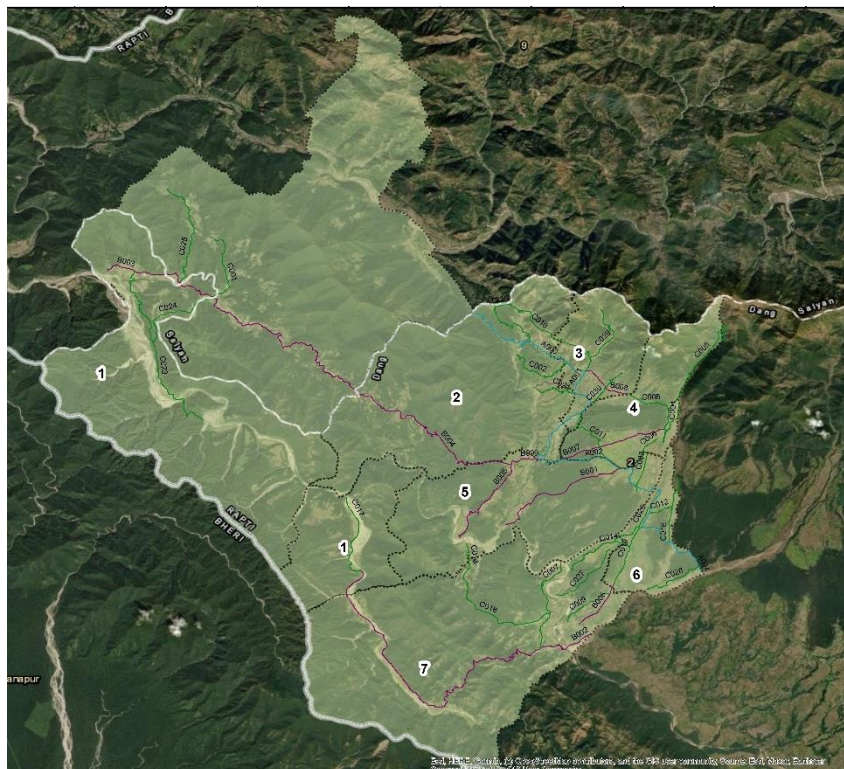




Government of Nepal
Babai Rural Municipality
Hapure, Dang

Rural Municipality Transport Master Plan



VOL-I Final Report

Submitted By

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Office of the Rural Municipal Executive
Hapure, Dang
Lumbini Province

This document is the final report prepared for the project, “Rural Municipality Transport Master Plan (RMTMP)” undertaken by Babai Rural Municipality Office, Dang. This document has been prepared by New planet Engineering Services Pvt. Ltd. for Babai Rural Municipality Office of the Rural Municipal Executive, Hapure, Dang. The opinions, findings and conclusions expressed herein are those of the Consultant and do not necessarily reflect those of the Rural Municipality.

Data Sources and Credits

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The consultants' team would like to express its appreciation to the officials from Babai Rural Municipality. We are highly grateful for their help and co-operation. We are very grateful to the Chairperson, Vice Chairperson and Chief Administrative Officer and other personnel of the Rural Municipality and local peoples who directly and indirectly contributed during this study and field survey.

Finally, the project team would like to express thanks to all staffs and colleagues for their anxious support for this study.

DECLARATION LETTER

We hereby declare that we have sincerely conducted the study of Rural Municipal Transport Master Plan (RMTMP) for Babai Rural Municipality in professional manner following DOLIDAR (MoFALD) guideline and other acceptable standard methodologies. To the best of our knowledge, the findings of our study are correct. The Rural Municipality Transport Master Plan has been prepared as per standard engineering tools, norms and practices. The visionary city development has been finalized on the basis of the discussion with the stakeholders. We would like to assure you that the RMTMP is reliable, practicable and adequate to the overall development of this Rural Municipality transport system. We shall be accountable for any misleading information in any part of this report in respective area of study.

Managing director
New Planet Engineering Services Pvt. Ltd.

EXECUTIVE SUMMARY

Babai Rural Municipality (बबई गाउँपालिका) is a Gaunpalika in Dang District in Lumbini Province of Nepal. On 12 March 2017, the government of Nepal implemented a new local administrative structure, with the implementation of the new local administrative structure, VDCs have been replaced with municipal and Village Councils. Babai is one of these 753 local units. Babai Rural Municipality has area of 257.48 sq.km. Babai RM is surrounded by Shantinagar Rural Municipality and Dangisharan Rural Municipality in the east, Banke district in the west, Salyan district in the north and in south there is Dangisharan Rural Municipality and Banke district. This Rural Municipality lies 46km west from Gorahi (Gorahi is the headquarter of dang district).

Babai Gaupalika, which has its own geographical, cultural, and community identity, is mainly inhabited by Magar, Bahun-Chhetri, Majhi, Newar, Dalit, Tharu and other communities. Purandhara and Paanchakule VDCs of the old VDCs are merged to form Babai Rural Municipality.

This rural municipality is situated between Lower altitude 470m to higher altitude 1891m from sea level. Purandhara waterfall, is the key attraction to tourists in this region. Babai river is the main river stream in this rural municipality. The Babai, named after this, is the beauty of this Rural Municipality. Complete dependence on agriculture. The main source of income of the people here is agriculture. From this, the people here make a living.

Though this Rural Municipality retains a huge scope in sectors like agriculture, tourism, and small-scale industries, it has not been able to maintain a good pace of development mainly due to lack of sectoral plans and their proper executing mechanism. Still a huge population of this Rural Municipality happen to fight against social maladies like poverty, illiteracy, backwardness and fatalism. The abundance of natural resources like forest, plants, herbs, wild life, water resources, moderate climate and unique geo-physical structure is the back bone of agricultural and tourism development in this RM. The proper utilization, and promotion of these resources is likely to transform the overall livelihood situation of the people of this Rural Municipality. Maize , Rice, Barley, Wheat are the main crops while Sugarcane, Oilseed, Lentils, Potato, Tobacco, Soyabean are major cashcrops in this region.

The topography of this Rural Municipality (RM) consists of several undulations having peaks, Chures, Plain terrain, ridges, hills, inner valleys/gorges, along with extensive forest cover. This

RM retains a moderate Climatic condition. Agriculture and livestock contribute almost 20% of entire income portfolio and they retain high potentiality to absorb significant number of youth populace if modernization in agricultural system gets in place. People also follow other chores as well for their sustenance besides agriculture for e.g., the contribution of remittance from Gulf countries and Malaysia remains vital in this RM as well.

This Rural Municipality has no air transport service to complement the surface transport facilities. Inner mobility and other development activities fully depend on expansion of road network within the district. The Rural Municipality has limited number of all-weather road facilities. Because most of the municipal roads are earthen in nature, it requires lots of adventure during the rainy season to shuttle from one place to another.

Based on investment plan, some RMTMP roads will be improved and prepared for upgrade up to gravel road standard including widening and maintaining longitudinal and cross drainage system. This intervention ensures to bring into all-weather road for maintainable stage. During the RMTMP period, approx. a total of NPR 440.248 million will be invested including the base line budget of NPR 103.88 million. In this total figure, some NPR 352.198 million will be invested for construction while NPR 88.046 million is expected to spend on maintenance within the period of RMTMP. Additional length of road section could also be upgraded with focus on black top in some particular sections depending upon the need and necessity if additional fund is available during this RMTMP period.

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ABBREVIATIONS

DDC	District Development Committee
DoLIDAR	Department of Local Infrastructure Development and Agriculture Road
DoR	Department of Road
DTICC	District Transport Infrastructure Coordination Committee
DTMP	District Transport Master Plan
DTPP	District Transport Perspective Plan
GIS	Geographical Information system
GPS	Global Positioning System
GoN	Government of Nepal
LGCDP	Local Governance and Community Development Programme
MoFALD	Ministry of Federal Affairs and Local Development
MTICC	Rural Municipality Transport Infrastructure Coordination Committee
MTPP	Rural Municipality Transport Perspective Plan
RMTMP	Rural Municipality Transport Master Plan
RAP	Rural Access Program
RoW	Right of Way
SOR	Socially Oriented Responsibility
SWAp	Sector Wide Approach
VDC	Village Development Committee

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

This report on Rural Municipality Transport Master Plan of Babai Rural Municipality is the outcome of study carried out by New Planet Engineering Services Pvt. Ltd. as per the agreement between the Office of Babai Rural Municipality and the consultant. This Rural Municipality Transport Master Plan (RMTMP) has been prepared following the Rural Municipality Transport Master Plan preparation guide lines and terms of reference prepared by MoFALD. This report has been prepared with intensive field visit of Transport planner, Engineer, Social mobilizers, Enumerators and other professionals.

Nepal having least developed rural countryside communities, rural development is one of the main agenda for the overall development of the nation. The ultimate goal of rural development is attainment of sustainable livelihood and improved well-being of rural people. In the absence of better access to the goods and services; the people suffer. Rural people's needs for sustainable livelihood and improved well-being are possible only when they have better access to information, markets and opportunities; they need better access to health, education and other goods and services. The RMTMP is designed to take account of the real needs of the rural population for easy access to infrastructure.

Integrated Rural Accessibility Planning (IRAP) could be an effective tool to assess the existing situation of the services and facilities in rural areas. The access situation of the services and facilities including the infrastructure for each settlement will indicate the interventions to improve the access situation. The interventions derived from the Integrated Rural Accessibility Planning will represent the real needs and priorities of the local people. The planning approach should be participatory and Bottom-up, Demand Driven Approach from the settlement level. The implementations of such projects will certainly be more participatory and owned by the local communities. That makes the plan and project sustainable in the long run.

Local self-Governance Act 2055 and the Regulation 2056, has provisioned DDC and VDC for local level planning process to identify, prioritize and development of various sectoral plan and programs according to need-based and public participatory approach. Accordingly, the act has provisioned to formulate the periodic plan of the district with the visions, mission and strategy of the district vis-à-vis integrated Plan of the various sectors and sub sector agencies. Rural Municipality Transport Master Plan (RMTMP) is infrastructure development plan of district to identify the Rural Road Interventions it contains the perspective plan of Rural Road and holds the prioritized Rural Roads investment for five-year period.

Rural Municipality Transport Perspective Plan (MTPP) is a long-term transport plan of feasible rural linkages based on the socio-economic, geo-physical structure, development potentialities, as well as accessibility conditions of the district. The Rural Roads linkages are scored, graded and classified according to the Approach for the development of Rural and Agriculture Roads - DoLIDAR. A total Road Network is prepared to provide transport

access to the settlements within the national standard of minimum hour to reach the all-weather Roads.

1.2 OBJECTIVE OF RMTMP

The overall objective of the consulting services is to prepare the Rural Municipality Transport Master Plan (RMTMP) of the Babai Rural Municipality. The RMTMP will be 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:

- Finalize visionary city development plan if Comprehensive Town development plan is not prepared
- Analyse the accessibility situation.
- Identify and priorities the interventions based on the accessibility situation
- Prepare Indicative Developmental Potential Map (IDPM)
- Prepare the Rural Municipality Inventory Map (RMIM) of Road networks.
- Collection of demands for new/rehabilitation transport linkages from Municipalities / Settlements based on city development plan.
- Prepare the Perspective Plan of transport services and facilities;
- Synchronies the draft Perspective Plans of adjoining VDCs/Municipalities/districts
- Develop scoring criteria and its approval from Rural Municipality.
- Prepare the five-year Rural Municipality Transport Master Plan (RMTMP)
- Prepare a realistic physical and financial implementation plan of prioritized roads for the RMTMP period; and
- Prepare Rural Municipal Transport Perspective Plan (RMTPP)

1.3 SCOPE AND LIMITATION OF RMTMP

The consulting services is to provide high quality professional services for the preparation of the Rural Municipality Transport Master Plan (RMTMP), harmonized with the approach Manual of Department of Local Infrastructure Development and Agricultural Roads (DoLIDAR)'s. The scope of services carried out by the consultant shall broadly include, but not be limited to, the following:

- Assist for the formation of the Rural Municipality roads coordination committee (RMRCC)
- Secondary sources of information and review of the existing RMTMP (if any)
- Accessibility data collection and analysis
- Prepare the Indicative Rural Municipality Development Potential Map (IDPM)
- Prepare the Rural Municipality Inventory Map (MIM) of Urban Road, Main Trails and Bridges
- Collection of Demands for New/Upgrading/Rehabilitation Transport Linkages from Wards/Settlements
- Developing Scoring Criteria and its Approval from Rural Municipality
- Road Classification and Nomenclature
- Preparation of Perspective Plan of Interventions of Services and Facilities
- Analyse Fund Availability for Roads
- Preparation of the Rural Municipality Transport Master Plan (RMTMP)

- Prepare a Realistic Physical and Financial Implementation Plan of Prioritized Roads for the RMTMP Period

1.4 APPROACH AND METHODOLOGY

1.4.1 General approach

The Consultant has gone through the objective and ToR for Consultancy Services for preparation of the Rural Municipality Transport Master Plan (RMTMP). The ToR was itself sufficient for the execution of the work.

Integrated Rural Accessibility Planning (IRAP) is an integrated approach to solving problems by combining transport as well as non-transport interventions. It is participatory and bottom-up approach. Active involvement of community people and local authorities in every step is essential. The consultant facilitated the community people and local authorities in their need's identification, project prioritization and visionary development planning process.

The accessibility is 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 accessibility index of the settlements to concerned SOR sector. Accessibility Indicator is measurement of accessibility.

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

1.4.2 Methodology

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

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

Table 1: General methodology

S N	List of Task	Activities	Outputs
1.0 Data Collection			
1.1	Review of secondary source of information Review of existing RMTMP	<ul style="list-style-type: none"> • Collection of secondary information/Maps from the various Rural Municipality based line agencies, I/NGOs and other regional and central level related institutions. • Review of available existing RMTMP if any 	Obtain information about Rural Municipality situation in general, ready to precede further steps. Trend of implementation of RMTMP planning, constraint of

		<ul style="list-style-type: none"> • Data collection about year wise budgeting for RMTMP road and progress report of Rural Municipality • Interaction with Rural Municipality technician and other officials 	implementation will be found out
1.2	Accessibility data collection	<p>Through enumerators/field supervisor:</p> <ul style="list-style-type: none"> • Verification of secondary data in the field. • Collection of road data using GPS • Collection of access situation of every settlement in prescribed format. 	<p>find out the access situation of every settlement,</p> <p>identification of gaps with the reference to Comprehensive City Development Plan</p>
2	Analysis of Data	<ul style="list-style-type: none"> • Data entry -storage of collected data in computer using MS Excel software. • Base map preparation • Calculation of accessibility index 	Compilation of data, Accessibility index of all Wards of the Rural Municipality
3	IDPM preparation	<ul style="list-style-type: none"> • Assess the various potentiality of development of the Rural Municipality • Organized Rural Municipality/MRCC meeting • GIS map preparation 	IDPM report, Finalization of Growth Centers, identification and ranking of existing/potential areas and services
4	MIM preparation	<ul style="list-style-type: none"> • Assess the inventory of existing transportation linkage • Reconnaissance survey • Identification of required intervention • Map preparation 	MIM report, identify the existing transport situation, verification of MIM through discussion with the Rural Municipality
5	Area workshop Ward/VDC level	<ul style="list-style-type: none"> • Participatory workshop in each ward • Discussion about criteria of prioritization. • Standardize the accessibility indicator • Synchronize of interventions at Rural Municipality level • Validation of access data • Prioritization of interventions. 	Prioritization of interventions and projects.
6	Perspective Plan	<ul style="list-style-type: none"> • Compile the result from 	Perspective Plan of service and facilities

		<ul style="list-style-type: none"> ○ Accessibility analysis. ○ Area workshops • Identify and prioritize the interventions in every service and facility based on approved Rural Municipality standard. • Extract required interventions in transport linkage from the perspective plan of services and facilities 	including Rural Municipality Road network
7	RMTMP Preparation	<ul style="list-style-type: none"> • Assess the financial resources • Priorities the perspective plan • Preparation or updating RMTMP 	First five years Rural Municipality Road planning
8	Approval of RMTMP	<ul style="list-style-type: none"> • Presentation of draft RMTMP on Rural Municipality council through MRCC and Rural Municipality meetings. 	Final RMTMP report

1.4.3 Desk Study

Project Sensitization to Team

After signing the contract, the consultant has arranged a meeting of the proposed team and orient towards the objectives and scope of the work along with the working and manning schedules so that all the personnel will work as a team. The consultant has proposed a study team consisting of Transport Planner as a Team Leader, Socio-economist, who are competent and established professionals in their field of work. The study team was mobilized for further study

Task 1 Data Collection

a) Collection and Review of Secondary Information

The information about demographic data of Rural Municipality, maps, service flow pattern, various maps showing service centers or the location of SOR facilities, transport infrastructure inventory, past plans and sectoral study reports, sectoral standards and policy targets were collected from the secondary sources like DoLIDAR, Rural Municipality, line agencies of Rural Municipality, central Bureau of Statistics, Kathmandu, Topographical Survey Branch, Local NGOs. The details are given below:

List of documents/information will be collected and reviewed

- Previous reports of RMTMP prepared by the Rural Municipalities (if any)
- RMTMP of neighbouring Rural Municipality (if available).
- District/Rural Municipality periodic plan prepared by the DDC/Rural Municipality
- Annual reports /publications of line agencies of Rural Municipality
- District/Rural Municipality profile of the DDCY/Rural Municipality
- Traffic data of the Rural Municipality rural roads and strategic roads (if available)
- Annual plan, Programme and Budgetary allocations of last 5 years

- Expenditure in infrastructure development including roads in last 5 years
- Report on settlement pattern and market centers of the Rural Municipality
- Rural road statistics of neighbouring Municipalities and strategic road Networks
- Financial and technical data of on-going rural road projects in the Rural Municipalities and schedule including bilateral and multilateral funded projects.
- Demographic Statistics and socio-economic feature of the Rural Municipality
- Other relevant reports

Collection of Maps

- Topo maps the 1:23000 scales, which will be used as base map.
- Rural Municipality administrative map of Rural Municipality
- Arial photographs
- Rural Municipality Trail Map
- Map of strategic road Networks of Nepal
- Other Thematic maps

The main agencies for sources of information are

- District Development Committees (DDC),
- Rural Municipality
- Line agencies/office of the district about road, Rural Municipality Soil Conservation office, Forest, Agriculture Development, Livestock Service, Irrigation, Health, Education, Water Supply and sanitation, cottage industries, Rural Municipality Technical Office, Rural Municipality Chamber of Commerce and Industries office etc.
- National or Rural Municipality Research Organizations,
- Local and national NGO and INGO's working in development fields,
- District /Rural Municipality Chamber of Commerce and Industries office
- National Bureau of Statistics.
- Department of survey
- Other relevant office

The secondary information collected from above mentioned sources has been critically reviewed. The data were verified by and Cross checking of information of various sources and discussion with informants and local community people at unofficial and official meetings, workshops on the process of primary data collection.

The consultant has reviewed the available existing RMTMP and assesses the achievements during the last RMTMP period.

b) Primary Data collection

The scope of applying IRAP has been defined based on TOR. The relevant SOR sectors have been identified as per purpose of study. Primary information was taken from concerned community people, VDC officials, and schoolteachers about real accessibility situation of settlements in special format developed for this purpose.

c) Rural Municipality IRAP and RMTMP Orientation

One-day orientation program has been carried out in the Rural Municipality for the IRAP and RMTMP preparation. The participants were Rural Municipality body, ex-Rural Municipality body, line agencies, stakeholders, and representatives of national political parties and representatives from women, Dalit, local NGO. The field visit of enumerators has been arranged to:

- Verify the secondary data in the field.
- Collect data of access situation of every settlement in prescribed format.

Task 2 Analysis of Data

Compilation of data/Information collected from primary and secondary sources has been done by storing the data on computer. The data was entered in spreadsheet and prepare accessibility tables calculating the accessibility indicator approved by Rural Municipality.

The analysis has been done on the basis of time and quality factors. Accessibility Maps of every SOR facilities has been prepared. Accessibility profiles and accessibility maps of various SOR sector at settlement level was prepared and compiled them at VDC level.

Task 3 Indicative Development Potential Map (IDPM) preparation

The development potential of the Rural Municipality in agriculture, horticulture, livestock, cottage and small industries, other potentiality of the Rural Municipality has been compiled and prepared on the base map 1:112000 scale.

a) Rural Municipality base map has been prepared showing:

- Administrative/political boundaries of Rural Municipality/Ward.
- Large settlement
- National strategic roads, Rural Municipality roads, rural roads, trails, bridges.
- Important historical, cultural, religious and preserved places
- Important water bodies, forest and other lands.

b) The Consultant has analysed the potentiality of the Rural Municipality from secondary information collected from Rural Municipality line agencies. The development potential area has been defined as:

- Areas with extensive agriculture,
- Areas with extensive horticulture,
- Areas with extensive Livestock farming,
- Areas with extensive fisheries,
- Areas with extensive high value cash crops,
- Areas with extensive business markets,
- Potential Areas with tourism development,
- Potential Areas with development of large industries like hydropower, mining develop,
- Potential service centre
- And other potential development areas

c) Plotting of the development potential areas on the Rural Municipality base map has been done and the finalized map was prepared on GIS.

