospitals and similar other social infrastructures as well as cooperatives and banks were established, construction of Hetauda-Narayanghat road was started. A wildlife sanctuary was also established and the construction of Rapti irrigation project scheme was started. This massive resettlement program combined with the development of road, irrigation and agriculture development in the two districts mainly affected by the flood. New settlements in the two districts: Hetauda (Makwanpur) and Bharatpur (Chitwan) were developed as a part of this program and road links were established between these two major centers and other settlements that were established



by this project. Industrial estate was also established in Hetauda later on and an airport was built at Bharatpur for the economic development of these settlements.

The examples of Mahendranagar and Tulsipur which became headquarters of Mahakali and Rapti Zones respectively can be mentioned as the government efforts to initiate planned development of settlements. Large forests were cleared to build these townships. Tikapur was also built in similar area in Kailali district. During the early sixties, there were also some local initiative in town planning – Adarshanagar in Birgunj can be taken as an example of an attempt at planned town expansion.

In 1968, Rastriya Yojana Aayog (National Planning Commission) was established, and it took an advisory role to the plans and policies formulated by the Ministry of Planning. First five-year plan was announced for the first time in September 1956, which however prematurely ended, before being implemented, due to the change in political scenario in the year 1961. In 1962, with the establishment of the Ministry of Economic Affairs, a Three Year Plan was formulated by a high level Planning Council headed by the then King Mahendra, which became the Second Plan and was implemented in 1962-63.

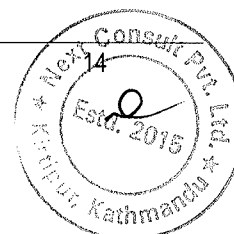
By the end of First Plan, the idea of creating new settlements along the Terai was firmly entrenched in the mind of development planners. It was then estimated that about 8,000 sq. km of forest land could be cleared for this purpose. A Nepal Resettlement Co. was established in 1964 with the technical assistance from Israel government to develop land. Timber Corporation of Nepal was formed with probably the largest saw mill in Asia at that time set-up in Hetauda, to take care of felling of trees in Terai and disposal of timbers in the market. By 1980 about 78,000 families had been settled in more than 105,000 hectares of newly acquired forest land. The government initiated resettlement schemes coupled with ceaseless hills- terai migration dramatically changed the Terai's physical and social landscape.

By the end of Seventh Plan, it became apparent that neither Nepal could afford to continue to rely heavily on clearing of forest land to increase its agricultural production nor can it continue to remain ambivalent of a rapidly deteriorating environment. In 1985/86 the government declared that it has abandoned the policy of clearing the forest land for settlement purpose. What became clear by that time was that: many of such resettlement projects had never been completed due to administrative, legal and inter-ministerial difficulties and poor planning; land in a mountainous country like Nepal is a scarce commodity, but was never treated like that; there was no conscious effort made to evolve relationship between such settlements and existing settlements; government-driven resettlement schemes did not make appreciable impact on a rapidly increasing phenomenon of illegal encroachment of Terai forest, reduce north-south migration, nor did they contribute much towards improving a stagnant hills economy.

It is through the system of urban centers that goods and services get distributed across the country thereby helping to integrate rural economy with the national economy. While this realization had not been well-reflected in the earlier development plans, it was only in the seventh plan that the role of urban centers in national economic development has received some recognition.

In the aftermath of the radical political change of 1950-51, Nepal and Nepalese people had the opportunity of increased international contacts after the centuries of isolation. These opportunities were further initiated by the two major events: coronation of late King Mahendra in 1955 and the state visit of the Queen Elizabeth II in 1962, which helped to launch the city beautification and urban renewal projects and programs in the capital city of Kathmandu. This was followed by the UN technical assistance program in 1962 for planning initiation in the Kathmandu Valley and other urban centers of the country. The result was the publication of "The Physical Development Plan for the Kathmandu Valley" in 1969. It was the first comprehensive planning document in the country, referred even today as the "1969 plan". The plan however, was not approved by the then HMG and hence never implemented.

A new phase of resurgence in urban planning and development (1975-86) followed after the launching of the Fourth Five Year Plan (1970-75), as a response to the long-felt need for action oriented planning for visible impacts on the welfare and general living conditions of the people in the urban areas. The important achievements contributing to the advancement of urban planning in Nepal during a period of 15 years (1975-90) are briefly presented below:



- Metropolitan planning exercise in the Kathmandu Valley
Planning in the valley despite a brief setback after the abrupt termination of the urban concerns from the UNDP country program for Nepal got a new life after the establishment of Kathmandu Valley Town Development Committee (KVTDC) under the Town Development Plan (Execution) Act -1973 (referred as 1973 Act), and the formal approval of the Urban Development Plan for the Kathmandu Valley-1976, by the then HMG. The 1976 Plan, which comprises of a number of policy documents and the land use regulations, are the further elaboration of the 1969 Plan and the 1973 Plan in the form of the detailed land use plans and policy guidelines.
- The perusal of the regional development strategy leading to the division of the country into 5 growth regions, each built around a major growth center and a number of subsidiary growth centers consisting of existing towns and settlements, and a north-south growth axis (or development corridor) linking the ecologically diverse regions; a strong resource support of the government for planned development of these growth centers in terms of manpower, materials, fund and the organization reflected a new political mood of the country for speedier development in the under developed regions. A separate Act was enacted in 1973 for the planned development of these centers.
- Planning and development efforts in the growing urban and rural centers of the Terai belt were pursued under the Town Development Committee Act - 1963.
- The Bhaktapur Development Project (1974-1984) was successfully launched with the technical and financial assistance of GTZ. There are also other initiatives by various donor agencies such as World Bank, USAID, Asian Development Bank etc. resulting into various studies; the Nepal Urban Development Assessment (1984); and Kathmandu Valley Land Policy Study (1986).
- Planning and Development efforts in the country have been very much guided by the urbanization and habitation policy of the 7th Plan (1985-90), for promoting planning and development activities in the whole country with a general legal (Town Development Act-1988) arrangement. The draft structure plans for 32 municipalities was formulated in September 1987 under MSUD/UNDP/World Bank project. The two studies– Nepal Urban Development Policy Study (HMG/UNDP/USAID/World Bank, 1990), and its follow-up Recommended Policies and Strategies for Urban Development – 1991 (MHPP/DHUD) did enumerate specific policies, strategies and action for the Kathmandu Valley. Planning and development efforts were also augmented during this period (1987-1990) through the introduction of an innovative program – Urban Development through Local Efforts – UDLE, a joint assistance program of HMG and GTZ; to provide advisory services to concerned agencies and municipal bodies; and to increase the capacity of municipalities to plan and manage all aspects of urban development, planning, finance, organization and training.

Present approaches and initiatives in urban planning and development process are very much guided by the principal objectives of the Eighth Plan (1992-1997), which are: Sustainable economic growth; alleviation of poverty; and reduction of regional imbalance. The sectoral objectives related to housing and urban development are stated as: promotion of urban and rural complementary; positive linkages between planning and management of urban centers, and growth of local economy; development of small towns and market centers; integrating of infrastructure and urban development; participation of private sectors and NGO's strengthening the roles of the municipalities; local resource mobilization; development of urban financing mechanism.

An important initiative during this period was ADB's involvement which commenced in 1990, with a grant funded technical assistance study in collaboration with the Department of Housing and Urban Development (DHUD)/ MHPP. The study completed in 1991, came up with a comprehensive study – Kathmandu Valley Urban Development Plans for specific areas.

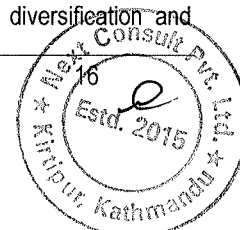
Table 1: Brief Overview of Physical Planning Efforts in Nepal

Timeline	Physical Planning Efforts in Nepal
1938	Physical Development Plan of Rajbiraj
1956	First Five Year Plan formulated (prematurely ended)
1952 - 1965	Rapti Valley Development Project
1961	Country divided into 14 administrative zones and 75 districts
1961	1st Three Year Plan formulated
1963	Town Development Committee Act
1964	Nepal Resettlement Company established
1968	Rastriya Yojana Aayog (National Planning Commission) established
1969	The Physical Development Plan for the Kathmandu Valley
1970 - 1975	Fourth Five Year Plan: action oriented planning for visible impacts on the welfare and general living conditions of the people in the urban areas
1973	Town Development Plan (Execution) Act
1974 - 1984	Bhaktapur Development Project
1976	Urban Development Plan for the Kathmandu Valley
1979	Urban Development through Local Efforts (udle)
1984	Nepal Urban Development Assessment
1985	Greater Kathmandu
1986	Kathmandu Valley Land Policy Study
1987	Draft Structure Plans for 32 municipalities formulated under MSUD/UNDP/World Bank project
1988	Town Development Act
1990	Nepal Urban Development Policy Study (HMG/UNDP/USAID/World Bank)
1991	Recommended Policies and Strategies for Urban Development (MHPP/DHUD)
1990 - 1991	Kathmandu Valley Urban Development Plans for specific areas
1993	Integrated Action Planning of the Municipalities
1993	Kathmandu Valley Urban Road Development
1994 - 1999	Kathmandu Urban Development Project
2002	Development Plan 2020 of the Kathmandu Valley
2002	City Development Strategy of the KMC
2012 - 2015	Three Year Interim Plan (13th Three Year Plan)

As a follow-up of this study, a five year Kathmandu Urban Development Project (1994-99) was initiated in 1994 as a result of Loan Negotiation between HMG, ADB and Kathmandu Metropolitan City. The project comprising of several components (infrastructure and environment improvement works, link road and implementation assistance and institutional strengthening) is an important initiative towards implementation of the strategy plan for the Kathmandu Valley.

Since the first plan in 1956, Ten five-year plans have been implemented, with the Tenth five year plan implemented from 2002-2007. After 2007, due to political instability, a new five year plan has not been able to be formulated and implemented in the country since 2007. The government has, however has now announced Three Year Interim Plan (2012-2015), known as the thirteenth three-year plan, for the interim period.

NPC's 13th three-year plan aims to transform Nepal into a developing country from least developed one. The proposed plan has a goal of reducing the number of people under the poverty line to 18 per cent from the existing 23.8 per cent. Development of hydropower and energy sectors, productivity growth of agro sector and its diversification and



commercialization, basic education, health, drinking water and sanitation, good governance, expansion of roadways, development of physical infrastructures, tourism and trade are the priorities of the upcoming three-year development plan,

Reducing the existing trade deficit and attaining the higher economic growth rate are the main challenges of upcoming development plan that has a strategy of increasing the contributions of private, government and cooperate sectors, partners of three-pillar economic policy, to the sustainable, broad and inclusive economic development of country. Empowerment of targeted groups of people and minimization of negative impacts of climate change are other strategies of the 13th three-year development plan.

