



Government of Nepal



District Transport Master Plan (DTMP)

VOLUME - I

MAIN REPORT

**Ministry of Federal Affairs
and Local Development**

**Department of Local Infrastructure
Development and Agricultural
Roads (DOLIDAR)**

District Development Committee,

Baitadi

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Sinnamangal, Kathmandu, for the District Development Committee (DDC) and District
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Government of Nepal

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Foreword

It is my pleasure to introduce this District Transport Master Plan (DTMP) of Baitadi district. I believe that this document will be helpful in backstopping to Rural Transport Infrastructure Sector through sustainable planning, resources mobilization, implementation and monitoring of the rural road sub-sector development. The document is anticipated to generate substantial employment opportunities for rural people through increased and reliable accessibility in on-farm and off-farm livelihood diversification and commercialization and industrialization of agriculture sector. In this context, rural road sector will play a fundamental role to strengthen and promote overall economic growth of this district through established and improved year round transport services reinforcing intra and inter-district linkages .

Therefore, it is most crucial in expanding rural road networks in a planned way as per the District Transport Master Plan (DTMP) by considering the framework of available resources in DDC comprising both internal and external sources. Considering these aspects, RTI Sector Maintenance Pilot / DoLIDAR has prepared the DTMP by focusing most of the available resources into upgrading and maintenance of the existing road networks. It is expected that this DTMP will be helpful in lobbying and facilitating the donor agencies through central government generating resources required through basket fund approach. Furthermore, this document will be supportive in avoiding pervasive duplication approach in resources allocation under the rural road network development of Baitadi District.

I would like to thank to Er. Soviyat Khadka, DTO Engineer and other DDC and DTO staffs who directly and indirectly supported in the process of preparing this document.

I would, like to express my gratitude to SIDeF team - Er. Hare Ram Shrestha, Project Director, Er. Dikendra Katwal, Team Leader, Er. Yadu Kishwar Shrestha, Engineer and Binod Dhakal, GIS expert for their continuous dedication, and cooperation in bringing this DTMP to final stage.

My special thank goes to all the representatives of political parties and other DPCC members who played central role in providing constructive and valuable supports in preparing this document.

Any innovative and constructive suggestions regarding this document will be highly appreciated.


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Acknowledgement

This Final report on the Preparation of District Transport Master Plan (DTMP) of Baitadi District has been prepared under the contract agreement between RTI Sector Maintenance Pilot, DoLIDAR and SIDeF, Kathmandu.

The consultant has prepared this report after extensive documentary consultation/ field work, road inventory study and interaction with line agency of the district.

We would like to extend our heartfelt gratitude to the District Development Committee (DDC) Baitadi for providing cooperation to carry out this task.

SIDeF would like to express our gratitude to Mr Ram Dutta Pandey, Local Development Officer, Er. Soviyat, DTO Engineer and all the DDC and DTO staffs for their valuable suggestions and co-operation for the preparation of this report.

We also extend our sincere thanks to the representatives of political parties for their active and valuable participation in the process of DTMP preparation. We are grateful to all the local people and leaders who have rendered their valuable accompany to our team during execution of the works.

Thank goes to our team of Er. Dikendra Katwal, Team Leader, Er. Yadu Kishwar Shrestha, Engineer, Binod Dhakal, GIS expert who continuously worked to finalize the DTMP.

Hare Ram Shrestha

Project Director
On behalf of
SIDeF

EXECUTIVE SUMMARY

Baitadi district is located in Mahakali Zone of Far western Development Region of Nepal. It Boarders with Bajang and Doti districts to the east, Uttarpradesh (Pithauragad) of India to the West, Darchula to the North and Dadeldhura to the south. The district consists of 1 municipalities and 62 VDCs. Topographic location of Baitadi district is $29^{\circ} 19'$ to $29^{\circ} 41'$ north longitude and $80^{\circ} 15'$ to $80^{\circ} 54'$ east latitude. Total area of Baitadi district is 1451.13 Km^2 (0.68% of total area of Nepal). Elevation above mean sea level ranges from 390 m. (min.) to 2950 m. (max.). The annual rainfall is 126.67 mm, the maximum temperature is 24.63° C and minimum temperature 15.08° C .

The main sources of occupations and livelihood of the district population are agriculture, livestock, Business, etc. The total population size is 250898 (male 117407, female 133491). The population density of the District is 165 per sq. km. The Average household size is 5.55 persons. The literacy rate of the district population is 62.97%. Baitadi district has multi ethnicity and the composition: majorities are Bramin 21.5%, Chhetri 46.9%, Thakuri 9.1%, Janajati 2%, Dalit 13%, Others 7.5%.

The major languages spoken in the Baitadi district are: Baitadeli and Nepali.

Baitadi District is connected by Mahakali highway and district headquarter Gothalapani is connected by Satbanj – Julaghat Road from the place Satbanj and also accessed from Uttarpradesh (Pithauragad). and accessed to Darchula by Mahakali highway.

In the Baitadi District total length of road is 372.53 km where 172.00 km is SRN roads, 57.10 km is Urban roads, 120.53 km is DRCN roads and 22.90 km is Village roads.

The total length of DDC approved DRCN road is 120.53 Km in which all Roads 120.53 km are earthen. The table ES1 gives overall picture of road inventory of Baitadi.

Table ES1.

Road Class	Total length	Black Top	Gravel	Earthen
Strategic road network	172.00	161.00	-	11.00
Urban roads	57.10	22.30	-	34.80
District road core network	120.53	-	-	120.53
Village roads	22.90	0.61	-	22.29
Total	372.53	183.91	-	188.62

The total estimated cost for long list of conservation, improvement and new construction for DRCN selected in the district is NPR 3136773000.00. The cost for conservation is NPR 180795000.00, cost for improvement is NPR 462776000.00 and that for new construction is NPR 2493202000.00 are worked out for DRCN roads.

Table ES2.

Improvement type	Requirement	Cost (NPR)
Bridges	60 M	42,000,000
Slab culverts	0 M	-
Causeways	66 M	6,600,000
Hume pipes	26 Units	260,000
Masonry retaining walls	2340 m ³	23,400,000
Gabion retaining walls	1060 m ³	4,240,000
Lined drains	87850 M	87,850,000
Widening	1300 M	32,500,000
Rehabilitation	0.95 Km	760,000
Gravelling	120.53 Km	265,166,000
Blacktopping	0 Km	-
New construction	402.13 Km	2,493,201,590
Total		2,955,977,590

For 5-years planning the total budget estimated is NPR 1,928,119,000.00.00. As per the DDC decision 80% of the total road sector budget has to be taken for DRCN roads which come to be NPR 1,542,495,200.00 where as the total estimated cost of DRCN road is NPR 3136773000.00. This clearly shows that budget allocation is not sufficient for all interventions. Hence, budget allocation is done based on the ranking priority.

For 5-years DTMP, The budget allocated for next five years are; NPR 336,363,000.00 for conservation, NPR 462,776 000.00 for improvement and NPR 743,357,000.00 for new construction.

At end of DTMP period, the percentage changes of road condition are seen. The fair weather road length is reduced from 100% to 0%, all weather gravel road is improved from 0% to 100%. 41 VDCs was not accessed by road at the start of DTMP. 24 VDCs will be accessed to road network at the end of DTMP period. Likewise, 17 VDCs (31% of population) were accessed to fair weather road, will be reduced to 0 VDC (0% of population). 0 VDC (0 % of population) were accessed to all weather roads, will be accessed to 34 VDCs (59% of population) at the end of DTMP.

ABBREVIATIONS

DDC	District Development Committee
DoLIDAR	Department of Local Infrastructure Development and Agriculture Road
DOR	Department of Road
DTICC	District Transport Infrastructure Coordination Committee
DTMP	District Transport Master Plan
DTPP	District Transport Perspective Plan
DTO	District Technical Office
DRCN	District Road Core Network
GIS	Geographical Information system
GPS	Global Positioning System
GON	Government of Nepal
LGCDP	Local Governance and Community Development Programme
MFALD	Ministry of Federal Affairs and Local Development
SWAp	Sector Wide Approach
VDC	Village Development Committee
DRILIP	Decentralized Rural Infrastructure And livelihood Project
PAF	Poverty Alleviation Fund
RCIW	Rural community Infrastructure Work

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1. INTRODUCTION

Baitadi district is located in mahakali Zone of Far western Development Region of Nepal. It Boarders with Bajang and Doti districts to the east, Uttarpradesh (Pithauragad) of India to the West, Darchula to the North and Dadeldhura to the south. The district consists 1 municipalities and 62 VDCs. Topographic location of Baitadi district is $29^{\circ} 19'$ to $29^{\circ} 41'$ north longitude and $80^{\circ} 15'$ to $80^{\circ} 54'$ east latitude. Total area of Baitadi district is 1451.13 Km² (0.68% of total area of Nepal). Elevation above mean sea level ranges from 390 m. (min.) to 2950 m. (max.). The annual rainfall is 126.67 mm, the maximum temperature is 24.63° C and minimum temperature 15.08° C

Figure 1 Location of the Baitadi District



The main sources of occupations and livelihood of the district population are agriculture, livestock, Business, etc. The total population size is 250898 (male 117407, female 133491). The population density of the District is 165 per sq. km. The Average household size is 5.55 persons. The literacy rate of the district population is 62.97%. Baitadi district has multi ethnicity and the composition: majorities are Bramin 21.5%, Chhetri 46.9%, Thakuri 9.1%, Janajati 2%, Dalit 13%, Others 7.5%.

The major languages spoken in the Baitadi district are: Baitadeli and Nepali.

Baitadi district is connected by Mahakali Highway and District headquater Gothalapani is connected by Satbanj – Julaghat Feeder Road and also accessed from Uttarpradesh (pithauragad), accessed to Darchula by Mahakali Highway and accessed to Bajhang by Khodpe – Chainpur Feeder Road.

2. DISTRICT ROAD CORE NETWORK (DRCN)

In the course of DTMP preparation, the entire road inventory existing in the district has been taken. A minimum network of rural roads that provides access to all VDC headquarters linking directly with district headquarter or to the SRN roads are indentified to form the district road core network (DRCN). In the process of selecting DRCN, some DRCN roads are extended beyond the VDC headquarters and some roads are added to provide access to agriculturally potential areas as well as tourism potential areas as DDC members insisted to incorporate some extra roads in DRCN even if the VDC is already linked with DRCN. Some SRN roads are taken as DRCN roads due to underconstruction. since DDC is investing in those roads as well.

The total length of SRN Road is 172.00 km, urban road is 57.10 km and Rural road is 143.43 km.

Table 2.1.1 Total road length (km)

Road Class	Total length	Black Top	Gravel	Earthen
Strategic roads	172.00	161.00	-	11.00
Urban roads	57.10	22.30	-	34.80
Rural roads	143.43	0.61	-	142.82
Total	372.53	183.91	-	188.62

2.1 NATIONAL HIGHWAYS AND FEEDER ROAD

The total length of SRN road within Baitadi is 172 km where 161 km is blacktop and 11 km is Earthern. Since the SRN Roads like Patan Pancheswor 62 km are included in the DRCN Raod, this Road lengths are not shown in SRN total length due to its underconstruction as shown in table below. Hence total length of SRN considered is 172 km only.

Table 2.2.1 National Highways and Feeder Roads (km)

Code	Name of Road	Total length	Black Top	Gravel	Earthen
H14	Mahakali Highway (Anarkholi – Gokuleshwor)	100.00	100.00		
F050	Satbanjh – Jhulaghat	42.00	31.00		11.00
F049	Khodpe – Chainpur (Khodpe – Bitthad)	30.00	30.00		
	Total	172.00	161.00	0.00	11.00

2.2 DISTRICT ROAD CORE NETWORK

We developed inventory map using GIS software. After preparation of the inventory map for the identification of DRCN based on the criteria set out by DTMP Guidelines, DRCN was selected in consultation with DTO engineers and the technicians. Second meeting of DDC was called by DDC Baitadi on the 14 July 2013 for approval of DRCN. Some of the roads were extended and some of the roads were added in the proposed DRCN list as per the suggestions of political parties present in the meeting of DDC. Finally the DRCN was approved by DDC with some additions. The Approved List of the DRCN road is shown in the table below containing 22 nos. of roads.