Task 4 Preparation of RMIM

The consultant has plotted the trail, bridge and road network of the Rural Municipality in 1:25000 and GIS maps from Rural Municipality level secondary sources. The consultant then carries out reconnaissance survey in the trails, bridges and roads with the help of checklist and update the map. The consultant has also prepared indicative cost estimates of improvements (Routine maintenance, recurrent maintenance & upgrading) and new construction of representative trails, bridges and road in the Rural Municipality. The consultant has prepared a support document of RMIM and validates the RMIM and the

document in MRCC.MIM has been prepared with reference to Annex (Reference to Annex 3). The economic data was collected by conducting PRA.

The consultant has prepared list of all existing transport linkage under the category of routing maintenance, recurrent maintenance, periodic maintenance and upgrading. These lists have been prepared separately for various classes of roads. The consultant then prepared indicative cost estimate for improvement.

On the basis of linkage inventory and condition of the linkage, easy linkage has been subdivided into maximum four types of section i.e.

- Section requiring routine maintenance
- Section requiring periodic maintenance
- Section requiring rehabilitation
- Unordered section (new construction)

All roads have been plotted under separate legends category by intervention type in MIM. List of roads having graveled road streetcars has been prepared separately. Information regarding inter Rural Municipality Road /trails also be included and used drawing planning process.

Task 5 Perspective Plan

The required of interventions of services and facilities has been identified from the accessibility analysis and compilation of ward level workshops. During the final Rural Municipality level workshop, the Rural Municipality standard of time and quality accessibility for every service and facilities has been decided. The required intervention of every service and facility has been identified and finalized on workshop on the basis of accessibility indicator. The Prioritized sector of services and prioritization of wards for every sector was done at Rural Municipality level based on AI.

In transportation sector, list of roads, bridges and required interventions for respective roads and bridges has been identified to improve accessibility to goods and services within the Rural Municipality. The perspective plan of Rural Municipality Road has been prepared for 20-25 years. All the identified interventions screened and graded on the basis of criteria 'B' of the approach manual. The interventions of services and facilities for the improvement of the access situation was discussed first with the Rural Municipality technical team and the MRCC, and only upon their recommendation it was forwarded to Rural Municipality Council meetings, hence the final perspective plan of Rural Municipality roads has been developed. The perspective plan has been shown in GIS maps also.

Task 6 RMTMP Preparation

Considering the Perspective Plan, the prioritization of the Perspective Plan has been done according to the DoLIDAR Approach Manual. Subsequently, the updated five year RMTMP of the Rural Municipality was prepared by selecting interventions (maintenance, upgrading and new construction of main trails, trail bridges and roads) that have top priority in the Perspective Plan and that could be implemented in the next five years period, based on cost estimates of maintenance, upgrading, rehabilitation and new construction of main trails, trail bridges and roads and available financial resources.

1.4.4 Process and Activities in detail:

The Consultant has listed out all transport linkages given in the Perspective Plan, under the following categories;

- a. New construction
 - b. Upgrading
 - c. Rehabilitation
 - d. Recurrent maintenance
 - e. Periodic maintenance
- These lists have been prepared separately for various classes (Rural Municipality Road, Village Road, Main Trial, and Village Trial).
- On the basis of Criteria (for prioritization), the consultant has ranked all the above projects
- The financial resources of Rural Municipality on road sector have been analysed first
- The Consultant has prepared next Five Year's Projected Financial Plan by accounting all possible financial resources of Rural Municipality and concerned wards and VDCs.
- The consultant has prepared Five Year Financial Plan of the Rural Municipality based on likely availability of financial resources in next five year. (All consolidated financial resource has been projected based on the past 3- 5 years data.
- The Consultant will determine the tentative lengths that could be under taken by each year, in each category and under each class. These lengths shall be documented and presented.
- The Consultant has prepared all ranked lists of transport linkages to the Rural Municipality development Committee for the selection of year - wise priority lists which should be implemented in the first, second and fifth year.
- All ranked lists of transport linkages; the Consultant has selected the year-wise priority lists to be included in the "*Five Year Master Plan*".
- Based on the approved year-wise priority lists, the Consultant has prepared Five Year Rural Road Master Plan.
- Synchronizing of the Draft Perspective Plans with adjoining Rural Municipality was done
- The draft report of RMTMP was presented on Rural Municipality and MRCC in a workshop. Incorporating the suggestions and recommendations from the Rural Municipality and MRCC, the final report has been prepared. Subsequently, the Rural Municipality will present the final RMTMP report to the Rural Municipality council for formal approval

1.4.5 Organization of Workshop

Following workshop was organized

1) Rural Municipality IRAP and RMTMP Orientation

One day orientation program was carried out in the Rural Municipality for the IRAP and RMTMP preparation. The participants were Rural Municipality body, ex- Rural Municipality body, line agencies, stakeholders, representatives of national political parties and representatives from women, Dalit, local NGO.

2) IRAP Data collection training

One day orientation training for enumerators was organized for them about efficient data collection using IRAP tools at the consultant's office.

3) Ward/ VDC/cluster level workshop

The consultant has organized ward/ cluster level workshop in each ward in which ward secretaries, representatives of political parties, women, NGO's, disadvantaged people's representations, davits, traders, industries were presented. The workshop primarily focused on following aspects.

- Access situation within the area
- Validation of accessibility data
- Identification of interventions of every service and facility.
- Access situation within the area
- Assess the local prioritization

4) Final workshop at Rural Municipality level

The final validation workshop at Rural Municipality level will be organized at Rural Municipality. The workshop will primarily focus on following aspects:

- Verification and update of secondary information and data's
- Finalizing IDPM, MIM, Accessibility profiles.
- Standardize accessibility indicator.
- Finalization of intervention required and prioritized at Rural Municipality level.
- Identifying new viable transportation linkages and standard.
- Problem identification in the rural transport linkage and required intervention on this.
- Identifying required intervention (i.e., routine maintenance, periodic maintenance, rehabilitation and upgrading length) for each transportation linkages and bridges.
- Responsibility of ward and Rural Municipality regarding maintenance, rehabilitation and upgrading works.
- Financial recourse mobilization for the achievement of the set target.

CHAPTER 2

REVIEW OF EXISTING INFRASTRUCTURE SITUATION

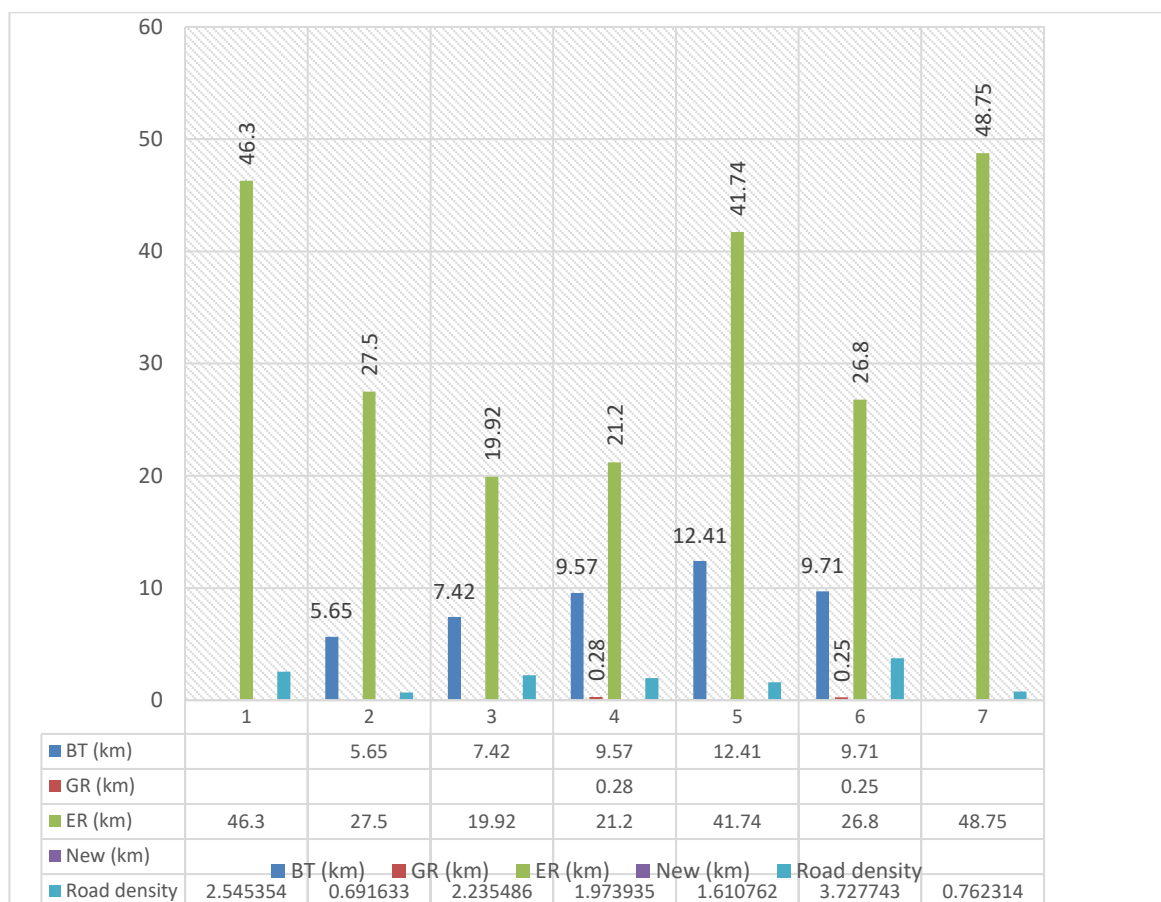
2.1 ACCESSIBILITY SITUATION OF THE RURAL MUNICIPALITY

This Rural Municipality is formed with the eight wards. In this present situation the people of the all wards have access with road head. Since the people has access with the road head it's assumed that people have access with the services and facilities including the utilities. Though; the local people have few difficulties for the access situation due to irregular public transportation facilities in the local level. On above of that most of the roads are not all weather.

Table 2: Ward wise road density

Ward no.	Area (Sq. km)	Length (km)	BT (km)	GR (km)	ER (km)	Road density
1	18.19	46.30			46.30	2.545354
2	47.93	33.15	5.65		27.50	0.691633
3	12.23	27.34	7.42		19.92	2.235486
4	15.73	31.05	9.57	0.28	21.20	1.973935
5	33.45	53.88	12.41		41.74	1.610762
6	9.66	36.04	9.71	0.25	26.80	3.727743
7	63.95	48.75			48.75	0.762314
Total		276.51	44.49	0.53	231.49	

Figure 1: Ward wise Road condition and road density



2.2 REVIEW OF EXISTING INFRASTRUCTURE SITUATION

The existing transportation network of Babai Rural Municipality was studied during this inventory survey. Condition of various structures of roads was also studied. Most of the roads were found to be fair weather road. Condition of structures like bridge, masonry walls, culverts, drains etc. were also studied. Most of the roads and cross drainage structures requires proper regular maintenance in order to keep them in full functioning state. Also lacks of cross drainage structures have created difficulties in road crossing. It is required to upgrade all existing roads to all weather roads.

2.3 RISK SENSITIVITY SITUATION OF THE RURAL MUNICIPALITY

Risk sensitivity analysis will not eliminate the uncertain risk but it can reduce that risk to the minimum and provide the tools for minimizing risk as the action goes forward. People suffer a relentless cycle of periodic destruction of homes, livelihoods, schools and disruption of life given the country's geographical vulnerability to frequent natural disaster.

In the recent years the nation has faced the severe threats from the earthquake devastation and this Rural Municipality is one of the affected areas. Likewise, the landslide, fire, floods, soil erosion and other are of prime importance to consider before preparation of any development plan of the city or town. During our field visit we find some of the road's pass by the landslide prone zone and some of them pass by the flood plain too. Therefore, before

implementing and having detailed design and survey all of the roads should study in detail for the risk sensitivity.

Disaster resilience infrastructure should be made in order to ensure sustainable development of a Rural Municipality. To create a wider safety net for the entire community, local government, communities and other organizations should collectively address such issues.

CHAPTER 3

INDICATIVE DEVELOPMENT POTENTIAL MAP

3.1 RURAL MUNICIPALITY PROFILE

3.1.1 Background

Babai Rural Rural municipality is located in Dang district in Lumbini Province and covers an area of 257.5 square kilometre. The rural Rural municipality is formed by merging two previous VDCs which are Purandhara and Paanchakule. According to the national census 2021, the total population of the Rural municipality is 30,968 comprising 14,446 (46.6%) male and 16,522 (53.4%) female residing in 7,527 households. Babai Rural Rural municipality has an average population density of around 120 person per sq. km. Religious and cultural festivities form a major part of the lives of people residing in Babai. There are people of various religious beliefs such as Hinduism, Buddhism and Christianity. Nepali is the major language spoken whereas other several languages spoken in this Rural municipality includes Magar, Nepali, tharu, etc.

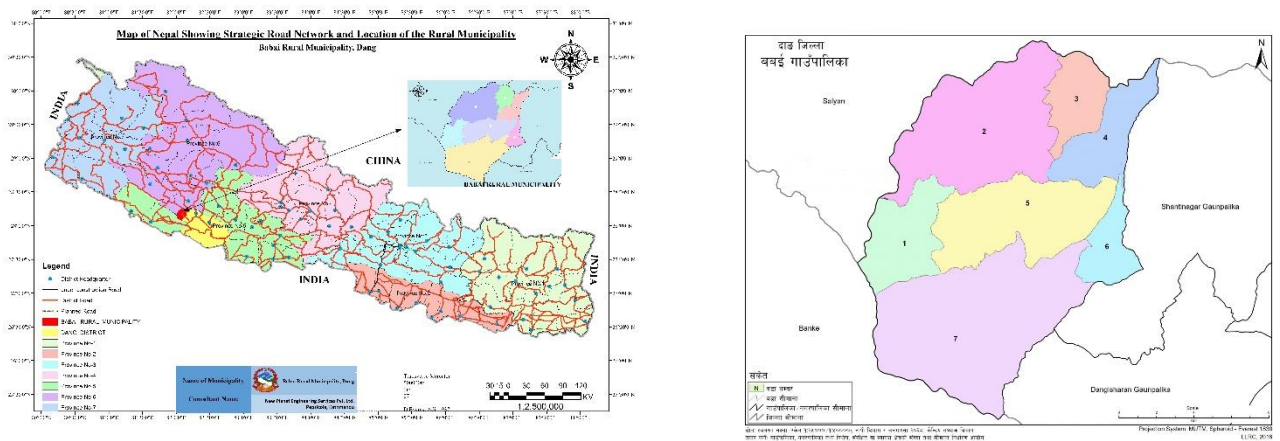


Figure 2: Location map of Babai Rural Municipality

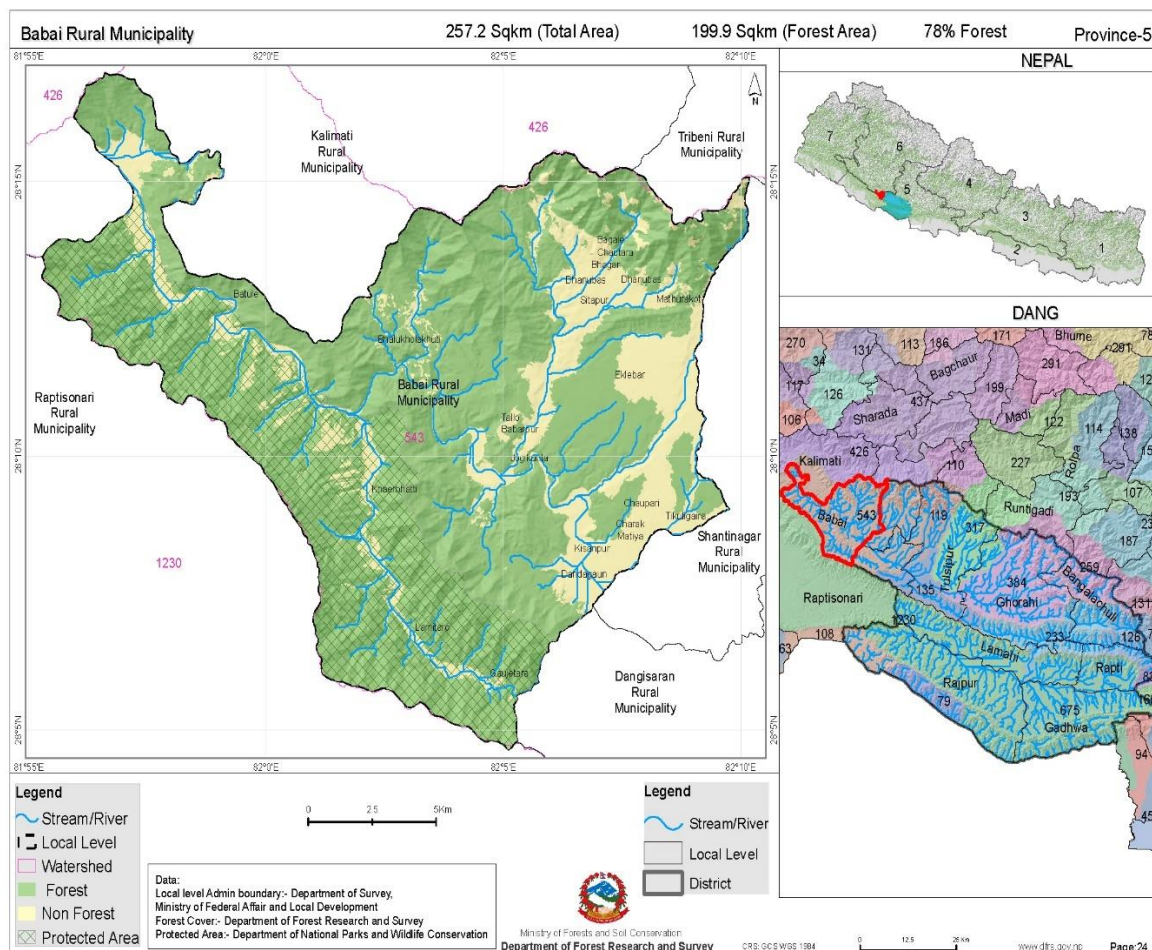


Figure 3:Local resource map of Babai Rural Municipality

3.1.2. Physical location and geographical Characteristics

Babai Rural Rural municipality is located in the western part of Nepal and covers an area of around 257.5 square kilometres. This Rural Municipality is surrounded by Shantinagar Rural Municipality and Dangisharan Rural Municipality in the east, Banke district in the west, Salyan district in the north and in south there is Dangisharan Rural Municipality and Banke district.

