

Government of Nepal



Prepared by Rural Infrastructure Developers Consultant P. Ltd (RIDC) for the District Development Committee (DDC) and District Technical Office (DTO) Jajarkot with Technical Assistance from the Department of Local Infrastructure and Agricultural Roads (DOLIDAR), Ministry of Federal Affairs and Local Development and grant supported by DFID



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FOREWORD

It is my great pleasure to introduce this revised District Transport Master Plan(DTMP) of Jajarkot district which was concurred by the district stakeholder's meeting held on 5th July, District Core Road Network selected by DDC body on 16th July and approved by DDC Board on 18th July 2013. Based on DTMP guideline 2012, All District Core Road Network (DRCN) aiming to connectall Village Development Committee (VDC) headquarters with the district headquarters, either directly or through highway and strategic road net work have been selected.

I believe this document will be helpful to materialize Rural Transport Sector Wide Approach (RTI SWAp) through sustainable planning, resources mobilization, implementation and monitoring of the road development. The document is anticipated to generate substantial employment opportunities for rural people conservation, improvement and new construction activities of the existing road network.DRCN plays an important role to strengthen and promote overall economic growth of the district through established and improved year round transport services reinforcing intra and inter district linkages. It is most crucial to expand DRCN in a planned way as per the DTMP recommendation by considering the framework of available resource of DDC.This document is very essential in lobbying the donor agencies through central government to attract fund gap. Furthermore, this document will be supportive in avoiding prevailing duplication in resource allocation in road network development by considering basket fund approach.

I would like to express my gratitude to RTI Sector Maintenance Pilot for financial and technical support. Secondly, my thanks go to Mr. Om Kumar Shah (DTO), Mr. Kul Bahadur G.C. (Planning Officer), Mr. Dhan Prasad Subedi (DPO) for his efforts to organize and make succeed the workshops as well as collecting data.

Last but not least, I would like to express my heartfelt gratitude to Ministry of Federal Affairs and Local Development (MoFALD) and Department of Local Infrastructure Development and Agriculture Road (DOLIDAR) for providing valuable suggestions and cooperation to produce this report. Any pioneering and constructive suggestions regarding this document will be highly appreciated.

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Local Development Officer

Acknowledgement

We would like to express gratitude to RTI SECTOR Maintenance Pilot for entrusting us on preparation of District Transport Master Plan of Jajarkot District.

We would also like to express our sincere thanks to Mr. Chakra Bahadur Budha, LDO and Mr. Om Kumar Shah, DTO of Jajarkot District for their cooperation and coordination during DTMP preparation. We would also like to thanks all the VDC secretaries and officials for their support.

We thank the team who has worked very hard to bring this report at this stage and successful completion of the assignment.

We are grateful to the local people, political parties and leaders, members of government organizations and non-government organizations of Jajarkot District who have rendered their valuable suggestion and support for the successful completion of the job.

Rural Infrastructure Developers Consultants P. Ltd. (RIDC), Baneshwor, Kathmandu. July 2013, Kathmandu

Executive summary

Jajarkot District is located in Bheri Zone of the Mid-western Development Region of Nepal. It borders with Rukum in the east, Dailekh, Jumla and Kalikot districts in the west, Dolpa and Jumla districts in the north and Salyan and Surkhet districts in the south. The district is divided into two electoral constituency level, eleven Ilakas, and thirty Village Development Committees. The district Headquarter is recently linked with road network and passenger bus service is available round the year. The total area of the district is 2223.36 km². Geographically the district is divided into three distinct regions from north to south, viz High Mountainous, Mountainous and River Basins. The altitude of the district ranges from 610 m to 5412m from mean sea level. The major rivers in the district are Bheri, a Chheda gaad, and Nalsingh gaad.

The main economic activity of the Jajarkot is agriculture, where more than 90% of the district population depends on the agriculture. Paddy, Maize, Millet, Wheat and Barley are the usual cereal crops; potato, bean, and herbal products are the cash crops.

The district inventory identified just over 270.13 km of roads, including 151.1 km of strategic roads and 118.63 km of rural roads. In coordination with the DTICC and DDC, 16 rural roads with a length of 94.5 km were identified as making up the district road core network (DRCN), and the remaining 24.13 km were classified as village roads. The existing DRCN roads link up 5 of the 30 VDC headquarters. Out of these 16 roads under DRCN, 2 roads are earthen fair-weather, 6 roads are under track opening phase. The DRCN length is increased by 229 km by extending all 8 existing roads and adding six new roads to cover all VDCs of the district in DRCN, thereby making 16 roads in DRCN with total length of 223.5km.

Out of these 16 roads in DRCN, 1 road is planned to conserve, improve and construct by DRILP, within this DTMP period.

Road Class	Total length	Black Top	Gravel	Earthen
Strategic road network	151.50	34.20	-	117.30
Urban roads	-	-	-	-
District road core network	94.50	-	5.00	89.50
Village roads	24.13	-	-	24.13
Total	270.13	34.20	5.00	230.93

Annual conservation cost of 8 roads with 94.5 km length is estimated to NPR 24.875 million based on the first year, and will be updated in the ARMP based on actual annual maintenance needs as determined in the annual road condition survey. For the full five-year period the conservation costs will come to NPR 124.375 million. An analysis of the road network identified the need for improvement of all the DRCN roads in order to bring them to a maintainable all-weather standard and provide them with a proper road surface in light of existing traffic volumes. The required improvements and their estimated costs are listed below.

Improvement type	Requirement		Cost (NPR)
Bridges	499	m	160,200,000
Slab culverts	104	m	20,800,000
Causeways	142	m	14,200,000
Hume pipes	71	units	1,420,000
Masonry retaining walls	144	m ³	1,008,000
Gabion retaining walls	4867	m ³	19,468,000
Lined drains	14350	m	71,750,000
Widening	0	m	-
Rehabilitation	0	km	-

Gravelling	89.5	km	179,000,000
Blacktopping	0	km	-
New construction	229.00	km	1,662,900,000
Total			2,130,746,000

The available budget for the road sector for the coming five years (fiscal year 2070/71 to 2074/75) is estimated to be NPR 618.5 million. Allocation to the district road core network was set at 80% of the total road sector budget, which was subsequently allocated firstly to the annual maintenance needs, secondly to the improvement needs and lastly to new construction. This budget is insufficient to cover all the estimated costs of conservation, improvement and new construction. However, it allows all conservation requirements to be covered throughout the DTMP period and improvement works of nearly 8 roads to be completed within the DTMP period including 1 road undertaking by DRILP. The remaining improvement works and new construction works will be carried out in the next DTMP.

Within the DTMP period 78.82km of roads will be gravelled (83%), resulting in being brought to a maintainable all-weather standard. VDC headquarters with access to all-weather DRCN roads or the SRN will increase from 0 to 5, while the percentage of the district population with such access will increase from 0% to 20%.

Abbreviations

DDC	District Development Committee
DOLIDAR	Department of Local Infrastructure Development and Agriculture Road
DOR	Department of Road
DTICC	District Transport Infrastructure Coordination Committee
DTMP	District Transport Master Plan
DTPP	District Transport Perspective Plan
GIS	Geographical Information system
GPS	Global Positioning System
GON	Government of Nepal
LGCDP	Local Governance and Community Development Programme
MLD	Ministry of Local Development
RAP	Rural Access Programme
SWAp	Sector Wide Approach
VDC	Village Development Committee

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1. Introduction

Jajarkot district is situated in Bheri zone of the Mid Western Development Region. The total area of the district is 2223.36 sq. km. The district is surrounded by Rukum in the east, Dailekh, Jumla and Kalikot districts in the west, Dolpa and Jumla districts in the north and Salyan and Surkhet districts in the south. The district is situated in Longitude between 81° 49' to 82° 34' East and Latitude between 28° 37' to 29° 30' North. Geographically the district is divided into three distinct regions from north to south, viz High Mountainous, Mountainous and River Basins. The altitude of the district ranges from 610 m to 5412m from mean sea level. The major rivers in the district are Bheri, a Chheda gaad, and Nalsingh gaad.

The main economic activity of the Jajarkot is agriculture and livelihood where more than 85% of the district population depends on the agriculture. Paddy, Maize, Millet, Wheat and Barley are the usual cereal crops and apple, potato, bean, oil seed and herbal products are the cash crops.