The total length of approved DRCN Road is 120.53 Km (constructed existing Roads) out of which all length of roads 120.53 km is Earthen.

In the Baitadi district total existing length of road is 372.53 km where 172 km is SRN roads, 57.1 km is Urban roads, 120.53 km is DRCN roads and 22.9 km is VRCN roads which are shown in the respective tables 2.3.1 and 2.3.2 as shown below.

Table 2.3.1 Total road length (km)

Road Class	Total length	Black Top	Gravel	Earthen
Strategic road network	172.00	161.00	-	11.00
Highways	100.00	100.00		
Feeder roads	72.00	61.00		11.00
Urban roads	57.10	22.30	-	34.80
Dasarath Chand Municipality	57.10	22.30		34.80
District road core network	120.53	-	-	120.53
Village roads	22.90	0.61	-	22.29
Total	372.53	183.91	-	188.62

Table 2.3.2 District road core network (km)

Code	Description	Total length	Black Top	Gravel	Earthen	All weather	Fair weather
74DR001	Sadarmukam - Sera – Dhikgad	12.10	-	-	12.10	-	12.10
74DR002	Sadarmukam – Pancheshwor	2.10	-	-	2.10	-	2.10
74DR003	Dehimandu – Giregada	24.00	-	-	24.00	-	24.00
74DR004	Patan – Pancheshwor	20.50	-	-	20.50	-	20.50
74DR005	Bisalpur - Udayadev - Sarmali - Mahakali – pancheswor	-	-	-		-	-
74DR006	Chhela - Durgabhawani – Sreekot	0.83	-	-	0.83	-	0.83
74DR007	Dehimandu - Durgasthan – Salena	-	-	-		-	-
74DR008	Gurukhola – Basantapur	1.50	-	-	1.50	-	1.50
74DR009	Gokuleshwor - Rudreshwor	-	-	-		-	-
74DR010	Gokuleshwor - Dilasaini - Mathairaj – Mahadevsthan	-	-	-		-	-
74DR011	Khochlek - Sittad – Dilasaini	2.70	-	-	2.70	-	2.70
74DR012	Sreekot - Katunjpani - Bijayapur - Talladehi	5.00	-	-	5.00		5.00
74DR013	Satbanjh - Rauleswor - Sankarpur – Shribhawar	3.00	-	-	3.00		3.00
74DR014	Manikakham - Bohare Gaun - Rouleshwor	2.60	-	-	2.60	-	2.60
74DR015	Patan (Lorkha) - Sakar – Kailpal	-	-	-		-	-
74DR016	Anarkholi – Kailpal	2.10	-	-	2.10	-	2.10
74DR017	Bitthad - Suilek - Kuwakot - Bhatana - Nwadeu – Kotpetara	18.50	-	-	18.50	-	18.50
74DR018	Sribhawar – Hat	10.00	-	-	10.00		10.00
74DR019	Bachpani - Sibaling - Thalakanda	-	-	-		-	-
74DR020	Dudlakhan - Gazari -Sri sigas –Thalakanda	8.60	-	-	8.60	-	8.60
74DR021	Bipyakatal – Dhungad	7.00	-	-	7.00	-	7.00
74DR022	Sigas Road	-	-	-			
	Total	120.53	-	-	120.53	-	120.53
			0%	0%	100%	0%	100%

Other Roads which are planned for New construction by DDC Baitadi but they do not fit in our DRCN criteria so they are listed as Important Road. Which are as Follows :

- Bhumeshwor - Pakhadhar - Rouleshwor Road
- Dasarath N.P (Malli Aait) - Aala - Nilgadh Road Road
- Dehimandu - Bhumiraj (5,4,3,2,1) - Kotila - Hat Road
- Dehimandu - Lamalekh Road
- Dharmadhar - Gajraula - Phatigada Road
- Ganna - Ganaikhan Road
- Kolenika - Tudikhel - Khalanga Road
- Kuwakot (DDC building) - Hat Road
- Lamlek - Balaraghat - Maharudra - Sivanath - Raudidewal - Girgada Road
- Melauli - Bhageshwor Road
- Melauli - Ugratara Road
- Rudreshwor - Dilasaini Road
- Rudreshwor - Mahadevsthan Road
- Sainikhan - Kharaki - Sadarmukam Road
- Salena - Basantapur Road
- Salena - Durgasthan Road
- Tolimod - Dhakali Road
- Jhulaghat – Sera – Sillek – Deulekdham – Kataunjpani – Talladehi – Hat Road
- Jhulaghat – Pancheswor Road
- Gurukhola – Pali – Jhulaghat – Chaiseri gaun school – Surakal – Dhadaun – Pele – Suni – Kafal Kanda – Tala – Gadmeshwor Road. (Important in Tourism view).
- Pele – Lamalekh Road.
- Bhageshwor (Dadeldhura) – Bisalpur – Udayadev – Sarmali – Mahakali – PanchesworRoad. (Important in Tourism View).
- Hat – Kuwakot Road
- Dharam ghar – Rouleshwor Dham Road (Important in tourism view)
- Khochlekh – Chadepani Road (important in tourism view)
- Lama Lekh – Hataranga – Pachkaura – Ujwol Gaun – Sailoda – Kulau – Mahakali Road
- Giregada (Khanari) – Tolidgada – Arjun – Pele Raod
- Sahilekh – Binasau – Iswori Ganga Raod
- Dasarath Chand NA.PA -9 – Dungra – Bartoli – Simu Raod
- Seude – Patal Bhumeshwor Raod
- Sinkelek – Bajkot – Kalaun
- Adtola – Samayaji – Sakar - Kailpal

2.3 VILLAGE ROADS

After the identification of DRCN roads, all other roads that do not belong to the DRCN roads and urban roads are classified as village roads and fall under the responsibility of the VDCs. The planning for these roads is not included in the DTMP, as they are not the responsibility of the district. The management of these roads will be the responsibility of the VDC and any planned interventions will be included in the annual work programme of the VDCs. Funding for these interventions will come from VDC grant, community contributions and the additional funding (20% as decided by DDC meeting) made available from DDC through rural roads project. VDCs will be responsible for emergency and routine/recurrent maintenance of these roads.

Figure 2 Total road inventory

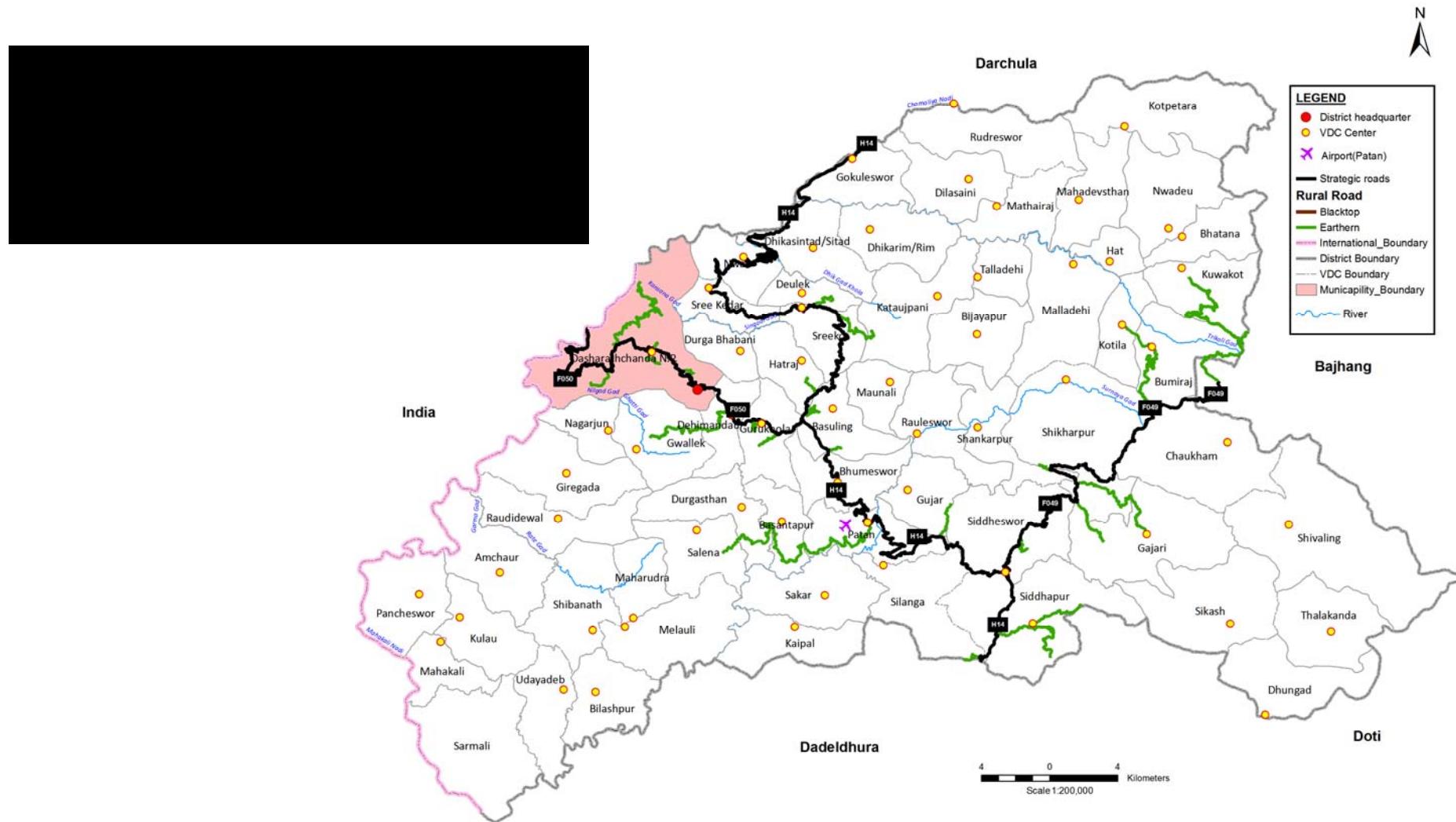
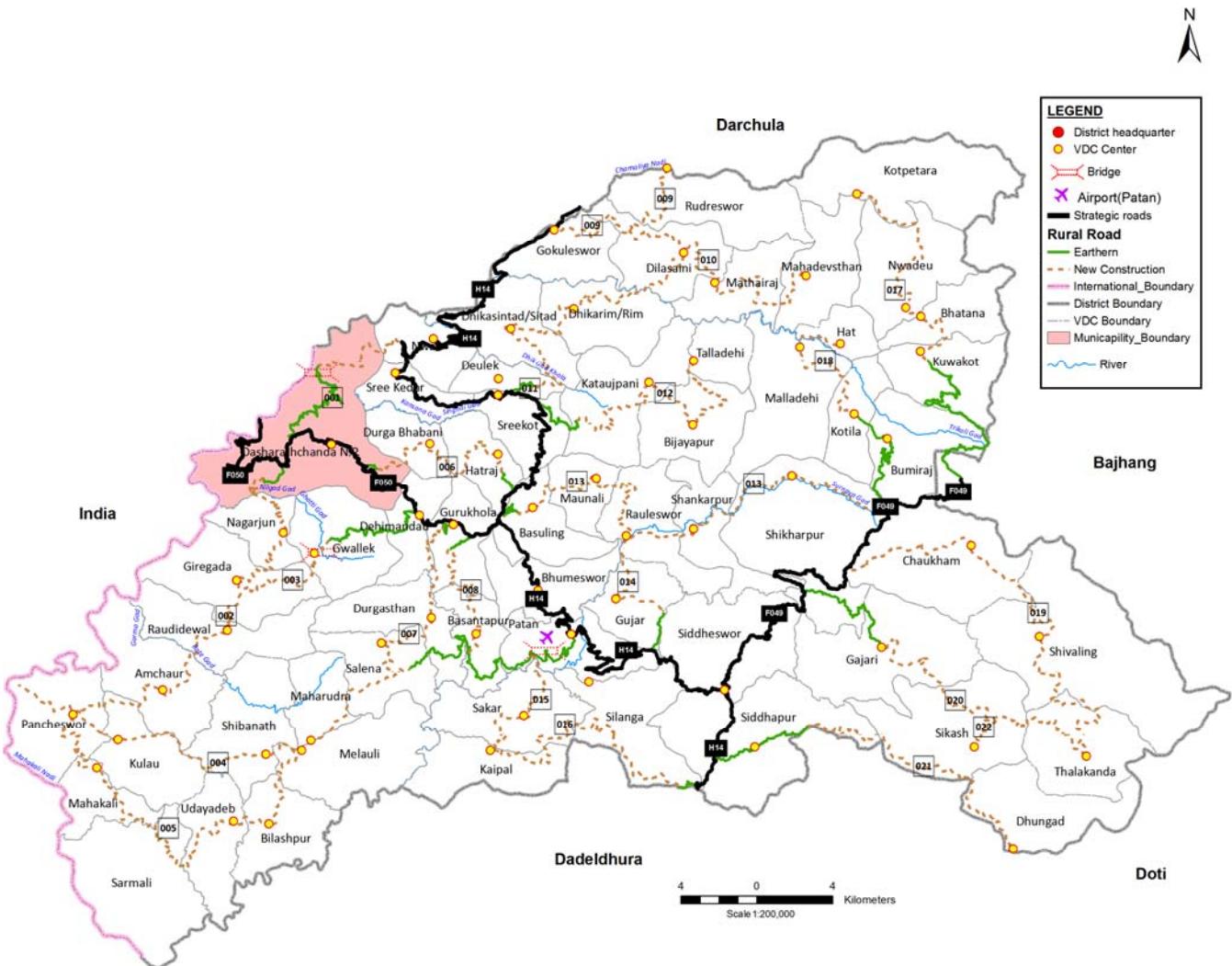


