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Department of Local Infrastructure Development and Agricultural Roads (DoLIDAR)  
Rural Access Improvement and Decentralization Project (RAIDP)  
Project Coordination Unit (PCU)  
Jawalakhel, Lalitpur

## Final Report



## Preparation of DISTRICT TRANSPORT MASTER PLAN (DTMP) (Siraha District)

(Contract No: RAIDP/10/DTMP/066-67)

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**North Star Engineering  
Consultant (P) Ltd.**  
P. O. Box 3522, Chakupat, Lalitpur  
Tel: 52 60 835  
Fax: ++977-1-52 60 834  
E-mail: [nsec.consultant@gmail.com](mailto:nsec.consultant@gmail.com)



**ITECO Nepal (P) Ltd.**  
Min Bhawan, New Baneshwor  
P. O. Box 2147, Kathmandu  
Tel: 4621764 (Hunting Line)  
Fax: ++977-1-44 82 298  
Email : [iteco@mos.com.np](mailto:iteco@mos.com.np)

**Fuji Int'l Design  
Associates (FIDA)**  
New Baneshwor  
P. O. Box 8975, Kathmandu  
Tel: 01-4781863  
Fax: ++977-1-4781378  
E-mail: [krity@ntc.net.np](mailto:krity@ntc.net.np)

## **Foreword**

It is my great pleasure to introduce this District transport Master Plan (DTMP) of Siraha District. I believe that this DTMP will be very helpful in providing single approach on sustainable planning, resource mobilization, implementation and monitoring for the development of rural road sub-sector. Transport facilities help in developing access of rural urban linkages also. Road accessibility can reduce isolation, stimulate crop production and marketing activities, encourage public services and help technology transfer. Road building has been seen to bring about notable enthusiasm and visible changes in rural life. Thus, this document is expected to generate substantial opportunities for the employment of rural people through the commercialization, industrialization and diversification of traditional agricultural system of the rural area.

For the rational and effective use of available resource of DDC, development of rural road sector in planned and sustainable way is the most crucial requirement. Viewing these aspects, the DTMP of Siraha District which comprises the existing and proposed rural roads network with their prioritization for new construction, rehabilitation and periodic maintenance will of course be a strong guideline for the ultimate development of the District. This document is also assumed to be helpful in drawing the attention of the donor agencies. It will also be justifiable for the central government to allocate adequate resources for transport sector development of the district. Furthermore, this document will make the work easy for resource allocation to rural roads by avoiding duplication between the different development agencies.

Last but not least, I would like to express my heartfelt gratitude to RAIDP, DoLIDAR for the endeavour of updating/preparing this DTMP. I would also like express my gratitude to all experts whose diligent effort has been clearly reflected in this document.

I would warmly appreciate any creative and positive suggestions regarding this document.

**Bijay Raj Subedi**  
Local Development Officer  
Siraha DDC.

## **Acknowledgement**

The District Transport Master Plan of Siraha District has been prepared for Rural Access Improvement and Decentralization Project (RAIDP), DoLIDAR [ IDA Grant No : H525-NEP & Credit No: 4664 ] under the Contract Agreement between RAIDP and North Star Engineering Consultant (P) Ltd, ITECO Nepal (P) Ltd and FIDA JV. We would like to convey our indebtedness to RAIDP for entrusting us the responsibility to carry out the task of updating / preparing of DTMP of 10 districts of Nepal.

We would like to express our sincere gratitude to the Project Co-ordinator Mr. Raja Karmacharya, Engineer Baikuntha Aryal and Shekhar Pokharel whose valuable co-operation and suggestions guided us to accomplish the agreed task to this level. Account and Administrative personnel of the project are also thankful for their liberal cooperation in the financial and administrative dealings. We would also like to convey our sincere thanks to LDO of Siraha DDC, Mr. Bijay Raj Subedi, DTO Chief Mr. Pashupati Sah Rauniyar, Engineers, Sub-engineers and other staffs of DDC and DTO, Siraha for their extended help and regular support; and coordination at different levels while working at the field level.

The local leaders and local people from Siraha district are also thankful for their help and suggestion for the selection and identification of the roads. We hope, this updated / prepared DTMP of Siraha District will be very helpful and a valuable guideline for the planning and development of effective and systematic transport network in Siraha District.

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**Dhruba Raj Tripathi**  
On behalf of  
**North Star – ITECO – FIDA JV**

## Abbreviations

Agri	:	Agriculture
CEA	:	Cost Efficient Analysis
DADO	:	District Agriculture Development Office
DBUD	:	Department of Building and Urban Development
DDC	:	District Development Committee
DEO	:	District Education Office
DFID	:	Department for International Development (UK)
DIM	:	District Inventory Map
DRILP	:	Decentralized Rural Infrastructure and Livelihood Project
DoLIDAR	:	Department of Local Infrastructure Development and Agriculture Roads
DoR	:	Department of Roads
DTICC	:	District Transport Infrastructure Coordination Committee
DPA	:	Development Potential Area
DRCC	:	District Road Coordination Committee
DTMP	:	District Transport Master Plan
DTO	:	District Technical Office
DTPP	:	District Transport Perspective Plan
DVO	:	District Veterinary Office
GIS	:	Geographical Information System
GoN	:	Government of Nepal
GPS	:	Global Positioning System
Ha	:	Hectare
HH	:	House Hold
IDPM	:	Indicative Development Potential Map
IF	:	Importance Factor
INGO	:	International Non Governmental Organization
Irri	:	Irrigation
ILO	:	International Labour Organization
KM	:	Kilometers
LGCDP	:	Local Governance and Community Development Programme
LEP	:	Labour based, Environment friendly and Participatory
MLD	:	Ministry of Local Development
MP	:	Master Plan
MT	:	Metric Ton
NGO	:	Non Governmental Organization
Nos	:	Numbers
NRs	:	Nepalese Rupees
PCO	:	Public Call Office
P-RRA	:	Participatory Rapid Rural Appraisal
RRA	:	Rural Road Class A
RRB	:	Rural Road Class B
RRC	:	Rural Road Class C
RTI	:	Rural Transport Infrastructure
St	:	Student
SBD	:	Suspension Bridge Division
TBSU	:	Trail Bridge Support Unit
TU	:	Transportation Unit
UR	:	Urban Road
VDC	:	Village Development Committee
VR	:	Village Roads
Yr	:	Year
ZoI	:	Zone of Influence

## Executive Summary

It is obvious that transport is one of the major components to improve access of the people to services and facilities through increased mobility. Increased mobility results in better linkages with the market centres, agricultural production pocket areas and help in generating numerous opportunities in the district. With transport sector interventions and planning based on accessibility considerations, District Transport Master Plan (DTMP) for a district offers long term perspective for the planned development of the rural roads network in the district. Thus, DTMP is being developed in Siraha District including other programmed Districts to support for the probable investments in the development of systematic transport system with appropriate guidelines and criteria for rational decision making process.

Siraha District is located in Sagarmatha Zone of the Eastern Development Region of Nepal. It extends from 86°06' E to 86°26' E east and 26°33' N to 26°55' N north. As per the census of 2001, total population of the district is 572551 comprising of 278499 female and 294052 male clustered in 101492 households with household size of 5.72 and annual population growth rate of 2.0%. Average population density of district is 482 per sq. km.

In order to arrive at the socio-economic profile of various existing and potential market centers, the consultant has studied relevant documents/reports and conducted detailed socio-economic survey through consultation and interaction with program/project personnels and the local people. From such study, a total of 30 existing and potential market centers were identified and considered for present analysis. Based upon the centrality index, each existing market center is graded as 'A', 'B' and 'C' using updated guideline of district transport master plan of DoLIDAR and the potential markets as 'Others'. From such analysis, total number of existing markets centers of grade A, B and C were 4, 6 and 14 respectively and the remaining 6 markets as other potential ones.

All the rural roads network in Siraha district consist of 70 roads comprising a total of nearly 734.25 km. length which are classified as class A, B and VR in accordance with the Interim Guidelines of DTMP prepared by DoLIDAR. From such classification, 14 roads comprising a total length of 253 km. were found under class A, 30 roads comprising a total length of 333.50 km. under class B and the rest 157.75 under VR. Similarly, under pedestrian mobility a total of 2 trail bridges have been recorded within the district. Besides rural road network, this district consists of 109.93 km. of strategic roads, one highway of 43.27 km. length, two feeder roads, 33.66 km. length and one postal / Main district road 33 km long. From these data, it can be regarded that Siraha district is in a relatively better transport situation. However, most of the district roads are earth/gravel surface, mostly in fair weather condition and need to be upgraded. Present study also reveals that accessibility areas can be categorized into accessible and partially accessible VDCs.

After a through study of rural transport network and the related socio-economic and development trend of existing and potential market centers of the district, a total of 33 km. of one district roads of class 'A', 22 km. of 3 district roads of class 'B' are proposed for new construction. Similarly, 131 km. of 14 district roads of class 'A' and 88 km. of 30 district roads of class 'B' are proposed for upgrading/rehabilitation. Furthermore, a total length of 730 km of Class A and 1095 km of Class B roads are proposed for maintenance in the present District Transport Perspective Plan (DTPP).

The first five-year financial plan is prepared on the basis of the present available financial resources and the existing trend of funding from various sources and their projections for the next five years. Total projected financial resource for the first five year is NRs. 730,169,960.00. Sharing of the total financial resource to various interventions of roads and trail bridges is 15 % for new construction, 75 % for upgrading/rehabilitation and 10 % for maintenance.

Based upon the prioritized transport linkages and the projected financial plan, first five year District Transport Master Plan (DTMP) indicating the year-wise physical and financial target has been prepared. Various categories of interventions of new construction, maintenance and upgrading/ rehabilitation for different classes of roads including the trail bridges has been addressed with year-wise physical and financial targets. Total target for different interventions in the first five year DTMP has been summarized as follows:

Class of Transport Linkage	Intervention Type	First Five Year Target		
		No. of Roads/Bridges	Physical (Km)	Financial (NRs. in '000)
District Road A	New construction	1	33	6,5715
	Upgrading/ Rehabilitation	14	131	328,576
	Maintenance	-	730	29,207
District Road B	New construction	5	22	43,810
	Upgrading/ Rehabilitation	30	88	219,051
	Maintenance	-	1095	43,810
Trail Bridge	New construction	-	-	-
	Maintenance	-	-	-

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## CHAPTER I: INTRODUCTION

### 1.1 Introduction

Siraha district is located in Sagarmatha zone in Eastern Development Region and covers an area of 1228 square kilometer within latitude 26°33' N to 26°55' N and longitude 86°06' E to 86°26' E. The District is bordered with Saptari district in the east, Udayapur district in the north, Bihar province of India in the south and Dhanusa district in the west. This is smallest in area and highly dense populated district among six districts of Sagarmatha zone. Siraha bazar is the district headquarters and trade centre of Siraha situated 18 Km south from Mahendra highway linked by Chauharwa-Siraha-Madar road. Lahan is another big trade centre of district situated on Mahendra highway. According to the national census 2011 projection, the total population of the district is 6,43,136 comprising 3,13,292 male and 3,29,844 female. Subsistence agriculture farming, small scale livestock is the main source of occupation and livelihood of the majority of the population.

The district is served by surface transport facilities linking the district with the national strategic road network through Mahendra Highway. The network of feeder roads, district roads, Postal road and village roads are increasing significantly in the district. However, district and village roads and postal roads are mostly in poor condition that requires upgrading/rehabilitation and proper maintenance. Presently, roads in the district is being upgraded and maintained under RAIDP project and other different projects launched in this district.

Transport facilities help in developing access of rural urban linkages. Road accessibility can reduce isolation, stimulate crop production and marketing activities, encourage public services and help to transfer technology. Road building has been seen to bring about notable enthusiasm and visible changes in rural life. However, in the absence of rational criteria and professional guidelines, road construction is carried out in an ad hoc manner leading to, wastage of limited resources.

District Transport Master Plan (DTMP) is being developed in the districts to support investments in transport development with appropriate guideline and criteria for rational and transparent decision making process.

Transport is one of the major components to improve access of the people to services and facilities through increased mobility. Increased mobility results in better linkages with market centres/agricultural production pocket areas and other opportunities in the district. With transport sector interventions and planning based on accessibility considerations, District Transport Master Plan (DTMP) for a district offers long term perspective for the planned development of the rural roads in the district.

In a nutshell, District Transport Master Plan is a reflection of existing transport infrastructure situation and future potential in relation with the resources available the district. DTMP essentially covers the rural transport infrastructures (RTIs), which are funded, supported and implemented by DDCs. The DTMP preparation strongly advocates meaningful participation of all key stakeholders in the planning process to make DTMP more acceptable and ensure ownership. The preparation process goes through a series of techno-political activities that include consultation workshops and interactive meetings with stakeholders to increase participation of all stakeholders. These activities include district level workshop and cluster or ilaka level workshops, formal/informal meeting, focus group discussions and transit walk etc. At every stage, to careful consideration is given to ensure access and high level of participation of representatives from line agencies, major political parties, social leaders, women organizations, dalit and janajatis coordination committees, differently able people, chamber of commerce, transportation association etc. The approach is to work towards consensus building.

A completed and DDC endorsed DTMP serves as a planning document when potential donor agencies, line agencies and development partners approach the district for possible transport sector investments. DTMP becomes an authoritative document of the district to negotiate possible grant and loan assistance from donor agencies. It facilitates project identification. Donors or funding agencies supporting rural transport investments have accepted DTMP as a prerequisite tool for transport related assistance.

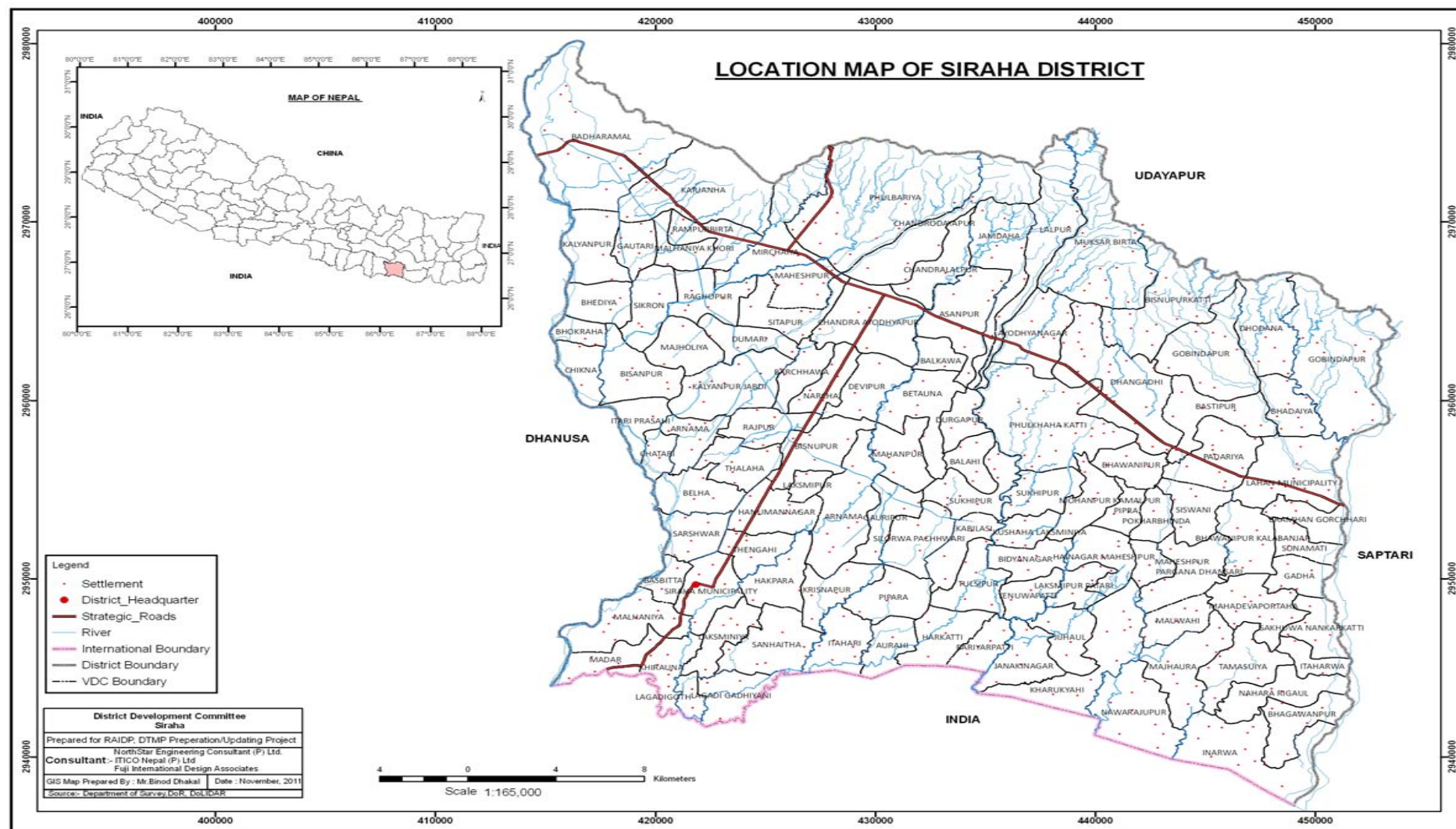
The long term vision of the Government of Nepal for the road sector, as formulated National Strategy (MoLD, 1997) is the development of basic rural infrastructure (with strong emphasis on district agricultural roads) country-wide in a planned and sustainable manner. In line with the poverty alleviation objectives, labour based technology and environmental friendly, local resource oriented construction methods have to be incorporated in rural infrastructure development process. The national strategy highlights that development of rural infrastructure takes place in decentralized environment.

## 1.2 Objective of the Study

The overall objective of the consulting services is the updating of the District Transport Master Plan (DTMP) and District Transport Perspective Plan (DTPP) of the districts as indicated in the ToR and to prepare the DTMP as per the Interim Guidelines of DTMP of DoLIDAR.

The specific objectives, but not necessarily limited to the following, are:

- Review and analyze the existing DTMP.
- Train district personnel for operating the GPS, processing the GPS data collected and converting those data to GIS shape file during preparation of road inventory and to up-date the inventory in the future.
- Train district personnel for preparation of DTMP.
- Prepare Indicative Developmental Potential Map (IDPM).
- Prepare the District Inventory Map (DIM) of Rural Road networks and based on DIM prepare accessibility mapping for two hours and four hours by considering terrain, major river and river crossing facilities.
- Preparation of Road Network Plan.
- Develop scoring criteria and its approval from DDC.
- Prepare the District Transport Perspective Plan (DTPP).
- Prepare/update the five year District Transport Master Plan (DTMP); and
- Prepare a realistic physical and financial implementation plan of prioritized Rural Transport Infrastructures (RTIs) over or the DTMP period.

**SIRAHA DISTRICT**

## CHAPTER II: APPROACH AND METHODOLOGY

### 2.1 Approach

District transport Master Plan has been prepared using participatory bottom-up approach and differs from conventional practices of top down approach. Techno-Political interface has been incorporated in the planning process, where active participation from representatives of political parties, line agencies, DDC officials is crucial.

The District Transport Infrastructure Coordination Committee (DTICC) has been constituted at the district level as authorized legislative body of DDC. This body, comprising political representatives from all political parties, provided necessary policy decisions during the DTMP preparation process

### 2.2 Methodology

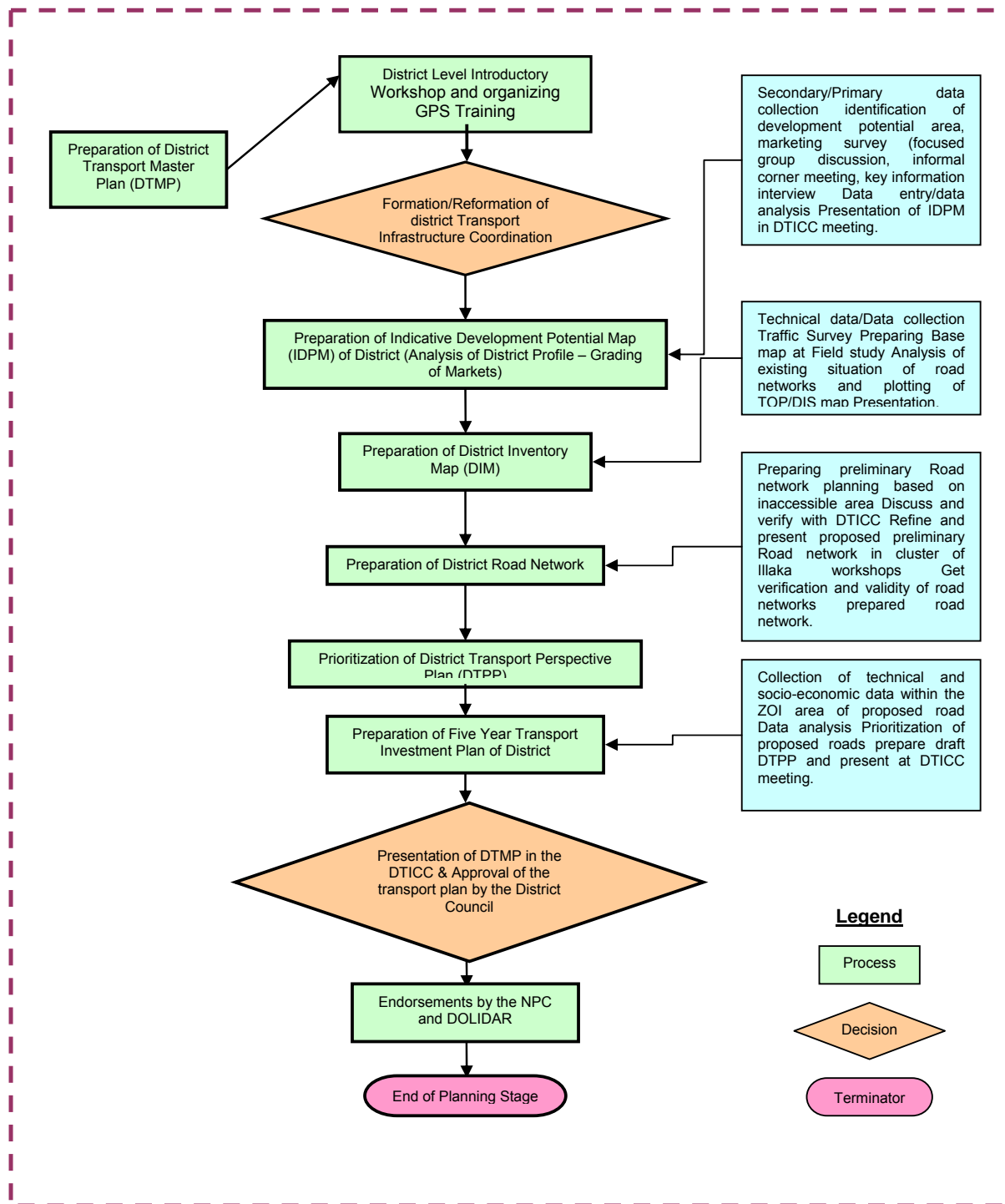
The Consultant has studied the entire procedure of project implementation as recommended by the Interim guidelines and DTMP methodology developed. The Consultant has strictly followed the methodology prescribed by the guideline while preparing/updating the existing DTMPs of the districts under the study area. The general methodology of the study is outlined below:

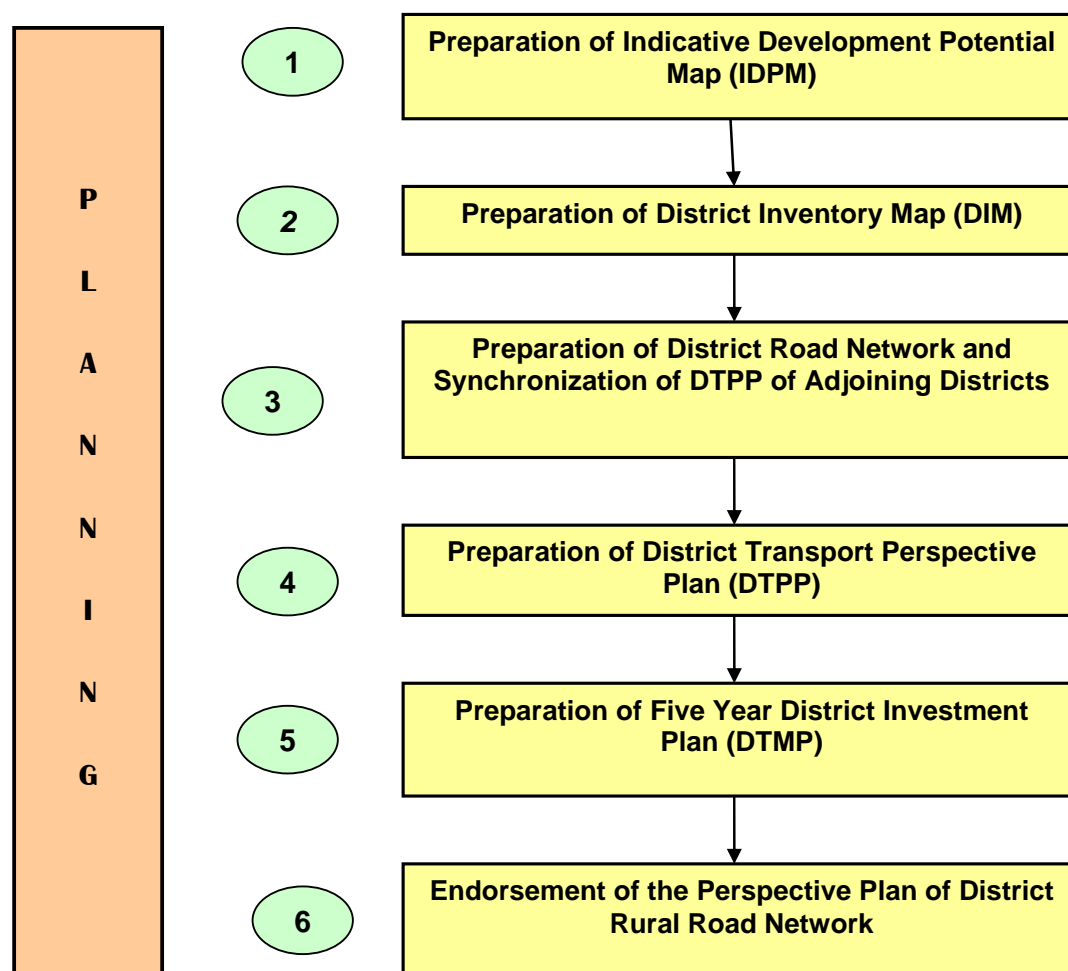
**Table 2.1: General Methodology of Study**

Action No.	Description
1.0	Desk Study and Review of previous DTMP reports
1.1	Collection and review of other Relevant Documents.
1.2	Collection and review of Maps
1.3	Collection and review of other socioeconomic aspects
1.4	Identification of existing and potential areas with development activities
2.0	Prepare the accessibility profile of settlements and compile them at VDC level
3.0	Preparation of indicative Development Potential Map
4.0	Preparation of District Inventory Map (DIM)
5.0	Preparation of District Network Plan (DNP)
6.0	Financial resource Assessment and preparation
7.0	Preparation of perspective plan
8.0	Five year projected Financial Plan
9.0	Preparation of DTMP

The Consultant has followed the following specific process to accomplish the assignment as specified in the objectives and scopes of work in the ToR.

