



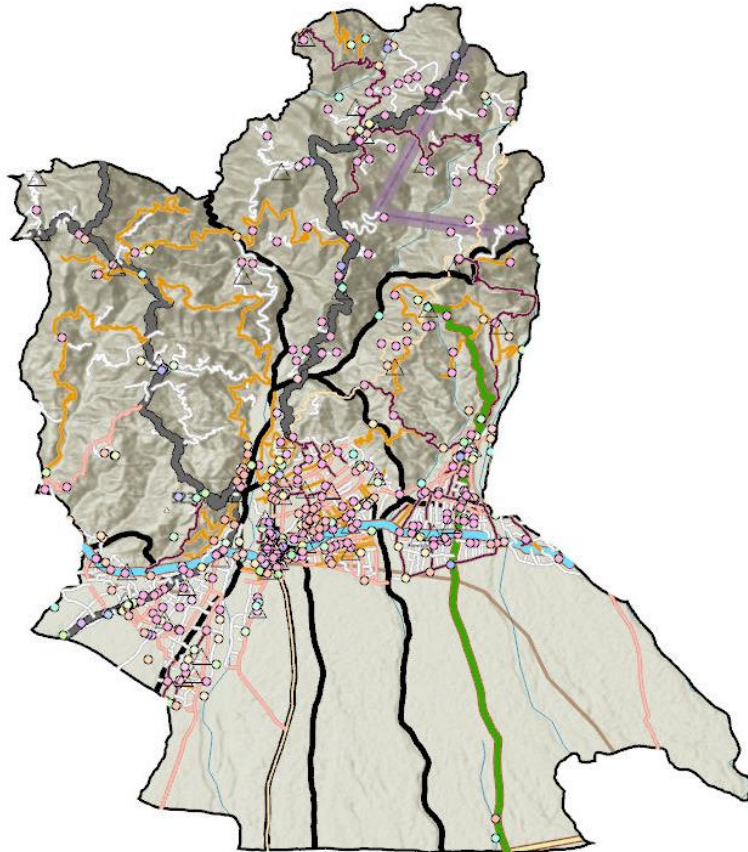
## Letang Municipality

Office of Municipal Executive  
Morang District  
Koshi Province, Nepal

# MUNICIPAL TRANSPORT MASTER PLAN OF LETANG MUNICIPALITY (MTMP)

## VOLUME I: MAIN REPORT

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## Letter of Submission

Letang Municipality

Office of Municipal Executive

Morang District

Koshi Province, Nepal

This document is the Final Report prepared for the Title of Consulting Services, “**Letang Municipal Transport Master Plan (MTMP)**” undertaken by, Letang Municipality Office, Morang District This document has been prepared by Platform Engineering Construction and Consultancy Pvt. Ltd. The opinions, findings, and conclusions that have been expressed herein are those of the consultancy and do not necessarily reflect those of the municipality.

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*“Municipal Transport Master Plan (MTMP) of Letang Municipality”.*

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## Project Description and Structure

Altogether, the study, analysis, and planning of the MTMP of Letang Municipality have been compiled in three volumes including GIS Maps. This report is volume one that presents the overall study outcome in the form of data, analysis, and the proposed plans and proposals. The total compilation is presented including the project description below;

<b>Project Descriptions and Structures</b>	
<b>Title of Consulting Service</b>	Preparation of Letang Municipal Transport Master Plan (MTMP)
<b>Local Level</b>	Letang Municipality Morang District Koshi Province, Nepal
<b>Date</b>	2081
<b>Report Volume-I</b>	Main Report (Final Report)
<b>Report Volume-II</b>	GIS Maps and Drawings (MTMP- Maps)/Quantity and Estimates
<b>DVD/USB</b>	Soft Copy
<b>Consultant</b>	Platform Engineering Construction and Consultancy Pvt. Ltd.

## **Acknowledgment**

The MTMP report has been developed based on an extensive field study and study of relevant documents guidelines such as DoLIDAR Guideline and Manual 2014 A.D., Nepal Road Standards 2070 B.S, Nepal Urban Road Standards-2076 (NURS-2076 BS), Urban Planning Norm and Standard 2015 A.D., interactions with the local government, people representatives, stakeholders in the municipality and ward levels and as per the ToR provided along with the contract agreement with the Letang Municipality. We would like to express gratitude to the Letang Municipality for providing an opportunity to study and prepare of Municipal Transport Master Plan (MTMP).

The consultant would like to express its appreciation to the officials from Letang Municipality are highly grateful for the support. We Consultant would like to extend sincere gratitude to Mr. Bhupendra Kumar Lavati, Mayor, and Mrs. Krishna Kumari Pokharel Niraula, Deputy Mayor, of Letang Municipality. We would also like to express our gratitude to Mr. Narayan Neupane Chief Administrative Officer of the municipality, members of the steering committee, head of the technical section, planning Section, and other concerned sections of the municipality for their valuable time, support, valuable comments and suggestions during the preparation of MTMP. We would like to express special thanks to the chairman of all wards and ward members, the representatives from different political parties, and volunteers for their support and contribution to making the working environment easy and pleasant for their coordination during the field visit and project identification.

I, the Consultant, am also grateful to all technical and management teams involved in the preparation of MTMP. The acknowledgment will be incomplete if we ignore the support obtained from every individual in the municipality. Finally, we would like to thank all the helping hands involved directly or indirectly in the preparation of this report.

## Acronyms/Abbreviations

BT	Black Topped
CBS	Central Bureau of Statistics
DoLIDAR	Department of Local Infrastructure Development and Agricultural Roads
DoR	Department of Road
DRCN	District Road Core Network
DTMP	District Transport Master Plan
DUDBC	Department of Development of Building Construction
ER	Earthen Road
FR	Feeder Road
GIS	Geographic Information System
GPS	Global Positioning System
GR	Graveled Road
IAP	Integrated Accessibility Planning
IDP	Integrated Development Plan
IDPM	Indicative Developmental Potential Map
INGO	International Non-Governmental Organization
IRC	Indian Road Congress
KM	Kilometer
LGOA	Local Government Operation Act
MIM	Municipal Inventory Map
MTMP	Municipal Transport Master Plan
MoFALD	Ministry of Federal Affair and Local Development
MoUD	Ministry of Urban Development
MRCC	Municipal Roads Coordination Committee
MRCN	Municipal Road Core Network
MTPP	Municipal Transport Perspective Plan
NGO	Non-Governmental Organization
NH	National Highway
NMT	Non-Motorized Transport
NPC	National Planning Commission
NRS	Nepal Road Standard

NTPCO	New Town Project Co-ordination Committee
NUDS	National Urban Development Strategic
NURS	Nepal Urban Road standard
OD	Origin and Destination
PCU	Passenger Car Unit
RCUP	Resource Conservation Utilization Project
RBN	Road Board Nepal
RoW	Right of Way
RTO	Regional Transport Organization
SOR	Socially Oriented and Responsibility
TIMP	Transport Infrastructure Master Plan
TDF	Town Development Fund
ToR	Term of Reference
VDC	Village Development Committee

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## Chapter: 1 Introduction

### 1.1 Context and Background

Population growth and rapid urbanization have become the greatest noteworthy scenario in the context of the local-level (Municipal) development. Provisions for transportation, mobility, and supportive infrastructures for well-organized urbanization have become a prominent challenge for most of the stakeholders and administrations. With the increase in the number of migrants, the provision of well-planned and well-managed infrastructure for urban development has become a challenge, and the local authority is unable to provide proper infrastructure, thus properly managed urbanization and urban road network plan is required.

Physical infrastructure development has been extremely sluggish especially at the local level in Nepal, for a long due to extending political turmoil and transition. The development of transportation infrastructure is one of the most essential groundworks for opening other avenues of development. Proper development of the transportation system opens accessibility of people to larger markets, service centers, and overall economic sectors. The development of roads also leads to the development of urban centers with amenities like hospitals, schools, markets, services, etc. Roads establish significant linkages with the large neighboring cities with the vibrancy of economy, human activities, and transactions. This sort of linkage is key for the development of rural areas. Therefore, the development of transportation basically through the development of road linkages is a fundamental necessity of the Municipality. It has prioritized the development of a sustainable Municipal Transport Master Plan which is expected to address the need of opening easy access to people's mobility in particular and the inception of avenues of all kinds of development in general.

Municipal Transport Master Plan (MTMP) is defined as the process of identification, classification, and prioritization of roads within a Municipality; construction, upgrading, maintenance, and rehabilitation of prioritized roads based on approved criteria with the calculation of financial budget. The background for the preparation of the transport master plan along with the objectives and the scope of planning has been stated in this chapter. The basic approach for the preparation of MTMP is the bottom-up and participatory approach.

Chiefly, this MTMP aims to assess the present status of roads and transportation within the Municipality through extensive field survey and inventorying of the details of existing roads and transport situation. The study has also unfolded the problems and genuine necessities of road and transportation along with the recommendation of key interventions to be made for the sustainable development of road and transportation networks. The planning Approach adopted by the consultant is fundamentally bottom-up and participatory. Study and analysis of existing road status and need assessment have been the basis for this overall planning.

MTMP is a long-term visionary plan which aims to systematize the road and transport development processes in the Municipality. It identifies the roads and creates a complete inventory of the roads. It categorizes the roads into four classes A, B, C, and D according to their importance. It prioritizes the interventions and allocates the estimated budget for the necessary interventions. Above all, it systematizes the process of road and transportation development according to the need of the municipality. The consultant has followed all the prevailing norms and standards for the planning. It is based on the Approach Manual prepared

by DoLIDAR and MTMP guidelines prepared by the then MoFALD. It has determined the Municipal Road Core Network (MRCN) as practical in the planning process of DTMP/MTMP and has identified the key linkages with another road network. A complete road network has been identified to make a basis for the future development of roads which primarily helps to develop transport access to all the settlements in the municipality meeting the national standard of nominal duration to reach the core road network or all-weather roads.

A broader perspective on urban transportation is proposed in National Urban Development Strategy 2017 A.D. The strategies include the integration of land use and transportation in urban as well as regional planning and development of related institutional mechanisms and capacity. The provision of hierarchically balanced urban road infrastructure; promotion of sustainable urban public transport, and preparation and implementation of comprehensive transport management standards and plans for urban areas are the broader perspective that has focused on in the strategy. In prioritized regions, the provision of high-speed inter-urban transport infrastructure is also proposed.

Local Government Operation Act (2074) provisions formulation of local development plan according to needs-based, bottom-up and participatory approach. It has prominently defined tangible steps for the formulation of such a development plan. The main objective of this plan is to invest in planned development within each of the local bodies' territories. Ultimately, development endeavours help attain sustainable livelihood and improved the well-being of people. People's needs for sustainable livelihood and improved well-being are such that they require better access to information, markets, and opportunities; they need better access to health, education, and other goods and services. Hence as a part of MTMP preparation, accessibility planning has been recommended as an effective tool to access the existing situation of the services and facilities. A strategic road network is important for national income while local roads are for poverty reduction (Worku, 2011). The interventions derived from the accessibility planning have represented the real needs and priorities of the local people.

Nepal Government, Ministry of Federal Affairs and Local Development stepped up to bring forward a proposal to create New Municipalities including Municipalities from those urban and semi-urban settlements by combining prevalent Village Development Committees approved the proposal leading to the creation of 753 local bodies with new municipalities in various steps. There are altogether 6 Metropolitan, 11 Sub-Metropolitan, 276 Municipalities, and 460 Rural Municipalities, in October 2017. Since this municipality is at an early stage of infrastructure development, they require an appropriate long-term plan so that organized and beautiful cities shall be developed. MTMP has been considered an objective tool for prioritizing the projects and it will fulfil partially the lacking part of LGOA. 2074. Therefore, the Letang municipality is intended to prepare MTMP for sustainable transport development in the city.

## **1.2 Objectives**

The overall objective of the consulting services is to prepare the Municipal Transport Master Plan (MTMP) of the Letang Municipality. The MTMP has been prepared as per the Department of Local Infrastructure Development and Agricultural Roads (DoLIDAR)s Approach Manual and ToR provided by the client. The specific objectives, but not necessarily limited to the following, are:



- ❖ To collect demands for new/rehabilitation transport linkages from municipalities/Settlements based on the city development plan.
- ❖ To analyse the accessibility situation.
- ❖ To identify and prioritize the interventions based on the accessibility situation.
- ❖ To prepare Indicative Developmental Potential Map (IDPM).
- ❖ To prepare the Municipal Inventory Map (MIM) of Road networks.
- ❖ To prepare the Perspective Plan of transport services and facilities.
- ❖ To synchronize the draft Perspective Plans of adjoining VDCs/Municipalities/districts.
- ❖ To develop scoring criteria and their approval from Municipality.
- ❖ To prepare the five years Municipal Transport Master Plan (MTMP)
- ❖ To prepare a realistic physical and financial implementation plan for prioritized roads for the MTMP period; and
- ❖ To prepare Municipal Transport Perspective Plan (MTPP).

### **1.3 Scope and Limitation of MTMP**

The consulting service has provided high-quality professional services for the preparation of the Municipal Transport Master Plan (MTMP), harmonized with the approach Manual of the Department of Local Infrastructure Development and Agricultural Roads (DoLIDAR). The scope of services carried out by the consultant broadly includes, but not be limited to, the following:

- ❖ Assist in the formulation of the Municipal Roads Coordination Committee (MRCC).
- ❖ Secondary Sources of Information and Review of the existing MTMP.
- ❖ Accessibility data collection and analysis.
- ❖ Developing Scoring Criteria and approval from municipality.
- ❖ Road classification and nomenclature.
- ❖ Analyse fund availability for Roads.
- ❖ Preparation of Perspective Plan of interventions of services and facilities.
- ❖ Preparation of the Municipal Transport Master Plan (MTMP).
- ❖ Prepare a realistic Physical and Financial Implementation Plan for prioritized roads for the MTMP implementation period.

#### **Limitation**

This transport master plan is limited to the territory of the Letang Municipality. Since the data collected for the planning has been based on the information provided by the local people at the ward levels, they may have supplied limited information. Although enumerators have attempted their best to reach all the roads for the necessary data, there are chances of missing the data to some extent. The misnaming of the road may occur due to pronunciation errors or hearing problems by the respondent as well as enumerators. Chances of error may occur during data

entry and tabulation. The scale used to work on GIS is also likely to generate some errors. Though such limitations and errors are obvious, attempts have been made to minimize such errors by taking precautions in the error-prone areas. The field survey has been conducted through GPS Survey.

#### **1.4 Output and Deliveries**

Municipal Transport Master Plan has been prepared with a complete picture of the Municipal Road Core Network (MRCN). The plan supports municipal development and a well-managed urban perspective. The complete in-depth analysis of the development potentials of the study areas includes the following outputs:

- ❖ Study of existing road networks and mobility situations.
- ❖ Analysis of additional and potential road networks.
- ❖ Prepare existing road network inventory maps and develop location maps.
- ❖ Road grading, coding, and prioritization with the nomenclature of each road network.
- ❖ Develop 5-Year horizon road inventory development plan.
- ❖ Develop 5-Year horizon budget development plan.
- ❖ Development of final GIS road inventory plan maps.

## Chapter: 2 Project Methodology

### 2.1 General and Technical Methodology Approach

Municipal Transport Master Plan has been prepared using a participatory bottom-up approach from the settlement level. We, experts, incorporate in the planning process, where active participation from representatives of the mayor, deputy mayor of the municipality, ward members, political parties, line agencies, and Municipality officials is crucial. The Municipality Road Coordination Committee (MRCC) has been constituted as an authorized legislative body of the Municipality.

The consultant studied thoroughly the objective and ToR for the preparation of the Municipal Transport Master Plan (MTMP).

Accessibility is the function of distance and traveling time, frequency of travel, transport infrastructure difficulty factor, physical facilities of Socially Oriented and Responsibility (SOR), and management of SOR provision and viability of service provision. The degree of accessibility problem was assessed in terms of the accessibility index of the settlements to the concerned SOR sector. The accessibility Indicator is a measurement of accessibility.

The required interventions were identified for improving accessibility of every settlement based on easing and reducing travel time, improving physical facilities for SOR, and improving the management of SOR provision in an integrated fashion.

The consultant's efforts have been comprehensively streamlined to meet the objectives of the assignment by covering the scope of services outlined in the prescribed Terms of Reference. The consultant followed the following specific process to accomplish the assignment as specified in the objectives and scopes of work.

The project methodology comprises the Integrated Accessibility Planning (IAP) tools for the accessibility planning and DoLIDAR's Approach manual for the roads for the preparation of the MTMP with some modification as per the Municipality situation and based on the ToR provided by the Municipality as directed by the project in-charge of the client.

The phases proposed in the technical approach have been further broken down into task series and specific tasks according to the intended content of the task, to help ease in comprehending the methodology planned for carrying out the task. The analysis will be carried out for the input requirements of discipline experts and the output expected for each task. Since the methodology has been developed in the form of phases formulated in the Technical Approach, their compatibility has been assured. The problems that normally come up in such projects were identified. The phase included in the approach and methodology addresses them adequately. Task and sub-tasks are organized in a sequence, to run in series or parallel process.

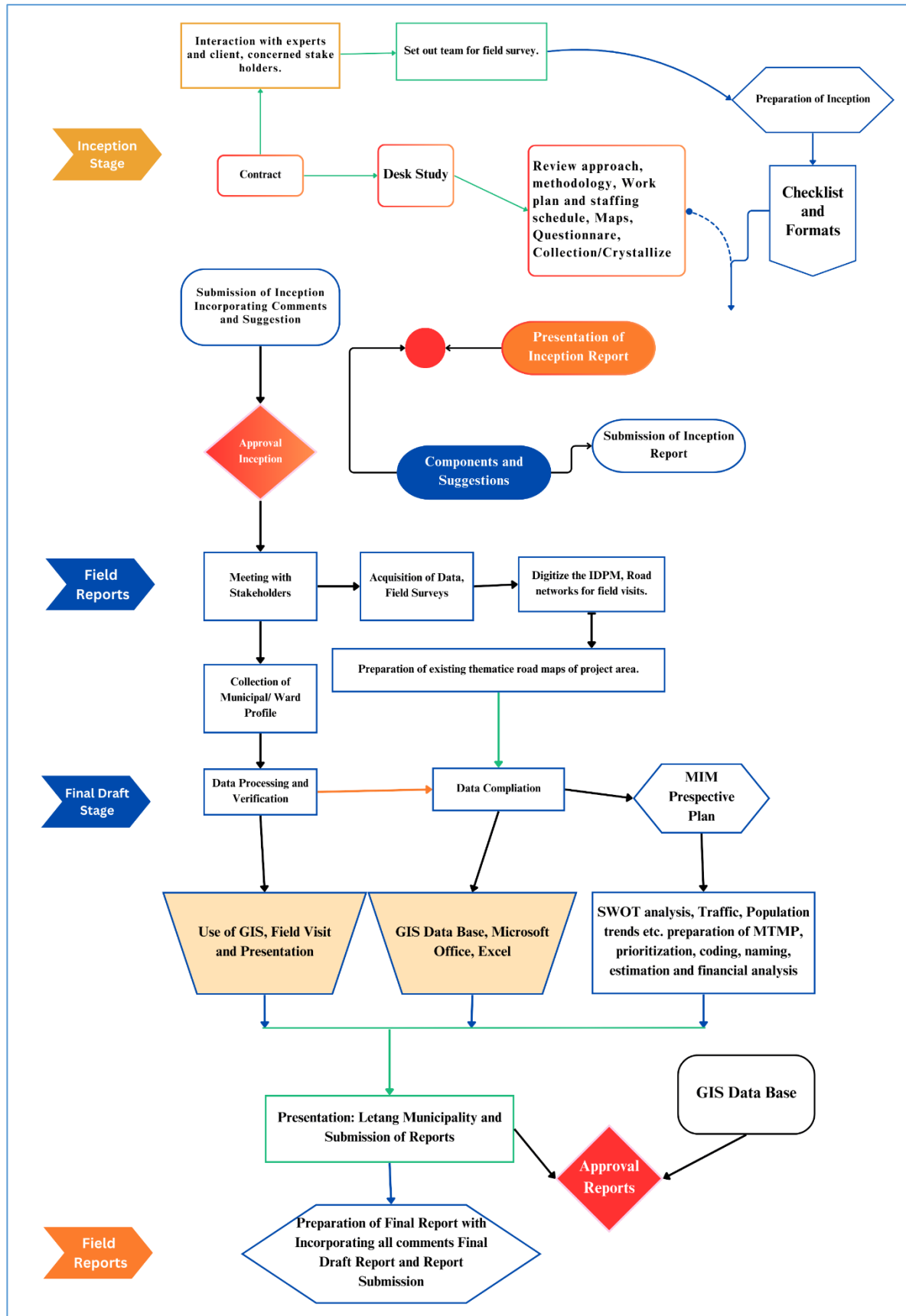


Figure No 2.1: Flow Chart of Project Methodology

**Table No 2.1: Methodology Involved during MTMP Preparation**

S.N	List of Task	Activities to be done	Output
1.	Data Collection		
1.1	Desk Study	The existing data, reports, and information on the study area were collected. The collected data were compiled, analyzed, and thoroughly reviewed before carrying out further work.	General municipal information, locations, etc.
1.2	Review of secondary source of information	Collection of secondary information/Maps from the various Municipal based line agencies, I/NGOs, and other regional and central-level related institutions.	Obtain information about the municipal situation in general, ready to proceed further steps.
1.3	Literature Reviews	Study of the proposed project and collection of information through internet surfing, planning norms, government policies, planning policies, guidebooks, articles, etc. Moreover, other relevant information has also been collected from MoUD, NPC, DOR, MoFALD, DUDBC, DoLIDAR, NURS, and other libraries. Detailed study of the periodic planning report. A case study of similar projects and the best examples of proper MTMP has been carried out.	Ideas of best Planning approach, National guidelines, policies, and way of planning. Relation between vicinities local level, potential development, and importance of MTMP in the Municipality.
1.4	Review of existing MTMP (if any)	Review of available existing MTMP. Data collection about the yearly allocated budget for MTMP road and progress report of Municipality. Interaction with Municipal Technician and other Officials.	Implementation trend of MTMP Planning and constraints of implementation will be found out.
1.5	Accessibility Data Collection, GPS Survey	Data were collected through enumerators/field supervisors including drone surveys. Develop field data collection data sheets and related arrangements. Verification of secondary data in the field. Collection of road data using GPS, Measuring Tapes, etc., Collection of access situation of every settlement in the prescribed form, collection Minutes and field photos, etc.	Find out the access situation of every settlement and market area, and identification of gaps with the reference to Town.
2	Analysis of Data	Data entry-storage of collected data in the computer using MS Excel software. Preparation of Location maps, Road Inventory Maps Calculation of accessibility index	Compilation of data, Accessibility index of all Wards of the Municipality.
3	IDPM Preparation	Assess the various potentiality of development of the Municipality Organize Municipality/MRCC meeting GIS map preparation	IDPM report, Finalization of Growth Centres, identification and ranking of existing/potential areas and services.
4	MIM	Assess the inventory of existing transportation	MIM report, identify the

S.N	List of Task	Activities to be done	Output
	Preparation	linkage Reconnaissance survey Identification of required intervention Map preparation	existing transport situation, and verification of MIM through discussion with the Municipal Board.
5	Area workshop Ward/Municipal level	Participatory workshop in each ward Discussion about criteria of prioritization. Standardize the accessibility indicator Synchronize interventions at the Municipality level Validation of access data Prioritization of interventions.	Prioritization of interventions and projects
6	Perspective Plan	Compile the result Accessibility analysis. Area workshops. Identify and prioritize the interventions in every service and facility based on approved Municipality Road standards. Extract required interventions in transport linkage from the perspective plan of services and facilities.	Perspective Plan of service and facilities including Municipality Road network.
7	MTMP Preparation	Assess the financial resources Priorities the perspective plan Preparation or updating MTMP	First five-year Municipal Road planning.
8	Approval of MTMP	Presentation of draft MTMP in the Municipal council through MRCC and Municipality Meetings.	Final MTMP Report
9	Final Report Submission	Incorporate all the comments (if any) from draft reports	Final report Completion the Project

## 2.2 Literature Review and Guidelines

I, the consultant studied the proposed project and collection of information through the internet, planning norms, government policies, planning policies, guidebooks, articles, etc. Moreover, other relevant information was also collected from MoUD, NPC, DOR, MoFALD, DUDBC, DoLIDAR, and other libraries. Case studies of similar projects and best examples of proper MTMP were carried out. The urban linkage between the vicinity settlements, inter-relationship with neighboring towns, and regional context were analyzed and the probable economical potentialities helping road networks be ascertained.

### 2.2.1 Historical Sketch of Road Transport in Nepal

The historical evidence shows that the Gorkhali rulers had devised several arrangements for maintaining lines of transport and communications from Kathmandu to different districts. As mentioned by Regmi (1987) these arrangements could be described under two main headings: An east-west track through the hill region and a postal service for the transportation of official mail and supplies. However, Rana rulers (until 1950), according to Regmi (1987), refrained from constructing large-scale transportation infrastructure because they were afraid that

economic development should provide a motive for the British to annex the Kingdom. Road construction initiatives took place after the fall of the Rana Regime. The major emphasis on the construction of a strategic road network during the period of 1950 – 1975 gradually changed and the country started to focus on constructing roads of regional importance.

Nepal's first highway Tribhuvan Rajpath connecting Birgunj and Kathmandu was constructed with the help of the Government of India and completed in 1956. The agreement among the Governments of India, the United States of America, and Nepal in 1958 to establish the Regional Transportation Organization (RTO) for the construction of roads in an organized and planned way on a long-term basis, was the first effort in the history of Nepalese motorized road construction in Nepal (Zimmermann and Rajbhandari, 1995). The RTO formulated a 20-year program to build north-south roads connecting with Indian cities and railheads along the border. After the collapse of RTO in 1962, Nepal continued its effort to invite donors and build roads. The second highway Siddhartha Rajmarga connecting Sunauli and Pokhara was constructed with the help of the Government of India. The earlier policy of emphasizing north-south roads was replaced by east-west roads like the East-West Highway (1026 km) and Prithivi Raj Marg (Kathmandu - Pokhara, 176 km). With internal resources of Nepal and contributions received from major donor countries and agencies like India, China, USSR, UK, USA, Switzerland, Japan, World Bank (WB), and Asian Development Bank (ADB), Nepal developed the present strategic road networks. *(Source: International Conference on Sustainable Development of Transport System 20 -22 October 2011)*

### **District Transport Planning Initiatives in Nepal**

The main national focus since 1990 was the development of district-level roads through mobilizing the local governments and maintenance of the strategic road networks. Regional and district-level projects were implemented in various districts e.g. Rapti Integrated Project, Koshi Hill Integrated Development Project, RCUP, Palpa Development Project (PDP), Dhading Development Project (DDP/GTZ), etc.

### **Early Initiatives in District Transport Planning**

The first DTMP was prepared for Dhading District in 1993 by DDP/GTZ. It was named as Transport Infrastructure Master Plan (TIMP). The idea of preparing TIMP was first conceived by DDP/GTZ IN 1987. As part of the policy of supporting the construction of district roads that 'the road program should be executed in line with the overall infrastructure master plan of the district to be prepared and approved by the district'. The basic strategy adopted was to cover the district with a combination of roads, road bridges, trails, and trail bridges networks to reach most of the (80%) area from the nearest road or mule trail within two hours of walking distance, (Five kilometers of aerial distance was taken as two hours walking distance). The following basic concepts were utilized in proposing the networks and priorities of the master plan:

- ❖ Alignment is to pass through a maximum of village settlements lying along the ridges or mid-hill slopes rather than the valley bottom.
- ❖ Avoid as much as rivers and streams so that construction costs can be kept low.
- ❖ Alignment to pass through the geologically stable area.
- ❖ Preference to alignment, where peoples' participation and resource conservation approach could be adopted.

- ❖ Open up economically active areas to better market access.
- ❖ Selection of routes that make it possible for local people to extend the proposed alignment to other villages through local resource mobilization.
- ❖ Roads and trails are so planned that is possible to interconnect with other road networks within the district or neighboring districts to achieve inter-district road networks.

TIMP was produced as part of DDP/GTZ support to the two rural road projects in the Dhading district. TIMP made the plan in two categories – medium-term and long-term. The medium-term plan was assumed to be completed within 25 years and long-term after completion of medium-term plan. Later, during 1994 – 1998, Pilot Labour Based District Road Rehabilitation and Maintenance Project (PLRP) prepared DTMPs of 4 project districts – Morang, Kapilvastu, Rupandehi, and Nawalparasi in a systematic process of rural transport planning. Intending to strengthen local governments, the PLRP (Shrestha, 1997a), initiated the concept of the “District Transport Master Plan (DTMP)”. After a successful implementation of the master plan in four pilot districts, GoN circulated the national policy to prepare a master plan for each district of the country. Realizing its significance, the GoN established the Department of Local Infrastructure Development and Agricultural Roads (DOLIDAR) under the MOLD in 1998 (DOLIDAR, 1998). *(Source: International Conference on Sustainable Development of Transport System 20 - 22 October 2011).*

*Note: Later on annexing of the VDC into Municipality (2073 B.S), the DTMP has been replaced by MTMP to make the planning of urban roads in the municipal level.*

### **2.2.2 DoLIDAR/MTMP Guidelines and Manual**

The guideline and Manual of Municipal Transport Master Plan (MTMP) have been prepared by DoLIDAR (2014 A.D.). The main objective of the manual is to guide the preparation and formulation of the MTMP Final Report. The guideline defines the MTMP process and overall planning overviews in detail. The shortlist of the guideline and steps has been given here as.

- ❖ MTMP definition and overviews
- ❖ Objectives and scopes
- ❖ Expected output and limitation in MTMP Implementation
- ❖ Formulation of Municipality Road Coordination Committee (MRCC)
- ❖ Road inventory data collection sheets, demand analysis, and map preparation.
- ❖ Requirements of transport linkages between wards and settlements, upgradation/rehabilitation of urban roads etc.
- ❖ Develop Scoring Criteria and Approval from Municipality
- ❖ Road Classification (A, B, C, D, Municipal Ring Road (if any) and Nomenclature.
- ❖ Transport services and facilities intervention and accessibility
- ❖ Analysis of fund availability for urban roads and perspective budget planning by developing 5-years horizon
- ❖ Preparation of MTMP with GIS Maps color code, legends etc.



### 2.2.3 Nepal Road Standard-2070 BS

Nepal Road Standards-2077 (Second Revision 2070), in short, called NRS-2070, shall apply to all Strategic Roads in rural areas being constructed within Nepal. For non-strategic (Local Roads) and urban roads separate standards shall be considered.

To achieve consistency in road design and construction, NRS was first introduced by DOR in 2027 B.S and was revised in 2045 B.S. Minor revisions were made in 2051 B.S and in 2054 B.S to incorporate certain changes, which were relevant at the time of revisions. But those revisions were treated separately, not as an official version of the NRS-2077.

The NRS 2070 is the main guideline for the design of any type of road in Nepal. NRS defines road types (Administration Roads: National Highway, Feeder Roads, District Roads, and Urban Roads and Technical Classification), vehicle dimensions, vehicle types and equivalency factors level of service (LOS), terrain classification, design speed, etc. The standard provides design criteria for a cross-section of roads such as carriageway, shoulder, medians, curbs, formation width, RoW, horizontal and vertical curves, gradient, vertical and horizontal clearance, road drainage, camber, superelevation, sight distances, intersections, grade separation, road humps, traffic signs and safety consideration, bicycles tracks, footpaths, pedestrian crossing, road markings, hairpin bends, road tunnels and flyover, pass, etc. In addition, the standard has also considered road aesthetics, lighting, roadside arboriculture, environmental aspect, etc. The manual has developed some typical section of roads which has been given below as,

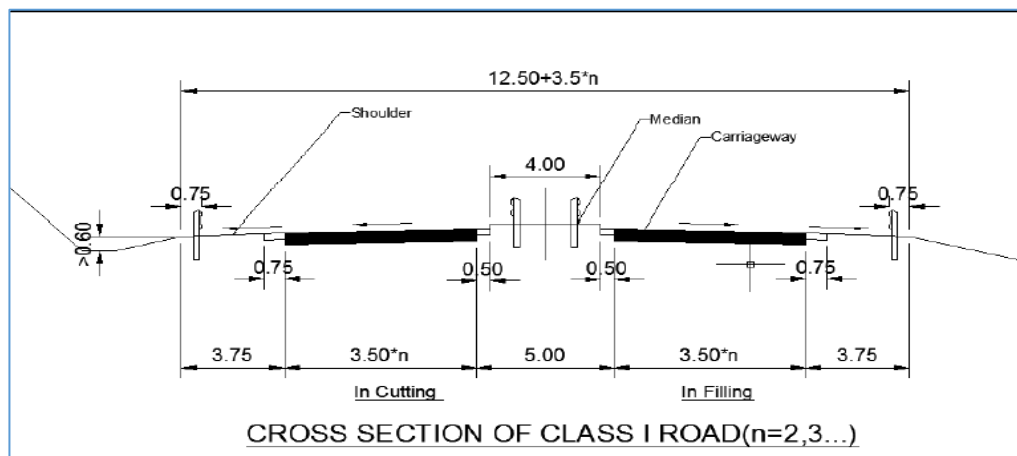


Figure No 2.2: Typical Cross Section of Road

### 2.2.4 Nepal Urban Road Standard- 2076

Nepal Urban Road Standards-2076 (NURS-2076) can apply to all urban roads being constructed within the urban areas of Nepal. These standards may be relaxed by the Government of Nepal to meet special circumstances. Road network is the major urban infrastructure in terms of its required financial resources, land consumption, and land-use planning in the urban area. Furthermore, the aesthetic appearance of the city is mainly dependent on the urban road pattern. The growth of the urban area is mainly guided by the urban road hierarchy and its alignment.

In this context, growing urbanization in Nepal is a major challenge for the urban planner as well as municipal authorities. Such a situation has created a challenging situation for the safe movement of vulnerable road users especially pedestrians and non-motorized vehicles leading to the poor road safety situation. The recent situation demands safer travel and accessibility to all while considering urban mobility. Urban mobility and accessibility mainly depend upon urban road network planning and their technical parameters. To achieve consistency in road design and construction, Nepal Road Standard, (NRS) had been introduced. According to the four administrative classifications given in Nepal Road Standard-2070, the urban road is one of them but, these standards were applicable only for the design of strategic roads and are not applicable to address all the urban needs. Therefore, it became very essential to develop the ‘Nepal Urban Road Standard’.

The standard incorporates major technical as well as planning aspects for urban roads. Classifications of urban roads, design criteria, elements of cross-section, clearance, etc., are major parts of this standard.

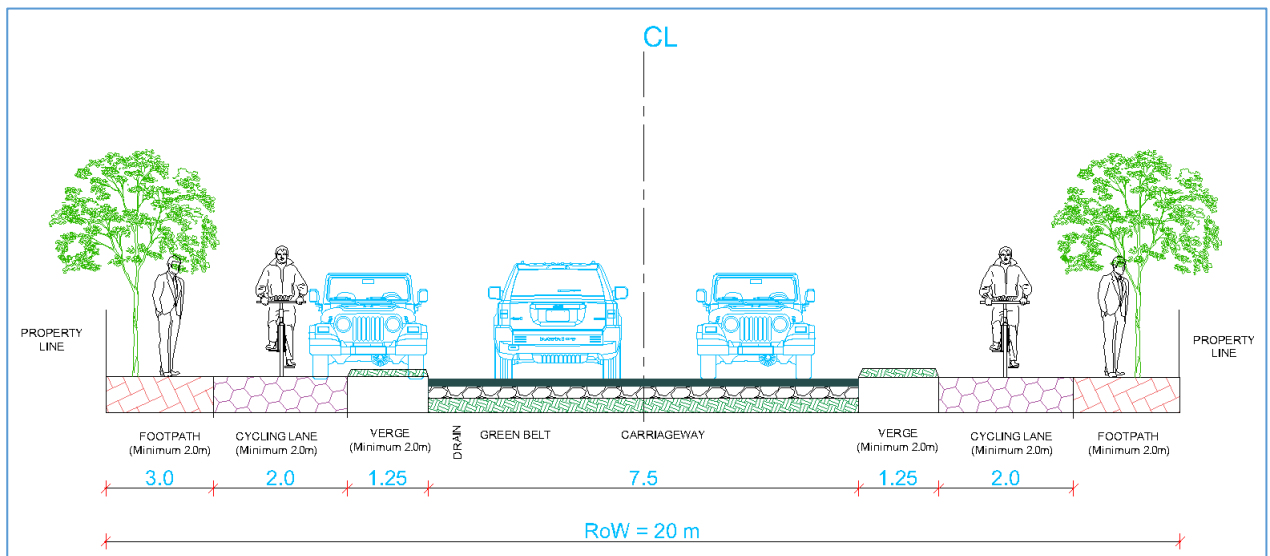


Figure No 2.3: Typical Cross Section of Urban Road

### 2.3 Primary Data Collection

A primary information of present household and trip characteristics, traffic characteristics, existing accessibility and mobility level of settlements, and prioritized road network required for each ward were collected via various reliable methods such as drone survey for clear image and land use calculation, questionnaire survey, ward level meetings, and workshops, etc. Tracking of the existing road network along with detailed information on its width, surface type, and possible intervention required for the effectiveness of services were carried out.

The primary data collection methods carried out in the field are:

- ❖ Origin and Destination (OD) Survey
- ❖ Road Inventory Survey
- ❖ Demand Survey
- ❖ Classified Vehicle Count Survey

- ❖ Public Transport and Services Study
- ❖ Field Survey

The questionnaire method was used to conduct the *Origin and Destination Survey* which gives the number of information reflecting, personal, household, and trip-making characteristics. This survey has also helped to visualize the accessibility and mobility scenario of the road network and public transportation from the settlement/wards.

*Road Inventory Survey* was conducted to collect data on the condition of road networks, road linkage, road safety status, and issues that need to be highlighted. It helps in field validation of base maps and assists in the preparation of road inventory maps, nomenclature, and coding/grading of the road linkages and proposed various interventions.

*Road Demand Survey* comprises an interactive session with the members of the ward representative, and local people followed by ward level workshop to fill up the demand survey form, which will include demand for new facilities or interventions to improve existing roads based on priority.

*Classified Vehicle Count* was conducted to reflect the usage of various vehicles in a certain route, especially where maximum volume occurs. Twelve-hour count was done at the specified location and the vehicles have been classified into different types finally traffic volume has been converted to passenger car units (PCU) to visualize the exact condition.

*The public Transport and Services Study* highlights the services provided by the public transportation system and the location of various services and facilities. It has been carried out by directly interviewing the route operators.

## 2.4 Data Processing, Field Verification and Analysis

After verifying the municipal boundaries, ward boundaries, and other necessary data, data collected from the field was used as base data. All the complete and reliable sets of data were transformed into useable information and the present scenario of the municipality has been shown through charts, graphs, figures, and tables. For roads, fields have been added in the attribute table for total width, carriageway width, surface type, road name, etc. Data obtained from field inventory and verification for roads and land use has been manually entered for all roads using the Editor Tool in Arc GIS. GPS and google image have been used for recording place names, buildings, culverts, and bridges in the field. This google image and GPS data have been converted using “GPS conversion tools” and then used in Arc GIS. Similarly, those which has been entered into the GIS database provide various types of maps. Population and traffic have been forecasted for the MTMP and MTPP Period. And, finally, various intervention has been proposed and their economic analysis is also performed.

## 2.5 Indicative Municipal Development Potential Map (IDPM)

The Municipal Indicative Development Potential has been prepared based on a visionary city as the development plan of the Municipality. Further, the visionary city development plan will help to prepare based on the characteristics of the location along with the consultation with the people and MRCC. The final potential map is validated through the MRCC and Municipality. The development potential of the Municipality in agriculture, horticulture, livestock, cottage,

small industries, markets centers, etc. has been compiled and prepared on the **map 1:50000 scale**.

The maps have been prepared showing:

- ❖ Location maps/administrative/political boundaries of municipality/ward.
- ❖ Large/ major settlements and market centers.
- ❖ National strategic roads, urban roads, trails, bridges, etc.
- ❖ Important historical, cultural, religious, and preserved places.
- ❖ Important water bodies, forests, cultivable land, and other lands.
- ❖ Institutions, line agencies, commercial, economic development areas, industries, tourism, urban linkages, etc.
- ❖ Other potential development Areas.

## **2.6 Municipal Road Inventory Map (MIM)**

Municipal Road Inventory Map (MIM) has been prepared based on the field inventory survey. The field survey was carried out by mobilizing enumerators via walkover surveys. The inventory includes the roadway length, width, surface type, carriageway width, drainage condition, number of served population, administrative buildings, educational offices, and hospitals/health posts. The consultant then carried out a reconnaissance survey of the trails, bridges, and roads with the help of a checklist and updated the maps

All roads are plotted under separate legends categories by intervention type in MIM. Information regarding inter-urban roads /trails will also be included and used drawing planning process.

## **2.7 Perspective Road Interventions of Services and Facilities**

The study and planning team has prepared a perspective plan of interventions of services and facilities, which are identified from the accessibility analysis and municipal-level workshops. All the identified interventions have been screened and rated based on approved criteria. The team discussed with the municipal technical team and the MRCC relating to interventions of services and facilities for the improvement of the access situation and forwarded to the municipal council meeting with a recommendation.

In the transportation sector, a list of roads, bridges, and required interventions for respective roads along with bridges have been identified to improve accessibility to goods and services. The perspective plan of the road has been prepared for 20 years. All the identified interventions were screened and graded based on the criteria of the approach manual. Accordingly, the final perspective plan of urban roads is developed. The perspective plan has been shown in GIS maps also.

## **2.8 Municipal Transport Master Plan (MTMP)**

Considering the perspective plan, the prioritization of the perspective plan has been done according to the DoLIDAR approach manual. This plan provides urban road grading, specific coding, nomenclatures, and all road inventory information like length in km., width, RoW, etc. Subsequently, the five-year horizon MTMP has been prepared by selecting interventions (maintenance, upgrading, and new construction of main trails, trail bridges, and roads) that have top priority in the perspective plan. The plan should be implemented in the next 5-Year horizon period. The plan depends upon cost estimation of maintenance, upgrading, rehabilitation, and new construction of MRCN, trails, bridges, and other urban roads according to the availability of financial resources.

The consultant has also prepared indicative cost estimates of improvements (Routine maintenance, recurrent maintenance & upgrading) and new construction of representative trails, bridges, and urban roads. The cost estimate has been prepared separately for various classes of urban roads.

All the planned road inventory maps and related GIS maps have been developed as separate Volume (II): Urban Road Inventory Plan Maps- MTMP.

Before going through Municipal Transport Master Plan (MTMP), it is fundamental to know about the present condition of the municipal profiles and existing urban inventory. The summarized municipal profile has been given in the following Chapters. The chapter includes the existing road and roadside infrastructure along with their current condition. The major demographic data, physical, social, economic, institutional, and environmental infrastructures which have an indirect effect on the transportation system such as urbanization, and apartment system have also been assessed.



## Chapter: 3 Review of Existing Situation

### 3.1 General Overview

Municipal and ward-level surveys have revealed that the overall transport infrastructure, primarily the road network appears to be in the medium state in Letang Municipality. Despite being located in terai terrain and geographically accessible regions; the municipality lags far behind in terms of well-developed road infrastructures. The major characteristics of the roads in the municipality are manifested as muddy during the rainy/wet seasons and entirely dusty during the winter/dry seasons. At present condition, Madan Bhandari Highway (NH 09) passes the municipality which is the most important road linkage as a key to transportation and mass mobility. Most of the roads in the municipality have been observed as fair-weather roads and need to be improved and upgraded to bring them into operation around the year.

Most of the roads do not have basic road furniture and lack basic components like culverts, bridges, cross structures, drains, etc. It indicates that the overall development of road transportation and mass mobility is at the elementary stage which requires interventions from the medium level and requires a huge investment.

### 3.2 Visionary Municipal Development Plan

The road network is the major backbone of the development of every city and country. Because, it plays a vital role in the development of the social sector, and economic sectors. It makes easier for people to move around within a municipality from one place to another place in a short time. It makes also easier to transport goods from one place to another. It also helps in the health sector and education sectors.

The Letang municipality has prepared **Periodic Plan** for horizon 2081/82 to 2085/86 which has chiefly focused on the physical, social, economic, institutional, and environmental infrastructures development. However, the development of the road and transportation sector is the foremost sector to attain its long-term vision and goals. The periodic plan for the development of Letang municipality is the strategic response to the 5-year growth of the municipality.

This strategic plan delivers on the long-term vision of the municipality:

**Long-Term Vision:** “कृषि उद्योग र पर्यटनको विकास गर्दै सुसंस्कृत र समता मूलक समाजको स्थापना गर्ने!”

It is expected to meet the lead sector by raising economic activity through organic agriculture production, animal husbandry, tourism, industry, business, commerce, cooperatives, financial management, Intuitional Management, Tourism development, and sufficient Urban Infrastructures development.

Visionary as prosperity Letang of periodic plan gives a brief picture of the potential areas of growth that will bring social and economic prosperity to the municipality. It has identified the potential areas of economic growth and helps guide other planning efforts to compatibly support those areas. This brings rapid development of the municipality in all sectors.

In the case of Letang municipality, mostly people are concentrated in the market area which lies on the right and left side of the Madan Bhadari Highway like Jate, Jyamire, Letang, Budhabare. The settlements are scattered along the existing road. Hence, urban transport management has to focus on this issue.

### **3.3 Visionary Municipal Transport Master Plan**

Current life is living in a municipal area i.e., organized and planned human settlements, which are mostly referred to as communities are only possible if people have good mobility daily. Settlements are separated from workplaces, major shopping is concentrated in identifiable centers, and larger entertainment and relaxation facilities are found at specific locations. They have to have good accessibility.

According to the “Planning Standard and Norms 2017”, road density shall be 5 km/sq.km (NUDS 2017) for the newly formed municipal body. The road density is 6.6 km/ sq.km per usable area i.e. the road density in the municipality is slightly more than the standard value. Thus, it can be concluded, the municipality now needs to take action for upgrading all existing roads to all-weather roads from fair-weather roads. The existing road networks need major intervention in maintenance and upgrading tasks. The periodic plan has proposed the preparation of the Municipal Transport Master Plan, the upgradation of Letang ring road, operation of public transportation, maintenance and upgradation works, construction of the bus stops and waiting for places, development of the tourism development routes, and management.

The periodic plan has aimed to set up the Right of Way (RoW) of the roads, and road connectivity to all settlements. The length of the blacktopped road will be increased from 50 km to 150 km, the gravel road will be 200 km and the total length of the road will be 600 k.m with multiple numbers of motorable bridges. The municipal strategic project is the Letang ring development. Other concern matters related to this road network such as bus stops, bus bays, parking area ring roads, etc. have been also planned.

Transportation issues are of foremost importance to support the passengers and freight mobility requirements of settlement agglomerations.

In Letang municipality most of the area of the ward remains in a semi-rural state. There is somehow smooth transportation mobility in such an area. The people of such areas are facing transportation problems at the time of emergencies like the delivery case, and serious health patient. With the greater possibility of mass transportation, the municipality have a bus park with size equivalent to 7 travel bus. The transportation facility is available in the morning time from urban settlements to the village and the evening from the city to urban settlements but on ward 1 the facility is somewhat poor than the rest. Many citizens are travelling by auto-rickshaw to reach bazar. The transportation service is moderate in the locality and available services are Jeep, motorcycle, Auto-Rickshaw, and buses in highway areas. To overcome the transportation services problems, the municipality should initiate municipal bus services immediately.

