



Siddharthanagar Municipality  
Office of the Municipal Executive  
Siddharthanagar, Rupandehi  
Lumbini Province, Nepal

## **Integrated Urban Development Plan (IUDP)**

of  
Siddharthanagar Municipality

(Approved by 9<sup>th</sup> Municipal Council)



2021

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## **ABBREVIATIONS AND ACRONYMS**

ADB	Asian Development Bank
CBS	Central Bureau of Statistics
CBD	Central Business District
CEN	Clean Energy Nepal
CFUG	Community Forest Users' Group
CTEVT	Council of Technical Education and Vocational Training
DPR	Detail Project Report
DRMP	Disaster Risk Management Plan
DoA	Department of Archaeology
SM	Siddharthanagar Municipality
DUDBC	Department of Urban Development and Building Construction
EA	Environmental Assessment
EIA	Environmental Impact Assessment
FAR	Floor Area Ratio
FNCCI	Federation of Nepalese Chamber of Commerce and Industry
GDP	Gross Domestic Product <sup>[[1]]</sup>
GESI	Gender Equality and Social Inclusion
GHGs	Green House Gases <sup>[[1]]</sup>
GIS	Geographic Information System
HH	Household <sup>[[1]]</sup> <sup>[[1]]</sup>
Ha	Hectare
IAAS	Institute of Agriculture and Animal Science
IEE	Initial Environment Examination
IUDP	Integrated Urban Development Plan
JICA	Japan International Co-operation Agency
KVDA	Kathmandu Valley Development Authority
LEED	Leadership in Energy and Environmental Design
LGCDP	Local Governance and Community Development Project
LFA	Logical Framework Approach
LPCD	Liters Per Capita Per Day
MDG	Millennium Development Goals
MoFALD	Ministry of Federal Affairs and Local Development
MoUD	Ministry of Urban Development
MRT	Mandatory Rules of Thumb
MSIP	Multi-Sectoral investment plan
NEA	Nepal Electrician Authority
NBC	National Building Code
NPR	Nepalese Rupees
NSET	Nepal Society of Earthquake Technology
NTB	Nepal Tourism Board
NTC	Nepal Tele-communications
NUDS	National Urban Development Strategy
PU	Purbanchal University
PPP	Public Private Partnership
3R	Reduce, Reuse, Recycle
ROW	Right of Way
SAP	Structural Analysis Program
SIP	School Improvement Plan
SRN	Strategic road network
SWOT	Strength Weakness Opportunity Threat
TOR	Terms of Reference
UN	United Nations
UN-Habitat	United Nations Human Settlements Programme
VDC	Village Development Committee



## **EXECUTIVE SUMMARY**

Bhirahawa Nagar Panchayat established in 1967 changed its name to Siddharthanagar Nagar Panchayat after the good name of Lord Gautam Buddha in 1977. Further, it was named as Siddharthanagar Municipality in 1990 after the people's movement for multiparty democracy. It is also the headquarter of Rupendehi district.

Among five major entry points of Nepal – India Border, Siddharthanagar Municipality is the one, located at the southern part of Rupandehi District of Nepal as an important commercial and industrial city. It is the gate way of Lumbini where Lord Gautam Buddha was born. Hence, it is one of the popular land transits for international tourists and foreign trade. Lumbini is 22 km far in west from Siddharthanagar. By virtue of these, Siddharthanagar is gradually growing with the time. The expanding trend is expected to grow in a fast manner, thus having impact on the urban amenities. Hence, it is a high time introspecting on an appropriate planning approach for designing and restructuring cities. There have been Integrated Action Plan and Periodic plans as an approach towards the urban planning of Nepal's urban cities but these planning tools still have quite a few shortcomings, major one, not being able to embrace the multi disciplinary aspects of the society or a city.

Urbanization in Siddharthanagar Municipality is growing at a very fast rate of approximately 2.2 % per annum. The agricultural sector continues to be strained by changing competition in markets and reduction in farmlands due to increase in population and unpredictable climatic conditions. It is projected that, by 2035, Siddharthanagar's population will be 107,025. This fact is compounded by the following numerous challenges in Siddharthanagar:

### **UNPLANNED AND UNCOORDINATED URBAN GROWTH**

Haphazard urban growth of the Siddharthanagar Municipality (SM) has led to the decay in varying degrees of the natural and human environments in the area. In a nutshell, these include: a proliferation of unplanned housing in the town, and lack of adequate provision of various services such as roads, water supply, sewerage and solid-waste collection, among others. It has contributed to the destruction of the aesthetic quality of the SM and imbalances the natural scape.

### **INADEQUATE TRANSPORT AND INFRASTRUCTURE SERVICES**

There is no public vehicles service in different routes. Therefore, people are forced to use private vehicles for rent out. There is also bicycle, rickshaw, private cars and motorcycles ply in the road which accelerate traffic congestion as well as air pollution.

Among the inadequate facilities and services include: solid waste management system, road networks, water provision and sewage disposal systems. As a result, SM is usually overstretched or simply remains reluctant to provide the various services to such areas.

### **INSUFFICIENT HOUSING CONDITIONS**

Housing development is insufficient. There is a mismatch between housing development and community facilities within the population. Slums and squatters is emerging in the city.

### **INCREASED DETERIORATION OF ENVIRONMENTAL QUALITY**

Haphazard waste disposition near forest and river, direct discharge of raw sewerage to Danda Khola and Ghagara Khola, encroachment of natural setting, dust due to earthen road, open defecation, industry pollution are the main sources of environmental pollution of Siddharthanagar. Numbers of factories are growing factories which are considered as main source of air pollution. Solid waste

management is major problem in Siddharthanagar; waste from house hold is thrown outside the house in many places.

### **INADEQUATE CAPACITY OF INSTIUTIONS**

With the reform of local administrative structure, staffs seem to be inadequate. Also, the lack of digital usage restricts the efficiency of service delivery.

### **METHODOLOGY**

This Integrated Urban Development Plan of Siddharthanagar for 2020-2035; serves as an urban planning tool to facilitate the growing development pattern. For preparing this IUDP, a rigorous ground research is done. With reference to the previous periodic plans literature reviews and data collection are performed, site visit, field study and meeting are done for preparing a municipal profile depicting the existing situation of Siddharthanagar. Then after, a long-term vision is set as a base for achieving an integrated urban development plan. SWOT analysis is performed to identify the probable strong and weak aspects of Siddharthanagar that can be developed as a potential, furthermore, trend analysis, spatial analysis, financial and economic analysis is done and thematic objective is set up for various strategic sectors. Plans and Programs are formulated based on the logical frame approach and various activities of each sector are identified that aids in financial planning of Siddharthanagar.

### **CHAPTER SYNOPSES**

**Chapter 1** introduces the project “Integrated Urban Development Plan” with its goal and objectives, scope and limitations; methodology employed and expected outputs.

**Chapter 2** presents the long-term vision of Siddharthanagar Municipality, its Goal, specific objectives, theme, and its broad strategies addressed.

**Chapter 3** provides the existing situation of Siddharthanagar with its regional setting, indicating the location and historical growth of Siddharthanagar, topography and drainage, geology and soils, vegetation, wildlife and all other related characteristics, population and demographic characteristics, existing housing and human settlements, existing social services and community facilities, economic activities and organization characteristics. It also critically assesses the existing situation and provides a base map plan.

**Chapter 4** provides the critical analysis of the existing situation using various analysis tools and forecast a future need base demand.

**Chapter 5** presents the thematic urban development plan viz. Physical, Social, Environmental, Disaster, Culture and Tourism, Economic, Financial and Institutional.

**Chapter 6** highlights the multi-sectoral investment plan in various thematic development plans.

**Chapter 7** provides an overview of prioritized three major sub projects.

**Chapter 8** outlines the planning and building byelaws for Siddharthanagar.

**Chapter 9** articulates the concluding remarks for the project.

The planning concept for the IUDP of Siddharthanagar embraced **green city perception** with tourism from all over world. Siddharthanagar has its own international airport which is being constructed which will help tourist to come directly to birth place of Gautam Buddha, Lumbani. Siddharthanagar is gate way to birth place of Gautam Buddha so tourist will come to Siddharthanagar first and if good hotels and other infrastructure like road are built, it calls of Tourism Destination Area Plan of Nepal. For a city to be considered “green and Lord Gautam Buddha Birth Place”, measures and investments

is required in city greening, energy efficiency, low carbon transport, green industry, green/resilient infrastructure and intelligent systems.

### **Highlight of Proposed Plan**

The purpose of IUDP of Siddharthanagar is to develop a guiding document to create an environmentally sustainable, socially inclusive and balanced society with physical, social and economic infrastructures. All the activities proposed under different sectors is aligned towards the achieving the long term vision of **“Tourism, Industries, Commerce and Education, Greenery are the desire of Buddhabhumi Siddharthanagar”**

Due to the current reform of administrative structure of Government of Nepal (GoN), it is essential for each municipality to accumulate its own income through various revenue generation plans and also opportune to prepare its own prioritized development projects with local autonomy. This IUDP explores the potential and opportunities of Siddharthanagar for an integrated approach of urban planning. It shall guide Siddharthanagar Municipality for the effective implementation and management of projects over 15 years for sustainable urban development.

The activities under different sectors are proposed to undertake in 3 different period of time. First is 1-5 years, second is 6-10 years and third is 11-15 years. Activities under physical infrastructure such as road, drainage, sewerage, bridges, landfill, mono and metro rails are considered as a long-term projects and the activities under other sectors are supposed to be implemented in short term and medium term period of time. The tentative budget for all sectors for 15 years period is about NPR 22,089.73 million.

Under physical development sector, construction of 45 Km of new road, upgrade of 121 Km of existing road, regular maintenance of 271 km road, widening of 75 km road, construction of 4 overhead and 2 flyover bridges, study and construction of Ring Road, Mono rail and Metro rail, construction of 135.5 Km of drainage and 200 Km of sewerage trunk line, construction of land fill site, Construction of two treatment plant, one new bus terminal, 20 bus stops, 5 vehicle parking area, one overhead tanks in each ward, promotion of ground water recharge and rain water harvesting project, development of irrigation projects are mainly proposed for IUDP period. The total estimated budget for physical infrastructure development is NPR 11,960.91 million (54.15% of total cost).

Under strategic project, development of Danda River Corridor, construction of Panchabatika park with complete amenities, Bhairahawa gate, community agriculture development, Siddhartha cricket stadium are mainly proposed for IUDP period. The total estimated budget for strategic project is NPR 5,980.57 million (27.07 of total cost).

Under social development sector, construction of 19 primary schools, ECD programmes, distribution of e-learning material, activities for quality education, provision of incentive for children for marginalized people, improvement of physical amenities in government schools, activities for improvement of health sector, improvement of amenities in Bhim hospital, many activities for welfare of women, children and marginalized people, provision of rehabilitation centers for children, 17 community library, establishment of orphanage centers, construction of multipurpose hall, construction of 13 police post, construction of museum are mainly proposed for IUDP period. The total estimated budget for social development sector is NPR 1,635.90 million (7.41 of total cost).

Under environment management sector, construction of slaughter house, construction of dedicated cycle lane and pedestrian, provision of awareness programme for environment protection, tree plantation are mainly proposed for IUDP period. The total estimated budget for environment management sector is NPR 747.50 million (3.38 of total cost).

Under disaster management sector, protection of flood of Danda River, provision of awareness training on disaster risk management, formation and training of different task forces, subsidy for construction of earthquake resistant building are mainly proposed for IUDP period. The total estimated budget for disaster management sector is NPR 132.9 million (0.6% of total cost).

Under culture and tourism sector development of pedestrian lane of 15 km connecting famous temples and places, improvement of road to Kotimai temple from city core area, infrastructure development of Durga Mandir, Radhakrishna Mandir, façade improvements of buildings at bank road, operation of 7 Tourist Information centers and preparation of Comprehensive Tourism Plan of Municipality are mainly proposed for IUDP period. The total estimated budget for culture and tourism sector is NPR 279 million (1.26% of total cost).

Under economic development sector, establishment of 3 cold stores, subsidy for organic fertilizer production, fish farming, fodder and forage, improvement of access road to rural areas, development of irrigation projects, operate night market, construction of vehicle parking for tourist, Promotion electric vehicle, construction of 13 vegetable market in each wards, construction of commercial complex with 1 movie hall in existing municipality office building and pumping set distribution are mainly proposed for IUDP period. The total estimated budget for economic development sector is NPR 703.55 million (3.46% of total cost).

Under institutional development sector, construction of new municipality building and ward office building, provision of training for capacity building of staff, leadership training to representatives, formulation of different laws, bylaws and guidelines, operation of municipality websites, conduction of public hearing and social audit are mainly proposed for IUDP period. The total estimated budget for institutional development sector is NPR 589.4 million (2.67% of total cost).

The total estimated cost of the proposed projects for the year 2077/078 is NPR 2,210.08 million. The total budget available for the year 2077/078 from GoN and SM is NPR 806.57 million. The deficit budget of NPR 1,403.51 million shall be arranged through internal (421.05million) and external resources (982.454 million).

Out of NPR 1,403.505 million, SM will generate 221.052 million internally through taxes and services charges and NPR 200 million will manage by citizen's participation. Still the gap of NPR 982.454 million needs to be managed through external resources which includes federal and provincial government grant and different development partners such as UN, World Bank, ADB, and different INGOs.

### **Recommendation**

Siddharthanagar Municipality should be proactive to get the following points to be implemented as these points are crucial in the successful implementation of the proposed IUDP.

- Transfer the jail and army barrack from the city core area to Pachkauli and airport side respectively to create open space in city area.

- Lobbying with federal government, provincial government and other neighbouring Palikas to extend physical boundary of Siddharthanagar Municipality up to Rohini River in east, Tinau River in West, Tilottama Municipality in north and Indian boarder in south as SM has its limited natural resources and hard to sustain with its existing own resources.

## **1 CHAPTER I: PROJECT INTRODUCTION**

With the increasing globalization, trend of mega cities and global cities are emerging all around the world. Nepal is the faster urbanizing and least urbanized country in South Asia. Urbanization had begun in Nepal dated early 1960s in Kathmandu. In developing countries like Nepal, urbanization is both a challenge and opportunity to create sustainable urban cities. Despite the comprehensive city planning, most cities of Nepal are clogged with problems of poverty, unemployment, poorly developed infrastructure, inadequate public services, acute shelter deficits and accelerated environmental deterioration. These problems are mainly the consequence of the discrepancy between the urbanization rate and their economic development pace and lack of management system.

Hence, an Integrated Urban Development Plan (IUDP) seems an ideal solution for planning the livable urban areas with cross-sectoral co-operation, multi-disciplinary framework and participatory approach. IUDP is an internationally adopted planning tool for an inclusive, comprehensive livable city.

### **1.1 Background**

Nepal has been practicing the settlement planning since 1944; and in 1956 first National Periodic Plan was commenced. Several past focus only on the physical planning neglecting the demands of the grass root level several issues regarding poverty, health, and environmental degradation. To overcome past shortcomings; National Urban Policy 2007 was introduced which exhibits the interest of central government to support more sustainable and socially inclusive economic growth in local level. The policy is outstanding with prioritizing investment to the lagging regions and sectors of the urban area of the country fostering development of regional cities and intermediate town as well. Therefore, with the aim of reducing poverty and upgrading urban physical facilities, Ministry of Federal Affairs and Local Development (MoFALD) has prioritized investment in 25 municipalities of Nepal.

For systematic planning and overcome above shortcomings, MoFALD has developed a guideline and TOR and make available of fund for preparation of Integrated Urban Development Plans for mid sized municipalities including Siddharthanagar. Siddharthanagar Municipality (SM) gone through the contract with consultant; *RIDARC-RARA- Kalika JV* to prepare IUDP of Siddharthanagar Municipality.

An integrated urban development plan (IUDP) comprises a system of interlinked actions, which seeks to bring about a lasting improvement in the economic, physical, social and environmental conditions of a city or an area within the city. The key to the process is “integration”, meaning that all policies, projects and proposals are considered in relation to each other. In this regard, the synergies between the elements of the plan should be such that the impact of the plan as a whole adds up to more than the sum of the individual parts if implemented in isolation.

Regional Urban Development Project with subproject in Siddharthanagar municipality is financed by the Asian Development Bank under loan number 47252. The Department of Urban Development and Building Construction (DUDBC) under the Ministry of Urban Development (MOUD) is the executing agency and is responsible for technical and project management matters including engineering, safeguards, and social aspects. The Siddharthanagar municipality is the implementing agency. The aim of this project is to increase quality of life and resiliency in Siddharthanagar. The project will improve existing roads with urban design features, and improve the drainage system to improve mobility and safety and reduce waterlogging and flooding. It has other sub projects i.e. community



development program, mainstreaming women and backward society and pockets within the municipality. Though it is called integrated project, has not covered the numerous other sectors like social and economical developments, infrastructures needed like road and storm drainages, financial development schemes and others. These sectoral plans need to be integrated to create holistic image of city, which seems lagging in current IUDP.

This proposed IUDP is a comprehensive document with multi-sectoral plans. The plan has envisaged a holistic document incorporating municipality's vision, mission, goals, objectives, strategies, programs and projects to guide the city for next 15 years. It will incorporate both short term and long-term programs from 1 year to 5 years and up to 15 years. The changing scenario of the development will be coped with modified updated plans.

## **1.2 Goal and Objectives**

The main objective of the proposed assignment is to prepare IUDP of Siddharthanagar Municipality. However, the specific objectives can be listed as follows:

- To set out Long-term Vision and overall Goal, Objective and Strategies for Siddharthanagar Municipality (15 years).
- To prepare Land Use Plan, Physical Development Plan, Social, Cultural, Economic, Financial, and Institutional Development Plan; Environmental and Risk Sensitive Land use Plan, Multi-sectoral Investment Plan (MSIP) and other relevant plans if any, in consultation with Siddharthanagar Municipality on the basis of Sectoral Goal, Objectives, Strategies, Output and Programs.
- To prepare building bye-laws to regulate development in the town integrating Land Use and road network plan and long-term vision of Siddharthanagar Municipality
- To prepare Detail Cost Estimate of prioritized 3 sub-projects in consultation with Siddharthanagar Municipality.

## **1.3 Scope and Limitations**

Scope of consulting services for preparation of IUDP (as mentioned in expected output) include but not necessarily limited to the following:

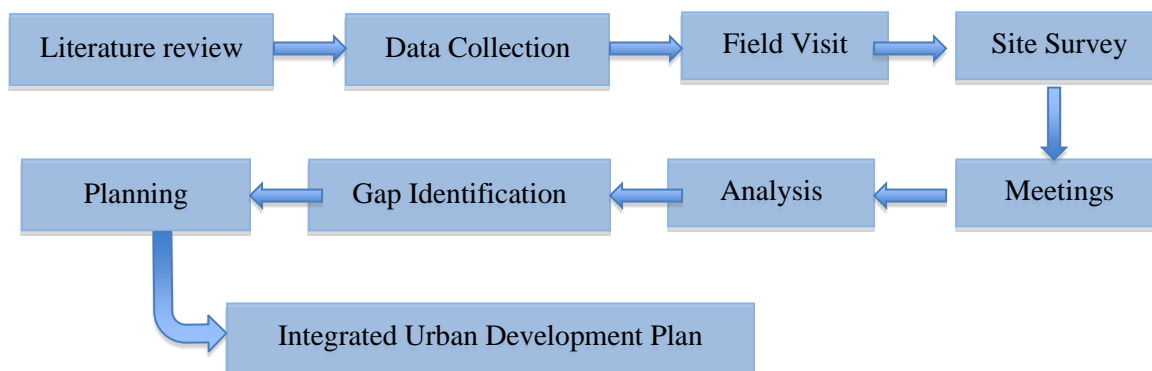
- The consultant shall spell out the *Vision of the city*. The vision should articulate the desires of the city and its citizens, and will provide the guiding principles and priorities for the plan's implementation. Prepare overall Integrated Urban Development Plan of entire area including existing and future (5, 10 and 15 years) plan. This should be based on land use plan and followed by narrative description, analysis, fact and figures.
- Conduct additional study on *local economy and its activities* including change in demographics and migration trend for 5, 10 and 15 years period.
- Identify the *potential area for urban development based on land suitability and other factors*. Analyze present and future (5, 10 and 15 years) housing needs/ market, stock, conditions and recommend strategies for land acquisition, distribution of *land and housing* in future.
- Conduct studies on present and future (5, 10 and 15 years) demand in infrastructures (such as transportation, communication, electricity, water supply and sewerage system) and their supply. Analysis of demand should be in different scenarios with 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.*



- The consultant shall carry out *study of existing social infrastructure* such as health, education, sports, communication, and security centers and other community facilities by addressing present deficiencies and future (5, 10 and 15 years) demands.
- Identify and assess *critical, sensitive and other natural resources* including parks, green belts, recreational areas along with strategies for their protection, preservation and stewardship against the adverse impact of future development and land use changes.
- *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 Integrated Urban Development 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.
- Prepare the Proposed Land Use Plan for 5, 10 and 15 years in the existing cadastral maps (plans) 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 center*
  - v. *Parks, green belts, recreational areas*
  - vi. *Cultural and historic resources and others.*
- Provide a full study of following Land Use Zone and recommend bye-laws for the construction of building and other infrastructures,
  - i. *Residential zone*
  - ii. *Institutional zone*
  - iii. *Industrial zone*
  - iv. *Preserved zone*
  - v. *Airport zone*
  - vi. *Urban expansion zone*
  - vii. *Stream/river banks zone*
  - viii. *Green zone*
  - ix. *Others*
- Prepare Building and Planning bye-laws that clearly spells minimum in the following areas regarding the construction of building:
  - i. *Minimum land area*
  - ii. *Maximum ground coverage*
  - iii. *Maximum floor area ratio (FAR)*
  - iv. *Maximum building height*
  - v. *Maximum no. of floors*
  - vi. *Right of way of roads*
  - vii. *Set back in four sides of the building*
  - viii. *Minimum parking area*
  - ix. *Minimum distance to be left in both sides of stream/river.*
- The Building and Planning Bye-Laws shall be prepared in accordance with Conceptual Building Bye-laws 2072 of Town Development, Urban Planning and Building Construction published by Ministry of Urban Development. (MoUD)
- Preparation of detail cost of *three prioritized sectoral projects* with feasibility study
- *Recommend an implementation strategy* (including a suggested action program that generally describes the actions, costs, time frames, responsibilities, procedures and the Municipality's capacity to use them) necessary for implementing the Integrated Urban Development Plan.

## 1.4 Methodology

IUDP was commenced with literature reviews. There was data collection (primary and secondary data) and followed by field-visit to validate the data and further information acquisition. Meetings were conducted on municipality level for preparing a development plan with participatory way. Then the collected data were analytically compared for identifying a gap in the planning process. Finally, an integrated urban development plan was prepared based on these findings. The graphical chart for the methodology of the project is represented below:



*Figure 1-1 Graphical Chart for the methodology*

### 1.4.1 Literature Reviews

Integrated urban development plan for the municipality is aimed to obtain basic infrastructure and services and establish improved governance system. The consultant is prepared a comprehensive plan with a dream of a good urban environment based on the reality of technical and financial resources of Municipality. For this, some Planning and Development Principles and Government Policies were reviewed that is listed below.

- Constituence of Nepal
- Policies formulated by federal, provincial and local level
- Periodic plan of federal and provincial government
- Guidelines of federal and provincial government
- Sustainable Development Goals
- Integrated Urban Development Plan, Siddharthanagar
- Planning Norms and Standards 2015
- Periodic plan of Siddharthanagar 2066/67
- Nepal Urban Development Strategy 2015
- Urban Road Standards 2071
- Local Governance and Community Development Program 2071
- Nepal National Building Code and Building Bye-laws
- Building Byelaws of Siddharthanagar
- घर नक्सापास सम्बन्धि कार्यविधि २०६९
- *Building and Planning Bylaws\_2072*
- भवन तथा योजना मापदण्ड २०७२ एवं भवन निर्माण निर्देशिका २०७२

### 1.4.2 Data Collection

Along with the literature reviews, primary data and secondary data necessary for the preparation of IUDP was collected from all the relevant sources. These data helped in preparation of GIS Base map

and municipal profiles. It also aided in identifying the lagging points of the existing infrastructures and services that directed in preparing a proper sustainable urban plan.

### ***1.4.3 Field Visit and Site Study***

For creating a better idea of the project, a field visit is necessary for any of the projects. In this project also, a field visit was conducted to have a clearer picture of the physical, social and economical amenities. During the visit, the Consultant has observed the different parts of municipal area and identified the major development issues. Some site surveys were conducted for gathering the lacking information and preparing a detail GIS base map as mentioned in the scope of work. Apart from survey, meeting and gatherings were conducted with the concerned local personnel to ascertain the vision, and requirement of the city and its inhabitants. There was introductory meeting, information dissemination meeting. Visits were done on parks and environmental sensitive areas, river corridors, proposed land fill site area, old city settlements, squatter settlement areas, open spaces etc.

### ***1.4.4 Analysis***

After the literature reviews, field study and data collection, it was analyzed based on the standard norms. A trend analysis of the existing urban and economy was done with spatial analysis for identifying the current urban pattern and future probabilities, economic and financial analysis to identify the economic growth trend and profitable infrastructure investments of the city. Similarly, strength, weakness, opportunities and threats were identified for each sectoral theme with a SWOT analysis. The existing infrastructure and its current status were evaluated and a lagging or deficit point was achieved. Future projection of demographic value was made and planning was done to cater the future demand.

### ***1.4.5 Comprehensive plan preparation***

Based on study of existing infrastructures, environmental situation, health and educational status and future projected demographic value; an integrated urban plan is prepared. Plan proposed the state of Siddharthanagar municipality socially equitable and inclusive, environmentally bearable, economically viable, effective, efficient and reliable with improved and affordable infrastructure services, providing accountability to its citizens and more responsive to their demands. These plans were formulated using Logical Framework Analysis (LFA), which is a strategic project planning and action tool that helps municipal executives and planners answer these four critical questions:

1. What are we trying to accomplish and why?
2. How will we measure success?
3. What other conditions must exist?
4. How do we get there?

LFA uses a log frame or matrix (table) with columns and rows to help plan a project. The rows represent a hierarchy (top to bottom) of goals and objectives, from overall goal to activities, and the columns represent the way in which achievement of these goals and objectives can be verified.

## **1.5 Outputs**

The Integrated Urban Development Plan has its output as the followings:

- a) Assessment and Preparation of Base Map (various GIS maps)

- b) Comprehensive Development Plans–Physical, Socio-Cultural, Economic Development Plan, Environmental Management Plan and Institutional Development Plan
- c) Planning and Building Bye-laws
- d) Multi-Sectorial Investment Plan
- e) Cost Estimate of Prioritized Three Sub-Projects

The IUDP is anticipated to provide improvement in the economic, physical, social and environmental conditions of a city or an area within the city with incorporation of all policies, projects and proposals; and expected to provide an improved governance system with the participation of various stakeholders of the society.

## **2 CHAPTER II: MUNICIPALITY'S LONG-TERM VISION AND GOALS**

### **2.1 Municipal Introduction**

Siddharthanagar is a beautiful town of Nepal. The town of Siddharthanagar is also known by the name of Bhairahawa. This town beautifully lies touching the south western border with India. It is located at a distance of 265 kilometer west of Kathmandu. The population of town is nearly 64,000. The inhabitants generally speak the local language Bhojpuri apart from the national language Nepali. As the town of Siddharthanagar shares the south western border with India, it is also regarded as an important center for export and import.

Reaching to Siddharthanagar is quite easy as it is linked with most of the important cities of India through roadways. Thousands of visitors find good quality of accommodation in the well managed Hotels named Sambala, Himalaya, Ashoka, Nirvana, Lumbini Pagoda, Shantanu, Pawan and Yeti in Siddharthanagar. The climatic condition of this place is also favorable. The summer temperature ranges between 35 and 38 degree Celsius and the winter temperature between 10 and 27 degree Celsius.

The main population of this town comprises of various ethnic groups. Apart from this, the various shopping centers and the medical centers available also cater to varying degrees of necessities of the people. Finally, the various temples scattered in around the city of Siddharthanagar also attract a large number of tourists from various parts.

### **2.2 Municipal Vision and Principals**

As the vision stated in periodic plan is not yet achieved by Siddharthanagar Municipality (SM), this IUDP emphasizes on the same vision for achieving a model green city. Also stated in the budget speech of Siddharthanagar Municipality for fiscal year 2075/76 and approved by the city council meeting, the vision of the city is stated as:

*“पर्यटन, उद्योग, व्यापार र शिक्षा, हराभरा बुद्धभूमि सिद्धार्थनगरको इच्छा”*

**“Tourism, Industries, Commerce and Education, Greenery are the desire of Buddhabhumi Siddharthanagar”**

### **2.3 Objectives**

The main objective of the IUDP of Siddharthanagar is to create an environmentally sustainable, socially inclusive and balanced society with physical, social and economic infrastructures. With the long-term vision of **“Tourism, Industries, Commerce and Education, Greenery are the desire of Buddhabhumi Siddharthanagar”** for achieving the various sectoral goals, following specific objectives are set in the field of health, education, tourism and trade derived from the periodic plan of Siddharthanagar Municipality.

- Strengthen the education infrastructure for quality based competitive learning environment
- Emphasize on public health to minimize the maternal and child mortality rate
- Increase foreigning as well as local tourism through developing, preserving and protecting the religious and other historical places and information dissemination through various means.
- Uplift economy through establishment of local industry
- Focus on supply of adequate drinking water
- Emphasize on road development and expansion

- Manage solar lights on road
- Co-ordinate with private sector for solid waste management
- Manage and simplify the distribution of social allowance
- Construct office buildings
- Complete plans and programs in prioritized order
- Make wards child labor free zones
- Prepare building byelaws to regulate development in the town integrating land use and road network plan
- Create effective environment friendly local governance
- Conduct targeted community development programs
- Prepare Cost Estimate of prioritized three sub projects.

The above-mentioned sectoral vision is mainly focused on Municipality's governance and management system. In addition, the IUDP also aims to develop and improvise the urban area, health and environment, social security and gender equity and inclusion.

## **2.4 Sectoral Plan/Program and its Goals**

Sectors, which are required to be incorporated, are physical infrastructures, environmental management, social and economic sectors, disaster management, climate change, economic and financial management planning and organization development plans. Such Sectoral plans and programs are back up by multisector investment plans prepared giving due attention to national concerns such as poverty reduction and social inclusion.

Based on municipality vision "**Tourism, Industries, Commerce and Education, Greenery are the desire of Buddhabhumi Siddharthanagar**" following sectoral goals and strategies were fixed.

1. A planning framework, with integrated urban development approach, to be prepared for the period of 15 years based on long-term physical development concept and vision
2. Effort to provide and upgrade the minimum public service facilities and other physical infrastructure requirements like housing, employment for improving the quality of life and living standards of people in coming 15 years, considering the population increase
3. Preserve the environment of municipalities from the negative effects of urbanization. Bring balance among natural and man-made milieu to create a clean and pleasant physical atmosphere for various kinds of human activity and orient towards sustainable urban development
4. Improvement of the Siddharthanagar Municipality as a socially, economically, culturally, politically and environmentally equitable and inclusive city
5. Support economical development by creating environment for commercial and industrial activities
6. Promote inclusive social development by broadening the range of development, not limiting it to physical development, encompassing women, disabled, single women, children, the elderly and marginalized group
7. Conservation and preservation of building with archaeological, architectural and cultural importance in the historic areas of Siddharthanagar
8. Implementation of building bye-laws
9. Repair and Maintenance of existing physical infrastructures

## 10. Development of additional physical amenities based on priority of new urban expansion

To achieve the integrated urban development plan, various sectoral programs need to be planned. The sectoral plans and programs are explicated in detail in the strategic plan sub heading of Chapter 5.

### **2.5 Outputs**

The IUDP of Siddharthanagar Municipality is expected to benefit the city achieve higher economic growth with further socially inclusion and environmental benefits. Encompassing every sector of the city, it should have following outputs:

Output 1: Rehabilitation of the urban infrastructures and improvement of urban services like water supply systems, transport, sanitation and road

Output 2: Rehabilitation of social infrastructure, including housing and improvement of social services

Output 3: Upgrading the living environment and promoting social equity

Output 4: Enabling environment for economic development

Output 5: Conservation and preservation of urban environment

Output 6: Preservation and revitalization of cultural heritage sites

Output 7: Advocating good governance and participation

Output 8: Promoting disaster risk awareness and preparedness

Output 9: Advocate green city concept for sustainability



### 3 CHAPTER III: PREVAILING SITUATION OF SIDDHARTHANAGAR

#### 3.1 Municipality Profile

Siddharthanagar (formerly Bhairahawa) is a municipality and the administrative headquarter of Rupandehi District on the Outer Terai plains of Nepal, 265 km (165 mi) west of Kathmandu Nepal's capital. It is the closest city to Lumbini, the birthplace of Gautama Buddha, which is located 22 km (14 mi) to the west. The city borders the Indian city of Sonauli in Maharajganj district of Uttar Pradesh. The city is among the major industrial power house in the country impacting major economic aspects of Nepal. It has the second largest rate of border trade with India after Birgunj border in the country. Bhairahawa is under the administration of Siddharthanagar Nagarpalika (municipality) so often known as Siddharthanagar. Area of Siddharthanagar Municipality is 36.03 Sq. Km and has 13 wards in total. It is surrounded by Rohini and Omsatiya in the East, Mayadevi in the West, Mayadevi and Omsatiya in the North and Sunaulai of India in South.

##### 3.1.1 Physical state

###### 3.1.1.1 Climate

The highest temperature ever recorded in Siddharthanagar was 44.8 °C (112.6 °F) on 7 June 1998, while the lowest temperature ever recorded was -1.1 °C (30.0 °F) on 20 January 1971. The average maximum temperature of Siddharthanagar is 30.9 °C and minimum average temperature is 18.7°C, with annual average rainfall is 1725.3 mm.

**Table 3-1 Temperature and Rainfall in Siddharthanagar**

Climate data for Siddharthanagar (Bhairahawa Airport) (1981-2010)													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Average high °C (°F)	21	25.4	31.3	36.1	36.4	35.5	33	33.4	33	32.2	28.9	24.1	30.9
	-69.8	-77.7	-88.3	-97	-97.5	-95.9	-91.4	-92.1	-91.4	-90	-84	-75.4	-87.6
Daily mean °C (°F)	14.9	18.1	23	28	30	30.6	29.5	29.6	28.8	26.3	21.7	17.1	24.8
	-58.8	-64.6	-73.4	-82.4	-86	-87.1	-85.1	-85.3	-83.8	-79.3	-71.1	-62.8	-76.6
Average low °C (°F)	8.8	10.7	14.6	19.9	23.6	25.7	25.9	25.9	24.7	20.3	14.5	10.2	18.7
	-47.8	-51.3	-58.3	-67.8	-74.5	-78.3	-78.6	-78.6	-76.5	-68.5	-58.1	-50.4	-65.7
Average precipitation mm (inches)	17.7	19.2	16.7	26.4	82.3	269.4	545.6	395.5	253.5	77.5	8.2	13.3	1725.3
	-0.7	-0.76	-0.66	-1.04	-3.24	-10.61	-21.48	-15.57	-9.98	-3.05	-0.32	-0.52	-67.93

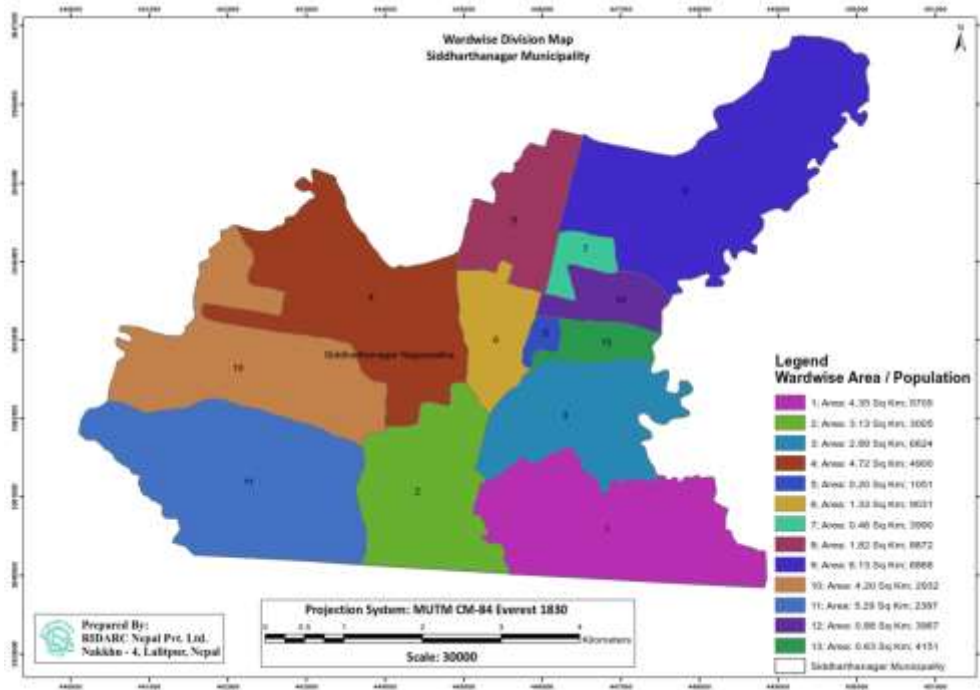
Source: Department of Hydrology and Meteorology

###### 3.1.1.2 Demography

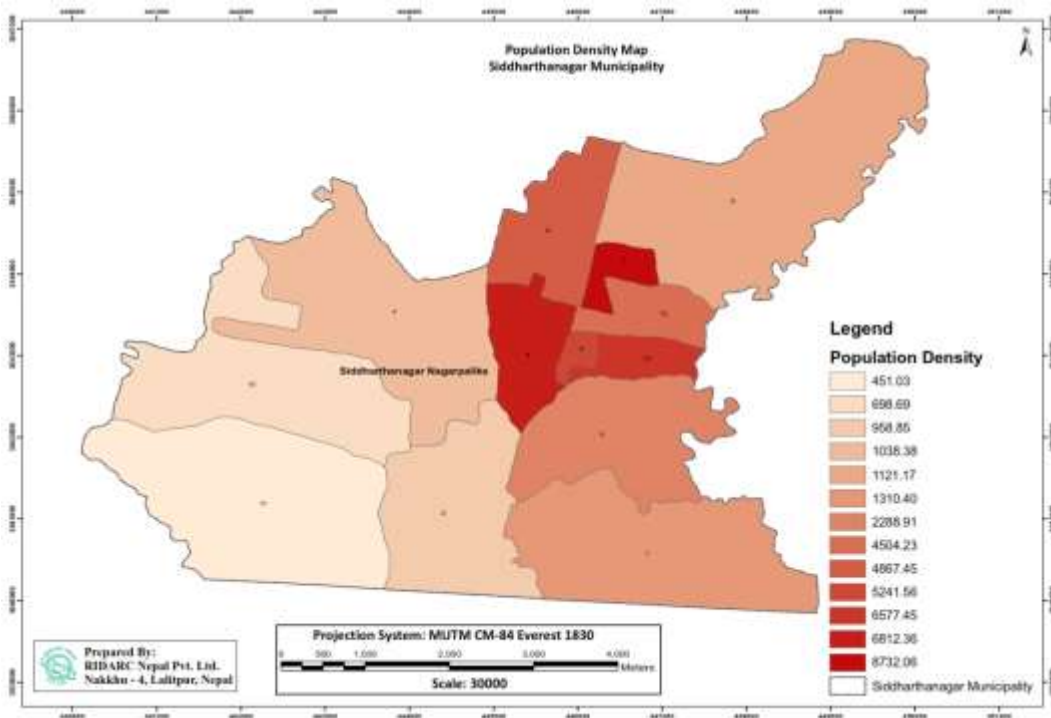
Siddharthanagar Municipality city has population of 63,483 (census 2011) with female 31,810 and male 31,673 and household numbers 12,497. Major five castes are Brahmin, Muslim, Chhetri, Magar Gurung, Magar, with religious groups mainly Hindus, Muslim, Kirat, Buddhist, Christian, etc. The ward wise population is listed on table no 3.2 below.

**Table 3-2 Demographic chart of Siddharthanagar Municipality (CBS 2011)**

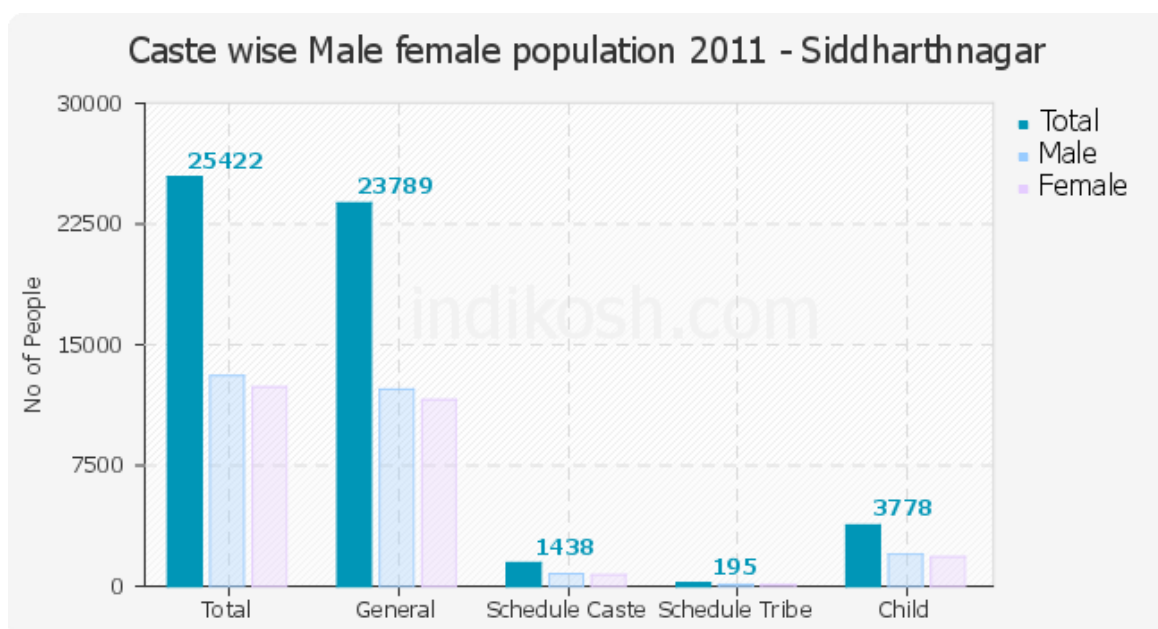
Population		63,483
Male		31,673
Female		31,810
Household		12,497
Population Density per km <sup>2</sup>		1,761.95



**Figure 3-1 Wardwise Division Map**



**Figure 3-2 Population Density Map**



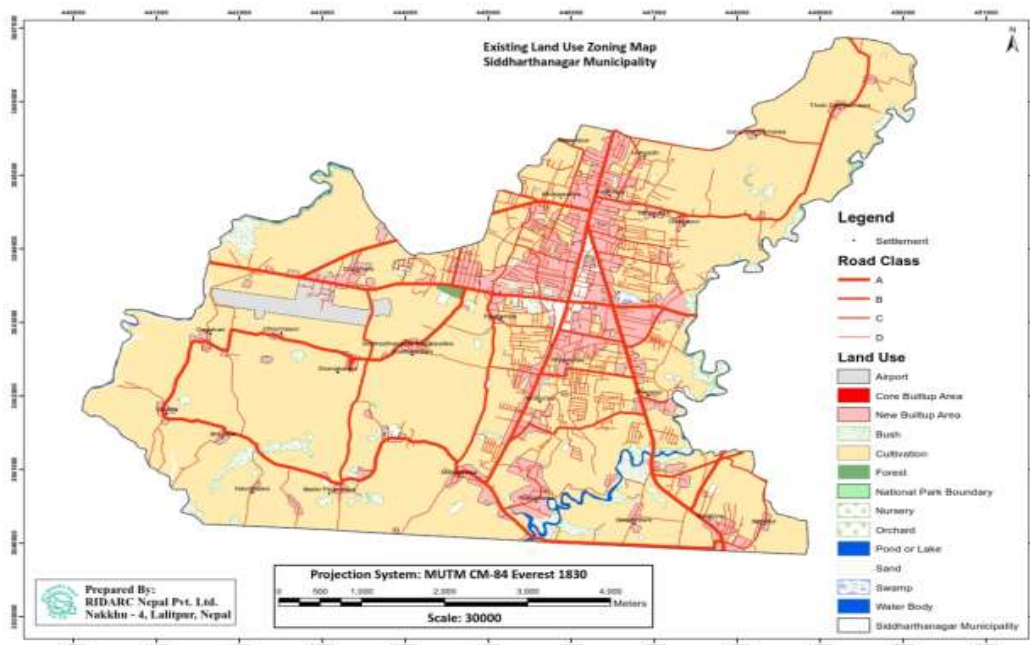
**Figure 3-3 Caste wise Male Female Population**  
**Table 3-3 Ward wise Demography of Siddharthanagar Municipality**

Ward No	Total Population	Male	Female	House Hold	Area (Sq Km)	Population Density/ Km <sup>2</sup>
1	5,705	2,787	2,918	1,066	4.35	1,311.49
2	3,005	1,446	1,559	498	3.13	960.06
3	6,624	3,324	3,300	1,285	2.89	2,292.04
4	4,900	2,493	2,407	813	4.72	1,038.14
5	1,051	538	513	193	0.2	5,255.00
6	9,031	4,543	4,488	1,633	1.33	6,790.23
7	3,990	2,016	1,974	952	0.46	8,673.91
8	8,872	4,421	4,451	2,078	1.82	4,874.73
9	6,868	3,396	3,472	1,352	6.13	1,120.39
10	2,932	1,495	1,437	467	4.2	698.10
11	2,387	1,204	1,183	335	5.29	451.23
12	3,967	1,972	1,995	886	0.88	4,507.95
13	4,151	2,038	2,113	939	0.63	6,588.89
<b>Total</b>	<b>63,483</b>	<b>31,673</b>	<b>3,1810</b>	<b>12,497</b>	<b>36.03</b>	<b>1,761.95</b>

It is obvious that the core area (wards 7, 6, 13, 5, 8, 12) has the highest density, and the peripheral and new extended area (wards 11, 10, 2) has low density. With the increase in density of urban area, the demand of urban services like water supply, road and drainages, electricity etc. too escalates and planning of such physical amenities evolve as the main challenge of the IUDP.

### **3.1.1.3 Land use and Settlement pattern**

Siddharthanagar Municipality has the area of 36.03 sq. km of which 77.74 % area is covered with agricultural land followed by barren land. There is no forest area within the Municipality, however, government property and ponds are scattered all over the Municipality which needs to be developed in planned way to improve the environment of the area.

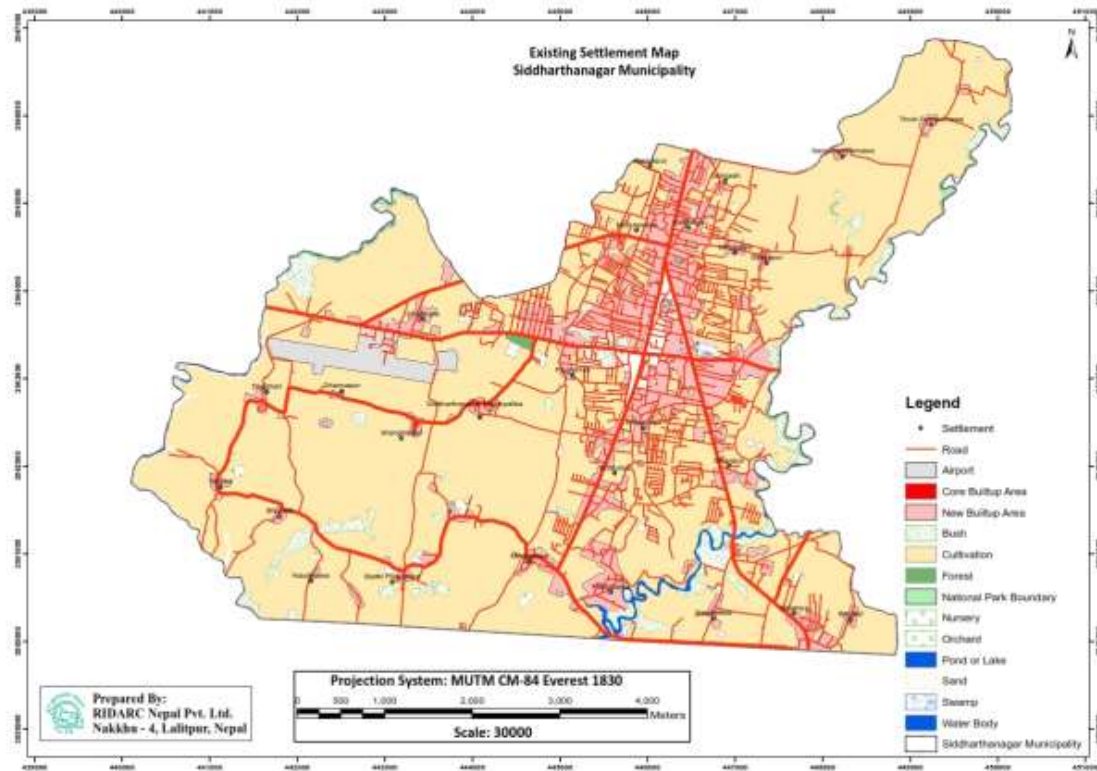


**Figure 3-4 Existing Landuse plan of Siddharthanagar Municipality**

Ample agricultural land is observed within the city mostly in the peripheral area. These low angle sloping lands are good for dry cultivation like maize, millet, wheat and cereals. The current land usage is explicit in the table.

**Table 3-4 Existing land coverage pattern**

Categories	Area (sqkm)	Percentage (%)
<b>Core Built up Area</b>	0.011	0.03%
<b>National Park Boundary</b>	0.132	0.37%
<b>Cultivation</b>	28.008	77.74%
<b>Forest</b>	0.042	0.12%
<b>Orchard</b>	0.087	0.24%
<b>Nursery</b>	0.038	0.11%
<b>Swamp</b>	0.058	0.16%
<b>Sand</b>	0.180	0.50%
<b>Barren Land</b>	4.558	12.65%
<b>Water Body</b>	0.315	0.87%
<b>Pound or Lake</b>	0.091	0.25%
<b>Airport</b>	0.602	1.67%
<b>Bush</b>	1.491	4.14%
<b>Built up Area</b>	0.418	1.16%
<b>Total</b>	<b>36.03</b>	<b>100</b>



**Figure 3-5 Existing settlement location of Siddharthanagar**

The existing settlement pattern of Siddharthanagar Municipality can be clearly classified as Central Business areas, Residential areas, Open areas, Institutional area.

➤ *Central Business Area:*

Siddharthanagar Municipality act as gateway to Lumbni, the birth place of Lord Buddha. It is connected by the highway from Kathmandu either through Narayanghat and or Pokhara. It has an airport which is being upgraded to Gautam Buddha International airport, which has currently regular flights to Kathmandu and occasional flight to Pokhara. It is the leading industrial and business center of the Western Terai Region of Nepal. By virtue of its proximity to the Indo-Nepal border, it functions as as outlet and inlets for Nepalese exports and imports respectively. It is surrounded by Rohini and Omsatiya in the East, Mayadevi in the West, Mayadevi and Omsatiya in the North and Sunaulai of India in South.