Figure 2.1: DTMP Planning Process and its Methodology



**Figure 2.2: Planning Processes for DTMP Preparation**

### 2.3 Collection and Review of Secondary Sources of Information

Secondary data were collected from annual report published by district level offices and consultation with stakeholders such as District Agriculture Development Office (DADO), District Veterinary Office (DVO), District Development Committee (DDC), District Education Office (DEO), Women Development Office (WDO), District Forest Office (DFO), Small Cottage Industries and Local Business Entrepreneurs etc.

Field study was carried out for general socio-economic assessment of the district. During the field study, data collection was done from primary and secondary sources by using P-RRA and consultation methods with emphasis on related data/information. Field survey method has focused on collection of data regarding area, location and significance of development potential areas such as extensive agriculture, horticulture, livestock farming, high value cash crops, cottage and agro-based industries, centre for business/commerce/markets places, tourism area, service centers; e.g. hospital, health post, agriculture service sub-centre etc. from published reports and documents by line agencies. The information about demographic data of district, maps, service flow pattern, various maps showing service centers or the location of SOR (Service of Road) facilities, transport infrastructure inventory, past plans and sector study reports, sector standards and policy targets were collected from the secondary sources - Bureau of Statistics, Kathmandu, Survey Department, Local NGOs, line agencies, DDC, etc. The details on the documents collected are summarized below:

List of documents

- Previous reports of DTMP prepared by the DDC.
- District profile prepared by DDC.
- Annual report of Agriculture Development Office, District Veterinary Office, report of District Education Office etc.
- Report on settlement pattern and market centers of the district.
- Demographic statistics and socio-economic feature of the district.

Collection of Maps

- Topo maps of the 1:25000 scales, for use as base map.
- Digitized topographic maps of department of survey.
- District administrative map.
- District Trail Maps, Helvetas/ TBSU.
- Strategic road network map of DoR.

**2.4 Collections of Primary Data and Analysis**

Primary information on existing accessibility level of settlements was derived from the communities, VDC officials, school teachers and other related organizations/individuals during the field investigation period to a standard format specially developed for this purpose. The primary data has been collected from local people through answer to the structured questionnaires which were filled up by the enumerators. Tracking of the existing road network has been carried out by enumerators employed by consultants using the GPS. Three days training has been organized to familiarise the tracking process and its function prior to field mobilization of enumerators. Collected digital existing road network became useful to analysis the accessible situation of the district.

**2.5 Preparation of Indicative Development Potential Map**

IDPM is basically the indication of the existing and potential market/service centers (key growth centers) and the areas having various development potentials such as high value cash crops, agro-based industries and tourism. Thus, IDPM shows the areas of high value cash crops, tourism potential, extensive agriculture, extensive horticulture, livestock farming, fisheries, NTFP/ MAPs, hydropower location and the other social service centers areas such as hospital, post office, telecommunication, school, campus, VDC centers, security offices and large settlements, important historic and religious places. Finally, it indicates the grading of various markets of the district thus providing the basis of network planning.

Existing/potential areas are defined as:

- Areas with extensive agriculture.
- Areas with extensive high value cash crops.
- Areas with extensive NTFP.
- Areas with extensive horticulture.
- Areas with extensive livestock farming.
- Areas with extensive fisheries.
- Areas with extensive small cottage industries.
- Potential areas for tourism development.
- Existing/potential areas for development of large industries like hydropower, mining etc

**Market Survey**

Market Survey was carried out to identify market and service centre. Data and information collected in the field were the basis for determining the relative importance of market/service centre and central places. All services existing in a particular centre listed by the district line agencies were also collected from the respective districts and supplemented by more detailed field data such as

economic population structure for the centre itself and its influence area, by means of P-RRA approach. For evaluation purpose, data from government offices, Industry, Business & Commerce, Education, Health, Communication, Electricity Supply, Drinking Water Supply services were combined for the centre and its influence area. Assessment of economic facilities and services existing in the market/service centers and their influence areas lead to the identification of the most important market/service centre. Centrality analysis of the market facilities and government services were carried out.

The Centrality Index is calculated using following formula

$$C_j = \sum (W X_{ij})$$

Where,

$C_j$  = Centrality Index of the  $j$ th market centre

$X_{ij}$  = value of the  $i$ th function (number of establishments or shops at the  $j$ th market centre)

$W_i$  = Weightage of the  $j$ th function

The weightage of each function is calculated by adopting the Median Threshold Population Technique. The Median Threshold Population Technique calculates the weightage as:

$$W_i = \frac{\text{Median population of the } i\text{th function}}{\text{Lowest median population of the market centers, where a function exists}}$$

- The collected information was plotted on the base map indicating their geographical boundaries as accurately as possible.
- Draft Indicative Development Potential Map (IDPM) of the district was prepared by plotting all the development potential areas and sites on the Base map. Brief notes on each of the potential development areas plotted were prepared by highlighting the nature and size of the area.

## 2.6 Preparation of District Inventory Map (DIM)

The following steps were taken for preparation of DIM report:

- The inventory survey of the existing rural roads was carried out and necessary interventions such as new construction, rehabilitation, periodic maintenance, regular maintenance etc. were identified.
- The information/data on existing rural infrastructures was taken using Global Positioning System (GPS) instruments including GPS tracking of existing roads. GPS tracking constituted major activity for DIM preparation, which has taken considerable effort in field level.
- Information on road surface type, traffic levels, status of passability, status of construction, adequacy of bypasses, existing bridges and their requirements, status of drainage and other improvement required were collected during inventory survey.
- The DIM was presented and discussed in the DTICC meetings and the mode of interventions on rehabilitations, maintenance and upgrading of the existing rural roads was agreed. The required interventions were analyzed based on accessibility situation.
- Presentation on DIM and IDPM was made in one day meeting with DTICC. This meeting then finalized the proposed IDPM and DIM plans.



## 2.7 Preparation of District Network Plan (DNP)

- Gradation of Market centers was done based on the centrality index as Market grade A (> 100), grade B (50- 100), grade C (25-50), and potential (< 25).
- GIS map of nodal centers was prepared according to the grading of market centers.
- All the market centers based on their hierarchy lying within the core of the central place was plotted in GIS map.
- After plotting all market centers, all the existing roads were overlaid on the GIS Map.
- Accessibility situation was analyzed using GIS model.
- Buffering along the left and right of the existing all weather road was carried out on the basis of walking distance of 2 hours for Terai and 4 hours for hills. These delineated areas were considered as accessible area.
- The planning tree proposes road network for the inaccessible area identified by the Zol analysis.
- Preliminary road network plan for inaccessible areas was prepared based on the nodal points/market centers and government policy of 2 hours and 4 hours walking distances.
- Rural roads identified are categorized into two type of roads i.e. district roads and village roads. District roads are classified as RRA and RRB according to the significance of the roads.
- Prior to disseminating information in clusters of Ilaka level workshops, DTICC meetings was conducted and the proposed preliminary road network plan for inaccessible areas was presented and discussed to verify and obtain preliminary approval of the proposed road networks.
- All suggestions and feedbacks were collected from DTICC meetings and incorporated them into the preliminary proposed road network plans.
- Preliminary road network plan was presented and discussed in series of Ilaka level workshops to collect the views of the participants and proposal for DTPP. Road network plan was thus finalized in the workshop.
- In the workshop, the DTMP study team had made presentation clarifying the objective of the DTMP and process of its preparation.
- Plenary discussion was organized to verify the views of local participants on new demands as well as existing road networks.

## 2.8 Financial Resource Assessment and Projection

In Nepal, DDCs are heavily relying on GoN grant and donors contribution and is expected this situation to be prevailed for next couple of years. Besides the GoN grant, involvement of VDC, line agency participation, international donors and NGO contribution have also been examined. In this context, resource projection became very difficult task.

The Consultant has thoroughly collected, reviewed and analyzed the expenditures made by the respective DDCs and other agencies in rural transportation sector in last five years and estimated the availability of financial resources for the next five years. Since this is being a very important task, it was carried out in close consultation & cooperation with the related Account Section and Planning Section of the respective DDCs. NGOs and other relevant district level offices were also consulted during this stage. The Consultant in consultation with respective DDCs tried to make provisions for allocation of necessary funds in yearly basis by linkage and intervention type i.e. routine maintenance, periodic maintenance, rehabilitation, upgrading and new construction works.

## 2.9 Preparation of District Transport Perspective Plan (DTPP)

### 2.9.1 Scoring System for Prioritization of Proposed New Roads

A network consists of several links. It is not possible to construct all roads at a time due to resource and time constraint. Therefore, each link in a network needs to be prioritized. After developing a district level network, a road engineer prepares the cost estimate of the road and assesses benefit of each link in the network. In the present study, Cost Efficiency Analysis (CEA) was used to prioritize new transport linkage. Criteria such as per capita cost and special social consideration (of inclusiveness) receive certain weightage (points) relative to their perceived importance. Each road link was then allocated the number of points corresponding to the fulfillment of the particular criteria. The aggregate number of points that each intervention receives was computed by simply adding the points allocated per indicator. The result of this process leads to a ranking of the investment options. The following criteria were used for prioritization of new transport linkages.

Existing population within the zone of influence, accessibility situation, land use pattern, environmental and social safeguard, proximity to the market/service centers, religious and tourism places were taken as the indicators for prioritization of rural roads. According to the importance of each of these indicators in transport sector, different score has been assigned to each of them as given in table 2.2.

**Table 2.2: Scoring System for Prioritization of New Linkages**

SN	Parameter	Scoring Unit	Score
1	Population (Within the Zone of influences)	Population/Km	40
2	Inaccessibility	Population Walking hour	15
3	Cultivated Land (Within the Zone of influences)	Hectare / Km	15
4	Environment and Social Safeguard		
	a) Population of Dalit and Janajati (Within the Zone of influences)	Population / Km	10
	b) Loss of forest due to road alignment	Hectare / Km	5
5	Market/service centre	Centrality Index	10
6	Religious centre/ Tourist place	Number of spot	5

### Calculation of Scores for Prioritization of New, Rehabilitation and Upgrading of Roads

In order to make the indicators comparable their results have to be transformed to dimensionless indices using the zero-to-one method.

The following formula was applied to each indicator for all the areas of investigation

**(For high value ranking)  $d = ((x - \min) * \text{Max score}) / (\text{Max} - \min)$**

Where,

d = transformed indicator

x = original indicator value

Max = maximum original value

min = minimum original value

For each area of investigation, the road link with the highest indicator value 'd' results in '1' multiplied by the highest mark available under the relevant indicators.

(Note: to avoid possible confusion, the value of lowest score, zero is transformed by relating it to the value of second lowest score using pro-rata distribution method)

**(For low value ranking)  $d = (\text{max} - x) \text{ multiply by score} / (\text{Max} - \min)$**

Where,

d = transformed indicator

x = original indicator value  
 max = maximum original value  
 min = minimum original value

For each area of investigation, the road link with the lowest indicator value 'd' results in '1' multiplied by the maximum available score.

(Note: to avoid possible confusion, the value of lowest score, zero is transformed by relating it to the value of second lowest score using pro-rata distribution method)

### 2.9.2 Scoring System for Prioritization of Rural Roads, Class A and B for Upgrading/ Rehabilitation

Similar to prioritization of new linkages, prioritization system for upgrading/rehabilitation has also been adopted. In this case, one additional indicator, 'traffic volume' which significantly contribute to the urgency of upgrading/rehabilitation roadshas been considered. Different indicators and the score assigned to each of them in accordance with their importance in transport sector are given in table 2.3.

**Table: 2.3 Scoring System for Prioritization for Upgrading / Rehabilitation**

S. No.	Criteria	Scoring Unit	Score
1	Population (Within the Zone of influences)	Population/Km	30
2	Cultivated Land (Within the Zone of influences)	Hectare / Km	20
3	Traffic Volume	Traffic Unit (TU)	20
4	Market/service centre	Centrality Index	20
5	Religious centre/ Tourist place	Number of spot	10
	<b>Total</b>		<b>100</b>

### 2.9.3 Prioritization of Trail Bridges

The prioritization was based on following formula derived on the basis of a simulation model using ICIMOD indices, related poverty, education, health etc. used by TBSU as follows:

#### Prioritization Formula for New Construction

$$\text{SSTB} : \{(2.041 P + 2.856 MP) \times DG\} \times \{(12 - RT) \times (1 + RF/100)\} / 12$$

$$\text{LSTB} : 0.3 \times \{(2.041 P + 2.856 MP) \times DG\} \times \{(12 - RT) \times (1 + RF/100)\} / 12$$

#### Prioritization Formula for Major Maintenance

$$\text{SSTB} : 2 \times \{(2.041 P + 2.856 MP) \times DG\} \times \{(12 - RT) \times (1 + RF/100)\} / 12$$

$$\text{LSTB} : 1.2 \times \{(2.041 P + 2.856 MP) \times DG\} \times \{(12 - RT) \times (1 + RF/100)\} / 12$$

#### Prioritization Formula for Rehabilitation

$$\text{SSTB} : 1 \times \{(2.041 P + 2.856 MP) \times DG\} \times \{(12 - RT) \times (1 + RF/100)\} / 12$$

$$\text{LSTB} : 0.3 \times \{(2.041 P + 2.856 MP) \times DG\} \times \{(12 - RT) \times (1 + RF/100)\} / 12$$

**Where,**

- P = Population i.e. the beneficiay population of the prospective bridge
- MP = Marginalized population (total dalit + marginalized janajatis + total minority + total poor from other caste)
- DG = Distance gained
- RT = River Type (no. of months fordable without a bridge)
- RF = Risk Factor (Percent of population who have died within the last five year.

On the basis of above criteria, the transport linkages under different categories of each class of roads are prioritized.

## **2.10 Preparation of Five Year District Transport Master Plan (DTMP)**

Following steps are considered to prepare the DTMP.

- The DTPP is used as the primary documents based on which the District Transport Master Plan is prepared.
- The available financial resource of the district for and spent on rural transportation sector was assessed from past trend and forecasted the budget in the basis of this for coming years. Moreover, the tentative budget plan for coming five years was prepared in consultation with DDC.
- The interventions and road linkages identified in the DTPP were prioritised then selected high scored roads for coming five year's plan whatever the budget sufficiency.
- Final workshop was organized at the DDC where the prioritisation of roads was approved.

## **2.11 Endorsement of the Five Year DTMP of District RTI Network**

DDC should submit the final District Transport Master Plan to District Council for approval. DTICC with support of planning team, will brief to the Council on the entire process of preparation of DTMP including scoring system for prioritization. The DTMP is finally approved by the District Council.

## **2.12 Complementary Activities in the district for DTMP**

In line with the approach mentioned above, orientation and interactive workshops and meetings were held at the district and Ilaka/cluster level. Activities that were carried out in the district as part of this DTMP preparation are summarized as follows.

- i. Orientation workshop (1st district level) in DDC on 2068/5/8
- ii. GPS training (3 days) in DDC from 2068/9/7 to 2068/9/9
- iii. Ilaka/cluster level workshop at Siraha on 2069/1/5
- iv. Ilaka/cluster level workshop at Mirchaiya on 069/1/6
- v. Ilaka/cluster level workshop at Asanpur, Golbazar on 2069/1/7
- vi. Ilaka/cluster level workshop at Bariyarpatti on 2069/1/8
- vii. Ilaka/cluster level workshop at DDC Lahan on 2069/1/10
- viii. District level workshop (2nd district level) in DDC on 2069/3/12
- ix. GIS training (4days) in DDC : 2069/06/15 to 2069/06/18
- x. District level workshop (3rd district level) in DDC: 2069/06/11
- xi. Center level workshop at DoLIDAR on 2069/08/10

In addition to above, meetings and sharing at individual level were also carried out with selected persons, representatives from NGOs, line agencies, district based projects related to transport infrastructures development for collecting secondary informations which were used in the preparation/updating of the present DTMP.

## CHAPTER III: INDICATIVE DEVELOPMENT POTENTIAL MAP (IDPM)

### 3.1 Physical Location and Geographical Characteristics

Siraha is a Terai district of Nepal. This district is located at the south border of Sagarmatha zone. Most parts of the district are accessible to road networks and transport facility is available nearly the entire district. The district is surrounded by Udaypur district at north, Dhanusa district at west, Saptari district at east & Indian State of Bihar at south. The district encompasses 1228 sq. Km. almost plain area (CBS).

There are 79 Rivers and 103 Streams/Kholas flowing on the district. Some major rivers are; Kamala, Balan, Ghurmi, Mainawati, Gagan, Sarre, Sahaja, Bataha, Jiwa and Bhedawa. Topographically, Siraha district entails latitude 26°33' N to 26°55' N and longitude 86°06' E to 86°26' E. The climate of the district varies from Terai plain to Siwalik range.

Siraha district has the subtropical climate. So it will be very hot in the summer and very cold in the winter. The maximum temperature rises more than 40 degree Celsius and falls down as low as 10.7 degree Celsius. The rainfall is mainly due to the southern-eastern monsoon. The monsoon, generally starts from the mid of June and ends by the mid of October. More than 80% of the annual rainfall takes place between June and September only. Average annual rainfall is 1467 mm and average relative humidity is 50%.

Siraha district is well known for religious, historical and tourism. Many places are religious, historical importance. Nandababa Temple, Balasundari Bhagawati and Parasnath Temple are the most famous temples of the district.

Geopolitically, the district is administratively divided into 6 Electoral constituencies 17 Illakas that consist of 106 VDCs and two municipalities. Each VDC is divided into 9 Wards.

### 3.2 Socio-economic Characteristics

#### 3.2.1 Population

According to the National population census 2011 projection, the total population of the Siraha district is 6,43,136 with comprises 3,13,292 male and 3,29,844 female. According to the National population census 2001 (CBS), total populations of the district is 5,72,551 which comprise 2,94,052 male and 2,78,499 female. There are 1,01,492 households in the district with an average household size of 5.72 (CBS). Population density per sq. km. is estimated as 482 with an average growth rate in population are recorded 2.0 %. Population census of 2001 was mentioned following table.

**Table 3.1: Population census**

SN	Description	
1	Total Population	5,72,551
2	Female	2,78,499
3	Male	2,94,052
4	Population Growth Rate (%)	2.0
5	No. Of household	1,01,492
6	Population Density Per Sq.KM	482
7	Household size	5.72

Source: District Development Plan, Siraha, 2067/68

VDC wise population of the district by total male and female and household is depicted in table as under:

**Table 3.2: Population in Siraha District**

S.N	Village Development Committee	Population			Total No. of Household
		Total	Female	Male	
1	Arnamalapur	8574	4200	4374	1431
2	Arnamarampur	3212	1629	1583	546
3	Asanpur	10372	4900	5472	1895
4	Ashokpur Balkawa	4787	2259	2528	805
5	Aurahi	5203	2550	2653	877
6	Ayodhyanagar	3876	1855	2021	683
7	Badharamal	13266	6598	6668	2518
8	Barchhawa	3524	1763	1761	648
9	Bariyarpatti	4188	2006	2182	688
10	Bastipur	5486	2708	2778	1060
11	Belaha	5532	2751	2781	843
12	Belhi	3763	1876	1887	738
13	Betauna	5014	2438	2576	818
14	Bhadaiya	4976	2487	2489	843
15	Bhaganpur	3399	1698	1701	544
16	Bhagawatipur	4435	2161	2274	696
17	Bhawanipur	5281	2529	2752	888
18	Bhawanpur Kalabanzar	3349	1640	1709	616
19	Bhokraha	1459	761	698	303
20	BhisnupurPra.Ma.	4358	2137	2221	735
21	BhisnupurPra.Ra	4693	2351	2342	858
22	Bhisnupurkatti	11126	5431	5695	1976
23	Brahmagaugadhi	3155	1564	1591	559
24	ChandraAyodhyapur	5800	2844	2956	944
25	Chandralalpur	5221	2554	2667	903
26	Chandrodayapur	5213	2508	2705	917
27	Chatari	2378	1221	1157	426
28	Chikana	3644	1835	1809	682
29	Devipur	3542	1768	1774	636
30	Dhangadi	9569	4708	4861	1738
31	Dhodhana	4748	2360	2388	866
32	Dumari	3559	1673	1886	625
33	Durgapur	4052	1978	2074	737
34	Fulbaria	8352	4012	4340	1501
35	FulkahaKati	8606	4149	4457	1430
36	Gadha	4343	2108	2235	694
37	Gauripur	2858	1400	1458	424
38	Gautari	3648	1841	1807	642
39	Govindapur Malahanama	6758	3363	3395	1201
40	GovindpurTaregana	6930	3409	3521	1199
41	Hakpara	4242	2075	2167	733
42	Hanumannagar	6100	3031	3069	1054
43	Hanaumannagar(Pra.Dha)	3879	1956	1923	661
44	Harakatti	2881	1352	1529	505
45	Inarwa	9138	4556	4582	1564

S.N	Village Development Committee	Population			Total No. of Household
		Total	Female	Male	
46	Itarhawa	3372	1608	1764	540
47	Itari Parsahi	3616	1829	1787	727
48	Itatar	4174	2033	2141	688
49	Jamadaha	4752	2266	2486	875
50	Janakinagar	3972	1877	2095	655
51	Jighaul	4486	2177	2309	736
52	Kabilasi	3280	1553	1727	542
53	Kachanari	5543	2646	2897	887
54	KalyanpurJabadi	9326	4534	4792	1662
55	Kalyanpurkalabanzar	3211	1557	1654	577
56	Karjanha	6221	2734	3487	1149
57	Kharukyanhi	4422	2178	2244	683
58	Khirauna	3329	1568	1761	565
59	KrisnapurBirta	3886	1854	2032	633
60	Kushahalaxininiya	3358	1610	1748	575
61	Kushahalaxminiya	5017	2378	2639	858
62	Lagadigodh	3377	1612	1765	548
63	Lahan N. P.	27654	13122	14532	5262
64	Lalpur	4064	1960	2104	725
65	Laxminiya	3986	1906	2080	646
66	Laxmipur (Pra. Ma.)	3870	1924	1946	602
67	Laxmipur Patari	3997	1971	2026	609
68	Madar	8879	4207	4672	1463
69	Mahadewa Portaha	3515	1718	1797	593
70	Mahanaur	5840	2971	2869	897
71	Meheshpur Gamhariya	4086	1976	2110	719
72	Maheshpur Patari	3888	1973	1915	666
73	Majhauiliya	4326	2169	2157	774
74	Majhaura	4820	2293	2527	782
75	Malhaniya Gamhariya	2444	1153	1291	418
76	Malhaniyakhori	3901	1921	1980	729
77	Mauwahi	3347	1580	1767	504
78	Media	4067	1961	2106	768
79	Mohanpur Kamalpur	5038	2487	2551	872
80	Muksar	3733	1775	1958	623
81	Mahara Rigoul	4931	2403	2528	754
82	Naraha Balkawa	3968	1928	2040	708
83	Navarajpu	7381	3573	3808	1244
84	Padariya Tharutol	5740	2923	2817	981
85	Pipra Pra. Dha	3641	1748	1893	637
86	Pipra Pra. Pi.	5692	2743	2949	897
87	Pokharbhinda	3636	1795	1841	762
88	Radhopur	3608	1743	1865	662
89	Rajpur	4692	2320	2372	807
90	Ramnagar Mirchaiya	9386	4346	5040	1732
91	Rampur Birta	4236	2026	2210	787
92	Sakhuwanankarkatti	3067	1521	1546	487
93	Sanhaitha	5119	2463	2656	856
94	Sarswar	5793	2794	2999	960

S.N	Village Development Committee	Population			Total No. of Household
		Total	Female	Male	
95	Sikron	3062	1382	1580	538
96	Silorba Pachhawari	5249	2551	2698	808
97	Siraha N. P.	23988	11795	12193	4314
98	Siswani	4674	2303	2371	828
99	Sitapur Pra. Da.	5702	2819	2883	1021
100	Sitapur Pra. Ra.	4242	2052	2190	776
101	Sonmati Majhaura	4105	1974	2131	644
102	Sothiyan	3477	1736	1741	585
103	Sukhachina	2897	1372	1525	465
104	Sukhipur	9491	4667	4824	1594
105	Tenuwapatti	4128	1942	2186	669
106	Thalaha Kataha	4224	2038	2186	701
107	Tulsipur	3679	1812	1867	615
108	Vidhyanagar	4592	2243	2349	729
109	Institutional	194	15	179	1
Total		5,72,551	2,78,499	2,94,052	1,01,492

Source: VDC Profile of Nepal, 2008

### 3.2.2 Religion, Festivals and Caste

Different ethnic caste is found in Saptari district. Majorities are Yadav and followed by Tharu, Brahmin /Chhetri, Magar, Newar, and others. Actually different caste commonly uses Maithali language for communication which follows by Tharu, Nepali, Urdu, Magar, Newari and others. Major festivals celebrated are Dashain, Tihar, Chhat, Phagupurnima (Holi), Sivaratri, Christmas etc.

### 3.2.3 Education Status

There are altogether 401 educational institutions. Out of total 401, there are 281 pre-primary /primary, 39 are lower secondary, 46 are secondary, 30 are higher secondary schools, and 5 are Campuses. Overall district literacy rate is 42.2%, whereas female literacy rate is 25.64% and male literacy rate is 58.4%.

**Table 3.3: Education Status**

SN	Level of Educational Institutions	Community	Institutional	Total
1	Pre Primary/ Primary	261	20	281
2	Lower Secondary	19	20	39
3	Secondary	21	25	46
4	Higher Secondary	23	7	30
5	Campus	4	1	5
Total		328	73	401

Source: DDC Plan, Siraha, 2068/69

### 3.2.4 Economically Active and Inactive Population

Economically active populations of the district are 265,549. Among them 179,471 are male and 86,078 are female. Likewise, economically inactive populations of the district are 218,879. Among them 69,908 are male and 148,971 are female. The following table shows active and inactive population of the district.

**Table 3.4: Economically active and inactive population:**

Status	Total	Male	Female
Economically Active	265,549	179,471	86,078
Economically Inactive	218,879	69,908	148,971
Total	484,428	249,379	235,049

Source: VDC Profile, 2008



### 3.2.5 Occupation Pattern

Major occupation in the district is agriculture. But this has shifted with high youth force migration due to social conflict and unemployment problem. About 65.6% of people are being involved in agriculture as subsistence livelihood and 34.4% in service and others as shown in following table.