The settlements seem as a linear pattern which is mostly along the highway corridor and in the typical village area, settlements are compact-type settlements. The people from the local level are migrating towards the market areas in search of better lives and opportunities. All wards are suitable for residential purposes. The major economic development sector is agriculture,



business/trade, and eco-tourism. Majorly, agriculture and livestock farming have a great opportunity within the municipality. Agriculture products can be easily exported via major districts road and highway to the major cities like Biratnagar, Itahari, Dharan, Inaruwa, Damak and Birtamond. The agriculture-based industries like cow farms, goat farms, bee farming, food industries, rice mills, and furniture are major industries within the municipality. In general, most of the sectors are connected by urban roads.

The proposed road hierarchy and its network has been designed to support the growth of these potential lead sectors of the municipality. Through, well-connected roads these sectors will have proper access to the market and settlements in the neighborhood of the municipalities.

The minimum road density at the existing municipal level has planned to make at least 5 km/sq.km area. Again, clause number 40 has described the overall strategy of municipal roads. It has focused on:

- ❖ Integration of land use and transportation
- ❖ Provision of hierarchical and balanced urban road infrastructure development
- ❖ Sustainable urban public transportation system
- ❖ Standards for urban road management
- ❖ Intercity high-speed transportation system

४०. सडक/परिवहन: शहरी यातायात संबन्धमा एउटा फराकिलो दृष्टिकोण राखिएको छ । यस अन्तर्गत प्रमुख रूपमा भूउपयोग र यातायात/परिवहनलाई शहरी तथा क्षेत्रीय योजना तर्जुमा प्रकृत्यामा एकीकृत गर्दै तत्सम्बन्धी संस्थागत संयन्त्र र क्षमताको विकास गर्ने, तहगत र सन्तुलित शहरी सडक पूर्वाधारको प्रावधान गर्ने, दिगो शहरी सार्वजनिक परिवहनको प्रबन्ध गर्ने, शहरी यातायात व्यवस्थापनका लागि मानकहरूका साथै बिस्तृत योजना तयार/कार्यान्वयन गर्ने, र प्राथमिकता प्राप्त प्रदेशहरूमा उच्च-गति अन्तर-शहरी यातायात पूर्वाधारको प्रावधान गर्ने जस्ता रणनीतिहरू रहेका छन् ।

*Source: Nepal Urban Development Strategy, 2015*

### 3.4 Constraints in the Implementation of MTMP

The road network is believed to be the lifeline of infrastructure. The doors of other physical, social, economic, institutional, and environmental infrastructure development possibilities are unlocked through the proper development of roads and transportation. Since the existing condition of roads in the municipality is a medium stage and large in length it requires a huge portion of the budget to address the problem of road upgradation and maintenance. This budgetary problem is purely a major obstacle to the timely implementation of the MTMP. Besides these other possible constraints are:

- ❖ Scatter settlements
- ❖ Lack of drainage networks
- ❖ The problem of landslides due to steep slope
- ❖ Finalization of standard RoW from the base level is problematic
- ❖ Lack of technology and information
- ❖ Poor pavement management system (PMS)
- ❖ Lengthy procurement process for construction work
- ❖ Lack of qualified manpower and labor force
- ❖ Lack of smooth and reliable availability of construction materials
- ❖ Lack of stable and favorable working environment.
- ❖ Social issues and beliefs
- ❖ Lack of financial support.

## Chapter: 4 Indicative Development Potential Map

### 4.1 Introduction of Study Area

Letang municipality lies in Morang District of Koshi Province along the Mahendra Highway. Letang municipality was declared a municipality by annexing all wards of the former Kusewor Dhumja (2-5,9) V.D.C, Kusewor Dhumja (1,6-8,), Jhaghajholi Ratamata (1-5), Jhaghajholi Ratamata (6-9), Puarana Jhaghajholi (1-9), Sitalpati (1-9), Majhuwa (1-9).

Topographically, municipality entails 27°22'30"N and 85°53'30"E which is situated at an altitude 4648 m from sea level. Thado Khola, Gangari Khola, Rahele khola, Aaisbote khola, Niuli khola, Gangate Khola, Bhote khola, Dyampe khola, Bhende khola are major major streams flowing through the municipality. Further, The Letang river is the northern boundary of the municipality.

According to CBS 2021, Letang municipality has 38,152 populations with 18,038 males and 20,114 females population. The municipality has 9 wards and 219.23 sq.km administrative boundary area.

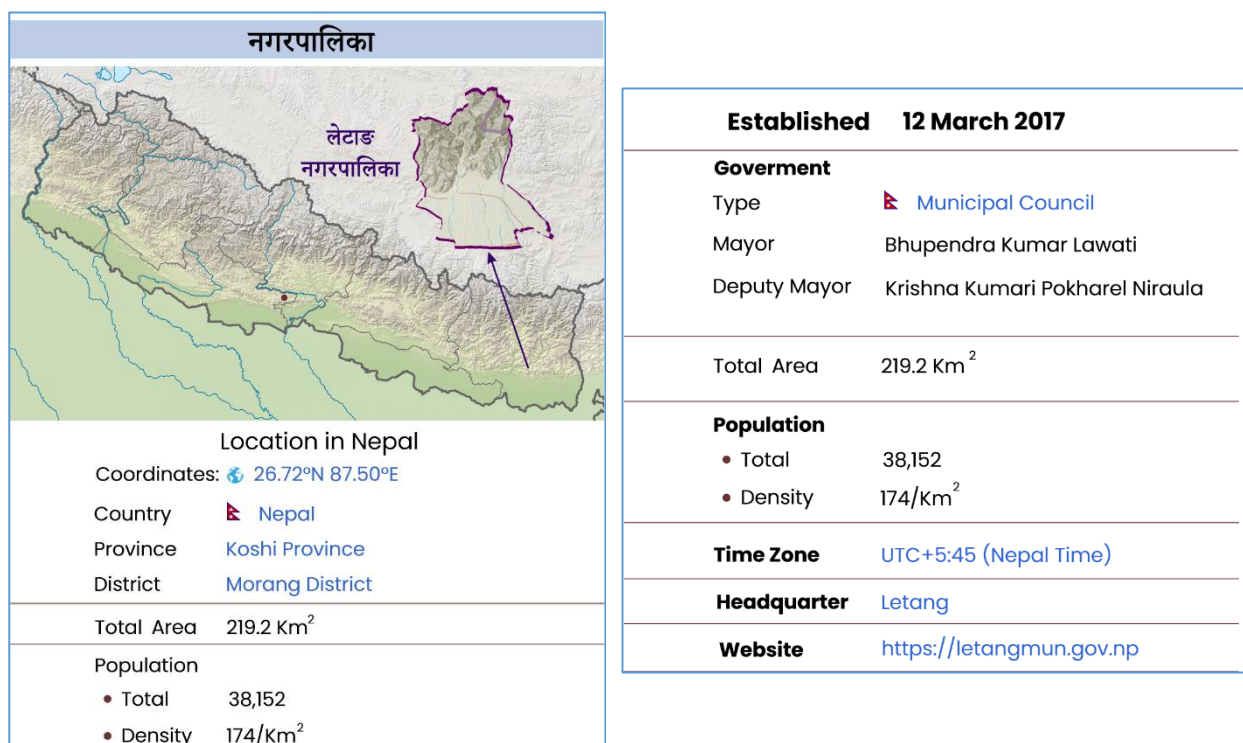


Figure No 4.1: Location Map, Letang Municipality

Table No 4.1: Political Boundary, Letang Municipality

East :	Miklajung Rural Municipality
West :	Kerabari Rural Municipality
North :	Chaubise Rural Municipality of Dhankuta District
South :	Pathari Shanishare Rural Municipality, Belbari Municipality and Kanepokhari Rural Municipality

Source: Municipal Profile , 2080

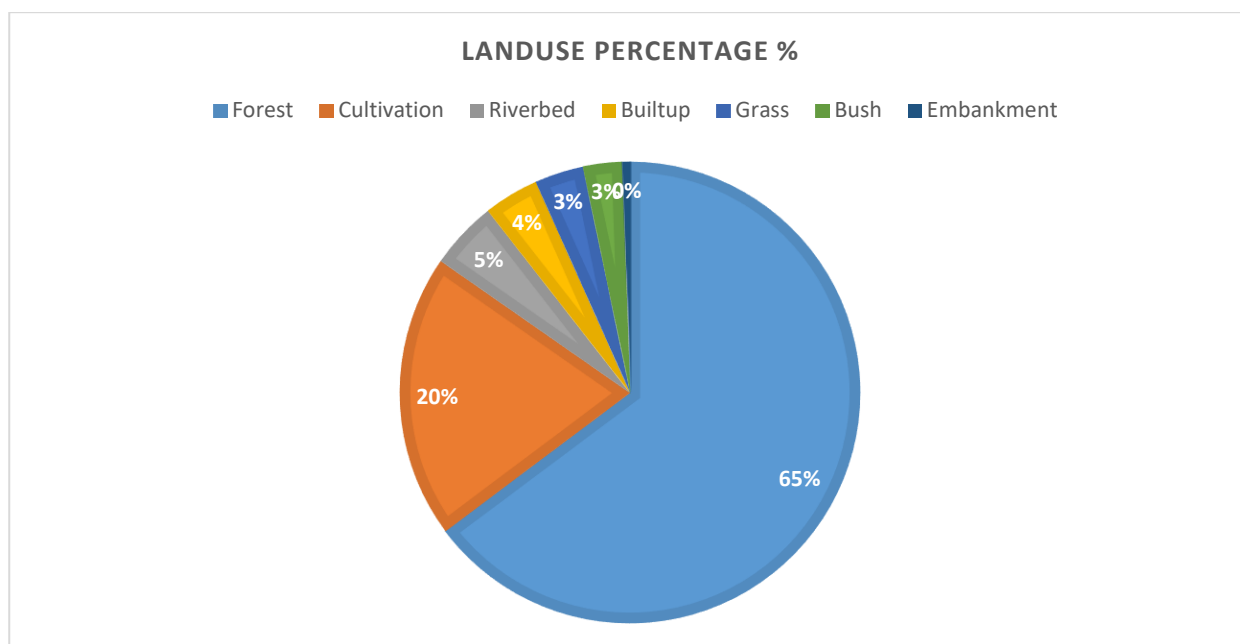
## 4.2 Summary of Municipal Profile

### 4.2.1 Landuse, 2081

The total area of the municipality is 223.87 sq. km. Out of the total area, 64.78 % area is used by forest area and cultivatable/agricultural land is 19.88% of the total land. The municipality has a dense settlement in major core areas like Letang, Jate etc. The details of land use have been listed in the table below.

Sn:	Landuse	Area (Sq.km)	Percentage %
1	Forest	145.03	64.78
2	Cultivation	44.50	19.88
3	Riverbed	10.70	4.78
4	Builtup	8.69	3.88
5	Grass	7.65	3.42
6	Bush	6.09	2.72
7	Embankment	1.20	0.53
		223.87	100

Table No 4.2: Land Use, 2081



### 4.2.2 Socio-Economic and Demographic Status

Letang municipality is following the way of urbanization, modernization, and development as an urban-rural linkage approach city. Local people have been involved in economic activities includes for participation, and open markets claim more freedoms, more choices, and more options. Local government has been providing training, skills, knowledge, and expertise to backward groups, women, and youth as well for poverty reduction, employment generation, and gender equality with technical assistance, monitoring, and evaluation.

Change in population impacts, its future population, and requirement of infrastructures like physical, social, economic, environmental, etc. The demography of the municipality helps to forecast the population change pattern and its proper management. Total population, population

density, household structure, literacy rate status, health, education, economic status, existing infrastructures, topography, climate changes, environment conditions, natural resources, and their characteristics are some of the major pillars for better understanding of the locality. Detailed study of demography is also one of the major guidelines for government investment for local development, utility planning, and infrastructure through the local authority.

### 4.2.3 Population and Population Density

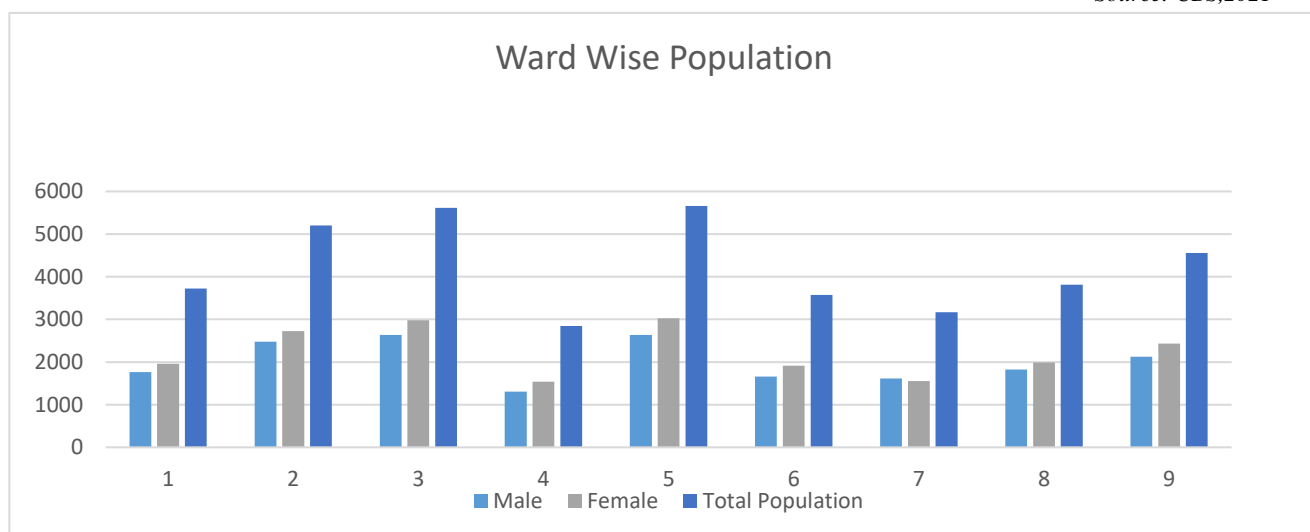
The population density of the municipality is 174 people per square kilometer and average family size is around 4.08.

As seen from the table and chart below, there is a distinct variation in population distribution among 9 wards. Population density lies in the range of 72 persons per sq. km. in ward 7 to 515 persons per sq. km in ward 2. Less population density is witnessed in wards 1,7 having a population density of just 72, and 76 respectively, whereas higher population density is witnessed in ward 2. The socio-demographic details of each ward have been given in the table below.

**Table No 1: Description of Demography and Household**

Wards No.	Total Population	Male	Female	Area (sq.km)	Population Density (/sq.km)
1	3722	1764	1958	48.45	76.82
2	5202	2477	2725	10.12	514.03
3	5615	2633	2982	17.66	317.95
4	2846	1308	1538	5.66	502.83
5	5661	2637	3024	19.14	295.77
6	3575	1662	1913	9.8	364.80
7	3164	1610	1554	43.69	72.42
8	3813	1824	1989	20.11	189.61
9	4554	2123	2431	44.61	102.08
Total	38152	18038	20114	219.24	174

Source: CBS,2021



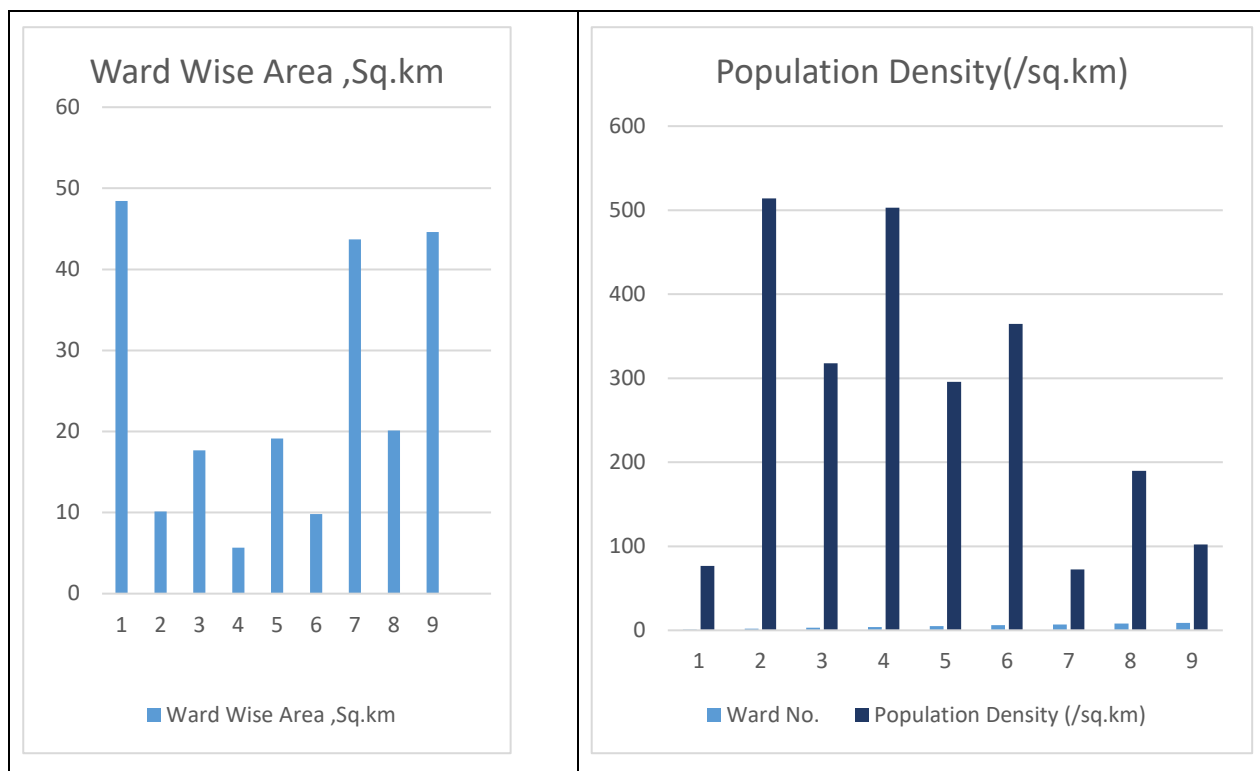


Figure No 4.2: Ward-Wise Population and Population Density

Table No 4.3: Summary of Municipal Profile, Letang

Aspect	Key Findings
<b>Location and Regional Connectivity</b>	<ul style="list-style-type: none"> <li>Name of Project area/Municipality: Letang Municipality, Morang , Nepal</li> <li>Total administrative boundary area: 219.2 sq. km.</li> <li>The total number of wards are 9.</li> <li>Located in the Morang District of Koshi Province</li> <li>Altitude Range: 276m to 2410m from sea level.</li> <li>Geographic Location: Topographically, Letang Municipality entails 26.72°N and 87.50° E.</li> <li>Strategically located on the cross-road of Madan Bhandari Highway and more urban roads accessibility.</li> <li>Surrounded by Kerabari Rural Municipality in the West, Chaubise Rural Municipality of Dhankuta District in the north, Miklajung Rural Municipality in the east, and Pathari Shanishare Rural Municipality, Belbari Municipality and Kanepokhari Rural Municipality in the south.</li> </ul>
<b>Demography</b>	<ul style="list-style-type: none"> <li>By CBS 2078 BS;</li> <li>Total Population: 38152; male (18038), and female (20114)</li> <li>Family size (4.08)</li> <li>Population density (174/sq.km)</li> <li>The population of age between 0-14 years (25.1%), 15-64 years (67.4%), and 65+ (7.5%).</li> <li>Population by Castes: Rai (20.77 %), Limbu (18.73%), Magar (15.46%), Brahmin-Hilly (10.09 %), Chettri -Hilly, (7.94 %) and others are Tamang, Kami, Brahmin-Terai, Newar, Damai, Sarki etc.</li> <li>Population by Mother Tongue/Language: Nepali (79.71%), Limbu (7.60 %), and others are Rai, Magar, Tamang, etc.</li> </ul>

Aspect	Key Findings
	<ul style="list-style-type: none"> <li>Population by Major Festivals: Dashain, Tihar, Lwosar, Udhauli Ubhauli parva, Buddha Purnima, Holi, Chirstmas Day etc.</li> <li>Major Religions: Hindu, Kirat and others.</li> <li>Economically active age group (15-59 years) 66.39%</li> </ul>
Physical Infrastructure	<p><b><u>Land use:</u></b></p> <ul style="list-style-type: none"> <li>46.02 % of the land is suitable for agriculture, and 34.02 % land is covered by forest land including barren land, bushes, grass lands etc.</li> </ul> <p><b><u>Major Settlements</u></b></p> <ul style="list-style-type: none"> <li>Rajarani, Adheri, Sakfara, Sagma, Budhabare, Kirat Chowk, Pragati Tol, Letang Bazar, Kamalpur, Biran, Chauki Line, Namuna Tol, Kheruwa, Talim Kendra, Guwabari, Samla, Warangi, Jante Bazar, Jyamire, Jante, Madan Chowk, Sagarmatha Tol etc.</li> </ul> <p><b><u>Housing:</u></b></p> <ul style="list-style-type: none"> <li>34.7% of households are Cement bonded bricks/stone used for outer walls of housing unit</li> <li>Construction materials vary from wood, cement, mud, slates, galvanized sheets, etc.</li> </ul> <p><b><u>Road and Transportation:</u></b></p> <ul style="list-style-type: none"> <li>Strategically located on the cross-road of Madan Bhandari Highway and more urban roads accessibility.</li> <li>Settlements are linked by urban roads and other major identified routes.</li> <li>The proposed right of way (RoW) is as 12m, 10m, 8m, and 6m according to the importance of urban/village roads.</li> <li>Road surface conditions: Mostly earthen.</li> <li>Transportation services: public transportation in Rangeli-Kanepokhari-Dandagaun-Budhabare and major route of each ward centers and settlements.</li> <li>Available transport services are: bus, auto riskshaw, tractor, jeep, motorcycle, pickup etc.</li> </ul> <p><b><u>Water Supply:</u></b></p> <ul style="list-style-type: none"> <li>84.85% of the households have piped connection access.</li> <li>Presence of community-level water supply schemes, supported by the financial assistance of district/province drinking water supply, water supply corporation, national planning commission, municipality, and water supply division.</li> </ul> <p><b><u>Sewerage and Sanitation:</u></b></p> <ul style="list-style-type: none"> <li>No sewerage network.</li> <li>Only 99.38% of households have toilet facilities.</li> <li>Declared ODF.</li> </ul> <p><b><u>Energy Use:</u></b></p> <ul style="list-style-type: none"> <li>90% of households use electricity as a source of light.</li> </ul> <p><b><u>Cooking Fuel Use:</u></b></p> <ul style="list-style-type: none"> <li>94% of households use fuel as a source.</li> </ul> <p><b><u>Communication:</u></b></p> <ul style="list-style-type: none"> <li>Population by use of the mobile phone (65%), Radio (40%), Television (50%), and internet (25%).</li> <li>Numbers of Post offices: 1 (Jante).</li> <li>Landline connections, and mobile phones. household have access to F.M., radios, Cable TV. Likewise, NCell, NTC-4G networks are internet facilities available.</li> </ul>
Social Infrastructure	<p><b><u>Education:</u></b></p>

Aspect	Key Findings
	<ul style="list-style-type: none"> <li>• Literacy rate –82.5%,</li> <li>• Situated educational institutes in the core areas and major settlements.</li> </ul> <p><b><u>Health:</u></b></p> <ul style="list-style-type: none"> <li>• 13 numbers of health institutions and services such as hospital, primary health posts, Health Posts.</li> <li>• Major available services are patient admit services, Outpatient Service, In-Patient Service, Emergency Service, Dressing, Plaster, lab/ Laboratory Service, ECG, women's diseases services, khop, early child health services, Emergency Obstetric Care etc.</li> <li>• 1 number of ambulances.</li> </ul> <p><b><u>Crime and Security:</u></b></p> <ul style="list-style-type: none"> <li>• Municipal police bits.</li> </ul> <p><b><u>Social Institutions:</u></b></p> <ul style="list-style-type: none"> <li>• Municipality office, wards offices.</li> <li>• Post office.</li> </ul>
<p style="text-align: center;"><b>Conservation, Cultural and Tourism Developments</b></p>	<p><b><u>Temples and Religious Institutions</u></b></p> <ul style="list-style-type: none"> <li>• Barji Temple, Pathibhara Temple, Prashamsha Church, Shani Temple, Tamang Gumba, Kirat Temple etc.</li> </ul> <p><b><u>Tourism Development</u></b></p> <ul style="list-style-type: none"> <li>• Prante Danda, Kiske Jharna, Rajarani Pokhari, Antardharmik Shanti Park etc.</li> </ul>
<p style="text-align: center;"><b>Economy</b></p>	<ul style="list-style-type: none"> <li>• 43.46 % of the total land is suitable for agricultural purposes.</li> <li>• Only about 30% of employment rate of age (15-59) years.</li> <li>• A substantial population is engaged in agriculture (39.30%) followed by business &amp; commerce (20.33%) and Abroad (15.25%).</li> <li>• Rice/Paddy, maize, millet, potato, vegetables, amriso, orange, coffee and cardamom, etc the major food and cash crops in the municipality.</li> <li>• Households were found to be inclined to professional dairy farms and animal husbandry with many people making it their profession.</li> <li>• The agriculture pocket areas are as: coffee, vegetables, bee farming have high possibilities in the municipal area.</li> <li>• Markets: Kathmandu, Biratnagar, Itahari, Dharan, Inaruwa, Damak, Birtamond and Local markets.</li> </ul>
<p style="text-align: center;"><b>Environment Setting</b></p>	<ul style="list-style-type: none"> <li>• 67.57 % of the total area is covered by forest area including barren, grasslands, bushes etc.</li> </ul> <p><b><u>Rivers and Streams</u></b></p> <ul style="list-style-type: none"> <li>• Morange Khola, Teli Khola, Kiske khola, Sagma khola, Bhuwa khola, Dhodi Khola, Lokhara khola, Takchuwa khola, Kheruwa khola are a majorstreams and Chisang river.</li> <li>• Pollution - Air and noise pollution are assumed to be within acceptable levels due to a smaller number of industries and vehicles. However, urbanization and development, degradation of soil due to the loss of vegetation cover, overexploitation and inappropriate agricultural systems, drought, lack of solid waste management, etc have triggered soil, water, and air pollution in the municipality.</li> <li>• Land degradation: The municipality lies in Terai terrain, so the slope of the geography is quiet mild. Due to this, there is the possibility of land degradation.</li> <li>• The possible natural hazards recorded as earthquake, landslide, floods, wildfires, disease spread, rock fall, thunder etc.</li> <li>• Open space – School's grounds, public parks, picnic spots, etc.</li> </ul>



Aspect	Key Findings
<p><b>Population Migration</b></p>	<ul style="list-style-type: none"> <li>• With the ongoing trend of land transactions in Letang, urban growth is likely to gain momentum in all the major settlements. One of the reasons for this might be the introduction of the federal system and people in search of a better facility. Letang municipality has a direct approach from Kathmandu via Mahendra highway and hilly areas and other rural villages of the vicinity municipalities through several roads. So, the municipality is predicted to receive a few numbers of inward migrants from these places.</li> <li>• In the present situation, outward migration is being seen more than inward migration.</li> <li>• The study shows that the total increase in population is due to migration though doesn't reflect the real status of the migration. Similarly, birth and death rate records show that there is an increase in population.</li> </ul>

#### 4.2.4 Physical Infrastructure

##### Road Network

The Madan Bhandari Highway passes from the centre of the Letang municipality crossing few wards. The settlements developing along the highway are a linear pattern. These settlements are major commercial areas in the municipality. Letang municipality has altogether 560.2 km of road length including the proposed new track which consists of roads like the National Highway (12.51 km), District Road/provincial roads (65.76 km), and Municipal Road length (455.24 Km). Most of the roads have to be found earthen. The only the national highway and district road sections are blacktopped.



Figure No 4.3: Road Condition

The ward-wise road inventory network detailed has been given in Chapter 5 Below.

##### Sanitation and Drainage System

There is no integrated sewerage network system in municipality and without a sewerage system, personnel hygiene and environmental sanitation cannot be achieved. During the field study, it has found that storm water drainage is along the National Highway.

The storm water drainage has been constructed at only the major urban roads of Madan Bhandari Highway and the district roads section. Due to the topography of the municipality, it is challenging to construct and manage drains in the city area compared to the countryside. So, it is needed to be planned within the core city area and needed to extend to the peripheral area in continuation.

The main problems in the urban/village side drainage in the city are:

- ❖ The tendency of people to throw solid waste into drains with the perception that it will be washed away during high discharge.
- ❖ Multiple agencies/authorities have built drains; however, it's constructed with a lack of coordination, planning, and improper design on a piecemeal basis.
- ❖ Many natural drains are encroached leaving no space for cleaning.

### Tele-Communication

The use of communication has made a huge change in the lifestyle of people and the town. The use of these modes is increasing day by day. Newspapers, e-newspapers, radio, and television are being used an extensive amount as the primary mode of communication for information while Nepal telecom and Ncell are providing telecommunication services in the municipality.

Most people are using mobile phones with NTC and NCELL networks where telecommunication is provided and available of dish home facility. The municipality possesses 3 local FM stations which are acting as effective modes of communication even in the rural part. One elaka post office and the other 3 Atirikta post offices are located within municipality.

### 4.2.5 Social Infrastructure

#### Educational Institutions

The education sector has been considered a powerful medium of human resources development for poverty reduction and four-point development in planning. The education sector can be determined by various educational programs operated in that area. The municipality is facilitated with a total of 54 numbers of schools including government and private schools. Educational institutions have been providing education from the Montessori level to the higher secondary level. Along with this, there are few campus-level institution that has been providing education up to the bachelor level. After getting SEE level education, students have been moving to cities like Banepa, and even Kathmandu for better and higher education.

Table No 4.4: List of Educational Institutions

S.N.	Name of Institutions	Ward	Locations	Road Network Code
1	Sagma Secondary School	1	Belbari	05DR017
2	Bathawa Bal Kendra	1	School	105M07D056
3	Kanyadevi School	1	Kharbeni Thokre Ring Road	105M07D013
4	Aarubotey School	1	Khorsane	05DR008
5	Shree Bhogteni Secondary School	1	Belbari	05DR017
6	Bal Bikash Primary School	1	Belbari	05DR017

S.N.	Name of Institutions	Ward	Locations	Road Network Code
7	Shree Lakshmi Secondary School	2	School Chowk	105M07D068
8	Morang Pathibara English School	2	Ganesh Dhakal Dakshin	105M07D064
9	Shree Himchuli Primary School	2	Budhabare Church Dhobi Hi	105M07D087
10	Siddhartha Bal Bikash Kendra	2	Turke Barpipal Chowk	105M07D059
11	Gyanjyoti Bal Bikash Kendra	2	Kirat Chowk	105M07D057
12	Prabhat Namuna Bal Bikash Kendra	2	Mil Chwok Biramile Tol	105M07D093
13	Bipat Bhaban	3	Shibalaya Mandir Kirtiman	105M07D136
14	Shree Shanti Bhagwati Secondary School	3	Tol Bikash Samiti 2 No	105M07D176
15	Chandrama Bal Bikash Kendra	3	Trisuli Sadak	105M07D129
16	Minerva Secondary Schol	3	Darjeeling Line	105M07D131
17	Kamalpur Bal kendra	3	Mahendra Marga	105M07D127
18	Shree Biran Basic School	3	Ekta Chowk Marga	105M07D180
19	Nawajyoti Bal Kendra	3	Sakela Chaur	105M07B003
20	Shree Krishna Primary School	3	Bal Kendra Marga	105M07D135
21	Shree Shanti Bhagwati Ma.Bi	4	Tol Bikash Samiti 2 No	105M07D176
22	Siddhartha Bal Bikash Kendra	4	Jansewa Marga	105M07A019
23	Shree Saraswati Bal Bikash Kendra	4	Tol Bikash Samiti 2 No	105M07D176
24	Letang Green Valley Academy	4	Marga 7	105M07D194
25	Purbanchal Alma Matter Home	4	Ekata Chowk Marga (26Ft)	105M07B009
26	Shree Shikshya Bikash	5	Sikshya Bikas Ma.	105M07A033

S.N.	Name of Institutions	Ward	Locations	Road Network Code
	Secondary School		Bi.	
27	Letang Secondary Boarding School	5	Kirat Marga (Paribartan T	105M07D201
28	Little Flower Boarding School	5	Sakari Marga	105M07D232
29	Surya Pra. Bi	5	Siddheshwar Marga	105M07C024
30	Sunrise Boarding School	5	Jirikhimti Marga	105M07A027
31	Shree Karambate Pra. Bi	5	Karambote Yuwa Marga	105M07D234
32	Gurans English School	5	Shanti Marga "Kha"	105M07C023
33	Shree Public Prathamik Bidyalaya	6	Dhuruncham Marga	105M07D243
34	Mahabharat Secondary School	6	Mahabharat Chatetar	105M07D246
35	Shree Sikshya Biaks Ma. Bi	6	Sikshya Bikas Ma. Bi.	105M07A033
36	Bal Bikash Kendra	6	Ramilo Marga	105M07D174
37	Public Central Secondary English Boarding School	6	Ujayalo Marga	105M07D255
38	Saraswati Aadharbhut Bi	8	Rupnaryan Ghar	105M07B021
39	Namuna Secondary School	9	D.P.M Marga	105M07D330
40	Shree Higher Secondary School	9	Shree Ma. Bi. Marga Purba	105M07D322
41	Shiksha Jyoti Pra. Bi	9	Buddha Marga	105M07D323
1	Sagma Secondary School	1	Belbari	05DR017
2	Bathawa Bal Kendra	1	School	105M07D056
3	Kanyadevi School	1	Kharbeni Thokre Ring Road	105M07D013
4	Aarubotey School	1	Khorsane	05DR008
5	Shree Bhogteni Secondary School	1	Belbari	05DR017

S.N.	Name of Institutions	Ward	Locations	Road Network Code
6	Bal Bikash Primary School	1	Belbari	05DR017
7	Shree Lakshmi Secondary School	2	School Chowk	105M07D068
8	Morang Pathibara English School	2	Ganesh Dhakal Dakshin	105M07D064
9	Shree Himchuli Primary School	2	Budhabare Church Dhobi Hi	105M07D087
10	Siddhartha Bal Bikash Kendra	2	Turke Barpipal Chowk	105M07D059
11	Gyanjyoti Bal Bikash Kendra	2	Kirat Chowk	105M07D057
12	Prabhat Namuna Bal Bikash Kendra	2	Mil Chwok Biramile Tol	105M07D093
13	Bipat Bhaban	3	Shibalaya Mandir Kirtiman	105M07D136

### Healthcare Centres

The constitution of Nepal has confirmed health services as a fundamental right for every Nepali citizen from the state and is equally accessible to everyone. In typical village areas, most people have not been able to take health services easily. The health care centers are far from the settlements and poor in transportation conditions as well. The health services have been mainly established at Letang bazar. Health centers have services upto to the required guideline as per MoHP.

As per the ministry of health and population, almost half of the population seems to be taking health services from non-governmental and private sectors. Only economically and financially sound people are merely successful in consuming such health services. There are some health centres in the vicinity of the municipality. But lack of medicines and equipment in health institutions seems to be the main problem in rural areas. Families living in remote areas have to spend a lot of time on healthcare and there is a more difficult situation during the rainy season. Local health services are provided through 13 Government health centres. The detailed status of health institutions within Letang municipality has been listed in the table below. People have to rely on the hospitals of Kathmandu in case of serious health conditions.

**Table No 4.5: Healthcare Centers Detail**

S.N.	Name of Health Institutions	Location	Ward No.	Road Access
1	Bhogatene Swaste Chauki	Swasthe Dada Tol Sadak	1	105M07D004
2	Aadharbhut Swastha Kendra	Budhabare	2	105M07D075

S.N.	Name of Health Institutions	Location	Ward No.	Road Access
	Budhabare	Turke Sadak		
3	Shubhakamana Hospital	Shanti Bhagawati Marga	3	105M07D178
4	PHC Hospital	Darjeeling Line	3	105M07D131
5	Nagar Pashu Aspatal	Marga 7	4	105M07D194
6	Aadharbhut Swastha Kendra	Marga 7	4	105M07D194
7	Letang Nagar Hospital	Shani Mandir	5	105M07D181
8	Aadharbhut Swastha Kendra	Ganesh Marga	5	105M07C044
9	Adharbhut Swaste Kendra	Guwabari Ring Road	6	105M07C049
10	NLF Office	Guwabari Ring Road	6	105M07C049
11	Warangi Swastha Chauki	Furketar	7	105M07B016
12	Jaate Health Post	Miklajung Ga.Pa. Sadak	8	105M07A038
13	Khop Kendra	Buddha Marga	9	105M07D323

### Crime and Citizen Security Service

Public security is the function of governments that ensures the protection of citizens in their territory, organizations, and institutions against threats to their well-being and the prosperity of their communities. To meet the increasing challenges in the public security area, responsible public institutions and organizations can tap into their intelligence to successfully address possible threats in advance. They optimize their internal structures, use synergies and carefully balance the costs and benefits of their measures.

Public safety organizations include law enforcement, fire, natural disasters, and emergency medical services. The public safety issues that a municipality, state, or federal jurisdiction might grapple with are narcotic use, trespassing, burglary, harassment, juvenile delinquency, unauthorized living, noise, littering, inappropriate social behavior, inebriation, and other quality-of-life issues. Generally, organizations are involved in the prevention of and protection from events that could endanger the safety of the general public from significant danger, injury, or property damage, such as crimes or disasters (natural or human-made). The description of public security offices has been listed in the table below.

Table No 4.6: List of Public Security Services

S.N.	Public Security Services Offices	Location	Ward No.	Road Access
1	Ilaka Prahari Karyalaya	Tol Bikash Samiti 2 No	4	105M07D176
2	Prahari Chauki Budhabare	Prahari Chauki Dakshin Pu	2	105M07D078

### Heritage, Culture, and Religion Tourism Potential Areas

Letang municipality is one of the destinations for tourists in Koshi Province due to the suitable climate, forest, vegetation, wildlife, and cultural diversity that has formed a specific geographical structure. The attractive hill sides, rock gardening, rivers streams, ponds, natural caves, and diverse forests are natural resources of the municipality. There are also attractive aspects of tourism like diverse cultures, castes, traditions or festivals, and lifestyles in short range. Tourism can certainly bring a significant contribution to the economic prosperity of the local people in the vicinity by utilizing all of these touristic assets.

People belonging to different cultural groups celebrate their festivals. The Hindus observe Dashian and Tihar as the main festivals, and the Buddhist visits Stupa, Koyobo, similarly Christians visit church. The detailed religious sites have been given in the table, below.

**Table No 4.7: Major Religious Sites**

S.N.	Name of Religious Sites	Category	Ward	Road Access
1	Kirat Thewa Maghim	Monastery	1	105M07D041
2	SDA CHurch	Church	1	105M07C005
3	Baptish Church	Church	1	105M07D015
4	Adhere Magar Ghumba	Monastery	1	05DR017
5	Satkanya Devi Mandir	Temple	1	105M07D007
6	Budhabare Baptis Church	Church	2	105M07D064
7	Prashansa Church	Church	2	105M07D119
8	Letang Ghumba	Monastery	2	105M07D068
9	Lakshminarayan Temple	Temple	2	105M07D068
10	Devithan Mandir	Temple	2	105M07D093
11	Shree Ram Janaki Mandir	Temple	2	105M07C001
12	Pantesh Code Church	Church	3	105M07D194
13	Prashansa Church	Church	3	105M07B003
14	Letang Immanuel Church	Church	3	105M07D129
15	Kamalpur Prashansa Church	Church	3	105M07D128
16	Devithan Panchakanya Mandir	Temple	3	105M07B004
17	Shibalaya Mandir Kirtiman	Temple	3	105M07D126
18	Tamang Bhelun Ghumba	Monastery	4	105M07D194
19	Krishna Mandir(Newar)	Temple	4	105M07B009
20	Sani Mandir	Temple	4	105M07D181
21	Pabitra Immanuel Church	Church	5	105M07D239
22	Immanuel Bible Missionary Church	Church	5	105M07D234
23	Siddheshwar Shiba Temple	Temple	5	105M07C024

S.N.	Name of Religious Sites	Category	Ward	Road Access
24	Ganesh Mandir	Temple	5	105M07D193
25	Radha Krishna Mandir	Temple	5	105M07D239
26	Kirateshwar Temple	Temple	5	105M07C046
27	Prasansa Church	Church	6	105M07D175
28	Shivalaya Mandir	Temple	6	105M07D174
29	Prashansa Church	Church	7	105M07B016
30	Prashansa Church Pitlumba	Church	7	105M07D286
31	Prasansa Church Phedapjung	Church	7	105M07C061
32	Kirat Manghim Pitlumba	Monastry	7	105M07D286
33	Kirat Hangsam Youma Manghim Kholaghari	Monastry	7	105M07D305
34	Kirat Hangsam Manghim Simana	Monastry	7	105M07C015
35	Barhaji Temple	Temple	7	105M07D293
36	Isai Prabhuko Mandali	Church	8	105M07A039
37	AFG Church	Church	8	105M07C064
38	Baudha Ghumba	Monastry	8	105M07B017
39	Shibalaya Temple	Temple	8	105M07B017
40	Manghim Mandir	Temple	8	105M07A039
41	Pathibhara Mandir	Temple	8	105M07C060
42	Prabhuko Sandesh Mandali	Church	9	105M07D328
43	Budha Ghumba	Monastry	9	05DR021
44	Shiva Shakti Baba	Temple	9	105M07D323
45	Shree Ganesh Temple Jate	Temple	9	105M07D326
46	Durga Temple	Temple	9	105M07D355

### Public Service Centers

The local level Letang municipality is one of the municipalities of the Morang district, from Koshi Province. The municipality lies in the terai territory and is connected by Madan Bhandari highway which are divided into 9 wards. The municipality is linked with village/urban roads and highways that make to setup municipal offices, health posts, police, etc. The detailing of public service centers has been listed below in the table.



Table No 4.8: Public Service Centers

Ward No.	Local Government Bodies	Location	Road Access
3	Municipal Office	Ekata Chowk Marga (26Ft)	105M07B009
1	Ward Office	Belbari	05DR017
2	Ward Office	Budhabare Turke Sadak	105M07D075
3	Ward Office	Ekata Chowk Marga (26Ft)	105M07B009
4	Ward Office	Marga 7	105M07D194
5	Ward Office	Shiva Marga	105M07C037
5	Ward Office	Shiva Marga	105M07C037
6	Ward Office	Ramailo Marga	105M07D174
7	Ward Office	Barbhanjyang	105M07D293
8	Ward Office	Danda Gaun	105M07A038

### Open Space and Parks

The parks and gardens have been developed in different areas of the municipality. To strengthen the ecosystem, open areas are necessary to protect and develop. These areas support creating a clean environment with the addition of beauty to the municipality.

People require daily exercise for recreation, entertainment, and mental refreshment. Different ways of recreation include fun and relaxation through a clean and natural environment. For recreation and relaxation, the municipality has 5 parks located in various part as per the road code. Also, there are some internal tourists can spend time having entertainment. The list of existing and recreational infrastructures has been given in the table below.

Table No 4.9: List of Open Spaces and Recreational Sites

S.N.	Name of sites	Location	Ward No	Road Access
1	Antar Dharmik Santi Park	1	Belbari	05DR017
2	Rajarani Pokhari	1	-	-
3	Teentale Jharna	1	-	-
4	Rajarani Paryatak Office	1	Belbari	05DR017
5	Nagar Prabesh Park Paitis Bighe	2	Prahari Chauki Dakshin Pu	105M07D078
6	Putali Park	3	Beldangi Marga	105M07C016
7	Sakela Park	3	Sakela Chaur	105M07B003
8	Children Park	4	Marga 7	105M07D194
9	Tinkune Park	4	Ekata Chowk Marga (26Ft)	105M07B009

S.N.	Name of sites	Location	Ward No	Road Access
10	Calesthenics Park	5	Bimire Marga	105M07C046
11	Jorkup Jaladhar Kshetra	5	Jirikhimti Marga	105M07A027
12	Bimire Jaladhar Kshetra	5	Bimire Marga	105M07C046
13	Letang View Tower	6	Guwabari Ring Road	105M07C049
14	Suke Pokhari	7	Guwabari	05DR017
15	Jate View Tower	8	Lawati Chowk	105M07A040
16	Kolung Jharana	8	-	-

#### 4.2.6 Economic Status

The municipality economy is mainly focused on the sectors like agriculture, forest by-products, small-scale factories, business, wholesale, retail markets, hotels, tourism, and services. Due to the suitable climate and fertile soil, the land is suitable for agriculture. Most of the households in the municipality are directly or indirectly involved in agricultural business. Due to strategic and village/urban road networks in all wards, access to the road to all the settlements has been connected. However, the roads constructed are haphazard and poor. Similarly, water, forestry, and biological diversity along with the rivers have added additional potential to the development of the economy. There are some small and domestic industries which include agricultural mills, crusher industries, poultry farming, bee farming, animal husbandry, etc. Local people are looking for the development of industries and businesses like furniture, herbal, industry, etc. The main economic fundamentals of the municipality are agriculture, trade, local employment, and remittance.

#### Agriculture

Agriculture is the main source of the economy of the municipality. Almost 70% of the population has involved in agriculture while 46.02% of the land is used by agricultural land. Orange/lemon, potato, paddy, wheat, maize, vegetables, and herbal products are the major crops that have been cultivated. Although the municipality has rivers, streams, and spring sources, the irrigation facility is not good enough. Thus, most of the rolling and steep agricultural land has been converted to barren land and ultimately developed as bushes and forests. Most of the irrigation channels are traditional and earthen. The local level is giving subsidies to develop water ponds, seeds shades, tunnels, technical assistance, and also managing markets, training, etc. to the farmers. These practices have encouraged the local farmers and youth.

As per local farmers, the agricultural land is fertile but due to a lack of irrigation facilities, farmers have faced many problems in growing crops, fruits & vegetables, and animal husbandry as well. Letang municipality produces a large number of food crops, herbals, and cereals. The production is mainly exported to nearby local markets like Letang Bazar, Budhabare Bazar, Jante, Warangi, Madan chowk and adheri and cities like Biratnagar, Itahari, Dharan, Inaruwa, Damak, Birtamond. The production of crops, meats, dairy products, fruits, vegetables etc. isn't enough for the local people. Thus, a huge amount of food has been imported from nearby local markets and Kathmandu.

## Major Production of Agriculture Crops

The agricultural land is fertile which helps to increase the economy of the local people. The municipality is also suitable for agriculture, and livestock farming. The major agricultural products in the municipality are paddy, maize, wheat, cash crops, vegetables, fruits, cereal crops, etc. Off-seasonal vegetable farming, commercial coffee farming, commercial honey-bee farming, commercial food farming, etc has been growing interest.

## Industry

The municipality has been dominated by agriculture-based industries like cow farms, goat farms, bee farming, etc. The field study has identified hotel and business industries which include the crusher industry on the bank of Chisang river. These industries are around the different wards of the municipality. Besides this, there are a few furniture, poultry farm, rice mills, etc. The list of industries has been listed in the table below.