Figure 3 District Road Core Network (DRCN)



3. DISTRICT TRANSPORT PERSPECTIVE PLAN (DTPP)

The District Transport Perspective Plan is simply the list of all the identified interventions that are necessary to bring the roads to a maintainable all-weather standard and keep them there, as well as the construction of any new roads considered necessary to complete the DRCN. As such it is the summation of the interventions identified which are required to improve the road to the proper standard, as well as the conservation requirements to keep the roads at this standard.

3.1 CONSERVATION

The need for conservation applies to the entire DRCN in existence, for as far as it is in maintainable condition and does not require rehabilitation first. A table is prepared to show the length of DRCN roads that require conservation, differentiating between emergency, routine, recurrent and periodic maintenance. For all conservation types the full length (in km) of the DRCN roads in maintainable standard is entered into Table 3.1.1. Even though the roads will only require emergency and periodic maintenance in some of the years, for DTMP planning purposes an average requirement and cost are applied to the entire network. The specific roads to receive emergency and periodic maintenance each year are determined in the ARMP.

Table 3.1.1 Conservation requirements

Code	Emergency maintenance (km)	Routine maintenance (km)	Recurrent maintenance (km)	Periodic maintenance (km)
74DR001	12.10	12.10	12.10	12.10
74DR002	2.10	2.10	2.10	2.10
74DR003	24.00	24.00	24.00	24.00
74DR004	20.50	20.50	20.50	20.50
74DR005	-	-	-	-
74DR006	0.83	0.83	0.83	0.83
74DR007	-	-	-	-
74DR008	1.50	1.50	1.50	1.50
74DR009	-	-	-	-
74DR010	-	-	-	-
74DR011	2.70	2.70	2.70	2.70
74DR012	5.00	5.00	5.00	5.00
74DR013	3.00	3.00	3.00	3.00
74DR014	2.60	2.60	2.60	2.60
74DR015	-	-	-	-
74DR016	2.10	2.10	2.10	2.10
74DR017	18.50	18.50	18.50	18.50
74DR018	10.00	10.00	10.00	10.00
74DR019	-	-	-	-
74DR020	8.60	8.60	8.60	8.60
74DR021	7.00	7.00	7.00	7.00
74DR022	-	-	-	-
TOTAL	120.53	120.53	120.53	120.53

3.2 IMPROVEMENT

For the road improvements, separate tables are prepared to show the required interventions for rehabilitation, gravelling (upgrading to gravel standard), cross drainage, protective structures, widening and blacktopping. For this purpose, the Tables 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.5 and 3.2.6 are prepared.

3.2.1 REHABILITATION

Rehabilitation and upgrading refer to the existing road network where the roads are found to be in poor condition, to require technical improvement (curves, gradients, etc) or to require an improved road surface. During field survey the rehabilitation works to be carried out is found to be 0.95 km out of the entire length of DRCN roads.

Table 3.2.1 Sections of the district road core network requiring rehabilitation

Code	Name of Road	Total length (km)	Rehabilitation (km)
74DR001	Sadarmukam - Sera – Dhikgad	12.10	0.30
74DR002	Sadarmukam – Pancheshwor	2.10	
74DR003	Dehimandu – Giregada	24.00	
74DR004	Patan – Pancheshwor	20.50	
74DR005	Bisalpur - Udayadev - Sarmali - Mahakali – pancheswor	-	
74DR006	Chhela - Durgabhawani – Sreekot	0.83	
74DR007	Dehimandu - Durgasthan – Salena	-	
74DR008	Gurukhola – Basantapur	1.50	0.10
74DR009	Gokuleshwor - Rudreshwor	-	
74DR010	Gokuleshwor - Dilasaini - Mathairaj – Mahadevsthan	-	
74DR011	Khochlek - Sittad – Dilasaini	2.70	
74DR012	Sreekot - Katunjpani - Bijayapur - Talladehi	5.00	
74DR013	Satbanjh - Rauleswor - Sankarpur – Shribhawar	3.00	0.05
74DR014	Manikakham - Bohare Gaun - Rouleshwor	2.60	
74DR015	Patan (Lorkha) - Sakar – Kailpal	-	
74DR016	Anarkholi – Kailpal	2.10	
74DR017	Bitthad - Suilek - Kuwakot - Bhatana - Nwadeu – Kotpetara	18.50	
74DR018	Sribhawar – Hat	10.00	
74DR019	Bachpani - Sibaling - Thalakanda	-	
74DR020	Dudlakhan - Gazari -Sri sigas –Thalakanda	8.60	
74DR021	Bipyakatal – Dhungad	7.00	0.50
74DR022	Sigas Road	-	
TOTAL		120.53	0.95

3.2.2 GRAVELLING

To improve the surface condition of the existing earthen roads considered in DRCN, 120.53 km will have to be converted into gravel standard to maintain as all weather condition.

Table 3.2.2 Sections of the district road core network requiring gravelling

Code	Name of Road	Total length (km)	Gravelling (km)
74DR001	Sadarmukam - Sera – Dhikgad	12.10	12.10
74DR002	Sadarmukam – Pancheshwor	2.10	2.10
74DR003	Dehimandu – Giregada	24.00	24.00
74DR004	Patan – Pancheshwor	20.50	20.50
74DR005	Bisalpur - Udayadev - Sarmali - Mahakali – pancheswor	-	-
74DR006	Chhela - Durgabhawani – Sreekot	0.83	0.83
74DR007	Dehimandu - Durgasthan – Salena	-	-
74DR008	Gurukhola – Basantapur	1.50	1.50
74DR009	Gokuleshwor – Rudreshwor	-	-
74DR010	Gokuleshwor - Dilasaini - Mathairaj – Mahadevsthan	-	-
74DR011	Khochlek - Sittad – Dilasaini	2.70	2.70
74DR012	Sreekot - Katunjpani - Bijayapur – Talladehi	5.00	5.00
74DR013	Satbanjh - Rauleswor - Sankarpur – Shribhawar	3.00	3.00
74DR014	Manikakham - Bohare Gaun – Rouleshwor	2.60	2.60
74DR015	Patan (Lorkha) - Sakar – Kailpal	-	-
74DR016	Anarkholi – Kailpal	2.10	2.10
74DR017	Bitthad - Suilek - Kuwakot - Bhatana - Nwadeu – Kotpetara	18.50	18.50
74DR018	Sribhawar – Hat	10.00	10.00
74DR019	Bachpani - Sibaling – Thalakanda	-	-
74DR020	Dudlakhan - Gazari -Sri sigas –Thalakanda	8.60	8.60
74DR021	Bipyakatal – Dhungad	7.00	7.00
74DR022	Sigas Road	-	-
TOTAL			120.53

3.2.3 CROSS DRAINAGE

To maintain the road in all weather condition, the required cross drainage structures are listed during the DRCN survey. The required cross drainage structure are shown in table below.

Table 3.2.3 Required cross drainage structures

Code	Name of Road	Bridge (m)	Slab culvert (m)	CC Cause way (m)	Stone Cause way (m)	Pipe culvert (units)
74DR001	Sadarmukam - Sera – Dhikgad	25		1		10
74DR002	Sadarmukam – Pancheshwor					
74DR003	Dehimandu – Giregada	15		12		
74DR004	Patan – Pancheshwor	20		12		2
74DR005	Bisalpur - Udayadev - Sarmali - Mahakali – pancheswor					
74DR006	Chhela - Durgabhawani – Sreekot					
74DR007	Dehimandu - Durgasthan – Salena					
74DR008	Gurukhola – Basantapur				6	
74DR009	Gokuleshwor - Rudreshwor					
74DR010	Gokuleshwor - Dilasaini - Mathairaj – Mahadevsthan					
74DR011	Khochlek - Sittad – Dilasaini					
74DR012	Sreekot - Katunjpani - Bijayapur - Talladehi			15		1
74DR013	Satbanjh - Rauleswor - Sankarpur – Shribhawar					2
74DR014	Manikakham - Bohare Gaun - Rouleshwor					
74DR015	Patan (Lorkha) - Sakar – Kailpal					
74DR016	Anarkholi – Kailpal					
74DR017	Bitthad - Suilek - Kuwakot - Bhatana - Nwadeu – Kotpetara					
74DR018	Sribhawar – Hat					
74DR019	Bachpani - Sibaling - Thalakanda					
74DR020	Dudlakhan - Gazari -Sri sigas –Thalakanda			25		4
74DR021	Bipyakatal – Dhungad			1		1
74DR022	Sigas Road					
TOTAL		60	-	66	-	26

3.2.4 PROTECTIVE STRUCTURES

To maintain the road in all weather condition, the required protective structures are listed during the DRCN survey. The required protective structure is shown in table below.

Table 3.2.4 Required protective structures

Code	Name of Road	Masonry walls (m3)	Gabion walls (m3)	Lined drain (m)
74DR001	Sadarmukam - Sera – Dhikgad	180	140	6,000
74DR002	Sadarmukam – Pancheshwor			2,000
74DR003	Dehimandu – Giregada		500	15,000
74DR004	Patan – Pancheshwor		80	100
74DR005	Bisalpur - Udayadev - Sarmali - Mahakali - pancheswor			
74DR006	Chhela - Durgabhawani – Sreekot			
74DR007	Dehimandu - Durgasthan – Salena			
74DR008	Gurukhola – Basantapur			100
74DR009	Gokuleshwor - Rudreshwor			
74DR010	Gokuleshwor - Dilasaini - Mathairaj – Mahadevsthan			
74DR011	Khochlek - Sittad – Dilasaini		180	80
74DR012	Sreekot - Katunjpani - Bijayapur - Talladehi			160
74DR013	Satbanjh - Rauleswor - Sankarpur – Shribhawar		500	230
74DR014	Manikakham - Bohare Gaun - Rouleshwor		50	2,000
74DR015	Patan (Lorkha) - Sakar - Kailpal			
74DR016	Anarkholi – Kailpal			1,400
74DR017	Bitthad - Suilek - Kuwakot - Bhatana - Nwadeu – Kotpetara			17,000
74DR018	Sribhawar – Hat		50	100
74DR019	Bachpani - Sibaling - Thalakanda			
74DR020	Dudlakhan - Gazari -Sri sigas –Thalakanda		800	
74DR021	Bipyakatal – Dhungad			150
74DR022	Sigas Road			5,500
TOTAL		2,340	1,060	87,850

WIDENING

To maintain the road in all weather condition, the required widening of each DRCN roads are listed during the DRCN survey. The required widening lengths to overcome the necking of the roads are shown in table below.