3.1.3. Socio economic

The Demographic features and other social characteristics of the Rural municipality have been presented here;

Table 3: Demography

S.N.	Description	Year 2021
1	Total Population	30,968
2	Female	16,522
3	Male	14,446
4	No. of household	7,527
5	Population Density Per Sq.KM	120
6	Average household size	4.12

Source: CBS 2021

Table 4: Wardwise population of Babai Rural Municipality

Ward	Total population	Male	Female
1	3888	1833	2055
2	3927	1847	2080
3	3133	1466	1667
4	5382	2510	2872
5	6214	2910	3304
6	4540	2104	2436
7	3884	1776	2108
Total	30968	14446	16522

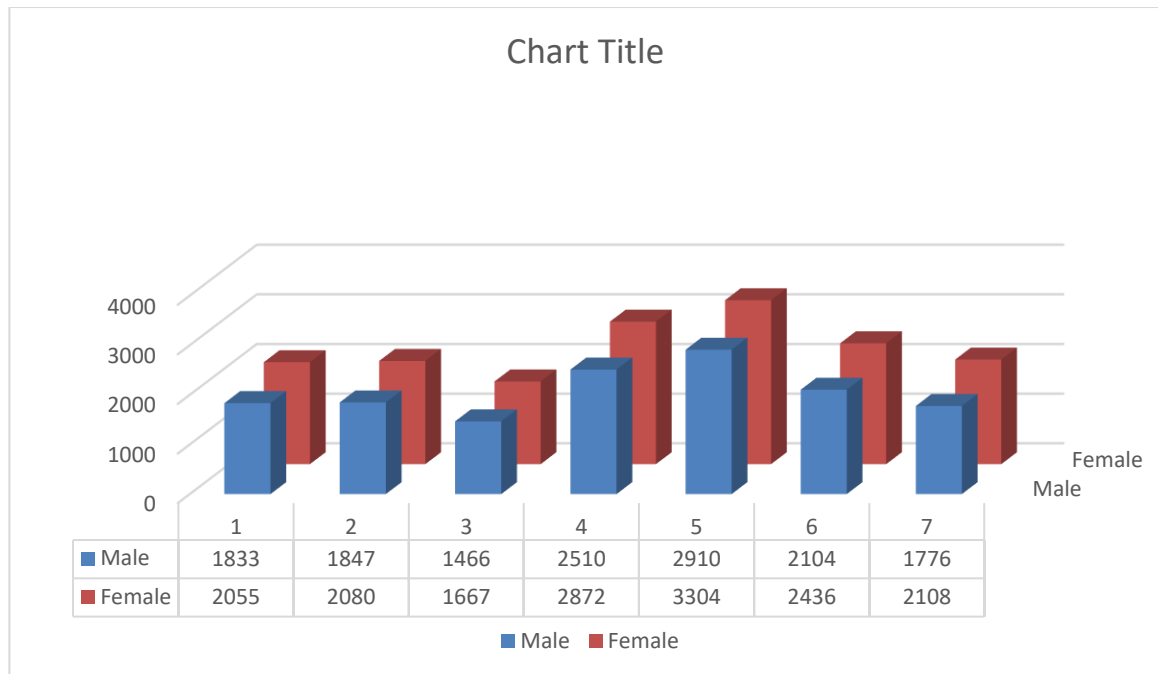


Fig 2: Chart demonstrating Wardwise Population of male and female

Population by age group:

S.N	Age of 5 years Group	Male	Female
	95+	1	8
	90-94	7	13
	85-89	13	17
	80-84	64	57
	75-79	148	150
	70-74	263	283
	65-69	363	389
	60-64	459	462
	55-59	536	565
	50-54	700	760
	45-49	673	771
	40-44	787	974
	35-39	838	1124
	30-34	893	1237
	25-29	1072	1494
	20-24	1246	1840
	15-19	1587	1821
	10-14	1650	1577
	05-09	1656	1612
	00-04	1490	1368

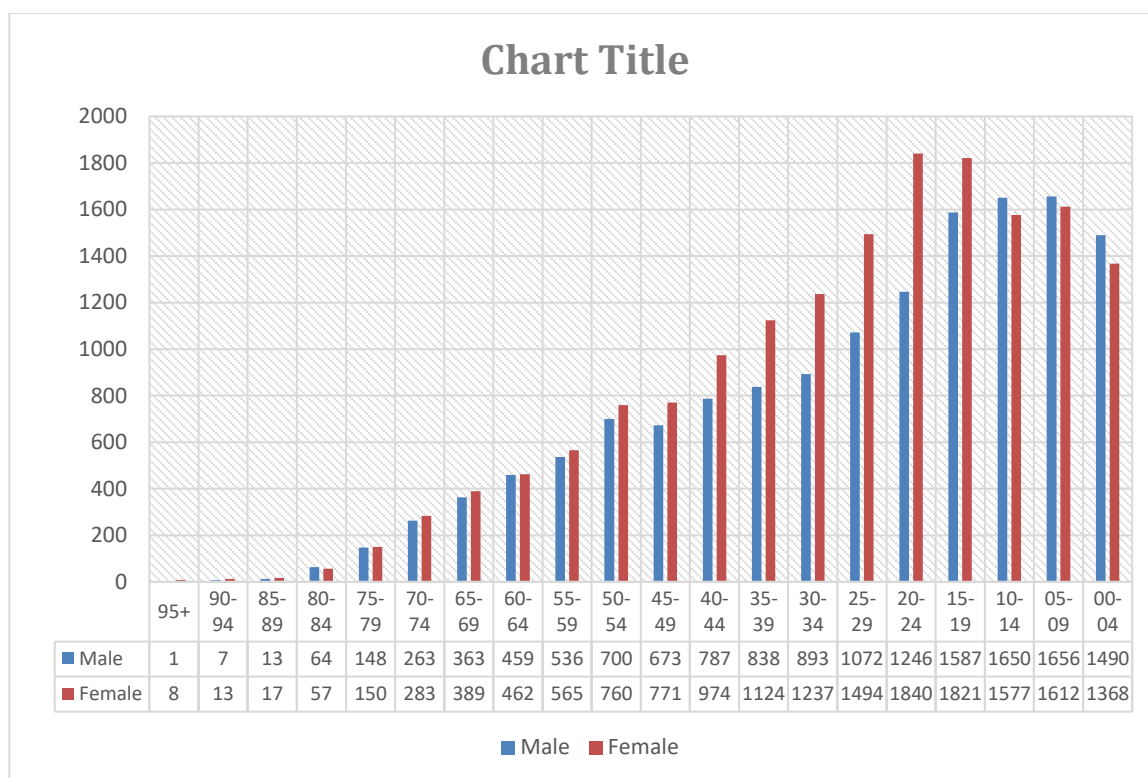


Fig 3: Chart Illustrating Male and Female Population by Age group of 5 years

❖ Festivals

The festivities such as the Dashain, Tihar, Shivaratri and many more are observed by all Hindu communities of Babai. Some of the traditional festivals observed in Babai apart from those previously mentioned, are Bada Dashain, Tihar, Maghe Sankranti, Naga Panchami, Janai Poornima, Eid, Teej/Rishi Panchami.

❖ Ethnic groups

People of various ethnic groups like Magar, Kami, Newar, Chhetri, Majhi, Brahmin - Hill, Sarki, Damai/Dholi, Tharu, Thakuri etc. According to 2021 census conducted by Central Bureau of Statistics (CBS), Babai Rural Rural municipality was inhabited by mostly the people of Chhetri caste. People of these different ethnic groups have their own language. Some of the used mother tongues are Nepali, Tamang, Newari, Magar, Maithili etc.

3.2 LIST OF POTENTIAL DEVELOPMENT AREA

3.2.1 Existing/Potential Area for Cottage and Agro based Industries

There are few small scale agro based industries like Poultry Farming. Agriculture is the major occupation of the local people over here and are in the phase of commercial development. This Rural municipality have potential of development in the area of herbs production.

Table 5: Existing area of cottage and agro based industries

S.N.	Industry	Location
1	Rice and Flour mills	13
2	Forest/Agro based industries	13
3	Handicrafts	None
4	Mechanical Industrial	1

3.3 SERVICE CENTERS AND FACILITIES

3.3.1 Health

In Babai Rural Municipality, health facilities are accessible to almost all local peoples. The health institutions available in this Rural Municipality are enlisted follow:

Table 6: List of health services

S.N.	Type of health centre	Location
1.	Health post	5
2.	Hospital	1
3.	Medical shops	8

3.3.2 Market centers

Devitar, Ghartichap, Gokule are the major markets of this rural Rural municipality. Major economic activities like business, service sectors etc. takes place over various markets. People from nearby settlements also visit here for various purposes. Local farmers transport their agricultural products to this market which is either consumed locally or exported to other bigger markets nearby.

3.3.3 Business and commerce

Table 7: List of service providers

S.N.	Type of Services	Number
1	Hotel, lodges and resturants	25
2	Agriculture service centres	1
3	Grocery shops	101
4	Hardware shop	1
5	Clothes shop	15
6	Stationary	4

3.3.4 Educational centres

In this Rural Municipality people have access to educational centres. Colleges are also available for higher level studies. Following tables shows the location of various educational centres.

Table 8: List of educational centres

S.N.	Type of educational centres	Number
1	Upper high school	3
2	High school	7
3	Lower Secondary	16
4	Primary School	22

3.3.5 Telecommunication

Telephone facilities are available in all part of the Rural Municipality. Nepal telecom and Ncell are the major service providers. CDMA and GSM mobile service are available in every wards of the Rural Municipality. Internet/ email services are easily available. In addition, internet service is available from CDMA mobiles.

3.3.6 Office

S.N.	Type	Number
1	Post office	2
2	Veterinary office	4
3	NGO	8
4	Banks	10
5	Telephone office	4
6	Electricity office	2
7	Cooperative Offices	35

3.4 TRAFFIC VOLUME STUDY

According to traffic survey conducted, it was found that people use private vehicles mostly motorcycle for travelling purpose. In case of short distance people preferred walking. Few numbers of trucks and jeeps were found to be used for the purpose of transportation of goods, agricultural products etc. to and from the production area and market centre.

Table 9: Traffic volume study

S.N.	Type	Present traffic volume (per day)	%
1	Motorcycle	200	71.42
2	Jeep	27	12.85
3	Bus	10	8.58
4	Truck	15	7.15
	Total	252	100

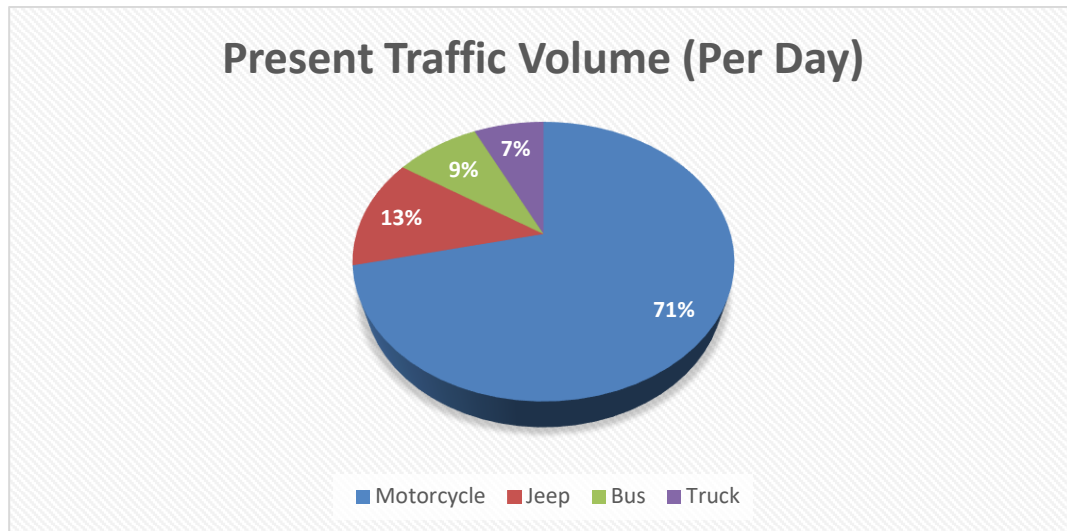


Figure 3: Traffic volume

3.4.1 Mode choice

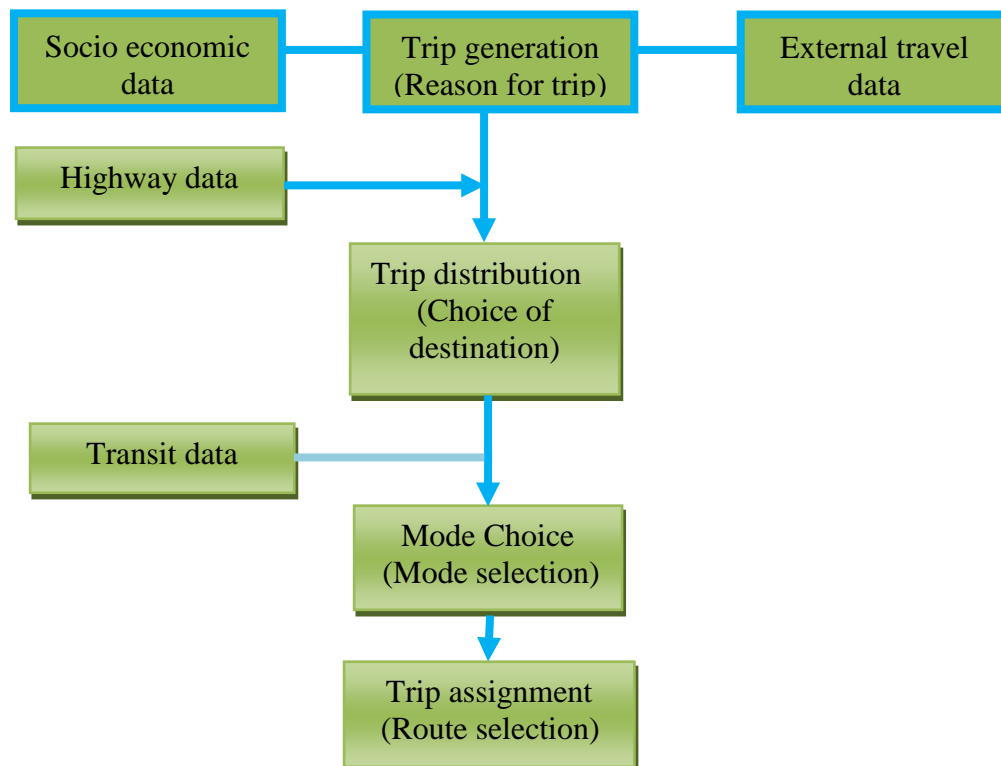
People choose the mode of transportation as per their convenience and their requirement. Different factors affect the mode choice. Some of them are:

- Household characteristics
 - ✓ Income
 - ✓ Household structures
- Zone characteristics
 - ✓ Land use
 - ✓ Land price
- Residential density, rate of urbanization
- Accessibility
- Vehicle ownership
- Quality of local public transit
- Purpose of travel, nature of work
- Travel time, cost and distance

3.4.2 Future traffic forecast

Traffic forecasting is the process of estimating the number of vehicles or people that are likely to use different transportation facilities in the future. Forecasting and estimation of growth in vehicular population of any major transportation engineering development requires capturing the past trend and using it to predict the future trend based on qualified assumptions, simulations and models created using explanatory variables.

Figure 4: Flow chart of travel demand forecasting



From the traffic survey conducted over Babai Rural Municipality following traffic data were collected and future traffic were forecasted taking growth rate 7% using following formulae:

$$F = P(1+r)^n$$

Where;

F = Future traffic

r = growth rate

n = number of years

P = Present traffic

Table 10: Future traffic forecast

S.N.	Vehicle	Present traffic	Future traffic forecast			
			5 years	10 years	15 years	20 years
1	Motorcycle	200	230	250	320	420
2	Jeep	27	38	52	80	100
3	Bus	10	18	38	65	83
4	Truck	15	22	42	58	75

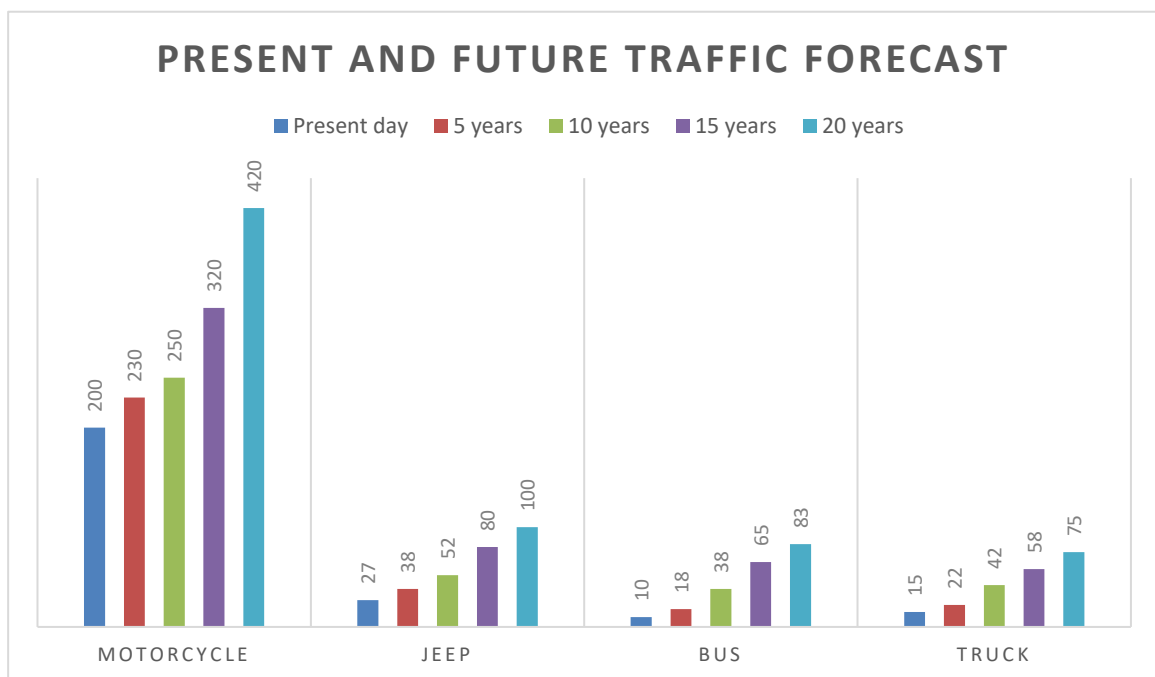


Figure 5: Chart showing future traffic forecast

From the above table, it is clear that the number of vehicles will be doubled after 10 years. Knowledge of future traffic flow is an essential input in planning, implementation and development of transportation system. These traffic forecast data are used for various operation like roadway and intersection level of service, delay, measure of effectiveness, road design etc. so while planning transport networking, future forecast have to be considered along the past trend analysis.

3.4.3 Transportation management

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

1. Drainage system:

Drainage is one of the most important factors in road maintenance. Side drains are the integral part of the roads and are essential means of preventing structural damage

to the road. From general observation it is apparent that their design and construction is not given enough thought in Nepal resulting in problems. This case implies in the case of this Rural Municipality also.

2. Parking area:

Parking is a part of an overall transportation system and is one of the serious problems that confront the urban planner and traffic engineer. Traffic usually travels towards a destination and a vehicle must be parked while some business. As the number of automobiles increases exponentially around the city, the need to house them in close proximity to destinations creates a challenging design problem.

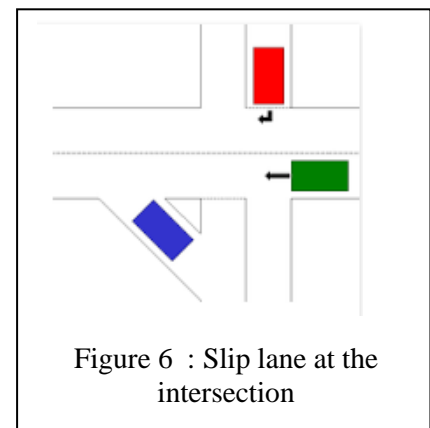
3. Road furniture

Different objects and equipment should be installed on roads for various purpose e.g., traffic signals, traffic signs, street light, traffic barriers, bus stands, bus stops etc. Road furniture will

- Ensure the most efficient and effective use of resources
- Building the aesthetics in surrounding area
- Ensure traffic safety
- Provide comfort to the pedestrian (bus stand, benches)
- Control and regulates traffic flow

So, while installing road furniture following elements should be considered:

- Standard road sign
- Junction improvement i.e., entry and exit through slip lanes with proper acceleration and deceleration lane
- Provision of raised footpath for pedestrian
- Inside widening for sharp curves
- Adequate off set distance from natural and road side features



3.5 ROAD CLASSIFICATION

Roads can be classified as per

- Function
- Purpose
- Speed
- Capacity
- Maintenance Responsibility
- Services and
- as per the guideline based on RoW

Apart from the guidelines other factors are also considered while determining the class of the road; such as accessibility to market centre, connection with strategic road networks, district headquarters, service centers, administrative centers etc. Various methods of road classification are as follows:

Table 11: Road classification criteria:

Criteria	Class A	Class B	Class C	Class D
Purpose	Mobility	Mobility and control access	Access and mobility	Access
Function	Through and long-distance movement	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
	High network coverage	Support through movement of traffic	Access to property	Direct access to property
	Segregated NMT facilities and Bus lay bays	Segregated NMT facilities and Bus lay bays	Segregated NMT facilities	Local NMT movement
	Complete access to public transport	High access public transport	Access limited to public transport	
Maintenance Responsibility	Rural Municipality	Rural Municipality	Rural Municipality and local people	Local people
Speed (kmph)	80-100	60-80	50-60	40-50
Capacity (PCU/hr.)	4000-4800	2400-3600	1500-2400	Less than 1500
Access Control	Full control	Partial control	No	No
Public transport services	Mass transit facilities	Mass transit, Local public transport	Access to public transport	No public transportation
Right of way	Minimum 14 m	Minimum 10m	Minimum 6m	Minimum 4m

Here for the classification of road, guideline has been followed i.e. Right of way has been considered for road classification.

3.6 ROAD CODING, DIGITAL NAMING AND NODAL POINTS

Digital Naming and the coding of the road have been done as prescribed by the RMTMP Preparation guideline. As per this, the digital name of the roads has been carried out starting from the SRN. And the coding of the road has been done for all roads starting from the district code. The digital name are assigned so that,

- first digit represents roads under strategic road network
- followed by a digit which indicates the number of collector road
- Then following digit indicates the nth sub collector road.
- Since there is no strategic road network in this Rural Municipality, class A roads are taken as main roads for naming.
- In case of this Rural Municipality due to absence of SRN Road class A area assumed as major roads for digital naming.

Once the roads are finalized, each municipal roads are assigned a road code. During assignment of road code guideline has been followed. As per the guide line, road code is made up of nine digit where first two digit represent the district, third digit letter 'M' represents Rural Municipality, fourth and fifth digit represents number of particular Rural Municipality, sixth digit represents class of the road and next three digits represents the particular transport linkage.

Nodal point of the road is the point from where the particular road starts. Here, Nodal points have been assigned as per ToR during field survey. Any infrastructure or road junction at the start of the roads were noted as nodal points.

Digital name are assigned in such a way that first digit represents roads under strategic road network followed by a digit which indicates the number of collector road then following digit indicates the nth sub collector road. If there is no strategic road network in this Rural Municipality, class A roads are taken as main roads for naming.

Coding of Municipality Roads

1. The following guidelines shall be followed when coding. Each transport linkage will have a nine-digit code unique for a particular linkage.

- First digit (numbers varying from 1 to 5) represents Development Region
- Second and Third digits (numbers varying from 01 to 75) represent District (1-75)
- Fourth digit (a letter M) indicates Municipality
- Fifth and Sixth digits (numbers varying from 01 to 99) represent Municipal number of district
- Seventh digit (a letter A to E) indicates Class of road
- Next three digits (numbers varying from 001 to 999) represent the particular transport linkage.