Table No 4.10: List of Industries

S.N.	Industries	Location	Road Access
1	Mahabharat Organic Coffee Firm	Belbari	05DR017
2	Tapari Factory	Bimire Marga	105M07C046
3	Letang Garment	Sakela Chaur	105M07B003

### 4.2.7 Environment Status

Letang municipality has fertile land that is rich for agriculture as well. Letang is home to various water birds and aquatic animals. More than dozens of rivers, streams, and ponds provide water for irrigation as well as for drinking purposes. Haphazard urbanization and development are taking a toll on these water bodies and thus it is necessary to conserve them and promote ecotourism.

A wide range of vegetation is practiced in Letang municipality which includes *Shorea robusta*, *Shrikhand*, *Elaeocarpus ganitrus*, *Pinus wallichiana*, *Diploknema butyracea*, *Bombax ceiba*, *Toona ciliate*, *Acacia catechu*, *Juglans regia*, *Rhododendron arboretum*, *Ribes uva-crispa*, *Zanthoxylum piperitum*, *Swertia chirayita*, *Asparagus Officinalis*, etc. Forest encroachment, deforestation, grazing, and forest fires are the issues regarding forest management which are looked after by the forest conservation committee and forest users committee.

Urban environmental problems are mostly inadequate and unsafe water supply, wastewater, solid waste, excess use/lack of energy sources, loss of green and natural spaces, urban sprawl, pollution of soil, air, traffic, noise, etc. Letang municipality also faces similar kinds of environmental problems. In this new emerging municipality, the prevailing environmental problems and issues are: -

Environmental Issues	Situations Analysis
Air Pollution	There is still the practice of burning organic fuels such as vehicle fuel for transportation, firewood, charcoal, dried dung, agricultural wastes, etc. as a source of energy for cooking and various other purposes.
Land Pollution	The land is polluted by the spoiling of mobile, and grease of vehicles, and the land is

Environmental Issues	Situations Analysis
Lack of Solid Waste Management	<p>highly used while expanding the road networks.</p> <p>Current waste generation in Letang municipality is 0.20 kg/capita/day with an average design waste generation of 0.22 kg/capita/day including a 1% increment with the development of the standard of life. The total average waste generation is 4.0 tons/day and the total waste collection is almost nil. municipal waste contains biodegradable waste, paper, plastics, metal, glass, textile, inert, etc</p>
Waste Water Pollution	<p>The problem emerging from wastewater, especially the degradation of water quality of rivers and other water bodies due to haphazard disposal of wastewater, blockage of sources due to the haphazard road network development, and the associated health and livelihood consequences indicates a lack of planning and infrastructures for the management of wastewater. The production of wastewater is through domestic, commercial, and industrial routes. Waste water produced from the domestic routes includes grey water and black water generated during washing, cleaning, bathing, and sanitary uses.</p>
Disaster Management	<p>Although there is a disaster management committee currently working with a specific disaster management fund in the municipality, there is a lack of technical approaches.</p>
Drinking Water Quality Degradation	<p>As in parts of the hill, the drinking water source is a spring source. Due to the haphazard development of the road network, a few sources have been clogged.</p>
Noise Pollution	<p>The main source of noise pollution in municipality is due to vehicles and industries. Especially in the Mahendra highway corridor, noise generation is higher due to the movement of heavily loaded vehicles.</p>
Industrial Pollution	<p>There are around 19 various types of small-medium industries in Letang. Rice mills, livestock farms, crushers, and poultries could be a source of effluent polluting the land and water bodies nearby while brick factories cause harmful air emissions polluting the air.</p>

**Core Problems Associated with Disaster**

The municipality is rich in mines and minerals such as sand, gravel, boulder, stones, etc. However, their rampant and unscientific mining and extraction of these cause erosion and slope instability in the hills areas, flooding thereby also threatening the ecological balance. Landslides are the major vulnerable hotspot in Letang municipality. and falls under the high-hazard probability area. The geological and climatic conditions could be responsible for landslides, debris flow, flooding, and wildfires. There are some common problems associated with disasters in the municipality as listed below-

Disasters	Situation Analysis
Soil Erosion and Landslide	<p>As the municipality lies in a hilly area, it is prone to soil erosion and landslides. The high part of the municipality is prone to soil erosion and landslide because of steep land and fragile environment which may cause loss of cultivable land, damage and destruction of road networks, and damaging settlements. The erosion is being seem along the Letang corridor.</p>
Fire	<p>Fire is another hazard prevalent in Letang municipality. Many of the areas of this new municipal have rural-style traditional homes which are generally made of stone clay and thatched roofs, which makes it more vulnerable to the</p>

Disasters	Situation Analysis
	impacts of fire hazards.
Epidemic	The outbreak of air and waterborne diseases is common in the municipality, especially during summer.
Earthquake	There have been recent phenomena of the earthquake (2072) in the municipality, there is always a risk as the whole of Nepal lies in a seismically active zone. Thus, preparedness for an earthquake is important as well, to keep the casualties and loss of properties low as possible, even when they occur in large magnitude.

### 4.3 Development Potential Area

There is a major highway such as Mahendra Highway passes through the municipality. The strategic road network offers many developments an opportunity in the municipality such as:

#### 4.3.1 Settlement and Market Centers

The land topography is the hill that makes some difficulty for the development of the settlements and markets all over the municipality. Thus, few of the areas are suitable for future developments and settlements. The existing road networks are almost developed in the settlement and need to be upgraded.

The settlements of the town follow a cluster-wise development pattern in the municipal area and along the highway the pattern of settlement is linear. The other settlements in each ward are scattered with low population density. The buildings constructed along the highway are mostly RCC-framed structures and use for commercial and residential purposes. The urban road access is sufficient but the road width is narrow than standards. The residents along the highway are a high population density and an altitude of low land topography. Detailed information on major settlements and markets area has been listed in the table below.

Table No 4.11: Major Settlements and Market Centres

Ward No.	Name/ Location	Types Settlements	Road access
1	Aarubote Tol	Small Market	05DR017
1	Chilaune Dada	Medium Market	105M07D056
1	Sakfara	Settlement/Market	105M07C012
1	Shiru Dada	Settlement	105M07A001
1	Lakh Gau	Settlement	105M07D012
2	Danda Tol	Settlement	105M07D134
2	Thakuri Niwas	Settlement	105M07D080
2	Budhabare Bazaar	Market/Settlement	105M07D064
2	Kirat Tol	Market/Settlement	105M07D057
2	Pragati Tol	Market/Settlement	105M07D093
2	Gadhabari Tol	Market/Settlement	105M07D076
2	Phadani Tol	Small Market	105M07A003
2	Nursery Tol	Medium Market	105M07D068

Ward No.	Name/ Location	Types Settlements	Road access
2	Sarulafa Tol	Settlement/Market	105M07D068
2	Paitis Bighe Tol	Settlement	105M07D078
2	Turkey Tol	Settlement	105M07D059
2	Dhobi Tol	Settlement	105M07D087
2	Khaireni Tol	Settlement	105M07D058
2	Beach Tol	Market/Settlement	105M07D064
3	Bihibare Bazaar	Market/Settlement	105M07D135
3	Trishuli Tol	Market/Settlement	105M07D194
3	Samabesi Tol	Small Market	105M07D194
3	Darjeeling Line	Medium Market	105M07D131
3	Sajha Tol	Settlement/Market	105M07B009
3	Biran Tol	Settlement	105M07D131
3	Kamalpur Tol	Settlement	105M07D127
4	Letang Hatiya Bazar	Settlement	105M07A019
5	Paribartan Tol	Settlement	105M07C023
5	Suryodaya Tol	Market/Settlement	105M07C024
5	Pragati Tol	Market/Settlement	105M07D197
5	Samabeshi Tol	Market/Settlement	105M07C037
5	Bimire Tole	Small Market	105M07C044
5	Sagarmatha Tol	Medium Market	105M07A027
6	6 No. Simana	Settlement/Market	105M07A033
6	Lamitar Tol	Settlement	105M07C021
6	Ghumti Tol	Settlement	105M07D175
6	Kapase Tol	Settlement	105M07D174
6	Public Chauri Tol	Settlement	105M07D174
6	Barghachi Tol	Market/Settlement	105M07C039
6	Salbari Tol	Market/Settlement	105M07A034
6	Budha Tol	Market/Settlement	105M07A034
6	Pragati Tol	Small Market	105M07D246
7	Fuketar Gaau	Medium Market	105M07B016
7	Warangi Chamling Tol	Settlement/Market	105M07D306
7	Teen kateri Gaau	Settlement	105M07D304
7	Guwabari	Settlement	105M07D246
7	Aahale Bazar	Settlement	105M07B016
7	Simana Tol	Settlement	105M07C015

Ward No.	Name/ Location	Types Settlements	Road access
7	Malibase Gaau	Market/Settlement	105M07C015
7	Muchhebung	Market/Settlement	105M07D292
7	Nadolung	Market/Settlement	105M07D286
7	Chyan Dada	Small Market	105M07C061
7	Bhutedaha	Medium Market	105M07D305
7	Subba Tol	Settlement/Market	105M07D305
7	Panchami	Settlement	105M07D308
7	Dudhe	Settlement	105M07D308
7	Dhotre	Settlement	105M07D283
7	Kerabari Tol	Settlement	105M07D283
7	Sangam Tol	Market/Settlement	105M07D301
7	Jahaubari Gaau	Market/Settlement	105M07D301
7	Jhilketaar	Market/Settlement	105M07D294
7	Kumletaar Gaau	Small Market	105M07D299
7	Hatikhark Gaau	Medium Market	105M07D299
7	Budhauri Tol	Settlement/Market	105M07D296
7	Deurali	Settlement	105M07D290
7	Terse	Settlement	105M07D290
7	Toksang	Settlement	105M07D303
7	Thado	Settlement	105M07D301
7	Tribeni	Market/Settlement	105M07D306
7	Teenpata	Market/Settlement	105M07D309
7	Katike	Market/Settlement	105M07D284
7	Gargare	Small Market	105M07D291
7	Kalimati	Medium Market	105M07D300
7	Dada Tol	Settlement/Market	105M07D300
7	Sikarthumkar	Settlement	105M07D289
7	Champe	Settlement	105M07D304
7	Asare Dada	Settlement	105M07D285
7	Barbhanjyang	Settlement	105M07D293
7	Kamauti	Market/Settlement	105M07D285
7	Lahabari	Market/Settlement	105M07D288
7	Aaptar	Market/Settlement	105M07D298
7	Sirubari	Small Market	105M07D298
7	Kerabari	Medium Market	105M07D307

Ward No.	Name/ Location	Types Settlements	Road access
7	Sakhuwabote	Settlement/Market	105M07D307
7	Suryamagar Tol	Settlement	105M07D287
7	Dhirinkha	Settlement	105M07D287
7	Jamdare Tol	Settlement	105M07D293
7	Pilungmang	Settlement	105M07D286
8	Hoksey Bhalukhop Tol	Market/Settlement	105M07C066
8	Jyamire Tol	Market/Settlement	F61
8	Dhap Shikhar Tol	Market/Settlement	F61
8	Jante Bazaar	Small Market	105M07B017
8	Jante Bazaar Open Market	Medium Market	105M07B017
8	Tukure Bazaar	Settlement/Market	105M07A041
8	Tamang Tol	Settlement	105M07D366
8	Buddha Sagarmatha Tol	Settlement	105M07D310
8	Jai Nepal Tol	Settlement	105M07D330
8	Bhu Pu Tol	Settlement	105M07B017
8	Sangam Tol	Market/Settlement	105M07B017
8	Bazaar Tol	Market/Settlement	105M07A038
8	Dada Gaau	Market/Settlement	105M07A040
8	Lal Jhoda Tol	Settlement	105M07C063
8	Andheri	Settlement	105M07B023
8	Majhuwa Gaau	Settlement	105M07D234
8	Khanya Tol	Small Market/Settlement	105M07C064
8	Eklry Gaau	Market/Settlement	105M07C062
8	Bhyangley Gaau	Settlement	105M07C062
8	Ekley Peepal	Small Market/Settlement	105M07C063
8	Sano Dhap	Small Market	F61
9	Samriddhi 2	Medium Market	105M07D328
9	Samriddhi 1	Settlement/Market	105M07D328
9	Swargadwari 1	Settlement	105M07D332
9	Swargadwari 2	Settlement	105M07D328
9	Barhagothe	Settlement	105M07D338
9	Madanpur 1	Settlement	105M07D339
9	Madanpur 2	Market/Settlement	105M07D342
9	Bihani 1	Market/Settlement	105M07D337
9	Bihani 2	Market/Settlement	105M07D337



Ward No.	Name/ Location	Types Settlements	Road access
9	Milijuli 2	Market/Settlement	105M07D330
9	Milijuli 1	Market/Settlement	105M07D337
9	Sagarmatha 1	Small Market/Settlement	105M07D327
9	Sagarmatha 2	Small Market/Settlement	105M07D343

### 4.3.2 Administration Center and Service

The municipal executive office of Letang municipality is located at Letang, ward no 3. The municipal office is situated in the almost mid part of the municipality which has been connected via village/urban road networks. This may offer a high possibility to develop as an institutional zone in the municipality.

### 4.3.3 Industry

The municipality can develop a large number of small to medium industries such as food processing, dairy processing, agro-processing, and others which may serve the local people and other municipalities and the whole district.

### 4.3.4 Agriculture/Forestry and Its Processing

With the suitable topography and climate available in the municipality, agricultural production especially coffee, orange, lemon, vegetables, cash crops, herbal products, livestock, and fruits can be given higher priority and the processing of agricultural products is a potential for the economic development of the municipality.

## Chapter: 5 Municipal Inventory Map of Road Network

The road inventory survey has been done with the help of the earlier prepared GIS base map of the municipality and road inventory form. Field verification of the base map has been done with the help of, google image maps survey and a GPS survey. A road inventory survey has been completed from one nodal point to another in each road section collecting information related to the road surface, crossing structure, road condition, and linkages to the large settlements, economically active spaces, existing service centers, potential growth centres, potential areas of development, areas of special considerations and direct link to another linkage. From data of the road inventory survey, MIM has been prepared. And based on the earlier study of potential areas and MIM, IDPM is developed.

### 5.1 Overview of Road Network

The Madan Bhandari Highway passes from the centre of the Letang municipality crossing wards. The settlements developing along the highway are linear patterns. These settlements are major commercial areas in the municipality. Letang municipality has altogether 560.2 km of road length which consists of roads like the National Highway (12.52 km), District Road (49.26km), and Municipal Road length (454.03Km) Most of the roads have to be found earthen. The only the national highway and district road sections are blacktopped.

Table No 5.1: Existing Road Inventory

Road Types and Surface Types	Road length, Km
<b>Blacktop</b>	<b>69.40</b>
District Road	18.44
Feeder Road	16.23
Municipal Road	34.73
National Highway	12.52
<b>Earthen</b>	<b>304.92</b>
District Road	30.82
Municipal Road	247.14
Feeder Road	10.456921
Provincial Road	16.502732
<b>Gravel</b>	<b>172.15</b>
Feeder Road	10.46
Provincial Road	16.50
Municipal Road	172.15
<b>Inter Locked</b>	<b>1.22</b>
<b>Grand Total</b>	<b>560.2</b>

**Table No 5.2: Road Length by Road Width**

<b>Road Class Type, Road Width, M</b>	<b>Road length, Km</b>
<b>0</b>	<b>14.043</b>
Municipal Proposed Road	15.043
<b>3</b>	<b>40.721</b>
Municipal Road	40.721
<b>3.5</b>	<b>239.767</b>
District Road	14.747
Municipal Road	186.641
National Highway	35.379
<b>4</b>	<b>104.094</b>
Municipal Road	104.094
<b>5</b>	<b>39.868</b>
District Road	14.124
Municipal Road	25.744
<b>8</b>	<b>18.096</b>
Municipal Road	18.096
<b>11</b>	<b>5.381</b>
Municipal Road	5.381
<b>Grand Total</b>	<b>463.269</b>

The table shows that the municipality has 239.767 km of road width below 3.5m.

## **5.2 Accessibility and Mobility**

The municipality has basic accessibility, i.e. All the people of the municipality have access to the road within 20-30 minute walking distance. In the modern concept, accessibility is defined as access to services and facilities, not derived from travel. Access to urban roads is not a problem in the municipality, but access to the services and facilities such as bus stops, city buses, roadside infrastructures, etc. is questionable in village/urban areas. The average travel time to access urban transport is about 20-25 minute (maximum) using a motorcycle, jeep, bus, etc. This hinders their mobility and thus renders the services and facilities inaccessible. The average time required to reach the nearest bus stop is about 50 minute. The unreliability of public vehicles has hindered village/urban mobility, which has increased dependence on privately owned motorcycles.

Each day more than 500 light and heavy vehicles pass across the Letang municipality via. Rangeli-Kanepokhari-Dandagaun-Budhabare. There is a direct bus and micro bus service from Kathmandu to the municipality. With the possibility of mass transportation, the municipality doesn't have a proper bus park and bus stations. Due to such a scenario, buses and other public transport means are seen to be parked along the side of the road which obstructs the traffic flow,

creating unpleasing congestion. So, the municipality has to plan for the construction of a well-facilitated bus terminal which has been proposed in Letang municipality, and a sufficient number of bus stands.

The Letang Bazar is centre of the municipality where the mass flow is high. The settlements of each ward have been linked by village/urban roads to the center. Mostly, urban roads are Gravel and have poor transportation facilities i.e. not regular. The transportation facility is only available in the morning time from rural settlements to the center and in the evening from the city to village/urban settlements. Many citizens are traveling by foot to reach markets, schools, health posts etc. The transportation service is weak in the locality and available services are jeep, motorcycle, pickup, auto riskshaw and buses, in bajar areas. To overcome the transportation services problems, the municipality should initiate municipal bus services immediately.

Although the municipality has connectivity with different parts of Nepal and its nearest cities and towns, it has not any bus stations and parking plots due to which vehicles are parking along the roadside which may cause congestion and increase road accidents. The bus park is one of the most important infrastructures in the town. Therefore, the municipality needs to either expand or search for another alternative.

Public transportation facilities especially jeep, micro, and bus services are available from Biratnagar via. Mahendra Highway while the rest of the wards are connected with the core market through jeep and other transportation services. Most of the municipal roads are earthen & in poor condition.

The Letang municipality is connecting to the major cities via. National Highways and its details have been listed in the table below.

**Table No 5.3: Connectivity to Major Cities**

Connectivity	Places	Distance(Km)	Highway	Remarks
	Biratnagar	48.1	Mahendra Highway	Capital City
	Itahari	28.6	Mahendra Highway	Morang

### 5.3 Traffic Volume Study

Generally, a traffic volume study has been done the establishment of the relative importance of the road. It helps to decide the priority of improvement and expansion of roads and to allocate funds accordingly. It will also help in the analysis of traffic patterns. Inventory of road traffic and physical features has been done by use of GPS, GIS Maps, and manual vehicle counting methods. This method has identified traffic volume as well as vehicle classification

Mostly, people from the area have made the trip on walking. Besides this, people are using motorbikes and jeeps, and pickups, as a trip option due to less availability of public vehicles in urban areas whereas trucks are for transport freights and construction materials.

#### 5.3.1 Traffic Vehicle Count

The traffic vehicle count per hour has been done at the following stations which are listed in the table below.

**Table No 5.4: Location and Route for Vehicular Count**

SN	Count Station	Location	Name of Road Linkage
1	Kuikunda	Kuikunda	Baguwa Lokhara Sadak
2	Murchung	Murchung	Baluwa Lakh Hardiya Murchung Sadak
3	Shani Mandir	Shani Mandir	Buddha Shanti Marga- Main Road NMB Bank - Hatiya Bazar- Sani Mandir-Madan Bhandari Marga
4	Kamalpur	Kamalpur	Jholunge Pool-Kamalpur Fireline Gate
5	Trishuli	Trishuli	Kamalpur -Trishuli Tol Sadak
6	Pragati	Pragati	Lapha Khel Maidan -Uttar Pragati Tol Sadak
7	Ward Office	Ward Office	Naglo Hotel- Green Valley Uttar-Ward Karyalaya Marga-3
8	Netra Chowk	Netra Chowk	Ncell Yuwa Paschim Bhupal Saru-Basu Subedi Dakshin Makim Marga
9	Khairene	Khairene	Pragati Chowk - Khairene Marga
10	Magma	Magma	Simana-Malibase-Sagma-Magma Sadak
11	Chisang Pool	Chisang Pool	Beach Tol Bato

**Table No 5.5: Vehicle count per Day**

S.N	Station	Mode Chioce					Total (PCU)
		Motorbike	Jeep/Car	Tractor	Tripper/ Truck	Bus	
1	Kuikunda	41	5	2	0	2	34.5
2	Murchung	41	1	1	1	1	29
3	Shani Mandir	47	2	0	2	0	31.5
4	Kamalpur	65	4	3	1	0	44
5	Trishuli	33	5	2	3	0	33.5
6	Pragati	45	4	1	0	0	28
7	Ward Office	107	3	2	0	0	59.5
8	Netra Chowk	86	6	1	1	1	56.5
9	Khairene	47	7	0	0	2	36.5
10	Magma	65	2	0	1	3	46.5
11	Chisang Pool	33	6	0	0	2	28.5
Total Vehicle		610	45	12	9	11	428
PCU/Day		305	45	18	27	33	428

**Table No 5.6: Modes of Transportation Services**

Modes of Transportation	PCU/Day	%
Motorcycles	610	71.26

Modes of Transportation	PCU/Day	%
Jeep	45	10.51
Tractors	12	4.21
Truck/Trippers	9	6.31
Bus	11	7.71
Total, PCU/Day	428	100

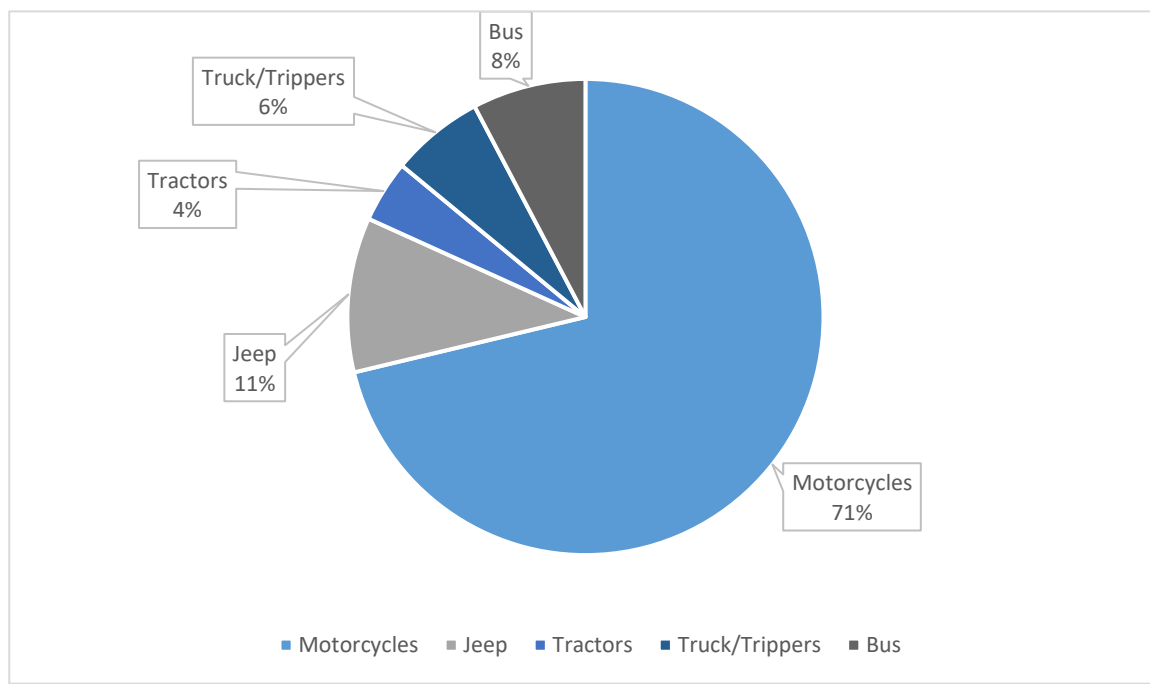


Figure No 5.1: Modes of Transportation Services

The composition of the vehicle shows that the major vehicle that plies on the major village/urban roads. Among the station, the transport facility is motorbike (71.26 %). Other than these, 10.51 % of traffic is occupied by Jeep and cars, 4.21 % by Tractors, and 7.71% is Bus.

**5.3.2 Active and Passive Transport User**

Active transport is also called Non-Motorized Transport, NMT, and human-powered transport. It refers to walking, cycling, and variants such as wheelchair, scooter, and handcart use. It includes both utilitarian and recreational travel activity, plus stationary uses of pedestrian environments such as standing on sidewalks and sitting at bus stops (Litman, 2015). Passive transport users prefer to travel by bus, car, etc. The sample survey shows that nearly 45% or above of the daily trips are done via an active mode of transport. The active mode of transport is beneficial in many aspects: this mode can be used by people of any age group irrespective of gender and economic status, it consumes human energy and does not depend on fossil fuel, and it is environment friendly and provides many health benefits to the user.

**5.3.3 Public Transportation**

The use of public transportation for daily trips is limited to the Rangeli-Kanepokhari-Dandagaun-Budhabare. Except for highways, the municipality has no formal form of public

transportation as it does not have a defined schedule and is not reliable. There is no public transport along other road sections of the municipality. Mobility relies on privately owned vehicles or has to walk self. It is prime time to implement interventions to introduce proper public transport routes and services so that a sustainable proper public transportation can be established and an increase in the number of private vehicles can be controlled in the future.

#### **5.3.4 Safety Status and Issues**

The data provided by the key interviewer's information shows that the majority of vehicles involved in the accidents are motorbikes due to road conditions, negligence and speeding is the major cause.

The municipal roads are mainly used by motorbikes, jeep users, and pedestrians. The use of motorized vehicles is very limited as the ownership of motor vehicles is low. Thus, with the majority of slow vehicles plying on municipal roads, the roads are safer.

But the situation is not very friendly along the highway and village roads which supports all sorts of high-speed motor vehicles. The Madan Bhandari Highway passes through the urban center (core market area) of wards 2,3,4,5. Market development along these highways is highly risky because of the carriageway section in the bridge and highway which is shared by all sorts of vehicles including pedestrians. Motorcyclists and pedestrians are at the highest risk along these sections and rural roads. Therefore, proper urban road infrastructure should be provided along the highway as it is a part of an urban road network.

### **5.4 Forecast and Planning**

This clause deals with the future projection of population and vehicles along with the allocation of potential development areas. It also formulates the hierarchy of urban roads for proposed different classes of roads. It has considered the relationship between land use and future transportation planning. It also deals with various infrastructure planning and how they will help to enhance the mobility and accessibility scenario. Finally, it covers the aspect of short-term and long-term urban road networks and transportation planning.

#### **5.4.1 Population and Traffic Forecasting**

The population and population density of the municipality is obviously in increasing order migration is the chief factor. The factors for migration may be the desire for better economic opportunities, the desire for better living or housing conditions (this applies particularly to short-distance migration within the locality), trips for reasons of health, education, retirement, etc., and others. For a sustainable supply of transport infrastructure, it is crucial to forecast the future population and required infrastructures for traffic management.

Population forecast is considered for areas showing stability in the size of their populations for several decades, and change in the economic and social conditions; whereas it becomes extremely difficult and complex for areas having sharp fluctuations in the direction or rate of population change. The population can be forecasted via various methods, which include arithmetic, geometric, arithmetic incremental method, logistic curve method, and so on.

According to records from CBS 2078, the population of the municipal area seems to be increased. But, we assume that the population will also be increasing in the coming years. To

forecast the population of the municipality, the geometric method has been used considering the urbanization of the area. For this the following formula is used:

$$P_n = P (1 + IG/100)^n$$

Where, IG = geometric mean (%)

P = Present population

n = no. of year.

$P_n$  = population at the end of the nth year

By using this method, we found that the average increase rate of population in this municipality is on average 1.5 % per year (the population increased rate of Morang district is 1.14%/year). Based on this trend, the minimum projected population of this municipality in the year 2084/85 BS will be 41718.

The population prediction for the municipality has been made for the following years: 2079, 2080, 2081, 2082, and 2083, 2084,2085/86 BS which has been given in the table and chart below.

**Table No 5.7: Population Forecast**

Projected Year	Projected Population	Remarks
2068	32782	Census Population (CBS)
2078	38152	Census Population (CBS)
2079	38725	Projected Population
2080	39306	Projected Population
2081	39895	Projected Population
2082	40494	Projected Population
2083/84	41001	Projected Population
2084/85	41718	Projected Population
2085/86	42343	Projected Population



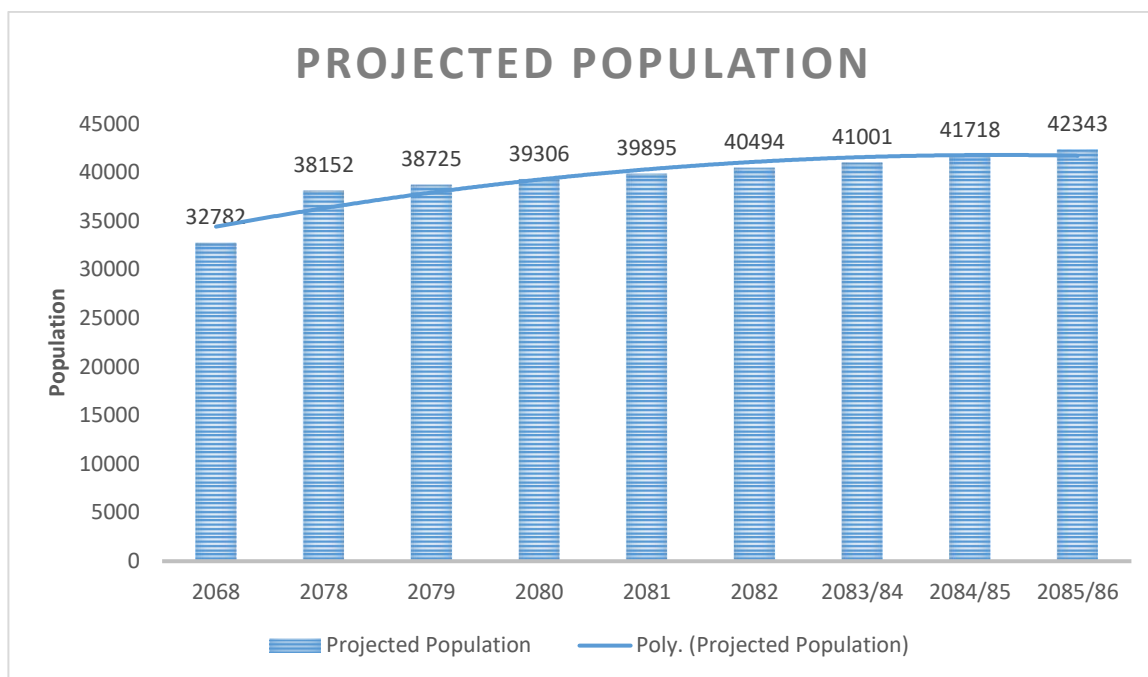


Figure No 5.2: Population Forecast

### 5.4.2 Traffic Forecast

Transportation forecasting is the process of estimating the number of people or vehicles that will use a specific transportation facility. Hence, it will provide benchmarks for developing overall transportation policy, planning, design, and operation for efficient mass mobility and transportation system.

The transport infrastructure and facilities pave the path for the development of the area. Thus, the existing trend of infrastructure development and land use are considered to plan the transport facilities requirements in the future. In the planning process of the transport infrastructures, the projection of the traffic is the most crucial factor. Traffic forecasting for planning projects determines the required number of lanes and road width to meet the future anticipated traffic demands. Transportation demand will depend upon demographic and geographic factors, including population size and age, economic and employment growth, urban road network, operating conditions, and land use policy, including the cost of travel.

Thus, the data collected during the study is used for forecasting the traffic in the municipality. Present-day traffic can be interpreted based on the OD survey. To forecast the traffic flow, it is assumed that about 15 to 24 % of the population makes daily trips. The projected traffic is based on an extreme case of population.

Table No 5.8: Projection of Mode Shares

Years	Motorcycle (%)	Motorcycle Increased Rate, %	Jeep/Pickups (%)	Jeeps Increased Rate, %	Tractor (%)	Tractors Increased Rate, %	Trippers/Trucks (%)	Trucks Increased Rate, %	Bus (%)	Bus Increased Rate, %	Total	Walking (%)
2079	52.99	1	13.51	0	29.09	-1	2.34	0	2.08	0.00	100.	25
2080	53.99	1	13.51	1	28.09	-1	2.34	-1	2.08	0	100.	23
2081	54.99	0.5	14.51	0.5	27.09	-1	1.34	0	2.08	0	100.	24

Years	Motorcycle (%)	Motorcycle Increased Rate, %	Jeep/Pickups (%)	Jeeps Increased Rate, %	Tractor (%)	Tractors Increased Rate, %	Trippers/Trucks (%)	Trucks Increased Rate, %	Bus (%)	Bus Increased Rate, %	Total	Walking (%)
2082	55.49	0.5	15.01	0	26.09	0	1.34	-0.5	2.08	0	100.	23
2083/84	55.99	0.5	15.01	0.5	26.09	-1.5	0.84	0	2.08	0.5	100.	22
2084/85	56.49	-	15.51	-	24.59	-	0.84	-	2.58	-	100.	20

Table No 5.9: Projected Trip Generation

Projection			Daily Trip, Mode Share					
Year (B.S.)	Projected Population	Trip Maker	Motorcycle	Tractor	Car/Jeep	Bus	Trippers/Trucks	Walking
Assume	%	15	52.99	29.09	13.51	2.08	2.34	25
2079	38725	2,724	1443	792	368	57	64	4540
Assume	%	17	53.99	28.09	13.51	2.08	2.34	23
2080	39306	3,091	1669	868	418	64	72	4182
Assume	%	20	54.99	27.09	14.51	2.08	1.34	24
2081	39895	3,641	2002	986	528	76	49	4370
Assume	%	22	55.49	26.09	15.01	2.08	1.34	23
2082	40494	4,011	2225	1046	602	83	54	4193
Assume	%	23	55.99	26.09	15.01	2.08	0.84	22
2083	41101	4,198	2351	1095	630	87	35	4016
Assume	%	24	56.49	24.59	15.51	2.58	0.84	20
2084	41718	4,387	2478	1079	680	113	37	3656
Assume	%							
2085	42343							

The above table shows that the motorcycle contributes about 53% of trips and assuming a 4.5% increase in bike ownership in the next five years, we can use the growth factor of about 2% in the trip making. The increase in trips of motorcycles reduces the trips of tractors and walking. Without any intervention in public transport routes, the public transportation usage level will more or less remain the same. But interventions during the first five years should demand public vehicles during the plan. Assuming increasing in the trips by 1%, we will come up with the above fact. There will increase in private car/jeep ownership and public vehicles in the municipality. At the same time, there will decrease in walking trips, which are taken up by motorbikes, car/jeep trips, and public vehicles. Though, its usage changes to the initial one as people have to walk to the nearest bus stops and so on. And, the provision of pedestrian facilities will help to maintain mass mobility in proportion.

## 5.5 Formulation of Road Network Hierarchy

Village/Urban roads facilitate a variety of functions, including direct access to pedestrians and motorcycles, bus routes, and catering through traffic. Many roads serve more than one function

to varying degrees, but the mixing of incompatible functions can lead to problems. Thus it is important to distinguish roads into different classes or types based on various criteria.

An urban road hierarchy is a means of defining each roadway in terms of its function along with appropriate objectives. The roadway can be setup and appropriate design criteria can be implemented. It is an important tool for road network and land use planning to asset management. Road hierarchy restricts or reduces direct connections between certain types of links, for example, residential streets and arterial roads, and allows connections between similar-order streets (e.g. arterial to arterial) or between street types that are separated by one level in the hierarchy (e.g. arterial to highway and collector to arterial.). These hierarchical distinctions of road types become clearer when considering the recommended design specifications for the number of through lanes, design speed, intersection spacing, and driveway access. A well-planned road hierarchy will reduce the overall impact of traffic by concentrating longer distance flow onto routes in less sensitive locations, ensuring land uses and activities. These networks are incompatible with traffic flow and restricted from routes where traffic movement should predominate and preserving areas where traffic is discouraged.

There are some different levels of road hierarchy in India and Nepal Such as:

- ❖ Indian Road Congress (IRC) has classified urban roads into four classes: Arterial, Sub-Arterial, Collector, and Local Street.
- ❖ NRS 2070 has classified road into four types that includes Class I, II, III, and IV roads based on technical/functional classification, and highlight the fact that this class is almost equivalent to expressways, arterial roads, collector roads, and local roads respectively.
- ❖ NURS 2076 has classified urban roads into five categories, i.e. Expressway, Arterial, Sub-Arterial, Collector, and Local Roads.

The road hierarchy principles will support orderly planning and provision of public transport routes, and pedestrian and bicycle routes. It also identifies the effects of development decisions on surrounding areas. It also facilitates urban design principles such as accessibility, connectivity, efficiency, amenity, safety, and road furniture and preserves landscaping. This study also formulates the road hierarchy for the various roads. After going through the literature, the study has proposed four-level hierarchy roads namely Class A, B, C, and D.

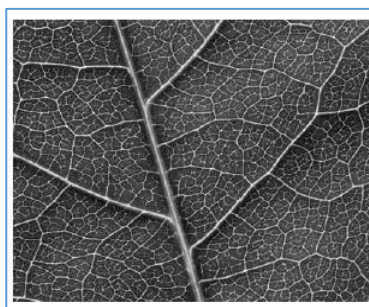


Figure No 5.3: Conceptual Hierarchy



Figure No 5.4: Road Network Hierarchy

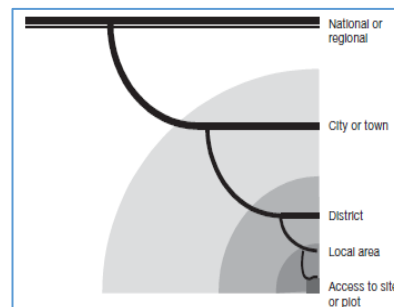


Figure No 5.5: Urban Road Hierarchy

### 5.5.1 Right of Way (RoW)

The RoW is the width of land to be acquired for the road along its alignment. The Nepal Road Standard 2070 has proposed roads under the category of National Highway (NH), Feeder Roads (FR), District Roads (DRCN), and Urban roads within the municipality area. The RoW of these roads is considered as per respective Guidelines. i.e the RoW of National Highways, Feeder Roads, and District Roads are 50.0 m, 30.0 m, and 20.0 m respectively. The guideline has clearly stated about the setback distance for these roads (having RoW  $\geq 20.0$ ) is 6.0 m on either side. All of these standards shall be applied to the municipality accordingly.

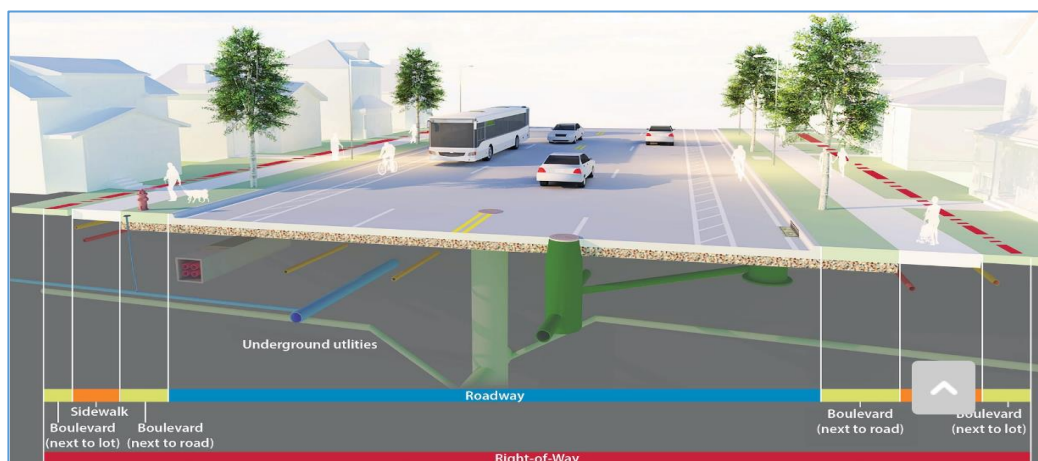


Figure No 5.6: Definition of RoW

Table No 5.10: Urban Road Class and Features

Road Class	Descriptions	Minimum RoW (m)	Minimum Set-back Distance (m)	Remarks
NH	National Highway	50	As Prescribed	NRS 2070
FR	Feeder Road	30		
DRCN	District Road	20		
Municipal Ring Road	Municipal Road	20	5 & 5	MTMP 2080/81
A	Arterial Road	12	1.5 & 1.5	
B	Sub-Arterial Road	10	1.5 & 1.5	
C	Collector Road	8	1.5 & 1.5	
D	Local Road	6	1.5 & 1.5	

Based on MTMP guidelines, the building line or setback shall be maintained at 6.0 m for roads having RoW equal to or more than 20.0 m and 2.0 to 5.0 m for other roads. However, Nepal Road Standards-2070 has considered the setback distance at curved sections only and that should be sufficient to provide adequate sight distance. It is silent about the building line.

१४.३१ अब निर्माण हुने सडकको कुनै पनि बाटोको न्यूनतम चौडाई ६ मी. हुनु पर्नेछ र नापी तथा मालपोत कार्यालयहरूलाई सोही बमिजिमले सेस्ता, नक्सा तथा अभिलेखहरूमा बाटो कायम गरी यस व्यवस्थाको कार्यन्वयन गर्न लेखि पठाउनु पर्नेछ। । यस्ता बाटोमा भवन निर्माण स्वीकृत दिँदा केन्द्रबाट कमिमा ३ मीटर सडकको क्षेत्राधिकार (RoW) र सडक क्षेत्राधिकार सिमाबाट १.५ मीटर सेट ब्याक छाडेर मात्र निर्माण स्वीकृति दिनु पर्नेछ। तर हिमाली/पहाडी जिल्लाका उपत्यका (valley) एवं समथल भू-भाग देखि बाहेकका भिरालो क्षेत्रमा प्राविधिकरूपमा उक्त ६ मिटर चौडाई कायम गर्न सम्भव नभएमा प्राविधिकको प्रतिवेदनको आधारमा सम्बन्धित स्थानीय निकायको परिषद्को निर्णयबाट ४ मिटरमा नघट्ने गरी निर्धारण गर्न सक्नेछ।

१४.३६ नगरपालिका क्षेत्रमा सडक सम्बन्धी ऐन लगायत प्रचलित कानूनले तोकेमा सोही अनुसार र सो नभएमा नगर यातायात गुरुयोजनाले निर्धारण गरे अनुरूप सेटब्याक कायम हुनेछ। तर नगरपालिकाले यस्तो सेटब्याक सडक किनारबाट १.५ मिटर भन्दा कम हुने गरी निर्धारण गर्ने छैन।

१४.३८ नयाँ बाटोको घुम्ति वा मोडको न्यूनतम अर्धव्यास बाटोको चौडाई भन्दा २०% ले बढी चौडा भएको हुनु पर्नेछ।

(Source: - Fundamental Guidelines for Settlement Development, Urban Planning and Building Construction - 2072 (2015 AD))

However, according to **Fundamental Guidelines for Settlement Development, Urban Planning and Building Construction-2072 (2015 AD)**, the minimum setback distance for urban roads is 1.5 m on either side. Again, the minimum Row of roads has been set as 6.0 m. i.e. 3.0 m on either side from the centreline. A portion of this guideline has been presented herewith.

### 5.5.2 Road Classification

Urban roads are the roads serving within the municipality. The classification practices of urban roads are guided by the functional hierarchy of roads. In the context of Nepal, Nepal Urban Road Standard- 2076 has classified urban roads as Arterial, Sub-arterial, Collector, and Local/ Residential Streets. The ToR provided for the preparation of MTMP has formulated the class of roads into A, B, C, and D.

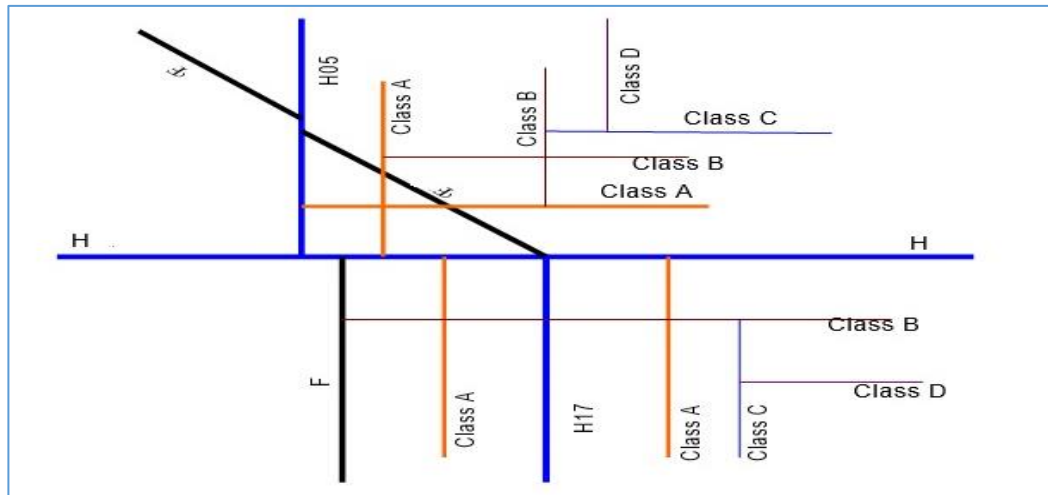


Figure No 5.7: Detail Description of Road Class

The fundamental parameters of the urban road are shown in Figure No 5.6. The municipality has a complete road network hierarchy consisting of national highways, feeder roads, and urban roads of all four classes. The conceptual layout based on the functional hierarchy of the entire road network is shown in Figure No 5.3,5.4,5.5.

**5.5.3 National Highways**

National Highways are the main roads connecting East to West and North to South of the Nation. These serve directly the greater portion of the long-distance travel, provide a consistently higher level of service in terms of travel speeds, and bear the inter-community mobility. These roads shall be the main arterial routes passing through the length and breadth of the country as a whole. They are designated by the letter “H” followed by a two-digit number. For example, Mahendra Highway (H06) with RoW 50 m.

**5.5.4 Feeder Roads**

Feeder roads are important roads of localized nature. These serve the community's wide interest and connect district headquarters, Major economic centres, and tourism centers to National Highways or other feeder roads. They are designated by the letter “F” followed by a 3-digit number.