The living standard of rural people could not be improved despite of the top priority given to the agriculture sector due to the lack of rural infrastructures such as roads, market centers, electrification and communication etc.

The district is divided into two electoral constituency level, eleven Ilakas, and thirty Village Development Committees. The district Headquarter is recently linked with road network and passenger bus service is available round the year.

The DDC body of Jajarkot has given its highest priority on rural roads and this is regard 118.5 km rural road is constructed, out of which the vehicles are plying over 87km during fair weather. All rural roads are earthen type and concern is focused to upgrade the rural roads from fair weather to all weather standards.

Land Use pattern of the district:

The total area of the district is 2223.36 sq. km. The 1291.21 sq. km. land is covered by forest, and only 366.08 sq. km land is cultivated.

Rivers and Lakes in the district:

Tila,Bheri River, Chheda Gaad and Nalsing Gaad are major rivers of district and majority of productive land is situated along the banks of the rivers. There is emmence possibility to use this river water for irrigation, install improved ghatta, hydropower and drinking purpose. The lakes like Naudhari Taal, Ber Pokhari, Naumuli Taal and Pokhara Taal are potential destination of domestic and international tourism.

Natural Plants:

This area is rich for high value Non Timber Forest Products ie. Yarshagumba, Padamchal, Jatamansi, Kutki, Guchhi Chau etc. Similarly, the lower part of the district is occupied by broadleaf and coniferous forest with dominant of Pinus, Dhupi, Gurans, Bhojpatra, Khasru, etc. The wild animals like, Kasturi, Bear Ghoral, Deer, and Leopard etc can be found in the forests of district.

Religious and Tourism area:

Many historically and archeologically important areas are in this district. Major historical and archeological places are Khatanga Sivalaya, Kalika temple, Swarup Paikako Devatako Than, Dasera Rukmala Bajrathan, Bhagawati temple of Khatigurta, Bhairabsthan of Majkot etc. Proper maintenance and conservation of these places are very important.





According to the District Profile published in 2068 BS, the total population of the district for the year 2067 BS is 170106 comprising 84,364 (49.6%) female and 85,742 (50.4%) male with 30,468 households. This district has an average population density of around 71.68 people per square km. The average family size is 5.9. The average literacy rate is about 61%. It has multi ethnic composition with Chhetri, Thakuri, Brahman, Damai, Kami and Bhote. The common language of the district is Khas (Nepali).

Although accessibility to Jajarkot is limited, it is improving rapidly. The main access road of district is Chhinchu Jajarkot Road which is currently being upgraded to all weather standards by DOR. This Feeder road connects district headquarter to national highway at Chhinchu of Surkhet district.

2. District Road Core Network (DRCN)

This chapter gives an overview of the existing roads in Jajarkot district, distinguishing between strategic roads and rural roads. It goes on to identify those rural roads that make up the district road core network (DRCN) that will form the basis for this DTMP. The remaining rural roads are classified as village roads.

2.1 Total Road Network

Jajarkot district has an estimated road network of 270.13 kilometres, including 151.5 km of strategic roads managed by DOR and 118.63 km of rural roads (94.5 km DRCN and remaining VRCN) managed by Jajarkot DDC and the VDCs. Most of the strategic roads and all of the rural roads have an earthen surface. A map of the total road network in Jajarkot district is shown in figure 2Figure at the end of this chapter.

Road Class	Total length	Black Top	Gravel	Earthen
Strategic roads	151.50	34.20	-	117.30
Urban roads	-	-	-	-
Rural roads	118.63		5.00	113.63
Total	270.13	34.20	5.00	230.93

Table 2.1.1Road length in Jajarkot district (km)

2.2 National Highways and Feeder Roads

Jajarkot district has one highway and two feeder roads totalling to 151.5km length. The Chhinchu-Jajarkot Road is being blacktopped by DOR, while Jajarkot-Dolpa Road and Mid Hill Highway are under track opening phase by DOR.

	Tuble 21211 Thurbhar ingh (ujb und feeder Fouds in Sujarnov district (init)				
Code	Name of Road	Total length	Black Top	Gravel	Earthen
F047	Chhinchu Jajarkot	34.20	34.20		
F047	Chhinchu Jajarkot Extension (Jajarkot-Dolpa)	68.10			68.10
H18	Mid Hill	49.20			49.20
Total		151.50	34.20	0.00	117.30

 Table 2.2.1
 National highways and feeder roads in Jajarkot district (km)

2.3 District Road Core Network

As part of the preparation of this DTMP, the District Road Core Network (DRCN) was identified together with the DTICC and DDC. This DRCN is the minimum network that allows all VDC headquarters to be connected with the strategic road network and the district headquarters, either directly or through other VDCs. In the selection of the DRCN roads, account was taken of the road conditions and the existing traffic levels. The identified DRCN roads were subsequently provided with road codes according to national standards.

The resulting District Road Core Network of this district is shown in figure 3 at the end of this chapter. The DRCN consists of 16 district roads with a total length of 323.5 km. The remaining 24.13 km of existing rural roads are not considered to be DRCN roads and are classified as village roads under the responsibility of the VDCs (see also section 2.3). A complete list of the DRCN roads and their characteristics is provided in Table 2.3..

Table 2.3.1	Road length in J	lajarkot District	(km)	
Road Class	Total length	Black Top	Gravel	Earthen
Strategic road network	151.50	34.20	-	117.30
Highways	49.20			49.20
Feeder roads	102.30	34.20		68.10
Urban roads	-	-	-	-
District road core network	94.50	-	5.00	89.50
Village roads	24.13	_	-	24.13
Total	270.13	34.20	5.00	230.93

Table 2.3.2	District road core network in Jaiarkot district (km)
1 ubic 2.5.2	District roud core network in sujarkot district (kin)

		Total	Black				Fair
Code	Name of Road	length	Тор	Gravel	Earthen	All weather	weather
61DR001	Chheda-Thala-Chande	28.00		5.00	23.00	5.00	23.00
61DR005	Chheda-Kachali	6.00			6.00	-	6.00
61DR008	Thala-Batule-Paik-Rokayagaun	10.00			10.00	-	10.00
(10000	Bhurchaur-Syaule-Bhedekharka-	5.00			5.00		5.00
61DR009	Machhaina	5.00			5.00	-	5.00
61DR010	Khalanga-Evar-Punma	6.00			6.00	-	6.00
61DR011	Khalanga-Panchkatiya-Dhime-Paik- Byaulidhunga	29.50			29.50	-	29.50
	Panchkatiya-Phulchauli-Ramidanda-						
61DR012	Rokayagaun-Nayakwada-Tamtu	7.00			7.00	-	7.00
	Panchkatiya-Kiteni-Bhargaun-						
61DR013	Sakala	3.00			3.00	-	3.00
Total		94.50	-	5.00	89.50	5.00	89.50

2.4 Village Roads

The 24.13km of remaining roads that do not form part of the identified district road core network (DRCN) are classified as village roads and are under the responsibility of concerned VDCs of the district. These are roads of a lower importance that do not form the main link between the VDC headquarters and the district headquarters or strategic road network. Instead they provide additional access to other parts of the VDCs.

On an average each VDC will thus be responsible for 2.24 km of village roads. It is recommended that the VDCs shall organise maintenance workers to carry out the emergency and routine/recurrent maintenance of these roads to ensure their accessibility. Any upgrading or new construction of village roads falls outside the scope of this DTMP and is the responsibility of the VDCs.

Funding for these roads will mainly come from the VDC grants. Some district funding will also be allocated to the village roads (see also chapter 6). However, this district funding will be mainly for maintenance, especially emergency maintenance and routine/recurrent maintenance to keep these roads passable.



Figure 3 District Road Core Network (DRCN) Map



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3. District Transport Perspective Plan (DTPP)

This chapter looks at the required interventions regarding conservation, improvement and new construction of the district road core network. It provides a complete list of all works required in the DRCN, which together form the District Transport Perspective Plan (DTPP). For the works forming part of the DTPP, chapter 4 will subsequently provide cost estimation, while chapter 5 will rank the works according to priority and chapter 6 will select those priority works that can be carried out in the next 5 years and thus form part of the District Transport Master Plan (DTMP).

