Nepal Government
Kamal Rural Municipality
Office of the Rural Municipal Executive
Jhapa, Province no 1

RURAL MUNICIPAL TRANSPORT MASTER PLAN

of

Kamal Rural Municipality

(Final Report)

Submitted by:

Galaxy Engineering Trade Link Pvt. Ltd.

Bhaktapur Nepal

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List of abbreviations

AD	Anno Domini
BS	BikramSambat
DDC	District Development Committee
DoR	Department of Road
DRCN	District Road Core Network
GIS	Geographic Information System
IDPM	Indicative Development Potential Map
INGO	International Non-Governmental Organizations
LSGA	Local Self-Governance Act
RMIM	Rural Municipality Inventory Map
MoFALD	Ministry of Federal Affairs and Local Development
RM	Rural Municipality
RMRCC	Rural Municipality Road Coordination Committee
RMTMP	Rural Municipality Transport Master Plan
RMTPP	Rural Municipality Transport Perspective Plan
NGO	Non-Governmental Organizations
NUDS	National Urban Development Strategy
RoW	Right of Way
SRN	Strategic Road Network
ToR	Terms of Reference
VDC	Village Development Committee

INTRODUCTION

Rural Municipality Transport Master Plan (RMTMP) shall be defined as the process of Identification, classification and prioritization of roads within the rural municipality; construction, upgrading, maintenance and rehabilitation of prioritized roads on the basis of approved criteria with calculation of financial budget. The background for preparation of transport master plan along with the objectives and the scope of planning has stated in this chapter. The basic approach for the preparation of RMTMP is the bottom up and participatory approach.

1.1 BACKGROUND

A broader perspective on urban transportation is proposed in National Urban Strategy 2015. The strategies include the integration of land use and transportation in urban as well as regional planning and development of related institutional mechanisms and capacity. The provision of hierarchically balanced urban road infrastructure; promotion of sustainable urban public transport, and preparation and implementation of comprehensive transport management standards and plans for urban areas are the boarder perspective that has focused in the strategy. In prioritized regions the provision of high- speed inter-urban transport infrastructure is also proposed.

Local Governance Execution Act (2074) provisions formulation of local development plan according to needs-based, bottom-up and participatory approach. It has prominently defined tangible steps for formulation of such development plan. The main objective of this plan is to make investment for planned development within each of the local bodies' territory. Ultimately, development endeavors help attaining sustainable livelihood and improved wellbeing of people. People's needs for sustainable livelihood and improved well-being are such that they require better access to information, markets and opportunities; they need better access to health, education and other goods and services. Hence as a part of RMTMP preparation, accessibility planning has recommended as an effective tool to access the existing situation of the services and facilities. Strategic road network is important for national income while local roads are for poverty reduction. The interventions derived from the accessibility planning has shall represent the real needs and priorities of the local people. The population and land area are inherent for economic development but the road density have multiplicative effect while road network connectivity have exponential effect on local economy.

The then Ministry of Federal Affairs and Local Development stepped up to bring forward proposal to create new municipalities from those urban and semi-urban settlements by combining prevalent Village Development Committees. Government of Nepal approved the proposal leading to creation of 753 new municipalities in various steps. There are altogether total 460 rural municipalities in Nepal till date. It needs a proper tie up between the other service areas and the road networks. But the existing municipal roads are failed to tie up/integrate the other facility areas. These all problems can be minimized by applying proper transportation planning in the rural municipality. RMTMP is one of the best planning tools for it.

Kamal Rural municipality is established through agglomeration of two existing Village Development Committees, namely Topgachhi and Lakhanpur.Since thisrural municipality is at an early stage of infrastructure development they require appropriate long term plan so that organized and planned cities shall be developed. RMTMP has considered as an objective tool for prioritizing the projects and it will fulfill partially the lacking part of LGEA.

1.2 OBJECTIVES OF RMTMP

The overall objective of this study is to prepare the Rural Municipality Transport Master Plan (RMTMP/RMTPP) for Kamal Rural Municipality.

The specific objectives are to:

1. Finalize visionary city development plan if Comprehensive Town Development Plan is not prepared.
2. Analyze the accessibility situation.
3. Identify and priorities the interventions based on the accessibility situation.
4. Prepare Indicative Developmental Potential Map (IDPM).
5. Prepare the Rural Municipality Inventory Map (RMIM) of Road networks.
6. Collection of demands for new/rehabilitation transport linkages from rural Municipalities/Settlements based on city development plan.
7. Prepare the Perspective Plan of transport services and facilities.
8. Synchronize the draft Perspective Plans of adjoining local levels.
9. Develop scoring criteria and its approval from rural Municipality.
10. Prepare the five years Rural Municipality Transport Master Plan (RMTMP).
11. Prepare a realistic physical and financial implementation plan of prioritized roads for the RMTMP period; and
12. Prepare Rural Municipality Transport Perspective Plan (RMTPP).

1.3 SCOPE AND LIMITATIONS OF RMTMP

The scope of the works and services of the consultant for the project are given below.

a. Assist in the Formulation of the Rural Municipality Roads Coordination Committee (RMRCC).

b. Secondary Sources of Information and Review of the existing RMTMP.

c. Accessibility data collection and analysis.

d. Prepare the Indicative Development Potential Map (IDPM).

e. Prepare RMIM of urban roads, main trails and bridges within the rural municipality.

f. Collection of demands for new/upgrading/rehabilitation transport linkages from wards/settlements.

g. Developing Scoring Criteria and its Approval from the rural municipality.

h. Road classification and nomenclature.

i. Analyze Fund Availability for Roads.

j. Preparation of Perspective Plan of interventions of services and facilities.

k. Preparation of the Rural Municipality Transport Master Plan (RMTMP).

l. Prepare a realistic Physical and Financial Implementation Plan of prioritized roads for the RMTMP period.

1.4 INCEPTION METHODOLOGY

1.4.1 Desk Study

Relevant secondary data and maps of Kamal Rural Municipality have been reviewed. For demographic and economic information, census data of years 1981, 1991, 2001 and 2011 published by Central Bureau of Statistics have been referred to, as applicable. Other report land use plan, tourism development plan and documents are studied for the relevant purpose.

Project study reports of similar nature – such as, district transport master plan, district perspective plan, town development plan, tourism plan, agricultural perspective plan of the district.

Figure 1.1Interaction with municipal staff and public transport entrepreneurs

1.5 PLANNING APPROACH AND METHODOLOGY

Rural Municipality Transport Master Plan is prepared using participatory bottom-up approach from the settlement level. Techno-Political interface is incorporated in the planning process, where active participation from representatives of political parties, line agencies, rural municipality officials is crucial. The Rural Municipality Road Coordination Committee (RMRCC) is constituted as an authorized legislative body of rural municipality.

Table 1.1Planning Matrix for the preparation of RMTMP

Objectives	Data type	Sources of data	Analysis tools or methods	Expected Output
1. Finalize visionary city development plan	Primary and Secondary	Local People , Planner and experts	Visualization of plan	VCDP
2. Analyse the accessibility situation.	Primary	GPS and HH survey	GIS mapping	Accessibility situation
3. Identify and prioritize the interventions based on the accessibility situation.	Primary	Local People , Planner and experts	PTAL,WLT,WT	Accessibility mapping and buffering
4. Prepare Indicative Development Potential Map (IDPM).	Primary and Secondary	Local People , Planner and experts	Land use and planning	IDPM
5. Prepare the Rural Municipality Inventory Map (RMIM)	Primary and Secondary	Field inventory survey & map by GIS Expert	GIS mapping	RMIM
6. Collection of demands for new/rehabilitation transport linkages from Municipalities/Settlements	Primary	Ward level meetings by enumerators	Checklists	Demands of each wards
7. Prepare the Perspective Plan of transport services and facilities	Primary and Secondary	Engineer and planner	Network analysis and accessibility analysis	RMTPP
8. Synchronize Perspective Plans of Adjoining VDCs /Municipalities /districts.	Primary and Secondary	Engineer and planner	Transportation networking	Inter linkages among Municipalities
9. Develop scoring criteria and its approval from Rural Municipality.	Primary	Approved by Rural Municipality &RMRCC	Checklists	Prioritization Criteria
10. Prepare five year Rural Municipality Transport Master Plan (RMTMP)	Primary and Secondary	All previous results	Perspective plan and financial plan	RMTMP
11. Prepare a physical and financial implementation plan of prioritized roads for RMTMP period.	Primary and Secondary	Rural Municipality Office and all previous results	Implementation Plan	Implementation Plan

1.5.1 Conceptual Framework

Prioritization of roads collected from demand form is done and interventions are proposed based on the analysis of projected budget available for road within RMTMP period. Based on it Rural Municipality Transport Perspective Plan (RMTPP) has been prepared. Finally, Rural

Municipality Transport Master Plan (RMTMP) and it's Physical and Financial Implementation Plan has prepared.

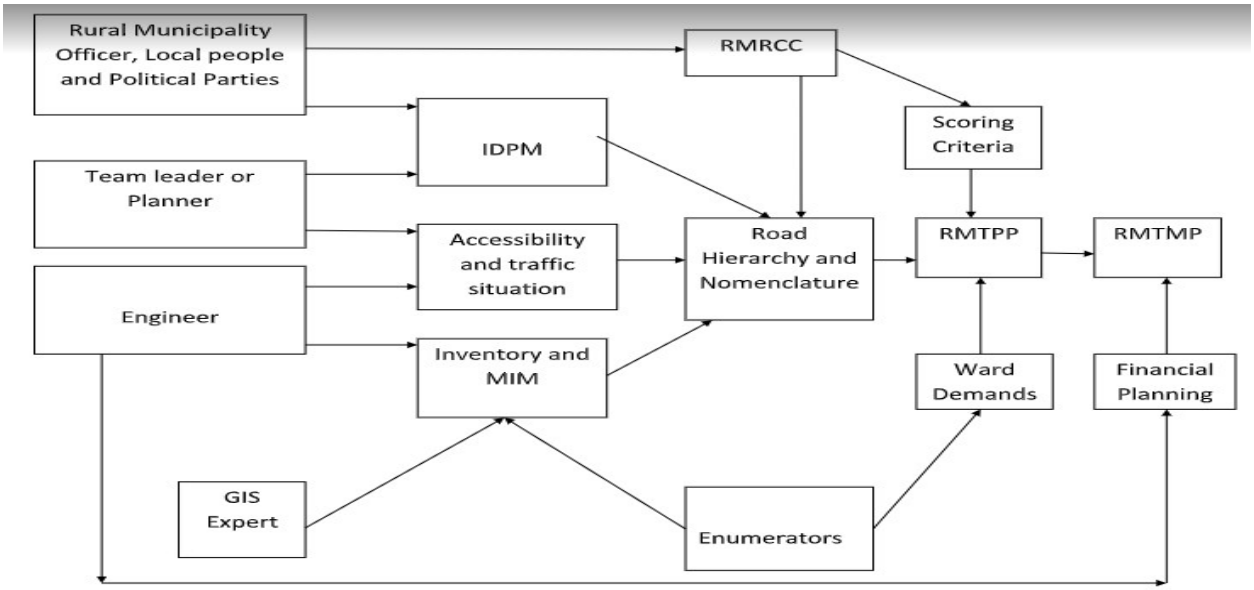

Figure 1.2 Conceptual framework RMRCC

a) Formation of RMRCC

The main task of RMRCC is to provide support to the rural municipality in formulating, managing and monitoring rural municipality road transport infrastructure policies, rules and regulations. In the presence of rural municipality staffs, representatives of political parties and other selective persons orientation workshop in the Kamal Rural municipality was held. The main objective of the workshop was to provide the concept, objective and methodology of the RMTMP and the scope of works of the consulting firm. Rural Municipality formed the RMRCC including the designated members.

Table 1.2Rural Municipality Road Coordination Committee (RMRCC) Members

Representative organization	**Position held**
Chairman of Kamal Rural Municipal Executive	Chairperson RMRCC
Vice-Chairman of Kamal Rural Municipal Executive	Member
Chief Administrative Officer of Rural Municipality	Member secretary
Two nominated Executive Members of Rural Municipality including one female	Member
Planning section chief of Rural Municipality	Member
Technical section chiefof Rural Municipality	Member

b) Secondary Sources of Information and Review of the existing DTMP

The secondary information has collected from the various district based line agencies, project/program, INGOs/NGOs, and other regional and central level organizations as required.

The team has reviewed the available existing DTMP of Jhapa district and rural profile of Kamal Rural municipality.

c) Accessibility Data Collection and Analysis

Accessibility data shall be collected using a standard questionnaire sheet through household survey. Accessibility shall be assessed by three ways including, accessibility to roads, accessibility to public transportation and accessibility to the services. The ward wise boundaries shall be considered as zones for accessibility as well as trip pattern.

d) Preparation of the Indicative Development Potential Map (IDPM)

The Rural Municipality's Indicative Development Potential has prepared based on visionary city development plan. The visionary city Development plan has prepared based the characteristics of the location along with the consultation with the people and RMRCC. The final potential map shall be validated trough the RMRCC and Rural Municipality. The base map will be prepared on a 1:25,000 scale topographical map.

e) Preparation of the Rural Municipality Inventory Map (RMIM)

Rural Municipality Inventory Map (RMIM) has prepared based on field inventory survey. The field survey has been carried out by mobilizing enumerators via walkover surveys. The Inventory includes the roadway length, width, surface type, carriageway width, drainage condition, number of served population, administrative buildings, educational offices and hospitals/health posts.

f) Collection of Demands for New Upgrading/Rehabilitation Transport Linkages from wards

The formal requests for new construction or rehabilitation of different linkages from has collected from wards and settlements, on their needs basis using format as recommended by ToR. The demand has been collected in the order of priority from each ward. The collected demand shall be screened and harmonized at rural municipality level through workshop. Again the socio-economic data of all requested transport linkages were also collected from wards as well as from inventory by enumerators. The framework that has been using in the whole process is as per ToR and DoLI approach manual.

Ward level meeting in every ward or ward cluster is done where information on RMTMP are collected. Demand form for each ward are provided which are later on collected after the form are duly filled in given time . As road demand from the settlement level is collected bottom up approach of planning is applied.

g) Developing Scoring Criteria and its Approval from Rural Municipality

The study and planning team has developed weight system for the scoring and prioritization criteria for screening and prioritized demanded following the recommended guidelines for interventions. The scoring and prioritization criteria shall be approved by the rural municipality. All the demanded linkages shall be processed and undergo through the screening and prioritization process.

Table 1.3Weights for the Prioritization Criteria

Sn	Criteria	Scoring	Method of Measurement	Score
1	Link providing service to large settlement areas/population.	Population served/km (continuously Scored)	Measurement of served HH from map and multiplying with HH occupancy of respective wards	15-20
2	Link providing service to areas with high potential for agriculture, horticulture, livestock production.	Annual production equivalent to NRs……/km (continuously Scored)	Measurement of Agriculture land area from map, livestock from inventory and multiplying with unit rate of production	5-10
3	Link providing service to existing market centers: 1. commerce and business centers or market sites (local haat) 2. Tourism attraction centers 3. Areas having agro-based and cottage industries 4. Other obligatory centers as decided by the rural municipality	Estimated annual transaction in these centres equivalent to NRs……./km (continuously Scored)	Inventory survey along with consultation with people (RMRCC) and land cover map are used to identify their location and transaction	20-25
4	Link providing service to the existing service centers: 1. health centers, 2. education centers (school/campus), 3. Office (municipality/ government) 4. Communication centre (post office, communication)	Population served by these service centres expressed as persons per km per year. (continuously Scored)	Inventory survey, Map along with consultation with people (RMRCC) identifies their location and served population.	15-20
5	Link providing service to the potential growth or service centers identified by rural municipality (IDPM) such as Waste management site.	Anticipated number of people to be directly benefited expressed as persons per km per. (scored continuously	Consultation with RMRCC and IDPM shall also be used	5-15
6	Link providing service to the potential future development sites such as: 1. Potential town growth 2. Land pooling 3. Potential industrial area 4. Forming ring road to rural municipality	It is technically sound to score these service discretely based on existence. For each service centers, a score of 2.5 is allocated.	Consultation with RMRCC and IDPM shall also be used	10-20
7	Link providing service to the areas recognized by the rural municipality as areas for special consideration, such as areas inhabited by backward and poor ethnic groups/ communities, isolated remote areas, historic sites, religious sites etc.	• Very important =5 • Important =2.5 • less important =0 (Scored discretely)	Inventory survey along with consultation with local people identifies their location and Importance.	10-5
8	Direct link with another linkage	• National Highway=10 • Feeder Roads=8 • District Roads=6 •Neighboring Municipality/ district= 4 • Otherwise= 0	Road Network Map and attribute table.	5-10
9	Ward Demand	• Priority-1, =10 • Priority-2, =8 • Priority-3, =6 • Priority-4, =4 • Priority-5, =2 • Others, =0	Ward Meeting using demand form	5-15

h) **Road classification and nomenclature**

The planning team has prepared road classification criteria, and the nomenclature has developed as the Terms of Reference.

Coding of Rural Municipality Roads

All road links within the Rural Municipality are given unique code number consisting of ten digits. The coding system for particular road link is described below:

- First digit (1 to 7) represents the number of Province

Code 1 stands for Province 1 and 2,3,4,5,6 and 7 stand accordingly.

- Second and third digits represent particular district (1 to 77). Jhapa District is coded by 04.
- Fourth code M represents for the Municipality/ Rural Municipality.
- Fifth and sixth digits represent particular name (1 to 99 for particular municipality/ rural municipality) of the municipality/ rural municipality in the district. KamalRural Municipality is coded by 09.
- Seventh code indicates letter A to D for particular Class of road.
- Next three digits (001 to 999) represent the particular transport linkage. After all the code numbers, road name is written.

An example of the code number and road in Kamal Rural Municipality is shown as

1	**0**	**4**	**M**	**0**	**9**	**C**	**0**	**0**	**2**

i) Preparation of Perspective Plan of Interventions of Services and Facilities

The study and planning team shall prepare perspective plan of interventions of services and facilities, which re identified from the accessibility analysis and rural municipality level workshops. All the identified interventions shall be screened and rated on the basis of approved criteria. The team shall discuss with the rural municipality technical team and the RMRCC relating to interventions of services and facilities for the improvement of the access situation and shall forward to MunicipalCouncil meetings with recommendation. Accordingly, the final perspective plan of rural municipality roads will be developed. The perspective plan shall be shown in GIS maps also.

j) Analyze Fund Availability for Roads

The internal and external financial resources available in the rural municipality shall be reviewed by the consultant discussing with the rural municipality authorities so that the financial recourses available for the transport interventions during the five year RMTMP period can be estimated. Sources of funding include annual budget allocated in the rural municipality, the budget allocated through GoN central agencies such as DoLI. Other possible sources of funds could be from road tolls, royalties, land taxes etc. Prospects of funding from other external sources, including possible and committed funding from donors, are reviewed and shall be taken into account.

k) Preparation of the Rural Municipality Transport Master Plan (RMTMP)

Considering the Perspective Plan, the team shall prioritize the Perspective Plan subsequently, the team shall prepare the five year RMTMP of the rural municipality by selecting transport interventions (maintenance, upgrading and new construction of main trails, trial bridges and roads) from among top priority in the Perspective Plan starting from first and that could be implemented in the next five year period. This shall be based on cost estimates of maintenance, upgrading, rehabilitation and new construction of main trails, bridges and roads and available financial resources.

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

The study team shall collect information on existing resources spent on transport infrastructure and possible available resources, and make a projection for the next five years period. From the total projected resources, the team shall discuss with the rural municipality to find out the appropriate proportion to be spent on on-going roads and new interventions (construction/ rehabilitation/ maintenance etc) proposed. This step involves matching the estimated resources that are expected to be available to the rural municipality over the plan period, with the interventions for on-going roads and proposed ones. The total numbers of road and interventions proposed for the RMTMP period shall match with the projected available resources and should avoid proposing a long list for the RMTMP period.

1.6 MOBILIZATION OF THE TEAM

The mobilization of the Consultant's staff commenced as provided in the Contract with the nominated Project Director assuming his assignment and conforming for the mobilization of the other staff. The composition of the team as agreed is summarized in **Table 1.** The Table also indicates the duty station and assigned districts for reference.

Table 1.4List of Consultant's Personnel

SN	Name	Proposed Position	Base Station
	Mr. Jagadish Dhungana	Team Leader	
	Mr. Paribesh Timsina	Project Coordinator/ Civil Engineer	Kathmandu/Field
	Mrs. Nirmala Acharya	Socio-economist	
	Mr. Dil Kumar Rai	GIS Expert	
	Mr. Paribesh Fuyal	Civil Engineer/Survey Team	
	Mr. Suman Acharya	Surveyors	

1.7 ORIENTATION OF THE STAFF MEMBERS

The acquaintance and orientation program for the RMTMP Consultants' staff members was

Organized and carried out by the Team Leader on July 23rd March 2020 immediately after signing of contract. The Orientation program mostly focused on precise data collection, mapping techniques, outcomes and presentation of reports and highlighted the working procedures including use of guidelines and manual of procedures. The Orientation Program discussed following topics:

- Working Procedures of Rural Municipality

- Socio-Economic Profile

- Road and Structure Inventory
- Data capture and analysis in GIS and other computer software
- Role & Responsibilities of Rural Municipality and other line agencies
- Conduction of Stakeholders Workshop and Presentation of report
- Reporting
- Discussion and Interaction.

The Resource persons delivering the highlights were consultant's members. Preparation of RMTMP according to DoLI's Approach Manual and IRAP tool is an advantage and the consultant's expertise and knowledge in core subject matter.

INTRODUCTION TO KAMAL RURAL MUNICIPALITY

2.1 RURAL MUNICIPALITY PROFILE

After the restructuring of the local bodies existing Lakhanpur and Topgachhi VDCs were agglomerated to form Kamal Rural Municipality. The specific features of the Rural Municipality are

Name
Kamal Rural Municipality
No. of Wards :7
Geographic Location
Latitude : 26.60°N
Longitude : 87.76°E
Area : 104.59 sq. km.

Relative Location
East :Shiva Satakshi Municipality Jhapa
North :Chulachuli Rural Municipality Ilam
West :Damak Municipality Jhapa
South :GauradahaMunicipality ,Gauriganj Rural Municipality

Administrative and Political Division
Province : Province no. 1
District : Jhapa
Electoral Constituency: Jhapa -5 "1" and Jhapa – 5 "2"
Local Level : Kamal Rural Municipality

Population and Population Density
Total Population :44365
Male Population :20296
Female Population :24069
No. of household :10256
Average household size :4.33 per household
Population Density :424.18 per sq. km

Ethnicity
Chhetri, Brahmin, Limbu ,RaiDhimal, Santhal , Tajpuriya , Rajbanshietc
Festivals
Dashain ,Tihar, Dhannach , Chandinach , Than Melasetc.
Important Markets
Kerkha, Padajungi, CampaBajaaretc.