**Figure 3-6 CBA of Siddharthanagar Municipality**

➤ *Residential areas*

The periphery of city area is predominantly residential. There are even plotting on the periphery of the municipality boundary where future settlement expansion will be guided. The traditional old



residential building of Siddharthanagar Municipality is mainly constructed of RCC, some old houses are made of mud/Thatch/ Straw and galvanized iron also.



*Figure 3-7 Old and new residential buildings in Siddharthanagar Municipality*

➤ *Parks and Open Spaces:*

Parks, forests and open spaces are within the city area. Pachabatika park, Buddha park, Bhagawn Biswakarma Mandir and Siddharth children park are the main parks in Siddharthanagar. All have natural values and moreover some have cultural values as well. Many temples of deities are located here. Besides, there is plantation that develops the green are on the bank of Danda River, which maintains the green environment around the city.



*Figure 3-8 Pachabatika Parks ward No-2 and Siddharth children park in ward no -4*



*Figure 3-9 Budhha Park in ward no -3 and Sworgadari ghat open area / Park at ward no – 12*

➤ *Institutional area:*

Siddharthanagar Municipality has many health and educational institutions. The major educational facility is Universal College of Medical Science and Teaching Hospital, Universal College of Dental Surgery, Lumbini Rana Ambika Shah Eye Hospital, Shree Krishna Netralaya , Bhairahawa Hospital, Siddharth City Hopital Pvt. Ltd., Marchawar Polyclinic Pvt. Ltd. The other colleges are Rupandehi Campus and IAAS Paklihawa Campus etc. These institutions have played the important roles for educational upliftment as well as increase the economic activities in city.



*Figure 3-10 Universal College of Medical Sciences and Paklihawa Animal and science campus*



*Figure 3-11 Lumbini Eye Institute / Aankha Asptal*

### **3.1.1.4 Physical Amenities**

➤ *Road*

Siddharthanagar is connected by the highway from Kathmandu via Narayanghat and Pokhara. It is about 20 km south from Butwal at the junction of east and west (Mahendra Highway) and north and south (Siddhartha Highway). Siddharthanagar has an airport with regular flights to Kathmandu and occasional flight to Pokhara. The airport will soon be upgraded to regional airport to augment the passenger capacity. This initiative has been taken to cater to the Buddhist pilgrims visiting Lumbini. Two major highways pass thorough Siddharthanagar Municipality- Siddhartha Highway and Lumbni Highway. The municipality has a good network of roads as compared to other towns. Internal roads link the internal settlement of the city area properly. Lumbini Highway connects this municipality to the birthplace of Siddhartha Gautam, the Buddha. Despite the black-topped of inner city road, there is high demand of balck top along with the side drain for the road in city area.

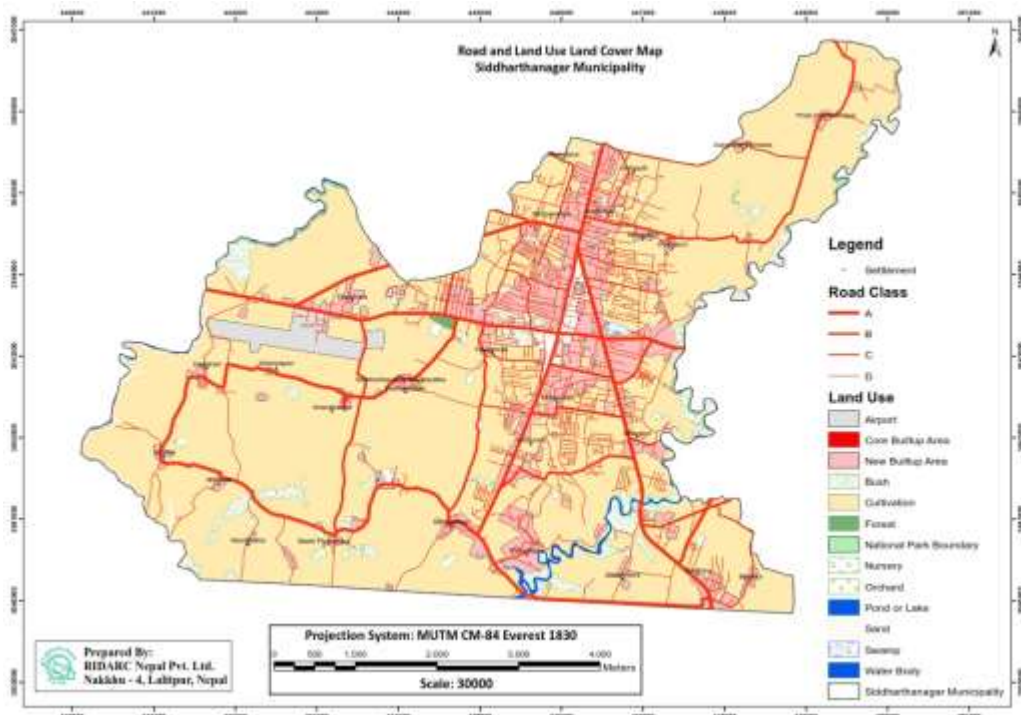




**Figure 3-12 Siddhartha Highway H10**

**Table 3-5 Road Network Siddharthanagar Municipality (SM 2011)**

Road Type	Class				Total km
	A	B	C	D	
Metalled / Black Top	38.23	13.39	12.71	40.76	105.09
Gravelled		3.30	2.30	68.50	74.11
Earthen		3.30		42.82	46.12
Brick				0.93	0.93
<b>Total Km</b>	<b>38.23</b>	<b>19.99</b>	<b>15.02</b>	<b>153.00</b>	<b>226.25</b>



**Figure 3-13 Road Network Siddharthanagar Municipality**

➤ *Water Supply:*

Siddharthanagar is bound by the Danda River in the South and East and Ghahgar River in the West. It uses only groundwater source for water supply due to its abundance. The available hydro-geological information confirms the existence of vast underground water resources. There are seven ponds in the Municipality. Ground water is the only source of water for the town. Before 1981 the water supply system in Municipality was operated by Department of Water Supply and Sewerage (DWSS). Since 1981 the system has been operated by Nepal Water Supply Corporation, which consists of 3 deep boring, 2 over head tanks and about 51 km of pipes of various material and sizes. It serves about 38% of the existing population. Households and other customers not connected to NWSC system draw water from private hand pumps (manually drilled tube wells).

*Table 3-6 Existing Source of drinking water in Siddharthanagar Municipality*

S.No.	Types of Source	Percentage (%)
1	Pipe	44.19
2	Well	0.13
3	Broing	54.03
4	Rivers	0.1
5	Others	1.55
	Total	100

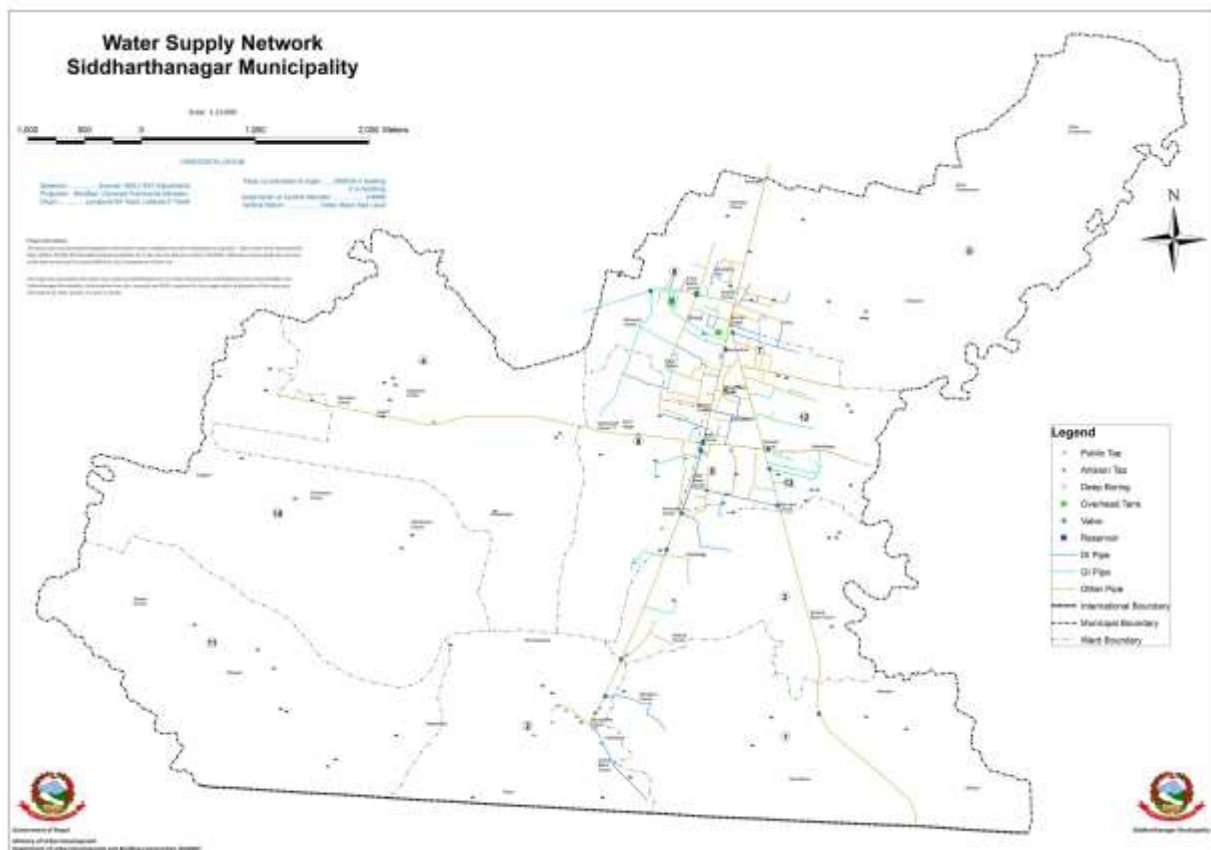
Source: Municipality Profile, 2010

*Table 3-7 Existing Situation of distribution of drinking water*

S.No	Description	Total in Number
1	Deep Boring	3
2	Overhead Tank	2 ( with capacity of 225,000 L and 450,000 L)
3	Pipe Line Connected	51 km
	Distribution	Total Tap 3,142
	Private	3,036
	Public	23
	Government Office	91
5	Water Distribution Per Day	3.5 MLD
6	Distribution time	
	Morning	5 AM to 10 AM
	Day	12 PM to 1 PM
	Evening	5:30 PM to 8:30 Pm



*Figure 3-14 water supply, Well no -5 in ward no- 3 and Over Head water tank in ward no -4*



*Figure 3-15 Water Supply Network of Siddharthanagar Municipality*

➤ *Sanitation, Drainage and Sewerage:*

Around 31% of the households are disposing waste along the road corridor and 13% are disposing in nearby dustbins. About 28% of the surveyed households are disposing the waste/ garbage in open area, 13% are practicing waste/ garbage burning frequently to dispose certain portions of the total household waste generated, and 10% are disposing waste within their own premises, which is an indication of the space availability for disposal. Only 2% are disposing

waste at locations identified by the municipality. About 2% of households are disposing the solid waste in the drains..

The typical sanitation system consists of a sealed tank which discharges direct to a drain. Private suppliers provide septic tank emptying facilities. There is no effective control on the dumping of the contents. Table below presents the preliminary information of the Socio-economic Household Survey in 2011 in relation to sanitation.

*Table 3-8 Toilet Use*

S.No	Description	Nos	Percentage
1	Total Households	12,497	100
2	Households without Toilet Facilites	2,169	17.36
3	Household with Toilet Facilites of	10,210	81.70
3.1	Flush Toilet	9,160	89.72
3.2	Ordinary Toilet	1,050	10.28
4	Toilet Facility not stated	118	0.94

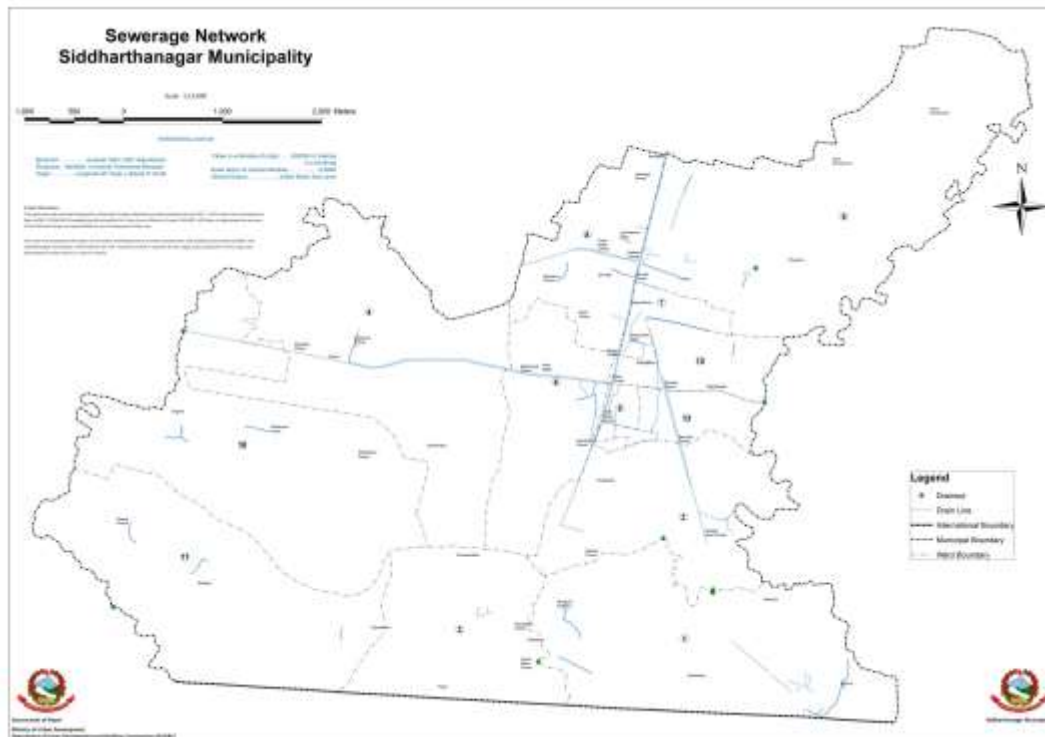
Source: CBS 2011

The survey indicates that open defecation is practiced by about 13% of the population. Though there are seven public toilets in the whole city, none of them maintained properly and running in bad condition. There is high demand from the general people for public toilets in Sunauli Bus Park, hat bazaar, vegetable markets, city centers area but due to worse condition of existing public toilet people refrain from using them.

➤ *Strom Water Drainage*

Danda Khola and Ghagara Khola are two major natural drainage of the Municipality. Strom water and water from other minor drainage finally disposed in these two rivulets. Danda Khola is in the east and south whereas Ghagara Khola is in the west of Municipality. In addition to this, there are other four natural drains flowing north-south in the form of water canals. These water courses serve as both canals for providing water to farmlands located at the downstream drains that collect surface run-off from major parts of the city.

Siddharthanagar located in Terai with flat terrain facing a severe flooding and inundation problem during monsoon season. Over the years, with increasing development and paved areas, run-off has increased, which has made the drainage situation progressively worse. At present the sizes of these water courses have been reduced significantly mainly due to encroachment, lack of proper maintenance and dumping of wastes in exising drainage reducing their capacity to effectively function as drains during the monsoons. Out of these four water courses, one ends at Ghangara Khola in the west of the airport, while the other three ends at Danda Khola. The presence of these water courses and rivers as its boundaries is a big advantage to the city in developing the strom water drainage system.



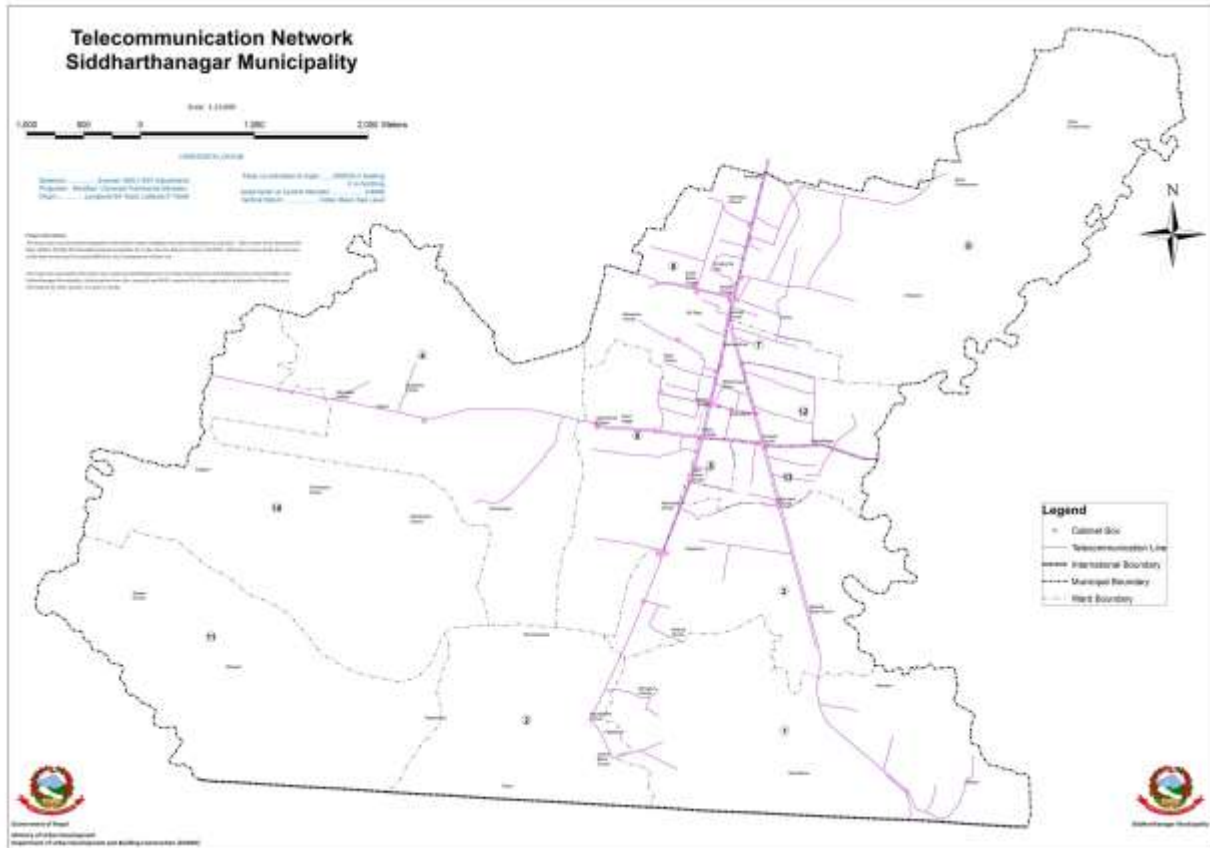
*Figure 3-16 Sewerage Network map of Siddharthanagar Municipality*

➤ *Telecommunication and Electricity:*

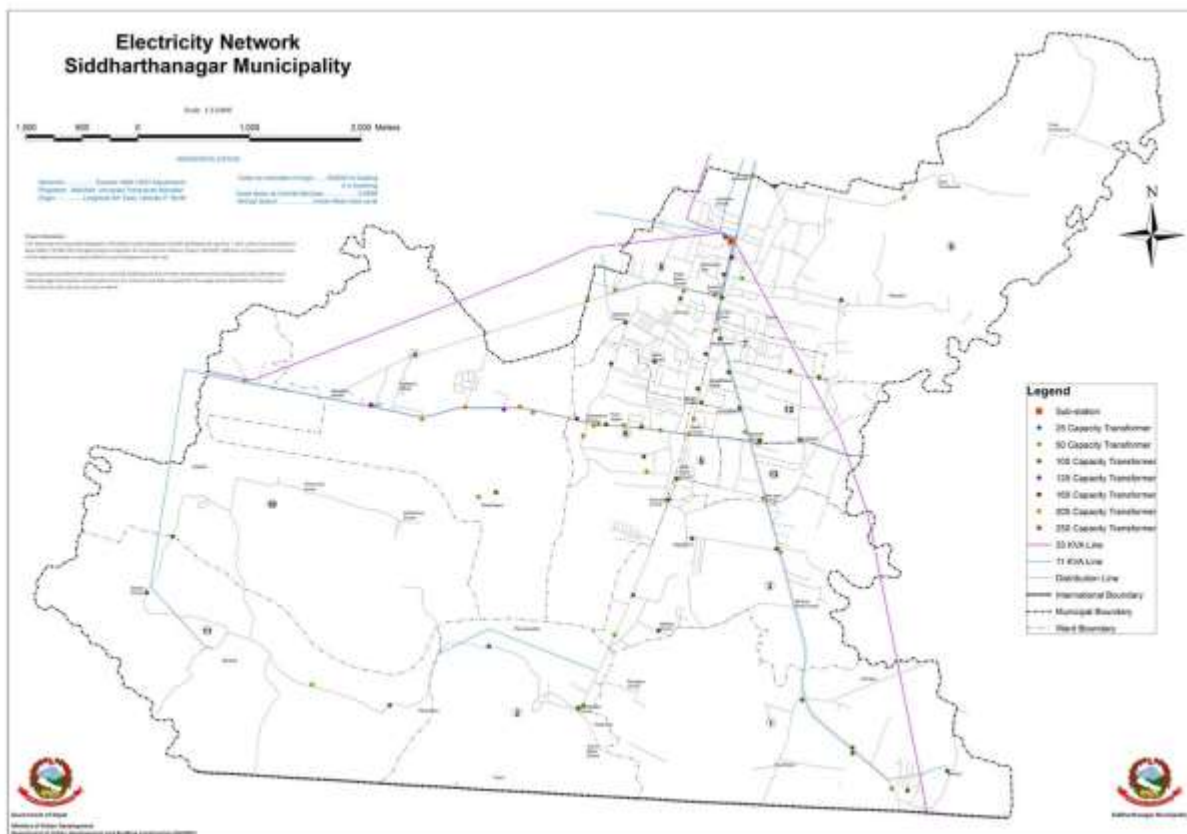
Postal service is provided by the district postal service office. There are two more postal service branch within the city and 7 letter boxes. In addition, there are 4 private courier services and 2 municipal information centers within the city. There are several local papers and 2 FM Station. Nepal Telecom and NCell are the major providers of communication facilities in Siddharthanagar. Telecommunication service is comparatively better here. Use of mobile phones has become common. About 98,110 telephone line and 55,560 mobile phones have been distributed already. The phone companies both provide e-mail and internet services.

Nepal Electricity Authority supplies electricity to households, institutions and industries in all 13 wards of Municipality. About 11,540 households are already connected to the system. The supply is provided through 33 KV and 11 KV lines. The city is also connected to the Indian Power System.





*Figure 3-17 Telecommunication network map of Siddharthanagar Municipality*



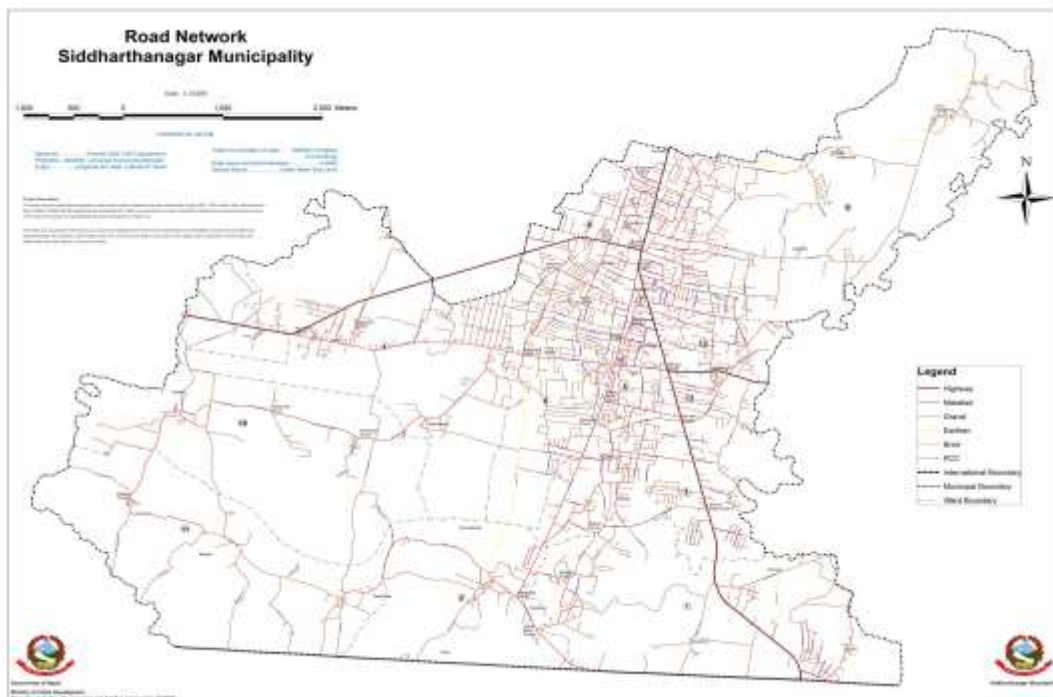
*Figure 3-18 Electricity Network of Siddharthanagar Municipality*

➤ *Transportation:*

Transportation options around the city and into surrounding areas include bus, minibus, unmetered taxicab and cycle rickshaw. There is regular bus service to Lumbini and Butwal. Private cars and motorbike are means of transportation in Siddharthagar. Due to increase in private ownership of vehicles there is huge problem in parking in central area. There is lack of public transportation and there is only one Bhairawa bus park which could not accommodate sufficient public vehicles. In Siddharthanagar there is Gautam Buddha domestic airport connect to Kathmandu and Pokhara. It is being upgraded to international airport under the name of Gautam Buddha International Airport.



*Figure 3-19 Bhairawa Bus Park (google.com)*



*Figure 3-20 Interlinkage map of Siddharthanagar*



There is daily bus services from Siddharthanagar to Butwal, Lumbini, Taulihawa, Parasi, Narayanghat, Pokhara, Kathmandu, Baglung, Beni, Palpa, Tamghas, Birgunj, Biratnagar, Kakarbhitta and Nepalgunj. Taxi Park is also set up in municipality for the benefit of beneficiaries.

### **3.1.2 Social state**

Siddharthanagar has a diverse culture with people from different faiths living with mixed communities. Hinduism (63.24%) and Muslim (35.96%) are two major religions in the city with Hindus comprising larger percentage of the population. Other religions like Buddhism, Sikhs and Christianity are among the minorities. Native languages spoken by the people are Nepali, Bhojpur and Hindi.

#### **➤ Education:**

In new context of local government, the education is the responsibility of Siddharthanagar Municipality and has to handle the school level education. Besides, the informal education, pre school facility, adult literacy programs are achieved by the city.

There are decent education facilities in Siddharthanagar, from primary level to higher education, which is shown in table below. Some of the famous institutions are Universal College of Medical Science and Teaching Hospital, .

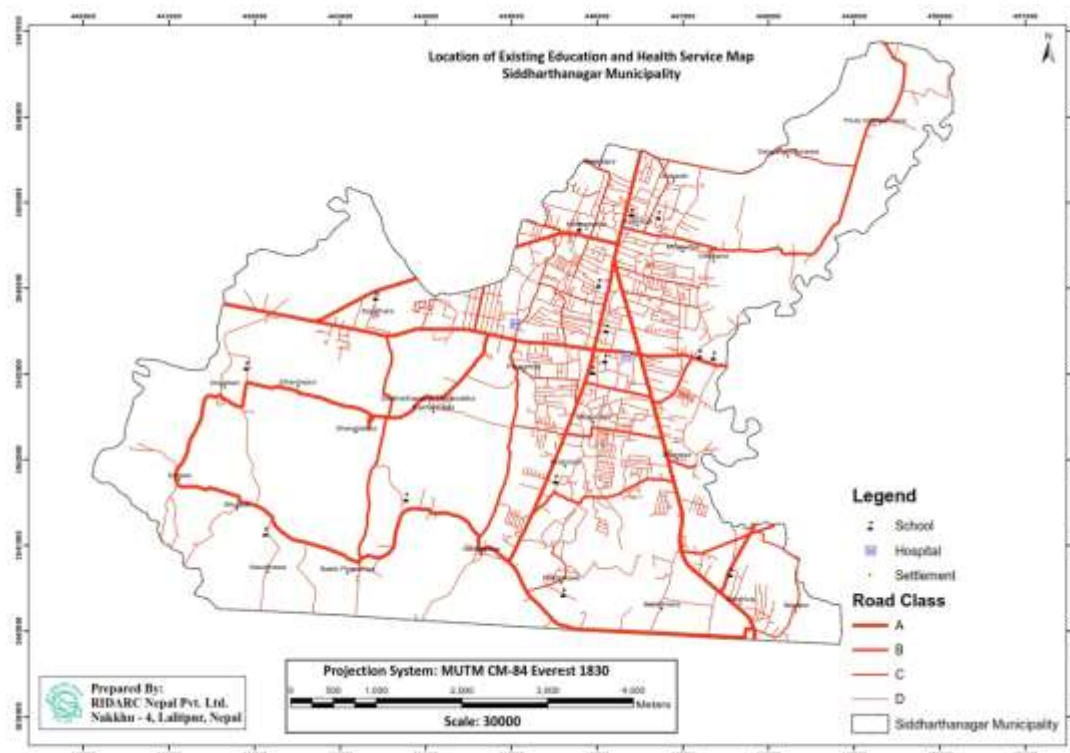
**Table 3-9 Educational institutes in Siddharthanagar (SM 2011)**

	Private	Government	Total
Pre-Primary	5	6	11
Primary School	2	3	5
Secondary	16	6	22
Higher secondary	4	2	6
College	6	4	10
Deemed University	-	-	-
Library	-	-	-
Special Education (Blind/Deaf)	-	-	-
Technical School CTEVT	-	-	-
Madarsa		10	10
Total			64

The literacy of the Siddharthanagar is higher than national average (59.63%). Its total literacy percentage is 69.78 % among which 79.22% are male and 60.79% are female. It shows the gaps in the literacy rate between sexes. Despite the available of education facility, 30% people are still illiterate in Siddharthanagar. There is need of upgrading the education quality in SM.

#### **➤ Health**

Siddharthanagar has highly developed healthcare system with several famous hospitals including Bhim Hospital (District Government Hospital), Universal College of Medical Science Hospital and Lumbini Eye Institute.



**Figure 3-21 Locations of existing education and health service**

➤ *Social security*

Social security falls under the quality of governance of local body. The constitutionally enriched local body has many responsibilities to the citizens. As it has declared the welfare state, there are many tasks to perform in social security sector. The social security covers the area of:

1. Social insurance: Typically include provision for retirement pensions, disability insurance, survivor benefits and unemployment insurance.
2. Services: Medical care, financial support during unemployment, sickness, or retirement, health and safety at work, aspects of social work and even industrial relations.
3. Basic security: Assistancess provided to disaster victims i.e. flood, fire, epidemics, refugee tec.

Siddharthanagar has provided many types of social assistances – Old age allowance, scheduled caste allowances, disabled allowance, child allowances for specific groups etc. The population taking various types of allowances is listed on table;

**Table 3-10 Number of people taking various allowances (Source:SM Fy 2076/077)**

Types of Allowance	Nos. of Beneficiaries
1. Senior citizen allowance (Others) Age 70 and above 70	1857
2. Senior citizen allowance (Dalit) Age 70 and above 70	114
3. Senior citizen allowance (Dalit) Age 60 above and Above 60	209
4. Scheduled caste allowance	-
5. Single women allowance	1452
6. Disabled Allowances (full)	44
7. Disabled Allowances (partial)	100
8. Children Allowance	-
9. Marginalized people allowance	55
Total	3831

Siddharthanagar also provides old age, widow and disabled allowance to its citizens.

**Table 3-11 Social Security Allowance Rates (Source:SM Fy 2076/077)**

Types of Allowance	Eligible Age	Monthly Allowance NPR
Senior citizen allowance (Others) Age 70 and above 70	70	3000
Senior citizen allowance (Dalit) Age 70 and above 70	70	3000
Senior citizen allowance (Dalit) Age 60 above and Above 60	60	2000
Widow (Above 60 yrs.)	60	2000
Widow (Below 60 yrs.)	From date widowed	2000
Marginalized	Not restricted to age	3000
Disabled Allowances (partial)	Not restricted to age	1600
Fully Disabled (Red Card holder)	Not restricted to age	3000

➤ *Sports*



**Figure 3-22 Siddharth Stadium**



**Figure 3-23 Paklihawa Football Ground**

Siddharth Stadium is the main stadium of the Siddharthnagar Municipality. There are also play grounds in many schools for promotion of sports. Sports plays not only to create healthy population but

also contribute a significant role in promoting social harmony and brotherhoods. National and international tournament on football and cricket has been organizing annually in Siddharthanagar.

➤ *Culture:*

Hindus are in the majority with a significant minority of Muslim and Buddhists associated with sites commemorating Gautam Buddha's life and relics. There is diversity in the culture as people from several parts of country live here. Awadhi and Bhojpuri culture is native identity.

There are several temples and mosque in Siddharthanagar. Some of the temples, monastery and mosque within the municipality are Narayan Temple, Radha Krishna Temple, Karanimai Temple, Samayami Temple, Durga Temple, Pashupati Temple, Basdelya Shivalaya Temple, Bishwokarma Temple, Shanti Buddha Bihar, Kotaki Temple, Shree Hanuman Temple, Puspa Kriti Bihar, Durga Mandir, Shiva Mandir, Radhakrishna Temple, Kalimai Mandir, Ram Janaki Mandir, Shakti pith, Sunni Maszid, Jama Maszid, Mohamdiya Jama Maszid, Nava Durga Temple, Baijanath Temple, Shree Durga Mandir etc.



*Figure 3-24 Pashupati Temple*



*Figure 3-25 Saraswati Vidya Mandir*



*Figure 3-26 Kothimai temple*

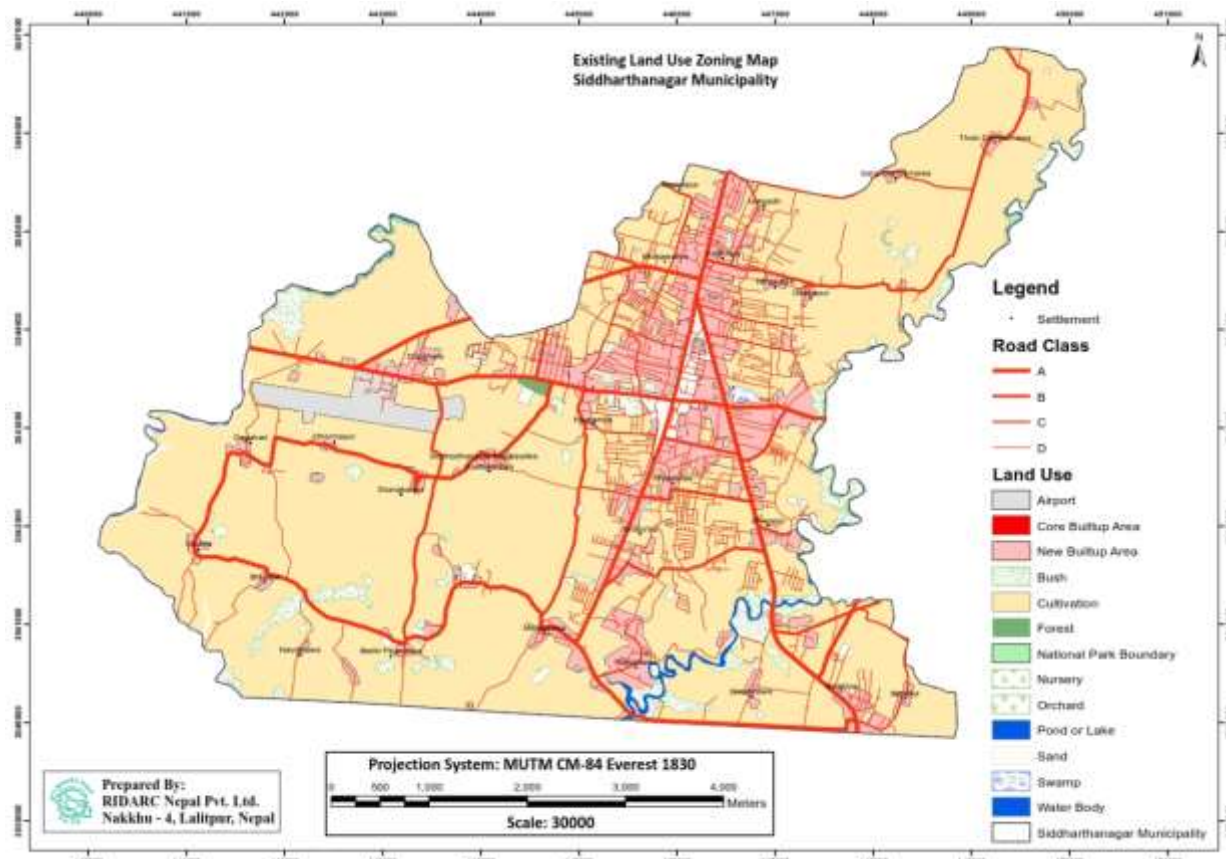


*Figure 3-27 Durga temple*



### 3.1.3 Environmental State

Siddharthanagar Municipality has Danda River, Forest and trees within its territory. Siddharthanagar exhibits range of topographical difference from flat land. The soil of Siddharthanagar is very good for absorbing the water and managing the ground water table and additionally best for agriculture. Siddharthanagar has rich sources for Agricultural.



*Figure 3-28 Existing Land Use Zoning Map*

#### ➤ Solid waste management:

As a result of rapid urbanization, Municipalities of Nepal have been facing a serious Solid Waste Management problem, putting immense pressure on municipal services. The waste is not being adequately managed, eventually creating serious health and environmental hazards. With increasing public awareness about good health and a clean environment, solid waste management has now become the priority of the municipalities.

Usual Model of Disposal of Solid waste in Municipality is about 31% of households dispose the household waste along the road corridor and 13% dispose in nearby dustbins. About 28% of the households surveyed dispose the waste/garbage in open area, 13% practiced waste/garbage burning frequently to dispose certain portion of the total household waste generated and 10% of households surveyed dispose waste within their own premises, which is an indication of the space availability for disposal. Only 2% dispose waste at locations identified by the Municipality or identified place in the locality. About 2% of households dispose the solid waste in the drains. As per field survey carried out by DSC in 2013, municipal waste generation rate is 0.210kg/capacity/day.

➤ *Environmental pollution:*

Environmental pollution is defined as undesirable change in physical, chemical and biological characteristics of environment i.e. air, water and soil which causes harmful effects on various forms of life or property. Growing urban population has also resulted in environmental pollution of Siddharthanagar. Solid waste and sewerage mainly cause the river pollution, land and air pollution. Smell and dust escaping out, from the industries operated in the city results in air and noise pollution. Besides, the haphazard building construction, unmanaged displays and advertisements, grill and metal workshops along the road has increase the visual as well as sound pollution of the city. The slaughtering is not properly managed.

The sources of air pollution in Sidhharthnagar municipality are mainly due industries like Pipe Industry, food industry, foam and agro Industries, brick cheminy and vehicular emissions and traffic; increase in number of vehicles, development works like road extension, building construction, open burning of solid wastes by households, agricultural and industrial activities. Black topped roads are within central municipal areas whereas roads at outskirts of municipalities are earthen or graveled. The dirty track roads are contributing significantly to the percentage of dust in the air.

Community-level major environmental problems are topped by unmanaged wastes and successively followed by bad smell, air pollution, unmanaged parking area/hat bazaar/cattle/soap, etc.

*Table 3-12 Community environmental pollution (Source: Household Survey 2006)*

S.N	Community level problems	In %
1	Unmanaged wastes	83.33
2	Bad smell	44.79
3	Air pollution	36.46
4	Unmanaged parking/haat bazaar/cattle/shop	32.29
5	Unmanaged drains	26.04
6	Road/street problem	21.88
7	Drinking water problem	17.71
8	Open defecation	17.71
9	Lack of sanitation	12.50
10	Noise pollution	11.46

### **3.1.4 Disaster History**

Siddharthanagar has faced many disasters like Earthquake, epidemic etc. and equally prone to flood and fire. In addition, lightning and thunder can be observed. With the increase of city size, it will be more vulnerable to epidemics. In past years various hazards cholera, storm, fire, earthquake and lightening and is observed in Siddharthanagar. The various form of hazard occurring in several years and its consequences are listed in table below.

A Disaster Risk Management Plan (DRMP) has been prepared in Siddharthanagar, which provides an immediate action plan during and post disaster. Due to the virtue of geological and topographical structure, Siddharthanagar lies under high risk of earthquake. The effects of earthquakes of 2072 BS also obsered on Siddharthanagar. In monsoon, high floods in Danda and Ghagara river cause damage in infrastructure and destroyed many hectors of cultivated land.

*Table 3-13 Risk based on various months of year (DRMP Siddharthanagar)*

Disaster	Mostly affected area and time
Flood	Shrawan and Bhadra (Flood coming through Danda and Ghagara Khola)



Fire	Baisakh, Magh, Falgun and Chaitra
Storm	Falgun, Chaitra and Baisakh
Plagues	Ashad, Shrawan, and Bhadra (Especially diarrhea)
Coldwaves	Magh month
Snake bite, monkey and wild animal attack	Attack by wild elephant through the year+ Loss due to monkey and snake bite particularly in summer seasons

Focused on the type of natural hazards, an analysis is made to identify the cause of disaster and to minimize its effect.

*Table 3-14 Types of Disaster, its causes and effects and mitigation measures (DRMP Siddharthanagar)*

	<b>Elements and Place of Risk</b>	<b>Possible Risk</b>	<b>Cause of Disaster</b>	<b>Affected area</b>
<b>Earthquake</b>	<ul style="list-style-type: none"> <li>Structures constructed on weak topography, old buildings, and other physical structures</li> <li>Large buildings constructed in Siddharthanagar municipality ward no. 5, 6, 12 and 13.</li> </ul>	<ul style="list-style-type: none"> <li>Physical infrastructure damage, fire</li> <li>Human loss</li> <li>Disturbance in telecommunication and electricity supply</li> <li>Scarcity of drinking water and possibility of outbreak of epidemic.</li> </ul>	<ul style="list-style-type: none"> <li>Weak topography</li> <li>Weak physical structures</li> <li>Lack of proper public knowledge of appropriate construction technology</li> <li>Lack of public awareness, skill manpower, etc</li> </ul>	<ul style="list-style-type: none"> <li>Manmade structures, public structures, source of income, cultural heritage, etc.</li> </ul>
<b>Flood</b>	<ul style="list-style-type: none"> <li>Settlements near river side Farming land, forest area, cultivated plants, road, animals, electricity, cable wire, telephone pole, etc.</li> <li>Other physical infrastructures</li> </ul>	<ul style="list-style-type: none"> <li>Bank erosion, could cause death and injury</li> <li>Desertification</li> <li>Disruption in Must-needed facilities</li> <li>Property loss</li> <li>Scarcity of food, plague</li> <li>Increase in Unemployment</li> <li>Increase in social insecurity</li> </ul>	<ul style="list-style-type: none"> <li>Climate change</li> <li>Unmanaged settlement</li> <li>Deforestation</li> <li>Lack of awareness</li> <li>Lack of planning</li> <li>Carelessness of concerned authority</li> </ul>	<ul style="list-style-type: none"> <li>Human, Animals, Cultivated plants</li> <li>Forests</li> <li>Must-needed facilities, physical infrastructure damage, etc.</li> <li>Effect houses</li> </ul>
<b>Fire</b>	<ul style="list-style-type: none"> <li>Buildings, physical structures, forest area</li> <li>Settlements constructed using wood</li> <li>Petrol pump and gas storage</li> <li>Unmanaged electricity supply</li> </ul>	<ul style="list-style-type: none"> <li>Human and property loss</li> <li>Damage of physical infrastructures</li> <li>Damage on natural beauty, environmental pollution, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Lack of public awareness</li> <li>Human mistake, carelessness</li> <li>Children's reach on fire causing substances</li> <li>Possible carelessness in industries</li> </ul>	<ul style="list-style-type: none"> <li>Buildings made by timber</li> <li>Unmanaged settlements near seasonal rivers</li> <li>Unmanaged electricity lines</li> <li>Petrol pumps in mid urban area</li> </ul>
<b>Thunderstorm</b>	<ul style="list-style-type: none"> <li>Houses made by using timber</li> <li>Cultivated plants</li> <li>Electric poles</li> <li>Animals</li> <li>Mobile, telephone, television</li> </ul>	<ul style="list-style-type: none"> <li>Roof of 'Tin'</li> <li>Electricity disruption and possible human loss due to falling of electric poles</li> </ul>	<ul style="list-style-type: none"> <li>Economic problem</li> <li>Loss of forest</li> <li>Drought</li> <li>Continuous heavy rain</li> </ul>	

### **3.1.5 Economic state**

Among five major entry points of Nepal-India Border, Siddharthanagar Municipality is an important commercial and industrial city which is located at the southern part of Rupendehi district of Nepal. It is the gate way to Lumbini where Lord Gautam Buddha was born. Hence, it is one of the popular land transits for international tourists and foreign trade. Lumbini is 22 km far in west from Siddharthanagar. there are several small and large scale industries around Siddharthanagar. In west towards Lumbini.

Bhairahawa Special Economic Zone (SEZ) was proposed to increase trade between Nepal and India. Government of Nepal has been encouraging different industries to establish their plant in the SEZ. The economy of Siddharthanagar is based on industries and agricultural goods which include following.

- i. Transport sector / Auto services
- ii. Hotels and restaurants
- iii. Banking and finance
- iv. Industries
- v. Agro-business
- vi. Health sectors
- vii. Education sectors
- viii. Trade and commerce

*Table 3-15 Trade and industries in Siddharthanagar (Source: SM)*

<b>Trade and Industries</b>	<b>No.</b>
Food Production and Processing Industry	46
Timber and Furniture Industry	9
Brick Factory	4
Other Industry	16
Hotel/Lodge/Guest House	39
Restaurants	130

➤ *Tourism:*

Siddharthanagar is the gateway to Lumbini for tourist who come to visit religious tourist spots such as: (a) the Lumbini Garden around Lord Buddha's birthplace, with numerous temples, monasteries and holy ponds; (b) the Devedaha an archeological site associated with the Koliya, tribe of Lord Buddha's mother and one of eight tribes that received corporeal relics after his death at Kushinagar; (c) Ramagrama- the center of the Koliya Kingdom having a stupa mound measuring approximately 10 meters in height and 20 meters in diameter; (d) the Kapilvastu- the kingdom of the Shakya ( Lord Buddha's paternal royal family) with many archaeological sites; (e) Tribeni Ghat on the Narayani River, an auspicious site for bathing which attracts hundred thousands of pilgrims on Maghe Sankranti; (f) Valmiki Ashram near Tribeni Ghat which is believed to be the place where Prince Siddhartha got down from his horse Kantaka and storded off on foot into the jungles in his search for answers to his questions; and (g) Lumbini Museum, Lumbini International Research Institute, and Kapilvastu Museum. The museum and research center have ancient literatures related to Buddha, and ruins of the ancient capital of Shakya Kingdom where Buddha has spent his youth as Prince Siddhartha, The Municipality is also a gateway to Chitwan National Park, a preserve large than 900 square km protecting some 700 native animal species including tiger, rhinoceros, gharial and crocodile and flora native to the Terai-Duar savanna; including grasslands and a wetland areas called Khadara Phanta north of Lumbini protecting the endangered Sarus Crane.



*Figure 3-29 Lord Buddha's birthplace and Ramgram nearby of Siddharthanagar*

➤ *Agriculture*

Agriculture is the dominant economic activity in the Municipality. 2800.08 ha of land, which is about 77.74 % of the total area of the Municipality (3,603 ha) is under cultivation and almost all cultivated land is irrigated. Paddy, wheat, oilseeds, potato and vegetables are major crops grown in the Municipality. Compared to other crops people grow more paddy, wheat and oilseeds and very little green vegetables and potato. The total cereal and cash crop production in 2010 were about 9,500 tons. Besides crop cultivation people in the area are found to practice nursery planting for splicing production of fruit trees and livestock farming as well.

➤ *Industry*

Siddharthanagar is a well-established industrial center in Nepal. In 2006, there were 47 registered industries within the Municipality (Source: Directory of manufacturing establishments 2064, CBS Nepal). Given the favorable location and conditions for growth, the number of industrial establishments has steadily increased from 47 in 2006 to 75 industries (mostly small industries) in 2010 (Source: Municipal Profile, 2011). Some 60% of total productions of the industries were exported to mountain and hilly districts of western region and about 15% were exported to Kathmandu. The remaining 15% of the productions were consumed locally and 10% were exported to India. The majority of industries were small scale industries such as rice mills, food and beverages, wood and steel furniture and brick industries. Other rapidly growing industry in the Municipality is construction related industries.



*Figure 3-30 Industries in Siddharthanagar*

### **3.1.6 Financial state**

Agriculture is predominant in Siddharthanagar along with industry and business. Tourism also provides a good economy to the city. Based on source, income of Siddharthanagar municipality is divided as internal i.e. local taxes, service charges, fees, sales, resource mobilization, dividends and bonus and external such as federal and provincial government grants, revenue sharing, foreign aid, loans and borrowings, donations and charity gifts, and municipal funds.

The municipal expenditure is divided into current (personal consumption expenditure, office operation and service charges, grants, service costs, interest payments, back spending, contingencies) and capital expenses (capital transfer expenditure, capital construction costs, investing, principal payment and contingencies).

The total budget projection for FY 2076/77 for Siddharthanagar was NPR 1,184.764 million, out of which only NPR 190.715 million is from internal sources. Siddharthanagar is rely on the large amount of NPR 994.049 million (83.9%) from external sources. The details of external resources is as follows:

- NPR 476.8 million from federal government grant,
- NPR 36.749 million from provincial government grant
- NPR 100 million from revenue from government
- NPR 70 million from social security
- NPR 10.5 million from Town Development Fund and
- NPR 400 million from foreign grant

Similarly, 22.4 % of total budget is spent for administrative purpose, 15.66% spent on expenditure of different offices under financial transfer and 61.89% for development sector.