Example: 3 72 M 04 B 183

3 Development Region
72 District (1-75)
M Municipality
04 Municipal number of district
B Class of road
183 Number of Roads

Legend:

- A. Road Class 'A' - Main Collector Road
- B. Road Class 'B' - Other Collector Road
- C. Road Class 'C' - Feeder Road
- D. Road Class 'D' - Other Road

Figure 8: Coding of municipal roads

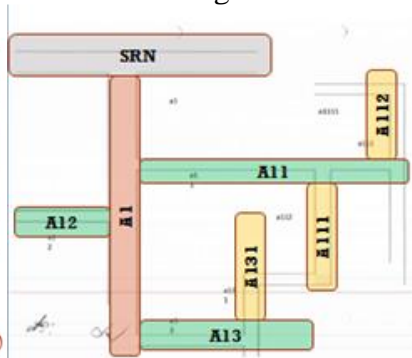


Figure 7: Digital naming of road

CHAPTER 4

RURAL MUNICIPALITY INVENTORY MAP OF ROAD NETWORK

4.1 EXISTING ROAD NETWORK

The Rural Municipality is not connected by Strategic Road network. Study and analysis show that Babai Rural Municipality has 174 Rural Municipal roads. Most of the roads have earthen surface restricting their operations in only fair weather. Moreover, construction quality of the road is poor and has to be upgraded to all weather roads to increase transport accessibility of the people and improve the overall transport situation of the Rural Municipality.

Table 12: Road network of Rural Municipality

S.N.	Road Name	Length (Km)				Total length (KM)
		BT	GR	ER		
1.	Strategic road network	21.77	-	-		21.77
2.	Rural Municipal roads	22.72	0.53	231.49		276.51

From table no. 13 it can be known that there are altogether 4 no.s of Class A roads, 9 no.s of Class B roads, 30 no.s of class C roads And 103.89 no.s of Class D roads. Length of the roads according to the class is given below:

Table 13: Summary of Road inventory according to the class of roads

Road Class	No.s	Length (km)
A	4	21.77
B	9	58.14
C	30	95.97
D	131	103.89
Total	174	276.51

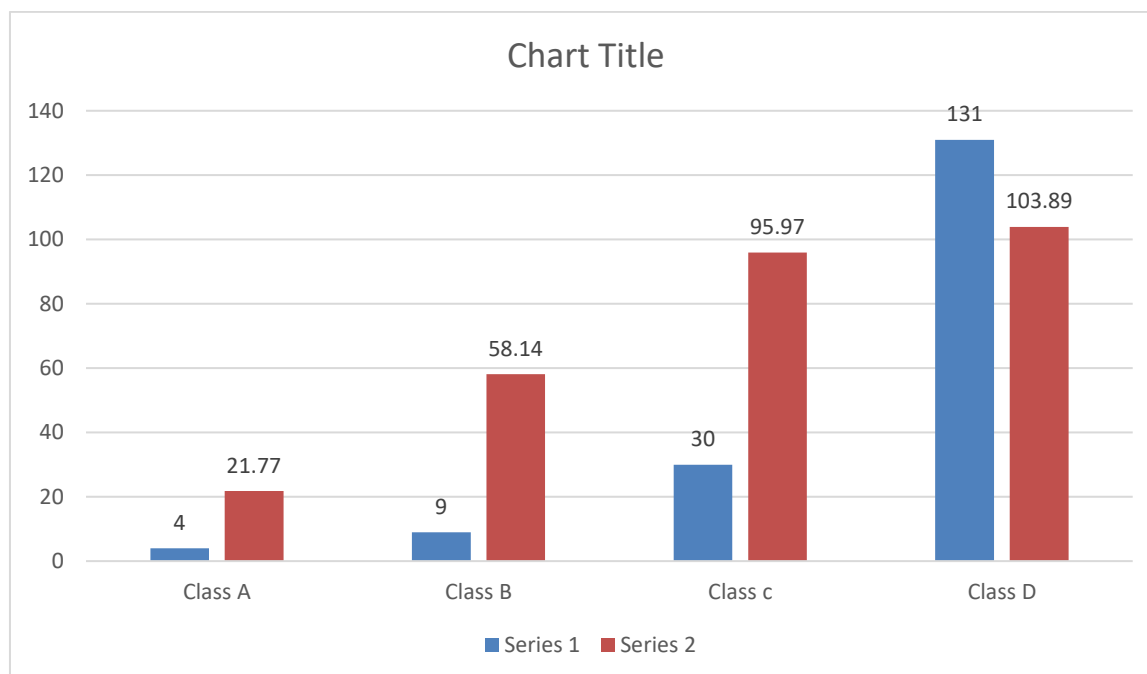


Figure 9: Class wise roads

From the survey it has been found that most of the roads within the Rural Municipality are gravel and earthen. Length of the roads according to their surface type are as follows:

Table 14: Road according to surface type

Road type	Length (km)
Earthen	231.49
Gravel	0.53
Black topped	44.49
Total	276.51

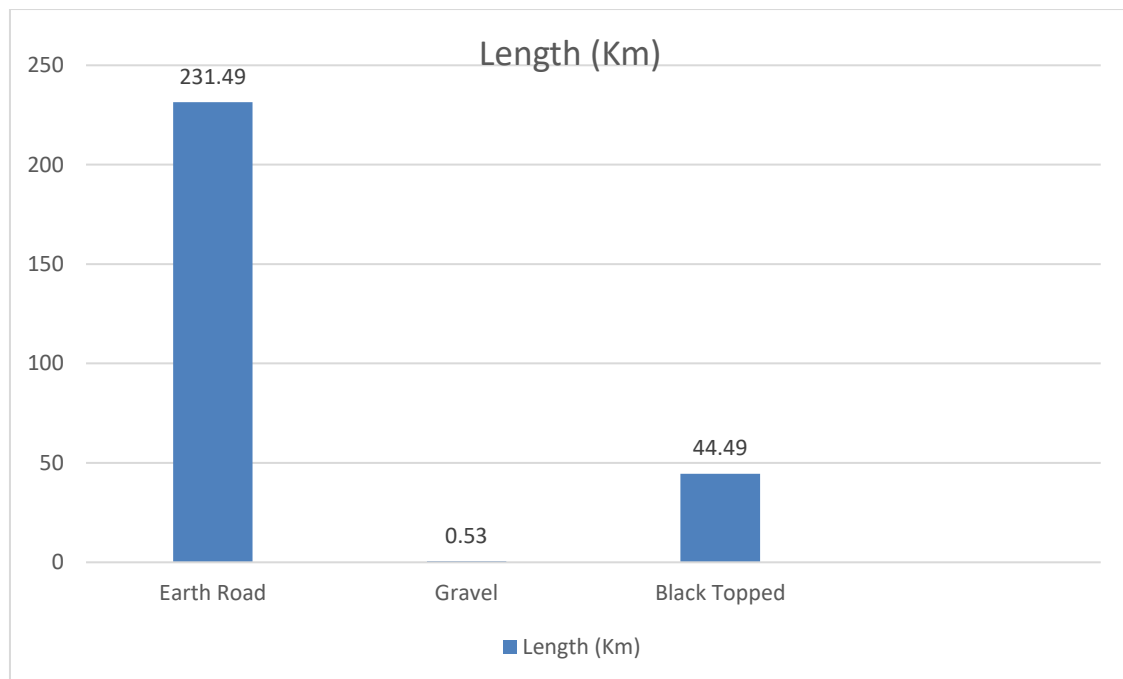


Figure 10: Chart showing road with different surface type

Brief Description of Road Class “A”

Roads with Right of Way greater than or equal to 14m are categorized as Road Class “A”. These are the main collector road of the Rural Municipality. Generally, class A roads are linked with strategic road network, highly dense settlement, major growth area, higher level market centre, service centers etc. These roads are facilitated with various road furniture, green belts for all road users i.e., vehicles, pedestrian, cycle etc. as shown in Figure no. 11.

Figure 11: Typical cross section of Road Class "A"

There are all-together 4 Rural Municipality roads which lie in road class A.

Table 15: List of road class A

S.n	Road Code	Road Name	Wards Pass	Surface Type				Total Length	Intervention	
				Black Top	Gravel	Earthen	New Construction		Upgrade	New Construction
Road class A										
1.0	356RM01A001	A001-TULSIPUR PURANDHARA BOTECHAUR LOKMARG	3	5.54				5.54		
2.0	356RM01A002	A002-TULSIPUR-PURANDHARA- BHOTECHAUR LOKMARGA	5	5.46				5.46		
3.0	356RM01A003	A003-TULSIPUR PURANDHARA BOTECHAUR LOKMARG	2	5.65				5.65		
4.0	356RM01A004	A004-TULSIPUR PURANDHARA BOTECHAUR LOKMARG	6	5.12				5.12		

4.3 SUMMARY OF ROAD CLASS B

Brief Description of Road Class “B”

Roads with Right of Way greater than or equal to 10m are categorized as Road Class “B”. These are the other collector road beside main collector roads of the Rural Municipality. Generally class B roads are linked with road class “A”, settlement, various market centre, service centers etc. these roads are facilitated with various road furniture, green belts for all road users i.e. vehicles, pedestrian, cycle etc. as shown in Figure no. 12.

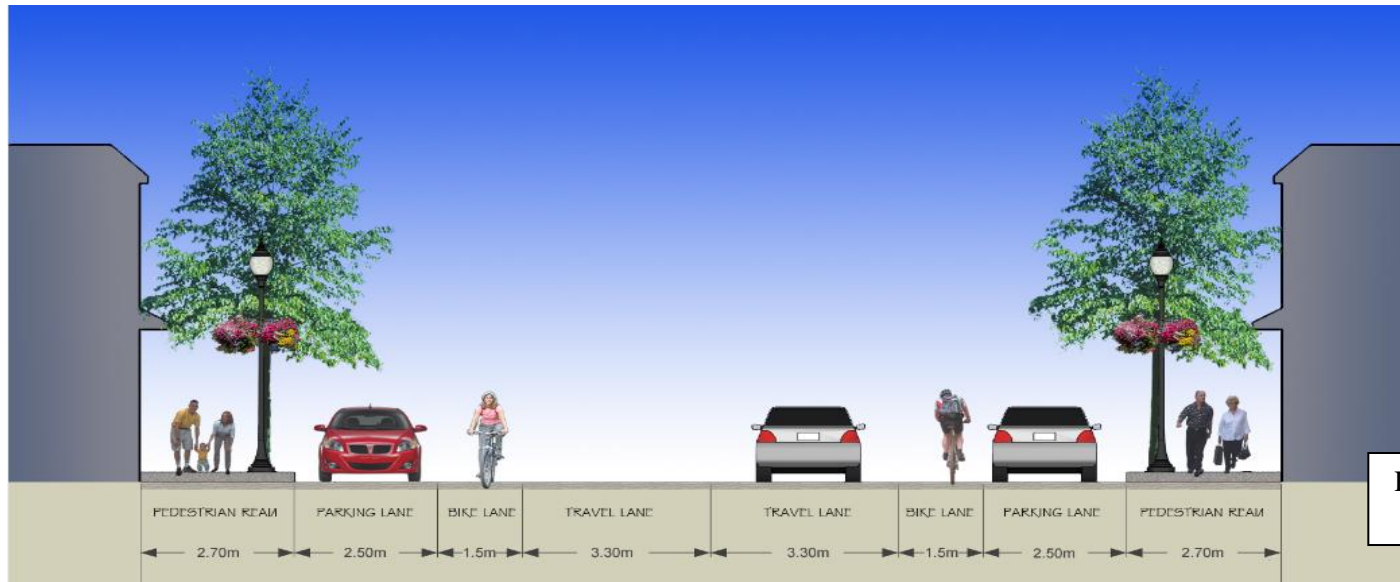


Figure 15: Typical cross section of Road Class "B"

Figure 12: Typical cross section of Road Class B

There are all-together 09 Rural Municipality roads which lie in road class B. The brief of individual road class B are as follows:

S.n	Road Code	Road Name	Wards Pass	Surface Type				Total Length	Intervention	
				Black Top	Gravel	Earthen	New Construction		Upgrade	New Construction
Road class B										
5.0	356RM01B001	BABAI MARG	5	5.33				5.33		
6.0	356RM01B002	Babai Pakhi pul hundai jaljala sadak	7			16.9		16.9		
7.0	356RM01B003	BABAI WARD NO 5 DEKHI BABARPUR DEKHI WARD NO 1 RIMKHOLI HUDAI GANGATYE BABAI NADISAMMA SHREEMANI MARGA SADAK	1			11.6		11.6		
8.0	356RM01B004	BAGARPUR BAJAR DEKHI JAUWARI SADAK	5			10.8		10.8		
9.0	356RM01B005	BAGARPUR BAJAR, TALLO BAGARPUR HUDAI UJHULUNGYE JODNE PUL	5			4.31		4.31		
10.0	356RM01B006	CHARAKMATIYA MATHYAURI MUL SADAK	7			2.13		2.13		
11.0	356RM01B007	GANGALAL MARG	4	3.91				3.91		
12.0	356RM01B008	PAWANNAGAR PURANDHARA KRISHI SADAK	3			1.97		1.97		
13.0	356RM01B009	TANKA KHOLA MASAN GHAT DEKHI BAGARPUR JANE SADAK	5			1.19		1.19		
						32				

Table 16: Description of Road Class “B”

4.4 SUMMARY OF ROAD CLASS C

Roads with Right of Way greater than or equal to 6m are categorized as Road Class “C”. These are the main tole roads of the Rural Municipality. Generally, class C roads are market roads etc. connecting various local markets and service centres. Typical cross section of road class C is as shown in figure 13.

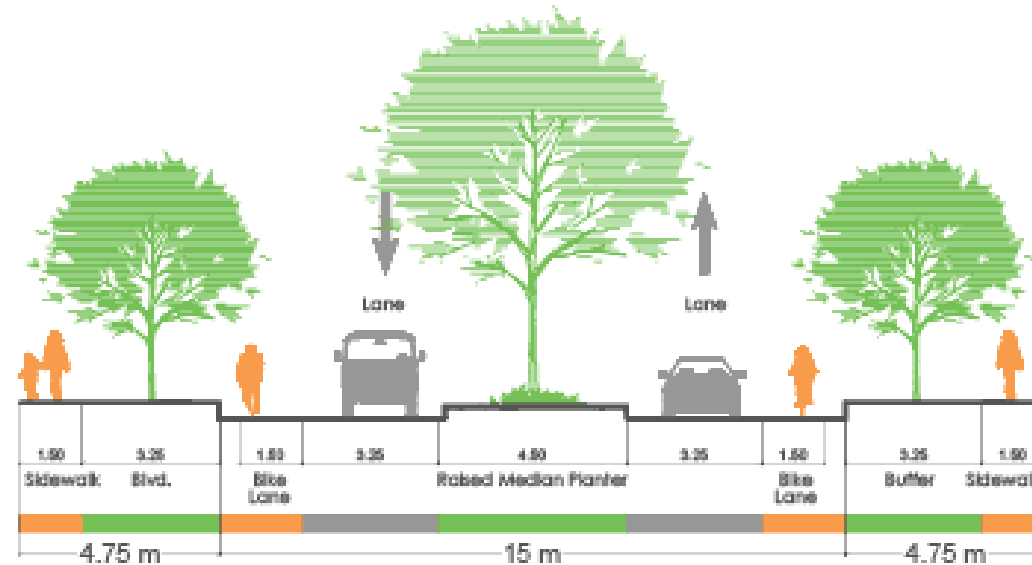


Figure 13: Typical Cross Section of Road Class "C"

There are all-together 30 Rural Municipality roads which lie in road class C.

Table 17: List of road class C

S.n	Road Code	Road Name	Wards Pass	Surface Type				Total Length	Intervention	
				Black Top	Gravel	Earthen	New Construction		Upgrade	New Construction
Road class C										
14.0	356RM01C001	AMARIAKHUTTI BIDHYALAYAHUDAI MAURIGHAR PATHIHALAN SADAK	1			3.17		3.17		C001
15.0	356RM01C002	BAGALE DEKHI KALAMATA, GHOIYACHAUR-JAREBAS HUDAI BHEDIKHORSAMMA	2			3.21		3.21		C002
16.0	356RM01C003	BHIRKUTI NAGAR SADAK	5			1.82		1.82		C003
17.0	356RM01C004	CHYATIKHOLA BAGAR TARA SADAK	4			2.46		2.46		C004
18.0	356RM01C005	DHARECHAHARA	4			6.42		6.42		C005
19.0	356RM01C006	DHARGHYECHAARA JAANE BATO	5			1.45		1.45		C006
20.0	356RM01C007	DHOLPUR KALI TARA	7			4.47		4.47		C007
21.0	356RM01C008	GAIRIGAU HUDAI SUNDARKHOLA CHAUTARA	4			2		2		C008
22.0	356RM01C009	GAURIBAJAR DEKHI GHARGANGIRI	7			2.1		2.1		C009
23.0	356RM01C010	GHATTEKHOLA-RAMPUR HUDAI PURANO BAISYERI SCHOOL HUDAI OLLO PALLO BAGALEY BHAYERA SALYANKO SIMANA SAMMA	2			4.83		4.83		C010
24.0	356RM01C011	HAPURE	4	2.84				2.84		C011
25.0	356RM01C012	ILAKA PRAHARI KARYALAYA DEKHI MANGAL SINGH THAPAKO GHAR SAMMA JODNE BATO	6			2.2		2.2		C012
26.0	356RM01C013	JALUGYE JHOLUNGYE PUL DEKHI HURUM NAYA BASTI SAMMAKO SADAK	5			2		2		C013

27.0	356RM01C014	KATKUTIYA CHOWK DEKHI SUNPUR HUDAI WADA LE JODNE BATO	6			2.99		2.99		C014
28.0	356RM01C015	KHAYAR BHATTI HIM BA GHAR DEKHI SIMGHARI JODNE SADAK	5			2.83		2.83		C015
29.0	356RM01C016	KHILTAPUR DEKHI CHISAPANI SURKHET ROAD JODNE SADAK	6			2.85		2.85		C016
30.0	356RM01C017	MALAI KAPTANEY PRA BI HUDAI 7 NUMBER JALJALA JODNE SADAK	1			3.78		3.78		C017
31.0	356RM01C018	MANMOHAN CHAKRAPATH	7			4.31		4.31		C018
32.0	356RM01C019	PANCHKULE CHOWK DEKHI CHARAKMOTIYA JANE SADAK	6	2.59				2.59		C019
33.0	356RM01C020	PANCHKULE DALIT BASTI DEKHI CHAUNI DADA SAMMA	6			2.12		2.12		C020
34.0	356RM01C021	PCO CHOWK DEKHI BHALUDANDA RAIDADA TALE SAMMA	2			2.1		2.1		C021
35.0	356RM01C022	PRIMWA OLIKO GHAR DEKHI DAKSHIN TARFA JANE BATO	2			3.39		3.39		C022
36.0	356RM01C023	PURANDHAARA JHARNA HUDAI MALAI SIMALKUWA JILLA DHOBIGHAT GANGATEY SHREEMANI MARGA SADAK	1			8.77		8.77		C023
37.0	356RM01C024	SHREEMANI MARGA BHANGAWARI ADALE HUIDAI DHOWAGHAT SADAK	1			3.81		3.81		C024
38.0	356RM01C025	SHREEMANI MARGA HUDAI PATHIHALANA AATIPARK SALYAN WALUK SADAK	1			5		5		C025
39.0	356RM01C026	SUNDARKHAL CHAUTARA DEKHI SUNDAR KHAL ARAMKOT	4			1.79		1.79		C026
40.0	356RM01C027	SUNPUR BADALE BICH BATO	7			2.94		2.94		C027
41.0	356RM01C028	SURKHET JANE HIGHWAY DEKHITIKULE GAURA HUDAI DHUNGE BAGAR JODNE BATO	6			2.5		2.5		C028

42.0	356RM01C029	SURKHET ROAD GHATTEKHOLA CHOWK DEKHI PAGAR HUDAI SALYAAN JODNE ROAD SAMMA	3			3.35		3.35		C029
43.0	356RM01C030	SURKHET ROAD DEKHI JWALAMARG HUDAI DHANUBASKOT	3	1.88		88.66		90.54		C030

summary of road class D

These types of urban roads have access to settlement level connected to class C roads. Residential streets are designed for comparatively lower traffic volumes for especially private transport. Right of Way (RoW) for this class is designed for single lane pavement. Minimum RoW for such Class of roads is allocated as 6 m. Altogether 131 roads have been identified as Class D roads in this RM and the total length of this category road is calculated as 103.89 km.