Table 2.1Ward wise population Distribution

Ward No.	Settlement zone (Existing)	Area (Sq. km)	Population			Population Density
			Male	Female	Total	
1	Topgachhi (1,2 and 9)	21.9	2729	3311	6040	275.80
2	Topgachhi (3,8)	15.6	2660	3189	5849	374.94
3	Topgachhi (7)	11.7	2515	3085	5600	478.63
4	Topgachhi (4,5 and 6)	15.4	2924	3533	6457	419.29
5	Lakhanpur (1)	13.7	3795	4352	8147	594.67
6	Lakhanpur (2,3 and 4)	9.69	2702	3041	5743	592.67
7	Lakhanpur (5,6,7,8 and 9)	16.6	2971	3558	6529	393.31
	Total	104.59	20296	24069	44365	424.18

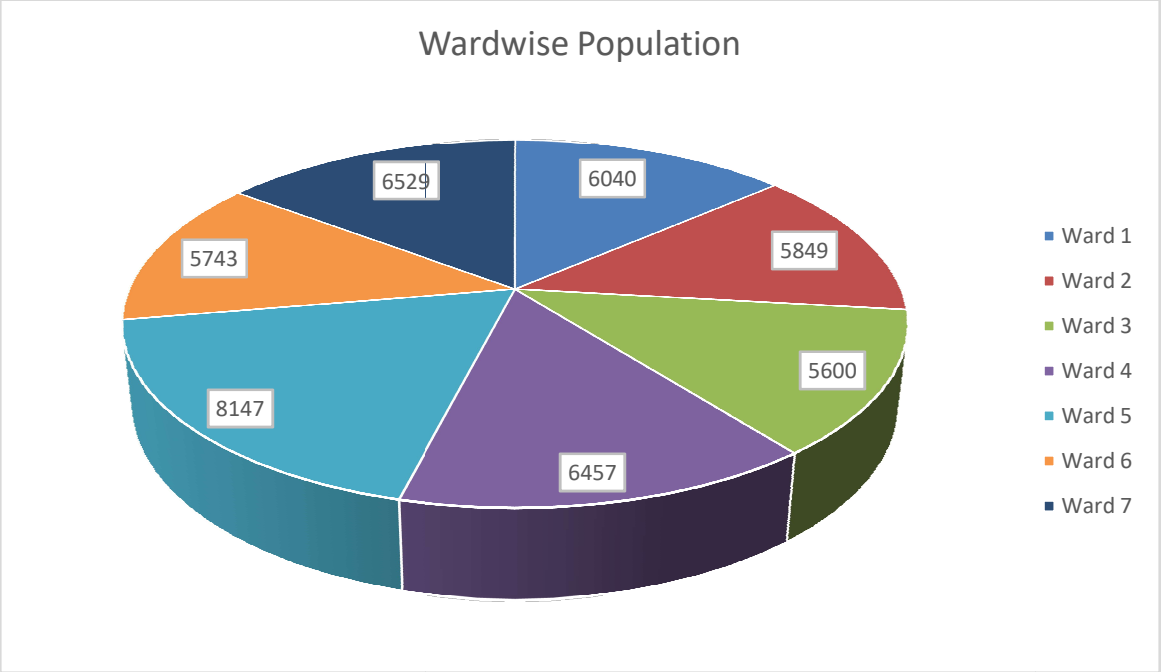

Figure 2.1 Ward wise Population Distribution

REVIEW OF EXISTING INFRASTRUCTURE SITUATION

3.1 STUDY AREA

Kamal Rural municipality lies in Jhapa district of Province One. It is a newly declared rural municipality formed by agglomerating 2 existing VDCs into single Kamal Rural Municipality. The agglomerated VDCs are Lakhanpur and Topgachhi VDCs. Kamal Rural Municipality stretches from Gauradaha Municipality and Gauriganj Rural Municipality in the South to Chulachuli Rural Municipality (Ilam) in the North. It has Damak Municipality in the West and Shivasatakshi Municipality in the East . It covers an area of 104.59 sq. km. The location/index map of the rural municipality has been presented in Figure below.

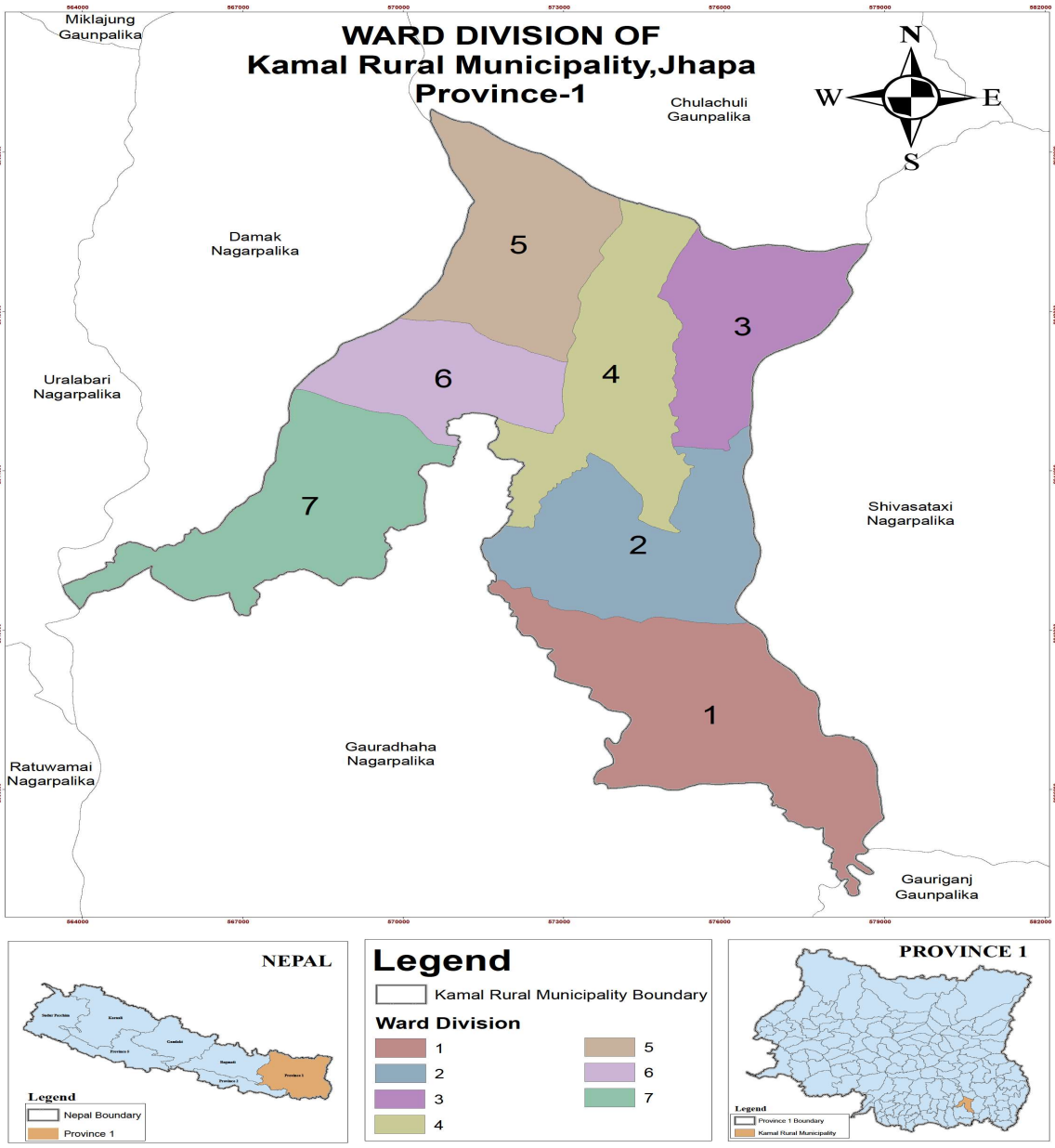

Figure 3.1Index map of rural municipality.

Initially, it is important to know about the present condition of transportation infrastructure before entering into the planning process. This chapter includes the existing road and roadside infrastructures along with their present conditions. The physical infrastructure which has direct / indirect effect to the transportation system such as urbanization, land plotting etc are also considered.

3.2 ASSESSMENT OF EXISTING INFRASTRUCTURE SITUATION

Kamal Rural Municipality is directly accessed by East-West Highway and through a feeder road which lies under SRN. These two strategic roads along with one existing district road comprise the framework of transport linkage within the rural municipality. East West Highway, being the largest road network of the country, has benefited the rural municipality to the utmost. The study area is enclosed by Kamal river in the East and Ratuwa River in the west. The rural municipality is of diverse land cover features. It contains a good blend of agricultural area, built up or commercial area, forests, water bodies and settlement areas which can be clearly distinguished. A number of small rivulets originating in the northern hills run throughout the rural municipality. Most of the roads present are non-metalled except for SRN and DRCN while village trails are mainly earthen. The rural municipality, being situated in the outskirts of Damak Municipality,in very near future is becoming a urban center. Furthermore with the completion of Biratnagar-Bhadrapur postal road, which is believed to serve as an alternative to the East-West Highway, will enrich the urbanization of the southern clusters of the settlements.

3.2.1 Strategic Road Network (SRN)

There is one national highway which passes through the geography and important feeder road joins the Postal Highway with East-West Highway.

Table 3.1Existing SRN within the Rural Municipality Area

S.N.	Name of Road	Class	Ref. No.	Length(km)
1.	East West Highway	National Highway	H01	8.32 km
2.	Padajungi – Gauriganj Feeder road	Feeder Road	F02	4.42 km

The map in Figure 5 shows the existing SRN in Jhapa district. The map also emphasizes the location of kamal rural municipality with respect to the strategic roads and the scope of rural municipality towards an urbanized center of the district.

However, excessive use of the road particularly during peak hours and movement of construction materials carrying vehicles specially loaded trippers and tractors have raised questions of road sustainability and safety.

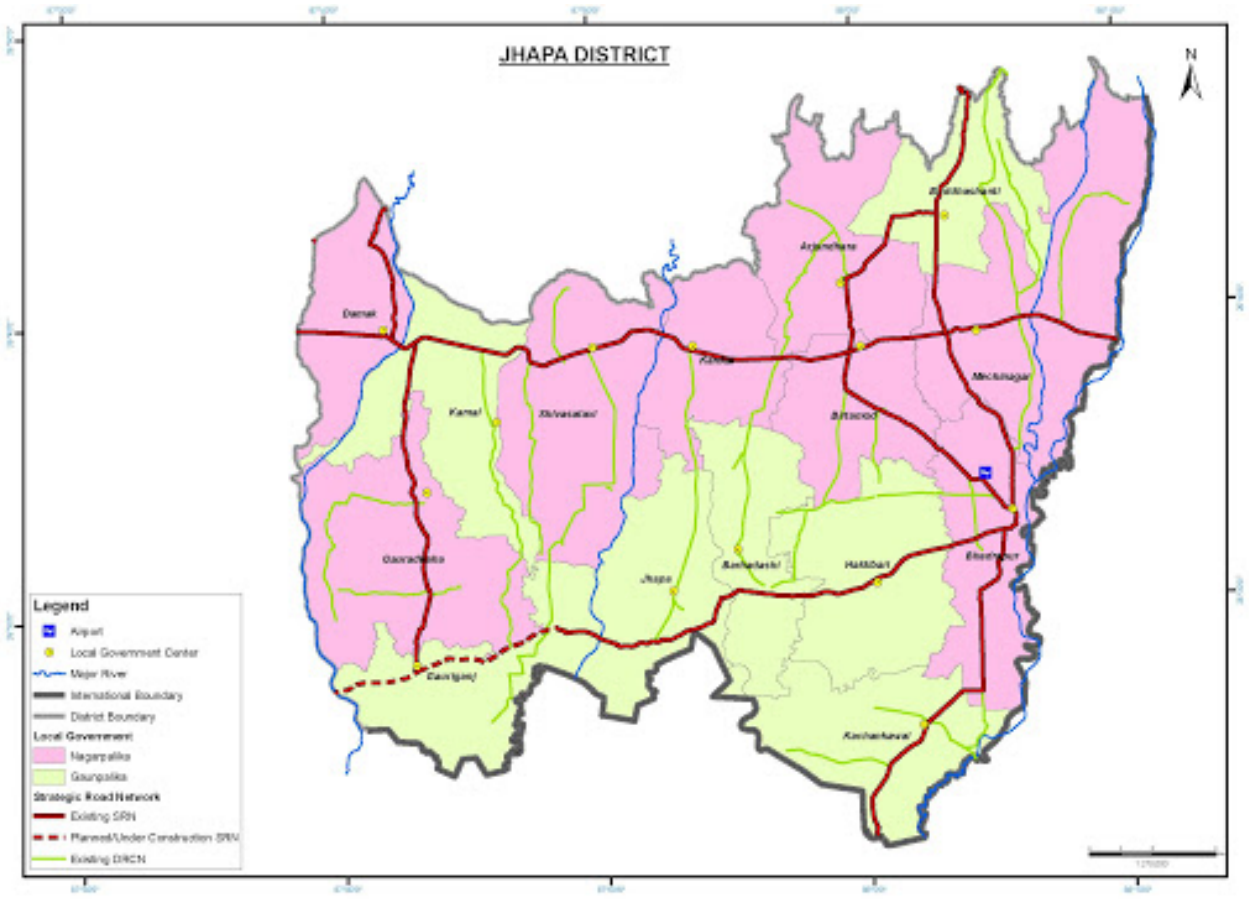

Figure 3.2 Strategic road network of Jhapa district.

3.2.2 Proposed Road Section as per SRN

Typical road Cross sections based on the guidelines of NRS-2070 and NRRS-2012 are shown in figure below. DoR is the authorized body for surveying, planning, design and maintenance of these highways.

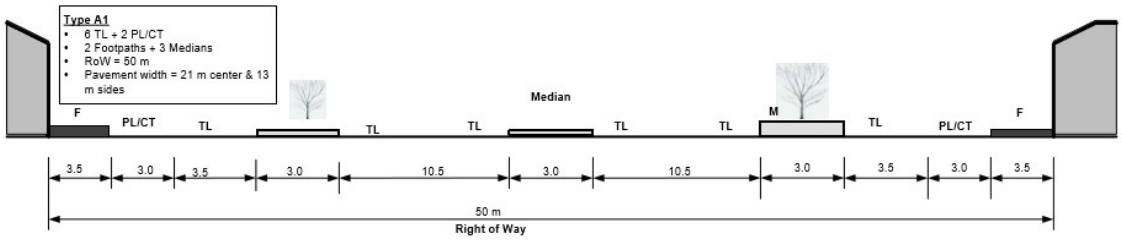

Figure 3.3Typical cross section of Arterial (National Highway)

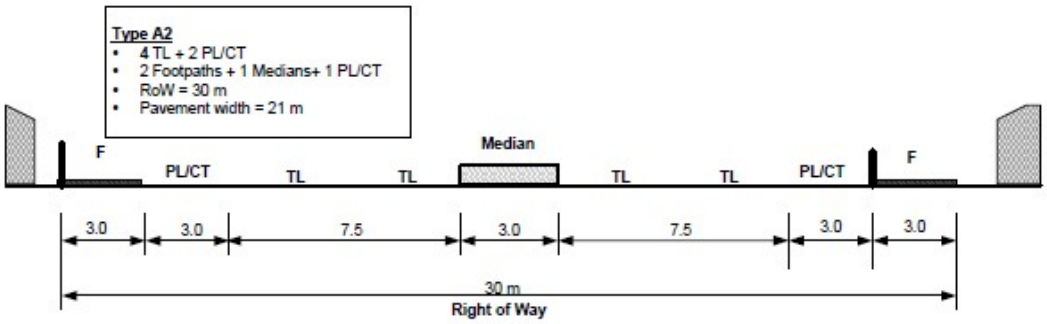

Figure 3.4Typical cross section of Arterial (Feeder Roads)

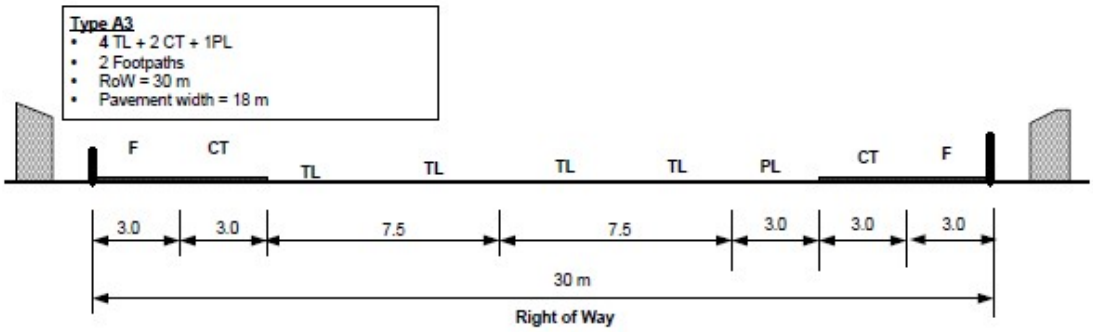

Figure 3.5Typical cross section of sub Arterial (Feeder Roads)

District Road Core Network (DRCN)

These are the roads connecting old VDC centers of the district with SRN . The planning of these roads was being carried out by district itself which is now transferred to the local levels as per the restructuring of local levels. According to the final report of DTMP of the district , the district roads lying within the rural municipality area listed in Table 4 .

Table 3.2Existing DCRN in Kamal Rural Municipality

S.N.	Name of Road	Class	Road Code	Length(Km)
1	Kerkha – Campa – Sarangpada – Baigundhura road	DRCN	04DR002	16.65

All of the above mentioned roads form the basic framework of road within the rural municipality. Other village roads and trails either start or end up in these roads. Hence the upgrading and maintenance of these DRCN are inevitable for uplifting the transportation structure of the rural municipality.

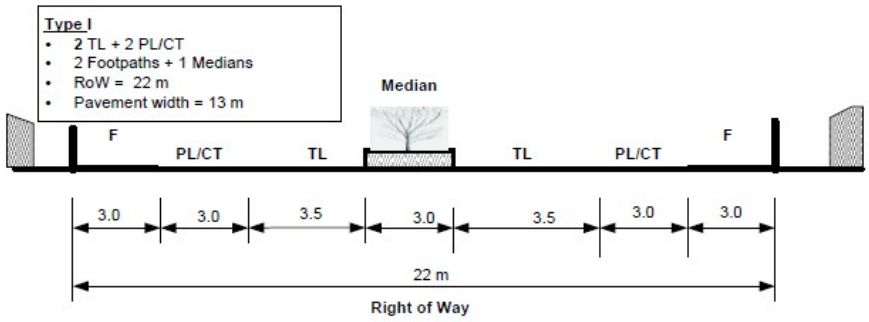

Figure 3.6Typical cross section of DCRN (RoW 22m)

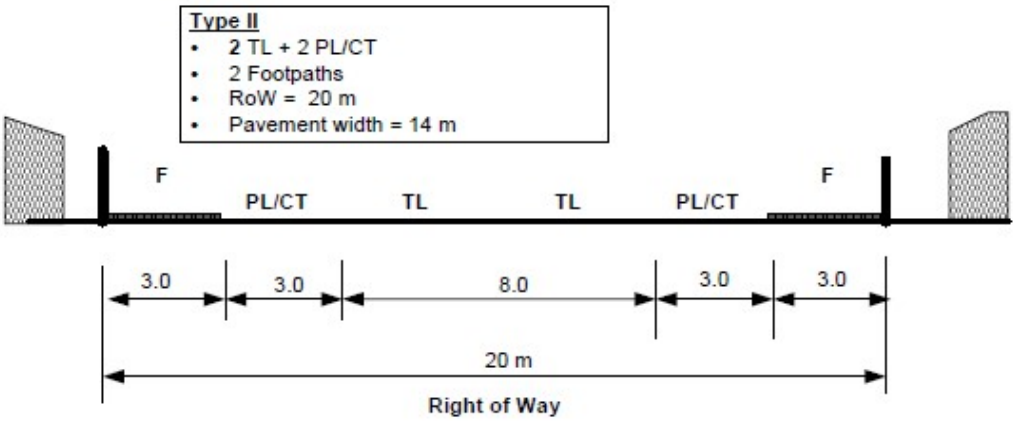

Figure 3.7Typical cross section of DCRN (RoW 20m)

3.3 REVIEW OF RURAL MUNICIPALITY STRATEGY AND OTHER REPORTS

Desirable condition	Indicators
Intra-Urban	
Adequate road infrastructure (7.5 km/sq.km in core and higher in urban expansion areas)	Road density in urban core and expanding areas % coverage of road per sq. km.
Provision of sustainable urban public transport services in cities with population more than 100,000.	Population served by sustainable urban public transport services
Inter- Urban	
Provision of better quality inter-urban connectivity	Average design and travel speed (connectivity to major urban areas)

Strategies	Activities/Inputs
Intra-Urban	
S34. Integrate land use and transportation in town and regional planning	Encourage land use based transport development in urban areas
	Formulate supportive building by-laws in coherence with town and city plans (high FAR near public transport route, land use which generates/attracts more visitors and traffic in higher accessible locations)
	Periodic monitoring of land use and transportation interface
S35. Develop institutional mechanism and capacity to address issues related to urban transport and land use	Develop sectoral coordination mechanism between MoPIT, MoUD and MoFALD
	Build transportation orientation within MoUD
S36.Provide hierarchically balanced urban road infrastructure in coordination with DoR and DoLIDAR.	Identify roads of different hierarchy based on traffic volume/ridership within urban limits.
	Expand/upgrade roads to meet the standards
S37. Promote sustainable urban public transport	Improve existing public transport through provision of high capacity, people centric design
	Review to empower institutional mechanism to regulate public transportation
	Conduct study and route planning for BRT, LRT and MRT in SMC and/or Metropolitan city
S38. Prepare transportation management plan	Promotion of non-motorized transport and pedestrianization through NMT guidelines and standards (cycle tracks, walkways also for differently able people)
	Prepare local parking management plan Traffic management and road safety

Figure 11: National Urban Development Strategy 2017.

3.4 VISIONARY CITY DEVELOPMENT PLAN

The word visionary reflects some far sighted plan or creativity. A person who is ahead of his time and who has a powerful plan for change in the future is an example of visionary.

Kamal Rural Municipality is named after Kamal River which lies in the eastern boundary of the rural municipality. Majority of northern part of the rural municipality is covered with forest which opens up the possibility of cultivation, processing and commercialization of medicinal herbs and conservation of floral and faunal diversity.

Kamal Rural Municipality is a possible suburb for rapidly expanding population of neighboring Damak municipality. A proper vision and its execution can lead the municipality to be a model of planned settlement. Also it may serve as agricultural basket for the area. Possibilities of surface irrigation from the surrounding Kamal and Ratuwa rivers and plenty of agricultural fertile land are the pros of the municipality.

Study of the area has identified the major development potential in the following sector.

1. Potentiality of planned settlement to manage the increasing population of neighboring city.
2. Potential commercial hub as the intersecting node of two strategic road networks.
3. Suitable landscape and environment for organized agriculture with respect to availability of land, rivers on both sides and potential markets nearby.
4. Promotion and conservation of existing forest including the flora and fauna so as to enhance biodiversity.

3.5 CONSTRAINTS IN IMPLEMENTATION OF RMTMP

The impracticable part of RMTMP lies in the areas other than built up portions due to very less movement of people and generation of trips. Presence of numerous water bodies may also prove to be a barrier for easy and effective implementation of the suggested transportation plan.

Being a newly formed rural municipality, a very few income generating sources are available within the rural municipality. Hence the rural municipality budget will be very scarce to implement the proposed strategies.

Active participation and support of local people is also a challenge for the plan implementation. Also, the problem of land acquisition may arise in the settlement zones and commercial areas.

3.5.1 Trend of urbanization

Transportation is more than moving people, goods and services on roads, buses and sidewalks. It is basic infrastructure that shapes urban form, impacts economic well-being and is a primary determinant of rural municipality's environmental, financial and social sustainability. Rural Municipality Transport Master Plan is a strategic planning document designed to define policies, programs and interventions required for the rural municipality's transportation needs for next 20 years and beyond. Developed through study of indicative development potential and probable land use changes the plan reflects the growth and development of the rural municipality.

Kamal Rural Municipality, so far has not faced critical problems arisen due to urbanization as compared to other growing urban areas but it is the probable rapidly urbanizing rural municipality in upcoming future. It will serve as a junction of different feeder roads leading to all directions of the province and also it as a possible major trade route of the province. Hence special attention should be taken right now to control unmanaged urbanization. Presently the trends of urbanization observed are:

1. Urbanization based on indigenous settlement
2. Industrial urbanization
3. Commercial Urbanization

Historic settlement areas are gradually being urbanized with better facilities of roads, sanitary and other social development works. Commercial growth is depicted by increasing economic activities and monetary transactions in the area. A number of small commercial centers are emerging which provides a positive impact in economy of the rural municipality in future.

INDICATIVE DEVELOPMENT POTENTIAL MAP

4.1 LIST OF DEVELOPMENT POTENTIAL AREAS

- Aadibasi Rangasala ra Smriti Pratisthan
- Santhal Basti (Namuna Basti Bikash)
- Dhardhare Simsar and Smile Fun Park
- Sadhuholi Paryatakiya Stal
- Agriculture production and livestock zone

4.2 BRIEF OF POTENTIAL DEVELOPMENT AREAS

Aadibasi Rangasal tatha Smriti Pratisthan:

It is located at the north of East – West National Highway at Sasatra Prahari Chowk at ward 5. Presence of a National level Stadium in any local level (rural/municipality) is a matter of pride. By upgrading the Stadium and the Academy area for sports and conservation of indigenous culture helps to create a center of attraction for the people around who loves sports and culture. If the stadium is upgraded to the National or International Level then our rural municipality would become a hub for the sports person and a lot of national and international level sports could be organized which helps in attracting the local and international level tourism. Thus it helps in the betterment of the economic standard of the locality directly through restaurants and lodging business and ultimately helps to raise the economy of the rural municipality.

Santhal Basti (Namuna Basti Bikash) and Community Hall & Park:

A Jhapa district has the highest population of Santhal. They are the native of Jhapa, Morang and Sunsari districts of Nepal. They prefer to live in the periphery of rivers and forest. They have unique religion and culture. They use bow and arrows as their main weapon. Construction of a home stay (Namuna Basti) for Santhal people by Kishne River at ward 1 would be one of the major factor for uplifting the indigenous tribe and conservation and promoting of such unique religion and culture would attract local tourists from which the people of Sukrabare and Bansbari Bazar would be directly benefitted. Similary, construction of Community Hall and a Park helps in promoting local level tourism.