### **3.1.7 Organizational/Administrative state**

Siddharthanagar Municipality is now lead by elected body. It a local government with substantial authority granted through constitution of Nepal. After the recent government reform, new governing structure is formed with 2 Divisions under which there are number of branches and further there are 8

more branches and other unit which is working directly. These are listed beneath and its organogram chart is shown in Fig

- 1 General Administration and Monitoring Section
  - a. Store sub-section
  - b. Basic urban services sub-section
  - c. Darta and Chalani unit
  - d. Municipality Police unit
- 2 Planning, Disaster and Environment Division
  - a. Planning section
  - b. Municipality drawing and land administration section
  - c. Sanitation and Disaster Management Section
- 3 Education and Social Development Division
  - a. Education and Sport section
  - b. Women and Social Development section
- 4 Economic Development and Revenue Section
  - a. Revenue Sub Section
  - b. Market Monitoring and Consumer Welfare and Conservation Sub Section
  - c. Urban Industry and Tourism Sub Section
- 5 Financial Administration Section
- 6 Health Section
- 7 Agriculture Section
- 8 Livestock Section
- 9 Internal Auditing Section
- 10 Law Section

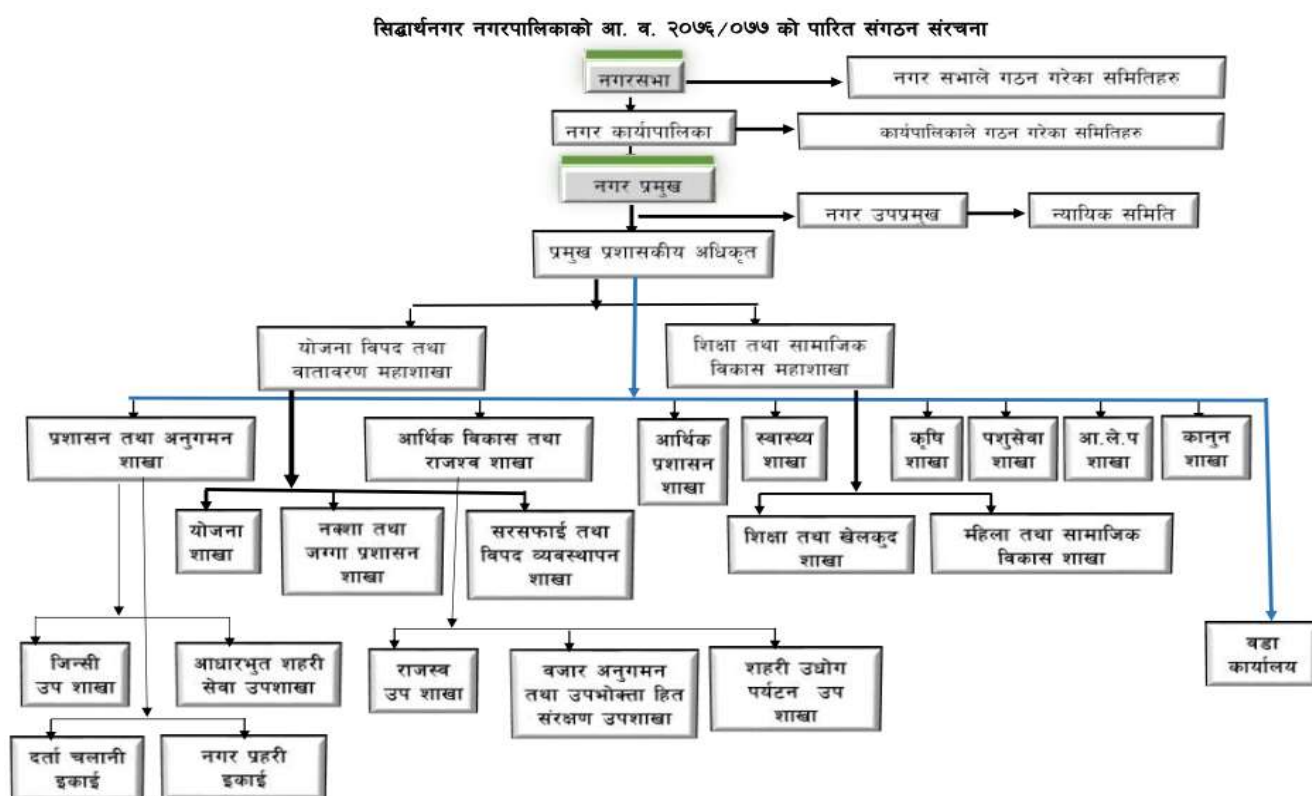
The organizational chart is given below. The administration part has been tried to enhance using IT but usage of digital system is weak due to the lack of manpower and funding resources. For increasing the institutional capacity of the workers, Siddharthanagar is regularly organizing some workshops and training.

There is a need of new office building since the existing municipality office building is not cater the emerging needs of local government. For the capacity development of the government staffs, Siddharthanagar Municipality should conduct different workshop on the different theme with the aim to expand the abilities in organizational structure and methodology, process performance, human resource development, information management system, financial management, and the coordination, development and extension of public relation sectors of Siddharthanagar.



There are 6 committees are actively working in SM, which is listed below:

- 1) Public Service and Capacity Building Committee
- 2) Economic Development Committee
- 3) Social Development Committee
- 4) Physical Infrastructure Development Committee
- 5) Environment and Disaster Management Committee
- 6) Bill Committee



*Figure 3-31 Old Organizational framework of SM*

### 3.2 Assessment and preparation of base map

The main objective of preparing a GIS base map is to have an overview of the municipality's existing territory and available infrastructures and identify the main challenges and opportunities of the city in the next 5-10-15 years. The GIS map have the following information.

1. Existing streets and buildings
2. Population density
3. Existing land-use
4. Transportation
5. Water supply
6. Drainage and Sanitation Network Plan



7. Multi hazard risk map
8. Public Services
9. Conservation areas
10. Culture and Tourism
11. Disaster Risk Management
12. Interlinkage

The detail GIS maps for the above existing and proposed services can be found in **APPENDIX II**.

## **4 Chapter IV: Data Analysis and Future Projection**

### **4.1 Previous Development Plan: Attempts and Achievements**

Looking back to the past, several infrastructures were established contributing to the development in Siddharthanagar. Some of them are Bhim Hospital, Lumbini Ran-Ambika Eye Hospital, Universal College of Medical Sciences, Shree Krishna Netralaya, Lumbini Netralaya, Universal College of Dental Surgery, Siddharthanagar City Hospital P Ltd, Marchwar Polytechnique P Ltd, Bhairahawa Hospital P Ltd, Badri Eye Center P. Ltd. Other infrastructures includes Siddharthanagar bus park extended in area of 3.94 Ha of land having parking capacity for 150 buses/vehicles, Gautam Buddham Airport which is upgrading as an international airport and construction work is underway, a city hall with 750 seats and Siddhararath stadium covering the area of 3.75 Ha of land.

The former periodic plan of Siddharthanagar Municipality prepared for F.Y. 2066/67 – 2072/73 was a base for the urban planning in Siddharthanagar with bottom up approach. There were certain issues and problems identified in the periodic plan mainly related to housing sector, health and education. The Periodic plan of Siddharthanagar 2067 identified the urban expansion needs and suggested the probable solution for accommodating the growing population. Besides, it also planned to conserve the architectural heritage of old town, which seems unachieved till date. It suggested the construction of soak pit in every household and planning of sewerage line and treatment plant, not achieved yet. The land pooling and site and services under land development program were not successful in previous years.

It had formulated various programs in different sectors and the achievements of periodic plan in each sector till date is explicit below:

a) Physical Infrastructure:

- 105.09 Km of black top road 74.11 Km of gravel road 15.5 Km of Main drainage and 36.4 Km of sub-drainage

b) Social:

- Literacy rate increased to 69.78 % (male literacy is 79.22% whereas female literacy is only 60.79% which shows the high gap in between sexes
- Female ownership in land and houses rising.
- Nuclear Family trend is growing.

c) Economic:

- 25% increase in economically active population.
- More Industry is established.
- Agro farming and animal husbandry growing.
- Number of standard hotels and restaurants increasing.
- People attracted to organic farming.

d) Environmental:

- Waste segregation concept is introduced.
- Public toilets construction in several areas.
- Solar energy usage and rainwater harvesting rising.
- Disaster Risk Management Plan for Siddharthanagar was prepared.

- Green homes concept for environmental sustainability growing.
- e) Institutional:
  - Workshops and programs for strengthening the capacity development.
  - E-governance initiated in municipality office.

## 4.2 Population growth trend and projection

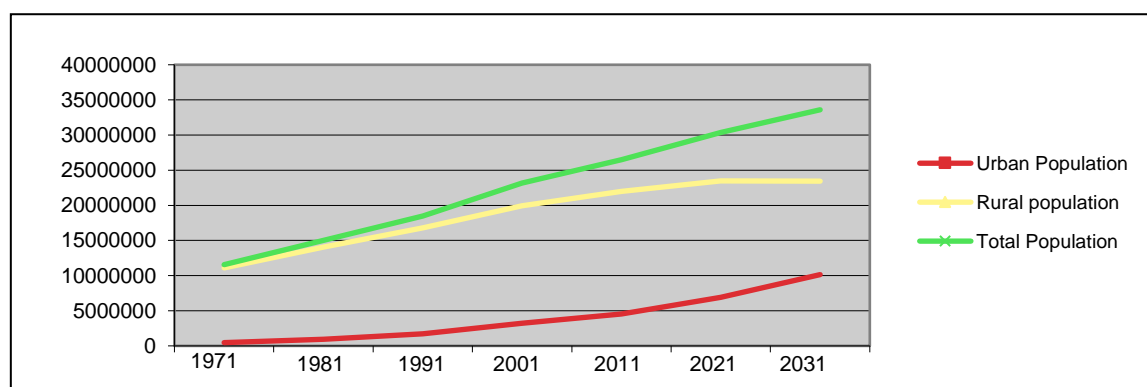
According to a UN Study, “Population projections are calculations which show the future course of fertility, mortality and migration. They are in general purely formal calculations, developing the implications of the assumptions that are made.” The projection of population reveals expansion in city size i.e. urban growth. The MoUD (2015) states that urban growth is the consequences of three mutually reinforcing transitions:

- Demographic transition i.e. more people are entering the labor force than leaving
- Spatial transition due to rural urban migration
- Economic transition due to the demise of the traditional subsistence economy, the declining contribution of agriculture to the Gross Domestic Product (GDP) and search of new livelihood options

Based on CBS data, an analysis of urban population growth trend of Nepal is performed and it can be derived: urban population of Nepal is increasing rapidly from 1971 till 2001 and the trend will resume similarly and by 2031, 43.34% people as compared to rural will be living in the urban area that is clear in the following table and graph.

*Table 4-1 Urban population growth trends*

	1971	1981	1991	2001	2011	2021	2031
Urban Population	461,938	956,721	1,695,719	3,227,879	4,523,821	6,902,867	10,143,254
Rural population	11,094,045	14,066,118	16,795,378	19,923,544	21,970,683	23,475,186	23,453,778
Total Population	11,555,983	15,022,839	18,491,097	23,151,423	26,494,504	30,378,055	33,597,032
% Urban	3.99%	6.36%	9.17%	13.94%	17.07%	22.72%	30.19%



*Figure 4-1 Urban population growth trends*

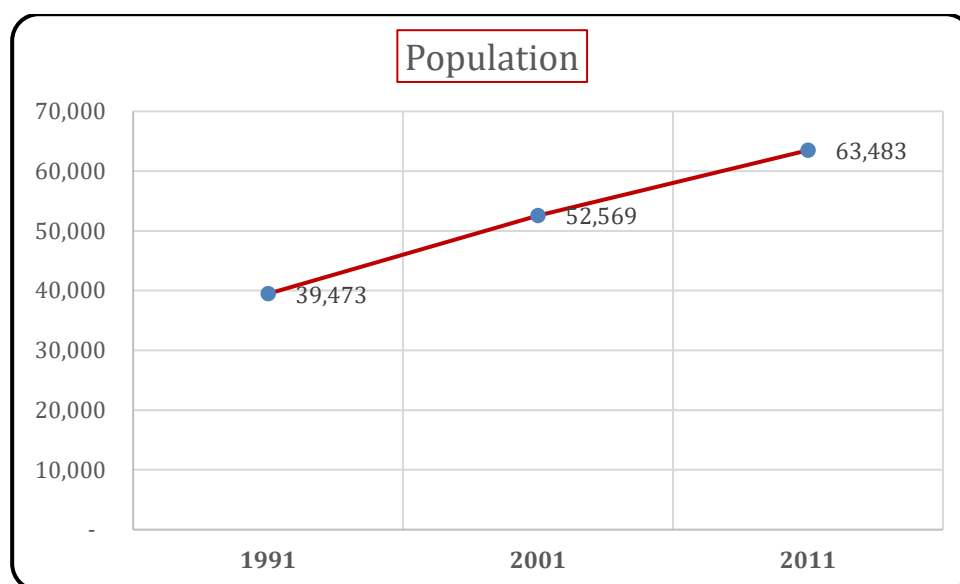
When overall population is growing in continual rate, Siddharthanagar also depicts the same growth trend. Siddharthanagar is also experiencing the urban growth due to

- Migration for economic opportunities
- Migration for official purposes
- Educational facilities
- Health facilities
- Rural urban linkages

The urban population of Siddharthanagar portrays continuous increment in previous years that can be obvious with the following chart.

**Table 4-2 Urban population of Siddharthanagar in various years**

	1991	2001	2011
Population	39,473	52,569	63,483
Increase		13,096	10,914



**Figure 4-2 Urban population of Siddharthanagar in various years**

With the rapid urbanization, more people will be migrating to urban areas, consequently increasing the size of the city. The annual growth rate of Siddharthanagar is 1.09 % as per CBS 2011. The total population of Siddharthanagar as per CBS 2011 is 63,483 with male and female occupying 49.89% and 50.11% respectively. There is latest development which was not visualized a decade ago. These include the fast construction of the Gautam Buddha International Airport and declared Butwal – a neighbouring city to Siddharthanagar – as a capital city of Province no 5. The rate of import and export through Siddharthanagar has been tremendously increased after the undeclared blockade imposed by India after promulgation of the constitution of Nepal 2072. All these recent development opened the avenue for the people to run various kind of business which ultimately increased the trend of migrating large number of people from rural area to this urban area. Furthermore, due to expansion of infrastructure and desire of people to raise their living standard, the population growth rate could be about 2.2 % for next 15 years. Hence, the planning shall be done to accommodate the growing population that requires prediction of future demography. The population forecast for 15 years from 2020 can be made with the formula for growth rate calculation,

$$P_t = P_o (1 + r)^t, \text{ where}$$

$P_o$  = Population at the base year,  $P_t$  = Population after t years,  $r$  = growth rate

Using the above principle, by 2035, the population is expected to rise to 107,025 . The population projection for the different year is tabulated below.

*Table 4-3 Population projection of Siddharthanagar for 2035*

Population (2011)	Projection (2020)	Projection (2029)	Projection (2035)
63,484	77,220	86,095	107,025

### 4.3 SWOT Analysis

SWOT refers to strengths, weaknesses, opportunities and threats. SWOT analysis is a process where the management team identifies the internal and external factors that will affect the city's future performance. The city's strengths and weaknesses are the internal factors and opportunity and threat are external factors. During IUDP, SWOT analysis is done for each sectoral theme to identify its potentials, major issues and probable risks that are elucidated below.

#### 4.3.1 Physical amenities

##### ➤ Land use planning

<p style="text-align: center;"><b><u>STRENGTHS</u></b></p> <ul style="list-style-type: none"> <li>• Control on growth</li> <li>• Planned beautiful city</li> <li>• Conservation of sensitive areas</li> <li>• Identification of risky zones</li> </ul>	<p style="text-align: center;"><b><u>WEAKNESS</u></b></p> <ul style="list-style-type: none"> <li>• No proper implementing tools</li> <li>• Lack of awareness</li> <li>• No uniform design patterns</li> <li>• Squatter settlement</li> </ul>
<p style="text-align: center;"><b><u>OPPORTUNITIES</u></b></p> <ul style="list-style-type: none"> <li>• Protection of environment</li> <li>• Balance of eco-system</li> <li>• Develop a uniform architecture pattern</li> <li>• Improved Linkages between different usage</li> </ul>	<p style="text-align: center;"><b><u>THREATS</u></b></p> <ul style="list-style-type: none"> <li>• Forest area encroachment</li> <li>• Phasing of development could lead to exacerbation of safety concerns</li> </ul>

##### ➤ Road network

<p style="text-align: center;"><b><u>STRENGTHS</u></b></p> <ul style="list-style-type: none"> <li>• Urban rural linkage/connectivity</li> <li>• Convenience</li> <li>• Time saving</li> <li>• Easy / fast Service</li> </ul>	<p style="text-align: center;"><b><u>WEAKNESS</u></b></p> <ul style="list-style-type: none"> <li>• Unpaved and earthen road are more (90.37 Km) in compared to black top (55.92 Km)</li> <li>• Low quality road</li> <li>• Dust, dirt, pollution</li> <li>• Lack of proper drain system</li> <li>• No bicycle / pedestrian lanes</li> </ul>
<p style="text-align: center;"><b><u>OPPORTUNITIES</u></b></p> <ul style="list-style-type: none"> <li>• Direct growth of the city</li> <li>• Economic growth</li> <li>• Developing eco-friendly access</li> <li>• Overall Development of the city</li> <li>• Transform to Mega cities and global cities</li> </ul>	<p style="text-align: center;"><b><u>THREATS</u></b></p> <ul style="list-style-type: none"> <li>• Unmanaged growth and urban sprawl</li> <li>• Increase in number of vehicles and lack of road and parkings</li> <li>• Air pollution</li> <li>• Encroachment of natural setting</li> <li>• Increase in crimes, safety issues</li> </ul>

##### ➤ Transportation

<p style="text-align: center;"><b><u>STRENGTHS</u></b></p> <ul style="list-style-type: none"> <li>• Eco friendly rickshaws and tempos</li> <li>• Decreases commuting time</li> <li>• Convenience and luxury</li> <li>• Ease lifestyle</li> </ul>	<p style="text-align: center;"><b><u>WEAKNESS</u></b></p> <ul style="list-style-type: none"> <li>• Use of fossil fuel</li> <li>• Traffic congestion</li> <li>• Dependent on technology</li> <li>• No parking space</li> </ul>
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<b><u>OPPORTUNITIES</u></b>	<b><u>THREATS</u></b>
<ul style="list-style-type: none"> <li>• Promotion of biking</li> <li>• Develop sustainable transport like BRT, car sharing etc.</li> <li>• Less impact on environment</li> <li>• Reduce air and noise pollution</li> </ul>	<ul style="list-style-type: none"> <li>• Safety issues to bicycle riders and pedestrians</li> <li>• Conflict in ownership and management</li> <li>• Issues of governance</li> </ul>

➤ **Water supply systemo**

<b><u>STRENGTHS</u></b>	<b><u>WEAKNESS</u></b>
<ul style="list-style-type: none"> <li>• Abundant underground water sources</li> <li>• Rain water harvesting initiation</li> </ul>	<ul style="list-style-type: none"> <li>• No treatment plants and storage areas</li> <li>• Inadequate water supply to the citizens</li> <li>• No water saving schemes in HH level</li> </ul>
<b><u>OPPORTUNITIES</u></b>	<b><u>THREATS</u></b>
<ul style="list-style-type: none"> <li>• Rainwater harvesting for water storage</li> <li>• Proper utilization of ground water</li> </ul>	<ul style="list-style-type: none"> <li>• Tube well use hamper water table label</li> <li>•</li> </ul>

➤ **Drainage**

<b><u>STRENGTHS</u></b>	<b><u>WEAKNESS</u></b>
<ul style="list-style-type: none"> <li>• Soak pit in each HH for feces collection</li> <li>• Only grey water on sewerage</li> </ul>	<ul style="list-style-type: none"> <li>• Inadequate drains</li> <li>• Lack of proper management</li> <li>• Rainwater connected to sewerage</li> <li>• No treatment plant for liquid waste</li> </ul>
<b><u>OPPORTUNITIES</u></b>	<b><u>THREATS</u></b>
<ul style="list-style-type: none"> <li>• Well managed outlook of city</li> <li>• Technology usage</li> <li>• Innovative solutions</li> </ul>	<ul style="list-style-type: none"> <li>• Increased cost for treatment plants</li> <li>• Alteration on natural landscape</li> <li>• Increase in paved surface</li> </ul>

➤ **Electricity and Telecommunication**

<b><u>STRENGTHS</u></b>	<b><u>WEAKNESS</u></b>
<ul style="list-style-type: none"> <li>• Connection to maximum buildings</li> <li>• Solar panels in some private homes</li> <li>• Ease in communication through mobiles</li> <li>• Rapid Flow of information</li> <li>• Connection to the global world</li> </ul>	<ul style="list-style-type: none"> <li>• Low network coverage</li> <li>• NTC and NCell dominant</li> <li>• Privatization</li> </ul>
<b><u>OPPORTUNITIES</u></b>	<b><u>THREATS</u></b>
<ul style="list-style-type: none"> <li>• Global connection</li> <li>• Commercial market</li> <li>• Income/revenue generation</li> <li>• Joint ventures with various organizations</li> </ul>	<ul style="list-style-type: none"> <li>• Increased cost</li> <li>• Cyber crimes</li> <li>• Privacy issues</li> <li>• Dependency on technology</li> <li>• Privatization</li> </ul>

In the context of physical development larger number of unpaved roads, lack of sufficient drainage, inadequate water supply, devoid of sewerage system, improper commuting facility, predominantly emerge as the main issues, whereas solar energy, rainwater harvesting, urban expansion provision, bicycles, electric and mass transit provide plentiful potential for physical amenities improvement.

**4.3.2 Social amenities**

➤ **Education**

<b><u>STRENGTHS</u></b>	<b><u>WEAKNESS</u></b>
<ul style="list-style-type: none"> <li>• High percentage of educated citizens</li> <li>• Adequate number of educational institutes</li> <li>• Famous Health institute</li> <li>• Engineering college</li> <li>• Qualified employee generation</li> </ul>	<ul style="list-style-type: none"> <li>• Traditional way of teaching</li> <li>• Lower number of females educated</li> <li>• Expensive</li> <li>• Out of general public reach</li> <li>• Political influence</li> </ul>

<ul style="list-style-type: none"> <li>• Entice people from all over Nepal</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of qualified teachers</li> <li>• Management issue</li> </ul>
<p style="text-align: center;"><b><u>OPPORTUNITIES</u></b></p> <ul style="list-style-type: none"> <li>• Education to all</li> <li>• Economy growth</li> <li>• Innovative solutions with new technology</li> <li>• Development prospects</li> </ul>	<p style="text-align: center;"><b><u>THREATS</u></b></p> <ul style="list-style-type: none"> <li>• Population growth</li> <li>• Increase in floating population</li> <li>• Cyber crimes</li> <li>• Develop as money generating institute</li> <li>• Negative competition</li> </ul>

➤ **Health**

<p style="text-align: center;"><b><u>STRENGTHS</u></b></p> <ul style="list-style-type: none"> <li>• Famous Universal College of Medical Science Teaching Hospital Accommodate large number of patients</li> <li>• Private and public clinics to serve people</li> <li>• Improved health of citizens</li> <li>• Low mortality rate</li> <li>• Accessibility in emergency</li> </ul>	<p style="text-align: center;"><b><u>WEAKNESS</u></b></p> <ul style="list-style-type: none"> <li>• Unmanaged and expensive</li> <li>• No health insurances</li> <li>• Political influence</li> <li>• Lack of qualified doctors</li> <li>• Developing as business than service</li> <li>• Lack of new technology</li> </ul>
<p style="text-align: center;"><b><u>OPPORTUNITIES</u></b></p> <ul style="list-style-type: none"> <li>• Attract people from various zones</li> <li>• Economic growth</li> <li>• Competitiveness</li> <li>• Development of modern technology in health services</li> </ul>	<p style="text-align: center;"><b><u>THREATS</u></b></p> <ul style="list-style-type: none"> <li>• Population growth with floating population</li> <li>• Low mortality rate</li> <li>• Imbalance in population</li> <li>• Business oriented and high price</li> </ul>

➤ **Parks/Open Space**

<p style="text-align: center;"><b><u>STRENGTHS</u></b></p> <ul style="list-style-type: none"> <li>• Land availability</li> <li>• Abundant parks and open space</li> <li>• Balance in built ad natural environ</li> <li>• Positive attitude of people</li> <li>• Multi usage</li> </ul>	<p style="text-align: center;"><b><u>WEAKNESS</u></b></p> <ul style="list-style-type: none"> <li>• Problem of squatters and Dumping</li> <li>• Abandoned Unproductive land</li> <li>• Commercialization</li> <li>• Lack of management</li> </ul>
<p style="text-align: center;"><b><u>OPPORTUNITIES</u></b></p> <ul style="list-style-type: none"> <li>• Use as shelter during emergency</li> <li>• Income generation</li> <li>• Ecosystem balance, Visual balance fo</li> </ul>	<p style="text-align: center;"><b><u>THREATS</u></b></p> <ul style="list-style-type: none"> <li>• Increased cost</li> <li>• Squatter problem, Dumping</li> <li>• Speculation and Price hike, privatization</li> </ul>

➤ **Sports**

<p style="text-align: center;"><b><u>STRENGTHS</u></b></p> <ul style="list-style-type: none"> <li>• Siddartha Stadium Cricket club</li> <li>• Sports hall</li> <li>• Increasing craze of sports like football and cricket</li> <li>• Broad minded citizens</li> </ul>	<p style="text-align: center;"><b><u>WEAKNESS</u></b></p> <ul style="list-style-type: none"> <li>• No proper management</li> <li>• Lack of indoor sports area</li> <li>• Political influence</li> <li>• Lack of awareness</li> <li>• High cost for infrastructure development</li> <li>• Not compulsory on schools</li> </ul>
<p style="text-align: center;"><b><u>OPPORTUNITIES</u></b></p> <ul style="list-style-type: none"> <li>• Encourage new generation</li> <li>• Increase global competitiveness</li> <li>• Collaborate with schools for promotion</li> </ul>	<p style="text-align: center;"><b><u>THREATS</u></b></p> <ul style="list-style-type: none"> <li>• Developing sports as profession</li> <li>• Maintaining reputation</li> <li>• Risk on main stream education system</li> </ul>

➤ **Security**

<p style="text-align: center;"><b><u>STRENGTHS</u></b></p> <ul style="list-style-type: none"> <li>• Allowances for old age, widow and disables</li> <li>• Police stations in each ward</li> <li>• Street lights in major streets</li> <li>• Inclusion of local citizens</li> </ul>	<p style="text-align: center;"><b><u>WEAKNESS</u></b></p> <ul style="list-style-type: none"> <li>• Low rate of allowances</li> <li>• Allowances not readily available</li> <li>• No digital tracking of citizens</li> <li>• High floating population</li> <li>• Not adaptation to new technology</li> </ul>
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	<ul style="list-style-type: none"> <li>Negative psychological impact on people</li> </ul>
<p style="text-align: center;"><b><u>OPPORTUNITIES</u></b></p> <ul style="list-style-type: none"> <li>Increase social awareness</li> <li>Develop new technology</li> <li>Promote social security system</li> </ul>	<p style="text-align: center;"><b><u>THREATS</u></b></p> <ul style="list-style-type: none"> <li>Increase in crime rates</li> <li>Dependent on technology</li> </ul>

➤ **Social/Public Centers**

<p style="text-align: center;"><b><u>STRENGTHS</u></b></p> <ul style="list-style-type: none"> <li>Available space for social centers</li> <li>Hub for exchange of ideas</li> <li>Build strong social relationship</li> <li>Educating medium</li> <li>Flexible usage</li> <li>Public willingness</li> <li>Knowledge sharing space</li> </ul>	<p style="text-align: center;"><b><u>WEAKNESS</u></b></p> <ul style="list-style-type: none"> <li>Lack of enough number of public centers</li> <li>Increased crime rate</li> <li>Increase in disputes and quarrel</li> <li>Lack of security</li> <li>Lack of management</li> <li>Indifferent of new technology</li> <li>Investment issues</li> </ul>
<p style="text-align: center;"><b><u>OPPORTUNITIES</u></b></p> <ul style="list-style-type: none"> <li>Secure public investments</li> <li>Promote new technology</li> <li>Increase communication and news flow</li> <li>Income generation</li> <li>Generation of job chances</li> </ul>	<p style="text-align: center;"><b><u>THREATS</u></b></p> <ul style="list-style-type: none"> <li>Seasonal usage</li> <li>Security issues</li> <li>Crime increase</li> <li>Social issues</li> <li>Political influence</li> </ul>

Decrease in family size, increasing outmigration from city, lack of social interaction, devoid of psychological security, increasing drug addiction and child and maternal mortality appears as main problems of the social environment of Siddharthanagar. The affluence of multi culture and multi ethnicity appears as a strong prospect encouraging to social development of backward and ethnic groups of Siddharthanagar. Health and education prove to be a strong backbone of Siddharthanagar.

**4.3.3 Environmental amenities**

<p style="text-align: center;"><b><u>STRENGTHS</u></b></p> <ul style="list-style-type: none"> <li>About 44% coverage of Char Koshe Jhadi</li> <li>Abundant parks and community forest</li> <li>Large number of agricultural lands</li> <li>Soak pits in each house</li> <li>Open defecation only 2%</li> <li>Waste Separation and waste recycling</li> <li>Waste to energy</li> <li>Disaster risk management plan</li> </ul>	<p style="text-align: center;"><b><u>WEAKNESS</u></b></p> <ul style="list-style-type: none"> <li>No land fill site</li> <li>Dumping haphazardly</li> <li>No conservation plans</li> <li>Inadequate drainage</li> <li>No sewerage lines</li> <li>Air pollution</li> <li>17.35% HHs do not have toilets</li> <li>Open space not identified for hazard</li> <li>Evacuation plan not prepared for emergency</li> <li>Lack of public toilet</li> </ul>
<p style="text-align: center;"><b><u>OPPORTUNITIES</u></b></p> <ul style="list-style-type: none"> <li>Manage forest and parks for income generation</li> <li>Sustainable environmental condition</li> <li>Use organic waste commercially</li> <li>Alternative energy usage from waste</li> <li>Conservation of sensitive areas for environment protection</li> <li>Attract tourist</li> </ul>	<p style="text-align: center;"><b><u>THREATS</u></b></p> <ul style="list-style-type: none"> <li>River and ancient area encroachment</li> <li>Forest encroachment</li> <li>Increase in squatter settlement</li> <li>Increased urban population</li> <li>Lack of public awareness</li> </ul>

River encroachment, lack of drainage, sewerage network, treatment plants and landfill sites, improper dumping, increasing air pollution, lack of public toilets is the main environmental issues of Siddharthanagar. The growing public responsiveness on waste recycling, usage of rainwater,

preparation of disaster risk management plan and investments in community forest and community parks proves the consciousness of citizen of Siddharthanagar towards environmental protection.

#### **4.3.4 Economy**

<p style="text-align: center;"><b><u>STRENGTHS</u></b></p> <ul style="list-style-type: none"> <li>• Agro farming and animal husbandry</li> <li>• Organic farming</li> <li>• Industries</li> <li>• Cultural heritage areas</li> <li>• Hiking, cycling in nearby hills</li> <li>• Sightseeing</li> <li>• Tourism destinations</li> <li>• Parks and community forest</li> <li>• Famous education and health institute</li> </ul>	<p style="text-align: center;"><b><u>WEAKNESS</u></b></p> <ul style="list-style-type: none"> <li>• Lack of advertisements/information dissemination</li> <li>• Decreasing attraction in agriculture</li> <li>• Traditional technology</li> <li>• Inadequate physical infrastructures</li> <li>• Lack of irrigation facility</li> <li>• Inadequate bus park and transportation facility</li> <li>• Lack of proper funding for projects</li> <li>• Inefficient management of internal and external resources</li> </ul>
<p style="text-align: center;"><b><u>OPPORTUNITIES</u></b></p> <ul style="list-style-type: none"> <li>• Attract youth in agriculture</li> <li>• Use of Modern techniques in agro farming</li> <li>• Potential of tourism development through pond, cable car, rafting, hiking and cycling trail, heritage site</li> <li>• Encouragement to industry through tax exemption</li> <li>• Develop Ayurveda centers</li> <li>• Off-season farming</li> <li>• Homestay</li> </ul>	<p style="text-align: center;"><b><u>THREATS</u></b></p> <ul style="list-style-type: none"> <li>• Increasing migrating trends due to unemployment</li> <li>• Lack of qualified and experienced trainers for modern agriculture techniques</li> <li>• Increased floating population</li> <li>• Higher commuting price</li> <li>• Costly transportation infrastructure</li> </ul>

#### **4.3.5 Institutional framework**

<p style="text-align: center;"><b><u>STRENGTHS</u></b></p> <ul style="list-style-type: none"> <li>• New constitution, local government reformation</li> <li>• Elected body</li> <li>• E-governance initiation in municipality office</li> <li>• Workshops and trainings for strengthening capacity development of staffs</li> <li>• Public participation for development works</li> <li>• Ward level offices</li> <li>• Various local social groups</li> </ul>	<p style="text-align: center;"><b><u>WEAKNESS</u></b></p> <ul style="list-style-type: none"> <li>• Delay on acts, policies from central government</li> <li>• Lack of coordination between different stakeholders</li> <li>• Traditional monitoring and evaluation techniques</li> <li>• Work culture of staffs still not service oriented.</li> <li>• Time consuming</li> <li>• No all wards committee have its own building</li> </ul>
<p style="text-align: center;"><b><u>OPPORTUNITIES</u></b></p> <ul style="list-style-type: none"> <li>• Reformation</li> <li>• Digital system in government office</li> <li>• Effective management system</li> <li>• Ward level service and reduce travel time</li> <li>• Transparency</li> </ul>	<p style="text-align: center;"><b><u>THREATS</u></b></p> <ul style="list-style-type: none"> <li>• Staffs vision not change</li> <li>• Superiority of donor agencies</li> <li>• Lack of public awareness</li> <li>• Security problems</li> <li>• Lack of plans and programs</li> </ul>

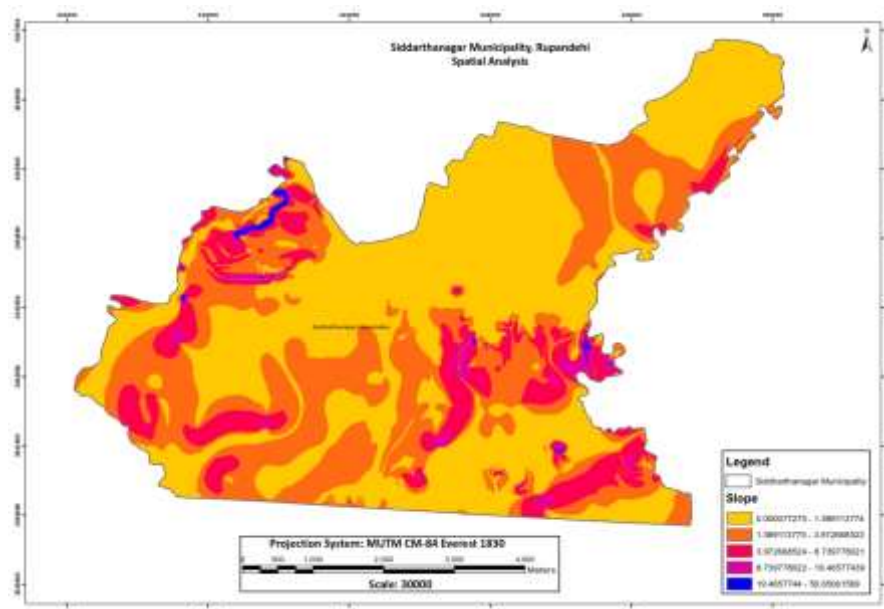
#### **4.4 Spatial Analysis**

Bhirahawa Nagar Panchayat established in 1967 changed its name to Siddharthanagar Nagar Panchayat after the the good name of Lord Gautam Buddha in 1977. Further, it was named as Siddharthanagar Municipality in 1990 after the people’s movement for multiparty democracy. It is also headquarter of Rupendehi district.

Among five major entry points of Nepal – India Border, Siddharthanagar Municipality is the one, located at the southern part of Rupandehi District of Nepal as an important commercial and industrial

city. It is the gate way of Lumbini where Lord Gautam Budhha was born. Hence, it is one of the popular land transits for international tourists and foreign trade. Lumbini is 22 km far in west from Siddharthanagar. With time, this urbanizing trend is expected to grow, thus having impact on the urban amenities. Hence, it is a high time introspecting on an appropriate planning approach for designing and restructuring cities. There have been Integrated Action Plan and Periodic plans as an approach towards the urban planning of Nepal's urban cities but these planning tools still have quite a few shortcomings, major one, not being able to embrace the multi disciplinary aspects of the society or a city.

Urbanization in Siddharthanagar Municipality is growing at a very fast rate of approximately 2.2 % per annum. The agricultural sector continues to be strained. The number of wards to **13 wards** and thus increasing the city size to 36.03 sq.km.



*Figure 4-3 Map showing gradient of topography of Siddharthanagar*

Siddharthanagar has mostly flat or plain terrain. As per the land use map larger area is used for agriculture which is 77.74 % whereas for built up / residential area and Airport is 1.19 % and 1.67 % respectively. The remaining of 19.4 % of land is occupied by others which include river, forest, barren land and open spaces. The GIS land use map depicts the increasing building growth. Increase in rate of construction over timemark this increasing spatial usage that can be verified with the 480 building permits per year.



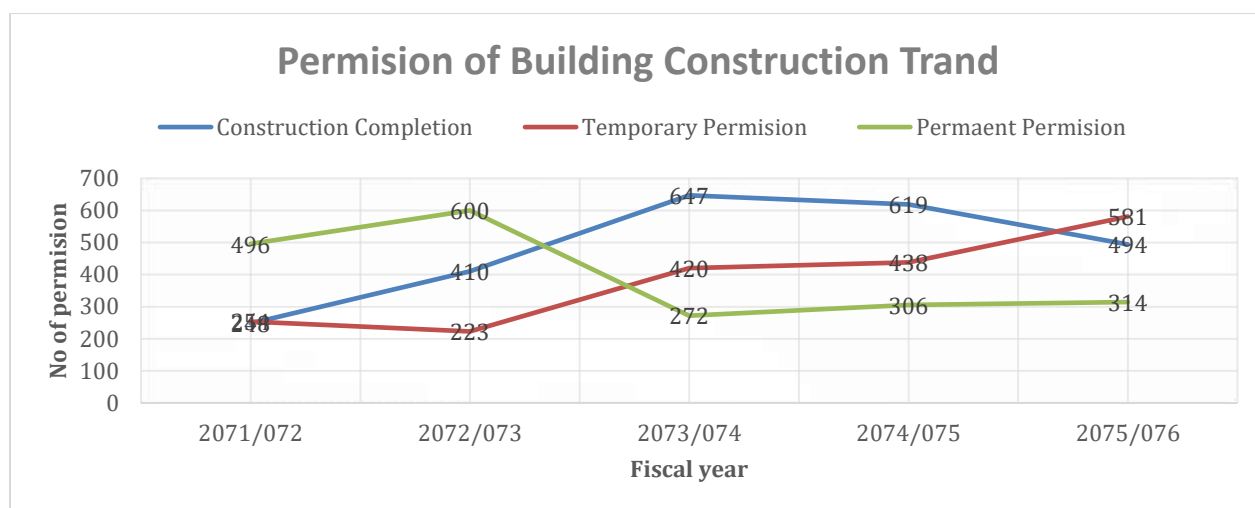


Figure 4-4 Permission of Building Construction Trand

#### 4.5 Financial Analysis

From the yearly FY reports, it can be derived that the main source of income of Siddharthanagar is taxes, service charge, rent and participation, besides grants. Most of the budget is spent on the physical infrastructure development works, program for marginalized group and administration cost including salaries. It is observed, less amount of money is spent on environmental, cultural and economic development.

Table 4-4 Comparison of revenues of SM over various fiscal years

Revenue	F.Y 2072/073	F.Y 2073/074	F.Y 2074/75	F.Y 20075/76	F.Y 20076/77
<b>Internal Resourse</b>					
Local Taxes	22,343,766.83	25,792,958.74	23,579,436.97	34,075,000.00	127,015,000.00
Service charges	12,411,626.72	15,383,022.22	14,931,618.51	20,635,000.00	
Charge	14,622,062.00	31,022,291.67	28,472,071.59	30,425,000.00	
Sells	29,100.00	33,825.00	-	500,000.00	
Resource Mobilization	1,039,625.00	1,702,815.00	2,748,315.00	1,925,000.00	
Capital, Intrest , Profit and Bonos	597,563.35	217,901.63	145,352.82	240,000.00	43,700,000.00
Other Income	5,077,575.83	6,654,947.54	6,638,797.99	4,995,000.00	20,000,000.00
<b>Total</b>	<b>56,121,319.73</b>	<b>80,807,761.80</b>	<b>76,515,592.88</b>	<b>92,795,000.00</b>	<b>190,715,000.00</b>
<b>External Reourses</b>					
Federal Government Grant	105,477,796.43	135,323,988.00	378,008,435.00	410,832,000.00	376,800,000.00
Nepal Government Revnue	8,333,864.00	7,757,358.00	3,380,487.00	91,354,000.00	100,000,000.00
Foreign Grant	282,209,034.66	577,657,874.31	903,858,236.35	1,282,500,000.00	400,000,000.00
Provincial Government Grant					36,749,000.00
Social Security	23,498,400.00	50,355,200.00	59,297,000.00	70,000,000.00	70,000,000.00
Loan and Devt	40,052,467.00	68,955,074.00	11,662,987.00	52,500,000.00	
Town development fund					10,500,000.00

Revenue	F.Y 2072/073	F.Y 2073/074	F.Y 2074/75	F.Y 20075/76	F.Y 20076/77
Donation	1,603,580.00	-	2,733,540.00	5,000,000.00	
Bank Treasury	5,941,012.73	4,483,595.94	35,830,664.98	-	
<b>Total</b>	<b>467,116,154.82</b>	<b>844,533,090.25</b>	<b>1,394,771,350.33</b>	<b>1,912,186,000.00</b>	<b>994,049,000.00</b>
<b>Grand Total</b>	<b>523,237,474.55</b>	<b>925,340,852.05</b>	<b>1,471,286,943.21</b>	<b>2,004,981,000.00</b>	<b>1,184,764,000.00</b>

**Table 4-5 Comparison of expenses of SM over various fiscal years**

Expenses	F.Y 2072/073	F.Y 2073/074	F.Y 2074/75	F.Y 20075/76	F.Y 20076/77
<b>Current Expenses</b>					
Office Operational Cost	29,050,591	26,752,888.51	27,974,596	126,986,000.00	265,918,000.00
Cleaning Expenses	96,802,189		109,684,700	23,000,000.00	
Fire Brigade and Food Expenses	12,465,165		7,787,728	10,300,000.00	
Social Security	13,216,203		6,054,493.74	70,000,000.00	
Different Line agency Office Expenses				199,900,000.00	
<b>Total</b>				<b>430,186,000.00</b>	<b>265,918,000.00</b>
<b>Capital Expenses</b>					
Furniture				800,000.00	
Vehical				13,500,000.00	
Macinnary and other Equipment				1,700,000.00	
Public Infrastructure Construction				138,445,000.00	
IUDP				350,000,000.00	
RUDP				1,040,000,000.00	
Road Boards				17,850,000.00	
LGCDP				2,500,000.00	
Capital study Contingency				3,000,000.00	
Capital Grand				2,000,000.00	
Capital Payment				5,000,000.00	
<b>Total</b>				<b>1,574,795,000.00</b>	<b>733,246,000.00</b>
Expenditure of different offices under financial transfer					185,600,000.00
<b>Grand Total</b>				<b>2,004,981,000.00</b>	<b>1,184,764,000.00</b>

#### **4.6 Demand Analysis and Forecast**

The forecast of population reveals increase in city size. With development period, the city will expand rapidly, thus escalating the demand in many urban services like water supply, solid waste management, housing plots and road. To address these issues, the municipality has to plan accordingly considering infrastructures large enough to cater future demand. The IUDP is expected to accommodate the prerequisites of the growing population and the mandatory infrastructures needed planning likewise.

Demand analysis is performed for the coming years and a supply forecast is attained based on the “**Urban planning norms and standards 2015.**” Keeping under consideration the available existing resources and amenities, a gap is identified for the deficit facilities from the supply forecast for forthcoming years and projects/programs are formulated.

### 4.6.1 Physical Infrastructure Demand Analysis

An analysis is done based on “Urban planning norms and standards 2015” for achieving the standard of Sub Metropolitan city of Nepal and the forecasted scarcity in physical infrastructure is explicit in the following table.

Table 4-6 Physical Infrastructure Demand Analysis

Types	Norms	Standards					Existing Infrastructure	Supply Forecast 2035	Deficit	Remarks
		ROW	Setback	Footpath	Cycle Track					
Road	<b>7.5 km/sq.km</b>						6.28 km/sq.km	7.5 km/sq.km	1.22 km/sq.km	7km/sq.km achieved
	Express way, Arterial, Sub Arterial, Collector street and Local Street	Expressway	50				226.25 Km	271 Km	45 Km	New Road Construction
		Arterial	30	1	2	2				
	All or 90% of household are within 0.5 km from motorable road	Sub Arterial	22	1	2	1.5	46.45% Black top	100% Black top	53.55%	Existing 121 Km road need to be black topped.
		Collector	14	1	2	1.5				
		Local	10	1	2	-				
Water Supply System (with storage and treatment facilities)	Metered house connection and distribution	<b>Quantity: 120 lpcd</b>					43.43% population have metered house connection - 5428 HHS	100% population have metered house connection	56.57%	15,640 Households should be connected (also considered increased HHS by 2035)
	Non domestic demand	<b>8-10%</b>					80%	100%	20.00%	
	Treatment plant (lab, dosing and guardhouse with storage facility: Elevated or Underground Reservoir (24 hrs requirement)	<b>2 ha per sites (2 Nos)</b>								
		Storage Capacity: 25% of total treatment capacity					4500000 ltr and 225000 ltr (2 Nos) 2.2 MLD	12.84 MLD	10.64 MLD	<b>Use rainwater harvesting</b>
	Provision of Rain water Harvesting in public buildings	Storage capacity: 7 to 10 thousand Litres					In some buildings	80 % of Total Building	75 % Building	<b>1000 million Litres of rainwater</b>
Sanitation/Sewerage System	Full coverage by public sewer system	Minimum diameter of trunk line: 200 mm					136 Km	336 Km	200 km	<b>New to be planned</b>
	Sewage Pumping System	0.01 ha – 0.02 ha per site					---			9,810 HHS need to be constructed household level toilet
	Treatment plant	5 ha - 7 ha per site (2 Nos.)					No	2 Nos	2 nos.	New Plan and design

Types	Norms	Standards	Existing Infrastructure	Supply Forecast 2035	Deficit	Remarks
	Provision of public latrines (male, female, disabled)	1 public toilet at a distance of 5 Km along the main road.	5	20	15 nos.	New Plan and design
Integrated Solid Waste Management	Collection Point (0.4kg/person/day)	Community collection/ Door-to-Door collection.	21 ton per day	42 tons	7 ton	Increase collection point
	Household level waste separation	1 collection point/container/ roadside pickup point serves a radius of 200m	Each day collection		10000	Add dustbins on roadside
	Transfer Station	1 Transfer Station for 1 city if the final disposal is within a distance of 10 km	1	3	2	new plan and construction
	Sanitary Landfill Site	<b>Only 30% of the total waste generated should go to landfill. 70% = reduce, reuse recycle.</b> Sanitary Landfill Site: Large (> 500 tons per day)	No sanitary landfill	1 no.	1 no.	Plan a new
Electricity	National grid supply line and Alternative energy	Power access to 100% coverage.	92.34%	100%	8%	Facilitate to get access to rest of the households alongwith promote solar energy in all building through bye laws
		Electric Sub Station: 3 ha				
Transmission Tower: 80 - 100 sq. m						
Distribution Tower: 20 - 25 sq. m						
	Alternative Energy (panels, battery)	150 - 200 Watt Solar Home System	Some Private residence	All buildings		
Tele-communication	Landline/mobile	100 % coverage	75%	100%	25%	<b>Addition of points</b>
		Telephone Exchange Office (1 exchange with a capacity of 6500 line capacity) - 0.02 ha per site	75%	100%	25%	
		Telephone Transmission tower (ROW: 5m)	2	3	1	<b>New to be planned</b>
	Public telephone booth (TB)	1 TB at a distance of 2.5 Km along the main road - Standard booth	Not identified	20	20	<b>New to be planned</b>
Climate Change Center/ Disaster Management Center	<b>City Level</b>	1 ha along with suitable open area (2ha) for soft parking, temporary shelter, parade ground	Not identified	Stadium, open space of park to be used for temporary shelter	15 nos.	No new planning needed, only awareness and improvisation of evacuation routes



### 4.6.2 Social Infrastructure Demand Analysis

An analysis is done based on “Urban planning norms and standards 2015” for achieving the standard of Sub Metropolitan city of Nepal and the forecasted scarcity in social infrastructure is explicit in the following table.

*Table 4-7 Social infrastructure Demand Analysis*

Types	Norms	Standards	Existing Infrastructure	Supply Forecast 2034	Deficit	Remarks
Educational Institution	<b>Primary</b>	1 per 3000 population at a distance of 0.4–0.8 km – 0.2 ha per site	16 nos. (Including pre-primary schools)	35 nos	19 nos.	Construct new schools
	<b>Higher Secondary</b>	1 per 7500 population at a distance of 30min in public transportation – 0.65 ha per site	28 nos. (including secondary school)	14 nos	-	No extra school required, needs to merge the schools and upgrade the quality
	<b>Graduate/Post Graduate</b>	1 per 25,000 population at a distance of 45min in public transportation	10 nos.	4 nos.	No	<b>Upgrade only</b>
	University	1 per 40,000 population at a distance of 1hr in public transportation	No	3	3	
Health Institution	<b>District Hospital</b>	1 per 50,000 population (25 – 50 beds) - 1.3 ha per site	1	2 hospitals	1	No need additional health institution but need to upgrade the existing hospitals
	<b>Zonal Hospital</b>	1 per 100,000 population (50-100 beds)	No	1 hospital	1	
Open Space	5% of total city area	5 % of 36.03 Sq km =1.805 Sq km	0.021 Sq km	1.805 Sq km	1.784 Sq km	<b>Improve existing and New to be planned</b>
	Neighborhood Park (with play equipment)	1 @ 800 population (0.4 ha per site)		130 nos		<b>New to be planned</b>
	Local Park	1 @ 10,000 population (1 ha per site)	11	1 park in each ward		<b>New to be planned</b>
	Community Park	1 @ 20,000 population (2 ha per site)	11	6 nos		<b>New to be planned</b>
	Zoo Park	1	0	1	0	<b>Not Planned</b>
	Specilized Park	1 in each city	0	1	1	<b>New to be planned</b>

<b>Types</b>	<b>Norms</b>	<b>Standards</b>	<b>Existing Infrastructure</b>	<b>Supply Forecast 2034</b>	<b>Deficit</b>	<b>Remarks</b>
Library	Community level	1 per 10,000 population (10,000 sq. meter per site)	1	11 nos	10	<b>New to be planned</b>
	National/Central Level	1 in each city	0	1	1	<b>New to be planned</b>
Fire Station	City level (5 -7 Km radius)	1 fire station @ 100,000 population	3 fire brigade	1 nos		<b>Improve facility only</b>
Religious Institution	Incineration /cremation areas	0.4 ha per site	no	1 New electric incineration	1	<b>Improvise infrastructure, add electric chamber</b>
Museum	Regional Level	0.5 ha per site	1 no.	1 no.		<b>Improve facility only</b>
Art Gallery	Regional Level	0.5 ha per site	No Gallery	1 no.	1	<b>New to be designed</b>
Old age home, orphanage, center for differently able people, sanatorium	Regional Level / Local Level	1 per 20,000 population (0.3 ha per site)	Not identified	6 nos	6 nos	<b>New to be designed</b>
Security	Police post	1 per 10,000 population (0.1 ha per site)	3	Police post in each ward	10	<b>New to be designed</b>
	Police Station	1 per 40,000 population (0.5 ha per site)	3 nos	3 nos		<b>Improve facility only</b>
Science and Innovative Centre (Exhibition Centers)	Regional Level	1 per 50,000 population (4 ha per site)	No	2 nos	2 nos	<b>New to be designed</b>

### 4.6.3 Economic Infrastructure Demand Analysis

An analysis is done based on “Urban planning norms and standards 2015” for achieving the standard of Sub Metropolitan city of Nepal and the forecasted scarcity in economic infrastructure is explicit in the following table.

