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District Transport Master Plan (DTMP)

Ministry of Federal Affairs and Local
Development



Department of Local Infrastructure
Development and Agricultural Roads
(DOLIDAR)



District Development Committee,
Taplejung

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Government of Nepal
Ministry of Federal Affairs and Local Development
Office Of District Development
Committee
Taplejung



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FOREWORD

It is my great pleasure to introduce this revised District Transport Master Plan (DTMP) of Taplejung district which was concurred by the district stakeholder's meeting held on 30th June, District Road Core Network (DRCN) selected by DDC body on 2nd August and approved by DDC Board on 23rd August 2013. Based on DTMP guideline 2012, all District Road Core Networks aiming to connect all Village Development Committee (VDC) with the district headquarters, either directly or through highway and Strategic Road Network (SRN) 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. I am grateful to the political parties, civil society and all the other stakeholders who actively involved in preparing this revised DTMP. My thanks go to Er. Sushil Shrestha (District Engineer) and other DDC/DTO staffs for their 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 (MFALD) and Department of Local Infrastructure Development and Agriculture Road (DOLIDAR/MFALD) for providing valuable suggestions and cooperation to produce this report. Any pioneering and constructive suggestions regarding this document will be highly appreciated.

Bharat Mani Pandey
(Local Development Officer)

स्थानीय विकास अधिकारी

ACKNOWLEDGEMENTS

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

We would also like to express our sincere thanks to Mr. Bharat Mani Pandey, Local Development Officer (LDO) of Taplejung District for his cooperation and continuous support during the preparation of District Transport Master Plan (DTMP). We are thankful to Er. Sushil Shrestha, District Engineer and other concerned officials and staffs from DDC/DTO Taplejung for their support during the DTMP workshops.

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

We are grateful to the VDC secretary from all VDCs, local people, political parties and leaders, civil society, members of government organizations and non government organizations of Taplejung District who have rendered their valuable suggestion and support for the successful completion of the DTMP.

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

EXECUTIVE SUMMARY

Taplejung District is located in Mechi Zone of the Eastern Development Region of Nepal. It borders with Shikkim of India to the East, Shankhuwasabha district of Koshi Zone to the West, Tibet of People Republic of China to the North and Pachthar district of Mechi Zone and Terhathum district of Koshi zone in south. The district has 50 VDCs, 11 *ilaka* and 2 constituency area. The district, with Phungling as its district headquarters, covers an area of 3,646 km² and has a population of 1, 27,461 as per census 2011. Taplejung is in northeastern Nepal; the Tamur River flows through the district. The area is famous for its proximity to Kangchenjunga (8586 m), the third highest mountain in the world. Taplejung had an airstrip with commercial flights to Biratnagar and Kathmandu; however, the airport is not currently in operation due to upgrading process. A road called Mechi highway connects the district headquarters with the Tarai plains. The annual temperature ranges in between 4.6 to 24.8 degree Celsius. The annual average rainfall is 1764 mm and relative humidity is 73.5 %. Taplejung is one of the most beautiful areas in eastern Nepal, with a spectacular landscape, Himalayan peaks of heights above 7000 meters and a wide range of flora and fauna. The Kanchenjunga Conservation Area (KCA) in the eastern Himalaya boasts some of the most stunning scenery in all of Nepal. Alpine grassland, rocky outcrops, dense temperate and subtropical forests, and no river valleys make up the region. Taplejung occupies an area ranging from 670 meters to 8586 meters (Mt. Kangchenjunga) above sea level. Taplejung plays host to the longest blue glacier in the world, the Yalung, and a high biodiversity rate.

This area is home to a diverse range of ethnic groups like the Limbus, Tibetans, Sherpas, Rai, Gurung, Magars, Newars and Tamangs. Most of the population is involved in agriculture. Traditional farming practices are a way of life here. There are rich forests with more than 250 species of bird and animal life. There are a number of high mountain lakes in Olangchung Gola.

The district inventory identified about 277.88 km of roads, including 47 km strategic roads (30 km black top and 17 km earthen) and 230.88 km of rural roads with earthen surface with poor serviceability. During DTMP workshops, a total of 16 district road networks have been identified as District Road Core Network (DRCN) with a total length of 376.88 km. Of total 16 DRCN, a part of DRCN with 154.56 km total length are earthen surface with under construction status, which are considered as fair-weather road and remaining has to be constructed as new construction. All the roads are planned for improvement and new construction to link up VDC headquarters and major settlements with district headquarter directly or through SRN. Although, the existing and under planning SRN passes through 10 VDCs, several years (at least first DTMP period) is yet to be required to make all-weather condition in terms of vehicular movement. Of total 16 selected DRCN, 5 roads are planned and constructed by DoR while one of the suggested DRCN linkages is partly constructed by DRILP and partly by DoR. One road linkage that connects district headquarters through Mechi highway with famous Pathibhara temple is also constructed by DoR with different stakeholders related to tourism under tourism road programme.

Road Class	Total length	Black Top	Gravel	Earthen
Strategic road network	47.00	30.00	-	17.00
Urban roads	-	-	-	-
District road core network	154.56	-	-	154.56
Village roads	76.32	-	-	76.32
Total	277.88	30.00	-	247.88

Annual conservation costs of existing DRCN roads with 154.56 km are estimated at NPR 38.64 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 193.2 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. For the full five-year period the improvement costs will come to NPR 530.91 million. The required improvements and their estimated costs are listed below.

Improvement type	Requirement	Cost (NPR)
Bridges	259.00 m	92,160,000
Slab culverts	78.00 m	14,040,000
Causeways	92.00 m	1,104,000
Hume pipes	40.00 units	480,000
Masonry retaining walls	0.00 m ³	-
Gabion retaining walls	3800.50 m ³	11,401,500
Lined drains	3080.00 m	3,696,000
Widening	0.00 m	-
Rehabilitation	0.00 km	-
Gravelling	154.56 km	408,031,008
Blacktopping	0.00 km	-
New construction	222.32 km	1,748,380,800
Total		2,279,293,308

The available budget for the road sector for the coming five years (fiscal year 2070/71 to 2074/75) is estimated to be NPR 412 million. Allocation to the district road core network was set at 85% 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 and improvement works of existing DRCN to be covered throughout the DTMP period and no part of new construction works to be completed before the end of the DTMP period. The remaining improvement works for few kilometers of existing DRCN and new construction works will be carried out in the next DTMP.

As a result of the activities planned in this DTMP, the length of all-weather maintainable DRCN roads under the responsibility of DDC increases from 0 km to 57.49 km. Moreover, 79% of existing road that are constructed and maintained by DDC becomes all-weather during first DTMP period. Similarly, all-weather DRCN roads will increase from 0 to 10 and the district population with access to the all-weather DRCN roads will increase from 0% to 33%. Moreover, 29% of district population with access to the SRN if completed during DTMP period.

ABBREVIATIONS

ARMP	Annual Road Maintenance Programme
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
DTO	District Technical Office
DRCN	District Road Core Network
DRILP	Decentralised Rural Infrastructure and Livelihood Programme
DTPP	District Transport Perspective Plan
GIS	Geographical Information system
GPS	Global Positioning System
GON	Government of Nepal
LGCDP	Local Governance and Community Development Programme
LDO	Local Development Officer
MLD	Ministry of Local Development
RAP	Rural Access Programme
SRN	Strategic Road Network
SWAp	Sector Wide Approach
VDC	Village Development Committee

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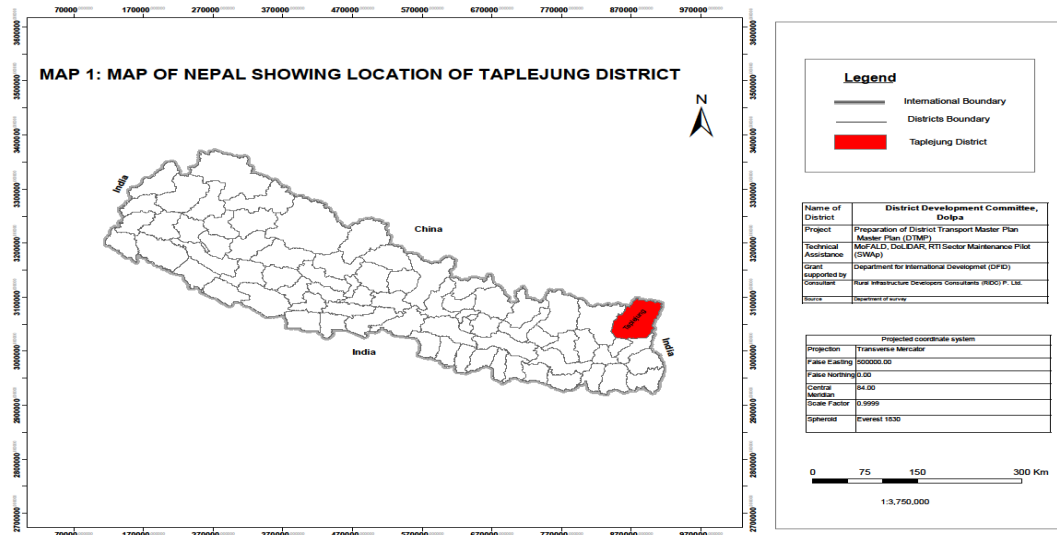
1. INTRODUCTION

Taplejung District is located in Mechi Zone of the Eastern Development Region of Nepal. It borders with Pachthar district of Mechi Zone and Terhathum district of Koshi zone in south and Tippet of People Republic of China to the North, Shankhuwasabha district of Koshi Zone to the West, Shikkim of India to the East. The district has 50 VDCs, 11 ilaka and 2 constituency area. The district, with Phungling as its district headquarters, covers an area of 3,646 km² and has a population of 1, 27,461 as per census 2011.