**Table 3.5: Occupation Pattern**

SN	Occupation	Percentage
1	Agriculture	65.60%
2	Service/Other	34.40%
Total		100%

Source: DDC Profile 2008

### 3.2.6 Land Use Pattern

The district holds 122,796 hectares lands, total of those 27,708 hectares is forest, 73,913 hectares is agricultural land, 1314 hectares is pasture land and 19,861 hectares is other land. The topographical distribution of land is shown in following table.

**Table 3.6: Land Use Pattern of District**

SN	Land Use	Area (ha)	Remarks
1	Agricultural Land	73,913	
2	Forest	27,708	
3	Settlement area	6,432	
4	Sand bare	4,686	
5	Grazing Land	1,314	
6	Pond/ River and others	8,743	
Total		122,796	

Source: District profile, DADO, Siraha, 2067/68

### 3.2.7 Agriculture Production

Economically active population is 65.6% in total who depend mostly on agriculture. Major agriculture production of this district is cereal crops (Paddy, Maize and wheat). Paddy production, fruit and vegetable are the main agricultural production in this district for the domestic use and exporting to other districts, particularly in Kathmandu. Types of crops, its production area and the quantity produced are given in Table 3.7.

#### 3.2.7.1 Cultivated land

67812 hec of total land is cultivated in this district. Highest cultivated land is in patthargadha, Chhinnamasta, Malet, Sambhunath, Kanakpatti and Kusaha and major cereal crops production are paddy, wheat and maize.

**Table 3.7: Major crops and their production**

Crops	Area (HA)	Production(MT)	Productivity Per Hectare(MT)
Paddy	47,090	116,709	2.47
Wheat	18,500	40,700	2.2
Maize	3,172	7,765	3.0
Millet	690	690	1.0
Oilseed	6,655	2,499	0.37
Pulse (Dalhan)	19,820	10,202	0.51
Winter green Vegetable	3,510	54,278	15.46
Monsoon Vegetable	815	8,145	10.0
Off season Vegetable	259	2,298	8.87
Fruits	5,503	46,197	8.39
Cash crop			

Crops	Area (HA)	Production(MT)	Productivity Per Hectare(MT)
Sugarcane	1,800	81,000	45.0
Tobacco	100	80	0.8
Potato	1,615	20,995	13.0
Oil	25	800	32.0
Jute	135	135	1.0

Source: Annual Report, DADO, Siraha, 2067/68

### 3.2.7.2 Cropping pattern and cropping calendar

Major crops of this district are paddy, wheat, maize, oilseed, potato and vegetable. Pulse crops are *Musuro, Rahar, Gahat* and *Mas*. Vegetable are radish, cauliflower, cabbage, tomato and potato etc. Fruits are banana, mango, jackfruit, guava etc. Vegetable seeds are soybean, radish, carrot, cucumber, tomato, cauliflower. Cash crops are sugarcane, jute, potato and tobacco. Detail cropping pattern with calendar of district is shown below.

**Table 3.8: Cropping Calendar:**

SN	Crops	Time of Sowing/Transplanting	Time of Harvesting
1	Paddy (Chaite)	April/May	July/August
2	Paddy (Barse)	June/July	Oct/Nov
3	Maize	March/April	July/August
4	Wheat	Oct/Nov	April/May
5	Millet	June/July	Sept/Oct
6	Barley	Nov/Dec	April/May
7	Winter Potato	Sep/Nov	Jan/March
8	Summer Potato	Jan/March	June/August
9	Winter Vegetable	Sep/Nov	Jan/March
10	Summer Vegetable	April/June	June/August
11	Jute	April/June	Aug/Sept
12	Tobacco	Sept/Oct	Dec/Jan
13	Sugarcane	Feb/Mar	Apr/May

Source: Annual Report, DADO, Siraha, 2067/2068

### 3.2.7.3 Existing/ Potential Area with Extensive Agriculture

Due to the fertility of the terai land, most part of the district are suitable for production of paddy crops as well as other crops such as; Wheat, Pulses, Mustard, Maize (Monsoon), Maize (Winter), Pulse (Mung), Pulse (Rahar), Gram, Pea, Winter Vegetables, oilseed and Jute.

Existing potential area for major crops pocket area are shown in following table.

**Table 3.9: Potential Area with Extensive Agriculture**

SN	Major Crops	Potential Pocket Area/VDCs
1	Paddy	All VDCs and municipalities
2	Wheat	All VDCs and municipalities
3	Maize and Millet	All VDCs and municipalities
4	Sugarcane	Dumari, Mirchaiya, Raghobpur, Gamhariya, Chandraayodhyapur
5	Legumes	All VDCs and municipalities
6	Oil seeds	All VDCs and municipalities

Source: Annual Report, DADO, 2067/68

### 3.2.7.4 Existing/ Potential Horticulture

Most of the land of the district is formed of fertile soil with plain area which is suitable for various kinds of fruits due to suitable climate. Existing and potential area for horticulture pocket areas are shown in following table 3.10.

**Table 3.10: Potential Area with Extensive Horticulture**

S/N	Crops	Potential Pocket Area/VDCs
1	Mango	All over district
2	Lichi	All over district
3	Gauva	All over district
4	Jackfruit	Bandipur, Chandraayodhyapur, Fulbariya and Bastipur
5	Banana	All over district

Source: Annual Report, DADO, 2067/68

**3.2.7.5 Existing/ Potential Cash Crops**

Existing and potential area for high value crops pocket areas are shown in following table.

**Table 3.11: Potential Area with Extensive Cash Crops**

SN	Crops	Potential Pocket Area/VDCs
1	Fisheries	All over district
2	Fresh Vegetable	All over district
3	Sugarcane	
4	Tobacco	
5	Honey	Bandipur, Jamdaha, Chandraayodhyapur
5	Jute	

Source: Annual Report, DADO, 2067/68

**3.2.8 Livestock Production**

Livestock is an important component of farming system in Siraha district. Livestock are regarded as one of the major assets of farm household. Cattle and buffaloes are primarily reared for draught power cultivation and transport, with the latter also providing milk and meat for on-farm consumption and opportunity sales. The livestock's population and their production are presented in following tables.

**Table 3.12: Livestock Population**

S.N.	Livestock	Unit	Total Number
1	Cow/Ox	no	233,779
2	She Buffaloes	no	87,771
3	He Buffaloes	no	20,658
4	Goat	no	115,224
5	Sheep	no	2,024
6	Pig/Swine	no	18,813
7	Fowl	no	412,487
8	Duck	no	10,798

Source: District Profile of Siraha, DVO, 2067/68

**Table 3.13: Livestock Production**

S.N.	Livestock Products	Unit	Annual Production
1	Milk	MT	54,820
2	Meat	MT	9222
3	Egg (Hen and Duck)	Thousand	6243
4	Wool	Kg	1130
5	Fish	MT	1530

Source: District Profile of Nepal, 2008

### 3.2.8.1 Livestock Potential Area

Potential areas for livestock production are shown in following table.

**Table 3.14: Livestock Potential Area**

SN	Livestock	Potential Pocket Area/VDCs
1	Buffalo Farming	All VDCs and municipalities
2	Goat Farming	All VDCs and municipalities
3	Poultry Farming	All VDCs and municipalities
4	Pig/Swine Farming	Jamdaha, Muksar, Bandipur, Dhangadhi, Padariya
5	Cow Farming	

Source: District Profile of Siraha, DVO, 2067/68

## 3.3 Service Centers and Facilities

As per the data/information regarding the service centres and facilities available in the district, the government, non-government and INGOs and public/private institutions are established who are continuously providing their services to the people. Details of service centres and their capacity are discussed below in brief.

### 3.3.1 Post Office

This district has one district post office. Illaka level post office is in 17 VDCs, additional post office is in 91 VDCs and money order facility is in 5 places. The communication system of the district comprises of the post office and Telecommunication facilities. The number of post offices according to their types is presented in below.

**Table 3.15: Status of Post Office**

S.N.	Type of Post Office(s)	Number	VDC/Municipality
1	District Post Office	1	Siraha
2	Illaka Post Office	35	VDC's
3	Additional Post Office	83	

Source: District Profile of Siraha, DADO, 2067/68

### 3.3.2 Telecommunication

Telecommunication tower for mobile and landline is available in some places. Mobile communication is working throughout the Saptari district. In this way access to telephone facility is in all VDCs. The type of telecommunication system and their access to various locations/VDC of the district is given in following table.

**Table 3.16: List of Access to Telephone Facilities**

SN	Type	Number	Access/VDCs
1	PSTN Telephone	1058	Siraha, Lahan, Mirchaiya, Golbazar, Sukhipur
2	Mobile (GSM Prepaid, Postpaid CDMA)	50000	106 VDCs
3	ISPN Service provider		
4	Cable operator		

Source: Nepal Telecom, Siraha

### 3.3.3 Financial Institution / Co-operatives

Many Banking and financial institution are established in the district. Among them, Rastriya Banijaya Bank, Nepal Bank Limited and Agriculture Development Bank are the government institution. Likewise, more than 8 Development Banks and above 117 cooperatives i.e. saving credit, Agriculture, Dairy, Health, Multipurpose etc are also functioning in the district.

**Table 3.17: Financial Institution /Co-operatives**

S.No.	Description	Nos
	<b>A. Development Banks</b>	
1	Agriculture Development Bank, Lahan, Siraha, Mirchaiya, Golbazar	8
	<b>B. Commercial Bank</b>	<b>4</b>
1	Rastriya Banijaya Bank, Siraha	
2	Rastriya Banijaya Bank, Lahan	
3	Nepal Bank Ltd., Mirchaiya	
4	Nepal Bank Ltd., Golbazar	
	<b>C. Co-operatives</b>	<b>117</b>
1	Saving and Credit	54
2	Multipurpose	50
3	Agriculture	2
4	Health	1
5	Dairy	4
6	Consumer	4
7	Small Farmer	2

Source: VDC Profile of Nepal, 2008

**3.3.4 Agriculture Service Centers**

Government has launched various programmes in this sector for people's economic growth. Siraha is also a pocket centre of agriculture production. To provide agriculture facilities, government has established Agriculture service center to provide the technical facilities to the people. Agriculture service and Agriculture service contact centre with their influence VDCs in district shown in the table below.

**Table 3.18: Agriculture Service Center/Agriculture Sub-Center**

SN	Agriculture Service /Agriculture Sub-Center	Located Place/VDCs	Influence VDCs
1	Livestock Service Center	Lahan	5 VDCs
2	Livestock Service Center	Nawarajpur	6 VDCs
3	Livestock Service Center	Sukhipur	8 VDCs
4	Livestock Service Center	Khirauna	3 VDCs
5	Livestock Service Center	Kalyanpur	9 VDCs
6	Livestock Service Sub-Center	Govindapur	4 VDCs
7	Livestock Service Sub-Center	Bhagawanpur	9 VDCs
8	Livestock Service Sub-Center	Dhangadhi	4 VDCs
9	Livestock Service Sub-Center	Maheshpur	6 VDCs
10	Livestock Service Sub-Center	Bariyarpatti	9 VDCs
11	Livestock Service Sub-Center	Golbazar	7 VDCs
12	Livestock Service Sub-Center	Arnama	9 VDCs
13	Livestock Service Sub-Center	Bishnupur	8 VDCs
14	Livestock Service Sub-Center	Naraha	8 VDCs
15	Livestock Service Sub-Center	Sarshwor	6 VDCs
16	Livestock Service Sub-Center	Mirchaiya	6 VDCs
17	Livestock Service Sub-Center	Bhediya	8 VDCs

Source: Annual Report, DVO, Siraha, 2067/68

### 3.3.5 Veterinary Service Centre

The district has one district veterinary office at Siraha municipality, 5 service centres and 12 sub-service centres at different VDCs. Existing location of the veterinary service and sub-service centres and their influence VDCs are shown below in table 3.19.

**Table 3.19: Veterinary Service Centre/Sub-Service Center**

SN	Agriculture Service /Agriculture Sub-Center	Located Place/VDCs	Influence VDCs
1	Livestock Service Center	Lahan	5 VDCs
2	Livestock Service Center	Nawarajpur	6 VDCs
3	Livestock Service Center	Sukhipur	8 VDCs
4	Livestock Service Center	Khirauna	3 VDCs
5	Livestock Service Center	Kalyanpur	9 VDCs
6	Livestock Service Sub-Center	Govindapur	4 VDCs
7	Livestock Service Sub-Center	Bhagawanpur	9 VDCs
8	Livestock Service Sub-Center	Dhangadhi	4 VDCs
9	Livestock Service Sub-Center	Maheshpur	6 VDCs
10	Livestock Service Sub-Center	Bariyarpatti	9 VDCs
11	Livestock Service Sub-Center	Golbazar	7 VDCs
12	Livestock Service Sub-Center	Arnama	9 VDCs
13	Livestock Service Sub-Center	Bishnupur	8 VDCs
14	Livestock Service Sub-Center	Naraha	8 VDCs
15	Livestock Service Sub-Center	Sarshwor	6 VDCs
16	Livestock Service Sub-Center	Mirchaiya	6 VDCs
17	Livestock Service Sub-Center	Bhediya	8 VDCs

Source: Annual Report, DVO, Siraha, 2067/68

### 3.3.6 Irrigation

The cultivated land in the district is 73,913 hectare. Among them total of 39,871 hectare is irrigated. Rest of the cultivated land is none irrigated. There are many number of complete irrigation project in the district and some are still ongoing construction.

**Table 3.20: Irrigation**

SN	Irrigation	Area (Ha)/Number	Percentage
1	Total Irrigated area	39,871 Ha	53.94
2	Non Irrigated area	34,042 Ha	46.06

Source: Annual Report, DADO, Siraha, 2067/68

### 3.3.7 Health

In Siraha district, access to health facilities is in all VDCs. There is one district hospital in district headquarters, Siraha and another eye hospital is in Lahan, 4 Primary Health Center, 1 Ayurvedik Centre, 11 Health posts, 97 Sub-Health Posts. The health institutions and facilities available in the district are given in detail below.

**Table 3.21: Health Service Centers**

SN	Type of Health Centres	Number	Location
1	District Hospital	1	Siraha
2	Lahan Eye Hospital	1	Lahan
3	Primary Health Center	4	
4	Ayurvedic centre	1	Siraha
5	Health Post	11	
6	Sub-Health Post	97	

Source: District Profile, DADO, Siraha

### 3.3.8 Existing/ Potential Area for Cottage and Agro Based Industries

The district has total Registered Industries of 143, Commercial Enterprises 134 and Small Cottage Industries 9. The existing Small Cottage and Commercial enterprises in district are given below:

**Table 3.22: Small Cottage and Agro-based Industries**

SN	Industries	Number
1	Registered Total Industries	143
2	Commercial Enterprises	134
3	Small Cottage Industries	9

Source: DADO, Siraha, 2068

### 3.4 Existing/Potential Area for Tourism, Religious and Historical Place

Siraha district is very famous for Religious and Historical Place. Existing/ Potential Area for Tourism, Religious and Historical Place are given below table.

**Table 3.23: Potential Area for Religious, Tourism and Historical Place**

SN	VDC/Place	Descriptions	Significance
1	Siswani, Padariya	Salahes Phulbari	Religious/Historical
2	Fulbariya	Kamaldah	Religious/Historical
3	Lakshmipur Patari	Hanumandhoka Patal, Pokhari	Religious/Historical
4	Badaramal	Nandababa Temple	Religious/Historical
5	Govindapur	Manikdaha	Religious/Historical
6	Siraha, Na Pa., W No-7	Salahes Gahawor	Religious/Historical
7	Sarswar	Sarswarnath Mahadev temple	Religious/Historical
8	Brahman Gorchhari	Brahman Gadh	Religious/Historical/Tourism
9	Bhadiya	Pakriya Gadh	Religious/Historical
10	Lalpur	Kumbhi Daha	Religious/Historical/ Tourism
11	Asanpur	Dhamiyaiansthan	Historical/ Tourism
12	Itahari Prasai	Parasnath Mahadev Temple	Religious/Historical
13	Govindpur	Kabhre Mahadevsthan	Historical/ Tourism
14	Bhagawanpur	Balasundari Bhagawati sthan	Religious/Historical
15	Badaramal	Uttarbahini (Kamalamai)	Religious/Historical
16	Muksar	Akash Ganga	Religious/Historical
17	Chandraudayapur	Polish patta	Historical/ Tourism
18	Pipra pra. Dha.	Dina Bhadri	Religious /Historical/ Tourism
19	Bakhair	Rajagadhi	Religious /Historical/ Tourism

Source: District profile, DADO, Siraha, 2067/68

### 3.5 Market Centers

According to the study of relevant literature/reports, consultation with related program/ project, consultation of the various person and field visit, total 30 market centres were considered for analysis. Market centres are graded as A, B, C and potential when required data are collected and analyzed the collected information according to interim guideline of DTMP.

**Table 3.24: Market Centers in the Saptari District**

S.N.	Name of Market Center	VDC	Grade	Remarks
1	Lahan	Lahan N.Pa.	A	
2	Siraha	Siraha N.Pa.	A	
3	Mirchaiya	Mirchaiya Ramnagar	A	
4	Golbazar	Asanpur	A	
5	Dhangadi	Dhangadi	B	
6	Bariyarpatti	Bariyarpatti	B	
7	Kalyanpur	KalyanpurJabdi	B	
8	Sukhiupur	Sukhiupur	B	
9	Bandipur	Badaramal	B	
10	Madar	Madar	B	
11	Zeromile	Dhangadi	C	
12	Sitapur	Mirchaiya Ramnagar	C	
13	Old choharwa	Chandra Ayodhyapur	C	
14	Karjanha	Kajanha	C	
15	Chhaparadi	Dhangadi	C	
16	Thadi	Bhagwanpur	C	
17	Bishnapura	Bishnapura	C	
18	Belha	Belha	C	
19	Hanuman Nagar	Hanuman Nagar	C	
20	Aurahi	Aurahi	C	
21	Bastipur	Bastipur	C	
22	Sarshwar	Sarshwar	C	
23	Maheshpur patari	Maheshpur patari	C	
24	Chhajana	Kushahalaxminiya	C	
25	Mohanpur Kamalpur	Mohanpur Kamalpur	P	
26	Bhagwanpur	Bhagwanpur	P	
27	New Chauharaba	Chandra Ayodhyapur	P	
28	Gadha	Gadha	P	
29	Nawarajpur	Nawarajpur	P	
30	Krishnapur, Hakpara	Hakpara	P	

Source: Group Discussion 2068

### 3.6 Descriptions of Market Centre

According to analysed market centres and their priority list, 4 market centres are graded as A, 6 market centres are graded as B, 14 market centres are graded as C, 6 market centres are identified as potential market centres. Brief description of market centres is given below. (Annex IA)

#### 3.6.1 Descriptions of Market Centre Grade A

##### Lahan

It is very important market center of the district and located at Lahan Municipality which is important growth center of the district. Mahendra Highway passes through with this market center. Lahan-Bhagawanpur-Thadi the strategic and other district roads also linked with this market center. It is



highly potential center for agro-based industries and fruit related cottage industries. There is 5 primary, 2 lower secondary, 5 secondary, 6 higher secondary schools, 3 campuses, 4 development banks like Governmental and other commercial, rural bank are located here to provide the financial service for the people. Agriculture and veterinary service center also providing their services to the community people. 3 Hospital are located here for health facility. Telephone and Electricity facilities are also available here. Many NGO and INGO are working to support the community people. Furthermore, one Tourism place is also located here.

### **Siraha**

It is located at district headquarters and connected with 16 km long blacktopped feeder road to the Mahendra highway. This center also linked with Mirchaiya-Kalyanpur-Siraha district Road. It has an industrial estate without any remarkable operating industry and has numerous agro-based cottage industries. There are three primary, four secondary three higher secondary schools and one college, number of Government and non-government offices with one hospital. Electricity is available for domestic and industrial purposes and telephone is also available.

### **Mirchaiya**

This is one of the important key growth centers of Siraha districts located at Mirchaiya VDC. Mahendra Highway passes through this center. It is highly potential for agro-based industries. This place is also connected with Katari road. District road namely Mirchaiya-Siraha, Badarmal-Sitapur Newchowk and Bhediya-Mirchaiya road linked with this market center. Three primaries, three lower secondary, three secondary, three higher secondary schools and one campus are located here. Two hospital, agriculture and veterinary offices are providing their services. Electricity and telephone facilities are also available here.

### **Golbazaar**

This place lies in Mahendra Highway at Asanpur VDC and link with Golbazaar-Belhi and Jamdaha-Gadiyani district road. This is one of the important agriculture potential places of Siraha district. Hat Bazaar takes place on Tuesday and Saturday. It is highly potential for agro-based industries. Two primaries, two secondary, two higher secondary schools are located here. Health post, agriculture and veterinary offices also located here. Electricity and telephone facilities are also available here. Some cooperatives and one NGO are providing their services.

## **3.6.2 Descriptions of Market Centre Grade B**

### **Kalyanpur**

This center lies to southern part of Siraha district and at Kalyanpur VDC and Mahendra Highway passes through this center and Mirchaya-Siraha district road linked with this center. Other places like Mahuliya, Daraul, Karunahi, Koriyani, Majholiya etc. are connected with cart track. It is highly potential for agro-based industries. Hat Bazaar takes place on Sunday and Wednesday. It is one of another important agriculture potential center of the district. two primary, two secondary, one higher secondary school, health post, agriculture, veterinary offices also located here and providing their services to the community. Electricity and telephone facilities are also available here.

### **Dhangadhi**

This place lies in Mahendra Highway and located Dhangadhi VDC and linked with Dhangadhi-Kajnari district road. This is also potential places for agro based industries. Hat Bazaar takes place on Tuesday and Saturday in this center. Three primaries, four secondary, two higher secondary schools are located here. One Hospital and Health post are providing their health services to the community people. Agriculture and veterinary offices also located here. Electricity and telephone facilities are also available here. Two cooperatives and one NGO are providing their social services.

### **Bariyarpatti**

This market center is located at Bariyarpatti VDS and linked with Zeromile-Bariyarpatti district road and connected with MRM. This is the agriculture center in south part of Siraha district potential for

agro-based industries. Hat Bazaar takes place on Sunday and Thursday. Other facilities like two primary, one secondary, one higher secondary school, health post, agriculture, veterinary offices also located here and providing their services to the community. Electricity and telephone facilities are also available here. One cooperative and two NGOs are providing their social services. Furthermore, one Tourism place is also located here.

### **Sukhipur**

This place is located at Sukhipur VDC in middle south part of the district and linked with Chikna-Gadha and Siraha-Sukhipur district road and inter connected with other Village road. Hatbazaar takes place on Tuesday and Saturday. Four primary, two secondary, one higher secondary school, health post, one post office also located here and providing their services to the community people. Telephone facility is also available here. One cooperative is providing its financial services.

### **Bandipur**

This place located at Badarmal VDC and connected with Bandipur-Kamalanadi district road and linked with Mahendra Highway. It is another important center for agro based industries. Two primaries, one secondary, one higher secondary school, agriculture, veterinary offices, one post office also located here. One cooperative is providing its financial services. One tourism place is also located here.

### **Madar**

Madar is the important market center of the district which is located at Madar VDC near the Indian boarder. Aurahi-Madar and Khairtoka-Sarswar district road linked with this market center. One primary, one secondary, one higher secondary school, agriculture, veterinary, post offices also located here.

## **3.6.3 Descriptions of Market Centre Grade C**

### **Zeromile**

This place located at Dhangadhi VDC and Mahendra Highway passes through here. District road Zeromile-Bariyarpatti, Dhangadhi-Kajahari and other village road are linked with this center. It is highly potential for agro-based industries. One primary, two secondary, one higher secondary school, are located here. One cooperative is providing its financial services. One tourism place is also located here. Two cooperatives are providing its financial services at local level. Other hotel and restaurant are running here.

### **Sitapur**

This market center located at Mirchaiya Ramnagar VDC and linked with Badarmal-Choharwa Newchowk and other Village roads. It is one of the important agriculture potential for agro based activities. Three primaries, two lower secondary, two secondary school are located here. One cooperative is providing its financial services. Other facilities e.g. health post, agriculture, veterinary offices also located here and providing their services. One cooperative is providing its financial services.

### **Choharwa**

This place is located at Chandra Ayodhyapur VDC and connected to Mahendra highway and linked with feeder road to Siraha district headquarters. Baluwa-Chandra Ayodhyapur, Belha-Lokmarg and other village road are also linked with this center. This is the important center for agro based industries. Two primaries and one school are located here. Other facilities post office also located here. One cooperative is providing its financial services. Weekly Hatbazaar takes place on Monday and Thursday.

### **Karjanaha**

This center located at Karjanaha VDC and linked with Badarmal-Choharwa and Mahadeva

Belshot District road and connected with other village road as well. It is also potential place for agro based industries. Many service providers like, one primary, two secondary, one higher secondary school, one hospital, agriculture, veterinary offices also located here. Telephone facilities are also available here. One cooperative is providing its financial services.

### **Chhaparadi**

This located at Dhangadhi VDC and Mahendra Highway passes through here and Dhangadhi-Kajnari, Zeromile-Ambash district and other village road are interconnected with this center. It is highly potential for agro-based industries. Other facilities like one primary, three secondary school including private, one health post, agriculture, veterinary offices also located here. Telephone facilities are also available here. One cooperative is providing its financial services.

### **Thadi**

This market center is located at Bhagawanpur VDC and Mahendra Highway passes through from here. District road namely, Dhodna-Kamaladaha and other village road linked with this center. There is one primary school, one health post, one post office which are providing their services to the community people.

### **Bishnapura**

This center is lies at Bishnapura VDC of Siraha district. Chickna-Gadha, Nirdhana-Jabdi and other short distanced roads are linked with this center. It is also potential center for agro based activities. There is two primary, one secondary school, one sub-health post, agriculture, veterinary one post office which are providing their services to the community people. Electricity and telephone facilities are also available here.

### **Belha**

This center is located at Belha VDC of Siraha district and linked with Mirchaiya-Siraha, Belha-Lokmarg district road. Weekly Hat Bazaar takes place here. Two primary, one lower secondary, one secondary school, post office also located here. Telephone facilities are also available here. One cooperative is providing its financial services.

### **Hanuman Nagar**

This center lies at Chauraha-Siraha Road and Human Nagar VDC of Siraha district. This center linked with Choharwa-Siraha Feeder road and other village rods. This point is connected with Bhaluwahi, Chharputti, Padampur, Shripur, Sundarpur, Narahiya VDC. It is important place for agriculture based industries. Hospital, one primary, two secondary school are also located here. Agriculture, veterinary and cooperative services are also available here. Telephone facilities are also available here. One tourism place is also located here. Weekly Hat bazaar takes place on Tuesday and Saturday.

### **Aurahi**

This center lies at Aurahi VDC which is Southern part of Siraha district and linked with Ayodhyanagar-Aurahi district road. This center also served to other adjoining VDCs people too. One primary, one secondary school is located here. Telephone facilities are also available here. One cooperative and NGO are working there. Weekly Hatbazaar take place on Sunday and Monday.