3.1 Conservation

Conservation refers to the actions required to repair a road and keep it in good and passable condition. For DTMP planning purposes standard costs per kilometre for each maintenance type are applied to the entire district road core network, whereby for certain maintenance type's distinction is made according to the surface type of the road. Identification of the actual maintenance requirements of each road is made annually in the ARMP. Conservation activities include:

- 1. <u>Emergency maintenance</u> Basic repairs aimed at removing landslides and repairing damage to the road that inhibit the proper use of the road and make it impassable. This mainly takes place during and after the rainy season. A provisional lump-sum is reserved for the entire district road core network based on the network length. Allocation to specific road sections is based on the actual need for clearing landslides or repairing washouts and cuts in the road.
- 2. <u>Routine maintenance</u> General maintenance of the road aimed at preventing damage by ensuring the proper working of the different road elements (retaining walls, drainage system, carriageway, etc.) and cutting vegetation. This is carried out each year on a more or less continuous basis. Routine maintenance is required for the entire district road core network. The specific requirements for routine maintenance are determined on an annual basis through the road condition survey and defined in the ARMP.
- 3. <u>Recurrent maintenance</u> Repairs of minor damage to the road surface and road structures to bring them back to good condition. This is generally carried out once or twice a year. Recurrent maintenance is required for the entire district road core network, whereby distinction is made according to the surface type. The specific requirements for recurrent maintenance are determined on an annual basis through the road condition survey and defined in the ARMP.
- 4. <u>Periodic maintenance</u> Larger repairs to the road largely aimed at renewing the road surface through re-gravelling, resealing or overlays. It is generally carried out with several years interval. Although periodic maintenance is only required for specific sections of the district road core network, a lump sum allocation is made for the entire district road core network based on average annual requirements, distinguishing between different surface types. The specific periodic maintenance requirements are determined on an annual basis through the annual road condition survey and defined in the ARMP.

The length of roads to be included under each conservation type for the first year is indicated below. This is basically the entire district road core network in as far as it does not require rehabilitation.

District Transport Master Plan (DTMP) of Jajarkot District

	Table 3.1.1 Conservation requirements							
Code	Emergency maintenance (km)	Routine maintenance (km)	Recurrent maintenance (km)	Periodic maintenance (km)				
61DR001	28.00	28.00	28.00	28.00				
61DR005	6.00	6.00	6.00	6.00				
61DR008	10.00	10.00	10.00	10.00				
61DR009	5.00	5.00	5.00	5.00				
61DR010	6.00	6.00	6.00	6.00				
61DR011	29.50	29.50	29.50	29.50				
61DR012	7.00	7.00	7.00	7.00				
61DR013	3.00	3.00	3.00	3.00				
Total	94.5	94.5	94.5	94.5				

3.2 Improvement

Improvement refers to actions required to improve a road to bring it to a maintainable all-weather standard. It includes the following actions, which for Jajarkot are described in more detail in the subsequent sections.

- 1. <u>Rehabilitation</u> Significant repairs required to bring a very poor road back to a maintainable standard. This does not include any changes to the original surface type.
- 2. <u>Gravelling</u> Placement of a gravel layer to make it all-weather and ensure that the road remains passable during the rainy season.
- 3. <u>Cross drainage</u> Placement of suitable cross-drainage structures with the aim of making the road all-weather and ensuring that the road remains passable even during the rainy season
- 4. <u>Protective structures</u> Placement of retaining walls and lined side drains to avoid excessive damage to the road during the rainy season and bring it to a maintainable standard.
- 5. <u>Blacktopping</u> Placement of a blacktop layer in roads with traffic volumes exceeding 50 passenger car units (PCU) to reduce damage to the road surface
- 6. <u>Widening</u> Increase of the road width in roads with traffic volumes exceeding 500 passenger car units (PCU) to ensure the proper flow of traffic.

3.2.1 Rehabilitation

No rehabilitation needs were identified in the district road core network.

Table 3.2.1 Rehabilitation

Code	Name of Road	Total length (km)	Rehabilitation (km)
61DR001	Chheda-Thala-Chande	28.00	
61DR005	Chheda-Kachali	6.00	
61DR008	Thala-Batule-Paik-Rokayagaun	10.00	
61DR009	Bhurchaur-Syaule-Bhedekharka-Machhaina	5.00	
61DR010	Khalanga-Evar-Punma	6.00	
61DR011	Khalanga-Panchkatiya-Dhime-Paik-Byaulidhunga	29.50	
61DR012	Panchkatiya-Phulchauli-Ramidanda-Rokayagaun-Nayakwada-Tamtu	7.00	
61DR013	Panchkatiya-Kiteni-Bhargaun-Sakala	3.00	
Total		94.50	-

3.2.2 Gravelling

As the entire district road core network needs to be brought to an all-weather status, gravelling of the road surface is required for all the earthen sections in the DRCN. This district concerns the total of 94.5 km of DRCN roads.

Code	Name of Road	Total length (km)	Gravelling (km)
61DR001	Chheda-Thala-Chande	28.00	23.00
61DR005	Chheda-Kachali	6.00	6.00
61DR008	Thala-Batule-Paik-Rokayagaun	10.00	10.00
61DR009	Bhurchaur-Syaule-Bhedekharka-Machhaina	5.00	5.00
61DR010	Khalanga-Evar-Punma	6.00	6.00
61DR011	Khalanga-Panchkatiya-Dhime-Paik-Byaulidhunga	29.50	29.50
	Panchkatiya-Phulchauli-Ramidanda-Rokayagaun-Nayakwada-		
61DR012	Tamtu	7.00	7.00
61DR013	Panchkatiya-Kiteni-Bhargaun-Sakala	3.00	3.00
Total			89.50

Table 3.2.2Sections of the district road core network requiring gravelling

3.2.3 Cross Drainage

The need for cross drainage was identified for the different DRCN roads. A total of 12 bridges with a total length of 178m, 11 slab culverts with total length of 104m, 19 cement concrete causeways with total length of 147m, and 71 pipe culverts were identified as being required.

		Bridge	Slab	CC Causeway	Stone Causeway	Pipe culvert
Code	Name of Road	(m)	culvert (m)	(m)	(m)	(units)
61DR001	Chheda-Thala-Chande	86	58	88		33
61DR005	Chheda-Kachali		10			5
61DR008	Thala-Batule-Paik-Rokayagaun	20				
61DR009	Bhurchaur-Syaule-Bhedekharka- Machhaina					3
61DR010	Khalanga-Evar-Punma	36	10	14		4
61DR011	Khalanga-Panchkatiya-Dhime-Paik- Byaulidhunga	16	18	24		16
61DR012	Panchkatiya-Phulchauli-Ramidanda- Rokayagaun-Nayakwada-Tamtu	20		16		3
61DR013	Panchkatiya-Kiteni-Bhargaun-Sakala		8			7
Total		178	104	142	-	71

Table 3.2.3Required cross drainage structures

3.2.4 Protective Structures

Based on the road survey carried out in Jajarkot, the following retaining walls were identified as being required to ensure the protection of the district road core network.

Table 3.2.4Required protective structures

Code	Name of Road	Masonry walls (m3)	Gabion walls (m3)	Lined drain (m)
61DR001	Chheda-Thala-Chande	43.2	3,099	9,000
61DR005	Chheda-Kachali		585	150
61DR008	Thala-Batule-Paik-Rokayagaun			

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61DR009	Bhurchaur-Syaule-Bhedekharka-Machhaina		235	300
61DR010	Khalanga-Evar-Punma	28.8	120	500
61DR011	Khalanga-Panchkatiya-Dhime-Paik-Byaulidhunga	36	565	3,500
	Panchkatiya-Phulchauli-Ramidanda-Rokayagaun-			
61DR012	Nayakwada-Tamtu	36	100	700
61DR013	Panchkatiya-Kiteni-Bhargaun-Sakala		163	200
Total		144	4,867	14,350

3.2.5 Widening

Widening of the district road core network in Jajarkot is required only in specific locations to bring it up to the minimum standard and to ensure sufficient space in the curves. Additional widening to a higher standard is not required because traffic volumes remain very low.