Taplejung is in northeastern Nepal; the Tamur River flows through the district. The area is famous for its proximity to Kangchenjunga (8586 m), the third highest mountain in the world. Taplejung has an airstrip with commercial flights to Biratnagar and Kathmandu; however, the operation has been temporarily shut down due to the upgrading of airport runway. A road called Mechi highway connects the district headquarters with the Tarai plains. The annual temperature ranges in between 4.6 to 24.8 degree Celsius. The annual average rainfall is 1764 mm and relative humidity is 73.5 %. Taplejung is one of the most beautiful areas in eastern Nepal, with a spectacular landscape, Himalayan peaks of heights above 7000 meters and a wide range of flora and fauna. The Kanchenjunga Conservation Area (KCA) in the eastern Himalaya boasts some of the most stunning scenery in all of Nepal. Alpine grassland, rocky outcrops, dense temperate and subtropical forests, and no river valleys make up the region. Taplejung occupies an area ranging from 670 meters to 8586 meters (Mt. Kangchenjunga) above sea level. Taplejung plays host to the longest blue glacier in the world, the Yalung, and a high biodiversity rate.

This area is home to a diverse range of ethnic groups like the Limbus, Tibetans, Sherpas, Rai, Gurung, Magars, Newars and Tamangs. Most of the population of district is involved in agriculture. Traditional farming practices are a way of life here. The area is made up of alpine grass lands, rocky outcrops, dense temperate and sub-tropical forests, and low river valleys with the Kanchenjunga as its crown and is home to one of the original homelands of the indigenous Limbu people. There are rich forests with more than 250 species of bird and animal life. There are a number of high mountain lakes in Olangchung Gola.

Figure 1 Map of Nepal indicating Taplejung District



2. DISTRICT ROAD CORE NETWORK (DRCN)

This chapter gives an overview of the existing and under planning roads in Taplejung 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 Existing and Planned Road Network

Taplejung district has an estimated road network of 277.88 kilometres, including 47 km of strategic roads and 230.88 km of rural roads which are constructed by Taplejung DDC and the VDCs in collaboration with other stakeholders. Most of the strategic roads and all of the rural roads are under planning stage. A map of the total existing road network in Taplejung district is shown in Figure 2 at the end of this chapter.

Table 2.1.1 Road length in Taplejung District (km)

Road Class	Total length	Black Top	Gravel	Earthen
Strategic roads	47.00	30.00	-	17.00
Urban roads	-	-	-	-
Rural roads	230.88			230.88
Total	277.88	30.00	-	247.88

2.2 National Highways and Feeder Roads

Taplejung district has a highway with length 149 km (30 km black top, 17 km earthen and rest is in planning stage). The other many roads that connect the Taplejung with other district are also planned and constructed by DoR in collaboration with DDC within central and region road programme but need to be completed and upgraded within first DTMP period.

Table 2.2.1 Feeder Roads in Taplejung district (km)

Code	Name of Road	Total length	Black Top	Gravel	Earthen
H0713	Mechi Rajmarga	30.00	30.00		
H0714	Mechi Rajmarga	17.00			17.00
H0714	Mechi Rajmarga	-			
Total		47.00	30.00	0.00	17.00

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 DTO/DDC, political parties, civil society and other various related stakeholders with series of consultation workshop. This DRCN is the minimum network that allows all VDC headquarters and/or major settlement 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 in Taplejung district is shown in Figure 3 at the end of this chapter. The DRCN consists of 16 district roads with a total length of 376.88 km. The remaining few road networks suggested during DTMP workshops are not considered to be DRCN roads and is classified as village roads under the responsibility of the VDCs (see also section 2.3). Of total 16 DRCN, a part of DRCN with 154.56 km total length are earthen surface with under construction status, which are considered as fair-weather road. Of total 16 selected DRCN, 5 roads are planned and constructed by DoR while one of the suggested DRCN linkages is partly constructed by DRILP and partly by DoR. One road linkage that connects district headquarter through Mechi highway with famous Pathibhara temple is also constructed by DoR with different stakeholders related to tourism under tourism road programme. However, only a part of DRCN road such as Dahalgaun-Khandingbe-Tellok road, DHQ- Kamida-Thumbedhin road, Deurali-Pathibhara road etc., is accessible for vehicular movement only in winter season (see Table 2.3.1). A complete list of the DRCN roads and their characteristics is provided in Table 2.3.2

Table 2.3.1 Existing road length in Taplejung district (km)

Road Class	Total length	Black Top	Gravel	Earthen
Strategic road network	47.00	30.00	-	17.00
Highways	47.00	30.00		17.00
Feeder roads	-			
Urban roads	-	-	-	-
District road core network	154.56	-	-	154.56
Village roads	76.32	-	-	76.32
Total	277.88	30.00	-	247.88

Table 2.3.2 District road core network in Taplejung district (existing)

Code	Name of Road	Total length	Black Top	Gravel	Earthen	All weather	Fair weather
1DR001	H0713(Bahande)-Dhovan-Santhakra-Lingtep-Thukimba-Papung	21.00			21.00	-	21.00
1DR002	Santhakra-Thinglambu-Phakumba-Shagu	1.80			1.80	-	1.80
1DR003	Dhovan-Chage-Dhungeshagu-Saghu-Gufa	32.60			32.60	-	32.60
1DR004	Hangpang-Saptami-Pavek-Chhatedhunga-Kerkere-Lali-Bungdhak road	3.30			3.30	-	3.30
1DR005	Bhanjyang(Khokling)-Liwang-Sanwa-Papung	6.63			6.63	-	6.63
1DR006	Dhovan-Hangpang-Dadakharka(Hangpang)-Jugetar(Fulbari)-Nidhuradin	9.97			9.97	-	9.97
1DR007	Handrung(Khokling)-Sawadin-Khejenin-Ekhabu-Lelep	7.45			7.45	-	7.45
1DR009	DHQ (Buddhachowk)-Kamidada-Thechambu-Chaksibote-Thumbedhin	17.46			17.46	-	17.46
1DR010	Suketar-Deurali-Pathibhara road	9.94			9.94	-	9.94
1DR011	Deurali-Phawakhola-Sikaicha-Tellok	7.30			7.30	-	7.30
1DR012	Gupte-Tiringe	11.30			11.30	-	11.30
1DR013	Chaksibote-Dumrise-Tiringe - Fawakhola road	4.00			4.00	-	4.00
1DR014	Dahalgau(Kabeli)-Khandingbe-Tellok-Yamphudin	12.71			12.71	-	12.71
1DR015	Bardada-Sablakhu-Limbudin-Mehele-Surumkhim-Khewang-Yamphudin	6.80			6.80	-	6.80
1DR016	Sablakhu-Ankhop-Sadewa-Kalikhola-Tingbung Pokhari	2.30			2.30	-	2.30
Total		154.56	-	-	154.56	-	154.56

2.4 Village Roads

The many road linkages that is under construction stage or planned for new construction that do not form part of the identified district road core network (DRCN) are classified as village roads and are under the responsibility of the 50 VDCs in Taplejung district. In addition, maximum 20% of budget allocated from DTMP road can be utilised to maintain these village road networks if identified as important and necessary linkages. The suggested VRCNs will be identified and listed in Final Report A total of 76.32 km existing road networks in the district, which are of a lower importance that do not form the main link between the VDC headquarters or main centres/settlements and the district headquarters or strategic road network. Instead, they provide additional access to other parts of the VDCs.

It is recommended that the VDCs organise maintenance workers to carry out the emergency and routine/recurrent maintenance of the existing roads to ensure they remain accessible. 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 the village roads open.