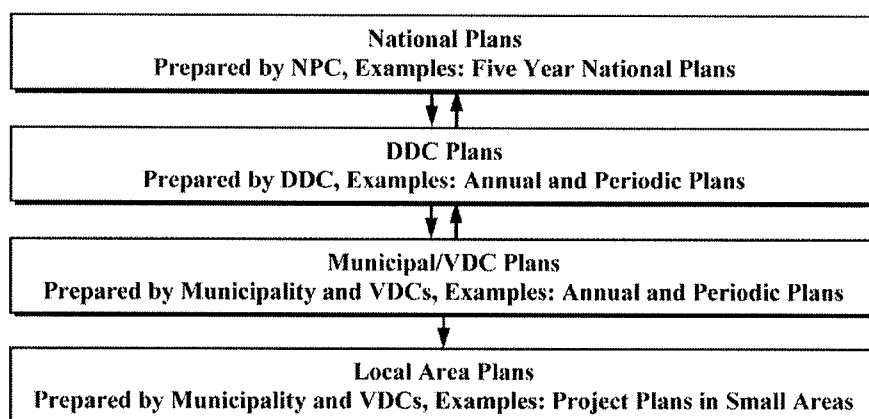
2.3 THE PLANNING HIERARCHY IN NEPAL

National Planning Commission (NPC) is the apex body, which formulates the national level development plan under the directives of the National Development Council. Objectives of the plan are finalized first and to achieve this objective, total and sectoral economic growth rate targets are determined for the plan period.

Sectoral planning which is the sectoral chapters in the five-year plans, are the building blocks of the plan. Each chapter contains the objectives of the plan in that particular period for the plan period. Once the draft plan is presented before the National Development Council and is revised according to their suggestions, the final detailed five year plan is prepared. This plan becomes a guideline for various ministries the planning programs are undertaken by the respective ministries at the micro level.

Periodic plans are prepared by the District Development Committees (DDCs), municipalities and Village Developing Committees (added VDCs). Each DDC should formulate periodic and annual development plans for the development of the district and on the basis of the plan, NPC and the Government of Nepal will provide grants and necessary policies and guidelines to the district. Periodic plans seek to adopt the bottom up planning approach. Plans received from village council and municipal council is due respected while formulating the DDC periodic plan. Some directives from national level are also incorporated in the process of planning. Periodic plans are in the form of report and supporting maps including resource maps, land use and zoning maps. They also identify some projects along with implementation plans.

Figure 1: Hierarchy of Plans in Nepal



Local Self-Governance Act 1999 has given full planning authority to DDC through periodic plan. If we consider a district as a region, then DDC periodic plan bears a status of regional plan. Municipality periodic plans are prepared on the basis of directives received from NPC and the DDC on national development policies and suggestions received from the ward committees. These Periodic plans bridge both higher level plans and lower level plans. Before the introduction of periodic plan, there was the Integrated Action Plan (IAP) in municipal Areas.

Lowest levels of plans are the Local Area Plans, which are prepared by the municipalities and the added VDCs, in association with sectoral offices, line agencies, line agencies, NGOs, INGOs etc. they cover small areas within the municipal boundary or the added VDC boundary. Local area plans are specifically developed to execute the projects in a certain area.

2.4 CURRENT PLANNING TRENDS

Nepal adopted various planning tools to institute balanced urban growth and planned towns. Basically, Nepal adopted problem oriented planning and came up with projects responding such problems. In this section we have tried to mention various planning trends adopted so far in urban sector.

- Master Plan
- Strategic Planning
- Integrated Action Plan
- Physical Development Plan
- Periodic Plan
- Land Use Plan and Building Bye Laws

Besides this, Periodic District Development Plan (PDDP) and District Transport Master Plan (DTMP) is practiced in district level whereas, Municipal Transport Master Plan is also being practiced in municipal level. The aim of these plans is to regulate balanced urban and regional growth.

2.5 SOME EXAMPLES OF PLANNING EFFORTS IN NEPAL

Kathmandu Valley Physical Development Plan 1969

The Physical Development Plan for the Kathmandu Valley was prepared by the Department of Housing, Building and Physical Planning, with the technical assistance from the United Nations. This was the first study that introduced the concept of physical planning for regional development and to undertake the comprehensive study of the Kathmandu Valley. The main objectives of the plan were the preservation of historical and cultural heritage, guided urban development through land use planning and densification of fringe areas. The plan was a guiding principle for ordered development in the Kathmandu valley and government promulgated a Town Development Implementation Act in 1972 to implement it. Kathmandu Valley Town Development Committee (KVTDC) was established under this Act and was entrusted with the overall responsibility of planning and regulating urban growth in Kathmandu valley. However, the 1969 plan was not formally adopted and implemented by the government.

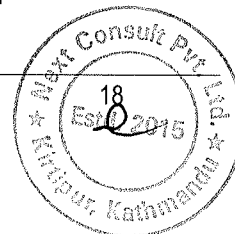
Kathmandu Valley Urban Development Plans and Programs 1991

In 1991, the Kathmandu Valley Urban Development Plans and Programs were prepared, with assistance from the Asian Development Bank. It tried to envision the concept of Greater Kathmandu with Kathmandu and Lalitpur as a planning boundary, with the goal of developing Kathmandu Valley as a government centre and a centre of culture, tourism and historic conservation. The plan divided the area into 5 development zones with a proposal of a new Central Business District encompassing the areas of *Durbar Marg*, *Jamal*, *Kamaladi*, *Bagbazar* and *Putalisadak*, with an aim of relieving the pressure of business and commercial activities from the Kathmandu historic city core.

Unfortunately, this plan too was not endorsed officially, as a result of which, the 1976 Physical Development Plan is still the statutory plan for the development of Kathmandu Valley, which is supported by the building regulations to guide the development of the Kathmandu Valley.

Integrated Action Planning (IAP)

Against the backdrop of a series of planning initiatives of the past, the IAP approach is relatively a new introduction and has evolved through a process of application as training programs from 1989 to 1992; and operationalization in 22 municipalities.



The IAP as an alternative planning paradigm is defined as a community-driven, participatory planning process to facilitate development through the identification of realistic and affordable projects, integrated within a multi-sector development plan (MSIP) to support the goals of a physical and environmental development plan (PEDP).

Integrated Action Planning was expected to promote the use of spatial planning as well as to improve investment programming. This it had not succeeded in doing to any great extent. Efforts to use a fixed schedule of expenditures over 5 years as a guide were enormously weakened by the inabilities of municipalities to know the funds that would be available. The differences between the concept and practice of Integrated Action Planning, such as: Use of an MSIP without annual revisions, so that it remained a fixed schedule over 5 years; Closing of ward level meetings after cessation of the IAP exercise; Unsatisfactory participation of central government line agencies, perhaps the greatest obstacle to effective application of the IAP concept. Integrated Action planning focused on planning and development in local level. The plans and projects focused mainly on the development of local infrastructures and failed to address the development issues in a municipal or regional level.

Long Term Development Concept for Kathmandu Valley (Vision 2020)

The Government of Nepal approved the Long Term Development Concept for Kathmandu Valley prepared by KVTDC in 2002, with an emphasis on consideration of a whole valley as single entity. It has highlighted that all development works should be carried out in context of the whole valley taking care of heritage, environment and ecology. The policies of the vision plan are:

- A valley-wide apex body to be formed with proportionate representation of local bodies;
- Job opportunities shall be decentralized so that people can settle in any location of the valley;
- Delineation of rural and urban boundaries so that separate planning standards can be enforced in rural and urban areas;
- Investments should be channelized to certain sectors only, so that densification, development of new towns, and allocation of future land can be delineated;
- A system of planning permits and environmental impact assessment shall be introduced;
- Tourism-related activities shall be promoted and polluting industries shall be relocated to other towns outside Kathmandu valley;
- Bhaktapur and other traditional settlements to be declared cultural towns, Kathmandu to be declared a single administrative entity;
- Protection of public parks and watershed areas;
- Development of cottage industries; and relocation of security establishments to fringe areas from urban core.

The plan (Vision 2020) has adopted the containment approach which mentions that urban development of Kathmandu valley should adopt compact urban form, conservation of heritage and protection of surrounding agricultural land for the ecological balance of the valley. If the concept is fully adopted and implemented by all sectors, the conservation of urban heritages and development of the valley could be achieved significantly.

Municipal Periodic Planning

Municipal plans based on integrated action planning technique have focused mostly on physical aspects only. The IAP's attention aimed towards ward level problems has become the cause of neglect in municipal level vision and desires. Although some municipalities have seen progress in physical aspects, issues such as social exclusion, urban poverty, environmental conservation, economic development, financial mobilization and municipal capacity building have almost been ignored in the previous planning efforts.

, Local Self Governance Act (1998) has outlined the need of a participatory and comprehensive periodic plan for the municipalities, consisting sectoral goals and programs with a long-term vision and physical development plan of the municipality. As per the Local Self Government Regulations (1999), the periodic plan must propose activity schedule

for five years as well as plan-making and approval procedures. The Municipal Periodic Planning Guideline 2002 prepared by Ministry of Local Development (current MoFALD) also requires and guides municipalities to prepare municipal periodic plans.

Regarding the need of technical support to the municipalities, the Tenth Plan 2002-2007 has prioritized the preparation of periodic plans of municipalities. Nevertheless, none of the municipalities were found to have initiated the periodic plan as per the guidelines. Concerted efforts have been put by Department of Urban Development and Building Construction (MoFALD) in coordination with former Ministry of Local Development and the municipalities. The support includes preparation of municipal periodic plan, digital maps and profile of base line information. Organizations like GTZ/ udle and RUPP (Rural Urban Partnership Program) are also providing technical and financial assistance to municipalities in technical capacity building.

Long Term Development Planning

The concept of long term development planning has been derived from National Urban Policy 2007, which advocates the necessity of long term development plan through the strategy for balanced national urban structure: developing one regional economic center in development regions for the consolidation of industrial and trade related activities as well as social structure through infrastructure development.

Long term development plan is a planning document which not only consists of plans and programs for physical, social, economic and environment development of a particular region (generally an area with several added VDCs and municipalities within same district, sharing a common resource base for development and livelihood), but also a clear understanding of settlement network of those areas, transportation network, roles and function of the settlements. Likewise, a continuation to the earlier structure plans, land use and bye law framework for the settlements according to their identified roles and functions in the regional context is taken up in long term development plans.