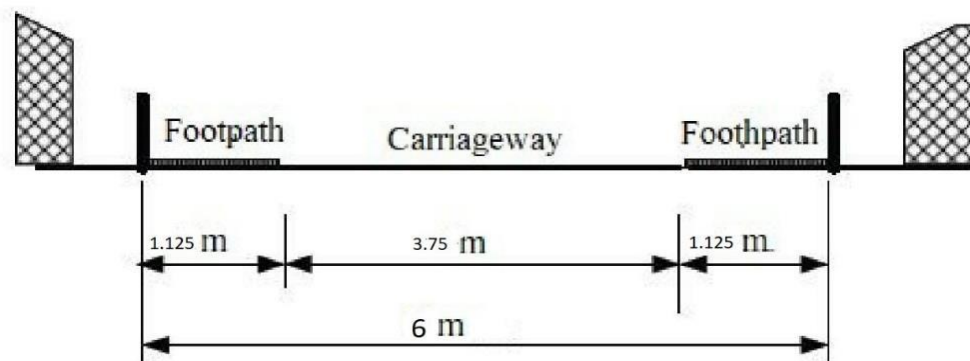


Table 18: List of road class D

S.n	Road Code	Road Name	Wards Pass	Surface Type				Total Length	Intervention	
				Black Top	Gravel	Earthen	New Construction		Upgrade	New Construction
Road class D										
44.0	356RM01D001	AAMA CHOWK HUDAI PALIKA JODNE SADAK	5			0.27		0.27		D001
45.0	356RM01D002	ADARSHANAGAR SADAK	4			1.41		1.41		D002
46.0	356RM01D003	AMARAIKHUTTI BIDHYALAYA HUDAI AMARAIKHUTTI GAU SADAK	1			0.81		0.81		D003
47.0	356RM01D004	AMARAIKHUTTI BIDHYALAYA HUDAI KUMBAS SADAK	1			1.15		1.15		D004
48.0	356RM01D005	ANANDANAGAR SADAK	5			0.72		0.72		D005
49.0	356RM01D006	BABAI MARG HUDAI LIPTEY SICHAI SADAK	5			0.39		0.39		D006
50.0	356RM01D007	BAGARPUR BAJAR DEKHI RATAGAU JANE SADAK	5			1.1		1.1		D007
51.0	356RM01D008	BAHULA KHOLA TATBANDA DEKHI CHARAK MOTIYO JANE SADAK	6			1.46		1.46		D008
52.0	356RM01D009	BELGHARI CHOWK DEKHI CHAUPARI PURANO GAU JANE BATO	6			1.25		1.25		D009
53.0	356RM01D010	BELGHARI CHOWK DEKHI KATKUIYA VITRI GAU JODNE BATO	6			1.21		1.21		D010
54.0	356RM01D011	BELGHARI PURANO GAU HUDAI BUTKEWA JODNE BATO	6			0.8		0.8		D011
55.0	356RM01D012	BHANGAWARI PRA.BI. HUDAI GALATE SADAK	1			0.94		0.94		D012

56.0	356RM01D013	BHANGGAWARI AMARAIKHUTTI BIDYALAYA HUDAI DAANDA GAU SADAK	1			1.95		1.95		D013
57.0	356RM01D014	BICH PADAMPUR HUDAI BABAI MARG JODNE SADAK	5			0.47		0.47		D014
58.0	356RM01D015	BICH PADAMPUR SADAK	5			0.65		0.65		D015
59.0	356RM01D016	BIDHYANAGAR	4			1.81		1.81		D016
60.0	356RM01D017	BISAUNI DANDA DEKHI GADYESIMAL SAMMA	2			1.21		1.21		D017
61.0	356RM01D018	BUDDHANAGAR SADAK	5			0.52		0.52		D018
62.0	356RM01D019	BUTKE DABARA DEKHI ITTA VATTA JODNE BATO	6			0.61		0.61		D019
63.0	356RM01D020	CHABALE HUDAI GOTHIBINEY TOLESAMMA	2			0.2		0.2		D020
64.0	356RM01D021	CHANDRANAGAR MARG	4	1.23				1.23		D021
65.0	356RM01D022	CHANTIYA CHOWK DEKHI PYAM JANE BATO	6			0.36		0.36		D022
66.0	356RM01D023	CHARAKMATIYA MUL SADAK DEKHI KATKUTIYA DALIT BASTI JODNE BATO	6			0.24		0.24		D023
67.0	356RM01D024	CHARAKMATIYA PASCHIM RING ROAD	7			0.98		0.98		D024
68.0	356RM01D025	CHARAKMATIYA RINGROAD PURANO GAU	7			1		1		D025
69.0	356RM01D026	CHARAKMATIYA SCHOOL DEKHI ROLAHA KHOLA SAMMA	7			0.21		0.21		D026
70.0	356RM01D027	CHAUNI DADA CHOWK DEKHI DALIT BASTI HUDAI ODALE JODNE BATO	6			0.56		0.56		D027
71.0	356RM01D028	CHAUPARI CHARAKMATIYA CULVERT DEKHI OLI DADA JANE BATO	6			0.55		0.55		D028
72.0	356RM01D029	CRUSHER JANE BATO	6		0.25			0.25		D029
73.0	356RM01D030	DADA GAU HHUDAI HAPUREY JANE BATO SAMMA	6			0.43		0.43		D030
74.0	356RM01D031	DAMODAR ROAD BAHULA KHOLA DEKHI BELASHPUR	7			1.44		1.44		D031

75.0	356RM01D032	DANDA GAU SAKHA BATO	7			1.32		1.32		D032
76.0	356RM01D033	DHANKHANYA SADAK	5			0.88		0.88		D033
77.0	356RM01D034	DHANUBASKOT DEKHI DHANBASH GAU SAMMA JANE BATO	3			0.46		0.46		D034
78.0	356RM01D035	DHOLPUR DEKHI BABAI SAMMA	7			0.75		0.75		D035
79.0	356RM01D036	DOBHAN	2			1.16		1.16		D036
80.0	356RM01D037	DURGANAGAR	4			1.21		1.21		D037
81.0	356RM01D038	GAIRIGAU NAGAR TARA SADAK	4			1.28		1.28		D038
82.0	356RM01D039	GANGALAL MARG	4			0.73		0.73		D039
83.0	356RM01D040	GAURIBAJAR DEJHI DILLI KHATRIKO GHARSAMMA	2			0.21		0.21		D040
84.0	356RM01D041	GAURIBAJAR DEKHI BULBULE HUDAI AAPTARI TAUKHOLA SAMMA	2			0.49		0.49		D041
85.0	356RM01D042	GAURIDANDA HUDAI BHAGWATI MANDIR	7			0.52		0.52		D042
86.0	356RM01D043	GHUREN DANDA DEKHI GEET PARIYARKO GHAR HUDAI TAL GAURA OLIKO GHAR SAMMA	2			0.43		0.43		D043
87.0	356RM01D044	GURIDANDA KHALYAN ROAD	7			0.44		0.44		D044
88.0	356RM01D045	GURUNG CHAUPARI JANE PITCH ROAD DEKHI RAMU TOLE SADAK	6			0.39		0.39		D045
89.0	356RM01D046	HAPURE JANE CHOWK DEKHI LAMITARA CHISAPANI JODNE SADAK SAMMA	6			0.79		0.79		D046
90.0	356RM01D047	INDRAPUR DEKHI RAJIKHARYE HUDAI SURKHET JODNE ROAD	3			1.71		1.71		D047
91.0	356RM01D048	JANAKALYAN MA.BI. HUDAI PURA HAAPUREY JODNE SADAK	5			0.53		0.53		D048
92.0	356RM01D049	JANJYOTINAGAR SADAK	5			0.65		0.65		D049
93.0	356RM01D050	JAUWARI JANE CHOWK DEKHI JHARANA HUDAI TALLO BABAI JODNE SADAK	5			1.88		1.88		D050

94.0	356RM01D051	JHARGAJERI BADALE	7			1		1		D051
95.0	356RM01D052	KAPARAIL HUDAI KANCHHI KHUTI SADAK	1			0.23		0.23		D052
96.0	356RM01D053	KAPARAIL KANCHIKHUTTI SADAK	1			0.3		0.3		D053
97.0	356RM01D054	KATKUIYA VITRI GAU DEKHI CHARAKMATIYA JODNE BATO	6			0.34		0.34		D054
98.0	356RM01D055	KATKUTIYA VITRI GAU DEKHI BELGHARI JODNE BATO	6			0.43		0.43		D055
99.0	356RM01D056	KATKUTIYA VITRI GAU DEKHI PANCHKULE CHOWK JODNE BAATO	6			1		1		D056
100.0	356RM01D057	KHAYAR BHATTI TALLO GAU SADAK	5			0.86		0.86		D057
101.0	356RM01D058	KHILATPUR RAJAN CHOWK DEKHI HAPURE JANE CHOWK SAMMA	6	1				1		D058
102.0	356RM01D059	KHILATPUR VITRI GAU DEKHI KHEL MAIDAN JODNE BATO	6			0.39		0.39		D059
103.0	356RM01D060	KOSHILAPUR CHAUTARA DEKHI BATKEWA JODNE BATO	6			0.32		0.32		D060
104.0	356RM01D061	KRISHI ROAD DEKHI BUSPARK JODNE BATO	3			0.75		0.75		D061
105.0	356RM01D062	KRISHI SADAK DEKHI 4 NUMBER SIMANA JODNE BATO	3			0.31		0.31		D062
106.0	356RM01D063	KRISHI SADAK DEKHI BUSPARK JODNE BATO	3			0.51		0.51		D063
107.0	356RM01D064	KRISHI SADAK DEKHI GHARTI GAU JANE BATO	3			0.3		0.3		D064
108.0	356RM01D065	KRISHI SADAK DEKHI KHANEPANI BHAWAN SAMMAKO ROAD	3			0.19		0.19		D065
109.0	356RM01D066	KRISHNA BAHADUR DOTHAN DEKHI AAPTARI SAMMA	2			0.14		0.14		D066
110.0	356RM01D067	KRISHNAPUR SAKHA BATO	7			1.83		1.83		D067
111.0	356RM01D068	LAMETARA JANE BATO DEKHI I PRA KA KHILATPUR SAMMA	6			0.8		0.8		D068
112.0	356RM01D069	LATOPOLE KHOLA CULVERTDEKHI SURKHET JODNEY ROAD SAMMA	3			0.59		0.59		D069

113.0	356RM01D070	MADANEY REKHETOL SADAK	1			0.49		0.49		D070
114.0	356RM01D071	MAINEWA SADAK	7			0.34		0.34		D071
115.0	356RM01D072	MANAKAMANA BAJAR DEKHI CHARAKMATIYA PURANO SADAK	7			0.88		0.88		D072
116.0	356RM01D073	MANBAHADUR DOTHAAN DEKHI AAPTARI SAMMA	2			1.1		1.1		D073
117.0	356RM01D074	MATHEURA SAKHA BATO	7			0.3		0.3		D074
118.0	356RM01D075	MATHYAURI DEKHI JHOLUNGYE PULSAMMA	7			0.47		0.47		D075
119.0	356RM01D076	MATHEURI KHALYAN ROAD	7			0.38		0.38		D076
120.0	356RM01D077	MULSADAK DEKHI BAMLAYI BADA TOL	7			0.37		0.37		D077
121.0	356RM01D078	MULSADAK DEKHI JHARGAJERI SAMMA	7			0.51		0.51		D078
122.0	356RM01D079	PANCHKULE CHOWK DEKHI KALIMATI MANDIR JANE BATO	6			0.37		0.37		D079
123.0	356RM01D080	PANCHKULE DALIT BASTI DEKHI THAKUR KC KO GHAR SAMMA JODNE BATO	6			0.41		0.41		D080
124.0	356RM01D081	PANCHKULE MAINROAD DEKHI CHYATIKHOLA HUDAI HAPURE JODNE SADAK	6			0.36		0.36		D081
125.0	356RM01D082	PRAGATINAGAR PASCHIM SADAK	4			0.26		0.26		D082
126.0	356RM01D083	PRAGATINAGAR SADAK	5			1.54		1.54		D083
127.0	356RM01D084	PRAGITINAGAR SADAK	4			1.13		1.13		D084
128.0	356RM01D085	PURBI BHRIKUTINAGAR	5	0.67				0.67		D085
129.0	356RM01D086	PUSHPALAL MARG	5			1.1		1.1		D086
130.0	356RM01D087	RAMPUR CHOWKDEKHI UTTAR RAMPURDANDA SAMMA	2			1.33		1.33		D087
131.0	356RM01D088	RATA DANDA DEKHI ROLPALI TARA SAMMAKO SADAK	5			1.9		1.9		D088

132.0	356RM01D089	RATAMATA TRIBENI CHOWK DEKHI DAKSHIN CHABALE HUDAI TWANKAKHOLA SURKHET ROAD SAMMA	2			1.3		1.3		D089
133.0	356RM01D090	RAWATARA RINGROAD	7			1.17		1.17		D090
134.0	356RM01D091	ROKCHYA TOL DEKHI 4 NUMBER SIMANA JODNE BATO	3			0.43		0.43		D091
135.0	356RM01D092	ROLLA DEKHI RATAMATA JODNE SADAK	3			0.93		0.93		D092
136.0	356RM01D093	SARSWATI AWASYA BIDHYALAYE DEKHI JHARGAJERI SAMMA	7			0.54		0.54		D093
137.0	356RM01D094	SEER MODE NAGAR	4			0.77		0.77		D094
138.0	356RM01D095	SHANTINAGAR SADAK	4			0.58		0.58		D095
139.0	356RM01D096	SHIVNAGAR SADAK	5			1.1		1.1		D096
140.0	356RM01D097	SHREEMANI MARGA HUDAI KAPARAIL SADAK	1			0.31		0.31		D097
141.0	356RM01D098	SHREEMANI MARGA MADANEY SISNEY SADAK	1			1.5		1.5		D098
142.0	356RM01D099	SHREEMANI MARGA PATIDHARYE HUDAI BISTACHAUR MADHYAMIK BIDHYALAYA SADAK	1			1.56		1.56		D099
143.0	356RM01D100	SHREEMANI MARGA RIMKHOLA SADAK	1			0.93		0.93		D100
144.0	356RM01D101	SIMALKUNA SAKHA BATO	7			0.33		0.33		D101
145.0	356RM01D102	SIMGAIDA PALNE BASTI SADAK	5			1		1		D102
146.0	356RM01D103	SITALNAGAR	4		0.28			0.28		D103
147.0	356RM01D104	SITAPUR GADIRAM BALIKO GHAR DEKH PASCHIM TARFA RAMESH BHANDARIKO GHAR HUDAI TAUKHOLA AAPTARI THULA CHAUR SAMMA	2			1.29		1.29		D104
148.0	356RM01D105	SITAPUR GHURENDANDA DEKHI BAGARPUR SAMMA	2			0.47		0.47		D105

149.0	356RM01D106	SITAPUR SCHOOL DEKHI UTTAR TARFA JANE BATO	2			0.51		0.51		D106
150.0	356RM01D107	SITAPUR TRANSMITTER DEKHI SUSAUNE SAMMA	2			0.89		0.89		D107
151.0	356RM01D108	SUKRHET ROAD DEKHI BAHUN TOL SAMMA	2			0.31		0.31		D108
152.0	356RM01D109	SUNDARKHAL	4			1.27		1.27		D109
153.0	356RM01D110	SUNPUR BADALE SADAK	7			1.53		1.53		D110
154.0	356RM01D111	SUNPUR HUDAI MASAN GHAT JANE BATO	6			0.35		0.35		D111
155.0	356RM01D112	SUPARYE KUIRE KHOLA HUDAI SURKHET JODNE ROAD	3			0.72		0.72		D112
156.0	356RM01D113	SURKHET ROAD DEKHI 2 NUMBER CHAKRAPATH JODNE BATO	3			0.85		0.85		D113
157.0	356RM01D114	SURKHET ROAD DEKHI BUSPARK JODNE BATO	3			0.85		0.85		D114
158.0	356RM01D115	SURKHET ROAD DEKHI BUSPARK JODNE BATO SAMMA	3			0.33		0.33		D115
159.0	356RM01D116	SURKHET ROAD DEKHI BUSPARK JODNE SADAK SAMMA	3			0.57		0.57		D116
160.0	356RM01D117	SURKHET ROAD DEKHI DHAAP SAMMA	3			1.1		1.1		D117
161.0	356RM01D118	SURKHET ROAD DEKHI GAIRI GAU HUDAI SURKHET ROAD JODNE BATO	3			0.59		0.59		D118
162.0	356RM01D119	SURKHET ROAD DEKHI GUNDRI BAJAR SAMMA	3			0.83		0.83		D119
163.0	356RM01D120	SURKHET ROAD DEKHI JANNAKHOLE TOLE HUDAI PANI TANKI SAMMA	2			0.34		0.34		D120
164.0	356RM01D121	SURKHET ROAD DEKHI KRISHI SADAK JODNE BATO	3			1.12		1.12		D121
165.0	356RM01D122	SURKHET ROAD DEKHI LATOPOLEY KHOLA	3			0.46		0.46		D122
166.0	356RM01D123	SURKHET ROAD DEKHI PALIKA JANE BATO	5	0.68				0.68		D123

167.0	356RM01D124	SURKHET ROAD DEKHI RATAMATA HUDAI WARD 2 SIMANA JODNE BATO	3			1		1		D124
168.0	356RM01D125	SURKHET ROAD DEKHI SAHAKARI BHAWAN HUDAI PUNA SURKHET ROAD DEKHI PURBA DHAARAKO KHOLSA SAMMA	2			0.67		0.67		D125
169.0	356RM01D126	SURYANAGAR SADAK	4	1.59				1.59		D126
170.0	356RM01D127	TANKAKATEY BAGARPUR SADAK	5			1.78		1.78		D127
171.0	356RM01D128	TYWANKAKHOLA DEKHI BISAUNIDANDA HUDAI RAMRO BAISERI JANE BATO	2			1.34		1.34		D128
172.0	356RM01D129	UTTAR KHILTAPUR DEKHI CHYATI KHOLA PUL SAMMA SADAK	6	1				1		D129
173.0	356RM01D130	VERIKHOR BATA JAREYWAS SAMMA	2			0.58		0.58		D130
174.0	356RM01D131	VITRI KANCHANPUR SADAK	4			0.93		0.93		D131

CHAPTER 5

PERSPECTIVE PLAN OF RURAL MUNICIPALITY TRANSPORT NETWORK

5.1 PROCESS AND PROCEDURE FOR COLLECTION OF DEMAND

Ward level meeting were held in each ward and demand forms were filled as per the demand and priority of the local people. From the discussion held in wards, various demands of people regarding requirement or upgrading of infrastructures were listed out and were prioritized. The hearings from public play a major role in planning the transportation network in future.

5.2 SCORING SYSTEM FOR SCREENING, GRADING AND PRIORITIZATION

A network consists of several links. It is not possible to construct all roads at a time due to resource gap, time constraint and limited management capacity. Therefore, each link in a network should be prioritized. Each road link is then allocated the number of points corresponding to the fulfilment of the particular criteria. The aggregate number of points that each intervention receives is computed by simple adding the points allocated per indicator. The result of this process leads to a ranking of the investment options. The following criteria are used for prioritization of new transport linkages:

Table 19: Scoring system for prioritization

S.N.	Criteria	Scoring Unit	Score
1	Link providing service to large settlement areas/population	Population served/km	15
2	Link providing service to areas with high potential for agriculture, horticulture, livestock production	Per Km income	10
3	Link providing service to existing Commerce and business centres, Market sites, Tourist attraction areas, areas having agro-based and cottage industries, other growth centres a) Estimated annual transaction in these centres equivalent to NRs.../km	Per Km, Amount	20
4	Population served by service centers	Population served/km	15
5	Link providing service to the potential growth or service centres identified by the District Development Committee and shown in the Indicative Development Potential Map of the District	Per Km Pop.	5
6	Link providing service to the potential future development sites such as hydropower development sites, mines, etc. as indicated in the IDPM of the district	Per Financial Km turn over	10
7	Special social Consideration center		15
8	Linkages with another Transport Linkages		10

5.3 POSSIBLE INTER RURAL MUNICIPALITY/DISTRICT LINKAGE

In Babai Rural Municipality, there are some rural roads which in future will be possible inter-Rural Municipality/District link roads. After completing the target of planned roads, there will be good transport facilities for the people of two municipalities/VDCs. Rural Municipality should give priority for constructing the planned road which will be inter-district linkage and DTMP/RMTMP should be updated regularly. List of possible inter-VDC/Rural Municipality link roads are as follows:

Table 20: List of Inter-District Transport Linkages

S.N.	Name of Road	Linked To	
		District	Rural municipality
1	Tulsipur-purandhara-bhotechaur lokmarga (A002)	Salyan	Kalimati
2	Babai wards no 5 dekhi babarpur dekhi ward no 1 rimkholi hudai gangatye babai nadisamma shreemani marga Sadak (B003)	Salyan	Kalimati
3	Babai Pakhi pul hundai jaljala Sadak (B002)	Dang	Shantinagar
4	Surkhet jane highway dekhitikule gaura hudai dhunge bagar jodne bato (C028)	Dang	Shantinagar
5	Dharechahara (C005)	Salyan	Tribeni

5.4 PERSPECTIVE PLAN OF RURAL MUNICIPALITY TRANSPORT NETWORK WITH THE RESPECTIVE SCORE AND RANKING

Perspective plan of the Rural municipality is the development plan that includes the plan of development of all roads hierarchy within the Rural municipality. RMTMP is short term Rural municipality Transportation Master Plan generally of 5 years which includes the prioritized road demands whereas perspective plan is a long term plan which includes the overall road demand of the Rural municipality.