Table 3.2.5 Sections of the district road core network requiring widening

Code	Name of Road	Total length (km)	VPD	Widening (m)
74DR001	Sadarmukam - Sera – Dhikgad	12.10	8.00	250
74DR002	Sadarmukam – Pancheshwor	2.10	4.00	
74DR003	Dehimandu – Giregada	24.00	6.00	
74DR004	Patan – Pancheshwor	20.50	16.00	
74DR005	Bisalpur - Udayadev - Sarmali - Mahakali – pancheswor	-	-	
74DR006	Chhela - Durgabhwani – Sreekot	0.83	4.00	200
74DR007	Dehimandu - Durgasthan – Salena	-	-	
74DR008	Gurukhola – Basantapur	1.50	1.00	
74DR009	Gokuleshwor - Rudreshwor	-	-	
74DR010	Gokuleshwor - Dilasaini - Mathairaj – Mahadevsthan	-	-	
74DR011	Khochlek - Sittad – Dilasaini	2.70	2.00	
74DR012	Sreekot - Katunjpani - Bijayapur - Talladehi	5.00	8.00	
74DR013	Satbanjh - Rauleswor - Sankarpur – Shribhawar	3.00	2.00	150
74DR014	Manikakham - Bohare Gaun - Rouleshwor	2.60	5.00	
74DR015	Patan (Lorkha) - Sakar – Kailpal	-	-	
74DR016	Anarkholi – Kailpal	2.10	2.00	700
74DR017	Bitthad - Suilek - Kuwakot - Bhatana - Nwadeu – Kotpetara	18.50	16.00	
74DR018	Sribhawar – Hat	10.00	-	
74DR019	Bachpani - Sibaling - Thalakanda	-	-	
74DR020	Dudlakhan - Gazari -Sri sigas –Thalakanda	8.60	8.00	
74DR021	Bipyakatal – Dhungad	7.00	8.00	
74DR022	Sigas Road	-	-	
TOTAL				1,300

3.2.5 BLACKTOPPING

To improve the surface condition of the DRCN roads based on the PCU greater than 150, the required blacktopping of DRCN roads are listed during the DRCN survey. The required blacktopping lengths of the roads are shown in table below.

Table 3.2.6 Sections of the district road core network requiring blacktopping

Code	Name of Road	Total length (km)	Blacktop (km)	Traffic (PCU)	Blacktopping (km)
				PCU	150
74DR001	Sadarmukam - Sera – Dhikgad	12.10	-	16	-
74DR002	Sadarmukam – Pancheshwor	2.10	-	11	-
74DR003	Dehimandu – Giregada	24.00	-	9	-
74DR004	Patan – Pancheshwor	20.50	-	27	-
74DR005	Bisalpur - Udayadev - Sarmali - Mahakali – pancheswor	-	-	-	-
74DR006	Chhela - Durgabhwani – Sreekot	0.83	-	11	-
74DR007	Dehimandu - Durgasthan – Salena	-	-	-	-
74DR008	Gurukhola – Basantapur	1.50	-	3	-
74DR009	Gokuleshwor - Rudreshwor	-	-	-	-
74DR010	Gokuleshwor - Dilasaini - Mathairaj – Mahadevsthan	-	-	-	-
74DR011	Khochlek - Sittad – Dilasaini	2.70	-	5	-
74DR012	Sreekot - Katunjpani - Bijayapur - Talladehi	5.00	-	23	-
74DR013	Satbanjh - Rauleswor - Sankarpur – Shribhawar	3.00	-	5	-
74DR014	Manikakham - Bohare Gaun - Rouleshwor	2.60	-	11	-
74DR015	Patan (Lorkha) - Sakar – Kailpal	-	-	-	-
74DR016	Anarkholi – Kailpal	2.10	-	4	-
74DR017	Bitthad - Suilek - Kuwakot - Bhatana - Nwadeu – Kotpetara	18.50	-	43	-
74DR018	Sribhawar – Hat	10.00	-	-	-
74DR019	Bachpani - Sibalung - Thalakanda	-	-	-	-
74DR020	Dudlakhan - Gazari -Sri sigas –Thalakanda	8.60	-	13	-
74DR021	Bipyakatal – Dhungad	7.00	-	18	-
74DR022	Sigas Road	-	-	-	-
TOTAL					-

3.3 NEW CONSTRUCTION

In Baitadi District one VDC headquarter is not connected with road network and one more road is not completed that are selected in DRCN. Hence these roads are proposed for new construction, which are shown in the table below.

Table 3.3.1 Sections of the district road core network requiring new construction

Code	Name of Road	New VDCs	Existing length	New length	Bridge (m)
74DR001	Sadarmukam - Sera – Dhikgad	Nuwali	12.10	7.54	
74DR002	Sadarmukam – Pancheshwor	Nagarjun, Giregada, Raudidewal, Amchar, Pancheswor	2.10	35.19	
74DR003	Dehimandu – Giregada	Giregada	24.00	1.00	
74DR004	Patan – Pancheshwor	Melauli	20.50	28.20	
74DR005	Bisalpur - Udayadev - Sarmali - Mahakali – pancheswor	Bisalpurpur, Udayadev, Sarmali, mahakali, pancheswor	-	34.81	
74DR006	Chhela - Durgabhwani – Sreekot	Durgabhwani, Sreekot	0.83	15.06	
74DR007	Dehimandu - Durgasthan – Salena	Dehimandu, Durgasthan, Salena	-	14.61	
74DR008	Gurukhola – Basantapur	Gurukhola, Basantapur	1.50	10.96	
74DR009	Gokuleshwor - Rudreshwor	Gokuleshwor, Rudreshwor	-	13.25	
74DR010	Gokuleshwor - Dilasaini - Mathairaj – Mahadevsthian	Gokuleshwor, Dilasaini, Mathairaj, Mahadevsthian	-	20.13	
74DR011	Khochlek - Sittad – Dilasaini	Khochlek, Sittad, Rim, Dilasaini	2.70	24.78	
74DR012	Sreekot - Katunjpani - Bijayapur - Talladehi	Sreekot, Katunjpani, Bijayapur, Talladehi	5.00	19.58	
74DR013	Satbanjh - Rauleswor - Sankarpur – Shribhawar	Basuning, Bhauneli, Rauleswor, Sankarpur	3.00	36.27	
74DR014	Manikakham - Bohare Gaun - Rouleshwor	Rouleshwor	2.60	6.93	
74DR015	Patan (Lorkha) - Sakar – Kailpal	Sakar	-	10.73	
74DR016	Anarkholi – Kailpal	Siddapur, Silanga, Kailpal	2.10	19.77	
74DR017	Bitthad - Suilek - Kuwakot - Bhatana - Nwadeu – Kotpetara	Bhatana, Nwadeu, Kotpetara	18.50	18.05	
74DR018	Sribhawar – Hat	Kotila, Malladehi, Hat	10.00	11.55	
74DR019	Bachpani - Sibaling - Thalakanda	Chaukham, Sibaling, Thalakanda	-	31.22	
74DR020	Dudlakhan - Gazari -Sri sigas –Thalakanda	Sigas, Thalakanda	8.60	20.40	
74DR021	Bipyakatal – Dhungad	Siddapur, Sikash, Dhungad	7.00	18.84	
74DR022	Sigas Road	Sigas	-	3.26	
TOTAL			120.53	402.13	-

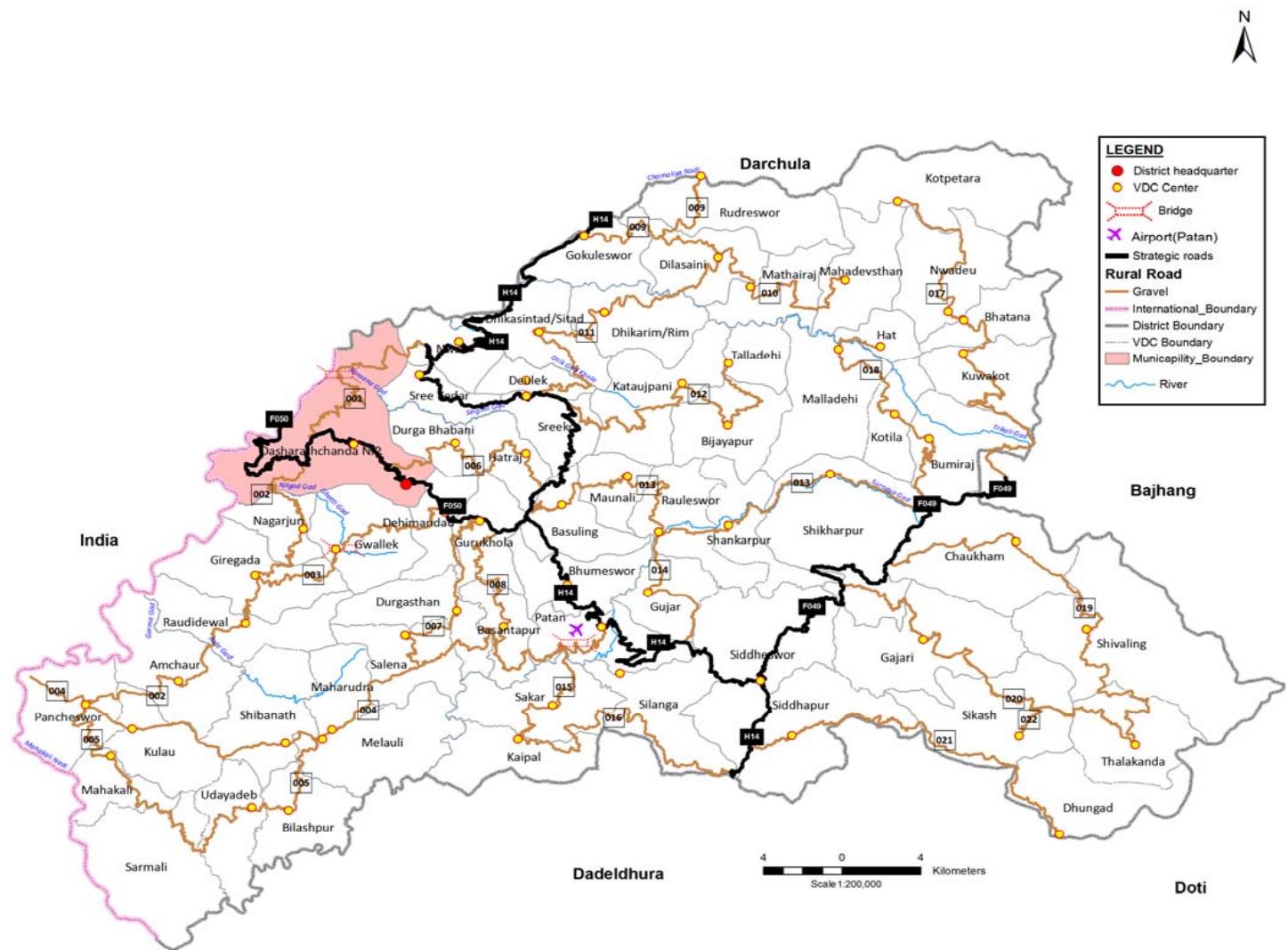
3.4 DISTRICT TRANSPORT PERSPECTIVE PLAN

The list of all the interventions that are necessary to bring the roads to a maintainable all-weather standard and keep them there, as well as the construction of any new roads considered necessary to complete the DRCN are identified. The interventions identified which are required to improve the road to the proper standard as well as the conservation requirements to keep the roads at this standard are worked out. The list of all the perspective interventions required are listed in the table 3.4.1 as listed below.