Table 2: Brief Comparison of Planning Approaches in Nepal

Contents	Master Plan/Physical Development Plan	Integrated Action Plan(IAP)	Municipal Periodic Plan	Long Term Development Plan
Plan Content	Vision, Goals, Policy, Maps-urban form	Maps-growth areas, Investment plan	Vision, goal, policy, map-growth plan, investment plan	Vision, Goals, Policy, Maps-urban form, urban growth as well as investment plan
Nature of plan	Comprehensive	Strategic & incremental	Comprehensive	Comprehensive
Planning process	Rational-technocratic/ goal seeking	Participatory-need matching	Rational & Participatory	Rational-technocratic/ goal seeking as well as participatory framework
Data collection & analysis	Extensive and lengthy	Rapid and short	Extensive	Extensive and comprehensive
Planning horizon	Long-range	Short-range	Short range	Long-range
Link to implementation			Link to resource, program, & performance indicators	Link to resource, program, & performance indicators

2.6 POLICY REVIEW IN URBAN CONTEXT (ACTS, POLICIES AND REGULATIONS)

Planning Norms and Standards 2013 (2069 B.S.)

Planning Norms and Standards was prepared by MoFALD in 2013, after completing a comprehensive literature review of national and international planning documents, existing norms and standards and policy of urban development related agencies and after a series of discussions with experts from related planning agencies. The Planning Norms and Standards draft has been prepared in context of the lack of coherence between physical development plans and the need for providing appropriate norms and standards of urban infrastructure and services. It has been formulated to manage an urban environment, improve an economic efficiency and the quality of life of urban areas, and also to make built environment functional and desirable..

Town Development Act 1988 (2045 B.S.)

This Act authorized the government to establish as autonomous and corporate committee acting through a management board. According to this Act, town development committee can control, restrict any development work in its planning area. Without the permission of Town Planning Committee, nobody can use forests, natural resources, agricultural resources, animals, ancient monuments, pilgrim' rest houses and religious places, public land and any kind of new development. The act contains plan for integrated physical development of town, plan for renewal/redevelopment of towns, plans for extension and expansion of towns/conservation plans, plan of new towns and plan for land use/zoning. The approval of plans is done by TDC through MHPP

National Urban Policy 2007 (2064)

National urban policy of Nepal has the objectives to promote a balanced urban structure, sustainable urban environment and effective urban management. The national urban policy views urban centres as catalysts for economic development and places the role of local governments at the core of urban development agenda, while recognizing that investments have not kept in pace with the urban growth.

The policy advocates the need for coordination and cooperation among the related central government agencies, local government bodies, non-government organizations, related private sectors and financial institutions responsible for planning, execution of physical infrastructures, provision of urban services and facilities and operation of urban economic activities. To achieve balanced national urban structure, the policy proposes the strategy of developing self-reliant development regions through planning and developing urban settlement systems in each region. The policy advocates for the development of infrastructure services and facilities along the north-south growth corridors to promote trade between Himalayan and Terai regions. The policy also proposes the development of at least one large urban center to serve as regional economic center for export promotion of industrial and consumption goods and to provide specialized services. The policy advocates the development of linkages of smaller and medium urban centers with regional economic centers.

To strive towards effective urban management, the policy proposes to strengthen the institutional capacity of local bodies for the implementation of urban plans and programs. The policy also proposes the development of urban management system based on integrated and collective approach for the urban centers bonded by geographical proximity, sharing common natural and physical resources and interlinked through similar activities.

National Land Use Policy 2012 (2069 B.S)

Land and land resources had played a very important role in economy and people's livelihoods in Nepal. Agriculture, forestry and tourism are the major sectors contributing to the nation's GDP. Haphazard urbanization is putting pressure on agricultural lands as well as forest areas. Hence, National Land Use Policy was created in order to address the issues of land and land resources so that they can be utilized in environment friendly way.

Following are the divisions of land use as per the policy:

1. Agricultural area
2. Residential area
3. Commercial area
4. Industrial area
5. Forest Area
6. Area for public use
7. Other areas as needed

National Land Use Policy encourages management and conservation of land as per the division of land use. With an aim to regulate uncontrolled urban expansion, the policy has made several provisions such as, to restrict uncontrolled land fragmentation, and to promote settlement development and planned urban development at suitable and desired places. The policy also has provisions for minimum area for green and open spaces in urban areas.

The policy empowers the government to acquire land as needed for infrastructure development. There are also policies regarding conservation and development of various historic, religious and cultural areas. Land use zoning is proposed as per geography, capacity and suitability of land. The policy advocates the development of integrated urban development of settlements in mountain and hilly regions and proposes to develop agriculture, forest, mines and tourism areas according to land suitability and fertility. The policy also makes provision for the change in land use other than designated one as and when needed for public welfare and infrastructure development.

Guthi Corporation Act 1964

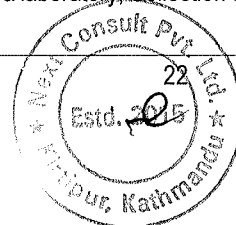
This act gives the definition of a *Guthi* (religious trust) and identifies the role and responsibilities of *Guthi* Sansthan (Corporation). This act gives exclusive power to the Guthi Corporation to manage properties under its ownership. The Act classifies Guthi into three categories: Private guthi, State guthi and Exempted guthi. The Act provides continuity to the trusteeship corporation established under the Trusteeship Corporation of Guthi Sansthan. The Act also makes provision to use income from movable or immovable property, belonging to the Guthi for the performance of religious rites and festivals, preserve cultural heritage and monuments and other religious buildings, preserve ancient ornaments and articles of religious and cultural importance. It prohibits registration of land belonging to temples or spaces for public festivals and worships.

Yet, the management of guthi land under this act has been unclear, and the *Guthi* Corporation has sold large amount of land under its ownership, to generate financial resources. The act has not been able to penalize individuals/institutions (tenants) who do not pay revenues. Due to the lack of proper management and record keeping, large amount of land and properties under its jurisdiction have been encroached upon and have been privatized through illegal means. This Corporation has been very much inefficient in taking care of the monuments and properties under its jurisdiction.

Environment Protection Act 1997 (2055 B.S.)

The government of Nepal published its first Environmental Protection Act on January 1997, mainly in order to maintain clean and healthy environment by minimizing, as far as possible, adverse impacts likely to be caused from environmental degradation on human beings, wildlife, plants, nature and physical objects. This Act is proponent to conduct Environmental Assessment of the prescribed plans and programs before implementation and Prohibits implementation of the proposal without approval. The Act empowers the government to give approval to the environmental assessment report.

The 4th, 5th and 6th provision of the act deals with submission and implementation of Proposal for approval. The 7th section includes rules for Prevention and Control of Pollution. Section 8, 9, 10, 11, and 12 includes provisions for environment inspector, Protection of National Heritage, Environment Protection Area, Establishment of a laboratory, Collection of Samples,



respectively. In section 13, there is provision associated with the establishment and Operation of Environment Protection Fund. Similarly, provision regarding Power to Constitute Environment Protection Council, Concession and Facility, formation of committee, provision of compensation, Punishment, Appeal, Delegation of Power, are included in section 14, 15, 16, 17, 18, 19, 21, respectively. Conditions regarding Power to Frame Guidelines and Power to Frame Rules are elucidated in section 23 and 24. Section 3 mandates the proponents to conduct Environmental Assessment of the prescribed plans and programs before implementation.

Motor Vehicle and Transport management Act, 1993 (2050)

This act manages and regulates traffic management and development of convenient and effective transportation facilities to the public, prohibit driving of certain vehicles & in certain places for public security and welfare. The act necessitates the registration of vehicles and its withholding if the vehicles do not fulfill the required norms and standards. The act also Act constitutes a Transport management committee which regulates registration of vehicles based on set of criteria and guidelines and driving prohibition in certain areas regulated through the Department of Transportation and Transport management committee, chaired by the Chief District Officer. The Act also ensures the penalty provision of Rs. 200 - 15000 for any person using any vehicle in contravention to this Act.

Public Road Act 1974 (2031)

It prescribes rules for planned road construction with defined boundaries and road width as well as road construction with defined boundaries and road width. It prohibits any work on road without their prior approval and empowers the Department of roads. The act is specially to demolish house or structures built within road boundaries. This act prescribes rules for planned road construction with defined boundaries and road width. The Act prohibits any work on road without the prior approval from Department of Roads. This Act empowers the Department of Roads to demolish house or structures built within road boundaries. However the Act is silent over how to address the issue of a large number of unplanned roads being developed in urban and peri-urban areas and narrow roads, 1-3 m wide developing in dense residential areas.

Land Acquisition Act, 1977

Land acquisition through expropriation is governed chiefly by the land acquisition Act, 1977. This Act empowers the government, by notifying publicly in the specified places, to acquire private land for the well-being of the general public. This act provides legal basis in the acquisition of private land: for the development of public property and to cope with any other emergency situation. The authority of land acquisition has been entrusted to the Chief District Officer (CDO) of each district and compensation rates were fixed by a committee headed by CDO. As per the act. Compensation rates for land should be as per prevailing market rates.

The main limitation of this Act is due to the inadequacy on the amount of compensation to be paid to the land owner. Section 16 states that for the compensation to the land owner, the compensation committee must take into consideration the current land price, the value of improvement and crops, and potential losses incurred by the owner due to dislocation. In many cases, however, the law requires compensation to be equal to the fair market value or just value of the land. The Act also does not contain any requirement that compensation be paid within a certain time limit, due to which landowners can be harmed by long delays in receiving compensation, and development programs may be held up by legal and administrative disputes caused by the delays.

2.7 STUDY OF URBAN PLANNING PRACTICES IN OTHER COUNTRIES

Urban Planning Practice in Hong Kong

Hong Kong's planning hierarchy has a three tiered system of plans consisting of

- Territorial / strategic planning
- Sub-regional planning
- District planning/local planning

The planning system comprises development strategies at the territorial level and various types of statutory and departmental plans at the district/local level. Guiding the preparation of these plans is the Hong Kong Planning Standards and Guidelines.

Territorial Development Strategy

The Territorial Development Strategy aims at providing a broad planning framework to guide future development and the provision of strategic infrastructure in Hong Kong. It also serves as a basis for the preparation of district plans.