Smile Fun Park and Dhardhare Simsar:

Smile Fun Park has already become one of the major tourist attraction centres of the rural municipality. People from neighboring municipalities like Damak municipality, Shivasatakshi Municipality, Chulachuli rural municipality and Gauradaha Municipality visit Smile fun park in huge number. Due to high number of visitors the economic activity of the ward 5 and ward 6 has increased and employment opportunities has been created. Similarly, if the rural municipality could develop the Fun park, at large scale tourists would visit the place and helps in increasing the economic activity of the area. Dhardhare Simsar is another spot having high potential of becoming one of the major touristic spot of the rural municipality. The rural municipality should give more attention for promotion and

conservation of the the Simsar (wet-land) area. A large number of tourists from nearby location can be attracted to the rural municipality if attention is given to such places.

Agriculture production and Livestock zone:

Instead of traditional system of agriculture, the productive areas can be declared as production zones of specific variety and planned agricultural system can be developed. Similarly, animal husbandry can be promoted in different areas of the region which in turn promotes the economy of the Municipality.

4.3 CITY GROWTH CENTRE

- Padajungi
- Mangalbare
- Kerkha
- Campa
- Solmari
- Rongpur
- Thulo Barhaghare
- Sukrabare
- Dhangri
- Samayagadh, etc

These areas basically are residential areas which in future can be developed as commercial centers. Almost all of the infrastructure, facilities and services are concentrated in these areas. Integrated land use planning of these areas, widening of existing roads and systematic planning of urban facilities in these centers can lead the centers to be exemplary city models in future.

4.4 INDICATIVE DEVELOPMENT POTENTIAL MAP (IDPM)

The ultimate target point for the development of the area shall be based on visionary plan of the city. The visionary plan however itself is insufficient to tell us about the land use plan and the development process. The development of the city shall be based on the potential of the area, their characteristics and the willingness of the resident people. The elaborated form of the visionary plan shall be reflected in potential map. Kamal Rural Municipality can be promoted as tourism area, agricultural, livestock zone, Sports Tourism. A proper planning for water supply scheme to provide safe drinking water to the people of the municipality. Conclusions based on the scope of study have been presented in the Indicative Development Potential Map have been presented in the report which can be amended as per the need of the area.

RURAL MUNICIPALITY INVENTORY MAP OF ROAD NETWORK

Road Inventory Survey was done with the help of the earlier prepared GIS base map of the Rural Municipality and Road inventory form. Field verification of the base map is done. Road inventory survey was done from one nodal point to another in each road sections collecting information related to road surface, crossing structure, road condition, and linkages to the large settlements, economically active spaces, existing service centers, potential growth centers, potential areas of development, areas of special considerations and direct link to another linkage. From data of the road inventory survey, RMIM is prepared. And based on the earlier study of Potential areas and RMIM, IDPM is prepared which was approved from Rural Municipality and RMRCC.

5.1 OVERVIEW OF ROAD INVENTORY

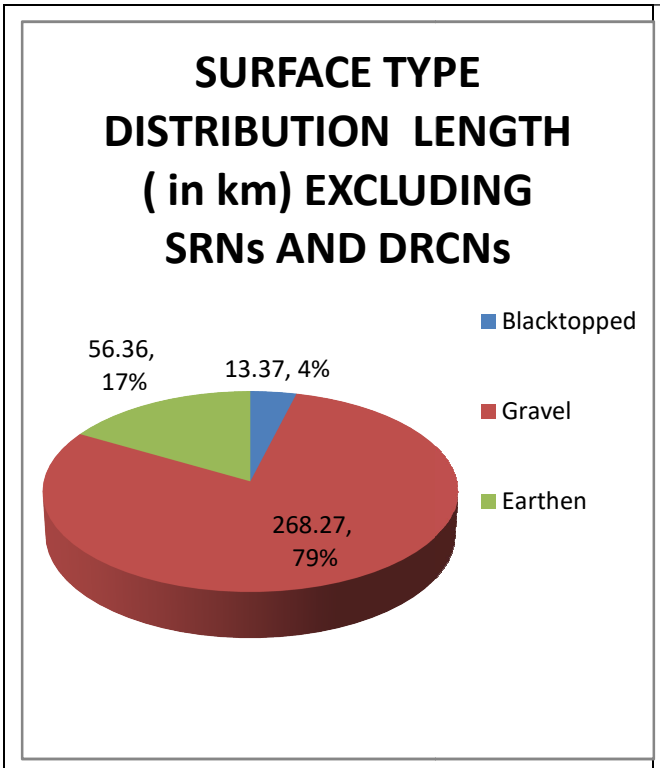

Figure 5.1.1Road length according to surface type (Survey, 2018)

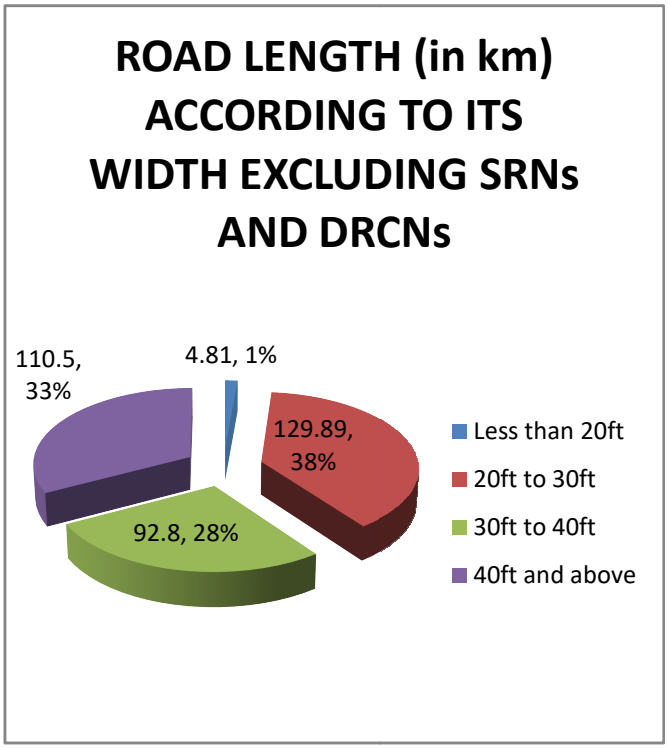

Figure 5.1.2Road Length according to it width (Source: Field Survey, 2018)

Most of the roads, among class A, B, C and D in Kamal Rural Municipality are gravelled (79%) followed by earthen (17%) roads. Very few i.e. negligible roads (4%) are blacktopped. Again, carriage width of 38% of total Rural Municipal roads is in between 20ft and 30ft while only 1% of Rural Municipal roads have carriage width less than 20ft. About 33% of the Rural Municipal roads are having width of 40ft and above. Similarly, 28% of the rural municipality road has

width in between 30ft to 40ft. There are two SRN roads and only one DRCN road. There are many existing village trails which are not classified here.

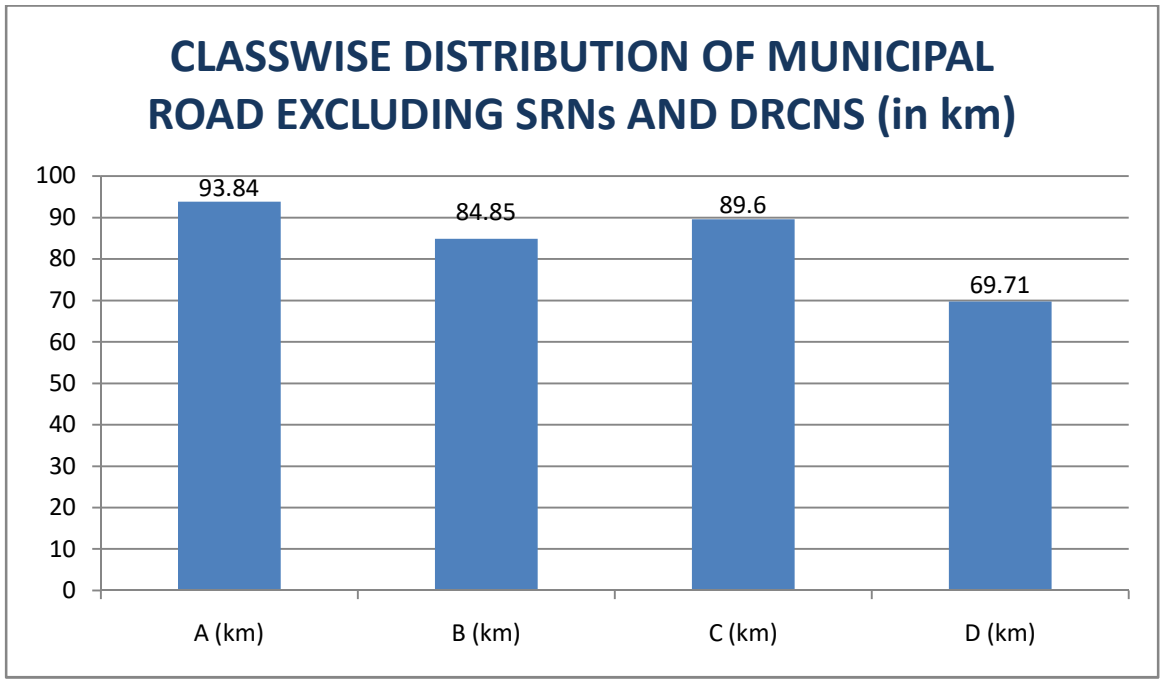

Figure 5.1.3Comparative distribution of classified road. (Source: Field survey 2018)

From field survey, according to guidelines prepared for RMTMP, it was found that most of the Rural Municipal roads (93.84 km) were in category of class A. 84.85 km and 89.60 km road were in the category of class B and class C respectively. Lesser length (69.71 km) of roads were of class D. We have not considered all of the roads that lie in the Rural Municipality but only the road that meets the guideline as Rural Municipal roads.

5.2 ROAD DENSITY

According to national urban strategy the target of urban road density is 7.5 km per square km land area. The most of the roads are graveled. Most of the roads are more than 20 ft wide. 2% of the road are very narrow (width<20 ft) to address the trip generated from various area. The road density as observed for total area of Rural Municipality is found as 3.23 km road (classified roads) per square km area. Again, the density of road per 1000 population is found as 7.618 km (Classified roads). The density based on population is not so low because the Rural Municipality is not highly populated. The density based on per sq. km is bit lower as per national urban strategy which has targeted density of 7.5km per square km land area. Hence the density of the road in Rural Municipality is not found to meet the national strategy. Thus, the major challenge for the development of road is to increase certain track as well as to make them more operational upgrading the road status.

Table 5.2:1 Ward wise length, area, population and road density

WARD	LENGTH(KM)	AREA(SQ.KM)	POPULATION	LENGTH PER SQ.KM	LENGTH PER 1000 POPULATION(km)
1	55.54	21.9	6040	2.54	9.20
2	37.164	15.6	5849	2.38	6.35
3	44.207	11.7	5600	3.78	7.89
4	58.396	15.4	6457	3.79	9.04
5	48.065	13.7	8147	3.51	5.90
6	42.863	9.69	5743	4.42	7.46
7	51.762	16.6	6529	3.12	7.93
sum	**337.997**	**104.59**	**44365**	**3.23**	**7.62**

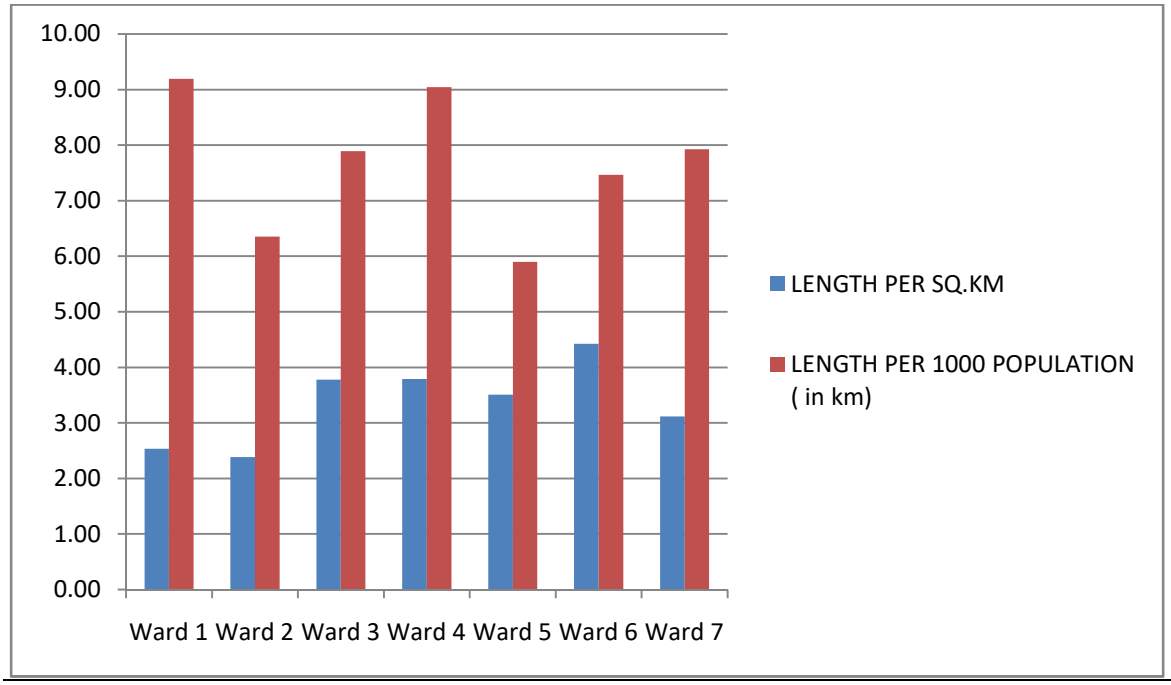

Figure 5.2.1 Road density based on population area

5.3 ROUTES OPERATING PUBLIC VEHICLES

The travel pattern of people in the Rural Municipality area is to go towards surrounding business and institutional points like Damak Municipality, Gauradaha Municipality, Jhiljhile through inter-municipality linkage, SRN and DRCN.The major settlements of generating public transport trips are dense settlement area as stated earlier. The details of the map have been presented in Annex.

Table 5.3:1 Public route vehicle

SN	ROAD NETWORK	ROUTE DESCRIPTION	VEHICLE TYPE
1	SRN	East-West Highway (H01)	Bus, Auto, city safari, private vehicles
2	SRN	Damak Padajungi Gaurijung (F002)	Bus, Auto, Private vehicles
3	DRCN	Kerkha – Campa – Sarangpada – Baigundhura road 04DR002	Bus, Auto, Private vehicles

5.4 INVENTORY OF ROAD TRAFFIC ACCIDENTS

Few locations has been identified as major locations having high frequency of occurring accident like Ratuwa River Turn, Padajungi Chowk, Kerkha, Geuriya etc. The vulnerable road users (i.e. pedestrians, bicycle riders, motorbike riders) were found the major victims of accidents. The indigenous living pattern and road side encroachment is also causing accidents. Further Sudden narrow section of bridges occurring in the various section of SRN has also increased the traffic accidents. Major involved vehicles are tippers and motorbikes as it is a busy connecting link of construction material to East-West Highway.

5.5 LIST OF RURAL MUNICIPALITY ROADS WITH CODING

Table 5.5:1Rural Municipality roads with coding.

S.N	Road Code	Ward	Road Link	length	Width (ft)	Road Class	Road Type	ROW (ft)
1	104M09A001	1	Sunara chowk - west - Shanti tole - Basbari Baajar	2.061	40	A	Gr	40
2	104M09A002	1	Sarangpada - Solmari - to Gauradaha	3.066	40	A	Gr	40
3	104M09A003	1	Hamro chowk - south - Barha Bighey - Gauriganj Border	1.602	50	A	Gr	40
4	104M09B001	1	Sukrabare chowk - Basbari bajaar- solmari chowk - Gauradaha border	4.680	40	B	Gr	32
5	104M09B002	1	Kankai main Canal road (kamal river - 04DR002 - Parakhopi - Nahar chowk - to Gauradaha)	3.853	25	B	Gr	32
6	104M09B003	1	104M09A002 - south - Pushpabir smriti pratisthan - to gauradaha	1.524	25	B	Gr	32
7	104M09B004	1	Sarangpada bajar -east - Shivasatakshi border	1.376	30	B	Gr	32
8	104M09B005	1	Hamro Chowk - east - Shivasatakshi border	0.495	40	B	Gr	32
9	104M09C001	1	Dhyangri bajar - west - putali chowk	2.277	30	C	Gr	26
10	104M09C002	1	104M09A001 at Radha krishna mandir - south - 104M09C001 at srijana tole	1.252	30	C	Gr	26
11	104M09C003	1	Sukrabare chowk - southwest- kisne khola	1.370	30	C	Gr	26
12	104M09C004	1	Putali chowk - Majhgaun	0.997	20	C	Gr	26
13	104M09C005	1	104M09C001- south - padakhopi - 104M09A002	1.593	30	C	Gr	26

14	104M09C006	1	Padakhopi - South west-104M09A002-104M09B001 - Gauradaha border (Canal road)	3.378	30	C	Er	26
15	104M09C007	1	104M09C006 near solmari road -south east - school	1.046	20	C	Er	26
16	104M09C008	1	104M09B003 near nahar chowk - south - Jhagad tole	1.216	20	C	Er	26
17	104M09C009	1	Ganesh chowk at 04DR002 -east - shivasatakshi border	1.560	30	C	Er	26
18	104M09C010	1	04DR002 at north of Laxmi tole - south West-gauradaha Border	0.520	25	C	Er	26
19	104M09C011	1	north of Hamro chowk - east - Tribhuwan High School at shivasatakshi border	1.013	25	C	Er	26
20	104M09C012	1	Ramailo Chowk- Gati Tole	0.581	20	C	Er	26
21	104M09C013	1	Dhangri Maha Chowk - south - east - Mistiri basti - upto 104M09B004	2.596	20	C	Gr	26
22	104M09C014	1	104M09B002 - south - cross 104M09D011 - south - east - DR002	2.035	20	C	Er	26
23	104M09C015	1	Sukrabare bazar (104M09B001) - south - 104M09D003	0.791	20	C	Gr	26
24	104M09D001	1	04DR002 at Ram janaki Mandir Sunara - east - Kamal Khola	0.403	20	D	Er	20
25	104M09D002	1	Dhyangri bajar road	0.179	30	D	Gr	20
26	104M09D003	1	104M09C003-104M09C004	1.655	25	D	Gr	20

			connecting road					
27	104M09D004	1	104M09C006 at gadurmari -west- south - Gauradaha	1.536	30	D	Gr	20
28	104M09D005	1	104M09B002 near dhyangri chowk - south - sigdel basti	0.875	25	D	Er	20
29	104M09D006	1	104M09B002 - east - south - 104M09A002 near dhyangri causeway	1.065	20	D	Er	20
30	104M09D007	1	104M09B002 at Jhagad tole - west - north 104M09B002 - 104M09C008	1.235	20	D	Er	20
31	104M09D008	1	Laxmi tole at 04DR002 - north - 104M09C009	1.435	20	D	Er	20
32	104M09D009	1	Ramailo chowk - Santhyal basti	0.279	15	D	Er	20
33	104M09D010	1	104M09C013 - south west - Fulbari chowk- road end	2.002	20	D	Gr	20
34	104M09D011	1	South of Dhangri Maha Chowk DR002 - East - Kamal Khola	0.803	20	D	Er	20
35	104M09D012	1	104M09B001 at gadurmari - west - 104M09D004	0.667	20	D	Gr	20
36	104M09D013	1	104M09D003 - south - west - Santhal basti home stay	0.383	20	D	Er	20
37	104M09D014	1	Road 402 east of Ratan chowk - south - road end	0.619	20	D	Gr	20
38	104M09D015	1	Road 402 north of ratan chowk- west - south - road end	1.020	20	D	Gr	20
39	104M09D016	1	104M09B011 - south east - kisne khola	0.507	20	D	Er	20

40	104M09A004	2	Kyampa Chowk - west - Bhujel dada - Jyoti nagar	0.909	40	A	Gr	40
41	104M09A005	2	Kyampa chowk - south - chhata chowk - west - samaya gadh - chhalfal chowk - Dangal Gaun	3.509	40	A	Gr	40
42	104M09B006	2	Chhata chowk - north - Jyotinagar -north - 04DR002	2.202	32	B	Gr	32
43	104M09B007	2	Kareshwor shivalaya mandir - Gaupalika office	0.375	20	B	Gr	32
44	104M09B008	2	Swasthya Chauki road	0.514	28	B	Gr	32
45	104M09B009	2	Chhata chowk - south - adhikari tole- dhakal gau - Bisnu Panchayan Mandir	1.650	30	B	Gr	32
46	104M09B010	2	Samayagadh - South - Sukrabare Chowk	2.767	40	B	Gr	32
47	104M09B011	2	Samayagadh- southwest- Ratan Chowk - Kisne Khola	3.888	35	B	Gr	32
48	104M09B012	2	Dangal Gau - south - Vutlung - Devichaun	3.096	40	B	Gr	32
49	104M09C016	2	104M09A008 at ward border - south - adarsha tole	0.352	25	C	Gr	26
50	104M09C017	2	04DR002 - east - Neupane chowk	0.526	20	C	Gr	26
51	104M09C018	2	04DR002 at Barpipal chowk - south - 104M09A004	0.588	32	C	Gr	26
52	104M09C019	2	Kyampa bazar - north - east of kamala ma. Vi. - Sukumbasi tole	0.375	20	C	Gr	26
53	104M09C020	2	04DR002 at Kyampa bazar - south - 104M09B007	0.121	20	C	Gr	26

54	104M09C021	2	Gaupalika office - south - west - 104M09A005	0.430	20	C	Gr	26
55	104M09C022	2	Pathibhara english school road	0.259	20	C	Gr	26
56	104M09C023	2	104M09B006 near bhujel dada - bhujel dada - south - road end	0.936	20	C	Gr	26
57	104M09C024	2	Shivalaya mandir at 104M09A005 - north west - dhyangri khola at ward 4 border	0.785	32	C	Er	26
58	104M09C025	2	Dhakal gau - south- 104M09A001	1.295	25	C	Gr	26
59	104M09C026	2	Bhalu gau - south - 104M09A001	1.243	25	C	Gr	26
60	104M09C027	2	Navodaya school at 104M09A005- south - Thapa gaun - Sangam Chowk	2.360	20	C	Gr	26
61	104M09C028	2	Chhalfal chowk - south - Bagan - 104M09B011	1.576	30	C	Gr	26
62	104M09C029	2	104M09A005 east of Dangal Gau - south - 104M09C028 near bagan	0.915	25	C	Gr	26
63	104M09C030	2	Vutlung khola -east- Vutlung gau - east - 104M09B011	1.811	20	C	Gr	26
64	104M09D017	2	04DR002 - west - 104M09B006	0.175	20	D	Gr	20
65	104M09D018	2	Road 204 near neupane chowk - north simaldangi at104M09B019	0.673	20	D	Er	20
66	104M09D019	2	04DR002 - west - 104M09C018 connecting roads	0.408	20	D	Gr	20
67	104M09D020	2	Nayabazar - Nayabasti	0.572	30	D	Er	20

			road near kamal khola					
68	104M09D021	2	04DR002 - east -north - naya basti near Kamal khola	0.570	20	D	Gr	20
69	104M09D022	2	Sunara chowk - east - Naya basti	0.350	20	D	Er	20
70	104M09D023	2	104M09B011 north of ratan chowk - north - road end	1.933	20	D	Gr	20
71	104M09A006	3	NH01 at sahid gate - north - Ekata tole chulachuli Border	2.158	40	A	Gr	40
72	104M09A007	3	NH01 - south - Dada tole -04DR002 at shivalaya mandir	1.552	40	A	BT	40
73	104M09A008	3	04DR002 at shivalaya mandir - south - kerkhali krishi Farm - east - 04DR002	2.649	30	A	Gr	40
74	104M09B013	3	NH01 near Kerkha chowk - north - Chulachuli border - west - Bohora chowk	2.655	36	B	Gr	32
75	104M09B014	3	Kerkha chowk - Dhyangri	0.387	36	B	Gr	32
76	104M09B015	3	Falgunanda tole at NH01 - Lalima Boarding School - Gosline Bazaar	0.272	25	B	BT	32
77	104M09B016	3	Ward 3 office - Hatiya line -104M09A007	0.282	24	B	Gr	32
78	104M09B017	3	H01-South-Shanti tole - south -west - 04DR002	0.332	24	B	BT	32
79	104M09B018	3	Road 324 (back of hatiya) - Bohora tole - Sawa road- baganey chowk - Kyampa Chowk	5.366	30	B	Gr	32
80	104M09B019	3	04DR002 at Keradhap chowk - south east - simaldangi - west -	1.230	35	B	Gr	32