Figure 2 Total Road Inventory Map of Taplejung District

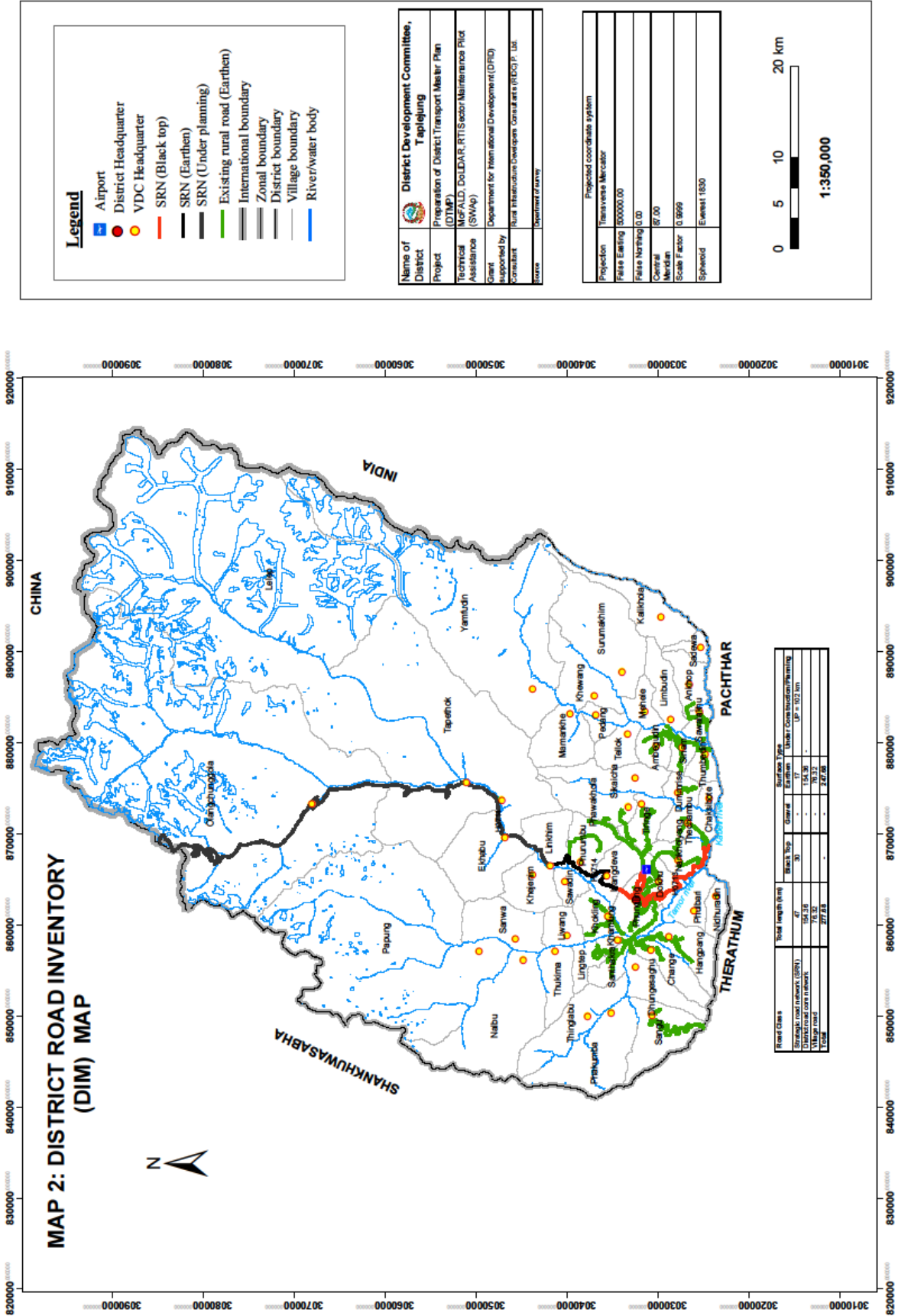
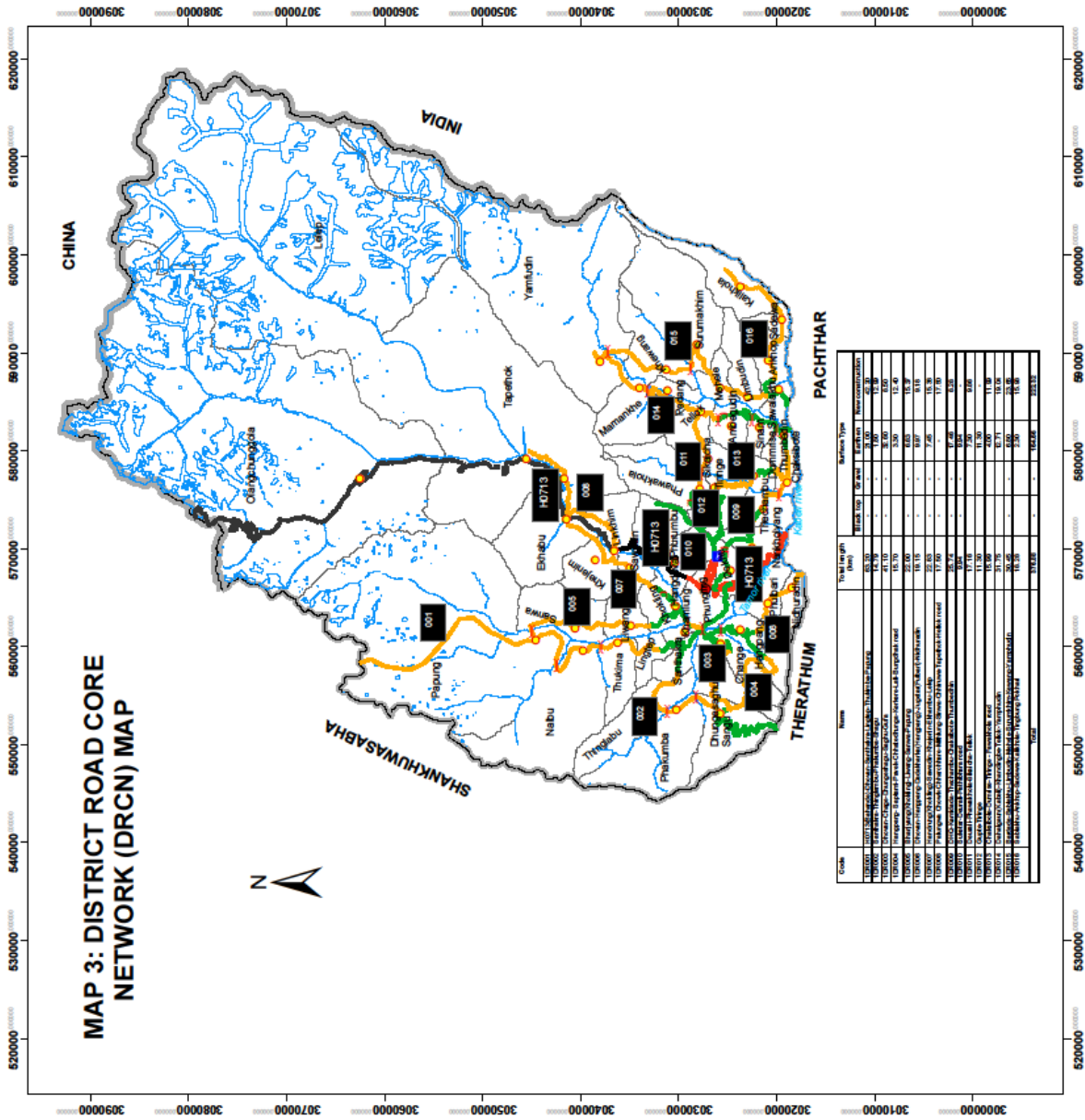
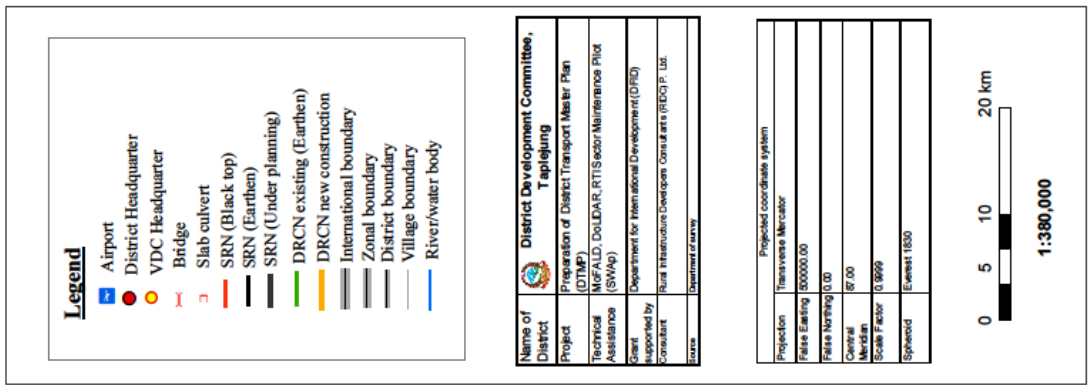


Figure 3 District Road Core Network (DRCN) Map



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 a 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 types 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:

Emergency maintenance - 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 lumpsum 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.