Perspective plan identifies all the infrastructure demands of the Rural municipality. The proposed road networks and road infrastructure will help to enhance the overall transportation network of the Rural municipality result in increased accessibility and mobility. The visionary development plan i.e. the municipal development plan will help to develop other sectors of the Rural municipality along with the development of transportation sector. The well facilitated and well-connected road will facilitate safe, comfortable and efficient trips to the road user. Also increase in transportation facility will help to boost the economic development of that particular Rural municipality which will contribute in overall economic activities of the nation. MTPP cost of all roads is around 331.05million and all roads. The first five year financial plan is prepared based on the assumption that the each year budget will increase.

Table 21: Standard cost of improvement

Activity	Unit	Unit cost (NPR)
Rehabilitation	km	500,000
Widening	m	58,000
Gravelling	km	9,200,000
Blacktopping	km	6,700,000
Bridge construction	m	18,00,000

Activity	Unit	Unit cost (NPR)
Slab culvert construction	m	350,000
CC Causeway construction	m	200,000
Stone Causeway construction	m	30,000
Pipe culvert placement	unit	20,000
Masonry wall construction	m ³	20,000
Gabion wall construction	m ³	4,500
Lined drain construction	m	6,400

Table 22: Standard cost for conservation

Activity	Unit	Unit cost (NPR)
Emergency maintenance	km	250,000
Routine maintenance	km	80,000
Recurrent maintenance (blacktop)	km	200,000
Recurrent maintenance (gravel)	km	600,000
Recurrent maintenance (earthen)	km	350,000
Periodic maintenance (blacktop)	km	1250,000
Periodic maintenance (gravel)	km	350,000

Table 23: List of roads for Rural Municipality Perspective Plan

S.N.	Name	Length (km)	Criteria-1, Mark-15	Criteria-2, Mark-10	Criteria-3 Mark-20	Criteria-4, Mark-15	Criteria-5, Mark- 5	Criteria-6, Mark-10	Criteria-7, Mark-15	Criteria- 8, Mark-10	Total Weighted score	Rank
1	TULSIPUR PURANDHARA BOTECHAUR LOKMARG	5.7	8	8	18	10	5	10	15	10	84.0	8
2	BABAI MARG	5.3	10	8	18	10	5	10	15	10	86.0	6
3	Babai Pakhi pul hundai jaljala sadak	16.9	14	8	17	14	5	9	15	9	91.0	1
4	BABAI WARD NO 5 DEKHI BABARPUR DEKHI WARD NO 1 RIMKHOLI HUDAI GANGATYE BABAI NADISAMMA SHREEMANI MARGA SADAK	11.6	14	8	17	13	5	9	15	9	90.0	2
5	BAGARPUR BAJAR DEKHI JAUWARI SADAK	10.8	14	8	18	13	5	9	15	9	91.0	1
6	BAGARPUR BAJAR, TALLO BAGARPUR HUDAI UJHULUNGYE JODNE PUL	4.3	15	8	18	12	5	9	13	9	89.0	3
7	CHARAKMATIYA MATHYAUARI MUL SADAK	2.1	14	8	17	13	5	9	13	9	88.0	4
8	GANGALAL MARG	3.9	15	8	17	11	5	9	15	9	89.0	3
9	PAWANNAGAR PURANDHARA KRISHI SADAK	2.0	13	9	17	12	5	9	10	8	83.0	9
10	TANKA KHOLA MASAN GHAT DEKHI BAGARPUR JANE SADAK	1.2	12	9	15	14	5	9	10	8	82.0	10
11	AMARIAKHUTTI BIDHYALAYAHUDAI MAURIGHAR PATHIHALAN SADAK	3.2	14	8	17	14	5	7	10	10	85.0	7

12	BAGALE DEKHI KALAMATA, GHOIYACHAUR-JAREBAS HUDAI BHEDIKHORSAMMA	3.2	14	8	17	14	4	8	10	10	85.0	7
13	BHIRKUTI NAGAR SADAK	1.8	14	8	18	14	4	8	10	10	86.0	6
14	CHYATIKHOLA BAGAR TARA SADAK	2.5	14	8	17	14	4	8	15	10	90.0	2
15	DHARECHAHARA	6.4	12	8	15	14	4	8	12	8	81.0	11
16	DHARGHYECHAARA JAANE BATO	1.5	12	8	16	14	4	8	12	7	81.0	11
17	DHOLPUR KALI TARA	4.5	10	8	15	13	4	8	11	9	78.0	13
18	GAIRIGAU HUDAI SUNDARKHOLA CHAUTARA	2.0	10	8	18	12	4	8	11	8	79.0	12
19	GAURIBAJAR DEKHI GHARGANGIRI	2.1	10	8	18	12	4	8	14	9	83.0	9
20	GHATTEKHOLA-RAMPUR HUDAI PURANO BAISYERI SCHOOL HUDAI OLLO PALLO BAGALEY BHAYERA SALLYANKO SIMANA SAMMA	4.8	10	8	12	12	4	8	14	6	74.0	18
21	HAPURE	2.8	10	8	14	12	4	7	14	7	76.0	16
22	ILAKA PRAHARI KARYALAYA DEKHI MANGAL SINGH THAPAKO GHAR SAMMA JODNE BATO	2.2	10	7	13	12	4	8	13	6	73.0	19
23	JALUGYE JHOLUNGYE PUL DEKHI HURUM NAYA BASTI SAMMAKO SADAK	2.0	10	9	18	14	4	9	14	8	86.0	6
24	KATKUTIYA CHOWK DEKHI SUNPUR HUDAI WADA LE JODNE BATO	3.0	10	9	19	11	4	9	15	8	85.0	7
25	KHAYAR BHATTI HIM BA GHAR DEKHI SIMGHARI JODNE SADAK	2.8	10	9	19	14	4	9	14	8	87.0	5
26	KHILTAPUR DEKHI CHISAPANI SURKHET ROAD JODNE SADAK	2.9	8	9	18	14	4	9	14	8	84.0	8
27	MALAI KAPTANEY PRA BI HUDAI 7 NUMBER JALJALA JODNE SADAK	3.8	9	9	18	11	4	9	14	8	82.0	10
28	MANMOHAN CHAKRAPATH	4.3	9	9	18	11	4	8	11	7	77.0	15
29	PANCHKULE CHOWK DEKHI CHARAKMOTIYA JANE SADAK	2.6	11	9	15	10	3	6	11	7	72.0	20

30	PANCHKULE DALIT BASTI DEKHI CHAUNI DADA SAMMA	2.1	10	9	14	8	3	6	11	7	68.0	23
31	PCO CHOWK DEKHI BHALUDANDA RAIDADA TALE SAMMA	2.1	10	9	15	8	3	7	11	7	70.0	22
32	PRIMWA OLIKO GHAR DEKHI DAKSHIN TARFA JANE BATO	3.4	11	9	12	12	3	7	11	5	70.0	22
33	PURANDHAARA JHARNA HUDAI MALAI SIMALKUWA JILLA DHOBIGHAT GANGATEY SHREEMANI MARGA SADAK	8.8	11	9	12	8	3	8	10	6	67.0	24
34	SHREEMANI MARGA BHANGAWARI ADALE HUIDAI DHOWAGHAT SADAK	3.8	12	9	12	8	3	9	10	8	71.0	21
35	SHREEMANI MARGA HUDAI PATHIHALANA AATIPARK SALYAN WALUK SADAK	5.0	12	9	12	12	3	9	10	8	75.0	17
36	SUNDARKHAL CHAUTARA DEKHI SUNDAR KHAL ARAMKOT	1.8	15	9	12	12	4	5	10	7	74.0	18
37	SUNPUR BADALE BICH BATO	2.9	15	9	12	14	3	5	12	7	77.0	15
38	SURKHET JANE HIGHWAY DEKHITIKULE GAURA HUDAI DHUNGE BAGAR JODNE BATO	2.5	10	9	15	14	3	5	10	7	73.0	19
39	SURKHET ROAD GHATTEKHOLA CHOWK DEKHI PAGAR HUDAI SALYAAN JODNE ROAD SAMMA	3.4	14	10	12	14	3	8	10	7	78.0	14
40	SURKHET ROAD DEKHI JWALAMARG HUDAI DHANUBASKOT	1.9	14	8	10	14	3	5	10	7	71.0	21

CHAPTER 6

FIRST FIVE YEAR RURAL MUNICIPALITY TRANSPORT MASTER PLAN

6.1 FIVE YEAR PROJECTED FINANCIAL PLAN

The first five-year financial plan is prepared based on the assumption that each year budget will increase by 10% from previous year budget. MTPP cost of all road is around 331.05 million. The budget allocated for road for upcoming five fiscal year and year wise target along with the breakdown in survey and design, conservation and improvement are tabulated below.

The budget is allocated for major 'A' and 'B' class road. The budget allocated for road for upcoming five fiscal year and year wise target along with the breakdown in survey and design, conservation and improvement are tabulated below.

Table 24: Five-year financial project

Source of Budget (NRS in '000)	Fiscal Year				
	2080/081	2081/082	2082/83	2083/84	2084/85
Budget allocated for road	69,000	72,000	88,200	98,840	112,208
Conservation	13800	14400	17640	19768	22441.6
Improvement	55,200	57,600	70,560	79,072	89766.4

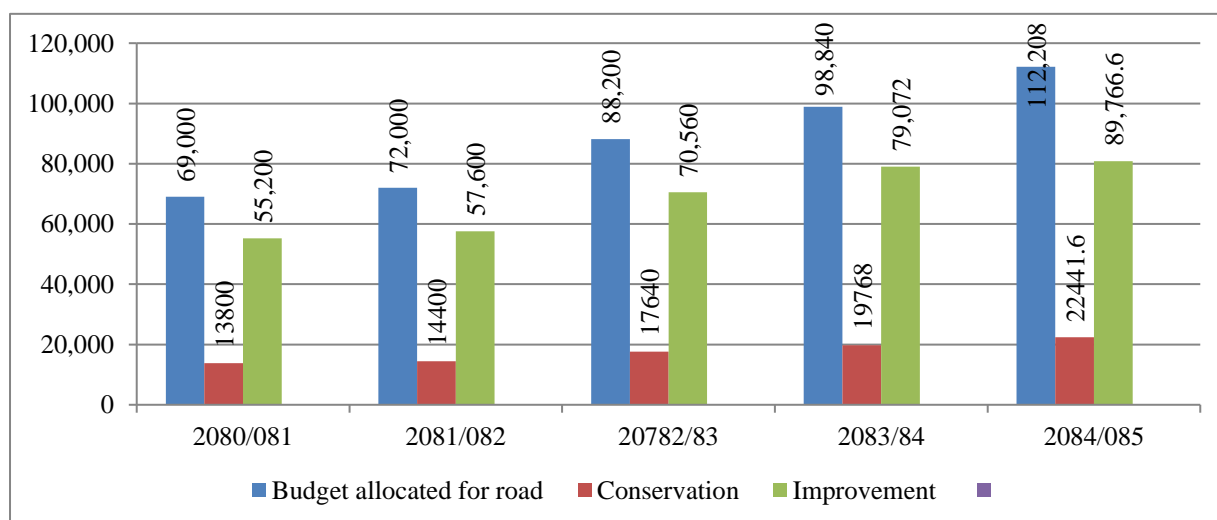


Figure 14: Chart showing five-year financial project

6.2 YEAR WISE TARGET

The annual targets for various interventions to be achieved within the upcoming five years are included in year wise target. The work equivalent to the budget allocated for that particular year will be accomplished within that year. Since all the work cannot be carried out within the five-year period due to various resources constrain, only the prioritized one will be included in the year wise target. For this particular Rural Municipality, year wise target is tabulated below:

Total Annual Budget (NRs. '000')
4,40,248
100%

Conservation
88,049.60
20%

Improvement
352,198.64
80%

Table 25: Year wise target

S.N.	Fiscal Year	Total Budget allocated for road	Total Budget (NRs. in '000) & Percentage for conservation and improvement			
			Conservation		Improvement	
			Amount	%	Amount	%
1	2080/081	69000	13,800.00	20	55,200.00	80
2	2081/082	72000	14,400.00	20	57,600.00	80
3	2082/083	88,200	17,640.00	20	70,560.00	80
4	2083/084	98,840	19,768.00	20	79,072.00	80
5	2084/085	112,208	22,441.60	20	89766.4	80
	Total	4,40,248.000	88,049.60		343,221.76	

6.3 PRIORITIZED RURAL MUNICIPALITY ROAD FOR RMTMP

Due to constrain in resources all roads cannot be included in five years plan. So as per the various criteria defined in Guidelines, scoring for all the roads are done and those with higher scores are included in prioritized road for RMTMP. For this Rural Municipality following roads have been finalized as priority roads for RMTMP:

Table 26: List of prioritized existing road

S.N.	Name	Length (KM)	Code	Rank
1	Babai Pakhi pul hundai jaljala sadak	16.9	356RM01B002	1
2	BAGARPUR BAJAR DEKHI JAUWARI SADAK	10.8	356RM01B004	1
3	BABAI WARD NO 5 DEKHI BABARPUR DEKHI WARD NO 1 RIMKHOLI HUDAI GANGATYE BABAI NADISAMMA SHREEMANI MARGA SADAK	11.6	356RM01B003	2
4	CHYATIKHOLA BAGAR TARA SADAK	2.5	356RM01C004	2
5	BAGARPUR BAJAR, TALLO BAGARPUR HUDAI UJHULUNGYE JODNE PUL	4.3	356RM01B005	3
6	GANGALAL MARG	3.9	356RM01B007	3
7	CHARAKMATIYA MATHYAUARI MUL SADAK	2.1	356RM01B006	4
8	KHAYAR BHATTI HIM BA GHAR DEKHI SIMGHARI JODNE SADAK	2.8	356RM01C015	5
9	BABAI MARG	5.3	356RM01B001	6
10	BHIRKUTI NAGAR SADAK	1.8	356RM01C003	6

11	JALUGYE JHOLUNGYE PUL DEKHI HURUM NAYA BASTI SAMMAKO SADAK	2.0	356RM01C013	6
12	AMARIAKHUTTI BIDHYALAYAHUDAI MAURIGHAR PATHIHALAN SADAK	3.2	356RM01C001	7
13	BAGALE DEKHI KALAMATA, GHOIYACHAUR-JAREBAS HUDAI BHEDIKHORSAMMA	3.2	356RM01C002	7
14	KATKUTIYA CHOWK DEKHI SUNPUR HUDAI WADA LE JODNE BATO	3.0	356RM01C014	7
15	TULSIPUR PURANDHARA BOTECHAUR LOKMARG	5.7	356RM01A003	8
16	KHILTAPUR DEKHI CHISAPANI SURKHET ROAD JODNE SADAK	2.9	356RM01C016	8
17	PAWANNAGAR PURANDHARA KRISHI SADAK	2.0	356RM01B008	9
18	GAURIBAJAR DEKHI GHARGANGIRI	2.1	356RM01C009	9
19	TANKA KHOLA MASAN GHAT DEKHI BAGARPUR JANE SADAK	1.2	356RM01B009	10
20	MALAI KAPTANEY PRA BI HUDAI 7 NUMBER JALJALA JODNE SADAK	3.8	356RM01C017	10
21	DHARECHAHARA	6.4	356RM01C005	11
22	DHARGHYECHAARA JAANE BATO	1.5	356RM01C006	11
23	GAIRIGAU HUDAI SUNDARKHOLA CHAUTARA	2.0	356RM01C008	12
24	DHOLPUR KALI TARA	4.5	356RM01C007	13
25	SURKHET ROAD GHATTEKHOLA CHOWK DEKHI PAGAR HUDAI SALYAAN JODNE ROAD SAMMA	3.4	356RM01C029	14
26	MANMOHAN CHAKRAPATH	4.3	356RM01C018	15
27	SUNPUR BADALE BICH BATO	2.9	356RM01C027	15
28	HAPURE	2.8	356RM01C011	16
29	SHREEMANI MARGA HUDAI PATHIHALANA AATIPARK SALYAN WALUK SADAK	5.0	356RM01C025	17
30	GHATTEKHOLA-RAMPUR HUDAI PURANO BAISYERI SCHOOL HUDAI OLLO PALLO BAGALEY BHAYERA SALYANKO SIMANA SAMMA	4.8	356RM01C010	18
31	SUNDARKHAL CHAUTARA DEKHI SUNDAR KHAL ARAMKOT	1.8	356RM01C026	18
32	ILAKA PRAHARI KARYALAYA DEKHI MANGAL SINGH THAPAKO GHAR SAMMA JODNE BATO	2.2	356RM01C012	19
33	SURKHET JANE HIGHWAY DEKHITIKULE GAURA HUDAI DHUNGE BAGAR JODNE BATO	2.5	356RM01C028	19

34	PANCHKULE CHOWK DEKHI CHARAKMOTIYA JANE SADAK	2.6	356RM01C019	20
35	SHREEMANI MARGA BHANGAWARI ADALE HUIDAI DHOWAGHAT SADAK	3.8	356RM01C024	21
36	SURKHET ROAD DEKHI JWALAMARG HUDAI DHANUBASKOT	1.9	356RM01C030	21
37	PCO CHOWK DEKHI BHALUDANDA RAIDADA TALE SAMMA	2.1	356RM01C021	22
38	PRIMWA OLIKO GHAR DEKHI DAKSHIN TARFA JANE BATO	3.4	356RM01C022	22
39	PANCHKULE DALIT BASTI DEKHI CHAUNI DADA SAMMA	2.1	356RM01C020	23
40	PURANDHAARA JHARNA HUDAI MALAI SIMALKUWA JILLA DHOBIGHAT GANGATEY SHREEMANI MARGA SADAK	8.8	356RM01C023	24

During five-year total 97.1 km will be upgraded to gravel and 120.66 km will be upgraded to blacktop. The budget is allocated for the ISTAR UNNATI road i.e., 105 crores and the road will be upgraded to blacktop. The Rural Municipality should either raise funds from various donor agencies or collect loans from other agencies for the fulfilment of resource gap. Some of the sources for budget may be as follows:

- Donor agencies
- Revenue/tax collection
- People participation
- Loans
- Government grants
- Service charges/tariffs
- Fines
- Public Private Partnership

CHAPTER 7

LANDUSE AND RURAL MUNICIPALITY DEVELOPMENT PLAN

7.1 LANDUSE PLAN

Land-use planning means the scientific, aesthetic, and orderly disposition of land, resources, facilities and services with a view to securing the physical, economic and social efficiency, health and well-being of urban and rural communities.

Land-use planning often leads to land-use regulation, which typically encompasses zoning. Zoning is the process of categorizing land tracts according to their intended use. Common types of zones include commercial, industrial, recreational, and various levels of residential

A proper land use system is required for increasing agricultural production, environmental sustainability and bio-diversity conservation. At present there is no strict norms regarding the land use system which has led to haphazard location of settlements and industries in places where food production is very feasible.

7.2 EXISTING LAND USE PATTERN

Land use involves the management and modification of natural environment or wilderness into built up pattern such as settlement. Land use typically refers to the changes we make to the natural environment to create homes, subdivisions, offices, urban areas, manufacturing centers, etc. Urban land use comprises two elements; the nature of land use which relates to which activities are taking place where, and the level of spatial accumulation, which indicates their intensity and concentration.

Existing land use pattern of this Rural Municipality is as follows:

Table 27: Existing Landuse pattern

S.N.	Description	Area (Sq.km)	(%)
1	Cultivation	75.042	23.76
2	Pond/Lake/Water body	1.6209	0.35
3	Vegetation/Forest	256.7664	75.27
4	Sand	6.1956	0.61

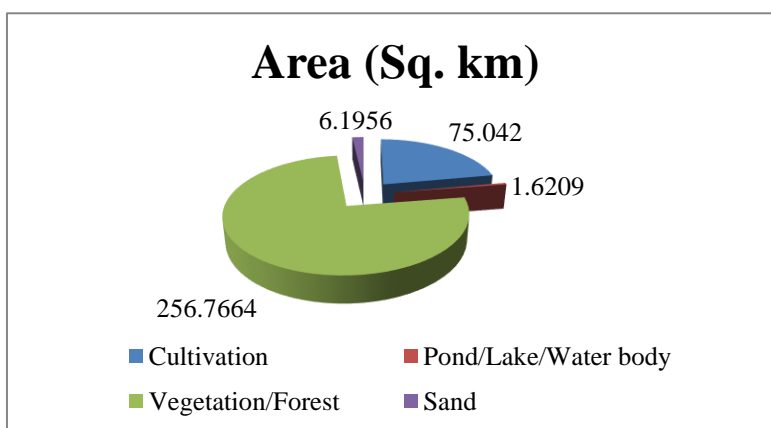


Figure 15: Chart showing existing land use pattern

7.3 LANDUSE AND TRANSPORTATION

Transportation and land use are inexorably connected. Everything that happens to land use has transportation implication and every transportation action affects land use. Effective land use planning can make our roads safer and more efficient and can reduce the need for new roads.

Roads are often built or improved to allow greater access to new development. The road improvement makes other land along the road more accessible and attractive for further development. With more housing and services along the road, traffic volumes increase resulting in more congestion and decreased road capacity. Eventually the reduced efficiency of the road necessitates 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 Rural 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.