Code	Name of Road	Total length (km)	VPD	Widening (m)
61DR001	Chheda-Thala-Chande	28.00	9.00	
61DR005	Chheda-Kachali	6.00	-	
61DR008	Thala-Batule-Paik-Rokayagaun	10.00	-	
61DR009	Bhurchaur-Syaule-Bhedekharka-Machhaina	5.00	-	
61DR010	Khalanga-Evar-Punma	6.00	-	
61DR011	Khalanga-Panchkatiya-Dhime-Paik-Byaulidhunga	29.50	10.00	
61DR012	Panchkatiya-Phulchauli-Ramidanda-Rokayagaun- Nayakwada-Tamtu	7.00	2.00	
61DR013	Panchkatiya-Kiteni-Bhargaun-Sakala	3.00	-	
Total				-

Table 3.2.5 Widening

3.2.6 Black Topping

An analysis of the traffic data for the different roads making up the district road core network shows that no road network require blacktopping.

Table 3.2.6 Blacktopping

					50
Code	Name of Road	Total length (km)	Blacktop (km)	Traffic (PCU)	Blackto pping (km)
61DR001	Chheda-Thala-Chande	28.00	-	24	-
61DR005	Chheda-Kachali	6.00	-	-	-
61DR008	Thala-Batule-Paik-Rokayagaun	10.00	-	-	-
61DR009	Bhurchaur-Syaule-Bhedekharka-Machhaina	5.00	-	-	-
61DR010	Khalanga-Evar-Punma	6.00	-	-	-
61DR011	Khalanga-Panchkatiya-Dhime-Paik-Byaulidhunga	29.50	-	23	-
61DR012	Panchkatiya-Phulchauli-Ramidanda-Rokayagaun- Nayakwada-Tamtu	7.00	_	4	_

District Transport Master Plan (DTMP) of Jajarkot District

61DR013	Panchkatiya-Kiteni-Bhargaun-Sakala	3.00	-	-	-
Total					-

3.3 New Construction

New construction of DRCN roads is required to connect the remaining VDC headquarters. A list of proposed roads for new construction is provided below. These roads provide access to 19 VDC HQs that do not currently have road access.

Code	Name of Road	New VDCs	Existing length	New length	Bridge (m)
61DR001	Chheda-Thala-Chande	Majhkot, Suwanauli, Daha	28.00	22.00	86
		Sima, Thala Raikar,			
61DR005	Chheda-Kachali	Thapajungachaur	6.00	18.00	
61DR008	Thala-Batule-Paik-Rokayagaun	Jhapra	10.00	12.00	32
61DR009	Bhurchaur-Syaule-Bhedekharka-Machhaina	Bhur	5.00	17.00	
61DR010	Khalanga-Evar-Punma	Punma	6.00	1.00	36
61DR011	Khalanga-Panchkatiya-Dhime-Paik- Byaulidhunga	Dhime, Paik	29.50	22.00	36
61DR012	Panchkatiya-Phulchauli-Ramidanda- Rokayagaun-Nayakwada-Tamtu	Ramidanda, Rokayagaun, Nayakwada	7.00	18.00	16
61DR013	Panchkatiya-Kiteni-Bhargaun-Sakala	Laha	3.00	27.00	20
61DR002	Lamatara-Matela-Luwadaha-Kortang	Kortang	-	9.00	20
61DR003	Lamotara-Matela-Garkhakot-Buddhidanda	Garkhakot	-	7.00	
61DR004	Managhat-Sodari-Khamalek-Salm	Salm	-	12.00	
61DR006	Thala-Challopole-Pajaru-Talegaun	Pajaru, Talegaun	-	14.00	25
61DR007	Batule-Tapuchaur-Archhani	Archhani	-	8.00	18
61DR014	Ultosaal-Syala-Bahunthana-Dinga-Kalpat- Dandagaun-Chayapata garhi	Dandagaun	-	16.00	32
61DR015	Kalimati-Sakala-Karkijyula	Sakala	-	17.00	
61DR016	Chankha-Rajik-Rawatgaun-Bhyargaun- Banjagaun-Damka-Sanghu	Ragda	-	9.00	
Total	Sandowan Sandaw Sangha	- uguu	94.50	229.00	321

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

3.4 District Transport Perspective Plan

The DTPP foresees bringing the entire existing district road core network to maintainable all-weather status, and expanding it to provide access to an additional 19 VDC headquarters. For this purpose, all 94.5 km will be gravelled and a number of different cross drainage and protective structures will be constructed. A further 229 km of new road will be constructed to maintainable all-weather gravel standard providing access to 19 additional VDC HQs. The district road core network will subsequently consist of 323.5 km of maintainable all-weather roads. The following table lists the required interventions, while the proposed network is shown in the DTPP map.

						Table 3	.4.1	DISU	rict I rans	port Pers	pective P	lan					
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)
61DR001	28.00	28.00	28.00	28.00	-	23.00	-	-	172.00	58.00	88.00	-	33.00	43.20	3,099.00	9,000.00	22.00
61DR005	6.00	6.00	6.00	6.00	-	6.00	-	-	-	10.00	-	-	5.00	-	585.00	150.00	18.00
61DR008	10.00	10.00	10.00	10.00	-	10.00	-	-	52.00	-	-	-	-	-	-	-	12.00
61DR009	5.00	5.00	5.00	5.00	-	5.00	-	-	-	-	-	-	3.00	-	235.00	300.00	17.00
61DR010	6.00	6.00	6.00	6.00	-	6.00	-	-	72.00	10.00	14.00	-	4.00	28.80	120.00	500.00	1.00
61DR011	29.50	29.50	29.50	29.50	-	29.50	-	-	52.00	18.00	24.00	-	16.00	36.00	565.00	3,500.00	22.00
61DR012	7.00	7.00	7.00	7.00	-	7.00	-	-	36.00	-	16.00	-	3.00	36.00	100.00	700.00	18.00
61DR013	3.00	3.00	3.00	3.00	-	3.00	-	-	20.00	8.00	-	-	7.00	-	163.00	200.00	27.00
61DR002	-	-	-	-	-	-	-	-	20.00	-	-	-	-	-	-	-	9.00
61DR003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.00
61DR004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.00
61DR006	-	-	-	-	-	-	-	-	25.00	-	-	-	-	-	-	-	14.00
61DR007	-	-	-	-	-	-	-	-	18.00	-	-	-	-	-	-	-	8.00
61DR014	-	-	-	-	-	-	-	-	32.00	-	-	-	-	-	-	-	16.00
61DR015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.00
61DR016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.00
Total	94.50	94.50	94.50	94.50	-	89.50	-	-	499	104	142	-	71	144	4,867	14,350	229.00

Table 3.4.1District Transport Perspective Pla



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		District HQ	
	(VDC Centre	
	Cro	ossing Structure	
	1	≍ Bridge	
	0	🗉 Causeway	
	E	Culvert	
	(Pipe Culvert	
-	_	— VDC Boundary	
		District Boundary	
	_	River	
		- SRN	
	_	- VRCN	
	_	Rural Road	
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	D	epartment of Survey, Field	
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4. Cost Estimation

For the cost estimation, use has been made of standard costs for the different activities required. For the conservation activities this results in an estimation of annual costs, while for improvement and new construction activities this result in an estimation of the total costs required.

4.1 Conservation

The costs of the required conservation measures have been calculated using the following standard costs. These standard costs have been applied to the entire district road core network, whereby distinction is made based on the surface type in the case of recurrent and periodic maintenance. It must be noted here that the standard costs for periodic maintenance are the average annual costs, but that the cost for applying periodic maintenance in a specific section every several years will be higher (the cumulative cost of several years). The estimated costs for the first year are presented below, while the costs for subsequent years will vary slightly as road surface types change as a result of improvements. Detailed cost estimations for the actual maintenance needs in any given year will be presented in the ARMP.

Activity	Unit	Unit cost (NPR)								
Emergency maintenance	km	30,000								
Routine maintenance	km	20,000								
Recurrent maintenance (blacktop)	km	400,000								
Recurrent maintenance (gravel)	km	300,000								
Recurrent maintenance (earthen)	km	200,000								
Periodic maintenance (blacktop)	km	200,000								
Periodic maintenance (gravel)	km	150,000								

 Table 4.1.1
 Standard unit costs for conservation

For the first year the estimated costs for conservation of the DRCN come to NPR 24.875 million. Based on this cost for the first year, the costs for conservation of the DRCN for the next 5 years are estimated at NPR 124.375 million. These costs will change slightly as the roads are improved and the standard conservation costs change. This will be updated in the ARMP on an annual basis.

