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ABBREVIATIONS AND ACRONYMS

BOQ	Bill of Quantity
CBO	Community based Organization
CBS	Central Bureau of Statistics
COM	Commercial
DES	Digital Elevation System
DGPS	Differential Ground Positioning System
DFR	Detail Feasibility Report
DPR	Detail Project Report
DoR	Department of Road
DTMP	District Technical Master Plan
DUDBC	Department of Urban Development and Building Construction
GCP	Ground Control Position
GDP	Gross Domestic Product
GoN	Government of Nepal
GIS	Geographical Information System
GPS	Global Positioning System
IAP	Integrated Action Plan
HH	House holds
HYD	Hydrology
IDP	Integrated Development Plan
IEC	Information Education Communication
IND	Industrial
ISWM	Integrated Solid Waste Management
IWPS	Integrated Waste Procession Site
IUDP	Integrated Urban Development Plan
IT	Information Technology
KV	Kilo Volt
LFA	Logical Framework Analysis
LUZs	Land Use Zones
MoFALD	Ministry of Federal Affairs and Local Development
MoUD	Ministry of Urban Development
MHW	Mahendra Highway
MPGM	Multi-Purpose Grid Mapping
MSIP	Multi-Sector Development Plan
NBC	Nepal National Building Code
NGO	Non-Governmental Organization
NLUP	National Land Use Project
NT	New Town
NTPCO	New Town Project Coordination Office
NUDS	National Urban Development Strategy
NPC	National Planning Commission
OTH	Others
ODK	Open Data Kit
LSGA	Local Self Governance Act
PDP	Physical Development Plan

PGI	Post Graduate Institute
PPP	Public Private Partnership
PUB	Public Use
RCC	Reinforced Concrete Cement
RES	Residential
RoW	Right of Way
SWOT	Strength Weakness Opportunity Threat
TB	Telephone Booth
ToR	Terms of Referance
TDC	Town Development Council
VDC	Village Development Committee

EXECUTIVE SUMMARY

Integrated Urban Development Planning is an approach to Five/Ten/Fifteen Year planning that involves the entire municipality and its citizens in finding the best solutions to achieve good long-term development. It aims to co-ordinate the work of local and other spheres of government in a coherent plan to improve the quality of life for all the people living in an area. It should take into account the existing conditions and problems and resources available for development. The plan should look at economic and social development for the area as a whole. It must set a framework for how land should be used, what infrastructure and services are needed and how the environment should be protected. This plan is meant to ensure the proper management of the planning process. IUDP is the principle strategic planning document of the Municipality, and it guides all planning and development, as well as decisions relating to planning, and development. The 5/10/15 year plans integrated the short term objectives with long term objectives. Comprehensive Planning. The focus of the planning was not only on economic parameters but also on social parameters of growth and development. On one side, it focused on acceleration of the pace of growth, on other side, it focused to minimize vertical and horizontal disparities. The focus of comprehensive planning was to achieve 'inclusive growth.

Preparation of integrated urban development plan (IUDP) of Narayan Municipality is one of the important planning attempt done till the date for this Municipality. This plan will be the guiding document to develop sustainable and liveable city in the future. Integrating physical, social, economic, environmental, institutional, tourism and cultural development plan, this plan document will be the basis for investing sectoral line agencies in the Narayan Municipality. These sectoral plans are formulated through scientific and valid participatory planning methods and tool, which means political leadership should take ownership to it. This IUDP focuses entire area of Narayan Municipality through its strategic perspectives.

Municipal profile, base map, Building construction byelaws, Project Design and Estimates are major component including main sectoral planning report within this integrated urban development plan. Municipal profile and participatory consultation meetings were the basis for formulating sectoral plan, contextualizing its existing situation where as base maps and consultation meetings were the basis for examining/ assessing the existing physical condition, and proposing the infrastructure projects according to planning standards and norms. The Byelaws is a product prepared to guide/ regulate Municipality development for the future based on the spatial niche of an area. Profile, base map and building byelaws are prepared in separate volumes within this assignment. Similarly, Project Design and Estimates is prepared to translate existing situation as well as proposed infrastructure in the city so that the form of future city will be reflected and visualize in the model.

Baseline information relating to this plan formulation were acquired through the secondary and field base primary data but demand and potentialities were analysed relating to the planning norms and standards as well and field base data (public consultations and discussions). Sectoral development plans such as physical development plan has focussed to develop the municipality as physically sound infrastructure (e.g. ROW, standards, road hierarchy, settlement linkages, open spaces, parks and basic urban facilities) where as social development plan has focused to develop education, health, social inclusion, participation, gender inclusion, development of needy people and so on. Similarly, economic development plan has focused agriculture, employment, trade and business in the Narayan Municipality with particular focus to marginalized and needy community/people. Environmental management and disaster mitigation plan mainly focus to identify the major environmental problems, sanitation, solid waste management, disaster prone

area delineation, risk sensitive area restriction etc. with reference to slope, altitude, geology and fragile landform for safer and sustainable city development. Tourism and cultural development plan has mainly highlighted to develop Narayan's tourism potentiality and investment in tourism focus development. Institutional development plan advocates to institutional aspects required for Narayan Municipality's development in the future, particularly for institutional capacity, cooperation, management of infrastructure, resources, sustainability, implementation strategy and appropriate framework for integrated urban development of the Municipality.

A long term vision was setup to develop Narayan Municipality as a prosperous and beautiful, environment friendly city by developing agriculture, industry, trade, business, tourism and infrastructure. It is expected to meet this vision through raise in economic activity through organic agriculture production, animal husbandry, tourism, industry, business, commerce, cooperatives, financial management and sufficient urban infrastructures. However, challenges are ahead to face in implementation of the project. For this effective institutional set up needed to be establishing in the Narayan Municipality. The competent Human Resources are required. The Narayan Municipality is the directly implementing agency of the proposed projects. Effective/functional coordination is required among the concerned institutions. Level of effectiveness of those local bodies will be the basis of performance measure of the Municipality development, reflection is observed in many case studies.

1. INTRODUCTION

1.1. Background of the Project

Nepal is one of the least urbanized countries of Asia but the pace of urbanization in the last decades has been faster and is likely to remain so, as a result of multiple transitions: spatial, demographic and economic – that are underway. In 2011, 58 municipalities harbored 19% of Nepal's population. According to the 2011 CBS, urban growth rate is 3.4%. Kathmandu Valley is the hub of Nepal's urbanization with nearly 22.4% of national urban population. Regional levels of urbanization vary markedly with high levels of urbanization in valleys and inner Terai relative to the more economically potential Terai. Urbanization is dominated by few large and medium cities in the hills. Among the 58 municipalities, 14 urban center with over 1 lakh population make up nearly 43.51% of national urban population. However, population comparisons can be misleading because municipal designation is a political decision which often ignores functional criteria. Between 2014 and 2015, 159 new municipalities irrespective if their functional attributes have been added to the municipal category bringing the number of municipalities to 217 and urban (municipal) population to 40% of the total.

By virtue of mass movement in the year of 2063 BS, the administrative system of Nepal has been restructured into three tiers of Government i.e. Central, Provincial and Local government. The federal restructuring of the country will have implications for the national and sub-national (provincial and regional) urban system for basically three reasons: first, the urban centers designated to be provincial capitals will attract priority investments in infrastructure and urban development in general. The political and administrative functions of these centers will most likely promote economic functions including the location of small and medium enterprises based on the mobilization of provincial/ regional resources. Second, the provincial strategy of the development and prioritization of basic intra-province road infrastructure can affect the existing urban hierarchy in so far as it would redefine the locational advantages of small towns and market centers. Third, the policies of provincial government with respect to the development of agriculture, industries, bio diversity and hydro-power (in the hills) will also impact the functional role of provincial urban centers and to that extent influence the regional urban system.

Government of Nepal has already enacted and has been implementing National Urban Policy since 2007 and National Urban Development Strategy, 2016. The policy is prominent by prioritizing investment to the lagging regions of the country, while fostering development of regional cities and intermediate towns as well. The objective of NUDS is to develop medium- and long-term strategic vision of a desirable national/ sub national urban system based on existing trends and regional resource potentials. It assesses existing conditions of infrastructure, environment, economy and governance, establishes benchmarks and desirable standards. And it identifies prioritized strategic initiatives for investment in infrastructure and environment to realize the comparative advantages of urban areas. Considering these objectives, GON has prioritized to invest in 90 emerging municipalities in country. The total work has been divided into five packages considering the physical distance of municipalities.

1.2. Objectives of the Study

The main objective of the proposed assignment is to prepare Integrated Urban Development Plan including Building Bye-Laws of designated municipalities. The other objectives are as follows:

1. To set out Long term Vision and overall Goal, Objectives and Strategies for Municipalities (for 15 years period).

2. To prepare Physical development plan, Social, Cultural, Economic, Financial, and Institutional Development Plan; Environment Sensitive Plan, Urban Transportation Plan, Multi-sectoral Investment Plan (MSIP) etc. on the basis of vision, objectives and strategies.
3. To prepare building bye laws to regulate development in the municipalities integrating Land Use and road network plan and long-term vision of the municipalities.
4. To prepare Detail Engineering Design of prioritized 2 sub-projects in each Municipality amounting not less than 30 crore for each project.

1.3. Understanding the Scope of Work

The scope of consulting services for preparation of Integrated Urban Development Plan are limited to the following:

- The consultant should spell out the Vision of the municipality. The Vision should articulate the desires of the municipality and their citizens, and will provide the guiding principles. Prepare overall Integrated Urban Development plan of entire municipality.
- Conduct study on demographics and migration trend for last 5 years and forecast for 5, 10 and 15 years period.
- Identify potential area for urban development based on land suitability and urban supplementary infrastructures.
- Conduct studies on present to future (5, 10 and 15 years) need of urban infrastructures (such as transportation, communication, electricity, water supply and sewerage system /treatment plant, solid waste management, landfill site etc.) and their objectives with implementation & operation.
- The consultant should carry out study of existing social infrastructure such as health / education / sports / communication / security center and other community facilities by addressing present deficiencies to 15 years demands.
- Identify and assess critical, sensitive and other natural resources including parks, green belts, recreational area, along with strategies for their protection, preservation and stewardship against the adverse impact of future development and land use changes. Show locations and calculate future requirements of such resources.
- Verify Government, Guthi and Public Land for future development and expansion of the urban areas including land required for government and public purposes. Prepare appropriate plan and policy to protect such land from private/public encroachment and others.
- Prepare the Proposed Land Use Plan for 15 years in the existing base map (plans) based on vision policy of the municipality.
Recommended the building and planning bye-laws of DUDBC for the construction of building and other infrastructures with landuse zoning ie. i. Residential zone, ii. Institutional zone, iii. Industrial zone, iv Preserved zone, v. Airport zone, vi. Sport zone, vii. Urban expansion zone, viii. Stream/river banks zone, ix. Green zone, x. Apartment housing, xi. Petrol pump/Electric line/Cinema theatres and xii. Mixed zone and others as per requirement .
- The planning and building bye-laws should include the following areas: a) Minimum plot area b) minimum width of roads c) maximum ground coverage d) maximum floor area ratio (FAR) e) maximum building height f) maximum no. of floors g) right of way of roads h) set back in four sides of the building i) minimum parking area j) lift k) minimum distance to be left in both sides of stream/river.

- The building and Planning bye-laws of the municipality should be prepared in accordance with the "Basti Bikas, Sahari Yojana tatha Bhawan Nirman Sambandhi Adharbhut Nirman Mapdanda, 2072"
- Prepare detail engineering design of at least 2 prioritized projects in each municipality, each projects cost should not be less than 30 crore.
- Prepare executive summary of IUDP of each municipality in Nepali and English language for the purpose of approval from government of Nepal.

- Setting out vision of municipality and Preparation of Integrated Urban Development Plan to achieve the vision
- Study of demographics, migration trend, social infrastructures and urban structures pattern and carry out forecast for up to 15 years. Preparation of plan for the forecasted population and trend pattern for the sustainability and progress of the Municipality.
- Identification and assessment of critical, sensitive and other natural resources along with the strategies for their preservation against adverse impact of future development and land use changes.
- Preparation of Building and planning bye laws for the construction of building and other infrastructures with land use zoning in accordance with "Basti bikas, Sahari Yojana tatha Bhawan Nirman Sambandhi Adharbhut Nirman Mapdanda, 2072"
- Preparation of detail engineering design of at least 2 prioritized projects in each municipality, each projects cost should not be less than 30 crores.

1.4.Expected Output

- Basic Service Delivery, Spatial and Environmental Development
- Community Safety and Security
- Community Development and Education
- Economic Development and Tourism
- Municipal Administration and Communication
- Municipal Transportation and Institutional Development
- Financial Viability and Management

Objectives:

- 1) Create an inclusive, responsive, and healthy environment conducive for living and sustainable growth.
- 2) To manage land-use and development in line with the Spatial Development Framework.
- 3) To render efficient environmental health and disaster management services.
- 4) To provide efficient public safety and law enforcement services.
- 5) To provide recreational facilities and opportunities and programmers aimed to facilitate and promote community development and social cohesion
- 6) To facilitate economic and tourism development to the benefit of the town and all residents.
- 7) Embed good governance through sound administrative practices and improved stakeholder relation
- 8) To maintain a skilled, capable and diverse workforce in a good working environment
- 9) Embed financial viability and sustainability through good financial management principles and practices

1.5. Structure of the Report

The whole report content is classified into following volumes:

- Volume I Main Report
- Volume II Municipal Profile
- Volume III Maps
- Volume IV Detailed Engineering Design
- Volume V Building Bye Law

2. THE METHODOLOGY

2.1. Conceptual Framework

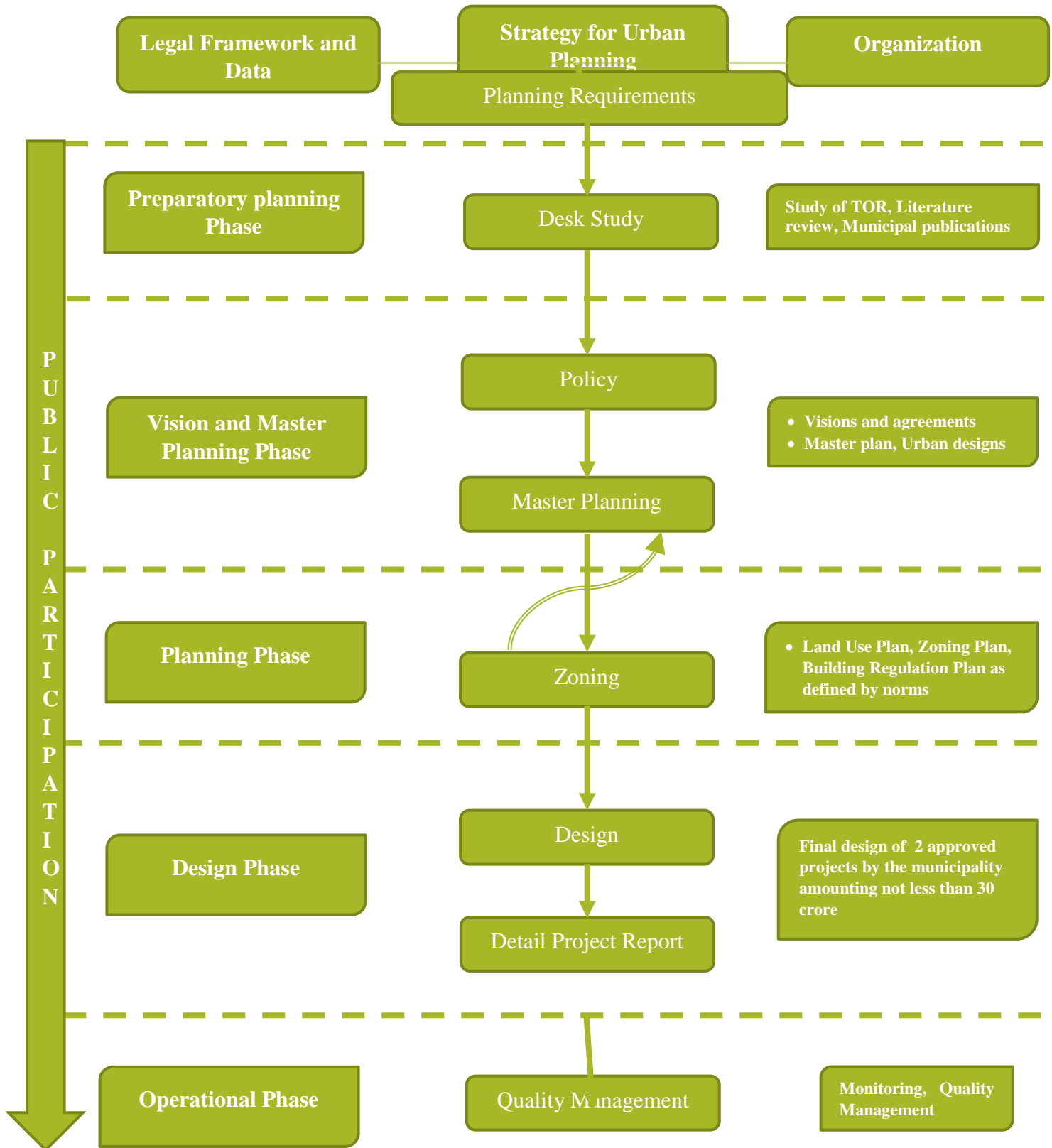
Similar kinds of problem exist in all the communities which lack the common vision and collective set of goals followed by set of objectives to achieve the desired future. Lack of comprehensive planning, or integration in different planning agencies result in multi-directional growth which is often observed in Nepali planning context.

The best example of lack of coordination of planning was outrageously witnessed by all the Kathmandu valley residents in recent time of road expansion, where it took months to complete task of single day lacking the coordination of road department and electricity department for shifting poles. Loss of irreversible infrastructural investment is yet to follow where recently made road is to be dig up again for laying water (Narayan) and sewer pipelines. Thus, such lacking coordination in planning are major challenges in recent time especially in underdeveloped countries like Nepal. Hence it is important to make conceptual framework for the study which enables for the integrated approach of planning and comprehend things which are not observed at the moment but are must in nearby future.

In any Urban Planning Process, Project will be carried out basically in five different phases i.e. Preparatory Planning Phase, Master planning Phase, Formal Planning Phase, Design and Implementation phase and finally the Operational Phase. Consultant is aware about the importance of ground/ contextual study as well as increasing influence of globalization in planning culture. In the literature or field study, expected framework is to come up with theorizing “Why we need comprehensive plans and how can we improve the effectiveness and efficiency of plans, for sustainable development of emerging towns” and “How can we achieve?”, which will be followed by identifying the vision of the municipality and adoption of the vision in the master planning. In the next phase more rigid planning approach will be adopted including land use plans, infrastructure services plan and other different types of plan. Finally, with the vision finalized followed by master planning supporting the vision, detail progress report of two projects recommended by Municipality, supported by vision of town will be implemented. The study is expected to be conducted on the basis of both the exploratory and descriptive methods followed by recommendation of integrated plan for the sustainable development of town.

Similarly, different data through the primary sources will be collected through focused group discussions with stake holders, key informants and direct observations. From the above sources it can conclude that what are existing condition of the site, perception of people towards development, development trends and the impacts of urbanization in changing land use, social spaces, infrastructure planning, etc. and how that change can be tackled by planning in sustained growth. Lastly all the information will be collected, analyzed and evaluated for final analysis and recommendation for integrated urban planning will be made with extensive public participation. Planning phase will be extensively inclusive in its process where vision of the IUDP will be set in the primary phase and planning will be done to achieve the target set in the vision. Planning will be carried with the consideration of existing planning legislations, standards, policies and requirements of modern planning approaches. Plans will be made to make it more achievable with its implementation plan and its investment plans, i.e. MSIP.

Figure 2.1: Conceptual Framework



2.1.1. Literature Review

2.1.1.1. Review of National Urban Development Strategy (NUDS), 2017

The economic, spatial and mobility trends in Nepal point towards the inevitability of increased urbanization and urban growth in favored locations and regions. While urbanization and urban growth appear inevitable, urban areas are beset with a host of critical issues related to urban development, management and institutions. Both national/ sub-national and urban/municipal perspectives need to be brought to bear in dealing with urbanization and urban growth issues. The urban challenges that Nepal faces provide the rationale for the National Urban Development Strategy (NUDS). The guiding principles for the National Urban Development Strategy are listed below. These guiding principles backs the objective of the NUDS.

Sustainability: The strategies outlined should seek to promote environment, social and economic sustainability of urban development. This means that urban development initiatives should be environmentally sustainable, i.e. should not have negative externalities and should not overstretch the capacity of the environment to sustain itself. Social sustainability refers to the nurturing and development of social capital which minimizes alienation and contributes to vibrant social life in the city. Economic sustainability refers to the promotion of environment friendly economic activities that can be sustained with minimal support from outside.

Inclusivity: Cities have to be socially inclusive both in terms of ethnicity/caste and gender, and in terms of economic class. Inclusion should be reflected in the space the city provides for the nurturing and celebration of social and cultural diversity and the sensitivity particularly to disadvantaged and marginalized, and minority groups, and the poor and the youth in general. Inclusivity promotes social justice and contributes to equity and balanced development. The increasing poverty trend in urban areas means that cities also need to be pro-poor in terms of attending to the needs of the poor and addressing their basic concerns of education, health, housing, livelihood and transportation.

Resilience: Resilience refers to both physical and social resilience so that cities are safer and adaptable to changes, both environmental and economic. The major focus of the strategy should be on physical, social, economic and institutional resiliency that is pivotal for mitigating short- or long-term vulnerability resulting from disaster or the regional/global impacts of climate change. Planning and urban development should enhance capacity to cope with different types of hazards and absorb shocks and risks.

Green: Strategies for urban development should be guided by three key considerations, namely, keeping the city green, cool, and wet. The thrust should be in saving, protecting, promoting greenery – green parks, green open spaces, urban agriculture, forestry and so forth. Cities should promote land use, technology and material that would contribute to low carbon emission, increase the use of alternative energy, and reduce the effects of urban heat islands and lower ambient temperatures. Similarly, cities should promote and protect clean water bodies – ponds, wells, rivers, canals that contribute to blue convection and survival of aquatic life, and urban biodiversity and contribute to recharge ground water.

Efficient: A sustainable, inclusive, resilient and green city can only be one that is efficient, well governed and effectively managed. National urban development strategy should therefore be guided by three basic concerns of governance: enhanced capability and technical competence of local bodies, institutionalization of a system of transparency and accountability in the urban planning and development process, and a citizen-oriented delivery of services and development outcomes.

2.1.1.2. Review of Act, Policy, Guideline and Strategy

Infrastructure development has remained a priority of the government right from the beginning of first five-year plan. With a view to facilitate and to create enabling environment many legislations have been enacted since then. Rules, Regulations and Guidelines have been developed and put to use. Policy documents have been passed and practiced so as to streamline the direction of the development. In these connections the following Acts, Regulations, policy frameworks etc. have been reviewed.

- i. National Urban Policy, 2007
- ii. National Urban Development Strategy, 2017
- iii. Planning Norms and Standards, 2015
- iv. National Land Use Policy, 2012
- v. Town Development Act, 2045
- vi. Land Acquisition Act, 1977
- vii. Solid Waste Management and Resource Mobilization Act, 1987 AD
- viii. Public Road Act, 1974
- ix. National Road Standard, 2070
- x. Nepal Urban Road Standard prepared by DUDBC, 2071
- xi. Nepal Urban Drain Standard prepared by DUDBC
- xii. Town Development Fund, 2053
- xiii. Industrial Enterprise Act, 1992
- xiv. Building Bye Laws
- xv. Land Use Policy
- xvi. Public Procurement Acts 2063 and Regulations 2064
- xvii. Public Roads Act, 2031
- xviii. Contract Act, 2023 and 2058
- xix. Construction Industry Acts
- xx. Public Infrastructure Build, Operate and Transfer Policy, 2057
- xxi. National Transport Policy, 2001
- xxii. National Agriculture Policy, 2004
- xxiii. Tourism Policy, 2008
- xxiv. National Industrial Policy, 2011
- xxv. Planning Norms and Standard, 2013
- xxvi. Constitution of Nepal, 2015

2.1.1.3. Planning Norms and Standards

Hierarchy of Urban Areas

The urban areas have been classified into 5 classes based on the population

a. Metro city:

It corresponds to the current metropolitan city i.e. Kathmandu. This is the highest level in the urban area hierarchy. The population for the level of urban areas will be above 300000. This can include either a single city with population more than 300000 or neighboring settlements cities within a certain distance of each other having a combined population of more than 300000 and who share the common resources and services.

b. Sub Metro City

It corresponds to the current sub metropolitan cities like Pokhara, Biratnagar, Lalitpur etc. The population for this level of urban areas will be above 100000 and equal to or less than 300000.

c. City

It corresponds to the current municipalities like Bharatpur, Dhangadi, Bhaktapur etc. The population for this level of urban areas will be above 40,000 and equal to or less than 100,000.

d. Sub City

It corresponds to the current small towns and the population for this level will be above 10,000 and equal to or less than 40,000.

e. Market Center

It is at the lowest level in the urban hierarchy and corresponds to the current market centers. Areas having at least 50 shops or outlets within 100 m from the center will be categorized as market centers.

Table 1.1: Planning and Norms for Sub-City: (10,000 to 40,000 Population)

S.No	Types of Infrastructure	Norms	Standards				Source	
A	Physical Infrastructure							
1.	Road	Sub arterial, Collector and Local Street (All or 90% of houses are within 2 km from motorable road)		ROW	Setback	Footpath	Cycle Track	Nepal Urban Road Standard, 2011
			Sub Arterial	22	1	2	1.5	
			Collector	14	1	2	1.5	
			Local	10	1	2	-	
2.	Water Supply	Courtyard Connection/ Provision of Rainwater Harvesting Treatment plant (lab, dosing and guardhouse) with Storage : Reservoir (24hrs requirement)	Quantity: 60 - 80 lpcd Accessibility: 90% of household have tap within 50m 1 ha per site (treatment plant and storage) Store capacity: 25% of the total treatment capacity				National Urban Water Supply and Sanitation Sector Policy, 2009 Conversation with staff at KUKL, February 2013 Conversation with Consultant at STIUEIP, January 2013	
3.	Sanitation/ Sewerage system Storm Water Drainage system	30% of the household is covered by public sewer system (pit latrine, septic tank etc) Sewage Pumping Station Treatment plant	Min diameter of trunk line: 200mm 0.01 ha – 0.02 ha per site 2.5 ha – 3.5 ha per site 1/3000 passerby at distance of 500m				Consolidated Design Criteria Report, STIUEIP, 2012 Conversation with Consultant, STIUEIP, January 2013 Preparing the Ktm Valley Urban Environment Improvement Project – Final report	

		Provision of public latrines		
4.	Integrated Solid Waste Management	25% of solid waste is collected and properly disposed Collection Point	Communal Collection (1 collection point/container/ roadside pickup point serves a radius of 200m)	Human Settlement Planning and Design, South Africa, 2000 Conversation with Consultant, STIUEIP, January 2013
		Sanitary Landfill Site	Sanitary Landfill Site: Small (Greater than 1 and less than 25 tons per day)	
5.	Electricity	National Grid supply line Alternative energy (panels, battery capacity 100AH)	100% of the household is covered by electricity city supply line Electric substation 33/11 KV : 0.07 ha per site Transmission Tower: 80 – 100 sq. m Distribution Tower: 20 – 25 sq. m 40 – 100 Watt Solar Home System	Conversation within PPUD Section, 2013
6.	Tele-communication	House connection Community telephone booth	100 % coverage 1 telephone booth for 2 neighborhood (Standard booth)	Conversation within PPUD Section, 2013
B	Social Infrastructure			

7.	Educational Institution	Primary/basic	1 per 3000 population at a distance of 0.4 – 0.8 km - 0.2 ha per site	Preparation of Urban Planning Manual, 2007
		level Higher	1 per 7500 population at a distance of 30min in public transportation – 0.65 ha per site	
		Secondary	1 per 25,000 population at a distance of 45min in public transportation	
		Graduate/ Post		
		Graduate		
	Vocational and Technical Schools			
8.	Health Institution	Sub Health Post	1 per 1000 population (0.04 ha per site)	Periodic Plan of Lekhnath, 2063 Conversation with Health Section, DUDBC
		Health Post	1 per 5000 population (0.15 per site)	
9.	Open Space/ Disaster Mgmt Recreational areas - Parks	5% of total sub city area Neighborhood Park (with play equipment)	1 @ 800 population (0.4 ha per site)	Human Settlement Planning and Design, South Africa, 2000
		Local Park	1 @ 10000 population (1 ha per site)	Periodic Plan of Lekhnath, 2063
10.	Library	City level	1 per 7500 population (0.5 ha per site)	Conversation with PPUD Section, 2013 Periodic Plan of Lekhnath, 2063

11.	Security	Police Post	1 per 10,000 population (0.1 ha per site)	Master Plan of Delhi, Delhi Development Authority (DDA), 2001
12.	Fire Stations	1 (3 to 4 km radius)	1 fire engine @ 25,000 – 75,000 population 0.5 ha per sub city	National Reference Manual on Planning and Infrastructure services, Government of Pakistan, 1986
C	Economic Infrastructure			
13.	Hall	Multipurpose	1 (0.2 ha per site)	National Ref. Manual on P/I services, Got. of Pakistan, 1986
14.	Vegetable Market	1 vegetable/ meat market with cold storage facility and other commodities	0.5 ha per site	
15.	Public parking space	Two/ Three/ Four Wheeler (Bus park/ Truck park)	1 parking lot (0.8 ha per site)	Periodic Plan of Lekhnath, 2063

2.1.1.4. Review of previous practices

A. DISTRITO@.BARCELONA

LONA

Funders:

Municipality of Barcelona

Location:

Barcelona, Spain

Date:

1998 to December 2008

Budget:

180M€



Figure 2.2 : Aerial view of 22 @ barcelona district

Project Description:

22@Barcelona project transforms two hundred hectares of industrial land of Poblenou into an innovative district offering modern spaces for the strategic concentration of intensive knowledge-based activities. This initiative is also a project of urban refurbishment and a new model of city providing a response to the challenges posed by the knowledge-based society.

It is the most important urban transformation project in Barcelona city of the last years and one of the most ambitious of Europe of this nature, with a high real estate potential and 180 million Euros public investment in an infrastructure plan.

22@Barcelona district commits itself to this model of an integrated, diverse and balanced city and fosters the coexistence of spaces for production, training and investigation with extensive housing, a new model of streets devoted to citizen use and an excellent offer of public and green spaces.

In 2000 the Barcelona City Council approved a new urban planning ordinance aimed at transforming the old industrial area of Poblenou, with obsolete factories that had long ago been abandoned or were simply not very productive, not a magnet for new activities. This new ordinance allowed for a new land designation called 22@, which substituted the traditional industrial designation 22a. So, land in the 22@zone, which is basically the whole south-eastern quadrant of the city, from Gran Via to the beltway and from the Olympic Village to Rambla de Prim, which is the equivalent of 115 blocks in the example, allows more construction, more public space or green areas and subsidized housing as long as the previous industrial activity is replaced by offices or other business services and equipment related to new technology and knowledge. The goal is to encourage land owners to update obsolete urban planning elements from the end of the 19th and beginning of the 20th centuries while maintaining economic activity, which would not have happened with traditional thinking from industrial to residential designations.

Beneficiaries:

The 22@Barcelona project has likewise been warmly received by the business community: an estimated 4500 new companies have moved to the district since 2000, an average of 545 per year and 1.2 per day, although the most prolific era was from 2003 to 2006. Of the 4500 companies 47.3% are new startups (the rest have moved from other locations) and 31% are technological or knowledge-based companies.

Strategy

Transformation of an industrial area within the city in a neighborhood that develops “new knowledge economy” through the implementation of specific projects and doing productive activities compatible with residential. At present it is giving a second impulse to 22@ with the proposal of a Smart City Campus, which will be a test laboratory for urban innovation.

This renovation process is regulated by three ordinance plans:

- The modification of the General Metropolitan Plan (MPGM), which favors the diversity of use in the area, acknowledges existing housing and plans to add new uses that are complementary to housing and compatible with the new production activities. This plan initially designates six areas to be developed through public initiatives (predetermined plans), and remits to derived plans to specify ordinances in each transformation area
- The Special Infrastructure Plans (PEI), which allow for urban improvements on 37 kilometers of streets in the 22 @Barcelona with highly competitive utilities and
- The Modification of the Special Plan for Historical/Artistic Architectural Heritage in the city of Barcelona, which adds 68 new elements of Poblenou’s industrial heritage to the Barcelona Heritage Catalogue

Impact

The city of Barcelona is a city used to the positive impact of urban change, as they have been able to renew neighborhoods and provide new urban activities, economic and social. All this by applying concerted planning processes in short and medium term.

Sustainability

The 22@ is born out of an innovation commitment in the field of sustainability as reflected in the planning regulations and the proposed planning. The Special Infrastructure Plan is a clear example of this administration, in order to create new networks to update the city. Today we are taking another step toward urban and edification self-sufficiency, through the development of the City Protocol and various examples of self-sufficient buildings.



Figure 2.3: Media and Plan of ICT Centers of Barcelona

2.2. Field Mobilization

The Consultant mobilized the field with all team for the following work completion:

- The consultant conducted collection of demographics and migration trend data within last 10 to 5 years. Identified the potential area for urban development based on land suitability and urban supplementary infrastructures as per original topography.

- Conducted field studies on present to future (5, 10 and 15 years) need of urban infrastructures (such as transportation, communication, electricity, water supply and sewerage system /treatment plant, solid waste management, landfill site etc.).
- The consultant carried out the study of existing social infrastructure such as health / education / sports / communication / security center and other community facilities by addressing present deficiencies to 15 years demands.
- Identified assess critical, sensitive and other natural resources and its locations.
- Survey conducted for preparing detailed project report of the detail engineering design's sub-project after identifying such sub-projects (i.e. 2 nos.).

2.3.Secondary Data Collection and conducting Survey

Sources of secondary data includes books, personal sources, journal, newspaper, websites, government records of different government offices, etc. Secondary data are known to be readily available compared to that of primary data. With the advent of electronic media and the internet, secondary data sources have become more easily accessible (Sources are highlighted). Among all above sources government records sources are very important and authentic for the secondary data. It contains information useful in marketing, management, humanities and social science research. Some of these records include; census data, health record, education institution records, environmental records, climate records, urban infrastructures records, etc. These all were collected to support in proper planning of Integrated Urban Development Plan (IUDP) including allocation of funds and prioritizing of projects.

After collecting the secondary data for IUDP, we conducted field survey about following activities as per need of IUDP process.

1. Satellite image
2. Spatial analysis
3. Climate Change
4. Topography
5. Urban water cycle as per water resource and Hydrology
6. Terrestrial Ecosystem
7. Demography as per population, education, health, poverty, household
8. Water supply
9. Sanitation
10. Electricity
11. Refuse removal
12. Safety and security
13. Murder
14. Sexual offenses
15. Drug related crimes
16. Driving under the influence
17. Residential burglaries
18. Fatal crashes
19. Road use facilities
20. Economy
21. Agriculture
22. Urban roads
23. Terrain
24. Forest and biodiversity
25. Plant biodiversity
26. NTFPs
27. Wild animals
28. Heritage, culture and tourism

2.4.Public Consultation plan

Consultation is the prime source and practice to retrieve the views of the locals and public towards the project and collect important suggestions from the mass regarding the progress and sustainability of the municipality. The consultation enables in identifying the prevailing problems of the municipality and plans can be made to rectify and improvise the condition of the Municipality. The Public consultation was carried out in following ways:

a. Consultation with Stakeholders

One day workshop or meeting was held in the premises of Municipality office regarding the discussion of the project. Before the meeting, information about IUDP was disseminated to concerned municipality. Informal discussions were done with concerned municipalities Mayor, deputy mayor, and administrative executive officer and Planning Section office

Table 2.1: Stakeholders Participant Meeting

S.N.	NAME OF MUNICIPALITY	NAME OF THE PERSON	DESIGNATION	TELEPHONE
1	NARAYAN MUNICIPALITY	Ratna Bahadur Khadka	Mayor	9858067222
2		Sabitri Malla	Deputy Mayor	9848064134
3		Dal Bahadur Thapa	Ward Chairperson-9	9848141902
4		Prakash Neupane	Ward Chairperson-6	9858051240
5		Tanka Bahadur Bista	Ward Chairperson-11	9848063074
6		Dal Bahadur Khatri	Ward Chairperson-	9848043375
7		Bir Bahadur Katwal	Ward Chairperson-	9848208901
8		Purna Bahadur Malla	Ward Chairperson-	9844807528
9		Ganesh Prasad Koirala	Chief Administration Officer	9804532116
10		Tritha Narayan Shrestha	Ward Chairperson-	9848142333
11		Chandra Prasad Upadhayay	Ward Chairperson-	9848100143

The consultant consulted with the local stakeholders such as Municipality, TDC, user's committee, concerned line agencies, local people residing within the study area. An interaction was made with the local stakeholders about the project being carried out by the consultant. They were fully informed about the objective and the scope of the project. Consultant tried to eliminate any negative rumors about the project and ambiguities were cleared during the discussion. The consultant not only expects the co-operation from stakeholders but also achieved participatory approach in execution of the project in long run. The objective of the above consultation is to gather information, sensitize local stakeholders and identify problems which are done through.

b. Focus Group Discussion

Focus group discussion concerning to the development plan in the selected settlements were conducted to know the key potentials and problems related to development planning. Issues such as the economic potentialities, possibility of future expansion of the settlements, rural-urban linkages, major problems facing/may face in the future and key projects to be focused with were covered during the focus group discussion. This information was helpful to identify the most potential sectors and major problems of the settlements. Furthermore, this information helped out in preparing DPR of the selected projects of the particular settlement.

These methods was helpful for identifying lead sector, potential function, function of hinterland areas, selecting key project for DPR, possible urban growth of the settlements etc.

2.5. Primary Data Collection

Data collected directly from the source either by surveying or through various checklist is placed under primary data. It provides the raw data of the study area that can be used for analysis or plan preparation It is the most holistic approach to data collection. Primary data

especially related to physical, social and economic infrastructure such as road network, drainage, water supply, electricity and telecommunication, educational, financial, institutional, health related institution, land use pattern were gathered from on-site surveys, photogrammetry and GPS techniques. 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. Following process or methods were applied in collecting Primary data:

a. Surveying

Survey team was mobilized in the municipality with the sole reason to get a clear view of infrastructural arrangements of the Municipality. Along with the infrastructural arrangements; open spaces, types of infrastructure, their uses, Environmental Sensitive areas, land use pattern, etc. were also obtained by the survey team. The survey teams were facilitated with the Android mobiles equipped with the Android mobile application named Open Data Kit (ODK) Collect. This application contains form and checklist which when extracted can impart us with every minute details of the structure along with the photographs and co-ordinates of the structure. For example, In case of building the details that can be obtained are building categories (commercial, educational, residential, offices etc.), with their sub-categories, if a building surveyed is commercial then type of commercial nature will be listed like Shop, Super market, Restaurant, Hotel etc. with their name, construction material type, roof type, floor count, Road access, electricity access, GPS location and finally with its photograph. Thus, with such sort of minute detailing of an infrastructure, existing condition of the municipality can be portrayed easily and planning activities can be done accordingly.

This method of survey was only used to get a clear view of the municipality and was not used for detail surveying. For the detail survey of approved two projects, the survey was carried out by Total stations and topographical survey was carried out.

b. Observation

Observational information was also collected using the checklist. Basically, information relating to existing infrastructural condition, possible expansion areas of the settlement, physical location, environmental situation and existing social infrastructure was collected. This information will be important while coming into the phase of data analysis.

c. Key Informants Interview

Key information relating to the project was collected through key informants. Key informants including the representative of civil society, political parties, local focal person, college lecturers, technical persons and local aged people was collected. Information such as changed on land use and local practices for developmental works, key information regarding potential sector of the settlements, economic, social linkages etc. was collected through this method. This method will be useful for collecting focal/key information of the settlements.

d. Questionnaire Survey

Questionnaire survey was conducted to collect household socio-economic and demographic information. Information such as population composition, trend of migration, age- sex composition, language and ethnic composition etc. was collected through questionnaire survey in each settlement. Similarly, economic condition of the household, occupation, source of income etc. was also collected through questionnaire survey. This information will be useful for preparing provisional list of the settlement and detail profile of the project settlements.

e. Information from Line Agencies

A checklist and data collection format were used to collect information from the line agencies about their past, present and future activities in the selected settlements.

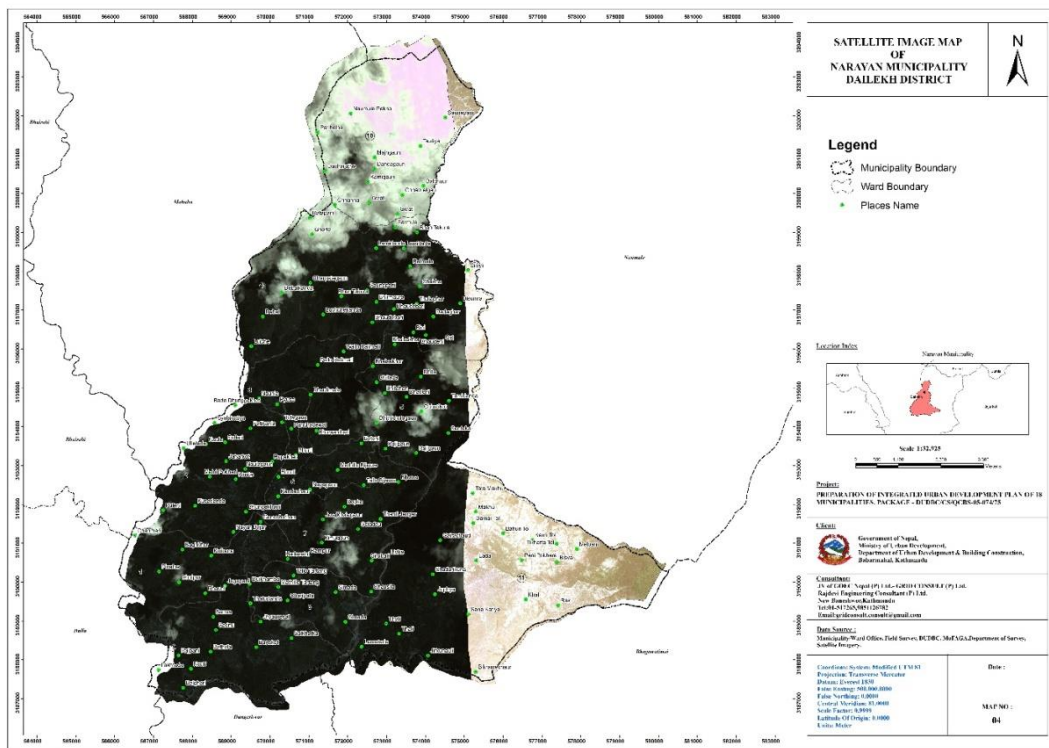
2.6. Preparation of GIS Base Map and Thematic Maps

Following method is adopted for preparation of base map of study area

Acquisition of satellite imagery

Satellite imagery of high resolution (Less or equal to 0.5m resolution) natural color/ Panchromatic were acquired along with their metadata, satellite orbital model file (rational polynomial coefficient file) and tile information files for preparation of digital base map if not exist. Following satellite image tile of Narayan municipality was available for purchase in the market.

Figure 2.4: Narayan Municipality map including the total area 110.037sq.km.



Identification of control points

In the context of preparation of base map, control points that are distinct in the image as well as can be easily identified in the field were marked in raw imagery acquired to carry out DGPS survey work described in the consequent point. The control points were marked assuring well distribution per scene.

Instrumental Survey Program for preparation of base map

DGPS survey for ground control points is necessary for establishing the control point. The team consisting of senior surveyor and junior surveyors are being deployed to undertake this task. Differential Global Positioning System (DGPS) is an enhancement to Global Positioning System that uses a network of fixed ground based reference stations to broadcast the

difference between the positions indicated by the satellite systems and the known fixed positions. It is a means of correcting for some system errors by using the errors observed at a known location to correct the readings of a roving receiver. The basic concept is that the reference station "knows" its position, and determines the difference between that known position and the position as determined by a GPS receiver. This error measurement is then passed to the roving receiver which can adjust its indicated position to compensate. DGPS survey is being undertaken to establish Ground Control Points (GCPs) to geometrically correct the high resolution satellite imagery. DGPS Survey is done using high precision Ashtech Promark 2. GPS receivers to identify numbers of GPS Points. Among numbers of GPS points some points are GCPs and some numbers of GPS points are check points. Check points are used to check the accuracy of the Satellite Ortho photo generated using collected GCPs. These GCP Points will be linked with National Geodetic control point, which is established by Department of Survey. Another National Geodetic control point is taken for accuracy assessment. The observations are made for 1-1.5 hours in each station to receive signals from the minimum of four satellites to identify the GPS location. Each GPS are observed with reference to the National Geodetic Control Point and three other adjacent points so as to form GPS triangulation network.

Data Processing and generation of Digital Elevation mode and contours

The observed data are post-processed using DGPS processing software to calculate the co-ordinates of the GCPs. Similarly the contours at 2m interval are generated using specialized DTM software in AutoCAD environment. Contours at 1m are generated for the core city area only. For rest of the fringe area, 20m contours from 1:25,000 scale topographic maps are used. The contours from both the sources are matched and merged to generate a seamless terrain contour. This is used in generating the Digital Elevation Model (DEM) of the entire municipality. This DEM is used for ortho-rectification and generate other derivative terrain maps (slope, aspect etc.).

Ortho rectification of satellite imagery and its mosaicking

Satellite image was refined to enhance the spectral and geometrical accuracy of the image using remote sensing technique. Pre-processed image was then corrected to remove topographic and atmospheric effect. Finally processed satellite imagery was oriented orthogonally using GCP obtained from DGPS survey and high- resolution DEM obtained from photogrammetric methods. Control points were observed through DGPS which were further post-processed to apply the various corrections and to find the accuracy of the points.

Vectorization and Data Capture

Vectorization over the stereoscopic anaglyph model enable to clearly discern the boundary of the features (buildings, roads and others) and visually distinguish the shadowed features, which otherwise is difficult to distinguish in 2D photogrammetry model. The vectorization is done in GIS and later edited in AutoCAD environment. This process is adopted to capture the buildings, road and other topographic features.

Field verification and updating works

Extensive field survey were being carried out in order to update the land use information, base map data, administrative ward and municipality boundaries and other topographic features in parallel with the house numbering during the field work in field map as well as in digital base map as shown in activity flowchart. Additionally, the updating work for mapping different utilities networks were carried out. The mapping of utility networks involved active participation from the municipality personnel and ward

members. With their participation, such network features were mapped on the printed draft maps and verified on the ground. Municipality and ward boundaries were verified on the ground along with the respective municipality /ward secretaries. Newly built roads and buildings were updated and mapped on the ground using printed satellite ortho imagery and GPS sets.

Building footprints were verified on the ground and updated in the digital database especially in the core area as well as in the settlement having complex built-up pattern. The complexity aroused when the individual buildings were not clearly identifiable since it was joined; building had been divided amongst the family members, building with vertical ownership, and building with entrances along the underpass.

Accuracy assessment

Accuracy of maps and digital data are measured for various aspects. Assessments for the accuracy levels of the geometrically corrected satellite imagery, planimetric and vertical accuracies of the captured features and completeness are performed to ensure the quality of the maps and data. The digital mapping accuracies are strictly observed according to the standard technical mapping specifications for 1:2500 scale maps as stipulated by the HMG Survey Department. The digitizing of planimetry are done so that at least 95% of the details clearly identifiable from aerial images are digitized within +/- 0.3 mm of their true position at the map scale with reference to the nearest control points. The contours on open areas are digitized within +/- 1m of their true elevation with reference to the nearest control points. The spot heights on open areas are digitized within +/- 0.5m of their true elevation with reference to the nearest control points. Accuracy measures for consistency and completeness are assessed by sampling buildings and other mapped features. This is assessed for errors of omission and commission and positional error.

Digital base map GIS Data base creation and Metadata

GIS datasets are populated and updated with associated existing attributes data. Associated attribute data are collected and updated by field surveying during the field verification works and from relevant secondary data sources. GIS databases are created in ESRI “shape” and “Geo-database” file format to be used in ArcGIS environment. The database are developed based on the data model in accordance with the “Specifications for Geographic Information Service and National Topographic Database” and the “Specification for National Urban Geographic Information Service in Nepal prescribed by the Survey Department. Metadata are created for all GIS datasets including image datasets. The metadata are in standard ISO format and contains basic information of the datasets. These information contain the source and method of data creation, attribute definition, accuracy, projection parameters and others. Metadata are documented and annexed in the final report. The GIS based database comprise of the following features but not limited to these and these features are managed in the database in compliance with GIS-based digital base Map-Data Model as a standard and approved by the client.