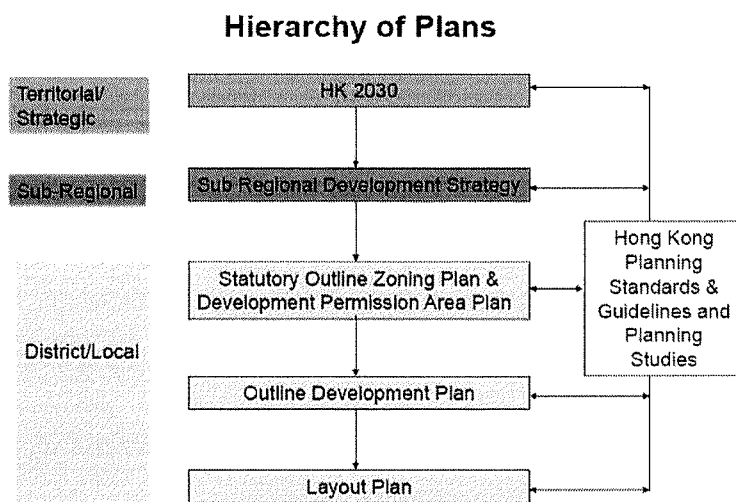


Figure 2: Hierarchy of Planning in Hong Kong

1984 TDS provides a long term planning framework for sub regional and district planning and for integrating other government policies including land, transport infrastructure and environment. The plan advocates integrated land use and transport model for development. TDS 1984 was reviewed in 1991-1998. The review document advocates sustainable development principles of integrated land use-transport-environment model for development. It also suggests the development strategy keeping in mind the Pearl River Delta factor, with the change in the status of HK and the change in the relationship with mainland and HK's hub function.

Hong Kong 2030 is the latest addition to territorial development strategy. It envisions strengthening the position of Hong Kong as Asia's World City. The planning document has the goal of adhering to the principles of sustainable development to balance social, economic and environmental needs to achieve better quality of life for present and future generations.

Sub Regional Development Strategy

These strategies aim to develop long-term comprehensive land use, transport and environment plans to guide medium and long-term development. They also serve as a bridge between the TDS and district plans through the translation of long-term, broad-brush territorial development visions and themes into district planning objectives for the five sub-regions in Hong Kong. The five sub-regions are the Metro Area, North-East New Territories (NEMunicipality), North-

West New Territories (NWMunicipality), South-East New Territories (SEMunicipality) and South-West New Territories (SWMunicipality).

Various Types of Town Plans

At the district level, statutory plans in the form of Outline Zoning Plans (OZP) and Development Permission Area Plans (DPA Plan) are prepared and gazette under the Town Planning Ordinance. These plans regulate development through specifying the types of permitted land-uses and in some cases development parameters on individual parcels of land within Hong Kong..

Outline zoning plans (OZP), DPA and URA Development Scheme Plans are the Statutory Plans and are enforceable by law. OZPs are prepared under sections 3(1) and 4(1) of the Town Planning Ordinance. OZPs consist of three components, the outline zoning plan, the notes attached to the plan and an explanatory note for the plan. The zoning plan shows the proposed land uses and major road systems of the individual planning scheme areas. The notes set out the uses which are always permitted and other uses for which the Town Planning Board's permission must be sought.

Development Permission Area Plans are implemented since the enactment of the Town Planning (Amendment) Ordinance 1991. They provide interim planning control and development guidance pending the preparation of OZPs. Any development not permitted in terms of the plan and without the necessary planning permission constitutes an unauthorized development (UD) and is subject to enforcement and prosecution by the Planning Authority. These plans are interim in nature and are effective for a period of three years from the date of first publication

Urban Renewal Authority (URA) Development Scheme Plans considered by the Town Planning Board under section 25(6) of the URA Ordinance as suitable for publication under the Town Planning Ordinance are deemed to be draft plans prepared by the Board. It Includes a Land-Use Diagram indicates broadly the types of planned uses, and a set of Notes setting out the permitted uses and the requirements for submitting a master layout plan to the Board.

Hong Kong Planning Standards and Guidelines

The Hong Kong Planning Standards and Guidelines is a government document of planning criteria and guidelines for determining the quantity, scale, location and site requirements of various land uses and facilities. It applies to planning studies, and the preparation or revision of town plans. The document is under constant review to take account of changes in government policies, demographic characteristics and social and economic trends. During the year, planning standards and guidelines for petrol filling stations, liquefied petroleum gas filling stations, electricity supply, telephone service and greening were revised or in the process of formulation.

CHAPTER STUDY AREA

3

3.1 SITE ANALYSIS

3.1.1 STUDY AREA

Named after important religious tourist area Gosainkunda lake, Gosainkunda Rural Municipality is located in the northern part of Rasuwa district. The area of the Rural Municipality is 978.77 km², which is larger than the other four local bodies in the District. There is a total of 7143 populations in the RM. Most important feature of the RM is the Langtang National Park. Furthermore, Gosainkunda lake is the other most important speciality of the RM. As this is famous religious place, each year thousands of Nepali and foreigners visit this area. RM includes Thuman (ward no. 1), Timure (ward no. 2), Briddhim (ward no. 3), Langtang (ward no. 4), Syafru (ward no. 5), Dhunche (ward no. 6). The office of Rural Municipality is currently operated in Ward no. 5. The rural municipality accessible by bus from Kathmandu (national capital) via Pasang Lhamu highway (H21), being about 120 km from Kathmandu.

Gosainkunda Rural Municipality (गोसाइकुण्ड गाउँपालिका) (was established in 2017 (2073 BS) as a Local level government of Nepal. Post local government restructure, additional wards were added to Gosainkunda which are more rural in character and use and with a more isolated settlement. Connections to these settlements is an issue.

The Population Census 2011 of Nepal (prior to restructure) counted 7143 persons in 2017 households of Gosainkunda Rural Municipality.

This municipality comprise of 6 wards as mentioned below.

क्र.सं.	नयाँ वडा	समावेश गाविस / नगरपालिका	जनसंख्या
१	१	थुमन(१-९)	८६८
२	२	टिमुरे(१-९)	४२३
३	३	बृद्धिम(१-९)	४२२

४	४	लाइटाड(१-९)	४१५
५	५	स्याफ्रु(१-९)	२२७१
६	६	धुन्चे(१-९)	२७४४
	जम्मा		७१४३

CHAPTER DETAILED METHODOLOGY

4

4.1 MOBILIZATION

The consultant will organize the meeting with Client and their experts during the agreement. The consultant's team will discuss and assure the quality assurance on their methodology and time frame for the specified project. The team member will start their involvement at office from the following day of the agreement.

4.2 PHASE I: PRELIMINARY PREPAREDNESS

Desk Study

Data Collection & Review

The team has been collecting the information regarding the project. All the available data and reports have been collected, reviewed and analyzed. The consultant has performed the following desk study:

Secondary Data Collection

Secondary data and information regarding the physical, social, economic, environmental, financial and institutional status of the Municipality have been gathered through the study of reports from concerned institutions such as the MoFALD/Municipality, made available by Municipality, the latest demographic and socio-economic data of the study area published by CBS have also been collected and studied.

All the collected documents related to the theoretical background of Physical Development Plan/Local area plan/ regional development plan and the studies of regional and sub-regional context documents have been referred.

Collection of Base Map

The Consultant has collected the data and study reports of GIS based Base Maps of the added VDCs of study Municipality already prepared by Municipality. The consultant team has captured high resolution satellite image of the study Municipality from open source software and is in the process of mosaicking and stitching the image through an image mosaicking software.

Literature Review

Available literature and study on Periodic Plan is studied. Furthermore, documents and study reports on the previous physical and other development planning attempts in Nepal, and abroad examples and study methods have been studied and reviewed. Government policies in land use, urban development, infrastructure development and management have been studied and reviewed.

Preparation of Checklist

The checklist for the reconnaissance survey, data collection for the preparation and update of GIS based base map of the study Municipality, key informant survey, focal group discussions (FGD) and PRAs have been prepared on the bases of study of the above documents and literatures. The workshop schedule is being prepared and the Municipality offices/officials of study Municipality have been communicated with.

Review of Methodology and Work Schedule

With the preparation of checklists and questionnaires for surveys and interviews, the consultant team will prepare a detailed work plan and site visit schedule. The methodology and work schedule submitted in the proposal, if necessary will be revised. Communication with TDCs of Municipality and other Local agencies will be done to schedule field visit. Prepared Checklist will be discussed and finalized with the Client before field visit for data collection.

Preparation of Inception Report

Inception Report has been prepared with the compilation of detailed work schedule, manning schedule with clear-cut roles of proposed personnel. The report also consists of the field checklist, questionnaires, critical review on prevailing but related acts, rules, guidelines and policies, lessons learned from previous physical and other developing planning attempts in Nepal and abroad. The report also consists of the study of Periodic Plans/ Periodic Plans in other countries.

4.3 PHASE II: FIELD SURVEY AND STUDY

Preparation of Field Programs

Appropriate plan to accomplish the job within the agreed time frame will be discussed within the team members to prepare the field work plan. The team will setup the field office as per the field work plan. This field work plan will include preparation of fieldwork plans, route plans and programs, arrangement of field equipment, staff logistics, arrangement of transportation, data collection methodology, survey methodology. This field work plan will be informed to the client.

Orientation and Formation of Sub-Steering Committee

The planning team consisting of the experts from the consultant and technical personnel from Municipality/Municipality and local bodies will organize a one day orientation/ preliminary preparedness workshop at the TDC office of study Municipality about the Periodic Planning process. TDC representatives, representatives from line agencies and a number of invitees from different walks of life will be oriented on the role of TDC and line agencies in each phase of preparation of Periodic Plan.

A sub-steering committee will be formed at the orientation workshop, consisting of the representatives from TDC, bodies, government agencies and political parties/leaders, civil societies such as NGOs, CBOs, TLOs, intellectuals, prominent citizens, professional bodies, and the planning team. The Sub-Steering Committee will be formed by the election or nomination at workshop. Working sub-committees will also be formed in the same workshop. An orientation about the role and responsibilities of the Working sub-committees will also be clarified at the same workshop. Key informants will be identified.

Secondary Data Collection

Data & information related to the physical, socio-economic, Municipality/added VDC revenue and expenditure, development budgets for the last five years will be extracted from the secondary sources, and published reports, added VDC/ municipality yearly report etc. Physical and Socio-economic information of the study Municipality will also be collected from other line agencies and partner organizations working in the study area. Satellite image from the open source as well as maps from different agencies will be collected to update digital base map. Base map will be used to prepare the existing land use of the town. Land transaction and land value information will be collected from different related institutions

Primary Data Collection

Primary Data mainly related to the physical infrastructure, existing land use pattern, extent of newly opened roads, their standards and quality, prevailing land values and environmental sensitive areas and areas with existing environmental problems will be gathered during field survey through physical mapping using GIS/ cadastral map, on site observation, technical investigation/ test and interview. Municipality level problems and developmental issues will be identified

through opinion survey and interviews of prominent citizens, officials of the local and government agencies (Key Informant Survey), and through Municipality level meetings which may include meetings of the TDC and Sub-committee meetings. added VDC/Municipality level urban and rural problems and needs will also be identified through Participatory Rapid Appraisal (PRA) by holding citizens gatherings at the TDC offices or at the convenient location of the Municipality.