*Table 4-8 Economic Infrastructure Demand Analysis*

Types	Norms	Standards	Existing Infrastructure	Supply Forecast 2035	Deficit	Remarks
Conventional Hall	City level	1 per 100,000 population (2 ha per site)	1	2 nos	1 no.	New to be planned
Sports Complexes	Regional Level	1 per 100,000 population (3 ha per site)	1	2 nos	1 no.	New to be planned
Movie Hall	Multiple Halls	5 seats per 1000 population	2 no.	3 nos. with 175 seats capacity	1 no.	New to be planned
Vegetable Market	Neighborhood level	1 wholesale, 1 retail and 1 Slaughter house for 2 neighborhood (0.5 ha per site) - 1 Neighborhood = 3000 population	some small slaughter house, wholesale and retail	17 wholesale, 17 retail and 17 slaughter house	some slaughter house, wholesale and retail	Identify locations and design and plan for new
Parking space	Public parking (two/ three wheeler)	1 parking lot for each neighborhood (3000 population) 0.04 ha per site	Public parking in current bus-stop and road sides	34 parking lot - total space 1.36 ha	5	<b>New to be planned</b>
	Public parking (four wheeler) Including vertical parking					
Transportation system	Intra City Bus Terminal (Linking with other cities) along with urban service centres/motels/gas stations	1 parking lot for 200 buses and 200 trucks (4ha per site)	1	1		<b>Improve existing</b>
	Inter City Bus Terminal (Within the city)	1 parking lot for 200 buses (2 ha per site)	0	1	1	<b>New to be planned</b>
Airport	National and International Airport	346 hectare International Airport National Airport 134-227 hectares	Airport at 40 km from Siddharthanagar (1hr)	1		<b>Improve existing</b>

## 4.7 Planning Concept for IUDP

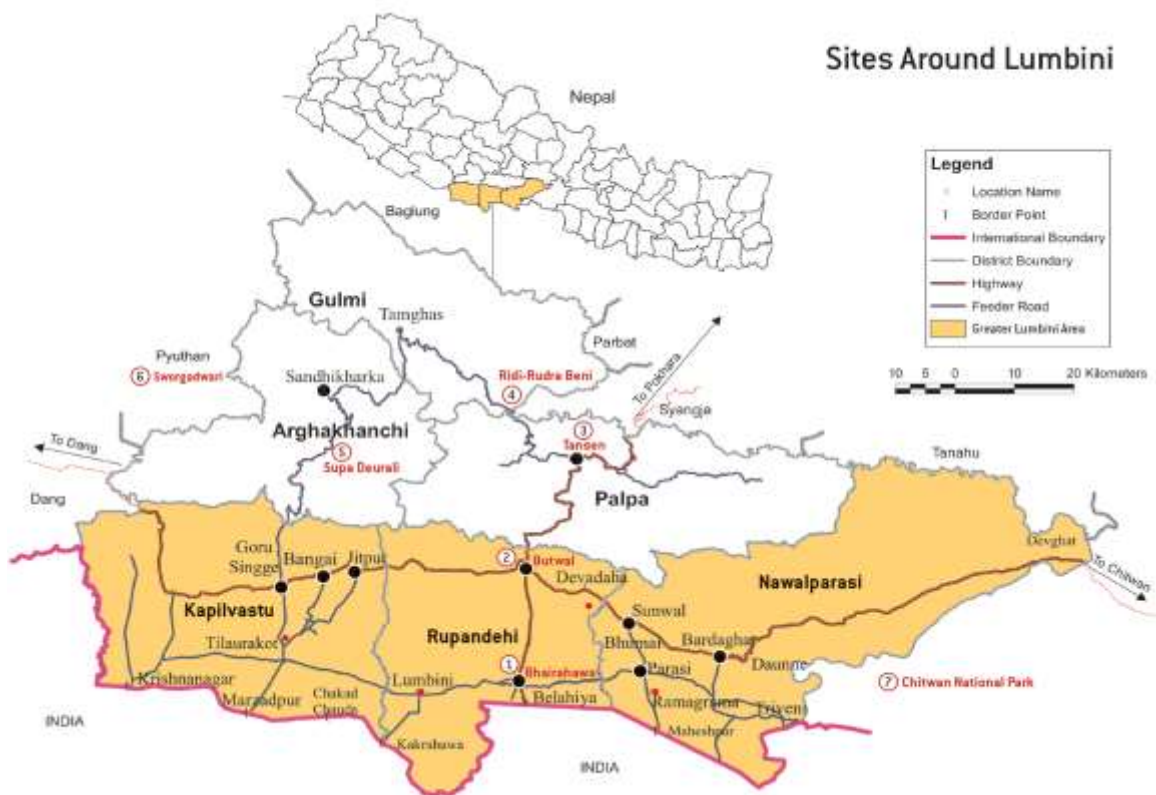
Government of Nepal has developed “Greater Lumbini Tourism Promotional Plan” which envisages establishing Lumbini and surrounding areas as one of the iconic products in the global tourism market. Its aim is to increase the length of stay and spending of tourists and create potential impacts on the livelihood of local communities.

The greater Lumbini project connects three districts, namely Kapilvastu, Rupandehi and Nawalparasi. The plan envisages integrating Lumbini, the Buddha’s birthplace; Tilaurakot, his childhood home; Devdaha, his maternal and in-laws’ home town and Ramgram in Nawalparasi, which contains one of the relics of the Buddha, into the Greater Lumbini Development Area which will be 157 square kilometres in size.

As per the plan, the roads linking all these areas will be widened into four lanes and lined with holy trees. The sustainable plan includes promoting Lumbini as a religious,

cultural and leisure destination separately. Under the scheme, Tilaurakot, Devdaha and Ramgram will be promoted for cultural heritage tourism. Likewise, Palpa, Butwal, Bhairahawa and Belhiya will be promoted as leisure, sports and shopping destinations.

The plan has also envisaged connecting Lumbini with other destinations like Pokhara, Palpa, Chitwan, Mustang, Jomsom, Dhorpatan, Swargadwari, Bardia, Rara Lake and Kailash Manasarovar.



*Figure 4-5 Tourism route of Greater Lumbini Development Area*



*Figure 4-6 Elements of green city*

For a city to be considered “green”, measures must be taken in comprehensive manner that not only positively impacts to the city but also contributes to the environmental sustainability of the global level. For achieving a Green city, investment is required in:

**a) Low Carbon Transport:**

It refers to cycling, walking and public transport encouragement, use of energy efficient vehicles, thus having zero or low emission reducing Green house Gases (GHG). It also promotes the public transit oriented urban development like bus rapid transit, electric railway.



*Figure 4-7 Low carbon transport*

**b) Green Industry:**

Green industry refers to the waste reduction through Circle Economy in which byproducts of one industry is used as input of other industry. Green industry concept advocates reducing contamination at sources and effective management of sources.

Recycling the plastics and making mats and other decorative items is one the examples of green industry. Decaying the organic waste and using it as fertilizers, generating energy from waste are some of the green industry initiatives in Siddharthanagar.



**c) Energy Efficient Building:**

This refers to reduce the amount of energy required for providing products and service. Like insulating a home allows a building to use less heating and cooling energy to achieve and maintain a comfortable temperature. Use of solar energy, wind energy, rain water harvesting for managing the day to day activities thus reducing the load in environment is termed as low energy consumption or sustainable energy usage.

*Siddharthanagar has also commenced programs of solar lights, solar panels and rainwater harvesting in the city.*

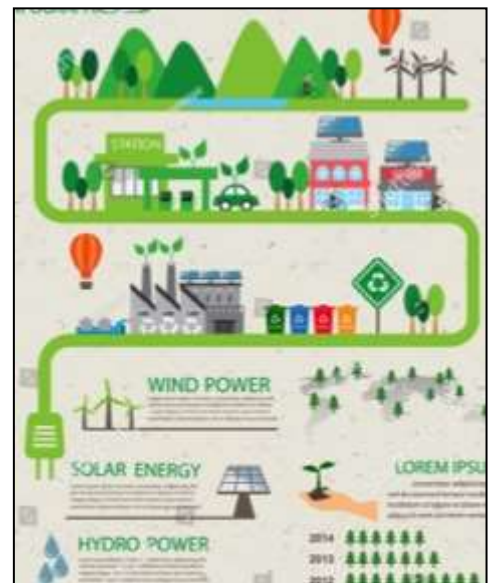
**d) City Greening:**

Increasing the greenery in the city through Roof Garden, Urban Farming, Vertical Farming, rain garden, Agricultural land, permeable pavement, Parks and Forest are elements of city greening. With the increase in built up area, city is lacking respective greenery. Greening the city is necessary for controlling the urban environment.

Siddharthanagar has maintained community parks and forest, private gardens, side bushes and tree plantation along the roads uplifts the green environment of the city. It is recommended it should be scaled up in coming days.



*Figure 4-9 City greening (google.com)*



*Figure 4-8 Eco friendly concept (google.com)*

**e) Green, Resilient Infrastructure:**

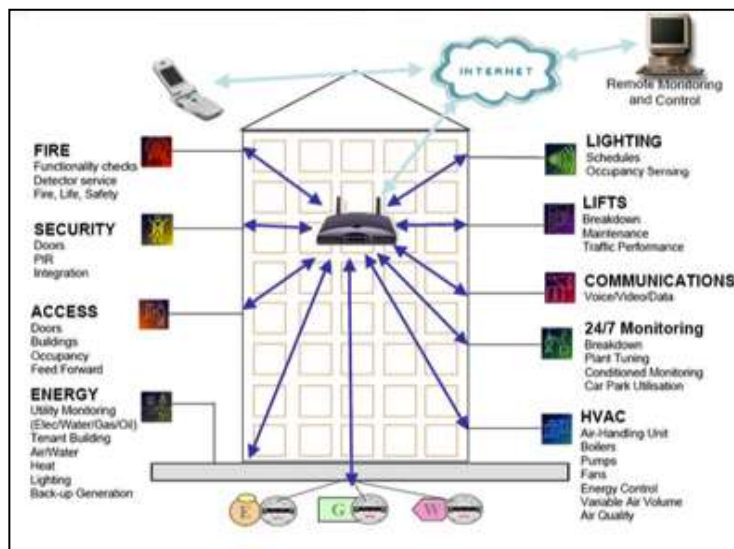
Green infrastructure deals with the technology that use natural environment in a way that maximizes its functions and seeks to put in place, either through regulatory or planning policy, mechanisms that ensure protection of natural environment, and proposes how these can be put in place through landscaped and/or engineered activities. These includes smart grid and distributed power for reducing energy consumption, using energy saving bulbs, automatic switching of streetlights during daylight or non-usage. This also refers to the decrease in energy consumption of public buildings through efficient management.

*Smart grid combined with solar panels should be used for electricity in private buildings in Siddharthanagar.*

**f) Intelligent System:**

Intelligent system indicates the smart city strategy includes installing municipal wire line or wireless broadband networks; implementing e-government by providing a digital access to city departments' web sites; integrating public transit with intelligent facility systems; developing distributed RES networks cutting carbon footprints, applying eco principles to reduce, recover, recycle, and reuse the urban resources. Energy-efficient solutions, computer networks, intelligent building networks, digital networking equipment, data analytics software, optical telecommunications systems, smart mobile networks, smart/intelligent applications, technologies, devices, objects, and systems, intelligent sensor/actuator networks, intelligent traffic systems, smart community technologies, resources tracking systems, all this are constituents of a smart urban entity.

*Siddharthanagar Municipality office has been using the e-governance system for tracking records but still digital system usage is lacking improvement, upgrading and holistic usage.*



*Figure 4-10 Intelligent system of Siddharthanagar*

Among the six features of Green city concept, Siddharthanagar has extended its footstep towards every component in small extent. This supports the advocacy of Siddharthanagar as a green city of west . Hence, planning concept for IUDP of Siddharthanagar adopts the measures guiding to the green city for achieving its long-term vision of **“Tourism, Industries, Commerce and Education, Greenery are the desire of Buddhabhumi Siddharthanagar’s”**.



*Figure 4-11 long-term vision*

From the prevailing situation analysis and vision, the lead sector for development of Siddharthanagar is identified. Collaborating the lead sectors with the green concept, an urban development idea is envisaged for achieving a livable sustainable Siddharthanagar city with social, economical and environmental equilibrium.

## **5 Chapter V: Thematic Urban Development Plan**

### **5.1 Physical Development Plan**

Physical planning is a comprehensive, multi sectorial master plan, which provides a planned spatial framework of development for the physical environment within which a balanced programme of social and economic development can be carried out. It provides the legislation necessary for the planning, controlling and implementation of the physical development process and is done to ensure the establishment of centralized infrastructure with overall responsibility for planning, evaluation, co-ordination, administration and implementation.

#### ***5.1.1 Goal, Objectives and Strategy***

**Goal:** Increasing the living standard of citizens with well equipped physical amenities utilizing less resources and maintaining the ecological stability

The long-term physical development plan of Siddharthanagar aims to improve the urban infrastructures of the Siddharthanagar. The urban infrastructures are classified as physical, social and economic.

#### **Objectives:**

- To improve and develop the conditions of road and invest on new connections
- To identify the probable water supply sources
- To plan for new sewerage systems
- To prepare plan for solid waste management
- To encourage the usage of alternative sources for electricity
- To increase network efficiency of Telecommunication
- To identify the places for new bus stop, parking space and construct bus stops and public toilets in required places.
- To repair and develop social infrastructure like Education Institution, Health Institution, Open Space, Community Hall, and Library
- To increase usage of alternative energy and resources
- To connect the infrastructure with digital technology
- To rehabilitate economic infrastructure like Parking Space, Stadium, Sports Complex, and Movie Hall
- To improve the land and housing demand
- To prepare a proper land use plan catering the future need

#### **Strategy:**

- To make easy and effective integrated service delivery from local levels by constructing buildings for municipality and ward level.
- Formulate the necessary policy and trained manpower for safer housing and strictly implement the building codes.
- Develop the Municipality Transport Master Plan and construction the road as priorities in MTMP.
- Develop the plan for land use, integrated urban development, conservation of watersheds and implement it effectively.
- Encourage private sector for apartment development for solving the housing problems.
- Increase the access of the people to the information by providing free WI FI facility in public places like school, governmental of office.

- Transfer the jail and army barrack from the city core area to Pachkauli and airport side respectively to create open space in city area.
- Promote PPP model for development infrastructure as far as possible.

### **5.1.2 Plan and Programs**

#### **5.1.2.1 Land use and urban expansion**

Based on the inventory and situation analysis, the need of physical facilities for next 15 years is identified. To restrict the haphazard growth in future, a land use planning with different zoning is proposed. A proposed land use plan with the following is prepared.

i. Residential, ii. Institutional, iii. Industrial, iv. Agriculture, v. Green, vi. Recreational, vii. Urban expansion, viii. Stream/river banks, ix. Others.

The proposed zoning has obvious segregation of following areas namely: Urban areas, urban expansion areas, Natural resource areas and

The urban area can be categorized in following way.

- Core area (Central Business Area): The area along the Bank Road and from Devekota Chwok to peripheral area having massive business activities and growth of health, business and service sector. It is potential business hub and transaction of trade and commerce.
- Periphery area: Mainly residential and cottage, grocery, slaughtering, godown and other activities are on periphery of CBA. Some of those areas have industries, hotels and new business complexes. Those areas lies on periphery, demanding more investments on road, drainage and enhancement of public places.
- Institutional area: The area with the educational facilities, health facilities and government offices are scattered around the CBA. The educational facilities are near the southern side due to the availability of large area of land.
- Industrial area: Industrial zone is also situated on the southern side. The existing industrial area need to expand for accomodating more industries.

The immediate urban area expansion is to be limited within the older settlement of Siddharthanagar by alteration in byelaws. Then after, for restricting urban sprawl, gradual increase of towns can be planned in the neighboring wards of 4 and 9.

#### **5.1.2.2 Housing demands**

The existing housing facilities shall also be upgraded with amenities. Besides, housing for low and middle-income groups shall be commenced from government level in collaboration with private sectors to enhance their living condition.

From the population projection, it is observed with the annual growth rate of 2.2 %, by 2035, the population will rise to 107,025 i.e. 40,000 people shall be adjusted in the city. There are two ways to accommodate this raised population: i) densification in core area with occupying the vacant lands ii) urban expansion on periphery in ward no 4 and 9.

Three techniques for providing housing i) land pooling for single-family dwellers, ii) medium rise apartments (10 storey) and iii) low rise apartments (5 storey)



If we assume 50% will prefer single dwelling units, 30% low rise and 20% medium rise apartments, total 51.62 Hectare of land is needed. The calculation for each dwelling unit is explained below.

➤ Single family dwelling:

50% of 40,000 = 20,000 people

**1 family dwelling unit = 80 sq.m+30% outer circulation space = 104 sq.m**

Single family size = 20,000/5 = 4,000 families

For 4,000 families space needed = 4,000\*104 sq.m = 416,000 sq.m = **41.6 Hectare**

➤ Low Rise Apartment:

30% of 40,000 = 12,000 people

1 two bed apartment size = 60 sq.m to cater single family of 5 people

Six apartment units in one floor = 360 sq.m

Ground coverage of Apartment = 360 sq.m+ 30% circulation space = 468 sq.m

**Land Area for Apartment 2 \* GCA = 936 sq.m**

1 low rise apartment have 6\*5 = 30 units = 30\*5= 150 people

Total number of apartment required = 12,000/150 = 80 apartments

Total area required for low rise apartment = 80\*936 sq.m = 74,880 sq.m = **7.49 Hectares**

➤ Medium Rise Apartment:

20% of 40,000 = 8,000 people

1 two bed apartment size = 60 sq.m to cater single family of 5 people

Six apartment units in one floor = 360 sq.m

Ground coverage of Apartment = 360 sq.m+ 30% circulation space = 468 sq.m

**Land Area for Apartment 2 \* GCA = 936 sq.m**

1 medium rise apartment have 6\*10 = 60 units = 60\*5= 300 people

Total number of apartment required = 8,000/300 = 27 apartments

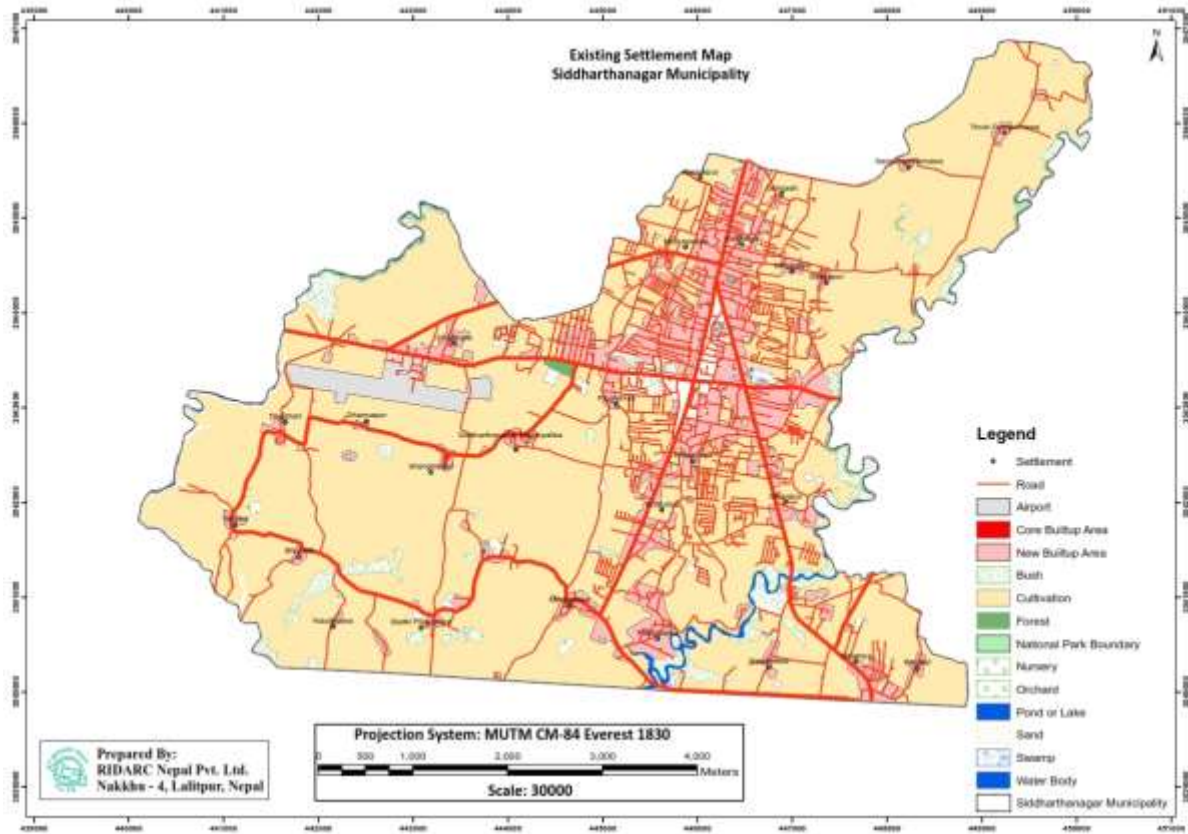
Total area required for low rise apartment = 27\*936 sq.m = 25,272 sq.m = **2.53 Hectares**

Thus, about 4,000 units of single family units, 80 low rise apartment and 27 mid rise apartment will adjust the augmented population.

The vacant land in the city area is supposed to be occupied at first attaining the maximum urban density. It is expected that the scanty scattered settlement around Jhandi Bazar in ward no -2 will also be densified with time, when the infrastructures are improved. Moreover, the settlements of ward no -5, 6, 8, 12 and 13 will also be dense in future. The probable urban expansion area for the new settlements in ward no 4 and 9.

### 5.1.2.3 Road Network

From the demand analysis, the existing road network of **226.25 km** is to be upgraded to **271 km** that suggest **45 km** road has to be newly constructed for meeting the municipality standard of 7.5 km/sq.km. Furthermore, the existing graveled and earthen road of 121 Km need to be upgraded.

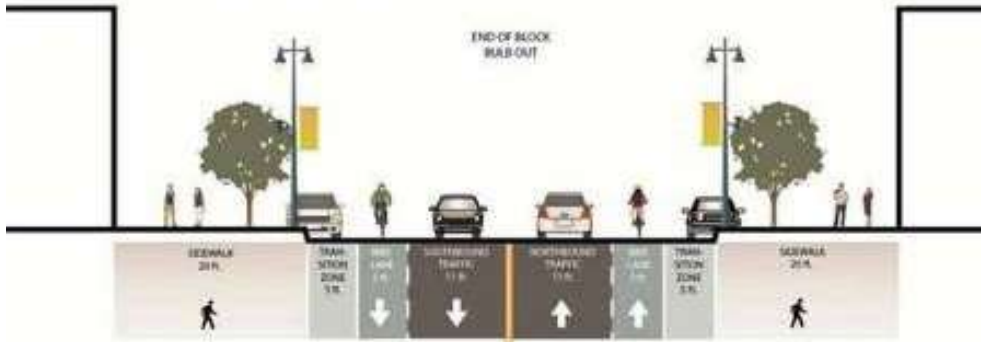


*Figure 5-1 Existing and Proposed road network of Siddharthanagar*

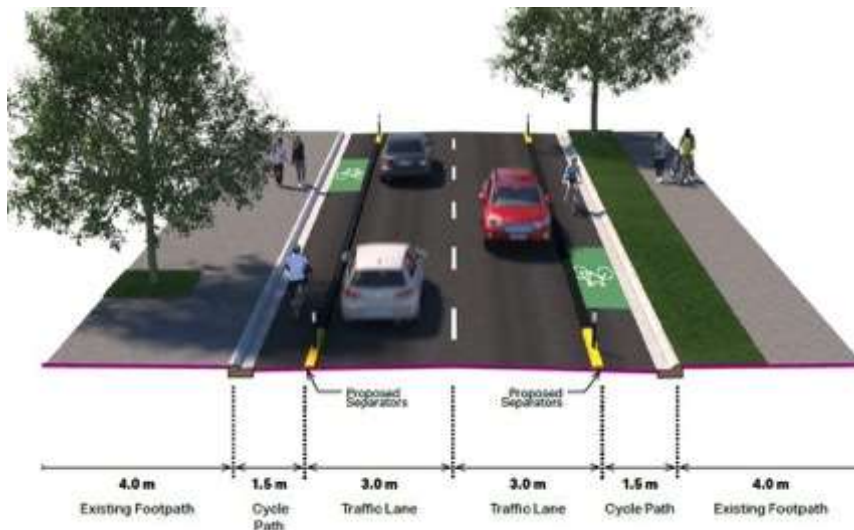
Based on Department of Roads (DoR) and DUDBC, classification of road is done as

1. Highway (50m): The highway passing through settlement shall be made 4 lanes and footpath and cycle lanes shall be made on the either sides encouraging environment friendly approach and safety.
2. Feeder Road (Class A): 30m
3. Urban Road: The hierarchy of urban road of SM is categorized as:
  - i. Collector Road A (Class B)  $\geq$  12m

This city urban road, with width greater than 12m, will connect the access road to the feeder road, ring road and highway. These roads have 2 lanes for vehicle travel, two cycle lane and pedestrian lane with greenery comes under this category. The major road urban road of Siddharthanagar connecting to ring road shall have the width of 15m. A cycling lane and pedestrian track needs to be incorporated in some existing road in old city area and cultural heritage sites.



**Figure 5-2 Typical section of urban road "Class B" Option 1**



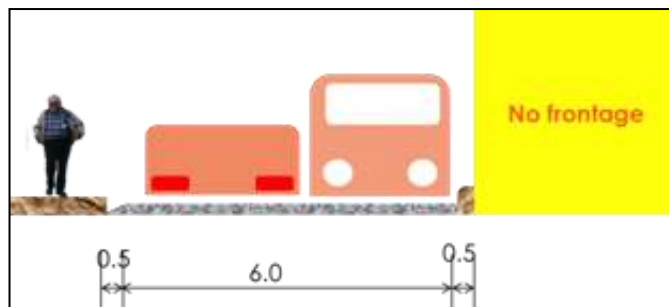
**Figure 5-3 Typical Section of urban road "Class B" option 2**

ii. Collector Road B (Class C): 9-10m

This urban road collects urban traffic from the city to Class B and highway. It has 2 lanes for vehicle with two pedestrian lanes and greenery. The inner urban areas with intracity transportation facility lie in this category.

iii. Access Road A (Class D): 8 m

This urban road has 2 lanes for vehicle with two pedestrian lanes and greenery. The inner urban areas with intracity transportation facility lie in this category.



**Figure 5-4 Typical section of urban road "Class D"**

iv. Access Road B (Class E): 6 m

This urban road is the access road within the city, which is connected directly to collector road and access road A. This type of road exists inside the city with low traffic volume and has only two-lane vehicle space with no separate pedestrian lane. The people are assumed to walk through the road area itself. During new road planning in side the city, the minimum width of the road shall be 6m.

The above-mentioned classification shall be followed for addition and improvements of existing road. The existing road less than 6m shall be kept as it unless initiated by local users. There will be no government investments in these small roads less than 6m in infrastructure planning. If small road width is to be planned in residential areas, this need to be financed through private investors or the investment of local user groups.



*Figure 5-5 Riverfront development concept*

Green belt of above concept is proposed in Danda River corridor. There shall be cycling track and pedestrian road along the corridor. Even, some parking space shall be allocated for the vehicles along the river corridor. A garden area of 10,000 sq.m is proposed wherever applicable depending on the site condition. Similarly, a combined cycle and pedestrian lane of width 2.5m and length 4 km is proposed throughout the corridor. The tourist vehicle coming to Siddharthanagar is parked in this river corridor-parking zone for promoting walking in the city area. This parking area can also solve the future-parking problem, which city will endeavor. This parking area is proposed.

A typical river corridor section will appear as follows:



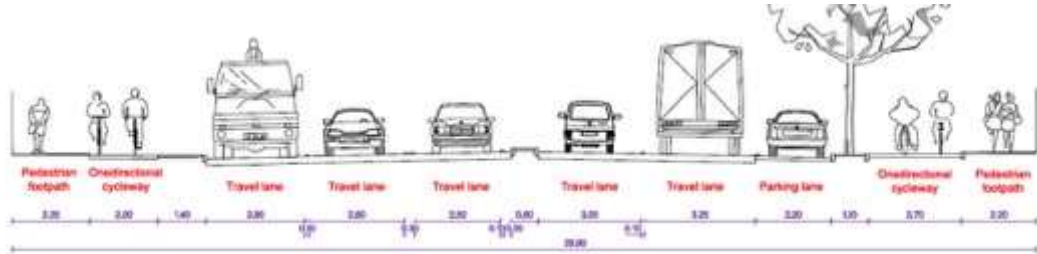
*Figure 5-6 Typical section of river corridor*



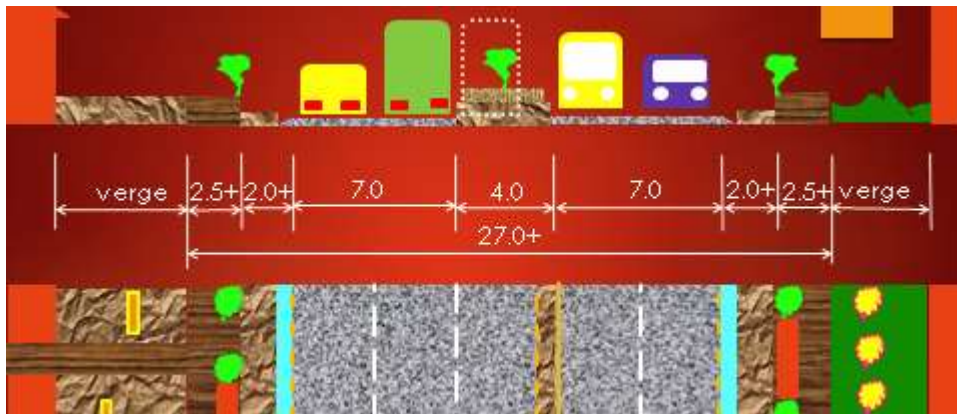
**Ringroad:**

- i. Ring road: 30 m

The proposed ring road of approximate 30 km have 4 lanes vehicle travel, with cycle lane, footpath and pedestrian track with greenery. The ringroad connect Rohini to Tinau. The urban road standards shall be followed for ringroad. It is proposed to make the ring road currently 2 lanes that can be expanded to either 4 lanes in future. All the services like electricity, sewerage, telephone, water shall be made underground in this new planned ring road.



*Figure 5-7 Typical Section of ringroad option1*

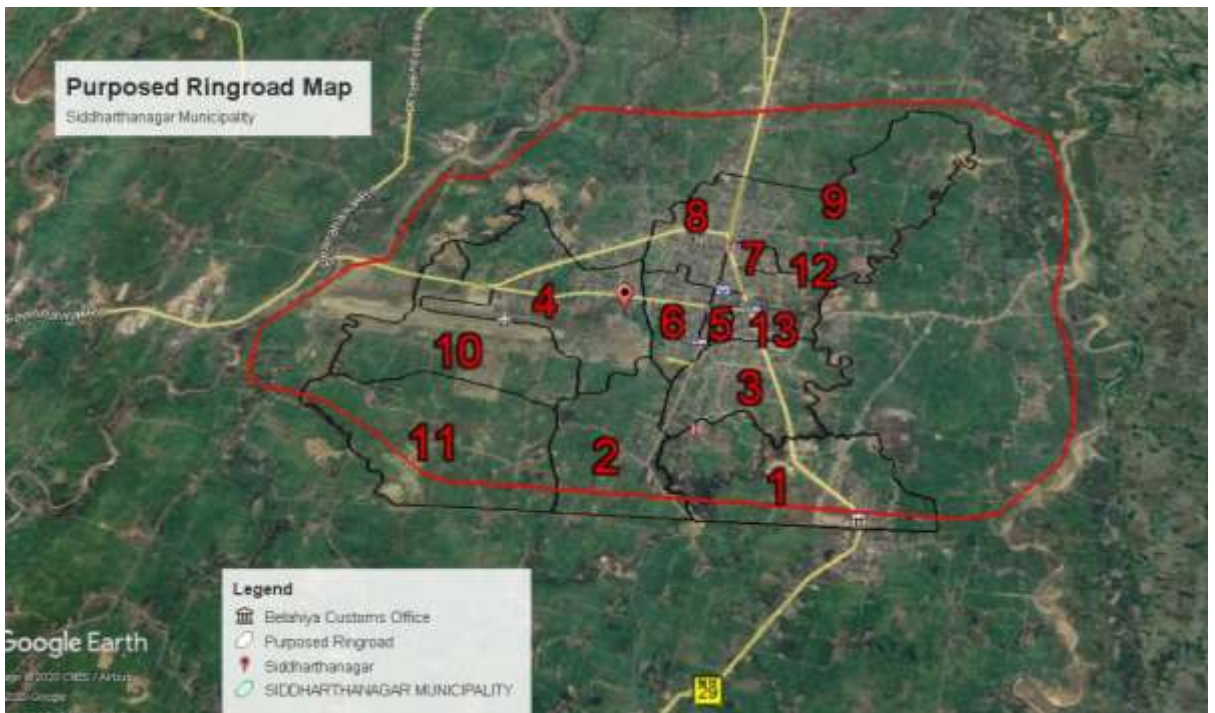


*Figure 5-8 Typical Section of ring road option 2*

**Bridges:**

Overhead Bridge and Flyover bridge are proposed in following location.

- i. Four Overhead Bridges (Putali bazar, Lumbini gate chowk, Buddha Chowk (north) and Behalia)
- ii. Flyover bridge at Buddha Chowk and Devkota Chowk



*Figure 5-9 Proposed Outer Ringroad of Siddharthanagar*

#### **5.1.2.4 Transportation**

**Buspark:** It is obvious from the analysis in above chapter that Siddharthanagar’s Bus Park is well functioning but is inadequate to serve the requisite of the city. There should be two separated busparks for smooth operation for intercity and intracity transportation. The existing bus park is mostly served as a intercity bus terminal and its capacity to be extended to cater the future needs. A separate intracity bus terminal should be constructed at suitable location with a appropriate facility of access, public toilets, ticket counter, waiting spaces, lights, and water supply and security.



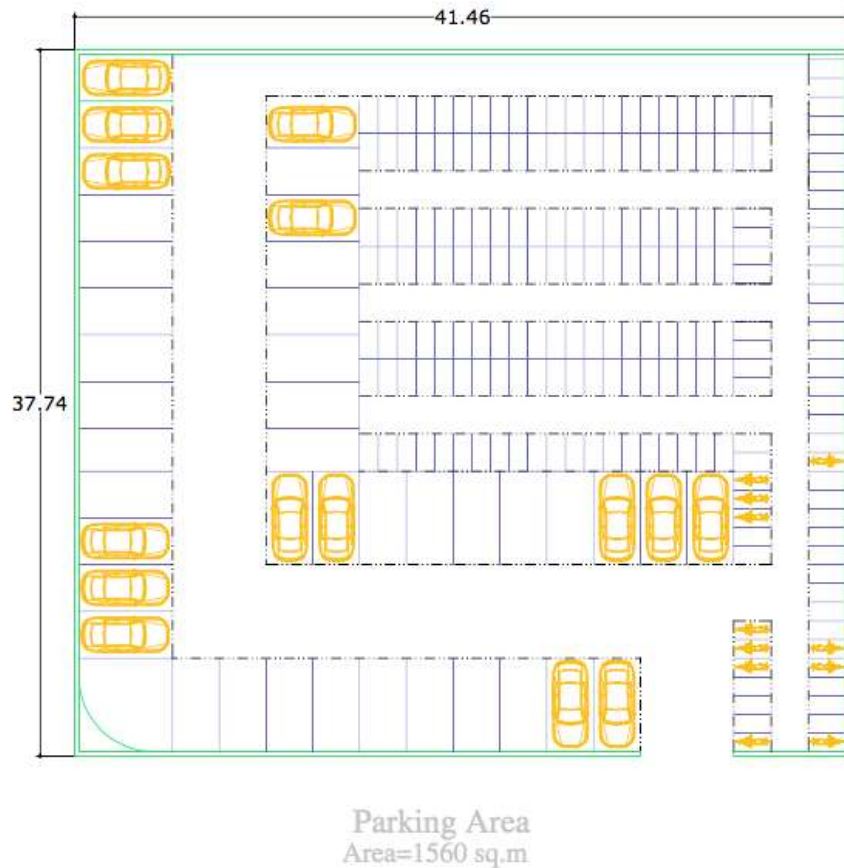
*Figure 5-10 Concept of proposed bus park*

#### **Parking Areas**

There is no dedicated parking area which created frequent traffic jam and disturb the smooth traffic movement within the city area. Therefore, there is deem necessary of dedicated parking areas. As there is no available land for proper parking, the current jail should be relocated to the another



area most probably in Patkhauri and build the modern parking area over there. If the shifting of jail is no feasible, the next option is SM has to acquire the land either by renting, leasing or buying as SM has no chunk of land.



*Figure 5-11 Typical Parking lots inside city center*

**Bus stops:**

From the infrastructure analysis, it is observed that there are 7 existing bus stops in Siddharthanagar. Total additional 20 bus stops with shaded structures are to be fabricated in new locations. The new bus stops are proposed at different places of Siddharthanagar. The bus stop will be constructed using light material. In primary road area, cycling lanes and bus stops can be arranges as shown in the figure below.



*Figure 5-12 ideas for public bus stops*

### **Transportation route:**

A local transportation route is proposed in Siddharthanagar along the major roads like highway, feeder road, ring road and Urban collector road Class 'B'. The bus stops are proposed in the same public vehicular routes.

#### **5.1.2.5 Water supply**

From the demand analysis, 12.84 million liter water is needed to cater 107,025 people based on urban planning standard. Currently there are 7 deep tubewells in Siddharthanagar and 6 deep tube wells are operating. The total supply of water from 6 deep tubewells is about 4.5 millions liter per day (MLD). This is not even enough for the projected population of 77,200 in 2020 AD. There are 3 pipeline projects under Nepal Water Supply Corporation. Out of which budget for only one scheme located at Shree Krishna Path, Ward No. 12 for a deep tube well and the overhead tank of the capacity of 450 m<sup>3</sup> is sanctioned. Though deep tubewell construction at Paklihawa ward no. 2 and Pipariha at ward no. 11 completed, it is not come under function in the absence of overhead tanks. The detailed project report (DPR) of these projects are completed and it is expected that these projects will be started in coming years.

After the completion of these projects the demand of water supply is more or less will be addressed. However, continued of pumping the ground water, it will have negative impact on the ground water table unless there is a ground water recharge programme. Therefore, a conducive policy and incentive should be in place for ground water recharge and water harvesting programme.

#### **5.1.2.6 Sewerage and Drainage Network**

From the analysis chapter, it is obvious; due to the presence of septic tank in each household there is no sewerage line for black water and only provision of storm water drainage along main road in city core. To cater the future demand, a new sewerage network of 200 km is suggested for the city. Furthermore a total of 135.5 Km drainage along the city road is suggested. Two treatment plants be constructed at suitable sites considering the topography. The sewerage network connection will be constructed phase wise depending on the priority of area.

There is water clogging problems in mostly city area. A proper drainage system of 135.5 Km is proposed with different discharge points to Danda River..

#### **5.1.2.7 Electricity and communication**

The electricity connection is to be increased from 93% to 100% in 2 year. shouldSolar panel usage is encouraged as far as possible through enforcement of byelaws in building construction and through subsidy projects. The network coverage of Telecom shall be increased with installation of new towers.

- Street Lamps shall be installed at 30m distances on straight line, 15m alternately on both sides of roads.
- Solar panels shall be used to operate these lights for promoting green energy concept.
- All the cables for electricity and telecommunication will of underground.
- Free Wi-Fi zones shall be made in 13 public places considering one in each ward.

- Tourist information system shall be set up in major areas like Airport, Devkota Chowk and and Beliya board.
- Websites of Siddharthanagar shall be updated regularly and promotion of services shall be done over Internet, TVs and radios.

**5.1.3 LFA for achieving physical development**

<b>Intervention Logic</b>	<b>Indicators</b>	<b>Means of Verification</b>	<b>Assumptions</b>
<p><b>❖ Goal:</b> Living standard of citizens will have enhanced with well equipped physical amenities (road, water supply, electricity, housing, communication) maintaining the ecological stability</p>			
<p><b>❖ Objective:</b> Improvement and development of physical infrastructure and increasing the grasp of general public for these facilities.</p>			
<p><b>❖ Result:</b></p> <ol style="list-style-type: none"> <li>1) Road connection of proper standard is increased.</li> <li>2) Mobility is convenient and faster serving entire population.</li> <li>3) Adequate drinking water is available to the citizens.</li> <li>4) Alternative energy usage have been increased.</li> <li>5) Land and housing is accessible for every income group.</li> <li>6) Electricity facility have been extended.</li> <li>7) Proper drainage amenities have been provided.</li> <li>8) Sewerage connection is extended through the city.</li> <li>9) Efficient and quick communication facility is available.</li> <li>10) Internet facility is available to common people.</li> </ol>	<p>By 2035,</p> <ul style="list-style-type: none"> <li>• Total road length will be 271 km.</li> <li>• Road network standard will be 7.5 km/ sq.km</li> <li>• 4 overhead bridges and 2 flyover will be constructed.</li> <li>• 1 existing bus park will be upgraded and 1 New bus park will be constructed for intracity transportation and 5 parking spaces are developed.</li> <li>• Electric vehicles usage is increased to 75%.</li> <li>• Public Vehicles number is increased.</li> <li>• 15 public toilets are constructed.</li> <li>• Each people will get 120 lpcd of drinking water</li> <li>• Solar Street Lamps are installed in every street and road.</li> <li>• Electricity coverage is increased from 92% to 100%</li> <li>• 100% houses are linked to sewerage network</li> <li>• 90% people have grasp on communication</li> </ul>	<ul style="list-style-type: none"> <li>• Documentation of Road and Transport Management Branch</li> <li>• Hydropower, Energy and Street Lighting Branch records</li> <li>• Water supply and Solid Waste Management Branch records</li> <li>• Field Visits</li> <li>• Records of Information, Communication and Statistics Management Division</li> <li>• Land Management and Building Regulation Division Records</li> </ul>	<ul style="list-style-type: none"> <li>• Budget is available</li> <li>• Arrangement of budget as planned</li> <li>• Work is efficiently performed</li> <li>• People participated in focused program</li> <li>• There is political stability</li> <li>• There is no bandhs and other casualties</li> <li>• Private sector aids in projects</li> </ul>

Activities:	Cost: In NPR	Time Frame
<b>Road</b>		
<ul style="list-style-type: none"> <li>i. Track opening of 45 km road</li> <li>ii. Black Topping of 121 km road</li> <li>iii. Regular Maintenance of road 271 km</li> <li>iv. Ward Level Road Project Upgrade 100.5 Km</li> <li>v. Widening of Road 75 Km</li> <li>vi. Feasibility study of New Track Opening Road 45 Km</li> <li>vii. DPR of New Track Opening Road 45 km</li> <li>viii. Ring road – Connecting Rohini to Tinau in coordination with neighboring RMs (Coordination, Feasibility Study, DPR and Construction) 30 km</li> <li>ix. Upgrade the Bank Road to Promote the tourism like as Basantapur Ktm.</li> <li>x. Construction of alternative bye pass road at east and west of the city area</li> <li>xi. Upgrade the Bhairahawa – Butwal as a commercial road with the lane improvement</li> </ul>	<ul style="list-style-type: none"> <li>i. 1,125 million</li> <li>ii. 726 million</li> <li>iii. 271 million</li> <li>iv. 2,266.26 million</li> <li>v. 187.5 million</li> <li>vi. 0.9 million</li> <li>vii. 3.375 million</li> <li>viii. 900 million</li> <li>ix. 13.75 million</li> <li>x. 75 million</li> <li>xi. 60 million</li> </ul>	<ul style="list-style-type: none"> <li>i. 15yrs.</li> <li>ii. 15yrs.</li> <li>iii. 15 yrs.</li> <li>iv. 15 yrs.</li> <li>v. 15 yrs.</li> <li>vi. 3 yrs.</li> <li>vii. 3 yrs.</li> <li>viii. 15 yrs.</li> <li>ix. 15 yrs.</li> <li>x. 15 yrs.</li> <li>xi. 15 yrs.</li> </ul>
<b>Strategic Projects</b>		
<ul style="list-style-type: none"> <li><b>a. Danda River corridor</b> <ul style="list-style-type: none"> <li>i. construction of vehicle and bicycle parking, entry plaza, ticket counter, fountain plaza with geodesic dome, amphitheater, children’s play area, elderly retreat area, cafeteria, restrooms and other services</li> <li>ii. BUDDHA PARK / MEDITATION AREA</li> <li>iii. Danda River Corridor construction of large playground with seating provision, children’s playing area, elderly retreat area, youth recreational area, cafeterias, restrooms etc</li> <li>iv. River embankment</li> <li>v. Pedestrian and cycle lane of 2.5m width construction</li> <li>vi. Garden development 1000 sq.m</li> </ul> </li> <li><b>b. Panchabatika Park</b>-Construction of Panchabatika Park</li> <li><b>c. Construction of Bhairahawa Gate and Park</b></li> <li><b>d. Community Agricultural Development Project</b> - Construction of complex, Hatbazar and Parking area in ward no -5 and 13</li> <li><b>e. Siddartha cricket stadium</b>- Construction of Siddartha cricket stadium</li> </ul>	<ul style="list-style-type: none"> <li><b>a. 5,241.5 million</b> <ul style="list-style-type: none"> <li>i. 1,200 million</li> <li>ii. 3,000 million</li> <li>iii. 1,000 million</li> <li>iv. 24 million</li> <li>v. 7.5 million</li> <li>vi. 10 million</li> </ul> </li> <li>b. 69.07 million</li> <li>c. 60 million</li> <li>d. 360 million</li> <li>e. 250 million</li> </ul>	<ul style="list-style-type: none"> <li><b>a. 15 yrs.</b> <ul style="list-style-type: none"> <li>i. 15 yrs.</li> <li>ii. 15 yrs.</li> <li>iii. 15 yrs.</li> <li>iv. 15 yrs.</li> <li>v. 15 yrs.</li> <li>vi. 15 yrs.</li> </ul> </li> <li>b. 15 Yrs.</li> <li>c. 2 Yrs.</li> <li>d. 5 Yrs.</li> <li>e. 15 Yrs.</li> </ul>
<b>Bridge</b>		
<ul style="list-style-type: none"> <li>i. Four Overhead Bridges (Putali bazar, Lumbini gate chowk, Buddha Chowk (nort) and Behalia)</li> <li>ii. Suvey, Design and Construction of Four Overhead Bridges</li> <li>iii. Feasibility Study, DPR and Construction of Flyover bridge at Buddha Chowk and Devkota Chowk</li> </ul>	<ul style="list-style-type: none"> <li>i. 18 million</li> <li>ii. 2 million</li> <li>iii. 300 million</li> </ul>	<ul style="list-style-type: none"> <li>i. 5 yrs.</li> <li>ii. 1 yrs.</li> <li>iii. 15 yrs.</li> </ul>
<b>Metro and Mono Rail</b>		
<ul style="list-style-type: none"> <li>i. Feasibility study, DPR and Constrction of Mono Rail on the proposed Ring Road</li> <li>ii. Study and Construction Metro rail operation in Lumbini Bhairahawa Butwal</li> </ul>	<ul style="list-style-type: none"> <li>i. 900 million</li> <li>ii. 1,200 million</li> </ul>	<ul style="list-style-type: none"> <li>i. 15 yrs.</li> <li>ii. 15 yrs.</li> </ul>
<b>Bus park</b>		
<ul style="list-style-type: none"> <li>i. 1 new bus parks construction for Inter City Bus Terminal</li> <li>ii. Extention and Upgrade of Existing Bus Park for Intra City Bus Terminal</li> <li>iii. 5 small Parking space development</li> </ul>	<ul style="list-style-type: none"> <li>i. 40 million</li> <li>ii. 20 million</li> </ul>	<ul style="list-style-type: none"> <li>i. 9 yrs.</li> <li>ii. 15 yrs.</li> </ul>

iv. 20 bus stops construction v. Feasibility Study and DPR of Inter City Bus Terminal vi. Relocated (shifted) the Jail to the area of Patakhauli and develop a modern parking area <b>Water Supply and Irrigation</b> i. Rain water harvesting subsidy on 5,000 HH ii. Feasibility study of Ground water resources iii. Construction of water supply projects iv. Water Supply and Irrigation Project of Ward Level v. Construction of overhead tank for water storage should be provisioned in each ward <b>Electricity and communication</b> i. Expansion of Electricity network -7% ii. Feasibility study for underground electric cables 200 km iii. Solar panel installations subsidy on 3,000 HH iv. Telecommunication and optical fibers for internet expansion and improvement v. Free Wi-Fi on 13 public places of Each Ward vi. Electricity, Solar and Communication of Ward Level <b>Sewerage and Drainage</b> i. 200 km sewerage line installation ii. 135.5 km drainage construction iii. Sewerage, Drainage and footpath construction of Ward Level iv. Construction of 2 treatment plant <b>Solid waste Management</b> i. Construction of 1 land fill site ii. Installation of 10,000 public dustbins on streets <b>Housing</b> i. Land pooling and site and services program commencement ii. Facilitation of Investment on affordable group housing and apartments iii. Housing Support for low and middle income groups iv. Maintaining and updating building records	iii. 30 million iv. 48 million v. 5 million vi. 300 million  i. 200 million ii. 900 million iii. 900 million iv. 99.8 million v. 260 million  i. 10 million ii. 400 million iii. 75 million iv. 70 million  v. 1.3 million vi. 46.05 million  i. 800 million ii. 271 million iii. 122.98 million  iv. 400 million  i. 200 million ii. 5 million  i. 200 million ii. 5 million  iii. 15 million iv. 5 million	iii. 3 yrs. iv. 6 yrs. v. 2 yrs. vi. 15 yrs.  i. 15 yrs. ii. 5 yrs. iii. 5 yrs. iv. 15 yrs. v. 15 yrs.  i. 3 yrs. ii. 15 yrs. iii. 15 yrs. iv. 15 yrs.  v. 1 yrs. vi. 15 yrs.  i. 15 yrs. ii. 15 yrs. iii. 15 yrs.  iv. 15 yrs.  i. 10 yrs. ii. 3 yrs.  i. 10 yrs.  ii. 5 yrs.  iii. 5 yrs. iv. 5 yrs.
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#### 5.1.4 Summary of Physical development plan implementation