- Administration: Demarcation of administrative units and sub units that includes municipal area, wards etc. with chowks or location name and address. Orient the municipality with respect to major administrative division (e.g. Country, region and district)
- Topography: Contour intervals in 1m (2m to 5m for hilly area depending upon slopes) in dense settlement area and 5m (6m to 15m for hilly area depending upon slopes) in remaining area, spot levels, digital elevation model, area of typical characteristics, land features (Land slide area, cliff etc), water bodies (rivers, lake, ponds, canal) and other

- relevant features.
- Existing land use/cover: residential, commercial, industrial, institutional, recreational area, parks, nature conservation sites, archaeological sites, religious area, cemeteries/crematorium, open space, public land, agricultural land, barren land, forest, water bodies and other relevant features.
 - Identification of public, government and institutional land within municipality (based on available land record database)
 - Transportation Network System
 - i. Road network according to road category/classification and its hierarchy based on DoR Standard (highway, supplementary road, feeder road, district road, main road etc) hierarchy based on metric addressing system, surface type (black topped, graveled, earthen, brick paved, track etc) network linking to settlements, road width, right of way, type of road, access to household, existing name of road)
 - ii. Name of chowk and squares
 - iii. Traffic light points
 - iv. Crossing structures (culvert, bridge, types of bridge according to the structure and material)/length/ width/ remarks
 - v. Bus stops, bus terminals, bus parks, parking areas, gas/ petrol stations and other relevant transportation infrastructures.
 - Electricity and street light system
 - i. Transmission line
 - ii. Segments of Road with street light
 - iii. Substations, transformers and other electric infrastructure
 - Telecommunication system:
 - i. Telecommunication network – transmission line and optical fiber; communication/mobile tower and other telecommunication infrastructures
 - ii. Telephone cabinet
 - Water supply system
 - i. Transmission network and distribution network with pipe type and size
 - ii. Water sources (public deep wells, public taps – dhungedhara or other), reservoirs, tanks, deep wells, public taps and other water supply infrastructure
 - Sewerage and drainage system
 - Networks of sewerage
 - Storm water drainage, drain type (covered/ uncovered) manholes and outfalls
 - Treatment plants and other relevant sewerage and drainage infrastructure
 - Solid waste management
 - Landfill area and waste processing centres (recycling, composting), disposal sites, waste collection point, transfer point; waste collection route; quantity and types of waste; waste collection coverage, management of solid waste by individual households, markets, hospitals and industries. Information on industrial and hazardous waste management is also required.
 - Buildings: individual building footprints, their functional use (residential, institutions, commercial, industrial, cultural/religious, historical health services, financial services, educational services, communication services, market place, weekly bazaars etc.), ownership of the building (public, private, community), main/ associate number of floor, construction type, structure of building, location, street code, building identification number based on metric addressing system, existing house number if any is recommended, vehicular road access (yes/no)
 - Other structure: This does not include in building e.g. Dabalis/wells/dhunge dharas/ chautari etc.

- Characteristic area: e.g. market place, weekly bazaars, temple/institution and other premises
- Public service building/ areas: municipal office, ward office, health service (hospitals, nursing homes, health posts etc.), public toilets, public taps, parks and recreational areas, city hall, public library, cinema hall, theaters, post office, market centers etc.
- Environment: Urban greenery area, public open spaces, parks, conservation area, watershed, environmentally risky area such as river cutting, flooding, earthquake prone area, landslide, erosion hazard zones, other sensitive areas including slums and squatters and environmental protection initiatives.

Preparation of topographic base maps

Topographic base map are being prepared at 1:2,500 and 1:5,000 scales for core city or built up area and the outer fringe areas respectively with index sheet. The topographic base maps are prepared with appropriate cartographic representations using “database driven cartography” technique in ArcGIS or Geo Media platform. The maps are composed with appropriate legends, cartographic layouts and elements, symbology and descriptive notes in compliance with approved standard. Maps are composed following the national grid standards. The maps will be printed/published in A1 size paper with digital version in 7 tone international color scheme or as specified by client.

2.7. Data Analysis

After the collection of secondary and primary data, consultant team analyzed the existing data and found the following activities to be improved.

Table 2.2: Activities List

Plan & Economic Development	Community Services	Infrastructure Services	Financial Services	Corporate Services	Government & Strategic Services
Town planning, Spatial Development planning, Human Settlement, Land-Use, Rezoning, Subdivisions, Building Control, Coastal Management, Environment Management, Valuations, Property, Administration, Contract, Outdoor Advertising, Urban	Cleansing Services, Environmental Health, Public Safety, Fire & Rescue Services, Library Services, Sport Development, Parks and Recreation, Law Enforcement, Facilities & Amenities, Traffic Management, Solid Waste Management, Sports Festival, Youth	Roads & Streets, Storm Water, Electricity Distribution, Street Lighting, Water Purification, Water Distribution, Telemetry Services, Pump Stations, Fleet Management, Sewerage Purification, Mechanical Services, Electrification of New Houses,	Budget and Treasury, Credit Control, Debt Collection, Loans, Expenditure, Income, Expenditure, Asset Management, Investments, Supply Chain Management, Cash Flow Management, Internal Audit, Audit	Administration, Legal Services, Individual Employee, Performance Telephone Services, Call Centre, Cleaning & Gardening Security Services, HR Administration, Employment Equity Skills Development, Council Support, Employee Safety,	Marketing Media Relations, Publications, SCM Bid Evaluation, Annual Report, Municipal Newsletter, Corporate Promotions IDP - Planning Performance Management Risk Management Ward Committees Public

Plan & Economic Development	Community Services	Infrastructure Services	Financial Services	Corporate Services	Government & Strategic Services
Renewal, LED, Rural Development	Development, Social Services	Renewable Energy	Committee	Tourism Development, Dias Festival	Participation Programme
The Municipal Manger is overall responsible for the effective rendering of internal audit services					

2.8. Vision Setting

One of the most important part of IUDP is the vision setting after the data analysis. As the planner, we've taken this task as the preparation of long term strategic vision planning, which will basically form the structural guide for the development of the municipality. It is expected that long term plan is set during the project implementation and be considered as the basic development strategy for next 15 years vision.

Vision: Struggle to be a trend-setting, dynamic Municipality delivering quality services responsive to the demands and challenges of the community and constitutional mandate, in which all stakeholders can participate in harmony and dignity.

Table 2.3: Vision Setting Indicator

Internal	External
<ul style="list-style-type: none"> • Municipal Council • Executive Mayoral Committee • IDP and Budget Steering Committee • Development Forum • Ward Committees • Community and Residents Associations • Local Aids Council • Early Childhood Development Forum • Centre Stakeholder Forum • Junior Town Council • Council of Stakeholders of Rural Areas • Local Elderly, Gender and Women Fora 	<ul style="list-style-type: none"> • Business Chamber • Local Tourism Fora • District IDP Managers Forum • Provincial IDP Managers Forum • Provincial and District Fora • Municipal Governance Review and Outlook • Communal Property Associations • Business Chamber Forum

Objectives of vision:

1. To ensure efficient and affordable basic services to all residents & migrants in new towns.
2. To strengthen the economy of Municipality for sustainable growth and job creation.
3. To develop a municipal governance system that complies with international best practice.
4. Create an institution that can align planning with implementation of effective and efficient service delivery; and
5. To be a financially viable institution geared to providing affordable and sustainable services to the residents of the Municipality

Also, the municipality vision are applicable with as per above vision

Municipality Vision

The NT / Municipal vision is still

“नारायण नगरपालिकाको समृद्धिको आधार
कृषि, पर्यतन र पूर्वधर”

2.9. Sectoral Development Plans

As per specified in the ToR, sectoral development were prepared within this IUDP. Sectoral plans were prepared with sectoral goal, objectives, output and programmes in LFA approach with verifiable indicators. Sectoral plans were formulated based on the issues raised by the sub-committees formed during the pre-planning workshop. Besides the physical development plan, following sectoral plans were formulated in LFA framework with justified verifiable indicators;

- Social development plan
- Economic development plan
- Environmental management (climate change adaptation and disaster risk reduction plan)
- Institutional development plan
- Tourism and cultural development plan

Prepared sectoral plan will guide to the Narayan Municipality for future development course. It will guide to investors and development practitioners for channelize the development/investment direction in the Municipality. Government authority will also be guided by the priority sectors and lead to development sector for sustainable management and Development of the Narayan Municipality. Concerned line agencies and Donors may also be guided by the sectoral plan so that their investment could be rightly allocated.

2.10. Multi Sectorial Investment Plans (MSIP)

Multi Sector Investment Plan (MSIP) was prepared mainly by using Logical Framework Approach (LFA), and will be supplemented by performance indicators and means of verification of such indicator as far as practicable. Such plan will reveal short, mid and long term programs/projects, cost estimate, and probable financing sources prioritized in sequential manner for the planning period of each 5 years. Such programs/projects will be to cater to both the short-term, mid-term and long-term needs of the study area, and will be consistent with the long-term development plan, sectoral goals and objectives, and the vision. Furthermore, MSIP will clearly reveal programs/projects for each fiscal year and for the tentative cost estimates of the projects to meet the vision. Such MSIP will be pragmatic, and be consistent with the financial resource plan. The city level plan/projects (Mega project) and the projects that can be implemented exclusively by Municipality also should be clearly mentioned in MSIP. It is suggested that the plan/projects that have to implement by different line agency in MSIP, included after thoroughly consultation with the concern office. The cost estimate of the projects will be done according to the approved district rate.

Objective of MSIP

- To coordinate and consolidate all the programs and investment of the different agencies working within the municipality.
- To provide guidelines to the municipality about how to spend their annual development budget in a planned and rational way so that the benefits of development are maximized.
- To bring a balance between required and available resources of municipality and different agencies
- To utilize the limited resource of different agencies according to the needs of the local people
- To support the implementation of the master plan

Following are the steps of preparation of the MSIP:

- Financial resource analysis,
- Project formulation,
- Project prioritization,
- Project programming,

- Defining the role of the concerned line agencies in implementing.

2.11. Preparation of DED

As mentioned in the TOR, detailed Engineering Design of two sub-projects in each municipality is to be prepared and the amount of each projects is agreed to be not less than 30 crore. The projects are selected such that the implementation of the projects lead to the empowerment of the locals in socio-economic prospect or promote cultural and tourism sector of the area ultimately leading to the enhancement of the municipality. Also, the selection process is primarily based on the discussion with the concerned authority of the municipality as well as rigorous analysis of the socio-economic, cultural, tourism aspect of the municipality.

As for the case of the Narayan Municipality, following projects were proposed for the detail work upon analysis and agreement with the Municipality. The letter of approval from the municipal office has been attached here in Annex.

Figure 2.5: Map showing DED projects

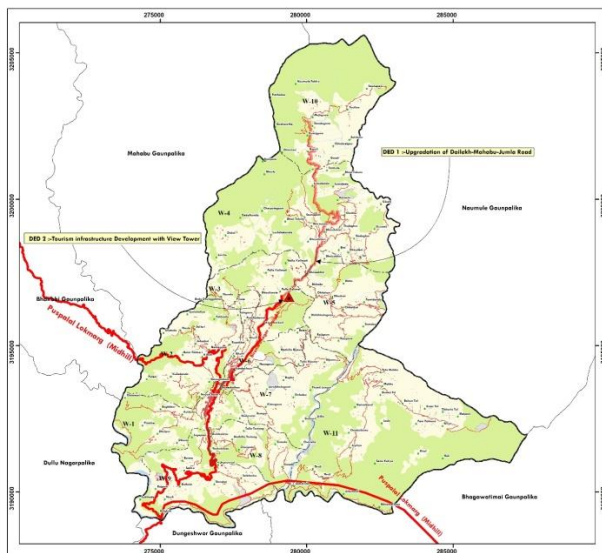
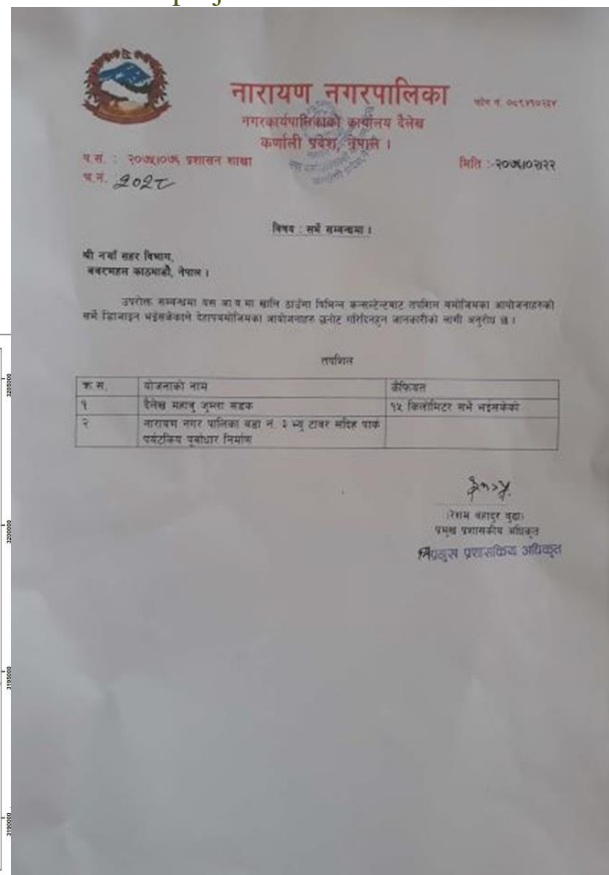


Figure 2.6: Letter from the Municipality for the DED project



2.12. Preparation of Building Bye laws

After a detail study of the Land Use of the Municipality, Building bye laws has been prepared for the regulation of Building and other infrastructures of the Municipality. This bye law ensures the planned and organized construction of any infrastructure within the Municipality which lies within the boundary and rules of the bye law. The Bye-laws will be prepared in accordance with sample bye laws, 2071 prepared by MoUD and "Bye-Laws 2064, of Kathmandu Valley" prepared by Kathmandu Valley Town Development Authority.

During the preparation of Bye Laws, detailed study has been made regarding the land use pattern of the Municipality. Irrespective the land use pattern, socio-cultural aspect of the Municipality has also been considered. This aspect can be illustrated by the bye laws preparation methodology of the Bhaktapur and Pokhara. Bhaktapur, being rich in cultural aspect and presence of World heritage site i.e. Bhaktapur Durbar square, building bye laws has been prepared considering these aspects of the society. As a result, any buildings that will be constructed nearby the periphery of the Durbar square, will have to maintain the cultural nature of the Durbar square and has to be built in the similar manner. Modern type concept of building construction is strictly prohibited by the bye law.

Whereas Pokhara being rich in Natural resources and major attraction for the tourism, the bye has been prepared accordingly. Machchhapuchchhre is the nearest Himalaya that is visible from the Pokhara and it is the one of the major attraction for the tourist. Considering the natural beauty that lies with the Himalaya, building bye law prohibits the construction of high rise building around the lake side area. This law ensures that visitors of Pokhara can enjoy the view of Himalaya without any sort of obstruction from the buildings. These are some of the examples which emphasizes the importance of the byelaw in preserving the cultural as well as natural beauty of any place. Considering these aspects, building bye laws of the Municipality has been prepared ensuring the preservation of any cultural and natural value of the Municipality.

Following issues were given in attention for preparing the building bye-laws;

- General definition
- Zoning classification and bye-laws/regulation
- Implementation mechanism & procedures etc
- Expected behavioural change from the citizens
- Existing bye-laws prepared by the MoFALD and MOUD
- Bye-laws of Other towns

Situation Analysis of the Municipality

After the collection of different information from site, interaction with local people, key informants, observation, different meetings and workshops performed in the site, we've analyzed opportunities and weakness of the new town with different perspective. Starting with the SWOT analysis to explore the Strength, Weakness, Opportunity and Threat, we further move to study the trend analysis of the site which includes the review of google earth and other information which gives historical development of the site. Some of the observed information and views collected from the local people or from different focused group discussion are placed in the field analysis. Finally, linkage of the town is studied with regard to the flow of people, services and goods. Linkage of the Municipality is identified in two perspectives with inter regional (Amongst the district) and Intra Regional (Within District or amongst VDCs). Furthermore, Economic, Financial, Institutional and Demand Analysis were also conducted to get a clear overview of the municipality. The mentioned above, about the municipality situation as per Building Bye Law are presented in Annex.

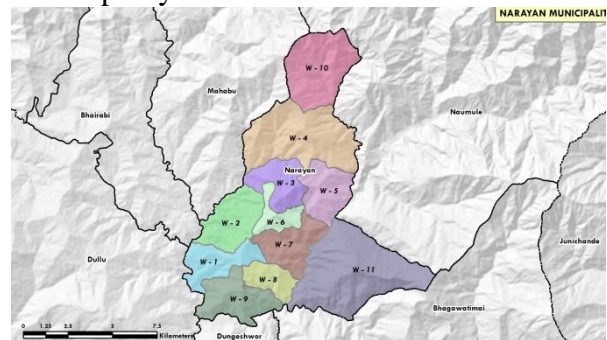
3. EXISTING SITUATION/STATUS

The complete data about the physical, social, economic, demographic, environment, financial and organizational structure of the municipality gives the clear picture about the existing situation and status of the municipality. Physical data of the municipality includes information about the road facilities, water supply and drinking water, sanitation and sewerage system, integrated solid waste management and electricity supply system, tele-communication and others. Social data includes information about the education facilities and institute, health institute, fire station, religious institution, security, socio-culture facility, library, etc. similarly demographic data includes different data collected which gives population and household distribution based on different topics like caste, religion, disability, age group etc. environmental data gives information about existing environmental condition, disaster and natural hazard, Economic data includes different income generating source. Financial and organizational data are gives financial condition and organizational status of the municipality.

3.1. Introduction

The statistics presented in this chapter indicate the existing developmental challenges facing municipality, such as poverty, unemployment, and service delivery excesses. This is crucial as it provides the Municipality and its social partners with deep insight into local socio-economic trends and how they impact on development. The programmers and projects in this IUDP are informed by this scenario. The municipality is 110.037 km in size. The Municipality is an amalgamation of several

smaller towns and of Dailekh District. The municipality have 11 wards.



3.2. Land (Geology & Soils)

Natural Biological and Physical Analysis Land (Geology & Soils): Based on WRB system, very few soil reference groups are found in Nepal. The soils are generally classified as Luvisols, which are shallow, and rocky soils found in the high hills of Nepal. Cambisols are most common and found in mid hills of Nepal. Regosols (high sand content) and Fluvisols (limited sand content) are also found in Nepal. Soil texture is described on the basis of soil

colour notation. It was found to be clay loam, sandy loam and silty loam soils in hilly region.

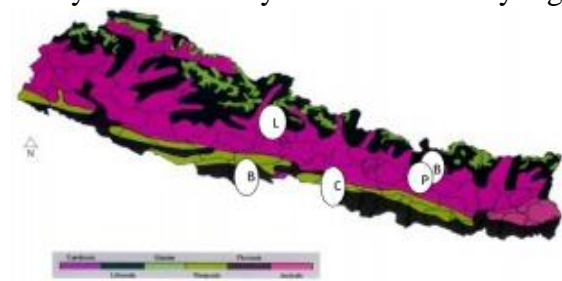


Table 3.1: Generic Nepalese soils

Soil Types	Advantages	Disadvantage
Black Clay	High Productivity (Good for rice)	Difficult to plough Yield declines if rain fall ID high
Red Clay	Medium Productivity	Difficult to plough Yield declines if rain fall ID high
Brown / grey Loam	High Productivity in normal years	Yield declines if rain fall ID high
Sandy Loam	Easy to plough	Low Productivity Yield declines if rain fall ID high

From above figure shows the variation in soil within the Nepal. The areas with the black clay soil are located along the proposed municipality. The soils are suitable for agriculture.

3.2.1. Climate change

Dailekh district located in Mahabharat range of Nepal. Here is mild and generally warm temperature. The summers are much rainier than the winter in Dailekh. The temperature here averages 18.5°C. About 1559 of precipitation falls annually. The temperatures are highest on average in June, at around 23.5 °C. January is the coldest month, with temperatures averaging 12.0 °C. The variation in the precipitation between the driest and wettest months is 732 mm. Throughout the year, temperatures vary by 11.5 °C.

The climate change trend analysis report (1971-2014), prepared by the Department of Hydrology and Meteorology (DHM) of Nepal, shows that almost all Province 6 districts experienced increased annual precipitation in winter, pre-monsoon and monsoon seasons with significant variations in monsoon precipitation among the districts. In all districts of Province 6, there is positive trend indicating a rise in minimum temperatures in all seasons. There is also a positive trend indicating an increase in maximum temperatures in all Province 6 districts. The trend in four Terai districts (Kapilvastu, Rupandehi, Banke and Dailekh) shows a decrease in maximum temperatures during winter.

Dailekh District is vulnerable to natural and human-induced disasters. Floods, fires, disease outbreaks, road accidents, drought, thunder and dry wind storm are among major hazard events. Disasters adversely affect natural resources, reduce people's livelihood opportunities and the amount of income they generate and exacerbate their suffering. Agriculture is one of the most impacted sectors in the district followed by water resources, ecosystems, and human health.

The disasters not only take human lives and destroy/damage physical property but also slow the pace of development. It was also found that, among the vulnerable population, children, older people and persons with disabilities (PwDs) are disproportionately affected by disaster and climate risks.

There are key challenges in terms of responding effectively to climate change and disaster risk and impact in the district. Climate Change adaptation and disaster risk reduction and management (DRRM) activities are very limited and not effective. The evidence suggests that local and province governments do not have systematic legal, policy and programmatic response to climate change. There is therefore an urgency to devise policy and institutional mechanisms to mainstream climate change and disaster risk reduction in the development policies and plans of the provincial and local government.

In addition, the analysis demonstrates that local and provincial governments do not have systematized data storage and information generation in relation to climate change and disaster. Therefore, it is important for local governments to systematize their climate and disaster information collection and generation to support scientific planning and budgeting processes.

Mainstreaming climate change and disaster risk reduction (DRR) in legal measures, policies, and programs is instrumental in order to ensure climate and disaster resilient development. The provincial government should provide adequate support to local governments to draft policies and other necessary legal instruments to mainstream climate change and DRRM in development

policies and plans. Institutional and financial arrangements should be strengthened at both levels of governance - local and provincial.

An increasing temperature trend, an increasing trend in the number of warm days and warm spell durations have a positive relation in determining the incidences of heat waves. Heat waves endanger the health and life of the population to a great extent. Research demonstrate that the impact falls disproportionately on senior citizens, children, pregnant women and poor and marginalized people.

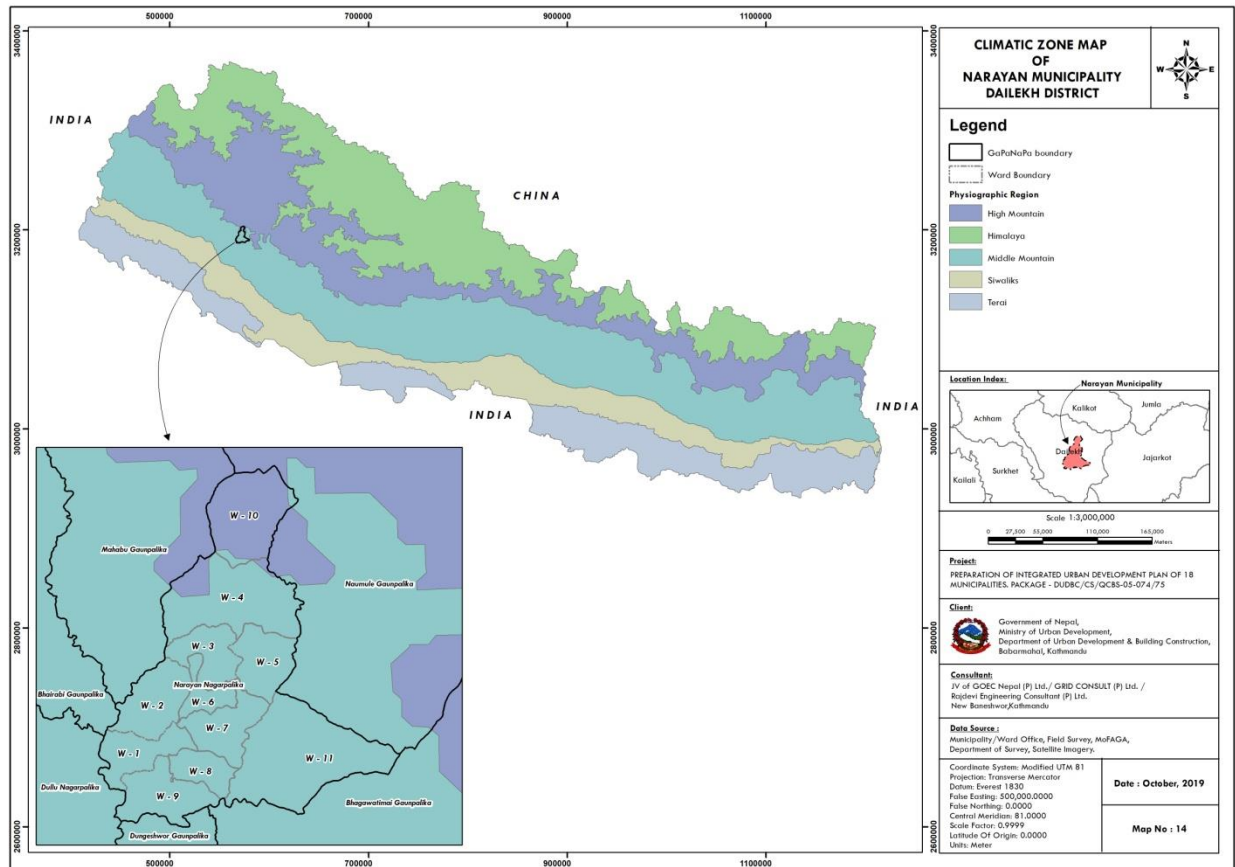


Figure 3.1: Climate change in Nepal

3.2.2. Rainfall

The economic impact of climate change is massive. Current climate variability and extreme events lead to major economic costs in Nepal. Extreme events are dominated by floods, but also include rainfall variability on agriculture (rain-fed agriculture, soil erosion, droughts) and low-season river flows reducing hydroelectricity generation. The estimated direct cost of these events is equivalent to 1.5–2% of current GDP/year (approximately US\$ 270–360 million/year in 2013 prices), and is much higher in extreme years, rising to 5% or more. This is high by international standards.

The impact of heavy rainfall was observed the most in Dailekh district municipality. Flooding of the Jyamire and Jaraj Khola has impacted Narayan i at higher risk of flood and other climate change impacts .

3.3. Topography

Narayan Municipality of Dailekh District is located in Province no. 5 of Nepal. The coordinate of the place is Longitude 81° 25' to 81° 53' East and Latitude of 28° 35' to 25° 58' 0" North. The area of the Municipality is 110.037 Sq.km. There are 10 wards in this municipality at present. Municipality is separated by Karnali River from western boundary (Tikapur Municipality) and by Geruwa River from the eastern Boundary (Madhuwan Rural Municipality). The settlements of the municipality are Kalashi tole, Khakhitarduwa tole, Bakitaduwa tole, Kaishi tole, Sunaphata gaun, Dala tole etc.,

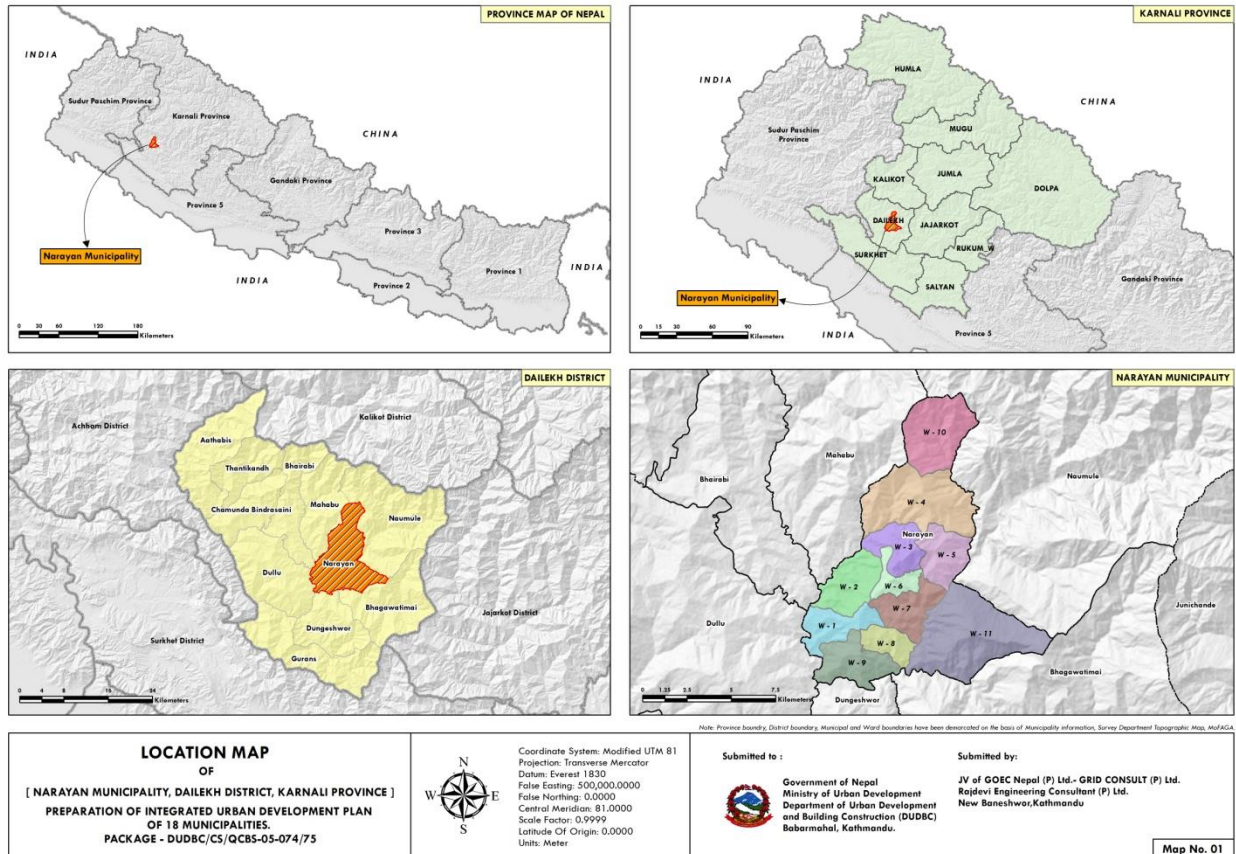


Figure 3.2: Topography Location Map

3.3.1. Terrain

Some part of the Dailekh district belongs to the Indo-Gangetic plain. It is the flat plain part of the country. In some of the areas, deep valley cut by the streams and rivers are also available. Undulating plains with sand dunes are also observed. Since the land scapes are bisected by several rivers and rivulets, recent sand and silts dunes are formed and some of the rivers have made deep cuts as well. As the rivers flow deep down, in some of the places irrigation water supply is difficult.

The terrain of the municipality is presented below figure:

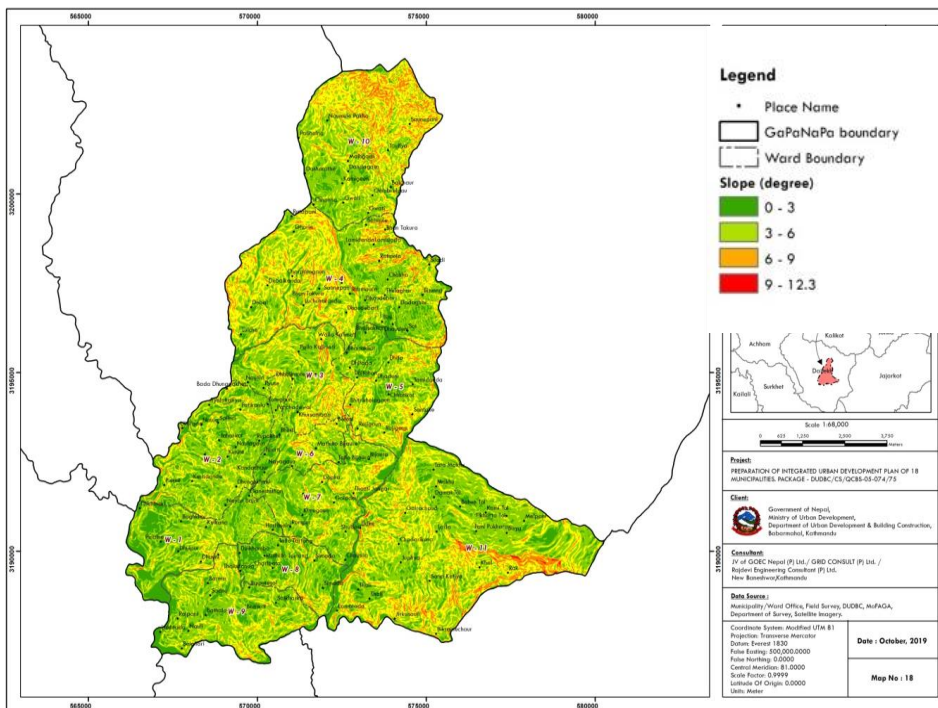
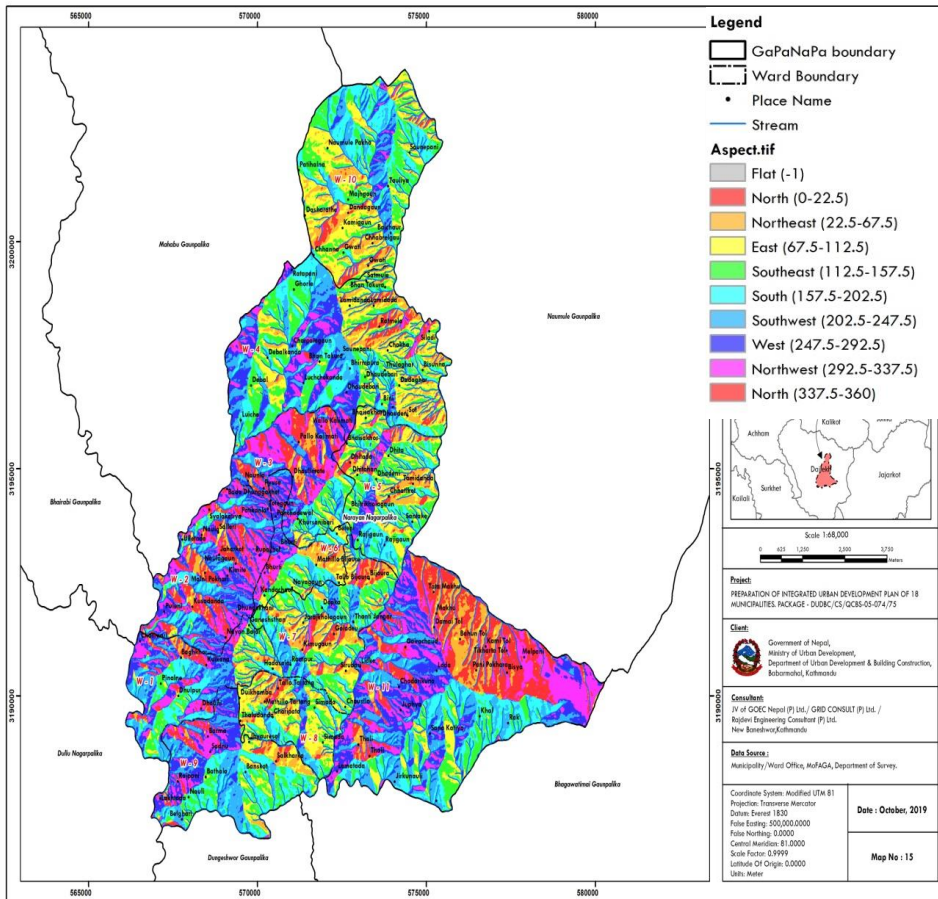


Figure 3.3: Terrain of Proposed Municipality

3.3.2. Agriculture

Table 3.2: Number, area of holdings and crop stand by total area of holding

Province/Municipality	Total		Crops under pure stand				Crops under mixed stand				Associated crops	
	No. of holdings	Area (ha)	Temporary		Permanent		Temporary		Permanent		No. of holdings	Area (ha)
			No. of holdings	Area (ha)	No. of holdings	Area (ha)	No. of holdings	Area (ha)	No. of holdings	Area (ha)		
Province 6	261452	212449.5	258408	176904.4	47759	8389.5	97147	25751.2	4562	401.8	8723	1002.73
Narayan	5078	835.0	5019	696.0	928	33.0	1887	101.0	89	2.0	169	4.00

Table 3.3: Number, area of holdings, number of holdings reporting and land under temporary crops by size

Province/Municipality	Cereal grains		Leguminous grains		Tubers and bulb crops		Oil seeds		Cash crops		Spices		Vegetables		Temporary grass crops	
	No. of holdings	Area (ha)	No. of holdings	Area (ha)	No. of holdings	Area (ha)	No. of holdings	Area (ha)	No. of holdings	Area (ha)	No. of holdings	Area (ha)	No. of holdings	Area (ha)	No. of holdings	Area (ha)
Province 6	260195	173408.9	119258	9934.4	120457	6144.2	82413	5747.3	3307	59.7	88896	2890.7	113113	4831.4	3800	263.3
Municipality in 2011	5053	682	2316	39	2339	24	1601	23	64	0	1727	11	2197	19	74	1

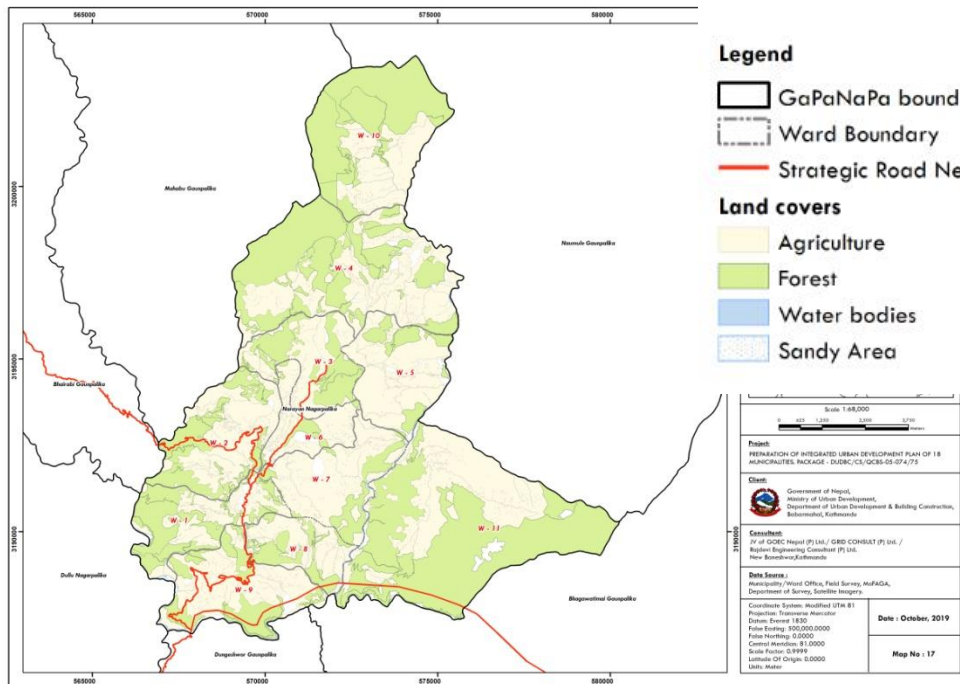


Figure 3.4: Land Use Patter (for Agriculture)

3.3.3. Hydrology

Cultivable land, Rivers is the main resource. Rivers are the sources of Irrigation as well as drinking water, Available rivers within municipality are presented below.

Table 3.4: Water source Summary

Description	Wards										
	1	2	3	4	5	6	7	8	9	10	11
River	Jyamir e Khola(1.35k m)	Dhud Khola(3.13k m)	Raypa ni Khola(0.66k m)	Bini Khola(1.15k m)	Bini Khola(2.10k m)	Jaraj Khola(0.24k m)	Jaraj Khola(2.24k m)	Jyamir e Khola(2.45k m)	Jyami re Khol a(0.4 2km)	Ghatt e Khol a(1.5 2km)	
		Salleri Khola(0.211k m)		Kale Khola(0.56k m)		Salleri Khola(0.10k m)	Jyamir e Khola(0.05k m)			Kale Khol a(4.5 2km)	
				Raypa ni Khola(1.97k m)							

Natural Canal/Bagmati Irrigation Canal (km)	4.28		0.32	14.19	4.48		1.83	3.26	14.86	12.16	9.57
Public Tap points (Nos.)	2	7		1		6	3	2		7	6
Reservoir Points (Nos.)	2	4		1							2
Water Sources (Nos.)		2		1		1				3	8

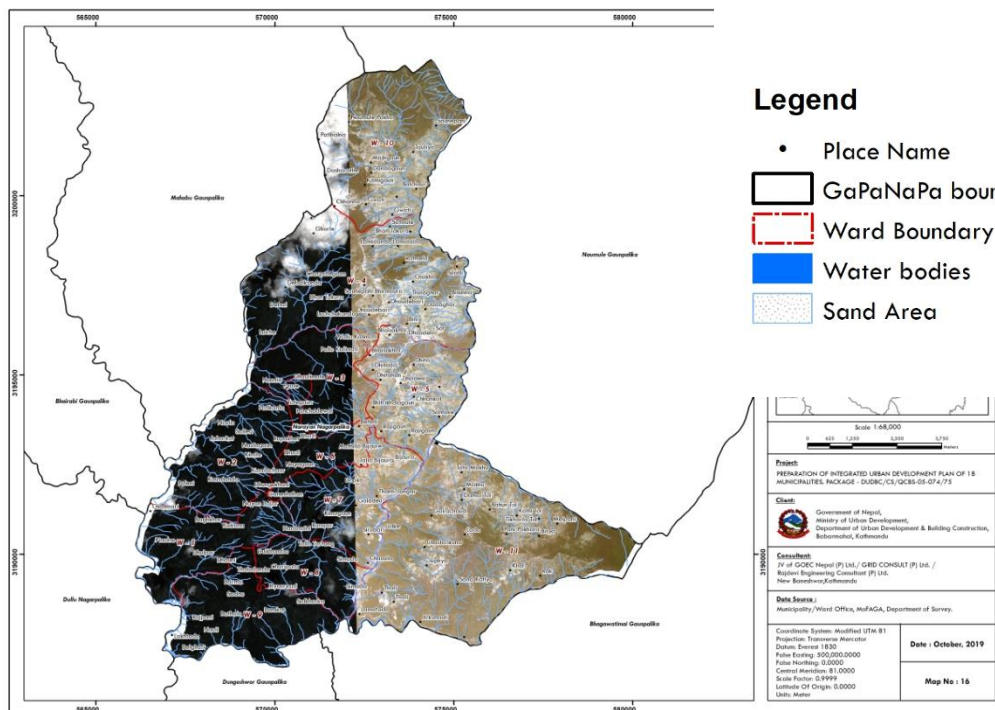


Figure 3.5: Existing Natural Drainage Network

3.4. Demographic data

Municipality has a population size of 27037 in 2068 as per National Population and Housing Census 2011(Population Projection 2011-2031), Central Bureau of Statistics, Kathmandu, Nepal, Profile results. According to the forecasts of the municipality population of Social Development, the population is estimated to reach 29699 in 2075. This total gradually increases across the 15-year planning cycle and is expected to reach 31,384 by 2090 which equates 1.35 percent annual average growth rate.

Table 3.5: Demographic Population

Ward	2011(2068)						2018(2075)					
	2011 CBS,population			2011 CBS,Youth			2018 CBS,population			2018 CBS,Youth		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	1806	1774	3580	547	548	1095	1984	1948	3932	600	602	1202
2	1067	1278	2345	358	359	717	1172	1404	2576	393	394	787
3	936	1073	2009	307	307	614	1028	1179	2207	337	337	674
4	1313	1559	2872	438	440	878	1442	1713	3155	481	483	964
5	965	1093	2058	314	315	629	1060	1201	2261	345	346	691
6	1257	1482	2739	418	419	837	1381	1628	3009	459	460	919
7	1053	1244	2297	351	351	702	1157	1366	2523	385	386	771
8	782	922	1704	260	261	521	859	1013	1872	286	286	572
9	1044	1247	2291	350	350	700	1147	1369	2516	384	385	769
10	1079	1118	2197	335	336	671	1185	1228	2413	368	369	737
11	1343	1602	2945	449	451	900	1475	1760	3235	493	495	988
Total	12645	14392	27037	4127	4137	8264	13890	15809	29699	4531	4543	9074

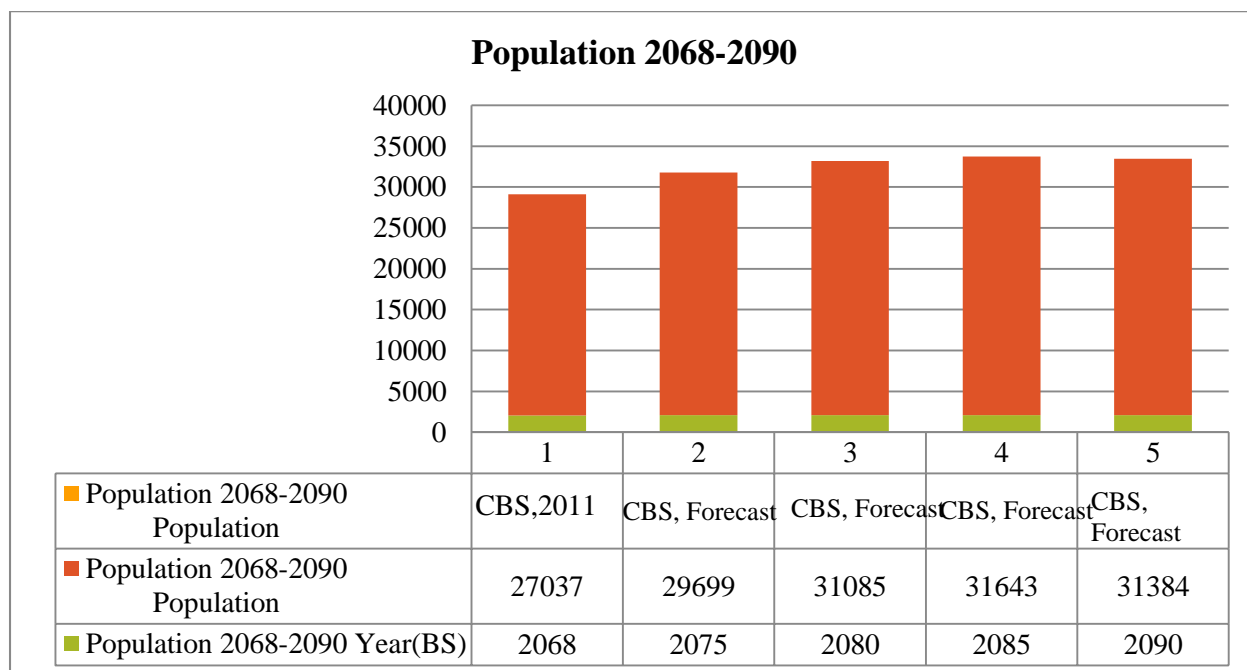


Figure 3.6: 5 Years Population Projection

Table 3.6: Ethnicity of the Municipality

Ethnicity	Population	Percentage
Chhetri	10,604	39.2
Kami	3,635	13.4
Brahman - Hill	3,086	11.4
Magar	2,868	10.6
Thakuri	2,107	7.8
Sarki	1,913	7.1
Damai/Dholi	1,231	4.6
Newar	694	2.6
Gurung	358	1.3
Other	541	2
Total	51845	100.00

3.4.1. Age distribution

The existing age distributions are presented below:

Age Group	2068	2075	2090
0-4 age	2974	3297	2715
5-14 age	7570	6828	6700
15-64 age	15410	18277	20283
65+ age	1081	1298	1685
	27035	29700	31383

Table 3.7: Age Distribution of the Municipality

3.4.2. Education

Education and training improves access to employment opportunities and helps to sustain and accelerate overall development. It expands the range of options available from which a person can choose to create opportunities for a fulfilling life. Through indirect positive effects on health and life expectancy, the level of education of a population also influences its welfare.

According to Census 2011, the literacy rate (age 5 years and above) in Nepal is 65.9 per cent, indicating an 11.8 percentage point increase from the 2001 rate of 54.1 per cent. It is important to note that while the male literacy in the country is 75.1 per cent, female literacy is only 57.4 per cent, highlighting the imbalance of the status of women. Among the eco belts, the Hill has the highest literacy rate (72.3 per cent), while the Mountain eco belt has the lowest literacy rate (60.5 per cent). There is also a wide disparity in literacy rates between urban (82.2 per cent) and rural (62.5 per cent) areas. By district, the highest literacy rate is reported in Kathmandu district (86.3 per cent) and lowest in Humla (47.8 per cent). Municipality literary rate (71.08%) is lowest from Kathmandu in the country.

Table 3.8: General Social Scenario of Nepal

SN	Description	Total
----	-------------	-------

1	Population growth rate of 2011	1.35%
2	Total No of individual households of 2011	54,23,297
3	Population density of 2011	180/sq.km.
4	Literacy rate of 5+ above age group population of 2011	65.9%
5	Crude birth rate of 2011	21.8
6	Crude death rate of 2011	7.3
7	Total fertility rate of 2011	2.5
8	Infant mortality rate of 2011	40.5
9	Life expectancy at birth of 2011	66.6
10	Human development index of 2011	0.458
11	Population of multidimensionally poor (According to the NPC & Oxford Poverty and Human Development Initiatives Report -Multidimensional Poverty Index – 2018) report 2018.	28.6%
12	Gini index of income inequality of 2011	32.8%
13	Real GDP at basic prices (Constant) (2016/017) in million Rs.	742539
14	Per capita income GDP of CBS 2018 (US\$) (2017/018) US\$	1004

Source: CBS's Statistical pocket book of Nepal 2016; Multidimensional Poverty Index 2018 of NPC& OPHDI: Nepal Human Development Report 2014 of NPC & UNDP

Table 3.9: Population aged 5 years and above by literacy status and sex of municipality

S.N.	Particulars	Population aged 5 years & above	Population who			Literacy not stated	Rate
			Can read & write	Can read only	Can't read and write		
0	Both Sex	23,976	17,043	694	6,229	10	71.08
1	Male	11,072	9,093	251	1,724	4	82.13
2	Female	12,904	7,950	443	4,505	6	61.61

Table 3.10: Total Number of Schools, Students & Teachers of Municipality in 2074 BS

Total no. of Schools			Total no of Students of all Types Schools (Grade 1-12)			Total no. of approved Teachers of Primary to Secondary Level Grade (grade 1-10 only)		
Community	Institutional	Total	Girls	Boys	Total	Approved	Rahat	Total
45	6	51	4136	4125	8261	1077(District wise)	741(District wise)	1818(District wise)

Sources: DOE, Flash Report I (2017-2018) and MOFALD, 2074 BS

Table 3.11: Population Aged 5 years and above by educational attainment (level passed) and sex

Municipal	Total	Population that have completed the educational level of	♂	♀
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ity and Sex		Beginner	Primary (1-5)	Lower secondary (6-8)	Secondary (9-10)	S.L.C. & equiv.	Inter-mediate & equiv.	Graduate & equiv.	Post Graduate equiv. & above	Others		
Both Sex	17,356	468	6,841	3,676	2,416	1,542	1,108	368	126	12	677	122
Male	9,244	234	3,637	1,995	1,307	831	597	257	96	6	220	64
Female	8,112	234	3,204	1,681	1,109	711	511	111	30	6	457	58

3.4.3. Health

Health is another major factor contributing to the general quality of life in Municipality. It is therefore for the municipality important to monitor the public health facilities as well as a variety of factors as diseases like HIV or TB and general topics that affect the community, like maternal health. This Socio-economic Profile provides the basic statistics concerning those issues. Following list are the health facilities within the municipality.