Table 3.4.1 District Transport Perspective Plan

Code	Emergency maintenance (km)	Routine maintenance (km)	Recurrent maintenance (km)	Periodic maintenance (km)	Rehabilitation (km)	Gravelling (km)	Blacktopping (km)	Widening (m)	Bridge (m)	Slab culvert (m)	CC Causeway (m)	Stone Causeway (m)	Pipe culvert (units)	Masonry walls (m3)	Gabion walls (m3)	Lined drain (m)	New construction (km)
74DR001	12.10	12.10	12.10	12.10	0.30	12.10	-	250.00	25.00	-	1.00	-	10.00	180.00	140.00	6,000.00	7.54
74DR002	2.10	2.10	2.10	2.10	-	2.10	-	-	-	-	-	-	-	-	-	2,000.00	35.19
74DR003	24.00	24.00	24.00	24.00	-	24.00	-	-	15.00	-	12.00	-	-	500.00	-	15,000.00	1.00
74DR004	20.50	20.50	20.50	20.50	-	20.50	-	-	20.00	-	12.00	-	2.00	80.00	100.00	18,000.00	28.20
74DR005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34.81
74DR006	0.83	0.83	0.83	0.83	-	0.83	-	200.00	-	-	-	-	-	-	-	-	15.06
74DR007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.61
74DR008	1.50	1.50	1.50	1.50	0.10	1.50	-	-	-	-	-	-	6.00	-	100.00	250.00	10.96
74DR009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.25
74DR010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.13
74DR011	2.70	2.70	2.70	2.70	-	2.70	-	-	-	-	-	-	-	180.00	80.00	2,700.00	24.78
74DR012	5.00	5.00	5.00	5.00	-	5.00	-	-	-	-	15.00	-	1.00	-	160.00	3,500.00	19.58
74DR013	3.00	3.00	3.00	3.00	0.05	3.00	-	150.00	-	-	-	-	2.00	500.00	230.00	500.00	36.27
74DR014	2.60	2.60	2.60	2.60	-	2.60	-	-	-	-	-	-	-	50.00	-	2,000.00	6.93
74DR015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.73
74DR016	2.10	2.10	2.10	2.10	-	2.10	-	700.00	-	-	-	-	-	-	-	1,400.00	19.77
74DR017	18.50	18.50	18.50	18.50	-	18.50	-	-	-	-	-	-	-	-	-	17,000.00	18.05
74DR018	10.00	10.00	10.00	10.00	-	10.00	-	-	-	-	-	-	-	50.00	100.00	8,000.00	11.55
74DR019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31.22
74DR020	8.60	8.60	8.60	8.60	-	8.60	-	-	-	-	25.00	-	4.00	800.00	-	6,000.00	20.40
74DR021	7.00	7.00	7.00	7.00	0.50	7.00	-	-	-	-	1.00	-	1.00	-	150.00	5,500.00	18.84
74DR022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.26
TOTAL	120.53	120.53	120.53	120.53	0.95	120.53		1300	60		66		26	2340	1060	87850	402.13

figure 4 District Transport Perspective Plan (DTPP)



4. COST ESTIMATION

The required interventions are determined from detailed survey of the DRCN roads. The costs necessary for conservation, improvement and new construction are calculated separately using actual average standard costs of the district.

4.1 CONSERVATION

The conservation costs are calculated for the first year to arrive at the amount of funding required. The costs are calculated by multiplying the lengths of roads requiring conservation by the relevant standard costs for different types of surfaces and type of maintenance. The Standard unit costs for conservation are listed in table 4.1.1 as below.

Table 4.1.1 Standard unit costs for conservation

Activity	Unit	Unit cost (NPR)
Emergency maintenance	Km	30,000
Routine maintenance	Km	20,000
Recurrent maintenance (blacktop)	Km	500,000
Recurrent maintenance (gravel)	Km	400,000
Recurrent maintenance (earthen)	Km	250,000
Periodic maintenance (blacktop)	Km	200,000
Periodic maintenance (gravel)	Km	250,000

The total conservation cost for the first year is NPR 36,159,000.00. Consequently the 5-year cost is 180,795,000.00. This calculation is shown in the table 4.1.2 as below. These costs for later year will vary slightly due to changes to the road network in terms of upgrading and new construction.

Table 4.1.2 Estimated conservation costs for the first year (NPR '000)

Code	Total length (km)	Blacktop (km)	Gravel (km)	Earthen (km)	Emergency	Routine	Recurrent (blacktop)	Recurrent (gravel)	Recurrent (earthen)	Periodic (blacktop)	Periodic (gravel)	Total Annual cost	Total 5-year cost
74DR001	12.10	-	-	12.10	363	242	-	-	3,025	-	-	3,630	18,150
74DR002	2.10	-	-	2.10	63	42	-	-	525	-	-	630	3,150
74DR003	24.00	-	-	24.00	720	480	-	-	6,000	-	-	7,200	36,000
74DR004	20.50	-	-	20.50	615	410	-	-	5,125	-	-	6,150	30,750
74DR005	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR006	0.83	-	-	0.83	25	17	-	-	208	-	-	249	1,245
74DR007	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR008	1.50	-	-	1.50	45	30	-	-	375	-	-	450	2,250
74DR009	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR010	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR011	2.70	-	-	2.70	81	54	-	-	675	-	-	810	4,050
74DR012	5.00	-	-	5.00	150	100	-	-	1,250	-	-	1,500	7,500
74DR013	3.00	-	-	3.00	90	60	-	-	750	-	-	900	4,500
74DR014	2.60	-	-	2.60	78	52	-	-	650	-	-	780	3,900
74DR015	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR016	2.10	-	-	2.10	63	42	-	-	525	-	-	630	3,150
74DR017	18.50	-	-	18.50	555	370	-	-	4,625	-	-	5,550	27,750
74DR018	10.00	-	-	10.00	300	200	-	-	2,500	-	-	3,000	15,000
74DR019	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR020	8.60	-	-	8.60	258	172	-	-	2,150	-	-	2,580	12,900
74DR021	7.00	-	-	7.00	210	140	-	-	1,750	-	-	2,100	10,500
74DR022	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	120.53	-	-	120.53	3,616	2,411	-	-	30,133	-	-	36,159	180,795

4.2 IMPROVEMENT

The improvement costs are calculated by multiplying the standard costs as given in table 4.2.1 with the intervention lengths and volumes as shown in next table 4.2.2 as below.

Table 4.2.1 Standard unit costs for improvement activities

Activity	Unit	Unit cost (NPR)
Rehabilitation	km	800,000
Widening	m	25,000
Gravelling	km	2,200,000
Blacktopping	km	5,700,000
Bridge construction	m	700,000
Slab culvert construction	m	150,000
CC Causeway construction	m	100,000
Stone Causeway construction	m	10,000
Pipe culvert placement	unit	10,000
Masonry wall construction	m ³	10,000
Gabion wall construction	m ³	4,000
Lined drain construction	m	1,000

The estimated cost for the improvement of the existing DRCN is the cost to maintain the DRCN to a maintainable all-weather standard. The total cost for improvement is NPR 462,776000.00 as shown in table 4.2.2 as below.

Table 4.2.2 Cost estimate for improvement measures (NPR '000)

Code	Total length (km)	Rehabilitation	Widening	Gravelling	Blacktopping	Bridges	Slab culverts	CC causeways	Stone causeways	Pipe culvert	Masonry walls	Gabion walls	Lined drains	Total cost
74DR001	12.10	240	6,250	26,620	-	17,500	-	100	-	100	1,800	560	6,000	59,170
74DR002	2.10	-	-	4,620	-	-	-	-	-	-	-	-	2,000	6,620
74DR003	24.00	-	-	52,800	-	10,500	-	1,200	-	-	5,000	-	15,000	84,500
74DR004	20.50	-	-	45,100	-	14,000	-	1,200	-	20	800	400	18,000	79,520
74DR005	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR006	0.83	-	5,000	1,826	-	-	-	-	-	-	-	-	-	6,826
74DR007	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR008	1.50	80	-	3,300	-	-	-	-	-	60	-	400	250	4,090
74DR009	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR010	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR011	2.70	-	-	5,940	-	-	-	-	-	-	1,800	320	2,700	10,760
74DR012	5.00	-	-	11,000	-	-	-	1,500	-	10	-	640	3,500	16,650
74DR013	3.00	40	3,750	6,600	-	-	-	-	-	20	5,000	920	500	16,830
74DR014	2.60	-	-	5,720	-	-	-	-	-	-	500	-	2,000	8,220
74DR015	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR016	2.10	-	17,500	4,620	-	-	-	-	-	-	-	-	1,400	23,520
74DR017	18.50	-	-	40,700	-	-	-	-	-	-	-	-	17,000	57,700
74DR018	10.00	-	-	22,000	-	-	-	-	-	-	500	400	8,000	30,900
74DR019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR020	8.60	-	-	18,920	-	-	-	2,500	-	40	8,000	-	6,000	35,460
74DR021	7.00	400	-	15,400	-	-	-	100	-	10	-	600	5,500	22,010
74DR022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	120.53	760	32,500	265,166	-	42,000	-	6,600	-	260	23,400	4,240	87,850	462,776

4.3 NEW CONSTRUCTION

The cost for new construction is calculated by using standard unit costs as given in table 4.3.1 as given below.

Table 4.3.1 Standard unit costs for new construction

Activity	Unit	Unit cost (NPR)
Opening up	Km	4,000,000
Gravelling	Km	2,200,000
Bridge construction	M	600,000

The new construction required to complete the DRCN is identified. In Baitadi 41 VDCs are not accessed by road network before DTMP.

In new construction there is not propessed required bridge because estimated cost without bridge itself more higher than budget allocated but being maintained also bridge construction is not in the scope of DDC.

The new construction cost calculated is NPR 2,493,202000.00 which is shown in table 4.3.2 as below.

Table 4.3.2 Cost estimate for new construction (NPR '000)

Code	Description	Length (km)	Opening up	Gravelling	Bridges	Total cost
74DR001	Sadarmukam - Sera – Dhikgad	7.54	30,146	16,580	-	46,727
74DR002	Sadarmukam – Pancheshwor	35.19	140,762	77,419	-	218,181
74DR003	Dehimandu – Giregada	1.00	4,000	2,200	-	6,200
74DR004	Patan – Pancheshwor	28.20	112,780	62,029	-	174,809
74DR005	Bisalpur - Udayadev - Sarmali - Mahakali – pancheswor	34.81	139,223	76,573	-	215,796
74DR006	Chhela - Durgabhawani - Sreekot	15.06	60,254	33,140	-	93,394
74DR007	Dehimandu - Durgasthan - Salena	14.61	58,437	32,140	-	90,577
74DR008	Gurukhola – Basantapur	10.96	43,851	24,118	-	67,969
74DR009	Gokuleshwor – Rudreshwor	13.25	52,991	29,145	-	82,135
74DR010	Gokuleshwor - Dilasaini - Mathairaj – Mahadevsthan	20.13	80,520	44,286	-	124,807
74DR011	Khochlek - Sittad – Dilasaini	24.78	99,125	54,519	-	153,644
74DR012	Sreekot - Katunjpani - Bijayapur – Talladehi	19.58	78,319	43,076	-	121,395
74DR013	Satbanjh - Rauleswor - Sankarpur – Shribhawar	36.27	145,080	79,794	-	224,874
74DR014	Manikakham - Bohare Gaun - Rouleshwor	6.93	27,723	15,248	-	42,971
74DR015	Patan (Lorkha) - Sakar – Kailpal	10.73	42,903	23,597	-	66,500
74DR016	Anarkholi – Kailpal	19.77	79,083	43,496	-	122,579
74DR017	Bitthad - Suilek - Kuwakot - Bhatana - Nwadeu – Kotpetara	18.05	72,194	39,707	-	111,900
74DR018	Sribhawar – Hat	11.55	46,213	25,417	-	71,630
74DR019	Bachpani - Sibaling – Thalakanda	31.22	124,888	68,688	-	193,576
74DR020	Dudlakhan - Gazari -Sri sigas -Thalakanda	20.40	81,617	44,890	-	126,507
74DR021	Bipyakatal – Dhungad	18.84	75,347	41,441	-	116,788
74DR022	Sigas Road	3.26	13,060	7,183	-	20,243
	TOTAL	402.13	1,608,517	884,684	-	2,493,202

4.4 DTPP COSTS

The DTPP cost is the required cost for long list of conservation, improvement and new construction for DRCN selected in the district. Projected 5-year Budget will not be sufficient to meet all the cost. The total DTPP cost calculated is NPR 3,136,773000.00 which is shown in the table 4.4.1 as below.