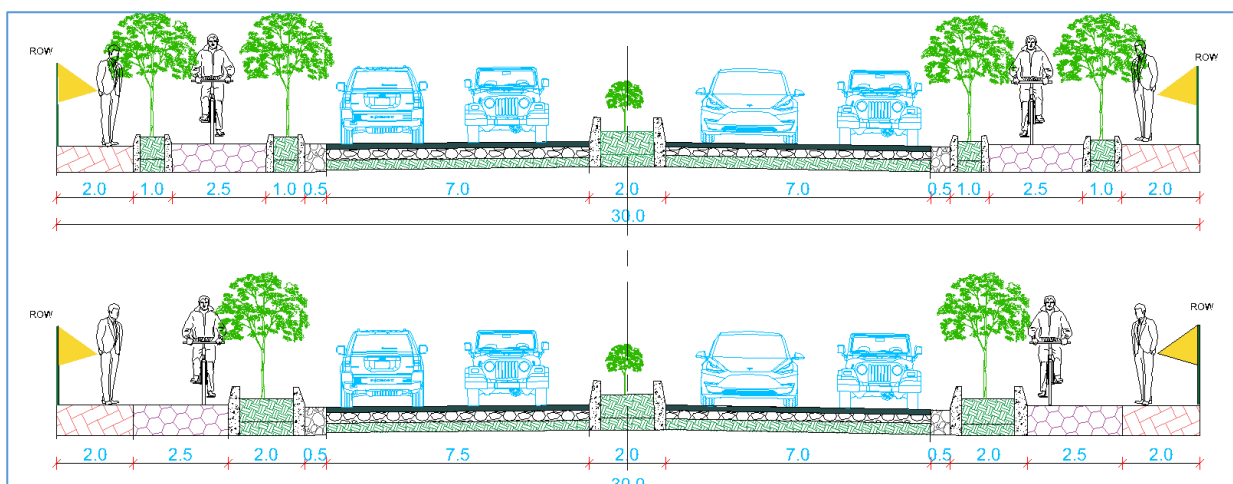


Figure No 5.8: Typical Cross Section of Feeder Road

### 5.5.5 District Roads

District Roads are important roads within a district serving area of production and markets, and connecting or with the main highways.

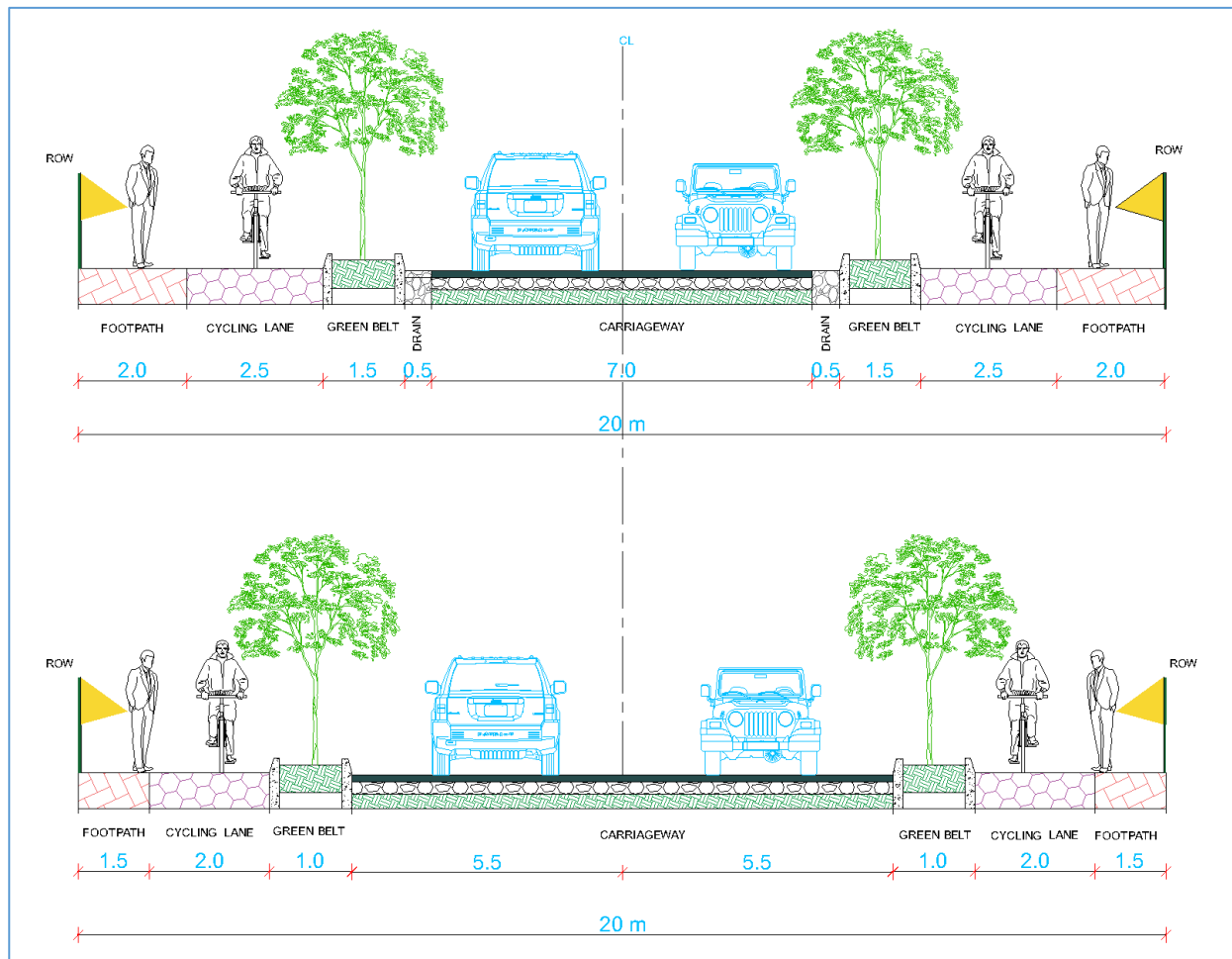


Figure No 5.9: Typical Cross Section of District Road

### 5.5.6 Urban Roads

**Arterial Roads (Path)- Class "A":** These roads are generally meant for thorough traffic usually on a continuous route. These roads are wider, basically with a total right of way of 14 m, and principally serve the purpose of mobility. However, in the case of Letang municipality, these roads have been designed with a Right of Way of 12 m. These roads are high-standard roads with a longer length and serve a large population and are considered highways of the municipality. They connect one or more major growth centers or have a direct linkage to SRN or LRN and thus it has high network coverage. The design speed of 40-50 Kmph has been set for class A roads. These roads are equipped with proper facilities for vehicles, pedestrians, cyclists, and greenbelts. Pedestrians are allowed to cross only at intersections or at designated crossings.

All major roads which connect one or more major growth centers (market, tourism Centre, industry, etc.) or several wards with any one of the following:

- ❖ High network coverage
- ❖ The right of way is at least 12 m.

- ❖ Directly or through the national strategic road network, or district road.
- ❖ Complete access to public transport with segregated NMT facilities.
- ❖ Underground facilities, i.e. cable, electric lines, sewer lines, water supply, gas lines, etc.

Typical sections of Arterial are shown in the figures of two types. Type II, the urban road has been prescribed for the Letang municipality.

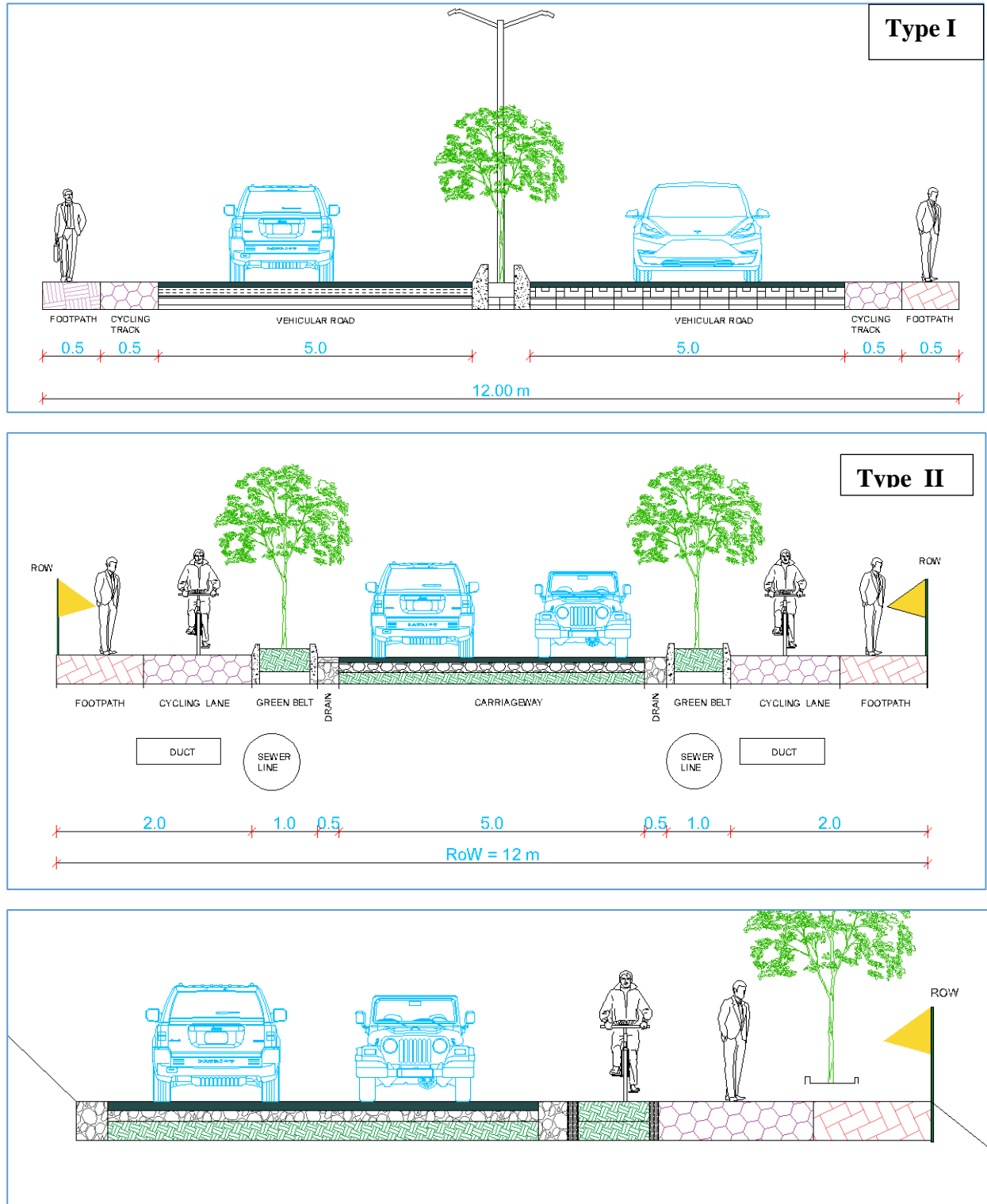


Figure No 5.10: Typical Cross Section of Arterial Road (Class A)

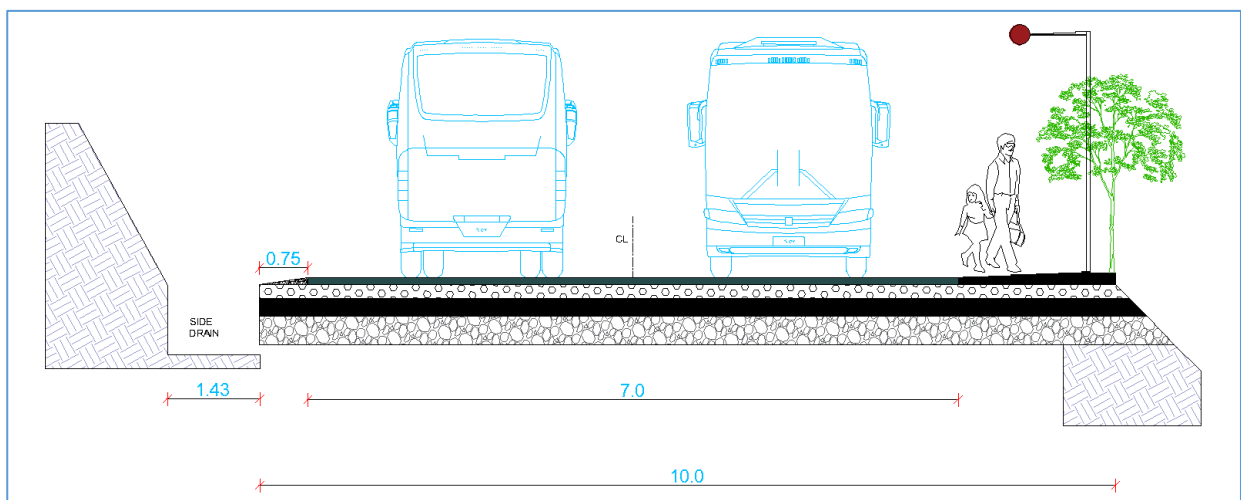
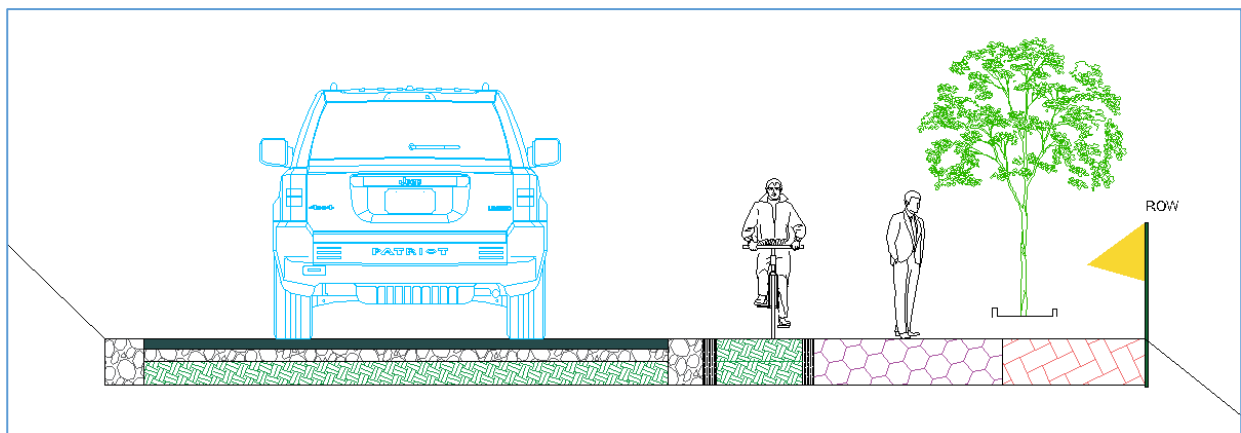


**Sub-Arterial Roads (Sadak)-Class "B":** These are roads with a somewhat lower level of travel mobility than arterial roads. The emphasis on access to the adjoining area is more in the case of these roads than in the case of arterial roads. These roads have been designed with a total right of way of **10 m** which can be considered as feeder roads of the municipality. These roads connect major road networks and other roads of similar hierarchy with either major growth centers or provide access between class A and class C roads. Mobility is also the main function and purpose of these roads too and is designed with similar facilities for all road users including drivers, pedestrians, and cyclists. The Design Speed of 30-40 Kmph has been set for class B roads. Pedestrians are allowed to cross only at intersections or at designated crossings.

All roads which connect to a major road network and other roads of similar hierarchy with any one of the following:

- ❖ A road connecting major growth center of the same or neighboring wards provide access between Class A and class C road.
- ❖ The right of way is at least 10 m.
- ❖ Access to public transport with segregated NMT facilities.
- ❖ Underground facilities, i.e. cable, electric lines, sewer line, water supply, gas lines, etc.

Typical sections of Sub-Arterial Road are shown in the figures given below:



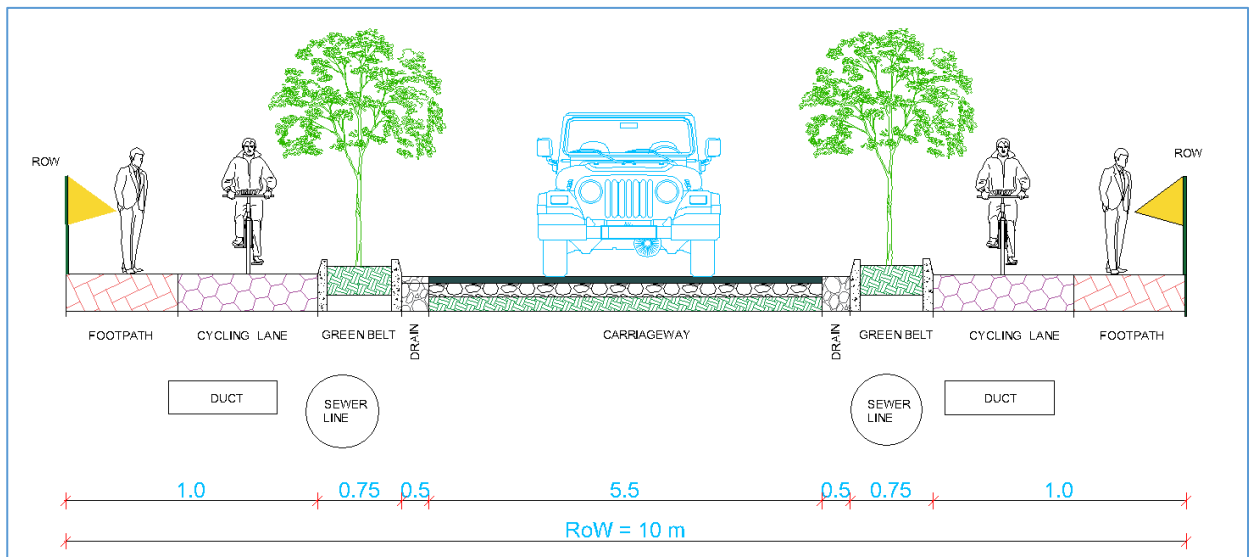
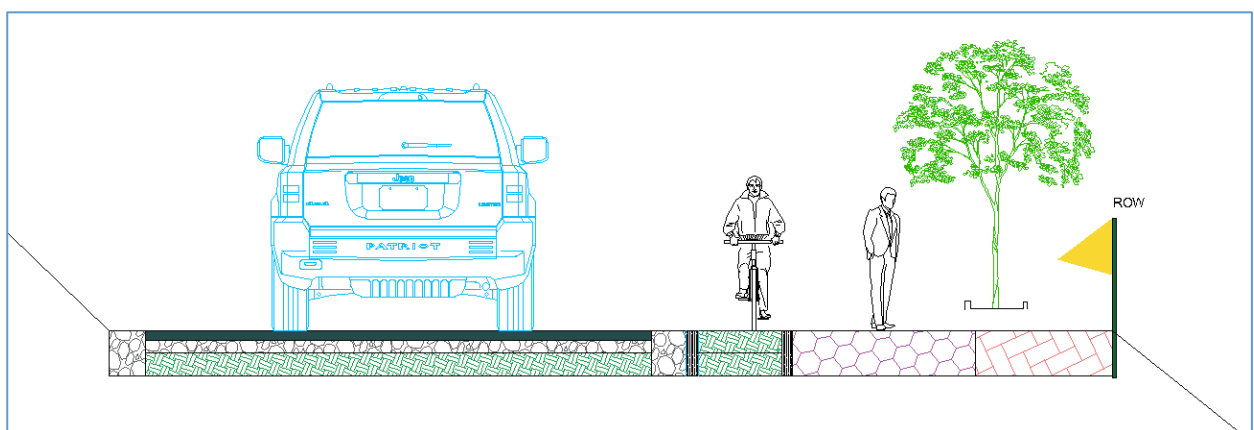


Figure No 5.11: Typical Cross Section of Arterial Road (Class B)

**Collector Road (Marg)- Class "C":** A collector road is one intended for collecting and distributing the traffic to and from local roads and also for providing access to arterial/sub-arterial roads. They may be located in residential neighborhoods, business areas, and industrial areas. Normally full access is allowed on these roads from abutting properties. A typical section of Collector Road is shown in the figure given below:

All roads which provide connection to higher order roads with any one of the following:

- ❖ All agricultural roads which connect a farm with a mini-market Centre or an agro-based production Centre
- ❖ The right of way is **8 m**, Roads for the mobility of local trips.
- ❖ Underground facilities, i.e. cable, electric lines, sewer line, water supply, gas lines etc.



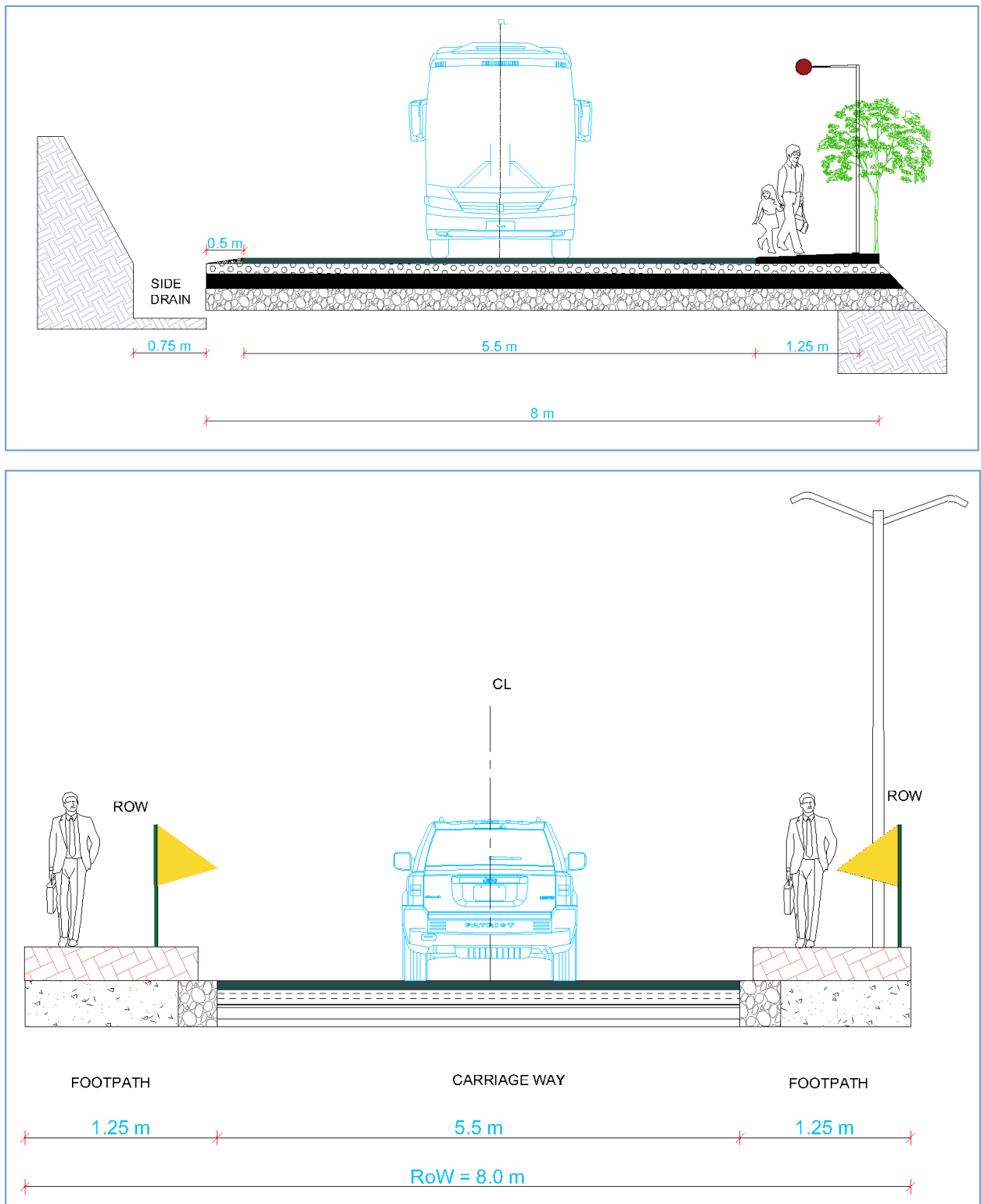


Figure No 5.12: Typical Cross Section of Collector Road (Class C)

**Local Road (Upamarg)-Class "D":** A local road is one primarily intended for access to the residence, business, or other abutting property. Such a road normally does not carry a large volume of traffic. The traffic carried either originates or terminates along its length. A local road may be residential, commercial, or industrial, depending upon the prominent use of the adjoining land. A typical section of the local road is shown in the given figure:

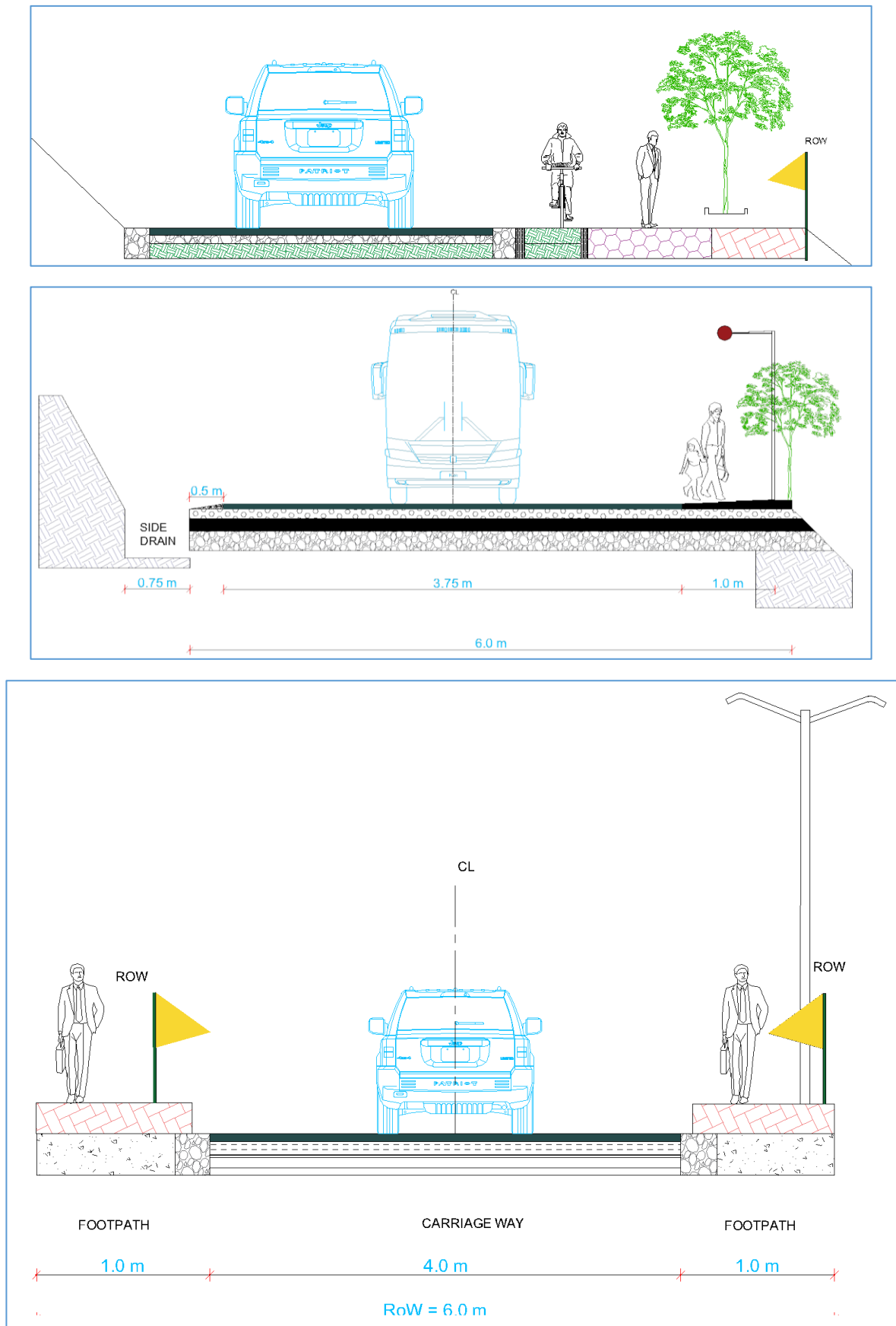


Figure No 5.13: Typical Cross Section of Local Road (Class D)

Criteria	Arterial Road (Path): - Class A	Sub-Arterial Road (Sadak): - Class B	Collector Road (Marg): - Class C	Local Road (Upa-Marg) Class D	Rural Municipal Ring Road
<b>Purpose</b>	Mobility	Mobility and control access	Access and mobility	Access	Mobility, control access, and access
<b>Function</b>	Through long-distance movement	The connection between Class A and C roads; and also provide alternative connection routes between Class A	Connects higher order roads and mobility to local trips	Connect local trips to higher-level roads	Through an overall distance movement
	High network coverage	Support through the movement of traffic	Access to property	direct access to property	High network coverage
	Segregated NMT facilities and Bus laybys	Segregated NMT facilities and Bus laybys	Segregated NMT facilities	Local NMT movement	Segregated NMT facilities and Bus laybys
	Complete access to public transport	High access to public transport	Limited access to public transport	-	Complete access to public transport
<b>Maintenance/Responsibility</b>	Municipality	Municipality	Municipality & Community	Community	Municipality/Province
<b>Public transport services</b>	Mass Transit facilities	Mass transit, local public transport	No public transportation	No public transportation	Mass Transit facilities
<b>Minimum Right of Way (ROW) m</b>	12	10	8	6	20
<b>Design Speed (Kmph)</b>	40-50	30-40	20-30	10-20	50-60
<b>Radius (m)</b>	60-70 and 90-105	30-40 and 60-70	15-20 and 30-40	9-20	>105
<b>Stopping Sight Distance,m</b>	45-65	30-45	20-30	10-20	>65
<b>Decision Sight Distance (m)</b>	160-195	120-160	80-120	40-80	>195
<b>Setback,m</b>	3	1.5	1.5	1.5	5
<b>Street Light pole height, m</b>	10-12	10-12	9-10	9-10	>12
<b>Street Light Pole Spacing, m</b>	30-35	30-35	25-30	25-30	30-35
<b>Footpath, m</b>	0.5	1.0	1.25	1.0	2
<b>Cycle Track, m</b>	0.5	1.25	-	-	2
<b>Vertical Clearance, m</b>	5	5	5	5	6

**Discussion on Road Hierarchy and Proposed RoW**

During RMTMP preparation, a series of discussions was held with Letang Municipal Board members/MRCC, stakeholders on related to MTMP. One of the major issues was road hierarchy and RoW. The matter was discussed during field report presentation. It is an obvious fact that people welcome any possibility of investment in their locality. But when the people's contribution demanded especially with their own land and house for the road, they tend not to support such plans. With existing road width of about 15 m or less, the proposed road network with 14 m and 12 m RoW roads were not welcomed whole heartedly.

The necessity of road infrastructures such as pedestrian way and cycle tracks with green belt was accepted as necessary roadside infrastructures by all the people at both ward level meetings and at the rural municipal meetings. The main issue was the possible social, economic and emotional loss due to loss of only plot of land/house owned by individuals along the proposed wider roads. As such comments could divert the discussion, class of roads with their function and purpose were first introduced during field report presentation and discussion with all the representatives. It was followed by proposed road network of class A and class B. All the participants had a common consensus on the necessity of the proposed road sections with proper pedestrian way, cycle tracks, green belt and road space.

After the consensus on the road network was met, the proposed minimum RoW of the roads was explained to accommodate the proposed infrastructures. The proposed RoW of 14 m for class A and 10 m for class B roads was not easily accepted. The necessity of such wider roads was clarified with the examples of developed cities of Nepal such as Kathmandu, Biratnagar, Butwal, etc. where with urbanization, wider roads were enforced at the loss of huge built-up infrastructures including houses. With time, number of people with small plot of land and house along the major roads will increase making expansion socially more unacceptable. The necessity of minimum RoW of 6 m was also emphasized by giving an example of fire in Asan Indrachowk area, Kathmandu. There was slight change in road network during the initial discussion and final discussion at the municipality.

As the necessity of road infrastructure and the RoW accommodating those infrastructure was accepted necessary for the sustainable development of all sectors, the main issue was as to how the loses (social, economic and emotional) would be addressed. To address this, issue a number of possible tools were put forward. Such tools are direct compensation (by the municipality or through other sources) which will ensure economic security to the people whose land and house are located along the road. Such compensation cannot ensure protection of social and economic loss. The best way to ensure minimum loss of all sort is through land pooling; where all the land and population that uses the road are identified in a buffer/catchment zone; all those in the buffer zone contribute for the road. In such provision, all the land owners in the buffer zone contributes certain percentage of his/her land for the development of the road so that the person whose land is located directly along the road do not suffer the all the loses and is shared by all those who use the road. After explaining such possible provisions to address loses, the participants agreed on the proposed RoW.

It is clear that, all the representatives and people understand the need and necessity of wider roads and proper road side infrastructure. But without proper compensation to those land/house owners along the roads, implementation of wider roads will be challenging.

Neither such compensation nor the land pooling at the local level is not a common practice in Nepal, expansion of such roads in a built-up area is only possible if proper compensation is ensured for those who lose their property. But it is not completely new (foreign) tool. Land acquisition has been an issue in many major projects in Nepal. So, proper policies and working plans should be prepared by the central level institution to implement these tools. It is utmost necessary as the amount of

### 5.6 Nomenclature and Coding of Urban Roads

All urban road links within the municipality have been given their names and unique code number consisting of ten digits. The coding system for particular road link is described below:

- ❖ The first digit (1 to 7) represents the number of provinces. Code 1 stands for **Province 1**, 2, 3, 4 5,6, and 7 indicating Province 2, Province 3, Province 4, Province 5, Province 6 Province 7 respectively.
- ❖ The second and third digits represent a particular district (1 to 77). Morang district is coded by **05**.
- ❖ The fourth code M represents the municipality.
- ❖ The fifth and sixth digits represent the particular names (1 to 753 for particular municipalities) of the municipality in the district. i.e. **Letang** Municipality is coded by **07**.
- ❖ The seventh code indicates the letter A to D for a particular Class of road.
- ❖ The next three digits (001 to 999) represent the particular transport linkage.

The following guideline shall be followed for Road Coding.

i.e.,

**Table No 5.11: Coding Guideline of Municipal Roads**

1	Koshi Province					
1	05	Morang District				
1	05	M	Municipality			
1	05	M	07	Letang Municipality		
1	05	M	07	A	Class Of Road	
1	05	M	07	A	001	Number of Roads

After all the code numbers, the road name has been written. An example of the code number and road in Letang municipality is shown as

1	0	5	M	0	7	A	0	0	1
---	---	---	---	---	---	---	---	---	---

(105M07A001: Baluwa Lakh Hardiya Murchung Sadak)

*Note: The all MRCN, Road Code with Nomenclature has been listed in Annex I: below.*

## Chapter: 6 Perspective Plan of Municipal Transport Network

### 6.1 Accessibility and Trip Pattern

The ultimate goal of most transportation is “access,” people’s ability to reach their destination, and get services and activities in time. Transportation decisions often involve trade-offs between different forms of access. How transport is measured can have a major impact on these trade-offs (Litman Todd, 2003).

Land use patterns affect mobility and accessibility in various ways. Thus, land use and transportation are interdependent. Mobility, especially in the form of motorized transport requires an increasing share of land. For, long-term sustainability it should be considered by altering the urban structure itself. As we fell, transportation demands are concentrated in town areas which can be dispersed to sub-centers by developing markets and economic activities. The dispersal of the settlement and economic activities will help in relieving congestion and promoting the development of a more balanced society.

Roads are often built or improved to allow greater access to new development and settlements. The road improvement makes other lands along the road more accessible and attractive for further development. With more housing and services along the road, traffic volumes increase. This results in more congestion and decreased road capacity. Eventually, the reduced efficiency of the road necessities more roadway improvements which can lead to additional development along the road and restart the land use transportation cycle.

When the land use transportation cycle occurs over and over in a newly developed city, the pressure of road capacity increases. The municipality transport master plan is one among the many planning efforts which will reflect the efforts to define where we work, play, and how we move from one place to another. Both population and traffic volume forecasting are considered during the planning.

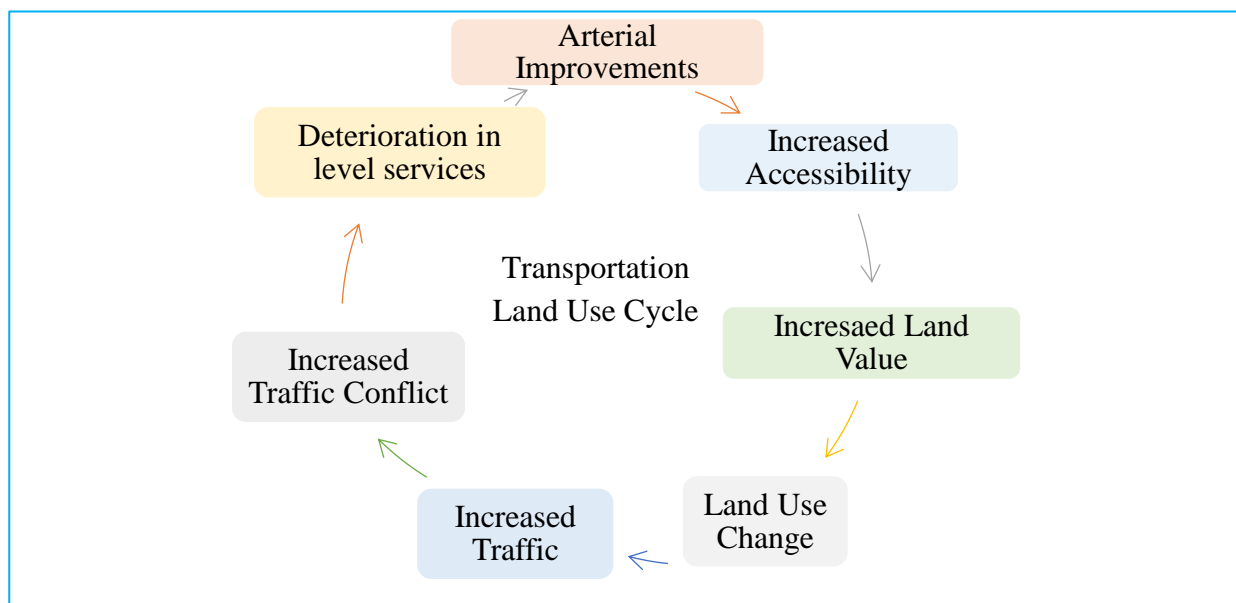


Figure No 6.1: Transportation Land Use Cycle

Land use patterns affect mobility and accessibility in various ways:



**Density:** (number of people or jobs per unit of land area) increases the proximity of common destinations, and the number of people who use each mode, increasing demand for walking, cycling, and transit.

**Land use mix:** (locating different types of activities close together, such as shops and schools within or adjacent to residential neighbourhoods) reduces the amount of travel required to reach common activities.

**Non-motorized conditions:** The existence and quality of walking and cycling facilities can have a major effect on accessibility, particularly for non-drivers.

**Network connectivity:** (more roads or paths that connect one geographic area with another) allows more direct travel.

There are many ways to measure transportation system performance, each reflecting particular perspectives concerning who, what, where, how, when, and why. Different methods favor different types of transport users and modes, different land use patterns, and different solutions to transport problems. Vehicle traffic is the easiest to measure, but this approach only considers a narrow range of transportation problems and solutions. Mobility is more difficult to measure since it requires tracking people's travel behaviour. It still considers physical movement an end in itself, rather than a means to an end, but expands the range of problems and solutions considered to include alternative modes such as transit, ridesharing, cycling, and walking. Accessibility is the most difficult to measure because it requires much effort for taking into account land use, mobility, and mobility substitutes, but most accurately reflects the ultimate goal of transportation, and allows the widest range of transport problems and solutions to be considered. For example, an accessibility perspective may identify low-cost solutions to transportation problems, such as improving local walkability; encouraging land use mix so common destinations such as stores, schools and parks are located near residential areas; and improving communications services for isolated people and communities (Litman Todd, 2003).

## 6.2 Process and Procedure for Collection of Demand

Ward-level meeting in every ward or ward cluster has been done. From, where information on RMTMP is collected. Demand forms for each ward are provided. Later on, these forms have been collected after the form are duly filled at the given time. As road demand from the settlement level has also been collected bottom-up approach to planning applied.

**Data Analysis and Field Verification of the Roads from Demand Form:** Analysis of data regarding the accessibility situation in each settlement, population forecasting for each sector, and major road linkages have been done. Similarly, all the roads demanded in demand form are verified in the field, GIS base maps by the survey team.

## 6.3 Scoring System for Screening, Grading, and Prioritization

Transport linkage in an urban area has greater importance for its overall development. A transport network consists of several links. It is not possible to construct all roads at a time due to resource and time constraints. Therefore, each link in a network needs to be scored for screening, grading, and ranking them. The basic criteria that have been used for prioritization include existing population within the urban of influence, present road demand, future potential route, accessibility situation, land use pattern, environmental and social safeguard, proximity to

the market/service centers, and religious and tourism places. The finalized scoring criteria based on the rigorous study are set in front of the municipality and MRCC for its approval. Each road link is allocated several points corresponding to the fulfillment of the particular criteria. The weighted average of the score that each intervention receives leads to a ranking/prioritization of the intervention options. The consultant has worked out the following weights for the criteria for the prioritization of road links. The following criteria were used as a prioritization indicator.

**Table No 6.1: Criteria for Prioritization**

S.N.	Criteria	Scoring Unit	Method of Measurement	Score (ToR)	Score
1.	Link providing service to large settlement areas/ population.	Population served/km (continuously Scored); ward-wise population	Measurement of served HH from the map and multiplying with HH occupancy of respective wards	10-25	25
2.	The link provides service to areas with high potential for agriculture, horticulture, and livestock production.	Annual production equivalent to NRs/km (continuously Scored) (used area-based method)	Measurement of Agriculture land area from the map, livestock from inventory, and multiplying with the unit rate of production.	10-20	20
3.	Link providing service to existing market centers: commerce and business centers or market sites (local haatbazar) tourism attraction centers Areas having agro-based and cottage industries Other obligatory centers as decided by the municipality.	Estimated annual transaction in these centres equivalent to NR/km (continuously Scored)	An inventory survey along with consultation with people (MRCC) and a land cover map is used to identify their location and transactions.	5-10	10
4.	Link Providing Service to the Existing Service Centers: Health Centers, Education Centers (School/Campus, Office (Municipality/ Government) Communication Centre (Post Office, Communication)	The population served by these service centers is expressed as persons per km per year. (continuously Scored)	An inventory survey, Map along with consultation with people (MRCC) identifies their location and served population.	5-10	10
5.	Link providing service to the potential future development	It is technically sound to score these	Consultation with MRCC and IDPM shall also be	5-10	10

S.N.	Criteria	Scoring Unit	Method of Measurement	Score (ToR)	Score
	sites such as: Potential town growth Land pooling Potential industrial area Waste Management Sites Forming ring road to municipality	services discretely based on existence. For each service centers, a score of 2.5 is allocated.	used		
6.	Link providing service to the areas recognized by the municipality as areas for special consideration, such as areas inhabited by backward and poor ethnic groups/communities, isolated remote areas, historic sites, religious sites etc.	Very important = 10 Important = 5 less important = 3 (Scored discretely)	An inventory survey along with consultation with local people identifies their location and Importance.	3-10	10
7.	The direct link with another linkage	National Highway=15 Feeder Roads=10 District Roads=10 Neighboring Municipality/district= 5 Otherwise= 0	Road Network Map and attribute table.	5 - 15	15

The prioritize/rank of the roads has been developed based on criteria as above described which is proposed by MoFALD and approved by MRCC meetings. The ranking of roads has been done in the following formulae.

**Table No 6.2: Urban Road Prioritization Calculation**

Criteria	Scoring Criteria
<b>Criteria 1: Population Served per km (25)</b>	25
Above 5000	20
3000-5000	15
2000-3000	10
2000-1000	5
Less than 1000	3
<b>Criteria 2: Agriculture potential growth centers (20)</b>	
Total Area Per Sq.Km =	(Ward Wise Area Per Sq.Km/Total Area Per Sq.Km)*Score
Area Per Sq.Km Ward Wise	

Criteria	Scoring Criteria
<b>Criteria 3: Existing Market Centers, Tourism, Industries (10)</b>	
Total Market Centers, Tourism, Industries	(Ward Wise Market Centers, Tourism, Industries /Total Market Centers)*Score
Market Centers Ward Wise	
<b>Criteria 4: Service Centers (10)</b>	
Total Service Centers	(Ward Wise Service Centers/Total Service Centers)*Score
Service Centers Ward Wise	
<b>Criteria 5: Potential Site (10)</b>	
Total Potential Site	(Ward Wise Potential Site /Total Potential Site )*Score
Potential Site Ward Wise	
<b>Criteria 6: Socially Important, Backwards Areas (10)</b>	
Total Sites	(Services sites/Total Sites)*Score
Service Routes	
<b>Criteria 7: Road Linkages (15)</b>	
	Scoring Criteria
National Highway	15
Feeder Roads	10
District Roads	10
Neighbouring District	5
Otherwise	0
<i>Note: the list of prioritization of the roads has been listed in Appendices II Below</i>	

The MRCC and ToR have decided to prioritize the class D Class Roads based on the available budget during the implementation of RMTMP.

#### 6.4 Public Transportation

Public transport is a means of mobility for local people. The high proportion of active transport users justifies the necessity of public transport to increase their mobility and thus access to wider services and facilities within the perceived travel time budget. Proper public transport routes are vital for sustainable transport development.

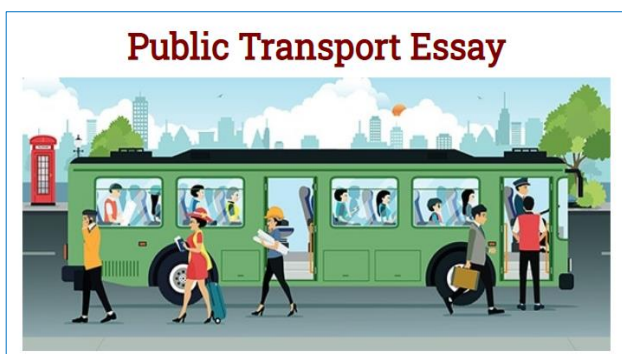
The travel pattern of people in the municipality from settlements to market, institutional area i.e Municipal center while from settlements to Letang and other markets in the morning and reverse at evening peak time. This travel pattern is fundamental for the planning of public transport routes. In this regard, the proposed route of public transportation must follow the main road and the link roads that help to access the public with the municipal head office and wards centre. Strategic development of such roads will not only create demand for public transport

(greater mobility) but also develop a proper road network that public transport vehicles can access. For a better mobility and transportation system, the local government should introduce city buses.

Thus, these road networks link the village/urban roads and BP national highway. The link roads are important for inter-linkages with other routes within the municipality as well.

**Table No 6.3: Proposed Public Transportation Route**

S. N.	Proposed Public Transport Route	Origin	Destination	Ward Pass	Length (km)



**Figure No 6.2: Typical Public Transport Mode**



**Figure No 6.3: Typical Public Transportation**

### 6.5 Basic Road Infrastructure

The roadway is used either by pedestrians or motors or both, and the proportion of active transport users such as motorcyclists, and pedestrians are high, and the road infrastructure is necessary to support these users. Such perception and the construction of road infrastructure accordingly will lead to a high rate of motorization which creates problems to manage the generated traffic, pollution, and congestion. Their use assists in the proper operation, and management of the roads and other roadside infrastructures. As the road development process, the use of road markings, traffic signs, and signals (i.e., refer to Traffic signs manuals Vol-I and Vol-II published by DOR) should also be upgraded. The use of signals is necessary after the higher hierarchy roads are completed and a high volume of traffic plies on those roads. These signs and signals also assist in enforcing road discipline as well.