Code	Total length (km)	Blacktop (km)	Gravel (km)	Earthen (km)	Emergency maintenance	Routine maintenance	Recurrent maintenance (blacktop)	Recurrent maintenance (gravel)	Recurrent maintenance (earthen)	Periodic maintenance (blacktop)	Periodic maintenance (gravel)	Total first year cost	Total 5-year cost
61DR001	28.00	-	5.00	23.00	840	560	-	1,500	4,600	-	750	8,250	41,250
61DR005	6.00	-	-	6.00	180	120	-	-	1,200	-	-	1,500	7,500
61DR008	10.00	-	-	10.00	300	200	-	-	2,000	-	-	2,500	12,500
61DR009	5.00	-	-	5.00	150	100	-	-	1,000	-	-	1,250	6,250
61DR010	6.00	-	-	6.00	180	120	-	-	1,200	-	-	1,500	7,500
61DR011	29.50	-	-	29.50	885	590	-	-	5,900	-	-	7,375	36,875
61DR012	7.00	-	-	7.00	210	140	-	-	1,400	-	-	1,750	8,750
61DR013	3.00	-	-	3.00	90	60	-	-	600	-	-	750	3,750
Total	94.50	-	5.00	89.50	2,835	1,890	-	1,500	17,900	-	750	24,875	124,375

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

4.2 Improvement

The costs of the required improvement measures have been calculated using the following standard costs. These standard costs have been applied to the identified improvement requirements presented in the previous chapter.

Activity	Unit	Unit cost (NPR)
Rehabilitation	km	7,000,000
Widening	m	15,000
Gravelling	km	2,000,000
Blacktopping	km	6,500,000
Bridge construction	m	900,000
Slab culvert construction	m	200,000
CC Causeway construction	m	100,000
Stone Causeway construction	m	10,000
Pipe culvert placement	unit	20,000
Masonry wall construction	m ³	7,000
Gabion wall construction	m ³	4,000
Lined drain construction	m	5,000

Table 4.2.1Standard unit costs for improvement activities

The resulting estimated costs come to NPR 467.846 million as indicated in the table below.

Table 4.2.2	Cost estimate for improvement measures (NPR '000)
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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
61DR001	28.00			46,000		77,400	11,600	8,800		660	302	12,396	45,000	202,158
61DR005	6.00			12,000			2,000			100	-	2,340	750	17,190
61DR008	10.00			20,000		18,000				-	-	-		38,000
61DR009	5.00			10,000						60	-	940	1,500	12,500
61DR010	6.00			12,000		32,400	2,000	1,400		80	202	480	2,500	51,062
61DR011	29.50			59,000		14,400	3,600	2,400		320	252	2,260	17,500	99,732
61DR012	7.00			14,000		18,000	-	1,600		60	252	400	3,500	37,812
61DR013	3.00			6,000			1,600	-		140	-	652	1,000	9,392
Total	94.50			179,000		160,200	20,800	14,200		1,420	1,008	19,468	71,750	467,846

4.3 New Construction

For new construction, the following standard costs have been applied to estimate the costs involved.

Table 4.5.1 Standard unit costs i	or new construction	
Activity	Unit	Unit cost (NPR)
Track opening	km	4,000,000
Gravelling	km	2,000,000
Bridge construction	m	900,000

Table 4.3.1Standard unit costs for new construction

The resulting estimated costs for new construction come to NPR 1,662.9 million.

Code	Name of Road	New length (km)	Opening up (NPR)	Gravelling (NPR)	Bridges (NPR)	Total cost (NPR)
61DR001	Chheda-Thala-Chande	22.00	88,000	44,000	77,400	209,400
61DR005	Chheda-Kachali	18.00	72,000	36,000	-	108,000
61DR008	Thala-Batule-Paik-Rokayagaun	12.00	48,000	24,000	28,800	100,800
61DR009	Bhurchaur-Syaule-Bhedekharka- Machhaina	17.00	68,000	34,000	-	102,000
61DR010	Khalanga-Evar-Punma	1.00	4,000	2,000	32,400	38,400
61DR011	Khalanga-Panchkatiya-Dhime- Paik-Byaulidhunga	22.00	88,000	44,000	32,400	164,400
61DR012	Panchkatiya-Phulchauli- Ramidanda-Rokayagaun- Nayakwada-Tamtu	18.00	72,000	36,000	14,400	122,400
61DR013	Panchkatiya-Kiteni-Bhargaun- Sakala	27.00	108,000	54,000	18,000	180,000
61DR002	Lamatara-Matela-Luwadaha- Kortang	9.00	36,000	18,000	18,000	72,000
61DR003	Lamotara-Matela-Garkhakot- Buddhidanda	7.00	28,000	14,000	-	42,000
61DR004	Managhat-Sodari-Khamalek- Salm	12.00	48,000	24,000	-	72,000
61DR006	Thala-Challopole-Pajaru- Talegaun	14.00	56,000	28,000	22,500	106,500
61DR007	Batule-Tapuchaur-Archhani	8.00	32,000	16,000	16,200	64,200
61DR014	Ultosaal-Syala-Bahunthana- Dinga-Kalpat-Dandagaun- Chayapata garhi	16.00	64,000	32,000	28,800	124,800
61DR015	Kalimati-Sakala-Karkijyula	17.00	68,000	34,000	-	102,000
61DR016	Chankha-Rajik-Rawatgaun- Bhyargaun-Baniagaun-Damka- Sanghu	9.00	36,000	18,000	-	54,000
Total		229.00	916,000	458,000	288,900	1,662,900

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

The total costs for the District Transport Perspective Plan come to NPR 2,255.121 million as indicated in the table below.

Table 4.4.1 DTPP costs (NPR '000)										
Code	Conservation	Improvement	New construction	Total						
61DR001	41,250	202,158	209,400	452,808						
61DR005	7,500	17,190	108,000	132,690						
61DR008	12,500	38,000	100,800	151,300						
61DR009	6,250	12,500	102,000	120,750						
61DR010	7,500	51,062	38,400	96,962						
61DR011	36,875	99,732	164,400	301,007						
61DR012	8,750	37,812	122,400	168,962						
61DR013	3,750	9,392	180,000	193,142						
61DR002	-	-	72,000	72,000						
61DR003	-	-	42,000	42,000						
61DR004	-	-	72,000	72,000						
61DR006	-	-	106,500	106,500						
61DR007	-	-	64,200	64,200						
61DR014	-	-	124,800	124,800						
61DR015	-	-	102,000	102,000						
61DR016	-	-	54,000	54,000						
Total	124,375	467,846	1,662,900	2,255,121						

District Transport Master Plan (DTMP) of Jajarkot District

5. Ranking

The ranking of the required interventions determines the order in which they will be carried out. This ranking is done separately for conservation, improvement and new construction. Ranking is done according to the cost per person served, whereby the costs are the estimated costs of the previous chapter. For the calculation of the population served, use is made of the population data for the VDCs linked by the road concerned.

5.1 Conservation

Ranking of roads for conservation is based on the total conservation costs per person served by the road. This ranking of roads will be updated each year in the ARMP based on the actual cost estimates for the year concerned. An example ranking is provided in the table below based on standard costs for the first year.

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)
61DR010	6.00	180	120	-	-	1,200	-	-	1,500	6,785	221
61DR005	6.00	180	120	-	-	1,200	-	-	1,500	3,817	393
61DR012	7.00	210	140	-	-	1,400	-	-	1,750	3,329	526
61DR009	5.00	150	100	-	-	1,000	-	-	1,250	1,392	898
61DR001	28.00	840	560	-	1,500	4,600	-	750	8,250	8,841	933
61DR011	29.50	885	590	-	-	5,900	-	-	7,375	7,154	1,031
61DR013	3.00	90	60	-	-	600	-	-	750	634	1,183
61DR008	10.00								DRILP Budget	2,634	-

 Table 5.1.1
 Ranking of conservation works (NPR '000)

The allocation of maintenance funding will follow a specific sequence indicated below, and will be applied to the road ranking as defined in the ARMP. This will be of particular importance where funding is insufficient to cover all conservation costs.

- 1. Emergency maintenance
- 2. Routine maintenance
- 3. Recurrent maintenance paved roads
- 4. Recurrent maintenance gravel roads
- 5. Recurrent maintenance gravel roads
- 6. Periodic maintenance blacktop roads
- 7. Periodic maintenance gravel roads

5.2 Improvement

In the case of improvement activities, ranking is again based on the basis of the total cost per person served. The resulting order of the roads is shown in the table below. In the case of roads requiring blacktopping, the improvement of the road has been split into two phases. The first phase includes all improvements to bring the road to a maintainable all-weather standard (gravelling, widening, cross drainage and protective structures), while the second phase only includes the blacktopping. This has been done to avoid unnecessarily delaying the improvement of such roads to all-weather gravel standard due to the additional cost of blacktopping (increasing the cost per person served).