Routine maintenance - 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.

Recurrent maintenance - 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.

Periodic maintenance - Larger repairs to the road largely aimed at renewing the road surface through regravelling, 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 lumpsum 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.

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.

This is basically the entire district road core network in as far as it does not require rehabilitation.

Table 3.1.1 Conservation requirements

Code	Emergency maintenance (km)	Routine maintenance (km)	Recurrent maintenance (km)	Periodic maintenance (km)
1DR001	21.00	21.00	21.00	21.00
1DR002	1.80	1.80	1.80	1.80
1DR003	32.60	32.60	32.60	32.60
1DR004	3.30	3.30	3.30	3.30
1DR005	6.63	6.63	6.63	6.63
1DR006	9.97	9.97	9.97	9.97
1DR007	7.45	7.45	7.45	7.45
1DR009	17.46	17.46	17.46	17.46
1DR010	9.94	9.94	9.94	9.94
1DR011	7.30	7.30	7.30	7.30
1DR012	11.30	11.30	11.30	11.30
1DR013	4.00	4.00	4.00	4.00
1DR014	12.71	12.71	12.71	12.71
1DR015	6.80	6.80	6.80	6.80
1DR016	2.30	2.30	2.30	2.30
Total	154.5572	154.5572	154.5572	154.5572

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 Taplejung are described in more detail in the subsequent sections.

Rehabilitation - 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.

Gravelling - Placement of a gravel layer to make it all-weather and ensure that the road remains passable during the rainy season.

Cross drainage - 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

Protective structures - 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.

Blacktopping - Placement of a blacktop layer in roads with traffic volumes exceeding 50 passenger car units (PCU) to reduce damage to the road surface

Widening - 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 Sections of the district road core network requiring rehabilitation

Code	Name of Road	Total length (km)	Blacktop (km)	PCU	50
				Traffic (PCU)	Blacktopping (km)
1DR001	H0713(Bahande)-Dhovan-Santhakra-Lingtep-Thukimba-Papung	21.00	-	-	-
1DR002	Santhakra-Thinglambu-Phakumba-Shagu	1.80	-	-	-
1DR003	Dhovan-Chage-Dhungeshagu-Saghu-Gufa	32.60	-	-	-
1DR004	Hangpang- Saptami-Pavek-Chhatedhunga-Kerkere-Lali-Bungdhak road	3.30	-	5	-
1DR005	Bhanjyang(Khokling)-Liwang-Sanwa-Papung	6.63	-	6	-
1DR006	Dhovan-Hangpang-Dadakharka(Hangpang)-Jugetar(Fulbari)-Nidhuradin	9.97	-	5	-
1DR007	Handrung(Khokling)-Sawadin-Khejenin-Ekhabu-Lelep	7.45	-	6	-
1DR009	DHQ (Buddhachowk)-Kamidada-Thechambu-Chaksibote-Thumbedhin	17.46	-	16	-
1DR010	Suketar-Deurali-Pathibhara road	9.94	-	-	-
1DR011	Deurali-Phawakhola-Sikaicha-Tellok	7.30	-	11	-
1DR012	Gupte-Tiringe	11.30	-	6	-
1DR013	Chaksibote-Dumrise-Tiringe - Fawakhola road	4.00	-	-	-
1DR014	Dahalgaun(Kabeli)-Khandingbe-Tellok-Yamphudin	12.71	-	16	-
1DR015	Bardada-Sablakhu-Limbudin-Mehele-Surumkhim-Khewang-Yamphudin	6.80	-	-	-
1DR016	Sablakhu-Ankhop-Sadewa-Kalikhola-Tingbung Pokhari	2.30	-	-	-
Total		154.56	-	71	-

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. For Taplejung this concerns the total of 154.56 km of DRCN roads however, nearly 50% of DRCN roads are constructed and maintained by DOR and other organizations of central government.

Table 3.2.2 Sections of the district road core network requiring gravelling

Code	Name of Road	Total length (km)	Gravelling (km)
1DR001	H0713(Bahande)-Dhovan-Santhakra-Lingtep-Thukimba-Papung	21.00	21.00
1DR002	Santhakra-Thinglambu-Phakumba-Shagu	1.80	1.80
1DR003	Dhovan-Chage-Dhungeshagu-Saghu-Gufa	32.60	32.60

1DR004	Hangpang- Saptami-Pavek-Chhatedhunga-Kerkere-Lali-Bungdhak road	3.30	3.30
1DR005	Bhanjyang(Khokling)-Liwang-Sanwa-Papung	6.63	6.63
1DR006	Dhovan-Hangpang-Dadakharka(Hangpang)-Jugetar(Fulbari)-Nidhuradin	9.97	9.97
1DR007	Handrung(Khokling)-Sawadin-Khejenin-Ekhabu-Lelep	7.45	7.45
1DR009	DHQ (Buddhachowk)-Kamidada-Thechambu-Chaksibote-Thumbedhin	17.46	17.46
1DR010	Suketar-Deurali-Pathibhara road	9.94	9.94
1DR011	Deurali-Phawakhola-Sikaicha-Tellok	7.30	7.30
1DR012	Gupte-Tiringe	11.30	11.30
1DR013	Chaksibote-Dumrise-Tiringe - Fawakhola road	4.00	4.00
1DR014	Dahalgau(Kabeli)-Khandingbe-Tellok-Yamphudin	12.71	12.71
1DR015	Bardada-Sablakhu-Limbudin-Mehele-Surumkhim-Khewang-Yamphudin	6.80	6.80
1DR016	Sablakhu-Ankhop-Sadewa-Kalikhola-Tingbung Pokhari	2.30	2.30
Total			154.56

3.2.3 Cross drainage

The need for cross drainage was identified for the different DRCN roads. A total of 6 bridges with a total length of 128 m, 10 slab culverts with a total length 78 m, and 40 pipe culverts were identified as being required.

Table 3.2.3 Required cross drainage structures

Code	Name of Road	Bridge (m)	Slab culvert (m)	CC Causeway (m)	Stone Causeway (m)	Pipe culvert (units)
1DR001	H0713(Bahande)-Dhovan-Santhakra-Lingtep-Thukimba-Papung					
1DR002	Santhakra-Thinglambu-Phakumba-Shagu					
1DR003	Dhovan-Chage-Dhungeshagu-Saghu-Gufa					
1DR004	Hangpang- Saptami-Pavek-Chhatedhunga-Kerkere-Lali-Bungdhak road		8			5
1DR005	Bhanjyang(Khokling)-Liwang-Sanwa-Papung					
1DR006	Dhovan-Hangpang-Dadakharka(Hangpang)-Jugetar(Fulbari)-Nidhuradin	30	8			2
1DR007	Handrung(Khokling)-Sawadin-Khejenin-Ekhabu-Lelep	40	10			1
1DR009	DHQ (Buddhachowk)-Kamidada-Thechambu-Chaksibote-Thumbedhin		18			13
1DR010	Suketar-Deurali-					

	Pathibhara road					
1DR011	Deurali-Phawakhola-Sikaicha-Tellok		10		22	6
1DR012	Gupte-Tiringe	18	16		50	11
1DR013	Chaksibote-Dumrise-Tiringe - Fawakhola road					
1DR014	Dahalgaun(Kabeli)-Khandingbe-Tellok-Yamphudin	40	8		20	2
1DR015	Bardada-Sablakhu-Limbudin-Mehele-Surumkhim-Khewang-Yamphudin					
1DR016	Sablakhu-Ankhop-Sadewa-Kalikhola-Tingbung Pokhari					
Total		128	78	-	92	40

3.2.4 Protective structures

Based on the road survey carried out in Taplejung, the following protective structures were identified as being required to ensure the protection of the district road core network.

Table 3.2.4 Required protective structures

Code	Name of Road	Masonry walls (m3)	Gabion walls (m3)	Lined drain (m)
1DR001	H0713(Bahande)-Dhovan-Santhakra-Lingtep-Thukimba-Papung			
1DR002	Santhakra-Thinglambu-Phakumba-Shagu			
1DR003	Dhovan-Chage-Dhungeshagu-Saghu-Gufa			
1DR004	Hangpang- Saptami-Pavek-Chhatedhunga-Kerkere-Lali-Bungdhak road		263	50
1DR005	Bhanjyang(Khokling)-Liwang-Sanwa-Papung		947	100
1DR006	Dhovan-Hangpang-Dadakharka(Hangpang)-Jugetar(Fulbari)-Nidhuradin		176	300
1DR007	Handrung(Khokling)-Sawadin-Khejenin-Ekhabu-Lelep		1,173	200
1DR009	DHQ (Buddhachowk)-Kamidada-Thechambu-Chaksibote-Thumbedhin		180	700
1DR010	Suketar-Deurali-Pathibhara road			
1DR011	Deurali-Phawakhola-Sikaicha-Tellok		217	150
1DR012	Gupte-Tiringe		476	500
1DR013	Chaksibote-Dumrise-Tiringe - Fawakhola road			80
1DR014	Dahalgaun(Kabeli)-Khandingbe-Tellok-Yamphudin		369	1,000
1DR015	Bardada-Sablakhu-Limbudin-Mehele-Surumkhim-Khewang-Yamphudin			

1DR016	Sablakhu-Ankhop-Sadewa-Kalikhola-Tingbung Pokhari			
Total		-	3,801	3,080

3.2.5 Widening

Widening of the district road core network in Taplejung is not required in existing situation because all the roads are either under construction or under planning stage.