Component	Base year 2020	Target 2035	Methodology	Approach	Stakeholder
<b>Road Network</b>	226.25 km	271 km	<ul style="list-style-type: none"> <li>Road Network Planning</li> <li>Construct Manually</li> </ul>	<ul style="list-style-type: none"> <li>PPP</li> <li>Regular Program</li> <li>Bidding</li> </ul>	<ul style="list-style-type: none"> <li>SM</li> <li>Users</li> <li>GoN</li> <li>Donor agency</li> </ul>
<b>Road Improvement</b>	105.25 Km black top	271 km black top	<ul style="list-style-type: none"> <li>Road standard setting</li> <li>Prioritization</li> <li>Implementation</li> </ul>	<ul style="list-style-type: none"> <li>PPP</li> <li>Bidding</li> </ul>	<ul style="list-style-type: none"> <li>SM</li> <li>Tole Bikas</li> <li>Users</li> <li>GoN</li> </ul>
<b>Road Widening</b>	0	75 km	<ul style="list-style-type: none"> <li>Planning</li> <li>Relocation or resettlement</li> <li>Design and Construction</li> </ul>	<ul style="list-style-type: none"> <li>Program</li> <li>PPP</li> <li>Bidding</li> </ul>	<ul style="list-style-type: none"> <li>GoN</li> <li>SM</li> <li>Users</li> </ul>
<b>River corridor</b>	0	4 km	<ul style="list-style-type: none"> <li>Road standard setting</li> <li>Design and construction</li> <li>Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Partnership</li> <li>Collaboration</li> <li>Program</li> <li>Bidding</li> </ul>	<ul style="list-style-type: none"> <li>GoN</li> <li>SM</li> <li>Citizens</li> <li>Private sector</li> <li>Donor agency</li> </ul>

<b>Over head Bridges and suspension bridges</b>	3	7	<ul style="list-style-type: none"> <li>• Location identification</li> <li>• Planning</li> <li>• Prioritization</li> <li>• Design and construction</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• PPP</li> <li>• Bidding</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SMC</li> <li>• GoN</li> <li>• Donor agency</li> <li>• Users</li> </ul>
<b>Bus Park</b>	1	2	<ul style="list-style-type: none"> <li>• Site identification</li> <li>• Feasibility study</li> <li>• Planning and design</li> <li>• Construction and Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• PPP</li> <li>• Collaboration</li> <li>• Partnership</li> <li>• Program</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Private sector</li> <li>• Citizens</li> <li>• GoN</li> </ul>
<b>Parking Spaces</b>	0	5	<ul style="list-style-type: none"> <li>• Location Identification</li> <li>• Design and planning</li> <li>• Construction</li> <li>• Monitoring</li> <li>• Operation</li> </ul>	<ul style="list-style-type: none"> <li>• Privatization</li> <li>• PPP</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Private sector</li> <li>• Community</li> <li>• GoN</li> <li>• Users</li> </ul>
<b>Bus Stops</b>	10	30	<ul style="list-style-type: none"> <li>• Standard setting</li> <li>• Planning and design</li> <li>• Construction and operation</li> </ul>	<ul style="list-style-type: none"> <li>• PPP</li> <li>• Partnership</li> <li>• Program</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Private sector</li> <li>• Citizens</li> <li>• GoN</li> </ul>
<b>Airport</b>	1	1	<ul style="list-style-type: none"> <li>• Site identification</li> <li>• Feasibility study</li> <li>• Planning and design</li> </ul>	<ul style="list-style-type: none"> <li>• PPP</li> <li>• Collaboration</li> <li>• Partnership</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Private sector</li> <li>• GoN</li> </ul>
<b>Drinking water Supply</b>	2.2 million Ltr/day	12.46 million Ltr/day	<ul style="list-style-type: none"> <li>• Source identification</li> <li>• Rain water harvesting</li> <li>• Design and construction</li> <li>• Supply Management</li> </ul>	<ul style="list-style-type: none"> <li>• PPP</li> <li>• Program</li> <li>• Bidding</li> <li>• Private</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Users</li> <li>• GoN</li> <li>• Donor agency</li> <li>• Private Sector</li> </ul>
<b>Municipal drains</b>	210 km	622 km	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Design and construction</li> </ul>	<ul style="list-style-type: none"> <li>• PPP</li> <li>• Regular Program</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Tole Bikas</li> <li>• GoN</li> <li>• Donor agency</li> </ul>
<b>Sewerage</b>	85 km	220 km	<ul style="list-style-type: none"> <li>• Standard setting</li> <li>• Planning and Prioritization</li> <li>• Design and construction</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• PPP</li> <li>• Collaboration</li> <li>• Mandatory</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• GoN</li> <li>• Donor agency</li> <li>• Users</li> </ul>
<b>Sewerage Treatment Plants</b>	0	2	<ul style="list-style-type: none"> <li>• Location identification</li> <li>• Standard setting</li> <li>• Planning and Design</li> <li>• Construction and monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Mandatory</li> <li>• Program</li> <li>• PPP</li> <li>• Partnership</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• GoN</li> <li>• Donor agency</li> <li>• Private sector</li> <li>• Citizens</li> </ul>
<b>Sanitary Landfill site</b>	0	1	<ul style="list-style-type: none"> <li>• Site identification<sup>SEP</sup> and acquisition</li> <li>• Assessment</li> <li>• Waste delivery</li> <li>• Leveling and pressing</li> <li>• Covering</li> </ul>	<ul style="list-style-type: none"> <li>• Mandatory</li> <li>• Program</li> <li>• Partnership<sup>SEP</sup></li> <li>• Private</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• GoN</li> <li>• Donor agency</li> <li>• Private sector</li> <li>• Citizens</li> <li>• NGOs</li> </ul>
<b>Electric public Vehicle</b>	50%	100%	<ul style="list-style-type: none"> <li>• Setting of standard</li> <li>• Implementation</li> <li>• Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Mandatory</li> <li>• PPP</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• GoN</li> <li>• NGOs</li> <li>• User</li> </ul>
<b>Housing and Apartments</b>	--	100%	<ul style="list-style-type: none"> <li>• Setting of standard</li> <li>• Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Mandatory</li> <li>• PPP</li> <li>• Privatization</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• GoN</li> <li>• Citizens</li> <li>• Private sector</li> </ul>
<b>Land development programs</b>		100%	<ul style="list-style-type: none"> <li>• Guided land development</li> <li>• Land pooling</li> <li>• Site and services</li> </ul>	<ul style="list-style-type: none"> <li>• Regular Program</li> <li>• Partnership</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• GoN</li> </ul>
<b>Electrification</b>	95% HH	100% HH	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Line distribution</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Regular Program</li> <li>• Collaboration</li> <li>• Coordination</li> </ul>	<ul style="list-style-type: none"> <li>• NEA</li> <li>• SM</li> <li>• GoN</li> <li>• Users</li> </ul>
<b>Solar Panel installation</b>	50%HH	100%	<ul style="list-style-type: none"> <li>• Planning and design</li> <li>• Solar PV installation</li> </ul>	<ul style="list-style-type: none"> <li>• Mandatory</li> <li>• PPP</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Users</li> </ul>



				<ul style="list-style-type: none"> <li>• Privatization</li> </ul>	<ul style="list-style-type: none"> <li>• NGOs</li> <li>• Private sector</li> </ul>
<b>Street public dust bins</b>		10000	<ul style="list-style-type: none"> <li>• Location identification</li> <li>• Design and quality</li> <li>• Planning</li> <li>• Implementation</li> </ul>	<ul style="list-style-type: none"> <li>• Mandatory</li> <li>• Partnership</li> <li>• PPP</li> <li>• Encouragement</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• GoN</li> <li>• NGOs</li> <li>• Users</li> </ul>
<b>Improve network coverage</b>	80%	100%	<ul style="list-style-type: none"> <li>• Feasibility study</li> <li>• Increase tower efficiency</li> <li>• Erect new towers</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• Private</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• NTC</li> <li>• Ncell</li> <li>• SM</li> </ul>
<b>Free Wi-Fi zones</b>	0	13	<ul style="list-style-type: none"> <li>• Formulation</li> <li>• Implementation</li> <li>• Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Partnership</li> <li>• Program</li> </ul>	<ul style="list-style-type: none"> <li>• Private sector</li> <li>• SM</li> <li>• NTC</li> <li>• Ncell</li> </ul>
<b>Underground cables</b>		100%	<ul style="list-style-type: none"> <li>• Feasibility study</li> <li>• Implementation</li> </ul>	<ul style="list-style-type: none"> <li>• Partnership</li> <li>• Private</li> </ul>	<ul style="list-style-type: none"> <li>• NTC</li> <li>• SM</li> </ul>

### 5.1.5 Conclusion

Physical planning will be on incremental growth basis. Planning of infrastructures will support vision and goal of the city thus making it livable. From the above elaborated plans and program, it is clear, physical infrastructure development will require huge investment. The total cost for the identified projects for physical development plan along with strategic projects is around **NPR 17,941.48 million**.

It is impossible for Siddharthanagar Municipality to acquire all planning in one go. Hence, prioritization of infrastructure is maintained and a short term (1-3 years), midterm (3-5/7 years) and long term (5-15years) plans is prepared. The possible stakeholders for each programs are also identified that will help in accumulating the required budget, which city will unable to achieve on its own. There are even some cross cutting issues like landfill sites, treatment plants, information centers, pedestrian tracks, cycling lanes, electric vehicles and alternative energy usage that are mentioned in infrastructure plan and will also be repeated in other sectoral programs as well. In summary, physical infrastructure planning is a basic but essential component of any city development work and shall be scrutinized in detail.

## 5.2 Social Development Plan

Social development means a commitment that development processes need to benefit people, particularly but not only the poor, but also provide a recognition to that people, and the way they interact in groups and society, and the norms that facilitates such interaction, shape development processes.

The strength of a social development plan lies in its ability to engage citizens, mobilize the community and to reinforce and build the work completed already. It is the plan providing opportunities to woman, backwards and disabled people in decision making process. Siddharthanagar is the new city developed by intermix of castes and ethnic people i.e. Bramhan, Musalman, Chhetri, Magar, Gurung and Madhesi etc. and it become essential to develop a social development plan including all the ethnic groups.

### 5.2.1 Goal, Objectives and Strategy

**Goal:** Upgrading the living environment through social inclusion and rehabilitation of social infrastructures and social services

### **Objectives:**

- To develop the social infrastructures in the city like schools, colleges, hospitals, library, city hall, police station, sport center, parks, and open spaces
- To increase the social equality and gender inclusion
- To increase the accessibility of people to information, health services and education
- To plan security of inhabitants in society
- To ensure women empowerment
- To ensure women and child welfare
- To include people with different ability in planning
- To uplift the condition and status of socially backward ethnic groups

### **Strategy :**

- Given the emphasis on the extension of technical and vocational education.
- Formulate necessary policies and allocate substantial budget for the quality improvement of the education in community school and also make school environment GESI friendly.
- Improve the service quality and access to the health facilities of the people.
- Extend the community health services through mobilizing Female Community Health Volunteers (FCHV) giving them ab incentives.
- Promote the Ayurvedic medical system by managing and utilizing locally available herbs.
- Focus on specialization and diversification on agriculture for availability of the food.
- Develop Siddharthanagar as an educational hub.
- Mobilize mother group, child club, youth club for various awareness programme including post ODF campaign.
- Bring the people from the marginalized sector into the main stream of development.
- Adopt policy for merging the governmental school to make well facilitated and equipped and ensure quality education.

#### **5.2.2 Plan and Programs**

##### **5.2.2.1 Education**

From the situation analysis, it is clear that the literacy of the Siddharthanagar is 69.78 % which is higher than national average 59.63%. The education sector is already strong in Siddharthanagar, and only some programs are needed for improving the literacy rate to 100% and making it first highly intellectual municipality. Based on planning norms and standard 2015, 19 primary schools shall be constructed. There is need of upgrading the status of existing higher secondary school rather than constructing new one. Municipality may provide an incentive for merger to some of the higher secondary schools would be an alternative option for upgrading the quality of education. To achieve the municipal long-term vision of making Siddharthanagar “Siddharthanagar enriched city with infrastructures for education services”, following specifics programs will aid in development of education sector:

- Universal College of Medical Science strengthen educational facilities.
- Paklihawa Campus facilities will be enhanced
- Institution of agriculture and health science strengthen educational facilities.
- The infrastructures have to be upgraded and innovative technologies have to be introduced.
- Qualified employees have to be appointed for upgrading the teaching standards.
- Encourage female students enrollment in schools and colleges

- Focus on improvement of marginalized groups education
- Develop the capacity of School Management Committees
- Preparation of guidelines and standards for Community and Private, Pre-Primary schools and its effective implementation.
- Regular evaluations of private schools will be done by Municipal Education Committee to ensure their effective performance.
- Physical and educational facilities of Community schools shall be developed in co-ordination with various educational organizations.
- Public libraries with modern technology need to be established for increasing the right to information.
- Arts and crafts programs to be established effectively.

#### **5.2.2.2 Public health**

From the analysis, it is derived there is no need of extra hospital or clinics but only the infrastructures shall be developed. For achieving the municipal long-term vision of making “Siddharthanagar enriched city with infrastructures for health services”, following programs shall be initiated:

- Bhim Hospital (District hospital) needs to be upgraded with appropriate infrastructure like road network, water supply, sanitation and modern examination techniques for developing as pioneer health service.
- Maternity baby health clinic shall be established to give services for various ethnic and backward groups
- Urban community health centers need to be formed in various wards.
- Tax exemption for more specialized health facilities and technical and higher education shall be introduced.
- Health areas should be accessible to all genders, ages and groups and create the social cohesion with vibrant social environment.
- Establishment of special units in Bhim hospital in collaboration with Siddharthanagar Municipality for mitigating the future possible calamities and epidemics.
- Workshops and program to be conducted on local wards for raising awareness about the primary health treatment
- Promotion of healthy diet and living among the citizens through ward level programs.
- Excellent health volunteer shall be awarded to encourage health volunteers and their demand needs to be addressed urgently.

Programs for reducing the HIV/AIDS and drug addiction:

- Formulation of Strategic planning for controlling HIV/AIDS and drug addiction in municipality tube done with coordination with concerned stakeholders
- Programs related with HIV/AIDS and Drug addiction shall be conducted in close coordination with Municipal AIDS Coordination Committee
- Recommendation fee will be discounted while recommending to concerned stakeholders from municipality for programs related to health treatment of drug addicted poor youth.
- For involving former drug addicts in labor works and developing their working capability, municipality shall establish necessary fund.

### **5.2.2.3 Security**

With the change in societal pattern, crimes are increasing and security of citizens is in risk. Unless the citizens are not mentally and physically safe, development of an urban area cannot be realistic. Social security of every individual is duty of municipality. Social mobilization groups shall be set in every ward with inclusion of marginalized group.

Proposed social security plans:

- Educate children through security programs in school about the harassment issues.
- Training programs relating to self-defense for male, female and even children.
- Make the social allowance easily and readily available to the concerned people like old age people, marginalized and handicapped.
- Identify the socially backward ethnic groups and work in their cultural preservation and upliftment in society.



*Figure 5-13 Solar Street Lamps (Source: KMC)*

Proposed physical security plans:

- Police station buildings with enough spaces for catering human resources, modern equipment, and accessories in each ward shall be constructed.
- A city level police headquarter is proposed.
- Police personnel or security guards have to be assigned by municipalities in the area suspected to be risky for example boarder area.
- Street lamps have to be installed in every street to decrease nighttime casualties.

### **5.2.2.4 Gender Equality and Social Inclusion**

Gender equality refers to exposure to opportunities irrespective of the gender. In a patriarchal society like Nepal, gender equality has become a talk of the town. Today 33% reservation policy in the government institutions has been done for safeguarding the rights of women. Gender equality is not only limited to female, but to the LGBT groups too. Social inclusion refers to removal of institutional barriers and the enhancement of incentives to increase access by diverse individuals and groups to development opportunities. This requires changes in policies, rules, and social practices and shifts in people's perspectives and behavior toward excluded groups. New programs to be formulated in IUDP needs to embrace GESI parameter.

- Formation of women empowerment groups and LGBT groups in ward levels.
- Sharing responsibility of ward level with these groups like cleaning streets, maintain roads, street lamps, parks etc. be done for income generation.

- The existing parks need addition of infrastructures like picnic shades, resting areas, toilets, walking lanes etc.
- A suitable management system, like ticket charge, activity charge etc. is required for making these parks self-sustainable
- Minimum charge can be allocated to the entrants for various entertainment purposes or it can be open to general public only during morning

#### **5.2.2.5 Parks and Open Spaces**

Parks of Siddharthanagar not only uplift the beauty of the city but also provide a natural environment for the citizens to relax and meet. These parks have higher potential for developing as picnic spots, playing areas and gathering area. Several activities for maintaining these open spaces and parks are proposed:

- Demarcation of portions of existing parks shall be done for creating children’s play area or picnic areas.
- Entrance fees for these parks can be levied during morning and evening hours and charged for remaining time of the day.
- Danda river corridor can develop as children parks, jogging area, waiting and meeting spaces.
- Facilities in Panchbatika be upgraded.
- Public spaces and open spaces within the city can be developed into park and green area.
- Identified 36 open spaces should be developed as a park and recreation centres.



*Figure 5-14 Concept of street furniture in public places*



*Figure 5-15 Concepts for intervention in existing open space and parks for creating social space*



#### **5.2.2.6 Public Service Centers**

After the reform of local bodies, the municipality needs many additional buildings for its service delivery. Ward offices as well as different section office within the municipality have to build. Based on availability of land and requirement, need identification can be done. The consultant shall prepare the design and estimate of a building. The consultant shall propose the retrofitting, conservation or restoration of old building and for reusing in such administrative purpose. Proposed activities for the development of other social centers are described beneath.

➤ **City hall**

- The existing City hall need upgrading and improvement of infrastructures for operation.

➤ **Oldage homes, orphanage home**

- An old age home is proposed near Swargadwarighat which is an ideal location for the elderly people.
- Near the old age home, an orphanage home is also proposed.

➤ **Exhibition centers:**

- 2 exhibition centers for public and private events, arts exhibition, trainings shall be planned.

➤ **Library/Information center:**

- The existing government library is to be upgraded as city level library with appropriate infrastructure.
- 10 community libraries shall be planned and developed with e-learning.

➤ **Museum**

- Diverse culture of Siddharthanagar is a valuable asset which needs to be conserved and promoted. This would not only give an opportunity to coming generation to understand their forefather efforts and struggle for their evolution but also play a attraction for the tourism promotion. Therefore a well equipped museum is proposed.

➤ **Sports**

- A multipurpose sports hall shall be constructed for multidisciplinary sport activities in the comlex of Bhairahawa Lumbini Ground Water Project.
- A sport academy is also proposed..
- The existing Siddharth Cricket stadium (Rangsala) should be developed with full facilities so as to cater the emerging needs in the field of sports.
- Developing small areas for sport activities within parks or outside, near group of wards.
- Construction of multi-purpose hall or a sports hall for indoor games that can be used for futsal, badminton, tennis, and 5 a side football, basketball, indoors hockey etc.
- Inclusion of sports as main subject in educational institutes.
- Creating the suitable environment for local club and organizations to participate in sport activities.
- Encouraging local sport club and organizations for registration in municipality and coordinating the sport activities by formation of municipality sport committee.

➤ **Public Toilets:**



From the municipality profile, it can be derived that there are nominal public toilet facilities with scarce infrastructure and pitiable hygiene. Since Nepal has been already declared as a Open Free Defecation (ODF) country, now focus has to be given on the sustainable hygiene practices. Therefore, at least 15 public toilets are proposed in important public places where large number of people gathering is expected such as market centre, important religious centres (temple, monastery and masjid). Minimal charges have to be allocated for using these facilities for maintaining the cleanliness. The public toilet shall be users friendly considering the need of women, children, old age people and people of with different capacity.



*Figure 5-16 Ideas for public toilet*

### 5.2.3 LFA for achieving social development

Intervention Logic	Indicators	Means of Verification	Assumptions
<p>❖ <b>Goal:</b> Achieving a quality life of the citizens through inclusive social environment</p>			
<p><b>Education Sector</b></p>			
<p>❖ <b>Objective:</b></p> <ul style="list-style-type: none"> <li>Development of education services for including every caste, gender, age groups and ethnicity.</li> </ul>			
<p>❖ <b>Result:</b></p> <ol style="list-style-type: none"> <li>Literacy rate will be increased.</li> <li>Physical amenities of education services will be fully developed.</li> <li>School going rate of female students will rise.</li> <li>Higher number of children from socially backward and ethnic groups will be going to school.</li> <li>More people will be graduated.</li> <li>Increase in number of literate elderly people.</li> <li>New techniques will be adopted in educational system.</li> <li>Extra curricular activities will augment in schools.</li> </ol>	<p>By 2035,</p> <ul style="list-style-type: none"> <li>Literacy rate will rise from 69.78% to 100%</li> <li>Literacy rate of female will increase from 60.79% to 100%.</li> <li>Male literacy rate will rise from 79.22% to 100%</li> <li>Percentage of students passing the exams will increase.</li> <li>19 primary schools will be constructed and the existing higher secondary school will be upgraded.</li> <li>Paklihawa Campus facilities will be enhanced</li> <li>Admission rate in ECD will be 100%</li> <li>Increase in number of scholarship holders in backward and lower caste ethnic groups</li> <li>Number of schools using e-learning techniques will increase.</li> <li>Sports and Arts will be included as major subject in all schools.</li> </ul>	<ul style="list-style-type: none"> <li>Records of Basic and Secondary Education Office</li> <li>Sports and Extra Curriculum Unit Documentation</li> <li>Gender Equality and Social Security Branch records</li> <li>Records of Culture, Heritage, Fine Arts and Tourism Promotion Unit</li> </ul>	<ul style="list-style-type: none"> <li>Budget is available though education ministry</li> <li>Private Sectors get affiliation from T.U or other concerned educational institutes</li> <li>There is political stability in country.</li> <li>Arrangement of budget is as planned.</li> <li>Focused groups are interested in programs.</li> </ul>

<b>Activities:</b> <ol style="list-style-type: none"> <li>i. Construction of 19 primary schools buildings</li> <li>ii. Education Program recommended by Ward Level</li> <li>iii. Facilitation of elderly classes</li> <li>iv. Promoting modern teaching system in schools</li> <li>v. Distributing e-learning materials in government schools</li> <li>vi. Scholarship provision for backward groups</li> <li>vii. ECD programs in government schools</li> <li>viii. Improvement of amenities of government educational facilities</li> <li>ix. Promotional events for increasing literacy</li> <li>x. Municipality should develop the school curriculum for moral education</li> <li>xi. Develop Paklihawa Campus as a provincial campus</li> </ol>		<b>Cost: In NPR</b> <ol style="list-style-type: none"> <li>i. 95 million</li> <li>ii. 68 million</li> <li>iii. 4 million</li> <li>iv. 6.1 million</li> <li>v. 28 million</li> <li>vi. 3.6 million</li> <li>vii. 5.2 million</li> <li>viii. 26 million</li> <li>ix. 3 million</li> <li>x. 5 million</li> <li>xi. 20 million</li> </ol>	<b>Time Frame</b> <ol style="list-style-type: none"> <li>i. 5 yrs.</li> <li>ii. 15 yrs.</li> <li>iii. Yearly</li> <li>iv. 3 yrs.</li> <li>v. 5 yrs.</li> <li>vi. Yearly</li> <li>vii. 3 yrs.</li> <li>viii. 5 yrs.</li> <li>ix. 2 yrs.</li> <li>x. Yearly</li> <li>xi. 15 yrs.</li> </ol>
<b>Health Sector</b>			
<b>❖ Objective:</b> <ul style="list-style-type: none"> <li>• Improvement of public health status with provision of fast and convenient health facility to all user groups of society</li> </ul>			
<b>❖ Result:</b> <ol style="list-style-type: none"> <li>1) Maternal and Infant mortality rate will reduce.</li> <li>2) Mortality under 5 years will reduce</li> <li>3) Decrease in number of unhealthy people.</li> <li>4) Health services for infant and child are more effective and increased.</li> </ol>	By 2035, <ul style="list-style-type: none"> <li>• Maternity mortality rate will be decreased.</li> <li>• Child and infant mortality rate is decreased by 75 %.</li> <li>• Child Vaccination rate will augment to 100%.</li> <li>• Malnutrition rate is decreased in children below 5 yrs.</li> <li>• Institutional delivery rates will increase to 100%.</li> <li>• People using family planning mediums rises.</li> <li>• Number of people getting admitted to hospital for regular diseases decreases.</li> </ul>	<ul style="list-style-type: none"> <li>• Records of Basic Health and Cleanliness Office</li> <li>• Personal Event registration unit documentations</li> <li>• Market monitoring, food safety and consumer protection brands records</li> <li>• Inventories of NGOs</li> <li>• Documentation of District Health Office</li> </ul>	<ul style="list-style-type: none"> <li>• Budget is available though Health ministry</li> <li>• Health staff is appointed in adequate nos.</li> <li>• There is political stability in country.</li> <li>• There is no transmittable disease or epidemics</li> </ul>
<b>Activities:</b> <ol style="list-style-type: none"> <li>i. Organizing child vaccination programs</li> <li>ii. Promotion to nutrition programs</li> <li>iii. Encouragement of safe and secure maternity delivery</li> <li>iv. Initiating free checkup facilities for people with different ability and elderly</li> <li>v. HIV/Aids rehabilitation program</li> <li>vi. Empowerment programs for HIV/drug addiction community</li> <li>vii. Improvement of amenities of Bhim Hospital</li> <li>viii. Establishment of health groups in each ward</li> <li>ix. Operate City Health Cleaning in each wards</li> <li>x. Develop Bhim hospital as a modern and highly equipped Maternity Hospital</li> <li>xi. Promotion of Smoke Less stove and Bio Gas</li> <li>xii. Provision of Outdoor fitness equipment in parks</li> <li>xiii. Establishment of rehabilitation center for drug addicts and mental health</li> <li>xiv. Promotional allowance for female community health volunteer</li> </ol>		<b>Cost: In NPR</b> <ol style="list-style-type: none"> <li>i. 2.5 million</li> <li>ii. 26 million</li> <li>iii. 13 million</li> <li>iv. 10 million</li> <li>v. 13 million</li> <li>vi. 3.25 million</li> <li>vii. 5 million</li> <li>viii. 3.25 million</li> <li>ix. 6.5 million</li> <li>x. 3 million</li> <li>xi. 13 million</li> <li>xii. 65 million</li> <li>xiii. 13 million</li> <li>xiv. 6.5 million</li> </ol>	<b>Time Frame</b> <ol style="list-style-type: none"> <li>i. Yearly</li> <li>ii. Yearly</li> <li>iii. Yearly</li> <li>iv. Yearly</li> <li>v. Yearly</li> <li>vi. Yearly</li> <li>vii. 2 yrs.</li> <li>viii. 2 yrs.</li> <li>ix. 15 yrs.</li> <li>x. 2 yrs.</li> <li>xi. 5 yrs.</li> <li>xii. 5 yrs.</li> <li>xiii. 5 yrs.</li> <li>xiv. 5 yrs.</li> </ol>
<b>Women and Child Welfare Sector</b>			
<b>❖ Objective:</b>			

<ul style="list-style-type: none"> <li>Encouragement of women and children welfare through security in educational, social, economical and political inclusion</li> </ul>			
<p><b>❖ Result:</b></p> <ol style="list-style-type: none"> <li>Women participation in politics, education, health and economic sector is increased.</li> <li>Child labor will be eliminated.</li> <li>Homeless children will be decreased.</li> </ol>	<p>By 2035,</p> <ul style="list-style-type: none"> <li>Child labour works become zero.</li> <li>Number of women enrollment in college and school is increased</li> <li>Orphanage is established.</li> <li>Divorce rate and violence against women cases is minimized.</li> </ul>	<ul style="list-style-type: none"> <li>Records of Gender Equality and Social Security Branch</li> <li>Social Security program Subhead records</li> <li>Inventories of NGOs</li> </ul>	
<p><b>Activities</b></p> <ol style="list-style-type: none"> <li>Promotion of demoralizing usage of child in household works</li> <li>Women empowerment workshops and training</li> <li>Training on physical securities</li> <li>Management of women groups in each ward</li> <li>Management of child groups</li> <li>Rehabilitation of homeless children</li> <li>Establishment of orphanage centers</li> <li>Women &amp; Child Welfare from Ward Level</li> <li>Safe shelter for Violence victims</li> <li>campaign against child marriage, polygamy, domestic violence and child labour</li> <li>Preparation gender responsive budget for municipality</li> <li>Facilate for Formation of Child club and Youth Club</li> </ol>		<p><b>Cost: In NPR</b></p> <ol style="list-style-type: none"> <li>5 million</li> <li>7.8 million</li> <li>6.5 million</li> <li>9.75 million</li> <li>7.8 million</li> <li>30 million</li> <li>18 million</li> <li>53 million</li> <li>15 million</li> <li>6.5 million</li> <li>3.25 million</li> <li>6.5 million</li> </ol>	<p><b>Time Frame</b></p> <ol style="list-style-type: none"> <li>5 yrs.</li> <li>3 yrs.</li> <li>3 yr.</li> <li>Yearly</li> <li>Yearly</li> <li>Yearly</li> <li>3 yrs.</li> <li>15 yrs.</li> <li>3 yrs.</li> <li>3 yrs.</li> <li>3 yrs.</li> <li>3 yrs.</li> <li>3 yrs.</li> </ol>
<p><b>Security and social mobilization</b></p>			
<p><b>❖ Objective:</b></p> <ul style="list-style-type: none"> <li>Establishing social and physical security for the inhabitants</li> </ul>			
<p><b>❖ Result:</b></p> <ol style="list-style-type: none"> <li>Allowances are provided to needy and deserving.</li> <li>People feel secure while travelling at night.</li> <li>Citizens are socially active and well informed.</li> </ol>	<p>By 2035,</p> <ul style="list-style-type: none"> <li>Rate of crime is decreased.</li> <li>Cases of violence against women and child are minimized.</li> <li>Old age homes are established.</li> </ul>	<ul style="list-style-type: none"> <li>Records of Gender Equality and Social Security Branch</li> <li>Social Security program Subhead records</li> <li>Inventories of NGOs</li> </ul>	
<p><b>Activities</b></p> <ol style="list-style-type: none"> <li>Events on social welfare</li> <li>Social mobilization coordination</li> <li>Establishment of social groups in each wards</li> <li>Research on traditional culture and ethnic groups</li> <li>Programs on marginalized groups</li> <li>Establishment of old age home</li> <li>Program for Post ODF</li> </ol>		<p><b>Cost: In NPR</b></p> <ol style="list-style-type: none"> <li>19.5 million</li> <li>13 million</li> <li>3.9 million</li> <li>6 million</li> <li>19.5 million</li> <li>90 million</li> <li>6.5 million</li> </ol>	<p><b>Time Frame</b></p> <ol style="list-style-type: none"> <li>Yearly</li> <li>Yearly</li> <li>3 yrs.</li> <li>3 yrs.</li> <li>3 yrs.</li> <li>15 yrs.</li> <li>3 yrs.</li> </ol>
<p><b>Social Infrastructures</b></p>			
<p><b>❖ Objective:</b></p> <ul style="list-style-type: none"> <li>Construction and Planning of police stations, library, city hall, museum, and exhibition centers, parks and sports center for benefitting the social interaction of citizens.</li> </ul>			
<p><b>❖ Result:</b></p> <ol style="list-style-type: none"> <li>City level library is established.</li> <li>Community Library is operated in each neighborhood.</li> </ol>	<p>By 2035,</p> <ul style="list-style-type: none"> <li>10 community libraries are established.</li> <li>2 exhibition halls are constructed.</li> <li>13 new parks will be developed</li> </ul>	<ul style="list-style-type: none"> <li>Records of Sports and Extra Curriculum Unit</li> <li>Records of Gender Equality and Social Security Branch</li> </ul>	<ul style="list-style-type: none"> <li>Budget is available.</li> <li>There is political stability in country.</li> </ul>

<p>3) Siddharth Cricket Stadium is developed as a regional Stadium.                  4) Sports Academy is established.                  5) National City hall is developed.                  6) Exhibitions centers are constructed.                  7) Museum is well developed.                  8) Each ward will have 1 local park.                  9) Each ward will have one police stations buildings                  10) A city police headquarter is constructed.</p>	<ul style="list-style-type: none"> <li>• 13 new police station buildings are constructed.</li> <li>• 1 city police headquarter is built.</li> <li>• Existing city hall is improved and well executed.</li> <li>• Museum is smoothly operating.</li> </ul>	<ul style="list-style-type: none"> <li>• Documentation of Culture, Heritage, Fine Arts and Tourism Promotion Unit</li> <li>• Social Security Program Subhead records</li> <li>• City Police administrative Branch Details</li> </ul>	<ul style="list-style-type: none"> <li>• Arrangement of budget is as planned.</li> <li>• Focused groups are interested in programs.</li> <li>• Construction work is operated smoothly.</li> </ul>
<p><b>Activities:Sports</b></p> <ul style="list-style-type: none"> <li>i. Construction of Multipurpose hall / sports hall at Bhailabhuj</li> <li>ii. Improvement of Siddharth Cricket stadium (Rangsala) amenities</li> <li>iii. Establishment of Sports Academy</li> <li>iv. Sports scholarship for socially backward groups</li> </ul> <p><b>Others</b></p> <ul style="list-style-type: none"> <li>i. Formation of 10 community libraries</li> <li>ii. Upgrading facilities city library</li> <li>iii. Construction of 2 exhibition halls</li> <li>iv. 13 new police post building construction</li> <li>v. Improvement of 3 police stations</li> <li>vi. Construction of 13 new parks</li> <li>vii. Upgrading of existing parks</li> <li>viii. Construction of museum</li> <li>ix. Improvement of amenities of existing city hall</li> <li>x. Management of City hall</li> <li>xi. Electric incineration chamber installment</li> <li>xii. 8 public toilet construction</li> <li>xiii. Solar street lamps installation</li> <li>xiv. Relocated the army barrack from the city core area to Airport area and develop a modern park</li> </ul>		<p><b>Cost: In NPR</b></p> <ul style="list-style-type: none"> <li>i. 52.5 million</li> <li>ii. 150 million</li> <li>iii. 100 million</li> <li>iv. 36 million</li> <li>i. 30 million</li> <li>ii. 7 million</li> <li>iii. 75 million</li> <li>iv. 65 million</li> <li>v. 6 million</li> <li>vi. 65 million</li> <li>vii. 26 million</li> <li>viii. 4 million</li> <li>ix. 10 million</li> <li>x. 15 million</li> <li>xi. 10 million</li> <li>xii. 45 million</li> <li>xiii. 45 million</li> <li>xiv. 120 million</li> </ul>	<p><b>Time Frame</b></p> <ul style="list-style-type: none"> <li>i. 15 yrs.</li> <li>ii. 15 yrs.</li> <li>iii. 15 yrs.</li> <li>iv. yearly.</li> <li>i. 5 yrs.</li> <li>ii. 2 yrs.</li> <li>iii. 5 yrs.</li> <li>iv. 10 yrs.</li> <li>v. 3 yrs.</li> <li>vi. 10 yrs.</li> <li>vii. 3 yrs.</li> <li>viii. 2 yrs.</li> <li>ix. 2yrs.</li> <li>x. Yearly</li> <li>xi. 3 yrs.</li> <li>xii. 5 yrs.</li> <li>xiii. 15 yrs.</li> <li>xiv. 15 yrs.</li> </ul>

**5.2.4 Summary of Social Development Plan Implementation**

Component	Base year 2020	Target 2035	Methodology	Approach	Stakeholder
Schools	34	49	<ul style="list-style-type: none"> <li>• Site Identifications</li> <li>• Design and planning</li> <li>• Bidding</li> <li>• Construction</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• PPP</li> <li>• Private investments</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• GoN</li> <li>• Development Partner</li> <li>• Private sector</li> </ul>
Colleges	10	10	<ul style="list-style-type: none"> <li>• Site Identifications</li> <li>• Design and planning</li> <li>• Bidding</li> <li>• Construction</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• PPP</li> <li>• Private investments</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• GoN</li> <li>• Development Partner</li> <li>• Private sector</li> </ul>
ECD programs		100%	<ul style="list-style-type: none"> <li>• Need identification</li> <li>• Planning</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• Promotion</li> <li>• Encouragement</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Citizens</li> <li>• NGOs</li> </ul>

			<ul style="list-style-type: none"> <li>• Implementation and monitoring</li> </ul>		
<b>Elderly classes</b>		90%	<ul style="list-style-type: none"> <li>• Need identification</li> <li>• Encouragement</li> <li>• Planning</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• Awareness</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• NGOs</li> <li>• Citizens</li> <li>• Youth groups</li> </ul>
<b>Vaccination program</b>		100%	<ul style="list-style-type: none"> <li>• Research</li> <li>• Gathering of resources</li> <li>• Planning</li> <li>• Implementation</li> </ul>	<ul style="list-style-type: none"> <li>• Partnership</li> <li>• Regular Program</li> <li>• Coordination</li> <li>• Promotional events</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• NGOs</li> <li>• Development Partner</li> </ul>
<b>Safe maternity programs</b>		90%	<ul style="list-style-type: none"> <li>• Trainings for midwives</li> <li>• Basic educations for delivery</li> <li>• Standard setting for clinics</li> </ul>	<ul style="list-style-type: none"> <li>• Trainings</li> <li>• Coordination</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• NGOs</li> <li>• GoN</li> <li>• Private sector</li> </ul>
<b>Free Health checkup</b>		75%	<ul style="list-style-type: none"> <li>• Medical camps formation</li> <li>• Collection of basic medicines</li> <li>• Information flow</li> </ul>	<ul style="list-style-type: none"> <li>• Regular Program</li> <li>• Collaboration</li> <li>• Coordination</li> <li>• Promotional events</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Private Sector</li> <li>• NGOs</li> </ul>
<b>Women and Child welfare</b>		100%	<ul style="list-style-type: none"> <li>• Workshops and Trainings</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Citizens</li> </ul>
<b>Library</b>	1	11	<ul style="list-style-type: none"> <li>• Need identification</li> <li>• Feasibility study</li> <li>• Planning and design</li> <li>• Bidding</li> <li>• Construction and operation</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• Community Participation</li> <li>• Coordination</li> <li>• Private</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Citizens</li> <li>• Development Partner</li> <li>• Youth groups</li> <li>• NGOs</li> </ul>
<b>Exhibition center</b>	0	2	<ul style="list-style-type: none"> <li>• Site identification</li> <li>• Bidding</li> <li>• Design and construction</li> </ul>	<ul style="list-style-type: none"> <li>• Private funding</li> <li>• Coordination</li> <li>• Collaboration</li> <li>• Participation</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• GoN</li> <li>• Private sector</li> <li>• NGOs</li> </ul>
<b>Security (police posts)</b>	10	14	<ul style="list-style-type: none"> <li>• Design</li> <li>• Construction</li> </ul>	<ul style="list-style-type: none"> <li>• Regular Program</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• GoN</li> </ul>
<b>Sport area</b>	1	2	<ul style="list-style-type: none"> <li>• Need identification</li> <li>• Infrastructure improvements</li> <li>• Design and construction</li> </ul>	<ul style="list-style-type: none"> <li>• Privatization</li> <li>• Partnership</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• GoN</li> <li>• Development Partner</li> <li>• NGOs, Users</li> </ul>
<b>Parks/Gardens</b>	11	13	<ul style="list-style-type: none"> <li>• Improvement of existing</li> <li>• Construction of new ones</li> <li>• Design and planning</li> <li>• Operation and maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• PPP</li> <li>• Privatization</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Citizens</li> <li>• NGOs</li> <li>• Private sector</li> </ul>
<b>Museum</b>	0	1	<ul style="list-style-type: none"> <li>• Completion of existing structure</li> <li>• Addition of new facilities</li> <li>• Operation and maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• Partnership</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Private sector</li> </ul>
<b>City hall</b>	1	2	<ul style="list-style-type: none"> <li>• Maintenance of existing hall</li> <li>• Improvement of facilities</li> <li>• Management and operation</li> </ul>	<ul style="list-style-type: none"> <li>• Collaboration</li> <li>• Coordination</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Private sector</li> <li>• Users</li> </ul>
<b>Public Toilets</b>	6	15	<ul style="list-style-type: none"> <li>• Design and construction</li> <li>• Monitoring</li> <li>• Operation</li> </ul>	<ul style="list-style-type: none"> <li>• PPP</li> <li>• Partnership</li> <li>• Program</li> </ul>	<ul style="list-style-type: none"> <li>• SM, GoN</li> <li>• Private sector</li> <li>• Citizens</li> </ul>
<b>Electric Incineration</b>	0	2	<ul style="list-style-type: none"> <li>• Research study</li> <li>• Planning</li> <li>• Operation</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• GoN</li> <li>• NGOs</li> </ul>

### 5.2.5 Conclusion

From the LFA, it is derived around NPR **1,635.90 million** budget is required for the social development plan of Siddharthanagar for 15 years. Major investments are required for the

construction of social infrastructure facilities like school buildings, library, sports hall, exhibition halls etc.

The standard of Hospital, Clinics, School, Colleges portrays the social status of the city. Investment is required in parks and open spaces to upgrade the urban milieu and revive the fading social bonding and living style. Furthermore, investments are required in social mobilization and security strengthening of Siddharthanagar. For an inclusive social environment, focus shall be in improvement and development of social infrastructures, women empowerment, child rights and socially backward communities and ethnic groups.

### **5.3 Environmental Management Plan**

Environmental Management is an effort to control human impact on the surrounding in order to preserve the natural resources. It focuses on improvement of human welfare in present and future generations. A clean and healthy city not only upgrades the living standard of its citizens but also reflects the beauty of the city. Therefore, protection of environment is obligatory for any city, to promote and improve all aspects of the city.

For environmental management plan, the TOR has focused on the sectors of solid waste and management of waste products, air pollution, noise and vibration, conservation of greeneries etc. This plan also caters the solid waste management plan, environmental disaster planning, identification and management of landfill site and city level pollution management plans etc.

#### **5.3.1 Goal, Objectives and Strategy**

**Goal:** Maintaining the ecological balance of Siddharthanagar by promoting green city concept, improving the urban atmosphere, conserving sensitive areas and preserving bio diversity.

#### **Objectives:**

- To prepare a proper solid waste management system by promoting waste to energy concept
- To formulate plans for implementing waste to energy concept
- To identify and conserve the environmentally sensitive areas
- To create a balance between natural and built environment
- To promote the green design principles in planning and advocate the sustainable city concept
- To reduce the waste generation by promoting waste recycling
- To prepare environmental policy
- To improve urban open spaces and greenery
- To reduce environmental pollution
- To improve the ground water recharging by promoting rain water harvesting
- To prepare climate change adaptation and mitigation strategies and plan

#### **Strategy :**

- Integrating the concept of climate change, disaster risk management and environment in the development of physical infrastructure for sustainable development.
- Link the available forest area to the livelihoods of the people.
- Use 3 R concepts for the solid waste management.
- Focus on the city greenery by managing parks and adopting one house two plants policy.
- Focus given to protection of public land and develop greenery area.



### **5.3.2 Plan and Programs**

#### **5.3.2.1 Solid waste management**

As explained in the Prevailing situation analysis chapter, solid waste management has not been properly done. “Waste to energy” program is also in the priority list of Siddharthanagar but a proper strategy and implementation plan haven’t been formulated yet. A proposed series of activity for the solid waste management are described below.

##### **Landfill site:**

- A landfill site is not identified due to lack of appropriate site within Siddharthanagar. Therefore, it is advised to undertake this activity in close coordination with the neighboring palikas as they are also need of landfill site in future. This will solve the solid waste management problem of the city.

##### **Waste Reduction, Recycling and Reuse:**

- A waste separation system at home should be strengthened by municipality for separating glass, paper, electronics, organic waste and non organic waste.
- The private institutions should be encouraged to participate on “waste to energy” program in PPP module.
- Waste production will be reduced by 40% (from 0.18 kg/person/day to 0.10 kg/person /day) by investing in organic waste production and waste recycling to achieve the green city standards that suggests 50% of the waste produced per person is recycled.
- Training programs can be initiated to use the organic waste in kitchen gardens and roof gardens.
- City can even develop a strategy to charge the people only for the inorganic, non degradable waste based on the garbage weight.
- The recyclable and reusable material can be collected for free in exchange of the non degradable waste or can be purchased from dwellers alternatively.
- A plastic free city initiative measures can be taken by the city in coordination with schools, private organizations and business owners.
- Charging policy with the deposit that can be refunded for every plastic bottles (soft drinks, water, juice) has to be initiated for reduction of plastic bottle waste.

#### **5.3.2.2 Waste water management**

The existing condition of wastewater management is already explained in the drainage and sewerage chapter in physical development planning.

##### **Sewerage treatment plants:**

- Sewerage network of 200 km is planned which is to be constructed in a phasewise and drainage construction of 135.5 Km along the city roads is planned.
- Two-treatment plants are proposed at appropriate considering the topography.
- The bio-gas and manure production from wastes is encouraged and proposed in the plan.

##### **Storm water management:**

- Strategy in planning and building byelaws is made, so that the rainwater can be used for the ground water recharge instead of mixing it with sewer and discharging it to river.
- A collection tanks can be made in various locations of the city for this side drainages, which can be used for watering vegetation around the city.

### **5.3.2.3 Environmental deterioration**

The activities for controlling the environmental pollution are:

#### **Taxation and awareness:**

- Restricting vehicular emissions by regular checking and banning very old vehicles producing smokes.
- Increasing awareness about reducing the usage of firewood for household purpose.
- Charging the people for dumping the waste haphazardly.
- Taxation for people who set free their pets like dogs, cow, goat, chicken on road.

#### **Visual pollution:**

- Visual pollution needs to be corrected by enforcing building bye-laws, restricting the hoarding boards usage in commercial areas only.
- Control mechanism has to be set for managing built environment that can be achieved only through planning and building byelaws. An incentive and penalty mechanism have to be clearly stated in the byelaws of Siddharthanagar, for controlling these built structures.

#### **Slaughter house:**

- Modern slaughter houses is the demand of the city but there is no any modern slaughter houses in Siddharthanagar. As per the 'Planning Norms and Standards 2013' 17 slaughter houses have to be constructed for the solving environmental issues in the .

### **5.3.2.4 Climate change: mitigation and adaptation strategies**

- A climate change responsive plan and program is to be formulated to reduce and mitigate the effects of the climate change.
- SM is in risk of climate change. Hence, the climate change responsive and adaptive programs need to be prioritized in these areas.
- The program like tree plantation initiated in various places such as Swargadwari road, Danda corridor, Panchabatika should be continued for encouraging clean development mechanism and gaining incentives for carbon economics and co-ordinate with alternative energy center.

### **5.3.2.5 Urban greenery**

With the increasing urban population in the city core and high densification, there always a clash between natural environment and man made structures. These built structures overshadow the natural environment with lack of greeneries and plants. Even in Siddharthanagar, except the nearby Danda corridor and area on the south of the city, the city cores lack greeneries resulting the cityscape to be grey and dry. This exacerbates various problems in the city area resulting in rising temperatures, and heat waves producing a heat island effect. For this, urban greenery can be an ideal solution. Urban greenery can mean everything from city parks and traditional streetscaping, like trees and planters, to more modern adaptations, like green roofs and bioswales. In addition to aesthetics, these green solutions results in cleaner air, improved storm water management, safer neighborhoods and benefits the local economy. Urban greenery even makes a strong credit point in LEED certification.

- Urban greenery implementation needs to be combined with planning and building byelaws of Siddharthanagar .
- Tree plantation along the major roads of Siddharthanagar .
- Construction of park in each local neighborhood (ward).
- Promotional programs for encouraging people to include green roofs, green walls and urban farming in homes.

- For the implementation, incentives and awareness program has to be formulated by the SM.
- Tax exemptions while getting building permit and incentive of time frame for building construction for people who are using urban greeneries in their homes.

#### **5.3.2.6 Conservation of environmental sensitive areas**

As explained in proposed land use plan of physical development plan, for protection of environment sensitive area, conservation areas are identified. Further activities for conserving these areas can be listed as:

##### **River protection:**

- A river embankment plan is needed for bounding the flow of river as these are seasonal river.
- The afforestation initiation on opposite bank of Danda River is a perfect example for maintaining environmental balance.
- Relocation of the squatter settlements from river areas and heritage zones.

##### **Natural resource preservation:**

- Conservation of natural resources and ground water table.
- Restriction of usage of modern technology material like marble and others during cremation for accelerating degradation rate of the corpse.
- Penalty for people dumping waste near river, forest and temple areas.

##### **Danda Watershed Eco-park:**

To conserve the vital source of water of Siddharthanagar, Danda watershed conservation plan shall be implemented. It shall be combined with a concept of eco-park as this area is rich in bio-diversity. This eco-park will help in preservation and conservation of Danda watershed and also promote eco tourism and economy of nearby area. The Eco-Park (Bio-diversity park) will have a picnic spot, memorial park water park, Herbal park, meditation center, peace stupa, stone water spouts, bio-diversity forest, nursery, zoo, health park.

#### **5.3.2.7 Sustainable cities concept**

With the increase in urbanization trends and urban sprawl, sustainable cities concept is highly claimed in current context. A sustainable or eco city is a city with consideration of environmental impact, inhabited by people dedicated towards minimum resource intake and minimum waste output generation. With this urbanizing trends, almost over half of the population of the world will be living in city area by 2035. This will suggest more resource usage and waste generation. Hence, a compact, organic, green city can be a solution for this growing global development of cities.

The following ideology of a sustainable city can be adopted in Siddharthanagar planning byelaws too.

##### **Walkable City:**

Proposed activities:

- Walking needs to be promoted in those wards which houses numerous temples like Durga Mandir, Ganesh Mandir.
- The park, green area to be developed near the river corridor development will also promote the walkability in the city.
- Apart from the main road network accessed by local vehicle, the inner city area needs to be encouraged for walking with pedestrian lanes.
- A cultural route can be developed for connecting the various temples.

- Pedestrian walkways should be incorporated in existing roads for encouraging walking.

**Sustainable transportation:**

Proposed activities:

- Improvement of public transportation, electric vehicles and solar power vehicles and promoting bicycles usage can be a mode of sustainable transportation in Siddharthanagar emphasizing the use of a diversity of fuel-efficient transportation vehicles in order to reduce greenhouse emissions and fuel demand, thus advocating the green city model.

**Renewable energy:**

Proposed activities:

- Promotion of sources of alternative energy usage, like Sun and organic waste, rainwater harvesting to cater to the green city concept of Siddharthanagar. Solar energy can be a best alternative energy in Siddharthanagar.
- Rainwater harvesting proves as solution for drinking water problem that also recharge ground water table.