### **Bastipur**

This market center is located at Bastipur VDC and linked with Bastipur-Mukshargola and Manikdaha-Phulbari district road. It is small market center and shall be potential in future for agriculture center. Two lower secondary schools are located here.

### **Sarshwar**

This center lies at Sarshwar VDC in the Bank of Kamala Nadi of Siraha district. It is linked with Siraha Bazaar with Mirchaiya-Kalyanpur-Siraha road and another district road is Khairtoka-Sarshwar also connected with this center. It is highly potential for agro-based industries. Hat Bazaar takes place at Sunday and Wednesday. Two primary, one lower secondary, one secondary school,

health post are also located here. Telephone facilities are also available here. One cooperative and NGO are providing their services to the local level.

#### **Maheshpur Patari**

This center lies at Maheshpur Patari VDC, interconnected by Piluwaha-Chikna-Gadha, Laxmipur-Aurahi and other village road. Mahendra Highway also connected at this center. Community facilities like one primary, one secondary school, sub-health post and post office are located here. A telephone facility is also available here.

#### **Chhajana**

This center lies at Kushaha Laxminiya VDC and linked with Zeromile-Bariyapatti, Laxmipur-Aurahi district road. Other facility namely two primary, one lower secondary school, post office are located here. Telephone facility is also available here. One cooperative is providing its financial services.

### **3.6.4 Descriptions of Potential Market Centre**

#### **Mohanpur, Kamalpur**

This center located at Mohanpur Kamalpur VDC of Siraha district. Siraha-Sukhipur, Chikna-Gadha district roads and other village roads are linked with this market center. Two high schools and one post office are located here. One cooperative is providing financial service to the community people.

#### **Bhagwanpur**

This is the potential market center and located at Bhagawanpur VDC. It is linked with Dhodna-Kamaladaha district and other village roads. Community facilities likely one primary, one secondary school, health post and post office and cooperatives are located here. Telephone facility is also available here.

#### **New Choharwa**

This is the newly established center and potential center in future for business and agriculture purpose and located at Chandra Ayodhyapur VDC. Mahendra highway passes through here and linked with Baluwa-Chandra Ayodhyapur, Khadimtole-Chikna Gadha district road.

#### **Gadha**

This center lies at Gadha VDC and interlinked with Bathnaha-Kushandi district road. One primary, one secondary schools are situated here to provide the education services to the local people. One post office also located here. It shall be potential market center in future.

#### **Nawarajpur**

This center lies at Nawarajpur VDC of Siraha district and interlinked with Bathnaha-Kushandi district road. One high school and one health post are situated here. It may be agriculture potential center for future.

#### **Krishnapur, Hakpara**

This center lies at Krishnapur, Hakpara VDC of Siraha district and Siraha-Pipra Pra. Pi., Jamdaha-Gadiyani district road are linked here. One high school and sub-health post are located here.

## CHAPTER IV: DISTRICT INVENTORY MAP OF RURAL ROAD NETWORK

### 4.1 Existing Transport Situation

Siraha district has no air transport service to complement the surface transport facilities. Inner and inter district mobility and as such the development activities fully depend on expansion of rural road network within the district. All weather transport facilities through Mahendra Highway, Chaurahawa-Siraha-Madar and Mirchaiya-Katari feeder roads have been providing in district. Similarly, 44 district roads (14 RRA, 30 RRB) and 29 village roads having 853 km road network providing fair weather transport facility to district. Strategic roads within the district are all weather and play vital role in the overall transportation system of the district. List of strategic roads is given in table 4.1.

There are numerous district and village roads. From the field study, it has been observed that most of them are in fair weather condition. Most of these roads have been constructed on an adhoc basis without proper planning and engineering design. In the present work, detailed study of these roads have been made and prioritized to their contribution to enhance the rural transport network system of the district.

The study team has found Siraha district in a relatively better transport situation. This district has an easy surface transport connection with major market and commercial cities namely Itahari, Biratnagar, Lahan and Janakpur. However, most of the rural roads are in poor condition and need to be improved /upgraded for safe and reliable journey.

Prime objective of the present study is to prepare a master plan of rural transport network of the district. Consultant has therefore, focused mainly on the detailed study of district and village roads as described in the subsequent sections. Strategic roads are only shown to show the relative linkages to the rural roads.

**Table 4.1 List of National Highway/Feeder Roads**

SN	Highway/Feeder road	Total Length (KM)
<b>A</b>	<b>Highway</b>	
1	Mahendra Highway (Balan to Kamala Section)	43.27
<b>B</b>	<b>Feeder Road</b>	
2	Chauharwa-Siraha-Madar	26.66
3	Mirchaiya-Katari-Okhaldhunga	7.00
<b>C</b>	<b>Main District Road</b>	
4	Siraha – Balan (Postal Road)	33.00
	<b>Total</b>	<b>109.93</b>

Source: SSRN, DoR, 2011/12

#### **Brief description of all transport linkages i.e. National highway, Feeder road, and District Roads :**

##### **Balan-Kamala ( 43.27-BT) :H01**

It is National Highway of Nepal and also known as East West highway. This road starts from Balan River and ends at Kamala River in Siraha district. This road serves as inter-district connection road because it connects two districts Saptari and Dhanusha with Siraha district. It has total 43.27 km road length of bituminous surface. Various feeder and district roads like Lahan-Bhagawanpur-Thadi, Dhagadhahi – Vidhyapur – Bariyarpatti, Chauharaba – Siraha – Madar are connected with this road. Major markets situated on this section of Mahendra highway are Lahan, Bandipur, Dangarhi, Mirchaiya, Golbazar and Chauharwa.

##### **Chauharwa – Siraha – Madar ( 26.66 km-BT) F05:**

This feeder road starts from New Chauharwa at Mahendra Rajmarg and ends at Madar, Nepal-India border via district headquarters of Siraha. This road connects two major market centre of this area i.e. Siraha municipality and Madar bazaar. Madar bazaar is major market near Indian market

Jayanagar. The total road length is 26.66 km of fully bituminous surface. Various district roads connect or cross with this feeder road.

#### **Siraha – Balan (D16) Postal road:**

This road enters to Siraha district from Balan River and runs towards west where it passes through Siraha N.Pa. and runs again towards west and enters Dhanusha district while crosses the Kamala river. This road is also known as inter - district road which connects district headquarters as well as Siraha bazaar. The road passes through Bagawanpur, Nahara Rigaul, Tamasuiya, Majhaura, Nabarajpur, Kharukhiyahi, Janakinagar, Bariyarpatti, Harkatti, Aurahi, Itahari, Sanaitha, Lakshminiya, Siraha and Basbitta VDCs. Length of the road is 33 km earthen.

#### **Mirchaiya – Katari – Okhaldhunga F72 :**

This road starts from Mirchaiya bazaar at Mahendra Rajmarg and ends at Jyamire then enters to Udayapur district. This road serves as inter–district link road for four districts i.e. Siraha, Udayapur, Okhaldhunga and Khotang. The small portion of this road about 7 km section lies in Siraha district. This road is blacktopped single lane standard and is providing all weather access.

### **4.2 Classification of Rural Roads**

Rural roads are classified as A and B on the basis of enroute market grade, connection to VDC's / service centers, linkage to strategic roads, connection to major growth centers or connection of VDC's with district headquarter etc. as defined in the Interim Guidelines of DTMP, DoLIDAR (Chapter:4)

### **4.3 Inventory of Rural Road**

Road condition assessment has been made in terms of length by pavement type (i.e. blacktop, gravel or earth), surface condition (good, fair or poor), serviceability condition (i.e. all weather/fair weather) and type of intervention required. Inventory of each class of roads has been separately prepared and presented in the following sub-sections:

## 4.3.1 Summary of District Roads “A”

Table 4.2: Summary of District Roads “A”

Road code	Road name	Total length	Total existing length (Km)	Road status (blacktopped/gravel/earthen)			Surface condition (good/fair/poor)			Serviceability (all weather/fair weather)		Required intervention (Km)	
				Black top	Gravel	Earthen	Good	Fair	Poor	All weather	Fair weather	Upgrading /Rehab	New
16A001R	Mirchaiya- Kalyanpur - Sirha	23	23		20	3		20	3	20	3	23	
16A002R	Lahan - Bhagwanpur - Thadi	17	17		17	0		17		17		17	
16A003R	Siraha – Sukhipur	17	17		2	15		2	15	2	15	17	
16A004R	Chickna - Kalyanpur – Gadha	40	40		20	20		20	20	20	20	40	
16A005R	Lahan - Sahid chowk- Jhanjharpatti	19	19		9	10		9	10	9	10	19	
16A006R	Kalyanpur- Sitapur – Mahendra Rajmarg	10	10		0	10			10		10	10	
16A007R	Zeromile -Bariyarpatti	18	18		18	0		8	10	8	10	18	
16A008R	Zeromile-Sare Ambash	12	12		12	0			12		12	12	
16A009R	Jamdha-Lagadhi- Gadhiyani	26	26		18	8		18	8	18	8	26	
16A010R	Lahan-Taregana - Mahadevthan	14	14		10	4		10	4	10	4	14	
16A011R	Golbazar - Durgapur – Belhi	7	7		4	3		4	3	4	3	7	
16A012R	Lahan -9 – Pakdhiyagha – Govindpur	15	15		7	8		7	8	7	8	15	
16A013R	Dhangadhi-Patahari Jighaul -Kachnari	19	19		12	7		12	7	12	7	19	
16A014R	Aurahi –Kamalpur - Madar bazar	16	16		0	16			16		16	16	
	<b>Total</b>	<b>253</b>	<b>253</b>	<b>0</b>	<b>149</b>	<b>104</b>	<b>0</b>	<b>149</b>	<b>104</b>	<b>149</b>	<b>104</b>	<b>253</b>	

### 4.3.2 Briefs description on District Roads “A”

Study and analysis shows that Siraha district has 14 existing district roads and no new road under class A. Most of the district roads have earthen surface restricting their operations in only fair weather. Moreover, construction quality of the road is poor and has to be upgraded to all weather roads to increase accessibility of the people and improve overall transport situation of the district. Different roads need different type of interventions as given in summary table above. The briefs on individual district roads are given below:

#### **Mirchaiya- Kalyanpur –Siraha road (16A001R)**

This road starts from Mirchaiya bazaar at Mahendra Rajmarg and passes through different VDCs up to district headquarter Siraha. The main influenced VDCs are, Sarshwar, Belha, Thalaha, Kataha, Arnama Pra.Ra., Kalyanpur, Dhumari, Raghopur, and Mirchaiya Ramnagar. This road links Mahendra Rajmarg at north & Siraha-Balan Hulaki Sadak, Siraha Municipality bazar at south. Out of total 26 km, surface condition of the road is graveled in 23 km and remaining 3 km is earthen surface and the road provides transport facility as all weather.

#### **Lahan – Bagwanpur – Thadi (16A002A)**

This road starts from Lahan N.Pa. at Mahendra Rajmarg and ends at Thadi Bishwaspati of Inarwa VDC at Nepal-India border. The main VDCs touched by this road are Bramhan Gorchhari, Sonamati, Gadha, Mahadevaportaha, Itaharwa, Narha Rigaul and Inarwa. The settlements lies in this road are Chharapatti, Sonamati, Bathana, Sakhuwa Narkatti and Itaharawa. Total length of this road is 17 km gravel standard. This road plays major role for convenience to local people in travelling from Mahendra Rajmarg to India border. Various types of public and private vehicles are operating in this road in all season.

#### **Siraha-Sukhipur road (16A003A)**

This road starts from district headquarters Siraha N.Pa. and ends at Sukhipur where it links with Dhanghari- Bariyarpatti feeder road. Main influenced VDCs by this road are Thengahi, Sagarpur, Maheshpur, Mahaderpur, Gauripur, Kabilasi, Kalyanama and Sukhipur. Total length of the road is 17 km in which major portion is earthen i.e. 15 km & only remaining 2 km is gravel.

#### **Chikna –Kalyanpur-Gadha road (16A004R)**

This road passes parallel to Hulaki sadak & Mahendra Rajmarg. The road starts from Bhokraha and ends at Gadhiya of Gadha VDC where it meets Lahan-Bhagawanpur Thadi feeder road. VDCs lies in this road are Bhokraha, Chikna, Sikron, Bishanpur, Majholiya, Kalyanpurjabdi, Barchhawa, Devipur, Betauna, Mohanpur, Durgapur, Belhi, Sukhipur, Mohanpur Kamalpur,, Kushahalaxminiya, Pokhaarbhinda, Siswani, Maheshpur, Pargana, Bhawanipur K.Ba. The total length of the road is 20 km out of that 10 km length is gravel & 10 km length is earthen.

#### **Lahan- Sahidchowk- Jaanjharpatti road (16A005A)**

This road also starts from Lahan and ends at Jhajarpatti of Nabarajpur VDC. This road crosses Balan-Siraha Postal road at Naharniya. This road passes through different VDCs namely Lahan N.Pa, Braman Gorchhari, Bhawanipur, Bhagwanpur kalabanzar, Mahadev Portaha, Majhaura and Nawarajpur. This road is 19 km length whereas 9 km is gravel and 10 km is earthen. This road links Mahendra Rajmarg to Nepal-India border crossing district north to south.

#### **Kalyanpur-Sitapur-Mahendra Rajmarg road (16A006R)**

This road starts from Pipra at Mahendra Rajmarg and ends at Kalyanpur where it links Chikana-kalyanpur-Gadha road. The road passes through four VDCs namely Kalyanpur, Sitapur, Dumri and Maheshpur and crosses settlements like Piluwaha, Sitapur, Kanchanpur and Maheshpur. The total length of the road is 10 km, fully earthen surface.

#### **Zeromile- Bariyarpatti road (16A007R)**

Zeromile-Bariyarpatti road starts from Zeromile at East west highway and ends at Bariyarpatti bazaar close to Indian border. The total length of the road is 18.0 km and it is totally graveled and needs upgrade. The main VDC crosses by the road are Fulkahakatti, Sukhipur, Kushaha-Laxminiya,



Tenuwapatti and Bariyarpatti. Major market centre and settlements are Zeromile, Jaupur, Teshbiga, Mahadeva, Sukhipur, Kushaha, Shivnagar, Chajana, Nayatole and Bariyarpatti.

#### **Zeromile-Sarre-Ambas road (16A08R)**

This road joins from the Udayapur district at Marama, to Amba near Udayapur Border. It passes through three VDCs Dhangadhi, Bishnupurkatti and Govindpur and also serves the almost ten numbers of VDCs of Udayapur district. This road is very much important for public security, forest security, site seeing and economic growth of the Zero Mile Bazar along with the people of that corridor. Total length of the road is 12.0 km. The road has fully graveled surface.

#### **Jamdaha - Lagadi Gadiyani Road (16A009R)**

This road starts from Chorpaniya of Jamdaha VDC crosses Mahendra highway, Hulaki Sadak and reaches up to border of Nepal and India. The road is nearly parallel to Chaurharwa-Siraha-Madar feeder road. Main influencing VDCs are Jamdaha, Lalpur, Asanpur, Betauna, Arnama, Gauripur, Hakpara, Sanaitha, Lakshiniya, Lagodi Gadiyani etc. The crosses main market center Golbazar at Mahendra Rajmarg & also major settlements i.e. Haripur, Lalpur, Krishnapur-Hakpara. The total length of the road is 26 km, having 18 km gravel and 8 km earthen surface. Public & private vehicles are operating on this road.

#### **Lahan-Teregana-Mahadevsthan road (16A010R)**

This road starts from Lahan N .Pa. diverges from Mahendra highway and ends at Mahadevsthan of Govindpur VDC. Total length of the road is 14.0 km having 10.0 km gravel & 4.0 km earthen. Mainly crossing settlements by this road are Lahan N.Pa., Lagangoth, Ganeshpur, Teregana, Koiritole etc. Seasonal vehicles are operating in this road.

#### **Golbazar-Durgapur-Belhi road (16A011R)**

This road starts from Golbazar at Mahendra highway and ends at Belhi. The road passes through four numbers of VDCs such as Belhi, Betauna, Balkawa, Durgapur and Asanpur. This road connects settlements like Nipaniya, Kashipur, Belha, Baijarpur, and Langurwa to Mahendra highway. Total length of this is 7.0 km having 5.0 km gravel & 2.0 km earthen.

#### **Lahan-9-Pakdhiyagha-Govindpur road (16A012R)**

This road connects the one of the major market centre of this area Lahan municipality with three numbers of VDCs i.e. Bhadaiya, Dhodhana and Govindpur. This road serves different market centres and settlements like Lahangoth, Gudhigaun, Shovapur, Kheshera, Manikdhah etc. The road starts from Lahan municipality ward no 9 and ends at Govindapur. It has total 15 km length in which 7 km is gavel & 8 Km is earthen.

#### **Dhangadhi-Patahari Jighaul-Kachnari road (16A013R)**

This road starts from Dhangadhi and ends at Kajnari having total road length 19 km out of which 12 km is gravel & 7 km is earthen. This road provides direct transport facility to Dhangadhi, Bhawanipur, Pokharbhinda, Maheshpur and Khaurkiyahi. The main settlements lies in this road are Chhaparari, Bakhar, Rampur, Parsa, Sundarpur, Khaurkiyahi, Kajara, Nargi, Barhari and Kachanari.

#### **Aurahi-Kamalpur-Madar bazaar road (16A014R)**

This road starts from Aurahi VDC & ends to major Nepal-India border market i.e. Madar bazar. It passes through mainly three number of VDC i.e. Itahari, Lagadhigadhiyani, Sanhaitha, Lagadhigodh, Khirauna. Total length of the road is 16.0 km fully earthen surface.

## 4.3.3 Summary of District Roads “B”

Table 4.3: Summary of District Roads “B”

Road code	Road name	Total length	Total existing length (Km)	Road status (blacktopped/gravel/earthen)			Surface condition (good/fair/poor)			Serviceability (all weather/fair weather)		Required intervention (Km)	
				Black top	Gravel	Earthen	Good	Fair	Poor	All weather	Fair weather	Upgrading /Rehab	New
16B001R	Siraha-Pipra Pra.Pi.	6	6		0	6			6		6	6	
16B002R	Kushha Laxminiya-Dhangadhi	8	8		8	0		8			8	8	
16B003R	Lahan – Dhodana -Betaha	15	15		5	10		5	10	5	10	15	
16B004R	Mirchaiya – Kuthanama-Bhedia	11.5	11.5		4.5	7		4.5	7	4.5	7	11.5	
16B005R	Ayodhyanager bazar -Pipra - Aurahi	18.5	18.5		16	2.5		16	2.5	16	2.5	18.5	
16B006R	Belha - Chandraayodhyapur-Mahendra Rajmarg	15	15		5	10		5	10	5	10	15	
16B007R	Laxmipur Patari – Kushaha – Aurahi	5	5		0	5			5		5	5	
16B008R	Badaharamal - Sitapur-Chauharwa ( New chowk)	18	18		8	10		8	10	8	10	18	
16B009R	Bathnaha – Jagatpur Phulbaria –Kushandi	13	13		5	8		5	8	5	8	13	
16B010R	M.Rajmargh (Dhodana - Kamaldhah	6	6		1.5	4.5		1.5	4.5	1.5	4.5	6	
16B011R	Bastipur- Gobindpur - Mukshargola	15	15		6	9		6	9	6	9	15	
16B012R	Bariyarpatti – Tulshipur – Kushaha Laxminiya	7	7		2	5		2	5	2	5	7	
16B013R	Bisanpur Pr.Ma. – Pipra - Sukhipur	16	16		0	16			16		16	16	
16B014R	M.Rajmargh – Ganeshpur-Sitapur - Barhari Bazar	19	19		5	14		5	14	5	14	19	
16B015R	Khairtoka Custom- Sarswar	10	10		5	5		5	5	5	5	10	
16B016R	Old Choharwa - Panbari - Lalbhitiya	8	8		8	0		8		8		8	
16B017R	Manikdah - Ganeshpur - Shalhesh Phulbari	9	9		3	6		3	6	3	6	9	

Road code	Road name	Total length	Total existing length (Km)	Road status (blacktopped/gravel/earthen)			Surface condition (good/fair/poor)			Serviceability (all weather/fair weather)		Required intervention (Km)	
				Black top	Gravel	Earthen	Good	Fair	Poor	All weather	Fair weather	Upgrading /Rehab	New
16B018R	Khairbona chowk – Inarwa	12	12		3	9		3	9	3	9	12	
16B019R	Nirdhana -Kalyanpur- Jabadi	9.5	9.5		0	9.5			9.5		9.5	9.5	
16B020R	Navrajpur – Devnagar – Inarwa (Garsaha tole)	8	8		0	8			8		8	8	
16B021R	Bidyanagar-Sohanpur-Gargambha	8	8		0	8			8		8	8	
16B022R	Bheriya -Kalyanpur Jabadi	8	8		0	8			8		8	8	
16B023R	Tenuwapatti-Laxmipur-Sitapur	12	12		0	12			12		12	12	
16B024R	Kashaha - Mukshar	12	12		5	7		5	7	5	7	12	
16B025R	Rariyaha – Arnama pra. Pi.-khoriyatol	16	16		0	16			16		16	16	
16B026R	Bandipur-Utarahini Kamalanadi	6	6		6	0		6		6		6	
16B027R	Baluwa- Chandruodhyopur	18	18		8	10		8	10	8	10	18	
16B028R	Kalyanpur Ka.ba. - Premnagar - Raghobpur Gachiya	9	9		0	9			9		9	9	
16B029R	Kabilashi-Pokhariya Chowk-Harkatti	8	8		0	8			8		8	8	
16B030R	Mahuwahi – Sodhiyane - Tamasuiya	7	7		3	4		3	4	3	4	7	
	Total	333.5	333.5	0	107	226.5	0	107	226.5	107	226.5	333.5	

#### 4.3.4 Briefs on District Roads Class “B”

##### 1. Siraha – Pipra Pra.Pi. Road (16B001R)

This road starts from Siraha Bazaar and ends at Pipra. Main influencing villages are Aroha, Hakpara, Krishnapur and Pipra Pra. Pi. etc. Total length of the road is 6 km fully earthen surface. The road provides direct transport services to different market centres and settlements like Siraha N.P., Hakapara, Krishnapur, Beldarhi and Khajanpur.

##### 2. Kushaha-Laxminiya -Dhangarhi Road (16B002R)

This road starts from Salampur and passes through Kushaha Laxminiya, Mohanpur Kamalpur, Pipara, Bhawanipur, PhulkahaKatti, Dhangadgi etc. and ends at Dhangarhi at Mahendra highway. The road serves settlements like Kurwa, Bhawanipur, Betaha, Kamalpur, Pipara and Bidyanagar. Total length is 8 km gravel surface.

##### 3. Lahan-Dhodana -Betaha Road (16B003R)

This road starts from Lahan municipality at Mahendra highway and passes through socio-economic important place like Sobhapur, Amahi, Gothgaun, Ganeshpur etc. Main influencing VDCs are Dhodana, Bhadaiya and Lahan municipality. Total length of the road is 15 km whereas 5 km is gravel and rest of 10 km is earthen surface.

##### 4. Mirchaiya – Kuthanama-Bhedia Road (16B004R)

This road starts from main Mirchaiya bazaar and end at High school. It has total 11.5 km length out of which 4.5 km is gravel and 7.0 km is earthen. This road is important for educational point of view because it connects kathauna, Baluwatole, Sikron and Bheriya up to High School. It also connects to the main market centre like Mirchaiya bazaar in this area.

##### 5. Ayodhyanagar -Pipra – Aurahi Road (16B005R)

This road starts from Ayodhyanagar and ends at Aurahi which is the main market centre of this area. Total length of the road is 18.5 km in which 16 km of this road is graveled and rest of the length is earthen. This road crosses VDCs like Ayodhyanagar, Fulkahakatti, Balahi, Sukhipur, Kabilasi, Pipra Pra.Pi. and Aurahi. The road serves settlements like Kasaha, Phulkaha, Simara, Lalsahiya, Dahipaudi, Silorwa, Kabilasi, Pokhariya, Karharwa and Aurahi.

##### 6. Belha - ChandraAyodhyapur- Mahendra Rajmarg Road (16B006R)

This road starts from Belha and end at Mahendra Rajmarg at old Chauharwa. It has total 15 km length out of which 5.0 km is gravel & 10 km is earthen. The main VDC lies in this road are Belha, Bishnupur Pra.Ma., Laxmipur, Rajpur, Naraha, Balkawa, Chandra Ayodhyapur and settlements are Belha, Thalaha, Gadhiya, Rajpur, Kauwaha, Lalbhitiya, Barchhawa, Narha Balkawa, Khoiriya old, Choharwa.

##### 7. Laxmipur Patari – Kushaha – Aurahi Road (16B007R)

This road starts from Laxmipur and end at Aurahi. This road passes through Kabilasi, Tulsipur, Kushaha Laxminiya, Bidyanagar, Maheshpur patari and settlements, Patari, Barhampuri, Bidyanagar, Chhajana, Kushaha, Salampur, Baniniya, Kabilashi and Pokhariya. The total length of the road is 5 km which is earthen standard.

##### 8. Badaharamal - Sitapur- Chauharwa (New chowk) Road (16B008R)

This road starts from Badaraha of Badaharamal VDC and ends at New Chauharaba at Mahendra Rajmarg. It has total 18.0 km of length in which 8 km is gravel and 10 km is earthen. Name of VDCs lie in this road are Badaharamal, Rampurbirta, Malahaniyakhori, Ramnagar Mirchaiya, Gamariya, Maheshpur, ChandraAyodhyapur and Karjanaha. Main settlements link by this road are Badahara, Karjanaha, Manharba, Birta, Mahadeva, Mirchaiya, Maheshpur, Chandra Ayodhyapur and Pipra.

##### 9. Bathnaha – Jagatpur Phulbaria –Kushandi Road (16B009R)

This road has 13 km length which starts from Bathnaha and ends at Devnagar-Kushandi. It has 5 km gravel and 8 km earthen surface. The name of the VDCs lie in this road are Gadha,

Mahadevaportaha, Tamasuiya, Majhaura, Nawarajpur and settlements are Jagatpur, Sarhanchiya, Makarampur, Tharuwahitol and Phulbariya.

#### **10. Mahendra Rajmargh - Kamaldhah Road (16B010R)**

This road starts from old Chauharwa at Mahendra Rajmarg and ends at Kamaldhah. It has total 6 km length out of which 1.5 km is gravel and 4.5 km is earthen. This road crosses Govindpur & Malahanama settlements.

#### **11. Bastipur- Gobindpur - Mukshargola Road (16B011R)**

The total length of the road is 15.0 km which starts from Bastipur bazaar and ends at Mukshargola of Muksarbirta VDC. It has 6 km gravel and 9 km earthen surface. VDCs which are touches by the road are Bastipur, Govindapur, Dhangadhi, Bisnupurkatti, Muksarbirta, Lalpur and settlements are Pakkitol, Sarwati, Bishnupur, Bishnupurkatti, Magartol, Gonitol, Chamartole, Bhorleni, Bhulke, Jogidanda, Muksarbirta, Kasaitol and Gola.