Table 4.4.1 DTPP costs (NPR '000)

Code	Conservation	Improvement	New construction	Total
74DR001	18,150	59,170	46,727	124,047
74DR002	3,150	6,620	218,181	227,951
74DR003	36,000	84,500	6,200	126,700
74DR004	30,750	79,520	174,809	285,079
74DR005	-	-	215,796	215,796
74DR006	1,245	6,826	93,394	101,465
74DR007	-	-	90,577	90,577
74DR008	2,250	4,090	67,969	74,309
74DR009	-	-	82,135	82,135
74DR010	-	-	124,807	124,807
74DR011	4,050	10,760	153,644	168,454
74DR012	7,500	16,650	121,395	145,545
74DR013	4,500	16,830	224,874	246,204
74DR014	3,900	8,220	42,971	55,091
74DR015	-	-	66,500	66,500
74DR016	3,150	23,520	122,579	149,249
74DR017	27,750	57,700	111,900	197,350
74DR018	15,000	30,900	71,630	117,530
74DR019	-	-	193,576	193,576
74DR020	12,900	35,460	126,507	174,867
74DR021	10,500	22,010	116,788	149,298
74DR022	-	-	20,243	20,243
TOTAL	180,795	462,776	2,493,202	3,136,773

5. RANKING

Ranking of the DRCN roads are based on the cost calculation of the intervention and population served basis. Prioritization is done according to the cost per capita and ranking is carried out for conservation, improvement and new construction. The cost of all the interventions under conservation, improvement , new construction is added up for each roads and this total cost is divided by the population served by the road.The population data for the VDCs linked by the road concerned are shown in Annex 2.

5.1 CONSERVATION

The ranking for conservation is based on per capita cost for conservation cost. The ranking for conservation is shown in table 5.1.1 as below.

Table 5.1.1 Ranking of conservation works (NPR '000)

Code	Total length (km)	1. Emergency	2. Routine	3. Recurrent (paved)	4. Recurrent (gravel)	5. Recurrent (earth)	6. Periodic (blacktop)	7. Periodic (gravel)	Total cost (NPR '000)	Population served	Cost/person (NPR)
74DR005	-	-	-	-	-	-	-	-	-	23,988	-
74DR007	-	-	-	-	-	-	-	-	-	11,919	-
74DR009	-	-	-	-	-	-	-	-	-	7,785	-
74DR010	-	-	-	-	-	-	-	-	-	16,469	-
74DR015	-	-	-	-	-	-	-	-	-	11,568	-
74DR019	-	-	-	-	-	-	-	-	-	9,641	-
74DR022	-	-	-	-	-	-	-	-	-	4,036	-
74DR002	2.10	63	42	-	-	525	-	-	630	17,378	36
74DR006	0.83	25	17	-	-	208	-	-	249	5,829	43
74DR016	2.10	63	42	-	-	525	-	-	630	11,383	55
74DR011	2.70	81	54	-	-	675	-	-	810	13,306	61
74DR008	1.50	45	30	-	-	375	-	-	450	7,019	64
74DR013	3.00	90	60	-	-	750	-	-	900	12,883	70
74DR012	5.00	150	100	-	-	1,250	-	-	1,500	14,739	102
74DR014	2.60	78	52	-	-	650	-	-	780	6,835	114
74DR018	10.00	300	200	-	-	2,500	-	-	3,000	20,310	148
74DR004	20.50	615	410	-	-	5,125	-	-	6,150	40,300	153
74DR001	12.10	363	242	-	-	3,025	-	-	3,630	16,791	216
74DR017	18.50	555	370	-	-	4,625	-	-	5,550	24,963	222
74DR020	8.60	258	172	-	-	2,150	-	-	2,580	11,244	229
74DR021	7.00	210	140	-	-	1,750	-	-	2,100	8,864	237
74DR003	24.00	720	480	-	-	6,000	-	-	7,200	11,273	639

5.2 IMPROVEMENT

The ranking for improvement is based on per capita cost for improvement cost. The ranking for improvement is shown in table 5.2.1 as below.

Table 5.2.1 Ranking of improvement works (NPR '000)

Code	Total length (km)	Gravelling (km)	Blacktopping (km)	Total cost (NPR '000)	Population served	Cost/person (NPR)
74DR005	-	-	-	-	23,988	-
74DR007	-	-	-	-	11,919	-
74DR009	-	-	-	-	7,785	-
74DR010	-	-	-	-	16,469	-
74DR015	-	-	-	-	11,568	-
74DR019	-	-	-	-	9,641	-
74DR022	-	-	-	-	4,036	-
74DR002	2.10	2.10	-	6,620	17,378	381
74DR008	1.50	1.50	-	4,090	7,019	583
74DR011	2.70	2.70	-	10,760	13,306	809
74DR012	5.00	5.00	-	16,650	14,739	1,130
74DR006	0.83	0.83	-	6,826	5,829	1,171
74DR014	2.60	2.60	-	8,220	6,835	1,203
74DR013	3.00	3.00	-	16,830	12,883	1,306
74DR018	10.00	10.00	-	30,900	20,310	1,521
74DR004	20.50	20.50	-	79,520	40,300	1,973
74DR016	2.10	2.10	-	23,520	11,383	2,066
74DR017	18.50	18.50	-	57,700	24,963	2,311
74DR021	7.00	7.00	-	22,010	8,864	2,483
74DR020	8.60	8.60	-	35,460	11,244	3,154
74DR001	12.10	12.10	-	59,170	16,791	3,524
74DR003	24.00	24.00	-	84,500	11,273	7,496

5.3 NEW CONSTRUCTION

The ranking for new construction is based on per capita cost for new construction cost. The ranking for new construction is shown in table 5.3.1 as below.

Table 5.3.1 Ranking of new construction works (NPR '000)

Code	Length (km)	Total cost (NPR '000)	Population served	Cost/person (NPR)
74DR003	1.00	6,200	11,273	550
74DR001	7.54	46,727	16,791	2,783
74DR018	11.55	71,630	20,310	3,527
74DR004	28.20	174,809	40,300	4,338
74DR017	18.05	111,900	24,963	4,483
74DR022	3.26	20,243	4,036	5,016
74DR015	10.73	66,500	11,568	5,749
74DR014	6.93	42,971	6,835	6,287
74DR010	20.13	124,807	16,469	7,578
74DR007	14.61	90,577	11,919	7,599
74DR012	19.58	121,395	14,739	8,236
74DR005	34.81	215,796	23,988	8,996
74DR008	10.96	67,969	7,019	9,684
74DR009	13.25	82,135	7,785	10,550
74DR016	19.77	122,579	11,383	10,769
74DR020	20.40	126,507	11,244	11,251
74DR011	24.78	153,644	13,306	11,547
74DR002	35.19	218,181	17,378	12,555
74DR021	18.84	116,788	8,864	13,176
74DR006	15.06	93,394	5,829	16,022
74DR013	36.27	224,874	12,883	17,455
74DR019	31.22	193,576	9,641	20,078

6. DISTRICT TRANSPORT MASTER PLAN (DTMP)

In the process of preparing DTMP, balancing of the available budget and the estimated costs of the required interventions, to determine which interventions can be carried out in the 5-year DTMP period are worked out.

6.1 FIVE YEAR PROJECTED FINANCIAL RESOURCES

The estimation of the financial resources available at district level for investments in the road sector has been carried out which is shown in Table 6.1.1 below. The expected fund for next five year is worked out by projecting the last years available budget on the basis of their increment of the budget.

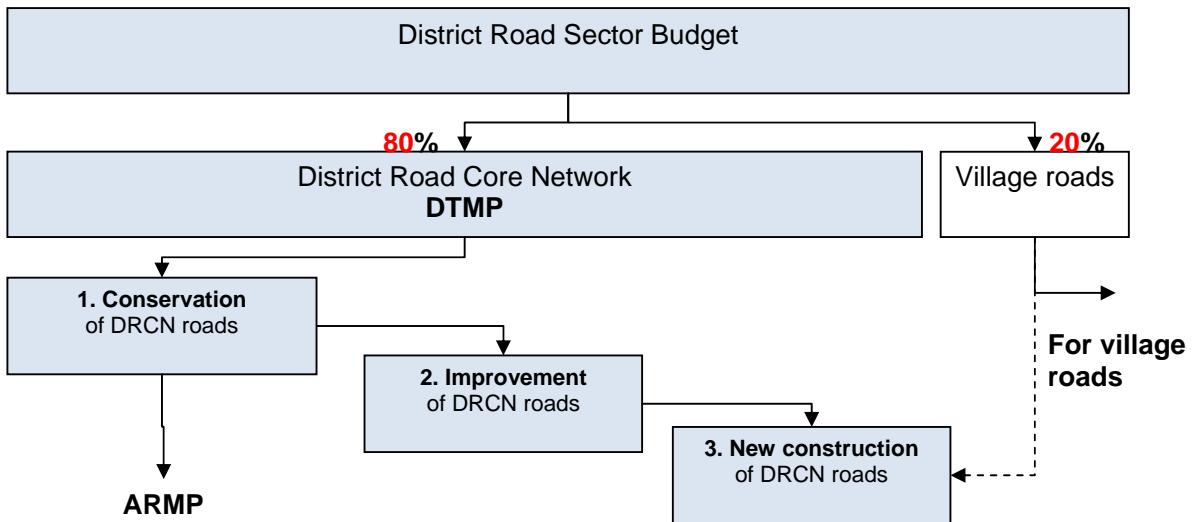
Table 6.1.1 Estimated funding levels (roads) for next five years (in NPR '000)

Funding source	2069/70	2070/71	2071/72	2072/73	2073/74
RCIW	13,200	14,520	15,972	17,569	19,326
DRILIP	100,000	120,000	140,000	160,000	180,000
Road board Nepal	3,000	3,500	4,000	4,500	5,000
DDC grant	3,000	3,500	4,000	4,500	5,000
Agricultural Road	16,182	19,418	23,302	27,962	33,555
GIZ	100,000	120,000	144,000	172,800	207,360
DOR	35,700	39,270	43,197	47,517	52,268
Poverty Alleviation Fund	4,000	4,500	5,000	5,500	6,000
Total	275,082	324,708	379,471	440,348	508,509
Grand total			1,928,119		

6.2 BUDGET ALLOCATION

The percentage of budget allocation for DRCN road is 80% and 20% is allocated in village roads as decided by DTICC/DDC meeting held in the district.

Figure 5 District road sector budget allocation



The budget allocation for next five year is done based on the ranking of the road and the priority given by DDC authority. Due to budget constraint, full budget for conservation of DRCN roads could not be allocated. Few roads are subjected to improve into gravel surface condition and budget is allocated to complete new construction which will complete the DRCN. Thus this will make all the VDCs accessible by road network in next five years. The detail of allocation of budget for next five year is shown in the table 6.2.1 as below.