Table 3.2.5 Sections of the district road core network requiring widening

Code	Name of Road	Total length (km)	VPD	Widening (m)
1DR001	H0713(Bahande)-Dhovan-Santhakra-Lingtep-Thukimba-Papung	21.00	-	
1DR002	Santhakra-Thinglambu-Phakumba-Shagu	1.80	-	
1DR003	Dhovan-Chage-Dhungeshagu-Saghu-Gufa	32.60	-	
1DR004	Hangpang- Saptami-Pavek-Chhatedhunga-Kerkere-Lali-Bungdhak road	3.30	2.00	
1DR005	Bhanjyang(Khokling)-Liwang-Sanwa-Papung	6.63	2.00	
1DR006	Dhovan-Hangpang-Dadakharka(Hangpang)-Jugetar(Fulbari)-Nidhuradin	9.97	2.00	
1DR007	Handrung(Khokling)-Sawadin-Khejenin-Ekhabu-Lelep	7.45	2.00	
1DR009	DHQ (Buddhachowk)-Kamidada-Thechambu-Chaksibote-Thumbedhin	17.46	8.00	
1DR010	Suketar-Deurali-Pathibhara road	9.94	-	
1DR011	Deurali-Phawakhola-Sikaicha-Tellok	7.30	6.00	
1DR012	Gupte-Tiringe	11.30	3.00	
1DR013	Chaksibote-Dumrise-Tiringe - Fawakhola road	4.00	-	
1DR014	Dahalgaun(Kabeli)-Khandingbe-Tellok-Yamphudin	12.71	9.00	
1DR015	Bardada-Sablakhu-Limbudin-Mehele-Surumkhim-Khewang-Yamphudin	6.80	-	
1DR016	Sablakhu-Ankhop-Sadewa-Kalikhola-Tingbung Pokhari	2.30	-	
Total	-	155	34	-

3.2.6 Blacktopping

In current situation, blacktopping of the district road core network in Taplejung is not required.

Table 3.2.6 Sections of the district road core network requiring blacktopping

				PCU	50
Code	Name of Road	Total length (km)	Blacktop (km)	Traffic (PCU)	Blacktopping (km)
1DR001	H0713(Bahande)-Dhovan-Santhakra-Lingtep-Thukimba-Papung	21.00	-	-	-
1DR002	Santhakra-Thinglambu-Phakumba-Shagu	1.80	-	-	-
1DR003	Dhovan-Chage-Dhungeshagu-Saghu-Gufa	32.60	-	-	-
1DR004	Hangpang- Saptami-Pavek-Chhatedhunga-Kerkere-Lali-Bungdhak road	3.30	-	5	-
1DR005	Bhanjyang(Khokling)-Liwang-Sanwa-Papung	6.63	-	6	-
1DR006	Dhovan-Hangpang-Dadakharka(Hangpang)-Jugetar(Fulbari)-Nidhuradin	9.97	-	5	-
1DR007	Handrung(Khokling)-Sawadin-Khejenin-Ekhabu-Lelep	7.45	-	6	-
1DR009	DHQ (Buddhachowk)-Kamidada-Thechambu-Chaksibote-Thumbedhin	17.46	-	16	-
1DR010	Suketar-Deurali-Pathibhara road	9.94	-	-	-
1DR011	Deurali-Phawakhola-Sikaicha-Tellok	7.30	-	11	-
1DR012	Gupte-Tiringe	11.30	-	6	-
1DR013	Chaksibote-Dumrise-Tiringe - Fawakhola road	4.00	-	-	-
1DR014	Dahalgaun(Kabeli)-Khandingbe-Tellok-Yamphudin	12.71	-	16	-
1DR015	Bardada-Sablakhu-Limbudin-Mehele-Surumkhim-Khewang-Yamphudin	6.80	-	-	-
1DR016	Sablakhu-Ankhop-Sadewa-Kalikhola-Tingbung Pokhari	2.30	-	-	-
Total		154.56	-	71	-

3.3 New Construction

New construction of DRCN roads is required to connect the almost all VDC headquarters. A list of proposed roads for new construction is provided below. Although, the existing and under planning SRN passes through 10 VDCs, several years (at least first DTMP period) is yet to be required to make all-weather condition in terms of vehicular movement. Of total 16 DRCNs with 376.88 km length, 15 roads with 154.56 km length are earthen surface with under construction status, which are considered as fair-weather road only. Among identified DRCNs, 5 roads are being under construction by DoR 1 road is being under construction by DRILP project under DDC Taplejung within this DTMP period. Similarly, 1 road which connects Pathibhara temple with district headquarters through Mechi highway is being under constructed as tourism road by DoR with

other organizations involved in tourism. Now, these roads (SRN and DRCN) provide access to all VDC HQs.

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)
1DR001	H0713(Bahande)-Dhovan-Santhakra-Lingtep-Thukimba-Papung	Santhakra, Lingtep, Thukimba, Papung	21.00	42.20	
1DR002	Santhakra-Thinglambu-Phakumba-Shagu	Santhakra, Thinglabu, Phakumba, Saghu	1.80	12.99	
1DR003	Dhovan-Chage-Dhungeshagu-Saghu-Gufa	Dhungesaghu, Saghu	32.60	8.50	
1DR004	Hangpang- Saptami-Pavek-Chhatedhunga-Kerkere-Lali-Bungdhak road	Hangpang, Chage, Dhungesaghu, Saghu	3.30	12.40	15
1DR005	Bhanjyang(Khokling)-Liwang-Sanwa-Papung	Liwang, Sanwa, Papung	6.63	15.37	18
1DR006	Dhovan-Hangpang-Dadakharka(Hangpang)-Jugetar(Fulbari)-Nidhuradin	Hangpang, Phulbari, Ndhuradin	9.97	9.18	
1DR007	Handrung(Khokling)-Sawadin-Khejenin-Ekhabu-Lelep	Khokling, Sawadin, Khejenin, Ekhabu, Lelep	7.45	15.38	
1DR009	DHQ (Buddhachowk)-Kamidada-Thechambu-Chaksibote-Thumbedhin	Thechambhu, Chaksibote, Thumbedhin	17.46	8.28	30
1DR010	Suketar-Deurali-Pathibhara road	Phurumbhu	9.94		
1DR011	Deurali-Phawakhola-Sikaicha-Tellok	Phawakhola, Sikaicha, Tellok	7.30	9.86	25
1DR012	Gupte-Tiringe	Tiringe	11.30		
1DR013	Chaksibote-Dumrise-Tiringe - Fawakhola road	Chaksibote, Dumrise, Tiringe, Phawakhola	4.00	11.99	28
1DR014	Dahalgau(Kabeli)-Khandingbe-Tellok-Yamphudin	Ambegudhin, Tellok, Yamphudin	12.71	19.04	15
1DR015	Bardada-Sablakhu-Limbudhin-Mehele-Surumkhim-Khewang-Yamphudin	Sablakhu, Limbudhin, Mehele, Surumkhim, Khewang, Yamphudin	6.80	23.65	
1DR016	Sablakhu-Ankhop-Sadewa-Kalikhola-Tingbung Pokhari	Ankhop, Sadewa, Kalikhola	2.30	15.98	
1DR008	Palungwa Chowk-Chharchhare-Mithlung-Sinwa-Chhiruwa-Tapethok-Hellok road	Handewa, Linkhim, Tapethok	-	17.50	
Total			154.56	222.32	131