			04DR002					
81	104M09C031	3	NH01 near rijal oil suppliers -north - bohora chowk at chulachuli border	2.340	25	C	Gr	26
82	104M09C032	3	NH01 at small chowk kerkha - north - Namuna chowk at chulachuli border	1.838	36	C	Er	26
83	104M09C033	3	NH01 near kirateshwor shiva mandir -north - Army barrack - Chautarey chowk	1.888	35	C	Gr	26
84	104M09C034	3	NH01 at sanju chautari-north - Kamadh chowk - Chulachuli border	1.654	40	C	Er	26
85	104M09C035	3	Kamadh chowk - Chautarey chowk - Namuna chowk	1.918	25	C	Er	26
86	104M09C036	3	NH01 near sahid gate - south - Pragati marga	0.455	20	C	Er	26
87	104M09C037	3	NH01 - south - Bhagyarekha marga	0.326	20	C	Er	26
88	104M09C038	3	NH01 - south - Adarsha tole - Kerkha /Kamal khola dovan	0.475	24	C	Gr	26
89	104M09C039	3	NH01 - south - Sangam Marga	0.568	16	C	Gr	26
90	104M09C040	3	NH01- south - laganshil marga	0.893	24	C	Gr	26
91	104M09C041	3	NH01 - south - Triveni Chowk	0.232	25	C	BT	26
92	104M09C042	3	04DR002 at sangam chowk - west - Triveni chowk	0.230	25	C	BT	26
93	104M09C043	3	Gosline Bazar - east - 04DR002	0.278	25	C	BT	26

94	104M09C044	3	Gosline bazaar - east - transmission tower - Gurung tole road	0.081	24	C	BT	26
95	104M09C045	3	NH01 - Sangam chowk - market roads	0.662	12	C	CP	26
96	104M09C046	3	Road 323 - Kerkha public school - 104M09A007	0.168	25	C	Gr	26
97	104M09C047	3	04DR002 north of Niharika School - east - Dada tole	0.191	20	C	Gr	26
98	104M09C048	3	Radhakrishna tole at 04DR002 -east - 104M09A007	0.234	25	C	Gr	26
99	104M09C049	3	NH01 at small chowk kerkha - Singhadevi mandir	0.260	20	C	Gr	26
100	104M09C050	3	Samabesi tole at 04DR002 - east- 104M09B018	0.490	25	C	Gr	26
101	104M09C051	3	Bagane Chowk - west - 04DR002 at telephone chowk	0.861	25	C	Gr	26
102	104M09C052	3	Road 338 (Back of kanchanjunga School) - east - Bagane tole	0.619	25	C	Er	26
103	104M09C053	3	Dhyangri river corridor	2.001	30	C	Er	26
104	104M09D024	3	Road 302-Road 308 (Nursury road)	2.673	30	D	Er	20
105	104M09D025	3	Happy kids montessori school road	0.227	20	D	CP	20
106	104M09D026	3	Dada tole at104M09A007 - West - Prabhat Furniture - south -Road 326	0.243	20	D	Er	20
107	104M09D027	3	Dada tole -east- bohora tole	0.803	20	D	Er	20

108	104M09D028	3	Road 329- south - BP Sa. Poultry Farm - 104M09B018	0.597	20	D	Er	20
109	104M09D029	3	Dada tole (Bhandari rice mills) - east - Bohora tole	0.608	20	D	Gr	20
110	104M09D030	3	Road 334 - South - Dhakal tole - 104M09C050	0.755	20	D	Gr	20
111	104M09D031	3	Road 336 - north - east - 04DR002 north of Hilihang Chowk	0.890	20	D	Er	20
112	104M09D032	3	04DR002 (South of kanchanjunga school) - east -104M09B019 - east -Road 329 south of baganey tole	0.472	20	D	Er	20
113	104M09D033	3	Road 324- east - 104M09B018	0.490	20	D	Gr	20
114	104M09D034	3	Radhakrishna tole at 04DR002 - west - 104M09A015	0.296	20	D	Er	20
115	104M09D035	3	04DR002 north of Yamuna rice mills - east -104M09A007	0.234	20	D	Gr	20
116	104M09D036	3	04DR002 south of shivalaya mandir - east - 104M09D030	0.374	20	D	Er	20
117	104M09A009	4	Sitapuri Sakela Chowk (H01) - Shantipur chowk(Mill Danda)- Jiwan Chowk -	3.714	40	A	BT	40
118	104M09A010	4	Jiwan Chowk - south-ward border - Ratan Chowk- Sukrabare Chowk	5.960	40	A	Gr	40
119	104M09A011	4	Ekata Chowk (H01) - south- Pulchowk - 104M09A025	1.888	40	A	Gr	40

120	104M09A012	4	Chulachuli Mode (H01) - south -Singhadevi - Dipjyoti Tole at104M09A025	2.157	40	A	Gr	40
121	104M09A013	4	Jyoti Chowk (H01) - South - Mujur Vitta	2.197	40	A	Gr	40
122	104M09A014	4	Rijal Oil Suppliers (H01)- south - Paruhang Chowk - Laxmi Rice Mill - Ward 04 Office - Chhalfal Chowk	4.395	40	A	Gr	40
123	104M09A015	4	Kerkha Bazzar (04DR002) - south - west - Gurung Tole - Dhangri Bridge - Saraswati tole - Shanti Chowk - 104M09A005	4.628	30	A	Gr	40
124	104M09A016	4	jiwan chowk - Himalaya Chowk - Chhalfal Chowk	1.559	40	A	Gr	40
125	104M09B020	4	Road 408 - South - Khanepani - Dangri Bridge	1.776	20	B	Gr	32
126	104M09B021	4	Himalaya Chowk-north - Majur Vitta	1.753	30	B	Gr	32
127	104M09B022	4	Road 628 - west of jiwan chowk - south - Gauradaha Border	1.211	30	B	Gr	32
128	104M09B023	4	Saraswati tole at104M09A015 - south - road 434	0.551	30	B	Gr	32
129	104M09C054	4	Ghoshline - Amal Dangi chowk - Dahal Chowk (Road 405)	0.920	20	C	Gr	26
130	104M09C055	4	Road 405 South of Jyoti chowk - east - Siddhartha Chowk - Dangri Khola	0.513	25	C	Gr	26
131	104M09C056	4	Kirat Chowk - south - Sirijunga Chowk	1.238	20	C	Gr	26

132	104M09C057	4	Road 405 -104M09A014 connecting road near kirat chowk	0.289	20	C	Gr	26
133	104M09C058	4	Dahal chowk at104M09A013 - Jyoti School - Niraula Tole at104M09A012	0.518	25	C	Gr	26
134	104M09C059	4	Pulchowk at104M09A011 - east - Singhadevi tole at104M09A012	0.589	24	C	Gr	26
135	104M09C060	4	Srijana Marga at104M09A009 - east - south -104M09A025 near Shantipur chowk	1.400	20	C	Gr	26
136	104M09C061	4	Dipjyoti tole - south - 104M09B021	1.036	30	C	Gr	26
137	104M09C062	4	Road 422 near himalaya chowk - north - west - 104M09A009 at Bhujel tole	1.023	20	C	Gr	26
138	104M09C063	4	Road 424 near bhujel tole - north - 104M09A025 near Shantipur chowk	1.120	25	C	Gr	26
139	104M09C064	4	Road 401 (south of Ujyalo education foundation) - east - rubbermill	0.350	22	C	Gr	26
140	104M09C065	4	Road 402 - east - pashupati mandir - north -104M09A016 - north - road end	1.758	20	C	Er	26
141	104M09C066	4	Dangal Gau - north - east -104M09A014	0.858	25	C	Er	26
142	104M09C067	4	Chhalfal Chowk - east - 104M09B006(Jyotinagar)	1.567	30	C	Gr	26
143	104M09C068	4	104M09A025 at majur vitta - south - Saraswati	2.276	20	C	Gr	26

			Ma. Vi -104M09C067 near Chhalfal chowk					
144	104M09C069	4	104M09A005 at north of Samaya Gadh - east - Pathibhara tole - north west -Road 407	1.358	30	C	Gr	26
145	104M09C070	4	104M09A005 west of samaya gadh - north - 104M09C069	0.311	30	C	Gr	26
146	104M09C071	4	Niraula tole road	0.180	20	C	Gr	26
147	104M09D037	4	H01 - South - 104M09A014	0.540	20	D	Gr	20
148	104M09D038	4	Siddhartha Tole Road (Sundar Marga)	0.388	20	D	Er	20
149	104M09D039	4	Baraha Mandir Marga	0.563	20	D	Er	20
150	104M09D040	4	Danfe Chowk at104M09A012 - west - 104M09A011	0.439	15	D	Er	20
151	104M09D041	4	104M09A025 near dipjyoti tole - north - lawati tole - 104M09D040	1.094	20	D	Er	20
152	104M09D042	4	Road 402 - east - Vutlung khola - north - 104M09C065	0.764	20	D	Er	20
153	104M09D043	4	Road 402 - east - Maharaji marga- 104M09B012	0.502	20	D	Er	20
154	104M09D044	4	Himalaya Chowk - South - Road end	0.553	20	D	Er	20
155	104M09D045	4	Newar tole at104M09A025-west - 104M09C061	0.807	25	D	Er	20
156	104M09D046	4	Road 438 - north - jyotinagar - north - 104M09A015	1.429	30	D	Er	20
157	104M09D047	4	Jalkanya Devithan	0.336	20	D	Gr	20

			Marga					
158	104M09D048	4	Road 403-104M09A012	0.834	20	D	Er	20
159	104M09D049	4	Road 403 -104M09A012 north of Niraula Tole	0.410	20	D	Gr	20
160	104M09D050	4	Road 405 south of Jyoti Chowk - west - road end	0.337	20	D	Er	20
161	104M09D051	4	Road 404 south of Kulung Farm - west - 104M09D041	0.303	20	D	Er	20
162	104M09A017	5	Padajungi chowk (H01) - east - north-H01(Bhupu sainik chowk)	0.823	20	A	Gr	40
163	104M09A018	5	Aadibasi janajati Stadium (H01)- south-Kabeli Electricity Distribution - Gauriya Khola	0.539	20	A	Gr	40
164	104M09A019	5	Aadibasi janajati Stadium (H01) - south-Ambika Chowk - Namastey tole - Redcross bhawan - Kaatachowk purba	1.615	30	A	Gr	40
165	104M09A020	5	Mangalbare Rajbansi Chowk (F02)- east-Namaste tole - 104M09A019	0.395	20	A	Gr	40
166	104M09A021	5	Pathibhara Marga (F02-Mangalmaya MaV Opposite) - 104M09A019	0.474	20	A	Gr	40
167	104M09A022	5	F02 Star Boarding School Padajungi - east - Ambika Chowk - east - Shiva jyoti Siddha Kirateswor Dham	1.454	20	A	Gr	40
168	104M09A023	5	Sayapatri Chowk H01 - south- Shiva jyoti Siddha Kirateswor Dham - Paruhang	1.760	40	A	BT	40

			Chowk- Renji Chowk					
169	104M09A024	5	Sabitra chowk (H01) - south - 104M09A019 - Ambika Chowk	1.076	20	A	Gr	40
170	104M09A025	5	Mangalbare chowk (F02)- east -south- Kaata chowk -Rejni chowk - Shantipur chowk (Mill Danda)- Pulchowk- Dipjyoti Tole- Majur Vitta- Keradhap Chowk (DRCN)	5.095	40	A	Gr	40
171	104M09A026	5	H01 East of Sabitra Chowk - south - Namuna Academy - Labarbote - Satyal Chowk - 104M09A025	1.695	30	A	Gr	40
172	104M09A027	5	H01- South - Bhumraj Marga	1.565	20	A	Gr	40
173	104M09A028	5	Dhan Prasad Marga (F02 -east 104M09A019- Santal Chowk)	0.936	20	A	Gr	40
174	104M09A029	5	ManagalbareChowk (F02) -west -Tribeni Chowk	0.869	40	A	Gr	40
175	104M09A030	5	Lovedanda (H01)- Basanta Chowk - Tribeni Chowk	0.546	30	A	Gr	40
176	104M09A031	5	Lovedanda (H01) -east - Shanti tole - F02	0.666	24	A	Gr	40
177	104M09A032	5	Padajungi chowk (H01) - south - Maina khata (Part of Sahid marga)	0.921	40	A	Gr	40
178	104M09A033	5	Rabi Oil Supplier (H01) - Sahid Marga Boarding Chowk - Mill Chowk (F02)	0.414	40	A	BT	40
179	104M09A034	5	Padajungi chowk (H01)	1.272	12	A	Gr	40

			- west - Goshline-Gajurmukhi tole					
180	104M09A035	5	Hamro Nembang driving Center - north - Purano Highway - east - Lakhanpur Khanepani Tanki (H01)	2.173	20	A	Er	40
181	104M09A036	5	Padajungi Chowk (H01)- north - Barha Kothe (Himali Marga)	3.615	40	A	BT	40
182	104M09A037	5	Sastra Prahai Bal Marga	0.658	30	A	Gr	40
183	104M09A038	5	Laganseel Marga (H01- north- Himali Marga)	0.673	20	A	Gr	40
184	104M09A039	5	New Ratuwa River Bridge - north - east - (Chiseni Marga) - illam	1.059	50	A	Gr	40
185	104M09B024	5	Mangalbare Bazar - Gaurigau- Gauriya khola- Pragati tole - Shiva jyoti Siddha Kirateswor Dham	1.467	30	B	Gr	32
186	104M09B025	5	Shaja Marga	1.147	20	B	Gr	32
187	104M09B026	5	104M09A026- west - south - Santal Chowk - south -104M09A025	0.866	30	B	Gr	32
188	104M09B027	5	Aaitabare - Guheshowri Marga (Guheswori Aadharbhut Bidhyalaya)- north road end	1.453	40	B	Gr	32
189	104M09B028	5	104M09A037- Majhi tole - Guheswori Aadharbhut Vidyalaya (Guheswori Marga)	0.712	20	B	Gr	32
190	104M09B029	5	Chaju Tukre chowk - north - Peltimari	1.288	40	B	Gr	32
191	104M09B030	5	104M09A039 - North - border (Srijunga Marga)	0.661	40	B	Gr	32

192	104M09B031	5	Fire line Sajha Marga (Kamal - Chulachuli border)	2.257	30	B	Gr	32
193	104M09C072	5	Kaata Chowk - Monsoon English School-north-104M09B024	0.301	20	C	Gr	26
194	104M09C073	5	Bansanta Chowk area road	0.332	15	C	Gr	26
195	104M09C074	5	Swami Chowk (Road - 21)- Mangalbare Hatiya + Hatiya Road	0.552	20	C	Gr	26
196	104M09C075	5	Basanta Chowk - Mainakhata Chowk	0.153	30	C	Gr	26
197	104M09C076	5	Ramailo tole - Dhimal Basti -Petrol pump + Petrol pump - Guragain Pratisthan	0.939	20	C	Gr	26
198	104M09C077	5	Naya basti - Gajurmukhi Tole Marga	0.744	20	C	Gr	26
199	104M09C078	5	Guheswori Chowk - north - Chaju Tukre	0.754	24	C	Gr	26
200	104M09D052	5	Tin fanke Marga	0.378	30	D	Gr	20
201	104M09D053	5	104M09B031 -South (Khausibunge Marga)	0.450	25	D	Gr	20
202	104M09D054	5	104M09B031 - South (Kurungbang Marga)	0.415	25	D	Gr	20
203	104M09D055	5	104M09A039 - South - east - Sitapure Marga	0.630	30	D	Gr	20
204	104M09D056	5	Sahid marga	0.403	30	D	Gr	20
205	104M09D057	5	104M09D055 - East - Sadhu holi (Simle Marga)	0.891	30	D	Er	20
206	104M09D058	5	104M09B031 - south - dead end (Dhanapati Marga)	0.978	30	D	Gr	20

207	104M09A040	6	Tribeni chowk - Gohabari- Bhattarai Chowk- Jharbari- Lal Dhondra (Continue Sahid Marga)	3.361	40	A	Gr	40
208	104M09A041	6	Mainakhata Chowk - south - Sanka dubu chowk - south- east Sonapur chowk (F02)	2.988	30	A	Gr	40
209	104M09A042	6	F02- west- South pole Boarding Marga	0.542	20	A	Gr	40
210	104M09A043	6	Khayarbari Chowk (104M09B032)- east - Faudarsingh Tajpuria Chowk - Sankaduba- Ward 6 office (F02)- east- Ratanpur- south Ward border(Ramu tole)	3.757	40	A	Gr	40
211	104M09A044	6	Sadhu Chautari- Gauriya Chowk	1.305	30	A	Gr	40
212	104M09A045	6	Jiwan Chowk - west - Daichowk	2.177	40	A	Gr	40
213	104M09B032	6	Gohabari Chowk- Khayarbari-south- Laldhondra chowk	2.804	40	B	Gr	32
214	104M09B033	6	Kaata Chowk - Aarabey Tole (Tinpaini) - Aafanta Chowk- Shree Panchakanya Abi. - Jiwan Chowk	2.869	30	B	Gr	32
215	104M09B034	6	Santyal Chowk - south - Aafanta chowk	0.951	30	B	Gr	32
216	104M09B035	6	Renji Chowk - South- Shree Laxmi Narayan Mandir-104M09A043 (Ratnapur Chowk)	1.248	40	B	Gr	32
217	104M09C079	6	104M09D059- east - F02- east - Aarabe Tole(Mini Marga)	0.708	20	C	Gr	26

218	104M09C080	6	104M09D059 - east - Janaki Grill Udhyog (F02) (Laxmi Narayan Marga 3)	0.314	20	C	Gr	26
219	104M09C081	6	South of Sadhu Chautari- west- Kirat Chowk	0.637	30	C	Gr	26
220	104M09C082	6	F02- west -south - Nutan Rice mill road	0.622	20	C	Gr	26
221	104M09C083	6	104M09A025 (Renji Chowk)- Smile Fun Park -Shree Panchakanya ABi	1.614	40	C	Gr	26
222	104M09C084	6	Saurabh Marga	0.468	20	C	Gr	26
223	104M09C094	6	104M09A025 (Sital Danda) - South - 104M09B033 near Aafanta Chowk	0.818	20	C	Gr	20
224	104M09D059	6	Shibhalaya Chowk - south - Sukumbasi basti- Shankaduba Chowk	1.527	22	D	Gr	20
225	104M09D060	6	Mainakhata chowk - south- Deuniya Marga	0.209	20	D	Gr	20
226	104M09D061	6	Adarsha tole road	0.498	20	D	Gr	20
227	104M09D062	6	Jimdar chowk west road dead end (Laxmi Narayan Marga 1-2)	0.397	20	D	Gr	20
228	104M09D063	6	Mercury Taaj Hotel area road	0.317	20	D	Gr	20
229	104M09D064	6	Pragati tole (F02)-west - Faven Krishi Farm - road end	0.534	22	D	Gr	20
230	104M09D065	6	104M09A043- west - Khayarbari Mahila Sahakari Sanstha - Daibi prakop Bhawan- Ratuwa River	0.585	20	D	Gr	20
231	104M09D066	6	Faudarsingh Tajpuriya Chowk - Shree Bani Ma.	0.212	20	D	Gr	20

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232	104M09D067	6	104M09C081- south east - 104M09A044	1.124	30	D	Gr	20
233	104M09D068	6	F02- west- Eastern Regional Ayurveda Hospital Gate	0.398	30	D	Gr	20
234	104M09D069	6	Janaki Grill Udhyog - east - 104M09B033 (Amrit Lal Marga)	0.427	20	D	Gr	20
235	104M09D070	6	Santyal Chowk104M09A025- south - Dhudhamuni - roadend	0.393	20	D	Gr	20
236	104M09D071	6	Jogichaun - Panchakanya	1.505	20	D	Gr	20
237	104M09D072	6	F02- Matatirtha Balika Bidyalaya- Benu Prasad Siwakoti Home- ward border	0.394	20	D	Gr	20
238	104M09D073	6	Shree Himali Boarding School Road	0.686	30	D	Gr	20
239	104M09D074	6	Healthpost Marga (Swasthachauki Marga)	1.011	20	D	Gr	20
240	104M09D075	6	104M09A040 - west - south - Nabhajyoti Marga - 104M09A040	0.740	20	D	Gr	20
241	104M09D076	6	104M09A040 -east - 104M09A041 (Krishi Marga)	0.392	20	D	Er	20
242	104M09D077	6	Naya basti Marga	0.897	20	D	Er	20
243	104M09D078	6	Tajpuriya chowk - west - 104M09D059	0.347	20	D	Gr	20
244	104M09D079	6	Tribeni Chowk - west - Ratuwa river	0.272	20	D	Gr	20
245	104M09D080	6	Santaneshwor Marga	0.391	20	D	Gr	20
246	104M09D081	6	104M09A040 - east -	0.372	20	D	Er	20

			104M09B037					
247	104M09D082	6	Jharbari (104M09A040) - west - north - 104M09A043	0.590	20	D	Gr	20
248	104M09D083	6	Bagar Marga	1.111	20	D	Er	20
249	104M09D084	6	Road F02 - east - Bimala Krishi Farm	0.352	20	D	Er	20
250	104M09A046	7	Laldhondra- Thulo baraghare- Balubathan ward border (Remaining Sahid Marga)	5.414	40	A	Gr	40
251	104M09B036	7	Gohabari Chowk- Shree Bani MaV- Sadhu Chautari- Siddheswor Temple and Gurukul- Sabhapati Chowk- Sumnima Chowk- Sainik Chowk- Rangpur chowk- west south - Sita Chowk- Dhardhare - Thapa Chowk -Naule Chowk	9.373	40	B	Gr	32
252	104M09B037	7	Bhattarai Chowk- Kirat Chowk- Pingdada Abi- Fulbari Chowk- Parijat chowk- (Srijana chowk - sumnima chowk jodne bato) + Nausite + Saraswati MaB	5.177	40	B	Gr	32
253	104M09B038	7	Laldhondra - Srijana Chowk- Tinsite - Swantantra Biblical Baptist Church - Thulo Barhaghare	2.795	40	B	Gr	32
254	104M09B039	7	Ekata Chowk(104M09A046) - south - Singhadevi Devsthal Mandir - 104M09B038(Tinsite)	1.114	40	B	Gr	32
255	104M09B040	7	Thulobaraghare Pasupati Mandir- Saraswati MaBi -	2.004	40	B	Gr	32

			Rangpur					
256	104M09B041	7	Sainik Chowk - east - Madan Danda - Kath Mill Chowk (F02)	0.956	40	B	Gr	32
257	104M09B042	7	Fulbari Chowk-Sabhapati chowk-Sachiv Chowk - Geuriya (F02)	0.923	30	B	Gr	32
258	104M09B043	7	Geuriya -Unnati Marga-Sachib Chowk - Kirat Rai Sakle Mangkhim-Paarijat Chowk - west Sahid Marga	1.992	30	B	Gr	32
259	104M09B044	7	Geuriya bazar - south west - 104M09B042	0.555	20	B	Gr	32
260	104M09C085	7	Thulobaraghare - Sita Chowk	1.883	30	C	Gr	26
261	104M09C086	7	104M09A046 - east - Singhadevi Devasthal Mandir - south - west-Sahid Marga	1.475	20	C	Gr	26
262	104M09C087	7	Naule Chowk - South-Dandagau- Gauradaha border	1.644	30	C	Gr	26
263	104M09C088	7	Sahid Marga - South-North of Araniko PraBi	0.692	35	C	Gr	26
264	104M09C089	7	104M09B040-104M09B036	0.719	40	C	Gr	26
265	104M09C090	7	Laldhondra - east - 104M09B037 (Pingdanda)	0.740	30	C	Gr	26
266	104M09C091	7	Geuriya Chowk-West-104M09B036	0.651	20	C	Gr	26
267	104M09C092	7	Khayarbari Majhi Tole-East-Kirat Chowk	0.649	20	C	Gr	26
268	104M09C093	7	Geuriya Chowk - East - Geuriya Khola -	0.433	30	C	Gr	26

			Gauradaha Border					
269	104M09D085	7	Saraswati MaBi - South- Near Sita Chowk	1.066	20	D	Er	20
270	104M09D086	7	Jharka (Sahid Marga)- south- Siran tole - ward border	0.851	20	D	Gr	20
271	104M09D087	7	North of Sita Chowk - West - south- Dhardhare Simsar	1.259	15	D	Er	20
272	104M09D088	7	104M09B036 (Naule Chowk) - East- crossing Road707 - meeting 104M09B040	1.530	20	D	Gr	20
273	104M09D089	7	Thulobaraghare - west- Industrial Corridor- Damak boundry	0.687	30	D	Gr	20
274	104M09D090	7	104M09B040 - Nausite - 104M09B038 + 104M09B038 -east- 104M09B036 (Rangpur Dandagau)	1.034	20	D	Gr	20
275	104M09D091	7	Sainik Chowk - Nausite	0.993	20	D	Er	20
276	104M09D092	7	Bishnu kattha - south - Lakandri Tole - Madan Danda - 104M09B041	1.429	40	D	Gr	20
277	104M09D093	7	Pingdanda Abi- Mishra tole -Agriculture farm west - 104M09B037	1.349	20	D	Gr	20
278	104M09D094	7	Jabegu tole road (Agriculture Farm)	0.800	20	D	Gr	20
279	104M09D095	7	Bishnu Kattha - Geuriya Khola Pul - south - Dhimal Danda - Municipal border (Beldangi)	1.223	20	D	Gr	20
280	104M09D096	7	Lokandri tole west - 104M09B036	0.351	20	D	Er	20

5.6 BRIEFS ON MAJOR MUNICIPALITY ROADS

The Rural Municipal level roads as per technical judgments have been presented in Table. The whole Municipality roads shall be classified into four categories including class A, class B, class C and class D. The roads in the table are the major roads which fall under road class A, class B, class C and class D. The details of each road with various attributes have been presented in Annex in report

5.7 LIST OF OTHER ROADS (NON-CATEGORIZED ROADS AND VILLAGE TRAILS)

Table 5.7:1 List of Other Roads (Non – categorized Roads and village trails)

SN	SYMBOL	NAME	LENGTH
1	N	NON- CLASSIFIED VILLAGE TRAILS	55.718 KM

5.8 BRIEFS ON SELECTIVE NON-CLASSIFIED TOLE ROADS AND VILLAGE TRAILS.

The roads other than classified road which are irrational to classify as A , B, C and D based on RMTMP guideline such as small village trails, short roads owned by private institution and roads that may end within few meters distance (not more than 300m) falls under this category.