Code	Total length (km)	Gravelling (km)	Blacktopping (km)	Total cost (NPR '000)	Population served	Cost/person (NPR)									
Couc	(KIII)				Scived	cost/person (in it)									
61DR005	6.00	6.00	-	17,190	3,817	4,504									
61DR010	6.00	6.00	-	51,062	6,785	7,526									
61DR009	5.00	5.00	-	12,500	1,392	8,980									
61DR012	7.00	7.00	-	37,812	3,329	11,358									
61DR011	29.50	29.50	-	99,732	7,154	13,941									
61DR013	3.00	3.00	-	9,392	634	14,814									
61DR001	28.00	23.00	-	202,158	8,841	22,866									
61DR008	10.00	10.00	-	DRILP Budget	2,634	-									

Table 5.2.1Ranking of improvement works (NPR '000)

5.3 New construction

For the roads proposed for new construction, ranking is also according to the cost per person served by the new road. The resulting ranking is indicated in the table below.

	14010 01011			·)
Code	Length (km)	Total cost (NPR '000)	Population served	Cost/person (NPR)
61DR003	7.00	42,000	5,630	7,460
61DR005	18.00	108,000	11,452	9,431
61DR006	14.00	106,500	10,346	10,294
61DR004	12.00	72,000	6,297	11,434
61DR016	9.00	54,000	4,085	13,219
61DR012	18.00	122,400	8,562	14,296
61DR015	17.00	102,000	6,192	16,473
61DR007	8.00	64,200	3,675	17,469
61DR014	16.00	124,800	6,839	18,248
61DR009	17.00	102,000	4,741	21,514
61DR002	9.00	72,000	3,242	22,209
61DR001	22.00	209,400	6,946	30,147
61DR011	22.00	164,400	5,332	30,833
61DR013	27.00	180,000	5,709	31,529
61DR010	1.00	38,400	1,132	33,922
61DR008	12.00	DRILP Budget	3,168	-

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

6. District Transport Master Plan (DTMP)

The District Transport Master Plan (DTMP) that covers the next five years is prepared based on the projected financial resources available and the prioritized transport interventions as listed in the DTPP. Year-wise targets are prepared for the different roads and intervention types.

6.1 Five Year Projected Financial Resources

The projected financial resources for the next five years are estimated by considering all possible funding sources. The funding levels are based on the existing trend of funding. An annual increase in funding of 10% is assumed for all funding sources. The total district budget for the road sector is NPR 728 million for the five-year period.

Tuble 0.1.1 Estimated funding it (its (Todus) for field first five years (in 1(1 K 000)													
Funding source	2070/71	2071/72	2072/73	2073/74	2074/75								
RTI SWAp (Bridge)	4,500	4,950	5,445	5,990	6,588								
Agricultural Roads	7,800	8,580	9,438	10,382	11,420								
RCIW	30,000	33,000	36,300	39,930	43,923								
Roads and Bridges (Individual)	4,500	4,950	5,445	5,990	6,588								
Roads Board Nepal	1,625	1,788	1,966	2,163	2,379								
Karnali Surrounding Area Special Program (40%)													
of total)	3,200	3,520	3,872	4,259	4,685								
Public Participatory Program (40% to total)	600	660	726	799	878								
Suspension Bridge	8,200	9,020	9,922	10,914	12,006								
VDC fund (40% of total)	24,000	26,400	29,040	31,944	35,138								
Peoples contribution (20% of total)	16,885	18,574	20,431	22,474	24,721								
Total	101,310	111,441	122,585	134,844	148,328								
Grand total			618,508										

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

6.2 Budget Allocation

The distribution of the available district road sector budget is indicated in the figure below. Due to the low number of village roads, 80% of the total budget is reserved for the district road core network. The remaining 20% is to be used by the DDC for the village roads, giving priority to emergency maintenance and routine/recurrent maintenance. Alternatively, this 20% may be used for the new construction of DRCN roads where this is considered a priority by the district. The 80% of the district road sector budget for the DTMP is allocated firstly to conservation, secondly improvement, and any remaining funding is allocated to new construction.



Based on this distribution of the estimated budget, the available annual budget for each intervention type and the resulting district road core network length by surface type can be calculated. The results are shown in the following table.

Table 6.2.1	Investment plan
--------------------	-----------------

Section																				
Α		Item										Year								
	Fiscal vear				20)70/71		2	071/7	2		2072/7	3	2	073/74		20	74/75		
	Total budget				10	01,310		1	11,44	1		122,58	5	1	34,844		14	8,328		
	Village roads				2	0,262		2	22,288			24,517	7		26,969		29	9,666		20%
	Core road netw	<u>ork budget (</u>	DTMP)		8	1,048		8	<u>39,153</u>			98,068	3	1	.07,875		11	8,662		80%
В	Core network le	ength (km)			9	94.50			94.50			94.50			94.50		9	4.50		94.50
	Blacktop (km)					-			-			-			-			-		-
	Gravel (km)					5.00			13.04			28.05			47.99		6	0.92		80.00
	Earthen (km)					<u> 89.50</u>			<u>81.46</u>			66.45			46.51		3	3.58		14.50
С	Conservation (N	NRs)			2	4,875		1	26,886			30,637	7		35,623		38	8,855		156,876
	Emergency					2.835			2.835			2.835			2.835		2	.835		
	Routine					1.890			1.890			1.890			1.890		1	.890		
	Recurrent (blac	ktop)				-			-			-			-			-		
	Recurrent (grav	el)				1.500			3.913			8.414			14.398		18	3.276		
	Recurrent leart	hen)			1	7.900		1	16.291			13.290)		9.301		6	./16		
	Periodic (blackt	(40				-			-			-			-		0	-		
D	Periodic (gravel	Cost	DT	CD	FC 172	750 PT	CD	62.267	1.957	CD	67 421	4.207	CD	72 251	7.199	CD	70.909	.138 DT	CD	
U	61DR005	- COSL		6.00	- 50.1/5		GR	02.207			- 07.431			72.231		GR	/9.606	- DI	GR	
	61DR010	51 062	-	6.00	51.062	-	6.00	-	-	-	_	-	-	-	-	-	_	-	-	
	61DR009	12 500	-	5.00	5 111	-	2 04	7 389	-	2 96	-	-	-	-	-	-	-	-	-	
	61DR012	37 812	-	7.00	-	_	-	37 812	-	7.00	-	-	-	-	-	-	-	-	-	
	61DR011	99.732	-	29.50	-	-	-	17.066	-	5.05	67.431	-	19.95	15.235	-	4.51	-	-	-	
	61DR013	9.392	-	3.00	-	-	-	-	-	-	-	-	-	9.392	-	3.00	-	-	-	
	61DR001	202.158	-	23.00	-	-	-	-	-	-	-	-	-	47.625	-	5.42	79.808	-	9.08	
	61DR008	-	-	10.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Tot	al improven	nent		56.173	-	8.04	62.267	-	15.00	67.431	-	19.95	72.251	-	12.92	79.808	-	9.08	337.930
E	Construction	Cost	I	GR	-		GR	-		GR	-		GR	-		GR	-		GR	
	61DR003	42.000	7	7.00	-		-	-		-	-		-	-		-	-		-	
	61DR005	108.000	1	8.00	-		-	-		-	-		-	-		-	-		-	
	61DR006	106.500	1	4.00	-		-	-		-	-		-	-		-	-		-	
	61DR004	72.000	1	2.00	-		-	-		-	-		-	-		-	-		-	
	61DR016	54.000	<u> </u>	9.00	-		-	-		-	-		-	-		-	-		-	
	61DR012	122.400	1	8.00	-		-	-		-	-		-	-	-	-	-		-	
	61DR015	102.000	1	7.00	-		-	-		-	-		-	-		-	-		-	
	61DR007	64.200	5	<u>s.00</u>	-		-	-		-	-		-	-		-	-		-	
	61DR014	124.800	1	<u>6.00</u>	-		-	-		-	-		-	-		-	-		-	
	61DR009	72,000		<u>7.00</u>	-		-	-		-	-		-	-		-	-		-	
	61DR002	200 400	2	2.00	-		-	-		-	-		-	-		-	-		-	
	61DR011	164 400	2	2.00	-		-			-			-		1	-	_		-	
	6102012	180 000	2	<u>2.00</u> 7.00	_		_	-		-	-		-	-	1	-	_		-	
	61DR010	38 / 00	1	1.00	-		_			-			-		1	-	_		-	
	61DR008	-	1	2 00	_		-			-	-	1	-	-	1	-	_		-	
	Total	new constr	uction	2.00	-		-	-		-	-		-	-		-	-		-	-
F	Re	maining bug	lget		-			-			-			-			-			-

6.3 **DTMP Outputs**

Based on the investment plan presented above, all DRCN roads will be conserved for the duration of the DTMP period. A further 83.82 km including 10.0 km by DRILP will be improved to gravel standard inclusive of cross drainage and protective structures required to make them maintainable all-weather roads. The remaining 10.68 km of earthen roads at the end of the DTMP period will be improved in the next DTMP. The same goes for the new construction which will only take place after the existing DRCN roads have been improved to maintainable all weather standards (some of these roads may be constructed through VDC funding).