Table 3.12: List of Health Institute

Ward	Name	Type	Remarks
1	Panchakoshi Nursing Home	Hospital	
2	Narayan Swasth Chowki	Health Post	
6	Sahari Swasth Kendra	Health Post	
7	Basantamala Swasth Chauki	Health Post	
8	Dailekh Swasth Karyalaya	Hospital	
	Sahari Swasth Kendra	Health Post	
10	Khop Kendra	Health Post	
	Bhawani Swasthya Chauki	Health Post	
	Birthing Center	Health Post	
	Khop Kendra	Health Post	
11	Khop Kendra	Health Post	
	Swastha Chauki Bindabasini	Health Post	
	Khop Kendra	Others	

3.5. Basic services

3.5.1. Households

Access to formal housing and services in Municipality is measured against a total number of households of 5,791 in 2011 and 6,362 in 2018. The average annual growth rate of the municipality is 1.39%.

Table 3.13: Households of 2011 and 2018

Ward No.	2011, CBS		Forecast for 2018	
	Household	Population	Household	Population
1	890	3,580	978	3932
2	503	2,345	553	2576
3	400	2,009	439	2207
4	558	2,872	613	3155

5	399	2,058	438	2261
6	649	2,739	713	3009
7	511	2,297	561	2523
8	401	1,704	441	1872
9	510	2,291	560	2516
10	393	2,197	432	2413
11	577	2,945	634	3235
Total	5,791	27,037	6,362	29699

Table 3.14: Households by types of household facilities

S.N	Household Facilities	Year	
		2011	2018
1	Without any facility	1,366	1,501
2	At least one facility	4,281	4,703
3	Radio	3,209	3,525
4	Tele- vision	824	905
5	Cable Television	639	702
6	Computer	173	190
7	Internet	86	94
8	Tele- phone	277	304
9	Mobile Phone	3,201	3,517
10	Motor	16	18
11	Motor- cycle	116	127
12	Cycle	34	37
13	Other vehicle	12	13
14	Refri- gerator	122	134
15	Not stated	144	158

Source :2011 CBS

3.5.2. Access to housing

The number of households with access to formal houses in Narayan Municipality increased by 591 between 2011 and 2018, at an average annual rate of 1.35 per cent, which translates into approximately 84 additional formal houses per year over this period. The proportion of formal households has remained the same at 90 per cent between 2011 and 2018.

Table: Household by foundation of house/housing unit.

Table 3.15: Households by foundation of house/housing unit.

Total	Type of foundation of house					
	Mud bonded bricks/stone	Cement bonded bricks/stone	RCC with pillar	Wooden pillar	Others	Not Stated
5,791(2011)	5,081	333	278	26	9	64
6,362(2018)	5582	366	305	29	10	70

Source :2011 CBS

Table 3.16: Households by outer wall of house/housing unit.

Total	Type of outer wall						
	Mud bonded bricks/stone	Cement bonded bricks/stone	Wood/planks	Bamboo	Unbaked brick	Others	Not Stated
5,791(2011)	4,982	698	22	9	1	11	68
6,362(2018)	5473	767	24	10	1	12	75

Source :2011 CBS

Table 3.17: Households by roof of house/housing unit.

Total	Roof of the House							
	Thatch/straw	Galvanized iron	Tile / slate	RCC	Wood/planks	Mud	Others	Not Stated
5,791(2011)	1,647	1,198	2,086	649	3	110	24	74
6,362(2018)	1809	1316	2292	713	3	121	26	81

Source :2011 CBS

Table 3.18: Households by ownership of house/housing unit In use.

Total	Ownership of house/housing unit				
	Owned	Rented	Institutional	Others	
5,791	4,972	693	65	61	
6362	5462	761	71	67	

Source :2011 CBS

Table 3.19: Households by usual type of fuel used for cooking

Total house-hold	Fuel usually used for cooking							
	Wood / firewood	Kero-sene	LP gas	Santhi/ guitha (cow dung)	Bio gas	Electri-city	Others	Not Stated

5,791(2011)	5,019	19	657	0	12	1	40	43
6,362(2018)	5514	21	722	0	13	1	44	47

3.5.3. Access to water

The sources of water supply identified are both natural rivers, well and hand pump. According to National Population & Housing Census 2011, the main source of drinking water in Municipality is tap/piped water on which 65.58 % of total household depends. 21.34% of total household depends on spout water. 10.08% people use uncovered well/kuwa. Rest of the household is dependent tubewell/handpump, covered well/kuwa, rivers and other sources for water.

Table: Household by main source of drinking water.

Table 3.20: Households by main source of drinking water

Total household	Main source of drinking water							
	Tap/piped water	Tubewell / handpump	Covered well/kuwa	Uncovered well/kuwa	Spout water	River /stream	Others	Not Stated
5,791(2011)	3,798	3	97	584	1,236	27	3	43
6,362(2018)	4,172	3	107	642	1,358	30	3	47

Source :2011 CBS

3.5.4. Access to sanitation

Sanitation promotes health through the provision of safe disposal and treatment of human waste. Where sanitation systems are inadequate, negative health effects can be extremely serious. Access to a flush toilet not only advances physical health but also provides the user with a sense of human dignity. The drought highlights challenges in the use of potable water within the sanitation services process.

According to National Population & Housing Census 2068, out of 5,791 households of Municipality, only 3,433 households have toilet facility while rest 2,316 households do not have toilet facility.

Table 3.21: Households by type of toilet.

Total households	Households without toilet facility	Households with toilet facility of		Toilet facility not stated
		Flush toilet	Ordinary toilet	
5,791	2,316	2,364	1,069	42
6,362	2544	2597	1174	46
	39.99%	40.82%	18.46%	0.73%

Source :2011 CBS

3.5.5. Access to electricity

Energy is essential for human life; generally identified household uses include energy for cooking, heating and lighting. Energy sources also have usage risks; for example, health and safety risks especially in the use of paraffin and open flame usage. The information below relates to the use of electricity for lighting purposes.

Table: Household by source of lighting

Table 3.22: Households by usual source of lighting.

Total household	Fuel usually used for lighting					
	Electricity	Kerosene	Bio gas	Solar	Others	Not Stated
5,791	2,769	754	2	917	1,306	43
6,362	3042	828	2	1007	1435	47

3.5.6. Access to removal

Refuse removal is an essential service that ensures that health related problems are kept at bay. A lack of or inadequate service is likely to result in uncontrolled and unregulated dumping. There are growing concerns around the land and environmental limitations in the creation and lifespan of landfill sites. This would benefit greatly from the ‘reduce – reuse – recycle’ approach that firstly encourages non-wasteful consumption practices (reduce), the reuse of products where possible (reuse) and the recycling of the product where its use in current form has been exhausted (recycle).

Household access to refuse removal services in municipality has increased from 90 per cent in 2011 to 93.3 per cent in 2018. Household access to this service increasing faster (additional 394 households) than the growth in formal households).

3.6.Safety and Security

The Constitution upholds the notion that everybody has the right to freedom and security of the person. The safety of persons and property is therefore vitally important to the physical and emotional well-being of people and business. Without the respect of person and property, it would be impossible for people to live peacefully, without fear of attack and for businesses to flourish.

3.6.1. Murder

Murder is a social contact crime resulting in the loss of life of the victim, but excludes cases where the loss of life occurred because of a response to a crime, for example self-defence.

Crime remains a prominent issue in Municipality at a high socio-economic cost. Overall, the country has a very low rate of murder when compared to most countries.

Within the municipal area, the murder rate is not define.

3.6.2. Sexual Offences

Sexual offences includes rape (updated to the new definition of rape to provide for the inclusion of male rape), sex work, pornography, public indecency and human trafficking.

The cases of sexual offences in the municipality are not defined.

3.6.3. Drug Related Crimes

Drug-related crimes refers to the situation where the perpetrator is found to be in possession of, under the influence of, or selling illegal drugs. This is a crime detected through police activity rather than reports by members of the public. An increase in crimes of this nature may therefore reflect an increase in police.

Drug-related crimes have a negative impact on human development by degrading the quality of life as it infiltrates all aspects of society including families, health, the work environment and the economy. Drug-related crimes within municipality not define by police.

3.6.4. Driving Under The Influence

DUI refers to a situation where the driver of a vehicle is found to be over the legal blood alcohol limit. This is a crime detected through police activity rather than reports by members of the public.

Despite concerted efforts by government our roads are still considered amongst the most dangerous in the world. Reckless driving and alcohol consumption remain the top reason for road accidents.

The number of cases of driving under the influence of alcohol or drugs in municipality decreased by government policy.

3.6.5. Residential and Burglaries

Residential burglary is defined as the unlawful entry of a residential structure with the intent to commit a crime, usually a theft.

Given its regular occurrence and the psychological impact on victims, residential burglaries are an obstinate concern in municipality.

3.6.6. Fatal Crashes

A crash occurrence that caused immediate death to a road user, i.e. death upon impact, flung from the wreckage, burnt to death, etc.

There was a significant decrease in fatal crashes in Municipality and in the District between 2016 and 2017. Fatal crashes involving motor vehicles, motorcycles, cyclists and pedestrians within municipality decreased.

3.7. Road User Facilities

The type of road user that died in or during a crash i.e. driver, cyclist, passengers, pedestrians.

According to a recent study, most road fatalities in Nepal fall within the working age group - between the ages of 15 – 44 years. The untimely death of these primary employees therefore impacts directly upon not only the livelihood of family structures, but deprive society of active

economic participants that contribute towards growth and development. The socio-economic impact of such road fatalities has proven to be mostly demoralizing in Nepal where most road users hail from poor and weak communities.

The previous section specified that in total, fatal crashes is not occurred within the Municipality region because there is no such facilities.

Additional, lower-level information regarding the time, location, gender, ages of above specified crashes are available from the Department of Transport and Public Works upon request.

3.8. The Economy

Economic activity within municipal boundaries is important as it shows the extent of human development and living standards of communities. Although municipalities have no power to increase or decrease taxes to stimulate economic activity, there are few levers that local government authorities have control over to contribute to economic performance, including, among others, procurement of goods and services, job creation through expanded public works programmes as well as creating an enabling environment for small businesses.

3.9. Urban Road s

A network of higher quality interurban roads is required in every country to ensure the safe and efficient transit of people and goods. Part of this network is usually provided by motorway standard roads, supplemented by other divided, restricted access roads (called express roads in some countries). The standard of this latter group varies between and within countries. High interurban flows are also carried on 2 lane roads in some countries, although these are more suited to local rural roads.

Average fatal accident rates per vehicle km can be up to six times higher on 2 lane rural roads than on motorways, and decrease as traffic flows increase. The density of severe (fatal and serious injury) accidents per km is typically greatest for divided carriageways below motorway standard, but less than twice that on motorways or 2 lane roads.

Eighty per cent of all fatal accidents on major interurban roads occur due to single vehicles leaving the road, impacts at junctions, head-on impacts with opposing vehicles or impacts involving vulnerable road users.

The proportion within each of the four groups varies between countries depending on the characteristics of their road network and the traffic flow levels. The proportion also varies between road types, and at different flow levels.

The development of urban road infrastructure systems is an integral part of modern city expansion processes. In urban areas, the quality of road infrastructure directly influences the citizens' quality of life, such as the residents' health, safety, economic opportunities, and conditions for work and leisure. Therefore, every action needs careful planning as it is highly complex and socially sensitive.

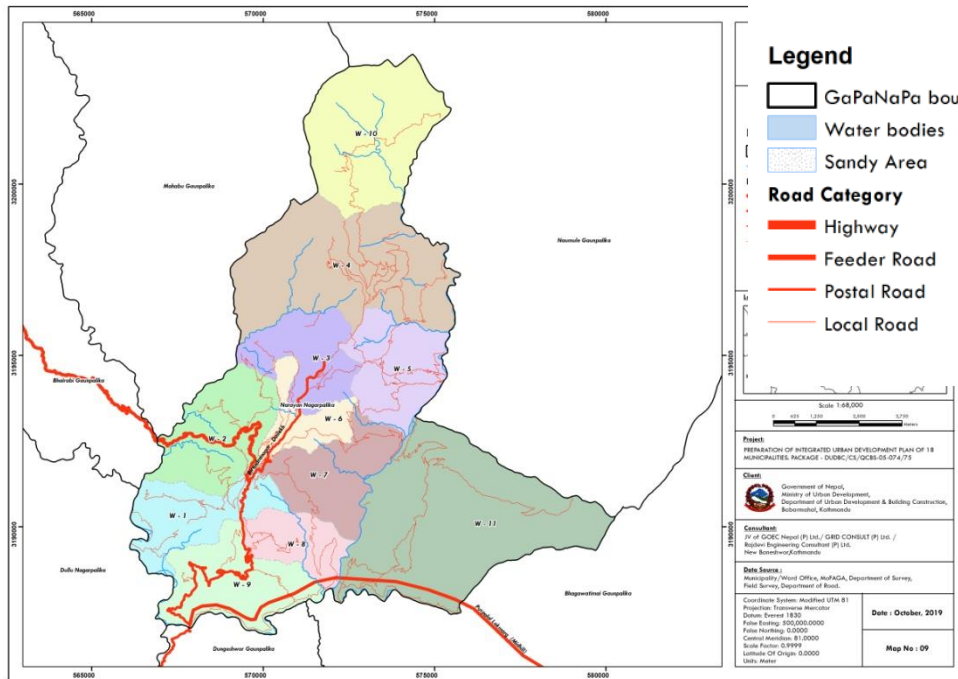


Figure 3.7: Existing Road Network

3.10. Forest and Biodiversity

This new town does not have either any type of national forest nor any natural forest cover. Local farmers are practicing various models of agroforestry system like homestead, agrosilviculture, agrohortosilviculture, orchards, wood lots, bunds plantation, aquasilviculture, urban forestry, riverside plantation and small-scale tree plantations in their private lands.

Major plant biodiversity within the area covered by private lands are Masala, Sissoo, Teak, Mango, Litchi, Amba, Imli, Kathar, Jilebi, Pipal, Bar, Ipil Ipil, Bakaino, Kadam, Simal, Bans, Siris, Bayer, Gular, Neem, Khair, Jamun, Bel, Khajur, Ashok, Pakari, Drumstick and Badhar.

3.11. Plant biodiversity:

Major plant biodiversity within the area covered by private lands are Masala, Sissoo, Teak, Mango, Litchi, Amba, Imli, Kathar, Jilebi, Pipal, Bar, Ipil Ipil, Bakaino, Kadam, Simal, Bans, Siris, Bayer, Gular, Neem, Khair, Jamun, Bel, Khajur, Ashok, Pakari, Drumstick and Badhar.

3.12. NTFPS

Some medicinal plants like Simal, Tarul, Bel, Jamun, Amala, Shikakai, Sarpagandha, Pudina, Gurjo, Bans, Khair, and Drumstick etc.

3.13. Wild Animals

Some wild mammals, birds and reptiles are Jackle , Fox, Large bat , Mongoose , Houserat, Moles ,House dog Crow, woodpecker, Drongo, Swift, Eagle , owl , Tithee, dove , Pigeon, Myna, Parakeet , Sparrow ,Vulture, Gomansarpa , Dhamansarpa,Common garden Lizard,etc.

3.14. Heritage, Culture and Tourism

3.14.1. Heritage

The municipality is rich in heritage. There are different public places in this municipality. There are many temples, ponds and panorama scene. Hindu people perform worship regularly. During religious ceremonies and festivals, people flock the temples to perform worship.

Table 3.23: List of Heritage, Culture and Tourism

Ward	Building Use	Categories	Function Name
1	Cultural & Archaeological	Temple	Ganesh Mandir
	Cultural & Archaeological	Temple	Bhairav Mandir
	Cultural & Archaeological	Temple	Narayan Mandir
	Cultural & Archaeological	Temple	Bhimsen Mandir
	Cultural & Archaeological	Temple	Etiassik Kotgadi Dailekh
	Cultural & Archaeological	Temple	Bhagwati Mandir
	Cultural & Archaeological	Church	Jeavanjyoti Church
	Cultural & Archaeological	Temple	Mahakaleswor Shiva Mandir
	Cultural & Archaeological	Temple	Bahunchautara
	Cultural & Archaeological	Temple	Panchadewal Mandir
	Cultural & Archaeological	Temple	Balbhairav Mandir
	Cultural & Archaeological	Temple	Lash bisaune thau
	Cultural & Archaeological	Temple	Maibhagwati Mandir
	Cultural & Archaeological	Temple	Saraswati Mandir
2	Cultural & Archaeological	Temple	Deval Mandir
	Cultural & Archaeological	Temple	Masta than
	Cultural & Archaeological	Temple	Masta than
	Cultural & Archaeological	Temple	Deutisthan temple
	Cultural & Archaeological	Temple	Thaldewal
	Cultural & Archaeological	Temple	Baheshwari Temple
3	Cultural & Archaeological	Temple	Mahabai Dungristhan Mandir
	Cultural & Archaeological	Temple	Bandali Mandir
	Cultural & Archaeological	Temple	Shivashakti Mahabai Temple
6	Cultural & Archaeological	Temple	Maatathan
	Cultural & Archaeological	Temple	Panchadewal Mandir
	Cultural & Archaeological	Temple	Shivalaya Mandir
	Cultural & Archaeological	Temple	Belaspur Mandir
	Cultural & Archaeological	Temple	Krishna Mandir
7	Cultural & Archaeological	Temple	Siddheswor Mahadev Temple
	Cultural & Archaeological	Temple	Bhairav Temple

	Cultural & Archaeological	Temple	Mai Mandir
	Cultural & Archaeological	Temple	Panchadewal
	Cultural & Archaeological	Temple	Deutisthan temple
8	Cultural & Archaeological	Temple	Shiva Mandir
	Cultural & Archaeological	Temple	Kalbhairav Temple
	Cultural & Archaeological	Temple	Mai Mandir
	Cultural & Archaeological	Temple	Bhimsenthan
10	Cultural & Archaeological	Temple	Ganesh Mandir
	Cultural & Archaeological	Temple	Jagnath Mahadev Temple
11	Cultural & Archaeological	Temple	Raili Tripani Mandir
	Cultural & Archaeological	Temple	Eklesalla Mandir
	Cultural & Archaeological	Temple	Egna Mandir
	Cultural & Archaeological	Temple	Rumaladevi Mandir
	Cultural & Archaeological	Temple	Mahabai Than Mandir
	Cultural & Archaeological	Temple	Masta Mandir
	Cultural & Archaeological	Temple	Bindabasini Mandir
	Cultural & Archaeological	Temple	Chhetrapalmasto Mandir
	Cultural & Archaeological	Temple	Jagannath temple
	Cultural & Archaeological	Church	Church
	Cultural & Archaeological	Church	Shanthi Jeavanjyoti Church
	Cultural & Archaeological	Temple	Bhairav Mandir
	Cultural & Archaeological	Temple	Bhairav Mandir
	Cultural & Archaeological	Temple	Narayan Mandir
	Cultural & Archaeological	Dharmashala	Dharmashala
Cultural & Archaeological	Temple	Shiva Mandir	

3.14.2. Culture

The municipality is rich in cultural diversity. There are different castes and ethnic groups living in this municipality. These different castes and ethnic groups have their own customs and traditions. Generally, people following different religions have different cultures. Hindus are the dominant religious group living here. Even the same caste follows different culture depending on the different places. Usually people of different religion follow different culture. In terms of religion, Hindus are in majority position in this municipality. They celebrate Teej, Dashain, Tihar, Chhat, HoliMaghi as their major festivals.

3.14.3. Tourism

The municipality does not have significant heritage for tourism development. There are different caste and ethnic groups residing various settlements of the municipality. There is ample scope of rural tourism in the municipality. The people of this municipality are very honest and hospitable. People of this municipality regard guests as gods. In addition to the rural tourism there is scope of religious tourism in this municipality.

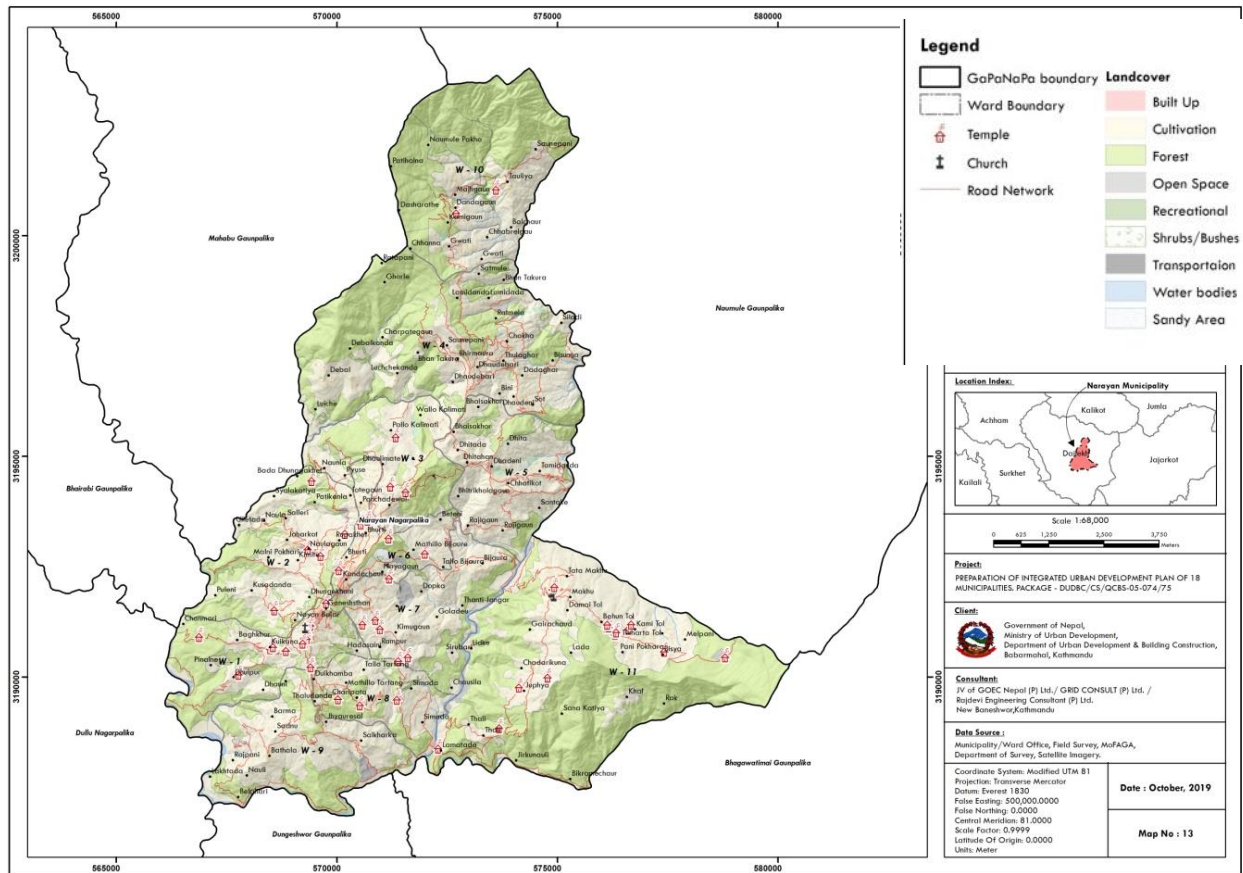


Figure 3.8: Existing Tourism Sector

3.15. Risk in the Municipality

The result acquired through the analysis reveals the fact the study area needs immediate action to take against flood such as river training or embankment or levee construction to protect the given area by flood. Surrounding area are more prone to flood as revealed by the study. The people in such area are at risk of flood hazard so these people needs to be shifted from this area to the area free of flood and other risk are earthquake, fire, Industrial Risk, Scouring risk are other risk of this municipality.

4. SITUATION ANALYSIS OF THE MUNICIPALITY

4.1. Trend Analysis

An IUDP is a planning mechanism to synchronise planning and fiscal spending across all spheres of government. The IUDP allows for synergy between the efforts of all spheres of government to improve the combined developmental impact of the local, translating national, provincial and district objectives into practical interventions within a defined municipal space.

This IUDP Review read with the initial fifteen-year plan is the expression of the planned strategic development intensions of the Council of Municipality. It guides and informs all planning, budgeting, management, and strategic decision making in the Municipality and supersedes all other plans that guide development. The plan links, integrates and coordinates other existing plans, while taking development proposals into account. The aim is to align the IUDP with the municipality’s resources and internal capacity, forming a policy framework and social compact on which annual municipal budgets are based.

Thus, IUDP is informed by national and provincial government development goals and priorities, current emerging social and economic trends, an increasing demand and social outcry of the people of Municipality for better services and improved infrastructure as well as other compelling issues that provide a framework which guides the Municipality on its developmental local government path.

4.1.1. Trend Analysis

Demographic Analysis helps us to determine the future population and show the future course of fertility, mortality and migration. The project will be designed in order to fit the future projected population. This topic deals with the determination of population growth rate, ethnic distribution, age and house hold size.

At the time of verification of secondary data, municipality unable to provide the existing population and household data of the municipality and instructed to follow the CBS data which is currently published. So, all existing data are taken from the Central Bureau of Statistics of Nepal.

As per National Population and Housing Census 2011 (Population Projection 2011 – 2031) of Government of Nepal, National Planning Commission Secretariat, Central Bureau of Statistics, Kathmandu, Nepal in August, 2014 forecast the Nepal population up to 2031 by fixing the growth rate.

4.1.1.1. Determination of population growth rate

Based on the Central Bureau of Statistics, an analysis of population growth trend of Narayan municipality of Dailekh district is presented below including growth rate.

Table 4.1: Determination of Population

S N	Ye ar	Growth rate	Ward											
			1	2	3	4	5	6	7	8	9	10	11	Total
1	201 8	1.35	393 2	257 6	220 7	315 5	226 1	300 9	252 3	187 2	251 6	2E+ 07	323 5	2E+ 07
2	201 9	1.32	397 6	260 4	223 1	319 0	228 6	304 2	255 1	189 2	254 4	2440	327 1	3002 7
3	202 0	1.29	401 8	263 2	225 5	322 3	231 0	307 4	257 8	191 2	257 1	2466	330 5	3034 4
4	202 1	1.26	405 8	265 8	227 7	325 5	233 3	310 4	260 3	193 1	259 7	2490	333 8	3064 4

5	202 2	1.22	409 1	268 0	229 6	328 2	235 2	313 0	262 5	194 7	261 8	2510	336 5	3089 6
6	202 3	1.17	411 6	269 6	231 0	330 2	236 6	314 9	264 1	195 9	263 4	2526	338 6	3108 5
7	202 4	1.13	414 3	271 4	232 5	332 4	238 2	317 0	265 8	197 2	265 1	2543	340 8	3129 0
8	202 5	1.08	416 1	272 6	233 5	333 8	239 2	318 4	267 0	198 1	266 3	2554	342 3	3142 7
9	202 6	1.03	417 5	273 5	234 3	334 9	240 0	319 4	267 9	198 7	267 2	2562	343 4	3153 0
10	202 7	0.98	418 5	274 1	234 8	335 7	240 6	320 2	268 5	199 2	267 8	2568	344 2	3160 4
11	202 8	0.93	419 0	271 5	235 1	336 1	240 9	320 6	268 8	199 4	268 1	2571	344 7	3161 3
12	202 9	0.88	419 2	274 6	235 2	336 3	241 0	320 7	268 9	199 5	268 2	2572	344 8	3165 6
13	203 0	0.83	418 9	274 4	235 1	336 0	240 8	320 5	268 8	199 4	268 1	2571	344 6	3163 7
14	203 1	0.78	414 8	273 9	234 7	335 5	240 4	319 9	268 3	199 0	267 6	2566	344 0	3154 7
15	203 2	0.73	417 1	273 2	234 1	334 6	239 8	319 1	267 6	198 5	266 9	2560	343 1	3150 0
16	203 3	0.68	415 6	272 2	233 2	333 4	238 9	317 9	266 6	197 8	265 9	2550	341 9	3138 4

4.1.1.2. Ethnic Distribution

This existing ethnic distribution is presented below

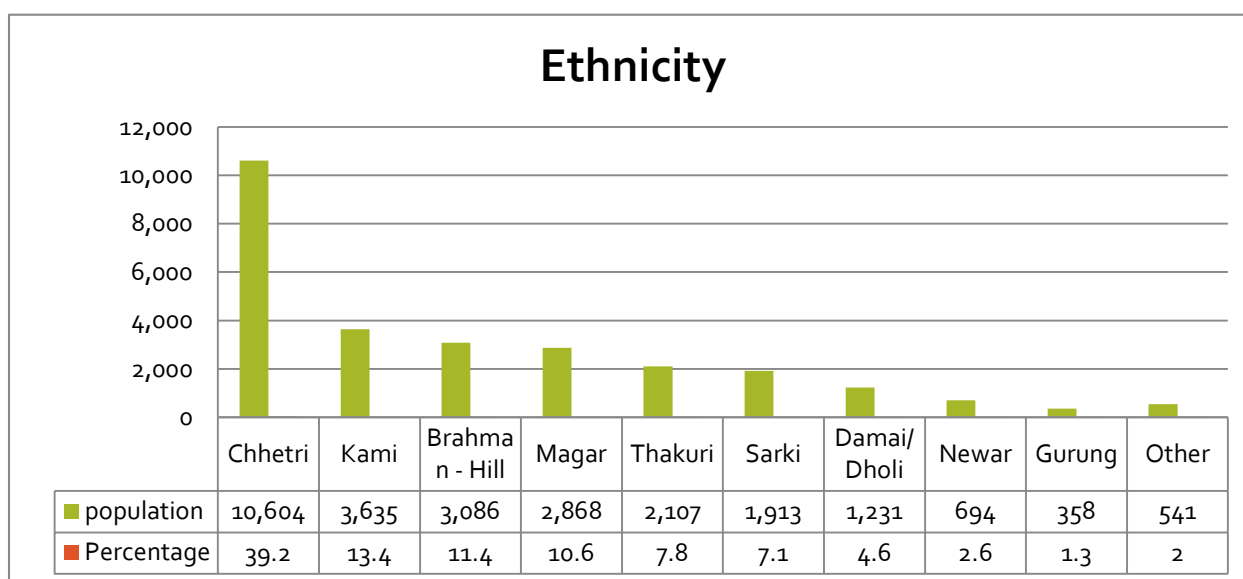


Figure 4.1: Population Ethnic Distribution

From above figure, Chhetri has dominant population with 39.2% which is followed by Kami with 13.4 % and 11.4% Brahman population. Gurung consists of least population with 358 No’s of population which is almost 1.3% of total population.

4.1.1.3. Age Wise Population

The majority of Municipality’s population is concentrated between the ages of 20 to 39, which is possibly reflective of an influx of young working professionals into the region (increased employment opportunities as a result of positive economic growth in the region). It is also noticeable that the population numbers in the older age categories remain relatively high in comparison to other municipalities. This trend can be attributed to the fact that municipality and its surrounding areas remain a popular retirement destination. Municipality’s dependency ratio will decrease from 75.43 in 2011 to 62.49 in 2018 before stabilizing at 54.73 towards 2033. As higher dependency ratios imply greater strain on the working age to support their economic dependents (children and aged), this increase will have far reaching social, economic and labour market implications. An increase in the dependency ratio is often associated with a relative decrease in the working age population. From a national perspective, the relative decrease in the working age population will result in lower tax revenues, pension shortfalls and overall inequality as citizens struggle to attend to the needs of their dependents amidst increased economic hardship. At the municipal level, this decrease in the working population will also result in a smaller base from which local authorities can collect revenue for basic services rendered and will necessitate the prioritization of municipal spending.

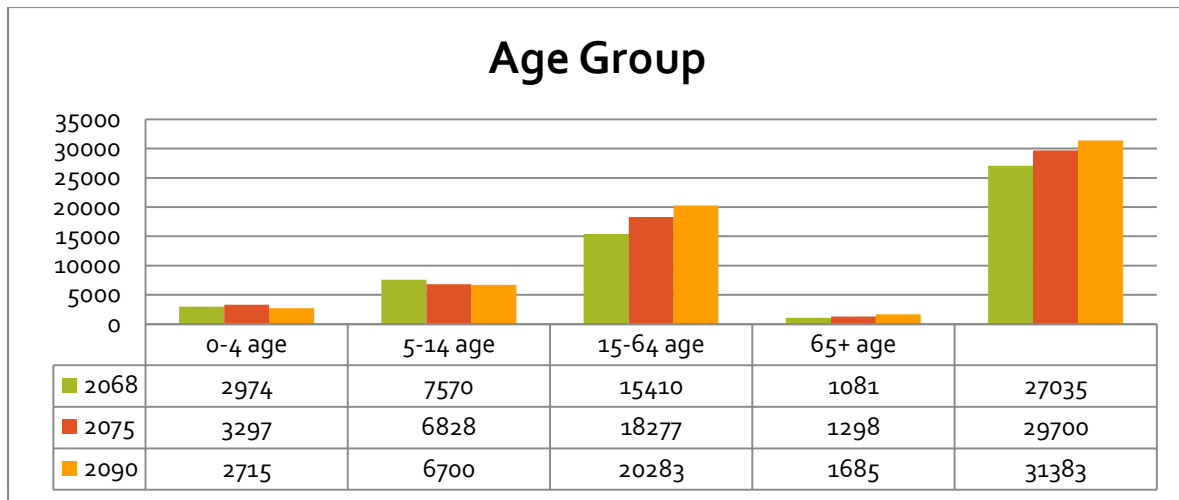


Figure 4.2: Age wise Population

Table 4.2: Dependency Ratio

Year	Children:(0-14 years)	Working Age:(15-65 years)	Age 65+	Dependency Ratio
2068	10544	15411	1081	75.43
2075	10124	18277	1298	62.49
2090	9415	20283	1685	54.73

4.1.1.4. Household Size

Household size refers number of persons living together in one house. This topic deals with the calculation of HH size and number of houses in each wards and presented below table.

Table 4.3: Ward Wise Household

Ward No.	Year 2018			
	Population	Household	Household Size	Remarks
1	3,932	978	4.02	
2	2,576	553	4.66	
3	2,207	439	5.02	
4	3,155	613	5.15	
5	2,261	438	5.16	
6	3,009	713	4.22	
7	2,523	561	4.50	
8	1,872	441	4.25	
9	2,516	560	4.49	
10	2,413	432	5.59	
11	3,235	634	5.10	
Total	29,699	6,362	52	Ave.HH

4.1.1.5. Migration

Migration is one of the major demographic factors to bring change in population size, structure and distribution. It is generally defined as a geographical form of population movement involving change of usual place of residence. Internal migration is associated with change of usual place of residence within the national boundary. People migrate to different places to earn their livelihood. Even people inside country migrate from one place to another place for job, occupation and business to earn money. People migrate and stay to other place along with their family.

According to the survey data huge number of population migrate to Gulf country for foreign employment. The Gulf countries are major destination for foreign employment. Majority of the migrants are now in the Gulf countries, such as Kuwait, UAE, Saudi Arab and Qatar. But, major portions are still in India.

Implications and Opportunities

- There is an overall average annual population growth rate of over 1.02% indicating the need for a carefully balanced approach to service delivery and the provision of sustainable settlements with opportunities to cater for the needs of the population.
- The most populated urban area is in ward No. 1.
- Spatial population distribution in terms of an equitable and sustainable urban development pattern requires consideration.
- The population is growing, which necessitates improvements in infrastructure. This also increases pressure on housing.
- The relatively young population indicates a sizable labour force. Initiatives to empower and develop skills in the labour force would be vital in improving the economy of the Municipality and reducing unemployment figures.
- Less of the population reside in rural areas in an extremely dispersed pattern. This makes providing services (health care, education, etcetera) economically challenging here.
- Specific initiatives, e.g. periodic and mobile service delivery and off-grid infrastructure, are required to cater for the rural communities.
- It should be noted that the Dailekh migration rate may be peaking. Such exponential growth rates are usually not sustained in the long term.

4.1.2. Land Use analysis and Urbanization

Municipality has developed rapidly expanding worldwide in conjunction with socioeconomic development. However, the rapid growth of urban areas has led to complex problems, including traffic congestion, environmental pollution, reduced open space, the deterioration of old downtown centers, and unplanned or poorly planned land development. To address these urban problems and to identify approaches for sustainable development, many researchers have focused on developing urban land-use change-prediction models. These land-use change models identify the best coefficient for predicting growth and land-use changes until the present using data from the past to the present as input for predicting urban land-use change.

Models of land-use change, which couple biophysical and socioeconomic drivers, are needed to address the complex issue of land-use change and build up sustainable land-use practices and

policies. Many models have been developed to simulate the outcomes of land-use decisions and support the analysis and understanding of land-use practices.

Our analyses considered patterns of urban development, and driving forces of urban development as well as opportunities and challenges of urban and peri-urban land use planning. Patterns of urban development are the spatial and temporal traces of urban development, for example land fragmentation and settlement configuration. We combined three different methodological approaches: expert interviews, remote sensing/GIS and literature review. We started our analysis with expert interviews to assess perceived patterns and drivers of urban development in the study areas. In addition, experts were interviewed about strengths and weaknesses of land use planning, since informal rules in addition to formal regulations were expected to shape the land use pattern as presented below figure.

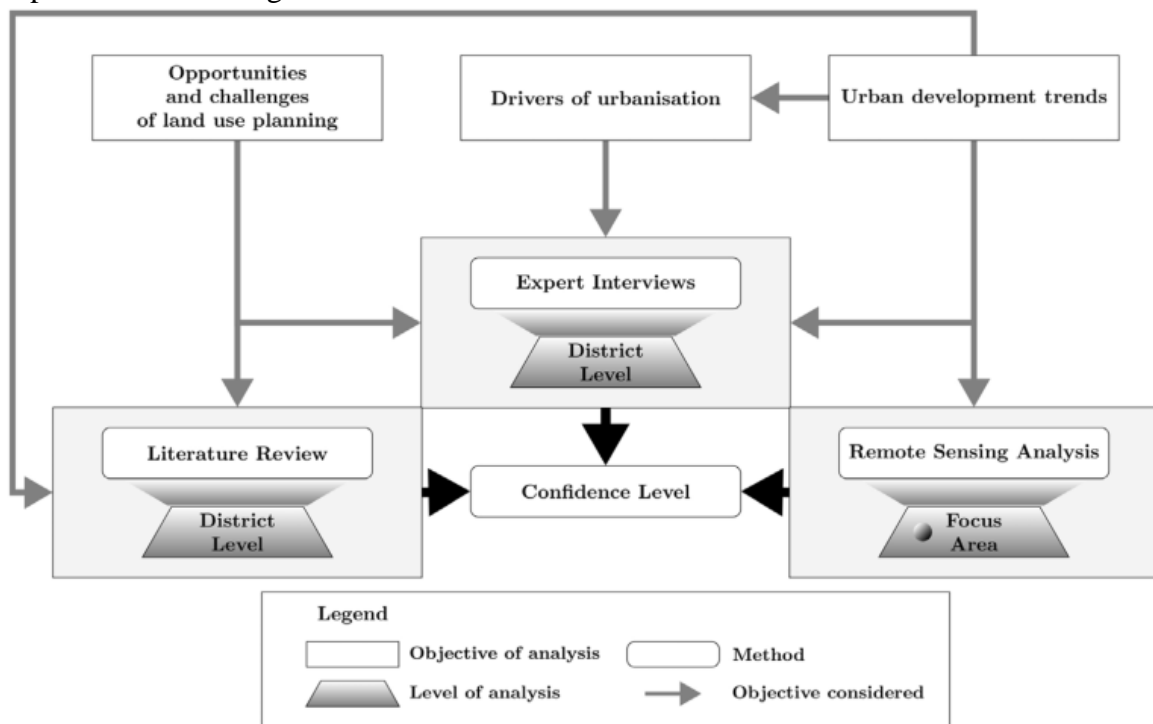


Figure 4.3: Methodological framework and analysis scales.

This was followed by a remote sensing analysis to validate how reliable these perceived patterns and drivers were, using the number, size, and density of scattered buildings. This analysis was used as a proxy indicator for informal urban development.

A literature review was performed before the field work to get an idea of the topic, but in a reduced way in order to remain unbiased for the interviews. An extensive literature review on district and local levels was carried out complementarily to the remote sensing analysis in order to validate the findings. Based on the consistency of the results of the three methods, we assigned confidence levels and presented in below table.

Confidence of findings of patterns and drivers of urban development for the municipality area (A). References from literature review; references of expert interviews. For methodology, RS = Remote sensing; A = Municipality area; XX = high agreement; X = medium agreement; ? = low agreement; - = no data or no evidence.

Analyzed Topic	Keywords	Interviews	RS analysis	Literature	Confidence
Patterns of urban development	Urban sprawl (unstructured urban expansion)	XX	XX	XX	Very high
	Land fragmentation	XX	XX	XX	Very high
	Scattered small settlement units (for RS: > 500 sqm)	XX	XX	XX	Very high
	Scattered large settlement units (for RS: > 10 sqm)	X	XX	XX	Very high
Drivers of urban development	Population growth (housing)	X	X	X	medium
	Roads	X	X	X	Medium
	Markets (trade and economy)	?	?	?	Very low
	Mining of stones or sand	?	?	?	Very low
	Agriculture	XX	XX	XX	Very high
	Governmental buildings and staff accommodations (decentralization processes)	X	X	?	Medium
	Customary land tenure	?	?	?	Very low
	Educational facilities	X	X	X	medium
	Heavy industry and workers accommodations	-	-	-	No data
	Real estate and hotels	-	-	-	No data
	Infrastructural development in general (electricity, piped water, hospitals)	?	?	?	low
Changing lifestyle	XX	XX	XX	Very high	

Table 4.4: Confidence of findings of patterns and drivers of urban development

Confidence of findings of challenges and opportunities of urban and peri-urban land use planning for the municipality area (A). References from literature review; references of expert interviews. NGO = Non-governmental organization; RS = Remote sensing; A = Municipality area; XX = high agreement; X = medium agreement; ? = low agreement; - = no data or no evidence.

Table 4.5: Confidence of findings of challenges and opportunities

Analyzed Topic	Keywords	Interviews	RS analysis	Literature	Confidence
Challenges for urban and peri-urban land use planning (LUP)	Customary land tenure	XX	XX	XX	Very high
	Lack of participation by people	?	?	?	low
	Lack of communication between industry & government	-	-	-	No data
	Distrust in government	XX	XX	XX	Very high
	Governmental decentralization	XX	XX	XX	Very high
	Joint Planning across district borders	?	?	?	low
	Lack of Law enforcement	XX	XX	XX	Very high
	Lack of financial capacity	XX	XX	XX	Very high

	Funding form INGO / NGOs	XX	XX	XX	Very high
Opportunities of urban and peri-urban LUP	Land Administration Project	-	-	-	No data
	Land use Bill	-	-	-	No data
	National and Regional Spatial Development Framework	X	X	?	Medium
	Public-Private-Partnerships (private = industry)	XX	XX	XX	Very high
	Awareness raising and local participation	XX	XX	XX	Very high
	Tendency towards multistory structures	X	X	X	medium

Urban extension is difficult to detect without comparing spatial land use plans with existing urban housing. We can identify urban extension through the use of different methods with the following characteristics: a land use and land cover change with low but scattered building density, uneven building sizes, mixed land uses, and their negative effect on the environment and people. Municipality area refers to the city of Dailekh District.

Expert interviews: In both regions, we started by forming regional focus groups consisting of a few, but highly relevant experts. We define “experts” as people with extensive knowledge and experience regarding land use planning in the study regions or residents who have lived there for more than 20 years, who were included as key knowledge holders. In total, we conducted in-depth interviews with all expert within the municipality and one expert at the national level who knew both study areas. The experts were also chosen according to availability and willingness to contribute to our study.

Our focus group consisted of two groups: (1) land use planning experts at the district level to obtain a clear understanding of urban development in the context of the process of formal and informal land use planning, and (2) representatives of organizations with legal and cultural mandates in land use planning at different levels of statutory planning. Examples are public authorities on different levels, non-governmental organizations, traditional heads and long-term residents. The different stages of the planning process, the roles of different institutions, how land use priorities were considered in the planning process, the spatially explicit key determinants of spatial growth in the districts, and the internal and external obstacles to sustainable development. Other questions addressed participatory land use planning and suggestions for future land use planning. The questionnaire is provided in above table. We applied open-ended questions to gain a profound insight into the regional spatial differences and perceived development processes by obtaining comprehensive knowledge about the variation in land use plan.

Remote sensing/GIS analysis: In our study, remote sensing data were exclusively used to identify patterns of urban development, but not for interpreting further drivers, such as distance to roads or markets. Single buildings in the study areas can only be identified on very high-resolution satellite images. Access to such data is very limited and expensive, and available data sets lack the benefit of multi-spectral images. Consequently, and due to difficulties in discriminating buildings from bare soil in remote sensing data using classic classification algorithms, we decided to perform a manual digitalization of each building. However, it was the most time-consuming method.

Literature review: For the literature review, we used databases such as Science Direct and Google Scholar, and added grey literature from free web searches to collate information on customary norms and experience. Land use planning in Municipality is mainly conducted by national and international non-governmental organizations and thus not published in peer-review journals. Our search terms are provided in above table.

Results: integrative analysis of interviews, remote sensing/GIS and literature: In the following, we present a comparative and integrative analysis of our municipality. Above Confidence of findings of patterns and drivers of urban development table and Confidence of findings of challenges and opportunities table, to which we refer throughout the text, provides information on the level of confidence in the findings to assess how reliable the observed or assumed trends and patterns of urban development are.

Patterns of urban development: Considerable urban development rates and land fragmentation trends were observed within municipality areas. This trend was confirmed by all three methods (very high confidence, above table). Analysis of the remote sensing data (below Figure) shows that in the municipality area, the built-up area increased in the period between 2011 and 2018.

2010 Image



Figure 4.4: Google Map 2010

2014 Image



Figure 4.5: Google Map 2014

2018 Image

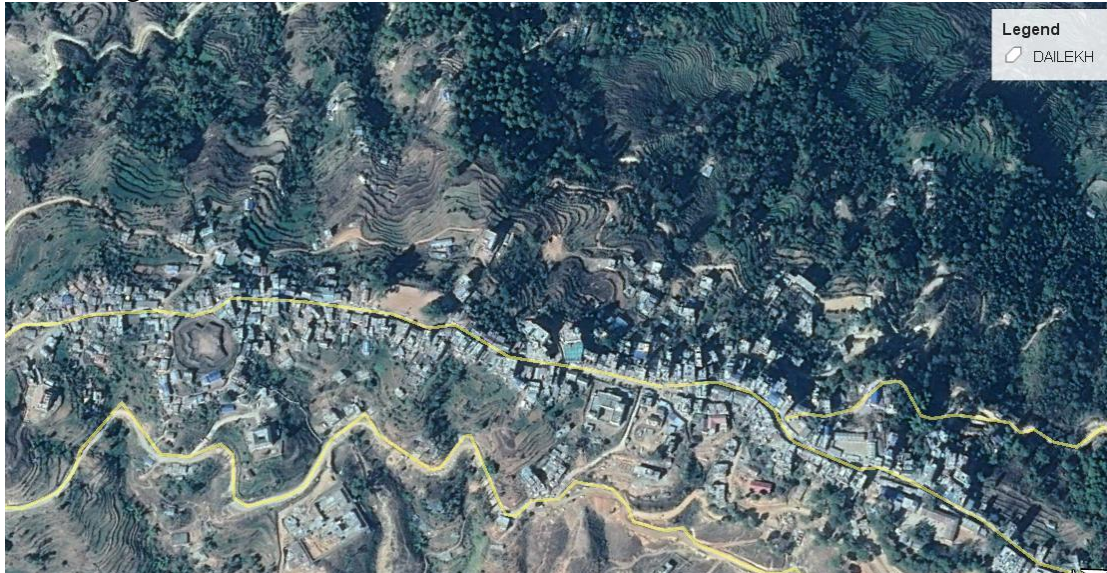


Figure 4.6: Google Map 2018

In the same period, the number of settlement units (SUs) increased from 5,791 to 6,362 (+9.86%). These change rates together with the increasing average SU size indicate that urban expansion was mainly based on smaller SUs, thus indicating informal urban extension. Though the number of SUs smaller than 500 sq.m was much lower than in the municipality area. This SU size distribution is well in line with the perceptions of the experts, who reported fast growing informal urban sprawl areas located side by side. The literature supports the observed trend that large buildings are a typical pattern of urban. However, the trend of large buildings was only reported for the municipality area (very low confidence).

Urban development in the municipality area was proceeding much faster. However, negative consequences for individuals were much more immediate in the municipality area due to the higher dependence on land for food provision through subsistence farming. Currently, based on expert statements, land parcels for agriculture are too large to feed the increasing household size of the families, and individual food crises are triggered. Local markets are poorly developed, and financial resources of farmers are very limited. Coping capacities were therefore assumed to be lower for the municipality area, which could lead to local food crises provoked by urban extension where land becomes useful for agriculture.

Driving forces for Urban Development: Our data sets show at a high confidence level that population growth is a driving force of urban development in both study areas (as for above table). More than 60% of the experts and more than two sources of literature confirmed this fact and provided many statements with high agreement. Expert interviews and literature analysis indicate that natural population growth and migration from rural areas due to poverty and land conflicts are the main reasons for increasing population in the municipality area. In general, industry development was identified as a strong driver of urban development in the municipality area, particularly the brick industry within the municipality. This has resulted in increasing demand for settlement areas for industrial employees and workers (confirmed by >60% of the experts and more than two literature sources). Zoning regulation was reported to be less strict, leading to mixed land uses, which were considered less desirable than separated land uses. Within the region, spill-overs from already congested areas were assumed to drive migration and informal urban sprawl. Real estate property and hotels were not stated.