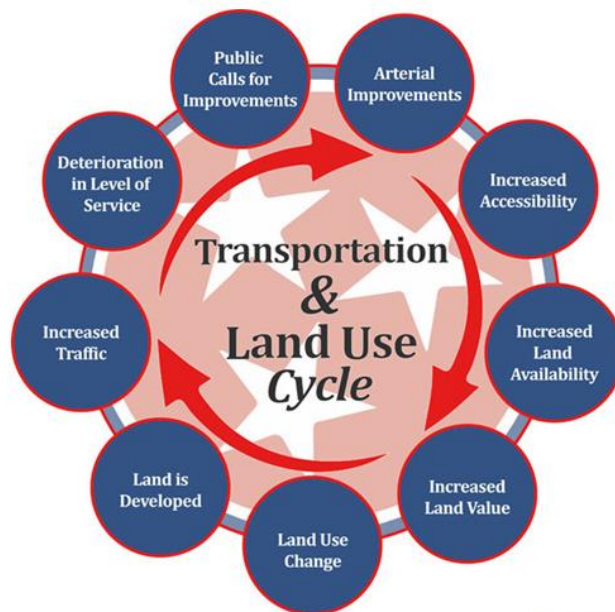


Figure 16: Transportation and land use cycle

Some visions of integration of Rural Municipality Transport Master Plan and land use plan are:

- Various settlements will be linked to each other via a network of greens paces, public transit
- Everyday services such as markets, medicines etc. will be concentrated in higher density settlements
- Religious, educational and medical institutions will have respected place in the community
- There will be protection of natural areas from harmful and incompatible development and maintain the integrity of natural systems
- There will be support to the development of relationship between agriculture and industries

7.4 RURAL MUNICIPALITY DEVELOPMENT PLAN

Rural Municipal Development Plan includes the vision for land use and development over next few years. This master plan outlines the goals and objectives for the future and is the principal guide directing land use policy and decision making. It will help in growth of city and provides a reliable basis for public and private investment. This plan will present a vision for land use and development in coming years.

For the successful implementation of this plan following steps are to be included:

- Revision of municipal ordinances and bylaws in order to ensure the proper reflection of plan's goal and policies
- Development of a capital budget and program to outline long term public investments need and commitments
- To offer detail about the various area of the Rural Municipality
- Continuing community involvement in the planning and governing

7.5 RURAL MUNICIPALITY GOALS AND OBJECTIVES

- ❖ Sustainable development of the city
- ❖ Preservation of the natural environment
- ❖ Preservation of the cultural and religious monuments
- ❖ Preservation of social cohesion
- ❖ Qualitative economic development
- ❖ Encouraging the local people for the better accessibility in the services & facilities
- ❖ Encouraging the people's participation in the development process
- ❖ Encouraging the disadvantaged and backwards peoples

Goals of Babai Rural Municipality Transportation Master Plan are:

1. To create an inter-connected street system
 - Enhance connectivity
 - Coordinate with an adjacent community
2. To provide multi modal transportation opportunities
 - Creating linkage with regional transit system
 - Creating a more walk able city
 - Providing an inter-connected system of trails for regional activity centers
3. To provide a transportation system which compliments land uses in city
 - Providing street cross section which vary by adjacent land use
 - Providing street cross section which maintain and enhance the character of historic areas
4. To create a transportation system for the future
 - Providing a network for all modes of travel
 - Considering options for future generations and future transportation demands
 - Considering funding in development of plan

5. To manage the parking spaces

- Assesses future parking needs based on planned institutional growth
- Evaluation of potential locations for future parking facilities and assesses the appropriate scale of these facilities
- Quantification of existing parking supply and demand
- Review of facilities vehicle and loading/ service area location

Plan of various sectors should be included in the municipal plan

A. Land use Plan

- Various settlements will be linked to each other via a network of greens paces, public transit
- Everyday services such as markets, medicines etc. will be concentrated in higher density settlements
- Religious, educational and medical institutions will have respected place in the community
- There will be protection of natural areas from harmful and incompatible development and maintain the integrity of natural systems
- There will be support to the development of relationship between agriculture and industries

B. Natural environment

- Will work toward relationship with the natural environment
- Protection of natural resources from degradation
- Will preserve scenic viewpoints and insure public access to natural areas where appropriate

C. Transportation Plan

- Will offers a range of choices that are safe, affordable and convenient for residents
- Will use the roadway as efficiency as possible

D. Community facilities and services plan

- Will make the most effective and efficient use of existing services, buildings, utilities and facilities
- Will coordinate land use and development with the availability and capacity of public services, facilities and utilities
- Will concentrate city administrative functions and public services to the greatest extent possible
- Will ensure that existing public property, buildings will receive regular maintenance, upgrade and replacement or expansion based on approved standards

E. Economic development plan

- Will support sustainable development activities in target area so the character of the neighborhood
- Will promote and support locally owned and controlled small business including home occupation appropriate
- Will work with neighboring communities, regional agencies and government to promote land use and development policies

F. Educational Plan

- Will ensure excellent and diverse educational opportunities, services
- Will support and maintain schools where children live in close proximity and school serves wide range of community
- Will ensure safe access to school facilities

G. Built Environment

- Will protect the scenic view by proper management of hoarding boards
- Will discourage haphazard vendors shops and will allocate specific market centers

CHAPTER 8

CONCLUSION

Road transportation is most crucial for socio-economic development of district. Rural Municipality should give more emphasis on resource collection and its proper allocation and efficient mobilization. This RMTMP will guide for this purpose too. The RMTMP is the result of studies considering socio-economic, environmental analysis and potentiality of various sectors as well as the accessibility to transport facilities in the Rural Municipality, which will draw the future scenario of the Rural Municipality and rural road development. RMTMP focuses on existing transportation situation, expected future road network accessibility and socio-economic benefits. It provides directives on utilization of the local resources by local institutions as well as other development agencies in line with the decentralization and local self-government act. In addition, it will provide Government and other donor agencies a rational basis on which to decide on future investments efficiently that will improve district transport accessibility situation.

The proposed interventions are reflection of the requirement of Rural Municipality to improve accessibility of people on goods and services and planned on current trend of financial resource availability.

It is strongly recommended that Rural Municipality shall strictly follow the RMTMP particularly in the Perspective Plan of Rural Municipality Road Network in deciding the sub-projects to be undertaken for development for future even beyond the five-year period. Strong commitment from all stakeholders is necessary for its implementation. It is also suggested that the RMTMP shall be revised at the end of every fifth year evaluating the previous planning and implementation. Rural Municipality should go ahead with required revisions if the Rural Municipality development potentials have changed tremendously.

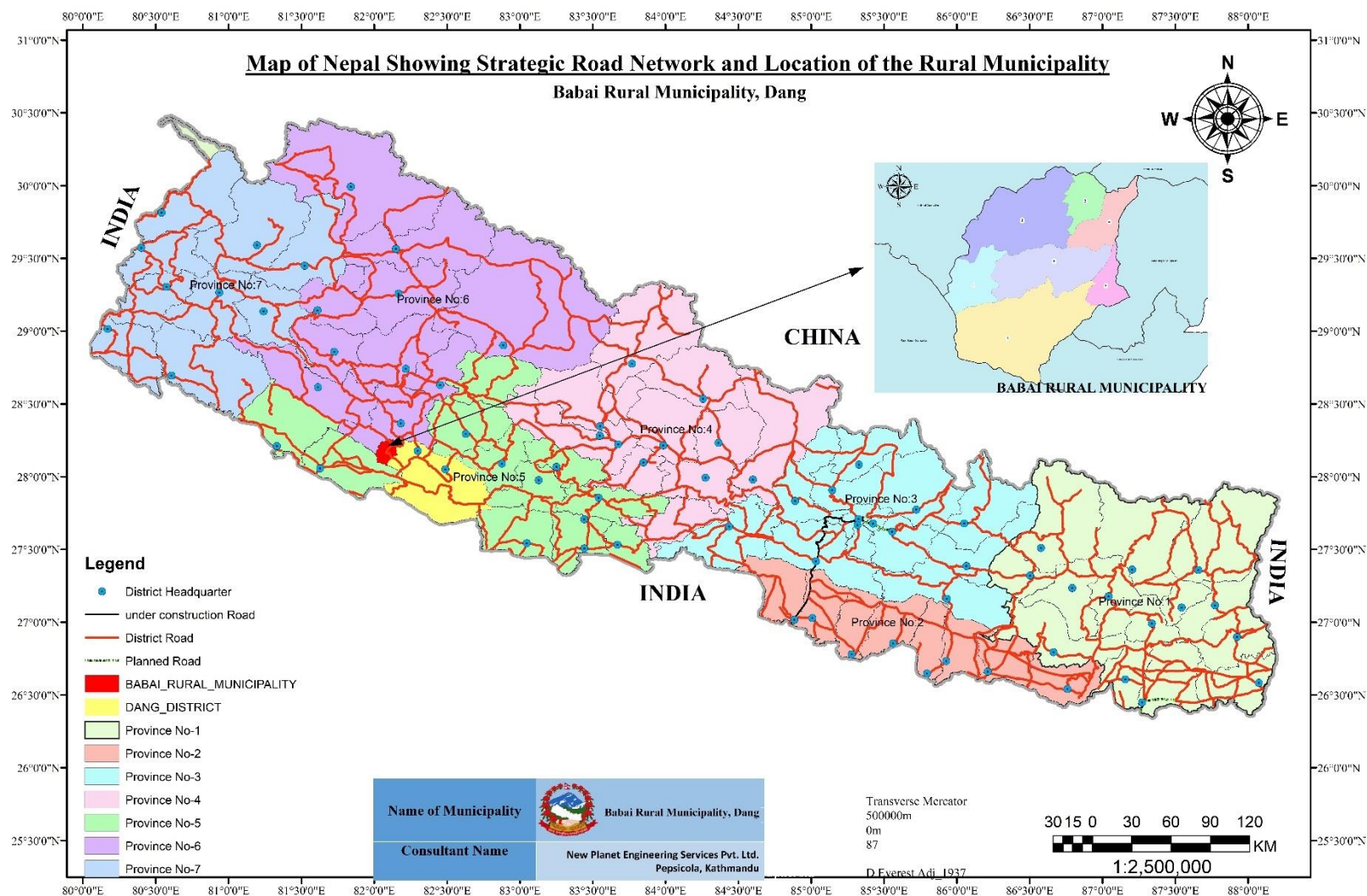
ANNEXES

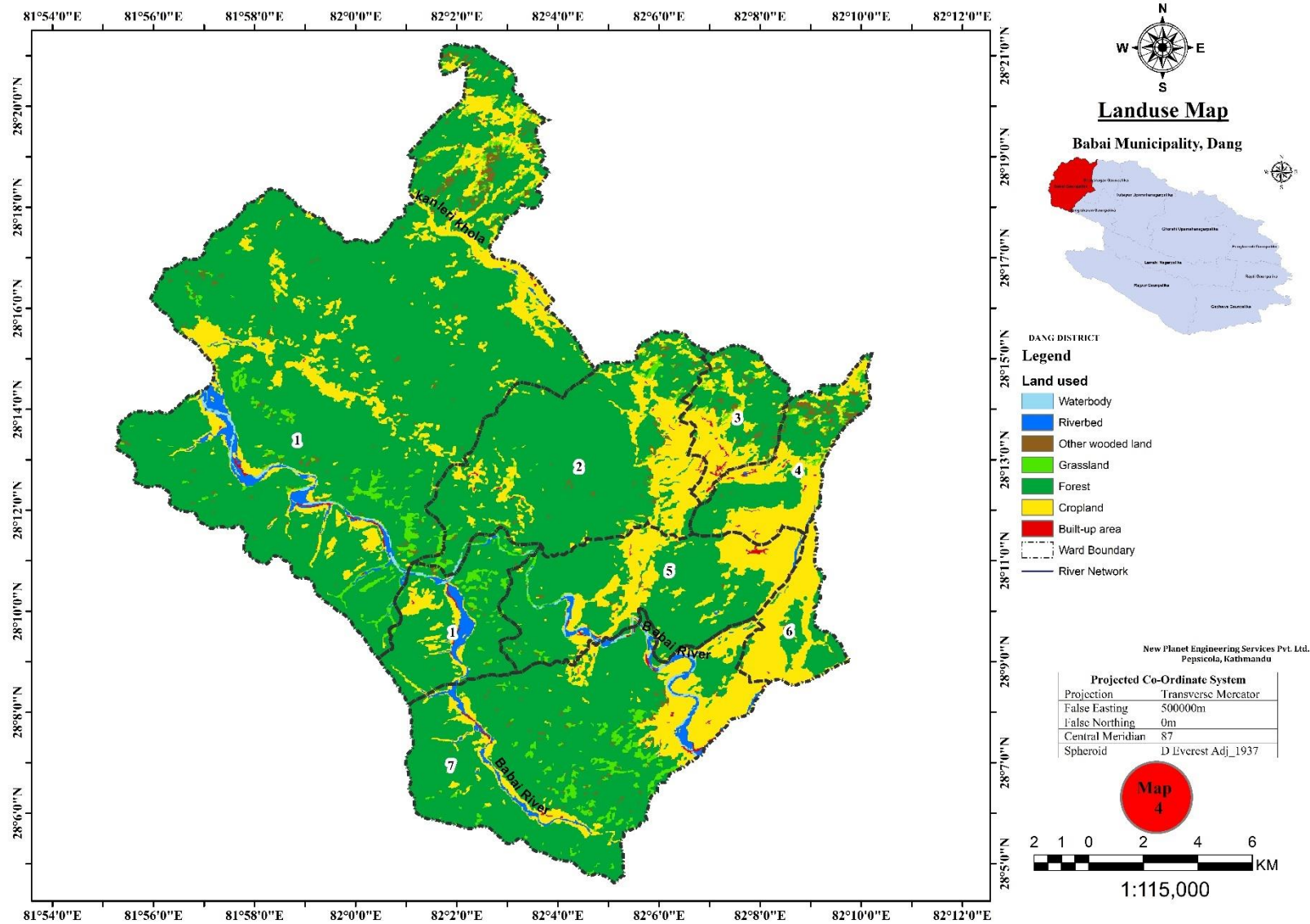
ANNEX 1 PHOTOGRAPHS

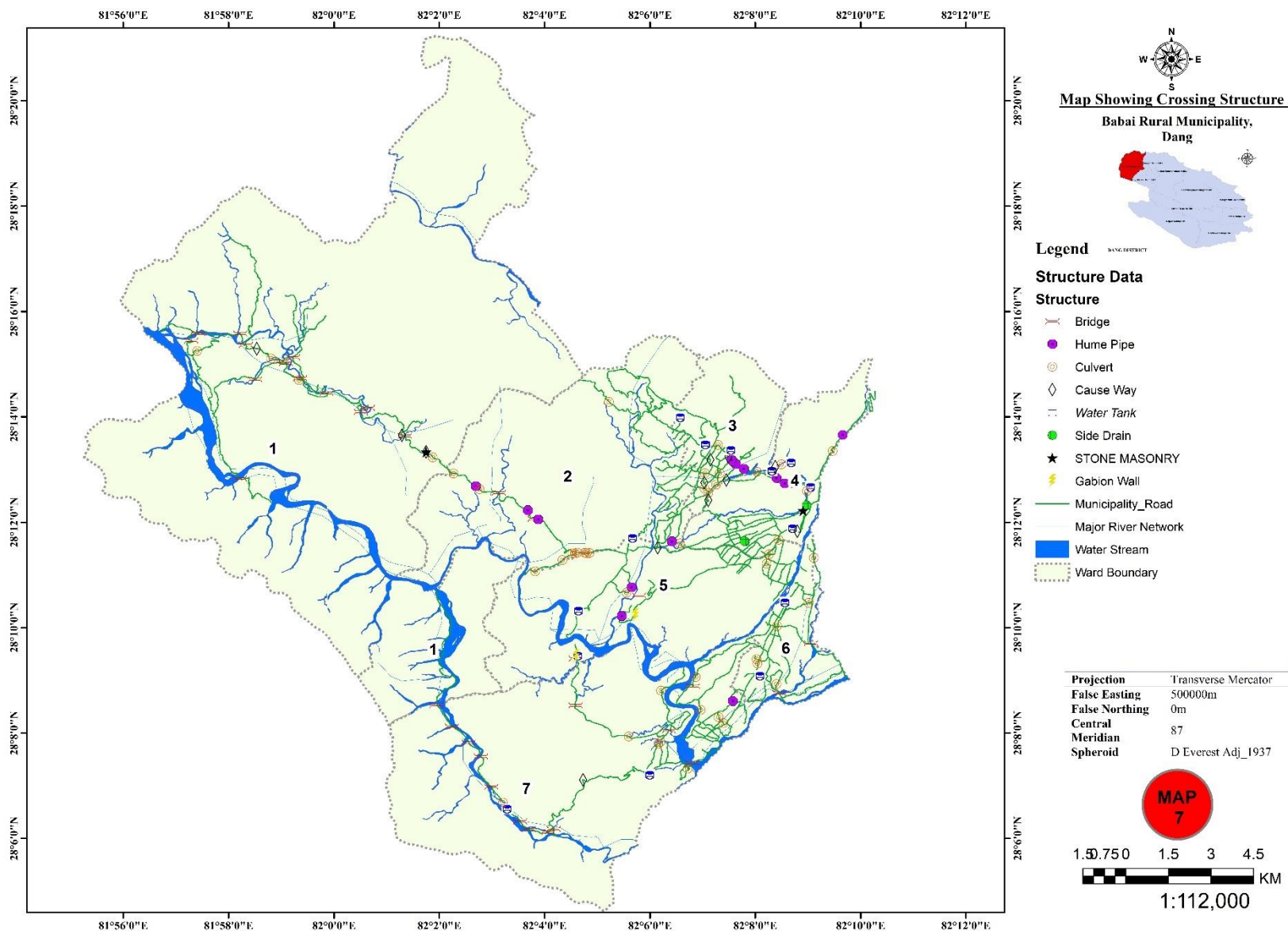
ANNEX 2 MEETING MINUTES

ANNEX 3 FIELD FORMS

ANNEX 4 MAPS







ANNEX 5 DATA COLLECTION AND GIS PROCESSING

A. DATA COLLECTION PROCESS

As mentioned in RMTMP Guidelines, the data collection procedure has been conducted. Some of the general data such as district area, population, hydrological and metrological data, SRN status has been collected from secondary sources like Central Bureau of Statistics Nepal, Profile of Nepal 2013 and DoR Publications. For Primary data collection, i.e. Existing Road Inventory; GPS (model C60s and C62s) and Motorcycle has been used. Further for new roads, Topographic maps (1:25000) in hard copy and soft copy with aid of Google Earth has been used.