For better and smooth mobility, cycle lanes, pedestrian crossing, road humps, footpaths, roadside drains, street lights (i.e. near settlements, bridges, culverts, bus stops, etc.) public toilets, and other facilities should be constructed along the road section. Similarly, the landscaping of the road sections with proper greenbelt will increase the greenery in the city. This provides shade to the active users, segregates different users, and a pleasant traveling environment for all the users. Proper buses are necessary elements for better mobility of the public transport system. Every bus stop should have, proper road network hierarchy maps, displays of routes, sheltering furniture, seating benches, lighting system, trash boxes, information boards, schedule of buses, properly connected pedestrian ways and zebra crossings, etc.

In the context of Letang municipality, cycle lanes will have constructed along highways, city areas, the class A, and class B road networks in plain terrain.

### 6.5.1 Foot Path

Footpaths are provided to promote safe and comfortable pedestrian mobility. Together with other elements such as road furniture and landscaping they constitute the primary public space of a urban and are accessible to all road users regardless of age, gender, or special needs. Footpaths are critical elements of streetscape unless traffic calming makes footpaths unnecessary. In urban areas footpaths should be provided as per the number of pedestrians estimated for the future. The minimum clear width of the footpath should be 1.5 m, though its width should be preferred to 2.0 m, at least in the arterial and sub-arterial road for easy movement of differently-able people. They should have a well-maintained surface with cross-fall neither so flat as to be difficult to drain nor as steep as to be dangerous to walk upon. The cross falls within the range of 2.5 to 3 percent and should meet this requirement. Those parts of the footpath immediately adjoining the building, fences, trees, and other obstructions should be disregarded while calculating the widths required. A good footpath should incorporate.

- ❖ No breaks or obstructions at property entrances and side streets.
- ❖ Continuous shade through tree cover.
- ❖ No railing or barrier that prevents sideways movement on and off the footpath.
- ❖ Elevation over the carriageway should be equal to 150 mm and has an adequate cross slope for storm water runoff. At the same time, the elevations should be low enough for pedestrians to step on and off the footpath.

The width should be increased by 1 meter in business and shopping areas to allow for the dead width. Footpaths adjoining shopping frontage should be 2.5 m and a minimum of 3.5 m is desirable adjoining longer shopping frontages. At points of possible congestion such as bus stops or entrances of large shops and public buildings, footpaths may be wider. Where space is available, the provision of a verge between the footpath and carriageway to increase the safety of pedestrians is desirable. When deciding the width of the footpath and verges, the width required to accommodate underground services clear of the carriageway should be taken into account. When on slopes or in the case of ramps, the capacity should be suitably reduced.

The table below gives the capacity guidelines for designing footpaths.

**Table No 6.4: Capacity of Footpaths**

Number of Pedestrians per hour		The required width of the Footpath, m
All in one direction	In both directions	
2400	800	2
3600	2400	2.5
4800	3200	3
6000	4000	4

*Source: Nepal Urban Road Standard- 2076*

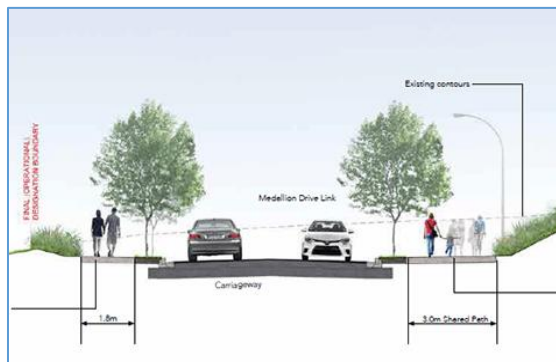


Figure No 6.4: Typical Section of Footpath

### 6.5.2 Cycle Lane

Cycle tracks should be continuous and provide uninterrupted movement. They are physically separated from the main carriageway to ensure both comfort and safety and are protected from encroachment by parked vehicles, pedestrians, and street vendors as shown in the figure. The minimum width of the cycle track should be 2 m. Each additional lane where required should be 1 m. Separate cycle tracks should be provided when the peak hour cycle traffic is 400 or more on route with a motor vehicle traffic of 100-200 vehicles per hour. When the number of motor vehicles using the route is more than 200 per hour, separate cycle tracks are justified even if cycle traffic is only 100 per hour.

For better efficiency cycle track should incorporate the following:

- ❖ • Continuity to allow for reasonable speed.
- ❖ • A smooth surface material, asphalt, or concrete paving blocks are to be avoided.
- ❖ • Manhole covers should be avoided and if unavoidable should be at the same level as the riding surface.
- ❖ • Continuous shade through tree cover.
- ❖ • Elevation above the carriageway e.g. +150mm that allows for stormwater runoff.
- ❖ • A buffer of 0.6m between the cycle track and parking area or the carriageway.
- ❖ • At property access points, the cycle track remains at the same level and vehicle access is provided by a ramp in the buffer.

Table No 6.5: Capacity of Cycle Tracks

Width of Cycle track		Capacity in number of cycles/hour	
One-way traffic		Two-way traffic	
Two lanes (3 m)	250-600	50-250	
Three lanes (4 m)	> 600	250-600	
Four lanes (5m)	---	> 600	

Source: Nepal Urban Road Standard- 2076



Figure No 6.5: Typical Plan/Section of Cycle Lane

### 6.5.3 Street Lighting

Street lighting enables motor vehicle drivers, cyclists, and pedestrians to move safely and comfortably by reducing the risk of traffic accidents and improving personal safety. From a traffic point of view, street lighting is important in potential colliding points such as intersections, driveways, and public transportation stops. Additionally, it also helps road users to avoid potholes and missing drain covers. It is also essential for mitigating the pedestrian sense of isolation and reducing the risk of theft and sexual assault. Further, it is equally important in isolation spaces such as under overpasses and walkways next to the park and blank facades. Lighting systems need regular upkeep in the form of electricity maintenance, bulb replacement, and dust cleaning to remain effective. A smart street light shall be installed which can save electric power. The following consideration should be considered.

Table No 6.6: Street Light Pole Height and Spacing

S. N	Urban Road Types	Pole Height (m)	Spacing (m)	Remarks
1	Municipal Ring Road	10-12	30-35	Additional lighting should be provided at junction points.
2	Arterial or Sub-arterial	10-12	30-35	
3	Local street or Collector	9-10	25-30	







Figure No 6.6: Provision of Street Light

### 6.5.4 Parking Lanes

Parking lanes width for parallel parking should be 2.5 m to 3.0m.

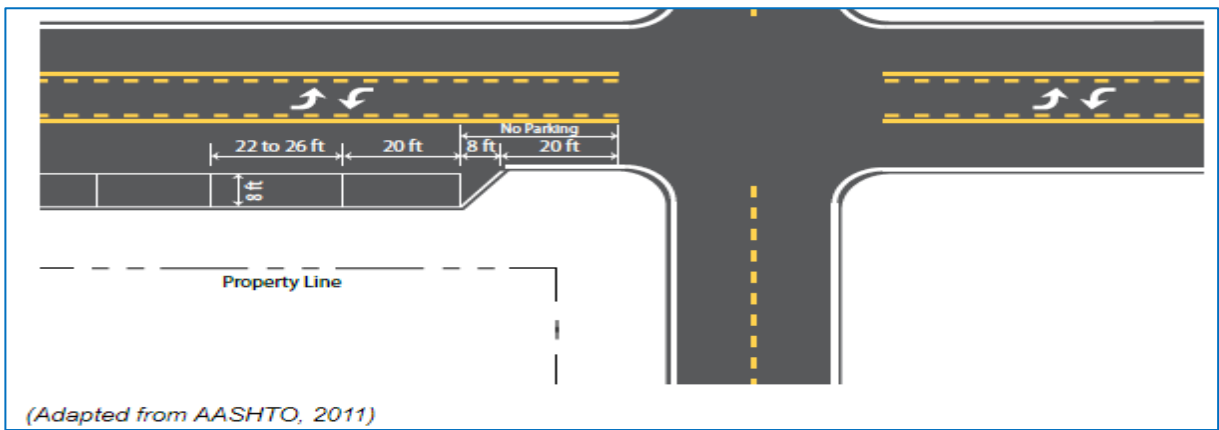


Figure No 6.7: Typical Layout of street parking

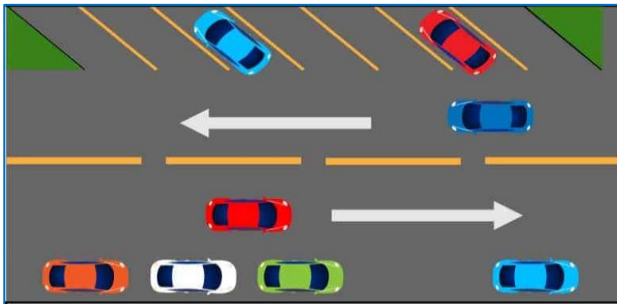


Figure No 6.8: Provision of Street Parking Lane

### 6.5.5 Taxi/Car Stand

Taxi stands should preferably be located 20 m before an intersection in a 2.5 m deep recess. If space is limited, 2.0 m wide and 3.0 long space per car shall be marked on the pavement and the side drain covered.

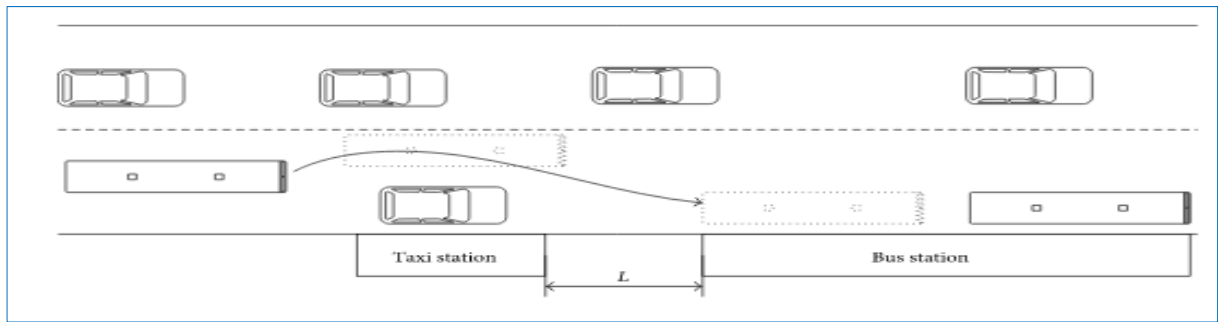


Figure No 6.9: Typical Layout of Taxi Stand

### 6.5.6 Bus Stops and Bus-Bays

Bus stops should be the interface between the street and a city’s public transport system. Spacing in busy commercial zones is typically closer than in residential areas interval between stops range from 200-400 m in city areas and for rural area, it would be 500-700 m apart. Stops should be located near cross streets and always provide safe pedestrian crossing.

Bus stops should be placed adjacent to the bus linear line of travel so that the bus does not need to pull over to the left. Ideally, a raised bus stop is to be integrated with the footpath and other raised elements so that passengers can reach the stop and board the bus directly from the footpath without the need to step on the carriageway. The road side infrastructures should be constructed as pedestrian-friendly paths.

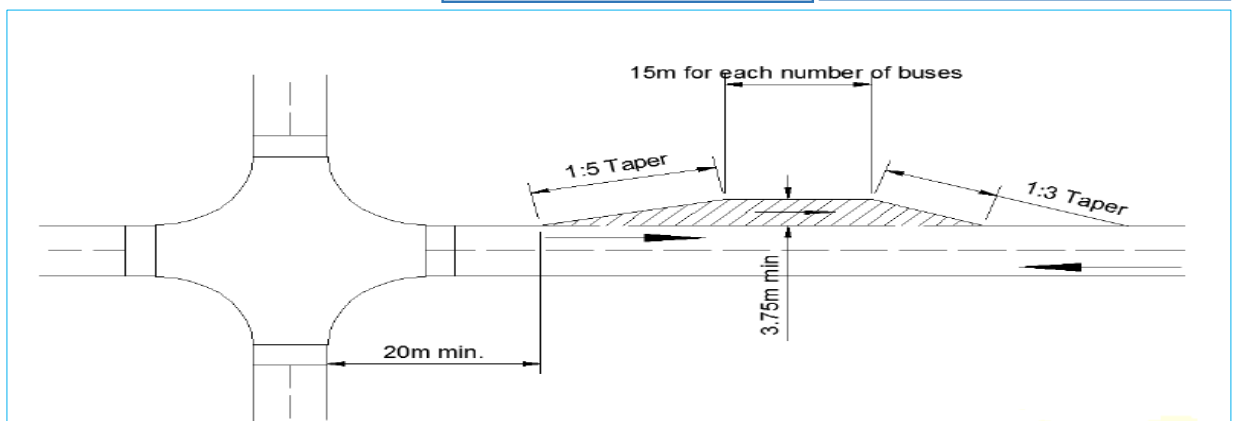


Figure No 6.10: Typical Plan of Bus Stop & Bus Bays

### 6.5.7 Cross Pedestrians

The pedestrian crossing should allow pedestrians to cross-busy the street safely and conveniently. The pedestrian crossings should be indicated by painted zebra markings. Raised crosswalks should be located at all intersections and at frequent intervals (e.g. every 150-200m). Crosswalks should be as wide as the adjacent footpath and never narrower than 2.5 m.

Where fences are to be installed to prevent crossing informal crossing in the form of barriers wherever is demand. The fence should be broken for at least 2 m to create a refuge island so that pedestrians do not spill over into the main carriageway.

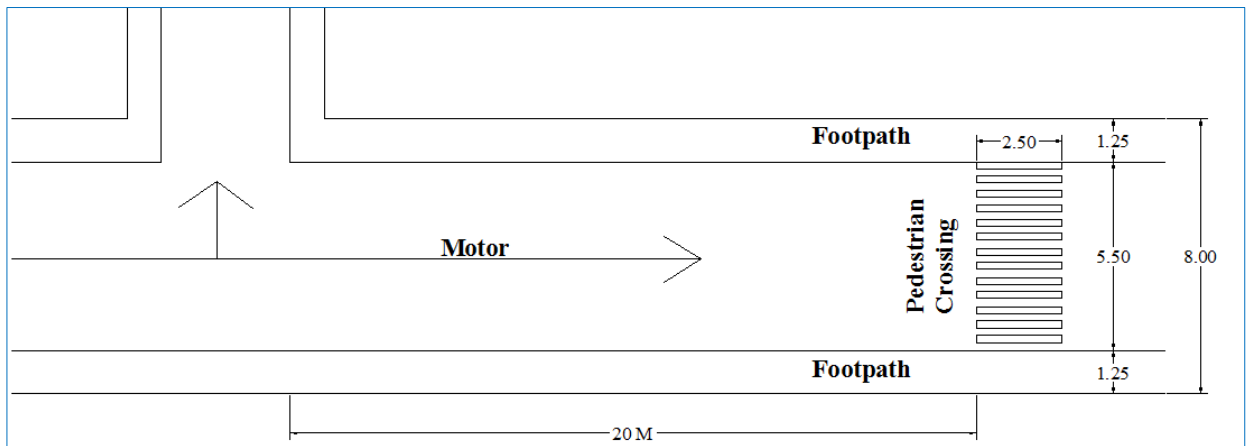


Figure No 6.11: Typical Plan of Pedestrian Crossing, C. Class Road

**6.5.8 Electricity lines, Cable Poles**

The overhead electrical lines shall be at least 5.5 m above the road pavement when along the road and 6.0m above at road crossing with poles at the inner edge of the walkways on the median strip. Also, the underground electric cable should be at least 2.0 m from the building line and at 1.5 m depth under the walkways or median strip.

The overhead cables other than that for electricity (telephone, data, TV, etc.) shall be at least 5.0 m above the pavement level when along the road and 5.5 m above at road crossings on the same poles as that for electricity. The poles shall be erected at the inner edge of the walkways or on the median strip. The underground cable ducts should be 1.0 m from the building line and at 1.0 m depth under the walkways or the median strip.

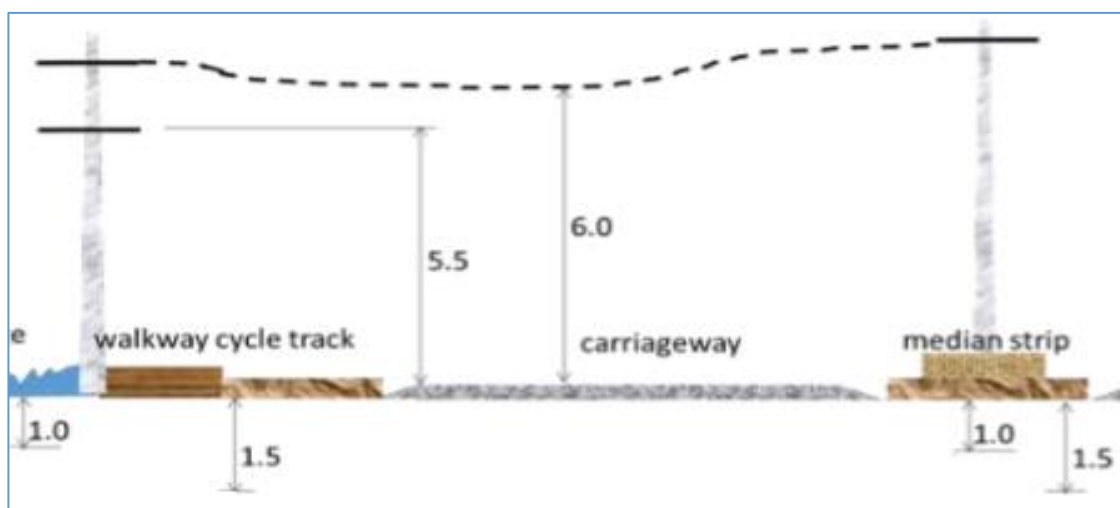


Figure No 6.12: Electricity lines and Cable Poles

### 6.5.9 Underground Utilities

The placement of utilities above and below the ground at the appropriate location in the right of the way ensures unconstrained movement as well as easy access for maintenance. Streets are the conduits for major services including electricity, water, sewer communication, gas, etc. The physical infrastructure may occur in form of pipelines telephone lines and fiber cable ducts and poles. Some utilities such as telecommunications cables require frequent access for expansion and maintenance. Utilities are generally placed at the edge of the right of way. Separate pipes shall be required for electric cables, other cables, and water mains. Provisioning of such utilities should follow:

Table No 6.7: Recommendation of Depth of Laying Underground utilities

S.N.	Types of Utilities	Depth (Denoting the bottom of the trench, m)	Remarks
1	Trunk Sewer line	2.0-6.0	
2	Water supply line		
2.1	Service line	0.6-1.0	
2.2	Trunk Line	1.0-1.5	
3	Electric Cable		
3.1	Low Tension Cable	0.6-1.0	
3.2	High Tension Cable	1.5-2.0	
4	Telecommunication Cable		
4.1	Directly laid	0.6-1.0	
4.2	Laid in Duct	2.0-3.0	
5	Gas Mains and Lines caring combustible materials	2.0-3.0	

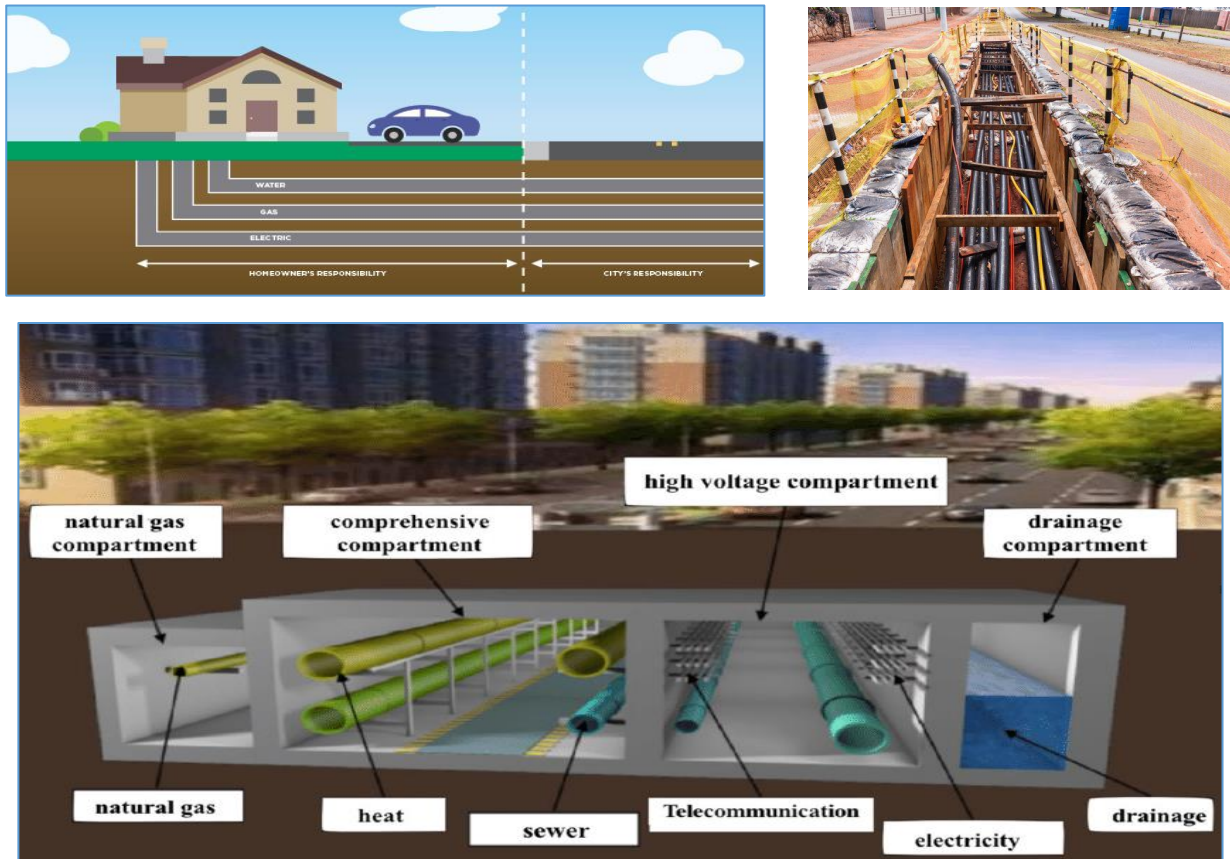


Figure No 6.13: Provision of Underground Utilities

### 6.5.10 Road Side Drainage

A stormwater drainage system is a mechanism that prevents waterlogging and erosion. Streets without stormwater drainage systems result in major longitudinal stormwater flow which may erode the street surface. Such deteriorated surfaces may cause an accident and thus imply costs beyond direct maintenance expenses. In flooded areas, pedestrians and cyclists are forced to make their way on the invisible ground under the water's surface, which makes them uncomfortable and potentially to accidents. Side drains along the pavement edge shall be "tick" shaped. The collector drains under the walkways could either could be of concrete pipes or covered U channel.

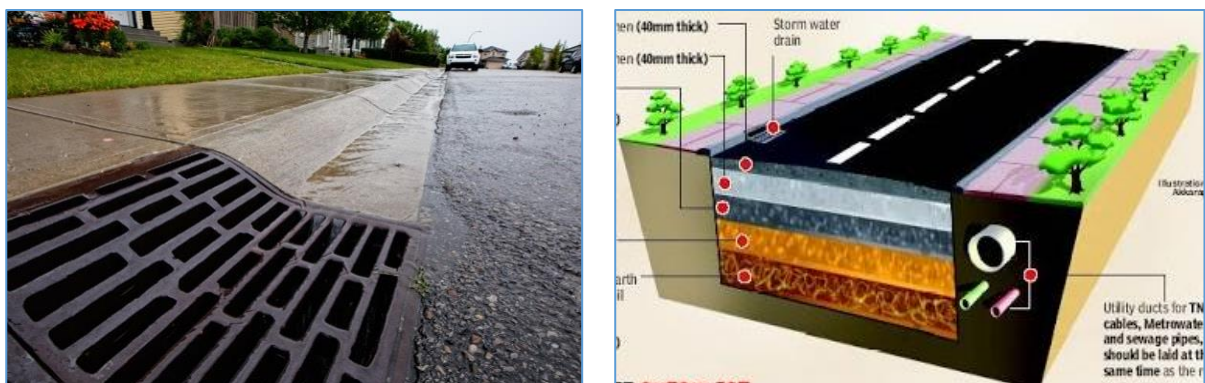


Figure No 6.14: Typical Conceptual Plan of Road Side Drainage

### 6.5.11 Traffic Calming Elements (Road Hump)

Traffic calming elements such as road humps should ensure pedestrian and vehicle safety by reducing the speed and volume of a motor vehicle. Such elements are particularly important in places where large numbers of children are present such as schools, parks, and residential areas. At such places, the speed breaker (hump) is to be provided to control the speed of the vehicle to enhance safety for non-motorized road users.

The most commonly used element is road speed humps and raised pedestrian crossing which relies on vertical displacement to reduce speed.

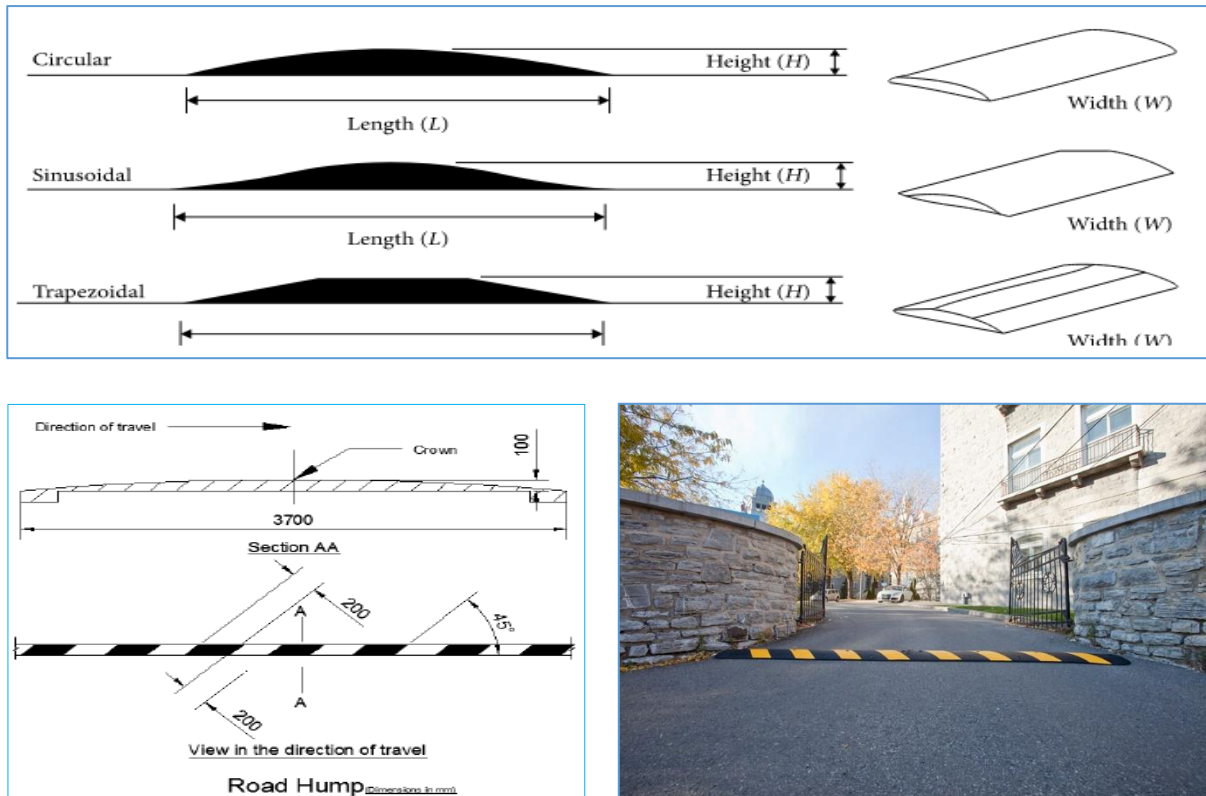


Figure No 6.15: Typical Plan & Section of Road Hump

### 6.5.12 Green Belt

The urban area is categorized by the density of population is high, high traffic volume, and dense built-up area. A green belt is a green space between the roadway and the building line. The road space is most frequently used as public space. The provision of green belts along the urban roads creates safer and more pleasant walking spaces, which acts as a medium to separate motorists from each other and the NMT users. It also reduces the roadside air temperature and absorbs more pollutants generated from the motor vehicles on street than other distant trees. Green belts can also absorb precipitation and reduce the size of required drainage. The trees also act as a screen and result in the attenuation of air, noise, and light pollution alongside the urban roads. Thus, a green belt between the motorists and NMT users and in the median strip is a compulsory infrastructure in the urban roads. The green belt can also be used as space to integrate other facilities such as drainage, water supply pipeline, and electric poles.

Landscaping and green belt improves livability and enhances the aesthetic qualities of the street. It plays a functional role in providing shade to pedestrians, cyclists, vendors, and public transport passengers. Effective greening with street trees reduces the street temperature, making it comfortable for people to walk, cycle riders, or gather for social activities. It also promotes a sense of ownership among nearby residents or shop owners towards upkeep. It can also incorporate fruit-bearing and medicinal or religious trees and shrubs.

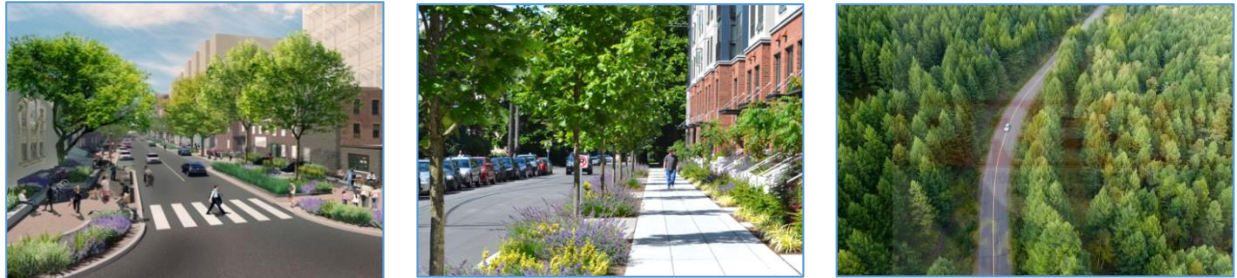


Figure No 6.16: Typical Green Belt

### 6.5.13 Traffic Regulations and Control

To have safe traffic operation on roads, it is desirable to impose adequate traffic regulations and traffic control with the help of standard traffic control devices. The traffic regulations and controls must have legal backing by enacting appropriate acts, suitable laws, and rules which are given in Traffic signs manuals Vol-I and Vol-II published by DOR.

A traffic sign is a device mounted on a fixed or portable support whereby a specific message is conveyed using words or symbols to regulate, warn, or guide traffic. The signs should be placed such that they could be seen and recognized by road users in time. The edge of the sign adjacent to the road is not less than 0.6 m away from the edge of the carriageway. The reverse side of all the sign plates should be painted gray or black.

Traffic signals are generally used at the intersection of the roadway for the control of conflicting streams of vehicular and pedestrian traffic. The arrangement draws attention and responses that make minimum waste of time and reduce accidents.



Figure No 6.17: Traffic Regulations and Signs

### 6.5.14 Road Side Furniture

Urban road furniture are points to the pieces of goods that we found in the urban environment like streets, parks, and other public areas. But it's not just benches and bins, urban furniture can refer to a whole range of items, including bike racks, bus stops, bollards, planters, seats, picnic tables, water fountains, streetlights, parasols; the list goes on. These items allow people to enjoy

a more comfortable experience in the outdoors. They can considerably improve the quality of life for the inhabitants of a city or town.

Having enough street furniture also promotes equality of opportunity, as it provides rest places for the elderly and people with mobility issues that support increased social interaction. Parents of small children can use it in public spaces and amenities, to keep a watchful eye on their youngsters, making accessibility and use more assured.



**Figure No 6.18: Road Side Seating Furniture**

### **6.5.15 Bus Terminal and City Bus Station**

A bus terminal is a point at the start/end of a bus route, where the vehicles stop, reverse and wait, before departing on the return journey. It also serves as a station for passengers to board and alight. Evidently, at a bus terminal, parameters addressing passenger and operator requirements overlap. It is the site for interchange between a large volume of bus and passenger traffic. This demands that the facilities at a bus terminal be planned systematically and that user requirements are addressed in such planning, or else the lack of an efficient and functional environment will lead to friction, ultimately compromising the attractiveness of the bus system.

Reliable, safe and comfortable public transport systems are a precondition for developing sustainable transport systems. Bus systems, in particular, are extremely relevant since they form the majority of public transport trips. Improved bus services and developing state-of-the-art supporting infrastructure like bus terminals, depots, and bus stops can attract users and increase ridership.

Currently, Letang municipality has not been a bus station yet. Due to the space limitation and facilities, other vehicles such as auto rikshaw, motorcycles, cars, and trucks can be seen parking along the sides of the road. The existing bus park and station are insufficient for accommodating existing public vehicles. Therefore, a city bus park is essential for managing public vehicles. Since a large bus terminal to accommodate all the existing vehicles requires large space, that can be very difficult to acquire. However, it's practical to construct one bus terminal and one bus station based on the necessity and proximity within the city. This will minimize congestion, delay in mobility, and more accidents. This situation in the municipality has also increased the aesthetic of overall urban road networks. For better mobility and transportation system, 1 bus terminal and 1 city bus station have been proposed in the following locations within the municipality. i.e.,



**Table No 6.8: Bus Terminal and City Station**

S.N.	Bus Station	Location	Ward No	Capacity	Area	Situation	Intervention
1	Bus Terminal	Letang		12 Buses	-	Proposed	Planned
2	City Bus Station	Letang		14 Buses	-	Proposed	Planned
4	Helipad	At least 1 in each ward	All wards				



**Figure No 6.19: Typical Conceptual Plan of Bus Terminal-I**

*Source: Bus Terminal Design guidelines, 2015, SGArchitects, New Delhi*

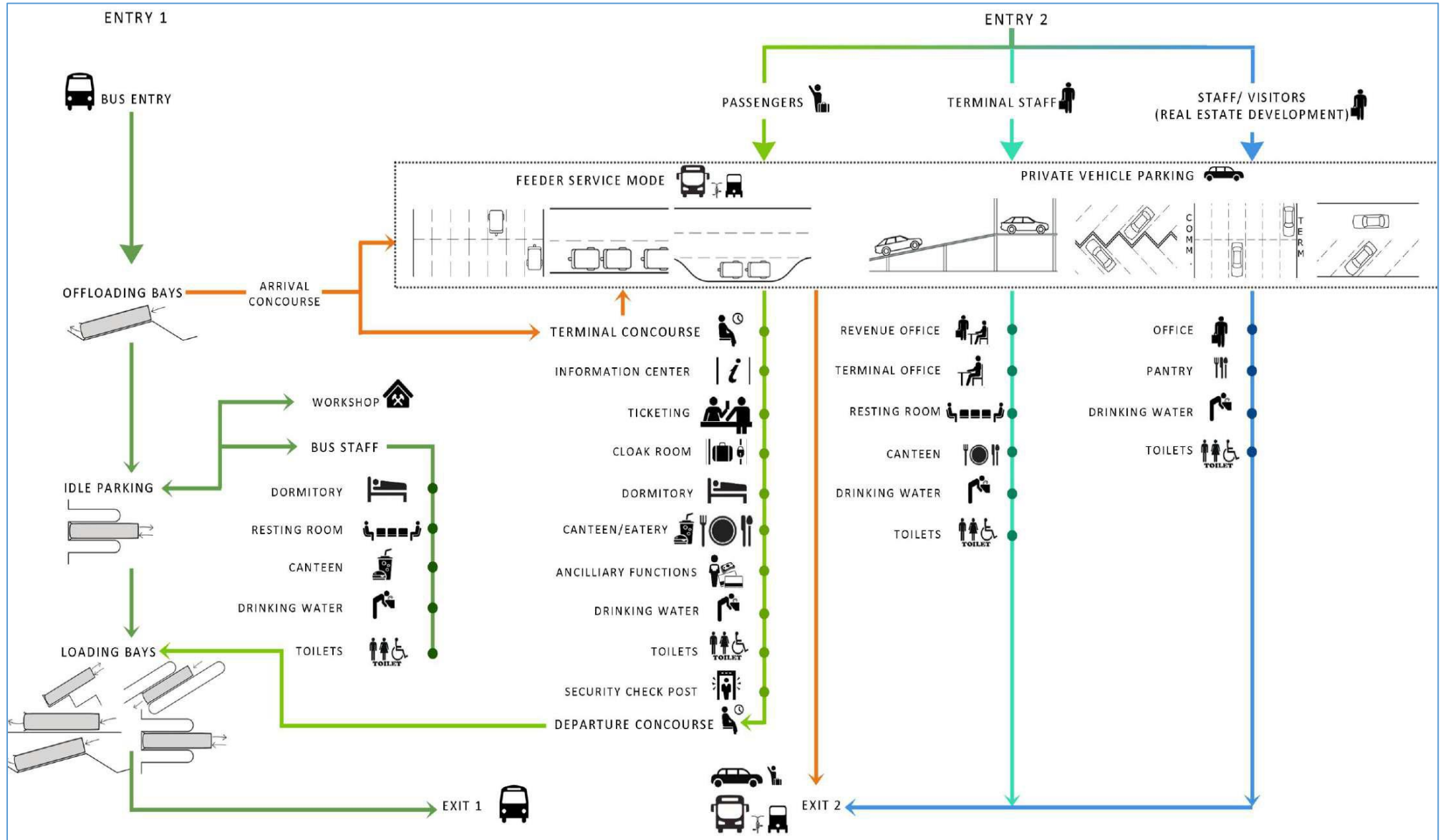


Figure No 6.20: Typical Functional Arrangement of Bus Terminal

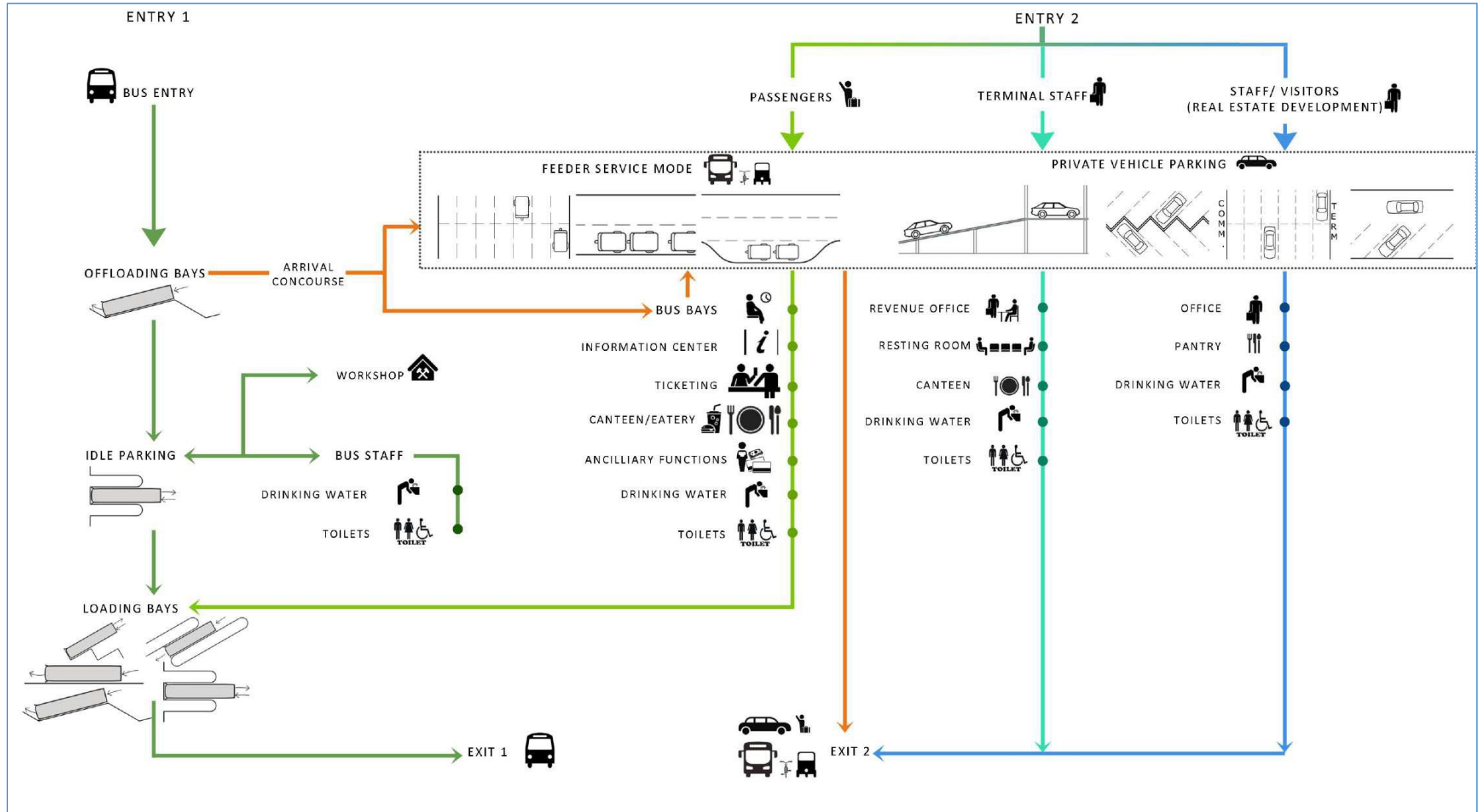


Figure No 6.21: Typical Functional Arrangement of City Bus Station

## 6.6 Transportation Management and Safety

Various components are included in a transportation system. For the proper functioning of the whole system, every component should work properly. Some of the major components of the transportation system are as follows:

### Drainage system

Drainage is one of the most important components in mass mobility and road maintenance. Roadside drains are an integral part of the roads and an essential means of preventing structural damage to the roads and inundation. From general observation, it is apparent that design and construction are not given as standards and guidelines enough in the municipality resulting in problems. Most village/urban roads do not have roadside drainage in the municipality.

### Parking Area

Parking place is a very important part of transportation management. In the absence of a parking area, the city may fall into greater problems like mobility, security, road crashes, road congestion, city aesthetic view, etc. Therefore, the city needs to develop long-time parking and short-time parking to avoid the above problems. The long-time parking area needs to park heavy vehicles like buses, minibuses, trucks, etc. which should be in a separate place and should come far from the downtown area. The short-time parking area is essential for shopping, official work, etc. which should be within the city either in the underground park or on the ground surface. Inside the municipality also, the number of vehicles are in increasing order. And while planning the parking area, future traffic forecasting should be considered. Various criteria for parking areas are studied as follows:

- ❖ Decide the capacity, location, and type of future parking facilities
- ❖ Determine the congestion in the city or town areas
- ❖ Access the suppressed parking demand
- ❖ Estimate the desire and demands of the public parking facility.

### Road Furniture

- ❖ Different objects and infrastructures should be installed on roads for various purposes e.g. traffic signals, traffic signs, street lights, traffic barriers, bus stands, bus stops, etc.
- ❖ Ensure the most efficient and effective use of resources
- ❖ Building the aesthetics in the surrounding area
- ❖ Ensure traffic safety
- ❖ Provide comfort to the pedestrian (bus stand, benches)
- ❖ Control and regulates traffic flow.

### Traffic Management

- ❖ Installation of sufficient signs and signals of standards
- ❖ Conduct awareness programs
- ❖ Research in the trend of accidents and improvement in policies, laws, and updated machinery.
- ❖ Proper coordination among government agencies and other agencies.
- ❖ Establish emergency response system etc.

### 6.7 Road Pavement

Road pavement is a specified space, required for the movement of traffic/vehicles below or above the ground. The space required by the road pavement is considered in longitudinal as well as transverse directions to enable fast-moving vehicles to move safely and comfortably at the design speed. The life of vehicles, fuel consumption, maintenance, comfort, and fatigue to the passengers are mainly affected by the nature of pavements. The nature of pavements is differing concerning cost, maintenance, service, design, etc. The road pavement is generally its thickness and characteristics of pavement layer materials.

A pavement consists of one or more layers, normally sub-grade, sub-base, base course, and surface course wearing course. The topmost layer is the surfacing course, the purpose of which is to provide a smooth, abrasion-resistant, resisting surface water infiltration and strong layer. The base course layer is a layer of graded materials located below the wearing course to transfer the stress to the subgrade through the pavement sub-base. The aggregate/gravel located between the pavement subgrade and base course, which provide additional support is sub-base. Next to this, the deepest/ lowest pavement layer is subgrade which transfers arrived vehicle load to the soil beneath.

The selection of pavement type is determined based on the traffic volume, axel wheel load and composition, soil characteristics, weather, performance of pavements in the area, availability of materials, energy conservation, initial cost, and the overall annual maintenance and service-life cost. The pavement surface type should be consistent with the selected design speed for the highway.

*Note1: For the selection and design of road pavements guidelines published by the Department of Roads shall be followed.*

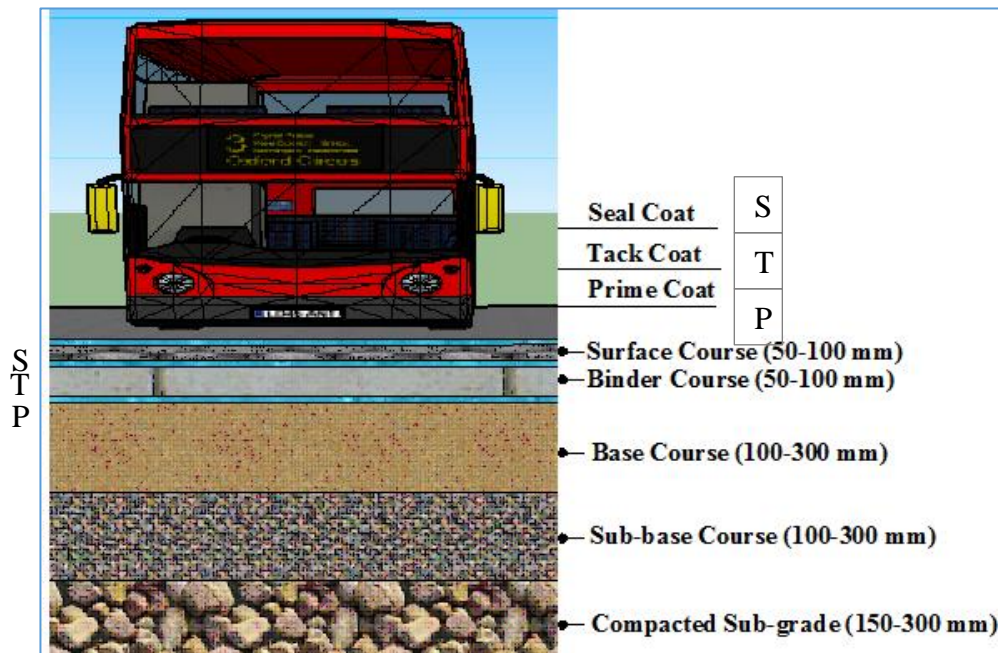


Figure No 6.22: Typical Pavement Thickness

*Note 2: Pavement thickness and material selection should be as Final DPR of urban roads.*

## **6.8 Urban Road Maintenance and Rehabilitation**

Maintenance is a series of interdependent activities carried out for preserving and keeping the road in serviceable condition, furniture, structures, and others facilities in the best possible condition to provide satisfactory and safe transportation along the road within the optimum cost. Maintenance ensures that it reduces road deterioration, lowers vehicle operating costs, keeps the road smooth mobility and always open, safe, etc. It also considers environmental issues.