5.9 MUNICIPALITY INVENTORY MAP OF ROAD NETWORK (MIM)

The inventory map of road network of the Municipality has been presented as a map which is attached in annex.

PERSPECTIVE PLAN OF RURAL MUNICIPALITY TRANSPORT NETWORK

6.1 ACCESSIBILITY AND TRIP PATTERN

The ultimate goal of most transportation is "access," people's ability to reach desired goods, services and activities. Transportation decisions often involve tradeoffs between different forms of access. How transport is measured can have a major impact on these tradeoffs. Land use patterns affect mobility and accessibility in various ways:

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

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

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

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

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

6.2 PROCEDURE FOR COLLECTING DEMANDS FROM WARDS

Ward level meeting in every ward or ward cluster is done where information on RMTMP are collected. Demand form for each ward are provided which are later on collected after the form are duly filled in given time. As road demand from the settlement level is collected bottom up approach of planning is applied.

Data Analysis and Field Verification of the Roads from Demand

Form Analysis of data regarding the accessibility situation in each settlement, population forecasting for each sector, major road linkages will be done. Similarly, all the roads demanded in demand form are verified in field by the survey team. Details of ward demand has presented in Volume-II of the RMTMP report.

6.3 SCORING SYSTEM FOR SCREENING

Development of the scoring criteria and prioritization criteria based on the provided guidelines are prepared and its approval from the Municipality and RMRCC is done. Transport linkage in an urban area has greater importance for its overall development. The development of road transport linkages to each plot of land or each residential unit is ideal approach for transport planner. Various types of land use pattern require different category of road transport linkage. The development of road linkage requires tremendous amount of public fund. However, the public authorities doesn't have adequate amount of funding. Therefore, a prioritization approach should be adopted for the rational allocation of limited funds for the construction, maintenance and rehabilitation of various categories of road linkage. Conventionally, each construction or maintenance projects are justified on the basis of cost-benefit ratio. This conventional approach disregards the benefit due to non-monetary aspects of the transport projects. Therefore, a multi-criteria approach for the selection of transport linkage is adopted as an justified approach for the project selection.

Transportation services are highly demanded infrastructure for urban as well as rural areas. The objective of the transport linkage is to provide accessibility for the given degree of mobility. Accessibility and mobility requirements are guided by the people’s demand for better living standard and economic opportunities. The objectives and importance of individual roads should guide the development of scoring criteria for the project selection for implementation. A term of Reference (ToR) for the preparation of RMTMP has formulated the criteria and their respective weights for the evaluation. Consultant has worked out the following weights for the criteria for the prioritization of road links. These scores for the particular criteria are needed to be discussed and approved by RMRCC.

Table 6.3:1 Weights for the Prioritization Criteria

SN	CRITERIA	SCORING	METHOD OF MEASUREMENT	SCORE(TOR)	SCORE
1	Link providing service to large settlement areas/population.	Population served/km (continuously Scored)	Measurement of served HH from map and multiplying with HH occupancy of respective wards	**15-20**	**20**
2	Link providing service to areas with high potential for agriculture, horticulture, livestock production.	Annual production equivalent to NRs……/km (continuously Scored)	Measurement of Agriculture land area from map, livestock from inventory and multiplying with unit rate of production	**5-10**	**5**
3	Link providing service to existing market centers: 1. commerce and business centers or market sites (local haat) 2. Tourism attraction centers 3. Areas having agro-based and cottage industries 4. Other obligatory centers as decided by the Municipality	Estimated annual transaction in these centers equivalent to NRs……. /km (continuously Scored)	Inventory survey along with consultation with people (RMRCC) and land cover map are used to identify their location and transaction	**20-25**	**20**
4	Link providing service to the existing service centers: 1. health centers, 2. education centers (school/campus), 3. Office (Municipality/ government) 4. Communication centre (post office, communication)	Population served by these service centres expressed as persons per km per year. (continuously Scored)	Inventory survey, Map along with consultation with people (RMRCC) identifies their location and served population.	**15-20**	**20**
5	Link providing service to the potential growth or service centers identified by Municipality (IDPM) such as Waste management site.	Anticipated number of people to be directly benefited expressed as persons per km per. (scored continuously	Consultation with RMRCC and IDPM shall also be used	**5-15**	**5**

6	Link providing service to the potential future development sites such as: 1. Potential town growth 2. Land pooling 3. Potential industrial area 4. Forming ring road to Municipality	It is technically sound to score these services discretely based on existence. For each service centers, a score of 2.5 is allocated.10	Consultation with RMRCC and IDPM shall also be used	**10-20**	**5**
7	Link providing service to the areas recognized by the Municipality as areas for special consideration, such as areas inhabited by backward and poor ethnic groups/ communities, isolated remote areas, historic sites, religious sites etc.	• Very important =5 • Important =2.5 • less important =0 (Scored discretely)	Inventory survey along with consultation with local people identifies their location and Importance.	**10-5**	**5**
8	Direct link with another linkage	• National Highway=10 • Feeder Roads=8 • District Roads=6 • Neighboring Rural/ Municipality/ district= 4 • Otherwise= 0	Road Network Map and attribute table.	**5-10**	**10**
9	Ward Demand	• Priority-1, =10 • Priority-2, =8 • Priority-3, =6 • Priority-4, =4 • Priority-5, =2 • Others, =0	Ward Meeting using demand form	**5-15**	**10**

6.4 GRADING AND NOMENCLATURE OF ROADS

Road network serve for direct access to the particular land-use by the provision of pedestrian footpaths, bicycle tracks, bus and vehicle routes and cater through traffic that is not related to immediate land uses. Functional provisions of passenger and goods movement mainly define the hierarchy of roads and their classification. On the basis of this concept, roads are classified as per their function. Road class is related to the technical standard and functional requirements. Therefore, road classification should be based on its functional hierarchy. It is important to

distinguish roads in different class or type based on various criteria. A road hierarchy is a means of defining each roadway in terms of its function such that appropriate objectives for that roadway can be set and appropriate design criteria can be implemented. It is an important instrument of road network and land use planning.

Figure 6.4:1 Conceptual Hierarchy, Road Network Hierarchy, Urban Road Hierarchy

There are restrictions of direct linkage between various kinds of road-hierarchy. In other words, direct connections between certain types of road links should be reduced, for example residential streets and arterial roads. Connections between similar order streets should be made (e.g. arterial to arterial) or between street types that are separated by one level in the hierarchy (e.g. arterial to highway and collector to arterial.). This conceptual framework can be seen from Figure 17, Figure 18 and Figure 19. These hierarchical distinctions of road types becomes more clear when considering the recommended design specifications for the number of through lanes, design speed, intersection spacing and driveway access.

A well-formed road hierarchy increases the performance and efficiency of the particular type of road as well as of the entire road network. Furthermore, it reduces overall impact of traffic by concentrating longer distance flow onto routes in less sensitive locations, ensuring land 40 uses and activities that are incompatible with traffic flow are restricted from routes where traffic movement should predominate and preserving areas where through traffic is discouraged.

The concepts of road hierarchy assist in planning of overall road network and its transport services. Different hierarchy of road has different effect in surrounding areas and other roadways. Hierarchies of roads enable urban design principles such as accessibility, connectivity, efficiency, amenity and safety. Further, it also identifies treatments such as barriers, buffers and landscaping to preserve amenity for adjacent land uses. Thus, a proper plan should accommodate all users of the urban streets in planning, designing and construction of the road infrastructure and furniture. Municipality road network can be conceptualized by considering the functional hierarchy as arterial, sub-arterial and urban roads of various categories such as Class A, Class B, Class C and Class D.

Right of Way for Roads of different Classes:

The DTMP guideline has expected roads under category of National Highway (NH), Feeder Roads (FR) and District Roads (DRCN) within the Municipality area. The RoW of these roads are considered as per respective Guidelines. i.e the RoW of National Highways, Feeder Roads and District Roads are 50.0 m, 30.0 m and 20.0 m . The guideline has clearly stated about the setback distance for these roads (having RoW ≥ 20.0 m) as 6.0 m on either side. All of these standards shall be applied to the Municipality accordingly.

Table 6.4:1 Urban Road Class and Features

Road Class	Description	Minimum RoW (m)	Minimum Set-back Distance (m)
NH	National Highways	As prescribed	As prescribed
FR	Feeder Roads		
DRCN	District Roads		
A	Main Collector	14	2.0m (DTMP Guideline) and 1.5m (Building Guideline)
B	Other Collector	10	
C	Main Tole Road	6	
D	Other Tole Road	4	

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

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

Urban Road Classification

Roads under jurisdiction of Municipal authority are referred as urban roads. The classification practices of urban roads basically are guided by the functional hierarchy of roads. In the context of Nepal, Department of Roads (DoR) has classified urban roads as Arterial, Sub-arterial, Collector and Local/Residential Street in its Urban Road Standard 2068 (draft). The ToR provided for the preparation of RMTMP has formulated the class of roads into A, B, C and D.

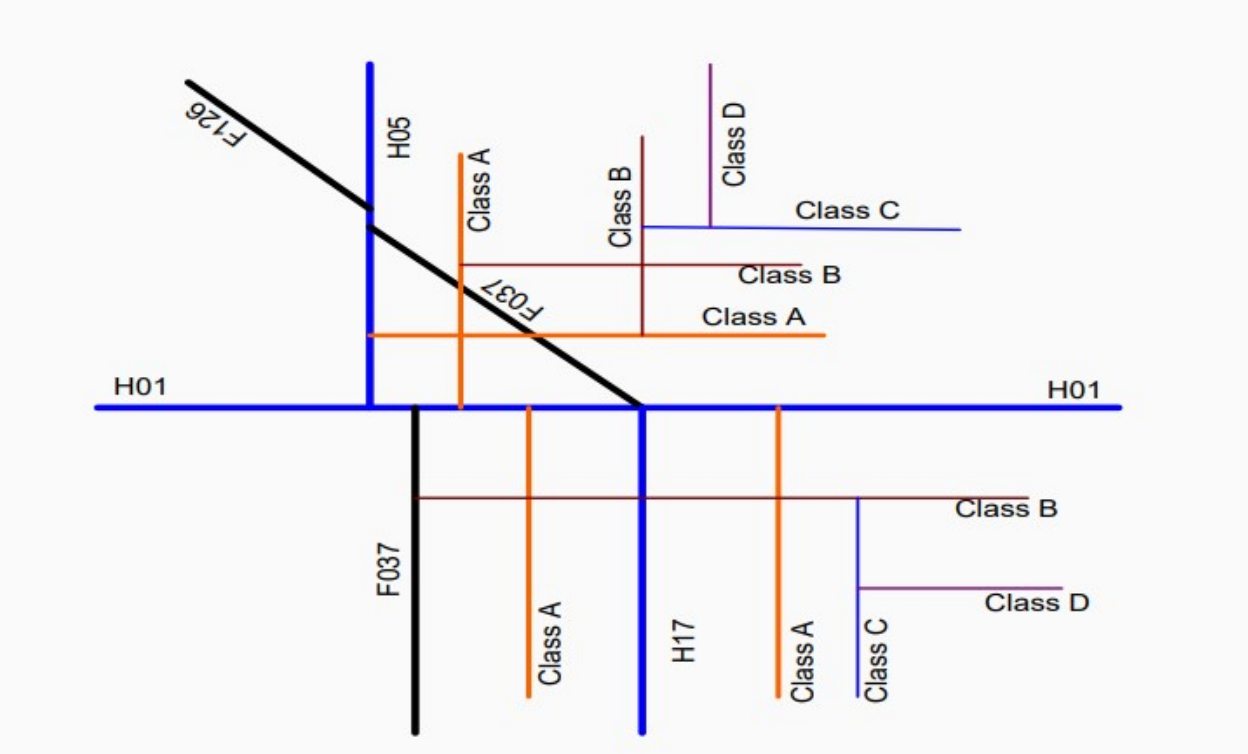

Figure 6.4:2 Detail description of road class

The fundamental parameters of the urban road are shown in Table 12. Municipality has a complete road network hierarchy consisting of National Highways, Feeder Roads, District Roads and Urban Roads of all four classes. The conceptual layout based on the functional hierarchy of the entire road network is shown in Figure 20.

National Highways

Arterial roads in Municipality are taken as the links of National Highways. The technical standards of these roads are taken from the DoR directives for Right of Way (RoW) and other features.

Feeder Roads

Feeder roads are taken as the sub-arterial road in Municipality. The technical standards for this category are taken as mentioned by the DoR road Standard. These roads have relatively higher traffic with through movement of local vehicles.

Class A Roads

Class A roads serve as the major collector roads. These roads start either from the Arterial or Sub-Arterial road. These roads are of relatively long distance which connect big market or settlement areas or two or more wards centers within the Municipality.

Class B Roads

Class B roads are of secondary type of collector roads. These may serve as the collector to the Class A roads with the relatively lower geometric standard. Intersection and other parameters may be taken as similar as Class A roads.

Class C and Class D Roads

Class C roads are residential street and they provide access to the private property and small industrial or public place. These roads serve mainly for small/light vehicular movement for low volume intensity. If these roads connect one or more residential blocks then they are taken as Class C. If they collect from or end to the single residential block then they are referred as Class D roads. These serve for internal traffic movement without through traffic movement.

Coding of Municipality Roads

All road links within the Municipality are given unique code number consisting of ten digits. The coding system for particular road link is described below:

- First digit (1 to 7) represents the number of Province.
- Second and third digits represent particular district (1 to 77). Jhapa District is coded by 04.
- Fourth code M represents for the Municipality.
- Fifth and sixth digits represent particular name (1 to 99 for particular Rural/Municipality) of the Rural/Municipality in the district. Kamal Rural Municipality is coded by 09.
- Seventh code indicates letter A to D for particular Class of road.
- Next three digits (001 to 999) represent the particular transport linkage. After all the code numbers, road name is written.

An example of the code number and road in Itahari Sub Metropolitan City is shown as

1	**0**	**4**	**M**	**0**	**9**	**B**	**0**	**0**	**1**

Typical Cross Sections of Municipal Roads

The existing transport linkages (except the Strategic Road Network (SRN) linkages) within the Municipality are referred as Municipal Roads. These roads have been classified based on their functional hierarchy. Geometric features of these roads may vary as per the availability of Row and roadside land-use pattern. Typical cross-sections of these roads have been described below.

Road Class A (Main Collector)

These roads are major transportation corridors within the Municipal territory. These roads are assumed to have higher traffic and they pass through along the east to west or north to south of

the Municipal area. Further, these roads connect major settlements or market areas within the Municipality. Functionally, these roads collect the traffic from major settlements, tourist area to the SRN linkages. As per the available RoW and land-use pattern typical cross-sections may be selected as shown in Figure 18. Minimum RoW for class A road is 14 m.

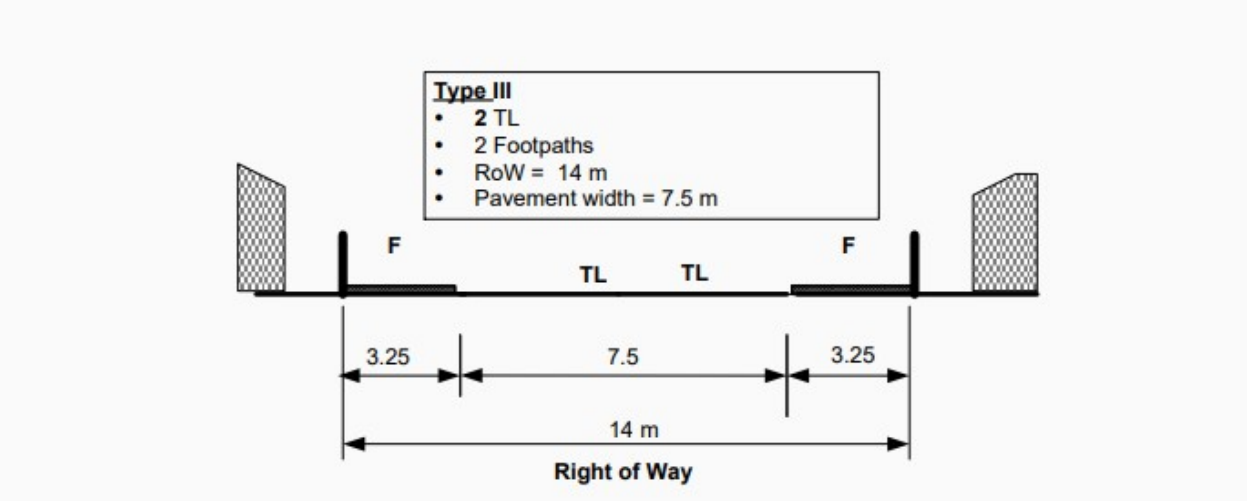

Figure 6.4:3 Typical Cross-section for Class A Roads (with RoW 14 m)

Road Class B (Other Collector Roads)

These roads serve as collector road from relatively small settlements and having less traffic flow. The minimum RoW for such class of roads is 10 m. The typical cross section with the minimum RoW is shown below.

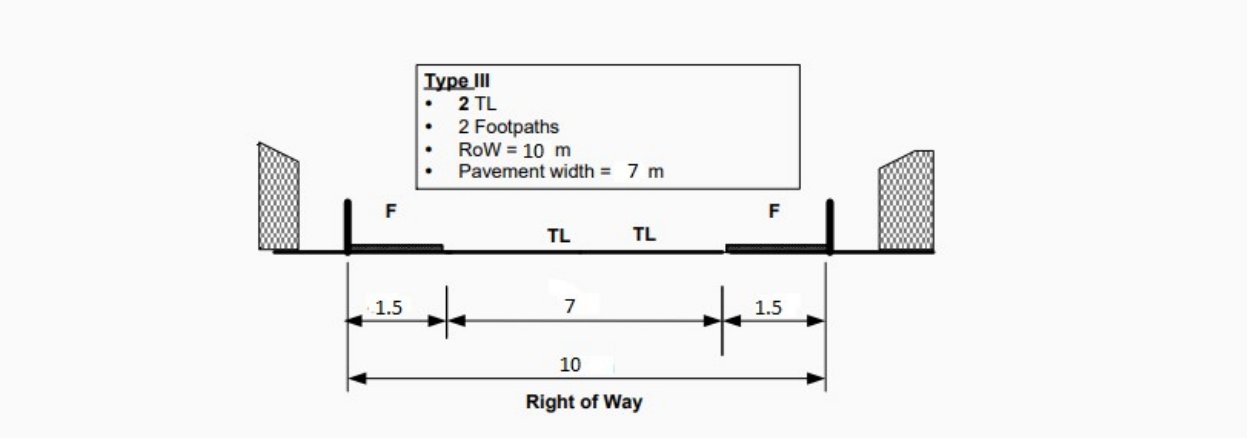

Figure 6.4:4 Typical Cross-section for Class B Roads (with RoW 10 m)

Road Class C (Tole Roads)

These types of urban roads are for the purpose of residential access. Residential streets are designed for the lower traffic volume, especially private transport. Therefore, RoW for this class of roads is designed for single lane pavement. Minimum RoW strip for such class of road is 6 m. Typical cross-sections as per the available RoW are shown in Figure below fig.23 and fig.24

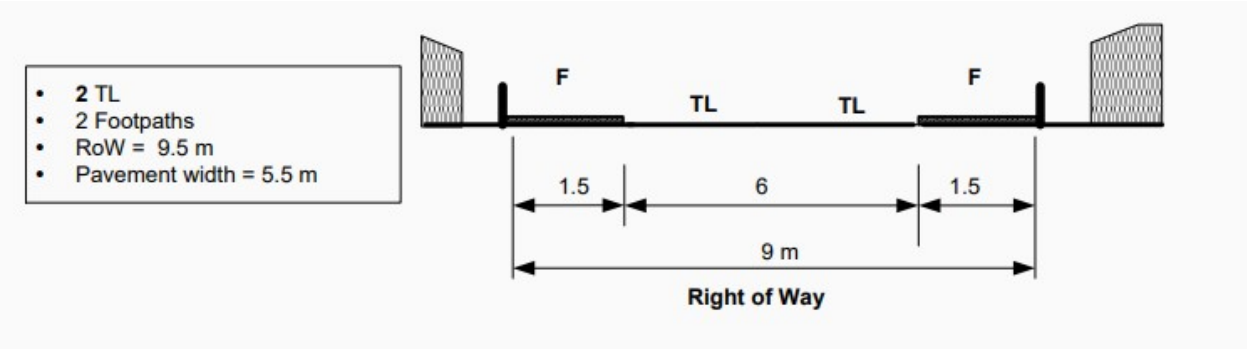

Figure 6.4:5 Typical Cross-section for Class B Roads (with RoW 9 m)

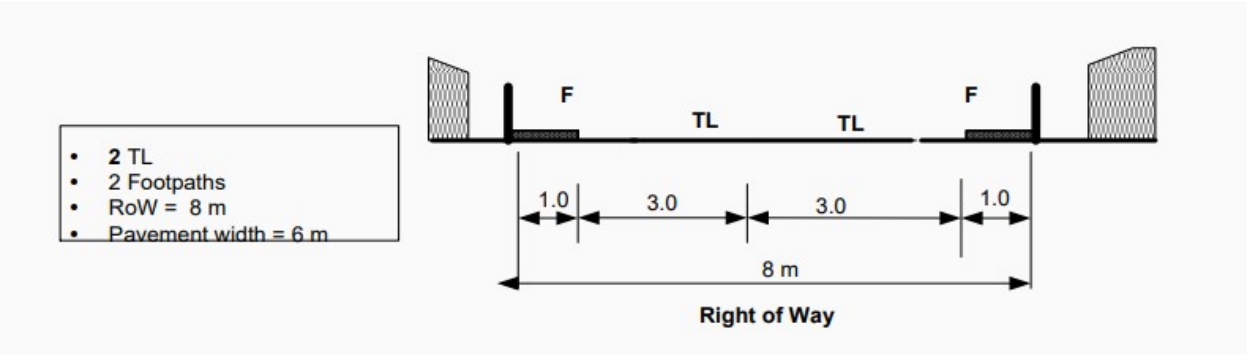

Figure 6.4:6 Typical Cross-section for Class B Roads (with RoW 8m)

6.5 PUBLIC TRANSPORTATION

Public transportation status, at this stage, is much less with regard to the geography, accessibility and trip pattern of people. Transportation system should at least be developed on the major Municipality roads. The travel pattern shows movement of people towards Municipality centers and neighboring Municipalities in the morning peak hours and it reverses in the evening. Hence initiation of public transportation on the specified route is a must in the Municipality. Available provision of public vehicles on DRCNs and SRN is not adequate. Therefore, with implementation of master plan, the expanded and upgraded Municipal roads along with the SRN and DRCN should be facilitated with public transportation.