Government, Guthi and Public Land identified by Municipality study of the same will be verified and the area required for future development and expansion of the town including land required for government and public purposes will be assessed. Appropriate plan and policy to protect such land from private/public encroachment and others will be formulated.

Community and Different level Consultation

Community and different level consultations will be carried out mainly for the collection of baseline information of the study area Municipality, preparation of Town Profile, defining the development vision of the Municipality and preparation of long term development plans. Participatory approach will constitute consultation from Municipality level to settlement level. Problems and potentials in the Municipality, major settlement level/ municipal level will be collected through different level of consultation. These consultations will also be used for collecting data and information in local level.

TDC of the study Municipality will function as Sub-Steering Committees. It will be the key body to formulate policies and guidelines related to plan preparation. TDC will advise the consultant on various aspects of plan preparation including identifying problems and issues of the municipality, formulating and reviewing of Municipality vision, goals, objectives, and programs. Sub-Steering Committee will be the key forum to set the vision of the municipality.

Focal Group Discussions with different partner organizations working in the district will be organized for the identification of problems and potentials. Community consultations will be held for the special groups like indigenous, disadvantaged groups, dalits, janjatis and special groups such as women, children, disabled etc.

Output of Phase I and Phase II: Town Profile

The primary and secondary data collected from field survey and study and data and information collected from Community and different level consultations will help the consultant in preparation of an up-to date Town Profile, comprising of base-line information of the existing physical, social, economic, environment, financial, and organizational state of the Municipality. Apart from the key statistics, the baseline information will also include textual descriptions, maps, charts, diagrams and key problems prevailing in the settlements and the municipality/added VDC. Baseline information of at least two time points- having minimum interval of (past) five years will be included.

4.4 PHASE III: DATA ANALYSIS

Data interpretation and analysis

Collected primary and secondary level data and information collected from field survey and study and data and information collected from community and different level consultations, verified base map and thematic maps (physical infrastructure, existing land use pattern, extent of newly opened roads, their standards and quality, prevailing land values, land transaction, growth trend, environmental sensitive areas and areas with existing environmental problem etc.) will be filtered, analyzed and presented by the planning team. The Municipality level problems identified from different level community meetings will be verified/justified through data analysis. All the collected data of the Municipality will be represented in GIS through the preparation of thematic maps to illustrate the existing situation of the Municipality.

The analysis will be done on the socio-cultural, economical, physical, environmental and disaster management perspective with due consideration to the urban growth and effects of climate change. The consultant will also identify

potential areas for urban development based on land suitability and other factors. Furthermore, the present and future housing needs/market, stock, conditions will be analyzed and strategies for land acquisition, distribution of land and housing in future will be recommended.

Two Day Workshop to identify Municipality vision

Above analyses will eventually identify the economic potentialities and related issues and impediments of development of the settlements/Municipality. These analyses will lead to identify the settlement/Municipality identity and lead sectors based on economic potentialities. A two day Vision-Setting workshop will be organized by the TDC to identify the lead sectors and the Municipality Vision. The Vision workshop will be broadly participated, including all the participants of the Sub-Steering Committee formation workshop.

Workshop Day One:

On the first session of the workshop, the planning team will present the existing condition of the Municipality to the participants. The analysis done on the socio-cultural, economical, physical, environmental and disaster management perspective of the Municipality with due consideration to the urban growth and effects of climate change will also be presented to the participants. The Trend Analysis, SWOT Analysis, Spatial Analysis and Financial Analysis findings will be presented by the planning team. The data collected and analyzed earlier will be presented to the participants. After the presentation by the planning team, the participants will be divided in different groups and prospective Municipality vision based on different analysis will be proposed by each group. Through vision setting workshop the planning team will facilitate to identify the a single Municipality vision statement and lead sectors will be identified/ agreed upon through the participatory approach. To make the vision operational, necessary development principles to guide the sectoral activities will also be outlined.

On the second session of the vision setting workshop day one, development principles to guide the sectoral activities will be outlined. The different working sub-committees with the support of planning team will formulate Municipality sectoral plans and programs. Such plan will clearly reveal the sectoral goals, objectives, outputs, activities, progress indicators, means of verification of these indicators, and implementation strategies. Such plan will cover the development sectors such as physical development, social development, economic development, cultural and tourism development, financial development, environment management, disaster management, institutional development, and climate change adaptation. The planning team will also make elaborate consultations with the concerned sub-committee to formulate the development principles and guidelines for the preparation of the long term physical development plan.

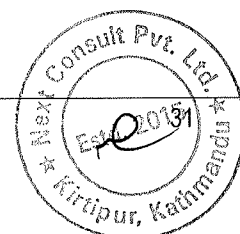
Workshop Day Two

On the second day session of the workshop, based on the sectoral plans and programs, different working committees will also identify and prioritize major projects for the long term development of the Municipality. The working sub committees with the help of planning team will also identify trunk infrastructure, which will be prepared in detail by the planning team, in the later stage of the study. The workshop session will also identify the major determinants for preparing building byelaws of Municipality.

4.5 PREPARATION AND UPDATING OF GIS BASED BASE MAP OF MUNICIPALITY

The approach procedures for base map preparation will be from the followings.

- Acquisition of Data
- Digital Compilation of Secondary Data
- Topographical Maps
- Generation of Contours and Digital Elevation Model
- Satellite Imagery Orthophoto



- Updating from Satellite Imagery
- Field verification
- GIS Database Creation

Acquisition of Data

The data to be used for this project will be collected from both primary and secondary sources.

Primary Sources

A high resolution satellite image of Gosainkunda Rural Municipality will be captured from open source software such as Google Earth, Bing Maps etc. and the captured images will be stitched together by doing mosaic through appropriate software. Topographical maps or digital data will be collected from Survey Department. GCPs for vertical control (topographical spot) will be collected from spirit leveling.

Secondary Sources

Existing analogue cadastral from respective Municipality Survey Offices and electricity network single line diagram will be obtained from NEA office within/ near the study area, if available. Telephone network design maps will be collected from MunicipalityC office within/near the study area, if available. Likewise, Water supply and sewerage network design drawings will be collected from DWSSC office within/near the study area, if available.

Digital Compilation of Secondary Sources Data

The secondary maps acquired in analogue format will be scanned using wide format scanner at 200 dpi resolutions. The scanned maps will be appropriately geo-referenced with geo-rectified high resolution satellite image captured and will be vectorized in GIS environment. Digital maps and design drawings acquired from various sources will be converted into compatible CAD and/or GIS formats.

Topographical Maps

The Spirit Levelling with double tertiary Survey was will be carried out connected from Benchmark established by Survey Department to determine the elevation of each GCP for vertical control point. Topographical spot level point will be collected with Auto Level or Total Station from these GCPs in the study area. These topographical spot point will be used to generate contours at 1m intervals in the study area.

Generation of Contours and Digital Elevation Model

From the above field surveyed spot levels, contours at 5 meter interval will be generated for core areas, and 10 meter interval for the rest of the areas will be generated using specialized DTM software compatible in AutoCAD or GIS environment. Contours generated will be used in generating the Digital Elevation Model (DEM) of the entire study area. This DEM will be used for ortho-rectification and generative other derivative terrain maps (slope, aspect etc.).

Updating Data from Satellite Image

The updating will be done using the latest high resolution satellite imagery, captured from free sources, by digitizing the features over the ortho-rectified imagery. Land use map will be prepared from high resolution satellite imagery by digitizing the existing land cover. Proposed land use map will be prepared by interacting with the key stakeholders and through community meetings/ consultations.

Field Verification

During the field visit and plan making process of the Periodic Plan of the study Municipality, updated data will also be verified field for completeness of data in the entire Municipality/ municipal area. The features which are not identified in the ortho-photo and ortho-images will be collected from field verification with Hand GPS survey. Attribute of data such as collection of road name and its categories, places, institutions will be collected from field survey. This collected

information will be updated and linking attribute into relative data. Field verification will be done by the consultant during the field visit, in co-ordination with and in presence of the representatives from Municipality.

GIS Database Creation

GIS database for all the base map features will be developed based on the data model in accordance with the “Specifications for Geographic Information Service and National Topographic Database” and the “Specification for National Urban Geographic Information Service in Nepal” prescribed by the Survey Department. The feature and attribute codes will be adopted as these standard specifications.

Database will be generated in ArcGIS software as file geo-database. All these data collected above will be incorporated into this geo-database. During the process of creating topologies, topological rules may be defined to remove the various errors such as overshoot, undershoot, pseudo node, misplaced or missing label such as id, name etc.

The prepared geo-database will be validated or updated with generated topological rules for error free data in geo-database so that the vectorized features will be cleaned to remove redundant. The cleaned feature vectors will be used to create respective topologies (point, line or polygon). Attribute databases will be created for each feature class in the data model.

Updating of GIS based Base Map

GIS based base maps will be prepared at 1:2,500 scale for core areas and 1:5000 scale for remaining areas with appropriate cartographic representations using “database driven cartography” technique in ArcGIS 10 platform. The maps will be composed with appropriate legends, cartographic layouts and elements, symbology and descriptive notes.

Maps will be composed following the national grid standards. The maps will be printed/ published in A1 size paper.

Output of Phase III:

- Identification of Municipality Vision and Lead sector
- Formulation of Sectoral Goals, Objectives, Outputs and Programs
- Prioritization of Sectoral plans/ programs identification
- Updated GIS based Base Map of Municipality
- Land Use Plan and zoning map of Municipality

4.6 FIELD REPORT PREPARATION

Field report will be prepared with the primary and secondary data collected during field study and survey. The report will consist mainly of the Town profile, collected data interpretation and analysis, the documents and information from vision workshop, Municipality Vision and Lead Sector identification and the formulation of sectoral goals, objectives, outputs and programs.

The field report will also consist of proposed use of Government/ Guthi/forest/private/public land in planning, infrastructure/block plan, Land Use Map, zoning, major determinants for preparing building bye-laws, trunk infrastructure plan. The report will give a clear picture of the Municipality Periodic Plan to future urban development for various infrastructure purposes.

4.7 PHASE IV: PLAN PREPARATION

The planning team will make elaborate consultation with the concerned Sub-Committee to formulate the development principles and guidelines for the preparation of the long-term physical development plan. Each committee will work out

by themselves for plan preparation, which will be facilitated by planning team. The plans and programs identified by each working sub-committee will be located by the consultant in the map with the help of GIS software.