Table 6.3.1 DTMP output												
Conservation Im	nprovement gravel	Improvement blacktop	New construction									
94.50	75.00	-	-									

Of the total DTMP budget, NPR 158.863 million will be spent on conservation and NPR 335.944 million on improvement. This will use up the entire DTMP budget for the five-year period.

6.4 **DTMP Outcome**

As a result of the activities planned in this DTMP, the percentage of all-weather maintainable DRCN roads increases by 83.4%, from 5 km to 83.82 km, with only 11.3% (10.68 km) remaining fair weather.

Table 6.4.1 Standard of DKCN roads													
	Total length	Fair-weath	ner	All-weather g	ravel	All-weather blacktop							
	km	km	%	km	%	km	%						
Start of DTMP	94.50	89.50	94.7%	5.00	5.3%	-	0%						
End of DTMP	94.50	14.50	15.3%	80.00	84.7%	-	0%						
Difference	-	- 75.00	-79.4%	75.00	79.4%	-	0%						

Standard of DDCN reads T-LL (1 1

The number of VDC headquarters with access to the SRN or all-weather DRCN roads will increase from 0 to 5 and the district population with access to the SRN or all-weather DRCN roads will increase from 0% to 19.8%. The number of VDC headquarters with no access to DRCN roads will remain at 19, while the percentage of the district population with no access to DRCN roads will remain at 56.5%.

										All-weather core					
	Dire	ect access t	to SRN	No	access to r	oad	Fair-	weather co	re roads		roads				
	VDCs	Population	%	VDCs	Population	%	VDCs	Population	%	VDCs	Population	%			
Start of			24.8			59.1					_				
DTMP	6	42,172	%	20	100,531	%	4	27,403	16.1%	0	-	0.0%			
			24.8			56.0									
End of DTMP	6	42,172	%	19	95,256	%	0	-	0.0%	5	32,678	19.2%			
				-	-				-						
Difference	-	-	0.0%	1	5,275	-3.1%	-4	- 27,403	16.1%	5	32,678	19.2%			

Table 6.4.2 Population with access to road network





Annex 1: DDC Letter



मिति : २०७०/०४/०३

श्री टिम लिडर

ग्रामीण यातायात पूर्वाधार क्षेत्रगत कार्यकम, ललितपुर

विषय : कार्यसम्पादन भएको बारे ।

प्रस्तुत विषयमा यस जाजरकोट जिल्लाको जिल्ला यातायात गुरुयोजना तयारी पार्ने कममा खटिई आएका परामर्शदातृ संस्था आर. आई.डि.सी.प्रा.लि. का परामर्शदाताहरुबाट कार्य सम्पादन शर्तनामा तथा निर्देशिका बमोजिम अभिमुखिकरण गोष्ठि, जिल्ला सडक संजाल छनौट गोष्ठि ड्राफ्ट प्रतिवेदन प्रस्तुती गोष्ठि तथा फिल्ड अध्ययनकार्य सम्पादन भएको ब्यहोरा अवगत गराईन्छ ।

ब्दा

Annex 2: Traffic Data

	Total Length		Car-Jeep-				
Code	(km)	Motorcycle	Minibus	Tractor	Truck-Bus	PCU	VPD
61DR001	28.00	7		8	1	24	9
61DR005	6.00	0	0	0	0	-	-
61DR008	10.00	0				-	-
61DR009	5.00	0				-	-
61DR010	6.00					-	-
61DR011	29.50	5		10		23	10
61DR012	7.00	0		2		4	2
61DR013	3.00					-	-
Total	94.50						

Annex 3: Population Served

			Road																
#	VDC/ municipality	Populati on	61DR001	61DR005	61DR008	61DR009	61DR010	61DR011	61DR012	61DR013	61DR002	61DR003	61DR004	61DR006	61DR007	61DR014	61DR015	61DR016	SRN
1	Archhani	3,675													х				
2	Bhagwati Tol	3,479																	х
3	Bhoor	6,133				х													
4	Daha	4,995	х																
5	Dandagaun	6,839														х			
6	Dasera	8,178																	х
7	Dhime	7,551						х											
8	Garkhakot	5,630										х							
9	Jagatipur	7,279																	х
10	Jhapra	5,802			х														
11	Junga Thapachaur	5,333		x															
12	Karkigaun	6,206																	х
13	Khagenkot	4,844																	х
14	Khalanga	12,186																	х
15	Kortang	3,242									х								
16	Laha	6,343								х									
17	Majhakot	7,866	х																
18	Nayakwada	6,077							х										
19	Paink	4,935						х											
20	Pajaru	7,163												х					
21	Punma	7,917					х												
22	Ragda	4,085																х	
23	Ramidanda	2,429							х										
24	Rokayagaun	3,385							х										
25	Sakala	6,192															х		
26	Salma	6,297											х						
27	Sima	5,275		х															
28	Suwanauli	2,926	х																
29	Talegaun	3,183												х					
30	Thala Raikar	4,661		х															
	Total population	170,106	15,787	15,269	5,802	6,133	7,917	12,486	11,891	6,343	3,242	5,630	6,297	10,346	3,675	6,839	6,192	4,085	42,172
	Total VDCs/municipa lities	30	3	3	1	1	1	2	3	1	1	1	1	2	1	1	1	1	6

Annex 4: Level of Access

#	VDC/municipality	No access DRCN start DTMP	No access DRCN end DTMP	Fair-weather DRCN start DTMP	Fair-weather DRCN end DTMP	All-weather DRCN start DTMP	All-weather DRCN end DTMP	Direct access to SRN
1	Archhani	x	х					
2	Bhagwati Tol							х
3	Bhoor			х			х	
4	Daha	х	х					
5	Dandagaun	х	х					
6	Dasera							х
7	Dhime			х			х	
8	Garkhakot	х	х					
9	Jagatipur							х
10	Jhapra			х			х	
11	Junga Thapachaur	х	х					
12	Karkigaun							х
13	Khagenkot							х
14	Khalanga							х
15	Kortang	х	х					
16	Laha	х	х					
17	Majhakot	х	х					
18	Nayakwada	х	х					
19	Paink	х	х					
20	Pajaru	x	х					
21	Punma			х			x	
22	Ragda	x	х					
23	Ramidanda	x	х					
24	Rokayagaun	x	х					
25	Sakala	x	х					
26	Salma	x	х					
27	Sima	Х					x	
28	Suwanauli	x	х					
29	Talegaun	x	х					
30	Thala Raikar	x	х					
	Total population	100,531	95,256	27,403	,	1	32,678	42,172
	Total VDCs	20	19	4	0	0	5	6

Annex 5: 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)
61DR001	Chheda - Thala - Chande	23.000 km	0+000	23+000		23			172	58	88		33	43	3,099	9,000
61DR005	Chheda - Kachali	6.000 km	0+000	1+620		6				10			5		585	150
61DR010	Khalanga - Evar - Punma	6.000 km	0+000	3+610		6			72	10	14		4	29	120	500
61DR009	Bhurchaur - Syaule - Bhedakharka - Machhaina	5.000 km	0+000	5+000		5							3		235	300
61DR011	Khalanga - Panchkatiya - Dhime - Paik- Byaulidhunga	29.500 km	0+000	29+500		29.5			52	18	24		16	36	565	3,500
61DR013	Panchkatiya - Kiteni - Bharagaun - Sakala	3.000 km	0+000	3+000		3			20	8	120	0	64	100	4604	42450
Total	Pancikaliya - Kileni - Bilafagaun - Sakala	72.50	0+000	5+000	0	72.5	0	0	316	ہ 104	126	0	61	108	4604	ļ