### **Routine Maintenance**

Maintenance operations of localized nature are required continually on MRCN. The works are generally carried out by either forced labor or petty contractor. The activities include routine maintenance are:

- ❖ Sweeping of MRCN.
- ❖ Maintenance of shoulders
- ❖ Cutting of grasses
- ❖ Cleaning of culverts, bridges, pipes, etc.
- ❖ Cleaning minor landslides, road furniture and side drains.
- ❖ Minor reshaping of drains.

### **Recurrent Maintenance**

Maintenance operations of localized nature of a limited extent are carried out at a more or less regular interval of six months to years with a frequency that depends on traffic volume. The works are generally carried out by contract by use of minor equipment. It covers the activities like pothole patching, edge repairs, holes and ruts, repair of depression, local reconstruction, crack sealing, maintenance of drains, repairs of road furniture, etc.

### **Periodic Maintenance**

Maintenance operations to a large extent are required at intervals of several years. In general, 6 years in the case of black top and 4 years in the case of gravel road depending upon the traffic volume. It covers activities like the renewal of wearing surfaces, repairing the damaged portions of side drains, repairing earth retaining walls, repairing parapet walls and fencing at bridges and culverts, resealing, etc.

### **Emergency Maintenance**

The urgent maintenance includes removing landslides and repairing damage to the road that inhibits the proper use of the road and makes it impassable. The activities mainly take place during and after the rainy season.

### **Rehabilitation**

The reinstatement of the road after the critical period is over by reconstruction of pavements, structures, and drainage of road alignment is rehabilitation. It measures improving the structural strength of the pavement and roadside structures.

## Chapter: 7 Five-Year Municipal Transport Master Plan

The five-Year Municipal Transport Master plan has been developed to guide the municipal investments in road infrastructure through 2080-2084/85 B.S. The plan will help the municipality towards the medium and long-term plan as outlined. The RMTMP refers to the maintenance and upgrading of the existing road networks to the proposed standards to support the present and future (5 years) transport demand. It also includes the construction of new road linkages which are necessary to support the current road network and the envisaged road network for the future. The interventions are applied to the road sections based on their priorities and the annual budget. The plan has also addressed the immediate need for NMT facilities within the municipal area along the MRCN.

As such, the five-year plan has focused on the accessibility of all the settlements, moving towards mobility to increase access to wider services, thus paving the way for the development of proper sustainable public transport services within and around the municipality. The strategy and investment plans for the 5-year Municipal Transport Master Plan have been elaborated below.

### 7.1 Sharing of Municipal Fund

The financial plan and the finalization of the RMTMP have been done based on the Terms of Reference as given by the municipality. During the preparation of MTMP, the investment from total available resources under the road sector for different classes of the road can be distributed as Apportion 30% for maintenance at first, and the remaining 70% has been distributed for construction, upgrading and rehabilitation. The MoFALD (2014 A.D.) guidelines have set the different views for budget distribution in a different class of road:

- ❖ Class A road,  $\geq 40\%$
- ❖ Class B road,  $\leq 30\%$
- ❖ Class C road,  $\leq 20\%$
- ❖ Class D road,  $\leq 10\%$

Although MoFALD has set guidelines for the distribution of the budget, it has been adjusted by making discussions with local authorities based on local conditions and the requirement of the municipality. The municipality has decided to invest the 70% in construction/Upgradation and 30% in the maintenance of the road for the next 5 fiscal years. The construction budget of the road sector is invested with 40% in A-Class and Municipal, 30% in B-class, 20% in C-class, and 10% in D-class.

The estimate of the budget required for the five years is prepared based on that the Class A road is to be made two lanes, Class B road is to be made intermediate lane and Class C and Class D roads are to be made single lane and municipal ring road will be four lanes. Due to the limitation of budget, the roads are assumed to have simple cross-drainage structures within this period whereas cross-drainage structures such as bridges are not included in this budget and are expected to be completed within this period by external sources. For approximate costing, the construction rate of road appurtenances is assumed to be equal to that of graveling cost and for

the short term, the minimum width of 3 m is assumed if the existing road width doesn't exist. Similarly, longitudinal drainage on both sides of the roadway is considered in this plan.

MTMP mainly deals with Class A, B, and C roads, and Class D roads but privately owned roads are not given any consideration. Interventions on those roads need to be incorporated into the annual budget plan. As compared to the present budget of the municipality, the estimated budget is more and the deficit amount should be managed from outer sources.

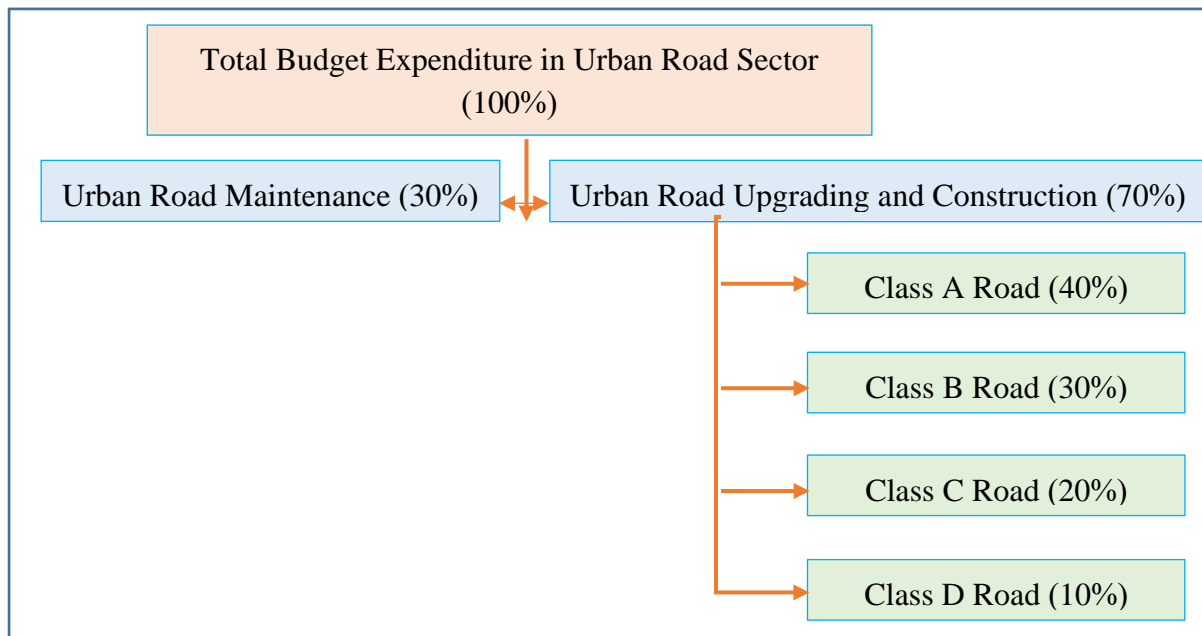


Figure No 7.1: Budget Share for Different Intervention and Class of Road

Interventions that needs can't be completed in the predetermined year should be the next priority in the coming year. If a certain road, which was targeted to complete in the first year could not be finished in the first year, need to be given priority in next year's expenditure plan. If there is a deficit in annual expenditure, the municipality needs to incorporate that particular heading in the next year at any cost. They can look for grants, and assistance from the district or even the central level or they can incorporate them by shifting the budget from a less important item/heading.

Table No 7.1: Sharing of Municipal Budget on MRCN Class

S.N.	Fiscal Years	Total Municipal Probable Budget in Road Sector(NRS)	#Construction Budget(NRS)	Maintenance Budget (NRS)	Class A(NRS)	Class B(NRS)	Class C(NRS)	Class D(NRS)
<b>Sharing of Fund</b>			<b>70%</b>	<b>30%</b>	<b>40% of #</b>	<b>30% of #</b>	<b>20% of #</b>	<b>10% of #</b>
1	2080/081	128700000	90090000	38610000	36036000	27027000	18018000	9009000
2	2081/082	128400000	89880000	38520000	35952000	26964000	17976000	8988000
3	2082/083	128000000	89600000	38400000	35840000	26880000	17920000	8960000
4	2083/084	132100000	92470000	39630000	36988000	27741000	18494000	9247000
5	2084/085	139925560	97947892	41977668	39179157	29384368	19589578	9794789
<b>Total</b>		657125560	459987892	197137668	183995157	137996368	91997578	45998789



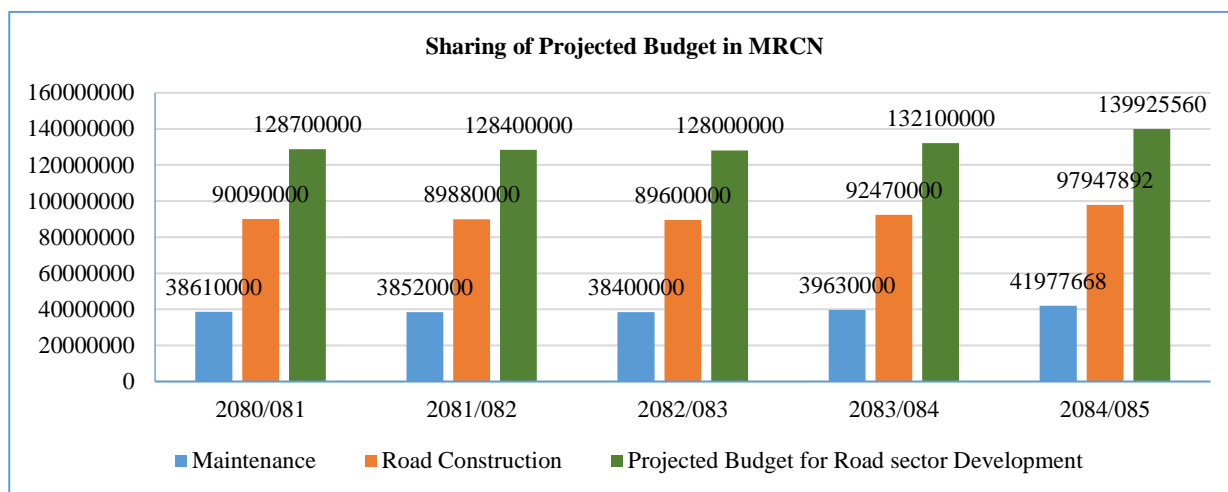


Figure No 7.2: Budget Projection in Road Development Sector and Maintenance

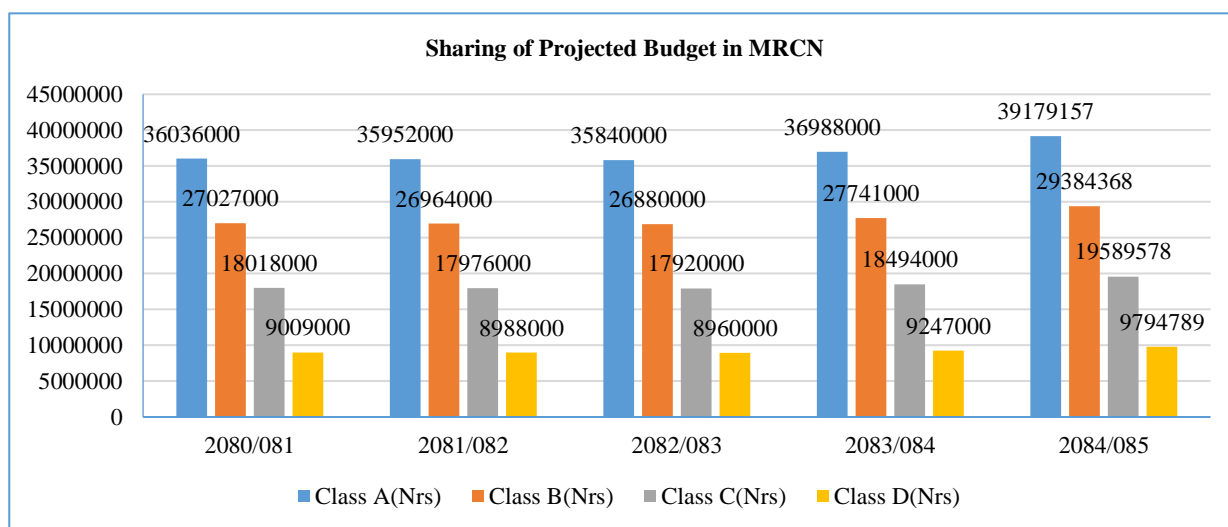


Figure No 7.3: Projection of Sharing of Municipal Budget in MRCN

## 7.2 Intervention on MRCN and Cost Estimation

The financial plan of RMTMP has been developed as per the following intervention in Municipal Road Core Network. The intervention includes construction (bridge, culverts, new track opening, graveling, blacktopping, longitudinal drains, footpaths, cycle lanes, street lights, etc.), upgradation, and maintenance of the urban roads. The summary of the total length of roads has been listed in Table below and intervention by road classification has been listed below table.

The probable cost of each road section has been prepared based on the district rate (2080) and MoFALD [2014]. The unit cost of the construction is listed below Vol I [Annex III]. The cost interventions and cost estimate of the MRCN are summarized below and detailed probable cost has been given in Separate Volume II [Annex II].

**Table No 7.2: Total Length By MRCN Proposed Class**

S.N	MRCN Class	Existing Road Length, Km			Proposed Road Length Km	Upgrade Length Km	Total Road length Km	Proposed		
		Earthen	Gravel	Blacktop				Longitudinal Road Side Drain, km	Footpath and Cycle Lane, km	Green Belt, km
1	Class A	10.51	27.21	9.21	0	10.51	46.58	10.51	10.51	10.51
2	Class B	34.16	27.62	4.81	0	34.16	88.99	34.16	34.16	34.16
3	Class C	79.17	30.11	4.49	0	79.17	113.77	79.17	79.17	79.17
4	Class D	130.03	83.09	13.48	0	130.03	226.637	130.03	130.03	130.03
Grand Total		253.87	168.03	31.99	0	253.87	475.977	253.87	253.87	253.87

### 7.3 Five-Year Implementation Plan

The detailed five years and abstract of the twenty-year implementation plan have been prepared. The implementation plan has been prepared based on the priority/rank obtained from the prioritization criteria and as per suggestion from the municipal authority. The total expected length of road for blacktopping within the MTMP period is 57.414 km as prescribed standards. The summary of implementation plan is given in Table below, and the year wise implementation plan has been tabulated in Table below.

*Note: The MRCC has decided to Plan Class D roads making discussions with local stakeholder during Budget Preparation.*

Table No 7.3: Intervention on MRCN Class for Twenty Years

S.N	MRCN Class	Existing Road Length, Km			Proposed Road Length Km	Upgrade Length Km	Total Road length Km	Proposed		
		Earthen	Gravel	Blacktop				Longitudinal Road Side Drain, km	Footpath and Cycle Lane, km	Green Belt, km
1	Class A	10.51	0	0	0	10.51	10.51	10.51	10.51	
2	Class B	34.16	0	0	0	34.16	34.16	34.16	34.16	
3	Class C	79.17	0	0	0	79.17	79.17	79.17	79.17	
4	Class D	130.03	0	0	0	130.03	130.03	130.03	130.03	
Grand Total		253.87	0	0	0	253.87	253.87	253.87	253.87	

## 7.1 Policy and Strategy

- ❖ Policy for Integrated Development Approach (co-ordination of line agencies) shall be developed.
- ❖ Policy for road class C and D shall be constructed by mobilization of the User's Committee.
- ❖ Policy for the construction of ring roads and class A roads by taking aid from donor agencies.
- ❖ Policy for the construction of class B roads by coordinating municipal own source and line agencies and donor agencies.
- ❖ All line agencies, NGOs, and INGOs who work on the urban roads have to manage their program as per approved MTMP.
- ❖ Policy for operating city buses and electric vehicles shall be prepared.
- ❖ A policy of promoting pedestrian-friendly paths, and pedestrian crossings is to be kept a top priority followed by cycling and other motor vehicles.
- ❖ Facility, security, and guarantee to be provided for the investment of the private sector in urban roads.
- ❖ The policy of urban road landscaping, green belt, and beautification shall be prepared.
- ❖ Effective regulatory mechanism for public transportation is to be prepared.
- ❖ Policy for road accident management and rescue mechanism shall be developed.

## 7.2 Suggestion

- ❖ Implement the road construction as per prioritized by the Municipal Transport Master Plan (MTMP).
- ❖ Minimum basic guidelines for roadside infrastructures, bicycle tracks, pedestrian facilities, curbs, bus lay bays, lighting and drainage should be followed as per the guidelines set by., Nepal Road Standards 2070 BS, Nepal Urban Road Standards-2076 (NURS-2076 BS).
- ❖ If different guidelines are provisioned for the same infrastructure, then the standard, which explains the pedestrian-friendly transportation most, is to be adopted.
- ❖ The RMTMP should be revised after every 5 years.

## Chapter: 8 Conclusion

In Letang municipality, the population increase rate is 0.13 % per year. The municipality is developing as an emerging **urban rural linkage development town**. A sustainable MRCN is required for better urbanization and market center development in the municipality. The development of transport infrastructures and traffic mobility should be smooth. By considering the better future in transport facilities of the municipality, 5-year RMTMP has been prepared.

The plan starts with present scenarios, the team has analysed the present status of urban roads by conducting field inventory, collecting primary and secondary data, interacting with various stakeholders at various levels, planning the necessary interventions, and prioritization the roads. The study has identified active transport users as a major trip-making group and therefore the road classes hierarchy addresses those users with interconnected pedestrian facilities and cycle tracks. Mobility has to be considered as the majority of people are dependent on privately owned vehicles or walking for daily trips. The feasible linkage routes, public city bus routes, etc. have been also developed in the plan. Most of the roads need maintenance and upgrading.

The data are then coded in a GIS software for developing the maps. Finally, the inventory map is prepared and the land use map has also been prepared. The potential development map and the visionary plan has used for the preliminary classification of the roads. The classification of the road is validated through MRCC meetings. The classes validated are A, B, C, D by defining Right of Way (RoW) 14m, 10m, 8m, and 6m respectively. The proposed prioritization criteria have been validated through MRCC and the rural municipal office. Again, the financial, as well as implementation plan, has been prepared in the report.

The total length of MRCN in the municipality will be 456.22 km. Among these, the proposed length of MRCN-validated classes A, B, C, D, are 10.51 km, 34.16 km, 79.17 km, and 130.03 km respectively.

## References

- Central Bureau of Statistics. (2013). National Census 2011. Kathmandu: Government of Nepal, National Planning Commission Secretariat.*
- District Transport Master Plan, guideline 2012 A.D.*
- DoR: Nepal Roads Standards (2027): First Revision 2045, BS*
- DoR: Nepal Roads Standard 2070, Kathmandu,*
- DoR: Traffic Signs Manuals Vol-I and Vol -II, Kathmandu, 1997*
- GoN. (2014). Government of Nepal Ministry of Federal Affairs and Local Development (MoFALD) Municipality Transport Master Plan Preparation Guidelines and Terms of Reference for Hiring Consultant Infrastructure Development Division, (IDD)/MoFALD MUNICIPALITY TRANSPORT MASTER PLAN PREPARATION GUIDELINES AND TERMS OF REFERENCE FOR HIRING CONSULTANTS MUNICIPALITY TRANSPORT MASTER PLAN (MTMP).*
- Government of Nepal. (2015). National Urban Development Strategy (NUDS). kathmandu, Nepal.*
- Litman Todd. (2003). Measuring Transportation Traffic, Mobility and Accessibility.*
- Ministry of Federal Affairs and Local Development. (2017). गाउँपालिका र नगरपालिका कायमगर्ने गरि उक्त एकाईहरुको नाम, संख्या, सीमाना, केन्द्र र वडाको सीमाना सहितको विवरण .Kathmandu, RAJPATRA.pdf.*
- National Transport Policy, His Majesty's Government Ministry of Physical Planning and Works 2058 (2001/2002)*
- Nepal Rural Road Standards- 2012,*
- Nepal Urban Road Standards 2071, Concept Paper*
- Nepal Urban Road Standard- 2076, Jestha, Government of Nepal Ministry of Urban Development Singhadurbar, Kathmandu.*
- Statistics of Local Road Network (SLRN) 2016, Department of Local Infrastructure Development and Agricultural Roads (DoLIDAR), Babarmahal Kathmandu Planning Norm and Standard 2015 A.D, DUDBC, Babarmahal Kathmandu*
- Letang Municipal Profile 2074*

**Annex I: List of Municipal Road Core Network (MRCN)**

Sn:	Sn	Road Code	Road Name	Road Class	ROW	Surface	Origin	Destination	Ward Pass	Road Length (km)
1	1	05DR021	Pathari-Jate-Jyamire Sadak	Provincial Road	30	Provincial Road	Pathari Jate	Jyamire	9	16.50
2	2	NH09	Madan Bhandari Highway	National Highway	50	Central Road	Madan Bhandari Highway	Madan Bhandari Highway	1,2,3,4,5,6,9	12.52
3	3	F61	Rangeli-Kanepokhari-Dandagaun-Budhabare	Feeder Road	30	Provincial Road	Kalebudule Marga	Kalebudule Marga	3,4,5,6	8.83
4	4	F61	Rangeli-Kanepokhari-Dandagaun-Budhabare	Feeder Road	30	Provincial Road	Kalebudule Marga	Kalebudule Marga	3,6	3.88
5	5	F61	Rangeli-Kanepokhari-Dandagaun-Budhabare	Feeder Road	30	Blacktop	Rangeli	Budhabare	6,8	6.58
6	6	05DR021	Rangeli-Kanepokhari-Dandagaun-Budhabare	Feeder Road	30	Blacktop	Rangeli	Budhabare	7,8	7.40
7	7	05DR017	Khorsane-Kerabari-Singhadevi-Samewa	District Road	20	Earthen	Khorsane	Samewa	1	4.75
8	8	05DR017	Belbari-Lokhara-Bhogteni-Aaitabare	District Road	20	Earthen	Belbari	Aaitabare	1,2	18.44
9	9	05DR017	Belbari-Lokhara-Bhogteni-Aaitabare	District Road	30	Blacktop	Belbari	Aaitabare	2	4.09
10	10	05DR017	Guwabari -Warangi-Gurasetar Sadak	District Road	20	Earthen	Guwabari	Gurasetar Sadak	6,7	2.50
11	11	05DR017	Guwabari -Warangi-Gurasetar Sadak	District Road	20	Earthen	Guwabari	Gurasetar Sadak	7	19.20
12	12	05DR017	Guwabari -Warangi-Gurasetar Sadak	District Road	20	Earthen	Guwabari	Gurasetar Sadak	7	0.28
								<b>Total</b>		<b>104.96</b>
13	1	105M07A001	Baluwa Lakh Hardiya Murchung Sadak	A	12	Earthen	Lakh	Murchung	1	4.79
14	2	105M07A001	Baluwa Lakh Hardiya Murchung Sadak	A	12	Earthen	Lakh	Murchung	1	0.44
15	3	105M07A002	Pragati Chowk - Khairene Marga	A	12	Gravel	Pragati Chowk	Khairene	1,2	0.61
16	4	105M07A003	Ncell Yuwa Paschim Bhupal Saru-Basu Subedi Dakshin Makim Marga	A	12	Gravel	Lapha Khel Maidan	Netra Chowk	2	1.09
17	5	105M07A004	Lapha Khel Maidan -Uttar Pragati Tol Sadak	A	12	Gravel	Budhabare Chowk	Pragati	2	1.93
18	6	105M07A005	Siddhartha Marga Turke Sadak	A	12	Gravel	Siddhartha Chowk	Turke	2	1.63
19	7	105M07A006	Budhabare Saru Tol Santa Jeu Marga	A	12	Gravel	Budhabare Saru Tol Santa	Budhabare Saru Tol Santa	2	0.75
20	8	105M07A007	Kamalpur -Trishuli Tol Sadak	A	12	Blacktop	Kamalpur	Trishuli	3	3.54
21	9	105M07A008	Jansewa Marga	A	12	Blacktop	Jansewa Marga	Jansewa Marga	3,4	0.61
22	10	105M07A009	Balkoshis Marga (BT)	A	12	Blacktop	Balkoshis Marga (BT)	Balkoshis Marga (BT)	3,6	0.62
23	11	105M07A010	Krishi Marga	A	12	Gravel	Krishi Marga	Krishi Marga	4	0.12
24	12	105M07A011	Hulaki Marga	A	12	Gravel	Hulaki Marga	Hulaki Marga	4,5	2.48

Sn:	Sn	Road Code	Road Name	Road Class	ROW	Surface	Origin	Destination	Ward Pass	Road Length (km)
25	13	105M07A012	Marga 2- Children Park Dekhi Gange Chowk Samma	A	12	Blacktop	Children Park	Gange Chowk	4,5	1.00
26	14	105M07A013	Campus Marga	A	12	Gravel	Hulaki Marga	Bargachi	4,5,6	1.49
27	15	105M07A014	Children Park Uttar 6 No. Chisyan Center Jane Bato	A	12	Earthen	Children Park	Cold Store	4,5,8,9	1.03
28	16	105M07A015	Jirikhimti Marga	A	12	Gravel	Jirikhimti Marga	Jirikhimti Marga	5	1.96
29	17	105M07A016	Buddha Marga	A	12	Gravel	Buddha Marga	Buddha Marga	5,6,8	5.14
30	18	105M07A017	Sikshya Bikas Ma. Bi. - Guwabari Sadak	A	12	Gravel	Sikshya Bikas Ma. Bi.	Guwabari Sadak	6	0.79
31	19	105M07A018	Balkoshis Marga	A	12	Gravel	Balkoshis Marga	Balkoshis Marga	6	1.19
32	20	105M07A019	Tribeni Marga	A	12	Blacktop	Tribeni Marga	Tribeni Marga	6	1.24
33	21	105M07A020	Shanti Marga "Ka"	A	12	Gravel	Tribeni Chowk	Ajambari Chowk	6	1.62
34	22	105M07A021	Shiksha Bikash Marga	A	12	Gravel	Shiksha Bikash Marga	Shiksha Bikash Marga	6	1.04
35	23	105M07A022	5,6 Simana Bato	A	12	Gravel	5,6 Simana Bato	5,6 Simana Bato	6	0.22
36	24	105M07A023	Shiksha Bikash Marga	A	12	Gravel	Shiksha Bikash Marga	Shiksha Bikash Marga	6	0.11
37	25	105M07A024	Balkoshis Marga	A	12	Gravel	Balkoshis Marga	Balkoshis Marga	6	0.33
38	26	105M07A025	Dada Gaau -Miklajung Ga.Pa. Sadak	A	12	Blacktop	Dada Gaau	Miklajung Ga.Pa. Sadak	8	0.28
39	27	105M07A026	Dhada Ghate Marga (Krishi Marga)	A	12	Gravel	Dhada Ghate Marga (Krishi)	Dhada Ghate Marga (Krishi)	8	1.58
40	28	105M07A027	Sabu Da Si Marga	A	12	Gravel	Lawati Chowk	Siran Tol	8	1.91
41	29	105M07A028	Bhu.Pu. Marga	A	12	Blacktop	Bhu.Pu. Marga	Bhu.Pu. Marga	8	1.47
42	30	105M07A029	Jay Nepal Marga	A	12	Blacktop	Jay Nepal Marga	Jay Nepal Marga	8	0.44
43	31	105M07A030	Dada Gaau -Miklajung Ga.Pa. Sadak	A	12	Gravel	Dada Gaau	Miklajung Ga.Pa. Sadak	8	0.32
44	32	105M07A031	Buddha Marga	A	12	Gravel	Buddha Marga	Buddha Marga	8,9	0.64
45	33	105M07A032	Dhada Ghate Marga (Krishi Marga)	A	12	Gravel	Dhada Ghate Marga (Krishi)	Dhada Ghate Marga (Krishi)	8,9	0.25
46	34	105M07A033	Ward 9	A	12	Earthen	Ward 9	Ward 9	9	4.25
								<b>Total</b>		<b>46.92</b>
47	1	105M07B001	Rajarani Sadak	B	10	Gravel	Rajarani Sadak	Rajarani Sadak	1	0.36
48	2	105M07B002	Bhupal Limbu Ghar -Bankailo Ghar -Trethube Limbu Pakhabare -Yam Magar Ghar Sadak	B	10	Earthen	Bhupal Limbu Ghar	Yam Magar Ghar Sadak	1	0.11
49	3	105M07B002	Bhupal Limbu Ghar -Bankailo Ghar -Trethube Limbu Pakhabare -Yam Magar Ghar Sadak	B	10	Earthen	Bhupal Limbu Ghar	Yam Magar Ghar Sadak	1	0.07
50	4	105M07B002	Bhupal Limbu Ghar -Bankailo Ghar -Trethube Limbu Pakhabare -Yam Magar Ghar Sadak	B	10	Earthen	Bhupal Limbu Ghar	Yam Magar Ghar Sadak	1	1.31
51	5	105M07B002	Bhupal Limbu Ghar -Bankailo Ghar -Trethube Limbu Pakhabare -Yam Magar Ghar Sadak	B	10	Earthen	Bhupal Limbu Ghar	Yam Magar Ghar Sadak	1,2	1.46
52	6	105M07B003	Bhawne-Kirtiman Dhat Sadak	B	10	Gravel	Kirtiman Bhawne Sadak	Kirtiman Bhawne Sadak	3	0.24
53	7	105M07B004	Jholunge Pool-Kamalpur Fireline Gate	B	10	Gravel	Fireline Gate	Kamalpur	3,4	2.29
54	8	105M07B005	Shivalaya Marga	B	10	Gravel	Ramilo Chowk	Salbari	3,6	0.76
55	9	105M07B006	Ekata Chowk Marga (26Ft)	B	10	Blacktop	Ekata Chowk Marga (26Ft)	Ekata Chowk Marga (26Ft)	4	0.27
56	10	105M07B007	Krishi Marga	B	10	Gravel	Krishi Marga	Krishi Marga	4,5	1.38
57	11	105M07B008	Prakash Marga	B	10	Gravel	Hulaki Marga	Tribeni Marga	5	1.64



Sn:	Sn	Road Code	Road Name	Road Class	ROW	Surface	Origin	Destination	Ward Pass	Road Length (km)
58	12	105M07B009	Suryodaya Marga	B	10	Gravel	Hulaki Marga	Madan Bhandari Marga	5	1.04
59	13	105M07B010	Krishi Marga	B	10	Gravel	Krishi Marga	Krishi Marga	5	0.30
60	14	105M07B011	Paribartan Marga	B	10	Gravel	Paribartan Marga	Paribartan Marga	5,6	0.99
61	15	105M07B012	Adhibasi Sakha Sadak	B	10	Gravel	Adhibasi Sakha Sadak	Adhibasi Sakha Sadak	6	0.36
62	16	105M07B013	Birendra Marga	B	10	Blacktop	Birendra Marga	Birendra Marga	6	0.32
63	17	105M07B014	Devithan Marga	B	10	Earthen	Devithan Marga	Devithan Marga	6	0.10
64	18	105M07B014	Devithan Marga	B	10	Earthen	Devithan Marga	Devithan Marga	6	0.72
65	19	105M07B015	Barghachi - Gowabari Sadak	B	10	Gravel	Barghachi	Gowabari	6	2.11
66	20	105M07B016	Budha Marga	B	10	Gravel	Budha Marga	Budha Marga	6	1.03
67	21	105M07B016	Budha Marga	B	10	Gravel	Budha Marga	Budha Marga	6	0.56
68	22	105M07B017	Gargare Dhirinkha-Barbanjyang Sadak	B	10	Earthen	Gargare Dhirinkha	Barbanjyang Sadak	7	2.80
69	23	105M07B018	Aahale-Warsngi-Furketar Sadak	B	10	Earthen	Aahale	Furketar	7	7.93
70	24	105M07B018	Aahale-Warsngi-Furketar Sadak	B	10	Earthen	Aahale	Furketar	7	10.07
71	25	105M07B019	New Krishi Marga	B	10	Gravel	New Krishi Marga	New Krishi Marga	8	1.09
72	26	105M07B020	Sangam Marga Purba Paschim	B	10	Gravel	Sangam Marga Purba Paschi	Sangam Marga Purba Paschi	8	0.72
73	27	105M07B021	Dada Gaau Kalopatre Sadak	B	10	Blacktop	Dada Gaau Kalopatre Sadak	Dada Gaau Kalopatre Sadak	8	0.24
74	28	105M07B022	Dhamala Marga Uttar Dakshin	B	10	Gravel	Dhamala Marga Uttar Daksh	Dhamala Marga Uttar Daksh	8	0.68
75	29	105M07B023	Lal Jhoda-Bhalukhop-Hoksey Sadak	B	10	Gravel	Rupnaryan Ghar	Laljhoda	8	3.38
76	30	105M07B024	Sagarmatha Marga	B	10	Blacktop	Sagarmatha Marga	Sagarmatha Marga	8	1.10
77	31	105M07B024	Sagarmatha Marga	B	10	Blacktop	Sagarmatha Marga	Sagarmatha Marga	8	0.40
78	32	105M07B024	Sagarmatha Marga	B	10	Blacktop	Sagarmatha Marga	Sagarmatha Marga	8	0.10
79	33	105M07B025	Lal Jhoda-Bhalukhop-Hoksey Sadak	B	10	Earthen	Lal Jhoda	Hoksey Sadak	8	0.08
80	34	105M07B026	Jate-Adheri-Yangsila Sadak	B	10	Earthen	Jate	Yangsila Sadak	8	4.45
81	35	105M07B027	Lal Jhoda-Bhalukhop-Hoksey Sadak	B	10	Earthen	Lal Jhoda	Hoksey Sadak	8,9	5.06
82	36	105M07B028	Baharakothe Teli - Tamang Basti Sadak	B	10	Gravel	Baharakothe Teli	Tamang Basti Sadak	8,9	0.24
83	37	105M07B028	Baharakothe Teli - Tamang Basti Sadak	B	10	Gravel	Baharakothe Teli	Tamang Basti Sadak	8,9	0.85
84	38	105M07B028	Baharakothe Teli - Tamang Basti Sadak	B	10	Gravel	Baharakothe Teli	Tamang Basti Sadak	8,9	1.68
85	39	105M07B029	Maulik Sanskritik Prayatan Marga Ring Road	B	10	Gravel	Maulik Sanskritik Prayata	Maulik Sanskritik Prayata	9	0.86
86	40	105M07B030	Sakela Marga Uttar 9,8 Simma	B	10	Gravel	Sakela Khel Maidan	8-9 Simana	9	1.99
87	41	105M07B031	Maulik Sanskritik Prayatan Marga Ring Road	B	10	Gravel	Maulik Sanskritik Prayata	Maulik Sanskritik Prayata	9	2.41
88	42	105M07B031	Maulik Sanskritik Prayatan Marga Ring Road	B	10	Gravel	Maulik Sanskritik Prayata	Maulik Sanskritik Prayata	9	0.66
89	43	105M07B031	Maulik Sanskritik Prayatan Marga Ring Road	B	10	Blacktop	Maulik Sanskritik Prayata	Maulik Sanskritik Prayata	9	1.97
90	44	105M07B031	Maulik Sanskritik Prayatan Marga Ring Road	B	10	Blacktop	Maulik Sanskritik Prayata	Maulik Sanskritik Prayata	9	0.42
			<b>Total</b>							<b>66.58</b>

Sn:	Sn	Road Code	Road Name	Road Class	ROW	Surface	Origin	Destination	Ward Pass	Road Length (km)
91	1	105M07C001	Budhi Man Limbu Ghar-Trethube Limbu Pakhabare	C	8	Earthen	Budhi Man Limbu Ghar	Trethube Limbu Pakhabare	1	0.55
92	2	105M07C002	Khaireni Talo Dhobi Marga	C	8	Earthen	Kharene Talo Dhobi Marga	Kharene Talo Dhobi Marga	1	1.39
93	3	105M07C003	Udhaune Sadak	C	8	Earthen	Udhaune Sadak	Udhaune Sadak	1	0.72
94	4	105M07C004	Tallo Lokhara-Khairene	C	8	Earthen	Talo Lokhara	Khairene	1	2.00
95	5	105M07C005	Krishi Prayatan Xetra Sadak	C	8	Earthen	Krishi Prayatan Xetra Sad	Krishi Prayatan Xetra Sad	1	2.75
96	6	105M07C006	Khairani Phedi Marga	C	8	Earthen	Kharene Bhete Marga	Kharene Bhete Marga	1	1.32
97	7	105M07C007	Sagma Kische Jharna	C	8	Earthen	Sagma	Kisehe Jharna	1	4.63
98	8	105M07C008	Kuwapani Ring Road	C	8	Earthen	Kuwapani Ring Road	Kuwapani Ring Road	1	0.43
99	9	105M07C009	Mane Marga Sadak	C	8	Earthen	Mane Marga Sadak	Mane Marga Sadak	1	0.11
100	10	105M07C010	Baguwa Lokhara Sadak	C	8	Earthen	Lokhara	Kuikunda	1	14.52
101	11	105M07C011	Simana-Malibase-Sagma Sadak	C	8	Earthen	Simana	Magma	1	0.10
102	12	105M07C011	Simana-Malibase-Sagma Sadak	C	8	Earthen	Simana	Magma	1	0.51
103	13	105M07C012	Sakfara Sadak	C	8	Earthen	Adhere	Lakh	1	5.85
104	14	105M07C012	Sakfara Sadak	C	8	Earthen	Adhere	Lakh	1	5.72
105	15	105M07C013	Lokhara Krishi Marga	C	8	Earthen	Lokhara Krishi Marga	Lokhara Krishi Marga	1	0.08
106	16	105M07C013	Lokhara Krishi Marga	C	8	Earthen	Lokhara Krishi Marga	Lokhara Krishi Marga	1	0.56
107	17	105M07C014	Lamitar Patikhet Sadak	C	8	Earthen	Lamitar Partykhet Sadak	Lamitar Partykhet Sadak	1,6	1.34
108	18	105M07C015	Simana-Malibase-Sagma Sadak	C	8	Earthen	Simana	Magma	1,7	12.01
109	19	105M07A007	Budhabare Nursey Tol	C	8	Earthen	Budhabare Chowk	Pragati Tol	2,3	2.20
110	20	105M07A021	2-3 Simana Bato	C	8	Gravel	5	2-3 Simana Bato	2,3	2.52
111	21	105M07A008	Kitiman Bhawne -Kirat Chowk-Lamasal Tol Sadak	C	8	Gravel	Kitiman Bhawne	Lamasal Tol Sadak	2,3	2.44
112	22	105M07B003	Beach Tol Bato	C	8	Blacktop	Sakela Chaur	Chisang Pool	3	2.05
113	23	105M07A009	Chisang Saa. Ba -Kirtiman Dhaat	C	8	Gravel	Chisang Saa. Ba	Kirtiman Dhaat	3	0.86
114	24	105M07C017	Tirtha Marga	C	8	Gravel	Tirtha Marga	Tirtha Marga	3	0.58
115	25	105M07B004	Biran School-Aspatal-Trisuli Tol	C	8	Blacktop	Biren School	-	3	1.20
116	26	105M07A011	Krishna Pra.Bi. Marga	C	8	Blacktop	Krishna Pra.Bi. Marga	Krishna Pra.Bi. Marga	3	0.38
117	27	105M07C020	Bakhra Haat Marga	C	8	Blacktop	Bakhra Haat Marga	Bakhra Haat Marga	3	0.17
118	28	105M07A016	Biran Kamalpur Marga	C	8	Earthen	Biran Kamalpur Marga	Biran Kamalpur Marga	3	0.24
119	29	105M07A017	Kitiman Bhawne -Kirat Chowk-Lamasal Tol Sadak	C	8	Gravel	Kitiman Bhawne	Lamasal Tol Sadak	3	1.88
120	30	105M07A017	Kitiman Bhawne -Kirat Chowk-Lamasal Tol Sadak	C	8	Gravel	Kitiman Bhawne	Lamasal Tol Sadak	3	2.90
121	31	105M07B007	Paschim Bagar Main	C	8	Gravel	Paschim Bagar Main	Paschim Bagar Main	3	0.47
122	32	105M07C022	Talimkendra - Salbari Marga Jodne Sadak	C	8	Gravel	Talim Kendra	Salbari	3,6	1.63

Sn:	Sn	Road Code	Road Name	Road Class	ROW	Surface	Origin	Destination	Ward Pass	Road Length (km)
123	33	105M07B026	Tamang Gumba-Children Park	C	8	Blacktop	Tamang Gumba	Children Park	4,5	1.21
124	34	105M07C023	Shanti Marga "Kha"	C	8	Gravel	Shanti Marga "Kha"	Shanti Marga "Kha"	5	0.32
125	35	105M07C024	Siddheshwar Marga	C	8	Gravel	Siddheshwar Marga	Siddheshwar Marga	5	0.54
126	36	105M07C025	Sayapatri Marga	C	8	Gravel	Sayapatri Marga	Sayapatri Marga	5	0.58
127	37	105M07C026	Godhauri Marga	C	8	Gravel	Godhauri Marga	Godhauri Marga	5	0.29
128	38	105M07C027	Sunaulo Marga	C	8	Gravel	Sunaulo Marga	Sunaulo Marga	5	0.40
129	39	105M07C028	Sangharsa Marga (Tol No.10)	C	8	Gravel	Sangharsa Marga (Tol No.1)	Sangharsa Marga (Tol No.1)	5	0.31
130	40	105M07C029	Koop Marga	C	8	Gravel	Koop Marga	Koop Marga	5	0.17
131	41	105M07C030	Lamichhane Marga	C	8	Gravel	Lamichhane Marga	Lamichhane Marga	5	0.26
132	42	105M07C031	Mirmire Marga	C	8	Gravel	Mirmire Marga	Mirmire Marga	5	0.29
133	43	105M07C032	Samabeshi Marga	C	8	Gravel	Samabeshi Marga	Samabeshi Marga	5	0.22
134	44	105M07C024	Siddheshwar Marga	C	8	Gravel	Siddheshwar Marga	Siddheshwar Marga	5	0.57
135	45	105M07C033	Little Flower Marga	C	8	Blacktop	Little Flower Marga	Little Flower Marga	5	0.22
136	46	105M07C034	Janasewa Marga	C	8	Gravel	Janasewa Marga	Janasewa Marga	5	0.43
137	47	105M07C035	Shital Marga	C	8	Blacktop	Shital Marga	Shital Marga	5	0.48
138	48	105M07C036	Jorkoop Marga	C	8	Earthen	Jorkoop Marga	Jorkoop Marga	5	0.12
139	49	105M07C024	Siddheshwar Marga	C	8	Gravel	Siddheshwar Marga	Siddheshwar Marga	5	0.36
140	50	105M07C037	Shiva Marga	C	8	Gravel	Shiva Marga	Shiva Marga	5,6	0.45
141	51	105M07C038	Surya Marga	C	8	Gravel	Surya Marga	Surya Marga	5,6	0.39
142	52	105M07C039	Namuna Marga	C	8	Gravel	Namuna Marga	Namuna Marga	5,6	0.58
143	53	105M07C040	Shiksha Jyoti Marga	C	8	Gravel	Shiksha Jyoti Marga	Shiksha Jyoti Marga	5,6	0.27
144	54	105M07C041	Sayapatri Marga	C	8	Gravel	Sayapatri Marga	Sayapatri Marga	5,6	0.54
145	55	105M07C042	Rupak Marga	C	8	Gravel	Rupak Marga	Rupak Marga	5,6	0.48
146	56	105M07C043	Ajambari Marga	C	8	Gravel	Ajambari Marga	Ajambari Marga	6	0.43
147	57	105M07C044	Ganesh Marga	C	8	Gravel	Ganesh Marga	Ganesh Marga	6	0.65
148	58	105M07C045	Pandey Marga	C	8	Earthen	Pandey Marga	Pandey Marga	6	0.19
149	59	105M07C046	Bimire Marga	C	8	Gravel	Bimire Marga	Bimire Marga	6	0.43
150	60	105M07C047	Plotting Marga	C	8	Earthen	Plotting Marga	Plotting Marga	6	0.15
151	61	105M07C048	Adhibasi Public Marga	C	8	Gravel	Adhibasi Public Marga	Adhibasi Public Marga	6	0.55
152	62	105M07C049	Guwabari Ring Road	C	8	Earthen	Guwabari Ring Road	Guwabari Ring Road	6	3.46
153	63	105M07C050	Kinari Marga	C	8	Gravel	Kinari Marga	Kinari Marga	6	0.45
154	64	105M07C051	Man Bir marga	C	8	Gravel	Man Bir marga	Man Bir marga	6	0.25
155	65	105M07C052	Guwabari-Lamitar Sadak	C	8	Earthen	Guwabari	Lamitar Sadak	6	0.30

Sn:	Sn	Road Code	Road Name	Road Class	ROW	Surface	Origin	Destination	Ward Pass	Road Length (km)
156	66	105M07C053	Kirat Marga (Bimire Tol)	C	8	Gravel	Kirat Marga (Bimire Tol)	Kirat Marga (Bimire Tol)	6	0.19
157	67	105M07C054	Bandhulal Marga	C	8	Gravel	Bandhulal Marga	Bandhulal Marga	6	0.24
158	68	105M07C055	View Tower Marga	C	8	Gravel	View Tower Marga	View Tower Marga	6	0.22
159	69	105M07C056	Pragati Marga	C	8	Gravel	Mahabharat School	Lamitar	6	1.25
160	70	105M07C056	Pragati Marga	C	8	Earthen	Mahabharat School	Lamitar	6	0.51
161	71	105M07C057	Chauhan Marga	C	8	Earthen	Chauhan Marga	Chauhan Marga	6	0.16
162	72	105M07C058	Budhalal Marga	C	8	Gravel	Budhalal Marga	Budhalal Marga	6	0.23
163	73	105M07C059	Ajambari Marga	C	8	Gravel	Ajambari Marga	Ajambari Marga	6	0.23
164	74	105M07C060	Suryatar-Pathibhara Mandir Sadak	C	8	Earthen	Suryatar	Pathibhara Mandir Sadak	6,8	3.44
165	75	105M07C061	Barbanjyang-Saure Sadak	C	8	Earthen	Barbanjyang	Saure	7	3.66
166	76	105M07C062	Baghkhori Ekley Bhyangley Sadak	C	8	Earthen	Baghkhori Ekley Bhyangley	Baghkhori Ekley Bhyangley	8	1.83
167	77	105M07C063	Ekle Pipal - Laljhoda Sadak	C	8	Earthen	Ekle Pipal	Laljhoda Sadak	8	1.93
168	78	105M07C064	Jyamire Khanya Tole Sadak	C	8	Earthen	Jyamire Khanya Tole Sadak	Jyamire Khanya Tole Sadak	8	2.84
169	79	105M07C065	Laljhoda Sadak	C	8	Gravel	Laljhoda	Jyamire	8	1.17
170	80	105M07C066	Hoksey Bhalukhp Sadak Sakha	C	8	Earthen	Hoksey Bhalukhp Sadak Sak	Hoksey Bhalukhp Sadak Sak	8	1.13
171	81	105M07C067	Laljhoda-Mikaljung Sadak	C	8	Gravel	Laljhoda	Jyamire	8	1.24
172	82	105M07C068	Bhyangle - Laljhoda Sadak	C	8	Gravel	Laljhoda	Jyamire	8	0.83
173	83	105M07C069	Ankit Sadak	C	8	Earthen	Sese Hotel	Wadhare	8	2.42
174	84	105M07C070	Baharakothe Teli Sadak	C	8	Gravel	Baharakothe Teli Sadak	Baharakothe Teli Sadak	8,9	0.30
175	85	105M07C071	Maghim Marga	C	8	Gravel	Maghim Marga	Maghim Marga	9	0.70
								<b>Total</b>		<b>114.99</b>
176	1	105M07D001	Kartike Dada Tol	D	6	Earthen	Kartike Dada Tol	Kartike Dada Tol	1	0.42
177	2	105M07D002	Belbote Aathbise Sadak	D	6	Earthen	Belbote Aawatha Bise Sada	Belbote Aawatha Bise Sada	1	1.29
178	3	105M07D003	Dhanbare-Kholaghari	D	6	Earthen	Dhanbare	Kholagare	1	0.84
179	4	105M07D004	Swasthe Dada Tol Sadak	D	6	Earthen	Swasthe Dada Tol Sadak	Swasthe Dada Tol Sadak	1	0.29
180	5	105M07D005	Bich Tol Dada	D	6	Earthen	Becha Tol Dada	Becha Tol Dada	1	1.17
181	6	105M07D006	Rewa Ghar- Birendra Ghar	D	6	Earthen	Rewa Ghar	Birendra Ghar	1	0.18
182	7	105M07D007	Satkanya Mandir Sadak	D	6	Earthen	Satkanya Mandir Sadak	Satkanya Mandir Sadak	1	1.04
183	8	105M07D008	Jadibuti Prasodhan Kendra Marga	D	6	Earthen	Jadibuti Prasodhan Kendra	Jadibuti Prasodhan Kendra	1	0.10
184	9	105M07D009	Rajarani Paryatak Office Sadak	D	6	Earthen	Rajarani Paryatak Office	Rajarani Paryatak Office	1	0.32
185	10	105M07D010	Sugatar Sadak	D	6	Earthen	Sugatar Sadak	Sugatar Sadak	1	0.46