Table 6.2.1 DTMP investment plan

Item				Year														
Fiscal year				2070/71			2071/72			2072/73			2073/74			2074/75		
Total budget				311,082			365,208			424,471			489,848			562,509		
Village roads				62,216			73,042			84,894			97,970			112,502		
Core road network budget (DTMP)				248,866			292,167			339,577			391,879			450,008		
Core network length (km)				120.53			120.53			120.53			120.53			120.53		
Blacktop (km)				-			-			-			-			-		
Gravel (km)				-			53.18			116.39			120.53			120.53		
Earthen (km)				120.53			67.35			4.14			0.00			0.00		
Conservation (NRs)				36,159			57,431			82,715			84,371			84,371		
Emergency				3,616			3,616			3,616			3,616			3,616		
Routine				2,411			2,411			2,411			2,411			2,411		
Recurrent (blacktop)				-			-			-			-			-		
Recurrent (gravel)				-			21,257			46,472			48,212			48,212		
Recurrent (earthen)				30,133			16,847			1,088			0			0		
Periodic (blacktop)				-			-			-			-			-		
Periodic (gravel)				-			13,286			29,045			30,133			30,133		
Improvement	Cost	BT	GR	20,087	BT	GR	40,462	BT	GR	63,106	BT	GR	63,593	B T	G R	86,563	B T	G R
74DR005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74DR002	6,620	-	2.10	6,620	-	2.10	-	-	-	-	-	-	-	-	-	-	-	-
74DR008	4,090	-	1.50	4,090	-	1.50	-	-	-	-	-	-	-	-	-	-	-	-
74DR011	10,760	-	2.70	10,760	-	2.70	-	-	-	-	-	-	-	-	-	-	-	-
74DR012	16,650	-	5.00	16,650	-	5.00	-	-	-	-	-	-	-	-	-	-	-	-
74DR006	6,826	-	0.83	6,826	-	0.83	-	-	-	-	-	-	-	-	-	-	-	-
74DR014	8,220	-	2.60	8,220	-	2.60	-	-	-	-	-	-	-	-	-	-	-	-
74DR013	16,830	-	3.00	16,830	-	3.00	-	-	-	-	-	-	-	-	-	-	-	-
74DR018	30,900	-	10.00	30,900	-	10.00	-	-	-	-	-	-	-	-	-	-	-	-
74DR004	79,520	-	20.50	79,520	-	20.50	-	-	-	-	-	-	-	-	-	-	-	-
74DR016	23,520	-	2.10	3,491	-	0.31	20,029	-	1.79	-	-	-	-	-	-	-	-	-
74DR017	57,700	-	18.50	-	-	-	57,700	-	18.50	-	-	-	-	-	-	-	-	-
74DR021	22,010	-	7.00	-	-	-	22,010	-	7.00	-	-	-	-	-	-	-	-	-
74DR020	35,460	-	8.60	-	-	-	35,460	-	8.60	-	-	-	-	-	-	-	-	-
74DR001	59,170	-	12.10	-	-	-	59,170	-	12.10	-	-	-	-	-	-	-	-	-
74DR003	84,500	-	24.00	-	-	-	9,822	-	2.79	74,678	-	21.21	-	-	-	-	-	-
Total improvement				183,907	-	48.54	204,191	-	50.78	74,678	-	21.21	-	-	-	-	-	-

Table 6.2.1 DTMP investment plan contd.....

Item			Year									
Fiscal year			2070/71		2071/72		2072/73		2073/74		2074/75	
Construction	Cost	GR		GR	-	GR	241,628	GR	307,508	GR	365,637	GR
74DR003	6,200	1.00	-	-	-	-	6,200	1.00	-	-	-	-
74DR001	46,727	7.54	-	-	-	-	46,727	7.54	-	-	-	-
74DR018	71,630	11.55	-	-	-	-	71,630	11.55	-	-	-	-
74DR004	174,809	28.20	-	-	-	-	28,455	4.59	146,354	23.61	-	-
74DR017	111,900	18.05	-	-	-	-	-	-	111,900	18.05	-	-
74DR022	20,243	3.26	-	-	-	-	-	-	-	-	-	-
74DR015	66,500	10.73	-	-	-	-	-	-	-	-	66,500	10.73
74DR014	42,971	6.93	-	-	-	-	-	-	-	-	42,971	6.93
74DR010	124,807	20.13	-	-	-	-	-	-	-	-	42,672	6.88
74DR007	90,577	14.61	-	-	-	-	-	-	-	-	77,570	12.51
74DR012	121,395	19.58	-	-	-	-	-	-	-	-	-	-
74DR005	215,796	34.81	-	-	-	-	-	-	-	-	-	-
74DR008	67,969	10.96	-	-	-	-	-	-	-	-	-	-
74DR009	82,135	13.25	-	-	-	-	-	-	-	-	82,135	13.25
74DR016	122,579	19.77	-	-	-	-	-	-	-	-	-	-
74DR02	126,507	20.40	-	-	-	-	-	-	9,653	1.56	10,589	1.71
74DR011	153,644	24.78	-	-	-	-	-	-	-	-	-	-
74DR002	218,181	35.19	-	-	-	-	-	-	-	-	-	-
74DR021	116,788	18.84	-	-	-	-	-	-	-	-	-	-
74DR006	93,394	15.06	-	-	-	-	-	-	-	-	-	-
74DR013	224,874	36.27	-	-	-	-	-	-	-	-	-	-
74DR019	193,576	31.22	-	-	-	-	-	-	-	-	-	-
Total new construction	-	-	-	-	-	-	153,012	24.68	267,908	43.21	322,437	52.01
Remaining budget	-	-	-	-	-	-	0	-	0	-	0	-

6.3 DTMP OUTPUTS

The output of the DTMP will be of conservation 120.53 km, improvement to gravel will be 120.53 km and new construction will be 119.9 km as shown in table 6.3.1 below.

Table 6.3.1 DTMP output

Conservation	Improvement gravel	Improvement blacktop	New construction
120.53	120.53	-	119.9

The budget allocated for next five years are; NPR 336,363,000.00 for conservation, NPR 462,776 000.00 for improvement and NPR 743,357,000.00 for new construction.

6.4 DTMP OUTCOME

After the DTMP fair weather roads are decreased from 100% to 0%, all weather gravel roads are increased from 0% to 100% and black top roads are not as it is after DTMP. But the existing DRCN Roads is too short 402.13 km Road length is needed to reach in target point in which 119.9 km roads will be constructed after DTMP. The allocated budget is not sufficient for it, only the condition of existing DRCN roads length is shown in the table 6.4.1 as below.

Table 6.4.1 Standard of DRCN roads

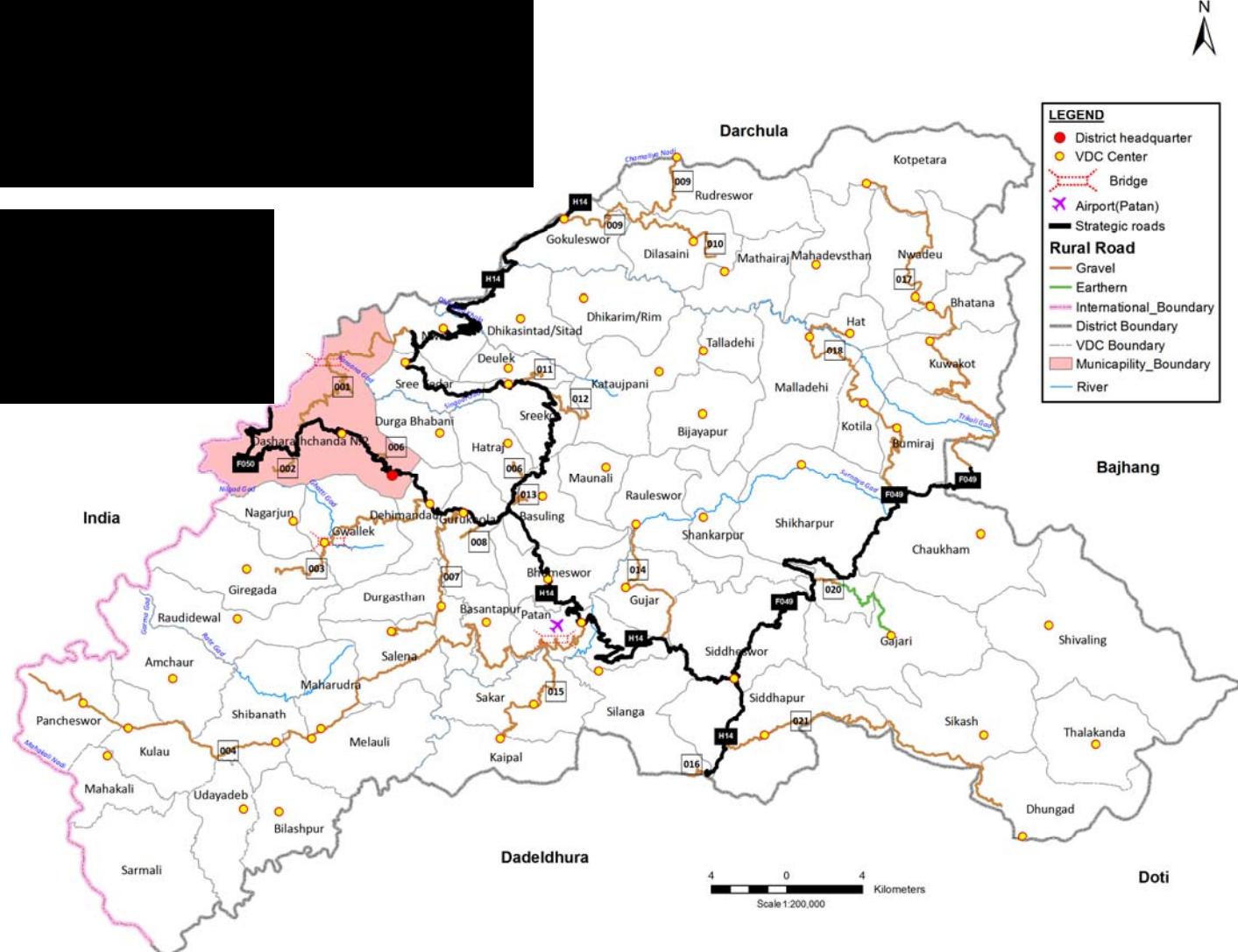
	Total length	Fair-weather		All-weather gravel		All-weather blacktop	
	Km	Km	%	Km	%	Km	%
Start of DTMP	120.53	120.53	100%	-	0%	-	0%
End of DTMP	120.53	- 0.00	0%	120.53	100%	-	0%
Difference	-	- 120.53	-100%	120.53	100%	-	0%

41 VDCs was not accessed by road at the start of DTMP. 24 VDCs will be accessed to road network at the end of DTMP period. Likewise, 17 VDCs (31% of population) were accessed to fair weather road, will be reduced to 0 VDC (0% of population). 0 VDCs (0 % of population) were accessed to all weather roads, will be accessed to 34 VDCs (59% of population) at the end of DTMP. After DTMP the access condition to VDC population is presented in table 6.4.2 below.