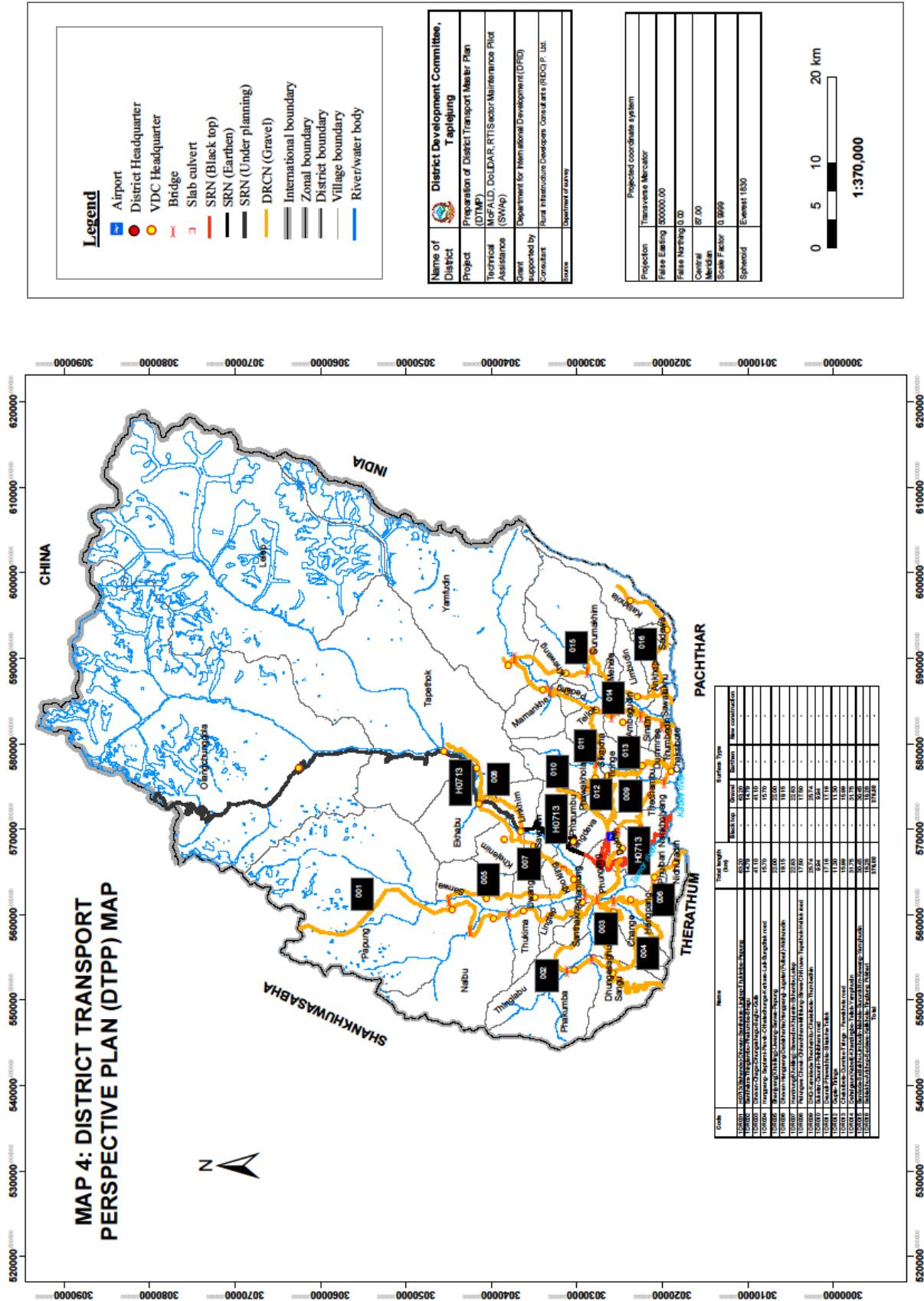
3.4 District Transport Perspective Plan

The DTPP foresees bringing the entire existing district road core network to maintainable all-weather status, and expanding it to provide access to all 50 VDC headquarters. For this purpose, all 154.56 km will be gravelled and a number of different cross drainage and protective structures will be constructed. A further 222.32 km of new road (including road planned, constructed and maintained by DOR and DRILP as mentioned above) will be constructed to maintainable all-weather gravel standard providing access to all VDC HQs. The district road core network will subsequently consist of 376.88 km of maintainable all-weather roads. The following table lists the required interventions, while the proposed network is shown in the DTPP map in Figure 4.

Table 3.4.1 District Transport Perspective Plan

Code	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)
1DR001	21.00	21.00	21.00	21.00	-	21.00	-	-	-	-	-	-	-	-	-	-	42.20
1DR002	1.80	1.80	1.80	1.80	-	1.80	-	-	-	-	-	-	-	-	-	-	12.99
1DR003	32.60	32.60	32.60	32.60	-	32.60	-	-	-	-	-	-	-	-	-	-	8.50
1DR004	3.30	3.30	3.30	3.30	-	3.30	-	-	15.00	8.00	-	-	5.00	-	262.50	50.00	12.40
1DR005	6.63	6.63	6.63	6.63	-	6.63	-	-	18.00	-	-	-	-	-	947.00	100.00	15.37
1DR006	9.97	9.97	9.97	9.97	-	9.97	-	-	30.00	8.00	-	-	2.00	-	176.00	300.00	9.18
1DR007	7.45	7.45	7.45	7.45	-	7.45	-	-	40.00	10.00	-	-	1.00	-	1,173.00	200.00	15.38
1DR009	17.46	17.46	17.46	17.46	-	17.46	-	-	30.00	18.00	-	-	13.00	-	180.00	700.00	8.28
1DR010	9.94	9.94	9.94	9.94	-	9.94	-	-	-	-	-	-	-	-	-	-	-
1DR011	7.30	7.30	7.30	7.30	-	7.30	-	-	25.00	10.00	-	22.00	6.00	-	217.00	150.00	9.86
1DR012	11.30	11.30	11.30	11.30	-	11.30	-	-	18.00	16.00	-	50.00	11.00	-	476.00	500.00	-
1DR013	4.00	4.00	4.00	4.00	-	4.00	-	-	28.00	-	-	-	-	-	-	80.00	11.99
1DR014	12.71	12.71	12.71	12.71	-	12.71	-	-	55.00	8.00	-	20.00	2.00	-	369.00	1,000.00	19.04
1DR015	6.80	6.80	6.80	6.80	-	6.80	-	-	-	-	-	-	-	-	-	-	23.65
1DR016	2.30	2.30	2.30	2.30	-	2.30	-	-	-	-	-	-	-	-	-	-	15.98
1DR008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.50
Total	154.56	154.56	154.56	154.56	-	154.56	-	-	259	78	-	92	40	-	3,801	3,080	222.32

Figure 4 District Transport Perspective Plan (DTPP)



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 these results 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.

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	350,000
Recurrent maintenance (earthen)	km	200,000
Periodic maintenance (blacktop)	km	200,000
Periodic maintenance (gravel)	km	225,000

For the first year the estimated costs for conservation of the existing DRCN come to NPR 38.64 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 193.2 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.

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

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
1DR001	21.00	-	-	21.00	630	420	-	-	4,200	-	-	5,250	26,250
1DR002	1.80	-	-	1.80	54	36	-	-	360	-	-	450	2,250
1DR003	32.60	-	-	32.60	978	652	-	-	6,520	-	-	8,150	40,750
1DR004	3.30	-	-	3.30	99	66	-	-	660	-	-	825	4,125
1DR005	6.63	-	-	6.63	199	133	-	-	1,326	-	-	1,658	8,288
1DR006	9.97	-	-	9.97	299	199	-	-	1,994	-	-	2,493	12,463
1DR007	7.45	-	-	7.45	224	149	-	-	1,490	-	-	1,863	9,313
1DR009	17.46	-	-	17.46	524	349	-	-	3,492	-	-	4,365	21,825
1DR010	9.94	-	-	9.94	298	199	-	-	1,988	-	-	2,485	12,425
1DR011	7.30	-	-	7.30	219	146	-	-	1,459	-	-	1,824	9,122
1DR012	11.30	-	-	11.30	339	226	-	-	2,260	-	-	2,825	14,125
1DR013	4.00	-	-	4.00	120	80	-	-	800	-	-	1,000	5,000
1DR014	12.71	-	-	12.71	381	254	-	-	2,542	-	-	3,178	15,888
1DR015	6.80	-	-	6.80	204	136	-	-	1,360	-	-	1,700	8,500
1DR016	2.30	-	-	2.30	69	46	-	-	460	-	-	575	2,875
Total	154.56	-	-	154.56	4,637	3,091	-	-	30,911	-	-	38,639	193,197

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.