6.6 ROAD INTERVENTIONS

Strategic Roads and District Roads are excluded for determining the cost of interventions, as the road standard and per unit cost of it also quite different than local level roads. The cost for the construction has determined based on these interventions. The interventions has categorized into two parts: one is road geometry while the other one is the road surface interventions. The road geometry interventions includes requirement of widening while the surface type interventions includes all interventions other than widening. The cost of interventions required is then determined based on interventions thus determined from the field inventory (other than

maintenance). All the costs associated have determined adopting rate of interventions given by MoUD and it is presented in Annex.

The final cost of interventions will be prepared after the preparation of complete prioritized rank list of roads and will be presented in final report.

6.7 PERSPECTIVE PLAN OF MUNICIPAL TRANSPORT NETWORK WITH RESPECT TO SCORING SYSTEM AND RANKING

The rank of the road has developed based on criteria given in Terms of References and that will be approved by RMRCC meetings. The details of the ranking system will be presented in Annex of the final report. The summary of scores and the rank has presented in table below. The final cost of interventions is prepared after the preparation of partial prioritized rank list of roads. The complete prioritization of the road will be done after collection of demands from wards and will included in the report along with the 5 year financial and implementation plan. From the field study and inventory data, we can prioritize the municipal roads which are shown below.

Table 6.7:1 Class wise Road Link prioritization Table

Class A Roads

SN	ROAD CODE	Length (km)	Criteria 1	Criteria 2	Criteria 3	Criteria 4	Criteria 5	Criteria 6	Criteria 7	Criteria 8	Criteria 9	SCORE
			Weight 20	Weight 5	Weight 20	Weight 20	Weight 5	Weight 5	Weight 5	Weight 10	Weight 10	
1	104M09A036	3.615	9.29	5.00	20.00	10.00	-	5.00	5.00	10.00	10.00	74.29
2	104M09A009	3.714	12.05	5.00	15.00	10.00	5.00	-	-	10.00	10.00	67.05
3	104M09A043	3.757	8.05	5.00	10.00	15.00	-	5.00	5.00	8.00	10.00	66.05
4	104M09A005	3.509	8.89	5.00	10.00	15.00	5.00	-	5.00	6.00	10.00	64.89
5	104M09A025	5.095	20.00	5.00	10.00	10.00	5.00	5.00	-	8.00	-	63.00
6	104M09A014	4.395	4.93	5.00	15.00	10.00	-	5.00	5.00	10.00	-	54.93
7	104M09A040	3.361	13.27	5.00	10.00	5.00	-	-	-	10.00	10.00	53.27
8	104M09A010	5.960	11.83	5.00	5.00	5.00	5.00	5.00	5.00	-	10.00	51.83
9	104M09A007	1.552	5.33	5.00	10.00	5.00	-	-	5.00	10.00	10.00	50.33
10	104M09A015	4.628	8.45	5.00	10.00	10.00	-	-	-	6.00	10.00	49.45
11	104M09A019	1.615	4.42	5.00	10.00	5.00	5.00	-	-	10.00	10.00	49.42
12	104M09A008	2.649	3.19	5.00	10.00	5.00	-	5.00	5.00	6.00	10.00	49.19

13	104M09A001	2.061	2.79	5.00	10.00	5.00	5.00	-	5.00	6.00	10.00	48.79
14	104M09A041	2.988	7.61	5.00	10.00	-	-	5.00	-	8.00	10.00	45.61
15	104M09A045	2.177	6.17	5.00	10.00	5.00	-	-	-	8.00	10.00	44.17
16	104M09A046	5.414	14.60	5.00	10.00	5.00	-	-	5.00	4.00	-	43.60
17	104M09A004	0.909	1.72	5.00	10.00	5.00	5.00	-	-	6.00	10.00	42.72
18	104M09A039	1.059	2.28	5.00	10.00	5.00	-	5.00	-	4.00	10.00	41.28
19	104M09A022	1.454	2.78	5.00	5.00	5.00	5.00	5.00	5.00	8.00	-	40.78
20	104M09A002	3.066	4.05	5.00	15.00	10.00	-	-	-	6.00	-	40.05
21	104M09A013	2.197	4.88	5.00	5.00	5.00	-	-	-	10.00	10.00	39.88
22	104M09A016	1.559	4.48	5.00	10.00	5.00	5.00	-	-	-	10.00	39.48
23	104M09A023	1.760	6.19	-	10.00	-	5.00	-	5.00	10.00	-	36.19
24	104M09A032	0.921	5.32	5.00	5.00	5.00	-	-	5.00	10.00	-	35.32
25	104M09A012	2.157	5.20	5.00	10.00	5.00	-	-	-	10.00	-	35.20
26	104M09A029	0.869	1.53	5.00	5.00	5.00	5.00	-	5.00	8.00	-	34.53
27	104M09A017	0.823	3.41	-	5.00	5.00	5.00	-	5.00	10.00	-	33.41
28	104M09A044	1.305	3.32	5.00	5.00	5.00	5.00	-	-	8.00	-	31.32
29	104M09A037	0.658	0.95	5.00	5.00	5.00	5.00	-	-	10.00	-	30.95
30	104M09A024	1.076	3.84	5.00	-	-	-	-	-	10.00	10.00	28.84
31	104M09A003	1.602	1.84	5.00	5.00	-	-	-	-	6.00	10.00	27.84
32	104M09A030	0.546	1.88	-	-	-	5.00	-	-	10.00	10.00	26.88
33	104M09A035	2.173	1.38	5.00	5.00	-	-	5.00	-	10.00	-	26.38
34	104M09A018	0.539	1.01	-	5.00	5.00	5.00	-	-	10.00	-	26.01
35	104M09A028	0.936	1.67	5.00	-	-	-	-	-	8.00	10.00	24.67
36	104M09A011	1.888	3.81	5.00	5.00	-	-	-	-	10.00	-	23.81

37	104M09A026	1.695	3.31	5.00	-	5.00	-	-	-	10.00	-	23.31
38	104M09A031	0.666	1.61	-	5.00	-	-	5.00	-	10.00	-	21.61
39	104M09A034	1.272	1.01	5.00	5.00	-	-	-	-	10.00	-	21.01
40	104M09A006	2.158	0.00	5.00	5.00	-	-	-	-	10.00	-	20.00
41	104M09A033	0.414	1.06	-	5.00	5.00	-	-	-	8.00	-	19.06
42	104M09A042	0.542	1.03	5.00	-	5.00	-	-	-	8.00	-	19.03
43	104M09A021	0.474	0.42	5.00	5.00	-	-	-	-	8.00	-	18.42
44	104M09A020	0.395	0.40	5.00	5.00	-	-	-	-	8.00	-	18.40
45	104M09A027	1.565	1.43	5.00	-	-	-	-	-	10.00	-	16.43
46	104M09A038	0.673	0.34	5.00	-	-	-	-	-	10.00	-	15.34

Class B Roads

1	104M09B001	4.680	12.38	5.00	10.00	10.00	5.00	5.00	-	4.00	10.00	61.38
2	104M09B036	9.373	14.24	5.00	5.00	10.00	-	5.00	5.00	4.00	10.00	58.24
3	104M09B018	5.366	9.16	5.00	10.00	5.00	5.00	-	5.00	6.00	10.00	55.16
4	104M09B010	2.767	6.95	5.00	10.00	10.00	5.00	5.00	-	-	10.00	51.95
6	104M09B017	0.332	1.35	-	10.00	10.00	-	5.00	-	10.00	10.00	46.35
7	104M09B040	2.004	5.11	5.00	10.00	10.00	-	-	5.00	-	10.00	45.11
9	104M09B033	2.869	7.80	5.00	5.00	5.00	-	5.00	5.00	-	10.00	42.80
11	104M09B043	1.992	3.91	5.00	10.00	-	-	-	5.00	8.00	10.00	41.91
5	104M09B014	0.387	1.53	-	10.00	10.00	5.00	-	5.00	10.00	-	41.53
14	104M09B037	5.177	11.12	5.00	5.00	5.00	-	-	5.00	-	10.00	41.12
15	104M09B011	3.888	6.95	5.00	10.00	5.00	-	-	-	4.00	10.00	40.95

19	104M09B032	2.804	5.57	5.00	5.00	5.00	-	-	5.00	-	10.00	35.57
8	104M09B042	0.923	1.96	5.00	5.00	5.00	-	5.00	5.00	8.00	-	34.96
20	104M09B002	3.853	3.26	5.00	10.00	-	-	-	-	6.00	10.00	34.26
10	104M09B007	0.375	1.08	5.00	10.00	5.00	5.00	-	-	6.00	-	32.08
27	104M09B038	2.795	6.69	5.00	5.00	-	-	-	5.00	-	10.00	31.69
12	104M09B012	3.096	6.60	5.00	10.00	5.00	-	-	5.00	-	-	31.60
28	104M09B008	0.514	0.40	-	5.00	5.00	-	-	5.00	6.00	10.00	31.40
13	104M09B016	0.282	1.33	-	10.00	10.00	-	-	-	10.00	-	31.33
16	104M09B004	1.376	1.64	5.00	5.00	5.00	-	5.00	-	6.00	-	27.64
17	104M09B015	0.272	1.66	-	10.00	5.00	-	-	-	10.00	-	26.66
18	104M09B024	1.467	3.02	5.00	5.00	-	-	-	5.00	8.00	-	26.02
21	104M09B044	0.555	1.22	5.00	5.00	-	-	5.00	-	8.00	-	24.22
22	104M09B009	1.650	2.96	5.00	5.00	-	-	-	5.00	6.00	-	23.96
23	104M09B027	1.453	3.81	5.00	5.00	5.00	-	-	5.00	-	-	23.81
24	104M09B019	1.230	1.25	5.00	5.00	5.00	-	-	-	6.00	-	22.25
25	104M09B034	0.951	2.04	5.00	-	10.00	5.00	-	-	-	-	22.04
26	104M09B005	0.495	0.77	5.00	-	5.00	-	5.00	-	6.00	-	21.77
29	104M09B013	2.655	0.10	5.00	5.00	-	-	-	-	10.00	-	20.10
30	104M09B041	0.956	1.39	5.00	5.00	-	-	-	-	8.00	-	19.39
31	104M09B006	2.202	2.83	5.00	5.00	-	-	-	-	6.00	-	18.83
32	104M09B031	2.257	2.91	5.00	-	-	5.00	-	-	4.00	-	16.91
33	104M09B020	1.776	1.57	5.00	-	5.00	-	-	5.00	-	-	16.57
34	104M09B025	1.147	1.06	5.00	-	-	-	-	-	10.00	-	16.06
35	104M09B003	1.524	1.81	5.00	-	5.00	-	-	-	4.00	-	15.81

36	104M09B029	1.288	2.80	5.00	5.00	-	-	-	-	-	-	12.80
37	104M09B035	1.248	2.15	5.00	-	-	-	-	5.00	-	-	12.15
38	104M09B039	1.114	1.63	5.00	-	-	-	-	5.00	-	-	11.63
39	104M09B028	0.712	1.27	5.00	-	5.00	-	-	-	-	-	11.27
40	104M09B030	0.661	2.25	5.00	-	-	-	-	-	4.00	-	11.25
41	104M09B022	1.211	1.60	5.00	-	-	-	-	-	4.00	-	10.60
42	104M09B026	0.866	2.14	5.00	-	-	-	-	-	-	-	7.14
43	104M09B021	1.753	1.84	5.00	-	-	-	-	-	-	-	6.84
44	104M09B023	0.551	0.51	5.00	-	-	-	-	-	-	-	5.51

Class C Roads

1	104M09C045	0.662	1.89	-	15.00	5.00	5.00	-	5.00	10.00	-	41.89
2	104M09C001	2.277	3.51	5.00	5.00	5.00	-	5.00	-	6.00	10.00	39.51
3	104M09C085	1.883	4.27	5.00	10.00	-	-	-	5.00	4.00	10.00	38.27
4	104M09C068	2.276	2.19	5.00	5.00	10.00	-	-	-	-	10.00	32.19
5	104M09C093	0.433	0.92	5.00	10.00	5.00	-	-	-	8.00	-	28.92
6	104M09C019	0.375	2.23	-	10.00	5.00	-	-	5.00	6.00	-	28.23
7	104M09C013	2.596	2.00	5.00	10.00	5.00	-	-	-	6.00	-	28.00
8	104M09C028	1.576	1.88	5.00	10.00	5.00	-	5.00	-	-	-	26.88
9	104M09C053	2.001	0.97	5.00	10.00	-	5.00	-	5.00	-	-	25.97
10	104M09C076	0.939	0.69	-	5.00	5.00	5.00	-	-	10.00	-	25.69
11	104M09C031	2.340	0.00	5.00	10.00	-	-	-	-	10.00	-	25.00
12	104M09C033	1.888	0.00	5.00	5.00	-	-	-	5.00	10.00	-	25.00
13	104M09C067	1.567	2.61				-	-	-	-		22.61

				5.00	10.00	5.00					-	
14	104M09C009	1.560	1.23	5.00	5.00	5.00	-	-	-	6.00	-	22.23
15	104M09C090	0.740	2.23	5.00	5.00	10.00	-	-	-	-	-	22.23
16	104M09C011	1.013	0.96	5.00	-	5.00	-	5.00	-	6.00	-	21.96
17	104M09C060	1.400	1.84	5.00	5.00	-	-	-	-	-	10.00	21.84
18	104M09C049	0.260	0.59	-	5.00	-	-	-	5.00	10.00	-	20.59
19	104M09C038	0.475	0.38	5.00	5.00	-	-	-	-	10.00	-	20.38
20	104M09C037	0.326	0.23	5.00	5.00	-	-	-	-	10.00	-	20.23
21	104M09C032	1.838	0.00	5.00	5.00	-	-	-	-	10.00	-	20.00
22	104M09C080	0.314	0.76	5.00	-	-	-	5.00	-	8.00	-	18.76
23	104M09C083	1.614	3.29	5.00	-	5.00	5.00	-	-	-	-	18.29
24	104M09C014	2.035	2.14	5.00	5.00	-	-	-	-	6.00	-	18.14
25	104M09C042	0.230	1.73	-	5.00	-	-	-	5.00	6.00	-	17.73
26	104M09C091	0.651	1.66	5.00	5.00	-	-	-	5.00	-	-	16.66
27	104M09C047	0.191	0.64	-	5.00	5.00	-	-	-	6.00	-	16.64
28	104M09C040	0.893	1.63	5.00	-	-	-	-	-	10.00	-	16.63
29	104M09C020	0.121	0.54	-	5.00	5.00	-	-	-	6.00	-	16.54
30	104M09C018	0.588	0.51	5.00	5.00	-	-	-	-	6.00	-	16.51
31	104M09C044	0.081	1.48	5.00	5.00	5.00	-	-	-	-	-	16.48
32	104M09C054	0.920	1.47	5.00	5.00	5.00	-	-	-	-	-	16.47
33	104M09C058	0.518	1.39	5.00	5.00	5.00	-	-	-	-	-	16.39
34	104M09C008	1.216	1.34	5.00	5.00	-	-	-	5.00	-	-	16.34
35	104M09C021	0.430	0.32	5.00	-	5.00	-	-	-	6.00	-	16.32
36	104M09C041	0.232	1.28	-	5.00	-	-	-	-	10.00	-	16.28

37	104M09C069	1.358	1.25	5.00	5.00	-	-	5.00	-	-	-	16.25
38	104M09C074	0.552	1.16	5.00	10.00	-	-	-	-	-	-	16.16
39	104M09C006	3.378	2.03	5.00	5.00	-	-	-	-	4.00	-	16.03
40	104M09C003	1.370	1.62	5.00	5.00	-	-	-	-	4.00	-	15.62
41	104M09C036	0.455	0.54	5.00	-	-	-	-	-	10.00	-	15.54
42	104M09C039	0.568	0.54	5.00	-	-	-	-	-	10.00	-	15.54
43	104M09C064	0.350	0.43	5.00	5.00	5.00	-	-	-	-	-	15.43
44	104M09C034	1.654	0.00	5.00	-	-	-	-	-	10.00	-	15.00
45	104M09C079	0.708	1.63	5.00	-	-	-	-	-	8.00	-	14.63
46	104M09C082	0.622	0.82	5.00	-	-	-	-	-	8.00	-	13.82
47	104M09C084	0.468	0.46	5.00	-	-	-	-	-	8.00	-	13.46
48	104M09C027	2.360	3.04	5.00	-	5.00	-	-	-	-	-	13.04
49	104M09C043	0.278	1.71	-	5.00	-	-	-	-	6.00	-	12.71
50	104M09C056	1.238	2.48	5.00	5.00	-	-	-	-	-	-	12.48
51	104M09C005	1.593	1.97	5.00	5.00	-	-	-	-	-	-	11.97
52	104M09C050	0.490	0.97	5.00	-	-	-	-	-	6.00	-	11.97
53	104M09C051	0.861	0.92	5.00	-	-	-	-	-	6.00	-	11.92
54	104M09C048	0.234	0.87	5.00	-	-	-	-	-	6.00	-	11.87
55	104M09C086	1.475	1.52	5.00	-	-	-	-	5.00	-	-	11.52
56	104M09C089	0.719	1.47	5.00	5.00	-	-	-	-	-	-	11.47
57	104M09C017	0.526	0.43	5.00	-	-	-	-	-	6.00	-	11.43
58	104M09C010	0.520	0.27	5.00	-	-	-	-	-	6.00	-	11.27
59	104M09C065	1.758	1.12	5.00	-	-	-	-	5.00	-	-	11.12
60	104M09C002	1.252	1.04	5.00	-	-	-	-	5.00	-	-	11.04

61	104M09C072	0.301	0.98	5.00	-	5.00	-	-	-	-	-	10.98
62	104M09C015	0.791	0.96	5.00	5.00	-	-	-	-	-	-	10.96
63	104M09C087	1.644	1.90	5.00	-	-	-	-	-	4.00	-	10.90
64	104M09C029	0.915	0.86	5.00	5.00	-	-	-	-	-	-	10.86
65	104M09C073	0.332	0.82	-	-	-	-	-	-	10.00	-	10.82
66	104M09C004	0.997	0.71	5.00	-	-	-	5.00	-	-	-	10.71
67	104M09C078	0.754	0.50	5.00	-	-	5.00	-	-	-	-	10.50
68	104M09C070	0.311	0.48	-	5.00	-	-	5.00	-	-	-	10.48
69	104M09C024	0.785	0.46	5.00	-	-	-	-	5.00	-	-	10.46
70	104M09C052	0.619	0.41	5.00	-	5.00	-	-	-	-	-	10.41
71	104M09C088	0.692	0.33	5.00	-	5.00	-	-	-	-	-	10.33
72	104M09C022	0.259	0.32	5.00	-	5.00	-	-	-	-	-	10.32
73	104M09C035	1.918	1.28	5.00	-	-	-	-	-	4.00	-	10.28
74	104M09C007	1.046	0.19	5.00	-	5.00	-	-	-	-	-	10.19
75	104M09C012	0.581	0.41	5.00	-	-	-	-	-	4.00	-	9.41
76	104M09C061	1.036	2.00	5.00	-	-	-	-	-	-	-	7.00
77	104M09C030	1.811	1.53	5.00	-	-	-	-	-	-	-	6.53
78	104M09C055	0.513	1.23	-	5.00	-	-	-	-	-	-	6.23
79	104M09C059	0.589	1.20	5.00	-	-	-	-	-	-	-	6.20
80	104M09C092	0.649	1.20	5.00	-	-	-	-	-	-	-	6.20
81	104M09C026	1.243	1.08	5.00	-	-	-	-	-	-	-	6.08
82	104M09C062	1.023	0.96	5.00	-	-	-	-	-	-	-	5.96
83	104M09C066	0.858	0.80	5.00	-	-	-	-	-	-	-	5.80
84	104M09C094	0.818	0.68	5.00	-	-	-	-	-	-	-	5.68

85	104M09C023	0.936	0.67	5.00	-	-	-	-	-	-	-	5.67
86	104M09C063	1.120	0.67	5.00	-	-	-	-	-	-	-	5.67
87	104M09C025	1.295	0.65	5.00	-	-	-	-	-	-	-	5.65
88	104M09C081	0.637	0.54	5.00	-	-	-	-	-	-	-	5.54
89	104M09C071	0.180	0.53	5.00	-	-	-	-	-	-	-	5.53
90	104M09C057	0.289	0.51	5.00	-	-	-	-	-	-	-	5.51
91	104M09C077	0.744	0.48	5.00	-	-	-	-	-	-	-	5.48
92	104M09C075	0.153	0.32	5.00	-	-	-	-	-	-	-	5.32
93	104M09C046	0.168	0.28	-	-	5.00	-	-	-	-	-	5.28
94	104M09C016	0.352	0.24	5.00	-	-	-	-	-	-	-	5.24

Class D Roads

1	104M09D059	1.527	2.77	5.00	10.00	5.00	-	-	5.00	-	-	27.77
2	104M09D003	1.655	1.62	5.00	5.00	-	5.00	-	5.00	4.00	-	25.62
3	104M09D068	0.398	0.35	5.00	5.00	5.00	-	-	-	8.00	-	23.35
4	104M09D002	0.179	1.04	-	10.00	5.00	-	-	-	6.00	-	22.04
5	104M09D037	0.540	1.28	5.00	-	-	5.00	-	-	10.00	-	21.28
6	104M09D074	1.011	1.03	5.00	10.00	5.00	-	-	-	-	-	21.03
7	104M09D092	1.429	2.15	5.00	-	5.00	-	-	-	8.00	-	20.15
8	104M09D064	0.534	1.22	5.00	5.00	-	-	-	-	8.00	-	19.22
9	104M09D073	0.686	1.03	5.00	-	5.00	-	-	-	8.00	-	19.03
10	104M09D072	0.394	0.54	5.00	-	5.00	-	-	-	8.00	-	18.54
11	104M09D062	0.397	0.49	5.00	-	-	-	5.00	-	8.00	-	18.49

12	104M09D084	0.352	0.05	5.00	5.00	-	-	-	-	8.00	-	18.05
13	104M09D025	0.227	1.51	-	5.00	5.00	-	-	-	6.00	-	17.51
14	104M09D020	0.572	1.48	5.00	5.00	-	-	-	-	6.00	-	17.48
15	104M09D032	0.472	0.79	5.00	-	5.00	-	-	-	6.00	-	16.79
16	104M09D093	1.349	1.66	5.00	5.00	5.00	-	-	-	-	-	16.66
17	104M09D091	0.993	1.66	5.00	-	-	-	-	-	-	10.00	16.66
18	104M09D095	1.223	2.61	5.00	-	5.00	-	-	-	4.00	-	16.61
19	104M09D011	0.803	0.55	5.00	-	5.00	-	-	-	6.00	-	16.55
20	104M09D022	0.350	0.43	5.00	5.00	-	-	-	-	6.00	-	16.43
21	104M09D001	0.403	0.38	-	5.00	-	-	-	5.00	6.00	-	16.38
22	104M09D055	0.630	1.38	5.00	5.00	-	-	-	5.00	-	-	16.38
23	104M09D057	0.891	0.71	5.00	5.00	-	-	-	5.00	-	-	15.71
24	104M09D065	0.585	0.63	5.00	5.00	5.00	-	-	-	-	-	15.63
25	104M09D066	0.212	0.57	5.00	5.00	5.00	-	-	-	-	-	15.57
26	104M09D013	0.383	0.49	5.00	5.00	-	5.00	-	-	-	-	15.49
27	104M09D089	0.687	1.22	5.00	-	-	-	5.00	-	4.00	-	15.22
28	104M09D085	1.066	0.46	5.00	-	5.00	-	-	-	4.00	-	14.46
29	104M09D078	0.347	0.54	5.00	-	-	-	-	-	8.00	-	13.54
30	104M09D063	0.317	0.33	5.00	-	-	-	-	-	8.00	-	13.33
31	104M09D069	0.427	0.30	5.00	-	-	-	-	-	8.00	-	13.30
32	104M09D008	1.435	1.75	5.00	-	-	-	-	-	6.00	-	12.75
33	104M09D071	1.505	1.52	5.00	-	5.00	-	-	-	-	-	11.52
34	104M09D031	0.890	0.36	5.00	-	-	-	-	-	6.00	-	11.36
35	104M09D021	0.570	0.32	5.00	-	-	-	-	-	6.00	-	11.32