B. GIS PROCESSING FOR MAP PREPARATION

The map preparation process is governed by the field work and field work is ruled by the proper adjustment in GPS. For setting the GPS, we have followed the following steps

1. Set the GPS for units and time
2. For position, select USER UTM Grid defined from the list for grid and define the properties as below:

Latitude of origin	E87
Scale factor	0.9999
False easting	500000 Meter
False northing	0 Meter
Select Datum	WGS84

After collection of the data in waypoint and track format, it is imported to computer by DNR Garmin Software and exported in KML and GPX format. The KML or GPX data is added to ARC GIS 10.3.1 and exported to Shape file. Added Shape file of Track is edited and append in **Road_Inventory.shp** whose property is given below,

Projected Coordinate System:	UTM-84
Projection:	Transverse _ Mercator
False _ Easting:	500000.00000000
False _ Northing:	0.00000000
Central _ Meridian:	87.00000000
Scale _ Factor:	0.99990000
Latitude _Of _Origin:	0.00000000
Linear Unit:	Meter
Geographic Coordinate System:	GCS_Everest_1830
Datum:	D_Everest_Adj_1937
Prime Meridian:	Greenwich
Angular Unit:	Degree

While geographic transformation from WGS to MUTM, following parameters were incorporated:

X= -295
Y= -736
Z= -257

ANNEX 6 ROAD DETAIL

S.n	Road Code	Road Name	Wards Pass	Surface Type			Total Length	Row
				Black Top	Gravel	Earthen		
1.0	356RM01A001	TULSIPUR PURANDHARA BOTECHAUR LOKMARG	3	5.54			5.54	20
2.0	356RM01A002	TULSIPUR-PURANDHARA-BHOTECHAUR LOKMARGA	5	5.46			5.46	20
3.0	356RM01A003	TULSIPUR PURANDHARA BOTECHAUR LOKMARG	2	5.65			5.65	20
4.0	356RM01A004	TULSIPUR PURANDHARA BOTECHAUR LOKMARG	6	5.12			5.12	20
5.0	356RM01B001	BABAI MARG	5	5.33			5.33	15
6.0	356RM01B002	Babai Pakhi pul hundai jaljala sadak	7			16.9	16.9	15
7.0	356RM01B003	BABAI WARD NO 5 DEKHI BABARPUR DEKHI WARD NO 1 RIMKHOLI HUDAI GANGATYE BABAI NADISAMMA SHREEMANI MARGA SADAK	1			11.6	11.6	15
8.0	356RM01B004	BAGARPUR BAJAR DEKHI JAUWARI SADAK	5			10.8	10.8	15
9.0	356RM01B005	BAGARPUR BAJAR, TALLO BAGARPUR HUDAI UJHULUNGYE JODNE PUL	5			4.31	4.31	15
10.0	356RM01B006	CHARAKMATIYA MATHYAUARI MUL SADAK	7			2.13	2.13	15
11.0	356RM01B007	GANGALAL MARG	4	3.91			3.91	15
12.0	356RM01B008	PAWANNAGAR PURANDHARA KRISHI SADAK	3			1.97	1.97	15
13.0	356RM01B009	TANKA KHOLA MASAN GHAT DEKHI BAGARPUR JANE SADAK	5			1.19	1.19	15
14.0	356RM01C001	AMARIAKHUTTI BIDHYALAYAHUDAI MAURIGHAR PATHIHALAN SADAK	1			3.17	3.17	10

15.0	356RM01C002	BAGALE DEKHI KALAMATA, GHOIYACHAUR-JAREBAS HUDAI BHEDIKHORSAMMA	2			3.21	3.21	10
16.0	356RM01C003	BHIRKUTI NAGAR SADAK	5			1.82	1.82	10
17.0	356RM01C004	CHYATIKHOLA BAGAR TARA SADAK	4			2.46	2.46	10
18.0	356RM01C005	DHARECHAHARA	4			6.42	6.42	10
19.0	356RM01C006	DHARGHYECHAARA JAANE BATO	5			1.45	1.45	10
20.0	356RM01C007	DHOLPUR KALI TARA	7			4.47	4.47	10
21.0	356RM01C008	GAIRIGAU HUDAI SUNDARKHOLA CHAUTARA	4			2	2	10
22.0	356RM01C009	GAURIBAJAR DEKHI GHARGANGIRI	7			2.1	2.1	10
23.0	356RM01C010	GHATTEKHOLA-RAMPUR HUDAI PURANO BAISYERI SCHOOL HUDAI OLLO PALLO BAGALEY BHAYERA SALYANKO SIMANA SAMMA	2			4.83	4.83	10
24.0	356RM01C011	HAPURE	4	2.84			2.84	10
25.0	356RM01C012	ILAKA PRAHARI KARYALAYA DEKHI MANGAL SINGH THAPAKO GHAR SAMMA JODNE BATO	6			2.2	2.2	10
26.0	356RM01C013	JALUGYE JHOLUNGYE PUL DEKHI HURUM NAYA BASTI SAMMAKO SADAK	5			2	2	10
27.0	356RM01C014	KATKUTIYA CHOWK DEKHI SUNPUR HUDAI WADA LE JODNE BATO	6			2.99	2.99	10
28.0	356RM01C015	KHAYAR BHATTI HIM BA GHAR DEKHI SIMGHARI JODNE SADAK	5			2.83	2.83	10
29.0	356RM01C016	KHILTAPUR DEKHI CHISAPANI SURKHET ROAD JODNE SADAK	6			2.85	2.85	10
30.0	356RM01C017	MALAI KAPTANEY PRA BI HUDAI 7 NUMBER JALJALA JODNE SADAK	1			3.78	3.78	10
31.0	356RM01C018	MANMOHAN CHAKRAPATH	7			4.31	4.31	10

32.0	356RM01C019	PANCHKULE CHOWK DEKHI CHARAKMOTIYA JANE SADAK	6	2.59			2.59	10
33.0	356RM01C020	PANCHKULE DALIT BASTI DEKHI CHAUNI DADA SAMMA	6			2.12	2.12	10
34.0	356RM01C021	PCO CHOWK DEKHI BHALUDANDA RAIDADA TALE SAMMA	2			2.1	2.1	10
35.0	356RM01C022	PRIMWA OLIKO GHAR DEKHI DAKSHIN TARFA JANE BATO	2			3.39	3.39	10
36.0	356RM01C023	PURANDHAARA JHARNA HUDAI MALAI SIMALKUWA JILLA DHOBIGHAT GANGATEY SHREEMANI MARGA SADAK	1			8.77	8.77	10
37.0	356RM01C024	SHREEMANI MARGA BHANGAWARI ADALE HUIDAI DHOWAGHAT SADAK	1			3.81	3.81	10
38.0	356RM01C025	SHREEMANI MARGA HUDAI PATHIHALANA AATIPARK SALYAN WALUK SADAK	1			5	5	10
39.0	356RM01C026	SUNDARKHAL CHAUTARA DEKHI SUNDAR KHAL ARAMKOT	4			1.79	1.79	10
40.0	356RM01C027	SUNPUR BADALE BICH BATO	7			2.94	2.94	10
41.0	356RM01C028	SURKHET JANE HIGHWAY DEKHITIKULE GAURA HUDAI DHUNGE BAGAR JODNE BATO	6			2.5	2.5	10
42.0	356RM01C029	SURKHET ROAD GHATTEKHOLA CHOWK DEKHI PAGAR HUDAI SALYAAN JODNE ROAD SAMMA	3			3.35	3.35	10
43.0	356RM01C030	SURKHET ROAD DEKHI JWALAMARG HUDAI DHANUBASKOT	3	1.88			1.88	10
44.0	356RM01D001	AAMA CHOWK HUDAI PALIKA JODNE SADAK	5			0.27	0.27	8
45.0	356RM01D002	ADARSHANAGAR SADAK	4			1.41	1.41	8
46.0	356RM01D003	AMARAICHHUTTI BIDHYALAYA HUDAI AMARAICHHUTTI GAU SADAK	1			0.81	0.81	8

47.0	356RM01D004	AMARAIKHUTTI BIDHYALAYA HUDAI KUMBAS SADAK	1			1.15	1.15	8
48.0	356RM01D005	ANANDANAGAR SADAK	5			0.72	0.72	8
49.0	356RM01D006	BABAI MARG HUDAI LIPTEY SICHAI SADAK	5			0.39	0.39	8
50.0	356RM01D007	BAGARPUR BAJAR DEKHI RATAGAU JANE SADAK	5			1.1	1.1	8
51.0	356RM01D008	BAHULA KHOLA TATBANDA DEKHI CHARAK MOTIYO JANE SADAK	6			1.46	1.46	8
52.0	356RM01D009	BELGHARI CHOWK DEKHI CHAUPARI PURANO GAU JANE BATO	6			1.25	1.25	8
53.0	356RM01D010	BELGHARI CHOWK DEKHI KATKUIYA VITRI GAU JODNE BATO	6			1.21	1.21	8
54.0	356RM01D011	BELGHARI PURANO GAU HUDAI BUTKEWA JODNE BATO	6			0.8	0.8	8
55.0	356RM01D012	BHANGAWARI PRA.BI. HUDAI GALATE SADAK	1			0.94	0.94	8
56.0	356RM01D013	BHANGGAWARI AMARAIKHUTTI BIDYALAYA HUDAI DAANDA GAU SADAK	1			1.95	1.95	8
57.0	356RM01D014	BICH PADAMPUR HUDAI BABAI MARG JODNE SADAK	5			0.47	0.47	8
58.0	356RM01D015	BICH PADAMPUR SADAK	5			0.65	0.65	8
59.0	356RM01D016	BIDHYANAGAR	4			1.81	1.81	8
60.0	356RM01D017	BISAUNI DANDA DEKHI GADYESIMAL SAMMA	2			1.21	1.21	8
61.0	356RM01D018	BUDDHANAGAR SADAK	5			0.52	0.52	8
62.0	356RM01D019	BUTKE DABARA DEKHI ITTA VATTA JODNE BATO	6			0.61	0.61	8
63.0	356RM01D020	CHABALE HUDAI GOTHIBINEY TOLESAMMA	2			0.2	0.2	8
64.0	356RM01D021	CHANDRANAGAR MARG	4	1.23			1.23	8
65.0	356RM01D022	CHANTIYA CHOWK DEKHI PYAM JANE BATO	6			0.36	0.36	8

66.0	356RM01D023	CHARAKMATIYA MUL SADAK DEKHI KATKUTIYA DALIT BASTI JODNE BATO	6			0.24	0.24	8
67.0	356RM01D024	CHARAKMATIYA PASCHIM RING ROAD	7			0.98	0.98	8
68.0	356RM01D025	CHARAKMATIYA RINGROAD PURANO GAU	7			1	1	8
69.0	356RM01D026	CHARAKMATIYA SCHOOL DEKHI ROLAHA KHOLA SAMMA	7			0.21	0.21	8
70.0	356RM01D027	CHAUNI DADA CHOWK DEKHI DALIT BASTI HUDAI ODALE JODNE BATO	6			0.56	0.56	8
71.0	356RM01D028	CHAUPARI CHARAKMATIYA CULVERT DEKHI OLI DADA JANE BATO	6			0.55	0.55	8
72.0	356RM01D029	CRUSHER JANE BATO	6		0.25		0.25	8
73.0	356RM01D030	DADA GAU HHUDAI HAPUREY JANE BATO SAMMA	6			0.43	0.43	8
74.0	356RM01D031	DAMODAR ROAD BAHULA KHOLA DEKHI BELASHPUR	7			1.44	1.44	8
75.0	356RM01D032	DANDA GAU SAKHA BATO	7			1.32	1.32	8
76.0	356RM01D033	DHANKHANYA SADAK	5			0.88	0.88	8
77.0	356RM01D034	DHANUBASKOT DEKHI DHANBASH GAU SAMMA JANE BATO	3			0.46	0.46	8
78.0	356RM01D035	DHOLPUR DEKHI BABAI SAMMA	7			0.75	0.75	8
79.0	356RM01D036	DOBHAN	2			1.16	1.16	8
80.0	356RM01D037	DURGANAGAR	4			1.21	1.21	8
81.0	356RM01D038	GAIRIGAU NAGAR TARA SADAK	4			1.28	1.28	8
82.0	356RM01D039	GANGALAL MARG	4			0.73	0.73	8
83.0	356RM01D040	GAURIBAJAR DEJHI DILLI KHATRIKO GHARSAMMA	2			0.21	0.21	8
84.0	356RM01D041	GAURIBAJAR DEKHI BULBULE HUDAI AAPTARI TAUKHOLA SAMMA	2			0.49	0.49	8
85.0	356RM01D042	GAURIDANDA HUDAI BHAGWATI MANDIR	7			0.52	0.52	8

86.0	356RM01D043	GHUREN DANDA DEKHI GEET PARIYARKO GHAR HUDAI TAL GAURA OLIKO GHAR SAMMA	2			0.43	0.43	8
87.0	356RM01D044	GURIDANDA KHALYAN ROAD	7			0.44	0.44	8
88.0	356RM01D045	GURUNG CHAUPARI JANE PITCH ROAD DEKHI RAMU TOLE SADAK	6			0.39	0.39	8
89.0	356RM01D046	HAPURE JANE CHOWK DEKHI LAMITARA CHISAPANI JODNE SADAK SAMMA	6			0.79	0.79	8
90.0	356RM01D047	INDRAPUR DEKHI RAJIKHARYE HUDAI SURKHET JODNE ROAD	3			1.71	1.71	8
91.0	356RM01D048	JANAKALYAN MA.BI. HUDAI PURA HAAPUREY JODNE SADAK	5			0.53	0.53	8
92.0	356RM01D049	JANJYOTINAGAR SADAK	5			0.65	0.65	8
93.0	356RM01D050	JAUWARI JANE CHOWK DEKHI JHARANA HUDAI TALLO BABAI JODNE SADAK	5			1.88	1.88	8
94.0	356RM01D051	JHARGAJERI BADALE	7			1	1	8
95.0	356RM01D052	KAPARAIL HUDAI KANCHHI KHUTI SADAK	1			0.23	0.23	8
96.0	356RM01D053	KAPARAIL KANCHIKHUTTI SADAK	1			0.3	0.3	8
97.0	356RM01D054	KATKUIYA VITRI GAU DEKHI CHARAKMATIYA JODNE BATO	6			0.34	0.34	8
98.0	356RM01D055	KATKUTIYA VITRI GAU DEKHI BELGHARI JODNE BATO	6			0.43	0.43	8
99.0	356RM01D056	KATKUTIYA VITRI GAU DEKHI PANCHKULE CHOWK JODNE BAATO	6			1	1	8
100.0	356RM01D057	KHAYAR BHATTI TALLO GAU SADAK	5			0.86	0.86	8
101.0	356RM01D058	KHILATPUR RAJAN CHOWK DEKHI HAPURE JANE CHOWK SAMMA	6	1			1	8
102.0	356RM01D059	KHILATPUR VITRI GAU DEKHI KHEL MAIDAN JODNE BATO	6			0.39	0.39	8
103.0	356RM01D060	KOSHILAPUR CHAUTARA DEKHI BATKEWA JODNE BATO	6			0.32	0.32	8

104.0	356RM01D061	KRISHI ROAD DEKHI BUSPARK JODNE BATO	3			0.75	0.75	8
105.0	356RM01D062	KRISHI SADAK DEKHI 4 NUMBER SIMANA JODNE BATO	3			0.31	0.31	8
106.0	356RM01D063	KRISHI SADAK DEKHI BUSPARK JODNE BATO	3			0.51	0.51	8
107.0	356RM01D064	KRISHI SADAK DEKHI GHARTI GAU JANE BATO	3			0.3	0.3	8
108.0	356RM01D065	KRISHI SADAK DEKHI KHANEPANI BHAWAN SAMMAKO ROAD	3			0.19	0.19	8
109.0	356RM01D066	KRISHNA BAHADUR DOTHAN DEKHI AAPTARI SAMMA	2			0.14	0.14	8
110.0	356RM01D067	KRISHNAPUR SAKHA BATO	7			1.83	1.83	8
111.0	356RM01D068	LAMETARA JANE BATO DEKHI I PRA KA KHILATPUR SAMMA	6			0.8	0.8	8
112.0	356RM01D069	LATOPOLE KHOLA CULVERTDEKHI SURKHET JODNEY ROAD SAMMA	3			0.59	0.59	8
113.0	356RM01D070	MADANEY REKHETOL SADAK	1			0.49	0.49	8
114.0	356RM01D071	MAINEWA SADAK	7			0.34	0.34	8
115.0	356RM01D072	MANAKAMANA BAJAR DEKHI CHARAKMATIYA PURANO SADAK	7			0.88	0.88	8
116.0	356RM01D073	MANBAHADUR DOTHAAN DEKHI AAPTARI SAMMA	2			1.1	1.1	8
117.0	356RM01D074	MATHEURA SAKHA BATO	7			0.3	0.3	8
118.0	356RM01D075	MATHYAUURI DEKHI JHOLUNGYE PULSAMMA	7			0.47	0.47	8
119.0	356RM01D076	MATHYEURI KHALYAN ROAD	7			0.38	0.38	8
120.0	356RM01D077	MULSADAK DEKHI BAMLAYI BADA TOL	7			0.37	0.37	8
121.0	356RM01D078	MULSADAK DEKHI JHARGAJERI SAMMA	7			0.51	0.51	8
122.0	356RM01D079	PANCHKULE CHOWK DEKHI KALIMATI MANDIR JANE BATO	6			0.37	0.37	8

123.0	356RM01D080	PANCHKULE DALIT BASTI DEKHI THAKUR KC KO GHAR SAMMA JODNE BATO	6			0.41	0.41	8
124.0	356RM01D081	PANCHKULE MAINROAD DEKHI CHYATIKHOLA HUDAI HAPURE JODNE SADAK	6			0.36	0.36	8
125.0	356RM01D082	PRAGATINAGAR PASCHIM SADAK	4			0.26	0.26	8
126.0	356RM01D083	PRAGATINAGAR SADAK	5			1.54	1.54	8
127.0	356RM01D084	PRAGITINAGAR SADAK	4			1.13	1.13	8
128.0	356RM01D085	PURBI BHRIKUTINAGAR	5	0.67			0.67	8
129.0	356RM01D086	PUSHPALAL MARG	5			1.1	1.1	8
130.0	356RM01D087	RAMPUR CHOWKDEKHI UTTAR RAMPURDANDA SAMMA	2			1.33	1.33	8
131.0	356RM01D088	RATA DANDA DEKHI ROLPALI TARA SAMMAKO SADAK	5			1.9	1.9	8
132.0	356RM01D089	RATAMATA TRIBENI CHOWK DEKHI DAKSHIN CHABALE HUDAI TWANKAKHOLA SURKHET ROAD SAMMA	2			1.3	1.3	8
133.0	356RM01D090	RAWATARA RINGROAD	7			1.17	1.17	8
134.0	356RM01D091	ROKCHYA TOL DEKHI 4 NUMBER SIMANA JODNE BATO	3			0.43	0.43	8
135.0	356RM01D092	ROLLA DEKHI RATAMATA JODNE SADAK	3			0.93	0.93	8
136.0	356RM01D093	SARSWATI AWASYA BIDHYALAYE DEKHI JHARGAJERI SAMMA	7			0.54	0.54	8
137.0	356RM01D094	SEER MODE NAGAR	4			0.77	0.77	8
138.0	356RM01D095	SHANTINAGAR SADAK	4			0.58	0.58	8
139.0	356RM01D096	SHIVNAGAR SADAK	5			1.1	1.1	8
140.0	356RM01D097	SHREEMANI MARGA HUDAI KAPARAIL SADAK	1			0.31	0.31	8
141.0	356RM01D098	SHREEMANI MARGA MADANEY SISNEY SADAK	1			1.5	1.5	8

142.0	356RM01D099	SHREEMANI MARGA PATIDHARYE HUDAI BISTACHAUR MADHYAMIK BIDHYALAYA SADAK	1			1.56	1.56	8
143.0	356RM01D100	SHREEMANI MARGA RIMKHOLA SADAK	1			0.93	0.93	8
144.0	356RM01D101	SIMALKUNA SAKHA BATO	7			0.33	0.33	8
145.0	356RM01D102	SIMGAIDA PALNE BASTI SADAK	5			1	1	8
146.0	356RM01D103	SITALNAGAR	4		0.28		0.28	8
147.0	356RM01D104	SITAPUR GADIRAM BALIKO GHAR DEKH PASCHIM TARFA RAMESH BHANDARIKO GHAR HUDAI TAUKHOLA AAPTARI THULA CHAUR SAMMA	2			1.29	1.29	8
148.0	356RM01D105	SITAPUR GHURENDANDA DEKHI BAGARPUR SAMMA	2			0.47	0.47	8
149.0	356RM01D106	SITAPUR SCHOOL DEKHI UTTAR TARFA JANE BATO	2			0.51	0.51	8
150.0	356RM01D107	SITAPUR TRANSMITTER DEKHI SUSAUNE SAMMA	2			0.89	0.89	8
151.0	356RM01D108	SUKRHET ROAD DEKHI BAHUN TOL SAMMA	2			0.31	0.31	8
152.0	356RM01D109	SUNDARKHAL	4			1.27	1.27	8
153.0	356RM01D110	SUNPUR BADALE SADAK	7			1.53	1.53	8
154.0	356RM01D111	SUNPUR HUDAI MASAN GHAT JANE BATO	6			0.35	0.35	8
155.0	356RM01D112	SUPARYE KUIRE KHOLA HUDAI SURKHET JODNE ROAD	3			0.72	0.72	8
156.0	356RM01D113	SURKHET ROAD DEKHI 2 NUMBER CHAKRAPATH JODNE BATO	3			0.85	0.85	8
157.0	356RM01D114	SURKHET ROAD DEKHI BUSPARK JODNE BATO	3			0.85	0.85	8
158.0	356RM01D115	SURKHET ROAD DEKHI BUSPARK JODNE BATO SAMMA	3			0.33	0.33	8

159.0	356RM01D116	SURKHET ROAD DEKHI BUSPARK JODNE SADAK SAMMA	3			0.57	0.57	8
160.0	356RM01D117	SURKHET ROAD DEKHI DHAAP SAMMA	3			1.1	1.1	8
161.0	356RM01D118	SURKHET ROAD DEKHI GAIRI GAU HUDAI SURKHET ROAD JODNE BATO	3			0.59	0.59	8
162.0	356RM01D119	SURKHET ROAD DEKHI GUNDRI BAJAR SAMMA	3			0.83	0.83	8
163.0	356RM01D120	SURKHET ROAD DEKHI JANNAKHOLE TOLE HUDAI PANI TANKI SAMMA	2			0.34	0.34	8
164.0	356RM01D121	SURKHET ROAD DEKHI KRISHI SADAK JODNE BATO	3			1.12	1.12	8
165.0	356RM01D122	SURKHET ROAD DEKHI LATOPOLEY KHOLA	3			0.46	0.46	8
166.0	356RM01D123	SURKHET ROAD DEKHI PALIKA JANE BATO	5	0.68			0.68	8
167.0	356RM01D124	SURKHET ROAD DEKHI RATAMATA HUDAI WARD 2 SIMANA JODNE BATO	3			1	1	8
168.0	356RM01D125	SURKHET ROAD DEKHI SAHAKARI BHAWAN HUDAI PURBA SURKHET ROAD DEKHI PURBA DHAARAKO KHOLSA SAMMA	2			0.67	0.67	8
169.0	356RM01D126	SURYANAGAR SADAK	4	1.59			1.59	8
170.0	356RM01D127	TANKAKATEY BAGARPUR SADAK	5			1.78	1.78	8
171.0	356RM01D128	TYWANKAKHOLA DEKHI BISAUNIDANDA HUDAI RAMRO BAISERI JANE BATO	2			1.34	1.34	8
172.0	356RM01D129	UTTAR KHILTAPUR DEKHI CHYATI KHOLA PUL SAMMA SADAK	6	1			1	8
173.0	356RM01D130	VERIKHOR BATA JAREYWAS SAMMA	2			0.58	0.58	8
174.0	356RM01D131	VITRI KANCHANPUR SADAK	4			0.93	0.93	