Sn:	Sn	Road Code	Road Name	Road Class	ROW	Surface	Origin	Destination	Ward Pass	Road Length (km)
186	11	105M07D011	Magma Ring Road	D	6	Earthen	Magma Ring Road	Magma Ring Road	1	0.96
187	12	105M07D012	Lakh -Deurali Sadak	D	6	Earthen	Lakh	Deurali Sadak	1	1.13
188	13	105M07D013	Kharbani Thokre Ring Road	D	6	Earthen	Kharbeni Thokre Ring Road	Kharbeni Thokre Ring Road	1	4.65
189	14	105M07D014	Prana Rai Uttar Sadak	D	6	Gravel	Prana Rai Uttar Sadak	Prana Rai Uttar Sadak	1	0.42
190	15	105M07D015	Bhogteni School Sadak	D	6	Earthen	Bhogteni School Sadak	Bhogteni School Sadak	1	0.52
191	16	105M07D016	Nangkhure Krishi Sadak	D	6	Earthen	Nangkhure Krishi Sadak	Nangkhure Krishi Sadak	1	1.20
192	17	105M07D017	Malibase Khapangitar Sadak	D	6	Earthen	Malebase Khopagetar Sadak	Malebase Khopagetar Sadak	1	0.52
193	18	105M07D018	Paryan Rai - Lal Bahadur Limbu Ghar	D	6	Earthen	Paryan Rai	Lal Bahadur Limbu Ghar	1	0.33
194	19	105M07D019	Koiralo Dada Sadak	D	6	Earthen	Korali Dada Sadak	Korali Dada Sadak	1	0.87
195	20	105M07D020	Bhogateni Swasthya Chauki	D	6	Earthen	Bhogatene Swaste Chauki	Bhogatene Swaste Chauki	1	0.26
196	21	105M07D021	Pharash Ghar - Khola Jane Bato	D	6	Earthen	Pharash Ghar	Khola Jane Bato	1	0.33
197	22	105M07D022	Sakfara - Dade Sadak	D	6	Earthen	Sakfara	Dade Sadak	1	1.04
198	23	105M07D023	Turkey Tole Marga	D	6	Gravel	Turkey Tula Marga	Turkey Tula Marga	1	0.25
199	24	105M07D024	Bajhobari Sadak	D	6	Earthen	Bajhobari Sadak	Bajhobari Sadak	1	0.82
200	25	105M07D025	Pradhan Tol	D	6	Earthen	Pradhan Tol	Pradhan Tol	1	0.17
201	26	105M07D026	Man Prasad Magar Marga	D	6	Earthen	Man Prasad Magar Marga	Man Prasad Magar Marga	1	0.12
202	27	105M07D027	Khulal Chowk - Khola Jane Bato	D	6	Earthen	Khulal Chowk	Khola Jane Bato	1	0.14
203	28	105M07D028	Kyapchhaki Marga	D	6	Earthen	Capchoke Marga	Capchoke Marga	1	0.09
204	29	105M07D029	Khola Ghare Sadak	D	6	Earthen	Khola Ghare Sadak	Khola Ghare Sadak	1	4.44
205	30	105M07D030	Kharbani - Khapane Tol	D	6	Earthen	Kharbane	Khapane Tol	1	1.37
206	31	105M07D031	Adhere Dangele Sadak	D	6	Earthen	Adhere Dangele Sadak	Adhere Dangele Sadak	1	3.61
207	32	105M07D032	Girel Tol Sadak	D	6	Earthen	Gerel Tol Sadak	Gerel Tol Sadak	1	0.92
208	33	105M07D033	Phedi Kharbani Krishi Sadak	D	6	Earthen	Fede Kharbene Krishi Sada	Fede Kharbene Krishi Sada	1	2.21
209	34	105M07D034	Shree Adhikari Marga	D	6	Earthen	Shree Adhikari Marga	Shree Adhikari Marga	1	0.16
210	35	105M07D035	Mohan Singh Sadak	D	6	Earthen	Man Singh Sadak	Man Singh Sadak	1	0.11
211	36	105M07D036	Khaireni Ganesh Marga	D	6	Earthen	Khaireni Ganesh Marga	Khaireni Ganesh Marga	1	0.18
212	37	105M07D037	Budhabare Chowk- Kharbane Dada Tol	D	6	Earthen	Budhabare Chowk	Kharbane Dada Tol	1	0.88
213	38	105M07D038	Fedi Kharbani Krishi Sadak - 7 No. Jane Bato	D	6	Earthen	Fedi Kharbani Krishi Sada	7 No. Jane Bato	1	1.11
214	39	105M07D039	Yam Kumar Magar Jagga-Achit Kumar Magar jagga	D	6	Earthen	Yam Kumar Magar Jagga	Achit Kumar Magar jagga	1	0.19
215	40	105M07D040	Murchunge Dhode Sadak	D	6	Earthen	Murchunge Dhode Sadak	Murchunge Dhode Sadak	1	1.11
216	41	105M07D041	Kirat Maghim Sadak	D	6	Earthen	Kirat Maghim Sadak	Kirat Maghim Sadak	1	0.35
217	42	105M07D042	Sanmaya Magar Jagga-Raj Kumar Rai Jagga	D	6	Earthen	Sanmaya Magar Jagga	Raj Kumar Rai Jagga	1	0.29
218	43	105M07D043	Ghumti Pasal Marga	D	6	Earthen	Ghumti Pasal Marga	Ghumti Pasal Marga	1	0.18
219	44	105M07D044	Mibhak Sadak	D	6	Earthen	Mibhak Sadak	Mibhak Sadak	1	1.12

Sn:	Sn	Road Code	Road Name	Road Class	ROW	Surface	Origin	Destination	Ward Pass	Road Length (km)
220	45	105M07D045	Makim Marga	D	6	Earthen	Makim Marga	Makim Marga	1	0.12
221	46	105M07D046	Khola Jane Bato	D	6	Earthen	Khola Jane Bato	Khola Jane Bato	1	0.65
222	47	105M07D047	Chisopani Parante Sadak	D	6	Earthen	Chisopani Paryante Sadak	Chisopani Paryante Sadak	1	1.05
223	48	105M07D048	Gadame Sadak	D	6	Earthen	Gadame Sadak	Gadame Sadak	1	0.26
224	49	105M07D049	Jhakute Sadak	D	6	Earthen	Jhakute Sadak	Jhakute Sadak	1	0.20
225	50	105M07D050	Adheri - Baguwa Sadak	D	6	Earthen	Adheri	Baguwa Sadak	1	3.83
226	51	105M07D051	Kubelal Dada Sadak	D	6	Earthen	Kubelal Dada Sadak	Kubelal Dada Sadak	1	0.55
227	52	105M07D052	Magma Ring Road	D	6	Earthen	Magma Ring Road	Magma Ring Road	1	0.06
228	53	105M07D053	Gopal Tamang Ghar- Yam Magar Ghar	D	6	Earthen	Gopal Tamang Ghar	Yam Magar Ghar	1	0.06
229	54	105M07D054	Deurali Tol - Rai Tol Sadak	D	6	Earthen	Deurali Tol	Rai Tol Sadak	1	0.58
230	55	105M07D054	Deurali Tol - Rai Tol Sadak	D	6	Earthen	Deurali Tol	Rai Tol Sadak	1	0.14
231	56	105M07D056	School-Devithan-Bathaha Sadak	D	6	Earthen	School	Bathawa Sadak	1	4.74
232	57	105M07D056	School-Devithan-Bathaha Sadak	D	6	Earthen	School	Bathawa Sadak	1	0.20
233	58	105M07D057	Kirat Chowk-Rajarani Sadak	D	6	Gravel	Kirat Chowk	Rajarani Sadak	1,2	0.28
234	59	105M07D058	Khaireni Milan Marga	D	6	Gravel	Khaireni Milan Marga	Khaireni Milan Marga	1,2	0.68
235	60	105M07D059	Turke Barpipal Chowk- Rai Tol Marga	D	6	Earthen	Turke Barpipal Chowk	Rai Tol Marga	1,2	0.67
236	61	105M07D060	Kirat Tol-Kisan Rai Marga	D	6	Gravel	Kirat Tol	Kisan Rai Marga	1,2	0.36
237	62	105M07D061	Neupane Chowk-Khaireni Marga	D	6	Blacktop	Neupane Chowk	Khaireni Marga	1,2	0.19
238	63	105M07D062	Frader Bot Bato Krishi Marga	D	6	Earthen	Frader Bot Bato Krishi Ma	Frader Bot Bato Krishi Ma	1,2	0.33
239	64	105M07D062	Frader Bot Bato Krishi Marga	D	6	Earthen	Frader Bot Bato Krishi Ma	Frader Bot Bato Krishi Ma	1,2	0.96
240	65	105M07D063	Hallunge Kholsi Paschim Deurali Dada Sadak	D	6	Gravel	Hallunge Kholsi Paschim D	Hallunge Kholsi Paschim D	1.2	0.77
241	66	105M07D064	Ganesh Dhakal Dakshin-Dhakal Marga	D	6	Earthen	Ganesh Dhakal Dakshin	Dhakal Marga	2	0.39
242	67	105M07D065	Indra Dhakal Ghar Uttar Krishi Marga	D	6	Gravel	Indra Dhakal Ghar Uttar K	Indra Dhakal Ghar Uttar K	2	1.04
243	68	105M07D066	Bhadra Shila Marga	D	6	Gravel	Bhadra Shila Marga	Bhadra Shila Marga	2	0.71
244	69	105M07D067	Dilli Shrestha Nursery Marga "Ka"	D	6	Earthen	Dilli Shrestha Nursery Ma	Dilli Shrestha Nursery Ma	2	0.29
245	70	105M07D068	School Chowk - Chisang Samudayik Ban Karyalaya	D	6	Blacktop	School Chowk	Chisang Samudayik Ban Ka	2	0.43
246	71	105M07D069	16 No Damodar Dahal Sadak	D	6	Gravel	16 No Damodar Dahal Sadak	16 No Damodar Dahal Sadak	2	0.33
247	72	105M07D070	Mausam Poudel Dakshin Khel Maidan	D	6	Gravel	Mausam Poudel Dakshin Khe	Mausam Poudel Dakshin Khe	2	0.49
248	73	105M07D071	Budhabare Morang Pathibhara School Sadak	D	6	Gravel	Budhabare Morang Pathibha	Budhabare Morang Pathibha	2	0.13
249	74	105M07D072	Roka Tol Utar Krishi Marga	D	6	Gravel	Roka Tol Utar Krishi Marg	Roka Tol Utar Krishi Marg	2	0.28
250	75	105M07D073	Guru Baral Chowk Becha -Kirtiman Jane Sadak	D	6	Gravel	Guru Baral Chowk Becha	Kirtiman Jane Sadak	2	0.23
251	76	105M07D074	Dilli Shrestha Ghar Purba Kirtiman Sadak	D	6	Gravel	Dilli Shrestha Ghar Purba	Dilli Shrestha Ghar Purba	2	0.40

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252	77	105M07D075	Budhabare Turke Sadak	D	6	Blacktop	Budhabare Turke Sadak	Budhabare Turke Sadak	2	1.02
253	78	105M07D076	Netra Chowk Ncell Marga	D	6	Gravel	Netra Chowk Ncell Marga	Netra Chowk Ncell Marga	2	0.39
254	79	105M07D077	Laxmi Sadak	D	6	Earthen	Laxmi Sadak	Laxmi Sadak	2	1.21
255	80	105M07D078	Prahari Chauki Dakshin Purba Sadak	D	6	Gravel	Prahari Chauki Dakshin Pu	Prahari Chauki Dakshin Pu	2	1.29
256	81	105M07D079	16 No. Jungal Dhar Paitis Bighe Sadak	D	6	Gravel	16 No. Jungal Dhar Paitis	16 No. Jungal Dhar Paitis	2	1.73
257	82	105M07D080	Heram Ghar Purba Giri Marga	D	6	Gravel	Heram Ghar Purba Giri Mar	Heram Ghar Purba Giri Mar	2	0.33
258	83	105M07D081	Dhobi-Chhatra Tol Sadak	D	6	Gravel	Dhobi	Chhatra Tol Sadak	2	0.70
259	84	105M07D082	Tikaram Lungeli Sadak Marga	D	6	Gravel	Tikaram Lungeli Sadak Mar	Tikaram Lungeli Sadak Mar	2	0.28
260	85	105M07D083	Madhukar Khulal Bato	D	6	Gravel	Madhukar Khulal Bato	Madhukar Khulal Bato	2	0.07
261	86	105M07D084	Samiti Kami Dada Sadak	D	6	Gravel	Samiti Kami Dada Sadak	Samiti Kami Dada Sadak	2	0.32
262	87	105M07D085	Purba Dakshin Haatkholo Sadak	D	6	Gravel	Purba Dakshin Haatkholo S	Purba Dakshin Haatkholo S	2	0.07
263	88	105M07D086	Mausam Poudel Ghar Uttar	D	6	Gravel	Mausam Poudel Ghar Uttar	Mausam Poudel Ghar Uttar	2	0.63
264	89	105M07D087	Budhabare Church Dhobi Himchuli Marga	D	6	Blacktop	Budhabare Church Dhobi Hi	Budhabare Church Dhobi Hi	2	0.86
265	90	105M07D088	Purano Bazzar Dhanpati Marga	D	6	Gravel	Purano Bazzar Dhanpati Ma	Purano Bazzar Dhanpati Ma	2	0.47
266	91	105M07D089	Tilak Lamsal Ghar Dakshin Sadak	D	6	Gravel	Tilak Lamsal Ghar Dakshin	Tilak Lamsal Ghar Dakshin	2	0.60
267	92	105M07D090	Mukti Chowk-Madan Marga	D	6	Earthen	Mukti Chowk	Madan Marga	2	0.65
268	93	105M07D091	Jyoti Marga Dhobi	D	6	Gravel	Jyoti Marga Dhobi	Jyoti Marga Dhobi	2	0.51
269	94	105M07D092	Haat Khola-Ward Karyalaya -35 Bighe Jodne Sadak	D	6	Earthen	Haat Khola	35 Bighe Jodne Sadak	2	0.30
270	95	105M07D093	Mil Chwok Biramile Tol	D	6	Gravel	Mil Chwok Biramile Tol	Mil Chwok Biramile Tol	2	0.83
271	96	105M07D094	Suman Rai Ghar Paschim Krishi Marga	D	6	Gravel	Suman Rai Ghar Paschim Kr	Suman Rai Ghar Paschim Kr	2	0.25
272	97	105M07D095	Kirat Chowk-Kirtiman Sadak	D	6	Gravel	Kirat Chowk	Kirtiman Sadak	2	1.05
273	98	105M07D096	Adhikari Tol Purba Sadak	D	6	Gravel	Adhikari Tol Purba Sadak	Adhikari Tol Purba Sadak	2	0.28
274	99	105M07D097	Himchuli Malla Tol Sadak	D	6	Gravel	Himchuli Malla Tol Sadak	Himchuli Malla Tol Sadak	2	0.51
275	100	105M07D098	Rani Ban Taal Sadak	D	6	Earthen	Rani Ban Taal Sadak	Rani Ban Taal Sadak	2	0.15
276	101	105M07D099	Beach Tol Manju Marga	D	6	Earthen	Beach Tol Manju Marga	Beach Tol Manju Marga	2	0.24
277	102	105M07D100	Gajalmani-Damaru Ghimire Sadak	D	6	Gravel	Gajalmani	Damaru Ghimire Sadak	2	0.40
278	103	105M07D101	Yubraj Khatiwada Ghar Purba-Barmaili Tol Sadak	D	6	Gravel	Yubraj Khatiwada Ghar Pur	Barmaili Tol Sadak	2	0.29
279	104	105M07D102	Naulaxmi Sadak	D	6	Gravel	Naulaxmi Sadak	Naulaxmi Sadak	2	0.41
280	105	105M07D103	Dharma Ohja - Arjun Dhakal Marga	D	6	Earthen	Dharma Ohja	Arjun Dhakal Marga	2	0.28
281	106	105M07D104	Nabin Pithakote Ko Ghar-Godawari Marga	D	6	Gravel	Nabin Pithakote Ko Ghar	Godawari Marga	2	1.09

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282	107	105M07D105	Tejkumar Marga	D	6	Gravel	Tejkumar Marga	Tejkumar Marga	2	0.30
283	108	105M07D106	Pragati Tole-Phadani Marga	D	6	Gravel	Pragati Tole	Phadani Marga	2	0.43
284	109	105M07D107	Naryan Khatiwada Ko Krishi Sadak	D	6	Earthen	Naryan Khatiwada Ko Krish	Naryan Khatiwada Ko Krish	2	0.13
285	110	105M07D108	Budhabare Naksale Dhara Sadak	D	6	Gravel	Budhabare Naksale Dhara S	Budhabare Naksale Dhara S	2	0.29
286	111	105M07D109	Sworali Sadak	D	6	Gravel	Sworali Sadak	Sworali Sadak	2	0.16
287	112	105M07D110	Kiran Karki Marga	D	6	Earthen	Kiran Karki Marga	Kiran Karki Marga	2	0.20
288	113	105M07D111	Sripali Chowk-Madan Marga -Himlakshmi Marga	D	6	Gravel	Sripali Chowk	Himlakshmi Marga	2	0.62
289	114	105M07D112	Sripali Chowk -Lakshmi Ma. Bi.-Saccos Marga - Neupane Chowk	D	6	Blacktop	Sripali Chowk	Neupane Chowk	2	1.42
290	115	105M07D113	Budhabare Bachat-Purba Dakshin Haatkholo Sadak	D	6	Gravel	Budhabare Bachat	Purba Dakshin Haatkholo S	2	0.16
291	116	105M07D114	Pragati Tol Leknath Marga	D	6	Gravel	Pragati Tol Leknath Marga	Pragati Tol Leknath Marga	2	0.25
292	117	105M07D115	Haat Khola-Ward Karyalaya -35 Bighe Jodne Sadak	D	6	Earthen	Haat Khola	35 Bighe Jodne Sadak	2	0.06
293	118	105M07D116	Nursey Tol Ramila Rai Marga	D	6	Gravel	Nursey Tol Ramila Rai Ma	Nursey Tol Ramila Rai Ma	2	0.18
294	119	105M07D117	16 No. Jhurpal Tol Sadak	D	6	Gravel	16 No. Jhurpal Tol Sadak	16 No. Jhurpal Tol Sadak	2	0.80
295	120	105M07D118	16 No. Jhurpal Tol Sadak	D	6	Gravel	16 No. Jhurpal Tol Sadak	16 No. Jhurpal Tol Sadak	2	0.67
296	121	105M07D119	Inara Marga	D	6	Gravel	Inara Marga	Inara Marga	2,3	1.22
297	122	105M07D120	Madal Chowk Paschim Marga	D	6	Gravel	Madal Chowk Paschim Marga	Madal Chowk Paschim Marga	2,3	0.24
298	123	105M07D121	Peepal Chowk-Dada Tol Marga	D	6	Gravel	Peepal Chowk	Dada Tol Marga	2,3	0.60
299	124	105M07D122	Sripali Chowk School Chowk-Kritiman	D	6	Blacktop	Sripali Chowk School Chow	Kritiman	2,3	2.05
300	125	105M07D123	Nursey Tol Ramila Rai Marga	D	6	Gravel	Nursey Tol Ramila Rai Ma	Nursey Tol Ramila Rai Ma	2,3	0.31
301	126	105M07D124	Bhaune Bhalera - Punya Khatiwada Purba Sadak	D	6	Gravel	Bhaune Bhalera	Punya Khatiwada Purba Sa	2,3	0.72
302	127	105M07D125	Mukunda Dahal Lamsal Tol Sadak	D	6	Gravel	Mukunda Dahal Lamsal Tol	Mukunda Dahal Lamsal Tol	2,3	0.85
303	128	105M07D126	Kishor Khet -Gyannath Bhattarai Ghar	D	6	Earthen	Kishor Khet	Gyannath Bhattarai Ghar	3	0.36
304	129	105M07D127	Mahendra Marga	D	6	Gravel	Mahendra Marga	Mahendra Marga	3	0.13
305	130	105M07D128	Korean Marga	D	6	Gravel	Korean Marga	Korean Marga	3	0.32
306	131	105M07D129	Trisuli Sadak	D	6	Blacktop	Trisuli Sadak	Trisuli Sadak	3	0.30
307	132	105M07D130	Shibalaya Uttar Pashim Marga	D	6	Earthen	Shibalaya Uttar Pashim Ma	Shibalaya Uttar Pashim Ma	3	0.11
308	133	105M07D131	Darjeeling Line	D	6	Blacktop	Darjeeling Line	Darjeeling Line	3	0.46
309	134	105M07D132	Trisuli Sadak	D	6	Gravel	Trisuli	Trisuli	3	0.56
310	135	105M07D133	Dhol Chowk Dakshin Purba -Inar Marga	D	6	Gravel	Dhol Chowk Dakshin Purba	Inar Marga	3	0.48
311	136	105M07D134	Pragati Danda Tol Marga	D	6	Gravel	Pragati Danda Tol Marga	Pragati Danda Tol Marga	3	0.38



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312	137	105M07D135	Bal Kendra Marga	D	6	Earthen	Bal Kendra Marga	Bal Kendra Marga	3	0.48
313	138	105M07D136	Shibalaya Mandir Kirtiman Purba	D	6	Earthen	Shibalaya Mandir Kirtiman	Shibalaya Mandir Kirtiman	3	0.55
314	139	105M07D137	Putali Chowk-Samabeshi Tol	D	6	Earthen	Putali Chowk	Samabeshi Tol	3	0.37
315	140	105M07D138	Chisang Crusher Jane Bato	D	6	Gravel	Chisang Crusher Jane Bato	Chisang Crusher Jane Bato	3	0.95
316	141	105M07D139	Nachhiring Marga	D	6	Gravel	Nachhiring Marga	Nachhiring Marga	3	0.13
317	142	105M07D140	Budha Chowk Purbha Sadak	D	6	Gravel	Budha Chowk Purbha Sadak	Budha Chowk Purbha Sadak	3	0.15
318	143	105M07D141	Aantar Samuha Uttar Dakshin Marga	D	6	Gravel	Aantar Samuha Uttar Daksh	Aantar Samuha Uttar Daksh	3	0.94
319	144	105M07C016	Beldangi Marga	D	6	Gravel	Beldangi Marga	Beldangi Marga	3	0.27
320	145	105M07A010	Ekata Marga	D	6	Earthen	Ekata Marga	Ekata Marga	3	0.43
321	146	105M07D142	Bhim Poudel Marga	D	6	Blacktop	Bhim Poudel Marga	Bhim Poudel Marga	3	0.11
322	147	105M07D143	Khane Pani Agadi Sadak	D	6	Gravel	Khane Pani Agadi Sadak	Khane Pani Agadi Sadak	3	0.10
323	148	105M07D144	Nunam Marga	D	6	Gravel	Nunam Marga	Nunam Marga	3	0.48
324	149	105M07D145	Plotting Marga	D	6	Gravel	Plotting Marga	Plotting Marga	3	0.18
325	150	105M07B005	Paschim Bagar Marga	D	6	Gravel	Paschim Bagar Marga	Paschim Bagar Marga	3	0.80
326	151	105M07D147	Sajha Tol Marga 1	D	6	Blacktop	Sajha Tol Marga 1	Sajha Tol Marga 1	3	0.06
327	152	105M07C018	Kirtiman Plotting Marga	D	6	Gravel	Kirtiman Plotting Marga	Kirtiman Plotting Marga	3	0.32
328	153	105M07C019	Biran Krishi Marga	D	6	Earthen	Biran Krishi Marga	Biran Krishi Marga	3	0.33
329	154	105M07D148	Krishna Pra Bi Uttar Marga	D	6	Earthen	Krishna Pra Bi Uttar Marg	Krishna Pra Bi Uttar Marg	3	0.17
330	155	105M07B006	Gairi Gaau Marga	D	6	Gravel	Gairi Gaau Marga	Gairi Gaau Marga	3	0.22
331	156	105M07D150	Krishi Marga Kamalpur	D	6	Gravel	Krishi Marga Kamalpur	Krishi Marga Kamalpur	3	0.92
332	157	105M07D151	Darjeeling Line "Kha"	D	6	Blacktop	Darjeeling Line "Kha"	Darjeeling Line "Kha"	3	0.35
333	158	105M07A012	Kamalpur Beldangi Marga	D	6	Earthen	Kamalpur Beldangi Marga	Kamalpur Beldangi Marga	3	0.45
334	159	105M07D153	Janakalyan -Phadani Jane Bato	D	6	Gravel	Janakalyan	Phadani Jane Bato	3	0.18
335	160	105M07D154	Pragati Tol Khola Dhar Marga	D	6	Gravel	Pragati Tol Khola Dhar Ma	Pragati Tol Khola Dhar Ma	3	1.18
336	161	105M07D155	Lakhman Marga	D	6	Gravel	Lakhman Marga	Lakhman Marga	3	0.21
337	162	105M07D156	Santa Majhi Tol Marga	D	6	Gravel	Santa Majhi Tol Marga	Santa Majhi Tol Marga	3	0.26
338	163	105M07D157	Imansingh Chamgling Marga	D	6	Gravel	Imansingh Chamgling Marga	Imansingh Chamgling Marga	3	0.17
339	164	105M07A014	Parijat Marga	D	6	Earthen	Parijat Marga	Parijat Marga	3	0.16
340	165	105M07A015	Pharmacy Marga	D	6	Gravel	Pharmacy Marga	Pharmacy Marga	3	0.26
341	166	105M07D158	Kirtiman Jho Pool Marga	D	6	Earthen	Kirtiman Jho Pool Marga	Kirtiman Jho Pool Marga	3	0.50
342	167	105M07D159	Devithan Krishi Marga	D	6	Earthen	Devithan Krishi Marga	Devithan Krishi Marga	3	0.28
343	168	105M07D160	Beldangi - Bhumigat Marga	D	6	Gravel	Beldangi	Bhumigat Marga	3	0.21
344	169	105M07D161	Shree Janga Marga	D	6	Gravel	Shree Janga Marga	Shree Janga Marga	3	0.15

Sn:	Sn	Road Code	Road Name	Road Class	ROW	Surface	Origin	Destination	Ward Pass	Road Length (km)
345	170	105M07D162	Sampang Marga	D	6	Gravel	Sampang Marga	Sampang Marga	3	1.36
346	171	105M07D164	Lakhman Marga	D	6	Gravel	Lakhman Marga	Lakhman Marga	3	0.17
347	172	105M07D165	Peepal Chowk-Dada Tol Marga	D	6	Gravel	Peepal Chowk	Dada Tol Marga	3	0.34
348	173	105M07D166	Krishi Marga Kamalpur	D	6	Gravel	Krishi Marga Kamalpur	Krishi Marga Kamalpur	3	0.24
349	174	105M07D167	Putali Krishi Sadak	D	6	Earthen	Putali Chowk	Chisang Khola	3	0.66
350	175	105M07A018	Devithan Marga	D	6	Gravel	Devithan Marga	Devithan Marga	3	0.36
351	176	105M07D168	Kha-Purano Bus Park -Dajubhai Hotel	D	6	Blacktop	Kha	Dajubhai Hotel	3,4	0.14
352	177	105M07D169	Ekata Chowk Marga	D	6	Blacktop	Ekata Chowk Marga	Ekata Chowk Marga	3,4	0.17
353	178	105M07D171	Mnerva Bazzar Marga	D	6	Blacktop	Mnerva Bazzar Marga	Mnerva Bazzar Marga	3,5	0.09
354	179	105M07D172	Marga 4- Telecom-Main Road-Nanglo Hotel	D	6	Blacktop	Marga 4	Nanglo Hotel	3,5	0.16
355	180	105M07D173	Trisuli Sadak (BT1)	D	6	Blacktop	Trisuli Sadak (BT1)	Trisuli Sadak (BT1)	3,5	0.13
356	181	105M07D174	Ramilo Marga	D	6	Gravel	Ramilo Marga	Ramilo Marga	3,6	0.32
357	182	105M07D175	Kirati Marga	D	6	Gravel	Kirati Marga	Kirati Marga	3,6	0.23
358	183	105M07C021	Sukechauri-Lamitar	D	6	Blacktop	Sukechauri	Lamitar	3,6	1.64
359	184	105M07D179	Shanti Bhagwati Marga	D	6	Blacktop	Shanti Bhagwati Marga	Shanti Bhagwati Marga	4	0.11
360	185	105M07D180	Ekta Chowk Marga	D	6	Blacktop	Ekta Chowk Marga	Ekta Chowk Marga	4	0.14
361	186	105M07D181	Buddha Shanti Marga- Main Road NMB Bank - Hatiya Bazar- Sani Mandir-Madan Bhandari Marga	D	6	Blacktop	NMB Bank	Shani Mandir	4	0.58
362	187	105M07D182	Janbikash Marga	D	6	Blacktop	Janbikash Marga	Janbikash Marga	4	0.44
363	188	105M07D183	Ekata Chowk-Shanti Chowk Sadak	D	4.87	Blacktop	Ekata Chowk	Shanti Chowk Sadak	4	0.08
364	189	105M07D189	Tol Bikash Samiti 5 No	D	6	Blacktop	Tol Bikash Samiti 5 No	Tol Bikash Samiti 5 No	4	0.12
365	190	105M07D190	1 no road	D	6	Blacktop	1 no road	1 no road	4	0.11
366	191	105M07D191	4 no road	D	6	Blacktop	4 no road	4 no road	4	0.10
367	192	105M07D192	Shree Shanti Marga(14FT)	D	6	Blacktop	Shree Shanti Marga(14FT)	Shree Shanti Marga(14FT)	4	0.06
368	193	105M07D193	Gopi Marga	D	6	Earthen	Gopi Marga	Gopi Marga	4,5	0.13
369	194	105M07D195	Susheli Marga	D	6	Earthen	Susheli Marga	Susheli Marga	5	0.27
370	195	105M07D196	Ujyalo Marga	D	6	Earthen	Ujyalo Marga	Ujyalo Marga	5	0.39
371	196	105M07D197	Chautari Marga	D	6	Gravel	Chautari Marga	Chautari Marga	5	0.32
372	197	105M07D198	Pratebha Marga	D	6	Gravel	Pratebha Marga	Pratebha Marga	5	1.08
373	198	105M07D199	Shiwakoti Marga	D	6	Earthen	Shiwakoti Marga	Shiwakoti Marga	5	0.12
374	199	105M07D200	Chauhan Galli	D	6	Earthen	Chauhan Galli	Chauhan Galli	5	0.17
375	200	105M07D201	Kirat Marga (Paribartan Tol )	D	6	Gravel	Kirat Marga (Paribartan T	Kirat Marga (Paribartan T	5	0.28
376	201	105M07D202	Shanti Marga "Ga"	D	6	Gravel	Shanti Marga "Ga"	Shanti Marga "Ga"	5	0.31
377	202	105M07D203	Pratebha Marga	D	6	Gravel	Pratebha Marga	Pratebha Marga	5	0.14
378	203	105M07D204	Aadarsha Marga	D	6	Gravel	Aadarsha Marga	Aadarsha Marga	5	0.44
379	204	105M07D206	Chhunam Marga	D	6	Gravel	Chhunam Marga	Chhunam Marga	5	0.04
380	205	105M07D207	Bhandari Marga	D	6	Earthen	Bhandari Marga	Bhandari Marga	5	0.13

Sn:	Sn	Road Code	Road Name	Road Class	ROW	Surface	Origin	Destination	Ward Pass	Road Length (km)
381	206	105M07D208	Laligurash Marga	D	6	Gravel	Laligurash Marga	Laligurash Marga	5	0.13
382	207	105M07D209	Sagarmatha Marga	D	6	Gravel	Sagarmatha Marga	Sagarmatha Marga	5	0.22
383	208	105M07D210	Raksha Marga	D	6	Gravel	Raksha Marga	Raksha Marga	5	0.26
384	209	105M07D211	Pragati Marga (Tol No.10)	D	6	Earthen	Pragati Marga (Tol No.10)	Pragati Marga (Tol No.10)	5	0.35
385	210	105M07D212	Pragati Marga	D	6	Gravel	Pragati Marga	Pragati Marga	5	0.28
386	211	105M07D213	Party Palace Marga	D	6	Gravel	Party Palace Marga	Party Palace Marga	5	0.33
387	212	105M07D214	Shijansel Marga	D	6	Blacktop	Shijansel Marga	Shijansel Marga	5	0.30
388	213	105M07D215	Sunakhare Marga	D	6	Earthen	Sunakhare Marga	Sunakhare Marga	5	0.15
389	214	105M07D216	Unati Marga	D	6	Gravel	Unati Marga	Unati Marga	5	0.40
390	215	105M07D206	Chhunam Marga	D	6	Gravel	Chhunam Marga	Chhunam Marga	5	0.09
391	216	105M07D217	Kirat Marga (Pragati Tol)	D	6	Gravel	Kirat Marga (Pragati Tol)	Kirat Marga (Pragati Tol)	5	0.32
392	217	105M07D218	Sunrise Marga	D	6	Earthen	Sunrise Marga	Sunrise Marga	5	0.20
393	218	105M07D219	Krishna Marga	D	6	Earthen	Krishna Marga	Krishna Marga	5	0.05
394	219	105M07D206	Chhunam Marga	D	6	Gravel	Chhunam Marga	Chhunam Marga	5	0.17
395	220	105M07D220	Sangarsa Marga (Tol No.9)	D	6	Gravel	Sangarsa Marga (Tol No.9)	Sangarsa Marga (Tol No.9)	5	0.26
396	221	105M07D221	Phulbari Marga	D	6	Gravel	Phulbari Marga	Phulbari Marga	5	0.22
397	222	105M07D222	Patrakar Marga	D	6	Gravel	Patrakar Marga	Patrakar Marga	5	0.27
398	223	105M07D223	Pratebha Marga	D	6	Gravel	Pratebha Marga	Pratebha Marga	5	0.17
399	224	105M07D224	Aabasiya Boarding Marga	D	6	Gravel	Aabasiya Boarding Marga	Aabasiya Boarding Marga	5	0.14
400	225	105M07D225	Naglo Hotel- Green Valley Uttar-Ward Karyalaya Marga-3	D	6	Blacktop	Naglo Hotel	Ward Office	5	0.20
401	226	105M07D226	Namuna Marga	D	6	Earthen	Namuna Marga	Namuna Marga	5	0.21
402	227	105M07D227	Marga 6	D	6	Earthen	Marga 6	Marga 6	5	0.05
403	228	105M07D228	Pratebha Marga	D	6	Gravel	Pratebha Marga	Pratebha Marga	5	0.09
404	229	105M07D229	Gedel Marga	D	6	Earthen	Gedel Marga	Gedel Marga	5	0.55
405	230	105M07D230	Kshitiz Marga	D	6	Earthen	Kshitiz Marga	Kshitiz Marga	5	0.36
406	231	105M07D231	Children Park -Buddha Rangshala	D	6	Gravel	Children Park	Buddha Rangshala	5,6	0.84
407	232	105M07D232	Sakari Marga	D	6	Earthen	Sakari Marga	Sakari Marga	5,6	0.09
408	233	105M07D233	Morange Marga	D	6	Earthen	Morange Marga	Morange Marga	5,6	0.62
409	234	105M07D234	Karambote Yuwa Marga	D	6	Gravel	Karambote Yuwa Marga	Karambote Yuwa Marga	6	1.24
410	235	105M07D235	Thapa Marga	D	6	Earthen	Thapa Marga	Thapa Marga	6	0.24
411	236	105M07D236	Tulasi Marga	D	6	Gravel	Tulasi Marga	Tulasi Marga	6	0.53
412	237	105M07D237	Naya Bato	D	6	Gravel	Naya Bato	Naya Bato	6	0.13
413	238	105M07D238	Samal Dada Marga	D	6	Earthen	Samal Dada Marga	Samal Dada Marga	6	0.96
414	239	105M07D239	Radha Krishna Marga	D	6	Gravel	Radha Krishna Marga	Radha Krishna Marga	6	0.33
415	240	105M07D240	Batuli Marga	D	6	Earthen	Batuli Marga	Batuli Marga	6	0.23

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416	241	105M07D241	Public Marga	D	6	Gravel	Public Marga	Public Marga	6	0.12
417	242	105M07D242	Samudhahik Marga	D	6	Gravel	Samudhahik Marga	Samudhahik Marga	6	0.27
418	243	105M07D243	Dhuruncham Marga	D	6	Gravel	Dhuruncham Marga	Dhuruncham Marga	6	0.19
419	244	105M07D244	Pragati Marga	D	6	Gravel	Pragati Marga	Pragati Marga	6	0.18
420	245	105M07D245	Salbari Marga	D	6	Earthen	Salbari Marga	Salbari Marga	6	0.29
421	246	105M07D246	Mahabharat Chatetar	D	6	Gravel	Mahabharat Chatetar	Mahabharat Chatetar	6	0.49
422	247	105M07D247	J.B Sadak	D	6	Earthen	J.B Sadak	J.B Sadak	6	0.80
423	248	105M07D248	Ring Road	D	6	Earthen	Ring Road	Ring Road	6	0.44
424	249	105M07D249	Antar Samuha Marga	D	6	Gravel	Antar Samuha Marga	Antar Samuha Marga	6	0.42
425	250	105M07D250	Gadawari Marga	D	6	Gravel	Gadawari Marga	Gadawari Marga	6	0.48
426	251	105M07D251	Guwabari Sakha Sadak	D	6	Gravel	Guwabari Sakha Sadak	Guwabari Sakha Sadak	6	0.18
427	252	105M07D252	Bohara Marga	D	6	Earthen	Bohara Marga	Bohara Marga	6	0.16
428	253	105M07D253	Kul Marga	D	6	Gravel	Kul Marga	Kul Marga	6	0.13
429	254	105M07D254	Gau Farki Sadak	D	6	Earthen	Gau Farki Sadak	Gau Farki Sadak	6	0.13
430	255	105M07D255	Ujayalo Marga	D	6	Gravel	Ujayalo Marga	Ujayalo Marga	6	0.35
431	256	105M07D256	Kirat Marga	D	6	Earthen	Kirat Marga	Kirat Marga	6	0.29
432	257	105M07D257	Kapase Marga	D	6	Gravel	Kapase Marga	Kapase Marga	6	0.18
433	258	105M07D258	Budha Tol Sakha Bato	D	6	Earthen	Budha Tol Sakha Bato	Budha Tol Sakha Bato	6	0.11
434	259	105M07D259	Purkhaule -Salbari	D	6	Gravel	Purkhaule	Salbari	6	2.30
435	260	105M07D260	Samriddhhi Marga	D	6	Earthen	Samriddhhi Marga	Samriddhhi Marga	6	0.13
436	261	105M07D261	Balkoshis Marga "Kha"	D	6	Gravel	Balkoshis Marga "Kha"	Balkoshis Marga "Kha"	6	0.21
437	262	105M07D262	Sangam Marga	D	6	Earthen	Sangam Marga	Sangam Marga	6	0.22
438	263	105M07D263	Himchule Marga	D	6	Gravel	Himchule Marga	Himchule Marga	6	0.30
439	264	105M07D264	Sampang Marga	D	6	Earthen	Sampang Marga	Sampang Marga	6	0.14
440	265	105M07D265	Sangam Marga	D	6	Earthen	Sangam Marga	Sangam Marga	6	0.12
441	266	105M07D266	Lakhbari Sakha Bato	D	6	Gravel	Lakhbari Sakha Bato	Lakhbari Sakha Bato	6	0.22
442	267	105M07D267	Jaitun Sadak	D	6	Gravel	Jaitun Sadak	Jaitun Sadak	6	0.37
443	268	105M07D268	Ghising Marga	D	6	Gravel	Ghising Marga	Ghising Marga	6	0.17
444	269	105M07D269	KKF Firm Bato	D	6	Earthen	KKF Firm Bato	KKF Firm Bato	6	0.16
445	270	105M07D270	Junkiri Marga	D	6	Earthen	Junkiri Marga	Junkiri Marga	6	0.23
446	271	105M07D271	Deuje Naya Basti Marga	D	6	Gravel	Deuje Naya Basti Marga	Deuje Naya Basti Marga	6	0.15
447	272	105M07D272	Chinari Marga	D	6	Gravel	Chinari Marga	Chinari Marga	6	0.41
448	273	105M07D273	Bahede Marga	D	6	Gravel	Bahede Marga	Bahede Marga	6	0.15
449	274	105M07D274	Lakhbari Sadak	D	6	Gravel	Lakhbari Sadak	Lakhbari Sadak	6	0.26
450	275	105M07D275	Chatetar Sadak	D	6	Gravel	Chatetar Sadak	Chatetar Sadak	6	0.23
451	276	105M07D276	Pani Tanki Sadak	D	6	Gravel	Pani Tanki Sadak	Pani Tanki Sadak	6	0.14
452	277	105M07D277	Basanta Marga	D	6	Earthen	Basanta Marga	Basanta Marga	6	0.41
453	278	105M07D278	Pragati Marga	D	6	Gravel	Pragati Marga	Pragati Marga	6	0.27

Sn:	Sn	Road Code	Road Name	Road Class	ROW	Surface	Origin	Destination	Ward Pass	Road Length (km)
454	279	105M07D279	Samudhahik Marga	D	6	Gravel	Samudhahik Marga	Samudhahik Marga	6	0.22
455	280	105M07D280	Samudhahik Marga	D	6	Gravel	Samudhahik Marga	Samudhahik Marga	6	0.21
456	281	105M07D281	Ganga Marga	D	6	Earthen	Ganga Marga	Ganga Marga	6	0.21
457	282	105M07D281	Ganga Marga	D	6	Earthen	Ganga	Ganga	6	0.12
458	283	105M07D282	Ring Road	D	6	Earthen	Ring Road	Ring Road	6	0.29
459	284	105M07D283	Panchami-Dhotre -Sukepokhari-Kerabari Sadak	D	6	Earthen	Panchami	Kerabari Sadak	7	2.31
460	285	105M07D284	Samala Dada -Katike Sadak	D	6	Earthen	Samala Dada	Katike Sadak	7	1.05
461	286	105M07D285	Bhuwakhola-Asare Dada Sadak	D	6	Earthen	Bhuwakhola	Asare Dada Sadak	7	1.34
462	287	105M07D286	Pitlumba-Nadolung Sadak	D	6	Earthen	Pitlumba	Nadolung Sadak	7	5.24
463	288	105M07D287	Dhirinkha-Suryamagar Tol Sadak	D	6	Earthen	Dhirinkha	Suryamagar Tol Sadak	7	0.96
464	289	105M07D288	Kamauti Lahabari Sadak	D	6	Earthen	Kamauti Lahabari Sadak	Kamauti Lahabari Sadak	7	0.48
465	290	105M07D289	Jhakre Khola Simale-Sikaryhumkar Sadak	D	6	Earthen	Jhakre Khola Simale	Sikaryhumkar Sadak	7	1.24
466	291	105M07D290	Terchhe-Deurali Sadak	D	6	Earthen	Terchhe	Deurali Sadak	7	0.86
467	292	105M07D291	Gargare-Samala Sadak	D	6	Earthen	Gargare	Samala Sadak	7	0.66
468	293	105M07D292	Simana-Muchhebung Sadak	D	6	Earthen	Simana	Muchhebung Sadak	7	1.75
469	294	105M07D293	Barbhanjyang-Jamdare Tol	D	6	Earthen	Barbhanjyang	Jamdare Tol	7	1.91
470	295	105M07D294	Jhilketar Sadak	D	6	Earthen	Jhilketar Sadak	Jhilketar Sadak	7	1.22
471	296	105M07D295	Dhirinkha-Suryamagar Tol Sadak	D	6	Earthen	Dhirinkha	Suryamagar Tol Sadak	7	0.27
472	297	105M07D296	Kumle-Budhauri Tol Sadak	D	6	Earthen	Kumle	Budhauri Tol Sadak	7	1.27
473	298	105M07D297	Pitlumba-Mulibase Sadak	D	6	Earthen	Pitlumba	Mulibase Sadak	7	3.62
474	299	105M07D298	Aaptar-Sirubari Sadak	D	6	Earthen	Aaptar	Sirubari Sadak	7	0.79
475	300	105M07D299	Kumle-Hatikhark Sadak	D	6	Earthen	Kumle	Hatikhark Sadak	7	3.07
476	301	105M07D300	Dada Tol-Kalimati Sadak	D	6	Earthen	Dada Tol	Kalimati Sadak	7	1.94
477	302	105M07D301	Jahau Bari-Sangam Tol Sadak	D	6	Earthen	Jahau Bari	Sangam Tol Sadak	7	1.93
478	303	105M07D302	Bargotha-Chakhunpa Sadak	D	6	Earthen	Bargotha	Chakhunpa Sadak	7	0.74
479	304	105M07D303	Taksang -Thado Sadak	D	6	Earthen	Taksang	Thado Sadak	7	1.07
480	305	105M07D304	Teen kateri Champe Sadak	D	6	Earthen	Teen kateri Champe Sadak	Teen kateri Champe Sadak	7	1.15
481	306	105M07D305	Subba Tol -Bhutedaha Sadak	D	6	Earthen	Subba Tol	Bhutedaha	7	3.04
482	307	105M07D306	Chamling -Tribeni Sadak	D	6	Earthen	Chamling	Tribeni Sadak	7	1.32
483	308	105M07D307	Sakhuwabote-Kerabari Sadak	D	6	Earthen	Sakhuwabote	Kerabari Sadak	7	0.47
484	309	105M07D308	Panchami-Dudhe-Kali Khola -Aahale, Track	D	6	Earthen	Panchami	Aahale, Track	7	4.46
485	310	105M07D308	Panchami-Dudhe-Kali Khola -Aahale, Track	D	6	Earthen	Panchami	Aahale, Track	7	1.59
486	311	105M07D309	Samala Barbanjyang-Teenpata Sadak	D	6	Earthen	Samala Barbanjyang	Teenpata Sadak	7,8	2.89
487	312	105M07D310	Dhamala Marga Purba Paschim	D	6	Gravel	Dhamala Marga Purba Pasch	Dhamala Marga Purba Pasch	8	0.24
488	313	105M07D310	Dhamala Marga Purba Paschim	D	6	Gravel	Dhamala Marga Purba Pasch	Dhamala Marga Purba Pasch	8	0.59
489	314	105M07D311	Bazaar Tole	D	6	Earthen	Bazaar Tole	Bazaar Tole	8	0.24