#### **12. Bariyarpatti – Tulshipur – Kushaha Laxminiya Road (16B012R)**

This road starts from Bariyarpatti bazaar near Indian border and ends at Kushaha. It has total 7 km length in which most of the part is earthen. The main function of the road is to connect the Bariyarpatti bazaar near India boarder. The road touches VDCs like Kushaha Laxminiya, Kabilasi, Tulsipur, Harkatti and Bariyarpatti. Similarly it touches settlements like Bariyarpatti, Sivanagar, Deuripatti, Tulsipur, Maltol, Baniniya and Kushaha.

#### **13. Bishnupur - Pipra – Shukhipur Road (16B013R)**

This road starts from Bishnupur and ends at Pipra. It has only earthen surface having a total road length is 16.0 km which needs to be upgraded. Main VDCs lie on this road are Bishnupur, Arnama, Gauripur, Silorwa Pachhawari, Kabilasi, Kushaha Laxminiya, Mohanpur Kamalpur and Pipra. Similarly main settlements which are connects by the road are Gauripur, Tahbildartol, Kharhitol, Silorba, BishnupurGoriarwa, Aamchowk, Charari, Baishakha and Pipra Dha.

#### **14. Mahendra Rajmargh – Barhari Bazar Road (16B014R)**

The road starts from fishery centre at Mahendra Rajmarg & end at Barahari bazaar of Sikron at south. It has total 19 km length out of which 5 km gravel and 14 km earthen. The names of VDCs lie in this road are Padariya, Siswani, Maheshpur, Khaurkyahi, Pargana Dhansari, Mauwahi. The road serves settlements and market centres like Jahadi, Siswani, Gamhariya, Barchhawa, Salokhair, Dehawari, Dhanchhawa, Khaurkyahi, Bhaur Kataiya, Pathargada, Narghi and Barhari.

#### **15. Khairbona Custom- Sarswar Road (16B015R)**

This road connects main two main bazaar i.e. Madar bazaar at Nepal-India border and Sarswar. It has total 10 km road length out of which 5 km is gravel and 5 km is earthen. The main VDCs links by this road are Madar, Malhaniya, Basbitta, Sarshwar & settlements are Khairtoka, Madar, Ramaul, Basbita, Kathakolwa and Sarshwar.

#### **16. Old Choharwa – Panbari - Lalbhitiya Road (16B016R)**

This road starts from Old Chorohwa and ends at Lalbitiya. It has total 8 km road length having fully graveled The main VDCs links by this road are Naraha Balkawa, Chandra Ayodhyapur, Chandralalpur, Chandrodaypur and settlements are Baluwa, Balanchauri.

#### **17. Manikdah - Ganeshpur -Shalhesh Phulbari Road (16B017R)**

This road has total 9 km length out of which 3 km is gravel & 6 km is earthen. This road connects main historical place i.e. Shalhesh Phulbari to settlements like Jhuttaki, Khapanitol, Bastipur and Ganeshpur. VDCs touches by the road are Padariya, Bastipur, Gobindpur.

#### **18. Khairbona chowk – Inarwa Road (16B018R)**

This road starts from Khairbona Sakhuwa Nankarkati VDC and ends at Inerwa. It has total 12 km road length out of which 3 is gravel remaining 9 km is earthen. It provides direct transport service to Sakhuwa, Nankarkatti, Itharwa, Bhagawatipur, Tamasuiya, Naraha Rigaul and Inarwa VDCs. The main settlements touches by this road are Khairbona, Nayatol, Gerwaha, Gamhariya, Paraul and Inarwa.

**19. Nirdhana -Kalyanpur- Jabadi Road (16B019R)**

This road starts from Nirdhana of Chikna VDC and ends at Jabadi via main market centre Kalyanpur of this area. It has total road length is 9.5 km fully earthen surface. It provides direct transport service to Chikana, Bishnupur Pra.Ra., Kalyanpur and Jabadi VDCs. The main touches settlements are Nirdana, Bisnupur, Mahuliya and Kalyanpur.

**20. Navrajpur – Devnagar – Inarwa (Garsaha tole) Road (16B020R)**

This road starts from Navrajpur and ends at Garsaha tole of Inarwa VDC. It has only earthen surface of 8 km. This road provides direct transport facility to Nawarajpur and Inarwa VDCs. The main settlements lies in this road are Devnagar, Menaha, Garshaha and Abhenagar.

**21. Bidyanagar-Sohanpur- Gargamba Road (16B021R)**

This road starts from Bidhyanagar and ends at Gargamba of Janakinagr VDC. This road has only earthen surface of 8.0 km length. It provides direct transport facility to Jankinagar, Jijhaul, Tenuwapatti, Bidyanagar VDCs and also for settlements i.e. Bidyanagar, Tenuwapatti, Jankinagar.

**22. Bheriya -Kalyanpur Jabadi Road (16B022R)**

This road starts from Bheriya (Bhediya) and ends at Jabadi via Kalyanpur bazaar. It has total earthen surface having road length 8 km. VDCs lie in this road are Bhediya, Bishnupur, Majholiya and Kalyanpur. Settlements serve by the road are Tikuliya, Jamuwa, Majholiya and Kalyanpur.

**23. Tenuwapatti-Laxmipur-Sitapur Road (16B023R)**

The road starts from Tenuwapatti and ends at Sitapur. This road provides direct transport facility to Tenuwapatti, Laxmipur and Sitapur VDCs. The main settlements link by the road is Tenuwapatti, Sohapur, Laxmipur, Brahampuri, Deuri and Sitapur. Total road length is 12 km fully earthen surface.

**24. Kashaha – Mukshar Road (16B024R)**

This road starts from Kashaha and ends at Mukshar. It has total 12 km out of which 5 km is gravel and 7 km is earthen. It serves direct transport to two numbers of VDCs i.e. Muksarbirta and Ayodhyanagar. The main settlements lies in this road are Kashaha, Chiyabari, Baldanda and Gulariya.

**25. Rariyaha – Arnama Pra. Pi.-Khoriyatol Road (16B025R)**

The road starts from Rariyaha & ends at Khoriyatole via Arnama Pra. Pi. This road serves direct transport facility to Bishnupur, Mohanpur, Arnama Pra.Pi. and Krishnapur VDCs. The main settlements lies in this road are Rariyaha, Krishnapur, Koilpur, Harkatta, Mahadeva, Arnama, Brahampuri and Khoriyatol. Length of the road is 16 km which is fully earthen surface.

**26. Bandipur-Utarahini Kamalanadi Road (16B026R)**

This road lies within Badarahamal VDC which starts from Bandipur and ends at Kamalanadi. It has total 6 km road length having fully graveled. It passes through Bandipur, Baltiya and Utarahini settlements.

**27. Baluwa- Chandruodhyopur Road (16B027R)**

This road starts from Baluwa and ends at Chandruodhyopur. It has total 18 km road length having 8km graveled and 10 Km earthen. It connects from Baluwa to Udayapur district border near Gurmi. The main VDCs links by this road are Naraha Balkawa, Chandra Ayodhyapur, Chandralalpur, Chandrodayapur and settlements are Baluwa, Balanchauri.

**28. Kalyanpur Ka.ba. -Premnagar - Raghobpur Gachiya Road (16B028R)**

It starts from Kalyanpur Ka.ba. and ends at Rampura. This road serves direct transport facility to Kalyanpur Ka.Ba., Gautari, Sikron and Raghobpur VDCs. Main settlements lie in this road is Kalyanpur Ka.Ba., Betaha, Premnagar and Rampura. This road has total length 9 km of earthen surface.

**29. Kabilashi Pokhariya Chowk- Harkatti Road (16B029R)**

This road starts from Kabilishi and ends at Harkatti. It has total road length 8 km of earthen surface. This road provides direct transport facility to Harkatti, Tulsipur and Kabilasi VDCs. This road also serves to different settlements like Tulsipur, Maltol, Kundalpur and Darahiya.

**30. Mahuwahi – Sodhiyane - Tamasuiya Road (16B030R)**

It starts from Mahuwahi and ends at Tamasuiya. This road serves direct transport facility to mainly three VDCs like Mauwahi, Majhaura and Tamasuiya. It has total road length of 7 km out of which 3 km is gravel and 4 km is earthen surface. Main settlements lie in this road is Mauwahi, Patana, Tamasuiya, Bachahi and Bhagawatipur.

**4.4 List of Existing Trail Bridges****Table 4.4 Existing Trail Bridges (Under Construction)**

SN	Name of Bridge	Right bank	Left bank	Name of river/khola	Span (m)
1	Kalyan Daha	Majhaura	Muhawa	Kalyan Daha Nadi	45
2	Dhodha Nadi	JankiNagar -08	Janki Nagar -07	Dhodha Nadi	45

**4.5 Construction Approach**

It is recommended to adopt Labour based Environmental friendly and Participatory (LEP) approach popularly known as green roads construction method. Green Road approach aims at reducing scarring by minimizing the amount of cut necessary and by balancing the amount of material cut with the amount of fill required. Fill material is disposed off in layers “tipping areas”, adjacent to the roads on the valley side and where necessary dry stone retaining walls are used to retain this on the road as well as in the tipping areas. Gabion structures are used for retaining structures over 3 meters high. Fill material is further protected by bioengineering and re-vegetation programs. In areas where large cut are unavoidable and it is uneconomical to transport the earth for long distance, surplus material is disposed off over the valley side. However, dry stone check dams or breast walls are built at intervals down the slope to terrain this material.

Following are the main aspects of LEP/Green Road Approach.

**Labour Based**

Labour is one of Nepal's largest resources and it is also one of the country's most under utilized resource especially in the agricultural slack period of October to May. During this period, underemployment is a problem in most districts when farmers need to supplement their agricultural income with off-farm work. The creation of short and medium-term employment is one of the major aims of the LEP approach.

Labour is employment from within a one to two hour walk from a construction site. They bring their own food and do not require accommodation, so the complications arising out of encampment are avoided. Some 65% to 80% of the construction cost is paid in wages, so the major part of the investment remains in the district and has a trickle down beneficial effect on the whole community. Local labourers learn skills that they can apply on their farms, use of future employment and which are beneficial for later road maintenance work. Labour is organized into group of 15 to 20 persons each with a group leader.

**Environmental Friendly**

A phased construction method is an essential part of this construction approach. Machine and outside contract oriented construction activities are not allowed in this method. The use of explosives is usually prohibited and rock splitter is used for breaking hard rocks. The improper use of explosives for blasting can destabilize mountain slopes and lead to environmental damage.

Due to very steep slopes, inherently unstable geology and harsh monsoon climate, standard engineering practices are not always the optimum solution for protection roadside slopes in Nepal. Bio-engineering with vegetation can play an important role in stabilizing the surface layers of any

slope. Vegetation with wide spreading root system binds soil together and increases its sheer strength and limits the extent of slope failure.

**Participatory Approach**

All stakeholders in the district and local people are involved in the process of planning, implementation, monitoring and evaluation and maintenance and operation of roads. LEP approach can only succeed if the local government and the people of the district feel a collective responsibility of the construction and maintenance of the district and village roads. The people will only assume this responsibility if they are the main benefactors of the program, both in terms of income earned during the construction phase and user benefit during the operation phase. Locally based and elected officials and organization is the best vehicle to represent the interests of local people and this is reflected in the user committees constituted using LEP approach.



## CHAPTER V: DISTRICT ROAD NETWORK PLANNING

Rural transportation provision is mainly to improve accessibility of the people to markets and services; and promote economic activities through employment generation and marketing of local products. In context of Nepal, a fixed point system model is adopted for networking where junctions are confined to a finite set of locations such as markets, historical/archeological locations.

### 5.1 Accessibility Situation

Siraha district is rich in road networks comprises 5 numbers of strategic roads, 14 numbers of class A district roads and 30 numbers of class-B district roads. According to DoR and DDC sources there are 79.93 Km blacktopped and 47 km graveled strategic road, 252 Km Class **A** district road and 333.5 km Class **B** district road are scattered over the district. Road density is high in southern part of district comparing to northern part demarcated by Mahendra highway. Northern part of Mahendra highway is almost covered by Chure forest and river bed. Being the district headquarters, Siraha bazar is located at western south of district and linked by Chauharwa-Siraha-Madar Feeder road with Mahendra highway and other more feeder and district roads linked with DHQ. Population of western south and surrounding part depends on Siraha to receive higher degree of service. But people of eastern part and proximity of Mahendra highway have choice to get higher degree function either from India or Lahan.

### 5.2 Zone of Influence Area

National Transport Policy has considered 2 hrs walking distance as the zone of influence (Zol) for the plain terrain. Mainly influencing factors such as a) existence of rivers and b) existence of river crossing facilities were used in determining the Zol. The zone of influence area is determined by two ways concerning the road facility viz. all weather and fair weather service.

According to GIS analysis, all 30 market centres have been covered by all weather as well as fair weather roads.

### 5.3 Delineation of Accessible Area

Delineation of accessible within Zol is carried out using the GIS Model for Strategic roads and district roads in three different categories viz. 20 minutes and 2hrs walking time to reach the nearest road head (ref Map no. 3a and 3b).

From the accessibility analysis, approximately 100% of people and 98% of the areas coverage are within Zol for all weather road networks. Similarly, 100% of people and 99% of the areas coverage are within Zol for all weather and fair weather road networks (Table 5.1 and 5.2). This indicates that at present existing road networks cover almost all areas and population accessible to motorable roads. However, there is still some area mainly of northern part of district to be linked by new motorable road network.

**Table 5.1 All Weather Accessibility with respect to Area Coverage, and Population Coverage**

Walking Time	Population	Population %	Area coverage (Sq.Km)	Area %
20 minutes	503,836	78	730	64
2 Hours	140,925	22	392	34
<b>Total</b>	<b>644,761</b>	<b>100</b>	<b>1182</b>	<b>98</b>

**Table 5.2 All weather and Fair Weather Accessibility with respect to Area Coverage, and Population Coverage**

Walking Time	Population	Population %	Area coverage (Sq.Km)	Area %
20 minutes	627,730	97	950	83
2 Hours	16,669	3	184	16
<b>Total</b>	<b>644,755</b>	<b>100</b>	<b>1134</b>	<b>99</b>

## 5.4 Inaccessible Area

In Siraha district, large part of area and market centers is within accessible area. All existing/potential market centres are linked by at least fair weather class B district roads. Few parts of northern (Bishnupurkatti VDC) and of Siraha is inaccessible to road network (ref map 3a and 3b). This area has covered by Chure forest.

## 5.5 Delineation of Inaccessible Area

Excluding accessible area from the GIS model, all the remaining areas are delineated as inaccessible area. Just reverse to the accessible area very few population and 2% areas coverage are inaccessible to all weather roads within Zol. Similarly, 1% of the areas coverage and none of population are out of Zol for all weather and district road network.

## 5.6 Network Planning in Inaccessible Area

With the detail study of accessibility, network planning was carried out for further extension of road network in inaccessible areas to meet the National Transport Policy. The road network is planned basically adopting two methods viz incremental and comprehensive. Increment method specially deals with inaccessible area beyond the 2 hrs walking distance from existing road network in terai. But there is marginal inaccessible area in Siraha district; therefore incremental method is not applicable. Thus new road network is planned by comprehensive method. In this method, road networks are planned such that the identified market centers are connected as the nodal points. Similarly, during the planning, possible synchronization of road linkage with the abutting districts was carried out. In this method, market centers are taken as a nodal point and tried to link those points each other. There is altogether 30 market centres categorized as class A, class B, Class C and potential depends upon their functions and score. Almost market centres are linked with road network in Siraha District. Some market centres are planned to link and expansion of road network is underway for this purpose. There are 5 roads identified to link one market centre to other or link with adjacent border road network. In total 57 km of district road network has been planned connecting market centers and adjacent district border road network. Detail of each proposed road corridor is given in Table 5.3 below.

**Table 5.3 New Proposed Roads as per Comprehensive method**

S.N	Name of Road	Length (KM)	Class of road	VDCs
1	Bandipur (Kamala Tatbandha) - Madar - Paterwa	35	A	Badharmala, Kalyanpur Kalabanzar, Midia, Bokhara, Chikana, Itariparsahi, Chatari, Belaha, Sarsawa, Siraha Municipal, Malnahiya Gamahariya and Madar.
2	Krishnapur – Gauripur – Mahanaur	10	B	Krishnapur, Gauripur, Silorwa Pachhawari, Mahanaur
3	Chandralalpur- Chauharwa Old Bazar – Ghurmi	10	B	Chandrodaypur, Chandra Ayodhyapur
4	Tulshipur – Kabilashi – Pipra - Jamuba	15	B	Pipra Pra.dha., Tulsipur
5	Kabilashi – SilorbaPachabari- Gauripur	12	B	Kabilashi, Silorba Pachhabari, Gauripur
6	SilorbaPachabari – Sukhipur - Dhahipaghaudi	10	B	Silorba Pachhabari, Sukhipur, Balaha
	<b>Total</b>	<b>92.00</b>		

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**CHAPTER VI: DISTRICT TRANSPORT PERSPECTIVE PLAN (DTPP)**

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**6.1 Perspective Plan of District Rural Road Networks**

The DTPP has perspective of 20 years. The DTPP is revised every five years when a new DTMP is being prepared according to the rolling plan system.

**6.2 Existing Road Network System**

As explained in District Inventory Map of Rural Transport Network, Chapter IV, Siraha district consists of highways, feeder road, district roads and village roads including trail bridges for pedestrian mobility. Strategic roads are all weather and in good condition. They have been referred to show the linkages of other roads with them and as such they have not been considered in the present planning process.

Rural roads are scattered throughout the district. Many of them are partially completed. Network planning thus requires construction of new road for incomplete ones and also the addition of new linkages to connect inaccessible areas; maintenance and upgrading/ rehabilitation of existing roads.

**6.3 Prioritization of Proposed New Roads**

Prioritization of proposed new roads has been done as per the scoring system discussed in section 2.9.

**6.3.1 Prioritization of District Road 'A' for New Linkage**

Table 6.1 shows the priority list of proposed district road Class A for New construction. Detailed Calculation of scores for each parameter is shown in Annex II-A-1 to II- A-7.

Table 6.1: Priority List of District Road 'A' for New Linkage

SN	Road code	Name of Road	Total Length (Km)	Length of Road for New Construction (Km)	Parameter used for the prioritization of road corridors and their corresponding scores							Total Score (100)	Priority Rank
					Population per Km (40)	Pop*Walking Hour/Km (15)	Cultivated land (Ha)/Km (15)	Population (Dalit/Janajati)/Km (10)	Loss of Forest (Ha)/Km (5)	Market/service center (10)	Religious/tourist place (5)		
1	16A015R	Bandipur (Kamala Tatbandha) - Madar - Paterwa	35	35	40.00	15.00	15.00	10.00	5.00	10.00	5.00	100.00	1

### 6.3.2 Brief on Proposed District Roads Class 'A' for New Construction

#### Bandipur (Kamala Tatabanda)-Madar-Paterwa road (16A015R)

Bandipur (Kamala Tatabanda)-Madar-Paterwa road starts from Bandipur of Badarmala VDC where it diverges from East west highway. Similarly the road ends at Paterwa of Madar VDC. This road passes through Silorba Badarmala, Kalyanpur Kalabajar, Media, Bhokraha, Chikana, Itahari Parsahi, Chatari, Belaha, Sarsawar, Siraha NP, Malhaniya Gamahariya and Madar VDCs. This road will serve to different settlements like Bandipur, Betaha, Madewa, Bhediya, Bhokraha, Chikana, Nirdana, Dunwari, Belaha, Suksthadih, Basbitta, Baderwa, Paterwa and Inarwa. Total length of the road will be about 35 km for new construction. After completion it will improve access service of above mentioned VDCs of Siraha district.

### 6.3.3 Prioritization of District Road 'B' for New Linkage

Table 6.2 shows the priority list of proposed district roads class 'B' for new construction. Detailed calculation of scores for each parameter is shown in Annex II-B-1 to II-B-7.

Table 6.2: Priority List of District Road 'B' for New Linkage

SN	Road code	Name of Road	Total Length (Km)	Length of Road for New Construction (Km)	Parameter used for the prioritization of road corridors and their corresponding scores							Total Score (100)	Priority Rank
					Population per Km (40)	Pop*Walking Hour/Km (15)	Cultivated land (Ha)/Km (15)	Population (Dalit/Janajati)/Km (10)	Loss of Forest (Ha)/Km (5)	Market/service center (10)	Religious/tourist place (5)		
1	16B031R	SilorbaPachabari – Sukhipur - Dhahipaghaudi	10	10	40.00	11.25	14.70	9.74	5.00	10.00	3.75	94.45	1
2	16B032R	Krishnapur – Gauripur – Mahanaur	10	10	35.20	15.00	12.00	10.00	5.00	0.00	5.00	82.20	2
3	16B033R	Chandralalpur- Chauharwa Old Bazar – Ghurmi	10	10	20.59	8.78	15.00	6.35	5.00	6.58	2.50	64.80	3
4	16B034R	Kabilashi – SilorbaPachabari- Gauripur	12	12	18.75	11.97	14.25	5.32	5.00	0.00	3.75	59.04	4
5	16B035R	Tulshipur – Kabilashi – Pipra - Jamuba	15	15	9.61	6.16	13.50	3.91	5.00	0.00	2.50	40.67	5
		<b>Total</b>	<b>57</b>	<b>57</b>									

### 6.3.4 Brief on Proposed District Roads Class 'B' for New Construction

#### 1. SilorbaPachabari – Sukhipur – Dhahipaghaudi Road (16B031R)

SilorbaPachabari – Sukhipur - Dhahipaghaudi road starts from SilorbaPachabari and ends at Dhahipaghaudi via Sukhipur one of the major market centre of this area. This road passes through Silorba Pachhabari, Sukhipur and Balahi VDCs. This road will serve to different settlements like Langurba, Jankipur, Kodampur, Sukhipur, Dahipaudi, and SilorwaPachhawari. Total length of the road will be about 10 km for new construction. After completion it will improve access service of above mentioned VDCs of Siraha district.

#### 2. Krishnapur – Gauripur – Mahanaur road (16B032R)

The road starts from Krishnapur and ends at Mahanpur. Estimated length of Krishnapur – Gauripur – Mahanaur road is about 10 km. This road will serve to different settlements like Krishnapur, Baluwatol, Laxmipur and Gauripur. After its completion the road will improve access facility of Krishnapur, Gauripur, Silorwa Pachhawari and Mahanaur VDCs.

#### 3. Chandralalpur- Chauharwa Old Bazar – Ghurmi road (16B033R)

This road starts from Chandralalpur and ends at Ghurmi of Udayapur district via old Chauharwa bazaar. After its completion, it will serve as inter-district connection with Udayapur district. Estimated length of this road into Siraha district is about 15 km. This road will improve transport facility of different settlements like Phulbariya, Chandrodaypur, Chandralalpur and Chandra Ayodhyapur. The main VDCs lies in this road are Phulbariya, Chandrodaypur, Chandralalpur and Chandra Ayodhyapur.

#### 4. Kabilashi – SilorbaPachabari- Gauripur road (16B034R)

Proposed this road starts from Kabilashi and ends at Gauripur. After its completion people of the VDCs like Kabilashi, Silorba Pachhabari and Gauripur will be benefited. This road will also serve to different settlements like Kabilashi, Silorba Pachhabari and Gauripur. Total length of the road will be about 12 km.

#### 5. Tulshipur – Kabilashi – Pipra – Jamuba road (16B035R)

This road starts from Tulshipur and ends at Jamuba. Total length of Tulshipur – Kabilashi – Pipra- Jamuba road will be 15 km. This road will serve direct benefit to the people of the settlements like Kabilashi, Silorba Pachhabari and Gauripur. The road will pass through Kabilashi, Silorba Pachhabari and Gauripur VDCs.

### 6.4 Inter-District Transport Linkages

In Siraha district, there are some district roads which are inter-district link roads. Some road links to Indian border. After upgrading planned roads, there will be good transport facilities for the people of two districts and neighbor country India. District should give priority for upgrading such road and DTMP should be updated regularly. List of inter-district link roads are as follows:

**Table 6.3: List of Inter-District Transport Linkages**

SN	Road code	Name of Road	Total Length (Km)	Links To
1	16A007R	Jamdaha-Lagdhigadiyani	26	India
2	16A009R	Zeromile-Bariyarpatti	18	India
3	16A012R	Dhangarhi (Chapdahi)-Patari Jhigaul-Kachanari	19	India
4	16B017R	M.Rajmarga (Paterwa)-Barhi bazar	19	India
5	16B010R	Bathnaha-Jagat phulbariya-Kushandi	17	India
6	16B031R	Nabarajpur-Devinagar-Inarwa	14	India
7	16A005R	MRM Lahan (Bairiyatol)-Taregana-Mahadevsthan	26	Udayapur
8	16B003R	Lahan-Dhodana-Betaha	15	Udayapur
9	16A010R	Zeromile-Sarre-Ambas	20	Udayapur
10	16B038R	Chandralalpur- Chauharwa Old Bazar – Ghurmi	10	Udayapur
11	16B004R	Belshot-Bhotetol-Mahadeva	20	Udayapur
12	16B016R	Karjanha,4-Kalyanpur,6-Bherwatol	15	Dhanusha

## 6.5 Prioritization of Rural Roads Class ‘A’ and Class ‘B’ for Upgrading/Rehabilitation

Prioritization of rural roads class ‘A’ and ‘B’ for upgrading/rehabilitation has been done on the basis of population served within the zone of influence, loss of cultivated land, traffic volume, proximity to market/service centers and religious/tourist places. Details of scoring system for each parameter have already been discussed in section 2.9.

### 6.5.1 Prioritization of District Road ‘A’ for Upgrading

Table 6.4 shows the priority list of proposed district roads class ‘A’ for upgrading. Detailed calculation of scores for each parameter is shown in Annex III-A-1 to III-A-5.