Table 6.4.2 Population with access to road network

	Direct access to SRN			No access to road			Fair-weather core roads			All-weather core roads		
	VDCs	Population	%	VDCs	Population	%	VDCs	Population	%	VDCs	Population	%
Start of DTMP	14	51,549	21%	41	151,990	61%	17	78,402	31%	0	-	0%
End of DTMP	14	51,549	21%	17	57,501	23%	0	-	0%	34	148,124	59%
Difference	-	-	0%	24	- 94,489	-38%	- 17	- 78,402	-31%	34	148,124	59%

Figure 6 District Transport Master Plan (DTMP)



ANNEX 1 TRAFFIC DATA

ANNEX 1 TRAFFIC DATA

Table A1.2 Traffic Data

Code	Total Length (km)	Motorcycle	Car-Jeep- Minibus	Tractor	Truck-Bus	PCU	VPD
74DR001	12.10	3	4	3	1	16	8
74DR002	2.10	9	2	2		11	4
74DR003	24.00	2	4	2		9	6
74DR004	20.50	5	10	5	1	27	16
74DR005	0.00					-	-
74DR006	0.83	3	1	2	1	11	4
74DR007	0.00					-	-
74DR008	1.50	2		1		3	1
74DR009	0.00					-	-
74DR010	0.00					-	-
74DR011	2.70	3	1	1		5	2
74DR012	5.00	7	3	2	3	23	8
74DR013	3.00	1		2		5	2
74DR014	2.60	2	2	2	1	11	5
74DR015	0.00					-	-
74DR016	2.10	2	1	1		4	2
74DR017	18.50	10	4	7	5	43	16
74DR018	10.00	3	2	1		6	3
74DR019	0.00					-	-
74DR020	8.60	5	6.0	2		13	8
74DR021	7.00	12	4.0	4		18	8
74DR022	0.00					-	-
Total	120.53						

ANNEX 2 POPULATION SERVED

ANNEX 2 POPULATION SERVED

Table A2.1 Population Served

#	VDC /municipality	Population	Road																				SRN	
			74DR001	74DR002	74DR003	74DR004	74DR005	74DR006	74DR007	74DR008	74DR009	74DR010	74DR011	74DR012	74DR013	74DR014	74DR015	74DR016	74DR017	74DR018	74DR019	74DR020	74DR021	74DR022
1	Amchaur	4,802		X																				
2	Basantapur	2,557				X				X														
3	Basuling	3,325															X							
4	Bhatana	4,017																		X				
5	Bhumeswor	3,462																						
6	Bijayapur	4,035														X								
7	Bisalpur	4,174							X															
8	Bumiraj	4,614																		X	X			
9	Chaukham	2,764																			X			
10	Dasharathchanda N.P	16,791	X																					
11	Dehimandau	4,362			X				X															
12	Deulek	2,437																						
13	Dhikamrim / Rim	4,132													X									
14	dhikasintad / Sital	4,655																						
15	Dhungad	2,325																				X		
16	Dilasaini	5,695												X	X									
17	Durga Bhabani	2,350							X															
18	Durgasthan	3,995				X			X															
19	Gajari	4,403																				X		
20	Giregada	3,089		X	X																			
21	Golkuleswor	4,073												X	X									
22	Gujar	2,795																	X					
23	Gurukhola	4,462											X											
24	Gwallek	3,822			X	X																		
25	Hat	2,292																				X		
26	Hatairaj	1,065																						
27	Kailpal	3,074																	X	X				
28	Kataujpani	4,296													X									
29	Kotila	3,639																				X		
30	Kotpetara	6,440																				X		
31	Kulau	2,970				X																		
32	Kuwakot	5,441																			X			
33	Mahadevsthan	3,697													X									
34	Mahakali	3,513					X																	
35	Maharudra	4,080				X																		

36	Malladehi	4,059															X						
37	Mathairaj	3,004														X							
38	Maunali	3,208														X							
39	Melauli	4,654					X																
40	Nargarjun	1,961		X																			
41	Nwadeu	4,451																	X				
42	Nwali	2,742																					
43	Pancheswor	3,972		X		X	X																
44	Patan	5,217				X											X						
45	Raudidewal	3,554		X																			
46	Rauleswor	4,040															X	X					
47	Rudreswor	3,712									X												
48	Sakar	3,277																X					
49	Salena	3,562				X			X														
50	Samali	7,642					X																
51	Sankarpur	2,310														X							
52	Shibanath	5,471				X																	
53	Shikhpur	5,706															X	X					
54	Shivaling	4,072																		X			
55	Siddapur	2,503																			X		
56	Siddeswor	4,947																					
57	Sigash	4,036																	X	X	X	X	
58	Silanga	2,603																					
59	Shree Kedar	1,979																					
60	Shreekot	3,479						X						X	X								
61	Talladehi	2,929													X								
62	Thalakanda	2,805																		X	X		
63	Udayadeb	4,687					X																
	Total population	250,225	16,791	17,378	11,273	40,300	23,988	5,829	11,919	7,019	7,785	4	16,469	12,883	13,306	4	14,739	3	11,568	11,383	24,963	20,310	9,641
	Total VDCs/municipalities	63	1	5	3	1 0	5	2	3	2	2	4	3	4	4	2	3	3	5	5	3	3	11,244
																							8,864
																							4,036
																							-

ource: *Population census 2012*

ANNEX 3 LOCATION OF PROPOSED INTERVENTIONS

Table A3.1 Location of proposed Interventions

Road code	Road Name	Length (km)	Start chainage (km) or X-coordinate	End chainage (km) or Y-coordinate	Rehabilitation (km)	Gravelling (km)	Blacktopping (km)	Widening (m)	Bridge (m)	Slab culvert (m)	CC Causeway (m)	Stone Causeway (m)	Pipe culvert (units)	Masonry walls (m3)	Gabion walls (m3)	Lined drain (m)
74DR001	Sadarmukam - Sera – Dhikgad	12.10	0+000	12+100	0.30		250.00	25.00		1.00		10.00	180.00	140.00	6000.00	
74DR002	Sadarmukam – Pancheshwor	2.10	0+000	2+100												2000.00
74DR003	Dehimandu – Giregada	24.00	0+000	24+000				15.00		12.00			500.00			15000.00
74DR004	Patan – Pancheshwor	20.50	0+000	20+500				20.00		12.00		2.00	80.00	100.00		18000.00
74DR005	Bisalpur - Udayadev - Sarmali - Mahakali – pancheswor	0.00	0+000	0+000												
74DR006	Chhela - Durgabhawani – Sreekot	0.83	0+000	0+830			200.00									
74DR007	Dehimandu - Durgasthan – Salena	0.00	0+000	0+000												
74DR008	Gurukhola – Basantapur	1.50	0+000	1+500	0.10							6.00		100.00		250.00
74DR009	Gokuleshwor - Rudreshwor	0.00	0+000	0+000												
74DR010	Gokuleshwor - Dilasaini - Mathairaj – Mahadevsthan	0.00	0+000	0+000												
74DR011	Khochlek - Sittad - Rim – Dilasaini	2.70	0+000	2+700								180.00	80.00	2700.00		
74DR012	Sreekot - Katunjpani - Bijayapur - Talladehi	5.00	0+000	5+000						15.00		1.00		160.00		3500.00
74DR013	Satbanjh - Rauleswor - Sankarpur – Shribhawar	3.00	0+000	3+000	0.05		150.00					2.00	500.00	230.00		500.00
74DR014	Manikakham - Bohare Gaun - Rouleshwor	2.60	0+000	2+600									50.00			2000.00
74DR015	Patan (Lorkha) - Sakar – Kailpal	0.00	0+000	0+000												
74DR016	Anarkholi – Kailpal	2.10	0+000	2+100			700.00									1400.00
74DR017	Bitthad - Suilek - Kuwakot - Bhatana - Nwadeu – Kotpetara	18.50	0+000	18+500		5										17000.00
74DR018	Sribhawar - Hat	10.00	0+000	10+000								50.00	100.00	8000.00		
74DR019	Bachpani - Sibaling - Thalakanda	0.00	0+000	0+000												
74DR020	Dudlakhan - Gazari -Sri sigas -Thalakanda	8.60	0+000	8+600					25.00		4.00	800.00				6000.00
74DR021	Bipyakatal - Dhungad	7.00	0+000	7+000	0.50				1.00		1.00		150.00			5500.00
74DR022	Sigas Road	0.00	0+000	0+000												
Total		120.53			0.95	5	0	1300	60	0	66	0	26	2340	1060	87850

ANNEX 4 LIST OF INVENTORY ROADS

Table A4.1 Overall Road Inventory

Road code	Road Name	Length (km)	Start chainage (km) or XY-coordinate	End chainage (km) or XY-coordinate	Surface Type:	Surface Type:	All Weather	Fair Weather	Condition - Good/Fair	Condition - Poor	Condition - Temporarily Impassable	Condition - Permanently Impassable
74DR001	Sardarmukam - Sher - Dhikgad Road	12.10	0+000	12+100	0.00	0.00	12.10	0.00	12.10	0.00	12.10	0.00
74DR002	Sardamukam - Pancheswor Road	2.10	0+000	2+100	0.00	0.00	2.10	0.00	2.10	0.00	2.10	0.00
74DR003	Dehimandu - Giregada Road	18.00	0+000	18+000	0.00	0.00	18.00	0.00	2.10	0.00	2.10	0.00
74DR004	Patan - Salena -Melauli Road	20.50	0+000	20+500	0.00	0.00	20.50	0.00	20.50	0.00	20.50	0.00
74DR006	Chhela - Durgabhawani Srikot Road	0.81	0+000	0+810	0.00	0.00	0.81	0.00	2.10	0.00	2.10	0.00
74DR006	Sinkelek - Hatairaj -Srikot - Pancheshwor Road	1.50	0+000	1+500	0.00	0.00	1.50	0.00	1.50	0.00	1.50	0.00
74DR008	Gurukhola - basantapur Road	1.50	0+000	1+500	0.00	0.00	1.50	0.00	2.10	0.00	2.10	0.00
74DR011	Khochlek - Sittad - Dilasaini Road	2.00	0+000	2+000	0.00	0.00	2.00	0.00	2.10	0.00	2.10	0.00
74DR012	Sillegada - Badiya - Jaiballa Road	4.50	0+000	4+500	0.00	0.00	4.50	0.00	4.50	0.00	4.50	0.00
74DR013	Satbanjh - Rouleshwor - Sankarpur - Shreebhawar Road	3.00	0+000	3+000	0.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00
74DR014	Manikakhan - Boharigau - Rouleshwor Road	2.60	0+000	2+600	0.00	0.00	2.60	0.00	2.10	0.00	2.10	0.00
74DR016	Anarkholi - Kailpal Road	1.50	0+000	1+500	0.00	0.00	1.50	0.00	1.50	0.00	1.50	0.00
74DR017	Bitthad - Suilek - Kuwakot - Kotpetra	18.50	0+000	18+500	0.00	0.00	18.50	0.00	2.10	0.00	2.10	0.00
74DR018	Shreebhawar - Hat	10.00	0+000	10+000	0.00	0.00	10.00	0.00	10.00	0.00	10.00	0.00
74DR020	Dudlakhan - Gazari - Thalakanda Road	8.60	0+000	8+600	0.00	0.00	8.60	0.00	2.10	0.00	2.10	0.00
74DR021	Bipyakatal - Dhungad Road	7.00	0+000	7+00	0.00	0.00	7.00	0.00	2.10	0.00	2.10	0.00
74VR001	Gothalapani - Isworiganga	0.85	0+000	0+850	0.00	0.00	0.85	0.00	2.10	0.00	2.10	0.00
74VR002	Dasarath Chand N.P Chakrapath Road	1.50	0+000	1+500	0.00	0.00	1.50	0.00	2.10	0.00	2.10	0.00
74VR003	Khochlek - Sittad - Panchonaya Raod	1.00	0+000	1+00	0.00	0.00	1.00	0.00	2.10	0.00	2.10	0.00
74VR004	Gurukhola - Kalauna Road	0.36	0+000	0+360	0.00	0.00	0.36	0.00	2.10	0.00	2.10	0.00
74VR005	Musyachaur - Basantapur Road	1.70	0+000	1+700	0.00	0.00	1.70	0.00	1.70	0.00	1.70	0.00
74VR006	Seude - Bijul Road	1.00	0+000	1+000	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
74VR007	Patan Chakrapath Road	0.61	0+000	0+610	0.61	0.00	0.00	0.61	0.00	0.61		0.00
74VR008	Manikakham - Silanga	1.50	0+000	1+500	0.00	0.00	1.50	0.00	2.10	0.00	2.10	0.00
74VR009	Harischand - Rouleshwor	4.50	0+000	4+500	0.00	0.00	4.50	0.00	2.10	0.00	2.10	0.00
74VR010	Suilek - Dhaulakanda Road	1.50	0+000	1+500	0.00	0.00	1.50	0.00	1.50	0.00	1.50	0.00
74VR011	Motinagar (Muse) - Musekhan (Shankarpur) Road	1.00	0+000	1+000	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
74VR012	Brindaban - Jukepani Road	3.70	0+000	3+700	0.00	0.00	3.70	0.00	2.10	0.00	2.10	0.00
74VR013	Bijayapur - Jukepani Road	2.10	0+000	2+100	0.00	0.00	2.10	0.00	2.10	0.00	2.10	0.00
74VR014	Khodpe - Sallebasa	1.50	0+000	1+500	0.00	0.00	1.50	0.00	2.10	0.00	2.10	0.00
74VR015	Hattas - Thulkhali - Dadeldhura	6.40	0+000	6+400	0.00	0.00	6.40	0.00	2.10	0.00	2.10	0.00
Total		143.43			0.00	0.00	142.8	0.00	98.20	0.00	98.20	0.00