Roads as drivers of urban development were rated with medium confidence for the municipality area. An expert reported that individuals buy parcels of land in remote areas, but have not settled there yet because most of them are waiting until access roads are constructed. For example, vacant lands towards to market, although unused, have been considered for industrial development once basic infrastructure such as roads and electricity are made available. Agricultural land area competes with industrial and residential land uses (very low confidence of agriculture as driver of urban development).

An expert in the municipality area mentioned the increase in governmental buildings in the course of the decentralization process as a factor contributing to urban development. He highlighted that the administrative role of municipality as the regional capital had increased, had been established. As a consequence, new accommodations for administrative staff were needed.

Apart from roads, other infrastructural development such as electricity, schools, hospitals and water provision appears with urban development.

Even though it was mentioned by the experts, sand and stone mining form an additional driving force of urban development. Mining was mentioned several times in the literature as a driver of urban development for both study areas. Due to a lack of more complete information, mining as a driver had a low confidence level.

Based on the expert interviews (> 60% confirmed), the customary land tenure system was identified as an indirect driver of urban development with high confidence for the municipality area. The customary land tenure system, particularly for those lands which are based on inheritance rights, provides the entry point for urban development. Splitting-up of land into smaller parcels leads to land fragmentation, as the small parcels are not suitable for agriculture and local planning (parcel by parcel planning), but suitable for settlements. Statutory land tenure could terminate the process of land fragmentation. In addition, chiefs and families are gradually interpreting common land as private ownership, which facilitates the selling of land for house construction. However, fragmented small-scale land ownership is hard to manage by large-scale investors, since these have to convince many different owners of small parcels.

Opportunities and challenges for urban and peri-urban land use planning: The experts named several challenges for land use planning in the study areas. Literature and expert's identified customary land tenure system, distrust in the government, and lack of law enforcement as main reasons. Especially for the customary land tenure system, we have high confidence that it is not only a driver of urban development but also a challenge to land use planning as such (above table). People insist on their customary land use rights, which complicates statutory planning. Poor communication and misunderstandings between government and population have led to an increase in informal settlements. Involvement of the local population in land use planning decisions is often limited to chiefs or selected representatives. However, statements from experts and literature were diverse, so that a lack of participation by people led to a very low confidence level for the municipality area.

To counteract the challenges, the experts and literature suggested an improvement in communication channels such as radio announcements and information boards with development plans. Only when land owners are sensitized and educated regarding land use planning, and adequately compensated in the case of compulsory land acquisition, will they understand the necessity for national land use planning (medium confidence). Public-Private-Partnerships (PPP)

were named by experts as an opportunity for attracting investors for prospective development and covering the costs of basic infrastructure. Therefore, we have low confidence for this area.

Land use planning regulations and guidelines, for example the Land Administration Project, the National and Regional Spatial Development Framework, and the upcoming Land Use Bill were considered as opportunities for land use planning but with low confidence due to the above mentioned lack of law enforcement, inequalities and financial gaps. Similarly, decentralization is contested as a challenge.

Different factors and different criteria was selected for suitability analysis and land - use planning. Factors and criteria were defined based on literature survey, expert's opinions, local contexts and availability of data. GIS - based Analytical Hierarchy Process (AHP) was used as a Multi - criteria Decision Making model. The research result shows that highly suitable area (6.7%) should be used for urban residential zone; moderately suitable area (8%) should be designated as mixed use zone; low suitable area (81%) should be reserved for agricultural use and open spaces; and not suitable area (4.3%) should be protected from any types of activities except agriculture. The research approached an urban land - use planning at a regional scale.

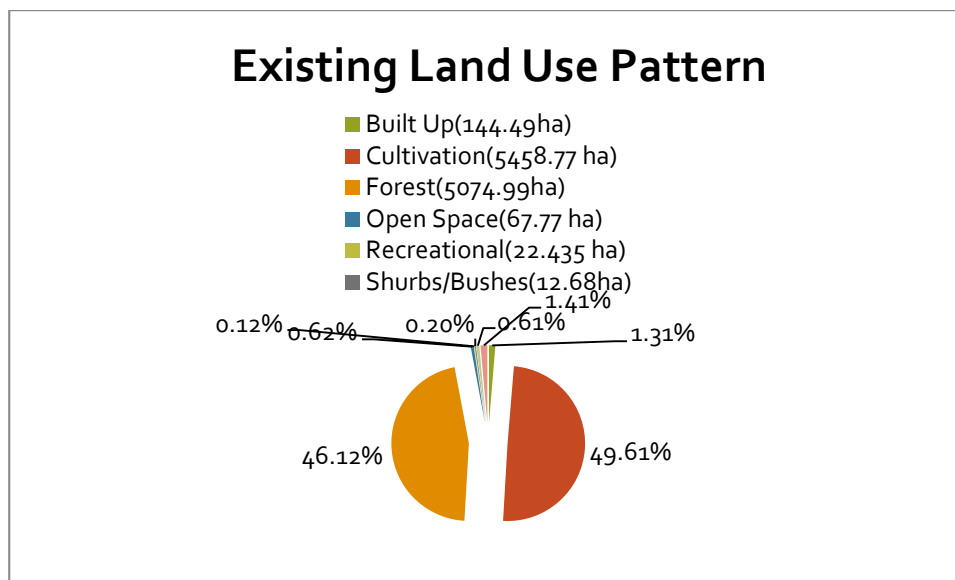


Figure 4.7: Existing Land Use Pattern

Based on above analysis theory following land use analysis & urbanization were forecasting with suitability analysis.

4.1.2.1. Existing Land Use

Based on land use imagery, seven types of land use, namely, cultivation, built of land, forest, open spaces, water body, transportation and Shurbs / Bushes. The existing land use of the municipality including suitability analysis are shown below:

	Displays	Suitability
Cultivation Land	Mixed agriculture products together occupied about 49.61% of the land and can be considered as pure agricultural land and among above percentage, Residential & Agriculture land use occupies about 25% land. This area involve agricultural practices within the households in order to support their daily needs for vegetables while at the same time earning cash.	Agriculture type production, neighborhood for resident / business, roads, water supply, communication structures, retail shops, vender shops, planting, built of open channel, agriculture market center, and industry.
Built up Land	People of the municipality lives in sprinkled way in 144.49 Ha with in the municipality.	Houses, roads, water supply, drainage, electricity, communication structures, small scale industries, retail shops, vender shops, Youth club, old age houses
Forest	Within the municipality, there is no big forest but 5074.99 Ha of the forest land within the municipality were covered by local wood trees and fruits trees. These forest land is private land and in future, land is developed individually for the purpose of settlement, agriculture, transportation and forest as a need.	Agriculture type production, neighborhood for resident / business, roads, water supply, communication structures, retail shops, vender shops, planting, built of open channel, agriculture market center, and industry.
Open Spaces	Within the municipality, 67.77 Ha of the land were covered in which these lands are private land and belongs to local people and government. Within the settlement area about 45% of the land is occurred by government and on these land many social activities are going on (as weekly market, temple activities, religion activities etc). But in the case of private lands, useful for the purpose of drying crops and agriculture activities. Also, in future, land is developed individually for the purpose of settlement, agriculture, transportation and forest as a need.	Agriculture type production, neighborhood for resident / business, roads, water supply, communication structures, retail shops, vender shops, planting, built of open channel, agriculture market center, and industry, tourism supplementary infrastructures
Water Body	Consists of river, kulo, kholsi, channel, ponds (or kuwa) natural drainage. The total area is 155.60 Ha with in the municipality.	Channel, Bridge and drainage network

	Displays	Suitability
Transportation	Within the municipality, 66.96 Ha land covers for transportation in which 26.404 km is blacktop road for district road classification, 119.54 km is earthen road for foot trail classification and 50.96 km is gravel road for local, urban, postal & village classification of urban road standard.	Roads, crossing drainage and Bridge
Shurbs / Bushes	Within the municipality, 12.68 Ha of the land were covered in which these lands are private land and belongs to local people for production of seasonable agriculture production and in future, land is developed individually for the purpose of settlement, agriculture, transportation and forest as a need.	Agriculture type production, neighborhood for resident / business, roads, water supply, communication structures, retail shops, vender shops, planting, built of open channel, agriculture market center, and industry.

Note: ward wise distribution of the land use is presented in Annex.

4.1.2.2. Housing

Ownership – At present (2018), out of 9449 household, 8844 households personal ownership, 422 households are rented, 2 households for institutional and 0 for others.

Foundations — 87.74% households lived in houses with foundations of mud-bonded bricks or stones. In Narayan , 278 households were reinforced concrete (RCC) foundations gaining ground, 333 households were brick/stone, 26 household are wooden pillar and 80 household are not mentioned

Roofs – 1198 households lived in houses with galvanized iron roofs. About 11.21% of households in the Narayan municipality lived in houses with RCC roofs while about 28.44% of households lived in houses with thatched roofs,0.05% are made up of wood/planks and 36.02% are made of tile/slate roofs.

Suitability: Plantation, Taxes

4.1.2.3. Existing Urban Structure

Table 4.6: Existing Urban Infrastructures / Public Services

Description		Wards											Total
		1	2	3	4	5	6	7	8	9	10	11	
School	Primary	4	1					3	2		2	6	18
	Secondary	1	1				2	3	1		2	1	11
	Others	4	1					1					6
Health Center	(Hospital, Health Post, Clinic,Medical Shop,Private Clinic)	1	1				1	1	2		4	3	13
Media		3						1					4

Government Office	(Ward Office, Malpot)	9	3	3			2	4	5	1	1	1	29
Bank	(Cooperative Bank, Finance)	12	1					3					16
Industry	(Brick Factory, Factory)						2						2
Temple	(Stupa, Masjid, Church)	14	6	3			5	5	4		2	16	55
Telecom Points				1			2		1				4
Culvert	Box Culvert		1	1	2	1	3			3			11
Security	(Police Station, Armed Police Force)						1						1
Transformer		3	1	1			2	2	2				11
Commercial	(Petrol Pump, Cinema, Shop)	1		1			1	4				1	8

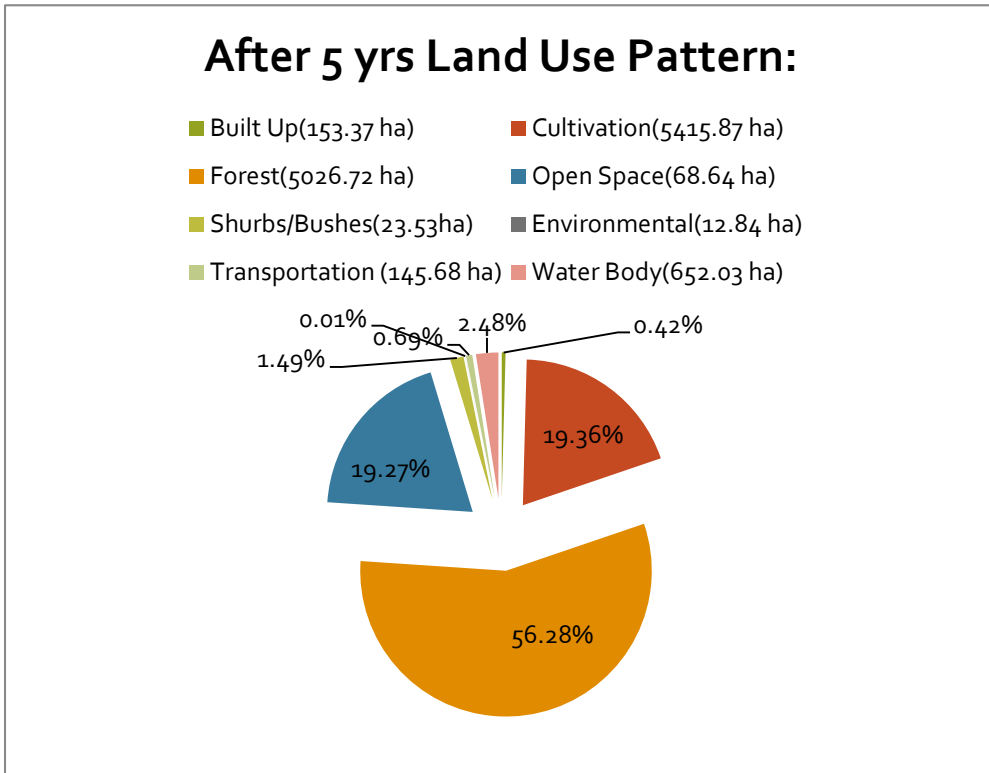
Suitability: Agriculture type production, neighborhood for resident / business, roads, water supply, communication structures, retail shops, vender shops, planting, built of open canal, agriculture market center, and industry.

4.1.2.4. Change in Built-Up Area, Agriculture Land, Water Body, Forest

As we can see in the map, Narayan is experiencing urban transitions throughout the year. The urban transition is vividly manifested in social, economic and physical aspects. While the urbanization can boost the industrialization and modernization goals of the country, it can cause adverse impact on natural environment as well as society and economy. The study showed that most of the urban expansion occurred in the periods 2010-2014 and 2014–2018. Throughout analysis, an implicit correlation between the urban growth, the trend of spatial expansion and other relevant geographic and socio-economic factors can be proposed. Result of this study would allow urban planners and decision makers to timely evaluate and adjust accordingly the urban growth and be aware of the sustainable usage of the invaluable natural lands and other environmental, social and economic problems. After the projection of the population for 15 years, Changes had occurred in every classification of the land use and changes of 5, 10 and 15 year plan are presented below by pie chart and data are included in Annex

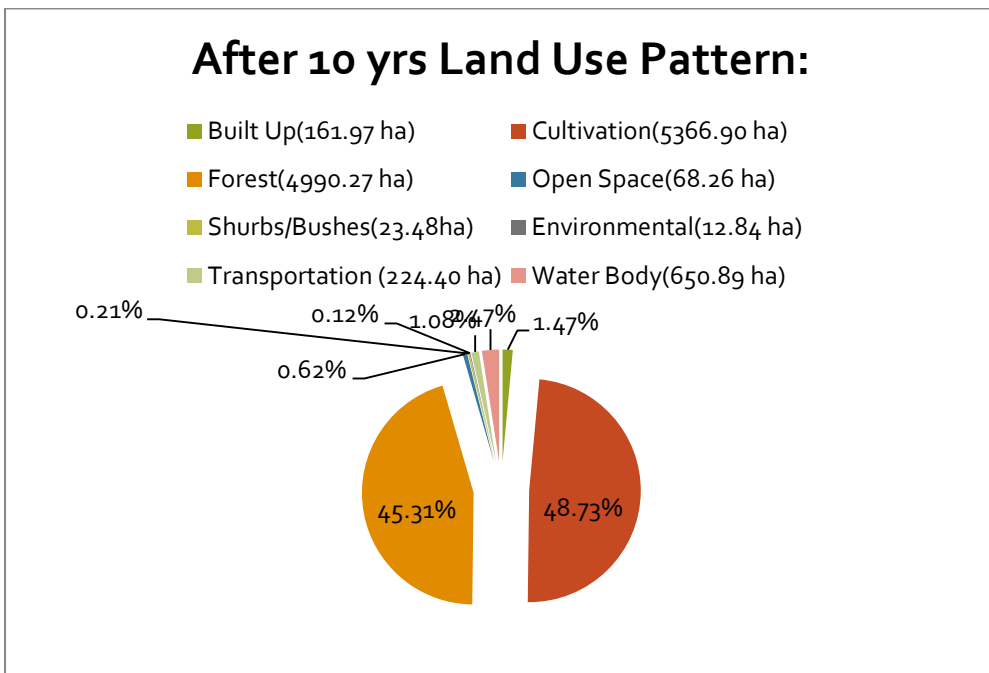
After 5 years and 10 years Land Use Patter

Figure 4.8: Proposed after 5 years Land Use Pattern



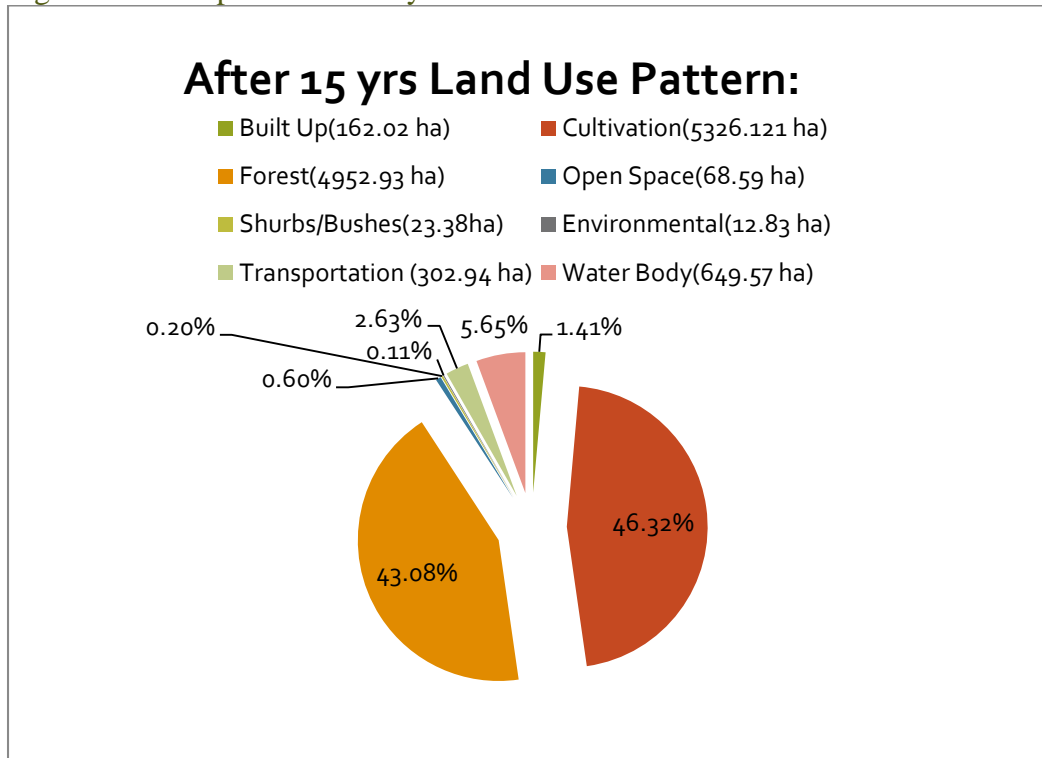
After 10 years Land Use Patter

Figure 4.9: Proposed after 10 years Land Use Pattern



After 15 years Land Use Patter

Figure 4.10: Proposed after 15 years Land Use Pattern



Suitability: Agriculture type production, neighborhood for resident / business, roads, water supply, communication structures, retail shops, vender shops, planting, built of open canal, agriculture market center, and industry.

4.1.2.5. Migration

A technical team, consisting of experts and subject matter specialists, worked closely with the Planning Commission of the consultant team. The team reviewed published literature and carried out consultations with the senior expert and local governments in between study time. The study team also reviewed disaster risk reduction plans and local plans on climate change adaptation and collected first-hand information at the municipality level.

The climate change trend analysis report (1971-2014), prepared by the Department of Hydrology and Meteorology (DHM) of Nepal, shows that almost all wards of the municipality experienced increased annual precipitation in winter, pre-monsoon and monsoon seasons with significant variations in monsoon precipitation. In all wards of municipality, there is positive trend indicating a rise in minimum temperatures in all seasons but there is decrease in maximum temperatures during winter.

Similarly the climate change scenario report (2014-2100), prepared by the DHM and International Centre for Integrated Mountain Development (ICIMOD), reveals that precipitation will increase in all wards. As well as the positive change in precipitation levels in wards are also expected to have an increase in temperature in the medium-term (2050) and the long-term (2100). The future wards scenarios also reveal that extreme events, such as warm days, warm

nights, warm spell duration, and wet days are going to increase rapidly. The increase in extreme events will have a direct impact on the health and livelihoods of people.

Findings further show that wards are vulnerable to natural and human-induced disasters. Floods, fires, disease outbreaks, road accidents, drought, thunder and dry wind storm are among major hazard events. Disasters adversely affect natural resources, reduce people's livelihood opportunities and the amount of income they generate and exacerbate their suffering. Agriculture is one of the most impacted sectors in the municipality followed by water resources, ecosystems, and human health. The disasters not only take human lives and destroy/damage physical property but also slow the pace of development. It was also found that, among the vulnerable population, children, older people and persons with disabilities (PwDs) are disproportionately affected by disaster and climate risks.

The areas near the Chupra river is prone to land slide and river Cutting. According to the Kathmandu post three persons died and two others are feared dead in separate incidents of floods and landslides in mid-west and far-west regions in July, 2014. The water-induced disasters also displaced several families.

The following risk are found within the municipality.

1. Flood
2. Inundation/embankment
3. Fire
4. Windstorm
5. Cold waves
6. Crop and livestock disease

Suitability: Health post, Hydrology station, awareness about the temperature, temperature display in every community places in all wards, pre information about the wind, flood, etc.

4.1.2.6. Open Spaces

Changes in land-use patterns affect both human and natural systems. Potential social and economic impacts of changes in land-use patterns include increased costs of providing public services, loss of open space, and increased congestion. So, municipal governments are adopting smart-growth principles to deal with forms and patterns of urban development that planners and organizations have deemed unsustainable. Undesirable urban features include unlimited outward development; “leapfrog” expansion of new, low-density developments; uncoordinated planning; and large-scale conversion of open space, farm lands, and environmentally sensitive lands to urban uses. Within the municipality, 67.77 Ha of the land was open spaces.

Suitability: Agriculture type production, neighborhood for resident / business, roads, water supply, communication structures, retail shops, vender shops, planting, built of open canal, agriculture market center, and industry, tourism supplementary infrastructures

4.2. Special Analysis

Narayan has changed a lot from the past. Due to increasing population and their needs and desire development of Municipality has accelerated. In the process of urbanization, the physical characteristics of Narayan are gradually changing, as open spaces especially along the roads are being converted into dense built-up areas. Therefore, it is necessary to track the morphological changes and guide them to the proper settlement pattern of the city. Narayan Municipality lies in

a terai region with large areas of plain land. The increasing population across all former VDCs indicates that settlement growth is taking place in the market centers and the existing market areas of Narayan are running out of flat or gently sloping land to build on and further residential development in market areas can only take place on farmlands.

Likewise, most of the agricultural area is converted into residential area. Number of houses has increases significantly along with population especially in ward. nos. 1, 11, 4 and 6 respectively. If this trend continues, more lands are likely to be converted into residential area. Increase in industries (both small scale and large scale) has increased over the period. Infrastructures like road, bridges have increased and the earthen road is converted into graveled and blacktopped road.

Spatial analysis is done to evaluate landscape, existing condition and land use that the municipality has and plan for the future. Throughout analysis, an implicit correlation between the urban growth, the trend of spatial expansion and other relevant geographic and socio-economic factors can be proposed. Result of this study would allow urban planners and decision makers to timely evaluate and adjust accordingly the urban growth and be aware of the sustainable usage of the invaluable natural lands and other environmental, social and economic problems.

4.3. Social Analysis

Social analysis is the practice of systematically examining a social status, social problem, issue or trend, often with the aim of prompting changes in the situation being analyzed. Along with the population, the demand will increase simultaneously, thus to fulfill the future demand of the municipality proper analysis of social infrastructure should be done for proper planning.

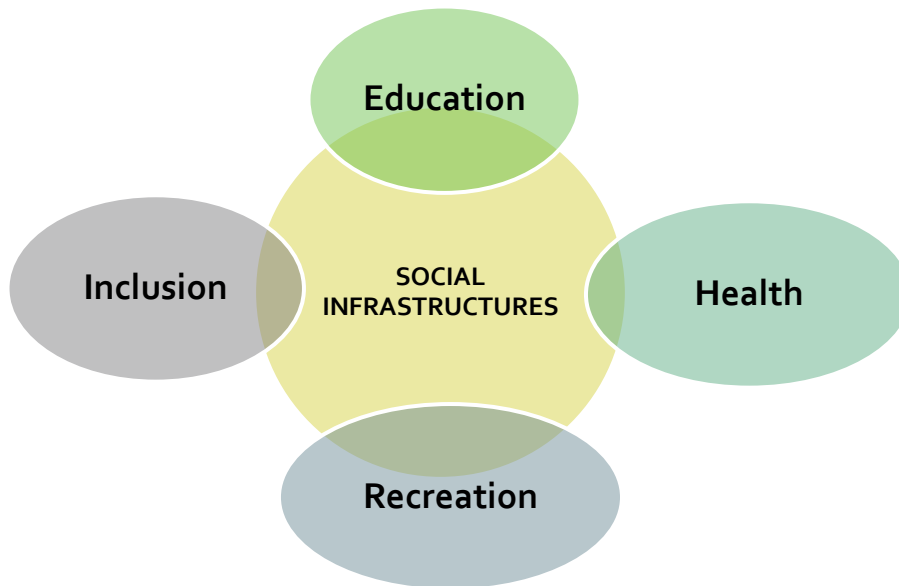


Figure 4.11: Flow chart for Social Infrastructures

Social Challenges: There are abundant deprived communities in the municipality who are socially backward. Women and children trafficking is the main problem of the municipality. This is due to the lack of awareness and education among the people of remote areas of the municipality. There is no provision for the higher education in the municipality. So, the people migrate to the neighbor district for better education and health facilities.

4.3.1. Education

With the improvement in living standards, educational status and health facilities, the life expectancy of the Nepalese population has been increasing. The CBS index, which indicates the number of old people compared to children, has been consistently increasing over decades. The index has increased from 7.78 in 1971 to 15.50 in 2011. The analysis of data has indicated remarkable achievements in the status of literacy, educational attainment and/or school attendance rates of both the male and female population over the years. However, learner enrolment of the municipality is gradually increasing. The GER (Gross Enrollment Rate) & NER (Net Enrollment Rate) rate (as per Flash Report I (2017-2018), DOE) of the municipality also showing the positive for increasing in Education Enrolment and presented below table.

School Level Indicators

Table 4.7: Gross Enrollment Rate (GER) of municipality in 2074 BS

ECD			Basic (1-5)				Basic (6-8)				Secondary (9-10)				Secondary (11-12)			
Girls	Boys	Total	Girls	Boys	Total	GPI	Girls	Boys	Total	GPI	Girls	Boys	Total	GPI	Girls	Boys	Total	GPI
76.8	78.9	77.8	140.5	128.3	134.4	1.10	109.7	106.2	107.9	1.03	79	84.6	81.8	0.93	38.2	35.9	37	1.06

Sources: Flash Report I (2017-018), DOE

Table 4.8: Net Enrollment Rate (NER) of Municipality in 2074 BS

Basic (1-5)				Basic (6-8)				Secondary (9-10)				Secondary (11-12)			
Girls	Boys	Total	GPI	Girls	Boys	Total	GPI	Girls	Boys	Total	GPI	Girls	Boys	Total	GPI
97.7	98.1	97.9	1.00	86.8	90.3	88.5	0.96	61.2	62.8	62	0.97	20.5	23.6	22.1	0.87

Sources: Flash Report I (2017-018), DOE

Table 4.9: GER and NER of Basic Level (1-8) and Secondary Level (9-12) of municipality in 2074 BS

Basic (1-8)						Secondary (9-12)					
GER			NER			GER			NER		
Girls	Boys	Total	Girls	Boys	Total	Girls	Boys	Total	Girls	Boys	Total
125.1	117.2	121.2	92.2	94.2	93.2	58.6	60.2	59.4	40.9	43.2	42

Sources: Flash Report I (2017-018), DOE

Table 4.10: New Entrants, Gross Intake Rate (GIR) and Net Intake Rate (NIR) in Grade 1 of municipality in 2074 BS

% of New Entrants in Grade 1	GIR in Grade 1	NIR in grade 1
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with ECD/ Education in Figures 2017 (At A Glance) PPC Experiences								
Girls	Boys	Total	Girls	Boys	Total	Girls	Boys	Total
61.8	62.9	62.4	142.6	129.3	136	97.1	97.5	97.3

Sources: Flash Report I (2017-018), DOE

Table 4.11: School Teacher Ratio (STR) in 2074 BS

Municipality	Grade (1-5)	Grade (6-8)	Grade (1-8)	Grade (9-10)	Grade (11-12)	Grade (9-12)
Narayan	29	37	31	34	23	29

Sources: Flash Report I (2017-018), DOE

Table 4.12: Education Budget Flow Trend FY. (2010/011 - 2017/2018) (NPR Thousand)

Fiscal Year Budget Source %	2067/68 (2010 / 2011)	2068/69 (2011 / 2012)	2069/70 (2012 / 2013)	2070/71 (2013 / 2014)	2071/72 (2014 / 2015)	2072/73 (2015 / 2016)	2073/74 (2016 / 2017)	2074/075 (2017 / 2018)
Total National Budget		384900000	404824700	517240000	618100000	819468884	1048921354	1278994855
Share % of Education Budget Compared to National budget	17%	16.61%	15.67%	15.65%	13.92%	12.04%	11.09%	9.90%
Govt. share in national budget	77	76	78	77.84	80.11	74.87	91.12	
Foreign share in national budget	23%	23.78%	19.63%	22.08%	13.36%	14.68%	8.8%	

Source: MOEST Financial Admin Section; Budget & Program Section Report; DOE Budget & Program Sec. 2074/075

From existing data (from chapter 3) and above data, it is clear that the present educations are enough for next 15 years. Need to improve the quality of schools and colleges and teachers including supplementary infrastructures.

4.3.2. Health

Health is very essential for human life. So, improvement of health facilities should be major priority in order to develop the municipality. According to the “Urban planning norms and standards 2015” 1 district hospital is required per 50 thousand populations. The 9 health posts and 2 Hospitals are in the municipality. Hence, upgrading and construction of new can be done. Despite of that, the municipality still lack better zonal hospital which should be constructed.

4.3.3. Recreation

According to Planning Norms and Standard 5% of the total sub city area should be dedicated for open space .There should be 1 such park per 800 populations. Likewise, there should be 1 local park per 10000 Population. As per our survey, it was found that the municipality has only 0.62% of open space. It clearly shows that there is deficit of 4.38% of the open space. Planning norms demand that the municipality should have a park in each ward. Nevertheless, all the wards do not own the park.

After analysis, it has been concluded that the municipality does not have sufficient community parks and local parks. Planning team can work on this aspect of the municipality for the development of the place.

4.3.4. Inclusion

Urban areas should be socially inclusive in terms of ethnicity, caste, gender, and economic class. Inclusion should be reflected in the space the city provides for the nurturing and celebration of social and cultural diversity and sensitivity particularly to disadvantaged, marginalized and minority groups, and poor people and youth in general. Inclusivity promotes social justice and contributes to equity and balanced development. The increasing rates of poverty in urban areas mean that their development needs to be pro-poor in terms of addressing the poor’s basic needs for education, health, housing, livelihoods and transportation. The planning should be balanced and inclusive. It means that the project should benefit all the groups and community living in the society.

4.4. Economic Analysis

Strategies related to urban economy are geared towards enhancing the contribution of urban areas to the GDP and strengthening the economic base of urban areas. These strategies cover the aspects of economic development, investment and finance. The strategy seeks to boost economic development by extending support in the formulation and implementation of local, provincial and regional economic development for urban areas in order to build competitiveness based on local, provincial and regional comparative advantages; promotion of urban regeneration programmes in historic core areas and the disaster affected urban centers; mainstreaming informal urban economy and alleviation of urban poverty.

Economic analysis involves the study of existing economic infrastructures like market areas, employment facilities, main occupation of the municipality for better planning and exhibit the existing economic scenario.

Economic challenges:

The people of Narayan produce milk, vegetables, and other agricultural produce, which are sold locally and exported to Dailekh and nearby commercial areas and market centers. However, there is no systematic practice of using unsold agricultural produce such as milk in times of excess production by producing by-products. Many locals also lack entrepreneurship skills.

4.4.1. Agriculture

Agriculture is the main occupation followed by the people of Narayan . Mostly, vegetables are grown there and sold to its neighbouring district. They have limited consumers so to gain more profit through agriculture new market centers need to be identified.

As agriculture is the leading sector for GDP contribution and employment generation in Nepal. Agriculture is one of the main occupations of the Narayan municipality. 26.56 % of the total land of the municipality is cultivation land.

Measures for the commercialization of the agricultural products

- ✓ Modern Technique of agriculture should be introduced to the local farmers of the municipality.
- ✓ Agriculture products should be given brand name and should be commercialized.
- ✓ Promotion of organic farming.
- ✓ Identification of pocket area as per climatic condition
- ✓ Provide better irrigation facilities to increase the productivity
- ✓ Establish cold storage facilities for potatoes and other vegetables.

4.4.2. Livestock

Livestock farming is popular in Narayan . Most of the local people seem engaging themselves in commercial production of animal product like poultry, fishery, dairy and meat parallel to traditional practice and are generation income from such practice. Households in more rural areas engage in cattle farming, mainly for dairy production. The people of Narayan produce milk, dairy products and animal products such as eggs, honey etc. and sold to market area. However, they do not follow systematic business practice. So, they are not getting enough profit they deserve due to the lack of entrepreneurship skill. So, the people of the municipality need special vocational training in order to follow systematic livestock farming. Table below gives the status of animal husbandary and its production in Narayan .

4.4.3. Mining

River mining is done in Narayan for sand and other construction materials. Chupra Rivers are regularly mined. Sand mining has increased dramatically along the Chupra River. This has a negative impact on the environment and the ecology of the river.

4.4.4. Industry

There are few domestic industries in the municipality. Due to the lack of large scale industries there, unemployment rate is increasing in Narayan . There are more than 30 small scale industry in this municipality. Industries in the municipality are: rice mills, agrovets, cotton factories and

paper factory. If the physical infrastructures like: highways and internal roads can be developed, industries can flourish in the municipality.

4.4.5. Import and Export

Narayan is well-known for its agriculture production and industrial production, which is sold locally and exported to markets and nearby commercial areas. Narayan municipality import more than exporting.

S.N	Name of export	Annual quantity (Quintal)	Total export value
1	Agriculture and forest products	50	20,00,000
2	Radipakhi	250 pieces	7,50,000
3	Industrial export	1000	20,000

4.4.6. Commercial

If the commercial sector of the municipality is focused then it can bring positive change in the economic development of the municipality. Commercialization of the agricultural products in large quantity is possible in the municipality. About half of the land of the municipality is cultivable land. Hence, with the commercialization of the agricultural products those land can be utilized properly. The main objective of IUDP planning should be to increase the commercial viability of agriculture and develop market opportunities for local agricultural produce. Not only agricultural products, the livestock products also should get proper market.

4.5. Financial Analysis

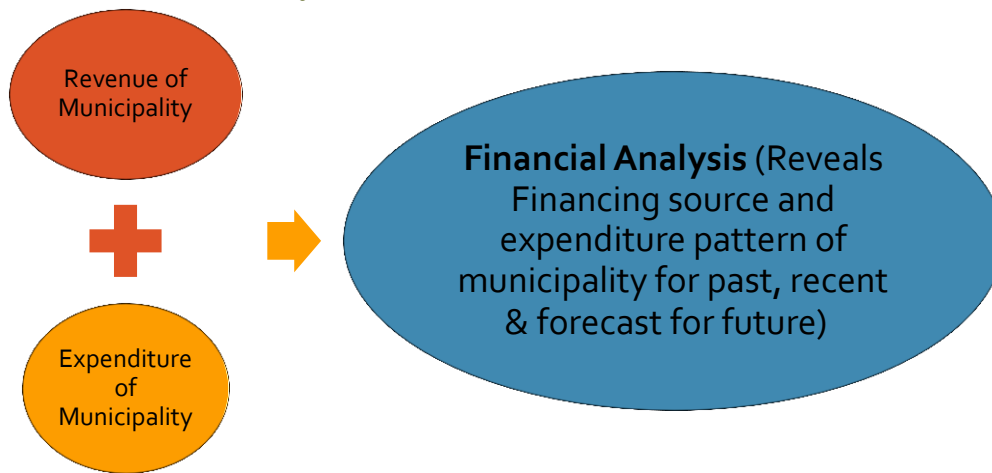


Figure 4.12: Flow chart for Financial Analysis

Financial analysis is the process of estimating the capital required and determining its nearest competition. It is the process of managing financial policies in relation to procurement, investment and administration of funds. Financial Development plan deals primarily with the sectoral investment policies, financial liabilities and assets, feasibility of major and minor projects based on financial analysis. It also helps in formulation, identification and mobilization

of resources required during the period of IUDP preparation. The following things/ subjects needs to be considered while formulation the financial analysis.

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

Promotional Strategies of Private sector and Civil Society: 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. Some of the strategy for promoting PPP modalities in municipality 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 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.

- Lack of proper knowledge of financial systems like better budgeting and accounting system.
- Lack of planning capacity for preparation of Municipal financial action plan for poverty alleviation and infrastructure development.
- Allocation of budget can be mainly seen in development of road and which can be divided for tourism development potential sector for economic development.
- Due to lack of monitoring and supervision, proper use of resource and budget is not possible.
- Local government is not able to collect tax from the local people as estimated.
- Some budgets is allocated for the economic development which needs to be increased as increase in economy and revenue will lead to long term development of this municipality.
- Some budget is allocated for environment and disaster management, which is not enough for healthy and prosperous environment of this municipality. So proper focus needs to be given for the proper management and development of management of environment and disaster.
- Low budgeting for development of health institution in infrastructure development. Due to lack of hospitals and proper health care facilities, people are facing problem.
- Lack of basic amenities like water, road, sewerage, drainage, electricity to new areas for hotel development, businessman which is essential to attract for tourism development.
- Lack of budget for maintenance of cultural and heritage sites.

New technology and management for service delivery and development is not enough. New ideas for solving municipal issues are important

The main goal of the analysis is the development of the areas of internal resources having a lively and broad base which leads municipality towards financial self-reliance. The analysis can help to increase the internal resources of municipality at the end of five years. Positive feelings of local taxes of the taxpayer and municipality need to be developed.

Table 4.13: Financial Development Plan

Plan Details	Measurement Indicators	Means of verification	Important Forecasts
1. Tax collection will have been significantly increased.	Increase in property tax.	Municipality's city's Audit Report.	Private sector's support will be received.
	The municipality tax residing in the (ऐलानी) township will come under tax.		The taxpayers will have developed a positive attitude.
	Increase in Industry and Business tax.		
	Increase in Transportation and		

Plan Details	Measurement Indicators	Means of verification	Important Forecasts
	Restoration taxes.		
2. Significant increase in income sources through scientifically assembled दस्तुर rates.	Real states practice and practice will be re-authorized and implemented.	Municipality's city's Audit Report	Private support and municipal participation will be received.

Looking at the components of budget made by government of Narayan municipality, it is clear that there will be two major permanent source of financing municipal activities. First one is Intergovernmental fiscal Transfer and another one is Local governance and Community Development Program.

The total expenditure of Narayan municipality of NPR 88581000. The major expenses is due to employee's salary that is NPR 29369000 and Incumbent salary is NPR 7700000.

Table 4.14: Expenditure of Narayan Municipality (FY 2075/076)

S.N	Expenditure Topic	Estimated expenditure of current fiscal year
1	Employee's Salary	29369000
2	Incumbent Salary	7700000
3	Uniform	1000000
4	allowance	4300000
5	dearness allowance	1512000
6	meeting allowance	800000
7	other allowance	1500000
8	Incumbent meeting allowance	4500000
9	Other facilities	1200000
10	Employee welfare fund	1500000
11	Water supply and electricity	300000
12	Communication expenditure	400000
13	Fuel incumbent	500000
14	Fuel for office purpose	2500000
15	Maintenance of vehicles	700000
16	Insurance and Renewal expenses	100000
17	Maintenance of machineries and installation expenditure	200000
18	Maintenance of constructed public Infrastructures	250000
19	Other property	300000
20	Miscellaneous	3500000

21	Fuel and other usage	150000
22	Newspaper, printing and information publication expenditure	900000
23	Service and counseling service	500000
24	Communication and software operation expenditure	1300000
25	Karar Service	400000
26	Cleanliness expenditures	300000
27	Other services	3700000
28	Employee trainings and ability development expenditure	900000
29	Training expenditures	1200000
30	Program expenditure	600000
31	Various programmer expenditure	600000
32	Following and appraisal expenditure	1800000
33	Excursion expenditure	300000
34	other excursion expenditure	100000
35	other expenditure	1300000
36	meeting conduction expenditure	1000000
37	support to organizations	100000
38	other economic support	1000000
39	Purchase of medicine	2000000
40	House Rent	600000
41	Vehicles and machinery tool rental	1100000
42	Ward office running expenditure (house rent , official items, communication expenses, water and electricity, fuel, other) expenditure	6600000
	Total	88581000

4.6. Institutional Analysis

According to Municipal System Act, a municipal Council must adopt a process set out in writing to guide the planning, drafting and review of its plan. This process plan outlines the programme to be followed and provides detail on the issues specified in the Act. The IUDP process plan paves the way and articulates the progressive activities and processes which the Municipality will embark upon in the review for the implementation period 2019/2033. It fulfils the role of a business plan or an operational framework for the IUDP process outlining the manner in which the IUDP review will be undertaken.

The process creates its own dynamics since it encompasses the involvement of external role players. It therefore requires accurate logistical planning and arrangements of engagement sessions to ensure that the process is implemented in accordance with the approved schedule. But

the actual implementation of projects and programmes which will ultimately create a conducive environment wherein all people can prosper socially and economically.

It has an Executive Mayoral System combined with a ward-participatory system. The delimitation of municipal boundary exercise, which was undertaken prior to the Local Municipal Elections, divided the municipal area into nine (10) wards. The full Council consists of 10 Councilor's, of which are directly elected.

The Board has an Executive Mayor and an Executive Mayoral Committee which consists of the Executive Deputy Mayor, who each hold a different group that is linked to the standing committees which have been established in terms of the Municipal Structures Act, to assist Council in carrying out its constitutional responsibilities and mandate.

Executive Mayoral Team

1. Executive Mayor
2. Deputy Exec. Mayor
3. Speaker
4. Technical Services
5. Integrated Services
6. Finance
7. SED & Tourism
8. Community
9. Corporate & Legal

The key role of Board is to focus on legislative, participatory and oversight responsibilities. Its principal and most substantive role is therefore that of a lawmaker. Council's role is also to facilitate political debate and discussion around institutional transformation and development and affairs related to the strategic and operational development trajectory of the Municipality.

The executive functions are delegated to the Executive Mayor and the Mayoral Committee who assists the Executive Mayor in fulfilling the day-to-day decision-making and operational oversight role. The functions of the Standing / Portfolio Committees include:

- Formulation of policies for their respective functional areas.
- Monitoring and evaluation of performance for their respective functional areas.
- Public Interface and making recommendations to the Executive Mayor and Council.

4.6.1. Role Classification

The Municipal Systems Act, stipulates, that the respective roles and areas of responsibility of each political structure and political office bearer of the Municipality and of the Municipal Manager must be defined.

Table 4.15: Role Clarification

Municipal Council	Executive Mayor	Mayor Committee
<ul style="list-style-type: none"> • Governs by making and administrating laws, raising taxes and taking decisions that affect 	<ul style="list-style-type: none"> • Is the executive and political leader of the Municipality and is in this capacity supported by the 	<ul style="list-style-type: none"> • Its members are elected by the Executive Mayor from the ranks of councillors, except for the Deputy

Municipal Council	Executive Mayor	Mayor Committee
<p>people’s rights.</p> <ul style="list-style-type: none"> • Is a tax authority that may raise property taxes and service levies • Is the primary decision maker and takes all the decisions of the Municipality except those that are delegated to political structures, political office bearers. • Delegate authority and responsibilities to officials. • Must strive towards the constitutional objects of local government; • Consult the community with respect to local government matters; and • Is the only decision maker on non-delegated matters such as the approval of the IUDP and budget. 	<p>Mayoral Committee.</p> <ul style="list-style-type: none"> • Is the social and ceremonial head of the Municipality • Must identify the needs of the Municipality and must evaluate progress against key performance indicators. • Is the defender of the public’s right to be heard • Has many responsibilities with respect to the annual budget, the budget process, budget control and various other financial matters; and • Performs the duties and exercises the responsibilities that were delegated to him/her by the Council 	<p>Executive Mayor who is elected by the Council and is an ex officio member of the Mayoral Committee.</p> <ul style="list-style-type: none"> • Its functional responsibility area is linked to that of the Executive Mayor to the extent that he must operate together with the members of the Mayoral Committee. • Its primary task is to assist the Executive Mayor in the execution of his powers - it is in fact an extension of the office of Executive Mayor and • The committee has no powers on its own – decision making remains that of the Executive Mayor.

4.6.2. Special Focus Area Delegated

The Executive Mayor has mandated the seven (7) full-time Councilor's that serve in the Executive Mayoral Committee to facilitate and oversee the implementation of the undermentioned projects and programmes. These projects and programmes in the main are considered as the key objectives and outcomes identified by the Executive. These will be pursued throughout the term of this Council.

Table 4.16: Special Focus Area Delegated

Range	Projects and Programmes Identified	Expected Performance Outcome
<p>Corporate and legal services</p>	<ul style="list-style-type: none"> • Support and oversee review of Organisational Macro Structure • Expand Community Wi-Fi (Broadband) Programme • Support, facilitate Urban Renewal / Upgrading of Point • Oversee development of new Employment Equity Plan • Support oversee institutionalisation of Call Centre • Support and facilitate expansion 	<ul style="list-style-type: none"> • Reviewed Organisational Macro Structure implemented • Follow through with urban renewal strategy including CBD, and Point upgrading / harbor development. • Call Centre fully institutionalized • Community Wi-Fi Coverage in reach of all residents

Range	Projects and Programmes Identified	Expected Performance Outcome
Office of the speaker	<ul style="list-style-type: none"> • Ward Committee Establishment • Effective Ward Committee Functionality • Functioning of Ward Forum • Ongoing Capacity Building of Ward Committees • Annual Ward Committee Summit • Public Participation in IDP and Budget Process • Institutionalise Ward-Based Planning 	<ul style="list-style-type: none"> • Roll out accredited training for Ward Committees • Institutionalised Ward Discretionary Funding Model to enhance service delivery. • Strengthened relationship between Ward • Committee and Municipal Executive. • Mayoral Committee and Management to attend all Public Roadshows
Technical Services	<ul style="list-style-type: none"> • Oversee implementation of Water Services Development Plan recommendations and related sector plans. • Upgrade and compliance of Water & Sewerage Plants and solid waste management, • Support, oversee, monitor effectiveness of Revenue Protection Measures such as reduction of water and electricity losses 	<ul style="list-style-type: none"> • Replacement / Renewal of ageing infrastructure critical for sustainable service delivery. • Compliant Water and Sewerage Purification Plants with sufficient capacity to meet growing demand • Reduce water losses below national norm. • To gain green city after management of solid waste
Planning and integrated services	<ul style="list-style-type: none"> • Support, oversee and monitor Housing Pipeline • Advocate and plan for toilet project and Civic Park • Advocate for upgrading of Road • Support and oversee formalisation of informal settlements • Oversee effective functioning of CID • Land-use planning/implementation • Oversee progress of Middle Income Housing Project • Advocate for Gap/Housing 	<ul style="list-style-type: none"> • 100 % spending of annual low-cost housing allocation. • Effective execution of Housing Pipeline and development of Road Corridor • 100% Middle Income Housing sites sold • Rectification of Religious Houses • Relocation of Power town Community • Implement Infrastructure Sector and Masterplans • Road Upgraded • 100 % of funds spent allocated for building of toilets • Gap/Middle Income housing approved
Community service	<ul style="list-style-type: none"> • Expansion of Entrepreneurs Cleaning Programme • Development new and upgrade sports 	<ul style="list-style-type: none"> • Cleanest Town Award / Remove illegal dumping • Operation of Regional Landfill

Range	Projects and Programmes Identified	Expected Performance Outcome
	facilities <ul style="list-style-type: none"> • New fire station • Regional Waste Landfill Site / Expand recycle initiatives • Promote community safety in all areas 	Site <ul style="list-style-type: none"> • Expand and enhance SWOP • Recycling rolled out to all wards • Pavilions completed and disabled and user friendly • Adopt municipal safety plan • Operational Neighbourhood Watches in all areas
Financial services	<ul style="list-style-type: none"> • Municipal Financial Viability • Sound Financial Administration and Implement 	<ul style="list-style-type: none"> • Maintain clean audit outcome and fully implemented in Long-Term Financial Viability
Social Economic development and tourism	<ul style="list-style-type: none"> • Review LED and Tourism Strategy • Youth Development and Functional Gender Forum • HIV/AIDS Awareness / Gender Mainstreaming • Effective Functioning of MLAC and LDAC Fora • Empower / support the Disabled and Elderly • Functional Poverty War Room • Enhance Rural Development / Poultry Value Chain Project • Youth Café Project Management and Operations • Support Early Childhood Development Centre • 100 % implementation of Community Work Programme • (CWP) 	<ul style="list-style-type: none"> • Implement LED interventions as per annual target • Gender Mainstreaming and Diversity in social programmes • Food gardens and soup kitchens in all disadvantaged areas • Poultry Value Chain Project implemented • Youth Development through Youth Café programmes • Implement Youth Café Mobiles to other rural areas • 1000 Participants under CWP – programme • Dilapidated ECD Centres upgraded • Improved relations and joint interventions in the fight against HIV/AIDS / TB / Teenage Pregnancies

4.6.3. Administrative and Institutional Capacity

The Municipal Manager as head of the administration is responsible and accountable for tasks and functions as provided for in the Systems Act, other functions/tasks as provided for in legislation, and functions delegated by the Executive Mayor and Council. He is responsible for the implementation of the IDP under the direction and guidance of the Municipal Council. The Municipal Manager is supported by Executive Managers appointed in terms of Government Act.