36	104M09D019	0.408	0.19	5.00	-	-	-	-	-	6.00	-	11.19
37	104M09D036	0.374	0.18	5.00	-	-	-	-	-	6.00	-	11.18
38	104M09D017	0.175	0.05	5.00	-	-	-	-	-	6.00	-	11.05
39	104M09D087	1.259	0.98	5.00	5.00	-	-	-	-	-	-	10.98
40	104M09D028	0.597	0.92	5.00	5.00	-	-	-	-	-	-	10.92
41	104M09D042	0.764	0.91	5.00	-	-	-	-	5.00	-	-	10.91
42	104M09D056	0.403	0.87	5.00	-	5.00	-	-	-	-	-	10.87
43	104M09D027	0.803	0.87	5.00	-	5.00	-	-	-	-	-	10.87
44	104M09D047	0.336	0.80	5.00	5.00	-	-	-	-	-	-	10.80
45	104M09D067	1.124	0.76	5.00	-	-	-	-	5.00	-	-	10.76
46	104M09D080	0.391	0.71	5.00	-	-	-	-	5.00	-	-	10.71
47	104M09D045	0.807	0.67	5.00	5.00	-	-	-	-	-	-	10.67
48	104M09D094	0.800	0.63	5.00	5.00	-	-	-	-	-	-	10.63
49	104M09D060	0.209	0.43	5.00	-	-	-	-	5.00	-	-	10.43
50	104M09D009	0.279	0.36	5.00	-	-	-	-	5.00	-	-	10.36
51	104M09D040	0.439	0.35	5.00	5.00	-	-	-	-	-	-	10.35
52	104M09D026	0.243	0.28	5.00	5.00	-	-	-	-	-	-	10.28
53	104M09D029	0.608	0.26	5.00	5.00	-	-	-	-	-	-	10.26
54	104M09D039	0.563	0.21	5.00	-	-	-	-	5.00	-	-	10.21
55	104M09D051	0.303	0.16	5.00	5.00	-	-	-	-	-	-	10.16
56	104M09D024	2.673	0.00	5.00	5.00	-	-	-	-	-	-	10.00
57	104M09D086	0.851	0.90	5.00	-	-	-	-	-	4.00	-	9.90
58	104M09D004	1.536	0.55	5.00	-	-	-	-	-	4.00	-	9.55
59	104M09D012	0.667	0.22	5.00	-	-	-	-	-	4.00	-	9.22

60	104M09D010	2.002	2.41	5.00	-	-	-	-	-	-	-	7.41
61	104M09D046	1.429	1.65	5.00	-	-	-	-	-	-	-	6.65
62	104M09D035	0.234	0.59	-	-	-	-	-	-	6.00	-	6.59
63	104M09D075	0.740	1.50	5.00	-	-	-	-	-	-	-	6.50
64	104M09D034	0.296	0.46	-	-	-	-	-	-	6.00	-	6.46
65	104M09D090	1.034	1.30	5.00	-	-	-	-	-	-	-	6.30
66	104M09D006	1.065	1.21	5.00	-	-	-	-	-	-	-	6.21
67	104M09D058	0.978	1.11	5.00	-	-	-	-	-	-	-	6.11
68	104M09D088	1.530	1.01	5.00	-	-	-	-	-	-	-	6.01
69	104M09D018	0.673	0.94	5.00	-	-	-	-	-	-	-	5.94
70	104M09D077	0.897	0.90	5.00	-	-	-	-	-	-	-	5.90
71	104M09D041	1.094	0.85	5.00	-	-	-	-	-	-	-	5.85
72	104M09D048	0.834	0.75	5.00	-	-	-	-	-	-	-	5.75
73	104M09D030	0.755	0.71	5.00	-	-	-	-	-	-	-	5.71
74	104M09D014	0.619	0.66	5.00	-	-	-	-	-	-	-	5.66
75	104M09D082	0.590	0.60	5.00	-	-	-	-	-	-	-	5.60
76	104M09D023	1.933	0.59	5.00	-	-	-	-	-	-	-	5.59
77	104M09D049	0.410	0.56	5.00	-	-	-	-	-	-	-	5.56
78	104M09D070	0.393	0.54	5.00	-	-	-	-	-	-	-	5.54
79	104M09D015	1.020	0.52	5.00	-	-	-	-	-	-	-	5.52
80	104M09D061	0.498	0.52	5.00	-	-	-	-	-	-	-	5.52
81	104M09D052	0.378	0.50	5.00	-	-	-	-	-	-	-	5.50
82	104M09D053	0.450	0.45	5.00	-	-	-	-	-	-	-	5.45
83	104M09D007	1.235	0.41	5.00	-	-	-	-	-	-	-	5.41

84	104M09D050	0.337	0.40	5.00	-	-	-	-	-	-	-	5.40
85	104M09D081	0.372	0.38	5.00	-	-	-	-	-	-	-	5.38
86	104M09D096	0.351	0.38	5.00	-	-	-	-	-	-	-	5.38
87	104M09D044	0.553	0.35	5.00	-	-	-	-	-	-	-	5.35
88	104M09D033	0.490	0.33	5.00	-	-	-	-	-	-	-	5.33
89	104M09D005	0.875	0.33	5.00	-	-	-	-	-	-	-	5.33
90	104M09D038	0.388	0.29	5.00	-	-	-	-	-	-	-	5.29
91	104M09D016	0.507	0.22	5.00	-	-	-	-	-	-	-	5.22
92	104M09D076	0.392	0.22	5.00	-	-	-	-	-	-	-	5.22
93	104M09D043	0.502	0.21	5.00	-	-	-	-	-	-	-	5.21
94	104M09D054	0.415	0.21	5.00	-	-	-	-	-	-	-	5.21
95	104M09D079	0.272	0.16	5.00	-	-	-	-	-	-	-	5.16
96	104M09D083	1.111	0.14	5.00	-	-	-	-	-	-	-	5.14

FIRST FIVE YEAR MUNICIPAL TRANSPORT MASTER PLAN

The previous year budget of the Municipality was collected and the growth rated was then determined. Then short term and long term financial plan shall be forecasted. The Projected financial plan for five year is be prepared.

7.1 FIVE YEAR PROJECTED FINANCIAL PLAN

The current budget plan of the Municipality has presented in table below. Based on the growth pattern, the growth factor is determined and the budget for coming year has forecasted as shown in below. The composition of source of budget in Municipality shows heterogeneous in nature. The very high amount of budget is granted by the ministry. So, if there is any changes occurred in granted amount by government, there result will be significant change in the Municipality budget. The growth rate that has been used in all the calculations is 10%, as it is used for general purpose when we don't have precise growth rate.

Table 7.1:1 Budget amount of Municipality in road sector

Fiscal year	Amount (NRs)	Rate of increment (%)	Remarks
2076/77	72220000		As per Budget details of Rural Municipality
2077/78	79442000	10%	

7.2 SHARING OF FUND

The financial plan and the finalization of the MTMP shall be done based on terms of reference as given by ministry. During preparation of MTMP, the investment from total available resources under road sector for different classes of the road can be distributed as per ToR. A portion 30%for maintenance at first and remaining 70 % shall be distributed as:

- Class A road, ≥ 40%
- Class B road, ≤ 30%
- Class C road, ≤ 20%
- Class D road, ≤ 10%

The budget has to be distributed between class A, class B, Class C and Class D roads accordingly. The details of the budget sharing of interventions and maintenance and also for class A, B, C and D has presented in following table:

Table 7.2:1Forecasted financial plan of the municipality in road sector

Forecasted budget (NRs)						
Year	Base year	1st	2nd	3rd	4th	5th
Fiscal year	076/77	077/78	078/79	079/80	080/81	081/82
Amount	72220000	79442000	87386200	96124820	105737302	116311032
Cumulative budget	72220000	151662000	239048200	335173020	440910322	557221354

Table 7.2:2Forecasted financial plan of the municipality by type of intervention

Forcasted budget (NRs)						
Year	Base year	1st	2nd	3rd	4th	5th
Fiscal year	075/76	076/77	077/78	078/79	079/80	080/81
Amount	72220000	79442000	87386200	96124820	105737302	116311032
Maintainance	21666000	23832600	26215860	28837446	31721190.6	34893309.7
Construction	50554000	55609400	61170340	67287374	74016111.4	81417722.5

7.3 YEAR WISE TARGETS

Year wise targets shall be developed based on available budgets.

Table 7.3:1Forecasted financial plan of the municipality for road construction work for all road class

Road class	Forecasted budget (NRs)						Total
	Base year	1st	2nd	3rd	4th	5th	
	075/76	076/77	077/78	078/79	079/80	080/81	
Class A roads	20221600	22243760	24468136	26914949.6	29606444.6	32567089	156021979
Class B roads	15166200	16682820	18351102	20186212.2	22204833.4	24425316.8	117016484
Class C roads	10110800	11121880	12234068	13457474.8	14803222.3	16283544.5	78010989.6
Class D roads	5055400	5560940	6117034	6728737.4	7401611.14	8141772.25	39005494.8
Total	50554000	55609400	61170340	67287374	74016111.4	81417722.5	390054948

Table 7.3:2Forecasted financial plan of the municipality for road maintenance by road class

	Forecasted budget (NRs)						
	Base year	1st	2nd	3rd	4th	5th	
Road class	075/76	076/77	077/78	078/79	079/80	080/81	Total
Class A roads	8666400	9533040	10486344	11534978.4	12688476.2	13957323.9	66866562.5
Class B roads	6499800	7149780	7864758	8651233.8	9516357.18	10467992.9	50149921.9
Class C roads	4333200	4766520	5243172	5767489.2	6344238.12	6978661.93	33433281.3
Class D roads	2166600	2383260	2621586	2883744.6	3172119.06	3489330.97	16716640.6
Total	21666000	23832600	26215860	28837446	31721190.6	34893309.7	167166406

7.4 IMPLEMENTATION PLAN

Within 5 year budget period, a total of 3.615 km road (including A, B, C and D class) will be blacktopped. A total of 125.14 km road (including A, B, C and D class) will be graveled, 202.684 km of existing road will be widened and both side of drain will be constructed for 27.153 km of road (including A,B,C and D class) .

The detail of implementation plan is shown in tables below:

Details of implementation plan

Implementation plan for construction of class A roads

1st year

		Type of intervention								
		Widening		Gravelling		Side Drain		Blacktopping		
Road Code	Total Length (km)	Length	Cost	Length	Cost	Length	Cost	Length	Cost	Total Cost
104M09A036	3.61516	3.61516	90379	3.61516	7953352					8043731
104M09A009	3.71368	3.71368	92842	3.71368	8170096					8262938
104M09A043	3.75727	3.75727	93931.75	2.5	5500000					5593931.75
104M09A005	3.50887	3.50887	87721.75							87721.75
104M09A025	5.09469	5.09469	127367.25							127367.25
104M09A014	4.39493	4.39493	109873.25							109873.25
104M09A040	3.36074									0
104M09A010	5.9596									0
104M09A007	1.55162									0
104M09A015	4.62752									0
104M09A019	1.61547									0
104M09A008	2.64908									0
104M09A001	2.06051									0

104M09A041	2.98801									0
104M09A045	2.177									0
104M09A046	5.41423									0
104M09A004	0.909213									0
104M09A039	1.05924									0
104M09A022	1.45417									0
104M09A002	3.0663									0
104M09A013	2.19673									0
104M09A016	1.55921									0
104M09A023	1.75978									0
104M09A032	0.920898									0
104M09A012	2.15699									0
104M09A029	0.869487									0
104M09A017	0.822874									0
104M09A044	1.30522									0
104M09A037	0.658308									0
104M09A024	1.07579									0
Total										22225563

Details of implementation plan

Implementation plan for construction of class A roads

2nd year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09A036	3.61516	Completed in 1st year		Completed in 1st year		3.61516	7230320			7230320
104M09A009	3.71368	Completed in 1st year		Completed in 1st year						0
104M09A043	3.75727	Completed in 1st year		1.25727	2765994					2765994
104M09A005	3.50887	Completed in 1st year		3.50887	7719514					7719514
104M09A025	5.09469	Completed in 1st year		2.547345	5604159					5604159
104M09A014	4.39493	Completed in 1st year								0
104M09A040	3.36074	3.36074	84018.5							84018.5
104M09A010	5.9596	5.9596	148990							148990
104M09A007	1.55162	1.55162	38790.5							38790.5
104M09A015	4.62752	4.62752	115688							115688
104M09A019	1.61547	1.61547	40386.75							40386.75
104M09A008	2.64908	2.64908	66227							66227
104M09A001	2.06051	2.06051	51512.75							51512.75
104M09A041	2.98801	2.98801	74700.25							74700.25
104M09A045	2.177	2.177	54425							54425
104M09A046	5.41423	5.41423	135355.75							135355.75

104M09A004	0.909213	0.909213	22730.325							22730.325
104M09A039	1.05924	1.05924	26481							26481
104M09A022	1.45417	1.45417	36354.25							36354.25
104M09A002	3.0663	3.0663	76657.5							76657.5
104M09A013	2.19673	2.19673	54918.25							54918.25
104M09A016	1.55921	1.55921	38980.25							38980.25
104M09A023	1.75978	1.75978	43994.5							43994.5
104M09A032	0.920898	0.920898	23022.45							23022.45
104M09A012	2.15699									0
104M09A029	0.869487									0
104M09A017	0.822874									0
104M09A044	1.30522									0
104M09A037	0.658308									0
104M09A024	1.07579									0
Total										24453220.03

Details of implementation plan

Implementation plan for construction of class A roads

3rd year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09A036	3.61516	Completed in 1st year		Completed in 1st year		Completed in 2nd year				0
104M09A009	3.71368	Completed in 1st year		Completed in 1st year						0
104M09A043	3.75727	Completed in 1st year		Completed in 2nd year						0
104M09A005	3.50887	Completed in 1st year		Completed in 2nd year						0
104M09A025	5.09469	Completed in 1st year		2.547345	5604159					5604159
104M09A014	4.39493	Completed in 1st year		4.39493	9668846					9668846
104M09A040	3.36074	Completed in 2nd year		3.36074	7393628					7393628
104M09A010	5.9596	Completed in 2nd year		1.9596	4311120					4311120
104M09A007	1.55162	Completed in 2nd year								0
104M09A015	4.62752	Completed in 2nd year								0
104M09A019	1.61547	Completed in 2nd year								0
104M09A008	2.64908	Completed in 2nd year								0
104M09A001	2.06051	Completed in 2nd year								0
104M09A041	2.98801	Completed in 2nd year								0
104M09A045	2.177	Completed in 2nd year								0
104M09A046	5.41423	Completed in 2nd year								0
104M09A004	0.909213	Completed in 2nd year								0
104M09A039	1.05924	Completed in 2nd year								0
104M09A022	1.45417	Completed in 2nd year								0

104M09A002	3.0663	Completed in 2nd year								0
104M09A013	2.19673	Completed in 2nd year								0
104M09A016	1.55921	Completed in 2nd year								0
104M09A023	1.75978	Completed in 2nd year								0
104M09A032	0.920898	Completed in 2nd year								0
104M09A012	2.15699									0
104M09A029	0.869487									0
104M09A017	0.822874									0
104M09A044	1.30522									0
104M09A037	0.658308									0
104M09A024	1.07579									0
Total										26977753

Details of implementation plan

Implementation plan for construction of class A roads

4th year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09A036	3.61516	Completed in 1st year		Completed in 1st year		Completed in 2nd year		3.61516	20606412	20606412
104M09A009	3.71368	Completed in 1st year		Completed in 1st year						0
104M09A043	3.75727	Completed in 1st year		Completed in 2nd year						0
104M09A005	3.50887	Completed in 1st year		Completed in 2nd year						0
104M09A025	5.09469	Completed in 1st year		Completed in 3rd year						0
104M09A014	4.39493	Completed in 1st year		Completed in 3rd year						0
104M09A040	3.36074	Completed in 2nd year		Completed in 3rd year						0
104M09A010	5.9596	Completed in 2nd year		4	8800000					8800000
104M09A007	1.55162	Completed in 2nd year								0
104M09A015	4.62752	Completed in 2nd year								0
104M09A019	1.61547	Completed in 2nd year								0
104M09A008	2.64908	Completed in 2nd year								0
104M09A001	2.06051	Completed in 2nd year								0
104M09A041	2.98801	Completed in 2nd year								0
104M09A045	2.177	Completed in 2nd year								0
104M09A046	5.41423	Completed in 2nd year								0
104M09A004	0.909213	Completed in 2nd year								0
104M09A039	1.05924	Completed in 2nd year								0
104M09A022	1.45417	Completed in 2nd year								0
104M09A002	3.0663	Completed in 2nd year								0
104M09A013	2.19673	Completed in 2nd year								0

104M09A016	1.55921	Completed in 2nd year								0
104M09A023	1.75978	Completed in 2nd year								0
104M09A032	0.920898	Completed in 2nd year								0
104M09A012	2.15699	2.15699	53924.75							53924.75
104M09A029	0.869487	0.869487	21737.175							21737.175
104M09A017	0.822874	0.822874	20571.85							20571.85
104M09A044	1.30522	1.30522	32630.5							32630.5
104M09A037	0.658308	0.658308	16457.7							16457.7
104M09A024	1.07579	1.07579	26894.75							26894.75
Total										29578628.73

Details of implementation plan

Implementation plan for construction of class A roads

5th year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09A036	3.61516	Completed in 1st year		Completed in 1st year		Completed in 2nd year		Completed in 4th year		0
104M09A009	3.71368	Completed in 1st year		Completed in 1st year		3.71368	7427360			7427360
104M09A043	3.75727	Completed in 1st year		Completed in 2nd year		3.75727	7514540			7514540
104M09A005	3.50887	Completed in 1st year		Completed in 2nd year		2.015	4030000			4030000
104M09A025	5.09469	Completed in 1st year		Completed in 3rd year						0
104M09A014	4.39493	Completed in 1st year		Completed in 3rd year						0
104M09A040	3.36074	Completed in 2nd year		Completed in 3rd year						0
104M09A010	5.9596	Completed in 2nd year		Completed in 4th year						0
104M09A007	1.55162	Completed in 2nd year		1.55162	3413564					3413564
104M09A015	4.62752	Completed in 2nd year		4.62752	10180544					10180544
104M09A019	1.61547	Completed in 2nd year								0
104M09A008	2.64908	Completed in 2nd year								0
104M09A001	2.06051	Completed in 2nd year								0
104M09A041	2.98801	Completed in 2nd year								0
104M09A045	2.177	Completed in 2nd year								0
104M09A046	5.41423	Completed in 2nd year								0
104M09A004	0.909213	Completed in 2nd year								0
104M09A039	1.05924	Completed in 2nd year								0
104M09A022	1.45417	Completed in 2nd year								0
104M09A002	3.0663	Completed in 2nd year								0
104M09A013	2.19673	Completed in 2nd year								0
104M09A016	1.55921	Completed in 2nd year								0
104M09A023	1.75978	Completed in 2nd year								0
104M09A032	0.920898	Completed in 2nd year								0

104M09A012	2.15699	Completed in 4th year								0
104M09A029	0.869487	Completed in 4th year								0
104M09A017	0.822874	Completed in 4th year								0
104M09A044	1.30522	Completed in 4th year								0
104M09A037	0.658308	Completed in 4th year								0
104M09A024	1.07579	Completed in 4th year								0
Total										32566008

Details of implementation plan

Implementation plan for construction of class B roads

1st year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09B001	4.67952	4.67952	116988	4.67952	10294944					10411932
104M09B036	9.37347	9.37347	234336.75	2.5	5500000					5734336.75
104M09B018	5.36585	5.36585	134146.25							134146.25
104M09B010	2.76653	2.76653	69163.25							69163.25
104M09B017	0.332186	0.332186	8304.65							8304.65
104M09B040	2.00441	2.00441	50110.25							50110.25
104M09B033	2.86884	2.86884	71721							71721
104M09B043	1.99221	1.99221	49805.25							49805.25
104M09B014	0.387178	0.387178	9679.45							9679.45
104M09B037	5.17727	5.17727	129431.75							129431.75
104M09B011	3.88826									0
104M09B032	2.80351									0
104M09B042	0.922661									0
104M09B002	3.85349									0
104M09B007	0.375388									0
104M09B038	2.7952									0
104M09B012	3.09585									0
104M09B008	0.513571									0
104M09B016	0.282212									0
104M09B004	1.3764									0
104M09B015	0.271776									0
104M09B024	1.46706									0
104M09B044	0.555031									0
104M09B009	1.65017									0
104M09B027	1.45255									0

Total										16668630.6

Details of implementation plan

Implementation plan for construction of class B roads

2nd year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09B001	4.67952	Completed in 1st year		Completed in 1st year						0
104M09B036	9.37347	Completed in 1st year		4.686735	10310817					10310817
104M09B018	5.36585	Completed in 1st year		2.682925	5902435					5902435
104M09B010	2.76653	Completed in 1st year		1	2200000					2200000
104M09B017	0.332186	Completed in 1st year								0
104M09B040	2.00441	Completed in 1st year								0
104M09B033	2.86884	Completed in 1st year								0
104M09B043	1.99221	Completed in 1st year								0
104M09B014	0.387178	Completed in 1st year								0
104M09B037	5.17727	Completed in 1st year								0
104M09B011	3.88826									0
104M09B032	2.80351									0
104M09B042	0.922661									0
104M09B002	3.85349									0
104M09B007	0.375388									0
104M09B038	2.7952									0
104M09B012	3.09585									0
104M09B008	0.513571									0
104M09B016	0.282212									0
104M09B004	1.3764									0
104M09B015	0.271776									0
104M09B024	1.46706									0
104M09B044	0.555031									0
104M09B009	1.65017									0
104M09B027	1.45255									0
Total										18413252

Details of implementation plan

Implementation plan for construction of class B roads

3rd year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09B001	4.67952	Completed in 1st year		Completed in 1st year						0
104M09B036	9.37347	Completed in 1st year		Completed in 2nd year						0
104M09B018	5.36585	Completed in 1st year		Completed in 2nd year						0
104M09B010	2.76653	Completed in 1st year		1.76653	3886366					3886366
104M09B017	0.332186	Completed in 1st year		0.332186	730809.2					730809.2
104M09B040	2.00441	Completed in 1st year		2.00441	4409702					4409702
104M09B033	2.86884	Completed in 1st year		2.86884	6311448					6311448
104M09B043	1.99221	Completed in 1st year		1.99221	4382862					4382862
104M09B014	0.387178	Completed in 1st year								0
104M09B037	5.17727	Completed in 1st year								0
104M09B011	3.88826	3.88826	97206.5							97206.5
104M09B032	2.80351	2.80351	70087.75							70087.75
104M09B042	0.922661	0.922661	23066.525							23066.525
104M09B002	3.85349	3.85349	96337.25							96337.25
104M09B007	0.375388	0.375388	9384.7							9384.7
104M09B038	2.7952	2.7952	69880							69880
104M09B012	3.09585									0
104M09B008	0.513571									0
104M09B016	0.282212									0
104M09B004	1.3764									0
104M09B015	0.271776									0
104M09B024	1.46706									0
104M09B044	0.555031									0
104M09B009	1.65017									0
104M09B027	1.45255									0
Total										20087149.93

Details of implementation plan

Implementation plan for construction of class B roads

4th year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09B001	4.67952	Completed in 1st year		Completed in 1st year		4.67952	9359040			9359040
104M09B036	9.37347	Completed in 1st year		Completed in 2nd year		4.686735	9373470			9373470
104M09B018	5.36585	Completed in 1st year		Completed in 2nd year						0
104M09B010	2.76653	Completed in 1st year		Completed in 3rd year						0
104M09B017	0.332186	Completed in 1st year		Completed in 3rd year						0
104M09B040	2.00441	Completed in 1st year		Completed in 3rd year						0
104M09B033	2.86884	Completed in 1st year		Completed in 3rd year						0
104M09B043	1.99221	Completed in 1st year		Completed in 3rd year						0
104M09B014	0.387178	Completed in 1st year		0.387178	851791.6					851791.6
104M09B037	5.17727	Completed in 1st year		1.2943175	2847498.5					2847498.5
104M09B011	3.88826	Completed in 3rd year								0
104M09B032	2.80351	Completed in 3rd year								0
104M09B042	0.922661	Completed in 3rd year								0
104M09B002	3.85349	Completed in 3rd year								0
104M09B007	0.375388	Completed in 3rd year								0
104M09B038	2.7952	Completed in 3rd year								0
104M09B012	3.09585									0
104M09B008	0.513571									0
104M09B016	0.282212									0
104M09B004	1.3764									0
104M09B015	0.271776									0
104M09B024	1.46706									0
104M09B044	0.555031									0
104M09B009	1.65017									0
104M09B027	1.45255									0
Total										22431800.1