The Periodic Plan will be prepared jointly by the team comprising of personnel from Municipality, Municipality, TDC, local bodies and experts from the consultant team. Municipality/ MunicipalityO will supervise and oversee overall task of maintaining collaboration and partnership for preparing plan as well as reporting back to the constituent partners on the progress being made in the field,

Preliminary draft of Periodic Plan will be first presented to the TDC/MunicipalityO for approval. The suggestion, comments and recommendations will be incorporated to prepare the final draft of Periodic Plan. The Draft Integrated Plan will be presented before the public gathering called by the TDC. Suggestions received there-from will be incorporated to produce the final draft that will be submitted to the TDC/Municipality and Municipality for its approval.

The long term development plan will consist of thematic maps will be prepared in GIS environment. It will consist of the following plans and maps:

- Index Map/Location Map
- Hinterland Map
- Existing and proposed Land Use and Zoning Map including an overlay of cadastral map, and contour line with approved intervals (<5m)
- Urban Expansion Area Map: total land area required for future town development will be identified and demarcated. The planner area will have network plan with contour map, detail drawings
- Existing and proposed Road Network Map, road Sections, bus bays, stop, bus park (inter/intra city), truck yards, and location of underground infrastructures etc
- Existing and proposed water supply network Map
- Existing and proposed Sewerage/Drainage network Map
- Existing and proposed communication network Map
- Proposed Solid Waste Disposal/Landfill site Map with an overlay of contour line of agreed intervals.
- Environmental Sensitive Map.
- Geological sensitive area Map
- Map showing government/public/guthi land, with an overlay of contour line of agreed intervals and other details etc.
- Map showing proposed location, site plan, and tentative sketch/size of social/cultural/economic infrastructures such as City Hall/ convention Center, public parks, sports complex, security center, public toilets/urban service centers, museum, zoo, cold store/ dry port etc.
- Detail Architectural/ Engineering Design/ Drawing of selected priority sub-projects.

4.8 PREPARATION OF MULTI-SECTORAL INVESTMENT PLAN (MSIP)

Thematic Maps of the Periodic Plan will also identify short and long term programs/projects, cost estimate, and probable financing sources prioritized in sequential manner for the planning period of short-term (0-5 years), medium-term (5-10 years) and long-term (>10 years). Such programs/projects will be able to cater to both the short-term and long-term needs of the Municipality/ added VDCs, and will be consistent with the long-term development plan, sectoral goals and objectives, and the vision. Furthermore, MSIP will clearly reveal programs/projects for each fiscal year and for the tentative cost estimates of the projects to meet the vision. Such MSIP will be consistent with the financial resource plan. The city level plans/projects (Mega projects) and projects that have to be implemented by different line agencies in

MSIP will be included after thorough consultation with the concerned offices, the consultant will prepare the cost estimate of the projects according to the approved district rate.

4.10 PHASE V: BLOCK PHYSICAL MODEL OF TOWN

The consultant will prepare a block physical model with 1:5000 of the study area will be prepared with detailing in 1:10000 scale will be prepared to display the Municipality vision, land use plan and effect of implementation of by-laws to the common public. CBD and important landmarks objects will be displayed in 1:5000 or higher scale.

The base map prepared earlier will be used extensively for the preparation of physical block model. Thematic maps prepared for the long term development plan will be utilized to prepare the proposed land use, and proposed physical infrastructure in the study Municipality. The block physical model will be prepared using different materials, mainly wood/ cardboard and model making paper.

OUTPUT OF PHASE IV, V AND VI

- Periodic Plan of Municipality
 - Long Term Physical Development
 - Social Development Plan
 - Cultural and Tourism Development PLAN
 - Economic Development Plan
 - Financial Development Plan
 - Institutional Development Plan
 - Environmental Management Plan
 - Disaster Management Plan
 - Climate Change Adaptation Plan
- Multi Sectoral Investment Plan of short and long term programs/ projects
- Block Physical Model of Town

4.11 DRAFT REPORT PREPARATION

The Draft Report will consist of the development principles and guidelines to prepare Periodic Plan of the Municipality. It will also consist of the thematic maps prepared in the course of formulating Periodic Plan. The Draft report will also

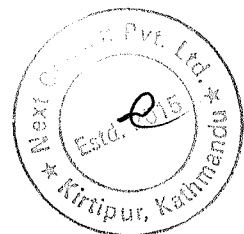
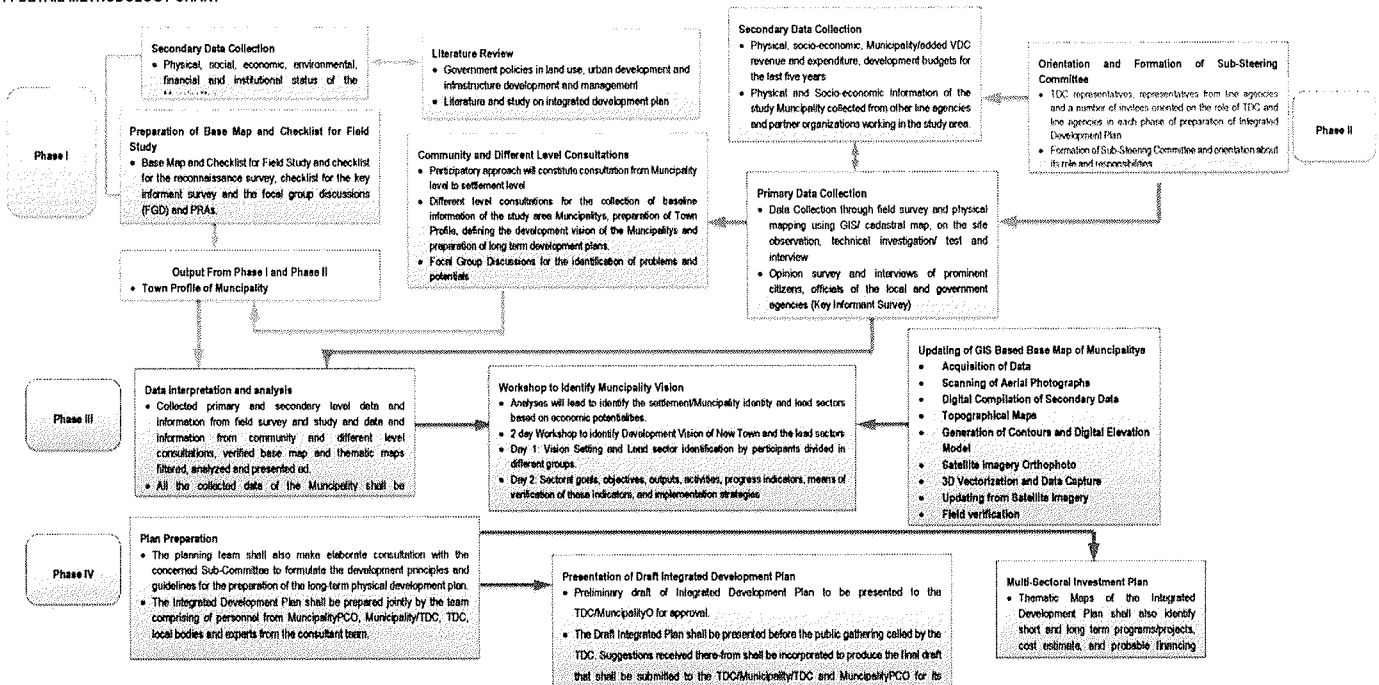
include the Multi Sectoral Investment Plan of short, medium and long term projects identified by the thematic maps of Periodic Plan.

The Draft Report will also contain land use and other thematic maps, building bye-laws, zoning map etc. Last, but not the least, the report will also contain the information, write-ups and pictures of the Block Physical Model of the study New Town prepared by the consultant team.

4.12 PRESENTATION OF DRAFT REPORT

- Preliminary draft of Periodic Plan will be first presented to the TDC/Municipality for approval. The suggestion, comments and recommendations will be incorporated to prepare the final draft of Periodic Plan.
- The Draft Integrated Plan will be presented before the public gathering called by the TDC. Suggestions received there-from will be incorporated to produce the final draft that will be submitted to the TDC/Municipality and Municipality for its approval.
- After Approval of Draft Integrated Plan at local level (TDC/Municipality), a presentation will be given at Municipality for approval of the Draft Integrated Plan.

4.14 DETAIL METHODOLOGY CHART

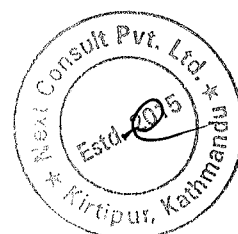


4.15 DETAIL WORKSCHEDULE

Activity (Work) Schedule

S. No.	Activities	Time in Weeks												
		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Desk Study & Reporting													
1.1	Collection and review of relevant document, Maps, Drawings and ariel photographs													
1.2	Crystalization of working methodology													
1.3	Preparation of Guidelines and procedure for the field work													
1.4	Preparation & Sub. desk /Inception report													
2	Mobilization													
3	Field Works & Field Report /Draft Report for GIS based Base Map													
3.1	Collection of Primary Data & Field Study, Meeting with Local beneficiaris etc. & Geotechnical Study, Topographic Survey etc.													
3.2	Social ,environmental, Geological, Insti. etc. related Survey (Questionnaire Survey)													
3.3	To set out Long-term Vision and overall Goal, Objective and Strategies for MC. All the field data collection as per TOR													
	To prepare Land Use Plan, Physical development plan, Social, Cultural, Economic, Financial, and Institutional Development Plan; Environmental and Risk Sensitive Land use Plan, Urban Transportation Plan, Multi-sectorial Investment Plan (MSIP) and other relevant plans if any in consultation with the client organization, Department of Urban Development and Building Construction and MoFALD on the basis of sectoral Goal, Objectives, Output and Programs													
3.4	Preparation and Submission of Field Report/ Draft Report with GIS Based Map													
4	Draft Final Report Phase (3rd Report)													
4.1	Data Entry and processing													
4.2	To prepare building bye-laws to regulate development in the town integrating Land Use and road network, plan and long-term vision													
4.3	To prepare Detail Engineering Design of prioritized 3 sub-projects with the consultation of MC and MoFALD													
4.4	Draft Final Report Preparation and Submission													
5	Comment from Client													
6	Preparation & Submission of Final Report													

Note: Here 1 means 1 week after the agreement.