Annex 6: Overall Road Inventory

Road code	Road Name	Length (km)	Start chainage (km) or XY-coordinate	End chainage (km) or XY-coordinate	Surface Type: Black Top	Surface Type : Gravel	Surface Type : Earth	All Weather	Fair Weather	Conditiom - Good/ Fair	Condition - Poor	Condition - Temporarily Impassable	Condition - Permanently Impassable
61DR001	Chheda - Thala - Chande	23.000 km	0+000	23+000			\checkmark		\checkmark		\checkmark	\checkmark	
61DR005	Chheda - Kachali	6.000 km	0+000	1+620			\checkmark		\checkmark		\checkmark		
61DR010	Khalanga - Evar - Punma	6.000 km	0+000	3+610			\checkmark		\checkmark		\checkmark		
61DR009	Bhurchaur - Syaule - Bhedakharka - Machhaina	5.000 km	0+000	5+000			\checkmark		\checkmark		\checkmark		
61DR011	Khalanga - Panchkatiya - Dhime - Paik- Byaulidhunga	29.500 km	0+000	29+500			\checkmark		\checkmark		\checkmark		
61DR013 Total	Panchkatiya - Kiteni - Bharagaun - Sakala	3.000 km 72.50	0+000	3+000			\checkmark		\checkmark				

Annex 7: Photographs



Khalanga, Jajarkot



Orientation Workshop



Khalanga-Risang-Panchkatiya –Dhime-Paink Road



DRCN Workshop





DRAFT REPORT PRESENTATION

Annex 8: Minutes

आज भिति १०८० /०२/२३ ठाते जिल्ला विकास सभितिकी हलमा, जाजरकीटका स्थानीय विकास, अधिकारी भी चक्र बाहदुर बुढा ज्यू को अद्यक्षतमा बैठक बसी यस जाजरकोट जिल्लाको सडक रारुयोजना तयारी अभिष्ठखिकरण गौढठीमा तपशित बमोर्जिमका महातुभावहरूको उपस्थितिमा बैठक बसी निर्णहरु जरियो । JURENA / -यक्रवहादुर तुढा, स्थानीय विकास अधिकारी, जिल विण्या जाउँकोट and areigi rer za enrez fr. 9 min and वहादुर रावत ए. र. छ. पा. आम्बोवादी जि. देखोजव Los de Zini In. Smarth - AS. 41 - Fighting DE F101 THAELGE THE - 21 MARZINI GUILAUL muit a EIST LUSTI - 2T. D. 41 MENRE MINILIC TEUS CANIA 27- JUI JUIA MERRY रेक्षा (2 माले) साचिव जिन्द्र. त्रवराज सिंह LIDAIGGIAS ADT TIATGRIT GTAR Fau deiles and 90. हमत्त केव्या कार्या राज्या रे रिमेली ZIMIMAT 92- हारिफाइर रिह नेपाली 294242 राष्ट्रिय देनिड की 43 भीना 217 मेंडे भारत दिनि आभा १४. राजेन्द्र ठाही तेपाल पत्रका महाहद आंग्राकेर VOO 9TUI POGOUTO 51221 A211 (0,10) B)- 41. 20 mili 2 7. BI. MIN(B)2 graz FE Intrad algaEUI ISTE COMITETA NTV/AUTURST 9C 34131 ar Taky tis sum 93 007 242 TATU acigs anot - manty - NGO bedone for set 20 मेम बहादर - प्रतार्शे सार संग्रेमेरी र-क्र-्र- " ") वारी , 7 १ र इम्राइक् केकोश (किरण) - रेकेट्रि . ते. छ. पा. - माइस्वाकी सामहिम (Sole. 317 artik KIL- 100 \$.- 101. 51. 91. 23 28. Moralizz A. E., W. S. Jur S. S., Tr. A. E. Junkay 24, काल इमाल अ उपाह्यम - ते कि पाठ एमात अने होवडिमेसि स्रीयोज्य जोग रिइस्मी.त. der

आज मिति २०६० /08 102 जते जिला विकास समितिको हलना जाजरकौटका स्थातीय विकास अधिकारी भी चत्रा बाहदुर बुढा ज्यू को अहयसतमा बैठक वसी यस जिल्लाको जिल्ला मुख्य सडक संजाल Solle JIJZAIC ज्याहर उगेरहीमा तपशित बमाजिमका महान भावहरत्की बैठक बसी निर्णहरू जारि उपस्थितिज्ञा उपस्थिति - अक्तबहादूर कुढा, रेखानीय विकास आधिकारी कि.वि.ध. जाताकोर उम्बर बहादुर विहे - उन्द्रभक्त ने कुपा एमाले जिन्ध- के जाताकोर हा. मा. समापति नेपाली डा. 8+15 3151 MOTIN 30 ENTO EUG -T. 92412 ALLE a CHRIG2IM 2104041 3782191 21441 ZADTIN 841 (xiziais)1 वहादर धापां - जायात्वय दा स. सचिव रोकाम 31)

यस जाजरकोट्ट जिल्लाका विम्त सडकहरू घुरुप सडक जारियो संजालमा खतीट निर्णयहरू छेडा - थलह - चाँदे 9) छेडा - कचाली 2) थलह - बाटुले - केने - चैक - रोकायगाँउ 2) बादुले - टापुचौर - अर्छनी 81 खलंगा - पॉचकारीया - दिमे - पैक - व्याउली दुडू K) पॉचकाटीया - फूलचाउनी - रामीजज - रोकायाजॉंउ _ 8) ब्यान्स्यान्स्यान्स्यारा - तस्त पॉचकारीया - किटेनी - भारगाँउ - सकला 6) Austrate - REAL DIVALSTE DILAST ALGSIST C मामर्टा मटेला लवार्ट स्ताबाट खोडारी, रवज्ञलेक सांहस : स्ताबाट खोडारी, रवज्ञलेक सांहस : लागतरा मटला लवाहह यक्ता ठाव्ही जिडता BIGITATIET - ettai ZIA ZIARDING GRUIJING ATTALINIS GA त रायाला बाहत्यात डिंगा ठलपत डांडां-यायापाटा साहा स्ति गाहि ain Sit Fuis of Heison migi VENI

2060 108 103 जते जिल्ला विकास समितिको आज मिति हलमा जाजरकोटका स्थानीय विकास अधिकारी भी オーコカ बाहदुर बुढा जयू को अध्यसतमा बैठक बसी यस जाजरकोट जिल्लाको जिल्ला व्या यातायात रारुयोजना इप्ट प्रतिवेदन प्रस्तुती जोण्ठीमा तपशिल बमोजिमका महानुभावहरूको उपस्थितिमा बैठक बसी निर्णहह जरियो उपस्थिति यकबहारूर नुदा, स्त्यानीय निक्रेम आधिकार TST. Fa. U. - Alanz 30 AI ANTA 2 RILE Salan1 HIMARY TZIE talas BII. S. DRILP-AF ODC, UTIM (S)21 धार प्रस्नाद स्रवदा विम भाह रा.प. पा. नेपाल के स. ए. ए सिंह स्तांत्वन मेपाली कार्राय 1111312 उत्र तर सिंह - आधादन मेल्या एमले जेगरा आमेरी ाल कुमार शामी 2 Sait End 41201 f.m. June WASIL DEIK Bigs AZAGIZZ (STZ) ZAFAIGZIAT NTV/AUIUIASI J. A. ch. Wildimines) yining olic 106 219121 वहाप्र- सन्द अहम्म आग किंग प्रति हिल के का मिन aring Michen भाना खाहार खारता न देवे-ट्रमनाद्यान राज्या. GETSI ATTUI 470 610 410 810 नहादुर साणा - र्त्रिया (माफ्रामार) प्रामीध वहाड् ट्रालाइन मेड मानसनही ज. श 1793 2901 in 21991 or 91 or 560 34 E2121 Refui TH STA HAD GERGY DUICH 1919 · STATERY DIC ENTO - 34124 BY 32192 2112 -CRAY X