Details of implementation plan

Implementation plan for construction of class B roads

5th year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09B001	4.67952	Completed in 1st year		Completed in 1st year		Completed in 4th year				0
104M09B036	9.37347	Completed in 1st year		Completed in 2nd year		4.686735	9373470			9373470
104M09B018	5.36585	Completed in 1st year		Completed in 2nd year						0
104M09B010	2.76653	Completed in 1st year		Completed in 3rd year						0
104M09B017	0.332186	Completed in 1st year		Completed in 3rd year						0
104M09B040	2.00441	Completed in 1st year		Completed in 3rd year						0
104M09B033	2.86884	Completed in 1st year		Completed in 3rd year						0
104M09B043	1.99221	Completed in 1st year		Completed in 3rd year						0
104M09B014	0.387178	Completed in 1st year		Completed in 4th year						0
104M09B037	5.17727	Completed in 1st year		3.8829525	8542495.5					8542495.5
104M09B011	3.88826	Completed in 3rd year		2.88	6336000					6336000
104M09B032	2.80351	Completed in 3rd year								0
104M09B042	0.922661	Completed in 3rd year								0
104M09B002	3.85349	Completed in 3rd year								0
104M09B007	0.375388	Completed in 3rd year								0
104M09B038	2.7952	Completed in 3rd year								0
104M09B012	3.09585									0
104M09B008	0.513571									0
104M09B016	0.282212									0
104M09B004	1.3764									0
104M09B015	0.271776									0
104M09B024	1.46706									0
104M09B044	0.555031									0
104M09B009	1.65017									0
104M09B027	1.45255									0
Total										24251965.5

Details of implementation plan

Implementation plan for construction of class C roads

1st year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09C045	0.662397	0.662397	16559.925	0.662397	1457273.4					1473833.325
104M09C001	2.27724	2.27724	56931	2.27724	5009928					5066859
104M09C085	1.8828	1.8828	47070	1.8828	4142160					4189230
104M09C068	2.27644	2.27644	56911							56911
104M09C093	0.433019	0.433019	10825.475							10825.475
104M09C019	0.375223	0.375223	9380.575							9380.575
104M09C013	2.59566	2.59566	64891.5							64891.5
104M09C028	1.57639	1.57639	39409.75							39409.75
104M09C053	2.00068	2.00068	50017							50017
104M09C076	0.938565	0.938565	23464.125							23464.125
104M09C031	2.34046	2.34046	58511.5							58511.5
104M09C033	1.88783	1.88783	47195.75							47195.75
104M09C067	1.56712	1.56712	39178							39178
104M09C009	1.56034									0
104M09C090	0.740264									0
104M09C011	1.01267									0
104M09C060	1.3999									0
104M09C049	0.259981									0
104M09C038	0.474744									0
104M09C037	0.325617									0
104M09C032	1.83811									0
104M09C080	0.314275									0
104M09C083	1.61409									0
104M09C014	2.03507									0
104M09C042	0.229731									0
104M09C091	0.651286									0
104M09C047	0.190819									0
104M09C040	0.893122									0
104M09C020	0.120823									0
104M09C018	0.588475									0
104M09C044	0.081211									0
104M09C054	0.920003									0
104M09C058	0.5175									0
104M09C008	1.21613									0

104M09C021	0.4302									0
104M09C041	0.231933									0
104M09C069	1.35752									0
104M09C074	0.552482									0
104M09C006	3.37826									0
104M09C003	1.36968									0
Total										11129707

Details of implementation plan

Implementation plan for construction of class C roads

2nd year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09C045	0.662397	Completed in 1st year		Completed in 1st year						0
104M09C001	2.27724	Completed in 1st year		Completed in 1st year						0
104M09C085	1.8828	Completed in 1st year		Completed in 1st year						0
104M09C068	2.27644	Completed in 1st year		2.27644	5008168					5008168
104M09C093	0.433019	Completed in 1st year		0.433019	952641.8					952641.8
104M09C019	0.375223	Completed in 1st year		0.375223	825490.6					825490.6
104M09C013	2.59566	Completed in 1st year		2.59566	5710452					5710452
104M09C028	1.57639	Completed in 1st year								0
104M09C053	2.00068	Completed in 1st year								0
104M09C076	0.938565	Completed in 1st year								0
104M09C031	2.34046	Completed in 1st year								0
104M09C033	1.88783	Completed in 1st year								0
104M09C067	1.56712	Completed in 1st year								0
104M09C009	1.56034									0
104M09C090	0.740264									0
104M09C011	1.01267									0
104M09C060	1.3999									0
104M09C049	0.259981									0
104M09C038	0.474744									0
104M09C037	0.325617									0
104M09C032	1.83811									0
104M09C080	0.314275									0
104M09C083	1.61409									0
104M09C014	2.03507									0
104M09C042	0.229731									0
104M09C091	0.651286									0
104M09C047	0.190819									0
104M09C040	0.893122									0

104M09C020	0.120823									0
104M09C018	0.588475									0
104M09C044	0.081211									0
104M09C054	0.920003									0
104M09C058	0.5175									0
104M09C008	1.21613									0
104M09C021	0.4302									0
104M09C041	0.231933									0
104M09C069	1.35752									0
104M09C074	0.552482									0
104M09C006	3.37826									0
104M09C003	1.36968									0
Total										12496752.4

Details of implementation plan

Implementation plan for construction of class C roads

3rd year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09C045	0.662397	Completed in 1st year		Completed in 1st year						0
104M09C001	2.27724	Completed in 1st year		Completed in 1st year						0
104M09C085	1.8828	Completed in 1st year		Completed in 1st year						0
104M09C068	2.27644	Completed in 1st year		Completed in 2nd year						0
104M09C093	0.433019	Completed in 1st year		Completed in 2nd year						0
104M09C019	0.375223	Completed in 1st year		Completed in 2nd year						0
104M09C013	2.59566	Completed in 1st year		Completed in 2nd year						0
104M09C028	1.57639	Completed in 1st year		1.57639	3468058					3468058
104M09C053	2.00068	Completed in 1st year		2.00068	4401496					4401496
104M09C076	0.938565	Completed in 1st year		0.938565	2064843					2064843
104M09C031	2.34046	Completed in 1st year		1.5	3300000					3300000
104M09C033	1.88783	Completed in 1st year								0
104M09C067	1.56712	Completed in 1st year								0
104M09C009	1.56034									0
104M09C090	0.740264									0
104M09C011	1.01267									0
104M09C060	1.3999									0
104M09C049	0.259981									0
104M09C038	0.474744									0
104M09C037	0.325617									0
104M09C032	1.83811									0

104M09C080	0.314275									0
104M09C083	1.61409									0
104M09C014	2.03507									0
104M09C042	0.229731									0
104M09C091	0.651286									0
104M09C047	0.190819									0
104M09C040	0.893122									0
104M09C020	0.120823									0
104M09C018	0.588475									0
104M09C044	0.081211									0
104M09C054	0.920003									0
104M09C058	0.5175									0
104M09C008	1.21613									0
104M09C021	0.4302									0
104M09C041	0.231933									0
104M09C069	1.35752									0
104M09C074	0.552482									0
104M09C006	3.37826									0
104M09C003	1.36968									0
Total										13234397

Details of implementation plan

Implementation plan for construction of class C roads

4th year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09C045	0.662397	Completed in 1st year		Completed in 1st year						0
104M09C001	2.27724	Completed in 1st year		Completed in 1st year						0
104M09C085	1.8828	Completed in 1st year		Completed in 1st year						0
104M09C068	2.27644	Completed in 1st year		Completed in 2nd year						0
104M09C093	0.433019	Completed in 1st year		Completed in 2nd year						0
104M09C019	0.375223	Completed in 1st year		Completed in 2nd year						0
104M09C013	2.59566	Completed in 1st year		Completed in 2nd year						0
104M09C028	1.57639	Completed in 1st year		Completed in 3rd year						0
104M09C053	2.00068	Completed in 1st year		Completed in 3rd year						0
104M09C076	0.938565	Completed in 1st year		Completed in 3rd year						0
104M09C031	2.34046	Completed in 1st year		0.84046	1849012					1849012
104M09C033	1.88783	Completed in 1st year		1.88783	4153226					4153226
104M09C067	1.56712	Completed in 1st year		1.56712	3447664					3447664
104M09C009	1.56034	1.56034	39008.5	1.56034	3432748					3471756.5
104M09C090	0.740264	0.740264	18506.6	0.740264	1628580.8					1647087.4

104M09C011	1.01267	1.01267	25316.75							25316.75
104M09C060	1.3999	1.3999	34997.5							34997.5
104M09C049	0.259981	0.259981	6499.525							6499.525
104M09C038	0.474744	0.474744	11868.6							11868.6
104M09C037	0.325617	0.325617	8140.425							8140.425
104M09C032	1.83811	1.83811	45952.75							45952.75
104M09C080	0.314275	0.314275	7856.875							7856.875
104M09C083	1.61409	1.61409	40352.25							40352.25
104M09C014	2.03507	2.03507	50876.75							50876.75
104M09C042	0.229731									0
104M09C091	0.651286									0
104M09C047	0.190819									0
104M09C040	0.893122									0
104M09C020	0.120823									0
104M09C018	0.588475									0
104M09C044	0.081211									0
104M09C054	0.920003									0
104M09C058	0.5175									0
104M09C008	1.21613									0
104M09C021	0.4302									0
104M09C041	0.231933									0
104M09C069	1.35752									0
104M09C074	0.552482									0
104M09C006	3.37826									0
104M09C003	1.36968									0
Total										14800607.33

Details of implementation plan

Implementation plan for construction of class C roads

5th year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09C045	0.662397	Completed in 1st year		Completed in 1st year						0
104M09C001	2.27724	Completed in 1st year		Completed in 1st year						0
104M09C085	1.8828	Completed in 1st year		Completed in 1st year						0
104M09C068	2.27644	Completed in 1st year		Completed in 2nd year						0
104M09C093	0.433019	Completed in 1st year		Completed in 2nd year						0
104M09C019	0.375223	Completed in 1st year		Completed in 2nd year						0
104M09C013	2.59566	Completed in 1st year		Completed in 2nd year						0
104M09C028	1.57639	Completed in 1st year		Completed in 3rd year						0

104M09C053	2.00068	Completed in 1st year		Completed in 3rd year						0
104M09C076	0.938565	Completed in 1st year		Completed in 3rd year						0
104M09C031	2.34046	Completed in 1st year		Completed in 4th year						0
104M09C033	1.88783	Completed in 1st year		Completed in 4th year						0
104M09C067	1.56712	Completed in 1st year		Completed in 4th year						0
104M09C009	1.56034	Completed in 4th year		Completed in 4th year						0
104M09C090	0.740264	Completed in 4th year		Completed in 4th year						0
104M09C011	1.01267	Completed in 4th year		1.01267	2227874					2227874
104M09C060	1.3999	Completed in 4th year		1.3999	3079780					3079780
104M09C049	0.259981	Completed in 4th year		0.259981	571958.2					571958.2
104M09C038	0.474744	Completed in 4th year		0.474744	1044436.8					1044436.8
104M09C037	0.325617	Completed in 4th year		0.325617	716357.4					716357.4
104M09C032	1.83811	Completed in 4th year		1.83811	4043842					4043842
104M09C080	0.314275	Completed in 4th year		0.314275	691405					691405
104M09C083	1.61409	Completed in 4th year		1.61409	3550998					3550998
104M09C014	2.03507	Completed in 4th year								0
104M09C042	0.229731	0.229731	5743.275							5743.275
104M09C091	0.651286	0.651286	16282.15							16282.15
104M09C047	0.190819	0.190819	4770.475							4770.475
104M09C040	0.893122	0.893122	22328.05							22328.05
104M09C020	0.120823	0.120823	3020.575							3020.575
104M09C018	0.588475	0.588475	14711.875							14711.875
104M09C044	0.081211	0.081211	2030.275							2030.275
104M09C054	0.920003	0.920003	23000.075							23000.075
104M09C058	0.5175	0.5175	12937.5							12937.5
104M09C008	1.21613	1.21613	30403.25							30403.25
104M09C021	0.4302	0.4302	10755							10755
104M09C041	0.231933	0.231933	5798.325							5798.325
104M09C069	1.35752	1.35752	33938							33938
104M09C074	0.552482	0.552482	13812.05							13812.05
104M09C006	3.37826	3.37826	84456.5							84456.5
104M09C003	1.36968	1.36968	34242							34242
Total										16244880.78

Details of implementation plan

Implementation plan for construction of class D roads

1st year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09D059	1.52664	1.52664	38166	1.52664	3358608					3396774
104M09D003	1.6549	1.6549	41372.5	0.82745	1820390					1861762.5
104M09D068	0.398398	0.398398	9959.95							9959.95
104M09D002	0.179477	0.179477	4486.925							4486.925
104M09D037	0.540027	0.540027	13500.675							13500.675
104M09D074	1.01067	1.01067	25266.75							25266.75
104M09D092	1.4288	1.4288	35720							35720
104M09D064	0.53423	0.53423	13355.75							13355.75
104M09D073	0.685724	0.685724	17143.1							17143.1
104M09D072	0.394178	0.394178	9854.45							9854.45
104M09D062	0.397475	0.397475	9936.875							9936.875
104M09D084	0.3524	0.3524	8810							8810
104M09D025	0.227288	0.227288	5682.2							5682.2
104M09D020	0.572369	0.572369	14309.225							14309.225
104M09D032	0.47206	0.47206	11801.5							11801.5
104M09D093	1.3491	1.3491	33727.5							33727.5
104M09D091	0.993002	0.993002	24825.05							24825.05
104M09D095	1.22267	1.22267	30566.75							30566.75
104M09D011	0.802768	0.802768	20069.2							20069.2
104M09D022	0.350227	0.350227	8755.675							8755.675
104M09D001	0.40313									0
104M09D055	0.629535									0
104M09D057	0.890807									0
104M09D065	0.58483									0
104M09D066	0.212145									0
104M09D013	0.382996									0
104M09D089	0.687138									0
104M09D085	1.06609									0
104M09D078	0.34651									0
104M09D063	0.317322									0
104M09D069	0.426889									0
104M09D008	1.43479									0
104M09D071	1.50487									0
104M09D031	0.890459									0
104M09D021	0.569761									0
104M09D019	0.408083									0

104M09D036	0.373829									0
104M09D017	0.174745									0
104M09D087	1.25856									0
104M09D028	0.596881									0
104M09D042	0.763558									0
104M09D056	0.40298									0
104M09D027	0.803337									0
104M09D047	0.335769									0
104M09D067	1.12416									0
Total										5556308.075

Details of implementation plan

Implementation plan for construction of class D roads

2nd year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09D059	1.52664	Completed in 1st year		Completed in 1st year						0
104M09D003	1.6549	Completed in 1st year		Completed in 1st year						0
104M09D068	0.398398	Completed in 1st year		0.398398	876475.6					876475.6
104M09D002	0.179477	Completed in 1st year		0.179477	394849.4					394849.4
104M09D037	0.540027	Completed in 1st year		0.540027	1188059.4					1188059.4
104M09D074	1.01067	Completed in 1st year		1.01067	2223474					2223474
104M09D092	1.4288	Completed in 1st year		0.7144	1571680					1571680
104M09D064	0.53423	Completed in 1st year								0
104M09D073	0.685724	Completed in 1st year								0
104M09D072	0.394178	Completed in 1st year								0
104M09D062	0.397475	Completed in 1st year								0
104M09D084	0.3524	Completed in 1st year								0
104M09D025	0.227288	Completed in 1st year								0
104M09D020	0.572369	Completed in 1st year								0
104M09D032	0.47206	Completed in 1st year								0
104M09D093	1.3491	Completed in 1st year								0
104M09D091	0.993002	Completed in 1st year								0
104M09D095	1.22267	Completed in 1st year								0
104M09D011	0.802768	Completed in 1st year								0
104M09D022	0.350227	Completed in 1st year								0
104M09D001	0.40313									0
104M09D055	0.629535									0
104M09D057	0.890807									0
104M09D065	0.58483									0

104M09D066	0.212145									0
104M09D013	0.382996									0
104M09D089	0.687138									0
104M09D085	1.06609									0
104M09D078	0.34651									0
104M09D063	0.317322									0
104M09D069	0.426889									0
104M09D008	1.43479									0
104M09D071	1.50487									0
104M09D031	0.890459									0
104M09D021	0.569761									0
104M09D019	0.408083									0
104M09D036	0.373829									0
104M09D017	0.174745									0
104M09D087	1.25856									0
104M09D028	0.596881									0
104M09D042	0.763558									0
104M09D056	0.40298									0
104M09D027	0.803337									0
104M09D047	0.335769									0
104M09D067	1.12416									0
Total										6254538.4

Details of implementation plan

Implementation plan for construction of class D roads

3rd year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09D059	1.52664	Completed in 1st year		Completed in 1st year						0
104M09D003	1.6549	Completed in 1st year		Completed in 1st year						0
104M09D068	0.398398	Completed in 1st year		Completed in 2nd year						0
104M09D002	0.179477	Completed in 1st year		Completed in 2nd year						0
104M09D037	0.540027	Completed in 1st year		Completed in 2nd year						0
104M09D074	1.01067	Completed in 1st year		Completed in 2nd year						0
104M09D092	1.4288	Completed in 1st year		0.7144	1571680					1571680
104M09D064	0.53423	Completed in 1st year		0.53423	1175306					1175306
104M09D073	0.685724	Completed in 1st year		0.685724	1508592.8					1508592.8
104M09D072	0.394178	Completed in 1st year		0.394178	867191.6					867191.6
104M09D062	0.397475	Completed in 1st year		0.397475	874445					874445
104M09D084	0.3524	Completed in 1st year		0.3	660000					660000
104M09D025	0.227288	Completed in 1st year								0

104M09D020	0.572369	Completed in 1st year								0
104M09D032	0.47206	Completed in 1st year								0
104M09D093	1.3491	Completed in 1st year								0
104M09D091	0.993002	Completed in 1st year								0
104M09D095	1.22267	Completed in 1st year								0
104M09D011	0.802768	Completed in 1st year								0
104M09D022	0.350227	Completed in 1st year								0
104M09D001	0.40313									0
104M09D055	0.629535									0
104M09D057	0.890807									0
104M09D065	0.58483									0
104M09D066	0.212145									0
104M09D013	0.382996									0
104M09D089	0.687138									0
104M09D085	1.06609									0
104M09D078	0.34651									0
104M09D063	0.317322									0
104M09D069	0.426889									0
104M09D008	1.43479									0
104M09D071	1.50487									0
104M09D031	0.890459									0
104M09D021	0.569761									0
104M09D019	0.408083									0
104M09D036	0.373829									0
104M09D017	0.174745									0
104M09D087	1.25856									0
104M09D028	0.596881									0
104M09D042	0.763558									0
104M09D056	0.40298									0
104M09D027	0.803337									0
104M09D047	0.335769									0
104M09D067	1.12416									0
Total										6657215.4

Details of implementation plan

Implementation plan for construction of class D roads

4th year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09D059	1.52664	Completed in 1st year		Completed in 1st year						0
104M09D003	1.6549	Completed in 1st year		Completed in 1st year						0
104M09D068	0.398398	Completed in 1st year		Completed in 2nd year						0
104M09D002	0.179477	Completed in 1st year		Completed in 2nd year						0
104M09D037	0.540027	Completed in 1st year		Completed in 2nd year						0
104M09D074	1.01067	Completed in 1st year		Completed in 2nd year						0
104M09D092	1.4288	Completed in 1st year		Completed in 3rd year						0
104M09D064	0.53423	Completed in 1st year		Completed in 3rd year						0
104M09D073	0.685724	Completed in 1st year		Completed in 3rd year						0
104M09D072	0.394178	Completed in 1st year		Completed in 3rd year						0
104M09D062	0.397475	Completed in 1st year		Completed in 3rd year						0
104M09D084	0.3524	Completed in 1st year		0.0524	115280					115280
104M09D025	0.227288	Completed in 1st year		0.227288	500033.6					500033.6
104M09D020	0.572369	Completed in 1st year		0.572369	1259211.8					1259211.8
104M09D032	0.47206	Completed in 1st year		0.47206	1038532					1038532
104M09D093	1.3491	Completed in 1st year		1.3491	2968020					2968020
104M09D091	0.993002	Completed in 1st year		0.496501	1092302.2					1092302.2
104M09D095	1.22267	Completed in 1st year								0
104M09D011	0.802768	Completed in 1st year								0
104M09D022	0.350227	Completed in 1st year								0
104M09D001	0.40313	0.40313	10078.25							10078.25
104M09D055	0.629535	0.629535	15738.375							15738.375
104M09D057	0.890807	0.890807	22270.175							22270.175
104M09D065	0.58483	0.58483	14620.75							14620.75
104M09D066	0.212145	0.212145	5303.625							5303.625
104M09D013	0.382996	0.382996	9574.9							9574.9
104M09D089	0.687138	0.687138	17178.45							17178.45
104M09D085	1.06609	1.06609	26652.25							26652.25
104M09D078	0.34651	0.34651	8662.75							8662.75
104M09D063	0.317322	0.317322	7933.05							7933.05
104M09D069	0.426889	0.426889	10672.225							10672.225
104M09D008	1.43479	1.43479	35869.75							35869.75
104M09D071	1.50487	1.50487	37621.75							37621.75
104M09D031	0.890459	0.890459	22261.475							22261.475
104M09D021	0.569761	0.569761	14244.025							14244.025
104M09D019	0.408083	0.408083	10202.075							10202.075

104M09D036	0.373829	0.373829	9345.725							9345.725
104M09D017	0.174745	0.174745	4368.625							4368.625
104M09D087	1.25856	1.25856	31464							31464
104M09D028	0.596881	0.596881	14922.025							14922.025
104M09D042	0.763558	0.763558	19088.95							19088.95
104M09D056	0.40298	0.40298	10074.5							10074.5
104M09D027	0.803337									0
104M09D047	0.335769									0
104M09D067	1.12416									0
Total										7331527.3

Details of implementation plan

Implementation plan for construction of class D roads

5th year

Road Code	Total Length (km)	Type of intervention								Total Cost
		Widening		Gravelling		Side Drain		Blacktopping		
		Length	Cost	Length	Cost	Length	Cost	Length	Cost	
104M09D059	1.52664	Completed in 1st year		Completed in 1st year						0
104M09D003	1.6549	Completed in 1st year		Completed in 1st year						0
104M09D068	0.398398	Completed in 1st year		Completed in 2nd year						0
104M09D002	0.179477	Completed in 1st year		Completed in 2nd year						0
104M09D037	0.540027	Completed in 1st year		Completed in 2nd year						0
104M09D074	1.01067	Completed in 1st year		Completed in 2nd year						0
104M09D092	1.4288	Completed in 1st year		Completed in 3rd year						0
104M09D064	0.53423	Completed in 1st year		Completed in 3rd year						0
104M09D073	0.685724	Completed in 1st year		Completed in 3rd year						0
104M09D072	0.394178	Completed in 1st year		Completed in 3rd year						0
104M09D062	0.397475	Completed in 1st year		Completed in 3rd year						0
104M09D084	0.3524	Completed in 1st year		Completed in 4th year						0
104M09D025	0.227288	Completed in 1st year		Completed in 4th year						0
104M09D020	0.572369	Completed in 1st year		Completed in 4th year						0
104M09D032	0.47206	Completed in 1st year		Completed in 4th year						0
104M09D093	1.3491	Completed in 1st year		Completed in 4th year						0
104M09D091	0.993002	Completed in 1st year		0.496501	1092302.2					1092302.2
104M09D095	1.22267	Completed in 1st year		1.22267	2689874					2689874
104M09D011	0.802768	Completed in 1st year		0.802768	1766089.6					1766089.6
104M09D022	0.350227	Completed in 1st year		0.350227	770499.4					770499.4
104M09D001	0.40313	Completed in 4th year		0.40313	886886					886886
104M09D055	0.629535	Completed in 4th year		0.4	880000					880000
104M09D057	0.890807	Completed in 4th year								0
104M09D065	0.58483	Completed in 4th year								0
104M09D066	0.212145	Completed in 4th year								0

104M09D013	0.382996	Completed in 4th year								0
104M09D089	0.687138	Completed in 4th year								0
104M09D085	1.06609	Completed in 4th year								0
104M09D078	0.34651	Completed in 4th year								0
104M09D063	0.317322	Completed in 4th year								0
104M09D069	0.426889	Completed in 4th year								0
104M09D008	1.43479	Completed in 4th year								0
104M09D071	1.50487	Completed in 4th year								0
104M09D031	0.890459	Completed in 4th year								0
104M09D021	0.569761	Completed in 4th year								0
104M09D019	0.408083	Completed in 4th year								0
104M09D036	0.373829	Completed in 4th year								0
104M09D017	0.174745	Completed in 4th year								0
104M09D087	1.25856	Completed in 4th year								0
104M09D028	0.596881	Completed in 4th year								0
104M09D042	0.763558	Completed in 4th year								0
104M09D056	0.40298	Completed in 4th year								0
104M09D027	0.803337	0.803337	20083.425							20083.425
104M09D047	0.335769	0.335769	8394.225							8394.225
104M09D067	1.12416	1.12416	28104							28104
Total										8142232.85