Table 4.2.1 Standard unit costs for improvement activities

Activity	Unit	Unit cost (NPR)
Rehabilitation	km	960,000
Widening	m	30,000
Gravelling	km	2,640,000
Blacktopping	km	6,840,000
Bridge construction	m	720,000
Slab culvert construction	m	180,000
CC Causeway construction	m	120,000
Stone Causeway construction	m	12,000
Pipe culvert placement	unit	12,000
Masonry wall construction	m ³	12,000
Gabion wall construction	m ³	3,000
Lined drain construction	m	1,200

The resulting estimated costs come to NPR 530.91 million as indicated in the table 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
1DR001	21.00	-	-	55,440	-	-	-	-	-	-	-	-	-	55,440
1DR002	1.80	-	-	4,752	-	-	-	-	-	-	-	-	-	4,752
1DR003	32.60	-	-	86,064	-	-	-	-	-	-	-	-	-	86,064
1DR004	3.30	-	-	8,712	-	-	1,440	-	-	60	-	788	60	11,060
1DR005	6.63	-	-	17,503	-	-	-	-	-	-	-	2,841	120	20,464
1DR006	9.97	-	-	26,321	-	21,600	1,440	-	-	24	-	528	360	50,273
1DR007	7.45	-	-	19,668	-	28,800	1,800	-	-	12	-	3,519	240	54,039
1DR009	17.46	-	-	46,094	-	-	3,240	-	-	156	-	540	840	50,870
1DR010	9.94	-	-	26,242	-	-	-	-	-	-	-	-	-	26,242
1DR011	7.30	-	-	19,265	-	-	1,800	-	264	72	-	651	180	22,232
1DR012	11.30	-	-	29,832	-	12,960	2,880	-	600	132	-	1,428	600	48,432
1DR013	4.00	-	-	10,560	-	-	-	-	-	-	-	-	96	10,656
1DR014	12.71	-	-	33,554	-	28,800	1,440	-	240	24	-	1,107	1,200	66,365
1DR015	6.80	-	-	17,952	-	-	-	-	-	-	-	-	-	17,952
1DR016	2.30	-	-	6,072	-	-	-	-	-	-	-	-	-	6,072
Total	154.56	-	-	408,031	-	92,160	14,040	-	1,104	480	-	11,402	3,696	530,913

4.3 New Construction

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

Table 4.3.1 Standard unit costs for new construction

Activity	Unit	Unit cost (NPR)
Track opening	km	4,800,000
Gravelling	km	2,640,000
Bridge construction	m	720,000

The resulting estimated costs for new construction come to NPR 1748.4 million.

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

Code	Name of Road	New length (km)	Opening up (NPR)	Gravelling (NPR)	Bridges (NPR)	Total cost (NPR)
1DR001	H0713(Bahande)-Dhovan-Santhakra-Lingtep-Thukimba-Papung	42.20	202,560	111,408	-	313,968
1DR002	Santhakra-Thinglambu-Phakumba-Shagu	12.99	62,352	34,294	-	96,646
1DR003	Dhovan-Chage-Dhungeshagu-Saghu-Gufa	8.50	40,800	22,440	-	63,240
1DR004	Hangpang- Saptami-Pavek-Chhatedhunga-Kerkere-Lali-Bungdhak road	12.40	59,520	32,736	10,800	103,056
1DR005	Bhanjyang(Khokling)-Liwang-Sanwa-Papung	15.37	73,776	40,577	12,960	127,313
1DR006	Dhovan-Hangpang-Dadakharka(Hangpang)-Jugetar(Fulbari)-Nidhuradin	9.18	44,064	24,235	-	68,299
1DR007	Handrung(Khokling)-Sawadin-Khejenin-Ekhabu-Lelep	15.38	73,824	40,603	-	114,427
1DR009	DHQ (Buddhachowk)-Kamidada-Thechambu-Chaksibote-Thumbedhin	8.28	39,744	21,859	21,600	83,203
1DR010	Suketar-Deurali-Pathibhara road	-	-	-	-	-
1DR011	Deurali-Phawakhola-Sikaicha-Tellok	9.86	47,328	26,030	18,000	91,358
1DR012	Gupte-Tiringe	-	-	-	-	-
1DR013	Chaksibote-Dumrise-Tiringe - Fawakhola road	11.99	57,552	31,654	20,160	109,366
1DR014	Dahalgau(Kabeli)-Khandingbe-Tellok-Yamphudin	19.04	91,392	50,266	10,800	152,458
1DR015	Bardada-Sablakhu-Limbudin-Mehele-Surumkhim-Khewang-Yamphudin	23.65	113,520	62,436	-	175,956
1DR016	Sablakhu-Ankhop-Sadewa-Kalikhola-Tingbung Pokhari	15.98	76,704	42,187	-	118,891
1DR008	Palungwa Chowk-Chharchhare-Mithlung-Sinwa-Chhiruwa-Tapethok-Hellok road	17.50	84,000	46,200	-	130,200
Total		222.32	1,067,136	586,925	94,320	1,748,381

4.4 DTPP Costs

The total costs for the District Transport Perspective Plan come to NPR 2472.5 million as indicated in the table below.

Table 4.4.1 DTPP costs (NPR '000)

Code	Conservation	Improvement	New construction	Total
1DR001	26,250	55,440	313,968	395,658
1DR002	2,250	4,752	96,646	103,648
1DR003	40,750	86,064	63,240	190,054
1DR004	4,125	11,060	103,056	118,241
1DR005	8,288	20,464	127,313	156,065
1DR006	12,463	50,273	68,299	131,035
1DR007	9,313	54,039	114,427	177,779
1DR009	21,825	50,870	83,203	155,899
1DR010	12,425	26,242	-	38,667
1DR011	9,122	22,232	91,358	122,712
1DR012	14,125	48,432	-	62,557
1DR013	5,000	10,656	109,366	125,022
1DR014	15,888	66,365	152,458	234,711
1DR015	8,500	17,952	175,956	202,408
1DR016	2,875	6,072	118,891	127,838
1DR008	-	-	130,200	130,200
Total	193,197	530,913	1,748,381	2,472,490

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.

4.5 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.

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)
1DR001	21.00	630	420	-	-	4,200	-	-	DoR budget	26,667	-
1DR002	1.80	54	36	-	-	360	-	-	DoR	12,359	-
1DR003	32.60	978	652	-	-	6,520	-	-	DoR/DRILP	11,595	-
1DR004	3.30	99	66	-	-	660	-	-	825	7,782	106
1DR016	2.30	69	46	-	-	460	-	-	575	4,023	143
1DR015	6.80	204	136	-	-	1,360	-	-	1,700	10,767	158
1DR006	9.97	299	199	-	-	1,994	-	-	2,493	13,784	181
1DR005	6.63	199	133	-	-	1,326	-	-	1,658	9,160	181
1DR007	7.45	224	149	-	-	1,490	-	-	1,863	9,275	201
1DR013	4.00	120	80	-	-	800	-	-	1,000	4,170	240
1DR014	12.71	381	254	-	-	2,542	-	-	3,178	13,132	242
1DR011	7.30	219	146	-	-	1,459	-	-	1,824	7,483	244
1DR009	17.46	524	349	-	-	3,492	-	-	4,365	14,649	298
1DR010	9.94	298	199	-	-	1,988	-	-	2,485	8,232	302
1DR012	11.30	339	226	-	-	2,260	-	-	2,825	1,703	1,659

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.

Emergency maintenance

Routine maintenance

Recurrent maintenance paved roads

Recurrent maintenance gravel roads

Recurrent maintenance gravel roads

Periodic maintenance blacktop roads

Periodic maintenance gravel roads

4.6 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).

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)
1DR002	1.80	1.80	-	DoR	12,359	-
1DR001	21.00	21.00	-	DoR	26,667	-
1DR003	32.60	32.60	-	DoR/DRILP	11,595	-
1DR007	7.45	7.45	-	DoR	9,275	-
1DR010	9.94	9.94	-	DoR	8,232	-
1DR015	6.80	6.80	-	DoR	10,767	-
1DR016	2.30	2.30	-	DoR	4,023	-
1DR004	3.30	3.30	-	11,060	7,782	1,421
1DR005	6.63	6.63	-	20,464	9,160	2,234
1DR013	4.00	4.00	-	10,656	4,170	2,555
1DR011	7.30	7.30	-	22,232	7,483	2,971
1DR009	17.46	17.46	-	50,870	14,649	3,473
1DR006	9.97	9.97	-	50,273	13,784	3,647
1DR014	12.71	12.71	-	66,365	13,132	5,054
1DR012	11.30	11.30	-	48,432	1,703	28,439

4.7 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.

Table 5.3.1 Ranking of construction works (NPR '000)

Code	Length (km)	Total cost (NPR '000)	Population served	Cost/person (NPR)
1DR006	9.18	68,299	13,784	4,955
1DR003	8.50	63,240	11,595	5,454
1DR009	8.28	83,203	14,649	5,680
1DR002	12.99	96,646	12,359	7,820
1DR014	19.04	152,458	13,132	11,610
1DR001	42.20	313,968	26,667	11,774
1DR011	9.86	91,358	7,483	12,209
1DR007	15.38	114,427	9,275	12,337
1DR004	12.40	103,056	7,782	13,243
1DR005	15.37	127,313	9,160	13,899
1DR015	23.65	175,956	10,767	16,342
1DR008	17.50	130,200	5,819	22,375
1DR013	11.99	109,366	4,170	26,227
1DR016	15.98	118,891	4,023	29,553

5. 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.