4.6.4. Exucutive Management

1. Municipal Manager (Executive Officer)
2. Plan & Economic Development
3. Community Services
4. Infrastructure Services

- 5. Financial Services
- 6. Corporate Services
- 7. Government & Strategic Services

4.6.5. Functional Disciplines

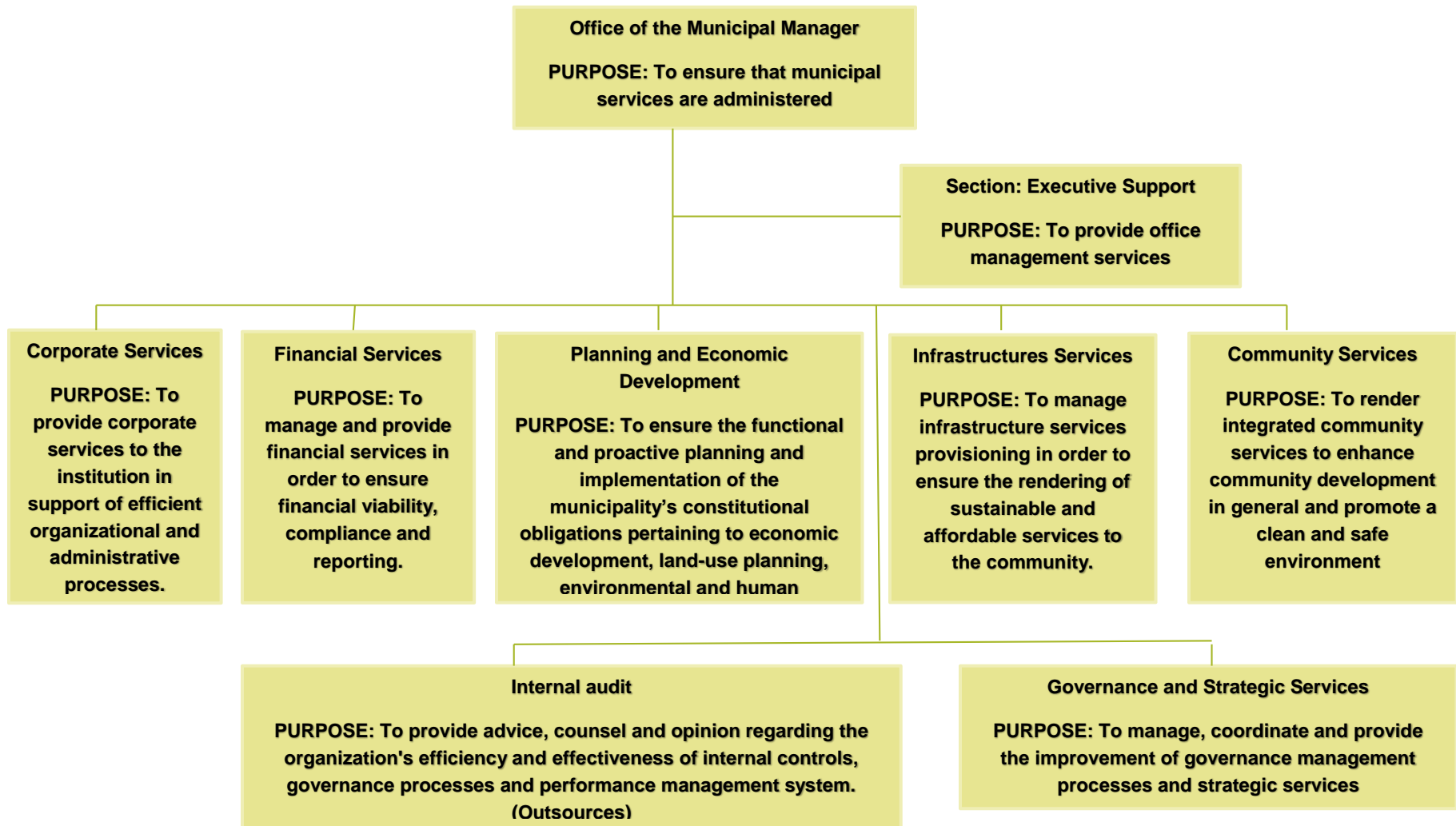
Table 4.17: Functional Disciplines

Plan & Economic Development	Community Services	Infrastructure Services	Financial Services	Corporate Services	Government & Strategic Services
Town planning, Spatial Development, Human Settlement, Land-Use Planning, Rezoning, Subdivisions, Building Control, Coastal Management, Environment Management, Valuations, Property, Administration, Contract, Outdoor Advertising, Urban Renewal, LED, Rural Development	Cleansing Services, Environmental Health, Public Safety, Fire & Rescue Services, Library Services, Sport Development, Parks and Recreation, Law Enforcement, Facilities & Amenities, Traffic Management, Solid Waste Management, Sports Festival, Youth Development, Social Services	Roads & Streets, Storm Water, Electricity Distribution, Street Lighting, Water Purification, Water Distribution, Telemetry Services, Pump Stations, Fleet Management, Sewerage Purification, Mechanical Services, Desalination Plant, Bore Holes and Dams Electrification of New, Houses Renewable Energy	Budget and Treasury, Credit Control, Debt Collection, Loans, Expenditure, Income, Expenditure, Asset Management, Investments, Supply Chain Management, Cash Flow Management, Internal Audit, Audit Committee	Administration, Legal Services, Individual Employee, Performance Telephone Services, Call Centre, Cleaning & Gardening Security Services, HR Administration, Employment Equity Skills Development, Council Support, Employee Safety, Tourism Development, Dias Festival	Marketing Media Relations, Publications, SCM Bid Evaluation, Annual Report, Municipal Newsletter, Corporate Promotions IDP Planning Performance Management Risk Management Ward Committees Public Participation Programme
The Municipal Manger is overall responsible for the effective rendering of internal audit services					

4.6.6. Organizational Macro-Structure

The revised structure will proposed for this IUDP.

Figure 4.13: Flow Chat about Organization Macro-Structure



4.7. SWOT Analysis

Municipalities operate in an ever-changing environment which poses unique challenges that have an impact on the day to day running of a municipality. The Council and Administration of the Municipality have a clear understanding of the negative and positive impact that the external environment has on the Municipality’s capacity to deliver and maintain service standards. The SWOT analysis intends to give a brief overview of the municipal environment. The Municipality through the implementation will capitalize on its strengths, compensate for its weaknesses, exploit opportunities and will strive to contain or reverse its threats.

Table 4.18: Municipality SWOT

	Strength	Weakness	Opportunities	Threats
Physical Infrastructures	<ul style="list-style-type: none"> • Close proximity to National Road • Moderate climate and good tourism potential • Good service standards, infrastructure, sport facilities • Good medical facilities and good schools • Municipal-funded cleaning project / initiative • Cannel for the irrigation portion • Agro based industry 	<ul style="list-style-type: none"> • Earthen and gravel roads • Roads are not in good conditions • No drainage network • No storm water drainage network • Frequent sewerage dumped / blockages • Ageing electricity infrastructure • Lack of available and suitable land for low cost housing • Growing backyard dwellers and informal settlements • Limited public transport options • Lack in landfill site 	<ul style="list-style-type: none"> • Many LED development opportunities • Upgrade Point area and lighthouse as tourism icon • Improve public transport • Integrated landfill-site development with waste • Revitalizing sport facilities to be multipurpose driven • Develop one major multipurpose sport stadium • Road and drain related projects • Water supply projects 	<ul style="list-style-type: none"> • Increasing Government Grant Dependency • Immigration from other provinces • Residential areas settled in low flood line areas
Social	<ul style="list-style-type: none"> • Corporate social responsibility investments • Stable political environment and good governance • Functional Ward Committee System • Established annual festivals and events 	<ul style="list-style-type: none"> • Growing backyard dwellers and informal settlements • Limited access to health facilities & services in rural areas • Prevailing social ills and increasing school drop outs 	<ul style="list-style-type: none"> • Culture / Fish Farming • Poultry Value Chain Project • Expanding of Community Work Programme • Community broadband (Wi-Fi) enhance and expand • Revitalizing sport facilities to be multipurpose driven • Develop one major multipurpose sport stadium • Adopt and implement safety plan with focus on community policing and neighborhood watches 	<ul style="list-style-type: none"> • Increase in crime and limited capacity of SAPS • HIV/AIDS pandemic • Drug and human trafficking • Climate change, droughts, veld-fires • Increasing population vs ability to pay for services • Decline of Central Business District • Immigration from other provinces • Illegal dumping of refuse and biological substances • Illegal and violent public protests (vandalism of property)

Integrated Urban Development Plan

	Strength	Weakness	Opportunities	Threats
Economic	<ul style="list-style-type: none"> • Corporate social responsibility investments • Moderate climate and good tourism potential • Good services standards, infrastructure, sport facilities • Good public participation and stakeholder track record • Community work program • Established annual festivals and events • Agro based industry 	<ul style="list-style-type: none"> • Lack of central Business District with limited parking • Lack of available and suitable land for low cost housing • Far from major market • Limited access to health facilities & services • Lack in solid waste management • Limited sports and recreational facilities • Lack in greenery land 	<ul style="list-style-type: none"> • Culture / Fish Farming • Poultry Value Chain Project • Revitalizing sport facilities to be multipurpose driven • Develop one major multipurpose sport stadium • Adopt and implement safety plan with focus on community policing and neighborhood watches 	<ul style="list-style-type: none"> • Electricity price increases • Escalating unemployment and poverty • Climate change, droughts, veld-fires • Increasing population vs ability to pay for services • Decline of Central Business District • Immigration from other provinces • Illegal dumping of refuse and biological substances • Illegal occupation of municipal land (Squatting)
Environment	<ul style="list-style-type: none"> • Relatively low crime rate • Moderate climate and good tourism potential • Stable political environment and good governance • Good public participation and stakeholder • Agro based industry 	<ul style="list-style-type: none"> • Lack in social awareness about the climate change and flooding • Lack in management of solid waste • Lack in sanitation • Lack in health and hygiene awareness • Lack in use of road, drain, sewerage and water supply • Lack in greenery area • Limited services through Bio-engineering 	<ul style="list-style-type: none"> • Exploit township tourism potential • minimization and waste-to-energy initiatives • Revitalizing sport facilities to be multipurpose driven • Develop one major multipurpose sport stadium • Adopt and implement safety plan with focus on community policing and neighborhood watches 	<ul style="list-style-type: none"> • Electricity price increases • Escalating unemployment and poverty • Climate change, droughts, veld-fires • Increasing population vs ability to pay for services • Decline of Central Business District • Immigration from other provinces • Illegal dumping of refuse and biological substances • Illegal and violent public protests (vandalism of property)
Agriculture & Livestock	<ul style="list-style-type: none"> • Close proximity to national road • Functional service center • Middle income housing delivery • Established annual festivals and events • Agro based industry 	<ul style="list-style-type: none"> • Lack of technology of hydrology for the agricultures • No any master plan about the implementation of storm water drainage for the agriculture • Lack in seasonal agriculture • Lack in small scale livestock industries for earning money 	<ul style="list-style-type: none"> • Agriculture market center • Cold Store for Agriculture production • 	<ul style="list-style-type: none"> • Electricity price increases • Escalating unemployment and poverty • Climate change, droughts, veld-fires • Increasing population vs ability to pay for services • Decline of Central Business District • Immigration from other provinces • Illegal dumping of refuse and biological substances • Illegal occupation of municipal land (Squatting)

Integrated Urban Development Plan

	Strength	Weakness	Opportunities	Threats
Natural Resources	<ul style="list-style-type: none"> • Good for the drainage network • Rivers and natural drainage • Agro based industry 	<ul style="list-style-type: none"> • Limited river and natural drainage • Limited supplementary infrastructures for the rivers and unmanaged natural drainage network 	<ul style="list-style-type: none"> • Develop one major multipurpose sport stadium 	<ul style="list-style-type: none"> • Electricity price increases • Escalating unemployment and poverty • Climate change, droughts, veld-fires • Increasing population vs ability to pay for services • Decline of Central Business District • Immigration from other provinces • Illegal dumping of refuse and biological substances • Illegal occupation of municipal land (Squatting)
Human Resources	<ul style="list-style-type: none"> • Good participation and stakeholders • Functional ward labor • Community work program (implemented by municipality for development of human resources) • Agro based industry 	<ul style="list-style-type: none"> • Limited labor • Limited money earning center • Active in agriculture activities so, lack in other activities of the civil works • Lack in employment services and employee too 	<ul style="list-style-type: none"> • Capitalizing on the EPWP job creation opportunities • Revitalizing sport facilities to be multipurpose driven • Develop one major multipurpose sport stadium • Adopt and implement safety plan with focus on community policing and neighborhood watches • 	<ul style="list-style-type: none"> • Escalating unemployment and poverty • Climate change, droughts, veld-fires • Increasing population vs ability to pay for services • Decline of Central Business District • Immigration from other provinces • Illegal dumping of refuse and biological substances • Illegal and violent public protests (vandalism of property)
Tourism	<ul style="list-style-type: none"> • Moderate climate and good tourism potential • Local tourism though temple 	<ul style="list-style-type: none"> • Lack in museums • Lack in Temple / masjid development as per culture and caste • Lack in tourism transport network within the municipality • Limited hotel & Restaurant including lodge • Limited cultural activities held in ward or municipality level 	<ul style="list-style-type: none"> • Exploit township tourism potential • Develop one major multipurpose sport stadium • Lack in Museum 	<ul style="list-style-type: none"> • Electricity price increases • Escalating unemployment and poverty • Climate change, droughts, veld-fires • Increasing population vs ability to pay for services • Decline of Central Business District • Immigration from other provinces • Illegal dumping of refuse and biological substances • Illegal and violent public protests (vandalism of property)

Integrated Urban Development Plan

	Strength	Weakness	Opportunities	Threats
Governance System	<ul style="list-style-type: none">• Stable political environment and good governance• Community broadband (WI-Fi)• Functional ward committee system• Established and functional municipal call center• Functional service center	<ul style="list-style-type: none">• Lack in information circulation about the good governance and capacity development awareness information	<ul style="list-style-type: none">• Capitalizing on the EPWP job creation opportunities•	<ul style="list-style-type: none">• Escalating unemployment and poverty• Decline of Central Business District

The annual review of Ward Development Plans should focus on the re-alignment and adjustment of service delivery and development priorities against the current socio-economic reality and environmental challenges or opportunities within the Ward. Ward Committees will therefore annually priorities their Ward Discretionary Budget Allocation to ensure maximum impact and meaningful change are realized in the life's of residents. Ward Committees should therefore annually monitor the progress on the implementation of Ward Development Plans and participate in the IUDP Review Process to ensure targeted investment and smooth implementation of priorities as identified.

Table 4.19: Ward Wise SWOT Analysis

	Strength	Weakness	Opportunities	Threats
Physical Infrastructures	Ward No.-1 to 11 Free Basic Services for Indigent HH Access to Municipal Services Municipal Pay Point River Health Post/Hospital/Clinic except ward no. 3,4,5 &9. Earthen Road Gravel Road Blacktop Road Irrigation Cannel Rivers in all wards Open space	Landfill Site Electricity Shortage Inadequate Housing Outside Toilets Sewerage System Irrigation System Multi hospital	Construction of Landfill site River Training construction Construction for Irrigation including river training Construction of road including road side drain and storm water drainage network Construction of footpath utilities Construction of water supply system including water treatment plant and reservoir storage Construction of Landfill site including collection and source segregation Construction or rehabilitation of electricity including power house Improving / increasing the telecom tower including landline distribution Improving cell phone tower Upgrading / Rehabilitation of schools & colleges infrastructures Construction of District Hospital Upgrading / Rehabilitation of existing health post supplementary infrastructures Upgrading of weekly market from needed infrastructures Construction of small scale park Construction of parking space Multimarket and multimarket including cinema hall Construction of Library, fire station, Public toilet, religious institutions, museum / art gallery, Security, Exhibition centers, city hall, sport complex, vegetable market and old age home infrastructures	Fire Hazards at shacks Sickness and Diseases due to Unhygienic Conditions Illegal Electricity Connections

	Strength	Weakness	Opportunities	Threats
Social	Ward No.-1 to 11 Ward Office Health Post only in Ward No.- 3,4,5 & 9 Hotel only in ward no.7 & 1 River Temple Church only in ward no. 1 Dharmashala onlt in ward no.11 School except in ward no. 3,4,5 &9 College: no college Government office only in ward no. 1,2,6,7 & 8 Municipal office in ward no. 1 Armed police force only in ward no. 6	Poverty and Grant Dependency Old Centre Library Clinic Facilities Sport Facilities Toilet Outside House Houses with Leaking Roofs No Blocking Arrangement	Youth Development Program Indoor Sport Centre and Play Parks HIV and AIDS Programs Multi-purpose Field Library with computer Lab Adult Learning Centre Petrol pump Centre Community Hall	Crime Increase School Drop Outs Drug and Alcohol Abuse Increased Vandalism Teenage Pregnancy
Economic	Ward No.-1 to 11 Health Post in Ward No.- 1,3 &8 Hotel only in ward no. 1&7 Factory in ward no 8,9 Bank in ward no. 1&7 and Government offices only in ward no.-1,2,6,7&8 Service oriented business in ward no.6&11 River Irrigation Cannel Mobile tower except ward no. 3,6 &8.	SMME Activity not Formalized Limited Dealer Trading Sites Limited Developed BEE HIVES No Support and Training Opportunities for SMME	Formalized SMME Entrepreneurs of Disadvantaged Areas Training Opportunities for SMME'S BEE HIVES Development Township Tourism Route SCM Tender Training for SMME Construction of Library, fire station, Public toilet, park, parking, multimarket including cinema, telecom tower, hospital, health post, religious institutions, museum / art gallery, Security, Exhibition centers, city hall, sport complex, vegetable market and old age home infrastructures	Unemployment Red-Tape with Municipal Policy on Informal Trading Products Confiscated by Law Enforcement Threatens SMME Sustainability
Environment	Ward No.-1 to 11 Health Post except Ward No.- 1,3 & 8 River Agro based industry (Poultry farm, animal husbandry , Dairy etc.)	Stray Animals / Livestock No Land For Small Farming Circumcision Sites not Formalized Steep Topography of Vacant Land Illegal Refuse Dumping Illegal Disposal of Death Animals Refuse Bag Provision	Food Gardening Recycling Project Formalization of Informal Settlements Land Allocation for Small Farming Development of urban physical infrastructures	Fire Pollution Informal Settlements Sickness / Drugs Illegal Invasion of Land Bad Living Condition

	Strength	Weakness	Opportunities	Threats
Agriculture & Livestock	<p>Ward No.-1 to 11 Hotel only in ward no. 1&7 River Also, (Strong brand/green business; Organic farming sounds positive; Young industry – new model; Commerce / jobs / wages; Scalable operation; Healthy food; Improve environmental condition; Year-round production, multiple species; Educational opportunities; Greater species diversification; Opportunities for business development; Preserve working waterfront; Provide ecosystem services; Good management; Visual perception of aquaculture operations; Scientific discovery; Lease revenues)</p>	<p>Urban agriculture and small-scale agriculture like kitchen garden and roof-top gardening, which can helpful in achieving food and nutrition security, were also neglected Smart farming and protected agriculture are some promising technology in agriculture which has not internalized Agro based industry is not promoting broadly Lack of thorough understanding of environmental impacts. Currently emphasize only high value products and thus less likely to contribute to world food needs</p>	<p>The growing interest of youth and private sector in agriculture creates a conducive environment for agricultural development. Urban agriculture and small-scale agriculture like kitchen garden and roof-top gardening, which can helpful in achieving food and nutrition security Smart farming and protected agriculture are some promising technology in agriculture which had to internalized Agro based industry (Fishery, Poultry farm, rice mill, Dairy etc.) Increases domestic production, decreased environmental costs Greater scope for decision-making for the aquaculture industry Aquaculture research platform, Specialized markets for products. Opportunity to culture new ecologically responsible species; Jobs, local buying; Social awareness; Eco-food tourism; Optimize nutrient loads; Increase healthy food supply; Control environment(marketability); Education pathway; Initiate partnerships; Improve technology, regulatory designs.</p>	<p>Potentially lower profitability in the short term compared with existing aquaculture systems. Not enough public funding (i.e. political will) for developing a network of demonstration and research sites to examine feasibility of Integrated aqua farming. Larger scale applications may have greater environmental impact and thus less social license. Fire Pollution Sickness / Drugs Illegal Invasion of Land Bad Living Condition Misinformation. Financing; Uncontrolled messages; Shoreline development; Lack of marine spatial planning; User conflicts over space; Competition in the market; Environmental degradation.</p>

	Strength	Weakness	Opportunities	Threats
Natural Resources	Ward No.-1 to 11 Rivers and natural drainage Crusher plant in ward no.10 Also, (Successful track record of developing new products – product innovation; Highly skilled workforce through successful training and learning programs; Good Returns on Capital Expenditure; Patents; Strong brand names; good reputation among customers)	There are few household parks within the area, is underserved; Many children do not have daily access to a vehicle that could take them to recreational opportunities outside; More weakness than strengths from a Park and Rec. point of view and Land fill pollutants; Lack of patent protection; high cost structure; lack of access to best natural resources	Better storm water management, restoration opportunity; Creating green infrastructure around including rain gardens; New housing developments could be required to provide parks; Good locations for new foot trails and bike paths; Good location for re-development with open space; Alignment with policies & strategies; Alignment with existing tools and methods; Increasing environmental awareness; Operationalization of sustainability; Demand for ecosystem management; Policy awareness; an unfulfilled customer need; arrival of new technologies; losing of regulations; removal of international trade barriers	Impaired water bodies; Addressing storm water impacts; Lack of public transit; Resistance to change environment practices; Insufficient funding; Lack of institutional capacity; misuse of environmental tools; Lack of awareness across general public; Environmental ethics viewpoints; Shifts in consumer tastes away from the firm's products; emergence of substitute products; new regulations; increased trade barriers
Human Resources	Ward No.-1 to 11 Hotel only in ward no. 1&7 (strategy and functionality, building a top-tier workforce, being an employer of choice)	Budget constraints, employee morale, high turnover.	Workforce growth, demand for products and services, translating to higher wages, growth for surrounding communities, longer tenure	Offering better working conditions, higher wages, more desirable benefits by others, cause difficulty recruiting best-qualified people
Tourism	Ward No.-1 to 11 Hotel only in ward no. 1&7 River in all wards Temple in all wards Church only in ward no. 1 Dharmashala only in wardno.11	Poverty and Grant Dependency No Old Centre No Library No Sport Facilities	Youth Development Program Indoor Sport Centre and Play Parks Library with computer Lab Adult Learning Centre Museum Religious institutions Museum / Art Gallery Old age home Exhibition Centers Sport complex Movie Hall	Crime Increase Drug and Alcohol Abuse Increased Vandalism
Governance System	Ward No.-1 to 11 Armed police in ward no.6 Ward Committee Members Sub-Committee's Members	No Street Lights No Neighborhood Watch	Improve Street Light Drug Rehabilitation Centre Enhance Police Capacity	Drug Dealers Crime

4.8. Demand Analysis of Infrastructures

The purpose of this Social Service Provision Strategy is to make meaningful recommendations about the types and the number of social facilities within the Municipality, should plan for in order for its residents to have adequate access to social services. It is important to note that this is a Guideline Document and the proposed recommendations must be read in context with what are proposed in the National Guidelines

Document for social facilities. For the purpose of this guideline document the Nepal standard norms (i.e. Urban planning norms and standards 2015) were used as the basis of the analysis. This

Guideline Document must therefore be interpreted in context of what is prescribed in the guideline (i.e. Building by law, Road standard, urban planning guideline, norms etc) and the different recommendations must be cross referenced with the applicable National, Provincial and Local Government/Departmental standards before being formally proposed/implemented. It is evident from this report, and from the findings contained. Through the analysis conducted, it is clear that municipality's residents have adequate access to the majority of social facilities located within the Municipality.

Table 4.20: Demand Analysis

Type s	Norms	Standards	Existing / Location	Discussion	Facilitat e	Recommendati on
Road	Sub arterial, Collector and Local Street (All or 90% of houses are within 2 km from motorable road)	ROW for Arterial, Sub arterial, Collector and Local is 30 m, 22 m, 14 m and 10 m respectively. Set-back for Arterial, Sub arterial, Collector and Local is 1 m. Foot-path for Arterial, Sub arterial, Collector and Local is 2 m. Cycle Track for Arterial, Sub arterial, Collector and Local is 2 m, 1.5 m, 1.5 m and 0 m.	Within the municipality, 66.96 Ha land covers for transportation in which 26.40 km is blacktop road for district road classification 119.54 km is earthen road for foot trail classification and 50.96 km is gravel road for local, urban, postal & village classification of urban road standard.	All access to the household, hospital, agriculture production to market, market centers etc. through the road access is not good transport network within the municipality. In present total road covers 66.96 Ha land	196.9 km road upgrading including pavement, drain, electricity, plantation, footpath etc.	To upgrading all blacktop road types to blacktop / rigid pavement standard. After the construction it complete all demand and by applying these norms and standard it covers 66.96Ha.
Water supply	Czuryard Connection/ Provision of Rainwater Harvesting Treatment plant (lab, dosing and guardhouse) with	Quantity: 60 - 80 lpcd Accessibility: 90% of household have tap within	At present, source of municipality id rivers, well and hand pump. Nearly 65.58% of the household are depend on tap/piped water. 21.34% & 26.21% of the people depend on spout water and uncoverd well/kuwa. 2.99% of the household	There is unsafe sources of water. At present total water demand is 10 MLD.	Construction of water supply network including treatment plant and overhead tank as per demand	As per national urban water supply and sanitation sector policy, 2009 and implemented through Nepal Water Supply Corporation, Nepal

	Storage : Reservoir (24hrs requirement)	50m 1 ha per site (treatment plant and storage) Store capacity: 25% of the total treatment capacity	depend on other sources of the water supply.			
Sanitation / Sewerage System Storm Water Drainage System	30% of the house hold is covered by public sewer system (pit latrine , septic tank etc) Sewage Pumping Station Treatment plant Provision of public latrines	Min diameter of trunk line: 200mm 0.01 ha – 0.02 ha per site 2.5 ha – 3.5 ha per site 1/3000 passerby at distance of 500m	At present there is not any sewerage system within the municipality including treatment plant. At present in every household, municipality ordered to construct minimum one toilet including septic tanks. At present 3433 household have toilet facility out of 5791 household	Due to topographically not much very, so, no need of such sewerage system. But municipality not planned the future problem about the sewerage waste for treat and dumped. Also, landfill site is not finalized by the municipality.	Public toilet Private toilet	Aware people to construct toilet by own sources. Public toilet should be constructed form municipality in every wards and government office. For the treatment plant, municipality merged in with landfill site of solid waste management or separately.

Integrated Solid waste management system	25% of solid waste is collected and properly disposed Collection Point	Communal Collection (1 collection point/container/roadside pickup point serves a radius of 200m)	At present, within the municipality, waste is generated from road side and managed not in proper system.	Household access to this service increasing faster than the growth in formal households. Thus, as per standard need of landfill site.	Waste generate , transfer station and sanitary landfill site	Implementation of Integrated solid waste management system including energy generated structures from the waste.
Electricity supply system	National Grid supply line Alternative energy (panels, battery capacity 100AH)	100% of the household is covered by electricity supply line Electric substation 33/11 KV : 0.07 ha per site Transmission Tower: 80 – 100 sq. m Distribution Tower: 20 – 25 sq. m 40 – 100 Watt Solar Home System	At present from National Grid supply line to 54.29% of the household	In future it meets 100% of supply line from the National Grid	No	

Tele - communication	House connection Community telephone booth	100 % coverage 1 telephone booth for 2 neighborhood (Standard booth)	At present from 37.86% of the population have communication facility with mobile and telephone	In future it meets 100% supply of mobile for communication within the municipality. Due to demand increase, the tower of the telecom going to decrease their range.	Increase the telecom tower	Concerned agencies were requested for increasing their tower as per demand and also increase in economy of the municipality though tax.
Educational Institution	Primary/basic level Higher Secondary Graduate/Post Graduate Vocational and Technical Schools	1 per 3000 population at a distance of 0.4 – 0.8 km - 0.2 ha per site 1 per 7500 population at a distance of 30min in public transportation – 0.65 ha per site 1 per 25,000 population at a distance of 45min in public transportation	At present, in total 35 number of community and Institutional schools are exist in which 1657 no. of student. From the municipality 677 student have non-formal education. Intermediate school student is 1651. Graduate & equiv. student is 368. Post Graduate equiv. & above student is 126. Condition of schools are not satisfied. The travel time to the schools and institution is within 60m.	As per existing data, schools should not be newly form but upgrading the existing schools through their infrastructures.	Upgrading of schools through infrastructure and quality education	Upgrading and awareness program about the quality teachers, quality management and quality infrastructures; which helps for good environment

Health Institution	Sub Health Post Health Post	<p>1 per 1000 population (0.04 ha per site)</p> <p>1 per 5000 population (0.15 per site)</p>	<p>In terms of access to health facilities, the Nepal health standards indicate that there is minimum adequate number of health clinics and health post without big hospital for the people that reside within the municipality. Existing health are presented in map and located in all wards except ward no. 3,4,5 & 9</p>	<p>There was undertaken to determine access to Health post and one to determine access to private clinic (including medical shop). The results indicated that the majority of people that reside within the town are located within acceptable walking distance to a clinic is more. As per standard threshold is well over the current population statistics for district level. The abovementioned standards does not consider the number of privately run medical facilities since these facilities are not accessible to the majority of middle to lower income population groups. It does however provide quality healthcare to a large majority of people that fall in the higher income groups.</p>	Need to District level Hospital	<p>Additional capacity / facilities should be planned for in ward no. 5. There is one health post facilities. According to the municipality, such a facility offers services intended to promote early childhood developments; and are provided by a person, other than a child's parents or caregiver, on a regular basis to children up to school -going age. This area will be subject to high density future urban growth in the next 5 – 15 years and will be subject to high population growth and high density residential areas, partly due to the Government funded housing programs, as well as the in migration of people from rural towns and surrounding provinces. It is evident that from some portions of the</p>
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						ward 5 area, residents must walk more than 60 minutes the closest health clinic facility.
Open Space: Parks Parada Ground (Tundikhel)	5% of total sub city area Neighborhood Park (with play equipment) Local Park	1 @ 800 population (0.4 ha per site) 1 @ 10000 population (1 ha per site)	Within the municipality, 67.77 Ha of the land were covered for open spaces in which these lands are private land and belongs to local people and government.	Within the settlement area about 45% of the land is occurred by government and on these land many social activities are going on (as weekly market, temple activities, religion activities etc). But in the case of private lands, useful for the purpose of drying crops and agriculture activities. Also, in future, land is developed individually for the purpose of settlement, agriculture, transportation and forest as a need.	Upgrading of market place including infrastructure Small scale park Religious structures Municipality gate Small parking including market Agriculture market Exhibition hall Government lodge Small scale park in every ward as per local religions in surrounding of temples / church / masjid Library	To implement different structures from the municipality for increasing economy of the municipality: 2 parking place in every ward near to weekly / daily vegetable market Agriculture market including cold store Vegetable market including cold stor Exhibition hall Government lodge Small scale park in every ward as per local religions in surrounding of temples / church / masjid Library
Library	City level	1 per 7500 population (0.5 ha per site)	no	In the education sector, student is increasing day by day. Increasing students are depend on newly world but they unable to know the history of Nepal or local level. In Nepal,	Small scale library under the municipality	In every ward office library is recommended for the implemented by occurring open spaces.

				in central level library is occurred and infrastructures are not in good conditions		
Fire Station	1 (3 to 4 km radius)	1 fire engine @ 25,000 – 75,000 population 0.5 ha per sub city	As per increase in temperature, fire risk is found within the municipality and damages of Crops, decrease in livestock and increase in many types of disease	The climate change trend analysis report (1971-2014), prepared by the Department of Hydrology and Meteorology (DHM) of Nepal, shows that almost all wards of the municipality experienced increased annual precipitation in winter, pre-monsoon and monsoon seasons with significant variations in monsoon precipitation. In all wards of municipality, there is positive trend indicating a rise in minimum temperatures in all seasons but there is decrease in maximum temperatures during winter.	Fire station including fire vehicle	At list 4 station for the fire station including fire vehicle.
Religious Institutions	Incineration / Cremation areas Cemetery / Burial	1	No	No	Incineration	The sharing and clustering of religious facilities with other types of

	Ground					social activities should be investigated and is strongly recommended including Worship centers.
Art Gallery	City Level	1/1	There are many historical places and cultures that attracts visitors	Within the municipality, religions activities for the people want to protect their community and broad to national level. For the art, naturally positive	Art Gallery	In ward no. 11, art gallery would be implemented.
Old age home, orphanage, center for differently able people	City and community level	1 per 20000 population	Since there is no old age home, orphanage center for the needed people, it is necessary.	The dependency ratio of the municipality is relatively high, so the old age home, orphanage home is necessary	At least 1 old age and orphanage home should be provided.	Facilities for the aged is an important social facility to any community, these facilities usually incorporate frail care and nursing facilities. So, recommended for implement these infrastructures.
Security	Police Post	1 per 10,000 population (0.1 ha per site)		There is future need for police stations according to the Nepal standards and the growth scenarios contained in the Town Profiler Tool. The police station in Municipality is leased from the Municipality and the building is not properly	7 police post and 1 police headquarters	It is recommended that the coverage the smaller towns receive should be improved, it is clear from the IUDP that safety and security in the smaller/rural towns is an issue that requires attention for the newly

				designed for a police station. A new site has however been identified.		police post and improved police station.
Exhibition centers	City Level	1 per 50,000 population	no	No	No	No
Hall	Multipurpose	1 (0.2 ha per site)	No	According to the Nepal Guidelines and the growth projections within the municipality Town Profiler Tool, the town will require halls.	City hall	It is recommended that the current facilities be optimally utilized for a FACILITIES FUTURE NEED variety of functions. The maintenance and management of these facilities are important and the responsible departments should ensure that these functions are fulfilled.
Sport complex	City level (football ground, volley ball, swimming pool etc.) District Sports Centre	1 per 50000 population 1 per 100000 population	No	According to Nepal standard rules and guideline and the growth population of the municipality, the municipality required sport complex.	Sport complex	It is recommended that the municipality will identified the proper place and implement after preparation of master plan and its feasibility study.

Movie Hall	City and local level	5 seats per 1000 population	No	According to Nepal standard rules and guideline and the growth population of the municipality, the municipality required movie hall including multipurpose market centers.	Movie Hall	It is recommended that the municipality will identified the proper place in local market area and implement after preparation of master plan and its feasibility study.
Vegetable Market	1 vegetable/ meat market with cold storage facility and other commodities	0.5 ha per site)	No	According to Nepal standard rules and guideline and the growth population & vegetable production within municipality, the municipality required vegetable market centers.	Vegetable Market	It is recommended that the municipality will identified the proper place in vegetable production area and develop and implement after preparation of master plan and its feasibility study with neighborhood level.
Parking Space	Two/ Three/ Four Wheeler (Bus park/ Truck park)	1 parking lot (0.8 ha per site)	No	According to Nepal standard rules and guideline and the growth population within municipality, the municipality required parking space but in municipality sufficient number of parking space is not available in single place.	Parking space	It is recommended that the municipality will identified the proper place within the municipality for the parking space and implement.
Transportation	Intra City Bus Terminal	1 parking lot for 100 buses and	No	Due to increasing of	After 15 years transpor	It is recommended that the

Syst em	(Linkage with other cities) Intra city Bus Terminal (within the city)	100 trucks 1 parking lot for 100 buses		population and urban infrastructure, transportation within the city area of the municipality people is also increasing due to health problem, personal problem, hobby, etc. At present condition municipality using own transport, public e-rickshaw, tractor, buses etc.	tation system will be up to 65% and need to in operatio nal at that time	municipality will identified the proper place within the municipality for the city bus terminal & Intra city bus terminal including buses with full accessories and implement.
Airp ort	National Airport	National Airport	Not	Air port near to 40 km	1	It is recommended that the transportation system up to the airport will be upgrading.

4.9. Potential Lead Sector Identification

To ensure sustainable growth and development is realized in municipality, it is vital that all strategic planning processes are aligned and fully integrated, so that development does not take place in fragmented manner. It is therefore required that the IUDP considers all relevant sector plans. These plans identify and priorities specific sector inputs that strengthen and augments the IUDP since it is aligned to the overarching strategic development agenda of the Municipality. The Municipality made a concerted effort to prepare these sector plans to strengthen the alignment with national and provincial priorities and to give effect to achieving its IUDP Objectives.

This topic gives a summary of these sector plans, its status and what it contributes towards the achieving of the Municipal potential lead sector objectives as summarized.

Figure 4.14: Flow chart about Potential Lead Sector Identification



5. Development Framework for Municipality

5.1. Vision of the Municipality

Visioning of the Municipality is a broad concept. It is the concept or the plan to be implemented to achieve desired goals in a long term which drives the development activities in desired future. It is an inspirational description of what the plan would like to achieve or accomplish in the long-term. It is intended to serve as a clear guide for choosing current and future courses of action and therefore, vision guides city planning to get its direction. So, vision statement can be the basis for sectoral plan formulation and implementation. It directs action plan to accomplish the intended objectives and goals.

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Table 5.1: Vision of Municipality

Vision:	Values:
Struggle to be a trend-setting, dynamic Municipality delivering quality services responsive to the demands and challenges of the community and constitutional mandate, in which all stakeholders can participate in harmony and dignity.	
Mission:	
⇒ To render cost-effective and sustainable services to the entire community with diligence and empathy.	Work Pride
⇒ To create mutual trust and understanding between the municipality and the community.	Accountability
⇒ To have a motivated and representative municipal workforce with high ethical standards, which is empowered to render optimal services to the community.	Loyalty
⇒ The community is our inspiration and our workforce is our strength in the mission for community development and service delivery.	Integrity
	Service Excellence

The slogan of the Municipality was decided to be like:

"Narayan Nagarpalika ko Sambridhi ko Adhar

Krisi Paryatan ra Purbhadhar"

Narayan Municipality has set its vision with the clear view of the prosperity of the Municipality through Agriculture and Tourism. The vision focused on the utilization of the irrigable land and replacing the traditional practice with more modern and technologically advanced equipment in the field of Agriculture. Furthermore, municipality also aims in the promotion of natural beauty of the place with the sole reason of attracting national and international tourists and develop Narayan as the hub for tourism.

5.2. Goals

The goal is to develop Narayan Municipality as a hub for Agriculture and Tourism through the development of the physical infrastructures within the Municipality.

5.3. Objectives

The objective is to prepare integrated sectoral development plan with focus on strategic projects which include the following objectives;

- a. To develop physical infrastructure in coordination with concerned stakeholders in the Municipality;
- b. To promote tourism and develop tourism infrastructure in the city for economic development of the local people;
- c. To motivate local farmers in the commercialization of Agriculture.
- d. To establish municipality as equitable, viable and sustainable city providing basic social services and good governance to its people;
- e. To implement building bye-laws and planning norms within the city for safe and livable city;
- f. To prepare city level strategic plan for overall development of the municipality to develop urban infrastructure.

5.4. Strategies

1. To ensure efficient and affordable basic services to all residents & migrants in new towns.
2. To strengthen the economy of Municipality for sustainable growth and job creation.
3. To develop a municipal governance system that complies with international best practice.
4. Create an institution that can align planning with implementation of effective and efficient service delivery; and
5. To be a financially viable institution geared to providing affordable and sustainable services to the residents of the Municipality

5.5. Plans for Implementing Development Framework

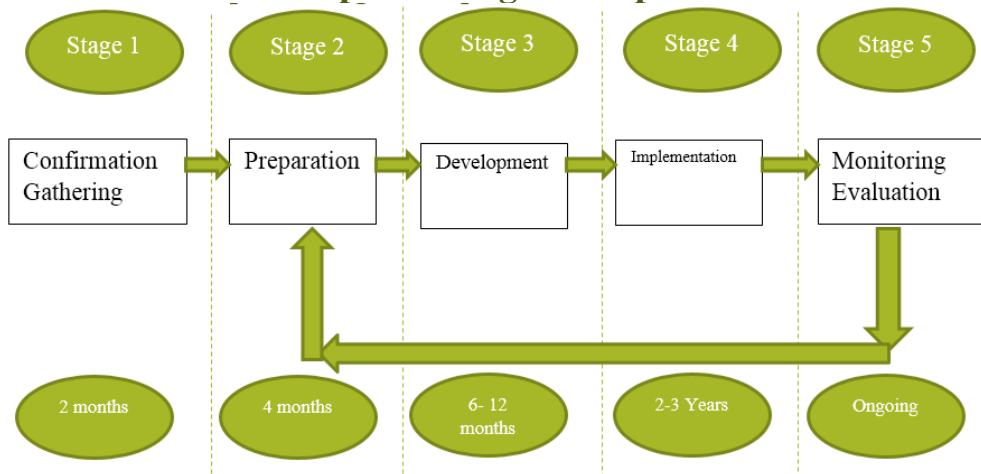


Figure 5.1: Implementing Development Framework

However, above Diagram illustrates an indicative timeframe, generally expressed in minimum terms and assuming that at least some pre-conditions have been met. For example, the Preparation Stage is likely to take a minimum of four months, but assumes that appropriate resources (both human and financial) are available for the range of tasks necessary to complete this stage, and that the approach taken will be professional and thorough. Above Diagram, .Indicative time frame for the development and implementation process. Any planning that

occurs needs to take account of local circumstances and should assure that time frames are practical and achievable in the local context.

5.6. DED Project

The major programs and activities to be included for Integrated Urban Development Plan of municipality were listed during Vision setting and planning workshop. The workshop through series of discussion among the Municipal Council, sectorial sub committees, local political party representatives, social workers, intellectuals and planning team made an agreement for long list (is presented in Annex) and short list and presented below.

Short List

- ✓ Road construction
- ✓ Development of tourist area and conservation of temples
- ✓ Construction of irrigation canal
- ✓ Construction of ward office building

From the above short list, we recommended following projects as per vision and presently need of municipality for the economic growth.

1. DED1:- Upgradation of road-“Dailekh-Mahabu-Jumla Road”(13.23 Km approx.)
2. Tourism development master plan at Pallo Kalimati(ward no.3)

The Detailed Project Report (DPR) of the recommended Detailed Engineering Design (DED) attached here in different volume.

6. Sectoral Development Plan

6.1. Introduction

Strategic Planning is central to long-term sustainability of a municipality. The implementation of the IUDP Process Plan has presented the opportunity to the Municipality to assess the current state of service delivery in preparation for the planning and strategy determination for the current Fifteen year IUDP. The Municipal Council acknowledges its Constitutional responsibility and understands the importance that strong political leadership, sound administration and financial management plays in the effective functioning of a municipality. It has therefore reconfirmed its vision, mission and values as outlined under Chapter 5 of this document. This Chapter outlines the strategic thrust of the Municipality aligned to key catalytic projects and programmes envisioned for implementation throughout the lifespan of this IUDP.

6.2. Physical Development Plan

Physical planning is a design exercise that uses the land use plan as a framework to propose the optimal physical infrastructure for a settlement or area, including infrastructure for public services, transport, economic activities, recreation and environmental protection. Physical Planning is the spatial expression of the desired form of social and economic development. Its purpose is to create and maintain a framework for a more balanced spatial development countrywide, through a rational arrangement of land use protection of the environment and alignment of the land uses with long-term government objectives for sustainable economic and social development. The physical planning of any municipality for integrated urban development is based in following principles:

1. Sustainability:
 - Promote sustainable practices in development
 - Promote sustainable practices in operations.
 - Encourage broad-based sustainability initiative
2. Landuse patterns:
 - Respect the natural environment and preserve open space as much as possible.
 - Integrate the natural and built environment.
 - Encourage sustainability and efficiency in building layouts.
3. Natural and cultural Resources:
 - Respect major landscape vegetation features.
 - Maintain continuity of wildlife habitats.
 - Design exterior landscaping to be compatible with surrounding native plant communities
 - Maintain natural surface drainage flows as much as possible
 - Protect historic and prehistoric cultural resources
4. Access and transportation:
 - Ease of access
 - Parking facilities
 - Transportation facilities (buses, metros, etc.)
5. Life style
 - Enrich the experience for all inhabitants
 - Offer adequate housing opportunities for all its inhabitants
 - Create an array of facilities that enrich the quality of city

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

6.2.1. Land Use Zoning

6.2.1.1. Existing Land Use

We need to analyze the existing land use pattern and settlement pattern of the area properly and determine the best way out to develop the Integrated Urban system and for scientific use of land in order to get the complete benefit of existing resource and nature and provide optimum facilities to all the individuals.

The existing landuse pattern of Narayan Municipality is represented below.

Table 6.1: Existing Land Use

Description		Wards											Total Area (ha)
		1	2	3	4	5	6	7	8	9	10	11	
Built Up	Area (ha)	25.05	15.41	7.53	15.23	8.64	17.74	12.83	10.45	13.04	6.01	12.58	144.49
	Percentage %	3.6%	1.8%	1.2%	0.8%	1.2%	4.9%	1.7%	2.3%	1.5%	0.5%	0.5%	1.31%
Cultivation	Area (ha)	292.60	511.29	339.51	850.57	579.91	269.86	553.73	259.19	514.95	440.80	846.41	5458.77
	Percentage %	42.2%	58.6%	52.2%	45.7%	77.6%	75.1%	73.0%	58.0%	59.2%	33.4%	34.9%	49.61%
Forest	Area (ha)	348.55	327.94	293.56	953.94	135.35	51.07	151.43	160.66	280.60	857.76	151.413	5074.99
	Percentage %	50.3%	37.6%	45.2%	51.3%	18.1%	14.2%	20.0%	36.0%	32.2%	65.0%	62.4%	46.12%
Open Spaces	Area (ha)	0.31	3.36		8.35		4.31	17.40	0.68	18.46		14.92	67.77
	Percentage %	0.0%	0.4%	0.0%	0.4%	0.0%	1.2%	2.3%	0.2%	2.1%	0.0%	0.6%	0.62%

Recreational	Area (ha)						11.39		1.30				12.685
	Percentage	0.0%	0.0%	0.0%	0.0%	0.0%	3.2%	0.0%	0.3%	0.0%	0.0%	0.0%	0.12%
Shrubs/Bushes	Area (ha)		0.49	3.82	5.14	6.05				4.765	2.185		22.435
	Percentage	0.0%	0.1%	0.6%	0.3%	0.8%	0.0%	0.0%	0.0%	0.5%	0.2%	0.0%	0.20%
Transportation	Area (ha)	5.27	9.61	3.65	9.52	4.9	4.1	3.16	4.8	8.86	1.9	11.19	66.96
	Percentage	0.8%	1.1%	0.6%	0.5%	0.7%	1.1%	0.4%	1.1%	1.0%	0.1%	0.5%	0.61%
Water Body	Area (ha)	21.67	5.14	2.00	18.17	12.03	0.89	20.19	9.46	29.43	10.99	25.68	155.60
	Percentage	3.1%	0.6%	0.3%	1.0%	1.6%	0.2%	2.7%	2.1%	3.4%	0.8%	1.1%	1.41%
Total Area(Sq. m)	Area (ha)	693.44	873.23	650.06	186.90	746.87	359.35	758.73	446.53	870.09	1319.63	2424.90	11003.70
	Percentage	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

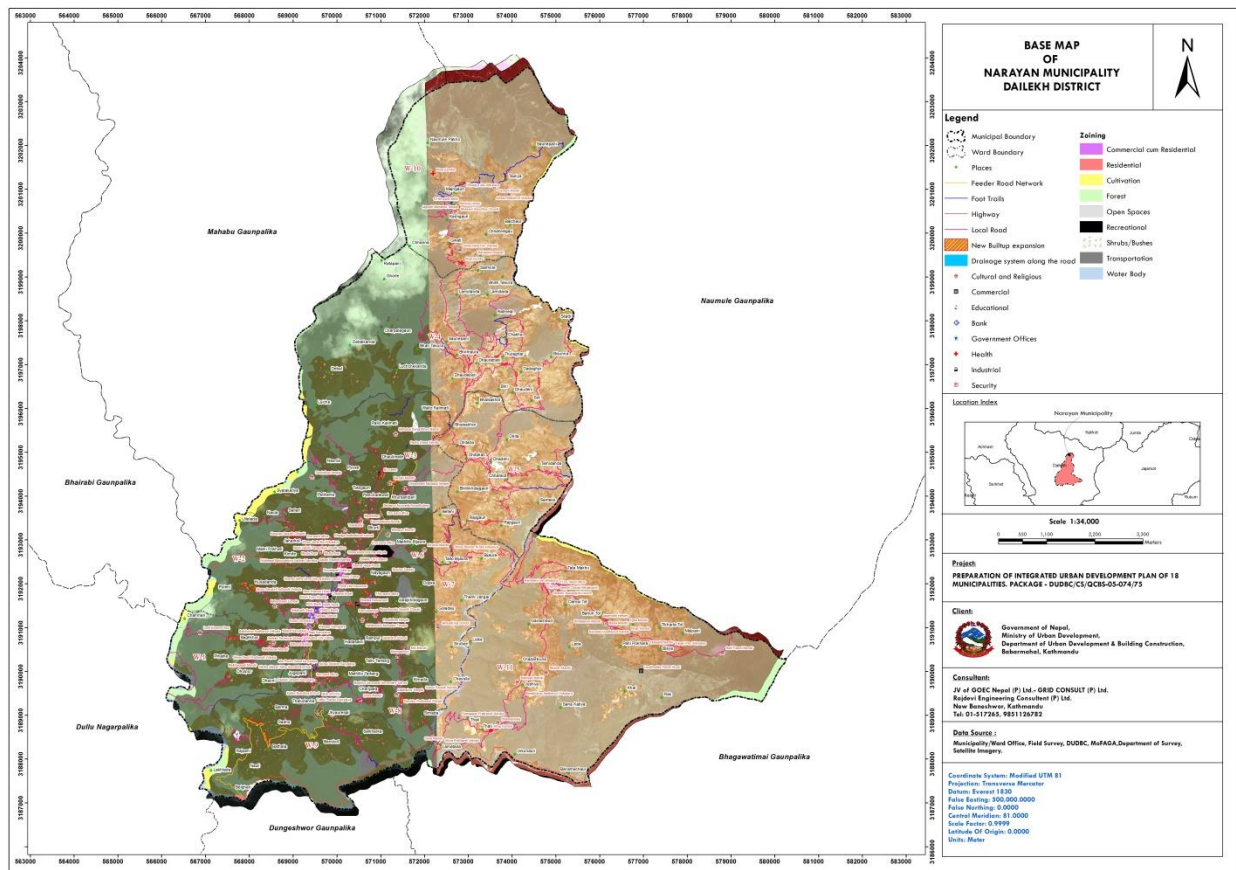


FIGURE 6.1: EXISTING LAND USE MAP

6.2.1.2. Land Suitability Analysis for Land Use Zoning

National Land Use Policy 2069 has categorized the land use/zone in its policy paper broadly as six major types of land use. They are

- a. Agriculture
- b. Residential
- c. Industrial
- d. Forest
- e. Public
- f. Others

However, there are many other sub-classes within a broad class of land use zoning practice in the urban planning context. To make scientific land use zoning of various towns and market center study, land suitability analysis is essential.