Table 6.4: Prioritized List of District Road 'A' for Upgrading

SN	Road code	Name of Road	Total Length(KM)	Length of Road for Upgrading/ Rehabilitation (Km)	Parameter used for the prioritization of road corridors and their corresponding scores					Total Score (100)	Priority Rank
					Population per Km (30)	Cultivated land (Ha)/Km (20)	Traffic Volume (20)	Market/service center (20)	Religious/ tourist place (10)		
1	16A001R	Mirchaiya- Kalyanpur -Sirha	23	23	21.86	18.18	20.00	20.00	8.33	88.37	1
2	16A002R	Lahan - Bhagwanpur -Thadi	17	17	21.69	20.00	14.97	15.53	8.33	80.52	2
3	16A003R	Siraha – Sukhipur	17	17	27.02	17.27	14.21	12.17	5.00	75.67	3
4	16A004R	Chickna - Kalyanpur – Gadha	40	40	21.12	18.91	19.66	3.64	10.00	73.33	4
5	16A005R	Lahan - Sahid chowk-Jhanjharpatti	19	19	19.33	18.18	16.25	14.29	5.00	73.05	5
6	16A006R	Kalyanpur- Sitapur –Mahendra Rajmarg	10	10	29.04	20.00	2.71	7.90	5.00	64.66	6
7	16A007R	Zeromile -Bariyarpatti	18	18	11.48	20.00	14.50	5.10	8.33	59.42	7
8	16A008R	Zeromile-Sare Ambash	12	12	20.70	19.09	10.17	1.83	6.67	58.46	8
9	16A009R	Jamdha-Lagadhi- Gadhiyani	26	26	14.93	20.00	12.93	3.62	6.67	58.15	9
10	16A010R	Lahan-Taregana - Mahadevthan	14	14	13.42	15.45	8.55	13.88	6.67	57.98	10
11	16A011R	Golbazar - Durgapur –Belhi	7	7	30.00	17.64	2.15	3.62	3.33	56.74	11
12	16A012R	Lahan -9 – Pakdhiyagha – Govindpur	15	15	26.74	17.27	7.24	0.29	3.33	54.87	12
13	16A013R	Dhangadhi-Patahari Jighaul -Kachnari	19	19	12.85	17.45	11.43	1.11	8.33	51.18	13
14	16A014R	Aurahi –Kamalpur - Madar bazar	16	16	16.20	19.09	2.25	2.41	5.00	44.94	14
		<b>Total</b>	<b>253</b>	<b>253</b>							

### 6.5.2 Prioritization of District Road 'B' for Upgrading

Table 6.5 shows the priority list of proposed district roads class 'B' for upgrading. Detailed calculation of scores for each parameter is shown in Annex III-B-1 to III-B-5.

**Table 6.5: Prioritized List of District Road 'B' for Upgrading**

SN	Road code	Name of Road	Total Length(KM)	Length of Road for Upgrading/Rehabilitation(Km)	Parameter used for the prioritization of road corridors and their corresponding scores					Total Score (100)	Priority Rank
					Population per Km (30)	Cultivated land (Ha)/Km (20)	Traffic Volume (20)	Market/service center (20)	Religious/tourist place (10)		
1	16B001R	Siraha-Pipra Pra.Pi.	6	6	16.45	19.09	14.58	14.16	8.57	72.85	1
2	16B002R	Kushha Laxminiya- Dhangadhi	8	8	29.82	17.27	8.34	5.00	7.14	67.57	2
3	16B003R	Lahan – Dhodana -Betaha	15	15	15.17	17.82	9.70	20.00	2.86	65.55	3
4	16B004R	Mirchaiya – Kuthanama-Bhedia	11.5	11.5	8.50	20.00	10.21	16.49	4.29	59.48	4
5	16B005R	Ayodhyanager bazar -Pipra - Aurahi	18.5	18.5	13.12	18.18	15.47	2.35	10.00	59.13	5
6	16B006R	Belha - Chandraayodhyapur- Mahendra Rajmarg	15	15	11.44	17.45	14.89	5.69	8.57	58.05	6
7	16B007R	Laxmipur Patari – Kushaha – Aurahi	5	5	30.00	19.09	3.18	0.79	4.29	57.35	7
8	16B008R	Badaharamal - Sitapur- Chauharwa ( New chowk)	18	18	15.29	18.18	12.98	0.79	8.57	55.82	8
9	16B009R	Bathnaha – Jagatpur Phulbaria –Kushandi	13	13	9.39	17.64	20.00	0.79	5.71	53.53	9
10	16B010R	M.Rajmargh (Dhodana - Kamaldhah	6	6	24.93	18.18	2.97	1.46	5.71	53.25	10
11	16B011R	Bastipur- Gobindpur - Mukshargola	15	15	16.53	17.45	12.67	2.31	4.29	53.25	11
12	16B012R	Bariyarpatti – Tulshipur – Kushaha Laxminiya	7	7	16.55	18.18	5.33	4.98	7.14	52.19	12
13	16B013R	Bisanpur Pr.Ma. – Pipra -Sukhipur	16	16	14.79	17.82	10.27	2.82	5.71	51.41	13
14	16B014R	M.Rajmargh – Ganeshpur-Sitapur - Barhari Bazar	19	19	7.06	17.45	17.30	0.79	7.14	49.75	14
15	16B015R	Khairtoka Custom- Sarswar	10	10	10.43	19.09	13.67	2.15	4.29	49.62	15

SN	Road code	Name of Road	Total Length(KM)	Length of Road for Upgrading/Rehabilitation(Km)	Parameter used for the prioritization of road corridors and their corresponding scores					Total Score (100)	Priority Rank
					Population per Km (30)	Cultivated land (Ha)/Km (20)	Traffic Volume (20)	Market/service center (20)	Religious/tourist place (10)		
16	16B016R	Old Choharwa - Panbari - Lalbhitiya	8	8	7.42	17.27	16.71	0.79	5.71	47.91	16
17	16B017R	Manikdah - Ganeshpur -Shalhesh Phulbari	9	9	12.27	20.00	9.98	0.79	4.29	47.32	17
18	16B018R	Khairbona chowk – Inarwa	12	12	12.66	18.18	8.43	0.79	7.14	47.20	18
19	16B019R	Nirdhana -Kalyanpur- Jabadi	9.5	9.5	11.32	18.18	8.21	5.05	4.29	47.05	19
20	16B020R	Navrajpur – Devnagar – Inarwa (Garsaha tole)	8	8	12.58	20.00	8.98	0.79	2.86	45.20	20
21	16B021R	Bidyanagar-Sohanpur- Gargambha	8	8	13.06	17.64	6.41	0.79	5.71	43.61	21
22	16B022R	Bheriya -Kalyanpur Jabadi	8	8	13.96	17.45	2.73	5.05	4.29	43.48	22
23	16B023R	Tenuwapatti-Laxmipur-Sitapur	12	12	6.21	18.18	11.33	3.43	4.29	43.44	23
24	16B024R	Kashaha - Mukshar	12	12	3.85	20.00	15.33	0.79	2.86	42.83	24
25	16B025R	Rariyaha – Arnama pra. Pi.-khoriyatol	16	16	7.87	18.18	8.75	0.79	5.71	41.30	25
26	16B026R	Bandipur-Utarahini Kamalanadi	6	6	13.45	19.09	2.50	4.24	1.43	40.71	26
27	16B027R	Baluwa- Chandruodhyopur	18	18	6.25	17.82	9.68	0.79	5.71	40.25	27
28	16B028R	Kalyanpur Ka.ba. -Premnagar - Raghobpur Gachiya	9	9	9.15	19.09	4.49	0.79	5.71	39.23	28
29	16B029R	Kabilashi-Pokhariya Chowk-Harkatti	8	8	7.48	19.09	4.62	0.79	4.29	36.28	29
30	16B030R	Mahuwahi – Sodhiyane - Tamasuiya	7	7	7.10	18.18	5.27	0.79	2.86	34.20	30
		<b>Total</b>	<b>333.5</b>	<b>333.5</b>							

## 6.6 List of Village Roads

There are 35 village roads identified in Siraha district having gravel as well as earthen surface. Total 156.75 km road network lies on village road standard passing through various VDCs given in table 6.6 below.

**Table 6.6: List of Village Roads**

SN	Name of Roads	TL(km)	Road condition				VDC Passes
			BT	Gra	Ear	New	
1	Bishnupur - Rajpur - Kalyanpur	4.50			4.50		Kalyanpur Jabadi, Rajpur, Bishnupur
2	Khajanpur - New Kamalpur	4.00		2.00	2.00		Pipra, Itahari
3	Madar ,6 - MalahaniyaGamhariya - Manpur	7.00		1.00	6.00		Malhaniya
4	Hakpada - Laxminiya –Sajhomaithan	6.00			6.00		Laxminiya, Sanhaitha, Hakapara
5	Chauharwa-Madar -Phulbariya	5.00		1.00	4.00		Madar
6	Madar –Hatiya -Sarshwar	3.00			3.00		Madar
7	Baishipokhri - Sanhetha -Gagan Khola	6.00			6.00		Sanhaitha,Itahari
8	Hakpada Pipra –Tarapatti chowk - Laxminiya	6.00			6.00		Hakpara, Laxminiya, Siraha N.P.
9	Madar Bazar- Sukhchaina –Jogiya	5.00		1.00	4.00		Lagadigoth, Khirauna, Sukhachaina, Madar
10	Chuharwa –Madar 6 -Nabatole -Itari Prashahi	5.00			5.00		Madar, Khirauna, Laxminiya
11	Itahari - Prasahi Kalyanpur -Jabadhi	4.50		4.50	0.00		Itahari Parasahi, Kalyanpur Jabadi
12	Nirdhana – Prasahi –Majhauria	4.00			4.00		Chikana, Itahari Parsahi, Chatari, Arnama
13	Chatari - Baniniya	3.00		3.00	0.00		Chatari, Arnama
14	Itari Prashahi -Sanchiraiya	3.00			3.00		Itari Parsahi, Arnama Pra.Ra.
15	Kalyanpur –Dokaha -Banggatiya	5.00			5.00		Kalyanpur Jabadi
16	Dhodana - kamaldha	6.00		2.00	4.00		Phulbariya
17	Bhedia -Tharuhat – Kalyanpur	3.25			3.25		Kalyanpur
18	VDC Sitapur - Pra.Pa. Soni gaun - Dokhaba	3.00			3.00		Kalyanpur Jabadi, Dumari, Sitapur
19	Nirdhana- Chikna	5.50			5.50		Chikana
20	Tenuwapatti – Kashaha Aurahi sadak – Pokharia chowk	5.00			5.00		Tenuwapatti, Tulsipur, Kabilasi

SN	Name of Roads	TL(km)	Road condition				VDC Passes
			BT	Gra	Ear	New	
21	Kashha-Gauraha- Gamharia	6.00		3.00	3.00		Asanpur, Balkawa, Ayodhyanagar
22	Kashaha chowk -Mothiyahi	6.00		6.00	0.00		Ayodhyanagar, Phulkahakatti
23	Golbazar – Belkawa - Debipur	7.00			7.00		Asanpur, Balkawa, Devipur
24	Bariyarpatti Durga Mandir – Harkatti	5.00			5.00		Bariyarpatti, Harkatti
25	Raghunitole - Chaprari - Negri	4.00		4.00	0.00		Dhangadhi, Bastipur
26	Hospital chowk (Lahan) – Milk factory chowk – Sankar Rice Mill – Balongeshwor	4.00			4.00		Lahan N.P.
27	Karjanaha -4, - Kalyanpur Ka.ba. -Bherwa tole	2.0			2.00		Karjanaha, Kalyanpur Ka.ba
28	Mahadewa – Chamartole - Belshot	4.0			4.00		Karjanaha,Rampurbirta,
29	Hemnarayan Chowk - Hanumannagar	6.0				6.00	Siraha N.Pa.,Hanumannagar,Thengahi
30	Kalimandir - Lagadigoth - India Border	3.0				3.00	Madar,Lagadigoth
31	Saraswar - Bhaluwahi	3.0				3.00	Sarswar,Hanumannagar
32	Bhulke - Badharamal-7-Bethaha	2.0				2.00	Badharamal
33	Mirchaiya - Sitapur-Kanchanpur-Mateshwor	3.0				3.00	Ramnagar Mirchaiya,Maheshpur
34	Pirari - Pryagpur	2.0				2.00	Malhaniyakhori,Rampurbirta
35	Makhanaha-Sukchaina-Lagadigoth	6.0			6.00		Siraha N.Pa.,Kairana, Sukchaina, Lagadigoth
	<b>Total</b>	<b>156.75</b>	<b>0.00</b>	<b>27.50</b>	<b>110.25</b>	<b>19.00</b>	

## 6.7 Prioritization of Trail Bridges

### 6.7.1 Prioritization of Trail Bridges for New Construction

Prioritized list of Trail Bridges for new construction is given in Table 6.7.

**Table 6.7 Prioritized Lists of Trail Bridges for New Construction**

SN	Name of Bridge	Right bank	Left bank	Name of river/khola	Span (m)
1	Kalyan Daha	Majhaura	Muhawa	Kalyan Daha Nadi	45
2	Dhodha Nadi	JankiNagar -08	Janki Nagar -07	Dhodha Nadi	45

## CHAPTER VII: FIRST FIVE-YEAR DISTRICT TRANSPORT MASTER PLAN

### 7.1 First Five-Year District Transport Master Plan

District transport prospective plan (DTPP) as discussed in the previous chapter covers a wider period, generally 20 years of implementation requiring significant financial input. Based upon the prioritized transport linkages and the projected financial plan, first five year-year District Transport Master Plan (DTMP) indicating the year-wise target has been prepared. Various categories of interventions such as new construction, maintenance and upgrading/rehabilitation for roads including the trail bridges have been prepared and presented in this report.

### 7.2 Five Year Projected Financial Plan

Major sources of funding to rural road network development are mainly the DDC development grant, VDC allocation, DDC's and VDC's own resources, DoLIDAR support, GON's grant and support from other donor agencies. While preparing the financial plan, current available financial resources and the existing trend of funding from various agencies was identified and this is then projected for the next five years to prepare the First Five-year Financial Plan as presented in table 7.1.

**Table 7.1: Possible Funding (Roads) for Coming Five Years Budget (NRs '000)**

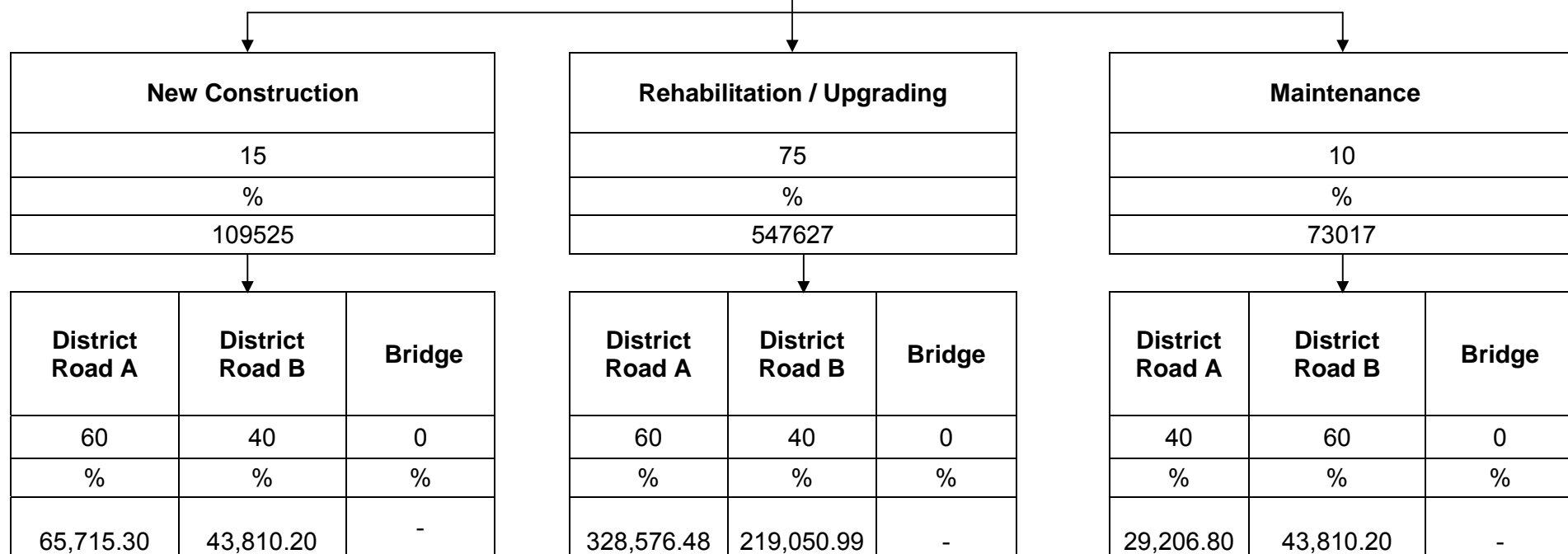
Source of Budget	Fiscal Year				
	069/70	070/71	071/72	072/73	073/074
DDC Grant	25,000.00	27,500.00	30,250.00	33,275.00	36,602.50
VDC Fund	53,000.00	58,300.00	64,130.00	70,543.00	77,597.30
Rural Access Improvement and Decentralization Programme (RAIDP)	22,500.00	24,750.00	27,225.00	29,947.50	32,942.25
Road Board Nepal	3,500.00	3,850.00	4,235.00	4,658.50	5,124.35
<b>Sub-Total</b>	<b>104,000.00</b>	<b>114,400.00</b>	<b>125,840.00</b>	<b>138,424.00</b>	<b>152,266.40</b>
People's Participation (15%)	15,600.00	17,160.00	18,876.00	20,763.60	22,839.96
<b>Total</b>	<b>119,600.00</b>	<b>131,560.00</b>	<b>144,716.00</b>	<b>159,187.60</b>	<b>175,106.36</b>
<b>Grand Total</b>	<b>730,169.96</b>				

### 7.3 Sharing of Budget

After a through study and also the consultation with related rural roads implementation authorities, the annual budget available for the development of transportation sector in the district is proposed to be shared for various interventions for new construction (15%), upgrading/rehabilitation (75%) and maintenance (10%) of roads and trail bridges which is further divided into district road and village/agriculture road. As per prevailing situation of the district, the sharing of fund will be done as per the chart given below:

## Sharing of Budget

<b>Total Annual Budget ( Road) (NRs.'000)</b>
<b>730170</b>
<b>100%</b>





## 7.4 Year- Wise Sharing Of Budget

Table 7.2: Year- Wise Sharing Of Budget

S.N.	Fiscal Year	Total Budget (NRs.)	Total Budget ( NRs. in '000) & Percentage for New, Rehabilitation & Maintenance						Total %
			New Construction		Rehabilitation/ Upgrading		Maintenance		
			Amount	%	Amount	%	Amount	%	
1	069/70	119600	17940	15	89700	75	11960	10	100
2	070/71	131560	19734	15	98670	75	13156	10	100
3	071/72	144716	21707	15	108537	75	14472	10	100
4	072/73	159188	23878	15	119391	75	15919	10	100
5	073/74	175106	26266	15	131330	75	17511	10	100
	Total	730170	109525		547627		73017		100

## 7.5 Year-Wise Targets

Table 7.3: Year-Wise Targets

Fiscal Year	Road Category						Trail Bridge		
	District Road A Km			District Road B Km			New Construction	Rehabilitation/ Upgrading	Maintenance
	New Construction	Rehabilitation/ Upgrading	Maintenance	New Construction	Rehabilitation/ Upgrading	Maintenance			
069/70	5.38	21.53	119.60	3.59	14.35	179.40	0.00	0.00	0.00
070/71	5.92	23.68	131.56	3.95	15.79	197.34	0.00	0.00	0.00
071/72	6.51	26.05	144.72	4.34	17.37	217.07	0.00	0.00	0.00
072/73	7.16	28.65	159.19	4.78	19.10	238.78	0.00	0.00	0.00
073/74	7.88	31.52	175.11	5.25	21.01	262.66	0.00	0.00	0.00
<b>Total (km)/no</b>	<b>32.86</b>	<b>131.43</b>	<b>730.17</b>	<b>21.91</b>	<b>87.62</b>	<b>1095.25</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Grand Total (km)/m</b>	<b>894.46</b>			<b>1204.78</b>			<b>000.00</b>		

Table 7.4: Year-Wise Physical Targets for New Construction

S.N.	Class of Transport Linkage	New Construction								Budget ' 000			
		2069/70		2070/71		2071/72		2072/73		2073/74		Total	
		Budget	km	Budget	km	Budget NRs. '000	km	Budget	km	Budget	km	Budget	km
1	District Road A	10764	5	11840	6	13024	7	14327	7	15760	8	65715	33
2	District Road B	7176	4	7894	4	8683	4	9551	5	10506	5	43810	22
3	Trail Bridge	0	0	0	0	0	0	0	0	0	0	0	0

Table 7.5: Year-Wise Physical Targets for Upgrading/Rehabilitation

S.N.	Class of Transport Linkage	Rehabilitation/Upgrading								Budget ' 000			
		2069/70		2070/71		2071/72		2072/73		2073/74		Total	
		Budget	km	Budget	km	Budget	km	Budget	km	Budget	km	Budget	km
1	District Road A	53820	22	59202	24	65122	26	71634	29	78798	32	328576	131
2	District Road B	35880	14	39468	16	43415	17	47756	19	52532	21	219051	88
3	Trail Bridge	0	0	0	0	0	0	0	0	0	0	0	0

Table 7.6: Year-Wise Physical Targets for Maintenance

S.N.	Class of Transport Linkage	Maintenance								Budget ' 000			
		2069/70		2070/71		2071/72		2072/73		2073/74		Total	
		Budget	km	Budget	km	Budget	km	Budget	km	Budget	km	Budget	km
1	District Road A	4784	120	5262	132	5789	145	6368	159	7004	175	29207	730
2	District Road B	7176	179	7894	197	8683	217	9551	239	10506	263	43810	1095
3	Trail Bridge	0	0	0	0	0	0	0	0	0	0	0	0

## 7.6 Prioritized Transport Linkages for the First Five Year Plan (DTMP)

In the previous chapter, all the rural roads in the district have been prioritized on the basis of pre set indicators and the scoring system assigned to each of them and a detailed DTPP been prepared. In the first five year plan (DTMP), different categories of roads for various interventions have further been prioritized in relation to the resources available in the district. Prioritized list of the roads with their year wise target (physical and financial) is presented in the following sub-sections:

## 7.6.1 Prioritized District Roads 'A' for the First Five Year Plan (DTMP)

Table 7.7: Prioritized District Road 'A' for New Linkage

S.N.	Code	Name of Road	Total Length (km)	Targeted Length of Road for New Construction km	2069/70		2070/71		2071/72		2072/73		2073/74		Total		Source of Funding
					Budget Nrs in '000	km	Budget Nrs in '000	km	Budget Nrs in '000	km	Budget Nrs in '000	km	Budget Nrs in '000	km	Budget Nrs in '000	km	
1	16A016R	Bandipur (Kamala Tatbandha) - Madar - Paterwa	35	35	10000	5	12000	6	14000	7	14000	7	16000	8	66000	33	
Required Budget and targeted length (km)			35	35.00	10000	5	12000	6	14000	7	14000	7	16000	8	66000	33	

Table 7.8: Prioritized District Road 'A' for Upgrading

S.N.	Code	Name of Road	Total Length (km)	Targeted Length of Road for Upgrading km	2069/70		2070/71		2071/72		2072/73		2073/74		Total		Source of Funding
					Budget Nrs in '000	km	Budget Nrs in '000	km	Budget Nrs in '000	km	Budget Nrs in '000	km	Budget Nrs in '000	km	Budget Nrs in '000	km	
1	16A001R	Mirchaiya- Kalyanpur -Sirha	23	23	20000	8	17500	7	20000	8					57500	23.00	
2	16A002R	Lahan - Bhagwanpur -Thadi	17	17	15000	6	17500	7	10000	4					42500	17.00	
3	16A003R	Siraha – Sukhipur	17	17	12500	5	12500	5	17500	7					42500	17.00	
4	16A004R	Chickna - Kalyanpur – Gadha	40	40	7500	3	10000	4	15000	6	32500	13	32500	13	97500	39.00	
5	16A005R	Lahan - Sahid chowk-Jhanjharpatti	19	19					2500	1	22500	9	22500	9	47500	19.00	
6	16A006R	Kalyanpur- Sitapur –Mahendra Rajmarg	10	10							12500	5	12500	5	25000	10.00	
7	16A007R	Zeromile -Bariyarpatti	18	18							5000	2	10000	4	15000	6.00	
Required Budget and targeted length (km)			144	144	55000	22	57500	23	65000	26	72500	29	77500	31	327500	131.00	

## 7.6.2 Prioritized District Roads 'B' for the First Five Year Plan (DTMP)

Table 7.9: Prioritized District Road 'B' for New Linkage

S.N.	Code	Name of Road	Total Length (km)	Targeted Length of Road for New Construction km	2069/70		2070/71		2071/72		2072/73		2073/74		Total		Source of Funding
					Budget Nrs in '000	km	Budget Nrs in '000	km	Budget Nrs in '000	km	Budget Nrs in '000	km	Budget Nrs in '000	km	Budget Nrs in '000	km	
1	16B031R	SilorbaPachabari – Sukhipur - Dhahipaghaudi	10	10	4000	2	4000	2	4000	2	4000	2	4000	2	20000	10	
2	16B032R	Krishnapur – Gauripur – Mahanaur	10	10	4000	2	4000	2	4000	2	4000	2	4000	2	20000	10	
3	16B033R	Chandralalpur- Chauharwa Old Bazar – Ghurmi	10	10							2000	1	2000	1	4000	2	
Required Budget and targeted length (km)			30.00	30.00	8000	4	8000	4	8000	4	10000	5	10000	5	44000	22	

Table 7.10: Prioritized District Road 'B' for Upgrading

S.N.	Code	Name of Road	Total Length (km)	Targeted Length of Road for Upgrading (km)	2069/70		2070/71		2071/72		2072/73		2073/74		Total		Source of Funding
					Budget Nrs in '000	km	Budget Nrs in '000	km	Budget Nrs in '000	km	Budget Nrs in '000	km	Budget Nrs in '000	km	Budget Nrs in '000	km	
1	16B001R	Siraha-Pipra Pra.Pi.	6	6	7500	3	7500	3							15000	6.00	
2	16B002R	Kushha Laxminiya- Dhangadhi	8	8	10000	4	10000	4							20000	8.00	
3	16B003R	Lahan – Dhodana -Betaha	15	15	10000	4	10000	4	17500	7					37500	15.00	
4	16B004R	Mirchaiya – Kuthanama-Bhedia	11.5	11.5	7500	3	12500	5	8750	3.5					28750	11.50	
5	16B005R	Ayodhyanagr bazar -Pipra - Aurahi	18.5	18.5					15000	6	17500	7	12500	5	45000	18.00	
6	16B006R	Belha - Chandraayodhyapur-Mahendra Rajmarg	15	15					7500	3	15000	6	15000	6	37500	15.00	
7	16B007R	Laxmipur Patari – Kushaha – Aurahi	5	5							7500	3	5000	2	12500	5.00	
8	16B008R	Badaharamal - Sitapur-Chauharwa ( New chowk)	18	18							7500	3	17500	7	25000	10.00	
Required Budget and targeted length (km)			97.00	97.00	35000	14	40000	16	48750	19.5	47500	19	50000	20	221250	88.50	

## 7.7 Prioritized List of Trail Bridge for the First Five Year Plan (DTMP)

Table 7.11: Priority List of Trail Bridge for the First Five Year Plan (DTMP)

SN	Name of Bridge	Right bank	Left bank	Name of River / Khola	Span (m)
1	*Kalyan Daha	Majhaura	Muhawa	Kalyan Daha Nadi	45
2	*Dhodha Nadi	Janki Nagar -08	Janki Nagar -07	Dhodha Nadi	45

\*Under Construction

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## CHAPTER VIII: CONCLUSION

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### 8.1 Conclusion

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

The proposed interventions are reflection of the requirement of DDC to improve accessibility of people on goods and services and plan on current trend of financial resource availability. The study is only concerned within the district boundary, but due consideration is also given to the nearest road head and the inter district linkages as well. National Strategic Roads / Feeder Roads are not included in DTMP. However, their linkages with the local local roads network have been fully considered in its preparation.