**Permeable pavements:**

Proposed activities:

- It is recommended to use permeable paving in newly constructed road, having restriction of vehicle usage, for ground water penetration.
- Pedestrian pavements need usage of permeable material

**5.3.3 LFA for achieving environmental management**

Intervention Logic	Indicators	Means of Verification	Assumptions
<b>❖ Goal:</b> Achieving a suitable secure and balanced urban living environment with less impact on nature			
<b>❖ Objective:</b> Management of urban environment of Siddharthanagar through preservation of natural resources, forest areas, maintaining bio diversity and promoting sustainable city concept to achieve ecological balance.			
<b>❖ Result:</b> 1) Encroachment on natural areas like forest and river will decrease. 2) Environment sensitive areas are identified and conservation is done. 3) Calamity rate is declined. 4) Watershed areas are utilized ecologically. 5) River pollution is minimum. 6) Air is cleaner. 7) Waste segregation is introduced in every household.	By 2035, • Multi Hazard risk map of Siddharthanagar is prepared. • Natural Resources mapping is prepared. • Number of people affected from flood is reduced. • Number of trees planted alongside the road is increased. • Groundwater table is increased. • Organic waste dumping rate is decreased by 50%. • Air pollutant particles are decreased.	• Documentation of Water Supply and Solid waste management branch • Records of Forest, Environment and Disaster Management Division • Land management and building regulation division records	• Budget is available • People actively participate in waste management program. • GoN is willing to address the environment issues
<b>Activities:</b> <b>Environmental pollution</b> i. Construction of 17 Slaughter houses ii. Enforcement of regulation and byelaws		<b>Cost: In NPR</b>  i. 85 million ii. 5 million	<b>Time Frame</b>  i. 15 yrs. ii. 3 yrs.

iii. Vehicular emission restriction	iii. 10 million	iii. 5 yrs.
iv. Awareness Program for environmental pollution	iv. 7.8 million	iv. 15 yrs.
v. Construction of cycle lane, footpath on Danda Khola corridor	v. 45 million	v. 15 yrs.
vi. Electric public vehicles promotion	vi. 15 million	vi. 5 yrs.
vii. Waste separation concept promotion	vii. 15 million	vii. 5 yrs.
viii. Workshop on organic fertilizers from waste	viii. 5.2 million	viii. 15 yrs.
ix. Subsidy for construction of toilets	ix. 117 million	ix. 15 yrs.
<b>Conservation of sensitive area</b>		
i. Tree plantation on City Area	i. 5 million	i. 2 yrs.
ii. Improvement and Construction of water reservoirs on Existing Pokari and Tal	ii. 65 million	ii. 5 yrs.
iii. Water source protection programs	iii. 97.5 million	iii. Yearly
iv. DPR for eco parks	iv. 6 million	iv. 2 yrs.
v. Maintain and update of Public land	v. 3 million	v. 2 yrs.
<b>Urban greenery</b>		
i. Establishment and management of forest nursery in Each Ward	i. 39 million	i. 5 yrs.
ii. Promote and subsidies one house two trees program	ii. 3 million	ii. 5 yrs.
iii. Tree plantation along major road of 100 km	iii. 4 million	iii. 5 yrs.
iv. Tax Exemption for promoting urban greenery	iv. 30 million	iv. 3 yrs.
v. Organizing workshops and trainings for green roof and urban farm	v. 3 million	v. Yearly
vi. Tree plantation in public places park school area religious places archaeological area	vi. 39 million	vi. 5 yrs.
vii. Appropriate herbs plants for income generation	vii. 15 million	vii. 5 yrs.
<b>Sustainable cities concept</b>		
i. Construction of 20 km cycle lanes in major roads	i. 44 million	i. 15 yrs.
ii. Development of 50 km pedestrian tracks on major roads	ii. 75 million	ii. 15 yrs.
iii. Promotion of alternative/renewable energy	iii. 8 million	iii. Yearly
iv. Promotion of car and taxi sharing programs	iv. 3 million	iv. 2 yrs.
v. Promotion for Noice Free City - No Horn programs	v. 3 million	v. 2 yrs.

#### 5.3.4 Summary of Environmental Management Plan Implementation

Component	Base year 2020	Target 2035	Methodology	Approach	Stakeholder
<b>Solid waste reduction</b>	0.18kg/person/day	0.10kg/person/day	<ul style="list-style-type: none"> <li>Segregation and collection</li> <li>Compost plant operation</li> <li>Implementation</li> <li>Operation and management</li> </ul>	<ul style="list-style-type: none"> <li>PPP</li> <li>Implementation of 3R approach</li> <li>Waste taxation</li> <li>Incentives</li> </ul>	<ul style="list-style-type: none"> <li>SM</li> <li>Ward</li> <li>HH</li> <li>NGOs</li> <li>GoN</li> </ul>
<b>Danda Khola Development</b>		Cycle lane, green	<ul style="list-style-type: none"> <li>Feasibility study</li> <li>Design and Construction</li> <li>Operation and Management</li> </ul>	<ul style="list-style-type: none"> <li>Program</li> <li>Partnership</li> </ul>	<ul style="list-style-type: none"> <li>SM</li> <li>Development Partner</li> <li>GoN</li> </ul>
<b>Water source protection</b>			<ul style="list-style-type: none"> <li>Implantation of vegetation</li> <li>Improving water recharge</li> </ul>	<ul style="list-style-type: none"> <li>PPP</li> <li>Programs</li> </ul>	<ul style="list-style-type: none"> <li>SM</li> <li>Users</li> <li>NGOs</li> </ul>
<b>Forest protection</b>			<ul style="list-style-type: none"> <li>Land use conservation plan</li> <li>Tree plantation</li> <li>Operation and management</li> </ul>	<ul style="list-style-type: none"> <li>PPP</li> <li>Plantation campaign</li> <li>School Program</li> </ul>	<ul style="list-style-type: none"> <li>SM</li> <li>School</li> <li>CFUG</li> <li>NGOs</li> </ul>
<b>Urban greenery</b>	30%	80%	<ul style="list-style-type: none"> <li>Plantation of trees, bush</li> <li>Green roof and green facades</li> <li>Park and garden development</li> <li>Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>PPP</li> <li>Incentives</li> <li>School programs</li> <li>Trainings/works hops</li> </ul>	<ul style="list-style-type: none"> <li>SM</li> <li>Citizens</li> <li>NGOs</li> </ul>



<b>Air quality</b>		100% Clean air	<ul style="list-style-type: none"> <li>• Standard setting</li> <li>• Enforcement</li> <li>• Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Polluters tax</li> <li>• Subsidy for clean energy promotion</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Users</li> <li>• NGOs</li> </ul>
<b>Sustainable city</b>		75%	<ul style="list-style-type: none"> <li>• Construction of cycle lanes and pedestrian tracks</li> <li>• Alternative energy study</li> <li>• Taxi and car sharing</li> </ul>	<ul style="list-style-type: none"> <li>• PPP</li> <li>• Incentives</li> <li>• Partnership</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SC</li> <li>• Donor agency</li> <li>• NGOs</li> <li>• Users</li> </ul>
<b>Slaughter House</b>	0	17	<ul style="list-style-type: none"> <li>• Site identification</li> <li>• Standard setting</li> <li>• Design and construction</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• Partnership</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Private sector</li> </ul>
<b>Sustainable city</b>		75%	<ul style="list-style-type: none"> <li>• Construction of cycle lanes and pedestrian tracks</li> <li>• Alternative energy study</li> <li>• Taxi and car sharing</li> </ul>	<ul style="list-style-type: none"> <li>• PPP</li> <li>• Incentives</li> <li>• Partnership</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SC</li> <li>• Donor agency</li> <li>• NGOs</li> <li>• Users</li> </ul>

### 5.3.5 Conclusion

Hence, the environmental management plan implies for the protection and preservation of components of environmental for a sustainable eco system. This advocates making city sustainable and encourages reducing the waste generation by 3R concept for placing fewer loads on environment. Presently, no budget is allocated for the environmental management except the waste collection. As sustainability is the main focus of the sustainable development goal, investment is required in environment too. The total cost for environmental plans for 15 years time frame summed up to NPR **747.50 million**. The severe environmental issues are related to river encroachment and watershed protection, air pollution that need to be addressed quickly.

## 5.4 Disaster Risk Management Plan

Disaster Risk Management is application of disaster risk reduction policies and strategies to prevent new disaster risk reduce existing disaster risk and control enduring risk, contributing to the strengthening of resilience and reduction of losses. Disaster risk reduction aims to reduce frequency of losses and damage caused by natural hazards.

### 5.4.1 Goal, Objectives and Strategy

**Goal:** Reducing the risk of life due to disaster related calamities through appropriate groundwork

**Objectives:**

- To utilize the local resources to handle the situation that arises during disaster
- To identify the open spaces for preparing an evacuation plan
- To raise the disaster preparedness awareness among public
- To co-ordinate with local communities, stakeholders and central level to mobilize the affected communities effectively
- To proceed disaster risk mitigation efficiently

**Strategy :**

- Integrating the concept of climate change, disaster risk management and environment in the development of physical infrastructure for sustainable development.
- Strengthening the community capacity for disaster risk management.
- Focus given to protection of public land and develop greenery area.

## **5.4.2 Plan and Programs**

### **5.4.2.1 Flood**

#### Proposed activities

- An alarm system for detecting flooding is to be installed in Danda Khola within two years.
- River embankment needs to be done for restricting the flooding.
- Settlement has to be controlled till 50m along riverside by enforcing regulations.
- Squatter settlements alongside river shall be relocated.
- Formation of committee with flood rescuers and conduct training for them.
- Conduction of programs for public awareness.
- Coordination and collaboration with national government rescuers.
- Alerting quickly through telephone, FM, local radio and newspaper.
- Coordinate with Police, army and Red Cross volunteers in various places for rescue operation.
- Appropriate drainage system should be in place to address the inundation problem.

### **5.4.2.2 Fire**

#### Proposed activities

- A rescue operation shall be planned with three distinct phases – immediate care, medical aid first and organized relief.
- Management plan of facilities required during rescue operation.
- A fire alarm system needs to be installed in public places or mass gathering area.
- Provide more fire extinguishers within Siddharthanagar.
- Increase fire brigade capacity.
- Coordinate with police and army for emergency.
- A preparedness program for fire led disaster shall be formulated by SM at ward level.

### **5.4.2.3 Thunderstorm**

#### Proposed activities

- Encourage proper earthing system during building construction.
- Working on system that provide premonition about thunderstorm.
- Increase public awareness about thunderstorm.
- Alerting citizens through newspaper, radios, TV and FMs.

### **5.4.2.4 Epidemics**

#### Proposed activities

- Primary health care and medical supply units for controlling epidemics need to be set up.
- A unit in Bhim Hospital has to be set up which will inform about the probable epidemics to the municipality office and the office will take the necessary measures for controlling epidemics.
- Alerting public and providing awareness through telephone, local radio, newspaper and FM.

### **5.4.2.5 Earthquake**

#### Proposed activities

- An awareness program shall be conducted for informing people about what to do during and after earthquake.

- Rehearsal of the exit pattern to closest identified open space shall be introduced to all the citizens once a year.
- Educate students about the pre and post earthquake activities.
- Prohibition on construction of large structure in weak topography.
- Construction of earthquake resistant structures.
- Provide trainings for increasing skilled manpower for building construction.
- Several open spaces for gathering during disaster are identified and awareness program for citizens shall be initiated.
- Evacuation master plans shall be placed in every ward.
- Signage in the open area used as temporary shelter during evacuation shall be places.
- The list of identified potential open spaces for emergency evacuation and temporary shelter construction during earthquake hazard is mentioned in Table 5.1, Total 56,032 people can be accommodated at the time of disaster in these places.

**Table 5-1 List of open space for evacuation plan during emergency**

S.N	Project Name	Co-ordinate	Area	Area (sq.m)	Capacity 3.5sq.m per person	Present use	Propose Plan for use
1	Belhiya Pokhari in ward no -1	27.476 N, 83.441 E	3 kattha	1015.89	290	Pokhari	godshi tatha kayrakram hal
2	Belhiya Open Area in Ward no -1	27.493 N,83.474 7E	4 kattha	1354.52	387	Khali thau	bal udhan tatha park
3	Harnaiya open area, sadak cheu in ward no -1	27.487 N,83.471 E	1 kattha	338.63	97	sadak ko xau	xina
4	Jharna khola kinar open area in ward no-1	27.487 N,83.467 E	10 kattha	3386.3	968	school ko lagi help	park and jaggging track
5	Meudihawa open area in ward no -1	27.480 N,83.458 E	15-16 kattha	5248.765	1500	jagga michiyko	bal utdhan tatha r park pokhari
6	Meudihawa Pokhari in ward no -1	27.495 N,83.458 E	2 kattha	677.26	194	Pokhari	sadak xau park partixalay
7	Meudihawa open area in ward no -1	27.495 N,83.459 E	1 kattha	338.63	97	Open Space	bal udhan bisram eistal
8	Dandha khola xau damping side nira open area in ward no -1	27.477 N,83.446 E	10-15 kattha	4063.56	1161	Open space	Park n temple
9	Ranigau Open area in ward no -1	27.485 N,83.446 E	5 kattha	1693.15	484	Open space	park dhrmasala
10	Dumping site Jhandi bazar jane bato open area at ward no -1	27.477 N,83.447 E	10 kattha	3386.3	968	Open Space Park	
11	Ranigau medical college open space in ward no – 1	27.490 N,83.448 E	2.5 kattha	846.575	242	Open space	commerical market
12	Panchabatika Park In ward no – 2	27.489 N,83.429 E	20.396 kattha	6907	1973	baira school xau	byabasthit park ttha picnic sport
13	Jhandi bazar abyebasthit basti Hataune in ward no -2	27.480 N,83.443 E	1 bigha	6772.6	1935	abyabasthitb basti hataune	childrean park and hal
14	Meudihawa 'a' batika path open area in ward no -2	27.485 N,83.439 E	2 kattha	677.26	194	Open space	mandir gudhi bisram eistal
15	Meudihawa 'b' batika path open area in ward no -2	27.485 N,83.437 E	3 kattha	1015.89	290	Open space	samudihik bhawan
16	Jhandi bazar in open area in ward no -2	27.480 N,83.443 E	19 dhur	321.6985	92	Open space	community market
17	Buddha park Mahamauy path in ward no -3	27.501 N,83.454 E	3 kattha	1015.89	290	Open Space Park	
18	Darkhaxuwa Danda khola Open area in ward no -3	27.492 N,83.464 E	8 kattha	2709.04	774	Open Space Park	
19	Doghara airport open area in ward no -4	27.508 N,83.424 E	3 kattha	1015.89	290	Open space	bal utdhan kayrakaram

S.N	Project Name	Co-ordinate	Area	Area (sq.m)	Capacity 3.5sq.m per person	Present use	Propose Plan for use
20	Doghara Temple area and Park in ward no -4	27.510 N,83.426 E	2 kattha	677.26	194	Temple n park khali thu	park
21	Doghara open area in ward no -4	27.510 N,83.425 E	2 kattha	677.26	194	Open space	pokhari sahit ko park
22	Doghara open area in side of road in ward no -4	27.510 N,83.423 E	2 kattha	677.26	194	bato sano	
23	Chauchau karkhanna open area in ward no -4	27.518 N,83.427 E	2-5 kattha	1185.205	339		brixaroparan garne
24	Ghagra khola xau in ward no -4	27.521 N,83.427 E	5.7 kattha	1940	554		brixaroparan gari jagga milaune
25	Jilla Parsasan ko agadi open area in ward no -5	27.521 N,83.451 E	2 kattha	677.26	194		karmacahri baseistan sudharne
26	Jilla parsasan jane bato ko open area in ward no -5	27.504 N,83.450 E	15 kattha	5079.45	1451		park banaune
27	Pauwa hotal mhabir path open area in ward no -6	27.509 N,83.441 E	3 bigha	20317.8	5805		ward kayralaya bhawan banaune
28	Pipariya open area (Bibadit) in ward no -6	27.505 N,83.441 E	2.5 kattha	846.575	242		bibadit
29	Ajay path open area in ward no -7	27.513 N,83.460 E	1.5 kattha	507.945	145		ward samiti bhawan
30	Ajay path and Himali path north Open area in ward no -7	27.513 N,83.460 E	1.5 kattha	507.945	145	Open Space Park	bisram eistal and park
31	Sano Dumduma Paschim Pati Open are in ward no -9	27.528 N,83.472 E	2.5 bigha	16931.5	4838	jel sarnu parne	children park samudahik bhawan
32	Guniya open area in ward no -9	27.514 N,83.476 E	2 bigha	13545.2	3870	bato navayako	park and danda khola boating
33	Guniya and Dhunathapur Open area in ward no -9 (Auto Village ko side ma)	27.514 N,83.473 E	1 bigha	6772.6	1935	auto village ko xau	khel maidan plus mandir plus park
34	Guniya (sano dumduma) in ward no -9	27.519 N,83.475 E	1 bigha	6772.6	1935	xau ma nala dam x	park
35	Sano dumduwa khola in ward no -9	27.526 N ,83.471 E	3 katta	1015.89	290	Open Space Park	
36	Doghari open area in ward no -10	27.502 N,83.405 E	2 kattha	677.26	194		mandir tatha bisram eistal
37	Doghair open area in ward no -10	27.501 N,83.409 E	1 kattha	338.63	97		
38	Sankarpur in ward no -10	27.498 N,83.426 E	10 kattha	3386.3	968	Open Space Park	
39	Siddartha Ban Batika Open space Park at ward no -11	27.488 N,83.413 E	10 bigha	67726	19350	Open Space Park	
40	Bauddha path start Bhimkali path end open area in ward no -12	27.508 N,83.457 E	1 kattha	338.63	97		Mandir banaune
41	Uday path jane bato ko Paschim open area in ward no -12	27.5101 N,83.463 E	1 kattha	338.63	97		Bisram eistal banaune
42	Sworgadari ghat open area / Park at ward no -12	27.507 N,83.466 E	5 kattha	1693.15	484	Open Space Park	
43	Hat Bazar open area in ward no -13	27.502 N,83.452 E	2 kattha	677.26	194	Open Space Park	
<b>Total</b>				<b>196092.5</b>	<b>56032</b>		

#### 5.4.2.6 Pre-Disaster Plan

The pre-disaster action plan is derived from the Disaster risk management plan of Siddharthanagar . The action plans itself is efficient but lacks implementation.

- a) Formulation and co-ordination of SM Disaster Risk Management Plan
  - Formation of Disaster Risk Management Committee
  - Formation of different task force (Early Warning, Light Search and Rescue and First Aid) at municipality level as well as ward level.
  - Activation of current committee.
  - Formation of Ward Level Disaster Risk Management Committee.
  - Identification of all organization operating in the SM.
  - Co-ordination with all stakeholder in SM.
- b) Public awareness and Training
  - Disaster risk management training to Members of SM Disaster Risk Management Committee
  - Identification and mapping of high risk area
  - Public awareness program in high risk zones
  - Public awareness program about preparation for flood, landslide, earthquake, plague, etc. in the high risk area
  - Plague control plans and programs formulation
  - Training on different task forces
  - Training for volunteers to make them capable of providing basic health service
  - Training on Earthquake Resistant Construction to construction workers
  - Training on Earthquake Resistant construction technology to Engineers and Technicians
  - Retrofitting of houses which are not constructed in accordance with Engineering technique
  - Development of Risk sensitive land-use planning
- c) Rescue activities and capacity development
  - Formation of Rescue team
  - Rescue Training
  - Management of facilities required for rescue operation
  - Practice of Rescue operation
- d) Physical infrastructure management and vulnerability mitigation
  - Consideration of disaster risk while construction physical infrastructure like telephone, electricity, road, water supply, etc.
  - Identification and management of Emergency health centers
  - Management of Fire-extinguisher van, Ambulance, hose pipe, first aid kit, etc.
  - Identification of open spaces, building it properly to be utilized as emergency residing place and declaring it like public parks and open areas of schools, colleges and government buildings.
  - Planning to install devices to pre-monitor disaster
  - Afforestation in the topographically vulnerable area
  - Prohibition on extracting sand and gravel from river beds
  - Development of Dumping site and landfill sites

#### **5.4.2.7 Immediate and Post-Disaster Action Plan**

Similarly, the post disaster action plan is also grounded on the DRMP of Siddharthanagar .

- a) Management of Injured and displaced
  - Providing information about earthquake or other disaster to people in the municipality and its precaution needed.
  - Performing local level rescue operation
  - Emergency treatment for the affected
  - Operating Emergency treatment team
  - Transferring emergency patients to hospitals
  - Co-ordination with national rescue team



- Evaluation of availability of most-needed facilities like road, bridges, telephone, etc. and operation it temporarily
  - Providing food, clothes and shelter to the displaced people
  - Constructing accommodation areas for providing immediate shelter to the displaced people
  - Proper management of dead bodies
  - Management of debris of damaged structures
  - Implementation of plan and timely evaluation
- b) Relief distribution and reconstruction work
- Identification of storage location
  - Management of materials needed for emergency shelter
  - Rescue collection, storage and distribution
  - Formation of Disaster Fund
- c) Post-disaster plague control
- Identification, declaration, and operation of team to evaluate the effects in the areas most vulnerable to plague
  - Developing public awareness about Communicable diseases
  - Building Temporary service center and other health service centers near affected area
  - Formation of Health operation team to treat injured people
  - Giving priority to Physically disabled, children, old and females which providing health facility
  - Managing nutrition required for pregnant, children, females and other people requiring immediate help
  - Providing facility to quickly transfer badly injured people to nearest health centers
  - Providing vaccination to control communicable disease
  - Managing water distribution properly
  - Managing most-needed medicines
  - Building toilets

#### **5.4.3 LFA for achieving Disaster Risk Management**

<b>Intervention Logic</b>	<b>Indicators</b>	<b>Means of Verification</b>	<b>Assumptions</b>
<b>❖ Goal:</b> Reducing the risk of life due to disaster related calamities through proper planning			
<b>❖ Objective:</b> Controlling natural and human induced calamities through pre disaster plans and identifying the most appropriate action plans during disaster for decreasing the number of affected people			
<b>❖ Result:</b> 1) Less number of citizens is affected by earthquake, fire, landslide and flood. 2) River bank encroachment is diminishing. 3) More people take part in Disaster Risk Management Program. 4) Lesser number people are die by plague and epidemics.	By 2035, • Multi Hazard risk map of Siddharthanagar is prepared. • Evacuation Plan map is prepared. • Squatter settlements are relocated. • Number of trees plantation is increased in forest. • Rate of firewood usage for household purpose is decreased.	• Records of Forest, Environment and Disaster Management Division • Land management and building regulation division documentation	• Budget is available • People actively participate in awareness program. • GoN is willing to address the environment issues

<b>Activities:</b>	<b>Cost: In NPR</b>	<b>Time Frame</b>
i. Subsidy for Construction of earthquake resistant buildings	i. 6 million	i. Yearly
ii. Enforcement of regulation and byelaws	ii. 10 million	ii. Yearly
iii. Protection against flooding of Danda Khola	iii. 10 million	iii. 4 yrs.
iv. Awareness program for fire safety	iv. 8 million	iv. Yearly
v. Workshop of earthing for preventing Thunderstorm	v. 13.5 million	v. Yearly
vi. Plague control awareness programs	vi. 8 million	vi. Yearly
vii. Establishment of epidemics department on Bhim Hospital	vii. 20 million	vii. 4 yrs.
viii. Collaboration with hospitals in Bhairahawa for health service	viii. 1 million	viii. Yearly
ix. Establishment of emergency health groups	ix. 6.5 million	ix. 1 yr.
x. Establishment of local rescuing team	x. 1.4 million	x. 1 yr.
xi. Formation and Training for different task forces	xi. 6.5 million	xi. 3 yrs.
xii. Training for rescuers	xii. 6 million	xii. Yearly
xiii. Relocation of squatter settlements	xiii. 20 million	xiii. 15 yrs.
xiv. Alarm system for flood in rivers	xiv. 12 million	xiv. 3 yrs.
xv. Evacuation plan promotion during emergency	xv. 2 million	xv. Yearly
xvi. Signage for evacuation routes	xvi. 2 million	xvi. 15 yrs.

#### 5.4.4 Summary of Disaster Risk Management Plan Implementation

<b>Component</b>	<b>Base year 2020</b>	<b>Target 2025</b>	<b>Basis for Target</b>	<b>Methodology</b>	<b>Approach</b>	<b>Stakeholder</b>
<b>Earthquake resistant building</b>	40%	100%	<ul style="list-style-type: none"> <li>• Earthquake prone area</li> <li>• Weak topography</li> <li>• Weak physical structures</li> <li>• Lack of proper public knowledge of appropriate construction technology</li> <li>• Large constructions without skilled manpower and technology</li> </ul>	<ul style="list-style-type: none"> <li>• Standard setting of earthquake resistance building</li> <li>• Enforcing standards</li> <li>• Monitoring</li> <li>• Workshops and training</li> <li>• Awareness</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• Partnership</li> <li>• Collaborative</li> <li>• Campaign</li> <li>• Subsidization</li> <li>• Awards and felicitation</li> </ul>	<ul style="list-style-type: none"> <li>• NSET</li> <li>• SM</li> <li>• HH</li> <li>• Youth groups</li> <li>• School</li> <li>• NGOs</li> <li>• GoN</li> </ul>
<b>Fire safety</b>	50%	100%	<ul style="list-style-type: none"> <li>• Buildings made by timber</li> <li>• Unmanaged electricity line</li> <li>• Less number of fire brigade</li> <li>• Petrol pumps, gas depots in residential area</li> <li>• Industrial area nearby</li> </ul>	<ul style="list-style-type: none"> <li>• Fire extinguishers, storage water tank</li> <li>• Awareness</li> <li>• Monitoring electrical lines</li> <li>• Managing rescue operation</li> <li>• Coordination with police, army</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• Collaborative</li> <li>• Campaign</li> <li>• Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• NGOs</li> <li>• HH</li> <li>• Industry</li> <li>• Hospital</li> <li>• Police</li> </ul>
<b>Thunderstorm</b>		0%	<ul style="list-style-type: none"> <li>• Electricity disruption and possible human loss due to falling of electric poles</li> <li>• Continuous heavy rain</li> </ul>	<ul style="list-style-type: none"> <li>• Alerting Public</li> <li>• Public awareness</li> <li>• Working system which can provide premonition about thunderstorm</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• Collaborative</li> <li>• Campaign</li> <li>• Partnership</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• GoN</li> <li>• NGOs</li> <li>• Citizen</li> </ul>
<b>Plaque control</b>		100%	<ul style="list-style-type: none"> <li>• Polluted drinking water</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness</li> <li>• Alerting public</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• Campaign</li> <li>• Collaborative</li> </ul>	<ul style="list-style-type: none"> <li>• SM,</li> <li>• GoN</li> <li>• NGOs</li> </ul>

			<ul style="list-style-type: none"> <li>• Lack of waste management</li> <li>• Risk of lives</li> </ul>	<ul style="list-style-type: none"> <li>• Preparing nearby health</li> </ul>		<ul style="list-style-type: none"> <li>• Citizen</li> </ul>
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#### **5.4.5 Conclusion**

The efforts for mitigating disaster risk should be planned properly and conducted accordingly. The capacity to handle the situation that could arise during disaster should be developed in the local level and should be discussed with concerned stakeholders. It is projected that **132.90 million** budget is required to carry out the disaster management plan for 5 years. Some projects like reinforcement of byelaws, subsidy for earthquake resistance building construction and tree plantation on areas prone to landslides requires funds every year. It is assumed that technical assistance required for disaster risk management is accomplished through local NGOs and INGOs.

### **5.5 Cultural and Tourism Development Plan**

As a potential strength of Siddharthanagar, it's identified lead sector, the cultural & tourism sector need to be capitalized linking with the birth place of Buddha i.e. Lumbini. As conceptualized in five years development plan of federal, provincial government and ADB's western corridor report Siddharthanagar has a very good potential of inflow of national and international tourists compare to world's Mega cities like New York and Tokyo. It can welcome, contain and engage the low and middle income tourists in the long run by developing Buddhist tourism related infrastructure. It can directly work on attracting international tourists from all over the world via direct air transport. As well as the Indian tourists through its ground means of transport through its Belahiya and Krishnanagar Boarder.

Therefor Siddharthanagar is to be developed as part of "Greater Lumbini Tourism Projects". The on going Gautam Buddha international airport provides the potential for increasing tourism by attracting people coming to Lumbini to Siddharthanagar for a stay. Urban environment, security and exploration of touristic sites are important for ecotourism.

#### **5.5.1 Goal, Objectives and Strategy**

**Goal:** Improvement of economy of Siddharthanagar through cultural and tourism development

**Objectives:**

- Identification and preservation of important Cultural heritage sites within Siddharthanagar
- Creation and development of new Buddhist and Hindu religion based recreational and resource sharing amenities in the Siddharthanagar itself to hold, engage the tourists.
- Identification of specific non-tangible cultures in the specific area
- Documentation of historically important sites and formulate plans for its revitalization
- Plan for conservation of both tangible and intangible cultures and link them to tourism development plan
- Formulation of plans to promote Siddharthanagar as touristic centers
- Develop the culture centers (local craft, paint, architecture, museum, culture exchange, exhibition)
- Initiation of Friends of Nepal (foreigner – slogan and its implementation) floating concepts for branding Siddharthanagar
- Involvement of private sector in tourism business/ tourism related infrastructures
- Travel incentive leaves for Institutional staffs collaboration with private sector

- Could get benefitted to attract the tourists from Local travel concessions (with holiday incentive package)
- Buddhist religion and value-based Education program will be initiated for Tourism promotion with the cooperation with adjacent local bodies.
- Making the hub and gateway for tourists for province 5 and prepare a plan accordingly.

**Strategy:**

- Develop Siddharthanagar as a national level tourist destination by developing coordination with Nepal Tourism Board, travel and trekking agencies, Hotel Association of Nepal and other related stakeholders
- Promotion of the cultural and religious important places by developing tourism related physical infrastructures and improve the access to these places
- By enhancing the beautification of the city to attract the tourist.

**5.5.2 Plan and Programs**

**5.5.2.1 Cultural heritage sites**

Lumbini, Tilaurakot, Kudan and Ramgram and Devdaha are the famous historical Places of cultural importance in and around Siddharthanagar. These areas seem to be full of tourists throughout the year. It shows that the Siddharthanagar has a high potential in attracting tourists from nation as well as abroad.

**Physical amenities:**

- Improvement of amenities like road network, accessibility, drainage, solar lights in these temple areas and creation of tourism related physical infrastructures, eg. Danda khola project, etc.
- Green areas like small parks, patis and entertaining area can be constructed for various cultural activities like gatherings and marriage functions.
- Pedestrian & cycling pathways construction along the urban road, inner pockets as well as in the fringe areas.
- Tourist information center can be introduced with physical amenities for all age group within the vicinity of Siddharthanagar.

**Cultural route:**

- A *heritage walk route* shall be planned for connectivity of main temples of city area i.e. Lumbini temple.
- Such kind of heritage walk center can be introduced as a pilot project linking with cultural & tourism related sites further.
- Cultural center can be developed to explore and maintain and transfer the indigenous skills & knowledge.
- Promotion of bus service linking Buddha & Buddhist cultural places

**Cultural forest/park:**

- The green pockets of city core area including library, the agricultural field as well as Lumbini International airport and its area could be visualize as an tourism related assets.

**5.5.2.2 Historical sites**

Siddharthanagar seems to have less historical infrastructures and sites within it, though it lies in the vicinity of international tourism hub Lumbini area. Besides having the strong connection to the Indian territory (as a trade point), it fails to uplift itself as a giant potential city. It's a high time

to connect and explore its potential by creating some religious, cultural and trade based infrastructures to connect and link with the historical sites nearby.

Buddha Chowk to airport lane will be developed as a pedestrianization pathway along the highway and maintain with the flavor of Buddhism related façade treatment and beatification in the landscapes too.

**Façade treatment:**

- Develop a streetscape walk route at bank road enhancing the building facades by traditional wall arts, traditional elements or other beautification related to Buddhism. For regulating the traditional façade, pedestrianize area shall be listed in conservation area in planning and building bye laws and rule enforcement techniques shall be promoted.
- Similarly, facades of building along the bank road shall also be enhanced to traditional prototype design.

**Stone paving:**

- Paving the streets of cultural route with semi permeable or permeable building materials like brick or stones and encouraging the pedestrianization and bicycling.

**Greenery and entertainment area:**

- Increasing trees and greeneries along the sidewalks. Small pots of plants can be placed wherever planting the trees are not possible.
- The greenery (with evergreen trees, flower & bushes) can be incorporated with street furniture along the cultural route for uplifting the social ambience.
- Develop small relaxing zones with kiosks, greeneries and seat outs
- Enhancing the existing garden with ponds, exercise area, jogging trail and kids play area incorporating indigenous entertaining means like dandibiyo, kabaddi, etc.
- Create a space by buying and develop a public plaza for conducting various events like awareness programs, meetings, rescue, temporary emergency facilities & services and exhibitions.

**5.5.2.3 Tourism**

According to the western urbanizing corridor report of ADB, tourism destination plan for western Nepal 2016, Siddharthanagar, Lumbini and Ramgram area can be focused as alternative tourism destinations which links Kathmandu, Pokhara and Chitwan and is currently the principal tourism destination in Nepal. Based on the municipal status, the plan considers religion & culture based tourism as being the region's strength, tapping in where also possible into the region's cultural, historical and religious heritage, agriculture, adventure sports (cycling, racing, kabaddi, dandibiyo, cricket, football) and urban environment possibilities. Siddharthanagar municipality has a great strength of having 20% floating population (from Indian & surrounding local bodies) which can get service in every sector at a lower cost.

**Water entertainment at Danda Khola:**

- Boating provision can be developed for water entertainment in Danda khola (at siddarthanagar and parasi side) from parasi road to boarder incorporating water dam
- Construction of Buddha stupa and Buddhist sculptures at Danda corridor for attracting Buddhist tourist.

**Tourist information center:**

- International standard Tourist information center at city center (near Buddha Chowk) and its liaison offices will be at several places proposed at Devkota chowk, Sunauli boarder and other major crossroads to provide useful service to tourists and visitors, especially the provision of

information goes hand-in-hand with other services, such as recharging facilities, toilets, Internet access, First Aid, etc.

**Cycling route:**

- Tourist cycling route shall be developed in Danda Khola corridor incorporating a green concept.

**Home stay/guesthouses:**

- Hotels and guesthouses of standard services (with high, medium and low budget) shall be constructed & promoted in SM. Homestay to be developed in potential area. Training camps will be conducted through the coordination with NATHM, hotel associations and tourism department of Federal and province government.
- Guided tours activities, undertaken usually by bus or in minibuses, with groups of visitors to main tourist attractions and destinations, can serve as a tourism development activity.

**5.5.3 LFA for achieving Cultural and Tourism Development**

<b>Intervention Logic</b>	<b>Indicators</b>	<b>Means of Verification</b>	<b>Assumptions</b>
<b>❖ Goal:</b> Uplifting economy of Siddharthanagar by enhancing culture and tourism			
<b>❖ Objective:</b> Identification of tourism and cultural heritage potential of Siddharthanagar and investing on its development for achieving <b>Green West</b> target as described in Tourism Development Action Plan of Westernize Urban Corridor, Nepal			
<b>❖ Result:</b> 1) Increase in revenue of SM. 2) More people are visiting Siddharthanagar . 3) Increase in demand of organic agricultural products. 4) Fish farming and animal husbandry is increasing.	By 2035, • Number of tourist is increased. • Agro farming industry registration rate is increased. • Fish farming and animal husbandry number is raised. • A cultural heritage circuit map is prepared. • A touristic circuit map is prepared.	• Records of Culture, Heritage and Tourism Promotion Unit • Documentation of Economic Development Division • Records of general Administration Division	• Budget is available • There is political stability in country. • Central government provides budget. • Private sector is willing to invest.
<b>Activities:</b> <b>Cultural heritage site</b> i. Development of pedestrian lane of 15 km connecting famous temples and Places ii. Temple premises management iii. Improvement of road to Kotimai temple from city core area. iv. Infrastructure development of Durga Mandir, Radhakrishna Mandir as so on. <b>Historical sites</b> i. Façade improvements of buildings Bank Road ii. Bye laws enforcement <b>Tourism</b> i. Danda Khola impoundment to develop as a Boating Place ii. Cycle trek development of 5 km from Parasi road to Boarder. iii. 7 Tourist Information centers operation iv. Homestay workshops v. Introduction of Guided tour in City bus vi. Preparation of Comprehensive Tourism Plan of Municipality		<b>Cost: In NPR</b>  i. 30 million ii. 27.5 million iii. 60 million iv. 26 million  i. 20 million ii. 3 million  i. 50 million ii. 25 million iii. 22.5 million iv. 2 million v. 2 million vi. 1 million	<b>Time Frame</b>  i. 15 yrs. ii. Yearly iii. 15 yrs. iv. 15 yrs.  i. 15 yrs. ii. 15 yrs.  i. 15 yrs. ii. 15 yrs. iii. Yearly iv. 2 yrs. v. 2 yrs. vi. 1 yr.



vii. Develop a night market at the site of National Trading Centre	vii. 10 million	vii. 3 yrs.
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#### **5.5.4 Summary of Cultural and Tourism Development Plan Implementation**

<b>Component</b>	<b>Base year 2020</b>	<b>Target 2035</b>	<b>Methodology</b>	<b>Approach</b>	<b>Stakeholder</b>
<b>Temple physical infrastructures</b>	Road, electricity Water Drainage	100%	<ul style="list-style-type: none"> <li>• Gap Analysis</li> <li>• Prioritization</li> <li>• Design and construction</li> <li>• Operation and management</li> <li>• Promotional strategy</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• Awareness</li> <li>• Collaborative</li> <li>• Partnership</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Donor agency</li> <li>• GoN</li> <li>• User Group</li> </ul>
<b>Panchbatika, Swargadari Ghat, Buddha Park and other open space</b>	0	100%	<ul style="list-style-type: none"> <li>• Need identification</li> <li>• Space analysis</li> <li>• Construction</li> <li>• Fund raising</li> <li>• Operation and management</li> </ul>	<ul style="list-style-type: none"> <li>• Program</li> <li>• Collaborative</li> <li>• Partnership</li> <li>• Privatization</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Users</li> <li>• Donor agency</li> <li>• GoN</li> </ul>
<b>Tourist information center</b>	1	5	<ul style="list-style-type: none"> <li>• Site identification</li> <li>• Arrangement of equipment</li> <li>• Establishment</li> </ul>	<ul style="list-style-type: none"> <li>• Partnership</li> <li>• Program</li> <li>• Self running</li> </ul>	<ul style="list-style-type: none"> <li>• Private sector</li> <li>• Tole Bikas</li> <li>• Youth clubs</li> <li>• SM</li> </ul>
<b>Homestay/ organic village</b>		20	<ul style="list-style-type: none"> <li>• Workshops/Trainings</li> <li>• Standard setting</li> <li>• Operation</li> <li>• Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Assistance</li> <li>• Subsidy</li> <li>• Partnership</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Private sector</li> <li>• Taragaun</li> <li>• Citizens</li> </ul>

#### **5.5.5 Conclusion**

As Siddharthanagar is rich in culture and environment, it is essential to be conserved not only for religious essence but also for economic growth. The location of Siddharthanagar in between Lumbini and Butwal with Indian Boarder provides ample benefit. Hence, tourism can be developed in the area. And every physical infrastructure can be linked with the tourism along with cultural tourism, i.e., health tourism (low cost health treatment), recreational tourism. A proper tourism development plan will help conserve the culture heritage sites and natural landscape as well as develop new tourism related sites with infrastructures in Siddharthanagar. From the strategic projects for cultural and tourism development, NPR **279.00 million** budget is required for 15 years. The duration of strategic projects is maximum 5 years with only management costs and promotional events lasting for 15 years.

### **5.6 Economic Development Plan**

Economic development is the process by which a nation improves the economic, political, and social well being of its people. It is an index, which is based on three equally weighted components: Longevity, measured by life expectancy at birth, Knowledge, measured by adult literacy and number of years children are enrolled at school and Standard of living, measured by real GDP per capita at purchasing power parity.

Commonly used criteria of economic development are increase in national income, per capita real income, comparative concept, standard of living and economic welfare of the community etc. Economy of an area can be directly related to the employment condition of that area, poverty, agricultural development, tourism development, road condition, industries and business, etc. Development in these sectors will therefore lead to the Economic Development of that area.

Siddharthanagar is one of the main economic center of Province No. 5 and the future plan shall focus on employment generation and poverty reduction synchronizing with local trainers for providing useful trainings to create self-employment. It is observed that the import and export activities alongwith the human flow through Beliha point have been considerably increased after the blockade imposed by India in 2072 BS.

### **5.6.1 Goals, Objectives and Strategy**

**Goals:** Standard of living of citizens is improved through employment generation and poverty reduction

**Objectives:**

- To increase the economy of Siddharthanagar through agro farming, tourism and industry
- To identify the potential economic zones
- To formulate plans for boosting the economic activities within the SM.
- To develop regional economic growth centers, and linking these centers with medium and small towns through improved infrastructure

**Strategy :**

- Develop conducive environment for fostering the agricultural, livestock, trade and industry sector as these are the major economic sector for Siddharthanagar.
- Develop poultry and birds farming as a sustainable income sources for the socially and economically disadvantage and vulnerable people.
- Extend the banking and financial services at the ward level by developing supportive environment for the development of banking and financial sectors.
- Emphasis to establishment and expansion of the industries based on the local raw materials by developing the required infrastructure and formulating the favorable policy and laws.
- Generate the employment opportunities by attracting the youth on the modern agriculture, livestock and trade and cottage industries through arranging the provision of soft loan.
- Focus on the programme which support for balanced and inclusive development, employment generation, maintain social harmony and poverty reduction.
- Given the emphasis on such technologies which play the role in reduction the negative impact caused by climate change and disasters.
- Lobbying with federal government, provincial government and other neighbouring Palikas to extend physical boundary of Siddharthanagar Municipality up to Rohini River in east, Tinau River in West, Tilottama Municipality in north and Indian boarder in south as SM has its limited natural resources and hard to sustain with its existing own resources.

### **5.6.2 Plan and Programs**

#### **5.6.2.1 Agro-Farming Development**

As clarified in earlier chapters, agriculture is one of the major source of income generation in Siddharthanagar. Lack of modern technology in farming, irrigation facilities, market management, and low financial capacity to invest on agro-farming has become main hindrances for developing agriculture as main income source.

Proposed activities:

- Siddharthanagar has alluvial soil with abundant land available for agriculture. Hence with *modern agriculture techniques* along with youths' participation on agro farming can be enticed to agriculture for income generation.
- Establishment of cold storage, dairy product centers, butcher centers in different parts of the city with proper linkage to the rural areas for employment generation.
- Encouragement to the farmer for organic farming in ward no 2,3,4,8,9,10 and 11.
- Vegetable and rooftop farming, horticulture is promoted in all wards.
- Establishment of market for agricultural product in ward no 1,2,3,4,6,10 and 11
- Promotion of seed production for cereal crops in ward no. 4,9,10 and 11.
- Focus given to meat production in each ward.
- Pumping set distribution for irrigation purpose in ward no 1,2,3,4,6,9,10 and 11.
- Construction of dam at Ghaghra and Danda River ponds
- Conservation of existing pond and promotion of rain water harvesting practices in all wards.
- Livestock programme at ward no 1, 4, 9, 10 and 11
- Fish farming at ward no 1, 4, 9, 10 and 11

#### **5.6.2.2 Trade promotion and Tourist Development**

Trade and tourism industry of Siddharthanagar have higher potential for economic growth in SM. Various plans for tourism development have already been explained in heading “Cultural and Tourism development plan”. Some proposed activities for increasing tourist are:

- Coordination between local and national travelling and trekking agencies for increasing number of national and international tourist.
- Promotion through Internet or advertisements.
- Local youths, women and students can be utilized for information flow about culture, heritage and natural picturesque of Siddharthanagar to outsiders.

#### **5.6.2.3 Micro Industry and Business Promotion**

Small and micro entrepreneurs are the engines of economic growth. Hence, their access to market, services, capital, education and technical knowledge should be eased.

Proposed activities:

- Necessary *institutional support* should be given to small and micro-enterprises in order to make them competitive in national and international markets.
- Provide technical and financial assistance to the small women driven and community driven local industry for promoting women empowerment through trainings like knitting, painting and other crafts.
- Establishment of organic fertilizer industry.
- Encourage use of local products.
- Promotion of local industries through taxes exemption and incentives in physical amenities.

#### **5.6.2.4 Employment Generation and Poverty Reduction**

For the employment generation and poverty reduction, various programs in different economic sector can be planned.

Proposed activities:

- Coordination to be done with concerned authority and organizations to manage remittance, which is one of the income sources of the municipality and programs, shall be conducted to promote it.

- Programs shall be conducted to provide information to those who want safe abroad employment.
- People will be encouraged to invest the remittance money in a productive sectors like agricultural farming, shopping malls, parking, sports hall etc.
- Trainings shall be provided in coordination with various NGO and INGO to promote local employment.

#### **5.6.2.5 Urban-Rural Linkage**

One of the main sources for income generation of any city is its linkage with surrounding rural areas. It will help in economic growth of any city area.

Proposed activities:

- Develop the road networks to the rural areas for efficient network and connection for exporting agricultural goods.
- Co-ordination with nearby exporting villages to manage safe export of agricultural goods.
- Coordination with small farmer of nearby villages to promote organic farming concept within the area.
- Surrounding rural area can be used for homestay and attracting tourists.
- Trade and networking activities in small urban sub centers should be fostered to stimulate the rural urban economy.
- Establishment of cold storage, dairy product centers, butcher centers in different parts of the city with proper linkage to the rural areas for employment generation.

#### **5.6.2.6 Promising Economic Zones**

- Transportation, Information and Communication sector, Educational training institutes, Banking sector, Commercial buildings and Manpower companies for foreign employments are the assuring fields for economic development of Siddharthanagar .
- SM can initiate lobbying with the local banking sector and finance companies for issuing loans to the local industry and trade.
- *Economic infrastructures* like Parking Space, Bus parks, vegetable markets, Stadium, Sports Complex, and Movie Hall can escalate the revenue generation of municipality.
- *Informal sector enterprises*, which are active in food preparation, selling tea and coffee, tailoring, street vending of various items and domestic services also increases the economic growth rate of the city. A program for managing these sectors without hampering the beauty of the city is the main challenge of SM.
- Educational and medical tourism can be promoted.

### **5.6.3 LFA for achieving economic development**

<b>Intervention Logic</b>	<b>Indicators</b>	<b>Means of Verification</b>	<b>Assumptions</b>
❖ <b>Goal:</b> Achieving a standard quality life of the citizens through employment generation and poverty reduction			
<b>Agro Farming and Livestock Sector</b>			
❖ <b>Objective:</b> • Improvement of income generation of farmers through commercialization in agriculture and animal husbandry			
❖ <b>Result:</b> 1) Youths are attracted towards agro farming. 2) Rise in agricultural products and production.	By 2035, • People involving in agro farming will rise to 75%. • Registration rate of animal farming is increased.	• Records of Agriculture, Livestock and Co-operative works.	• Budget is available though • Irrigation facility is available.