Land suitability refers to the ability of a particular type of land to support a specific use. The process of land suitability classification involves; evaluation and grouping of particular land areas based on their suitability for a defined use. Land use suitability analysis aims at identifying the most appropriate spatial pattern for future land uses according to specific requirements, preferences, or predictors of some activity.

Applications of suitability analysis can be found in many fields, such as site selection for cropland, agriculture suitability, graze suitability, forestry suitability (natural resource management field), flooding control, sustainable development (environment field), suitability for urban expansion, site selection for specific land use etcetera. Land suitability can be used in planning process to finalize most appropriate land for particular land use or activity. Land suitability analysis for land use zoning is as shown in the following table;

Table 6.2: Land Suitability Analysis For Land Use Zoning

Factors	Indicators
Future urban development	<ul style="list-style-type: none"> ➤ Existing land use/cover ➤ Economic activities ➤ Accessibility ➤ Proximity of major road ➤ Historical and cultural value ➤ Settlement pattern
Physical Features	<ul style="list-style-type: none"> ➤ Topography ➤ Slope ➤ Watershed and system ➤ Elevation ➤ Agro-climatic zone ➤ Landscape heterogeneity
Sustainability	<ul style="list-style-type: none"> ➤ Hazard prone area

	<ul style="list-style-type: none"> ➤ Eco-sensitive zone ➤ Ecological relation ➤ Coastal/River bank regulation area
Environment	<ul style="list-style-type: none"> ➤ Barren land ➤ Forest cover ➤ Pollution ➤ Landscape quality
Compatibility	<ul style="list-style-type: none"> ➤ Compatibility with existing land use ➤ Distance from residence ➤ Distance from industry ➤ Distance from forest ➤ Distance from environmental friendly industry ➤ Distance from environmental sensitive area ➤ Distance from nearest major roads ➤ Distance from infrastructure facilities

6.2.1.3. Zoning

Land use zoning is a systematic way of managing the nature and intensity of land use in a specific area. Different types of land use zones are:

Developable Zone: The areas under existing development and those earmarked for future development is termed as ‘U Zone’. This zone is envisaged at three levels U-1, U-2 and U-3.

- ‘U-1’ Existing Urban/built-up Zone.
- ‘U-2’ Potential for Urban expansion Zone
- ‘U-3’ New Area Zone

Industrial Zone: The areas earmarked for industrial use – service and light industry, extensive and heavy industry, special industrial zone or development of SIR, IT zones etc. is termed as ‘I Zone’.

Transport and Communication Zone: The areas earmarked for the transport and communication use shall be termed as ‘T Zone’.

Primary Activity Zone: The areas earmarked for primary activity use shall be termed as ‘PA Zone’. This zone can be sub divided into Agriculture, Forest, Poultry and dairy farming, Brick kiln and extractive areas etc.

Open Area Zone: The areas earmarked for leaving open shall be termed as ‘O Zone’. This zone can be subdivided into Recreation Area, peri Urban Area.

Protective and Eco-Sensitive Zone: The areas earmarked as Protective and Eco Sensitive Areas can be termed as ‘E Zone’. This zone may comprise of Water bodies, Special recreation zone/protective areas such as sanctuaries/ reserve forests, Forest Zone, Coastal/Bank Zone, Undevelopable use zone. Undevelopable use zone can be identified as Earthquake/ flood prone,

and environmentally hazardous area, areas adjacent to fault lines, areas with slope higher than 45°, areas adjacent to major drainage lines and other areas identified by State Disaster Management Authority.

Special Area Zone: In addition to the above listed zones, zones can also be specified keeping in view the special characteristic of such areas/pockets. Such areas shall be termed as ‘S Zone’. This zone may comprise of old built-up areas with architectural or historical importance : S-1, areas of scenic value: S-2 which need to be preserved without spoiling the character by putting up various kinds of structures, the area restricted for development by Government: S-3, or it may be area under other uses/ spot zones: S-4.

Land use zoning is the legal basis for all land use regulation is the police power of the city to protect the public health, safety, and welfare of its residents. The principle of land use zoning lies that the values it represents are spiritual as well as physical, aesthetic as well as monetary. It is within the power of the legislature to determine that the community should be beautiful as well as healthy, spacious as well as clean, well balanced as well as carefully patrolled. Justice Douglas, *Berman v. Parker* (1954)

Land use zoning has been prepared based on existing land use and trend of existing development activities seen and observed in the satellite image and further verified by the fieldwork. Then formal/informal discussion at the town level stakeholders was done to prepare land use zoning for different land use pattern. To prepare land use zoning map, core urban and rural area first identified and classified.

While classifying the land use zone, broad categories such as cultivation, forest, grassland, shrub land barren land, built-up, institutional, water body, sand and gravel etcetera have been done. Land use further sub-classified forest dense forest, grass, shrubs, scattered tree; water body as river, lakes, ponds, barren land, sand etc. Similarly, while sub-classifying to the built-up area it is further classified as residential, commercial, industrial, institutional etc. Existing land use zoning map and the proposed land use zoning map of delineated Municipality area of entire municipal is prepared in the ArcGIS 10.4.1 environment which is submitted in GIS based base map

While proposing land use zone, following specific land use zone has been proposed;

- Residential zone
- Residential cum commercial Zone
- Developing zone (expanding zone)
- Agricultural zone
- Institutional zone
- Industrial zone
- Recreational Zone
- Green zone
- Conservation zone
- Public Service Zone
- Risk Sensitive Zone

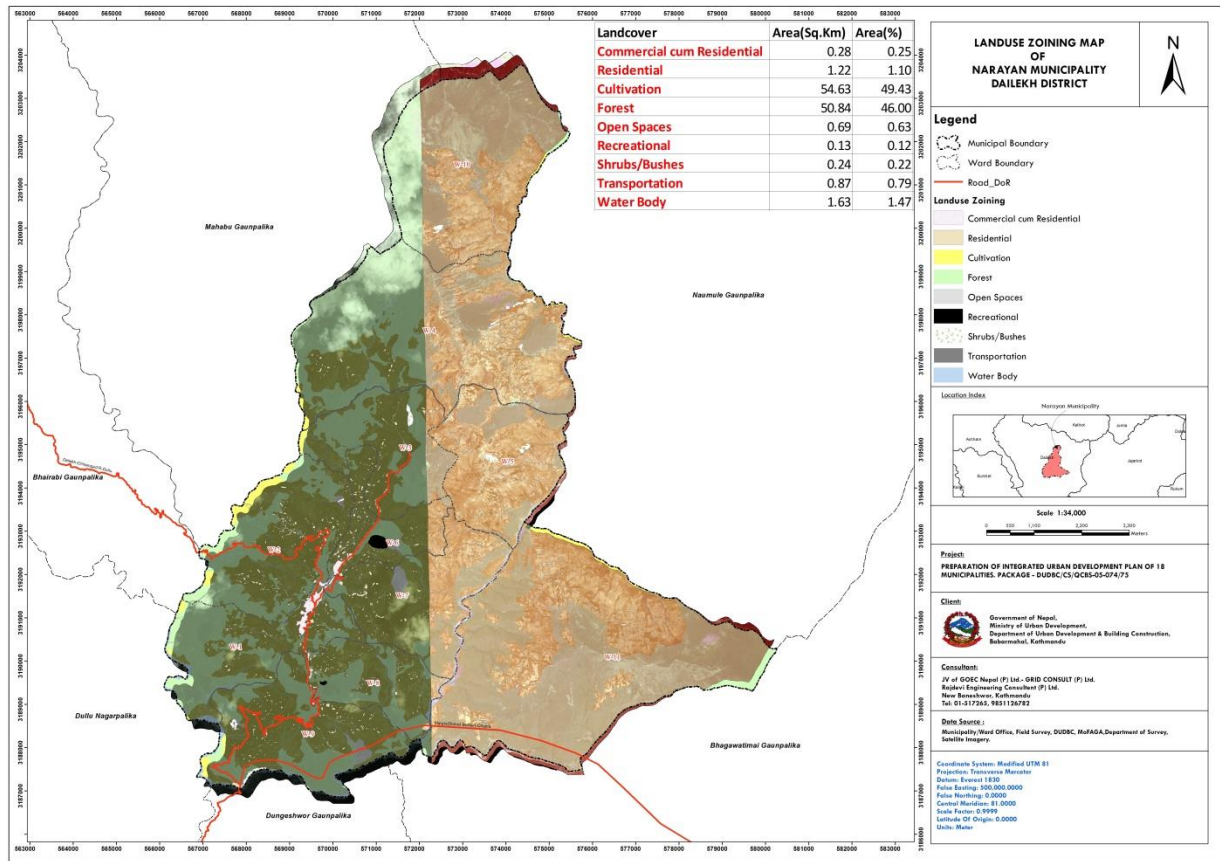


Figure 6.2: Land Use Zoning Map

Table 6.3: Norms on Mixed Residential Sub-Zone

S. N.	Building type	Maximum ground coverage	Floor area Ratio (FAR)	Maximum permitted building area	Maximum Height
1	Residential Plot Area: 6-15 Dhur	80 %	2.50	Plot Area x 2.50	Not blocking the light plane as shown in Figure 3
2	Residential Plot Area > 1.5 Katha	60 %	2.50	Plot Area x 2.50	
3	School, college, etc.	40 %	2.00	Plot Area x 2.00	
4	Governmental, semi-governmental offices, polyclinic, nursing home, etc.	40 %	2.00	Plot Area x 2.00	
5	Star Hotel	40 %	3.00	Plot Area x 3.00	
6	Cinema Hall, Theatre, Conference building	40 %	2.00	Plot Area x 2.00	
7	Building related to cottage and small industries, commercial complex, such as supermarkets, etc.	50 %	2.00	Plot Area x 2.00	

6.2.2. Urban Expansion

Urbanization and urban growth have been considered as one of the essential indicators of economic growth and development of a country. This process of urbanization has brought about significant changes in landscape pattern and land cover of the area concerned. With the increase of population day by day it has become inevitable to adopt proper urban planning to attain a sustainable environmental stability of an area. Rapid growth of urbanization along with poor planning and unregulated industrial activities causes contamination in surface as well as groundwater. Thus, sustainable and systematic urban expansion should be planned in order to accommodate to growing population.

The process of creating the built environment to house urban populations and their activities is known as urban expansion. There is a need to understand the dynamic interaction between the different aspects of urban expansion as expansion of built-up area, construction activities over natural features which cause diversion and destruction of aquifers, and the specific geomorphic features of the urban area.

The expansion of urban area is done using a Growth Center Strategy. The basis of the proposed strategy is to link the planning of different centers with provincial planning. Growth Center should be planned based on a practical extent of the area that is going to be influenced on the completion of the plan. Then the urban expansion process should proceed in the diffusion pattern of settlement from the growth center.

The pictorial representation of the existing urban area and urban expansion area is shown below.

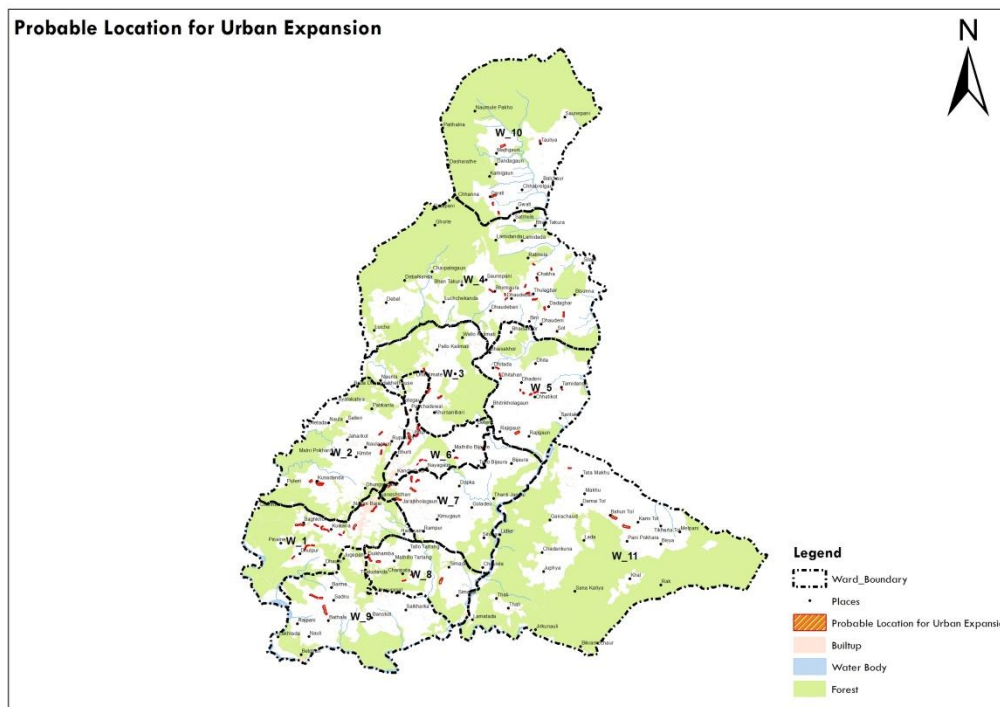
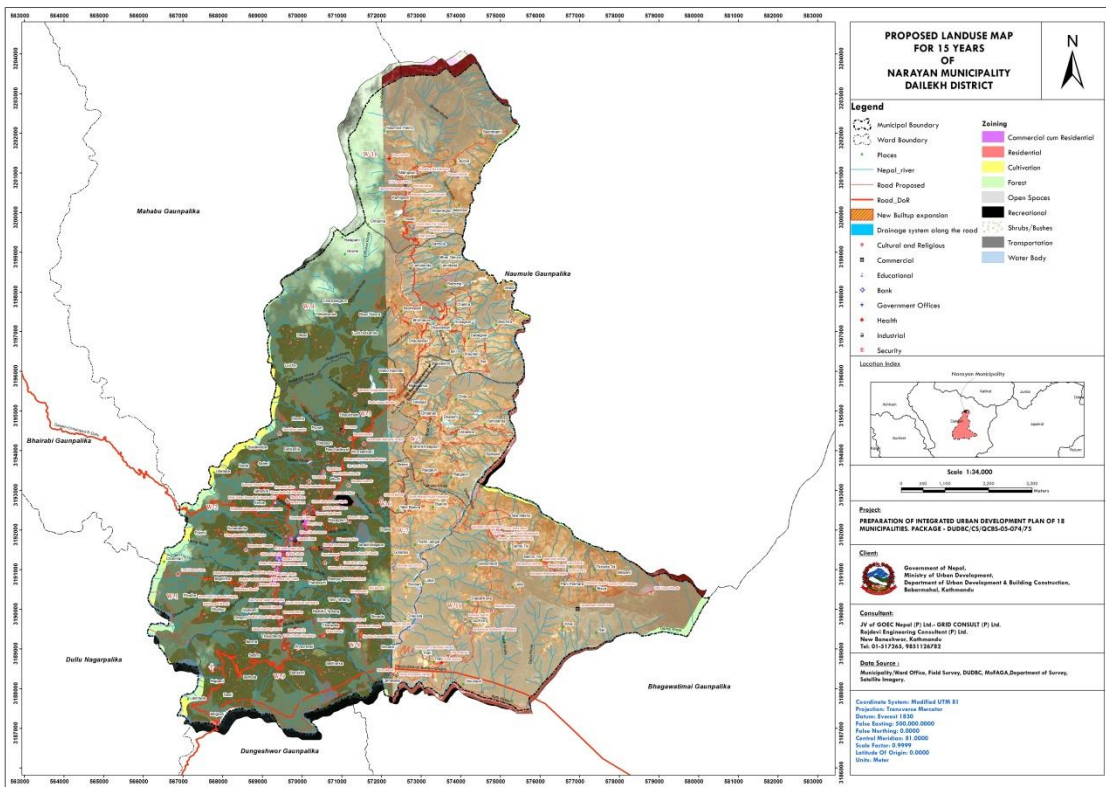


Figure 6.3: Land Use Map (Expansion Map)

Table 6.4: 15 Years Land Expansion List

Ward No.	Major Settlements	Existing Built Up Area (ha)	Projected Built Up Area (ha)		
			5 Yrs.	10 Yrs.	15 Yrs.
1	Nayan Bazaar	25.33	27.27	29.36	31.61
2	Naulagaun, Rupakhet, Kusadanda	15.69	16.89	18.18	19.58

3	Wallo Kalimati, Dhaulimate	7.81	8.41	9.05	9.75
4	Debal, Thulaghar, Dadaghar, Lamidada	15.51	16.70	17.98	19.36
5	Dhadeni, Chhatikot, Tamidanda	8.92	9.60	10.34	11.13
6	Panchadewal, Kandachaur, Nayagaun	18.02	19.40	20.89	22.49
7	Bijaura, Goladeu, Jarajkholagaun	13.11	14.11	15.20	16.36
8	Duikhamba, Thaludanda, Charipata	10.72	11.54	12.42	13.38
9	Jhyauresal, Sadnu, Bathala	13.31	14.33	15.43	16.61
10	Majhgaun, dandagaun, Kamigaun, Tauliya, Gwati	6.28	6.76	7.28	7.84
11	Thali, Damai Tole, Bahun Tole, Kami Tole, Tikharta Tole, Pani Pokhari	12.85	13.83	14.89	16.04
Total		147.55	158.84	171.02	184.138



Figure

6.4: Land Use Map (Proposed for 15 Years)

6.2.3. Physical Development Issues and Problems

Issues and problems related to physical development plan are categorically listed below so that sector plans could be identified and presented in the Logical Framework Analysis format. Problems relating to physical development plan are as follows;

1. Most of the road networks are in fair condition (13.41% blacktop, 25.88% gravelled, 60.71% earthen, narrow, seasonal)

2. Lack of sewerage and drainage networks (except side drain of Highway and in some per-urban area)
3. Solid waste management (Engineered sanitary landfill site, waste management mechanism proposed for development)
4. Plan documents for guiding physical planning is being developed with the support of various agencies.
5. Proper land use plan in practice is needed to be developed in scientific way
6. Building code implementation-monitoring and specific condition is needed to be done
7. After the election coordination between major stakeholders are improving more orientation and uniformity is required to be done.
8. Encroachment of Right of Way need to be monitored
9. Community infrastructures Such as Convention Hall, International Sports Complex, View Tower, Boating Pond inside the Children's parks needs to be proposed.
10. Drinking water supply (main Bazaar Area) is supplied through piped system in remaining area people uses pipes and well drinking water.

6.3. Urban Infrastructure Plan

Infrastructure is the prerequisite for the urbanization and development of any place. The vision of any infrastructure plan is done to manage the national integration, economic growth and the welfare of the people of Nepal. Infrastructure links settlements with their networks or grids and are concentrated in urban centers. Urban infrastructure planning should make full use of the existing infrastructure and help to make its provision more transparent. The infrastructure planning should be based on optimum use of existing resources with minimum possible monetary value to provide quality services and facilities to the residents related.

Each thematic area in urban infrastructure has specific issues. But there are some common issues related to infrastructure sector as a whole that need to be addressed as;

Major Issues:

- Inadequate government investment on urban infrastructure.
- Limited private sector investment on urban infrastructure.
- Lack of system based periodic maintenance of infrastructure.
- Lagging institutional coordination in infrastructure planning and implementation; focus on individual settlement rather than a regional view with multiple settlements.
- Weak institutional capacity to deliver infrastructure services.
- Inadequate infrastructure coverage and accessibility (in all urban areas and for all economic classes).

The infrastructure planning work is done on the basis of the logical framework analysis method.

This Key Performance Area relates to the effective and efficient delivery of basic municipal services. The Municipality through its service excellence programme has determined minimum service standards to ensure the equitable delivery of basic services to all communities at the same pace and quality level. Value for money and customer satisfaction are key consideration, hence it is of the utmost importance that ongoing service monitoring and evaluation take place. The Municipality's deliberate intention is to maintain a balance between the development of new infrastructure and the maintenance of existing infrastructure. The latter is informed by the Municipality's Long Term Financial Plan, which set the financial following parameters for project prioritization and budgeting. Maintenance or Replacement of Infrastructure: Funded from Capital Replacement Reserve (CRR) 80 %

Development of New Infrastructure : Funded from Capital Replacement Reserve (CRR) 20 % Infrastructure development projects prioritised for implementation under this municipality are catalytic of nature, since they impact on sustainable delivery of municipal service. Through the implementation of these projects previously disadvantaged areas will be uplifted, improving living conditions for all. The identification of these interventions was also informed by sector specific situational analysis and planning instruments. The listed sector plans were consulted.

- 6.3.1 Water supply
- 6.3.2 Waste water
- 6.3.3 Drainage
- 6.3.4 Solid waste
- 6.3.5 Electricity
- 6.3.6 Telecommunication

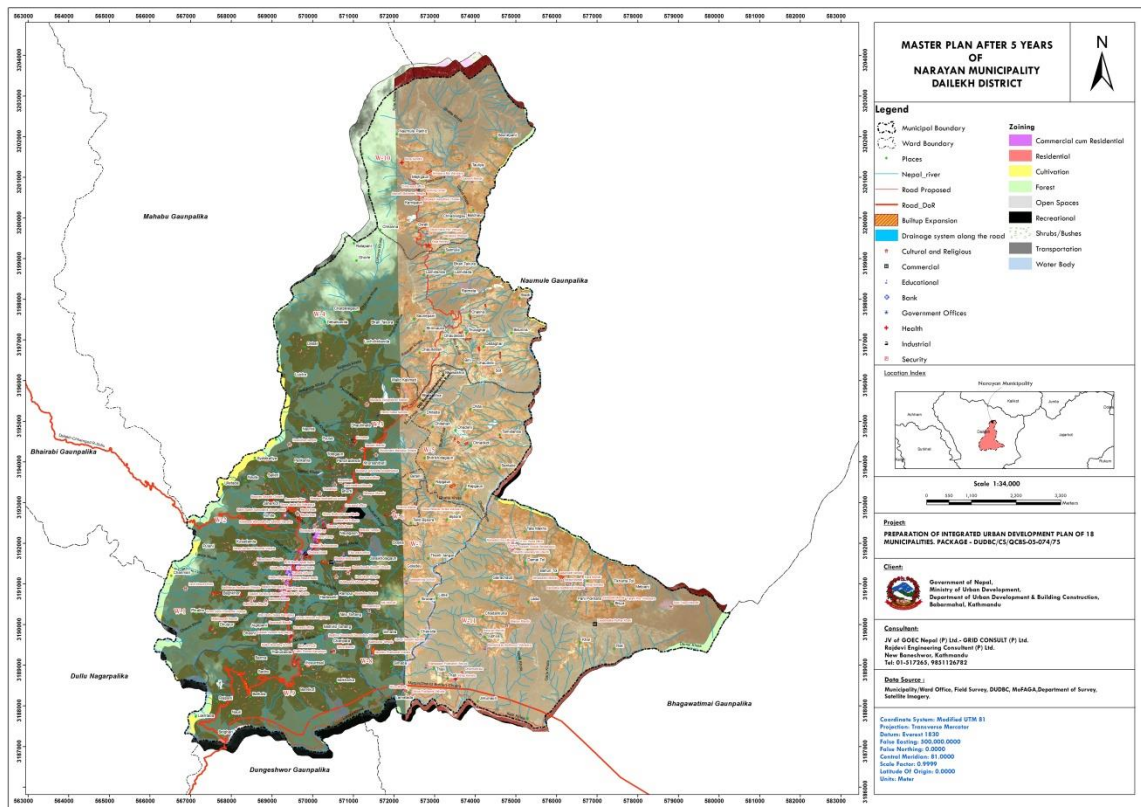


Figure 6.5: Land Use Map (Proposed for 5 Years)

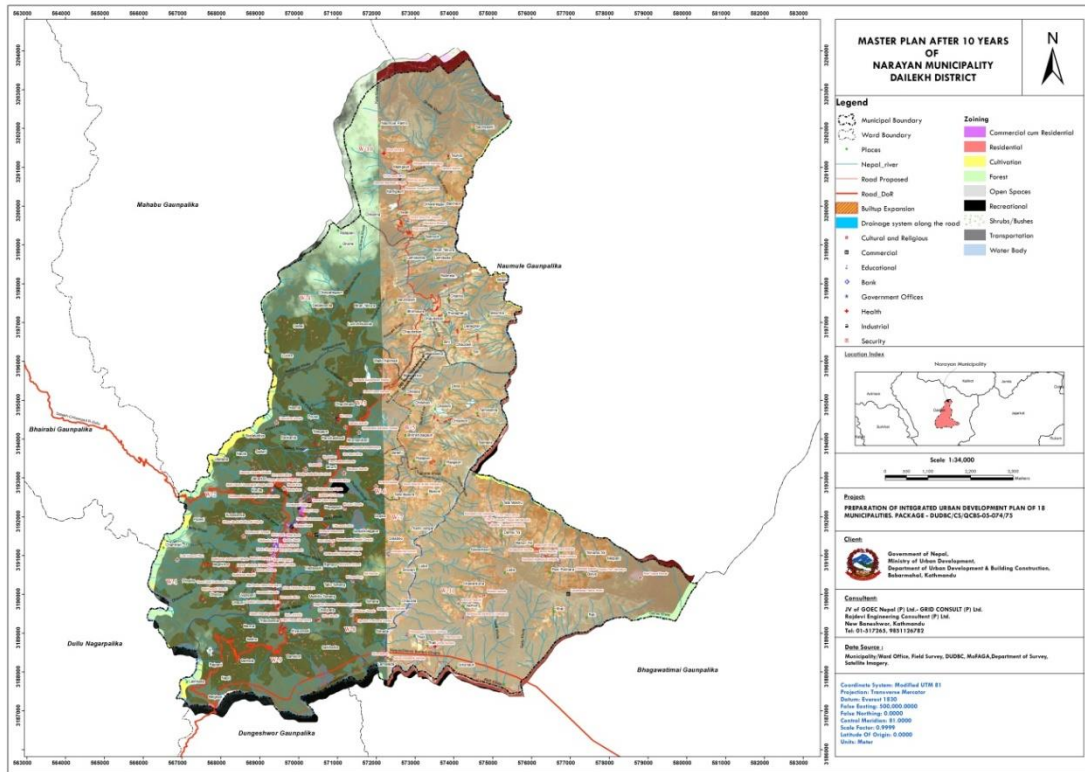


Figure 6.6: Land Use Map (Proposed for 10 Years)

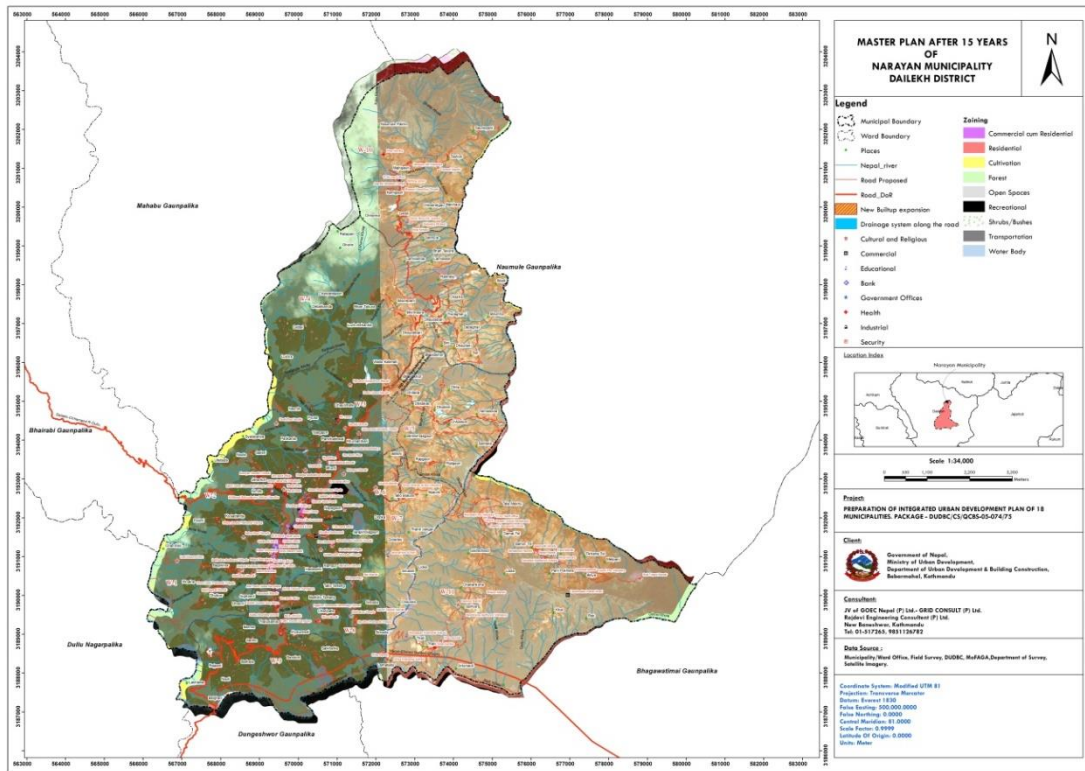


Figure 6.7: Land Use Map (Proposed for 15 Years)

6.3.1. Water Supply

From the demand analysis, 10 MLD water is needed to supply 29699 people based on urban planning standard. Municipality provides 80 % of water demand through pipe line system. Still, there will be deficit 8 MLD water supply. The deficit amount is balanced by Ghatte Khola, Kale Khola. The Municipality is at present implementing several high-impact interventions that will contribute towards the objectives of the National Water Conservation and Water Demand initiatives currently underway throughout the country in support of the protection of scarce water supply resources.

Table 6.5: Logical Frame Work Approach of Water Supply

Goal	<p>Achieve sustainable economic growth and social development</p> <p>Objectives:</p> <ul style="list-style-type: none"> → Water infrastructure development and management institutions in place → % of the population satisfied with their wellbeing attributed to access to water and sanitation services. <p>Means of Verification:</p> <ul style="list-style-type: none"> → Detailed project report including implementation and operational guide line
Purpose	<p>Ensure sustainable water supply and management including increase access for all to safe water and sanitation services</p> <p>Objectives:</p> <ul style="list-style-type: none"> → Capacity and institutions exist for planning, development and management of water supply and sanitation services → % of urban and rural population accessing safe water increased → % of urban and rural population accessing sanitation services increased <p>Means of Verification:</p> <ul style="list-style-type: none"> → Institutions established with mandate and funded → Baseline report → Survey reports → DPR reports → Medical statistical records <p>Assumption:</p> <ul style="list-style-type: none"> → Water supply reform accepted by current governance system
Outputs - 1	<p>Water supply and sanitation infrastructure are managed sustainably</p> <p>Objectives:</p> <ul style="list-style-type: none"> → National Water supply and sanitation Master Plan established and approved → Water supply and sanitation strategy developed and approved → Number of population access to potable water and sanitation <p>Means of Verification:</p> <ul style="list-style-type: none"> → WSS study reports <p>Assumption:</p> <ul style="list-style-type: none"> → Adequate financial resources available → Capacity built initially to implement this task → Full participation and involvement of stakeholders at the national and international level
Outputs - 2	<p>Increased access to water for economic purposes</p> <p>Objectives:</p> <ul style="list-style-type: none"> → Number and nature of water supply schemes/dams/reservoirs and other hydraulic infrastructure put in place to promote economic production and human well being

	<p>Means of Verification: → Economic Report Assumption: → Private sector commitment → Availability of fund</p>
Outputs - 3	<p>Sustainable access of the population to safe water for domestic use Objectives: → Establish baseline information on water supply and sanitation → % of urban water supply systems functional at the time of spot checks → % of urban piped water supply systems privately managed → % of urban population within 200m of an improved water source → Number and nature of protected water sources Means of Verification: → DPR report Assumption: → Availability of sufficient water supplies for essential activities (Long-term)</p>
Outputs - 4	<p>Access to sanitation services meeting hygienic standards increased Objectives: → % of schools with latrines as per standards → % of health centers with latrines → % of rural households with latrines → % of households and institutions with access to solid waste management facilities → Reduced number of outpatients with water and sanitation related diseases → % of public latrines with disability → Sensitive infrastructure as a proportion of the total number of public latrines available in public places → % of households and institutions with access to solid waste management facilities Means of Verification: → DPR report Assumption: → Availability of appropriate enabling laws → Funds are available</p>
Outputs - 5	<p>Human resources and institutional capacities in water and sanitation sector improved Objectives: → No. of competent personnel at central and decentralized levels in the field of water supply and sanitation → % of water points with actively functioning water and sanitation committees. → Number of extension services or support to the local government → % of water points with actively functioning water and sanitation committees → % of water and sanitation committees with women representation. → % of improved water sources that are functioning during monitoring → % of water and sanitation facilities with operators (total by category and by province) Means of Verification: → DPR report</p>

	<p>Assumption: → Opinion leaders and local authorities change attitudes</p>
Outputs - 6	<p>Strengthened institutional framework for Water supply and sanitation policy making, planning implementation and management</p> <p>Objectives: → % of the government's budget allocated to the Water supply and sanitation → % of sector expenditure executed by districts</p> <p>Means of Verification: → Municipality records</p>
Outputs - 7	<p>Sector Planning, Management information systems strengthened for O&M and informed decision making</p> <p>Objectives: → MIS system and reporting procedures in place → % of key indicators in this log frame for which accurate and timely information can be provided, disaggregated by gender, region, etc.</p> <p>Means of Verification: → Progress report</p> <p>Assumption: → Government expenditures are aligned with priorities</p>
Activities	
Output 1: Water supply and sanitation infrastructure Managed Sustainably	
1.1	<p>Potable water quality monitoring undertaken</p> <p>Objectives: → % of water samples that comply with national / WHO standards (taken at water collection and waste discharge points).</p> <p>Means of Verification: → Survey report</p>
1.2	<p>Undertake water infrastructure management strategy</p> <p>Objectives: → National water infrastructure master plan developed</p> <p>Means of Verification: → Plan</p> <p>Assumption: → Financial resources available</p>
1.3	<p>Mainstream gender in water supply management activities</p> <p>Objectives: → Number of water supply management committees with 30% representation from women</p> <p>Means of Verification: → Report available</p>
1.4	<p>Prepare overall National Water supply and Management Master Plan in place</p> <p>Objectives: → National Water supply and Management Master Plan in place and approved by Minister</p> <p>Means of Verification: → Report available</p>
1.5	<p>Coordinate actions for water supply and sanitation with other Ministries and/or agencies</p> <p>Objectives:</p>

	<p>→ Number of intersectoral meetings and workshops held</p> <p>Means of Verification:</p> <p>→ Minutes available</p>
1.6	<p>Develop human resources capacity in water supply and sanitation</p> <p>Objectives:</p> <p>→ Number of staff trained in water supply and sanitation</p> <p>Means of Verification:</p> <p>→ Training report</p>
1.7	<p>Undertake water supply and sanitation strategy</p> <p>Objectives:</p> <p>→ National water supply and sanitation master plan developed and approved</p> <p>Means of Verification:</p> <p>→ Strategy document available</p>
1.8	<p>Complete overall national water and sanitation master plan</p> <p>Objectives:</p> <p>→ National water supply and sanitation master plan developed and approved</p> <p>Means of Verification:</p> <p>→ Reports available</p>
1.9	<p>Review national potable water quality guidelines</p> <p>Objectives:</p> <p>→ Standards report available and published</p> <p>Means of Verification:</p> <p>→ National guidelines report available</p>
Output 2: Sustainable access of the population to safe water for domestic use	
2.1	<p>Formulate Water and sanitation planning, design, construction and operation and maintenance guidelines developed for public and private institutions</p> <p>Objectives:</p> <p>→ Water and sanitation planning, design, construction and operation and maintenance guidelines developed for public and private institutions</p> <p>Means of Verification:</p> <p>→ Reports</p> <p>Assumption:</p> <p>→ WSS</p>
2.2	<p>Provide, supply and rehabilitate water infrastructure (water supply system, Rivers)</p> <p>Objectives:</p> <p>→ Bulk water supply constructed/ rehabilitated in service</p> <p>Means of Verification:</p> <p>→ Reports</p> <p>Assumption:</p> <p>→ WSS</p>
Output 3: Access to sanitation services meeting hygienic standards increased	
3.1	<p>Assess and prioritize sector capacity building needs; agree plan</p> <p>Objectives:</p> <p>→ Capacity building plan available and approved</p> <p>Means of Verification:</p> <p>→ Training Report</p> <p>Assumption:</p>

	→ WSS
3.2	<p>Prepare national sanitation guidelines</p> <p>Objectives:</p> <p>→ Sanitation standards report available and published</p> <p>Means of Verification:</p> <p>→ Reports</p> <p>Assumption:</p> <p>→ WSS</p>
Output 4: Strengthened institutional framework for municipality sector policy making, planning and implementation	
4.1	<p>Develop and implement national level capacity program</p> <p>Objectives:</p> <p>→ National capacity building program developed, approved and implementation strategy operationalized</p> <p>Means of Verification:</p> <p>→ Report</p> <p>Assumption:</p> <p>→ WSS</p>
Output 5: Sector Planning, Management information systems strengthened for O&M and informed decision-making	
5.1	<p>Harmonize the planning and monitor the management of water supply and sanitation systems.</p> <p>Objectives:</p> <p>→ Result based planning, monitoring and evaluation system in place and operational</p> <p>Means of Verification:</p> <p>→ Monitoring report</p> <p>Assumption:</p> <p>→ Adequate personnel available for the task</p>
Indicator	<p>Achievement:</p> <p>→ All people have safe and equitable access to a sufficient quantity of water for drinking, cooking and personal and domestic hygiene. Public water points are sufficiently close to households to enable use of the minimum water requirement.</p> <p>→ Water is palatable, and of sufficient quality to be drunk and used for personal and domestic hygiene without causing significant risk to health.</p> <p>→ People have adequate facilities and supplies to collect, store and use sufficient quantities of water for drinking, cooking and personal hygiene, and to ensure that drinking water remains safe until it is consumed.</p> <p>→ Means of Verification:</p> <p>→ Source survey, estimate, dpr preparation and approval</p> <p>Assumption:</p> <p>→ Main source is jyamire river, jaraj river and salleri river, Bini Khola</p> <p>→ Mainly 6 treatment plant (three at bank of river and another three within the municipality.</p> <p>→ Mainly 650 km to 700 km distribution pipe line is needed</p> <p>→ 6-10 overhead tank is needed as per demand</p> <p>→ 10 MLD good water is needed to supply 29699 population of the municipality</p>

→ Total cost of these project is nearly to NRs. 3500000000.00

Figure: Proposing Bulk Water System from jyamire River

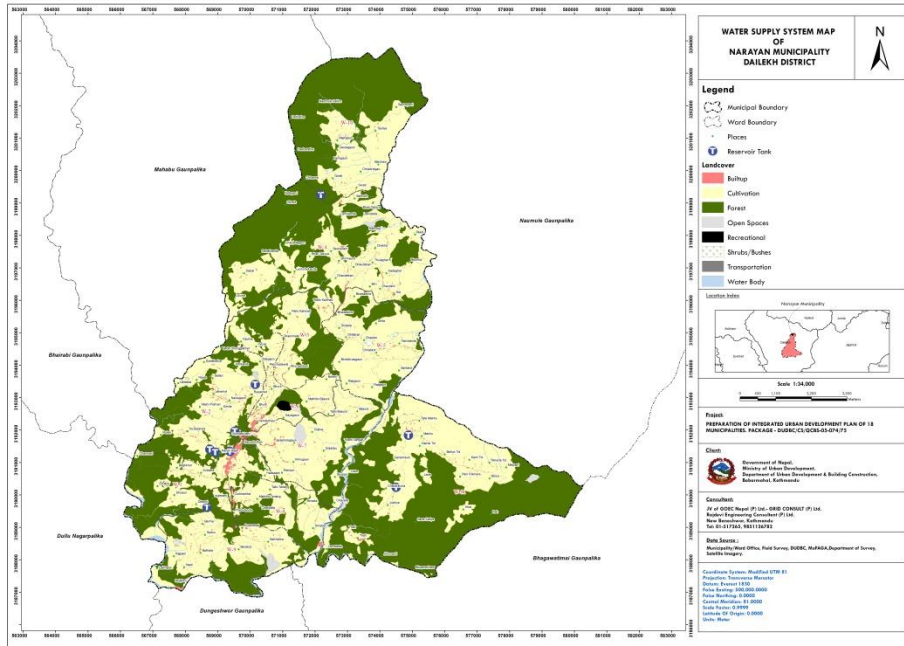


Figure 6.8: Proposed Water Supply

6.3.2. Waste Water

Developing and increasing of urban infra structures within the unmanaged urban municipality, in which space is very limited and always a challenge for development initiatives. If it's a space for managing waste, everyone says "please not in my backyard". With increasing access to water around houses, people tend to waste water thereby increasing challenges to treat wastewater. People are also focused on getting the wastewater out of their own compound, after which it becomes somebody else's problem. Inadequate sanitation continues to burden communities and also countries in terms of health, livelihood, and lost economic opportunities. While great strides have been made in eliminating open defecation in urban centers continue to rely on poorly designed and operating on-site wastewater systems that discharge highly infectious wastewater to surface and groundwater.

35% of the households have septic tanks but almost 95% of them do not have a soak well and more than 90% of the wastewater is disposed of directly or indirectly into water bodies and the local environment. When asked, people will have several explanations on where their poop goes: "Our populations are very smart and they have made an arrangement that my waste containment never gets full" or "Our waste containment is so large that it won't fill for a few decades". But as there is no collection or treatment plant, where does the poop actually go?

Disposal of fecal sludge was never seen as a problem because when toilets got blocked, manual emptier used to empty the waste containment and just release the sludge to the nearest drain or in water bodies. Water is getting scarce but we use more water as a medium to get rid of waste from toilets or for cleaning. Cities are spending large sums of funds to bring in water from afar, but invest very little in sanitation. Whereas proper investment in sanitation would reduce the utility cost for treating wastewater. And the decentralized wastewater management coupled with fecal sludge management are being planned to address wastewater management in urban areas in the meantime.

Increasingly, urban development is directed upwards, as there is limited space for horizontal development. This means that more and more people are living on smaller and smaller parcels, making it much more difficult to accommodate wastewater on-site through traditional on-site wastewater management technologies such as septic tank systems which require considerable space. So, Municipality have now interested in wastewater management methodologies that can be applied to smaller parcels and include better treatment and disposal options. And also, the inclusion of an improved sanitary plan with septic tank and additional approval rounds for construction with in the municipality.

Table 6.6: Logical Frame Work Approach of Water Waste

<p>Goal</p>	<p>Reducing trans-boundary water pollution Objectives: → Aggregate total of emissions of nutrients and priority substances from point sources. Means of Verification: → National/DRP reports on water</p>
<p>Purpose</p>	<p>Reduction of industrial, municipal and agricultural point-source water pollution (nutrients and toxic substances) within the municipality. Demonstration of project concept based on financial intermediary/private sector partnership in pollution reduction. Objectives: → Total volume of emissions reduction from projects financed by the Credit Facility. → Number of project supported companies and municipalities assisted in achieving compliance with national/EU legislation on water pollution within. → Number of similar financing facilities created within municipality. Means of Verification: → Project progress, evaluation and completion reports. → reports on progress Assumption: → Gains in the emission intensity of industrial operations are not offset by the overall increase in industrial activity (and improvements in municipal wastewater treatment are not offset by population growth). → District governments’ continued commitment to protecting the river basin and implementing related policies. → District governments’ continued commitment to maintaining an attractive climate for private investments. → Complementary national and regional programmers to address diffuse pollution, wetlands protection, awareness raising, capacity-building, etc. are implemented.</p>
<p>Output</p>	<p>Increased investments in water pollution reduction within municipality. Early compliance by borrowers with national water pollution legislation. A wide range of water pollution reduction technologies demonstrated. Increased participation of local financing and risk sharing of water pollution investments. Enhanced awareness of the activities and its results. Objectives: → Number and volume of loans from the Credit Facility.</p>

	<ul style="list-style-type: none"> → Number of borrowers achieving emission standards/conditions before deadlines. → Number of technologies used in the investments financed from the Facility. → Number of participating in the Credit Facility. → Number of visitors on activities area; number of responses to information requests/comments. <p>Means of Verification:</p> <ul style="list-style-type: none"> → Leading reports and progress report <p>Assumption:</p> <ul style="list-style-type: none"> → Enhanced availability of financing for water pollution reduction within municipality leads to increased investments in water pollution reduction. → Investment in water pollution reduction reduces emissions of nutrients and/or toxic substances from the plant concerned. → Demonstration of technologies leads to their increased adoption through increased user confidence and cost reductions. → Participation of local in the project will lead to increased awareness of the opportunities of lending for water quality. → Dissemination activities lead to replication of project approach within municipality.
Activities	<p>Credit Facility (Establishment of the Credit Facility; Presentation of loan applications by sub-borrowers; Review of loan applications against environmental and financial eligibility criteria; Disbursement of loans and subsidies; Environmental and financial monitoring, reporting and evaluation) with Technical Assistance (Environmental Expert; Technical assistance and training; Marketing; Information dissemination)</p> <p>Objectives:</p> <ul style="list-style-type: none"> → Helping tools for the operation, implementation and maintenance <p>Means of Verification:</p> <ul style="list-style-type: none"> → Disbursement and audit reports <p>Assumption:</p> <ul style="list-style-type: none"> → Local body provided with sufficient incentives to participate in the Credit Facility and make full use of its resources. → Borrowers provided with sufficient incentives to invest in water pollution reduction (existence and enforcement of emission standards, effluent conditions, wastewater tax, etc.). → Existing supply of financing for water pollution reduction insufficient to meet the demand.
Indicators	<p>Achievement:</p> <p>All facilities and resources provided reflect the vulnerabilities, needs and preferences of the affected population. Users are involved in the management and maintenance of hygiene facilities where appropriate.</p> <p>People have adequate numbers of toilets, sufficiently close to their dwellings, to allow them rapid, safe and acceptable access at all times of the day and night.</p> <p>Toilets are sited, designed, constructed and maintained in such a way as to be comfortable, hygienic and safe to use.</p> <p>Amount:</p> <p>Total cost of these capacity development awareness training project and construction of private toilet with in the municipality is nearly to NRs. 100000000.00 and it will totally implemented up to 2027.</p>

6.3.3. Drainage

Urban drainage systems are in general failing in their functions mainly due to non-stationary climate and rapid urbanization. As these systems are becoming less efficient, issues such as sewer overflows and increase in urban flooding leading to surge in pollutant loads to receiving water bodies are becoming pervasive rapidly. A comprehensive investigation is required to understand these factors impacting the functioning of urban drainage, which vary spatially and temporally and are more complex when weaving together. It is necessary to establish a cost-effective, integrated planning and design framework for every local area by incorporating fit for purpose alternatives. Carefully selected adaptive measures are required for the provision of sustainable drainage systems to meet combined challenges of climate change and urbanization. It is hoped that the under following description would provide drainage engineers, water planners, and decision makers with the state of the art information and technologies regarding adaptation options to increase drainage systems efficiency under changing climate and urbanization.

Table 6.7: Logical Frame Work Approach of Drainage

Goal	<p>Increasing the living standard of citizens with well-equipped physical amenities utilizing less resources and maintaining the ecological stability</p> <p>Objectives:</p> <ul style="list-style-type: none"> → Improvement and development of physical infrastructure and increasing the grasp of general public for these facilities.
Purpose	<p>Development and implement of the such identified project</p> <p>Objectives:</p> <ul style="list-style-type: none"> → Domestic wastewater is classified as sewage when mixed with human excreta. Unless the settlement is sited where there is an existing sewerage system, domestic wastewater should not be allowed to mix with human waste. Sewage is difficult and more expensive to treat than domestic wastewater. At water points and washing and bathing areas, the creation of small gardens to utilize wastewater should be encouraged. Special attention needs to be paid to prevent wastewater from washing and bathing areas contaminating water sources. → The permissible extent and type of land use, development and activities within flood lines are to be subject to stringent evaluation. → The type of development permissible within the 1:50 and 1:100 year flood lines is to be determined by the Municipality. → Preventing excessive hardening of surface areas in urban development and implementing a sustainable urban drainage strategy (SUDS) to stormwater management. → It is proposed that any development proposed within flood lines be supported by the relevant specialist. → Development of vacant land may be considered → Storm Water Management Plans are to be prepared for the drainage areas along Roads. → Flood lines should be updated, taking into account the latest available data. <p>Means of Verification:</p> <ul style="list-style-type: none"> → Survey <p>Assumption:</p>

	<p>→ Measures to mitigate the risk of flooding</p>
Output	<p>Rainwater Runoff shall be collected and transmitted in planned manner to the planned discharge point.</p> <p>Objectives:</p> <ul style="list-style-type: none"> → Urban area drainage system are designed as combined system with storm water drainage system → Oriented towards longer term livelihood security; → a continuous process; → results are sustained; → uses resources efficiently and sustainably; → involves planning; → combines old and new strategies and knowledge; → focused on finding alternatives <p>Means of Verification:</p> <p>→ Master plan including detailed DPR and approved for implementation</p> <p>Assumption:</p> <ul style="list-style-type: none"> → Oriented towards longer term livelihood security; → a continuous process; → results are sustained; → uses resources efficiently and sustainably; → involves planning; → combines old and new strategies and knowledge; → focused on finding alternatives
Activities	<p>Implement storm water drainage system</p> <p>Objectives:</p> <p>→ Helping tools for the operation, implementation and maintenance</p> <p>Means of Verification:</p> <ul style="list-style-type: none"> → Disbursement and audit reports <p>Assumption:</p> <ul style="list-style-type: none"> → Local body provided with sufficient incentives to participate in the Credit → Facility and make full use of its resources. → Borrowers provided with sufficient incentives to invest in water pollution reduction (existence and enforcement of emission standards, effluent conditions, wastewater tax, etc.). → Existing supply of financing for water pollution reduction insufficient to meet the demand.
Indicators	<p>Achievements:</p> <p>Areas around dwellings and water points are kept free of standing wastewater, and storm water drains are kept clear.</p> <p>Shelters, paths and water and sanitation facilities are not flooded or eroded by water</p> <p>Water point drainage is well planned, built and maintained. This includes drainage from washing and bathing areas as well as water collection points</p> <p>Drainage waters do not pollute existing surface or groundwater sources or cause erosion</p> <p>Sufficient numbers of appropriate tools are provided for small drainage works and maintenance where necessary</p>

	<p>Amount: Total cost of these indicator within the municipality nearly is NRs. 1500000000.00 for 200km storm water drainage network (road side drain + storm water drain + natural drainage network).</p>
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6.3.4. Solid Waste

Solid waste is byproduct of human activities which tends to increase with rapid urbanization, improved living standards and changing consumption patterns. Management of increasing amounts of solid waste has become a major challenge in many cities in developing countries. If solid waste is properly used, it can be a valuable resource, but if it is not effectively managed, it can result in serious adverse impacts on environment and public health. Solid waste management is therefore a critical component within urban sanitation and it is also one of the most important and resource intensive services provided by municipalities.