4.15 PROPOSED TABLE OF CONTENT FOR FINAL REPORT ON PERIODIC PLAN OF GOSAINKUNDA RURAL MUNICIPALITY

1. Introduction

- 1.1 Background (Background of Periodic Plan)
- 1.2 Rational of Periodic Plan in context of New Towns Development
- 1.3 Objectives of works
- 1.4 Methodology
 - 1.4.1 Institutional Arrangement
 - 1.4.2 Data Collection
 - 1.4.3 Plan Preparation
- 1.5 Scope of works
- 1.6 Presentation of the report

2. Town profile

2.1 Geographic and Physical information

- 2.1.1 *Geographic Location*
 - Political Boundaries
 - Administrative Boundaries
 - Topography
 - Types of soil
 - Land Area
 - Land Classification- Land types, Water bodies
 - Hydrology
 - Specialty of the Municipality (In the context of neighbor added VDC/Municipality/District/Zone/Region/Nation)

2.2 Demographic Information

- 2.2.1 *Size and composition of population(Total and Ward wise Male, Female)*
- 2.2.2 *Population according to age group, sex*
- 2.2.3 *Population Density(Total and ward wise, Area*
- 2.2.4 *Average population growth rate and its trend(compare at least 3 census)*
- 2.2.5 *Household Size*
- 2.2.6 *Migration(internal, external, immigration)*
- 2.2.7 *Description of population by religion, caste, population*

2.3 Physical Infrastructures, Settlement and Urbanization

- Land and Housing
- Land capability classification
- Slope class classification
- Existing land use
- Area covered by real green area (Community, private, Government)
- Percentage of household without own home
- No. of families illegally squatting on public land
- No. of permanent and semi-permanent house
- Types of Settlements
- Urbanization Process/trend in the municipality

- Road and Transportation Services
 - Road Classification (Ward wise)
 - Total road density (km road/ sq.km. area)(ward wise)
 - Mode of transportations
 - Number and types of registered vehicles
 - Inter-linkages within municipal area and linkages with regional urban centers, neighbourhood district, villages and others
 - Conditions of Bus Parks
- Electricity
 - Electricity distribution and coverage
 - Use of electricity (domestic, industries, institution, street light etc)
- Drinking Water and Sanitation
 - Source of Drinking Water, its Distribution and condition
 - Per Capita water viability
 - Drinking water coverage from pipe line (Ward wise)
 - Drinking water coverage from other sources- hand pump, well, canal, mail source etc. (Ward wise)
 - No. of school without drinking water
 - No. and percentage of household without permanent and semi permanent toilets.
 - No. of public toilets
 - No. of school without organized toilets
 - Solid waste management in municipality
 - Per capita waste generation
 - No. of household using container to throw solid waste/ garbage
 - Drainage and sewerage system in Municipality
 - Types and coverage of drain and sewer line (ward wise)
- Communication System
 - Post office service
 - Telephone line & its coverage
 - Mobile
 - Internet /Cyber café
 - No. and types of paper regularly published in the municipality area
 - No. of journalists with certificate in the municipality area
 - Radio broadcasting
 - Television broadcasting
- Others
 - Availability of organized vegetable and meat market
 - Street vendors and street encroachment
 - Land Encroachment
 - Inventory of important sites: Religious, Cultural, Heritage, Tourism sites or other

2.4 Social Condition

2.4.1 Education

- Education and Literacy Condition
- Admission rate in preprimary, primary, lower secondary, secondary, higher secondary, colleges and other educational institutes
- School dropout rate (Male/Female)
- Literacy percentage

- No. and percentage of trained teacher (Male/Female)
- Percentage of population having informal education and vocational training
- Type and No. of Educational institutes (community, private and government school including vocational, technical)
- Physical conditions of Educational Institutes
- Demand and supply situation of education services and facilities (school, colleges, teacher-male & female)

2.4.2 Health

Condition of Health

- Infant/child mortality rate
- Mother mortality rate
- Average mortality rate
- Name of common diseases found in the citizens
- STD/HIV/AIDS related risk area, community and population
- No. of children having diarrhea under 5 year (how many times within 5 years)
- No. of death from preventive disease in one year

Condition of health services

- Types and number of health intuitions (government, community, private)
- No. of heath worker (doctor/nurse and others)
- No. of hospital bed
- Percentage of household which do not get access to health service within 1 hour travel distance
- Percentage of infants born with the help of trained heath workers

2.4.3 Security

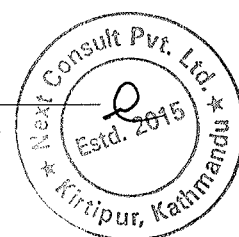
- Criminal incidents (crime, rape, theft, robbery, girl trafficking, prostitutions etc.)
- No. of security person
- Number and condition of fire brigade
- Number and condition of ambulance

2.4.4 Sports, entertainment and public space

- No. and types of public parks
- No. and types of public ground
- Availability of stadium, golf course, swimming pool, health club and fitness clubs and others
- Availability of cinema hall, town hall, community centers

2.4.5 Condition of women, deprived, oppressed and underprivileged people

- Number and percentage of child labour
- Number and percentage of disable and mentally retarded
- Number and percentage of women and child in special difficult situation
- Number and percentage of deprived, oppressed and under privileged families
- Education condition
- Health condition
- Employment condition
- Martial condition
- Representation and participation in communities and political activities
- Access to services and facilities



2.5 Economic and employment condition

- Specialization of economy
- Sector wise distribution of active population
- Major source of income
- Labour and employment condition
- Condition of financial intuitions, micro credit and area of major investment

2.5.1 Condition of Industry

- Condition of industrial development and industrial production (including, micro, cottage and small)
- Marketing situation of local production
- Credit availability to industrialist
- Employment generation by the sector
- Condition of local raw material availability and use
- Other industries and mining related description (if any)

2.5.2 Trade, tourism and services sector condition

- Wholesale and retail trade (employment, major trading products)
- Condition of export-import
- Condition of tourism sector (employment, hotels, rooms, no. of tourist visit), Contribution of tourism sector in the economy)

2.5.3 Agriculture Sector

- Total area of agriculture land
- Major agriculture production (surplus/deficit)
- Employment creation (male/female)
- Percentage of agriculture land with access to irrigation facilities
- Percentage of agriculture land which can be irrigated
- Loan investment in agriculture sector
- Major Livestock, poultry and its production

2.5.4 Others potentialities of economic development

2.6 Conservation, Cultural and Tourism

2.7 Environment Condition

- Inventory of Environment sensitive areas (Maps)
- Bio-diversity Types
- Alternative energy situation
- Use of smokeless stoves
- Air pollution
- Sound pollution
- Pollution of water source
- Built environment vs open land, forest, green space, water bodies
- Quality of drinking water
- Quality sanitation
- Quality Transport management
- Quality Unhealthy settlement management

2.8 Natural Disaster Risk

- No of families excessively suffered by natural disaster and estimate of annual loss
- Trend of Disaster incidence in terms of earthquake, flood, and landslides
- Possible landslide and other disaster prone areas
- Disaster prevention Measures in the past

2.9 Climate Change Adaptation

- Hydrological and metrological study
- Scope/area of CC in the context of particular Municipality
- Analysis of impact of CC

2.10 Financial Information

- Financial analysis and assessment of possible financial resources for the implementation of IDP
- Analysis and projection of town income
- Detailed Revenue and expenditure Breakdown of last five years
- External resources
- Inventory of the physical assets

2.11 Institutional Information

- Types and function of institutions
- Organizational structure, capacity and capacity building
- Human Resources Distribution
- Decentralization, good governance and mobilization of peoples participation
- Appropriate and optimum use of local resources and skills
- Institutional coordination and establishment of network

3.0 Analysis

- Trend Analysis
 - Population trend and projection
 - Urbanization trend and possibility of future expansion
- SWOT Analysis
- Spatial and infrastructures Demand Analysis
- Financial Analysis
- Identification of lead sector based on the town profile

4.0 Municipality Vision

5.0 Sectoral goals, objectives, output, Plans and programs

6.0 Long term Physical Development Plan

7.0 Land Use Plan

8.0 Environmental Management Plan:

- Solid waste Management: 3R promotion- reduce/ reuse/ recycle, Sanitary land fill site
- Waste water Management
- Air, water, land, visual and Noise pollution
- Urban Greenery (forestry, Agriculture), park, garden etc.
- Control and management of built environment
- Conservation of environmental sensitive areas
- Assessment of requirement of EIA/ IEE of major sub-projects

- Others (such as emergence of low carbon city, food green city, garden city etc. concepts) as per requirements

9.0 Social Development Plan:

- Education
- Public health
- Security (physical as well as social)
- Main streaming GESI: Inclusion of women, in-advantage groups, child, elder, physically challenged etc.
- Cultural and Sports
- Hierarchy of Parks & open spaces
- Other urban social service centres (information, library, and space for social gathering...)
- Others as per Municipality requirements

10.0 Conservation, Culture and Tourism Development Plan:

- Identification and preservation of important Cultural heritage sites within the Municipality area and hinterland
- Identification of specific non-material cultures in the area
- Plan for conservation of both material and non-material cultures and linked them to tourism development plan
- Culture centre (local craft, paint, architecture, museum, culture exchange, exhibition....)

11.0 Economic Development Plan:

- Economic development plan: Areas of comparative advantage
- Industry development (as per comparative advantage of the Municipality/ hinterland): Trade promotion, Tourist development
- Employment generation, poverty reduction
- Agricultural development (commercialization of agro-forestry products- cold storage, vegetable market ...)
- Rural urban linkage- strategic location of different market centre/ product collection centres
- Micro/small industry and business promotion
- Possible EZs based on local economic growth potentials (driving forces)
- Others as per Municipality requirements

12.0 Financial Development Plan:

- Financial analysis and assessment of possible financial resources for the implementation of Periodic Plan in each Municipality.
- Analysis and projection of town income and expenditure, Revenue improvement action plan
- Allocation of Development budget (for coming five year), cost sharing among sectoral agencies, and expenditure management action plan
- Promotional strategy of private sector and civil society (PPP)
- Financial and economic analysis of proposed priority sub-projects
- Others as per Municipality requirements

13.0 Institutional Development Plan:

- Decentralization, good governance and mobilization of people's participation
- Appropriate and optimum use of local resources and skills
- Institutional coordination and establishment of network
- Organizational capacity and capacity building
- Others as per Municipality requirements

14.0 Disaster Risk Management Plan:

- Pre- Disaster Plan
- During or immediate after disaster
- Post- Disaster Plan
- Disaster/calamity occurred previously in that area should be overlapped in the updated geological and disaster event maps (overlays of historic events)

15.0 Climate Change Adaptation Plan:

CHAPTER ROLES AND RESPONSIBILITIES

5

5.1 ROLES AND RESPONSIBILITIES OF EXPERTS

Periodic Planning Process is comprehensive planning activity which required tireless effort and high level expert input. This section defines the specific job and role of the experts during Periodic Plan preparation.