<p>3) Increase in production through development and improvements of cash crops. 4) Export of dairy and animal products is raised.</p>	<ul style="list-style-type: none"> <li>Export rate of cash crops is increased.</li> </ul>	<ul style="list-style-type: none"> <li>Agricultural development bank documentation</li> <li>Employment generation and poverty reduction branch records</li> </ul>	<ul style="list-style-type: none"> <li>There is no loss in agricultural product.</li> <li>There is no disease on crops.</li> </ul>
<p><b>Activities:</b></p> <ol style="list-style-type: none"> <li>Establishment of 3 Cold storage and collection centers</li> <li>Subsidy for organic manure production, cold storage, fish farming fodder and forage production. Pellat for poultry</li> <li>Trainings on animal farming and agriculture</li> <li>Danda Khola impounding for irrigation Study , Design and Constrction</li> <li>Construction of irrigation canal</li> <li>Promotion of organic farming and off seasonal farming</li> <li>Loans for construction of green house farming and others</li> <li>Networking activities with surrounding villages for product exports</li> <li>Improvement of access road to neighborhood rural areas</li> <li>Coordination for Loan for agro farming</li> <li>Subsidy for Fodder and Forage and Pellet Production</li> <li>Promotion for Fish Farming and Construction of Pond</li> <li>Cereal Crop seed Production</li> <li>Vegetable Farming</li> <li>Roof Farming</li> <li>Mushroom Farming</li> <li>Market for Organic Products</li> <li>Dairy and Meat Production</li> </ol>		<p><b>Cost: In NPR</b></p> <ol style="list-style-type: none"> <li>6 million</li> <li>13 million</li> <li>12 million</li> <li>30 million</li> <li>24 million</li> <li>13 million</li> <li>13 million</li> <li>7.8 million</li> <li>30 million</li> <li>10 million</li> <li>10 million</li> <li>26 million</li> <li>6.5 million</li> <li>3.9 million</li> <li>2.6 million</li> <li>7.8 million</li> <li>10.4 million</li> <li>13 million</li> </ol>	<p><b>Time Frame</b></p> <ol style="list-style-type: none"> <li>15 yrs.</li> <li>15 yrs.</li> <li>Yearly</li> <li>15 yrs.</li> <li>15 yrs.</li> <li>5 yrs.</li> <li>5 yr.</li> <li>Yearly</li> <li>15 yrs.</li> <li>Yearly</li> <li>Yearly</li> <li>5 yrs.</li> <li>5 yrs.</li> <li>5 yrs.</li> <li>5 yrs.</li> <li>5 yrs.</li> <li>5 yrs.</li> <li>5 yrs.</li> <li>5 yrs.</li> </ol>
<p><b>Tourism</b></p>			
<p>❖ <b>Objective:</b></p> <ul style="list-style-type: none"> <li>Increment in revenue generation of Siddharthanagar through tourism promotion</li> </ul>			
<p>❖ <b>Result:</b></p> <ol style="list-style-type: none"> <li>Increase in people visiting Siddharthanagar for tourism.</li> <li>SM will benefit from tourism.</li> </ol>	<p>By 2035,</p> <ul style="list-style-type: none"> <li>Rate of tourist will rise by 75%.</li> <li>Tourism circuit map is prepared.</li> </ul>	<ul style="list-style-type: none"> <li>Records of Economic Development Division</li> <li>Information, Communication and data Management Division</li> </ul>	<ul style="list-style-type: none"> <li>Budget is available.</li> <li>There is political stability in country.</li> <li>Donor agencies are willing to help.</li> </ul>
<p><b>Activities:</b></p> <ol style="list-style-type: none"> <li>Coordination with national and international travelling agencies</li> <li>Promotional events through internet and advertisements</li> <li>Educating students and local youths for information flow</li> <li>Operate night market focusing tourist at wardno 1, 3, 5, 8 and 13</li> <li>Construction of vehicle parking for tourist at ward no 1 and 5</li> <li>Develop and construct tourist park at ward no 1, 5, 8 and 9</li> <li>Promotion of electric tourist vehicle</li> </ol>		<p><b>Cost: In NPR</b></p> <ol style="list-style-type: none"> <li>15.6 million</li> <li>1.95 million</li> <li>5 million</li> <li>10 million</li> <li>10 million</li> <li>12 million</li> <li>10 million</li> </ol>	<p><b>Time Frame</b></p> <ol style="list-style-type: none"> <li>Yearly</li> <li>Yearly</li> <li>Yearly</li> <li>3 yrs.</li> <li>3 yrs.</li> <li>5 yrs.</li> <li>3 yrs.</li> </ol>
<p><b>Economic Infrastructures</b></p>			

<p>❖ <b>Objective:</b></p> <ul style="list-style-type: none"> <li>Construction and planning of vegetable markets infrastructure, multi purpose sports hall, movie halls for economic upliftment</li> </ul>			
<p>❖ <b>Result:</b></p> <ol style="list-style-type: none"> <li>Vegetable markets are established in ward no 1,2,3,4,6,10 and 11</li> <li>Enough entertainment facilities are available.</li> <li>Adequate space is available for sports and other events.</li> </ol>	<p>By 2035,</p> <ul style="list-style-type: none"> <li>Vegetable markets increase from 3 to 7.</li> <li>Number of multiplex hall (movie hall) increased from 2 to 3.</li> </ul>	<ul style="list-style-type: none"> <li>Records of Economic Development division</li> <li>Land Management and Building regulation Division records</li> </ul>	<ul style="list-style-type: none"> <li>Budget is available.</li> <li>There is political stability in country.</li> <li>Donor agencies are willing to help.</li> </ul>
<p><b>Activities:</b></p> <ol style="list-style-type: none"> <li>Construction of 13 vegetable market structures.</li> <li>Construction of commercial complex with 1 movie hall in existing municipality office complex.</li> <li>Improvement of 2 Existing Movies Halls</li> <li>Pumping set Distribution</li> </ol>		<p><b>Cost: In NPR</b></p> <ol style="list-style-type: none"> <li>65 million</li> <li>30 million</li> <li>15 million</li> <li>100 million</li> </ol>	<p><b>Time Frame</b></p> <ol style="list-style-type: none"> <li>15 yrs.</li> <li>15 yrs.</li> <li>5 yrs.</li> <li>5 yrs.</li> </ol>
<p><b>Micro Industry and Business Promotion</b></p>			
<p>❖ <b>Objective:</b></p> <ul style="list-style-type: none"> <li>Focus on micro industry for benefitting the economic status of citizens.</li> </ul>			
<p>❖ <b>Result:</b></p> <ol style="list-style-type: none"> <li>Employment is generated.</li> <li>Informal sector enterprises are well managed.</li> <li>Women driven local industries are increased.</li> <li>Investment in banks, transportation and promising economic zone is increased.</li> </ol>	<p>By 2035,</p> <ul style="list-style-type: none"> <li>Number of employed people is increased</li> <li>Number of people working in industry is raised</li> <li>Local industry registration rate is increased.</li> </ul>	<ul style="list-style-type: none"> <li>Records of Economic Development division</li> <li>Documentation of Rastriya Banijya Bank</li> </ul>	<ul style="list-style-type: none"> <li>Budget is available.</li> <li>There is political stability in country.</li> <li>People are convinced to operate industry.</li> </ul>
<p><b>Activities:</b></p> <ol style="list-style-type: none"> <li>Tax exemption on formation of industries.</li> <li>Provision of physical amenities to local industry</li> <li>Loans for local industry formation</li> <li>Subsidy on homestay conduction and small lodges</li> <li>Coordination with local banks for loans</li> <li>Solid Waste Product Processing Industry</li> <li>Organic Cold Store</li> <li>Organic Fertilizer Industry</li> <li>Subsidy on agricultural loan</li> <li>Solid Waste Management at doorstep</li> </ol>		<p><b>Cost: In NPR</b></p> <ol style="list-style-type: none"> <li>15 million</li> <li>8 million</li> <li>20 million</li> <li>50 million</li> <li>26 million</li> <li>65 million</li> <li>15 million</li> <li>26 million</li> <li>10 million</li> <li>15 million</li> </ol>	<p><b>Time Frame</b></p> <ol style="list-style-type: none"> <li>5 yrs.</li> <li>3 yrs.</li> <li>3 yrs.</li> <li>2 yrs.</li> <li>Yearly</li> <li>Yearly</li> <li>3 yrs.</li> <li>3 yrs.</li> <li>3 yrs.</li> <li>3 yrs.</li> </ol>

#### 5.6.4 Summary of Economic Development Plan Implementation

Component	Base year 2020	Target 2035	Methodology	Approach	Stakeholder
<b>Tourism Infrastructures</b>	60%	100%	<ul style="list-style-type: none"> <li>Explore sites</li> <li>Conservation</li> <li>Infrastructure Construction</li> </ul>	<ul style="list-style-type: none"> <li>PPP</li> <li>Community activation</li> </ul>	<ul style="list-style-type: none"> <li>SM</li> <li>GoN</li> <li>Community</li> <li>NTB</li> </ul>
<b>Vegetable Markets</b>	3	7	<ul style="list-style-type: none"> <li>Seven in ward no 1, 2, 3, 4, 6, 10 and 11</li> </ul>	<ul style="list-style-type: none"> <li>PPP</li> <li>Co-operatives</li> <li>Farmers</li> </ul>	<ul style="list-style-type: none"> <li>SM</li> <li>Private</li> </ul>



<b>Movie halls/ Malls</b>	2	3	<ul style="list-style-type: none"> <li>• Need assessment</li> <li>• Feasibility study</li> <li>• Land acquiring</li> <li>• Investment seeking</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion</li> <li>• PPP</li> <li>• Co-operation</li> </ul>	<ul style="list-style-type: none"> <li>• Private Sector</li> <li>• Community</li> <li>• SM</li> </ul>
<b>Agro farming</b>		100%	<ul style="list-style-type: none"> <li>• Update about modern technology</li> <li>• Preservation of agricultural land</li> <li>• Commercialized farming</li> </ul>	<ul style="list-style-type: none"> <li>• Trainings Workshops</li> <li>• Subsidy</li> <li>• Loans</li> </ul>	<ul style="list-style-type: none"> <li>• GON</li> <li>• SM</li> <li>• FNICCI-Siddharthanagar</li> <li>• NGOs</li> </ul>
<b>Home stay</b>		10	<ul style="list-style-type: none"> <li>• Formation of small lodge/homestay committee</li> </ul>	<ul style="list-style-type: none"> <li>• DSMC</li> <li>• PPP</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Taragaon regency</li> <li>• NGOs</li> </ul>
<b>Ware House/ Godowns and collection center</b>		1	<ul style="list-style-type: none"> <li>• Warehouses development in PPP model</li> <li>• Linkage and services to hinterland</li> </ul>	<ul style="list-style-type: none"> <li>• PPP</li> </ul>	<ul style="list-style-type: none"> <li>• FNCCI</li> <li>• Ministry of Commerce</li> <li>• I/NGOs</li> <li>• SM</li> </ul>
<b>Cold Storage</b>		3	<ul style="list-style-type: none"> <li>• Need assessment</li> <li>• Feasibility study</li> <li>• Land acquiring</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Farmers</li> <li>• SM</li> <li>• Traders</li> </ul>
<b>Subsidy/Loans</b>		50%	<ul style="list-style-type: none"> <li>• Formation of beneficiary committee</li> <li>• Application in SM division</li> </ul>	<ul style="list-style-type: none"> <li>• PPP</li> <li>• Lobbying</li> <li>• Promotional events</li> </ul>	<ul style="list-style-type: none"> <li>• GoN</li> <li>• SM</li> <li>• Banks</li> </ul>
<b>Advertisements</b>		100%	<ul style="list-style-type: none"> <li>• Coordination with travel agencies</li> <li>• Coordination with schools and youth groups</li> </ul>	<ul style="list-style-type: none"> <li>• PPP</li> <li>• Privatization</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• NTC</li> <li>• Travel agents</li> <li>• Schools</li> <li>• Youth groups</li> <li>• Citizens</li> </ul>

### 5.6.5 Conclusion

The economic development plan is believed to identify the probable profitable sectors of Siddharthanagar to help improving the economic growth of SM and its citizens. Moreover, it will focus on the poverty reduction, employment generation and promotion of tourism, agriculture and industry. The total investment required for the economical development is NPR **763.55 million** with most projects to be completed within 5 years time frame. The economic infrastructures like vegetable market and cinema halls/multiplex has time frame of 10 years.

## 5.7 Financial Development Plan

Financial development is a part of the development strategy to stimulate economic growth and reduce poverty, overcoming “costs” incurred in the financial system. It involves the establishment and expansion of institutions, instruments and markets that support this investment and growth process. It refers to the fulfillment of the functions of the financial system in the best manner by eliminating the market distortions.

### 5.7.1 Goals and Objectives

**Goal:** Achieving a financial sustainability through maximum utilization of available resources.

**Objectives:**

- To identify the areas of economic potential
- To recognize the probable revenue generation areas of Siddharthanagar and formulate plan likewise

- To promote alternative funding modalities for minimizing the government municipal budget by promoting PPP
- To encourage investments for financial sustainability

### 5.7.2 Plan and Programs

#### 5.7.2.1 Projection of budget for 2077-078

The total estimated budget of Siddharthanagar for the fiscal year 2076-77 as published by the SM is Rs 1,184.764 M with the Rs. 994.049 from external sources whereas only Rs. 190.715 million from the internal sources of SM. The external sources includes the grant from federal government and provincial government in different headings. But from the strategic projects of each thematic plan as described in this IUDP, the total cost for the projects for the year 2077-78 is Rs. 2,210.08 million. A deficit of NPR 1,403.51 million is observed based on the budget from the central government and municipal income. The deficit amount in each sectoral plan is explicit in the table below.

**Table 5-2 Projection of budget for 2077-078**

S.N	Sector	%	Budget from ministry and Province (in million NPR)	Municipal Budget (in million NPR)	Total Budget SM for 2077-078	Anticipated budget 2077-078 (in million)	Deficit (in million NPR)	Deficit resource allocation (in million NPR)			
								%	Internal	%	External
1	Physical Development Plan	54%	491.17	73.43	564.60	919.58	354.98	30%	106.50	70%	248.489
2	Strategic project	27%	28.07	4.20	32.26	642.06	609.79	30%	182.94	70%	426.856
2	Social Development Plan	7%	105.25	15.73	120.99	229.54	108.55	30%	32.57	70%	75.988
3	Environment Management Plan	3%	21.05	3.15	24.20	105.75	81.55	30%	24.47	70%	57.087
4	Disaster Management Plan	1%	7.02	1.05	8.07	30.37	22.30	30%	6.69	70%	15.613
5	Culture & Tourism Development Plan	1%	14.03	2.10	16.13	32.40	16.27	30%	4.88	70%	11.388
6	Economic Development Plan	3%	21.05	3.15	24.20	123.48	99.28	30%	29.78	70%	69.495
7	Institutional Development Plan	3%	14.03	2.10	16.13	126.90	110.77	30%	33.23	70%	77.538
	Total budget	100%	701.68	104.89	806.57	2,210.08	1,403.51	30%	421.05	70%	982.454

The budget received from GoN is distributed to each sector based on percentage. Similarly, listing is done for each sector for the budget allocated by SM taking the reference of their annual budget record. Thereafter, scarce budget in each sector is derived. The above table clearly shows the deficit amount in each sector. Internal and external resources are identified to obtain this scarce budget.

In **physical development plan**, it is anticipated to attain 30% of deficit amount through internal resource and 70% from external donor agencies.

Internal resource:

- 70% i.e. NPR **74.546 million** is assumed to be arranged through municipal resource like increase of taxes in property, business, automobile, entertainment and advertisements and increase in service taxes like parking fees, building permit, city cleaning, social infrastructure management. Furthermore, there is need of widening the scope of taxes whereby number of people came under the tax provision.
- 30% i.e. NPR **31.948 million** shall be accumulated through people's participation.

External resource:

- Ministry of Federal and Provincial Government
- International Donor agencies like ADB, World Bank, UN, UN Habitat
- Town Development Fund (TDF)
- Investment Board Nepal (IBN)
- Alternative Energy Promotion Center
- Nepal Electricity Authority
- NCell, NTC
- Private Investors

In **Strategic Projects plan** (Danda river corridor, Panchabatika Park, Bhairahawa Gate, Community Agricultural Development Project and Siddhartha cricket stadium), it is anticipated to attain 30% of deficit amount through internal resource and 70% from external donor agencies.

Internal resource:

- 70% i.e. NPR **128.056 million** is assumed to be arranged through municipal resource like increase of taxes in property, business, automobile, entertainment and advertisements and increase in service taxes like parking fees, building permit, City cleaning, social infrastructure management. Furthermore, there is need of widening the scope of taxes whereby number of people came under the tax provision.
- 30% i.e. NPR **54.881 million** shall be accumulated through people's participation.

External resource:

- Ministry of Federal and Provincial Government
- International Donor agencies like ADB, World Bank, UN, UN Habitat
- Town Development Fund (TDF)
- Investment Board Nepal (IBN)
- Alternative Energy Promotion Center
- Nepal Electricity Authority
- National Sport Council
- Private Investors

In **social development plan**, it is expected to accomplish 30% of deficit amount through internal resource and 70% from external donor agencies.

Internal resource:

- Increase in municipal resource like increase of taxes in property, business, automobile, entertainment and advertisements and increase in service taxes like parking fees, building permit, City cleaning, social infrastructure management. Furthermore, there is need of widening the scope of taxes whereby number of people came under the tax provision.

External resource:

- International Donor agencies like ADB, World Bank, UN, GIZ
- UNICEF
- WHO
- Oxfam Nepal
- ActionAid Nepal
- Other INGO and NGO

In **environmental management plan**, it is anticipated to attain 30% of deficit amount through internal resource and 70% from external donor agencies.

Internal resource:

- 70% i.e. NPR **17.126 million** is assumed to be arranged through municipal resource like increase of taxes in property, business, automobile, entertainment and advertisements and increase in service taxes like parking fees, building permit, City cleaning, social infrastructure management. Furthermore, there is need of widening the scope of taxes whereby number of people came under the tax provision.
- 30% i.e. NPR **7.339 million** shall be accumulated through people's participation.

External resource:

- International Donor agencies like ADB, World Bank, UN,
- Alternative Energy Promotion center
- Other INGO and NGO

In **Disaster management plan**, it is assumed DSMC will seek support from the external agencies for collecting the deficit amount for completing the project.

Internal resource:

- Increase in municipal resource like increase of taxes in property, business, automobile, entertainment and advertisements and increase in service taxes like parking fees, building permit, City cleaning, social infrastructure management. Furthermore, there is need of widening the scope of taxes whereby number of people came under the tax provision.

External resource:

- International Donor agencies like ADB, World Bank, UN
- Nepal Society of Earthquake Technology (NSET)
- International center for integrated mountain development (ICIMOD)
- Disaster preparedness network Nepal
- Department for International development (DFID)
- ActionAid Nepal
- Care Nepal
- Nepal Red Cross Society
- Other INGO and NGO

In **Cultural and Tourism development plan**, it is expected to achieve 30% of deficit amount through internal resource and 70% from external donor agencies

Internal resource:

- 30% i.e. NPR **1.454 million** is assumed to be arranged through municipal resource.
- 70% i.e. NPR **3.416 million** shall be accumulated through people's participation.

External resource:

- Archaeological department
- GIZ, UN
- ADB, World Bank
- Other INGO and NGO
- Greater Lumbini Tourism Development Project
- Private Investors

In **Economic development plan**, it is expected to achieve 70% of deficit amount through internal resource and 30% from external donor agencies.

Internal resource:

- The deficit amount is likely to be arranged through private investors and citizens participation

External resource:

- GIZ, ADB, UN
- Agricultural development Bank and Other Banks
- Other INGO and NGO
- Private Investors

In **Institutional development plan**, it is expected to achieve 70% of deficit amount through internal resource and 30% from external donor agencies .

Internal resource:

- The deficit amount is likely to be arranged through municipal resource like increase of taxes in property, business, automobile, entertainment and advertisements and increase in service taxes like parking fees, building permit, City cleaning, social infrastructure management. Furthermore, there is need of widening the scope of taxes whereby number of people came under the tax provision

External resource:

- GIZ, ADB, UN
- Agricultural development Bank and Other Banks
- Other INGO and NGO
- Private Investors

Possible Financial Resources for IUDP implementation

- Citizen's participation
- Public private partnership
- Private investments from multinational groups
- Banks, Co-operatives and Finance companies

- Grant and loans from ADB, World Bank, UN and other INGOs
- Town Development Fund (TDF)
- Investment Board Nepal (IBN)
- NGOs like ActionAid, Sun Farmer, Smaart pani, WaterAid
- City budget

**5.7.2.2 Promotional Strategy of Public Private Partnership**

For effective service delivery and management of infrastructures projects, private sector had proved to be more competent than public sector. By involving private sector, it has potential to increase operating efficiency by making investments in new technologies, bringing innovative solutions, and encouraging more transparent organizational structures. However, not all infrastructure projects are suitable for public private partnership (PPP), and conditions need to exist that entice private sector participation in the delivery of infrastructure assets and provision of service. When efficiently and transparently procured, the benefits of involving the private sector in the delivery of infrastructure include (i) efficient use of the resources, (ii) improved asset and service quality, (iii) improved public sector management, and (iv) overall improvement in public sector procurement. (ADB 2012)

Siddharthanagar already has some projects implemented in PPP model. Some of the strategy for promoting PPP modalities in Siddharthanagar is in the field of tourism, solid waste management and infrastructure development.

The proposed activity for promoting PPP is:

- If government provides basic amenities like water, road, sewerage, drainage, electricity to new areas for hotel development, businessman can be attracted for tourism development. This is also a type of PPP modalities where services are provided by private sector after initiation from public sector.
- Solid waste management can run on concession contract of PPP model where investment is done by private sector in the existing amenities or new innovative solutions can be derived with private ownership for certain period (15-30 years).
- PPP model can be implemented in transport services like buses, taxi services. Facility or operational management contract method can be best suitable for this type with ownership to public sector. Private sector can be given incentives of tax exemption of 10% on vehicle renewal and benefit sharing of 80-20%.
- The maintenance of assets and equipment of temples can be given to private sector with benefit incentive.
- Open public spaces can be given on lease for 10-30 years to private sector to develop parks, commercial building etc. depending on the location.
- The new projects like Bus Park, sports hall, public library can have the 60-40 public private model for investment. Benefits can be given to the shareholders like discounts on tickets or membership.

**5.7.3 LFA for achieving financial development**

Intervention Logic	Indicators	Means of Verification	Assumptions
<b>Goal:</b> Achieving a financial sustainability through maximum utilization of available resources			
<b>Objective:</b>			



<ul style="list-style-type: none"> <li>Identify the areas of economic potential to expand the revenue generation and encourage alternative investment modalities for financial sustainability</li> </ul>			
<p><b>Result:</b></p> <ol style="list-style-type: none"> <li>SM is collecting more revenues.</li> <li>Banks and corporate houses are attracted to Siddharthanagar .</li> <li>Investments from private sector are increased.</li> <li>Citizen’s involvement in projects increased.</li> <li>Collaboration and partnerships with NGOs and INGOs is strong and increased.</li> </ol>	<p>By 2035,</p> <ul style="list-style-type: none"> <li>Internal income from taxes and services are increased by 293 million.</li> <li>Number of corporate office and banks are increased.</li> <li>Strategic projects are completed.</li> <li>Infrastructures are well functioning.</li> </ul>	<ul style="list-style-type: none"> <li>Records of Revenue and Financial Administration Division</li> <li>Planning, Monitoring and Evaluation Division documentation</li> </ul>	<ul style="list-style-type: none"> <li>There is political stability in the country.</li> <li>Enough budgets are available.</li> <li>Revenue is generated.</li> </ul>
<p><b>Activities:</b></p> <ol style="list-style-type: none"> <li>Increase in property taxes, rent, income taxes</li> <li>Increase in service charges</li> <li>Initiate for Loan from TDF, IBN</li> <li>Grant and assistance from GIZ, ADB, World Bank, UN</li> <li>Collaboration with citizens</li> <li>Lobbying private sector investment</li> </ol>		<p><b>Cost: In NPR</b></p>	<p><b>Time Frame</b></p>

#### **5.7.4 Conclusion**

The development of city is indicated by its economic and financial growth. Hence, the financial plan is necessary for proper usage of budget allocated to sub metropolitan city. A proper revenue generation plan and expenditure strategy helps SM to balance its financial state.

- Municipality has limited resources for development. So PPP model is the best as far as possible. It can be in all sectors like service, infrastructures etc.
- Increase of tax is utmost important. Without increasing the tax horizon, municipality cannot fulfill the people’s desire.
- City should attract new technology and management for service delivery and development. New idea for solving municipal issues are important
- New industries and business should be enticed for increasing taxes and employment.

### **5.8 Institutional Development Plan**

Institutional development is the creation or reinforcement of a network of organizations to effectively generate, allocate and use human, material and financial resources to attain specific objectives on a sustainable basis.

#### **5.8.1 Goal, Objectives and Strategy**

**Goal:** Accelerating and managing the development works through efficient and intelligent organizational structure by strengthening and uplifting the capability of concerned stakeholders

**Objectives:**

- To review the existing governance modalities of the city and analyze its effectiveness
- To promote the good governance system

- To identify the various decision making and implementing tools
- To promote multiple stakeholders participation
- To establish a proper co-ordination system between different stakeholders
- To stimulate capacity development of the human resources

**Strategy:**

- Make effective the developmental process by adopting result-based monitoring system.
- Conduct progress review and impact evaluation regularly.
- Conduct annual review, social audit, mid-term and final evaluation in the result framework format in the involvement of third party and make its report public.
- Make the service delivery efficient and effective by adopting mobile apps application and other information technologies.
- Conduct sampling survey, ensure civic participation, organize public dialogue, follow result based framework to make local governance more people centric, responsive and transparent.
- Enhance the transparent, effectiveness and accountability by conducting public audit, public hearing of the implemented projects in the participation of users and stakeholders in the facilitation of civil society during the implementation phase and completion of the projects.

**5.8.2 Plan and Programs**

**5.8.2.1 Municipal structure of Siddharthanagar**

It a local government with substantial authority granted through constitution of Nepal. After the recent government reform, new governing structure is formed with 2 Divisions under which there are number of branches and further there are 8 more branches which is working directly. These are listed beneath and its organogram chart is shown in Fig 5.17.

- 1 General Administration and Monitoring Section
  - a. Store sub-section
  - b. Basic urban services sub-section
  - c. Darta and Chalani unit
  - d. Municipality Police unit
- 2 Planning, Disaster and Environment Division
  - a. Planning section
  - b. Municipality drawing and land administration section
  - c. Sanitation and Disaster Management Section
- 3 Education and Social Development Division
  - a. Education and Sport section
  - b. Women and Social Development section
- 4 Economic Development and Revenue Section
  - a. Revenue Sub Section
  - b. Market Monitoring and Consumer Welfare and Conservation Sub Section
  - c. Urban Industry and Tourism Sub Section
- 5 Financial Administration Section
- 6 Health Section
- 7 Agriculture Section

- 8 Livestock Section
- 9 Internal Auditing Section
- 10 Law Section

The existing appointed staffs shall be distributed to these various divisions according to their qualification and capacity. SM have one Mayor, one Deputy-Mayor and one Chief Administration Officer appointed by central government. In each ward, there is one ward chair, 2 general member, one woman member, one dalit woman member. At present, there is total 172 staff under SM of which 44 are working in ward office.

Ministry of Federal Affairs and General Administration has already suggested an organogram for the local government of different population size considering the new role and responsibility derived to them from the constitution of Nepal. Furthermore, local government has also the responsibility of service delivery to its people through different its section, sub section and units. The existing organogram of SM seems to be inappropriate to cater the present and future needs of SM. Therefore, it is suggested to revisit the organogram of SM in line with the suggestion of MoFAGA.

The existing organogram of SM and suggested organogram is illustrated below.

सिद्धार्थनगर नगरपालिकाको आ. व. २०७६/०७७ को पारित संगठन संरचना

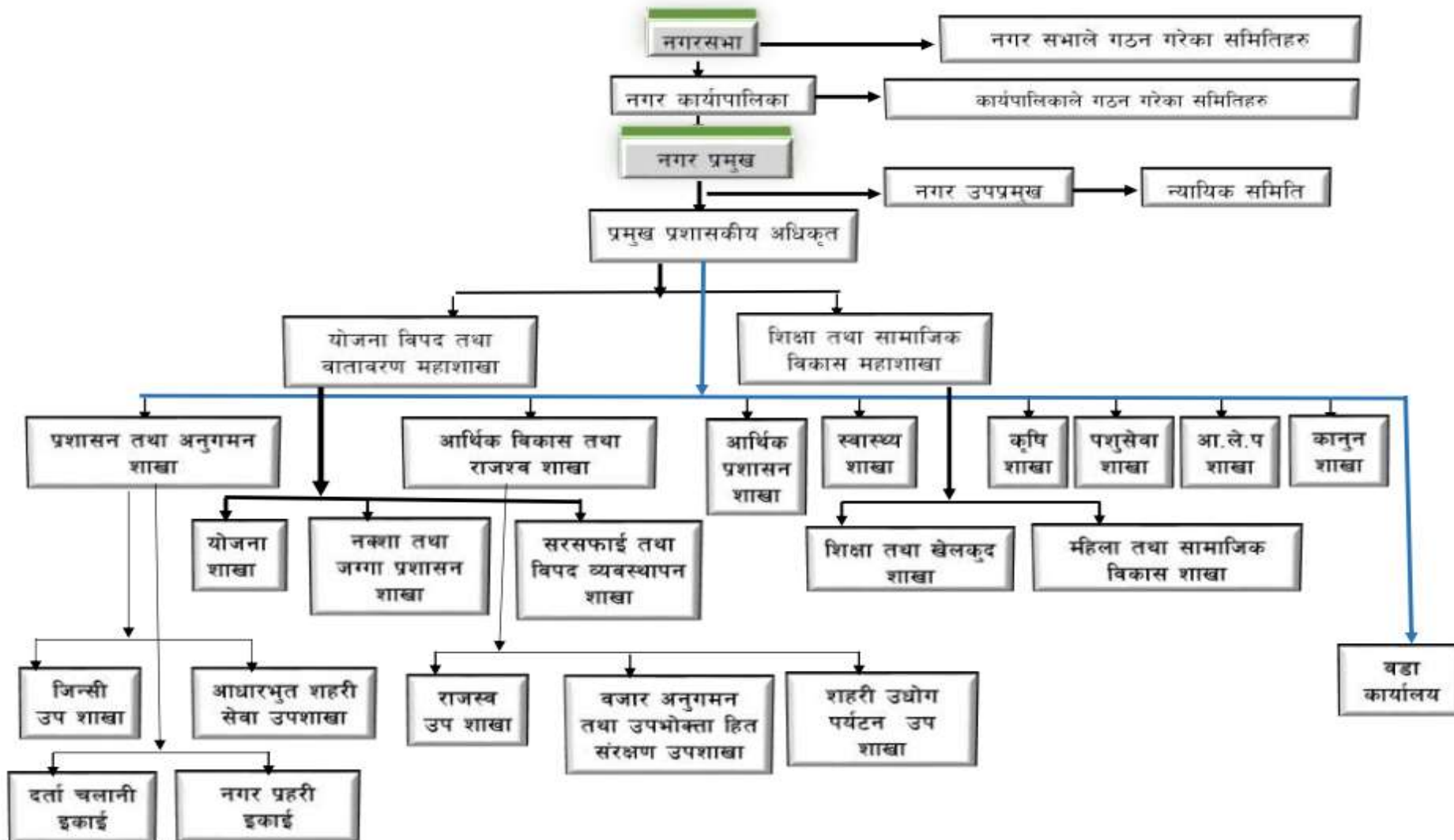


Figure 5-17 Old Organogram of SM

सङ्घीय मामिला तथा सामान्य प्रशासन मन्त्रालयले तयार गरेको स्थानीय तहको संगठन संरचनाको ढाचा र दरबन्दी तेरिज (७५ हजार भन्दा माथि जनसंख्या भएका नगरपालिकाको संगठन संरचना)

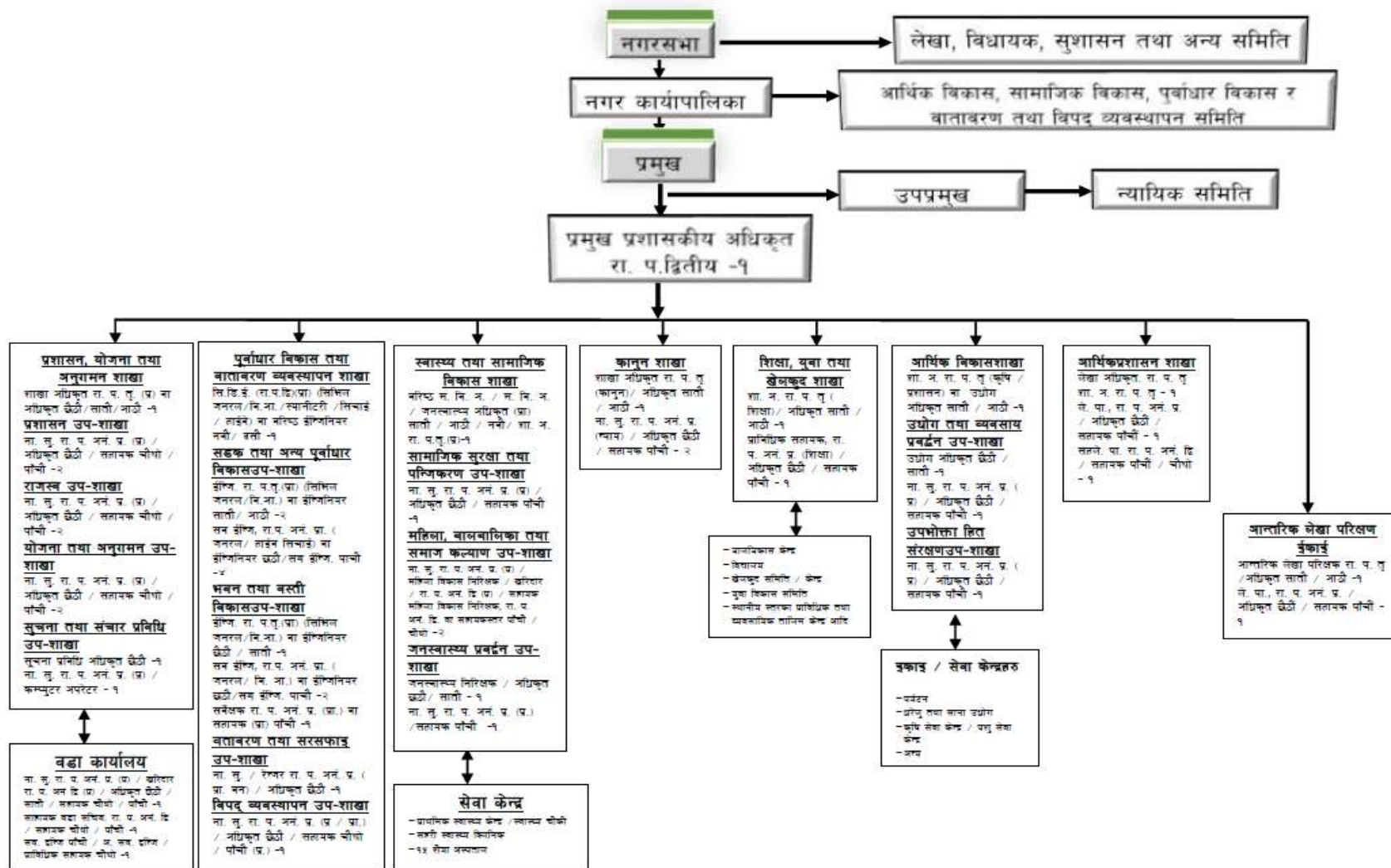


Figure 5-18 Organogram Recommended by MOFALD

सिद्धार्थनगर नगरपालिकाको प्रस्तावित संगठन संरचना

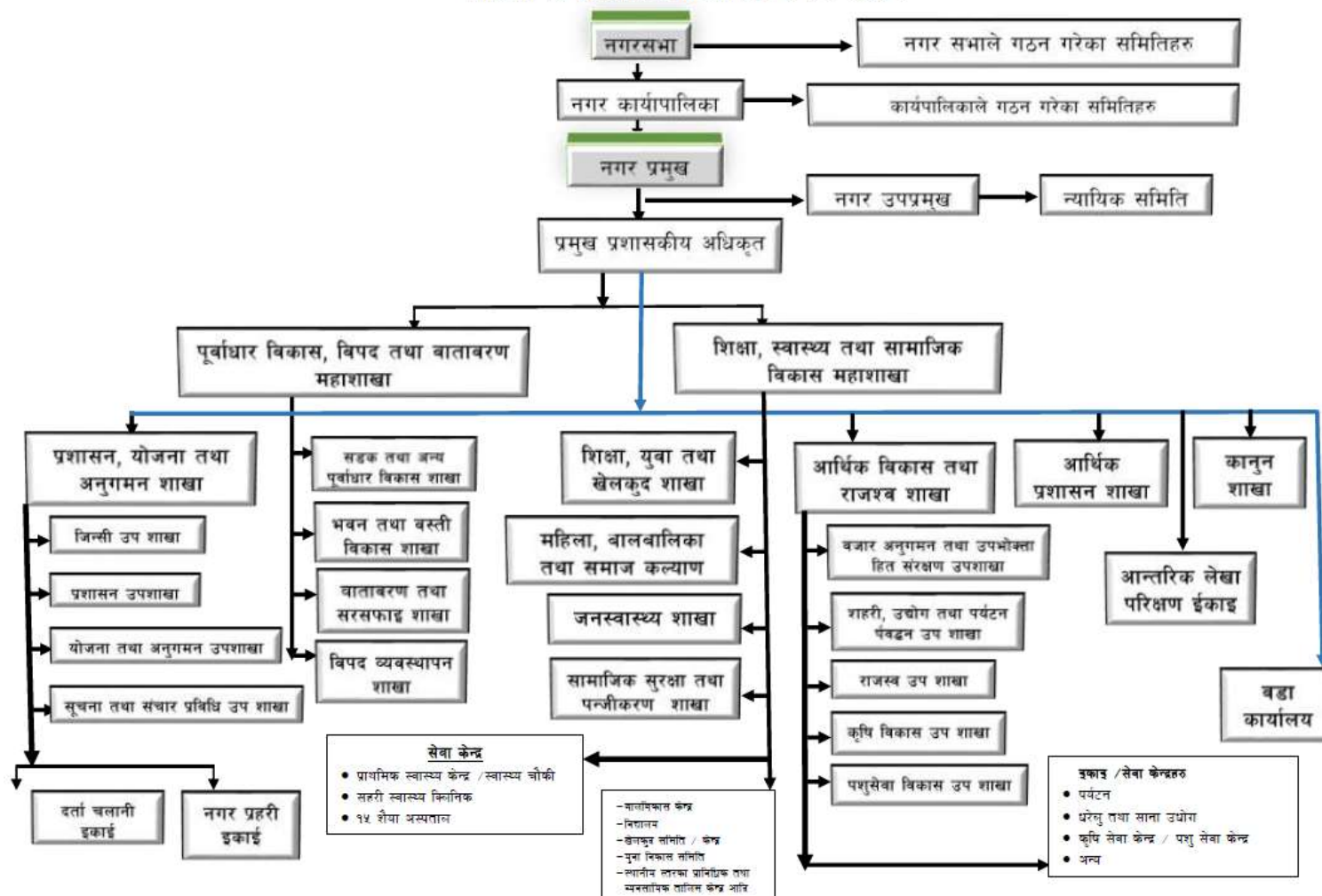


Figure 5-19 New Proposed Organogram of SM





*Figure 5-20 Organizational Chart of Ward office*

### **5.8.2.2 Governance**

Governance is establishment of policies, and continuous monitoring of their proper implementation, by the members of the governing body of an organization. For the effective development of any cities, only establishment of plans and policies is not important, but the execution of such plans in action is mandatory. Only with good governance, a city can achieve the targeted plan. The ultimate goal of the local government is good governance. It comes with the satisfaction of citizens to services delivered by municipality. Besides, many shortcomings i.e. infrastructures, business and trade environment, security etc. enough staffs with required qualifications and skills need to be mobilized for facilitating governance structure. Good governance is not about making 'correct' decisions, but about the best possible process for making those decisions.

For making the administration of SM anti-corruptive, transparent and citizen oriented and increasing the effectiveness of services and facilities to be provided to the citizens optimizing the minimum resources obtained by SM, following governance activities shall be articulated in the city.

- Various workshops and training need to be organized for the municipal staffs to update them with the new technology, process and governance.
- E-governance should be introduced to track the efficiency of municipal services i.e. streetlights, parking and Haat bazaar, road uses, waste management, public toilets and other public services etc.
- Digital system is to be introduced in the SM offices and regular updates of the work plan in its websites shall be done for making the service more efficient.
- For easy and fast service delivery, SM shall establish service centers and mobile service facility.
- The complaints of citizens needed to be managed by ward member in ward level and officer in city level.
- Electronic information system shall be commenced for establishing relation between SM, ward committee and citizens.
- The services in ward and metropolitan office are executed on first come first serve basis.
- Home service for elderly and children shall be introduced.

- For promoting the transparency of Siddharthanagar Municipality’s work, public hearing, public trial and social trial programs shall be executed.

### **5.8.2.3 Participation**

As explained in previous chapters, Siddharthanagar is well-known model city for public participation. Basis of the “tourism, industries, commerce and education – greenery are the desire of Buddhahumi Siddharthanagar” is with mobilization of local resources and citizen’s involvement.

Proposed activities:

- Ward Committee involvement in roads, streets, drainage of buildings, the construction of school buildings and toilets etc.
- Daily and weekly cleaning of road and streets in the local wards by ward committee and banning the entry of loaded vehicle and prohibit actions such as driving over speed
- For the involvement of the private sector, incentives through tax exemptions and subsidy program shall be introduced.
- PPP model can be operated for Park Management and Haat Bazaar Management, Truck Yards Construction, Vegetable Markets, Convention and Trade Centers construction.

### **5.8.2.4 Co-ordination and establishment of networks**

Some of the below mentioned committees shall be formed in SM for effective implementation of development projects:

1. Infrastructure development committee
2. Social development committee
3. Economic development committee
4. Environmental and disaster management committee
5. Public service and capacity development committee
6. Bill (विधेयक) Committee

As, Siddharthanagar municipality is model for public participation; coordination between different stakeholders and creating a good network is also a plus point of SM. For initiation of various development projects, stakeholders needed to be identified and network has to established for the successful completion of the project. For this, SM plays a pivotal role. Each branch in the SM will have a coordinator that synchronizes with the various national and international key players within Siddharthanagar .

### **5.8.2.5 Organization and Capacity development**

Proposed activities:

- Training and workshops shall be conducted for government staffs for adopting new technology and working styles.
- Leadership and communication skill training will be conducted for Ward Chairpersons and ward members.
- The management of street lamps and cleaning done by SM can be given to local ward level for increasing participation and cutting off the extra expenditures of SM.
- Initiate inspiration and admiration award system for the staff for their effective work execution and service delivery to boost their effort.

- Extend the responsibilities of capable candidates according to their potential and abilities for higher level of service delivery.

### 5.8.3 LFA for achieving institutional development

Intervention Logic	Indicators	Means of Verification	Assumptions
<p><b>❖ Goal:</b> Accelerating and managing the development works through efficient and intelligent organizational structure by strengthening and uplifting the capability of concerned stakeholders</p>			
<p><b>❖ Objective:</b> • Execution of good governing system by the local government and organizations with appropriate coordination and support between various stakeholders</p>			
<p><b>❖ Result:</b></p> <ol style="list-style-type: none"> <li>1) Government offices use e-governance system.</li> <li>2) Infrastructures of local body are functioning well.</li> <li>3) Delivery of public services is efficient and quick.</li> <li>4) Public service holders are up-to-date and responsive.</li> <li>5) Number of laws</li> </ol>	<p>By 2035,</p> <ul style="list-style-type: none"> <li>• Number of offices using digital technology is increased.</li> <li>• Local concerned bodies monitor development works.</li> <li>• Each government offices have the required amenities.</li> </ul>	<ul style="list-style-type: none"> <li>• Records of General Administration Division.</li> <li>• Planning, Monitoring and Evaluation Division documentation</li> </ul>	<ul style="list-style-type: none"> <li>• Budget is available</li> <li>• Support is available from donor agency.</li> <li>• Financial support is available from concerned ministry.</li> </ul>
<p><b>Activities:</b></p> <ol style="list-style-type: none"> <li>i. Construction of municipal new office building</li> <li>ii. Improvement of existing 8 ward office buildings</li> <li>iii. New Construction of office building for 5 Wards.</li> <li>iv. Retrofitting of old and dilapidated government buildings</li> <li>v. Training and workshops for capacity development</li> <li>vi. Introduction of digital system in all division, section and sub-section in SM.</li> <li>vii. Formulation of Required Laws, Bylaws, Guideline and Standard Such as Land Use, gender equality and social inclusion etc.</li> <li>viii. Organization of public hearing and trial sessions</li> <li>ix. Home services for needy citizens</li> <li>x. Promotion of PPP model for investments</li> <li>xi. Co-ordination with various organization</li> <li>xii. Facilitation of ward level committees</li> <li>xiii. Award systems for capable and efficient staff</li> <li>xiv. Appointment of new technical staffs</li> <li>xv. Networking of various divisions</li> <li>xvi. Operate and update Municipality website regularly</li> <li>xvii. New vehicles buying</li> <li>xviii. Builds a modern commercial complex at existing municipality office complex</li> <li>xix. Coordination with Federal and Provincial Government for Shifting of Jail and Army Barrack from Core City area to Pachkhuli and Airport site to avail the space for modern park.</li> </ol>		<p><b>Cost: In NPR</b></p> <ol style="list-style-type: none"> <li>i. 50 million</li> <li>ii. 65 million</li> <li>iii. 60 million</li> <li>iv. 15million</li> <li>v. 30 million</li> <li>vi. 10 million</li> <li>vii. 25 million</li> <li>viii. 15 million</li> <li>ix. 45 million</li> <li>x. 5 million</li> <li>xi. 5 million</li> <li>xii. 5 million</li> <li>xiii. 5 million</li> <li>xiv. 50 million</li> <li>xv. 1.9 million</li> <li>xvi. 7.5 million</li> <li>xvii. 60 million</li> <li>xviii. 80 million</li> <li>xix. 80 million</li> </ol>	<p><b>Time Frame</b></p> <ol style="list-style-type: none"> <li>i. 3 yrs.</li> <li>ii. 2 yrs.</li> <li>iii. 3 yrs.</li> <li>iv. 3 yrs.</li> <li>v. Yearly</li> <li>vi. 2 yrs.</li> <li>vii. 5 yrs.</li> <li>viii. Yearly</li> <li>ix. Yearly</li> <li>x. 5 yrs.</li> <li>xi. Yearly</li> <li>xii. Yearly</li> <li>xiii. Yearly</li> <li>xiv. 5 yrs.</li> <li>xv. 1 yr.</li> <li>xvi. 1 yr.</li> <li>xvii. 5 yr.</li> <li>xviii. 3 yrs.</li> <li>xix. 5 yrs.</li> </ol>

#### 5.8.4 Summary of Institutional Development Plan Implementation

Component	Base year 2020	Target 2025	Methodology	Approach	Stakeholder
<b>Ward offices Building</b>	8	13	<ul style="list-style-type: none"> <li>• Design and drawing of ward office</li> <li>• Municipal investment</li> </ul>	<ul style="list-style-type: none"> <li>• Tender</li> <li>• Participation</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> </ul>
<b>Division office</b>	1	10	<ul style="list-style-type: none"> <li>• GoN Investment</li> <li>• Municipal Investment</li> </ul>	<ul style="list-style-type: none"> <li>• Community Participation</li> <li>• Tender</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Citizen</li> </ul>
<b>Vehicles management</b>		100%	<ul style="list-style-type: none"> <li>• O and M survey</li> <li>• Local Demand</li> </ul>	<ul style="list-style-type: none"> <li>• Purchase</li> <li>• Hire</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Suppliers</li> </ul>
<b>Trainings, Skill Development</b>		100%	<ul style="list-style-type: none"> <li>• Demand Analysis</li> <li>• Capacity assessment of staffs</li> </ul>	<ul style="list-style-type: none"> <li>• Regular training</li> <li>• Hire and fire</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Staffs</li> <li>• Service providers</li> </ul>
<b>Special Courses (wiring, water supply, Fire Fighting)</b>		100%	<ul style="list-style-type: none"> <li>• Demand Analysis</li> <li>• Capacity assessment of staffs</li> <li>• Course designs</li> </ul>	<ul style="list-style-type: none"> <li>• Hiring</li> <li>• Service Provider</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• Staffs</li> <li>• Service providers</li> </ul>
<b>Networking</b>		On need basis	<ul style="list-style-type: none"> <li>• Committee formation</li> <li>• Identification of key players</li> </ul>	<ul style="list-style-type: none"> <li>• Coordination</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• SM</li> <li>• NGO</li> <li>• Donor agency</li> <li>• Citizen</li> </ul>

##### 5.8.1 Conclusion

The institutional development plan aims to advocate the good governance tools, promote participatory techniques, increase employee's efficiency and encourage co-ordination and networking for quicker and smoother service delivery. As the government body is reformed currently, more financing is required in new office set up, staff management and other logistics. Besides, investment is required in introduction of modern technology with digital usage in these offices. A total of NPR **589.40 million** is required for institutional management and capacity development.

## **6 Chapter VI: Multi Sectorial Investment Plan**

From the various thematic plans and programs of this IUDP, specific projects are scheduled for 15 years that would cost around NPR **22,089.73 million**. Amongst the total budget, based on the priority, expenses are made on sectoral themes, which is explained hereafter.

From the total cost, **7.41 %** will be spent on **Social Development Plan** that includes education, health, security, Women empowerment, child security, backward communities, sports and community centers.

Further **3.46 %** will be spent on agriculture, tourism, industry and commerce sectors of **Economic Development Plan**.

**54.15 %** of the total budget will be invested on infrastructures construction and improvement like road, bridges, water supply, sanitation, electricity, housing and alternative energy; and

**27.07 %** is invested on **strategic projects** like Danda river corridor, Panchabatika Park, Bhairahawa Gate, Community Agricultural Development Project and Siddartha cricket stadium.

**1.26 %** of the total budget is spent on preservation and conservation of heritage and culture areas as well as **tourism development**.

Moreover, **3.38 %** will be used for environmental protection, sustainable transportation, waste reduction and others of **environmental management plan**.

Likewise, **0.60 %** will be used for **disaster risk management** like flood, fire, earthquake, thunderstorm, plaque and epidemics.