Sn:	Sn	Road Code	Road Name	Road Class	ROW	Surface	Origin	Destination	Ward Pass	Road Length (km)
490	315	105M07D310	Dhamala Marga Purba Paschim	D	6	Gravel	Dhamala Marga Purba Pasch	Dhamala Marga Purba Pasch	8	0.19
491	316	105M07D312	Sagarmatha Marga	D	6	Earthen	Sargamatha	Sargamatha	8	0.28
492	317	105M07D313	Plotting Marga	D	6	Earthen	Plotting	Plotting	8	0.17
493	318	105M07D314	Suryodaya Marga	D	6	Earthen	Suryodaya	Sana Kishan	8	0.28
494	319	105M07D315	Jante Bazar	D	6	Blacktop	Jante Bazar	Jaate Bazar	8	0.16
495	320	105M07D316	Suryodaya Marga	D	6	Earthen	Suryodaya	Jaate	8	0.38
496	321	105M07D317	Suryodaya Marga	D	6	Earthen	Suryodaya	Suryodaya	8	0.23
497	322	105M07D318	Jante Bus Park Marga	D	6	Earthen	Jante Bus Park	Jante Bus Park	8	0.22
498	323	105M07D319	Teli Khola Marga	D	6	Earthen	Teli Khola	Teli Khola	8	0.29
499	324	105M07D320	Janga Marga	D	6	Earthen	Junga Chowk	Buddha Chowk	8	0.43
500	325	105M07D321	Buddha Chowk-Plotting	D	6	Earthen	Buddha Chowk	Plotting	8	0.20
501	326	105M07D322	Shree Ma. Bi. Marga Purba	D	6	Gravel	Shree Ma. Bi. Marga Purba	Shree Ma. Bi. Marga Purba	9	0.71
502	327	105M07D323	Buddha Marga	D	6	Gravel	Buddha Marga	Buddha Marga	9	0.88
503	328	105M07D324	Kishan Marga	D	6	Gravel	Kishan Marga	Kishan Marga	9	0.81
504	329	105M07D325	Aradhana Marga	D	6	Gravel	Aradhana Marga	Aradhana Marga	9	0.40
505	330	105M07D326	Krishna Habaldar Ghar Uthar Dakshin Marga	D	6	Gravel	Krishna Habaldar Ghar Uth	Krishna Habaldar Ghar Uth	9	0.85
506	331	105M07D327	Shiksha Jyoti Marga	D	6	Gravel	Shiksha Jyoti Marga	Shiksha Jyoti Marga	9	1.63
507	332	105M07D328	Shibalaya Mandir - Devkota Chowk -Basu Ghimire Ghar (Sworga Dwari -1)	D	6	Gravel	Shibalaya Mandir	1)	9	1.84
508	333	105M07D329	Chandani Marga	D	6	Gravel	Chandani Marga	Chandani Marga	9	0.18
509	334	105M07D330	D.P.M Marga	D	6	Gravel	D.P.M Marga	D.P.M Marga	9	1.03
510	335	105M07D331	Manakamana Marga	D	6	Gravel	Manakamana Marga	Manakamana Marga	9	0.32
511	336	105M07D332	Mahat Marga	D	6	Earthen	Mahat Marga	Mahat Marga	9	0.25
512	337	105M07D333	Tender Marga	D	6	Gravel	Tender Marga	Tender Marga	9	0.04
513	338	105M07D334	Sakale Marga	D	6	Earthen	Sakale Marga	Sakale Marga	9	0.50
514	339	105M07D335	Rewant Paudel Ghar Uttar 9 , 8 Ko Simana	D	6	Gravel	Rewant Paudel Ghar Uttar	Rewant Paudel Ghar Uttar	9	0.47
515	340	105M07D336	Sunsahan Marga	D	6	Gravel	Sunsahan Marga	Sunsahan Marga	9	0.56
516	341	105M07D337	Krishi Lok Marga	D	6	Earthen	Krishi Lok Marga	Krishi Lok Marga	9	0.92
517	342	105M07D338	Saral Marga	D	6	Earthen	Saral Marga	Saral Marga	9	0.43
518	343	105M07D339	Shibalaya Marga	D	6	Gravel	Shibalaya Marga	Shibalaya Marga	9	0.52
519	344	105M07D340	Faktaklung Marga	D	6	Gravel	Teli Pool	Faktaklung	9	1.19
520	345	105M07D341	Swargadwari 2 Marga	D	6	Blacktop	Swargadwari 2 Marga	Swargadwari 2 Marga	9	0.63
521	346	105M07D342	Dibyajyoti Marga	D	6	Gravel	Dibyajyoti Marga	Dibyajyoti Marga	9	0.94
522	347	105M07D343	Rai Basti Marga	D	6	Earthen	Rai Basti Marga	Rai Basti Marga	9	0.76
523	348	105M07D344	Santi Marga	D	6	Gravel	Santi Marga	Santi Marga	9	0.44
524	349	105M07D345	Chahenpur Dagure Marga	D	6	Gravel	Chahenpur Dagure Marga	Chahenpur Dagure Marga	9	0.50

Sn:	Sn	Road Code	Road Name	Road Class	ROW	Surface	Origin	Destination	Ward Pass	Road Length (km)
525	350	105M07D346	D.P.M Marga	D	6	Blacktop	D.P.M Marga	D.P.M Marga	9	0.87
526	351	105M07D347	Chandani Marga (GR)	D	6	Gravel	Chandani Marga (GR)	Chandani Marga (GR)	9	0.56
527	352	105M07D348	Kishan Marga	D	6	Gravel	Kishan Marga	Kishan Marga	9	0.27
528	353	105M07D349	Kirat Marga	D	6	Gravel	Kirat Marga	Kirat Marga	9	0.46
529	354	105M07D350	Layo Marga	D	6	Gravel	Layo Marga	Layo Marga	9	0.35
530	355	105M07D351	Godhuli Marga	D	6	Gravel	Godhuli Marga	Godhuli Marga	9	0.59
531	356	105M07D352	Neraula Marga	D	6	Gravel	Neraula Marga	Neraula Marga	9	0.45
532	357	105M07D353	Gadaili Marga	D	6	Earthen	Gadaili Marga	Gadaili Marga	9	0.28
533	358	105M07D354	Ghumti Marga	D	6	Earthen	Ghumti Marga	Ghumti Marga	9	0.32
534	359	105M07D355	Krishi Lok Marga	D	6	Earthen	Krishi Lok Marga	Krishi Lok Marga	9	0.59
535	360	105M07D356	Chandani Marga (ER)	D	6	Earthen	Chandani Marga (ER)	Chandani Marga (ER)	9	0.33
536	361	105M07D357	Yam Marga	D	6	Gravel	Yam Marga	Yam Marga	9	0.39
537	362	105M07D358	Shree Ma. Ba. Marga Paschim	D	6	Gravel	Shree Ma. Ba. Marga Pasch	Shree Ma. Ba. Marga Pasch	9	1.04
538	363	105M07D359	Shree Janga Marga	D	6	Gravel	Shree Janga Marga	Shree Janga Marga	9	0.82
539	364	105M07D360	Pathibhara Marga	D	6	Gravel	Pathibhara Marga	Pathibhara Marga	9	1.70
540	365	105M07D361	Swargadwari Marga	D	6	Earthen	Swargadwari	Swargadwari	9	0.25
541	366	105M07D361	Swargadwari Marga	D	6	Earthen	Swargadwari	Swargadwari	9	0.22
542	367	105M07D362	Baharakothe Teli Marga	D	6	Gravel	Kopila Samudahik Ban	Teli Khola	9	0.45
543	368	105M07D363	Fakathanung Marga	D	6	Earthen	Fakathanung	Fakathanung	9	0.66
544	369	105M07D364	Devithan Marga	D	6	Earthen	Devithan Marga	Devithan Marga	9	0.14
545	370	105M07D365	Dibyajyoti Marga	D	6	Gravel	Dibyajyoti Marga	Dibyajyoti Marga	9	0.36
546	371	105M07D366	Sangam Marga-Paschim Morange Khola	D	6	Gravel	Ganesh Mandir	Teli Khola	9	0.71
547	372	105M07D366	Sangam Marga-Paschim Morange Khola	D	6	Gravel	Ganesh Mandir	Teli Khola	9	0.25
548	373	105M07D367	Faktaklung Marga	D	6	Gravel	Teli Pool	Faktaklung	9	0.68
549	374	105M07D365	Fakathanung-Madan Bhandari	D	6	Earthen	Fakathanung	Madan Bhandari Highway	9	0.44
550	375	105M07D366	Barhagothe-Tamang Tole	D	6	Earthen	Baragothe	Tamang Tole	9	1.50
551	376	105M07D369	Facebook Marga	D	6	Gravel	Facebook Marga	Facebook Marga	9	0.23
552	377	105M07D370	Facebook Marga	D	6	Gravel	Facebook Marga	Facebook Marga	9	0.87
553	378	105M07D371	Devithan Marga	D	6	Earthen	Devithan Marga	Devithan Marga	9	0.70
554	379	105M07D372	Sangam Marga-Paschim Morange Khola	D	6	Gravel	Ganesh Mandir	Teli Khola	9	0.77
555	380	105M07D372	Sangam Marga-Paschim Morange Khola	D	6	Gravel	Ganesh Mandir	Teli Khola	9	0.24
556	381	105M07D372	Sangam Marga-Paschim Morange Khola	D	6	Gravel	Ganesh Mandir	Teli Khola	9	0.27
557	382	105M07D373	Jate-Dhans Khola	D	6	Earthen	Jate Chowk	Dans Khola	9	0.31
									<b>Total</b>	<b>226.64</b>
558	1	-	Sajha Tol Marga 2	Inter Locked	3.65	Inter Locked	Sajha Tol Marga 2	Sajha Tol Marga 2	3	0.04
559	2	-	Trisuli Sakha Bato	Inter Locked	3.65	Inter Locked	Trisuli Sakha Bato	Trisuli Sakha Bato	3	0.16

Sn:	Sn	Road Code	Road Name	Road Class	ROW	Surface	Origin	Destination	Ward Pass	Road Length (km)
560	3	-	Galaxy Marga	Inter Locked	3.65	Inter Locked	Galaxy Marga	Galaxy Marga	3	0.16
561	4	-	Biscuit Factory- Ekta Chowk	Inter Locked	3.65	Inter Locked	Biscuit Factory	Ekta Chowk	3,4	0.05
562	5	-	Tol Bikash Samiti 2 No	Inter Locked	3.65	Inter Locked	Tol Bikash Samiti 2 No	Tol Bikash Samiti 2 No	4	0.05
563	6	-	Tol Bikash Samiti 3	Inter Locked	3.65	Inter Locked	Tol Bikash Samiti 3	Tol Bikash Samiti 3	4	0.11
564	7	-	Sangam Tol Marga -Shanti Bhagawati Marga	Inter Locked	3.65	Inter Locked	Sangam Tol Marga	Shanti Bhagawati Marga	4	0.11
565	8	-	Sangam Tol Marga 2 -Santi Tol 2 No Marga	Inter Locked	3.65	Inter Locked	Sangam Tol Marga 2	Santi Tol 2 No Marga	4	0.11
566	9	-	Udas Marga	Inter Locked	3.65	Inter Locked	Gha	Udas Marga	4	0.06
567	10	-	Buddha Tol Bikash Sanastha 1 No Bato	Inter Locked	3.65	Inter Locked	Buddha Tol Bikash Sanasth	Buddha Tol Bikash Sanasth	4	0.11
568	11	-	Adhikari Galli	Inter Locked	3.65	Inter Locked	Adhikari Galli	Adhikari Galli	4	0.10
569	12	-	Daju Bhai Hotel-Kamala Tamang Ghar	Inter Locked	3.65	Inter Locked	Daju Bhai Hotel	Kamala Tamang Ghar	4	0.11
570	13	-	Marga 7	Inter Locked	3.65	Inter Locked	Marga 7	Marga 7	5	0.03
571	14	-	Marga 5	Inter Locked	3.65	Inter Locked	Marga 5	Marga 5	5	0.08
								Total		1.28
			<b>Grand Total</b>							<b>561.37</b>



**Annex II: List of Scoring of (MRCN)**

MRCN Scoring and Prioritization							
Class A							
Road Code	Prioritization Criteria					Total Score	Rank
	Population Served (25)	Market Along (20)	Ward Priority (10)	Service Centers (10)	Special Community (10)		
105M07A001	800	2	3	5	0	27	9
105M07A001	800	1	3	0	0	27	10
105M07A002	450	1	4	3	0	15	13
105M07A003	430	3	5	2	0	14	14
105M07A004	650	2	2	3	0	22	11
105M07A005	950	2	3	1	0	32	7
105M07A006	0	0		0	0	0	17
105M07A007	650	2	2	5	0	22	12
105M07A008	0	0		0	0	0	18
105M07A009	0	0		0	0	0	19
105M07A010	0	0		0	0	0	20
105M07A011	0	0		0	0	0	21
105M07A012	0	0		0	0	0	22
105M07A013	2200	3	3	0	0	73	2
105M07A014	0	0		0	0	0	23
105M07A015	0	0		0	0	0	24
105M07A016	0	0		0	0	0	25

MRCN Scoring and Prioritization							
Class A							
Road Code	Prioritization Criteria					Total Score	Rank
	Population Served (25)	Market Along (20)	Ward Priority (10)	Service Centers (10)	Special Community (10)		
105M07A017	0	0		0	0	0	26
105M07A017	0	0		0	0	0	27
105M07A018	0	0		0	0	0	28
105M07A018	0	0		0	0	0	29
105M07A019	0	0		0	0	0	30
105M07A020	2500	1	2	0	0	83	1
105M07A021	0	0		0	0	0	31
105M07A021	0	0		0	0	0	32
105M07A022	0	0		0	0	0	33
105M07A023	0	0		0	0	0	34
105M07A023	0	0		0	0	0	35
105M07A023	0	0		0	0	0	36
105M07A024	0	0		0	0	0	37
105M07A025	300	6	5	14	0	10	15
105M07A026	1646	4	3	6	0	55	3
105M07A027	0	0		0	0	0	38
105M07A028	1616	3	2	5	0	54	4
105M07A029	1400	1	5	2	0	47	5
105M07A030	0	0		0	0	0	39

MRCN Scoring and Prioritization							
Class A							
Road Code	Prioritization Criteria					Total Score	Rank
	Population Served (25)	Market Along (20)	Ward Priority (10)	Service Centers (10)	Special Community (10)		
105M07A031	0	2	1	4	0	0	40
105M07A031	0	2	1	4	0	0	41
105M07A032	300	1	2	2	0	10	16
105M07A033	0	0		0	0	0	42
105M07A034	0	0		0	0	0	43
105M07A034	0	0		0	0	0	44
105M07A035	0	0		0	0	0	45
105M07A036	1040	3	4	11	0	35	6
105M07A037	0	0		0	0	0	46
105M07A037	0	0		0	0	0	47
105M07A038	0	0		0	0	0	48
105M07A038	0	0		0	0	0	49
105M07A039	0	0		0	0	0	50
105M07A039	0	0		0	0	0	51
105M07A040	900	2	2	4	0	30	8
105M07A041	0	1	1	2	0	0	52
105M07A042	0	0		0	0	0	53

MRCN Scoring and Prioritization							
Class B							
Road Code	Prioritization Criteria					Total Score	Rank
	Population Served (25)	Market Along (20)	Ward Priority (10)	Service Centers (10)	Special Community (10)		
105M07B001	0	0		0	0	0	9
105M07B002	0	0		0	0	0	10
105M07B002	0	0		0	0	0	11
105M07B002	0	0		0	0	0	12
105M07B002	0	0		0	0	0	13
105M07B003	1600	6	4	13	0	53	6
105M07B004	1900	3	5	11	0	63	4
105M07B005	0	0		0	0	0	14
105M07B006	0	0		0	0	0	15
105M07B007	0	0		0	0	0	16
105M07B008	420	2	5	3	0	14	8
105M07B009	0	0		0	0	0	17
105M07B010	0	0		0	0	0	18
105M07B011	0	0		0	0	0	19
105M07B012	0	0		0	0	0	20
105M07B012	0	0		0	0	0	21
105M07B013	850	1	2	2	0	28	7
105M07B014	0	0		0	0	0	22

MRCN Scoring and Prioritization							
Class B							
Road Code	Prioritization Criteria					Total Score	Rank
	Population Served (25)	Market Along (20)	Ward Priority (10)	Service Centers (10)	Special Community (10)		
105M07B014	0	0		0	0	0	23
105M07B015	0	0		0	0	0	24
105M07B016	2000	4	2	14	0	67	2
105M07B016	2000	4	2	16	0	67	3
105M07B017	0	0		0	0	0	25
105M07B018	0	0		0	0	0	26
105M07B019	0	0		0	0	0	27
105M07B020	0	0		0	0	0	28
105M07B021	2300	2	3	1	0	77	1
105M07B021	0	0		0	0	0	29
105M07B021	0	0		0	0	0	30
105M07B022	0	0		0	0	0	31
105M07B022	0	0		0	0	0	32
105M07B022	0	0		0	0	0	33
105M07B023	0	0		0	0	0	34
105M07B024	0	0		0	0	0	35
105M07B024	0	0		0	0	0	36
105M07B024	0	0		0	0	0	37
105M07B025	0	0		0	0	0	38

MRCN Scoring and Prioritization							
Class B							
Road Code	Prioritization Criteria					Total Score	Rank
	Population Served (25)	Market Along (20)	Ward Priority (10)	Service Centers (10)	Special Community (10)		
105M07B025	0	0		0	0	0	39
105M07B025	0	0		0	0	0	40
105M07B025	0	0		0	0	0	41
105M07B025	0	0		0	0	0	42
105M07B026	1800	2	2	1	0	60	5

**Annex III: Consider Unit Cost for Different Interventions**

Activities	Unit	Unit Rate, Nrs.				Source	Remarks
		Class A	Class B	Class C	Class D		

Activities	Unit	Unit Rate, Nrs.				Source	Remarks
		Class A	Class B	Class C	Class D		
Blacktopping	Km	9352000.00	7348000.00	7348000.00	4665300	MorangDistrict Rate Analysis [2079/80 B.S]	
Bridge Construction	M	600000	600000	600000	600000	Mo FALD [2014 A.D]	
Cycle Lane and Footpath Construction	Km	3278996	1639498	2049373	1639498	MorangDistrict Rate Analysis [2079/80 B.S]	Single Sides
Street Lighting	KM	1260000	1260000	1260000	1260000	MorangDistrict Rate Analysis [2079/80 B.S]	Single Sides
Emergency Maintenance	Km	30000	30000	30000	30000	Mo FALD [2014 A.D]	
Gravelling and upgrading	Km	32200000	25300000	25300000	13200000	MorangDistrict Rate Analysis [2079/80 B.S]	Single Sides
Green Belt Construction	Km	508478	762717	0	0	MorangDistrict Rate Analysis [2079/80 B.S]	Single Sides
Longitudinal lined drain	Km	3789886	3789886	3789886	3872126	MorangDistrict Rate Analysis [2079/80 B.S]	Single Sides
Periodic Maintenance BT	Km	200000	200000	140000	200000	Mo FALD [2014 A.D]	
Periodic Maintenance Gravel	Km	250000	250000	175000	250000	Mo FALD [2014 A.D]	
Pipe Culvert	No.	10000	10000	10000	10000	Mo FALD [2014 A.D]	
Recurrent Maintenance BT	Km	500000	500000	500000	500000	Mo FALD [2014 A.D]	
Recurrent Maintenance Earthen	Km	250000	250000	250000	250000	Mo FALD [2014 A.D]	
Recurrent Maintenance Gravel	Km	400000	400000	280000	400000	Mo FALD [2014 A.D]	
Routine Maintenance	Km	20000	20000	20000	20000	Mo FALD [2014 A.D]	
Slab Culvert Construction	M	150000	150000	150000	150000	Mo FALD [2014 A.D]	
Track Opening	Km	4000000	4000000	2800000	2800000	Mo FALD [2014 A.D]	
widening	M	25000	25000	25000	25000	Mo FALD [2014 A.D]	

## Annex IV: Field Photographs







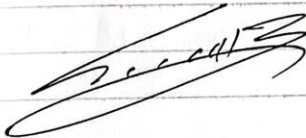
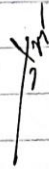
## Annex V: Minutes



प्रस्ताव नं. २ सडकको प्राथमिकरण सम्बन्धमा ।

निर्णय नं. २ प्रस्ताव नं. माथि हलफाल गढी कोटाड, नगरपालिका वडा नं. १ भित्रका सडकको प्राथमिकरण निम्न अनुसूची गरिने निर्णय गरियो ।

- किवात चौक लोखवा सडक आरुकोटे सडक (सडकको क्षेत्र अधिकारमा पर्ने ४५ फिट)
- लोखवा धाम फेदी ~~सडक~~ सडक (सडकको क्षेत्र अधिकारमा पर्ने २५ फिट)
- लोखवा फर्दिवा ~~सडक~~ सडक (सडकको क्षेत्र अधिकारमा पर्ने २५ फिट)
- किवात शारना ~~सडक~~ सडक (सडकको क्षेत्र अधिकारमा पर्ने २० फिट)
- सापफारा सडक (सडकको क्षेत्र अधिकारमा पर्ने १५ फिट)



प्रस्ताव नं. १ सडकको प्राथमिकरण सम्बन्धमा ।

निर्णय नं. १ : प्रस्ताव नं. १ माथि हलफल गर्दा लेटाड. न्यायाविका  
वडा नं. २ भित्रका सडकको प्राथमिकरण निम्न अनुसार गरिने  
निर्णय गरियो

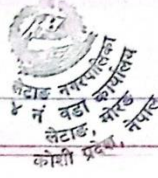
- लम्साल टोल किरात टोल सडक (सडक क्षेत्र अधिकारमा पर्ने ३३ फिट)
- लाफारपेल मैदान देखि रत्न प्रगती टोल सडक (सडक क्षेत्र अधिकारमा पर्ने ३३ फिट)
- रिजदार्थ मार्ग : पेरिससिद्धि देखि रुकेँ (सडक क्षेत्र अधिकारमा पर्ने ३३ फिट)
- डुमरु सिद्धि मार्ग प्रगती टोल देखि खैरेनी (सडक क्षेत्र अधिकारमा पर्ने ३२ फिट)
- दक्षिण भाकीम मार्ग रत्नसिद्धि युवा पशुपत भुपाल मार्ग हुने बासु सुवेदी मार्ग (सडक क्षेत्र अधिकारमा पर्ने ३२ फिट)
- बुधबारे मार्ग टोल सन्त ङ्ग मार्ग (सडक क्षेत्र अधिकारमा पर्ने ३३ फिट)



प्रस्ताव नं. १ सडकको प्राथमिकरण सम्बन्धमा।

निर्णय नं. १ : प्रस्ताव नं. १ माथि द्रुतफल गर्दा लेटाड नगरपालिका वडा नं. २ भित्रका सडकको प्राथमिकरण निम्न अनुसार गरिने निर्णय गरीयो।

- किर्तिमान आउने चौक देखि किर्तिमान डाँडा सम्म (सडकको रैत आधिकार ५०')
- कमलपुर पुच्छार मौलुङ्गे पुल देखि कमलपुर पायलटइन रैत सम्म (सडकको रैत आधिकार मा पर्ने ५०')
- कमलपुर पुच्छार बाट त्रिशूली बेल सम्म (सडकको रैत आधिकार मा पर्ने ४०')
- किर्तिमान लाडेल चौकी देखि चिलाड पुल सम्म। (सडकको रैत आधिकारमा पर्ने ३०')
- बिरन लकल बाट अल्पाताल छुट्टी बिरन डाँडा त्रिशूली सम्म (सडकको रैत आधिकारमा पर्ने ३०')



प्रस्ताव नं. १ सडकको साधनीकरण सम्बन्धमा

निर्णय नं. १ : प्रस्ताव नं. १ माथि दलफल गर्दा लेटाड: नगरपालिका वडा नं. ४ भित्रका सडकको साधनीकरण निम्न अनुसार गरिने निर्णय गरियो।

- चिलड्रेन पार्क देखी अर्शी क्याम्प, पू नं. पार्ड सिमाना (सडकको क्षेत्र अधिकारमा पर्ने २० फिट) (A)
- चिलड्रेन पार्क देखी ६ नं. चिसाङ्ग सेन्टर जाने बाटो (सडकको क्षेत्र अधिकारमा पर्ने २० फिट) (A)
- नाङ्गुलो होटल देखी अर्ध शाली इन्टर जाने बाटो (सडकको क्षेत्र अधिकारमा पर्ने २० फिट) <sup>साकारित गर्न बाटो</sup>
- रत्न गण बी देखी वरुनि मन्दिर सम्मको बाटो (सडकको क्षेत्र अधिकारमा पर्ने २० फिट)
- जंगो चोक देखी खोला जाने पैकलिपक बाटो (सडकको क्षेत्र अधिकारमा पर्ने २० फिट) ~~२० फिट~~
- चिलड्रेन पार्क देखी खानी क्लिपन हुँदै गंगे चोड तिनडुने पार्ड सम्मको बाटोको सडक क्षेत्र अधिकार ३६ फुट हाल (A)
- प्रैतरी हाफिडविर देखी इतर हटिम नज्द देड मल्ल भग्गी राजापार्क सम्मको बाटोको सडक क्षेत्र अधिकार हाल ४० फुट (A)

~~Handwritten signature~~



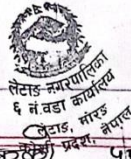
प्रकाश नं-२ सडक प्राथमिकरण निष्कर्षमा

निर्णय नं-२ प्रकाश नं: प्रायो हुलप्रल जेदा  
लेवाङ्ग, नगरपालिका बाडा नं-४ गिका सडकको  
प्राथमिकरण निष्का अनुसार जोसे निर्णय गरेको।

क्रम सडकको

- वृद्धमार्ग (सडको जेरा अधिकारमा पर्ने ५०')
- प्रकाश मार्ग (सडको जेरा अधिकारको पर्ने ~~३६'~~ ३६')
- क्याम्पल मार्ग (सडको जेरा अधिकारमा पर्ने ५०')
- श्वाणित मार्ग (सडको जेरा अधिकारमा पर्ने ~~३६'~~ ३६')
- सूर्योदय मार्ग (सडको जेरा अधिकारमा पर्ने ~~३६'~~ ३६')

*[Signature]*



प्रस्ताव नं.-०१ लडकको प्राथमिकरण सम्बन्धमा,

निर्णय नं.-०१ प्रस्ताव नं.-०१ प्राचीन फूलजल बाहिरी लिटड,  
नगरपालिका वडा नं. ६ भित्रका लडकको प्राथमिकरण  
लिख अनुसार गरिने निर्णय गरियो।

- टाल कोठीछाडि प्राचीन हुँदै लाल वारी जाने काम पूर्वैली  
प्राचीन छेत्र अधिकारमा पर्ने ३०' फुट।
- वरगाछि वार बाबावारी जोडने लडक को क्षेत्र  
अधिकारमा पर्ने ३०' फुट
- प्राचीन चौड वार सि. मा. भि. लि. हुँदै लामिवाट प्रगावि  
प्राचीन को क्षेत्र मा अधिकारको पर्ने ३०' फुट
- तालिम केन्द्र हुँदै लालावारी जोडने तालिम केन्द्र  
लडक को क्षेत्र अधिकारको मा पर्ने ३४' फुट
- ब्रमाडली चौड वार आ. वा. प्राचीन हुँदै लालवारी  
जाने वारी को क्षेत्र अधिकारमा पर्ने ३४' फुट

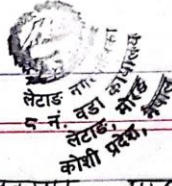


प्रस्ताव नं. २ सडकको प्राथमिकरण सम्बन्धमा ।

निर्णय नं. २ प्रस्ताव नं. २ माथि हलफल गर्दा लेटाइ. नगरपालिका  
वडा नं. ६ भित्रका सडकको प्राथमिकरण सम्बन्धमा निम्न अनुसार  
गरिने निर्णय जारी छ ।

- गुठारी वारंगी हुदै उदरासे तर सडक (सडकको क्षेत्र अधिकारमा पर्ने २६ फुट)
- आठले हुदै फुकेतर सडक (सडकको क्षेत्र अधिकारमा पर्ने १६ फुट)
- वर भन्ने झाडु हुदै सौरे सडक (सडकको क्षेत्र अधिकारमा पर्ने २६ फुट)
- मुब्बा टोल भन्ने सडक (सडकको क्षेत्र अधिकारमा पर्ने २० फुट)
- सिमाना हुदै जालिवासे सडक (सडकको क्षेत्र अधिकारमा पर्ने २० फुट)

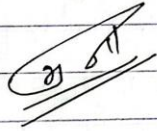


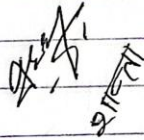


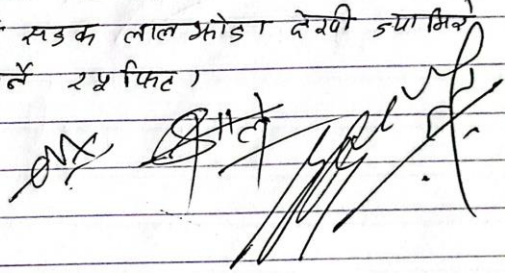
प्रस्ताव नं. २: सडकको प्राथमिकरण सम्बन्धमा ।

निर्णय नं. २: प्रस्ताव नं. २ माथि दलफल गर्दा लेटाड. नगरपालिका वडा नं. ८ भित्रका सडकको प्राथमिकरण निम्न अनुसार गरिने निर्णय गरियो ।

- भुपु टोल सडक इडाक चोक देखी लेटाडागौडा सम्म (सडक क्षेत्र अधिकार मा पर्ने ४५ फिट)
- सपुडासी सडक लापती चोक - प्रिमान तला सम्म (सडक क्षेत्र अधिकार मा पर्ने ३६ फिट)
- जाते लालभोडा सडक रूपनारायणको टोल देखी लालभोडा सम्म (सडक क्षेत्र अधिकारमा पर्ने २० फिट)
- सेसे होटल जाते बट्टा वडारे सम्म सडक सेसे होटल देखी वडारे सम्म (सडक क्षेत्र अधिकारमा पर्ने २५ फिट)
- लालभोडा ज्यामिरे सडक ज्यामिरे सडक लालभोडा देखी ज्यामिरे सम्म (सडक क्षेत्र अधिकारमा पर्ने २५ फिट)



  
शास्ता





लेटाङ नगरपालिका  
२ नं. वडा कार्यालय  
गाँदे गोरड  
कोशी प्रदेश, नेपाल  
प्रस्ताव नं. १ - सडकको प्राथमिकताकरण सम्बन्धमा ।

निर्णय नं. १ - प्रस्ताव नं. १ माथि दलफल गर्दा लेटाङ नगरपालिका  
वडानं. १ भित्रका सडकको प्राथमिकताकरण निम्न अनुसार गरिने निर्णय  
गरियो ।

१ (b) दि०य उपोति मार्ग मदनपुर - रक्षादारी १, २ हुदैं त सम्म  
(सडक अधिकार क्षेत्रमा पर्ने १२० फिट)

३ (b) खोला मार्ग हुदैं पश्चिम मोरड, खोला सम्म (सडक अधिकार  
क्षेत्रमा पर्ने १२० फिट)

२ (b) सैकिला मार्ग इतर डरटको सिमाना सम्म १२० फिट  
(सडक अधिकार क्षेत्रमा पर्ने १२० फिट)

४ (b) बाहुगोठे लेली मार्ग (सडक अधिकार क्षेत्रमा पर्ने १२० फिट)

५ (b) फाकताङ्ग लेडी मार्ग (सडक अधिकार क्षेत्रमा पर्ने १२० फिट)

माग फारम (सडकका लागि अनुरोध)

१. वडाको नाम : ...

२. प्राथमिकताका आधारमा तालिका भर्नुहोस् :

कोड	बाटोको नाम	चौडाई	बाटोको प्रकार				प्राथमिकता क्रम. *
			नया बाटो खोल्ने	स्तरोन्नति गर्ने	पुनरुत्थान गर्ने	अवधिक मर्मत	
क	किराण चौड लोखरा लाबामा अरुवैली सडक	२०'					१ ४२५'
ख	लोखरा आन फोडि कुड कुडा फोडि सडक	१४'					२ २२१'
ग	लाख हरदिया मुकुण्ड सडक मुकुण्ड	१४'					३ २२१'
घ	किले फारना सडक	१४'					४ २०१'
ङ	साकपारा साकपारा सडक	१४'					५ १२१'

पहिलो प्राथमिकताका लागि १, दोस्रोका लागि २ भर्नुहोस्

३. माथिको प्राथमिकता ..... २०७३/०९/२२...६६... मितिमा बसेको वडा बैठकबाट तोकिएको हो।

४. लाभान्वित बस्ती :

कोड **	बस्तीको नाम, घरधुरी/ जनसंख्या
क	लोखरा, साकपारा, कालिबै, अरुवैली, कुडकुण्ड साकपारा, अरुवैली लगायत वडा नं. १ का समुदाय बस्ती
ख	आन फोडि, कुडकुण्ड
ग	लाख, हरदिया सरकिण्डा
घ	लाबामा र किले टोका -
ङ	साकपारा साकपारा

\*\* २ न. तालिका अनुसार भर्नुहोस्

माग फारम (सडकका लागि अनुरोध)

१. वडाको नाम : वडा नं. ३

२. प्राथमिकताका आधारमा तालिका भर्नुहोस् :

कोड	वाटोको नाम	चाँडाई	वाटोको प्रकार				प्राथमिकता क्रम.	Row
			नया वाटो खोल्ने	स्तरोन्नति गर्ने	पुनर्स्थापन गर्ने	अबधिक मर्मत		
क	किर्तिमान गाडने बाटो	३५		✓			५०	५०
ख	कमलपुर (पूछार)	२०						५०
ग	कमलपुर (पूछार) काठ	२०						४०
घ	किर्तिमान साडेला-चाँदे	२५						३०
ङ	विराट स्कुल काठ प्रत्यक्ष	२५						३०

पहिलो प्राथमिकताका लागि १, दोस्रोका लागि २ भर्नुहोस्

३. माथिको प्राथमिकता ..... २०८१/०१/२५ ..... मितिमा बसेको वडा बैठकबाट तोकिएको हो।

४. लामान्वित बस्ती :

कोड **	बस्तीको नाम, घरघुरी/ जनसंख्या
क	किर्तिमान टोल वडा १, २, ३ टोल USPV बट्टि १३०० घर घुरी
ख	कमलपुर बाँधु र वडा १, २, ३ टोल बाँधु को माथि USPV १३०० घर घुरी
ग	कमलपुर पूछार टोल किर्तिमान टोल ८०० घर घुरी
घ	किर्तिमान साडेला-चाँदे टोल विमान टोल ५०० घर घुरी
ङ	विराट टोल र नगरवासी १२०० घर घुरी

\*\* २ न. तालिका अनुसार भर्नुहोस्

माग फारम (साहकका लागि अनुसोध)

१. चडाको नाम : ...तारा नं. ४...

२. प्राथमिकताका आधारमा तालिका भर्नुहोस् :

कोड	बाटोको नाम	चौडाई	बाटोको प्रकार				प्राथमिकता क्रम.
			नया बाटो खोल्ने	सतरोन्नति गर्ने	पुनरुत्थान गर्ने	अतिरिक्त मर्मत	
क	मिल्डेन पार्क ट्रेखी आर्मी क्याम्प, अ.नं. चर्च सिमाना	२० फुट	✓				१
ख	मिल्डेन पार्क ट्रेखी अ.नं. सिमाना सभटा आर्मी ठाउँ	२० फुट	✓				
ग	ठाकुरलौ हाईवे ट्रेखी अ.नं. सिमाना अर्वा आर्मी ठाउँ	<del>२० फुट</del> २५	✗		✓		
घ	एन एम डी ट्रेखी बाणिमन्डप मुसमको बाटो	२० फुट			✓		
ङ	गाने-धौण्डेखी खीला आर्मी ट्रेखिण ठाउँ	२० फुट	✓				

गौन ल्याइने बाटो लुकाइने

Row  
30  
20  
~~20~~  
20  
30 फुट

पहिलो प्राथमिकताका लागि १, दोस्रोका लागि २ भर्नुहोस्

३. माथिको प्राथमिकता २०.०९.०९/१९ गितीमा बसेको वडा बैठकबाट तोकिएको हो।

४. लाभान्वित बस्ती :

कोड **	बस्तीको नाम, घरधुरी/ जनसंख्या
क	ठाकुरलौ हाईवे, आर्मी क्याम्प/सिमाना ठाउँ
ख	अर्वा बाटो
ग	ठाकुरलौ हाईवे, अर्वा अर्वा ठाउँ लम्बाभाग २५
घ	दुधिया हाईवे, लम्बाभाग २०
ङ	अर्वा बाटो खीला आर्मी ट्रेखिण ठाउँ

\*\* २ न. तालिका अनुसार भर्नुहोस्

माग फारम (सडकका लागि अनुरोध)

१. वडाको नाम: वडा नं. ५

२. प्राथमिकताका आधारमा तालिका भर्नुहोस् :

कोड	बाटोको नाम	चौडाई (फुट)	बाटोको प्रकार				प्राथमिकता क्रम. *
			नया बाटो खोल्ने	स्तरोन्नति गर्ने	पुनरुत्थान गर्ने	अवधिक मर्मत	
क	सुदूरमार्ग	४०		✓		✓	१
ख	प्रकाशमार्ग	३०		✓			२
ग	क्याम्पस मार्ग	४०		✓			३
घ	शान्ति मार्ग (क)	३०		✓			४
ङ	सुशोध्य मार्ग	३०		✓			५

Row  
(फिट)

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पहिलो प्राथमिकताका लागि १, दोस्रोका लागि २ भर्नुहोस्

३. माथिको प्राथमिकता २०२१/०९/२० मितिमा बसेको वडा बैठकबाट तोकिएको हो।

४. लाभान्वित बस्ती :

कोड **	बस्तीको नाम, घरधुरी/ जनसंख्या
क	परिवर्तन, क्याम्पस, नमुना, समावेशी, सगरमाथा, विहारे, करमबोट टोल $\rightarrow$ ६९९ घर $\rightarrow$ २४६५ जन
ख	सिद्धेश्वर, सुशोध्य, सगरमाथा, नमुना टोल $\rightarrow$ ४०४ घर $\rightarrow$ १६९६ जन
ग	प्रगति, सिर्जन, परिवर्तन, क्याम्पस टोल $\rightarrow$ ४३६ घर $\rightarrow$ १६९६ जन
घ	विहारे, शिक्षा विकास टोल $\rightarrow$ २६० घर $\rightarrow$ १०४० जन
ङ	सुशोध्य, सिद्धेश्वर, सुशोध्य, सगरमाथा, सिर्जनशाला $\rightarrow$ ३५० घर $\rightarrow$ १४०० जन

\*\* २ न. तालिका अनुसार भर्नुहोस्

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माग फारम (सडकका लागि अनुरोध)

१. वडाको नाम : वडा नं. १६

२. प्राथमिकताका आधारमा तालिका भर्नुहोस् :

कोड	वाटोको नाम	चौडाई	वाटोको प्रकार				प्राथमिकता क्रम. *
			नया वाटो खोल्ने	स्तरोन्नति गर्ने	पुनर्स्थापन गर्ने	अवधिक मर्मत	
क	बाली खोला नदी नदी किनारो साल कारी आन प्रयोग/मार्ग	३० Ft	✓				1
ख	बरागाडी बाली नदी नदी मोडने ६५५	११-	✓				२
ग	साँढे खोला बाली नदी नदी किनारो आन प्रयोग/मार्ग	२२ Ft	✓				३
घ	बाली नदी नदी नदी नदी मोडने बाली नदी नदी ६५५	३० Ft	✓				४
ङ	साँढे खोला बाली नदी नदी मोडने बाली नदी नदी ६५५	३० Ft	✓				५

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पहिलो प्राथमिकताका लागि १, दोस्रोका लागि २ भर्नुहोस्

३. माथिको प्राथमिकता २०१९/०९/२०१८ मितिमा बसेको वडा बैठकबाट तोकिएको हो।

४. लाभान्वित बस्ती :

कोड **	बस्तीको नाम, घरधुरी/ जनसंख्या
क	उपारु, बुढु टोल सालकारो टोल भागि २०० घर
ख	बरागाडी पाली टोल सालकारो टोल भागि २०० घर
ग	साँढे टोल प्रयोग टोल सालकारो टोल भागि २१० घर
घ	बाली नदी नदी नदी नदी टोल सालकारो टोल भागि २००
ङ	साँढे खोला बाली नदी नदी टोल सालकारो टोल भागि १००

\*\* २ न. तालिका अनुसार भर्नुहोस्

माग फारम (सडकका लागि अनुरोध)

१. वडाको नाम: ...लेहवा, रिवा, विमाना, कुम्ला, प्रिया, ... - ६ वार्ड

२. प्राथमिकताका आधारमा तालिका भर्नुहोस् :

कोड	बाटोको नाम	चौडाई	बाटोको प्रकार				प्राथमिकता क्रम. *
			नया बाटो खोल्ने	स्तरोन्नति गर्ने	पुनरुत्थान गर्ने	अवधिक मर्मत	
क	कुम्ला बाटो, रिवा वार्ड	१५ft		✓			१
ख	भाहला बाटो, रिवा वार्ड	२३ft		✓			२
ग	वडा मज्जा, रिवा वार्ड	१५ft		✓			३
घ	लेखा टोल, रिवा वार्ड	१५ft		✓			४
ङ	विमाना बाटो, रिवा वार्ड	१५ft		✓			५

पहिलो प्राथमिकताका लागि १, दोस्रोका लागि २ भर्नुहोस्

३. माथिको प्राथमिकता १०८१७१/१११ मितिमा बसेको वडा बैठकबाट तोकिएको हो।

४. लाभान्वित बस्ती : कुम्ला

कोड **	बस्तीको नाम, घरधुरी/ जनसंख्या
क	कुम्ला, रिवा, विमाना, कुम्ला, प्रिया, ... मंगल वार्ड, लेखा टोल, रिवा वार्ड - ५४६०२५
ख	पापलीडा टोल, रिवा वार्ड, मंगल वार्ड, दुईधर टोल, कुम्ला - ५५०१
ग	लेखा टोल, विमाना टोल, रिवा टोल - ५५०१
घ	लेखा टोल, रिवा, मंगल वार्ड, चन्द्र, प्रिया - ५५०१
ङ	विमाना, कुम्ला, रिवा वार्ड - ५५०१

\*\* २ न. तालिका अनुसार भर्नुहोस्



माग फारम (सडकका लागि अनुबंध)

१. वडाको नाम : लेटाडा: १ पा. ८ जाते  
 २. प्राथमिकताका आधारमा तालिका भर्नुहोस् :

कोड	वाटोको नाम	चौडाई	वाटोको प्रकार				प्राथमिकता क्रम.
			नया वाटो खोल्ने	स्तरोन्नति गर्न	पुनर्स्थापन गर्न	अबधिक गर्न	
क	शुपु टोल सडक	३६		✓	✓	✓	१
ख	खगुडाखा सडक	३६		✓	✓	✓	२
ग	जाते लालकोडा सडक	२०		✓	-	-	३
घ	सिसे होटल जाते वार्ड वडारे सडक	२५		✓	✓	-	४
ङ	लालकोडा जपानिरे सडक	२५		✓	✓	✓	५

पहिलो प्राथमिकताका लागि १, दोस्रोका लागि २ भर्नुहोस्

शुपु टोल देखाई गोडा  
 तापली-खोडा-सिमान तला  
 रूपनायापडा देखाई लालकोडा  
 सिसे होटल देखाई वडारे सडक  
 लालकोडा देखाई जपानिरे सडक

३. माथिको प्राथमिकता २०८९/०९/१६ नितोमा बसेको वडा बैठकबाट तोकिएको हो।

४. लाभान्वित बस्ती :

कोड **	बस्तीको नाम, घरधुरी/ जनसंख्या
क	जाते कजार, ३०० घरधुरी - १५६० जनसंख्या
ख	शुपु टोल, डाडा गाड २०० घरधुरी - ९०० ..
ग	जाते / लालकोडा १०० .. ६०० ..
घ	डाडा गाड, अचोती, खेडेटा, पाडसीला, नजपुर सिखा(धाप १५० घर १००
ङ	लालकोडा / जपानिरे १५० घरधुरी ६००

\*\* २ न. तालिका अनुसार भर्नुहोस्

माग फारम (संरक्षणका लागि अनुरोध)

१. वडाको नाम : ...वडा नं. ३...गोरे...

२. प्राथमिकताका आधारमा तालिका भर्नुहोस् :

कोड	बाटोको नाम	चौडाई	बाटोको प्रकार				प्राथमिकता क्रम. *
			नया बाटो खोल्ने	स्तरोन्नति गर्ने	पुनरुत्थान गर्ने	अवधिक मर्मत	
क	दिवा प्रोत्ति मार्ग अगा' (महल पुर + खार्दारी प. २ फुट्टे)	२०५१		✓	✓	✓	①
ख	सुंग्राम मार्ग दुर्गे पश्चिम मोटोकाला २०५१ लामा बाटो			✓	✓	✓	③
ग	सन्तिल्ला मार्ग उ० इ२ टकी विभाग खम्म ३२११ बाटो						②
घ	फाउन्टाना लुङ्गु मार्ग बाटो	२०५१					⑤
ङ	काहगोठ तेली मार्ग (उपे लाइड पक्की नाला)	२०५१					④

पहिलो प्राथमिकताका लागि १, दोस्रोका लागि २ भर्नुहोस्

३. माथिको प्राथमिकता क्रम. क्रि. क्रि. २०.२२.१.१/१५.८.८... मितिमा बसेको वडा बैठकबाट तोकिएको हो।

४. लाभान्वित बस्ती :

कोड **	बस्तीको नाम, घरधुरी/ जनसंख्या
क	महल पुर टोल, २०० घरधुरी १००० (खार्दारी लामा बाटो)
ख	महल पुर, विहादी, मीमिचुली टोल ३०० घरधुरी, १२०० जन संख्या (लामा बाटो)
ग	विहादी, मीमिचुली, सखरी, स्याङ्गाया टोल ३३०० घरधुरी २१०० जन संख्या
घ	काहगोठ टोल १५० घरधुरी २२० जन संख्या
ङ	सखरी, महल पुर, लामा, काहगोठ टोल, २०० घरधुरी २२०० जन संख्या

\*\* २ न. तालिका अनुसार भर्नुहोस्

१५/४ ११/३०  
१५/५ ५९९२