According to the Local Self-Governance Act, 1999, municipalities are responsible for managing solid waste, but municipalities in Nepal generally do not have the necessary skills or resources to manage the waste in the proper manner. This act has empowered municipalities to take every necessary action at local level. On average the 58 municipalities in the country are spending about 13 percent of their total budget on waste management related activities (SWMRMC, 2004), but in most cases this amount is not being spent in an efficient manner.

Management of solid waste is a growing concern in Nepal as urban population densities increase and flat usable land is in short supply. Although small urban centres were declared to be municipalities, they suffer from a lack of infrastructural, technical and financial resources to tackle the problems of waste management. With increasing public awareness about good health and a clean environmental sanitation, solid waste management has now become the priorities of the municipalities in Nepal. Municipalities, for managing the waste, are expressing their desire to develop final disposal system even though collection systems are still not in place. They are also promoting waste reduction, reuse, and recycling among the communities.

However, in spite of the many challenges faced, municipalities have joined hands with local communities and the private sector to introduce innovative approaches for waste management that are cost effective and efficient. These include door-to-door collection system.

Effective solid waste management is more than just cleaning the streets or collecting waste and dumping of the collected waste, as practiced within the municipality. It requires efficient combination of various components of solid waste management in an integrated manner. Integrated solid waste management is therefore a process of optimizing the waste management system as a whole with application of a variety of suitable technologies. This includes the following:

- Reduction of the amount of waste generated
- Proper segregation and storage of waste at source
- Efficient waste collection
- Street sweeping
- Waste transfer from preliminary collection vehicles to haulage vehicles
- Transportation of waste
- Waste composting and recycling
- Landfilling
- Hazardous waste management

- Public education and participation
- Formulation and enforcement of policies and regulations
- Organizational management
- Financial management

Table 6.8: Logical Frame Work Approach of Solid Waste

Goal	Increasing the living standard of citizens with well-equipped physical amenities utilizing less resources and maintaining the ecological stability
Purpose	<p>Development and implement of the such identified project</p> <p>Objectives:</p> <ul style="list-style-type: none"> → Reduction of the amount of waste generated → Proper segregation and storage of waste at source → Efficient waste collection → Street sweeping → Waste transfer from preliminary collection vehicles to haulage vehicles → Transportation of waste → Waste composting and recycling → Landfilling → Hazardous waste management → Public education and participation → Formulation and enforcement of policies and regulations → Organizational management → Financial management <p>Means of Verification:</p> <ul style="list-style-type: none"> → Survey, DPR and Design Report <p>Assumption:</p> <ul style="list-style-type: none"> → Measures to implement
Output	<p>Objectives:</p> <ul style="list-style-type: none"> → Waste Collection System → Composting and Recycling → Medical waste management → Construction of landfill, operation of solid waste including waste water → Private sector participate → Public participation <p>Means of Verification:</p> <ul style="list-style-type: none"> → Survey, DPR and Design Report Implementation <p>Assumption:</p> <ul style="list-style-type: none"> → Oriented towards longer term livelihood security; → a continuous process; → results are sustained; → uses resources efficiently and sustainably; → involves planning; → combines old and new strategies and knowledge; → focused on finding alternatives
Activities	<p>Objectives:</p> <ul style="list-style-type: none"> → Proper network for collection municipality waste including vehicle and infrastructures. → Helping tools for the operation, implementation and maintenance of the landfill site

	<p>→ Local body provided with sufficient incentives to participate in the Credit Means of Verification: → DPR and sanitation action plan Assumption: → O&M cost for the solid waste within the municipality including landfill site, were fixed by municipality and issues to municipality people</p>
Indicators	<p>Achievements: Area for the land fill will be fixed or purchases by municipality Amount: Total cost of these indicator within the municipality nearly is NRs. 205000000.00.</p>

6.3.5. Electricity

The electricity connection is to be increased from 95% to 100% in 1 year. Solar panel usage is encouraged through enforcement of byelaws in building construction and through subsidy projects.

- 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.

Table 6.9: Logical Frame Work Approach of Electricity

Goal	Indicators	Means of Verification	Major Assumptions
<p>provide electricity facilities to all Narayan inhabitants Provide electricity facilities to entire households.</p>	<p>100% need the demand and sure by NEA, Nepal</p>	<p>Field survey Municipal profile District Profile IUDP mid-term evaluation report NGO/INGOs report</p>	<p>Allocation of budget Public private partnership in infrastructure development Good coordination among the stakeholders Continue support from government of Nepal and donor agencies</p>
<p>Outcomes:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Electricity access to entire households of Narayan Municipality <input type="checkbox"/> Upgrading of present electricity system <input type="checkbox"/> Increased number of alternative energy used households <input type="checkbox"/> Promotion and installation of Alternate energy such as solar energy in the street lamp, public places and private household. 			
<p>Activities/Programs:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Electrification work in entire Municipality. <input type="checkbox"/> Promotion and extension of alternative energy. <input type="checkbox"/> Attract private sector investment to development alternate energy such as Solar Panel above the Irrigation Canal. <input type="checkbox"/> Install street light in the streets of Narayan Municipality. <input type="checkbox"/> Transfer rural area electricity management to local people/community by forming management committee 			

6.3.6. Tele-communication

The network coverage of Telecom shall be increased with installation of new towers.

- Free Wi-Fi zones shall be made in public places where the municipality estimated.
- Tourist information system shall be set up in major areas
- Websites of municipality shall be updated regularly and promotion of services shall be done over Internet, TVs and radios.

Table 6.10: Logical Frame Work Approach of Tele-Communication

Goal	Indicators	Means of Verification	Major Assumptions
provide communication facilities to all Narayan inhabitants Provide communication facilities to entire wards of Narayan Municipality	100% need the demand and sure by Telecom, Nepal	Field survey Municipal profile District Profile IUDP mid-term evaluation report NGO/INGOs report	Allocation of budget Public private partnership in infrastructure development Good coordination among the stakeholders Continue support from government of Nepal and donor agencies
Outcomes: <ul style="list-style-type: none"> <input type="checkbox"/> Communication facilities to entire households of Narayan Municipality <input type="checkbox"/> Quality and reliable communication <input type="checkbox"/> Promotion and installation of Alternate energy such as Solar energy in the street lamp, public places and private household 			
Activities/Programs <ul style="list-style-type: none"> <input type="checkbox"/> Telecommunication and optical fibers for internet expansion and improvement <input type="checkbox"/> Free Wi-Fi on public places <input type="checkbox"/> Organize press freedom and promotion program <input type="checkbox"/> Capacity development of Nepal telecom and Ncell network <input type="checkbox"/> Provide internet facilities in, every household, major market centers and tourist spots 			

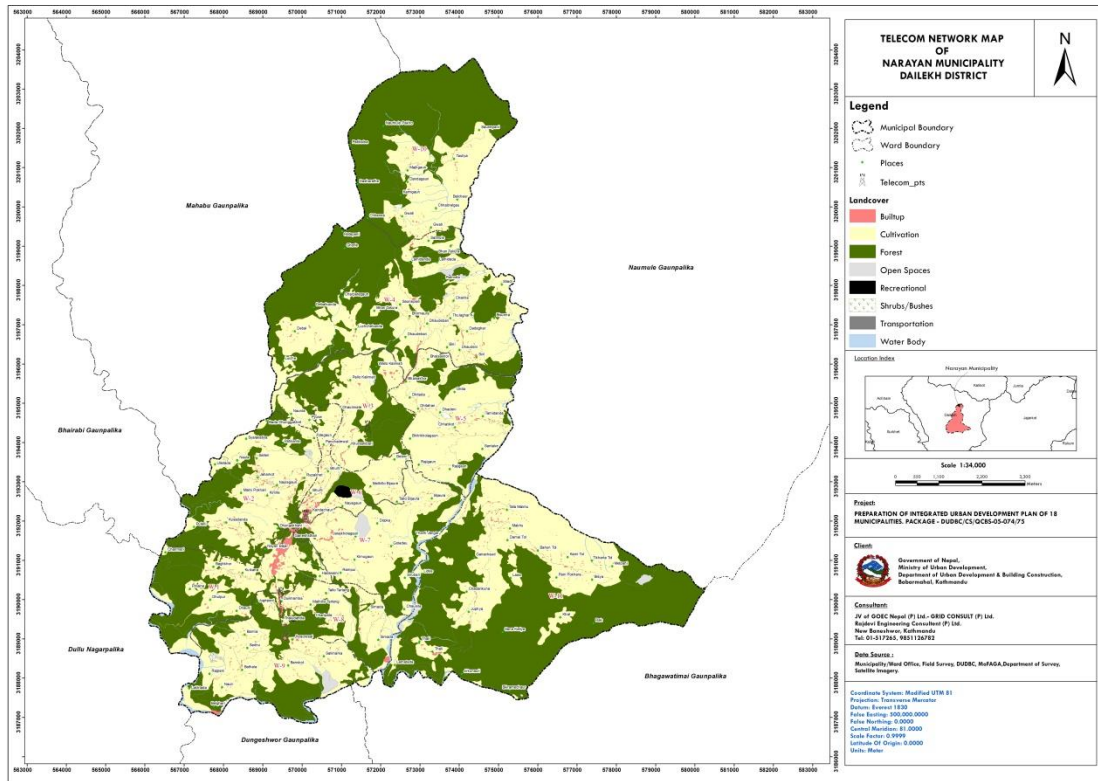


Figure 6.9: Telecom network of the Municipality

6.4. Urban Transport Plan

Goal:

To develop effective, reliable and safe transportation system inside municipality.

By utilizing internal and external resources, the municipality will develop effective transportation infrastructures inside municipality. The municipality aims to increase economic standard of public by providing access, minimizing travel time and increasing economic activities inside municipality.

Objectives:

- To strengthen major road that connects municipality with other parts of Nepal
- To improve and develop the conditions of road and invest on new connections.
- To develop sustainable reliable safe and efficient transportation system inside Municipality.
- To rehabilitate economic infrastructure like Parking Space, Stadium, Sports Complex, and Movie Hall.
- To identify the places for new bus stop, parking space and construct bus stops and public toilets in required places.

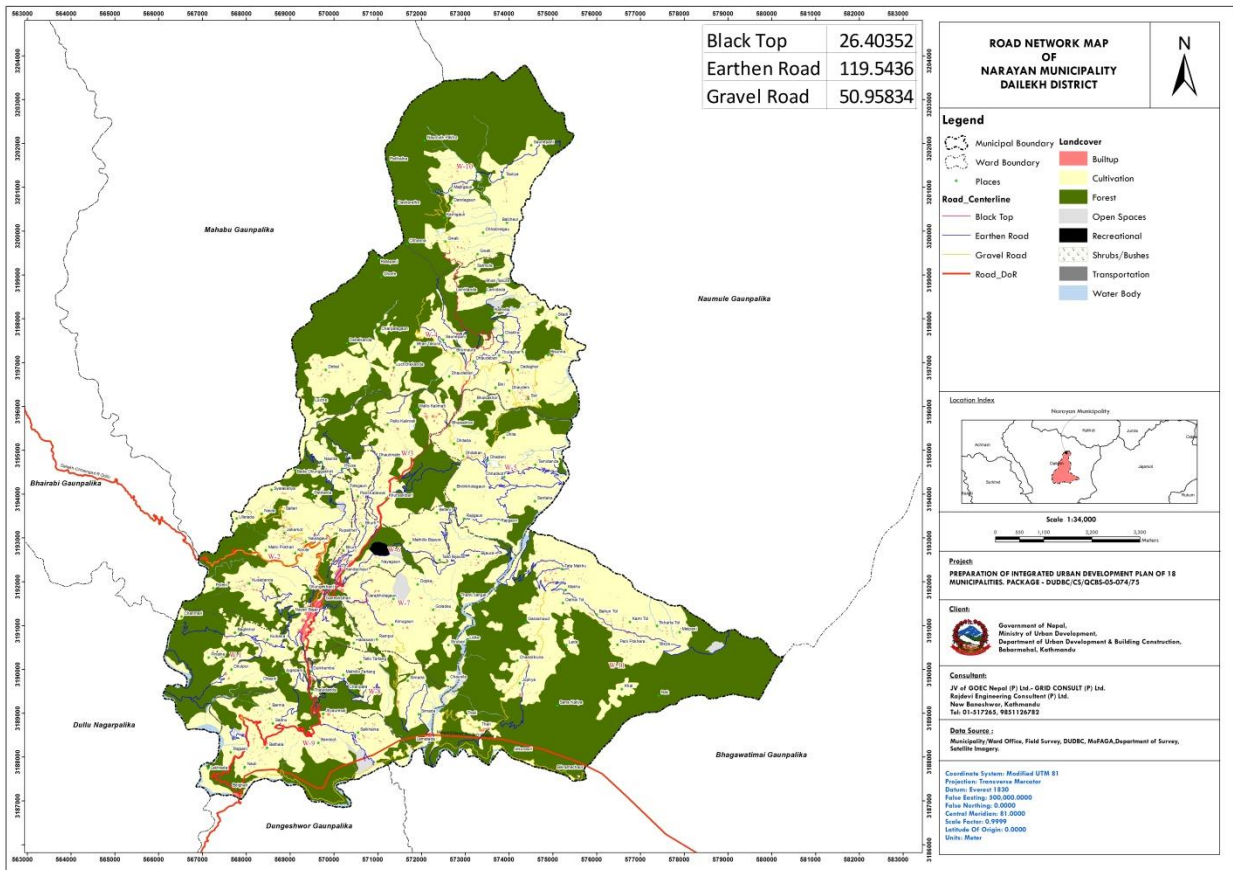


Figure 6.10: Road Network Map

6.4.1. Road Classification

Road classification on the basis of Right of Way is given below:

Table 6.11: Road Classification

Class	Road ROW (m)	Road Length (Km)
Class A	50	10.21
Class C	10	160.4815
Class B	30	8.24
Total		196.8038

Above data gives us the classification of the road on the basis of their qualities and also the right of way. Road is classified as A, B and C on the basis of the standard of the road. Class A consists of urban road, district road and road connecting the highway. Class B consists of feeder road joining the class A and Class C consists of foot trail and road which consists of road without following the norms.

Also, the road should have the below clearances laterally and vertically for the safety and betterment of the municipality and its people.

6.4.1.1. Lateral Clearances

a. For a single carriageway road that goes through an underpass, whole width of the roadway (carriageway plus shoulder widths) should be cleared in lateral direction.

- b. If footpaths are provided minimum lateral clearance should be width of footpath plus 1.0 m.
- c. On roads with divided carriageway, left hand side lateral clearance should be as given as (a.) and (b.) above.
- d. Right hand side clearance should be 2.0 m (desirable) with 1.5m minimum.

6.4.1.2. Vertical Clearances

A vertical clearance of 5.0m measured from the crown of the road surface shall be provided for whole roadway width on all roads. No obstructions shall be made on this space.

6.4.2. Road Network

The municipality has all together 196.74 km of road which consist of all kinds of road like, i.e. district road, feeder road, urban road, foot trails etc. Nearly 5.77% of the roads in the Municipality were found to be earthen out of 196.74 km. 75.78% of the roads in the municipality were found to be gravel road without civil road side drain and remaining is damaged blacktopped road which follow district and Feeder road. The network of road within the municipality is presented below with its physical conditions.

6.4.3. Parking Management

Bus Park

It is obvious from the analysis in above chapter that Bus Park in municipality is functioning but is inadequate to serve the requisite of the city. The existing bus park should be maintained and upgraded and another bus park is proposed. The intercity bus park will have an appropriate facility of access, public toilets, ticket counter, waiting spaces, lights, and water supply and security. This is implemented as per chapter 5.

Bus stops:

The infrastructure analysis, it is observed, there are around no systematic existing bus stops without suitable shaded structures. Total 30 bus stops with shaded structures are to be proposed in different locations within the municipality and including in roads network DPR. The bus stop will be constructed using light material. In primary road area, cycling lanes and bus stops can be arranged as shown in the figure below.



Figure 6.11: Sample for Bus Stop

Table 6.12: Network of Road Including Physical Conditions

Description	Wards											Total (km)
	1	2	3	4	5	6	7	8	9	10	11	
Local Road	14.21	12.94	10.29	26.78	15.98	11.48	9.48	10.99	6.38	4.33	26.22	149.08
<i>Percentage</i>	79.16%	68.25%	77.06%	91.56%	88.53%	83.43%	88.93%	90.45%	28.75%	46.66%	84.20%	76%
Feeder Road	1.94		2.13			1.77	0.99	0.41	8.97			16.21
<i>Percentage</i>	10.81%	0.00%	15.95%	0.00%	0.00%	12.86%	9.29%	3.37%	40.42%	0.00%	0.00%	8%
HighWay	1.8	5.55				0.51	0.19	0.75	6.37		4.92	20.09
<i>Percentage</i>	10.03%	29.27%	0.00%	0.00%	0.00%	3.71%	1.78%	6.17%	28.71%	0.00%	15.80%	10%
Foot Trails		0.47	0.93	2.47	2.07				0.47	4.95		11.36
<i>Percentage</i>	0.00%	2%	7%	8%	11%	0%	0%	0%	2%	53%	0%	6%
Total Road Length (km)	17.95	18.96	13.35	29.25	18.05	13.76	10.66	12.15	22.19	9.28	31.14	196.74
<i>Percentage</i>	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 6.13: Logical Frame Work Approach of Road Network and Transportation

Road and Transport	Indicators	Means of Verification	Major Assumptions
<p>Goal: Construction and development of basic physical infrastructure for comfortable and easy life</p> <p>Objectives Construction of motorable road to each settlements of Municipality Application of Landuse plan for infrastructure development Disable and child friendly infrastructure Environment friendly infrastructure</p>	<p>Construction and implementation of road project through phase wise 1st 5 years = Master Plan, DPR including design and implement for 126km of all types of road up to black top pavement / rigid pavement. 2nd 5 years = Implement for 126km of all types of road up to black top pavement / rigid pavement. 3rd 5 years = Implement for 126km of all types of road up to black top pavement / rigid pavement. Amount: Total cost of these indicator within the municipality nearly is NRs. 65800000000.00.</p>	<ul style="list-style-type: none"> ▪ Field survey ▪ Municipal profile reports ▪ District profile ▪ Economic survey ▪ Evaluation report of infrastructure sector ▪ Monitoring and supervision report of urban infrastructure ▪ Traffic survey 	<ul style="list-style-type: none"> ▪ Allocation of budget ▪ Public private partnership in infrastructure development ▪ Good coordination among the stakeholders ▪ Continue support from government of Nepal and donor agencies
<p>Outcomes:</p> <ul style="list-style-type: none"> ▪ All settlement will be connected by graveled road. ▪ Progressive implementation of municipal road master plan ▪ Easy accessibility around the through improved road network ▪ Upgrading of blacktopped, graveled and existing earthen road 		<ul style="list-style-type: none"> ▪ Building code will be implemented in major settlements and town areas ▪ Bio-engineering technology will be applied in road construction ▪ Mandatory afforestation policy along the road side will be implemented ▪ Public transportation will be available in the town ▪ Public friendly local transportation will be available in the town ▪ Land use plan will be implemented in major market centers and town areas 	
<p>Activities/Programs:</p> <ul style="list-style-type: none"> ▪ Preparation and implementation of land use plan ▪ Implementation of building code in the municipal area ▪ Implementation of Mandatory bio-engineering system in road construction ▪ Management of public transportation service ▪ Traffic lights management in the area 			

The proposed urban transportation plan of Narayan municipality is represented below:

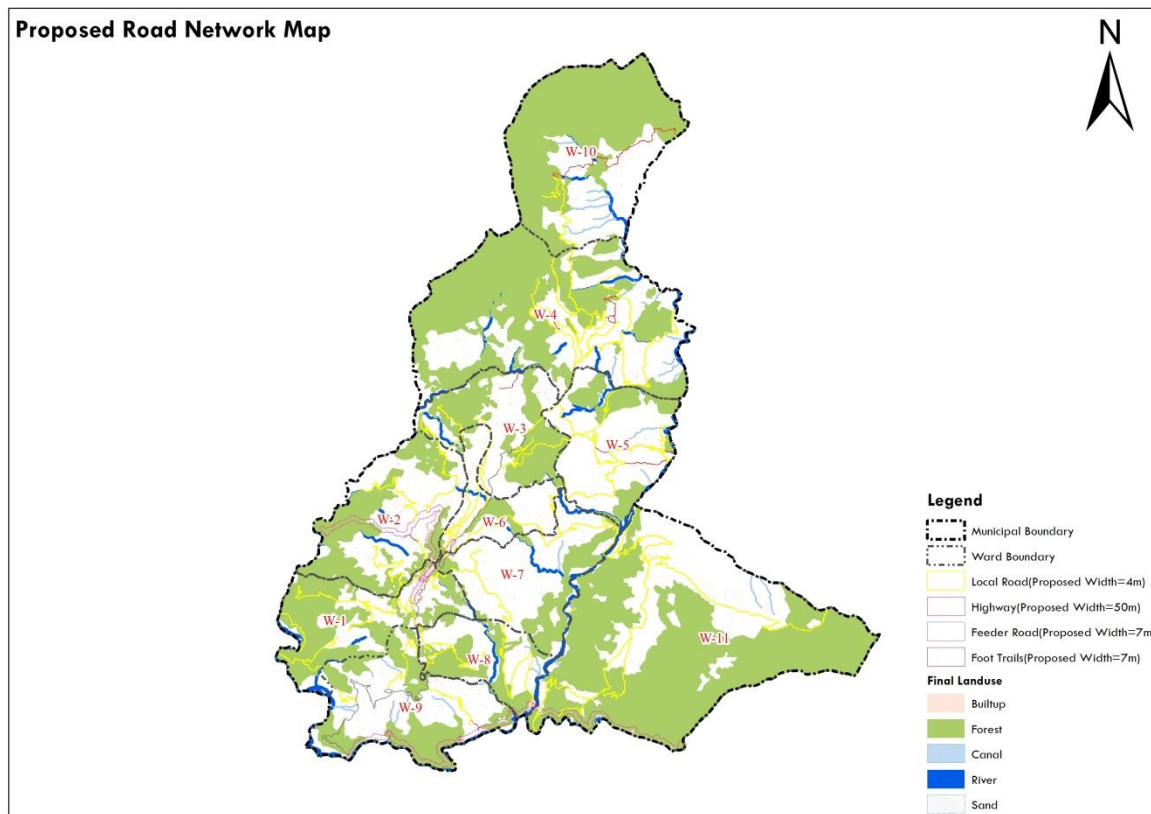


Figure 6.12: Road Transportation Network Map

6.4.4. Issues and Problems

- Although municipality is mainly focused in developing transportation infrastructures, there are some major threats in achieving goal of municipality. They are as follows:
- Limited Financial resources: The construction cost of road infrastructures is too high, whereas, the municipality has limited resources. There is a probability that the municipality will not be able to generate financial resources for development of transportation infrastructures as expected.
- Large number of cross drainage structures: This municipality possess large number of rivulets and streams which need same amount of cross drainage structures. The increase in number of cross drainage structures will significantly increase the construction cost of road.
- Migration: Although development works are increasing in this municipality, the inevitable migration of people from this municipality is increasing day by day. At some point, there might be a situation that municipality will complete upgrading of road to some settlements whose population has decreased significantly due to migration. If this scenario occurs, then the investment of municipality will go in vein.

6.5. Social Development

Social development plan focuses on the issues relating to social development in Narayan Municipality. Inclusive development, participatory approach, focused group target will be the process of social development plan. While developing social development plan, socially excluded groups, marginalized communities, children, aged people, women, scheduled caste groups will be main focus.

This plan will focus on harnessing pro-community, pro-individual responsibility, pro-positive self-regard and pro-empowerment solutions to achieving what we want in the future. Women participation and mainstreaming of scheduled caste ethnic groups and marginal communities will be the method of social development and planning.

Present Status

At present, reflects some level of social development initiatives but it demands more improvement in it. It is still found some sort of hindrances for social development due to lack of awareness as well as infrastructures. Summary of the present social indicators is shown in the following table:

Table 6.14: Social Development Status in Percentage Wise

Social indicators	Status	Remarks
Population Density (Per Sq. Km)	245.7	
Economically inactive population (%)	50.65	
Economically Active Population (%)	49.35	
Disable Population (%)	1.92	
Hilly Dalit (%)	11.5	
Electricity	54.29	
Literacy Rate (%)	51	
Firewood users (%)	88.6	
Bio-gas users HH (%)	0.218	
LP gas (%)	10.24	
Mobile	638	
ADSL	250	
Internet HH	1500	
Tap/ Pipe Water supply (%)	62.62	
Uncovered well water supply (%)	16.58	
River Water water supply	16.78	
Major occupation (%)	65.2	

(Source: Fieldwork, 2018)

Problems

Problems related to social development plan is categorically listed below so that sector plans could be identified and presented in the LFA format. Problems relating to social development plan are as follows;

- Poverty cluster still exist in the municipal area.
- Lack of participation of children, women and excluded groups in the main stream of development.
- Low level of women participation.
- Poor condition of sanitation and increasing its social consequences.
- Lack of disable friendly infrastructure in the municipality.
- Lack of public infrastructures (community hall, convention centres, community library, public toilets etc.)
- Lack of proper management plan of public property (temple, statue, monastery, religious and cultural places etc.).
- Lack of public awareness programmers.
- Poor condition of health facilities.

- Decreasing social harmony.

Social Development Concern

Social development sectors in Narayan such as education, public health, security, inclusive development, cultural and sports, parks and open spaces, public infrastructures etc. are covered which are presented in the logical framework analysis below:

6.5.1. Education

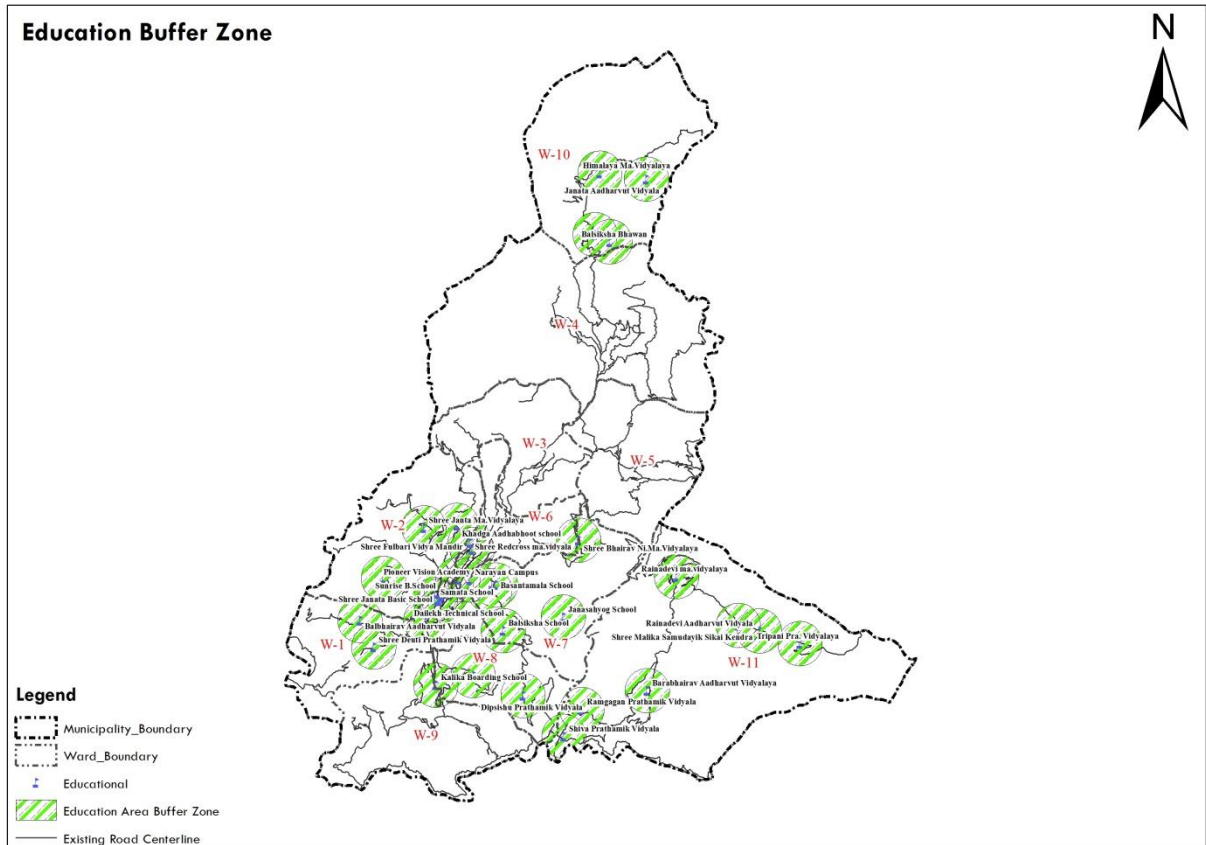


Figure 6.13: Education Map

In terms of education, all wards of Narayan Municipality are well facilitated from educational institutes especially for primary and secondary level but for higher education, most of the people are migrated for better education. There is a lack of graduate/post graduate institute in Narayan . Therefore, within the Narayan Municipality, ward no. 6 is proposed for the educational hub for higher education after the IUDP implementing period completion. The proposed site is located centrally for whole municipality and it is connected through DED road.

Education

Table 6.15: Logical Frame Work Approach of Education

1. Education	Indicators	Means of Verification	Major Assumptions
<p>Goal: 1.1: To obtain cent percent literary and provide easy access of basic and secondary education in Municipality Objectives 1.1.1: To improve the education condition of all class and community 1.1.2: To provide minimum physical infrastructure (class room, library, science lab and school environment) to confirm the quality education for all the children 1.1.3: To provide child friend school education and environment 1.1.4: To provide the education opportunity up to secondary level to all the children</p>	<p>Drop out student should be targeted to drop into the school Upgrading of the school infrastructures Total cost of these indicator within the municipality nearly is NRs. 500000000.00.</p>	<ul style="list-style-type: none"> ▪ Municipal profile ▪ reports ▪ District profile ▪ District Drinking Water Office ▪ District health office report ▪ FLASH Report (DEO) ▪ Reports of local sports clubs ▪ Report of District women and children development office ▪ Report of district child welfare board ▪ N/INGOs report 	<ul style="list-style-type: none"> ▪ Allocation of budget ▪ Continue support from donor agencies, government and local people ▪ Public private partnership in infrastructure development ▪ Good Coordination among the stakeholders ▪ Active and effective school management committee
<p>Outcomes:</p> <ul style="list-style-type: none"> ▪ Child, gender and disabled friendly school and physical infrastructure; Well trained teachers; Well-functioning; Availability of necessary teaching material at schools; 			
<p>Activities/Programs:</p> <ul style="list-style-type: none"> ▪ Fulfillment of minimum infrastructure condition (class room, library, science lab and school environment); Arrangement and distribution of teacher post according to teacher student ratio; Merge and remove unnecessary school on the basis of school mapping; Provide necessary trainings to teachers; Good coordination between school and local people through school management committee; Continuation and extension of scholarships and day meal program; Establish library in all schools; Extension of day meal program; Capacity development programs for stakeholders (DDC, Municipality, Teacher guardian association, teachers, head teachers, RPs, SS, parents); Effective operation of saving, credit and income generation program through capacity development of community learning centre ; Establishment of technical institution 			

6.5.2. Health

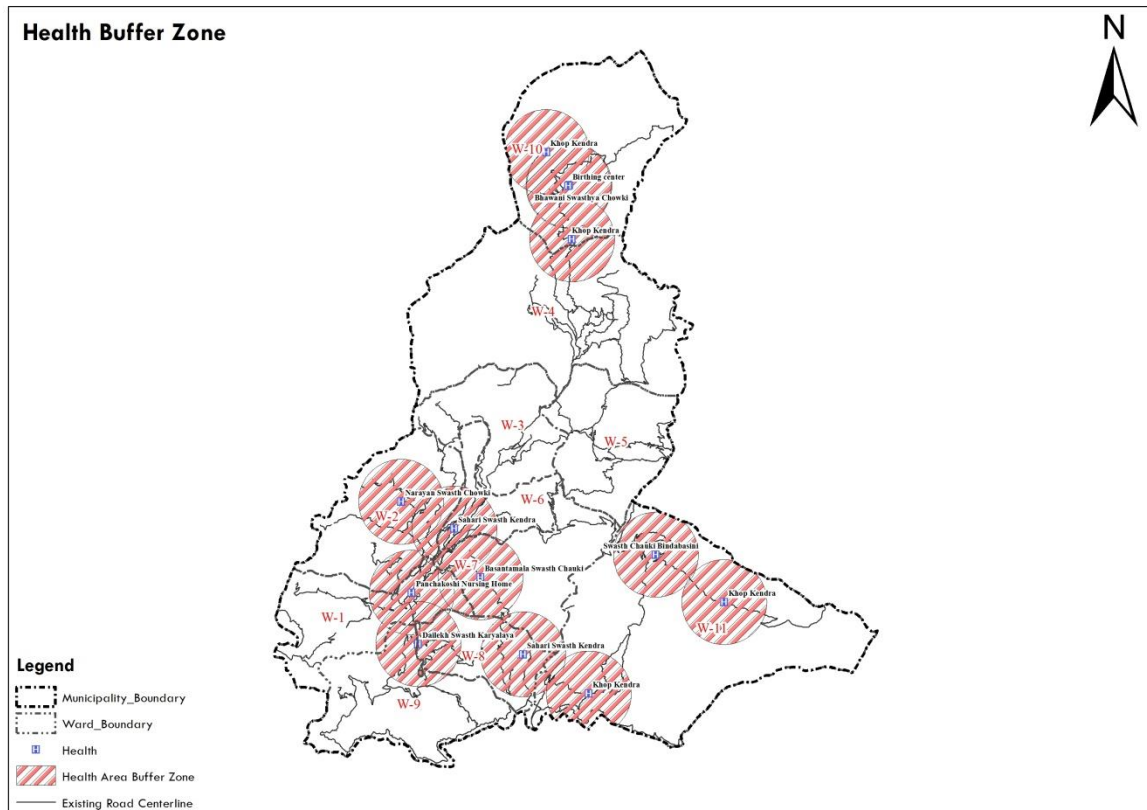


Figure 6.14: Health Sector Map

In terms of health services, except ward no. 3,4,5,9, all wards of Narayan Municipality are well facilitated from health facilities (health post). There is hospital in the municipality which cannot provide advance facilities. For better treatment, people have to go Nepalgunj, Pokhara, Kathmandu and India. Nepalgunj is well known for medical hub and most of the people have been migrating there for better medical facility. There is no any well-facilitated birthing center also due to this; there is a high risk of mortality rate. Additional capacity / facilities should be planned for in ward no. 3,4,5,9. There is no health post facilities. According to the municipality, such a facility offers services intended to promote early childhood developments; and are provided by a person, other than a child’s parents or caregiver, on a regular basis to children up to school -going age. This area will be subject to high density future urban growth in the next 5 – 15 years and will be subject to high population growth and high density residential areas, partly due to the Government funded housing programs, as well as the in migration of people from rural towns and surrounding provinces. It is evident that from some portions of the ward 3,4,5,9 area, residents must walk more than 60 minutes the closest health clinic facility. Thus, in future district hospital should be planned and implemented for construction.

Health

Table 6.16: Logical Frame Approach of Health Work

Goal	Indicator	Means of Verification	Major Assumption
<p>Improvement in health condition providing easy and quality health services to all the dwellers</p> <p>Easy access of quality health service to all municipality people</p> <p>Infrastructure development for quality health service</p> <p>Development and extension of Ayurveda services in municipality</p>	<p>District level hospital shall be constructed</p> <p>Maternity baby health clinic shall be established within 1 year.</p> <p>Urban community health centres need to be formed in various wards.</p> <p>Health areas should be accessible to all genders, ages and groups and create the social cohesion with vibrant social environment.</p> <p>Workshops and program to be conducted on local wards for raising awareness about the primary health treatment</p> <p>Promotion of healthy diet and living among the citizens through ward level programs.</p> <p>Excellent health volunteer shall be awarded to encourage health volunteers and their demand needs to be addressed urgently.</p> <p>Total cost of these indicator within the municipality nearly is NRs. 500000000.00.</p>	<p>IUDP evaluation report</p> <p>Human Development report index</p> <p>Yearly report of District Health Office</p> <p>NGO/INGOs report</p> <p>Municipal profile</p> <p>DDC yearly report</p>	<p>Allocation of budget</p> <p>Continue support from donor agencies, government and local people</p> <p>Public private partnership in infrastructure development</p> <p>Good Coordination among the stakeholders</p>
<p>Outcomes:</p> <p>Trained health workers and doctors; Improved physical infrastructure and modern health equipment; Patient friendly hospitals and health centers; Availability of medicine and health equipment at hospitals and health centers; Improved health condition of local people; Controlled of transmitted disease and flu; Increased number of community health centers; Easy and accessible treatment facilities of different diseases through periodic health camps; Increased number and services of institutional and community health service centers;</p>			
<p>Activities/Programs:</p> <p>Emergency Medical Services</p> <p>HIV / AIDS</p> <p>Tuberculosis</p> <p>Child Health</p> <p>Mental Health</p>			

6.5.3. 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. Also, municipality shall co-ordinated with the Nepal police for expansion and effectiveness of the “Police my friend (“Prahari Mero Sathi”)” program.

Also, increasing in development of municipality, the extent of crime have a significant impact on the livelihood of citizens. Crimes hampers growth and discourages investment and capital accumulation. If not addressed with seriousness, it has the potential to derail both social and economic prosperity.

Table 6.17: Logical Frame Work Approach of Security

Goal	Indicator	Means of Verification	Major Assumption
To provide efficient public safety and law enforcement services	Traffic and Law Enforcement Services Firefighting and Rescue Services Community Safety Total cost of these indicator within the municipality nearly is NRs. 500,000,000.00.	Traffic Control and Traffic Administration Services / Law Enforcement Services / Road Safety Awareness Public Gatherings / Traffic / Law Enforcement Fleet Firefighting and Rescue Services Neighborhood Watches	Safety and Security
Outcomes: The murder rate remains a grave concern throughout the municipality.; The cases of sexual offences within the municipality area decreases; Drug related crimes shall be decreases; Road user facility shall be promoted; reduces Residential Burglars, Fatal crashes;			
Activities/Programs: Safety and Security about following activities Murders Sexual Offences Drug Related Crimes Driving Under the Influence Residential Burglars Fatal Crashes Road user Fatalities			

6.5.4. Culture and Sports

6.5.4.1. Culture

Physical culture is one aspect of the general culture of society; it is a sphere of social activity intended to strengthen personal health, develop one’s physical capabilities, and apply the population’s physical skills to the service of society. The basic indicators of the level of physical culture in a society are the population’s health and physical development and the role of physical

culture in upbringing and education, production, everyday life, and the structure of free time; other important indicators are the quality of physical education, the organization of amateur sports, and the winning of major athletic competitions.

The major forms of physical culture are physical exercise; series of physical exercises and exercise competitions; hardening of the body; occupational and everyday hygiene; physical activities such as hiking, cycling, and boating; and physical labor as recreation for people who work at sedentary jobs.

In socialist society, physical culture is a right of the people and an important means “of bringing up a new man who harmoniously combines intellectual wealth, moral purity, and physical perfection”. Physical culture promotes the population’s involvement in work and public life and raises production efficiency. The physical-culture movement is supported by various state and public organizations.

6.5.4.2. Sports

The three basic types of organized sports, which are mutually related, are amateur sports, scholastic sports, and the major sports. Amateur and scholastic sports are important for physical education and the physical fitness of the general population. A person’s ability to take part in amateur sports may be somewhat limited by his age, health, and level of physical development. Scholastic sports are taught in all types of educational institutions and are included in army training. Amateur and scholastic sports are important in education and upbringing, practical physical training, health, and recreation. Amateur sports are also the basis for the major sports and are important for the physical development of growing generations.

The major sports provide opportunities for individuals with exceptional talent and skill in a particular sport to set athletic records by undergoing intense specialized and individualized training and by constantly striving to overcome their athletic limitations. They also set standards of excellence for amateur sports and introduce new, effective methods of athletic improvement. Sports records and victories won in official international, national, and other athletic competitions generate a moral stimulus for the development of amateur sports.

Each of the numerous sports practiced today has its own particular objective, rules of play, and strategy, usually stressing the players’ determination and moral qualities. Internationally recognized sports are conventionally divided into five basic groups: (1) athletics, or sports based on movement, including track and field, weight lifting, swimming, rowing, ice skating, skiing, boxing, wrestling, fencing, and athletic games; (2) transportation sports, including motorcycle, automobile, airplane, glider, yacht, and ice-boat racing; (3) sports using special equipment for striking a target, such as shooting, trap shooting, and archery; (4) the building and racing of model airplanes, cars, and boats; and (5) games of intellectual skill for two players, such as chess and checkers.

Sports have historically included various actions derived from everyday life. Sports of ancient origin developed from distinctive physical exercises and movements used in work and battle. Movements used in physical education since ancient times include running, jumping, throwing, weight lifting, rowing, and swimming. Some modern sports evolved in the 19th and 20th centuries from existing sports and related spheres of culture; these include many athletic games, gymnastics, rhythmic gymnastics, the modern pentathlon, figure skating, orienteering, and touring. Technical sports came about with the development of technology and include automobile racing, motorcycle racing, cycling, airplane sports, and underwater sports.

Most modern sports that are practiced throughout the world and have commonly accepted procedures and official rules were formalized in the second half of the 19th and first half of the 20th century. At that time official national and international competitions were first held, and national and international athletic associations and sports clubs and societies were formed. For promoting modern sports within municipality, professional sports developed, becoming a branch of show business. Professional sports are a business and a source of profit for entrepreneurs and a means of existence for exploited professional athletes.

In socialist countries sports are supported by a mass physical-culture movement. An ever-growing number of people take part in various sports, and the number of sports schools and sports structures and facilities is constantly growing. State and public organizations plan sports programs and set aside considerable sums of money for this purpose. In addition, a well-organized system of athletic competition has been put into effect.

Table 6.18: Logical Frame Work Approach of Sports

Goal	Indicator	Means of Verification	Major Assumption
To provide recreational facilities and opportunities and programmers aimed to facilitate and promote community development and social cohesion	Common for culture and sports Total cost of these indicator within the municipality nearly is NRs. 250,000,000.00.	Social Development Rural Development Youth Development Facilities Management Sport and Recreation	Women Development Programmed / Support of the Disabled / Elderly / HIV/AIDS Programmed and Interventions Rural Development Programme / Youth Development Programmes, Activities and Projects Management, Administration and Maintenance of Indoor Sport Centre / Youth Café Operation and Maintenance
Outcomes: The Olympic game promote. Healthy people within the municipality			
Activities/Programs: Indoor and outdoor games, cultural activities			

6.5.5. Parks and Open Spaces

Parks and open space vary in size, form and the functions that they perform. A strategic approach is needed in assessing the needs of a community and planning an open space network. Public open space is usually categorized, district and regional open space and can be used for either passive or active recreation. Parks provide for regular local use and may include:

- ⇒ small areas of open space that are accessible to local residents, generally providing for recreation such as children’s play and relaxation, which also can provide an identity and a sense of place for a community especially where it incorporates an important landscape feature or historic characteristic
- ⇒ playing fields for organized sport (from 1ha to 3ha in size) which can also be used for walking and informal activities, and
- ⇒ linear parks linking areas of open space. These often follow drainage lines or environmental corridors and can incorporate off road shared pedestrian and cyclist paths.

An open space network should encourage more active lifestyles by offering a variety of safe and attractive spaces that are well distributed throughout a park and are accessible and cater to the sporting and recreational needs of the community. Public open space should attempt to cater for

multiple users. Through landscaping and the addition of facilities, a sporting oval could be designed to cater for sportspeople, walkers, and children.

Figure 6.15: Landscaping Example for sports people, walkers and children



Figure 6.16: Landscaping Example for low rates participation



With low rates of participation by children, and especially by adults, in field based sports, there has been a move away from allocating a high proportion of local open space to play fields, instead focusing on providing open space for informal recreational use close to where people live in combination with public access to school play fields.

Table 6.19: Logical Frame Work Approach of Parks and Open Spaces

Goal	Indicator	Means of Verification	Major Assumption
Improving access to public open space has the potential to increase levels of physical activity, and to have mental health benefits and reduce healthcare and other costs.	Open space (parks) Total cost of these indicator within the municipality nearly is NRs. 100,500,000.00..	Social Development Rural Development Youth Development Facilities Management Sport and Recreation	Protects and enhances the environmental, cultural and heritage values of an area Assists with place-making by building on the special attributes of an area, eg. rocky outcrops, remnant vegetation, water features, views, vistas, and incorporating community art projects/public art is pleasant and welcoming, eg. through embellishments such as landscaping, park furniture (seats, drinking fountains) and lighting is well maintained and actively managed,

			and is safe and perceived to be safe such as by providing lighting and areas that can be viewed by people.
<p>Outcomes: Improved physical health and wellbeing – with reduced risk of lifestyle related diseases, higher survival rate of other diseases, improved quality of life and long term health, and, in young people and children healthy growth and development. Improved mental health – builds individual self-esteem and self-image, reduces stress, improves concentration and enhances memory and learning. Enhanced social outcomes – encourages social interaction and development of social skills, improves social networks and social capital, increases community cohesion and pride, safer communities Reduced healthcare costs – improved physical health and the building of stronger families and communities helps lower health-care costs, reduces the costs of social intervention and plays a role in reducing crime and social dysfunction.</p>			
<p>Activities/Programs: Construction of one park in all wards</p>			

6.5.6. Urban Social Service Centre

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 municipality shall propose the retrofitting, conservation or restoration of old building (if any) and for reusing in such administrative purpose. The municipality shall identified the proper urban services and implement as soon as possible as the need of urban development. Proposed activities for the development of other social centers are described beneath.

Municipality hall

⇒ The existing Municipality halls need upgrading and improvement of infrastructures for operation.

Old age homes

⇒ 1 old age home shall be proposed. .
⇒ Near the old age home, an orphanage home is also proposed.

Exhibition centers:

⇒ 1 exhibition centre for public and private events, arts exhibition, trainings shall be planned

Library/Information centre:

⇒ The existing government library is to be upgraded as municipality level library with appropriate infrastructure

Museum

⇒ The under construction ethnic museum shall be enlarged to widen its scope as a cultural centre with performing art, centre of study and research for history, culture and tradition.
⇒ Necessary adjoining facilities shall be constructed.

Public Toilets

From the municipality profile, it can be derived that there are nominal public toilet facilities with scarce infrastructure and pitiable hygiene. Hence, 20 public toilets are proposed within the municipality. Minimal charges have to be allocated for using these facilities for maintaining the cleanliness. The public toilet shall be gender friendly and cater differently abled people too.

Table 6.20: Logical Frame Work Approach of Public Toilets

Goal	Indicator	Means of Verification	Major Assumption
To Planning of social urban services for benefitting the social interaction of citizens.	Police stations, library, city hall, museum, and exhibition centers, parks and sports center. Total cost of these indicator within the municipality nearly is NRs. 250,000,000.00.	Records of Sports and Extra Curriculum Unit Records of Gender Equality and Social Security Branch Documentation of Culture, Heritage, Fine Arts and Tourism Promotion Unit Social Security Program Subhead records City Police administrative Branch Details	Budget is available. There is political stability in country. Arrangement of budget is as planned. Focused groups are interested in programs. Construction work is operated smoothly.
<p>Outcomes:</p> <p>Improved physical health and wellbeing – with reduced risk of lifestyle related diseases, higher survival rate of other diseases, improved quality of life and long term health, and, in young people and children healthy growth and development.</p> <p>Improved mental health – builds individual self-esteem and self-image, reduces stress, improves concentration and enhances memory and learning.</p> <p>Enhanced social outcomes – encourages social interaction and development of social skills, improves social networks and social capital, increases community cohesion and pride, safer communities</p> <p>Reduced healthcare costs – improved physical health and the building of stronger families and communities helps lower health-care costs, reduces the costs of social intervention and plays a role in reducing crime and social dysfunction.</p>			
<p>Activities/Programs:</p> <p>Sports, old age house, police post / station, museum, city hall etc.</p>			

5.5.7. Social Development Issues and Problems

Problems in Delivery of Education

Despite much effort and dedication, particularly on the part of teaching staff, to maintain the standard of education, subject expertise and learning methods have not evolved in step with developments.

Economic difficulties have led to shortages of textbooks and basic school supplies, which are now charged to parents rather than the local authority. Educational infrastructure, such as school buildings and water and sanitation, is rapidly degrading.

Problems in Delivery of Health Care

Severe and widespread shortages of basic equipment, a general degradation in the infrastructure, combined with the deterioration of water and sanitation systems have reduced the capacity of the health system to manage disease.

Problems in Delivery of Social Services

The social security system developed as a means of promoting equality among urban and rural populations, resulting in relatively equitable extension of services throughout the country. With dwindling resources, however, it has not been possible to maintain government spending and social investments. Although difficult to quantify, there is a growing gap in income and standard

of living, and one can only assume that class ranking will have an impact on who benefits and who loses out.