The remaining **2.67 %** will be spent on capacity development and **institutional development**

Table 6-1 Multi Sectoral Investment Plan for 15 years

Multisectoral Investment Plan										
15 years Investment Plan Summary (NPR million)										
S.N	Sector	Anticipated budget on thematic urban development program								
		%	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088- 2091/092	Total of 15 years
1	Physical Development Plan	<b>54.15%</b>	919.58	1052.58	1092.96	1077.96	1073.66	2717.45	4026.72	11960.91
			8%	9%	9%	9%	9%	23%	34%	100%
2	Strategic project	<b>27.07%</b>	642.06	602.06	592.06	592.06	592.06	1184.11	1776.17	5980.57
			11%	10%	10%	10%	10%	20%	30%	100%
3	Social Development Plan	<b>7.41%</b>	229.54	230.99	220.64	191.77	194.77	273.08	295.12	1635.90
			14%	14%	13%	12%	12%	17%	18%	100%
4	Environment Management Plan	<b>3.38%</b>	105.75	103.75	93.75	92.75	92.75	103.5	155.25	747.5
			14%	14%	13%	12%	12%	14%	21%	100%
5	Disaster Management Plan	<b>0.60%</b>	30.37	23.47	18.97	13.47	7.47	15.70	23.45	132.90
			23%	18%	14%	10%	6%	12%	18%	100%
6	Culture and Tourism Development Plan	<b>1.26%</b>	32.4	31.4	30.4	26.4	26.4	52.8	79.2	279
			12%	11%	11%	9%	9%	19%	28%	100%
7	Economic Development Plan	<b>3.46%</b>	123.475	123.475	128.475	86.475	84.475	86.87	130.305	763.55
			16%	16%	17%	11%	11%	11%	17%	100%
8	Institutional Development Plan	<b>2.67%</b>	126.9	126	115.5	90.5	60.5	30.5	39.5	589.4
			22%	21%	20%	15%	10%	5%	7%	100%
		<b>100%</b>								
	Total budget		<b>2210.08</b>	<b>2293.73</b>	<b>2292.75</b>	<b>2171.38</b>	<b>2132.08</b>	<b>4464.02</b>	<b>6525.71</b>	<b>22089.73</b>



Table 6-2 Detail budget of various projects for 15 years

Detail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
<b>1</b>	<b>Physical Development plan (in million NPR)</b>												
<b>a</b>	<b>Road</b>												
1	Track opening of 45 km road	Km	45	25	1125.00	15	112.500	112.500	112.500	112.500	112.500	225.000	337.500
2	Black Topping of 121 km road	Km	121	6	726.00	15	72.600	72.600	72.600	72.600	72.600	145.200	217.800
3	Regular Maintenance of road	Km	271	1	271.00	15	27.100	27.100	27.100	27.100	27.100	54.200	81.300
4	Ward Level Road Project Upgrade	Km	100.5	22.5	2266.26	15	226.626	226.626	226.626	226.626	226.626	453.253	679.879
5	Widening of Road	Km	75	2.5	187.5	15	18.750	18.750	18.750	18.750	18.750	37.500	56.250
6	Feasibility study of New Track Opening Road	Km	45	0.02	0.9	3		0.300	0.300	0.300			0
7	DPR of New Track Opening Road	Km	45	0.075	3.375	3			1.125	1.125	1.125		0
8	Ring road – Connecting Rohini to Tinau in coordination with neighboring RMs (Coordination, Feasibility Study, DPR and Construction)	Km	30	30	900	15	90.000	90.000	90.000	90.000	90.000	180.000	270.000
9	Upgrade the Bank Road to Promote the tourism like as Basantapur Ktm	Km	0.55	25	13.75	15	1.375	1.375	1.375	1.375	1.375	2.750	4.125
10	Construction of alternative bye pass road at east and west of the city area	Km	2.5	30	75	15	7.500	7.500	7.500	7.500	7.500	15.000	22.500
11	Upgrade the Bhairahawa – Butwal as a commercial road with the lane improvement	Km	3	20	60	15	6.000	6.000	6.000	6.000	6.000	12.000	18.000
	Total				5628.79		562.451	562.751	563.876	563.876	563.576	1124.903	1687.354
<b>b</b>	<b>Bridge</b>												

etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
1	Four Overhead Bridges (Putali bazar, Lumbini gate chowk, Buddha Chowk (north) and Behalia)	Nos	4	4.50	18	5	3.6	3.6	3.6	3.6	3.6		
2	Suvey, Design and Construction of Four Overhead Bridges	Nos	4	0.50	2	1	2						
3	Feasibility Study, DPR and Construction of Flyover bridge at Buddha Chowk and Devkota Chowk	Nos	2	150.00	300	15	15.000	45.000	30.000	30.000	30.000	60.000	90.000
	Total				320		20.6	48.6	33.6	33.6	33.6	60	90
<b>c</b>	<b>Metro and Mono Rail</b>												
1	Feasibility study, DPR and Constuction of Mono Rail on the proposed Ring Road	Km	30	30	900	15	9.000	45.000	45.000	45.000	45.000	261.000	450.000
2	Study and Construction Metro rail operation in Lumbini Bhairahawa Butwal	Km	40	30	1200	15	12.000	60.000	60.000	60.000	60.000	348.000	600.000
	Total				2100		21.000	105.000	105.000	105.000	105.000	609.000	1050.000
<b>d</b>	<b>Bus park</b>												
1	1 new bus parks construction for Inter City Bus Terminal	sq.m	2000	0.02	40	9		8	8	8	8	8	
2	Extention and Upgrade of Existing Bus Park for Intra City Bus Terminal	sq.m	4000	0.005	20	15	2	2	2	2	2	4	6
3	5 small Parking space development	sq.m	15000	0.002	30	3	10	10	10				
4	20 bus stops construction	no.	20	1.5	48	6	8	8	8	12	12		
5	Feasibility Study and DPR of Inter City Bus Terminal	sq.m	2000	0.0025	5	2	2.5	2.5					
6	Relocated (shifted) the Jail to the area of Patakhauli and develop a modern parking area	sq.m	1500	0.2	300	15	3.000	15.000	15.000	15.000	15.000	87.000	150.000

etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
	Total				443		25.5	45.5	43	37	37	99	156
<b>e</b>	<b>Water Supply and Irrigation</b>												
1	Rain water harvesting subsidy on 5,000 HH	no.	5000	0.04	200	15	20	20	20	20	20	40	60
2	Feasibility study of Ground water resources	no.	3	1	3	2	1.5	1.5					
3	Construction of Water supply Project	HH	15000	0.03	450	15	11.25	11.25	45	45	45	135	157.5
4	Water Supply and Irrigation Project of Ward Level				99.8	15	9.98	9.98	9.98	9.98	9.98	29.94	19.96
5	Construction of overhead tank for water storage should be provisioned in each ward	no.	13	20	260	15	6.5	6.5	26	26	26	78	91
	Total				1012.8		49.23	49.23	100.98	100.98	100.98	282.94	328.46
<b>f</b>	<b>Electricity and Communication</b>												
1	Expansion of Electricity network (7%)	%	7		10	3	2	3	5				
2	Deatil Feasibility study for underground electric cables and Construction	Km	200	2	400	15	40	40	40	40	40	80	120
3	Solar panel installations subsidy on 3,000 HH	No	3000	0.025	75	15	7.5	7.5	7.5	7.5	7.5	15	22.5
4	Telecommunication and optical fibers for internet expansion and improvement	Km	35	2	70	15	3.5	3.5	3.5	3.5	7	14	35
5	Free Wi-Fi on 13 public places of Each Ward	no.	13	0.1	1.3	1	1.3						
6	Electricity, Solar and Communication of Ward Level				46.05	15	4.605	4.605	4.605	4.605	4.605	13.815	9.21
	Total				602.35		58.905	58.605	60.605	55.605	59.105	122.815	186.71
<b>g</b>	<b>Sewerage and Drainage</b>												
1	200 km sewerage line installation	Km	200	4	800.00	15	80.00	80.00	80.00	80.00	80.00	160.00	240.00

etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
2	135.5 km drainage construction	Km	135.5	2	271.00	15	27.10	27.10	27.10	27.10	27.10	54.20	81.30
3	Sewerage, Drainage and footpath construction of Ward Level				122.98	15	12.30	12.30	12.30	12.30	12.30	24.60	36.89
4	Construction of 2 treatment plant	Nos	2	200	400.00	15	40.00	40.00	40.00	40.00	40.00	80.00	120.00
	Total				1593.98		159.40	159.40	159.40	159.40	159.40	318.80	478.19
<b>h</b>	<b>Solid waste Management</b>												
1	Construction of 1 land fill site	No	1	200	200	10	10	10	10	10	10	100	50
2	Installation of 10,000 public dustbins on streets	No	10000	0.0005	5	3	1	2	2				
	Total				205		11	12	12	10	10	100	50
<b>i</b>	<b>Housing</b>												
1	Land pooling and site and services program commencement	no.	3	10	30	4	5	5	10	10			
2	Facilitation of Investment on affordable group housing and apartments				5	5	2	2	1				
3	Housing Support for low and middle income groups	HH	300	0.05	15	5	2.5	2.5	2.5	2.5	5		
4	Maintaining and updating building records				5	5	2	2	1				
	Total				55		11.5	11.5	14.5	12.5	5		
<b>2</b>	<b>Strategic Projects (in million NPR)</b>												
<b>a</b>	<b>Danda River Corridor</b>												

etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
1	construction of vehicle and bicycle parking, entry plaza, ticket counter, fountain plaza with geodesic dome, amphitheater, children's play area, elderly retreat area, cafeteria, restrooms and other services	sq.m	60000	0.02	1200	15	120.00	120.00	120.00	120.00	120.00	240.00	360.00
2	BUDDHA PARK / MEDITATION AREA [construction of meditation areas, flower gardens, Yoga area, global plaza, rock garden, zen garden, viewing deck for wetlands, sheds, restrooms etc.]	sq.m	60000	0.05	3000	15	300.00	300.00	300.00	300.00	300.00	600.00	900.00
3	Danda River Corridor construction of large playground with seating provision, children's playing area, elderly retreat area, youth recreational area, cafeterias, restrooms etc	sq.m	50000	0.02	1000	15	100.00	100.00	100.00	100.00	100.00	200.00	300.00
4	River embankment	Km	4	6	24	15	2.40	2.40	2.40	2.40	2.40	4.80	7.20
5	Pedestrian and cycle lane of 2.5m width construction	Km	2.5	3	7.5	15	0.75	0.75	0.75	0.75	0.75	1.50	2.25
6	Garden development 1000 sq.m	sq.m	1000	0.01	10	15	1.00	1.00	1.00	1.00	1.00	2.00	3.00
	Total				5241.5		524.15	524.15	524.15	524.15	524.15	1048.30	1572.45
<b>b</b>	<b>Panchabatika Park</b>												
	Construction of Panchabatika Park	sq.m	6907	0.0100	69.07	15	6.91	6.91	6.91	6.91	6.91	13.81	20.72
<b>c</b>	<b>Bhairahawa Gate</b>												
	Construction of Gate and Park				60	2	50	10					
<b>d</b>	<b>Community Agricultural Development Project</b>												
	Construction of complex, Hatbazar and Parking area in ward no -5 and 13				360	5	36.00	36.00	36.00	36.00	36.00	72.00	108.00

etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
<b>e</b>	<b>Siddhartha cricket stadium</b>												
	Construction of Siddhartha cricket stadium				250	15	25.00	25.00	25.00	25.00	25.00	50.00	75.00
<b>3</b>	<b>Social development plan (in million NPR)</b>												
<b>a</b>	<b>Education</b>												
1	Construction of 19 primary schools buildings	no.	19	5	95	5	9.50	9.50	9.50	9.50	9.50	19.00	28.50
2	Education Program recommended by Ward Level				68	15	6.8	6.8	6.8	6.8	6.8	20.4	13.6
3	Facilitation of elderly classes	Person	200	0.02	4	yearly	0.40	0.40	0.40	0.40	0.40	0.80	1.20
4	Promoting modern teaching system in schools	no.	122	0.05	6.1	3	1.5	1.5	3.1				
5	Distributing e-learning materials in government schools	no.	40	0.7	28	5	5	5	5	6	7		
6	Scholarship provision for backward groups	Person	300	0.012	3.6	yearly	0.36	0.36	0.36	0.36	0.36	0.72	1.08
7	ECD programs in government schools	no.	26	0.2	5.2	3	1.6	1.3	2.3				
8	Improvements of amenities of government educational institutes	no.	26	1	26	5	4	4	4	6	8		
9	Promotional events for increasing literacy	%	10		3	2	1.5	1.5					
10	Municipality should develop the school curriculum for moral education	LS			5	yearly	0.50	0.50	0.50	0.50	0.50	1.00	1.50
11	Develop Paklihawa Campus as a provincial campus	No	1	20	20	15	2.00	2.00	2.00	2.00	2.00	4.00	6.00
	Total				263.9		33.16	32.86	33.96	31.56	34.56	45.92	51.88
<b>b</b>	<b>Health</b>												



etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
1	Organizing child vaccination programs	Person	5000	0.0005	2.5	yearly	0.25	0.25	0.25	0.25	0.25	0.50	0.75
2	Promotion to nutrition programs	No	13	2	26	yearly	2.60	2.60	2.60	2.60	2.60	5.20	7.80
3	Encouragement of safe and secure maternity delivery	No	13	1	13	yearly	1.30	1.30	1.30	1.30	1.30	2.60	3.90
4	Initiating free checkup facilities for differently abled and elderly	Person	2000	0.005	10	yearly	1.00	1.00	1.00	1.00	1.00	2.00	3.00
5	HIV/Aids rehabilitation program	No	13	1	13	yearly	1.30	1.30	1.30	1.30	1.30	2.60	3.90
6	Empowerment programs for HIV/drug addiction community	no.	13	0.25	3.25	yearly	0.33	0.33	0.33	0.33	0.33	0.65	0.98
7	Improvement of amenities of Bhim Hospital	No	1	5	5	2	2.5	2.5					
8	Establishment of health groups in each ward	no.	13	0.25	3.25	2	1.25	2					
9	Operate City Health Cleaning in each wards	no.	13	0.5	6.5	15	0.65	0.65	0.65	0.65	0.65	1.30	1.95
10	Develop Bhim hospital as a modern and highly equipped Maternity Hospital	no.	1	3	3	2	1.50	1.50					
11	Promotion of Smoke Less stove and Bio Gas	no.	65	0.2	13	5	1.30	1.30	1.30	4.55	4.55		
12	Provision of Outdoor fitness equipment in parks	no.	13	5	65	5	6.50	6.50	6.50	22.75	22.75		
13	Establishment of rehabilitation center for drug addicts and mental health	no.	13	1	13	5	1.30	1.30	1.30	4.55	4.55		
14	Promotional allowance for female community health volunteer	no.	13	0.5	6.5	5	0.65	0.65	0.65	2.28	2.28		
	Total				183		22.43	23.18	17.18	41.55	41.55	14.85	22.28
<b>c</b>	<b>Women &amp; Child Welfare</b>												

etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
1	Promotion of demoralizing usage of child in household works				5	5	1	1	1	1	1		
2	Women empowerment workshops and training	no.	13	0.6	7.8	3	2.5	2.5	2.8				
3	Training on physical security	no.	13	0.5	6.5	3	2	2	2.5				
4	Management of women groups in each ward	no.	13	0.05	9.75	yearly	0.98	0.98	0.98	0.98	0.98	1.95	2.93
5	Management of child groups	no.	13	0.04	7.8	yearly	0.78	0.78	0.78	0.78	0.78	1.56	2.34
6	Rehabilitation of homeless children	Person	400	0.005	30	yearly	3.00	3.00	3.00	3.00	3.00	6.00	9.00
7	Establishment of orphanage centers	no.	1	18	18	3	6	6	6				
8	Women & Child Welfare from Ward Level				53	15	5.30	5.30	5.30	5.30	5.30	10.60	15.90
9	Safe shelter for Violence victims	no.	3	5	15	3	5.00	5.00	5.00				
10	campaign against child marriage, polygamy, domestic violence and child labour	no.	13	0.5	6.5	3	2.00	2.00	2.50				
11	Preparation gender responsive budget for municipality	no.	13	0.25	3.25	3	1.00	1.00	1.25				
12	Facilate for Formation of Child club and Youth Club	no.	13	0.5	6.5	3	2.00	2.00	2.50				
	Total				169.1		31.555	31.555	33.605	11.055	11.055	20.11	30.165
<b>d</b>	<b>Security and Social mobilization</b>												
1	Events on Social welfare	no.	13	0.1	19.5	yearly	1.95	1.95	1.95	1.95	1.95	3.90	5.85
2	Social mobilization coordination				13	yearly	1.30	1.30	1.30	1.30	1.30	2.60	3.90
3	Establishment of social groups in each wards	no.	13	0.3	3.9	3	1.3	1.3	1.3				
4	Research on traditional culture and ethnic groups				6	3	2	2	2				

etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
5	Programs for marginalized groups	no.	13	1.5	19.5	3	6.5	6.5	6.5				
6	Establishment of old age homes	no.	6	15	90	15	9.00	9.00	9.00	9.00	9.00	18.00	27.00
7	Program for Post ODF	no.	13	0.5	6.5	3	2.00	2.00	2.50				
	Total				158.4		24.05	24.05	24.55	12.25	12.25	24.50	36.75
<b>e</b>	<b>Sports</b>												
1	Construction of Multipurpose hall / sports hall at Bhailabhuj	sq.m	1500	0.035	52.5	15	5.25	5.25	5.25	5.25	5.25	10.50	15.75
2	Improvement of Siddharth Cricket stadium (Rangsala) amenities	no.	1	150	150	15	15.00	15.00	15.00	15.00	15.00	30.00	45.00
3	Establishment of Sports Academy	no.	1	100	100	15	10.00	10.00	10.00	10.00	10.00	20.00	30.00
4	Sports scholarships for socially backward groups	Person	200	0.012	36	yearly	3.60	3.60	3.60	3.60	3.60	7.20	10.80
	Total				338.5		33.85	33.85	33.85	33.85	33.85	67.70	101.55
<b>f</b>	<b>Amenities</b>												
1	Formation of 10 community libraries	No	10	3	30	5	6	6	6	6	6		
2	Upgrading facilities of city library	No	1	7	7	2	3	4					
3	Construction of 2 exhibition halls	sq.m	7500	0.01	75	5	15	15	15	15	15		
4	13 new police post building construction	No	13	5	65	10	6.5	6.5	6.5	6.5	6.5	32.5	
5	Improvement of 3 police stations	No	3	2	6	3	2	2	2				
6	Construction of 13 new parks	No	13	5	65	10	6.5	6.5	6.5	6.5	6.5	32.5	
7	Upgrading of existing parks	No	13	2	26	3	8	8	10				
8	Construction of museum				4	2	2	2					
9	Improvement of amenities of existing city hall				10	2	5	5					
10	Management of City hall				15	yearly	2	2	2	2	2	2	3

etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
11	Electric incineration chamber installment	No	2	5	10	3	3	3	4				
12	15 public toilet construction	No	15	3	45	5	9	9	9	9	9		
13	Solar street lamps installation	No	2500	0.018	45	15	4.50	4.50	4.50	4.50	4.50	9.00	13.50
14	Relocated the army barrack from the city core area to Airport area and develop a modern park	No	1	120	120	15	12.00	12.00	12.00	12.00	12.00	24.00	36.00
	Total				523		84.5	85.5	77.5	61.5	61.5	100	52.5
<b>4</b>	<b>Environmental management plan (in million NPR)</b>												
<b>a</b>	<b>Pollution</b>												
1	Construction of Slaughter house	No	17	5	85	15	8.50	8.50	8.50	8.50	8.50	17.00	25.50
2	Enforcement of regulation and byelaws				5	3	2	2	1				
3	Vehicular emission restriction				10	5	2	2	2	2	2		
4	Awareness Program against environmental pollution	no.	13	0.6	7.8	15	0.78	0.78	0.78	0.78	0.78	1.56	2.34
5	Construction of cycle lane, footpath on Danda Khola corridor	Km	15	3	45	15	4.50	4.50	4.50	4.50	4.50	9.00	13.50
6	Electric public vehicle promotion				15	5	3	3	3	3	3		
7	Waste separation concept promotion				15	5	3	3	3	3	3		
8	Workshop on organic fertilizers from waste	no.	13	0.4	5.2	15	0.52	0.52	0.52	0.52	0.52	1.04	1.56
9	Subsidy for Construction of toilets in Public Places	no.	39	3	117	15	11.70	11.70	11.70	11.70	11.70	23.40	35.10
	Total				305		36	36	35	34	34	52	78
<b>b</b>	<b>Conservation area</b>												

etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
1	Tree plantation on City Area	no.	5000	0.001	5	2	2.5	2.5					
2	Improvement and Construction of water reservoirs on Existing Pokari and Tal	no.	13	5	65	5	13	13	13	13	13		
3	Water source protection programs	no.	13	0.5	97.5	yearly	9.75	9.75	9.75	9.75	9.75	19.50	29.25
4	DPR for eco parks	no.	1	6	6	2	4	2					
5	Maintain and update of Public land	no.	1	3	3	2	1.5	1.5					
	Total				176.5		30.75	28.75	22.75	22.75	22.75	19.5	29.25
<b>c</b>	<b>Urban greenery</b>												
1	Establishment and management of forest nursery in Each Ward	no.	13	3	39	5	7.8	7.8	7.8	7.8	7.8		
2	promote and subsidies one house two trees program	no.	3000	0.001	3	5	0.6	0.6	0.6	0.6	0.6		
3	Tree plantation along major road of 100 km	no.	4000	0.001	4	5	0.8	0.8	0.8	0.8	0.8		
4	Tax Exemption for promoting urban greenery	HH	3000	0.01	30	3	3.00	3.00	3.00	3.00	3.00	6.00	9.00
5	Organizing workshops and trainings for green roof and urban farm	Times	4	0.05	3	yearly	0.30	0.30	0.30	0.30	0.30	0.60	0.90
6	Tree plantation in public places park school area religious places archaeological area	no.	13	3	39	5	7.8	7.8	7.8	7.8	7.8		
7	Appropriate herbs plants for income generation	no.	5	3	15	5	3	3	3	3	3		
	Total				133		23.3	23.3	23.3	23.3	23.3	6.6	9.9
<b>d</b>	<b>Sustainable City</b>												
1	Construction of 20 km cycle lanes on major roads	Km	20	2.2	44	15	4.40	4.40	4.40	4.40	4.40	8.80	13.20

etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
2	Developing 50 km pedestrian lane on major roads	Km	50	1.5	75	15	7.50	7.50	7.50	7.50	7.50	15.00	22.50
3	Promotion of alternative/renewable energy				8	yearly	0.80	0.80	0.80	0.80	0.80	1.60	2.40
4	Promotion of car and taxi sharing programs				3	2	1.5	1.5					
5	Promotion for Noise Free City - No Horn programs				3	2	1.5	1.5					
	Total				133		15.70	15.7	12.7	12.7	12.7	25.4	38.1
<b>5</b>	<b>Disaster Management Plan(in million NPR)</b>												
1	Subsidy for Construction of earthquake resistant buildings	no.	300	0.02	6	yearly	0.60	0.60	0.60	0.60	0.60	1.20	1.80
2	Enforcement of regulation and byelaws				10	yearly	1.00	1.00	1.00	1.00	1.00	2.00	3.00
3	Protection against flooding of Danda Khola				10	2	5.00	5.00					
4	Awareness program for fire safety				8	yearly	0.80	0.80	0.80	0.80	0.80	1.60	2.40
5	Workshop of earthing techniques for preventing Thunderstorm	Times	6	0.15	13.5	yearly	1.35	1.35	1.35	1.35	1.35	2.70	4.05
6	Plague control awareness programs				8	yearly	0.80	0.80	0.80	0.80	0.80	1.60	2.40
7	Establishment of epidemics department on Bhim Hospital	no.	1	20	20	4	4	5	5	6			
8	Collaboration with Bhim Hospital for health service				1	yearly	0.10	0.10	0.10	0.10	0.10	0.20	0.30
9	Establishment of emergency health groups	no.	13	0.5	6.5	1	6.5						



etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
10	Establishment of local rescuing team	no.	7	0.2	1.4	1	1.4						
11	Formation and Training for different task forces	no.	13	0.5	6.5	3	2	2	2.5				
12	Training for rescuers	Times	2	0.2	6	yearly	0.60	0.60	0.60	0.60	0.60	1.20	1.80
13	Relocation of squatter settlements	no.	200	0.1	20	15	2.00	2.00	2.00	2.00	2.00	4.00	6.00
14	Alarm system for flood inundation	no.	4	3	12	3	4	4	4				
15	Evacuation plan promotion during emergency				2	yearly	0.20	0.20	0.20	0.20	0.20	0.40	0.60
16	Signage for evacuation routes				2	15	0.02	0.02	0.02	0.02	0.02	0.80	1.10
	Total				132.9	44	30.37	23.47	18.97	13.47	7.47	15.70	23.45
<b>6</b>	<b>Cultural and Tourism Development Plan (in million NPR)</b>												
<b>a</b>	<b>Heritage site</b>												
1	Development of pedestrian lane of 15 km connecting famous temples and Places	Km	15	2	30	15	3.00	3.00	3.00	3.00	3.00	6.00	9.00
2	Temple premises management	Nos	55	0.5	27.5	yearly	2.75	2.75	2.75	2.75	2.75	5.50	8.25
3	Improvement of road to Kotimai temple from city core area.	Nos	4	15	60	15	6.00	6.00	6.00	6.00	6.00	12.00	18.00
4	Infrastructure development of Durga Mandir, Radhakrishna Mandir as so on.	nos.	13	2	26	15	2.60	2.60	2.60	2.60	2.60	5.20	7.80
	Total				143.5		14.35	14.35	14.35	14.35	14.35	28.70	43.05
<b>b</b>	<b>Historic site</b>												

etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
1	Façade improvements of buildings Bank Road	no.	200	0.1	20	15	2.00	2.00	2.00	2.00	2.00	4.00	6.00
2	Byelaws enforcement				3	15	0.30	0.30	0.30	0.30	0.30	0.60	0.90
	Total				23		2.3	2.3	2.3	2.3	2.3	4.6	6.9
<b>c</b>	<b>Tourism</b>												
1	Danda Khola impoundment to develop as a Boating Place	No	1	50	50	15	5.00	5.00	5.00	5.00	5.00	10.00	15.00
2	Cycle trek development of 5 km from Parasi road to Boarder.	Km	5	5	25	15	2.50	2.50	2.50	2.50	2.50	5.00	7.50
3	7 Tourist Information centers operation	No	7	0.5	22.5	yearly	2.25	2.25	2.25	2.25	2.25	4.50	6.75
4	Homestay workshops				2	2	1	1					
5	Introduction of Guided tour in City bus				2	2	1	1					
6	Preparation of Comprehensive Tourism Plan of Municipality				1	1	1						
7	Develop a night market at the site of National Trading Centre				10	3	3	3	4				
	Total				112.5		15.75	14.75	13.75	9.75	9.75	19.50	29.25
<b>7</b>	<b>Economic Development Plan (in million NPR)</b>												
<b>a</b>	<b>Agro farming and Livestock</b>												
1	Establishment of 3 Cold storage and collection centers	No	3	2	6	15	0.60	0.60	0.60	0.60	0.60	1.20	1.80
2	Subsidy for organic manure production, cold storage, fish farming fodder and forage production. Pellat for poultry	no.	13	1	13	15	1.30	1.30	1.30	1.30	1.30	2.60	3.90
3	Trainings on animal farming and agriculture	Times	4	0.2	12	yearly	1.20	1.20	1.20	1.20	1.20	2.40	3.60

etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
4	Danda Khola impounding for irrigation Study , Design and Constraction	no.	1	30	30	15	3.00	3.00	3.00	3.00	3.00	6.00	9.00
5	Construction of irrigation canal	Km	8	3	24	15	2.40	2.40	2.40	2.40	2.40	4.80	7.20
6	Promotion of organic farming and off seasonal farming	No	13	1	13	5	3	3	3	3	1		
7	Loans for construction of green house farming and others	Person	130	0.1	13	15	1.30	1.30	1.30	1.30	1.30	2.60	3.90
8	Networking activities with surrounding villages for product exports	no.	13	0.04	7.8	yearly	0.78	0.78	0.78	0.78	0.78	1.56	2.34
9	Improvement of access road to neighborhood rural areas	Km	15	2	30	15	3.00	3.00	3.00	3.00	3.00	6.00	9.00
10	Coordination for Loan for agro farming				10	yearly	1.00	1.00	1.00	1.00	1.00	2.00	3.00
11	Subsidy for Fodder and Forage and Pellet Production				10	yearly	1.00	1.00	1.00	1.00	1.00	2.00	3.00
12	Promotion for Fish Farming and Construction of Pond	no.	13	2	26	5	5.20	5.20	5.20	5.20	5.20		
13	Cereal Crop seed Production	no.	13	0.5	6.5	5	1.30	1.30	1.30	1.30	1.30		
14	Vegetable Farming	no.	13	0.3	3.9	5	0.78	0.78	0.78	0.78	0.78		
15	Roof Farming	no.	13	0.2	2.6	5	0.52	0.52	0.52	0.52	0.52		
16	Mushroom Farming	no.	13	0.6	7.8	5	1.56	1.56	1.56	1.56	1.56		
17	Market for Organic Products	no.	13	0.8	10.4	5	2.08	2.08	2.08	2.08	2.08		
18	Dairy and Meat Production	no.	13	1	13	5	2.60	2.60	2.60	2.60	2.60		
	Total				239		32.62	32.62	32.62	32.62	30.62	31.16	46.74
<b>b</b>	<b>Tourism</b>												

etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
1	Coordination with national and international travelling agencies	no.	13	0.08	15.6	yearly	1.56	1.56	1.56	1.56	1.56	3.12	4.68
2	Promotional events through internet and advertisements	no.	13	0.01	1.95	yearly	0.20	0.20	0.20	0.20	0.20	0.39	0.59
3	Educating students and local youths for information flow				5	yearly	0.50	0.50	0.50	0.50	0.50	1.00	1.50
4	Operate night market focusing tourist at wardno 1, 3, 5, 8 and 13	No	5	2	10	3	3.00	3.00	4.00				
5	Construction of vehicle parking for tourist at ward no 1 and 5	No	2	5	10	3	3.00	3.00	4.00				
6	Develop and construct tourist park at ward no 1, 5, 8 and 9	No	4	3	12	5	4.00	4.00	4.00				
7	Promotion of electric tourist vehicle				10	3	3.00	3.00	4.00				
	Total				64.55		15.26	15.26	18.26	2.26	2.26	4.51	6.77
<b>c</b>	<b>Infrastructure</b>												
1	Construction of 13 vegetable market structures.	No	13	5	65	15	6.50	6.50	6.50	6.50	6.50	13.00	19.50
2	Construction of commercial complex with 1 movie hall in existing municipality office complex.	No	1	30	30	15	3.00	3.00	3.00	3.00	3.00	6.00	9.00
3	Improvement of 2 Existing Movies Halls	No	2	7.5	15	5	3	3	3	3	3		
4	Pumping set Distribution	No	200	0.5	100	5	20	20	20	20	20		
	Total				210		32.50	32.50	32.50	32.50	32.50	19.00	28.50
<b>d</b>	<b>Trade and Industry</b>												
1	Tax exemption on construction of industries.	%	20		15	5	3	3	3	3	3		

etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
2	Provision of physical amenities to local industry				8	3	3	3	2				
3	Loans for local industry formation	no.	100	0.2	20	3	2.00	2.00	2.00	2.00	2.00	4.00	6.00
4	Subsidy on homestay conduction and small lodges	no.	100	0.5	50	2	5.00	5.00	5.00	5.00	5.00	10.00	15.00
5	Coordination with local banks for loans	no.	13	2	26	yearly	2.60	2.60	2.60	2.60	2.60	5.20	7.80
6	Solid Waste Product Processing Industry	no.	13	5	65	yearly	6.50	6.50	6.50	6.50	6.50	13.00	19.50
7	Organic Cold Store	no.	3	5	15	3	5.00	5.00	5.00				
8	Organic Fertilizer Industry	no.	13	2	26	3	8.00	8.00	10.00				
9	Subsidy on agricultural loan				10	3	3.00	3.00	4.00				
10	Solid Waste Management at doorstep				15	3	5.00	5.00	5.00				
	Total				250		43.1	43.1	45.1	19.1	19.1	32.2	48.3
<b>8</b>	<b>Institutional Development Plan (in million NPR)</b>												
1	Construction of municipal new office building	no.	1	50	50	3	20	10	20				
2	Improvement of existing 8 ward office buildings	no.	13	5	65	2	32.5	32.5					
3	New Construction of office building for 5 Wards.	no.	6	10	60	3	12	12	12	12	12		
4	Retrofitting of old and dilapidated government buildings	no.	15	1	15	3	5	5	5				
5	Training and workshops for capacity development				30	yearly	3.00	3.00	3.00	3.00	3.00	6.00	9.00
6	Introduction of digital system in all division, section and sub-section in SM	No	10	1	10	2	5	5					

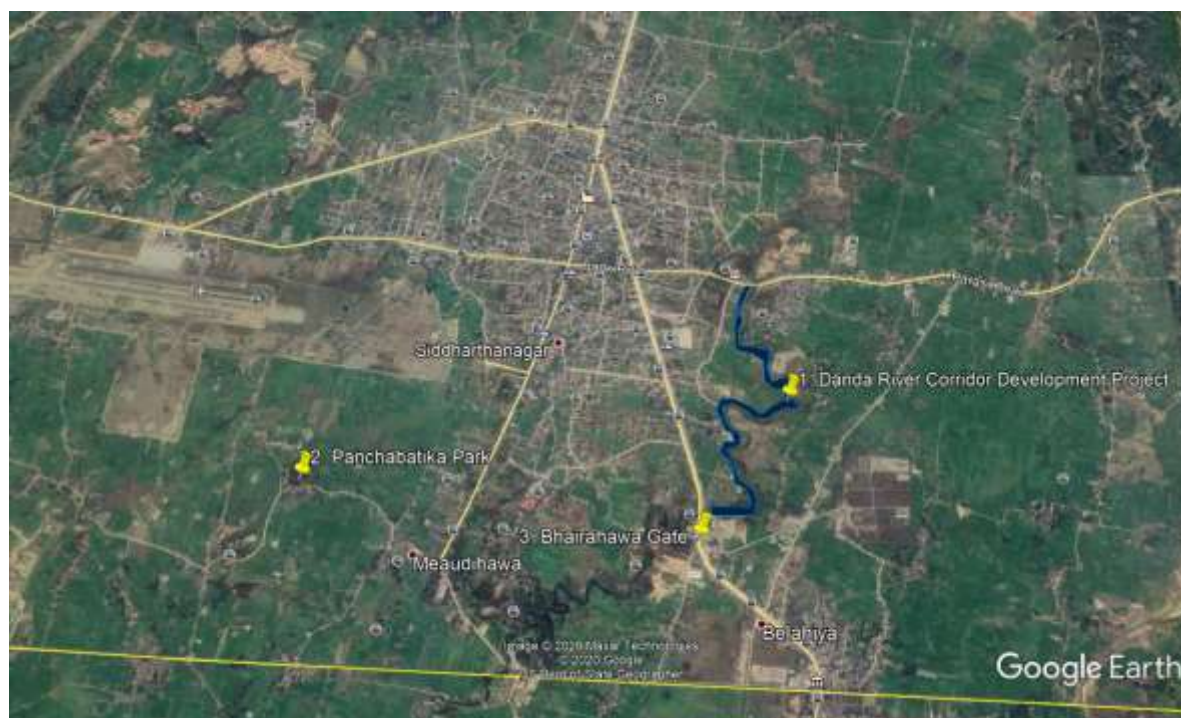
etail budget on multi sectoral plans													
Multi sectoral investment plan for 15 years													
	Activities	Unit	Quantity	Rate	Cost	Time yrs	2077/078	2078/079	2079/080	2080/081	2081/082	2082/083 - 2086/087	2087/088 - 2091/092
7	Formulation of Required Laws, Bylaws, Guideline and Standard Such as Land Use, gender equality and social inclusion etc.	LS			25	5	5	5	5	5	5		
8	Organization of public hearing and trial sessions	Times			15	yearly	1.50	1.50	1.50	1.50	1.50	3.00	4.50
9	Home services for needy citizens	Person	1500	0.002	45	yearly	4.50	4.50	4.50	4.50	4.50	9.00	13.50
10	Promotion of PPP model for investments				5	5	1	1	1	1	1		
11	Co-ordination with various organization				5	yearly	1	1	1	1	1		
12	Facilitation of ward level committees				5	Yearly	1	1	1	1	1		
13	Award systems for capable and efficient staff				5	Yearly	1	1	1	1	1		
14	Appointment of new technical staffs	nos.	10	5	50	5	10	10	10	10	10		
15	Networking of various divisions	no.	38	0.05	1.9	1	1.9						
16	Operate and update Municipality website regularly	no.	1	7.5	7.5	15	0.5	0.5	0.5	0.5	0.5	2.5	2.5
17	New vehicles buying	no.	3	20	60	5	20	10	10	10	10		
18	Builds a modern commercial complex at existing municipality office complex	no.	1	80	80	3		20	30	30			
19	Coordination with Federal and Provincial Government for Shifting of Jail and Army Barrack from Core City area to Pachkhuli and Airport site to avail the space for modern park.	no.	1	55	55	5	2	3	10	10	10	10	10
	Total				589.4		126.9	126	115.5	90.5	60.5	30.5	39.5



## **7 Chapter VII: Prioritized Major Sub-Projects**

Siddharthanagar Municipality has already finalized three major sub projects and its DPR has also been completed through the consulting service. The identified sub projects are i. Danda River Corridor Development Project ii. Panchabatika Park and iii. Bhairahawa Gate

The proposed projects are shown in the fig 7.1 which tells us that all these projects are located in the periphery of Siddharthanagar.



*Figure 7-1 Locations of prioritized three sub projects*

### **1. Danda River Corridor Development Project**

The Danda River Corridor Development project is one of the major projects of Siddharthanagar. Danda River is a boon for Siddharthanagar, therefore it needs to be conserved and preserved.

The cost estimate of Danda River Corridor development is NPR **5241.5 million**. The cost breakdown is explicit in table below:

*Table 7-1 cost estimate of Danda River Corridor development*

S.N.	Activities	Unit	Quantity	Rate	Cost (in million NPR)
1	Construction of vehicle and bicycle parking, entry plaza, ticket counter, fountain plaza with geodesic dome, amphitheater, children's play area, elderly retreat area, cafeteria, restrooms and other services	sq.m	60,000	0.02	1,200
2	BUDDHA PARK / MEDITATION AREA [construction of meditation areas, flower gardens, Yoga area, global plaza, rock garden, zen garden, viewing deck for wetlands, sheds, restrooms etc.]	sq.m	60,000	0.05	3,000
3	Danda River Corridor construction of large playground with seating provision, children's playing area, elderly retreat area, youth recreational area, cafeterias, restrooms etc	sq.m	50,000	0.02	1,000
4	River embankment	Km	4	6	24

S.N.	Activities	Unit	Quantity	Rate	Cost (in million NPR)
5	Construction of Pedestrian and cycle lane of 2.5m width	Km	2.5	3	7.5
6	Garden development 1,000 sq.m	sq.m	1,000	0.01	10
	Total				5,241.5

The Danda River Corridor Development Project includes

- Dadnda River Corridor divided into three sections
  - I. Dam to Parasi road section for irrigation and agriculture
  - II. Parasi Road to Highway Section for recreational public park
  - III. Highway to India Border section for conservation of wild life

The section 2 i.e. Parasi Road to Highway is further classified as the following zones.

- **Active Zone** – Under this zone there will be vehicle and bicycle parking, entry plaza, ticket counter, fountain plaza with geodesic dome, amphitheater, children’s play area, elderly retreat area, cafeteria, large playground with seating provision, children’s playing area, elderly retreat area, youth recreational area, cafeterias, restrooms etc.and other services.
- **Passive Zone** – There will be restriction of vehicle movement to create a peaceful environment where meditation areas, flower gardens, yoga area, global plaza, rock garden, zen garden, viewing deck for wetlands, sheds, restrooms are provisioned, Buddha Park/ Meditation.



*Figure 7-2 Master plan of Donda River Corridor development project*



*Figure 7-3 ENTRY PLAZA – water fountain, geodesic dome, amphitheater, parking*





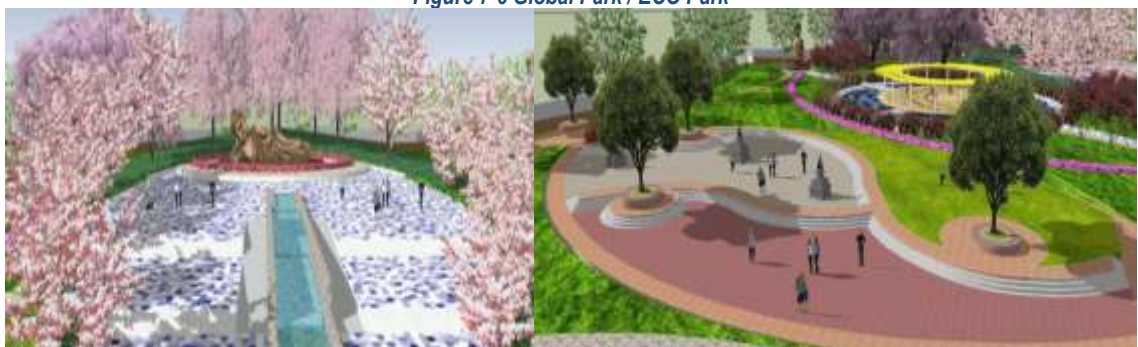
**Figure 7-4 Children's Playing Area ; Eledery Recreational Area**



**Figure 7-5 Maze Around Buddha Statue, Flower Garden**



**Figure 7-6 Global Park / ECO Park**



**Figure 7-7 Sleeping Buddha Park and Petal - Sitting Spaces , Chautaris**

## 2. Panchabatika Park in ward no -2

Urban life is becoming tough due to complexity of living style. People needs peace and calm environment to get rid of from hectic schedule. Therefore, SM has planned to develop Panchabatika - a modern park where means of recreation centre will be provisioned.

Panchabatika Park is located in Jungle Tole, 4.5 km west from Siddharthanagar Highway, near Meudihawa village. The total area of Panchabatika Park is about 6,907 Sq m. The park is currently habited by trees of Sishau, Peepal, Sagwan (Teak) and others. The site is surrounded by Meudihwa – Belahiya Road to its south, Shree Bahira Bal Madhyamik Bidhyalaya (deaf school) to west, agriculture land to north and east. The total cost for construction of Panchabatika Park is NPR 60.52 million. Detail cost as per follows.

*Table 7-2 cost for construction of Panchabatika Park*

SN	Item	Unit	Quantity	Rate	Amount
<b>A.</b>	<b>Site Clearance and Levelling</b>	sq.m	<b>6907.00</b>	<b>20</b>	<b>138140.00</b>
<b>B.</b>	<b>Entry Plaza</b>				
1	Parking Lot	sq.m	1000.00	1754.00	1754000.00
2	Community Resting Hut (2 Nos)	sq.m	74.00	21500.00	1591000.00
3	Ticket Counter Block	sq.m	15.00	21500.00	322500.00
4	Electronic Ticket Gate	sq.m	36.00	21500.00	774000.00
5	Guard Post/Tourist information centre	sq.m	60.00	21500.00	1290000.00
6	Restaurant Block	sq.m	60.00	21500.00	1290000.00
7	Pool and fountain - A	LS	1.00	600000.00	600000.00
8	Pavement	sq.m	1500.00	2539.72	3809586.75
<b>C.</b>	<b>Kids Playground</b>				
1	Slip resistant, water resistant Rubber Flooring	sq.m	785.00	1500.00	1177500.00
2	See Saw/Slide/water slide with pool, monkey climb ,swing and other outdoor equipment	LS	1.00	1000000.00	1000000.00
<b>D.</b>	<b>Picnic Zone</b>				
1	Maintenance of Picnic Shade	sq.m	108.00	1200.00	129600.00
2	Cooking Block for every picnic shade	sq.m	4.00	16125.00	64500.00
3	Tap area for Picnic Shade	Nos.	3.00	25000.00	75000.00
4	Restroom Block	sq.m	20.00	2150.00	43000.00
5	Pedestrian Path ( 2m wide)	m.	277.00	5079.45	1407007.37
6	Maintenance of existing Pedestrian Path (2m wide)	m.	176.00	2000.00	352000.00
7	Water Tower ( 50,000 litre capacity)	cu.m	50.00	25000.00	1250000.00
<b>E.</b>	<b>Zone of five religious trees</b>				
1	Chautara	Nos.	5.00	15000.00	75000.00
2	Open Air Ampitheatre in Stone masonry	cu.m	150.00	10077.84	1511676.00
3	Pedestrian Path	m.	210.00	7619.17	1600025.70
4	Maintenance of existing Pedestrian Path	m.	318	2000.00	636000.00
5	Flag stone Pavement	sq.m	1350.00	2539.72	3428628.08
4	Pool and fountain - B	LS	1.00	200000.00	200000.00
5	Pool and fountain - C (3 identical pool)	LS	3.00	100000.00	300000.00
6	Water Pond	LS	1.00	400000.00	400000.00
8	Resting Hut	sq.m	36.00	16125.00	580500.00
5	Outdoor Benches ( 4' long)	Nos.	20.00	8000.00	160000.00
6	Restroom Block	sq.m	20.00	2150.00	43000.00
<b>F.</b>	<b>Meditation Zone</b>				
1	Meditation Pavillion ( 4 units )	sq.m	1150.00	21500.00	24725000.00
5	Pedestrian Path ( 2m wide)	m.	279.00	5079.45	1417166.27
2	Water Fall Pond - A	sq.m	205.00	452.25	92711.25
3	Water Fall Wall - A	cu.m	105.30	11232.79	1182812.79
4	Water Fall Pond - B	sq.m	144.00	452.25	65124.00
5	Water Fall Wall - B	cu.m	77.76	11232.79	873461.75
6	Gautam Budha Statue ( 1.8 m hight, 1.8 m wide)	Nos.	1.00	400000.00	400000.00
7	Miniature sculpture of Nepalese stupa	Nos.	8.00	50000.00	400000.00
8	Restroom Block	sq.m.	20.00	2150.00	43000.00
9	Sound Set up for outdoor meditating music / bhajan	LS	1.00	500000.00	500000.00



<b>G. Other infrastructure</b>					
1	Boundary Wall and fencing	cu.m	780.00	11232.79	8761576.20
2	Drainage	LS	1.00	200000.00	200000.00
3	Solid waste Maanagement	LS	1.00	100000.00	100000.00
4	Electric and Solar lighting	LS	1.00	100000.00	100000.00
5	Signages	Nos.	15.00	6000.00	90000.00
<b>H. Greenery Management</b>					
1	Cutting Of Old and decaying Trees and Trimming	LS	1	50000.00	50000.00
2	Plantation of New Trees	LS	1	50000.00	50000.00
3	Clearance of Weed and gardening	sq.m	500	150.00	75000.00
<b>Total</b>					<b>53559289.41</b>
<b>VAT @ 13%</b>					<b>6962707.623</b>
<b>Total including VAT</b>					<b>60521997.03</b>

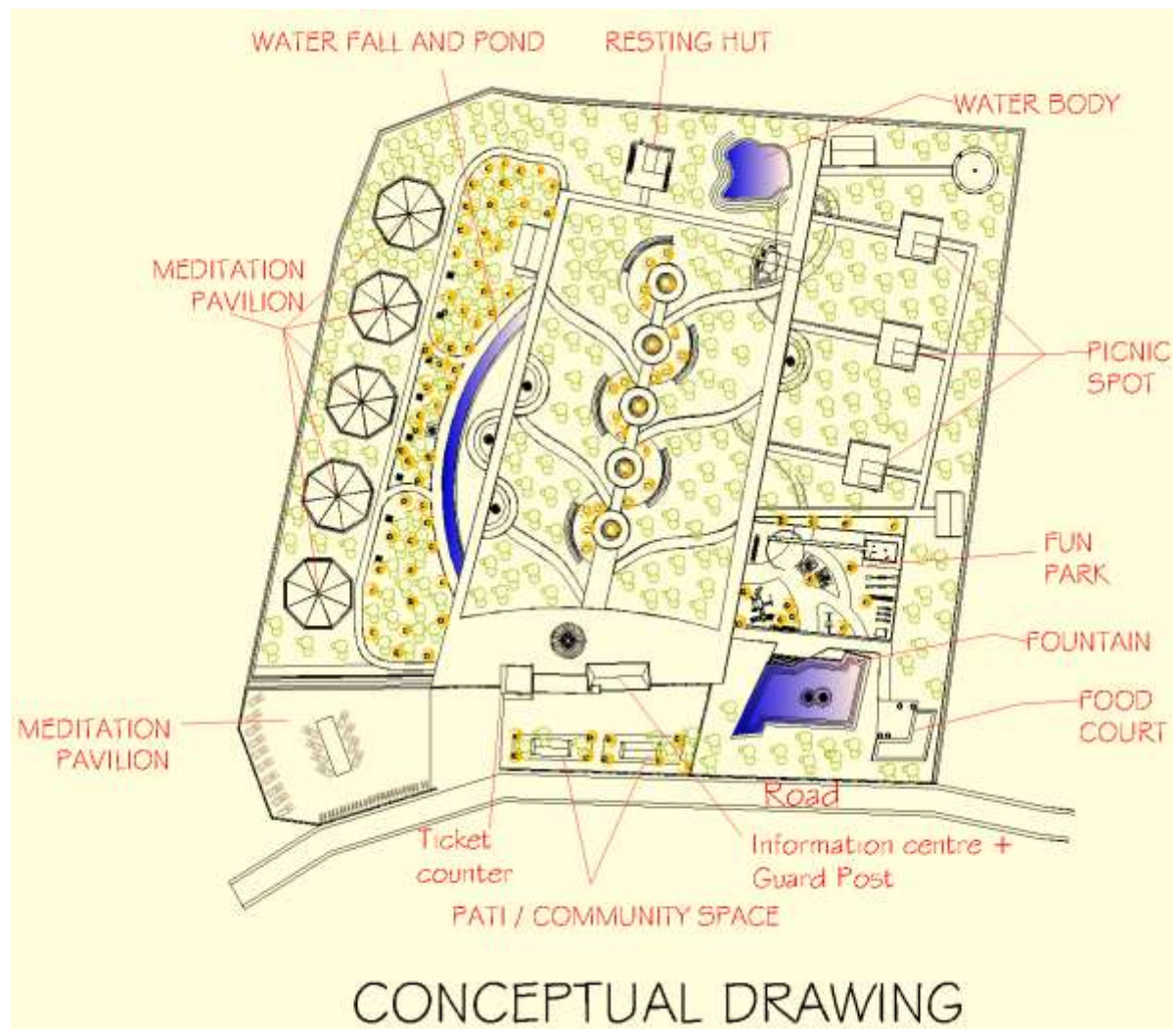


Figure 7-8 Conceptual design Development



*Figure 7-9 Rendered 3D view of Entry Zone*



*Figure 7-10 Picnic Spot*



*Figure 7-11 Master plan*







## **9 CONCLUDING REMARKS**

The Integrated Urban Development Plan of Siddharthanagar is prepared based on “Urban Planning Norms and Standard 2015” for achieving the long-term vision of “**Tourism, Industries, Commerce and Education, Greenery are the desire of Buddhabhumi Siddharthanagar**”.

Municipality profile, long-term vision analysis, identification of lead sectors, SWOT analysis, application of LFA for accomplishing specific goals, objectives, outputs, indicators, means of verifications and possible activities for implementation of plans and programs are included in this IUDP.

After the SWOT analysis, it is obvious that for physical development, investment is required mostly in road network, transportation, water supply and housing demands. For social development, funding is needed in improvement of existing social infrastructures like schools, hospitals, sports area, police stations, public toilets, bus stops and additionally women and child welfare and social security and mobilization. Similarly, environment management requires financing on promoting green concept. As Siddharthanagar already has a disaster risk management plan, less amount of budget is needed and focus is required primarily on construction of earthquake resistance buildings and organizing training and information flow. On the other hand, as Siddharthanagar is to be promoted as a part of “**Greater Lumbini Tourism Project**”, attention is required in conservation of the existing heritage and cultural areas and improvement of new touristic spots not only for tourism development but also for economic uplift. Due to the current restructuring of government institution, more investment is required for setting up the organizational structure and strengthening and developing the capacity of staffs for couple of years.

For completion of most of the strategic projects, time frame ranges from **1-5 years** with maximum time frame **1-15 years** mainly for the physical infrastructure like road, drainage, sewerage, bridges, landfill site and treatment plant construction. The total cost for all the projects for 15 years is **NPR 22,089.73 million**.

The total estimated cost of the entire proposed projects for the year 2077/078 is **NPR 2,210.08 million**. The total budget available for the year 2077/078 from GoN and SM is **NPR 806.57 million**. Consequently, **NPR 1,403.51 million** budget seems deficit, which shall be arranged through internal (421.05million) and external resources (982.454 million).

**Table 9-1 Projection of budget for 2077-078**

S.N	Sector	%	Budget from ministry and Province (in million NPR)	Municipal Budget (in million NPR)	Total Budget SM for 2077-078	Anticipated budget 2077-078 (in million)	Deficit (in million NPR)	Deficit resource allocation (in million NPR)			
								%	Internal	%	External
1	Physical Development Plan	54%	491.17	73.43	564.60	919.58	354.98	30%	106.50	70%	248.489
2	Strategic project	27%	28.07	4.20	32.26	642.06	609.79	30%	182.94	70%	426.856
2	Social Development Plan	7%	105.25	15.73	120.99	229.54	108.55	30%	32.57	70%	75.988

S.N	Sector	%	Budget from ministry and Province (in million NPR)	Municipal Budget (in million NPR)	Total Budget SM for 2077-078	Anticipated budget 2077-078 (in million)	Deficit (in million NPR)	Deficit resource allocation (in million NPR)			
								%	Internal	%	External
3	Environment Management Plan	3%	21.05	3.15	24.20	105.75	81.55	30%	24.47	70%	57.087
4	Disaster Management Plan	1%	7.02	1.05	8.07	30.37	22.30	30%	6.69	70%	15.613
5	Culture & Tourism Development Plan	1%	14.03	2.10	16.13	32.40	16.27	30%	4.88	70%	11.388
6	Economic Development Plan	3%	21.05	3.15	24.20	123.48	99.28	30%	29.78	70%	69.495
7	Institutional Development Plan	3%	14.03	2.10	16.13	126.90	110.77	30%	33.23	70%	77.538
	Total budget	100%	701.68	104.89	806.57	2,210.08	1,403.51	30%	421.05	70%	982.454

Out of **NPR 1,403.51 million**, **221.05 million** shall be accumulated by SM through increase in taxes and service charges and **200 million** by citizen's participation. The external **NPR 982.454 million** needs to be gathered through donor agencies (INGOs and NGOs) like UN, World Bank, ADB, UNICEF, UNHabitat, GIZ, Oxfam, Winrock, ActionAid, WaterAid, and NGOs.

Based on the situation analysis, some key recommendations for the comprehensive development of Siddharthanagar are stated herewith:

- Improvement of physical infrastructures for upgrading the living standard of citizens and maximizing the reach of public to such facilities.
- Utilization of natural resources for the benefit of the city without hampering the environment.
- Enhancement of touristic spots for improving economy.
- Commercialization of agriculture for enticing young generation and accelerating economic growth rate.
- Creating environment for alluring citizens for involvement in strategic projects.
- Increment of resources both financial and manpower on energy efficiency and renewable energy.
- Preservation and improvement of culture and heritage of ethnic groups.
- Formulation of programs focused on marginalized groups, women and children welfare.
- Address child friendly, disable friendly and gender friendly issues during building design and construction.
- Increasing the efficacy of local government through transparent and hassle free service delivery.
- Establish coordination and collaboration between INGOs, NGOs and user groups through efficient capacity development.

## **10 APPENDIX**

Appendix I: Meeting minute and others related documents

Appendix II: GIS Base Maps

Appendix III: Summary and Details of Wrad level projects

Appendix IV: Photos of different activities during the study

Appendix V: Planning and Building Bye-laws

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