Team Leader

Team leader will be responsible for overall coordination of the project and guide team members regarding developing the working methodologies, survey and data collection method design, overall coordination of data collection, data interpretation and analysis in order to complete the assigned task in the stipulated time. Team leader will also be responsible for coordinating and communicating with different stakeholder viz., Municipality, Municipality, TDC, municipality, added VDC, and other sectoral institutions including team leaders of other packages regarding administrative, financial, technical matters for the smooth mobilization of the study process. Team leader will act as moderator the possible misunderstanding and disputes during the plan making process among the client and the consultant, and similarly among the community within the study area.

Team leader will be responsible for reviewing the past plans and documents, planning tend nationally and internationally, review the relevant acts, policies and regulations that would help overall functioning of the study process. He shall review the documents, not limited to the following documents and studies: Review of different relevant acts, policies and regulations, Review Road Inventory/ Road Network Plan study of New Towns, Review Land Inventory study of New Towns, Review of different relevant acts, policies and regulations, Review Feasibility Study of Economic Development of Municipality.

Team leader, along with the other team members will facilitate Municipality/ TDC level workshops, discussions and presentations, and will moderate with different sectoral sub-committees, political representatives, sectoral agency representatives and other stakeholders to formulate Municipality vision for development. Team Leader will also coordinate in compiling and finalizing overall report written by different personnel in their capacity as individual sectoral experts and present the documents at Municipality level and Central level. The team leader will also present the final study at Municipality level and Central level.

Urban Planner/ Infrastructure Planner

Urban Planner/Infrastructure planner will be working as deputy-team leader and he/she will be responsible for assisting Team Leader to coordinate overall project. He /she will also Team Leader for the development of study methodology, working modality, work plan and task assignment, survey and data collection method design, overall coordination of data collection, data interpretation and analysis, and coordination in report writing in order to complete the assigned task in the stipulated time. He/ She will coordinate the overall field work and table work. He/she will be responsible to prepare and develop the conceptual physical development plan, infrastructure network plan, land use and zoning map.

Urban Planner/Infrastructure Planner will also assist the Team Leader in preparing the phase wise/stage wise progress reports as well as have an overview of the overall report written by different personnel in their capacity as individual sectoral experts, help give final form to the report and present the documents at Municipality level and Central level. He/she will assist the Team Leader to present the final study at Municipality level and Central level.

Architect

Architect is responsible for architectural design and detailing along with the preparation of a physical model of the New Town with adequate detailing of infrastructures and services. He/ She shall assist team leader and Urban Planner to convey architectural knowledge to the locals. Besides architectural works, an architect shall assist the consultant team in the review of the existing/ past plans, policies, acts and planning documents. Architect will also be responsible for the preparation of study reports in the field of expertise and help the team in the presentation of such reports and design drawings and physical models with adequate detailing in Municipality level and Central level.

Water Supply/ Sewerage Engineer

Water supply and sewerage engineer will be responsible for assisting the consultant team in the review of relevant acts, policies, regulations, plans and planning studies and documents. He/she will support team leader and urban planner in preparation of infrastructure plans. He/she will coordinate with the team members to prepare existing status of water supply and sewerage and drainage network map, propose and prepare detailed master plan of the water supply network map, sewerage and drainage network map. He/she will coordinate with the members to propose solid waste disposal site. He/she will forecast demand in infrastructure and their supply for 20 yrs and analyze and design according to the demand. Water Supply/Sewerage Engineer will also work with the consultant team in the preparation of study reports in the field of expertise and help the team in the presentation of subjective plans/ reports in Municipality level and Central level.

Civil Engineer

Civil Engineer will be responsible for assisting the consultant team in the review of relevant acts, policies, regulations, plans and planning studies and documents. He/she will be responsible for studying existing physical infrastructures and services in study Municipality and also for the design of proposed physical infrastructure design for the study Municipality. He/she will coordinate with the team members to prepare the land use plan of the existing and future New town. He/ she will gather data and carry out necessary analysis and inform the outcome of such analysis to the team leader to produce desired report. Civil Engineer will also work with the consultant team in the preparation of study reports in the field of expertise and help the team in the presentation of subjective plans/ reports in Municipality level and Central level.

Environment Engineer

Environment Engineer will be responsible for assisting the consultant team in the review of relevant acts, policies, regulations, plans and planning studies and documents. He/she will also be responsible for studying existing environmental sensitive areas and disaster risk areas in study Municipality and also to prepare environmental management plans for the study Municipality. He/she will support team leader to find out environmental sensitive area in Municipality. He/she will support the team in finding mitigation measure to protect natural resources/ environment. He/she will identify and assess critical, sensitive and other natural resources which includes green belts, park, recreational area, along with strategies for their protection, preservation and stewardship against the adverse impact of future development, suggest necessary environmental improvement project, suggest location of sanitary landfill site for Municipality with suitable treatment plan location, solid waste management system and landfill site. Environmental Engineer will also work with the consultant team in the preparation of study reports in the field of expertise and help the team in the presentation of subjective plans/ reports in Municipality level and Central level.

Geotech Engineer

Geotech Engineer will be responsible for assisting the consultant team in the review of relevant acts, policies, regulations, plans and planning studies and documents. He/she will be responsible for the preparation of the checklist and questionnaire regarding the geological features of the New Towns for the reconnaissance survey and detail field survey. He/she will coordinate with the GIS expert to prepare the Geological Sensitive area map. He/she will also coordinate with the team members and extensively participate in the data collection process and its interpretation mostly concentrating on the geological aspect, and perform geological assessment of the New town. Geotech Engineer will also

work with the consultant team in the preparation of study reports in the field of expertise and help the team in the presentation of subjective plans/ reports in Municipality level and Central level.

Electrical Engineer

Electrical Engineer is responsible for designing and developing conceptual electricity network plans for New Towns. He/she will coordinate with the team leader to prepare and design the network grid for the electricity required for the new towns.. He/she will calculate demand and supply of electric of the study area. He/she will identify proper location for the location of the substation, coordinate with the team leader to identify the required land area for the establishment of the substation required for the new towns and coordinate with the team members to produce the existing Electricity network line and also predict future demand and its network line. Electrical Engineer will also work with the consultant team in the preparation of study reports in the field of expertise and help the team in the presentation of subjective plans/ reports in Municipality level and Central level.

GIS Expert

GIS Expert will be assisting team leader in preparation of GIS based database and update the base maps of the New Towns. He/she will coordinate with the team leader, urban planner and geo-tech engineer to prepare the land use map in existing cadastral maps, land use zoning and identify potential areas for urban development. He/she will coordinate with the various stakeholders to produce GIS data base of the study Municipality. He/she will help the study team in the application of GIS based system for the preparation of plans. He/she will also provide technical inputs as and when required on the preparation of GIS database and cadastral map information system. He/she will maintain regular coordination with the socio-economic survey team in order to keep track of their field progress and to guide them when required. GIS expert will play a leading role in the preparation and finalization of GIS based Base Map of Study New Towns, preparation of digital database and the preparation and presentation of the same in Municipality level as well as Central level.

Economist/ Financial Analyst

Economist/ Financial Analyst will be assisting the team leader and the urban planner to analyze economic status of New Towns. He/she will be responsible for conducting financial analysis and assessment of possible financial resources for the implementation of IDP. He/she will be carrying out following tasks during the Periodic Plan study: analyze and project the town income and expenditure with strategic revenue collection and improvement action plan, predict the development budget for the next five years along with the cost sharing of sectoral agencies and expenditure management action plan, identify and proposed any possible economic development area which will help the new town for economic based identity, prepare economic development plan based on the area of comparative advantage of the new town, identify potential industry development area, trade promotion and tourist development potential area, propose strategic location for different market center and also suggest micro/small industry and business promotion area. Economist/Financial Analyst will work with the consultant team in the preparation of study reports in the field of expertise and help the team in the presentation of subjective plans/ reports in Municipality level and Central level.

Sociologist/ Community Development Expert

Sociologist/ Community Development Expert is responsible for preparing the checklist and questionnaire regarding the economic and financial sector for the workshop, key informants, reconnaissance survey and detail field survey. He/she will also be doing analysis of collected data / information and identify problems and potentials for the development of the area. He/she will be carrying out the following tasks: coordinate with other members and participate in vision defining workshop, assist the thematic groups in the preparation of Social development plan, prepare Periodic Plan document on the part of Social Development Plan, prepare the checklist and questionnaire for the survey related to Social Development, conduct discussion (meeting) with the concerned organizations, person to collect necessary information. Sociologist/Community Development Expert will also work with the consultant team in the preparation of study reports in the field of expertise and help the team in the presentation of subjective plans/ reports in Municipality level and Central level.

Institutional Development Expert

Institutional Development Expert will support the team to analyze existing institution and their capacity. He/she will suggest appropriate institution framework, along with capacity building, sustainability for the effective execution of Municipality project. He/she will coordinate with other team members and organize Discussion (meeting) with the concerned organizations, person to collect necessary information required for the study, coordinate with the team leader to conduct vision defining workshop, assist thematic group for the study of New Town, prepare Periodic Plan document on the part of Institutional Development Plan, reconnaissance survey and detail field survey. He/she will coordinate with other team member to prepare Human Resources development plan and organizational development plan of the institutional development plan.

Institutional Development Expert will be responsible to prepare documents for the organizational capacity development of the New towns, and help the team in the presentation of the same in Municipality level and Central level.

5.2 COMPOSITION OF FIELD TEAM

The Consultant ensures that the Project will benefit much from the rich experience and knowledge of the proposed experts. The requirements of the Project and the tasks have been fully discussed with the team members and each is fully committed to participate in the Project.

Table: Field Team Composition

Proposed Key Staffs
Team Leader/ Urban Planner
Urban Planner/ Infrastructure planner
Architect
Water supply/Sewerage Engineer
Civil Engineer
Environmental Expert
Geo-Technical
Electrical Engineer
GIS Expert
Financial analyst
Sociologist
Institutional Development Expert

Table: Support Staff

Proposed Support Staffs
Supervisor Community mobilizer
Urban Planner
Sociologist
Civil Engineer
Civil Engineer

5.3 MANNING SCHEDULE OF CONSULTANT FIELD TEAM

Time Schedule for Professional Personnels

S. No.	Activities	Time in Weeks																					Total MM
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1	Team Leader																						5
2	Architect																						2
3	Civil Engineer																						5
4	Environmental Engineer																						2
5	Geotechnical Engineer																						2
6	GIS Expert																						5
7	Economist																						2
8	Sociologist																						4
9	ID Expert																						2
	Supporting Staffs																						TBN