Upgrading of road linking district headquarters with national strategic road is major concern of **Siraha** district. Rational planning and proper implementation are two sides of coin. Negligence in one part will make other less effective. DDC is strongly recommended to improve the current practices of ad-hoc investment in roads on short term consideration.

It is strongly recommended that every local institution, especially DDC shall strictly follow the approved DTMP, particularly in the Perspective Plan of District Road Network in deciding the sub-projects to be undertaken for future development even beyond the planned period. Strong commitment from all stakeholders is necessary for its implementation. It is also suggested that the DTMP shall be revised at the end of every fifth year, evaluating the outcome of previous planning and implementation. If the development potentials of the district change tremendously, DDC should go ahead with adequate and necessary revisions/amendment in the prevailing DTMP.

# **Annexes**

## **Annex – I**

### **Existing / Potential Market Centres and Analysis**



### Annex I -a: Name of Market Center and their Ranking

S.N.	Name of Market Center	VDC	Score	Grade	Rank
1	Lahan	Lahan N.Pa	919.47	A	1
2	Siraha	Sirha N.Pa.	344.01	A	2
3	Mirchaiya	Mirchaiya Ramnagar	200.33	A	3
4	Golbazar	Asanpur	119.93	A	4
5	Dhangadi	Dhangadi	60.71	B	5
6	Bariyarpatti	Bariyarpatti	60.52	B	6
7	Kalyanpur	KalyanpurJabdi	61.36	B	7
8	Sukhiupur	Sukhiupur	59.03	B	8
9	Bandipur	Badaramal	51.51	B	9
10	Madar	Madar	51.09	B	10
11	Zeromile	Dhangadi	49.39	C	11
12	Sitapur	Mirchaiya Ramnagar	41.72	C	12
13	Old choharwa	Chandra Ayodhyapur	38.82	C	13
14	Karjanha	Kajanha	35.71	C	14
15	Chhaparadi	Dhangadi	36.67	C	15
16	Thadi	Bhagwanpur	33.51	C	16
17	Bishnapura	Bishnapura	34.28	C	17
18	Belha	Belha	30.31	C	18
19	Hanuman Nagar	Hanuman Nagar	26.45	C	19
20	Aurahi	Aurahi	28.61	C	20
21	Bastipur	Bastipur	28.03	C	21
22	Sarshwar	Sarshwar	26.12	C	22
23	Maheshpur patari	Maheshpur patari	25.79	C	23
24	Chhajana	Kushahalaxminiya	25.93	C	24
25	Mohanpur Kamalpur	Mohanpur Kamalpur	23.59	P	25
26	Bhagwanpur	Bhagwanpur	21.09	P	26
27	New Chauharaba	Chandra Ayodhyapur	17.73	P	27
28	Gadha	Gadha	14.66	P	28
29	Nawarajpur	Nawarajpur	13.67	P	29
30	Krishnapur, Hakpara	Hakpara	9.61	P	30

Annex I-b; Centrality Index Calculation

S.N.	Name of Market Center	population	EDUCATION					HEALTH			BUSINESS & COMMERCE								INDUSTRIES					OFFICE								Tourism Place	Centrality Index	Ranking	Grading of Market Centre	Remark	
			Campus (no.)	Upper High School(no.)	High School(no.)	Lower Secondary School(no.)	Primary	Hospital(no.)	Health post(no.)	Sub-Health post(no.)	Hotels & Lodges(no.)	Restaurants & Tea stall (no.)	Grocery Shops(no.)	Hardware Shops (no.)	Medical Shops(no.)	Clothes/ readymade shops(no.)	Household goods	Stationary	Rice and flour mills(no.)	Forest based Industries(no.)	Handicrafts(no.)	Mechanical/ Fabrication(no.)	Agro based (no.)	Banks (no.)	Agriculture Service centers(no.)	Veterinary office (no.)	Post office (no.)	Telephone office(no)	Electricity office (no)	Cooperatives office (no)	NGO (no)						
1	Lahan	34545	3	6	5	2	5	3		8	150	240	15	15	180	35	15	7	4	3		5	7	1	1	1	1	1				12	1	919.47	1	A	
3	Siraha	28635	2	3	4		3	1		5	50	35	7	4	70	18	10	4	3		5	3	5	1	1	1	1	1	1	10	14	1	344.01	2	A		
2	Mirchaitiya	9386	1	3	3	3	3	2		1	5	21	20	8	7	25	12	5	4	3	2	3	2	3	1	1	1		1	4	4		200.33	3	A		
4	Golbazar	10372		2	2		2		1		4	15	12	5	3	14	7	4	3	2	2	3		1	1	1	1		1	2	1		119.93	4	A		
6	Dhangadi	9569		2	4		3	1	1		9	7	2	3	4	2	2	2			1			1	1	1				2	1		60.71	5	B		
19	Barlyarpatti	4188		1	1		2		1		15	8	2	3	3		1	2	1		1	1		1	1	1			1	2	1	60.52	6	B			
8	Kalyanpur	9326		1	2		2		1		5	8	3	2	6	2	3	2	2		2	1	1	1	1	1			1	1		61.36	7	B			
7	Sukhiupur	9491		1	2		4		1		7	7	2	3	6	2	2	1	2		1	1	1			1			1			59.03	8	B			
13	Bandipur	13266		1	1		2				8	7	1	2	5	2	2	2		1	1	1		1	1	1			1		1	51.51	9	B			
9	Madar	11674		1	1		1		1	1	6	9	2	2	4		3	1			2	1		1	1	1					2		51.09	10	B		
17	Zeromile	4785		1	2		1		1		10	9	1	3	2		2	2	1		2	1							2	1		49.39	11	C			
25	Sitapur	3129			2	2	3		1		10	6	1	3	1		1	2						1	1				1			41.72	12	C			
5	Old choharwa	5800				1	2		1		10	5		3	3	2	1	2				1				1							38.82	13	C		
20	Karjanha	6221		1	2		1	1			5	4	1	3	2	1	1	2			1	1		1	1				1				35.71	14	C		
16	Chhaparadi	4785			3		1		1		7	8		2	2		1	1			1	1		1	1				1				36.67	15	C		
11	Thadi	1700					1		1		5	4	1	3	4	2	2	1			2	1				1							33.51	16	C		
10	Bishnapura	4693			1		2			1	5	5	1	3	3		1				1			1	1	1		1					34.28	17	C		
23	Belha	5532		1	1	2			1		4	4	1	1	3		1	1	1		1	1				1			1				30.31	18	C		
21	Hanuman Nagar	6100		2			1	1			4	3	1	2	2		1	1						1	1				1		1		26.45	19	C		
24	Aurahi	5203		1			1	1			6	5	1	1	2		1	1				1				1			1	1			28.61	20	C		
18	Bastipur	5486			2						5	4	1	2	3	1	1	1		1	1	1											28.03	21	C		
22	Sarshwar	5793		1	1	2			1		4	3	1	1	2		1	1			1	1							1	1			26.12	22	C		
15	Maheshpur patari	3888		1			1		1		5	4	1	2	2		2	2											1				25.79	23	C		
29	Chhajana	5017		1	2				1		6	1	1	1	2	1	1				1	1				1			1				25.93	24	C		
28	Mohanpur Kamalpur	5038		2					1		4	1	1	1	1	1	2	1				1				1			1	1			23.59	25	P		
12	Bhagwanpur	1700			1		1		1		3	3		2	2		1	1			1					1			1				21.09	26	P		
30	New Chauharaba	3877									5	1	1	2	2	1	1	1			1												17.73	27	P		
34	Gadha	4343			1		1		1		3	1		2			1	1								1							14.66	28	P		
26	Nawarajpur	7381		1					1		5	2		1	1		1																13.67	29	P		
27	Krishnapur, Hakpara	4242			1				1		2	1	1	1			1																9.61	30	P		
	Total Functions	235163	6	23	50	12	47	10	13	9	24	394	427	62	83	356	89	71	49	19	9	40	26	18	14	14	19	2	5	44	41	5					
	Median Population		19504	9356	5532	6587	5797	5486	4785	7381	11819	5509	5509	5532	5509	5509	7381	5509	5509	9386	10372	5800	5800	9931.5	7743	7743	7381	21966	11674	5486	7743	6100					
	Weightage		4.08	1.96	1.16	1.38	1.21	1.15	1.00	1.54	2.47	1.15	1.15	1.16	1.15	1.15	1.54	1.15	1.15	1.96	2.17	1.21	1.21	2.08	1.62	1.62	1.54	4.59	2.44	1.15	1.62	1.27					
	Minimum Population	4784.5																																			

Note : Grade A&gt;100 ,B-(50-100), C-(25-50) and Potential(P)&lt;25

## **Annex – II**

### **Prioritization of proposed Transport Linkage for New**

**Annex: II - A- 1: Scoring of Class A Road on the basis of Population**

SN	Name of the Road	Total Length (Km)	Length of Road for New Cons (Km)	Popl <sup>n</sup> (Zol)	Population/Km	Max <sup>m</sup> no.	Coefficient	Score (40)	VDC
1	Bandipur (Kamala Tatbandha) - Madar - Paterwa	35	35	23456	670.00	670.00	1.00	40.00	Badharamal, Kalayanpur Ka.Ba., Bhediya, Bhokraha, Chickna, Itahari Parsahi, Chattari, Belha,Saraswar, Siraha N.Pa., Malhaniya Gamahariya,Madar

**Annex - II - A-2: Scoring of Class A Road on the basis of Inaccessibility**

<b>SN</b>	<b>Name of the Road</b>	<b>Total Length (Km)</b>	<b>Length of Road for New Cons (Km)</b>	<b>Popl<sup>n</sup> (Zol)</b>	<b>Walking Hour</b>	<b>Population* Walking Hour</b>	<b>Population* Walking Hour/km</b>	<b>Max<sup>m</sup> no.</b>	<b>Coefficient</b>	<b>Score (15)</b>	<b>VDC</b>
1	Bandipur (Kamala Tatbandha) - Madar - Paterwa	35	35	23456	0.50	11728.00	335.09	335.09	1.00	15.00	Krishnapur, Gauripur, Silorwa Pachhawari, Mahanaur

**Annex - II - A-3: Scoring of Class A Road on the basis of Cultivated Land**

<b>SN</b>	<b>Name of the Road</b>	<b>Total Length (Km)</b>	<b>Length of Road for New Cons (Km)</b>	<b>Cultivated land in Hectare (Zol)</b>	<b>Hectare/Km</b>	<b>Max<sup>m</sup> no.</b>	<b>Coefficient</b>	<b>Score (15)</b>
1	Bandipur (Kamala Tatbandha) - Madar - Paterwa	35	35	2800	80.00	80.00	1.00	15.00

**Annex - II - A-4: Scoring of Class A Road on the basis of Population of Dalit/Janajati**

<b>SN</b>	<b>Name of the Road</b>	<b>Total Length (Km)</b>	<b>Length of Road for New Cons (Km)</b>	<b>Popl<sup>n</sup> (Zol)</b>	<b>Population of dalit/janajati (Zol)</b>	<b>Population/ Km</b>	<b>Max<sup>m</sup> no</b>	<b>Coefficient</b>	<b>Score (10)</b>	<b>VDC</b>
1	Bandipur (Kamala Tatbandha) - Madar - Paterwa	35	35	23456	8210.0	235.00	235.00	1.00	10.00	Krishnapur, Gauripur, Silorwa Pachhawari, Mahanaur

**Annex - II - A-5: Scoring of Class A Road on the basis of Loss of Forest**

<b>SN</b>	<b>Name of the Road</b>	<b>Total Length (Km)</b>	<b>Length of Road for New Cons (Km)</b>	<b>Loss of forrest in Hectare (Zol)</b>	<b>Hectare/Km</b>	<b>Max no</b>	<b>Converter</b>	<b>Max</b>	<b>Coefficient</b>	<b>Score (5)</b>
1	Bandipur (Kamala Tatbandha) - Madar - Paterwa	35	35	No Loss of forest in Siraha District for these Roads						5.00



**Annex - II - A-6: Scoring of Class A Road on the basis of Market Center**

<b>SN</b>	<b>Name of the Road</b>	<b>Total Length (Km)</b>	<b>Length of Road for New Cons (Km)</b>	<b>Market Centers</b>	<b>Total centrality index</b>	<b>Max</b>	<b>Coefficients</b>	<b>Score (10)</b>
1	Bandipur (Kamala Tatbandha) - Madar - Paterwa	35	35	Bandipur, Madar	102.56	102.56	1.00	10.00

**Annex - II - A-7: Scoring of Class A Road on the basis of Religious / Tourism Center**

<b>SN</b>	<b>Name of the Road</b>	<b>Total Length (Km)</b>	<b>Length of Road for New Cons (Km)</b>	<b>Religious centre/tourist place</b>	<b>Total number of spot</b>	<b>Max</b>	<b>Coefficients</b>	<b>Score (5)</b>	<b>VDC</b>
1	Bandipur (Kamala Tatbandha) - Madar - Paterwa	35	35	Temples	4	4	1	5	Krishnapur, Gauripur, Silorwa Pachhawari, Mahanaur

**Annex-II-B-1 : Scoring of Class B Road on the basis of Population**

SN	Name of the Road	Total Length (Km)	Length of Road for New Cons (Km)	Population (Zol)	Population/Km	Max <sup>m</sup> no.	Coefficient	Score (40)
1	Krishnapur – Gauripur – Mahanaur	10	10	5350.00	535.00	608.00	0.88	35.20
2	Chandralalpur- Chauharwa Old Bazar – Ghurmi	10	10	3130.00	313.00	608.00	0.51	20.59
3	Tulshipur – Kabilashi – Pipra - Jamuba	15	15	2196.00	146.00	608.00	0.24	9.61
4	Kabilashi – SilorbaPachabari- Gauripur	12	12	3416.00	285.00	608.00	0.47	18.75
5	SilorbaPachabari – Sukhipur - Dhahipaghaudi	10	10	6082.00	608.00	608.00	1.00	40.00

**Annex-II-B-2: Scoring of Class B Road on the basis of Inaccessibility**

SN	Name of the Road	Total Length(Km)	Length of Road for New Cons (Km)	Popl <sup>n</sup> (Zol)	Walking Hour	Population*Walking Hour	Population*Walking Hour/km	Max <sup>m</sup> no.	Coefficient	Score (15)
1	Krishnapur – Gauripur – Mahanaur	10	10	5350.00	0.50	2675.00	267.50	267.50	1.00	15.00
2	Chandralalpur- Chauharwa Old Bazar – Ghurmi	10	10	3130.00	0.50	1565.00	156.50	267.50	0.59	8.78
3	Tulshipur – Kabilashi – Pipra - Jamuba	15	15	2196.00	0.75	1647.00	109.80	267.50	0.41	6.16
4	Kabilashi – SilorbaPachabari-Gauripur	12	12	3416.00	0.75	2562.00	213.50	267.50	0.80	11.97
5	SilorbaPachabari – Sukhipur - Dhahipaghaudi	10	10	6082.00	0.33	2007.06	200.71	267.50	0.75	11.25

**Annex-II-B-3: Scoring of Class B Road on the basis of Cultivated Land**

<b>SN</b>	<b>Name of the Road</b>	<b>Total Length (Km)</b>	<b>Length of Road for New Cons (Km)</b>	<b>Cultivated land in Hectare (Zol)</b>	<b>Hectare/Km</b>	<b>Max<sup>m</sup> no.</b>	<b>Coefficient</b>	<b>Score (15)</b>
1	Krishnapur – Gauripur – Mahanaur	10	10	800	80.00	100.00	0.80	12.00
2	Chandralalpur- Chauharwa Old Bazar – Ghurmi	10	10	1000	100.00	100.00	1.00	15.00
3	Tulshipur – Kabilashi – Pipra - Jamuba	15	15	1350	90.00	100.00	0.90	13.50
4	Kabilashi – SilorbaPachabari- Gauripur	12	12	1140	95.00	100.00	0.95	14.25
5	SilorbaPachabari – Sukhipur - Dhahipaghaudi	10	10	980	98.00	100.00	0.98	14.70

**Annex-II-B-4: Scoring of Class B Road on the basis of Population of Dalit / Janjati**

<b>SN</b>	<b>Name of the Road</b>	<b>Total Length (Km)</b>	<b>Length of Road for New Cons (Km)</b>	<b>Popl<sup>n</sup> (Zol)</b>	<b>Population of Dalit/Janajati (Zol)</b>	<b>Population/ Km</b>	<b>Max no</b>	<b>Coefficient</b>	<b>Score (10)</b>
1	Krishnapur – Gauripur – Mahanaur	10	10	5350.00	1873.00	187	187	1.00	10.00
2	Chandralalpur- Chauharwa Old Bazar – Ghurmi	10	10	3130.00	1189.00	119	187	0.63	6.35
3	Tulshipur – Kabilashi – Pipra - Jamuba	15	15	2196.00	1098.00	73	187	0.39	3.91
4	Kabilashi – SilorbaPachabari- Gauripur	12	12	3416.00	1196.00	100	187	0.53	5.32
5	SilorbaPachabari – Sukhipur - Dhahipaghaudi	10	10	6082.00	1825.00	183	187	0.97	9.74

**Annex-II-B-5: Scoring of Class B Road on the basis of Loss of Forest**

SN	Name of the Road	Total Length (Km)	Length of Road for New Cons (Km)	Loss of forrest in Hectare (Zol)	Hectare/Km	Max <sup>m</sup> no	Converter	Max	Coefficient	Score (5)
1	Krishnapur – Gauripur – Mahanaur	10	10	No Loss of forest in Siraha District for these Roads						5.00
2	Chandralalpur- Chauharwa Old Bazar – Ghurmi	10	10							5.00
3	Tulshipur – Kabilashi – Pipra - Jamuba	15	15							5.00
4	Kabilashi – SilorbaPachabari- Gauripur	12	12							5.00
5	SilorbaPachabari – Sukhipur - Dhahipaghaudi	10	10							5.00

**Annex-II-B-6: Scoring of Class B Road on the basis of Market Center**

<b>SN</b>	<b>Name of the Road</b>	<b>Total Length (Km)</b>	<b>Length of Road for New Cons (Km)</b>	<b>Market Centers</b>	<b>Total centrality index</b>	<b>Max</b>	<b>Coefficients</b>	<b>Score (10)</b>
1	Krishnapur – Gauripur – Mahanaur	10	10	X	0	59.03	0.00	0.00
2	Chandralalpur- Chauharwa Old Bazar – Ghurmi	10	10	Old Choharwa	38.82	59.03	0.66	6.58
3	Tulshipur – Kabilashi – Pipra - Jamuba	15	15	X	0	59.03	0.00	0.00
4	Kabilashi – SilorbaPachabari- Gauripur	12	12	X	0	59.03	0.00	0.00
5	SilorbaPachabari – Sukhipur - Dhahipaghaudi	10	10	Sukhipur	59.03	59.03	1.00	10.00



**Annex-II-B-7: Scoring of Class B Road on the basis of Religious / Tourism Center**

<b>SN</b>	<b>Name of the Road</b>	<b>Total Length (Km)</b>	<b>Length of Road for New Cons (Km)</b>	<b>Religious centre/tourist place</b>	<b>Total number of spot</b>	<b>Max</b>	<b>Coefficients</b>	<b>Score (5)</b>
1	Krishnapur – Gauripur – Mahanaur	10	10	Temples	4	4	1	5
2	Chandralalpur- Chauharwa Old Bazar – Ghurmi	10	10	Temples	2	4	0.5	2.5
3	Tulshipur – Kabilashi – Pipra - Jamuba	15	15	Temples	2	4	0.5	2.5
4	Kabilashi – SilorbaPachabari- Gauripur	12	12	Temples	3	4	0.75	3.75
5	SilorbaPachabari – Sukhipur - Dhahipaghaudi	10	10	Temples	3	4	0.75	3.75

## **Annex – III**

### **Prioritization of proposed Transport Linkage for Upgrading**

**Annex -III-A-1 : Scoring of Class A Road on the basis of Population**

SN	Name of the Road	Total Length (Km)	Length of Road for Upgrading/Rehabilitation (Km)	Population (Zol)	Population/K m	Max <sup>m</sup> no	Coefficient	Score (30)
1	Jamdha-Lagadhi- Gadhiyani	26	26	12863	495	994	0.50	14.93
2	Mirchaiya- Kalyanpur -Sirha	23	23	16662	724	994	0.73	21.86
3	Siraha – Sukhipur	17	17	15224	896	994	0.90	27.02
4	Aurahi –Kamalpur - Madar bazar	16	16	8591	537	994	0.54	16.20
5	Kalyanpur- Sitapur –Mahendra Rajmarg	10	10	9626	963	994	0.97	29.04
6	Chickna - Kalyanpur – Gadha	40	40	27998	700	994	0.70	21.12
7	Golbazar - Durgapur –Belhi	7	7	6960	994	994	1.00	30.00
8	Lahan - Sahid chowk-Jhanjharpatti	19	19	12174	641	994	0.64	19.33
9	Zeromile -Bariyarpatti	18	18	6847	380	994	0.38	11.48
10	Lahan-Taregana - Mahadevthan	14	14	6227	445	994	0.45	13.42
11	Lahan -9 – Pakdhiyagha – Govindpur	15	15	13292	886	994	0.89	26.74
12	Dhangadhi-Patahari Jighaul -Kachnari	19	19	8098	426	994	0.43	12.85
13	Zeromile-Sare Ambash	12	12	8228	686	994	0.69	20.70
14	Lahan - Bhagwanpur -Thadi	17	17	12221	719	994	0.72	21.69

**Annex -III-A-2: Scoring of Class A Road on the basis of Cultivated Land**

SN	Name of the Road	Total Length (Km)	Length of Road for Upgrading/Rehabilitation (Km)	Cultivated land in Hectare (Zol)	Hectare/Km	Max <sup>m</sup> no	Coefficient	Score (20)
1	Jamdha-Lagadhi- Gadhiyani	26	26	2860	110.00	110.00	1.00	20.00
2	Mirchaiya- Kalyanpur -Sirha	23	23	2300	100.00	110.00	0.91	18.18
3	Siraha – Sukhipur	17	17	1615	95.00	110.00	0.86	17.27
4	Aurahi –Kamalpur - Madar bazar	16	16	1680	105.00	110.00	0.95	19.09
5	Kalyanpur- Sitapur –Mahendra Rajmarg	10	10	1100	110.00	110.00	1.00	20.00
6	Chickna - Kalyanpur – Gadha	40	40	4160	104.00	110.00	0.95	18.91
7	Golbazar - Durgapur –Belhi	7	7	679	97.00	110.00	0.88	17.64
8	Lahan - Sahid chowk-Jhanjharpatti	19	19	1900	100.00	110.00	0.91	18.18
9	Zeromile -Bariyarpatti	18	18	1980	110.00	110.00	1.00	20.00
10	Lahan-Taregana - Mahadevthan	14	14	1190	85.00	110.00	0.77	15.45
11	Lahan -9 – Pakdhiyagha – Govindpur	15	15	1425	95.00	110.00	0.86	17.27
12	Dhangadhi-Patahari Jighaul -Kachnari	19	19	1824	96.00	110.00	0.87	17.45
13	Zeromile-Sare Ambash	12	12	1260	105.00	110.00	0.95	19.09
14	Lahan - Bhagwanpur -Thadi	17	17	1870	110.00	110.00	1.00	20.00

**Annex -III-A-3 : Scoring of Class A Road on the basis of Market Center**

SN	Name of the Road	Total Length (Km)	Length of Road for Upgrading / Rehabilitation (Km)	Market Centers	Total centrality index	Max	Coefficients	Score (20)
1	Jamdha-Lagadhi- Gadhiyani	26	26	Golbazar	119.93	662.13	0.18	3.62
2	Mirchaiya- Kalyanpur -Sirha	23	23	Siraha N.P., Sarshwar, Belha, Kalyanpur, Mirchaiya	662.13	662.13	1.00	20.00
3	Siraha – Sukhipur	17	17	Siraha N.P., Sukhipur	403.04	662.13	0.61	12.17
4	Aurahi –Kamalpur - Madar bazar	16	16	Madar, Aurahi	79.7	662.13	0.12	2.41
5	Kalyanpur- Sitapur –Mahendra Rajmarg	10	10	Mirchaiya, Kalyanpur	261.69	662.13	0.40	7.90
6	Chickna - Kalyanpur – Gadha	40	40	Kalyanpur, Sukhipur	120.39	662.13	0.18	3.64
7	Golbazar - Durgapur –Belhi	7	7	Golbazar	119.93	662.13	0.18	3.62
8	Lahan - Sahid chowk-Jhanjharpatti	19	19	Lahan N.P., Nawarajpur	473.17	662.13	0.71	14.29
9	Zeromile -Bariyarpatti	18	18	Zeromile, Sukhipur, Bariyarpatti	168.94	662.13	0.26	5.10
10	Lahan-Taregana - Mahadevthan	14	14	Lahan N.P.	459.5	662.13	0.69	13.88
11	Lahan -9 – Pakdhiyagha – Govindpur	15	15		9.61	662.13	0.01	0.29
12	Dhangadhi-Patahari Jighaul -Kachnari	19	19	Chaparari	36.67	662.13	0.06	1.11
13	Zeromile-Sare Ambash	12	12	Dhangadhi	60.71	662.13	0.09	1.83
14	Lahan - Bhagwanpur -Thadi	17	17	Lahan, Bhagawanpur, Thadi	514.1	662.13	0.78	15.53

**Annex -III-A-4 : Scoring of Class A Road on the basis of Religious / Tourism Center**

SN	Name of the Road	Total Length (Km)	Length of Road for Upgrading / Rehabilitation (Km)	Religious Centre/ tourist place	Total number of spot	Max <sup>m</sup>	Coefficients	Score (10)
1	Jamdha-Lagadhi- Gadhiyani	26	26		4	6	0.67	6.67
2	Mirchaiya- Kalyanpur -Sirha	23	23		5	6	0.83	8.33
3	Siraha – Sukhipur	17	17		3	6	0.50	5.00
4	Aurahi –Kamalpur - Madar bazar	16	16		3	6	0.50	5.00
5	Kalyanpur- Sitapur –Mahendra Rajmarg	10	10		3	6	0.50	5.00
6	Chickna - Kalyanpur – Gadha	40	40		6	6	1.00	10.00
7	Golbazar - Durgapur –Belhi	7	7		2	6	0.33	3.33
8	Lahan - Sahid chowk-Jhanjharpatti	19	19		3	6	0.50	5.00
9	Zeromile -Bariyarpatti	18	18		5	6	0.83	8.33
10	Lahan-Taregana - Mahadevthan	14	14		4	6	0.67	6.67
11	Lahan -9 – Pakdhiyagha – Govindpur	15	15		2	6	0.33	3.33
12	Dhangadhi-Patahari Jighaul -Kachnari	19	19		5	6	0.8	8.33
13	Zeromile-Sare Ambash	12	12		4	6	0.7	6.67
14	Lahan - Bhagwanpur -Thadi	17	17		5	6	0.8	8.33