6.6. Economic Development Plan

An economic development plan is concerned with creating more jobs by stimulating the economy and making it more competitive. It seeks to improve the economic, political, and social well-being of its people's lives through business activities. 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. While state governments and local non-profit economic development agencies/organizations often take the lead in developing economic development programs, local governments can play a major role to plan for economic development that bolster jobs, the local tax base, environmental sustainability, social equity, and a good quality of life.

Goal

- To make municipality a desirable place to live, invest and visit where all people enjoy a sustainable quality of life.
- To attain a sustainable development of its available resources, both human and natural, with emphasis on agro industrial based investments and eco-tourism development.
- To strengthen governance and management capabilities of the municipal government
- To promote a sustainable agriculture and aqua-culture services and provision of agro-tech support and facilities.
- To design tourism development plan as guiding tool for development of tourism-related infrastructure and projects.
- To institute health and medical programs that should facilitate sound health among its people and afford medical aid for the poorest among the poor in the town.
- To create a vibrant socio-economic environment thus making the town a desirable place for dwelling, business and eco-cultural adventure.
- To establish a unified multi-sectoral participation in its economic development, particularly for its eco-tourism, culture and creative industry.
- To empower the people through skills training, affordable and quality college education and enhance capability building for community and local government leaders.
- To formulate and implement business friendly policies which will invigorate business activity, attract investors and proliferate the principle of free trade in the town.
- To establish an environment that is friendly to children, youth, and women and elderly where their rights and privileges are duly promoted upheld and recognized.

Objectives

- To preserve natural resources and supporting sustainable development
- To develop integrated approach, including infrastructure and transport elements; economic, social and environmental development, and other strategic policies for the municipality;
- To promote equal and balanced development across the entire territory of this municipality.
- To promote democratic process of participation and the common interests of increasing the quality of life and social welfare;

- To promote stable economy which will create opportunities for the generation of new jobs for all residents with equal rights for all;
- To promote economic development in the field of agriculture and the service sector by increasing knowledge and associations;
- To develop partnership and inter municipal cooperation and in wider context also with the purpose of protection, rational use of existing resources, which belong to the community, and drawing benefits from joint projects.
- To increase the economy through commercial agriculture, tourism, industry, trade and service sector
- To increase agriculture production by giving training on mechanized and commercial agriculture methods and technology.
- To develop agriculture pocket areas and develop and upgrade irrigation facilities.
- To formulate plans for boosting the economic activities within the municipality
- Provide livestock and agriculture insurance and crop diversification and variation programme by providing seeds, fertilizers, modern agriculture tools and mechanics to promote and encourage farmers.

6.6.1. Industrial development and trade promotion

Industrial development is very much important for a municipality which is rich in natural and human resources required for industrial growth and may hold a key position in the growth of a stable economy. Industrialization means to lift up income, generate employment opportunities and improve both in imports & exports but also expand development process in different other sectors of the economy.

- Necessary institutional support should be given to small and micro-enterprises in order to make them competitive in national and international markets.
- There is a greater possibility of agro based industries and forest-based industry.
- Promotion of local industries through tax exemption and incentives in physical amenities.
- The private sector should be encouraged through fiscal incentives to set up small industrial estates to provide not only land and infrastructure but also suitable industrial environment & welfare schemes for workers.
- The municipality should coordinate with the state governments, federal government and other concerned agencies for the selection of sites for industrial estates and accessibility of road and electricity. The estate may run by the private sector on self-financing basis.
- A relevant factor of income is remittances from the diaspora which can be utilized to the productive sectors for the development of industries.
- Encourage use of local products.
- The export oriented industry and medical industries can be established in this municipality.
- 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.
- The collected raw materials and agro-products can be processed and used to establish related industries and can be exported to other parts of Nepal as well as in foreign countries.

6.6.2. Employment generation, poverty reduction

Due to the population growth and migration, there is an uncontrolled expansion of housing areas caused by a lack of governance endangers the environment and hinders adequate technical

supply. The level of infrastructure is low, mainly because of lack of maintenance and awareness. The level of primary and secondary education is rising; however, vocational / professional education is still not sufficient. On this scenario, there are lots of things to be done to generate employment and reduce poverty. For the employment generation and poverty reduction, various programs in different economic sector can be planned.

- Coordination to be done with concerned authority and organizations to manage remittance, and programs, shall be conducted to promote it.
- Programs shall be conducted to provide information to those who wants safe abroad employment.
- People will be encouraged to invest the remittance money in productive sectors like shopping malls, parking, sports hall etc.
- Trainings shall be provided in coordination with various NGO and INGO to promote local employment.
- The employment and job opportunities for the educated local people will be raised by providing professional education and training courses and studies within the municipality.
- Construction of a greater number of different agro based industries and other industries small or large, will increase employment opportunity which will help in increasing the economy of the local population.
- 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.

6.6.3. Regional competitiveness of municipality

The followings are the regional competitiveness of municipality.

Agro-Farming Development

The municipality is blessed with fertile land and wetlands. The land is suitable for agricultural production. There is a greater possibility of production of food crops like paddy, wheat, cash crops like, mushroom, sugarcane, mustard, spice, fruits like banana and medicinal herbs and green vegetables as well. Fruits such as banana, guava, pineapple, papaya, mango, and litchi are grown here whereas vegetables such as tomato, potato, cauliflower, cabbage, radish, green vegetable are grown here. Few farmers are also involved in fish farming and animal husbandry. There is also equal opportunity of production of dairy and meat items by promoting animal husbandry. Bee keeping and silk farming is also other product of this municipality. By utilizing local resources agro based industries can be established so as to increase income and employment the people of the municipality.

Industry and Business Promotion

Small and micro industry are the engines of economic growth. This can create employment opportunity so their access to market center, services, capital, education and technical knowledge should be eased. The role of women in the development of society is of utmost importance. In fact it is the only thing that determines whether a society is strong and harmonious as they are the backbone of the society. By providing technical and financial assistance, small women driven and community driven local industry for promoting women empowerment through trainings like knitting, painting and other crafts.

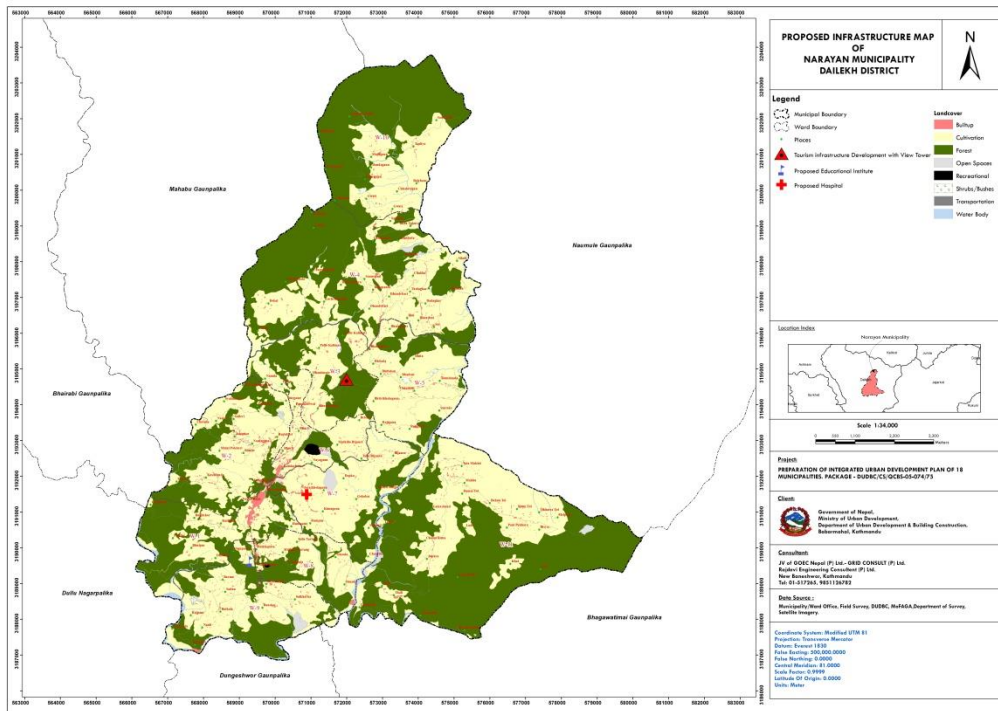


Figure 6.17: Industry and Business Promotion

Tourism Development

Blessed with natural beauty, abundant biodiversity, multiple castes, religion, social diversification and historical and cultural resources, there is a high potentiality of tourism development in this municipality. It can be made a tourist destination for domestic as well as foreign tourists. Since Narayan is a Chhetri culture dominant municipality, by promoting Chhetri Culture economy of the municipal people can be enhanced.

The high value of biodiversity has evolved through its wide, untouched landscape. However, in some cases habitats of special flora and fauna are also affected by human activities such as extensive pasture. Hence, Investment on the tourism sector is very essential for the development of the economy of this municipality. Natural waterbodies like rivers and rivulets, ponds, natural greeneries are the main tourism attractions. Jyamire Khola, Jaraj Khola, Kale Khola, and Salleri river etc. are the main river and rivulets of the municipality. Narayan is also rich in religious aspects. Temples of this municipality are very helpful to attract the tourist in the municipality. In addition to it, Proper management of accommodation of tourist, Children Park and other infrastructure can be constructed in order to welcome more tourist.

6.6.4. Agriculture development

Agriculture is the most important economic activity of the area. Abundant agriculture area is found in the Municipality. A threat to agriculture is the increasing occupation of fertile land by the expanding settlements. Agriculture accounts for the use of 49.61% of the Municipality's land area. Municipality's agricultural land is used for crops production that includes rice, Maize, Potato, tomato, mushroom, coffee and various other vegetables and fruits.

- Improve the performance of the agriculture and livestock systems. Promote improvement in and environmentally compatible use of the local resources, their organization into value

chains, and upgrade of capacities of competitiveness while maintaining a long term sustainable environmental, social and gender equity.

- Establish sound governance of agriculture and livestock systems
- Improve the economic performance and competitiveness of agricultural value chains.
- Improve processing, quality and marketing of agricultural products.
- Create additional income for farmers and rural dwellers, particularly for women, leading to improved living standards and working conditions in rural areas.
- This municipality has 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.

6.6.5. Strategic location of different market center /product collect centers

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. For this the road networks to the rural areas for efficient network and connection for exporting agricultural goods needs to be developed. Coordination with small farmer of nearby villages to promote organic farming concept within the area also helps in increase in economic growth of that area.

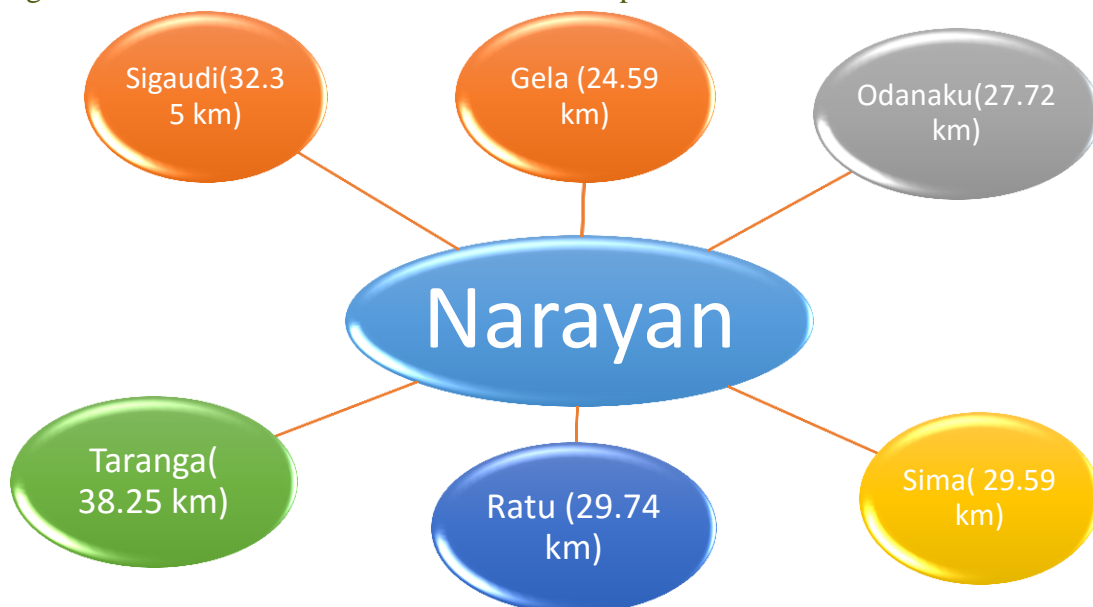
Accessibility and quality of road shall be improved to all wards and surrounding municipality and village for efficient network and export of agricultural goods. Agro-farming in the rural areas shall be promoted for eco-tourism. Trade and networking activities in small urban sub centers should be fostered to stimulate the rural urban economy.

The different market centers within the municipality that can be used for trade and services of this municipality are:-

- Dailekh Bazaar
- Chupra Bazaar
- Simada Lohare Bazaar
- Bhaise khor Bazaar
- Thaludanda Bazaar

The different market center of Naarayan outside the municipality which are core places used for trades and services, import and export are etc.

Figure 6.18: location of different market center /product collect centers



6.6.6. Possible economic zones based on local economic growth potentials

- 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 this municipality.
- They 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 this municipality. These types of infrastructures are promoted. The special packages to attract investment on this business by private sectors are promoted. The multi storey parking in existing bus park can also generated income for this municipality.
- As there are many forests, by organizing the community forest groups, Herbal farming and bee farming can be initiated for economic uplift.
- 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.
- Educational and medical tourism can be promoted through bio-diversity promotion.

6.6.7. Potentials and problems of economic development plan

Potentials of economic development plans

As Narayan is newly recognized Municipality, it is a challenge to establish the municipality as a developed municipality. So, it is important to convert its possibilities into strength and minimize the problems existing in the municipality.

- This municipality is good for growing vegetables and it may also be considered as an important aspect for economic growth in long run. Upgrading and proper management of new techniques in the field of agriculture is needed.
- The economy of this municipality is also dependent upon livestock and dairy product. This can be developed and can be expanded for the long run.
- Construction materials of this municipality can be taken as challenge in the development of this municipality.
- Many important place for tourism is situated in this municipality. It is important to train people of this municipality to involve them in this sector for the economic growth of this municipality.

Problems of economic development plans

- The rise in population also suggests increased demand for housing that prompted the conversion of agricultural land to other uses such as residential and commercial.
- The continued use of synthetic pesticides by farmers brought concern among consumers who call for adoption of good agricultural practices such as through organic farming to minimize, if not eliminate, the use of harmful chemicals in agriculture production.

- There is need to preserve the cultural diversity of the city and its historical assets is to be given preferential attention along with its places of natural attractions.
- Overall, the need for a comprehensive tourism development becomes imperative in order to sustain the Municipality's Tourism.
- Political instability.
- Immigration of local youngsters and Lack of skilled manpower
- Lack of processing industries.
- Lack of sufficient physical infrastructure.
- Lack of monetary and fiscal policy.
- Lack of processing industries (Zinger, Ghee, Cardamom, Forest products)

Table 6.21: Logical Frame Work Approach of Economic Development

Agriculture Development	Indicators						Means of Verification	Major Assumptions
	Unit	Present Condition	Five Years Target (2079/80)	Measuring Indicators	Location	Target Groups		
<p>Goal Improved livelihood and income through cash crops and commercial vegetable farming</p> <p>Objectives To attract farmers towards commercial agriculture, cash crops and vegetable farming Increase income through identification and commercialization of new cash crops Identification of new pocket area for modern agriculture development</p>	Percentage	29.37	50	Agricultural product	Narayan Municipality	Farmers group	<ul style="list-style-type: none"> ▪ Field Survey ▪ Municipal profile ▪ Reports ▪ District profile ▪ Economic survey ▪ Human Development Report ▪ Evaluation report of infrastructure sector ▪ Annual report of District Agriculture Development Office ▪ Living Standard Survey Report 	<ul style="list-style-type: none"> ▪ Allocation of budget ▪ Good coordination among the stakeholders ▪ Continue support from government of Nepal and donor agencies ▪ Farmers will be attracted to cash crops ▪ District agriculture development office will conduct pocket area specific programs
	Percentage	63	70	Dependent population in agriculture	Feasible areas	Vegetable farmers of Municipality		
	Percentage	67.4	80	Ownership in land	Feasible areas	Respective farmers		
	Percentage	10.4	15	Spice crop (Cardamom, ginger, turmeric, garlic) production	Feasible area	Respective farmers		
	Quintel	66.5	75	Cash crops	Feasible area	Respective farmers		
	Number	13	20	Number of aggrovet	Feasible area	Respective farmers		
	Number	1	5	Composting center	Feasible area	All Narayan Municipality inhabitants		
	Percentage	28	40	Farm for livestock				
	Percentage	78	80	Milk Production and their sale				

Outcomes:

- Local farmers will be involved in commercial vegetable farming and cash crop production.
- Local youths will be attracted to agriculture after the commercialization and marketing of agriculture.
- Agriculture production and income will be increased substantially from commercial farming.
- Farmers will be benefitted after the identification, development and expansion of new agricultural area.
- Agricultural market will be available for farmers.
- All weather roads will be constructed to reach local agriculture production to the market easily.
- Agriculture production will be increased by mechanization, expansion and diversification of local agriculture.
- Narayan will be self-reliance in food.
- Agricultural inputs (machine, materials, fertilizer, pesticide/insecticides, and technicians) will easily available.
- Local farmers will be trained.
- Cold storage and processing facility will be available in Narayan .
- Commercial agriculture and cash crops will be supportive to reduce local poverty.

Activities/Programs:

- Operate agriculture subsidy/grant program effectively
- Identification and conservation of local crops and fruits
- Operate crops extension program through scientific demarcation of agriculture pocket area
- Construction of agriculture production collection center, fruits and vegetable collection center, chilling center and processing center
- Manage additional agro technicians with the initiation of Narayan Municipality, DDC and district agriculture development office
- Organize agriculture training, seminar and workshops.
- Provide agriculture loan to local farmers without difficulty.
- Operate agricultural value chain program with the support of NGOs/INGOs.
- Organize best farmers honor program.
- Organize seeds and plants distribution program.
- Organize special agricultural production program
- Organize potato, vegetables and spice crop development program
- Implement integrated business strategy
- Organize crop development program
- Organize community managed irrigated agricultural area program

6.7. Tourism and cultural development plan

Tourism in Narayan is largely an undeveloped and unexploited sector of the economy, but the Municipality possesses a wide range of marketable assets which offer definite attractions for potential tourism. A pleasant climate, stability, friendly and hospitable people and diversity of natural settings from, forests, ponds, rivers to hills and parks are considered significant potential for the development of tourism in Narayan .

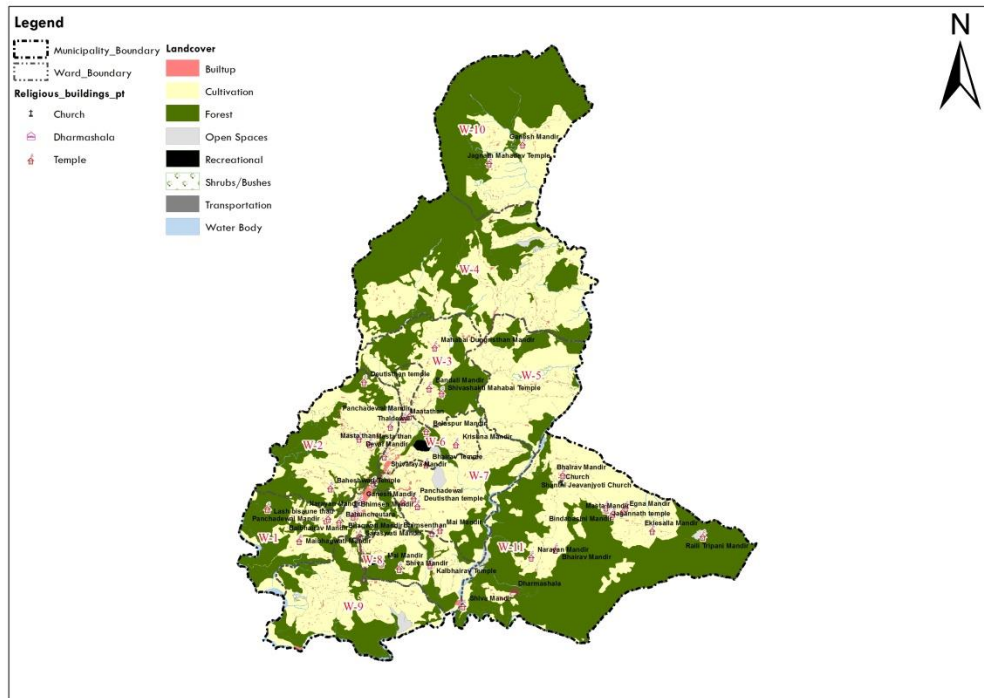


Figure 6.19: Tourism and Cultural Development Map

Narayan has possibility in the field of tourism. Kotila Mandir, Belaspur, Gadi, D. Park, raili Tripani Malika Mandir, Kuikana pancha debal etc. are the well-known temples of this municipality which needs to be managed and maintained to develop them as a touristic attraction centers.

6.7.1. Identification and preservation of cultural heritages sites

To promote Narayan as the touristic destination identification and preservation of cultural heritage sites is most important. Strong monitoring and evaluation body for the tourism activity is essential for the tourism development. . Kotila Mandir, Belaspur, Gadi, D. Park, raili Tripani Malika Mandir, Kuikana pancha debal etc. are the famous temples of cultural importance in and around Narayan municipality. These temples are crowded throughout the year. Hence, it has high potential of attracting Hindu pilgrims in Narayan , local pilgrims. Formulation of plans to promote Narayan as touristic centers is necessary.

- *Pancha debal and Belaspur* which is well known temples should be preserved and promoted as this temple carry a great value among the people.
- *Kotila mandir* is well known for religious fair. Establishment and promotion of this temple is important for development of tourism in this municipality.
- Temple premises management.
- Similarly, facades of building along temples route shall also be enhanced to traditional prototype design.

- A heritage walk route shall be planned for connectivity of main temples of city area.
- Green areas like small parks, patis and relaxing area can be constructed for various cultural activities like gatherings and marriage functions.
- The greenery can be incorporated with street furniture along the cultural route for uplifting the social ambience.
- Karnali River and Chaamgadh River can be developed as the tourist destination by establishing homestay and other touristic view in this municipality.

6.7.2. Conservation of both material and non-material cultures

Material culture is the aspect of social reality grounded in the objects and architecture that surround people. It includes the usage, consumption, creation, and trade of objects as well as the behaviors, norms, and rituals that the objects create or take part in. Thoughts or ideas that make up a culture are called the non-material culture. Non-material culture includes any ideas, beliefs, values, norms that may help shape society. Conservation of both material and non-material cultures are most important for tourism development of this municipality.

This centuries-old tradition is observed every five years in Kotila premises. People celebrate different culture as part of the Hindu festival, with the hope that god will heal all their problems and will lead to the fulfillment of wishes by the goddess. The Kriti debal or Pacha debal mandir is of huge importance and it was established by Pandab in ancient history.

6.8. Environment management plan

An Environmental Management Plan or EMP is a site or project specific plan developed to ensure that appropriate environment management practices are followed during the period of project construction or operation. It provides a description of the environmental situation in the project area, after which, first preliminary environmental and social screening of proposed sub-projects is carried out, and finally, indications on environmental and social safeguards applicable for project implementation are suggested.

It 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.

6.8.1. Present Status

Narayan has forest and rivers like Karnali River, Chammgadh River within its territory. Narayan exhibits range of topographical difference from flat land to hills. The soil of Narayan is best for agriculture. Narayan has rich sources for aggregates, sand, and firewood. There are various tourist destination areas within and near the territory of Narayan .

Sanitation is one of the most important topic used to define environmental status of any area. Most of the population in this municipality has toilet facilities. It is therefore, rated as good. Out of them about 19% of the population have ordinary toilets, while 21.5% have Safe Khalde toilet.

There are few household (11.02%) having water seal whereas 38.5% HH have toilet facility. Public toilets are not in proper condition. Poorly managed public toilets have been notably contributing to environmental pollution in the town. Karnali River, Chammgadh River flowing is experiencing the sewerage discharge that augments the environmental pollution, moreover encroachment of the stream by adjoining dwellers endangers its existence. Unplanned settlement is another important factor for the degradation of environment and their natural resources.

Growing urban population has also resulted in environmental pollution of Narayan. Solid waste and sewerage mainly cause river, land and air pollution. Smell and dust escaping out, particularly from different industries and brick factory results in air and noise pollution. Besides, the haphazard building construction, unmanaged displays and advertisements, grill and metal workshops along the road has increased the visual as well as sound pollution of the city.

The sources of air pollution in Narayan municipality are mainly 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 and main road 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.

6.8.2. Issues and Problems

Industrialization has created economic growth in the municipality, unfortunately sidelining another important aspect of the issue the environment which not only deteriorating environmental quality but also human health and well-being. There are many issues and problem in this municipality regarding environmental condition.

- Due to unmanaged waste disposal loss of productive soil and contamination of soil can be seen which is affecting the production of crops and vegetables. Fertility of soil is decreasing due to haphazard use of insecticides and pesticides.
- There is loss of water supply sources due to unmanaged waste water disposal. Unmanaged disposal of solid waste in river and kholsi is degrading the quality of water of that river.
- Degradation or deterioration in the quality of air with harmful pollutants is mainly due to 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 rapid industrialization.
- Non-timber forests are threatened by deforestation, habitat degradation and unsustainable harvesting.
- Poor management of natural resources, and inappropriate farming practices.

6.8.3. Strategy of Environmental Management Plan

- Provision of EIA and IAA for bigger influencing project with third party evaluation criteria.
- Strict laws or by laws for protection of water bodies and forest areas.
- Promotion of 3R (Reduce, Reuse and Recycle) concept in Solid waste management and segregation of organic and non-organic waste at HH level.

- Promotion of environment friendly materials to use in households and in commercial purpose.
- Provision of treatment of waste-water/ waste product from industries or hospitals.
- Promotion of electrical vehicles.
- Preservation of agriculture land and clear delineation of conservation zone for natural resources.
- Roadside plantation.
- Identification of green pockets within the different areas of town.
- Formation of artificial water bodies to address the micro-climate and manage rainwater.
- Cycle friendly and pedestrian friendly mobility plan.
- Separate industrial zone and buffer zone identified from water bodies.
- Campaign regarding environmental protection.
- The policy of "One house, four trees" should be adopted.

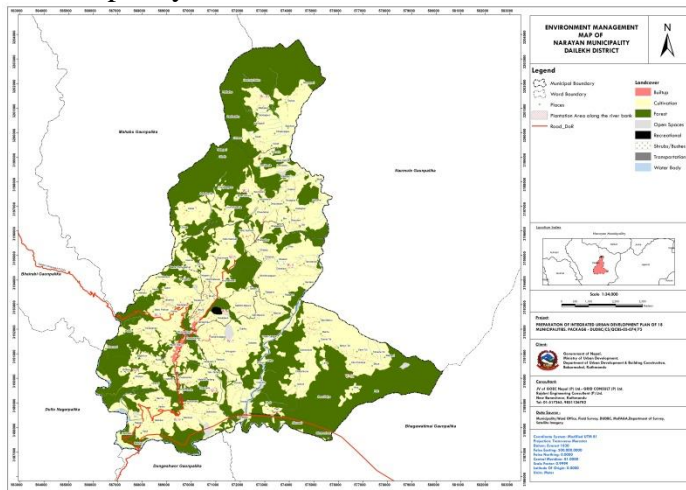


Figure 6.20: Environmental Management Map

Type of water resources	Set Back	Remarks
Non-perennial River	30m from edge of river	The boundary of pond, Wet area, Natural canal is determined using cadastral map by respective Unit.
Perennial River	50m from edge of maximum historic flood	
Pond (Natural)	50m from edge	
Canal	10m from edge	
Public Pond	5m from edge	
Public Well	4m from outer boundary of well	

6.9. Financial development plan

Financial Planning is the process of estimating the capital required and determining its nearest competition. It is the process of managing financial policies in relation to procurement, investment and administration of funds. Financial Development plan deals primarily with the sectoral investment policies, financial liabilities and assets, feasibility of major and minor projects based on financial analysis. IT also helps in formulation, identification and mobilization of resources required during the period of IUDP preparation.

As the world continues to rapidly urbanize, investment in good urbanization holds the key to sustainability. Global challenges like combating poverty, reversing rising inequality, and mitigating climate change will be increasingly won or lost in cities. Financing sustainable urbanization is therefore an investment in our present and future. Local government capacity must be expanded to harness private sector participation, leverage local assets through value capture, and partner with central governments to invest in urbanization. Since financing for infrastructure is insufficient, the path to long-term finance is to diversify sources. One source is more private participation and expanding the territory of taxation for local government.

While quality urbanization demands huge investment, with the right planning and institutional support, it also finances itself. Cities need the ability to access an increasing share of national wealth and revenue, borrow, increase and utilize local revenues, leverage land values, and apply complex financial products.

6.9.1. Municipality revenue improvement plan

1. Under 22 sectors of rights of local government as provisioned and specified in the Constitution of Nepal, resource management and mobilization will be done based on equitable, progressive and just system and tax and revenue rate in the municipality will be determined accordingly. Revenue was increased, mainly by extending the sphere of tax, in the participation of all stakeholders and tax payers and ratio of internal income in total budget of the municipality will be gradually and continuously increased.
2. Implementation of integrated property tax in more organized and effective way.
3. Identifying different sectors of revenue to prepare Improvement of Internal Revenue Action Plan which will orient towards increasing revenue from the next year.
4. Development of the areas of internal resources having a lively and broad base.
5. Increase in industry and business tax.
6. Increase in Transportation and Restoration taxes.
7. Service fees for newly established service centers.
8. International Donor agencies like ADB, World Bank, UN, UN Habitat should be encouraged.

6.9.2. Assessment of possible financial resources

A. Nepal central government

Nepal government provides financial resource for different services like:

- Salary and bonus for agricultural technician of local government
- Educational payment for secondary level
- Educational area development
- Salary for staff
- Daily expenses for field surveyor
- Expenses for office
- Payment for Senior citizen
- Machinery and laboratory equipment
- Medicines for free health service
- Relief campaign
- Village clinic facilities
- Other health assistant field bonus
- Uniform for staffs
- Water and other facilities
- Internal resources are 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, etc.
- Public Participation

- Public private partnership
- International Donor agencies like ADB, World Bank, UN, UN Habitat
- Private investments from multinational groups like CG, Dugar.
- Banks, Co-operatives and Finance companies
- District Coordination committee
- Previous fiscal year
- Private Investors like Asian Paints, Berger, CG, LG, Samsung, Mobile companies, Beverage companies etc.
- Donation from federal government

6.9.3. Allocation of development budget

The estimated budget for the fiscal year 2074/75 is NRS 469699684.89 . Among them 3.37% is for economic development, 44.95% is for Social development which is NRS 211130008.36, 30.4% is for infrastructure development and 20.36% for Institutional development. Summary of budget provided for different purpose are listed below:-

Table 6.22: Municipality Allocation Budget

S.N.	SECTORS	PROPOSED BUDGET	PERCENTAGE
1	Economic Development	15828879.38	3.37
2	Social Development	211130008.36	44.95
3	Infrastructure Development	142788704.21	30.4
4	Environment management	4321237.10	0.92
5	Institutional Development	95630855.84	20.36
	Total	469699684.89	100

6.9.4. Promotional strategy of private sector and civil society

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).

Some of the strategy for promoting PPP modalities in Narayan 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.

6.9.5. Financial and economic analysis

Based on source, income of Narayan municipality is divided as internal i.e. local taxes, service charges, fees, sales, resource mobilization, dividends and bonus) and external like government grants and District development committee, 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).

Economic analysis includes analysis of agricultural area, agricultural products and vegetable farming, import export. Narayan is rich in agricultural area. The total area of 49.5% is used for cultivation. Similarly, different agricultural products like crops, vegetables, fruits etc. are grown in this municipality. Major production of the area are potatoes, Orange, tomatoes, vegetables and fruits. Along with it honey, silk etc. are also produced in the municipality. Likewise, art and craft of local people are exported to nearby business and commercial areas etc.

The relation of surrounding Municipalities/ VDCs with the Municipality (urban-urban and rural-urban linkage) has been developed. Trading and export of goods and services produced in the Municipality and imports of products from outside, transport and storage facilities are available. As urban area is the market center of village, the relationship between settlements have been looked at the production and trading system of the Municipality. Linkage of this municipality to the nearby business area has been developed but needs to upgrade as most of the road network are graveled and earthen.

Industrialization and urbanization are complimentary to each other therefore the condition and possibilities of industries in the municipality needs to be improved. Proper settlement pattern needs to be planned. Enough raw material is available so potential of possibility of industrial development is high.

Economy of the Municipality is influenced due to other nearby big cities and important places were also analyzed. The weekly Hat Bazaar at various places of the Municipality influences the economy of the Municipality. The Buddhists pilgrimage places influences the economy of Municipality.

6.9.6. Issues and Problems

- Lack of proper knowledge of financial systems like better budgeting and accounting system.
- Lack of planning capacity for preparation of Municipal financial action plan for poverty alleviation and infrastructure development.
- Allocation of budget can be divided for tourism development potential sector for economic development.
- Due to lack of monitoring and supervision proper use of resource and budget is not possible.
- Local government are not able to collect tax from the local people as estimated.
- Budget allocated for the economic development needs to be increased as increase in economy and revenue will lead to long term development of this municipality.
- Budget allocated for environment and disaster management is not enough for healthy and prosperous environment of this municipality. So proper focus needs to be given for the proper management and development of management of environment and disaster.
- Low budgeting for development of health institution in infrastructure development. Due to lack of hospitals and proper health care facilities people are facing problem.
- Lack of basic amenities like water, road, sewerage, drainage, electricity to new areas for hotel development, businessman which is essential to attract for tourism development.
- Lack of budget for maintenance of cultural and heritage sites.
- New technology and management for service delivery and development is not enough. New idea for solving municipal issues are important.

6.10. Disaster management plan

This plan provides for the establishment of institutional arrangements for Narayan Municipality to address disaster risk management within the area. It includes both disaster management arrangements for preparing, managing and recovering from disaster events and institutional mechanisms for addressing disaster risk reduction, including climate change adaptation. Arrangements are addressed at the Municipality level to local community levels.

6.10.1. Present Status

According to disaster management committee, Earthquake, Flood, Soil erosion, Thunderstorm, Windstorm are the different disaster prevailing in this municipality. Similarly, drought is affecting the livelihood of the people of this municipality, drying out water resources, unseasonal hailstorm is affecting crops of this municipality. According to the disaster management committee of this municipality, different listed disaster-prone area of this municipality are as follows:

People of this municipality are somehow prone to Flood and fire. According to DRR PORTAL, last year 16 family were affected by flood while 20 family were affected by fire.

The roads affected due to flood needs to be repaired. Settlements which are highly prone to flood needs to be shifted away to the safe zone. All the water resources need to be maintained, repaired and minimized. Similarly, this Narayan Municipality is prone to windstorm, fire, and thunderstorm. Awareness program and pre planning needs to be conducted. Reconstruction of all

the houses, schools also needs to be completed.

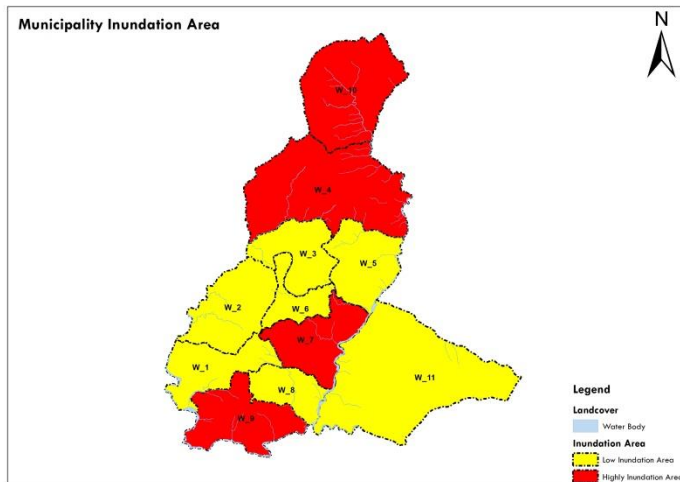


Figure 6.21: Flood Risk Area

In Narayan municipality there is risk management committee. For the risk management local municipality level are playing vital role. Similarly, ward wise planning for the risk management project has been established. Lots of project and planning has been done for the risk management of this municipality. Community level and educational level has been taking part for the development by providing training to the people of the municipality due to which ability to deal with natural hazard has been developed. Different acting programs through national level actors has been conducted in the local level for the awareness program which helps to aware people about the hazard of the municipality. Different governmental and non-governmental organization are helping for the management of risk through different practice.

Fund for disaster management should be divided for each ward. Ward having fund for risk and disaster management should be encouraged. They are contributing by providing notice and communication, search and rescue, primary health care, cleanliness, and others. It will be effective to conduct disaster management program from school.

There are various governmental and non-governmental organization which are continuously contributing in this field. Similarly, educated people, teacher and health officer are also strength of this municipality whose knowledge can be used for the disaster management of this municipality. Different road networks are the strength of this municipality which is used during disaster management process along with the normal use.

6.10.2. Issues and Problems

- Emergency treatment for the affected people is not available due to which quick action cannot be taken for the people affected by disaster.
- No proper management of rescue team and facilities.
- Lack of public awareness to deal with disaster.
- Lack of proper co-ordination with stakeholders of Risk Management Committee.
- Slow rescue work progress for the affected people from disaster.
- No provision for pre-monitor disaster device.
- Lack of Primary health care and medical supply units for controlling epidemics.
- Squatter settlement alongside river.

6.10.3. Adaptation Strategy for Disaster Management

Appropriate ground work should be done to minimize the risk of life and property due to disaster related calamities some of the strategies that needs to be adopted are:

1. Flood

- An alarm system for detecting flooding is to be installed.
- 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.

2. Fire

- 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.
- Increase fire brigade capacity.
- Coordinate with police and army for emergency.
- A preparedness program for fire led disaster shall be formulated at ward level.

3. Thunderstorm

- 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.

4. Epidemics

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

5. Earthquake

- 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.

6.10.4. Institutional Development Plan to be inserted

The different institutional development plan to be inserted for the disaster management are as follows:

1. Formation of Disaster Risk Management Committee will provide the downward focus required to work at the local level with coordination among the line agencies.
2. Activation of current committee.
3. Formation of Ward Level Disaster Risk Management Committee.
4. Identification of all organization operating of this municipality.
5. Co-ordination with all stakeholder of this municipality.
6. Governmental and non-governmental organization needs to be encouraged to provide their own helping hand in their own way.
7. Different political parties and group like Aama Samuha, Mahila Samuha, different finance, saving and cooperative limited, clubs should be encouraged.
8. Set of working guidelines needs to be raised for implementing agencies that have to notify an authorized body about their work in any area of the municipality.
9. Local people for disaster risk management for all line agencies and key stakeholders participating in the activities should be established which will provide a low-cost way of building institutional coordination across agencies and organizations.

7. MULTI-SECTOR INVESTMENT PLAN (MSIP)

As we have already discussed in earlier sections of financial plan and economic development plan, a city development of 15-year plan with ambition of one lakh population needs lots of investment. In addition, these investments could be in the form of annual budget, loans, grants/aid or some international projects. With model of public private partnership modality of infrastructural investment, it is also expected to have investment of private sector in city infrastructure projects. Apart from security and major strategic roads, in most of the sector we can expect the investment from private sectors and from other donor agencies. We have to understand that these entire budgets should be funneled down through the single channel of local project implementation body, which could be TDC or any other new autonomous body. For this, projects are identified under different sections, which could be new construction, upgrading existing scenario or upgrading the existing quality or capacity. With some standard rate of similar contemporary projects, under different headings, cost estimation is allocated.

Multi-Sector Investment Plan (MSIP) is to divide high priority projects into different groups. The first group will have the projects, which require formal budget approval and the second those, which are likely to cost little and which can be approved easily. The third group may include those to be implemented by the private sector and CBOs. All projects can be launched side by side.

For the preparation and implementation of MSIP, the following points should be considered:

- Identify the lead agency and form a steering committee that will set up priorities on investment. This should be composed of all the funding agencies and stakeholders.
- Obtain information on investments that are already underway or about to be started.
- Prepare the list of priority projects. Group them by agency or sectors.
- Plan for the revenue side of the MSIP budget.

As we know that these development plans have target period of 15 years, we have divide into 3 major milestones, short - term, mid-term and long-term projects. Depending upon the priority of the project and possible budget required, different projects are put under different period. Some longer-term projects may fall under different time and some of the projects are continuous process throughout the development, like training and updating the institutional capacity.

Municipality, estimated budget of around Million is for 15 years'. Around 48.77 % is to be spent from central government with different department sections. Around 30.52% of the total budget is to be spent from the local government over the range of 15 years. Remaining investments are to be expected from private sectors followed by NGO/INGOs and other community sectors.

From the various thematic plans and programs of this IUDP, specific projects are scheduled for 15 years. Amongst the total budget, based on the priority, expenses are made on sectoral themes, which are explained hereafter.

7.1. MSIP programs/projects for short term

The projects, which can be implemented within the short period of time that can be considered as short-term projects. Immediate projects are those that can be implemented within three to five years. A five-year plan should follow the preparation of the annual program. This makes the plan affordable and helps to achieve objectives in the rational manner. Municipality projects like up gradation works, construction of bridge etc. can be considered as short- term projects (first phase development projects).

7.2. MSIP programs/projects for middle term

Projects that can be implemented only after five years and which should be completed within ten years can be considered as middle-term projects. These are the second phase development projects. However, some of the middle term projects can be continuation of short-term projects where as some of them will be continued for longer period i.e. more than ten years. Municipality projects like improvement of pedestrian, bicycle track, underground wiring, up gradation of physical infrastructure, security facilities, construction of theatre, library, old aged home etc. can be considered as middle term projects.

7.3. MSIP programs/projects for long term

Since the target period of IUDP is 15 years, the projects, which can be implemented only after ten years and which should be completed within fifteen years that can be considered as long-term projects. These are the third phase development projects. However, some of the long-term projects can be continuation of short-term projects or middle term projects. In case of investment, municipality projects like traffic development plan, tourism action plan, water supply network, drainage network etc., which may be the continuation of short term and middle term required highest investment.

Especially, highest investment is done under infrastructures like roads, sanitations and others. Apart from the road, health and education are the most prioritized sector under social development plan. In yearly basis, budget will be spent on training and awareness campaigns on various issues on longer term. It is also important to consider that large amount of investment are put under the recreation. Good investment is allocated on improving the institutional capacity of the different service oriented institutions in the form of institutional development plan, financial plan or in terms of security as well by making citizen friendly city. Large investment is expected from private sectors as well, especially in the field of housing, job opportunities, entertainments, recreations and others. In the field of solid waste management plan, environment sensitive plan, non-governmental organizations are expected to be in good part. Such national and international organizations will help to improve the institutional capacity as well as promote the awareness regarding the topic.

Basic summary of the MSIP is shown below:

MSIP Summary Sheet

Table 7.1: Summary of Allocation Budget of Municipality

S.NO	SUBJECT	TOTAL BUDGET (Million Rs.)	Phase-Wise Development			INVESTMENT SECTOR					Remarks
			ST (0-5 YRS)	MT (5-10 YRS)	LT (10-15 YRS)	Central Govt.	Local Govt.	I/NGO's	Pvt. Sectors	Others	
A. PHYSICAL INFRASTRUCTURE DEVELOPMENT PLAN (50%)											
1	Road Network and Transportation Plan	1517.3	20%	20%	60%	55%	40%	0%	5%	0%	
2	Water Supply	214.6	20%	20%	60%	55%	40%	0%	5%	0%	
3	Drainage and Sanitation	139.2	20%	20%	60%	40%	20%	10%	15%	15%	
4	Solid Waste Management	506.8	30%	30%	40%	75%	25%	0%	0%	0%	
5	Electricity and Communications	222.0	40%	60%	20%	50%	40%	0%	10%	0%	
	Sub Total	2599.84									
B. SOCIAL INFRASTRUCTURE DEVELOPMENT PLAN (15%)											
6	Education	678.7	20%	30%	50%	60%	23%	8%	8%	0%	
7	Health	442.2	20%	30%	50%	58%	35%	4%	4%	0%	
8	Security	172.4	30%	40%	30%	80%	20%	0%	0%	0%	

S.NO	SUBJECT	TOTAL BUDGET (Million Rs.)	Phase-Wise Development			INVESTMENT SECTOR					Remarks
			ST (0-5 YRS)	MT (5-10 YRS)	LT (10-15 YRS)	Central Govt.	Local Govt.	I/NGO's	Pvt. Sectors	Others	
9	Recreation	231.7	20%	30%	50%	50%	25%	0%	25%	0%	
10	Urban and social infrastructures	185.9	20%	20%	60%	100%	0%	0%	0%	0%	
	Sub Total	1710.86									
C. MISCELLENIOUS DEVELOPMENT PLAN (35%)											
11	Conservation, Cultural and Tourism Development Plan	168.7	20%	30%	50%	0.00%	70.00%	0.00%	12.50%	17.50%	
12	Economic Development Plan	1068.6	30%	30%	40%	32.86%	38.57%	0.00%	28.57%	0.00%	
13	Financial Development Plan	11.9	40%	30%	30%	37.50%	55.00%	7.50%	0.00%	0.00%	
14	Institutional Development Plan	77.0	40%	40%	20%	70.00%	25.00%	5.00%	0.00%	0.00%	
15	Environment Sensitive Plan	145.7	30%	30%	40%	25.00%	45.83%	4.17%	0.00%	25.00%	
	Sub Total	1471.874									
	Total Investment	5782.575				2820.16	1764.84	353.31	554.55	289.71	

S.NO .	SUBJECT	TOTAL BUDGET (Million Rs.)	Phase-Wise Development			INVESTMENT SECTOR					Remarks
			ST (0-5 YRS)	MT (5-10 YRS)	LT (10-15 YRS)	Central Govt.	Local Govt.	I/NGO's	Pvt. Sectors	Others	
	Required in M Rs.										
	Contribution in %					48.77%	30.52%	6.11%	9.59%	5.01%	
	POTENTIAL INVESTORS					Central Govt.	Local Govt.	I/NGO's	Pvt. Sectors	Others	

The process of preparing and implementing the Physical Development Plan of cities, towns and market centers in Nepal has been going on since a long time. However, these Physical Development Plans are not coherent and urban infrastructure and services lack appropriate norms and standards. Consequently, many of these infrastructures have failed to provide the appropriate level services in a way that have also failed to meet the long-term service demand of the cities. Hence, formulation of Planning Norms and Standard has become necessary to manage an urban environment, improve an economic efficiency and the quality of life of urban area. It is for this reason that the department has undertaken this initiative. For the sake of this “Planning Norms and Standards the term Norms”, has been defined as the socially or institutionally set values which does shape and govern

8. Annexes

Wardwise Wishlist (Long List)

Ward no 2:

- Construction of pakki road from Ekantakuna to Sotipipal
- Construction of building of Birthing center
- Construction of water tank
- Construction of ward office building
- Construction of canal for irrigation

Ward no 3:

- Construction of ward office building
- Construction of gravel road from Panch Dewal to Piuse till Kalimati
- Construction of Piuse irrigation canal
- Construction of canal od Simaltala
- PCC of Desigade Bazaar
- Piuse Drinking water improvement and source conservation
- Construction of Shahid waiting place in Piuse Chautara

Ward no 4:

- Construction of road from Kalel chowk to Pipal danda
- Construction of road from Tiduka Sakha to Bisuna till Lami Danda
- Construction of Heath post building
- Construction of building of Mahendra Secondary school
- Construction of ward office building
- Construction of motorable road from Naula Gau till Saat Mula

Ward no 5:

- Construction of road from Bhaisekhor to Baulagau
- Construction of road from Malika till Chatikot
- Construction of road from Dhita Tole to Bhaisekhor
- Construction of ward office building
- Construction of irrigation canal from Seti Khola to Bini
- Construction of residential home for socially disadvantaged people

Ward no 6:

- Blacktopping of road from Ganesh Chowk to Panchdewal
- Blacktopping of road from Rampur to Bijaura
- Provision of lighting in all roads of ward 6
- Construction of cold store building in Bijaura
- Construction of bus park in Kadachaur
- Construction of steps for tourist from Panchdewal to Belaspur

Ward no 7:

- Construction of ward office building
- Construction of canal from Jarjakhola to Maur Chausil
- Construction of Kimugau Chautara Park and waiting place
- Improvement of road from Wadaban Chowk to Jarjakhola Dobhan
- Water supply from Bijaura Bhitrikhola
- Conservation of Deuli Mandir,

- Mandir
- Construction of Fulbari park
 - Land pooling in Nayagau

- Bijaura Bhairav Mandir and Dewal
- Construction of RCC irrigation canal from Jadepani to Tate
 - Construction of building for health post
 - Construction of pakki bridge connecting Bhabekhola, Ghattekholra and Bijaura

Ward no 8:

- Improvement of road from Dharmashala to Dailekh district hospital
- Construction of ward office building
- Construction of Pipal Chautari
- Blacktopping of road
- Improvement and proper management of D park
- Construction of building of Maipuje Mandir
- Construction of building of Simada Kalbhairav Mandir
- Construction of building for Dalit, Janjati and socially disadvantaged people

Ward no 9:

- Solar lighting program from Chupradevi to Tartang Road
- Construction of ward office building
- Construction of health post building
- Irrigation project from Lohore Khola till Batthala and Dehdaha Liting
- Construction of park and zoo in Chupra
- Blacktopping of road from Mauladanda to Bhagawati Tole
- Blacktopping of road from Rajpani to Batthala
- Bhaheri Water supply project

Ward no 10:

- Road from Sahid gate to Ward office
- Construction of ward office building
- Irrigation canal from Paneri Khola to Birauta
- Water supply project
- Repair of Bhawani Mandir
- Construction of building for primary school
- Construction of bridge

Ward no 11:

- Construction of ward office building
- Construction of school building of Shree Bhairav Primary School
- Construction of swimming pokhari in Raili Tripani
- Drinking water supply in Lamatada Bazaar
- Construction of school building