**Annex -III-A-5 : Scoring of Class A Road on the basis of Traffic Volume**

SN	Name of the Road	Total Length (Km)	Length of Road for Upgrading/Rehabilitation(Km)	Pedestrian	Porter	Packed animals	Bicycles	Ricshaway	Cars, Light van, Jeep & Pick up	Motorcycle	Carts	Minibus	Bus	Tractor	Light Truck	Truck	Heavy Truck	Traffic Unit	Max <sup>m</sup>	Coefficient	Score (20)
1	Jamdha-Lagadhi- Gadhiyani	26	26	800	18		200	10	20	80	10		2	25	5	6	3	501.20	775	0.65	12.93
2	Mirchaiya- Kalyanpur -Sirha	23	23	1200			300	20	30	180	2	6	6	30	10	9	4	775.00	775	1.00	20.00
3	Siraha – Sukhipur	17	17	1100			250		7	125	3			35				550.50	775	0.71	14.21
4	Aurahi –Kamalpur - Madar bazar	16	16	230			25			15	3			4				87.00	775	0.11	2.25
5	Kalyanpur- Sitapur –Mahendra Rajmarg	10	10	410			10			6	4			2				105.20	775	0.14	2.71
6	Chickna - Kalyanpur – Gadha	40	40	1600	25		300			210	15			35				762.00	775	0.98	19.66
7	Golbazar - Durgapur –Belhi	7	7	258	3		15			10	2			4				83.30	775	0.11	2.15
8	Lahan - Sahid chowk-Jhanjharpatti	19	19	1400	4		350	3	3	80	3			30	3	2		629.60	775	0.81	16.25
9	Zeromile -Bariyarpatti	18	18	1100			250	20	9	110	5	4	2	20	4	3		562.00	775	0.73	14.50
10	Lahan-Taregana - Mahadevthan	14	14	900			240			15	3			5				331.50	775	0.43	8.55
11	Lahan -9 – Pakdhiyagha – Govindpur	15	15	1100	20		25			10	6	2		4	1			280.50	775	0.36	7.24
12	Dhangadhi-Patahari Jighaul - Kachnari	19	19	900	6		250	2	2	95	4	2		15	1	1		442.90	775	0.57	11.43
13	Zeromile-Sare Ambash	12	12	700	30		200			110	10			15				394.00	775	0.51	10.17
14	Lahan - Bhagwanpur -Thadi	17	17	1100			250	20	12	110	5	4	2	25	4	3		580.00	775	0.75	14.97

**Annex - III-B- 1 : Scoring of Clas B road on the basis of Population**

SN	Name of the Road	Total Length (Km)	Length of Road for Upgrading/ Rehabilitation (Km)	Population (Zol)	Population/Km	Max <sup>m</sup> no	Coefficient	Score (30)
1	Ayodhyanager bazar -Pipra - Aurahi	18.5	18.5	11973	647.00	1479.00	0.44	13.12
2	Siraha-Pipra Pra.Pi.	6	6	4866	811.00	1479.00	0.55	16.45
3	Baluwa- Chandruodhyopur	18	18	5552	308.00	1479.00	0.21	6.25
4	Belha - Chandraayodhyapur- Mahendra Rajmarg	15	15	8466	564.00	1479.00	0.38	11.44
5	Manikdah - Ganeshpur -Shalhesh Phulbari	9	9	5447	605.00	1479.00	0.41	12.27
6	Khairtoka Custom- Sarswar	10	10	5135	514.00	1479.00	0.35	10.43
7	Nirdhana -Kalyanpur- Jabadi	9.5	9.5	5299	558.00	1479.00	0.38	11.32
8	Bheriya -Kalyanpur Jabadi	8	8	5504	688.00	1479.00	0.47	13.96
9	Laxmipur Patari – Kushaha – Aurahi	5	5	7395	1479.00	1479.00	1.00	30.00
10	Rariyaha – Arnama pra. Pi.-khoriyatol	16	16	6202	388.00	1479.00	0.26	7.87
11	M.Rajmargh – Ganeshpur-Sitapur - Barhari Bazar	19	19	6621	348.00	1479.00	0.24	7.06
12	Old Choharwa - Panbari - Lalbhitiya	8	8	2930	366.00	1479.00	0.25	7.42
13	Badaharamal - Sitapur- Chauharwa ( New chowk)	18	18	13576	754.00	1479.00	0.51	15.29
14	Mirchaiya – Kuthanama-Bhedia	11.5	11.5	4817	419.00	1479.00	0.28	8.50
15	Bandipur-Utarahini Kamalanadi	6	6	3980	663.00	1479.00	0.45	13.45
16	M.Rajmargh (Dhodana - Kamaldhah	6	6	7376	1229.00	1479.00	0.83	24.93
17	Kalyanpur Ka.ba. -Premnagar - Raghopur Gachiya	9	9	4059	451.00	1479.00	0.30	9.15
18	Kashaha - Mukshar	12	12	2283	190.00	1479.00	0.13	3.85
19	Bathnaha – Jagatpur Phulbaria –Kushandi	13	13	6018	463.00	1479.00	0.31	9.39
20	Kushha Laxminiya- Dhangadhi	8	8	11761	1470.00	1479.00	0.99	29.82
21	Kabilashi-Pokhariya Chowk-Harkatti	8	8	2952	369.00	1479.00	0.25	7.48
22	Mahuwahi – Sodhiyane - Tamasuiya	7	7	2450	350.00	1479.00	0.24	7.10



SN	Name of the Road	Total Length (Km)	Length of Road for Upgrading/ Rehabilitation (Km)	Population (Zol)	Population/Km	Max <sup>m</sup> no	Coefficient	Score (30)
23	Navrajpur – Devnagar – Inarwa (Garsaha tole)	8	8	4956	620.00	1479.00	0.42	12.58
24	Bariyarpatti – Tulshipur – Kushaha	7	7	5714	816.00	1479.00	0.55	16.55
25	Bisanpur Pr.Ma. – Pipra -Sukhipur	16	16	11662	729.00	1479.00	0.49	14.79
26	Bidyanagar-Sohanpur- Gargambha	8	8	5152	644.00	1479.00	0.44	13.06
27	Tenuwapatti-Laxmipur-Sitapur	12	12	3672	306.00	1479.00	0.21	6.21
28	Lahan – Dhodana -Betaha	15	15	11213	748.00	1479.00	0.51	15.17
29	Bastipur- Gobindpur - Mukshargola	15	15	12221	815.00	1479.00	0.55	16.53
30	Khairbona chowk – Inarwa	12	12	7483	624.00	1479.00	0.42	12.66

### Annex - III-B- 2 : Scoring of Clas B Road on the basis of Cultivated Land

SN	Name of the Road	Total Length (Km)	Length of Road for Upgrading / Rehabilitation (Km)	Cultivated land in Hectare (Zol)	Hectare/Km	Max <sup>m</sup> no	Coefficient	Score (20)
1	Ayodhyanagr bazar -Pipra - Aurahi	18.5	18.5	1850	100.00	110.00	0.91	18.18
2	Siraha-Pipra Pra.Pi.	6	6	630	105.00	110.00	0.95	19.09
3	Baluwa- Chandruodhyopur	18	18	1764	98.00	110.00	0.89	17.82
4	Belha - Chandraayodhyapur- Mahendra Rajmarg	15	15	1440	96.00	110.00	0.87	17.45
5	Manikdah - Ganeshpur -Shalhesh Phulbari	9	9	990	110.00	110.00	1.00	20.00
6	Khairtoka Custom- Sarswar	10	10	1050	105.00	110.00	0.95	19.09
7	Nirdhana -Kalyanpur- Jabadi	9.5	9.5	950	100.00	110.00	0.91	18.18
8	Bheriya -Kalyanpur Jabadi	8	8	768	96.00	110.00	0.87	17.45
9	Laxmipur Patari – Kushaha – Aurahi	5	5	525	105.00	110.00	0.95	19.09
10	Rariyaha – Arnama pra. Pi.-khoriyatol	16	16	1600	100.00	110.00	0.91	18.18
11	M.Rajmargh – Ganeshpur-Sitapur - Barhari Bazar	19	19	1824	96.00	110.00	0.87	17.45
12	Old Choharwa - Panbari - Lalbhitiya	8	8	760	95.00	110.00	0.86	17.27
13	Badaharamal - Sitapur- Chauharwa ( New chowk)	18	18	1800	100.00	110.00	0.91	18.18
14	Mirchaiya – Kuthanama-Bhedia	11.5	11.5	1265	110.00	110.00	1.00	20.00
15	Bandipur-Utarahini Kamalanadi	6	6	630	105.00	110.00	0.95	19.09
16	M.Rajmargh (Dhodana - Kamaldhah	6	6	600	100.00	110.00	0.91	18.18
17	Kalyanpur Ka.ba. -Premnagar - Raghobpur Gachiya	9	9	945	105.00	110.00	0.95	19.09
18	Kashaha - Mukshar	12	12	1320	110.00	110.00	1.00	20.00
19	Bathnaha – Jagatpur Phulbaria –Kushandi	13	13	1261	97.00	110.00	0.88	17.64
20	Kushha Laxminiya- Dhangadhi	8	8	760	95.00	110.00	0.86	17.27
21	Kabilashi-Pokhariya Chowk-Harkatti	8	8	840	105.00	110.00	0.95	19.09
22	Mahuwahi – Sodhiyane - Tamasuiya	7	7	700	100.00	110.00	0.91	18.18
23	Navrajpur – Devnagar – Inarwa (Garsaha tole)	8	8	880	110.00	110.00	1.00	20.00
24	Bariyarpatti – Tulshipur – Kushaha Laxminiya	7	7	700	100.00	110.00	0.91	18.18
25	Bisanpur Pr.Ma. – Pipra -Sukhipur	16	16	1568	98.00	110.00	0.89	17.82
26	Bidyanagar-Sohanpur- Gargambha	8	8	776	97.00	110.00	0.88	17.64
27	Tenuwapatti-Laxmipur-Sitapur	12	12	1200	100.00	110.00	0.91	18.18
28	Lahan – Dhodana -Betaha	15	15	1470	98.00	110.00	0.89	17.82
29	Bastipur- Gobindpur - Mukshargola	15	15	1440	96.00	110.00	0.87	17.45
30	Khairbona chowk – Inarwa	12	12	1200	100.00	110.00	0.91	18.18

**Annex - III-B-3 : Scoring of Clas B Road on the basis of Market Center**

SN	Name of the Road	Total Length (Km)	Length of Road for Upgrading / Rehabilitation (Km)	Market Centers	Total centrality index	Max	Coefficients	Score (20)
1	Ayodhyanagr bazar -Pipra - Aurahi	18.5	18.5	Aurahi	28.61	243.00	0.12	2.35
2	Siraha-Pipra Pra.Pi.	6	6	Siraha N.P.	172.01	243.00	0.71	14.16
3	Baluwa- Chandruodhyopur	18	18		9.61	243.00	0.04	0.79
4	Belha - Chandraayodhyapur- Mahendra Rajmarg	15	15	Belha, New/Old	69.13	243.00	0.28	5.69
5	Manikdah - Ganeshpur -Shalhesh Phulbari	9	9		9.61	243.00	0.04	0.79
6	Khairtoka Custom- Sarswar	10	10	Sarshwar	26.12	243.00	0.11	2.15
7	Nirdhana -Kalyanpur- Jabadi	9.5	9.5	Kalyanpur	61.36	243.00	0.25	5.05
8	Bheriya -Kalyanpur Jabadi	8	8	Kalyanpur	61.36	243.00	0.25	5.05
9	Laxmipur Patari – Kushaha – Aurahi	5	5		9.61	243.00	0.04	0.79
10	Rariyaha – Arnama pra. Pi.-khoriyatol	16	16		9.61	243.00	0.04	0.79
11	M.Rajmargh – Ganeshpur-Sitapur - Barhari Bazar	19	19		9.61	243.00	0.04	0.79
12	Old Choharwa - Panbari - Lalbhitiya	8	8		9.61	243.00	0.04	0.79
13	Badaharamal - Sitapur- Chauharwa ( New chowk)	18	18		9.61	243.00	0.04	0.79
14	Mirchaiya – Kuthanama-Bhedia	11.5	11.5	Mirchaiya	200.33	243.00	0.82	16.49
15	Bandipur-Utarahini Kamalanadi	6	6	Bandipur	51.51	243.00	0.21	4.24
16	M.Rajmargh (Dhodana - Kamaldhah	6	6	New Choharwa	17.73	243.00	0.07	1.46
17	Kalyanpur Ka.ba. -Premnagar - Raghopur Gachiya	9	9		9.61	243.00	0.04	0.79
18	Kashaha - Mukshar	12	12		9.61	243.00	0.04	0.79
19	Bathnaha – Jagatpur Phulbaria –Kushandi	13	13		9.61	243.00	0.04	0.79
20	Kushha Laxminiya- Dhangadhi	8	8	Dhangadhi	60.71	243.00	0.25	5.00
21	Kabilashi-Pokhariya Chowk-Harkatti	8	8		9.61	243.00	0.04	0.79
22	Mahuwahi – Sodhiyane - Tamasuiya	7	7		9.61	243.00	0.04	0.79
23	Navrajpur – Devnagar – Inarwa (Garsaha tole)	8	8		9.61	243.00	0.04	0.79
24	Bariyarpatti – Tulshipur – Kushaha Laxminiya	7	7	Bariyarpatti	60.52	243.00	0.25	4.98
25	Bisanpur Pr.Ma. – Pipra -Sukhipur	16	16	Bishnupura	34.28	243.00	0.14	2.82
26	Bidyanagar-Sohanpur- Gargambha	8	8		9.61	243.00	0.04	0.79
27	Tenuwapatti-Laxmipur-Sitapur	12	12	Sitapur	41.72	243.00	0.17	3.43
28	Lahan – Dhodana -Betaha	15	15	Lahan N.P.	243.00	243.00	1.00	20.00
29	Bastipur- Gobindpur - Mukshargola	15	15	Bastipur	28.03	243.00	0.12	2.31
30	Khairbona chowk – Inarwa	12	12		9.61	243.00	0.04	0.79

**Annex - III-B-4 : Scoring of Clas B road on the basis of Religious / Tourism Center**

SN	Name of the Road	Total Length (Km)	Length of Road for Upgrading/ Rehabilitation (Km)	Religious Centre/ Tourist place	Total number of spot	Max <sup>m</sup>	Coefficients	Score (10)
1	Ayodhyanagr bazar -Pipra - Aurahi	18.5	18.5		7	7	1.0	10.0
2	Siraha-Pipra Pra.Pi.	6	6		6	7	0.9	8.6
3	Baluwa- Chandruodhyopur	18	18		4	7	0.6	5.7
4	Belha - Chandraayodhyapur- Mahendra Rajmarg	15	15		6	7	0.9	8.6
5	Manikdah - Ganeshpur -Shalhesh Phulbari	9	9		3	7	0.4	4.3
6	Khairtoka Custom- Sarswar	10	10		3	7	0.4	4.3
7	Nirdhana -Kalyanpur- Jabadi	9.5	9.5		3	7	0.4	4.3
8	Bheriya -Kalyanpur Jabadi	8	8		3	7	0.4	4.3
9	Laxmipur Patari – Kushaha – Aurahi	5	5		3	7	0.4	4.3
10	Rariyaha – Arnama pra. Pi.-khoriyatol	16	16		4	7	0.6	5.7
11	M.Rajmargh – Ganeshpur-Sitapur - Barhari Bazar	19	19		5	7	0.7	7.1
12	Old Choharwa - Panbari - Lalbhitiya	8	8		4	7	0.6	5.7
13	Badaharamal - Sitapur- Chauharwa ( New chowk)	18	18		6	7	0.9	8.6
14	Mirchaiya – Kuthanama-Bhedia	11.5	11.5		3	7	0.4	4.3
15	Bandipur-Utarahini Kamalanadi	6	6		1	7	0.1	1.4
16	M.Rajmargh (Dhodana - Kamaldhah	6	6		4	7	0.6	5.7
17	Kalyanpur Ka.ba. -Premnagar - Raghopur Gachiya	9	9		4	7	0.6	5.7
18	Kashaha - Mukshar	12	12		2	7	0.3	2.9
19	Bathnaha – Jagatpur Phulbaria –Kushandi	13	13		4	7	0.6	5.7
20	Kushha Laxminiya- Dhangadhi	8	8		5	7	0.7	7.1
21	Kabilashi-Pokhariya Chowk-Harkatti	8	8		3	7	0.4	4.3
22	Mahuwahi – Sodhiyane - Tamasuiya	7	7		2	7	0.3	2.9
23	Navrajpur – Devnagar – Inarwa (Garsaha tole)	8	8		2	7	0.3	2.9
24	Bariyarpatti – Tulshipur – Kushaha Laxminiya	7	7		5	7	0.7	7.1
25	Bisanpur Pr.Ma. – Pipra -Sukhipur	16	16		4	7	0.6	5.7
26	Bidyanagar-Sohanpur- Gargambha	8	8		4	7	0.6	5.7
27	Tenuwapatti-Laxmipur-Sitapur	12	12		3	7	0.4	4.3
28	Lahan – Dhodana -Betaha	15	15		2	7	0.3	2.9
29	Bastipur- Gobindpur - Mukshargola	15	15		3	7	0.4	4.3
30	Khairbona chowk – Inarwa	12	12		5	7	0.7	7.1

**Annex - III-B-5 : Scoring of Clas B Road on the basis of Traffic Volume**

SN	Name of the Road	Total Length (Km)	Length of Road for Upgrading / Rehabilitation (Km)	Pedestrian	Porter	Packed animals	Bicycles	Ricshaway	Cars, Light van, Jeep & Pick up	Motorcycle	Carts	Minibus	Bus	Tractor	Light Truck	Truck	Heavy Truck	Traffic Unit	Max	Coefficient	Score (20)
1	Ayodhyanager bazar -Pipra - Aurahi	18.5	18.5	650	12		250	3	8	50	5	2	4	10	4	2	2	393.8	509.2	0.77	15.47
2	Siraha-Pipra Pra.Pi.	6	6	700	8		300	4	4	60	2			8				371.2	509.2	0.73	14.58
3	Baluwa- Chandruodhyopur	18	18	350	6		150	6	4	50	6	2		12				246.4	509.2	0.48	9.68
4	Belha - Chandraayodhyapur- Mahendra Rajmarg	15	15	880	4		280	4		25	8			8				379.1	509.2	0.74	14.89
5	Manikdah - Ganeshpur - Shalhesh Phulbari	9	9	600	30		100		2	20	4			16				254	509.2	0.50	9.98
6	Khairtoka Custom- Sarswar	10	10	550	25		150	10	5	60	18			20				348	509.2	0.68	13.67
7	Nirdhana -Kalyanpur- Jabadi	9.5	9.5	500	5		60			40	11			9				209	509.2	0.41	8.21
8	Bheriya -Kalyanpur Jabadi	8	8	220			20			5	3			2				69.5	509.2	0.14	2.73
9	Laxmipur Patari – Kushaha – Aurahi	5	5	150			40			20	4			3				81	509.2	0.16	3.18
10	Rariyaha – Arnama pra. Pi.- khoriyatol	16	16	670	3		65			40	6			5				222.7	509.2	0.44	8.75
11	M.Rajmargh – Ganeshpur- Sitapur - Barhari Bazar	19	19	750			250	5	10	65				35				440.5	509.2	0.87	17.30
12	Old Choharwa - Panbari - Lalbhitiya	8	8	950	10		220			75	12			15				425.5	509.2	0.84	16.71
13	Badaharamal - Sitapur- Chauharwa ( New chowk)	18	18	830	5		180			55	8			6				330.5	509.2	0.65	12.98
14	Mirchaiya – Kuthanama-Bhedia	11.5	11.5	650	11		75			70	9			7				259.9	509.2	0.51	10.21
15	Bandipur-Utarahini Kamalanadi	6	6	160	30		5			6	2			3				63.7	509.2	0.13	2.50
16	M.Rajmargh (Dhodana - Kamaldhah	6	6	200	20		8			8	3			4				75.6	509.2	0.15	2.97

SN	Name of the Road	Total Length (Km)	Length of Road for Upgrading / Rehabilitation (Km)	Pedestrian	Porter	Packed animals	Bicycles	Ricshaway	Cars, Light van, Jeep & Pick up	Motorcycle	Carts	Minibus	Bus	Tractor	Light Truck	Truck	Heavy Truck	Traffic Unit	Max	Coefficient	Score (20)
17	Kalyanpur Ka.ba. -Premnagar - Raghobpur Gachiya	9	9	150	2		90			25	3			5				114.3	509.2	0.22	4.49
18	Kashaha - Mukshar	12	12	450	8		115		3	125	7			45				390.2	509.2	0.77	15.33
19	Bathnaha – Jagatpur Phulbaria –Kushandi	13	13	740	8		250		3	150	10			35				509.2	509.2	1.00	20.00
20	Kushha Laxminiya- Dhangadhi	8	8	250	12		100			55	12			15				212.3	509.2	0.42	8.34
21	Kabilashi-Pokhariya Chowk-Harkatti	8	8	150	3		60			15	8			10				117.7	509.2	0.23	4.62
22	Mahuwahi – Sodhiyane - Tamasuiya	7	7	270	2		70			25	6			5				134.3	509.2	0.26	5.27
23	Navrajpur – Devnagar – Inarwa (Garsaha tole)	8	8	450	4		110			80	7			4				228.6	509.2	0.45	8.98
24	Bariyarpatti – Tulshipur – Kushaha Laxminiya	7	7	250	3		70			15	12			5				135.7	509.2	0.27	5.33
25	Bisanpur Pr.Ma. – Pipra - Sukhipur	16	16	470	5		125			60	8			15				261.5	509.2	0.51	10.27
26	Bidyanagar-Sohanpur-Gargambha	8	8	300	4		100			35	3			7				163.1	509.2	0.32	6.41
27	Tenuwapatti-Laxmipur-Sitapur	12	12	500	6		160			70	6			15				288.4	509.2	0.57	11.33
28	Lahan – Dhodana -Betaha	15	15	600	90		50			60	6			4				247	509.2	0.49	9.70
29	Bastipur- Gobindpur - Mukshargola	15	15	850	80		95			60	8			5				322.5	509.2	0.63	12.67
30	Khairbona chowk – Inarwa	12	12	550	4		110			40	4			4				214.6	509.2	0.42	8.43

## **Annex – IV**

### **Year wise Financial Analysis**

# Annex: IV -a

## Sharing of Budget for FY 069/70

Total Annual Budget ( NRs.'000)
119600
100%



New Construction
15
%
17940



District Road A	District B Road	Bridge
60	40	0
%	%	%
10764	7176	0
5.38	3.59	0.00

Rehabilitation/Upgrading
75
%
89700



District Road A	District B Road	Bridge
60	40	0
%	%	%
53820	35880	0
21.53	14.35	0.00

Maintenance
10
%
11960



District Road A	District B Road	Bridge
40	60	0
%	%	%
4784	7176	0
119.60	179.40	0.00



**Annex: IV- b**  
**Sharing of Budget for FY 070/71**

Total Annual Budget ( NRs.'000)
131560
100%



New Construction
15
%
19734



District Road A	District B Road	Trail Bridge
60	40	0
%	%	%
11840	7894	0
5.9	3.9	0.0

Rehabilitation/Upgrading
75
%
98670



District Road A	District B Road	Trail Bridge
60	40	0
%	%	%
59202	39468	0
23.7	15.8	0.0

Maintenance
10
%
13156



District Road A	District B Road	Trail Bridge
40	60	0
%	%	%
5262	7894	0
131.6	197.3	0.0

**Annex: IV- C**  
**Sharing of Budget for FY 071/72**

Total Annual Budget ( NRs.'000)
144716
100%



New Construction
15
%
21707



District Road A	District B Road	Trail Bridge
60	40	0
%	%	%
13024	8683	0

Year Wise Target (km)	6.51	4.34	0.00
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Rehabilitation/Upgrading
75
%
108537



District Road A	District B Road	Trail Bridge
60	40	0
%	%	%
65122	43415	0

26.05	17.37	0.00
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Maintenance
10
%
14472



District Road A	District B Road	Trail Bridge
40	60	0
%	%	%
5789	8683	0

144.72	217.07	0.00
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**Annex: IV - d**  
**Sharing of Budget for FY 072/73**

Total Annual Budget ( NRs.'000)
159188
(100%



New Construction
15
%
23878



District Road A	District B Road	District B Road
60	40	0
%	%	%
14327	9551	0
Year Wise Target (km)	7.16	4.78
		0.00

Rehabilitation/Upgrading
75
%
119391



District Road A	District B Road	District B Road
60	40	0
%	%	%
71634	47756	0
	28.65	19.10
		0.00

Maintenance
10
%
15919



District Road A	District B Road	District B Road
40	60	0
%	%	%
6368	9551	0
	159.19	238.78
		0.00

**Annex: IV - e**  
**Sharing of Budget for FY 073/74**

Total Annual Budget ( NRs.'000)
175106
100%



New Construction
15
%
26266



District Road A	District B Road	Trail Bridge
60	40	0
%	%	%
15760	10506	0

**Year Wise  
Target (km)**

7.88	5.25	0.00
------	------	------

Rehabilitation/Upgrading
75
%
131330



District Road A	District B Road	Trail Bridge
60	40	0
%	%	%
78798	52532	0

31.52	21.01	0.00
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Maintenance
10
%
17511



District Road A	District B Road	Trail Bridge
40	60	0
%	%	%
7004	10506	0

175.11	262.66	0.00
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## **Annex – V**

### **Photographs**





Photo 01: Participants taking part in the GPS training



Photo 02: Application of the GPS operation in the field level



Photo03: A moment of the GPS training



Photo 04: Banner stuck in the Ilaka level workshop venue



Photo 05 : Participants of the Ilaka level workshop



Photo 06: Sociologist delivering his view in the workshop



Photo 07: Participants of the Ilaka level workshop



Photo 08: Participant taking part in the Ilaka level workshop



Photo 09: Delivering view in the II district level workshop



Photo 10: Participant of the II district level workshop



Photo 11: Presentation of the DTMP Report being presented in the Central Level Workshop at DoLIDAR Conference Hall.



Photo 12: Continuation of the Presentation programme