5.1 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 412 million for the five-year period.

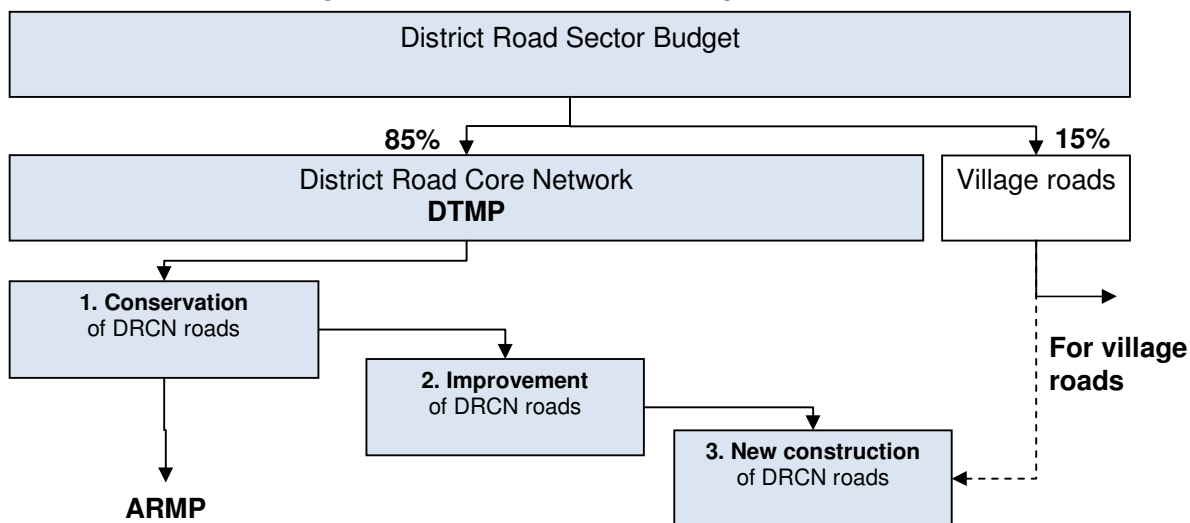
Table 6.1.1 Estimated funding levels (roads) for next five years (in NPR ‘000)

Funding source	2070/71	2071/72	2072/73	2073/74	2074/75
DDC internal revenue (10 % of total)	300	330	363	399	439
DDC grant (30 % of total)	3,990	4,389	4,828	5,311	5,842
Local agricultural rural road programme	11,000	12,100	13,310	14,641	16,105
Road board Nepal	1,950	2,145	2,360	2,595	2,855
Central road program	7,000	7,700	8,470	9,317	10,249
People participatory based programme (50 % of total)	0	0	0	0	0
Poverty allevation fund (50 % of total)	5,000	5,500	6,050	6,655	7,321
VDC grant (25 to 30 % of total)	27,000	29,700	32,670	35,937	39,531
Others					
People's contribution (20 % of total cost)	11,248	12,373	13,610	14,971	16,468
Total	67,488	74,237	81,660	89,827	98,809
Grand total	412,021				

5.2 Budget Allocation

The distribution of the available district road sector budget is indicated in the figure below. Due to the many number of existing road which are not categorized as DRCN, only 85% of the total budget is reserved for the district road core network including conservation, improvement and new construction. The remaining 15% is to be used by the DDC for the village roads, giving priority to emergency maintenance and routine/recurrent maintenance. The 85% 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. As the current budget in road sector is limited, the entire existing district road sector budget is allocated to conservation of 72.67 km and improvement of 57.49 km existing road respectively in Taplejung district.

Figure 5 District Road Sector Budget Allocation



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

A	Item				Year																																																												
	Fiscal year				2070/71				2071/72				2072/73				2073/74				2074/75																																												
	Total budget				67,488				74,237				81,660				89,827				98,809																																												
	Village roads				10,123				11,136				12,249				13,474				14,821				15%																																								
	Core road network budget (DTMP)				57,365				63,101				69,411				76,353				83,988				85%																																								
B	Core network length (km)				72.67				72.67				72.67				72.67				72.67																																												
	Blacktop (km)				-				-				-				-				-																																												
	Gravel (km)				-				12.81				26.35				39.76				48.34				57.49																																								
	Earthen (km)				72.67				59.86				46.32				32.91				24.32				15.18																																								
C	Conservation (NRs)				18,167				22,971				28,047				33,077				36,295				138,55																																								
	Emergency				2,180				2,180				2,180				2,180				2,180																																												
	Routine				1,453				1,453				1,453				1,453				1,453																																												
	Recurrent (blacktop)				-				-				-				-				-																																												
	Recurrent (gravel)				-				4,484				9,221				13,916				16,920																																												
	Recurrent (earthen)				14,533				11,971				9,264				6,581				4,865																																												
	Periodic (blacktop)				-				-				-				-				-																																												
	Periodic (gravel)				-				2,882				5,928				8,946				10,877																																												
D	Improve ment	Cost	BT	GR	39,198	BT	GR	40,130	BT	GR	41,364	B T	GR	43,276	B T	GR	47,693	BT	GR																																														
	1DR002	-	-	1.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																																														
	1DR001	-	-	21.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																																														
	1DR003	-	-	32.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																																														
	1DR007	-	-	7.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																																														
	1DR010	-	-	9.94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																																														
	1DR015	-	-	6.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																																														
	1DR016	-	-	2.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																																														
	1DR004	11,060	-	3.30	11,060	-	3.30	-	-	-	-	-	-	-	-	-	-	-	-																																														
	1DR005	20,464	-	6.63	20,464	-	6.63	-	-	-	-	-	-	-	-	-	-	-	-																																														
	1DR013	10,656	-	4.00	7,674	-	2.88	2,982	-	1.12	-	-	-	-	-	-	-	-	-																																														
	1DR011	22,232	-	7.30	-	-	-	22,232	-	7.30	-	-	-	-	-	-	-	-	-																																														
	1DR009	50,870	-	17.46	-	-	-	14,917	-	5.12	35,953	-	12.34	-	-	-	-	-	-																																														
	1DR006	50,273	-	9.97	-	-	-	-	-	-	5,411	-	1.07	43,276	-	8.58	1,586	-	0.31																																														
	1DR014	66,365	-	12.71	-	-	-	-	-	-	-	-	-	-	-	-	46,107	-	8.83																																														
	1DR012	48,432	-	11.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																																														
	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																																														
	Total improvement				39,198				-				12.81				40,130				-				13.54				41,364				-				13.41				43,276				-				8.58				47,693				-				9.14				211,661
E	Constru ction	Cost	GR	-	GR	-	GR	-	GR	-	GR	-	GR	-	GR	-	GR	-	GR																																														
	1DR001	313,968	42.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																																														
	1DR002	96,646	12.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																																														
	1DR003	63,240	8.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																																														
	1DR004	103,056	12.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																																														

District Transport Master Plan (DTMP) of Taplejung District

F	1DR005	127,313	15.37	-		-					-	-
	1DR006	68,299	9.18	-		-					-	-
	1DR007	114,427	15.38	-		-					-	-
	1DR009	83,203	8.28	-		-					-	-
	1DR004	-	12.40	-		-					-	-
	1DR011	91,358	9.86	-	-	-	-	-	-	-	-	-
	1DR012	-	-	-		-					-	-
	1DR013	109,366	11.99	-	-	-	-	-	-	-	-	-
	1DR014	152,458	19.04		-		-				-	-
	1DR015	175,956	23.65		-		-				-	-
	1DR016	118,891	15.98		-		-				-	-
	1DR008	130,200	17.50		-		-				-	-
		-	-		-		-				-	-
		-	-		-		-				-	-
		Total new construction			-	-	-	-	-	-	-	-
	Remaining budget			-	-	-	-	-	-	-	-	-

5.3 DTMP Outputs

Based on the investment plan presented above, all existing DRCN roads will be conserved for the duration of the DTMP period. A further 57.49 km will be improved to gravel standard in the first DTMP period. 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 using other direct road project fund and VDC funding).

Table 6.3.1 DTMP output

Conservation	Improvement gravel	Improvement blacktop	New construction
72.67	57.49	-	-

Of the total DTMP budget, NPR 138.56 million will be spent on conservation of 72.67 km and NPR 211.66 million on improvement of 57.49 km DRCN road. This will use up the entire DTMP budget for the five-year period.

5.4 DTMP Outcome

As a result of the activities planned in this DTMP, the length of all-weather maintainable DRCN roads under the responsibility of DDC increases from 0 km to 57.49 km. Moreover, 79% of existing road that are constructed and maintained by DDC becomes all-weather during first DTMP period.

Table 6.4.1 Standard of DRCN roads

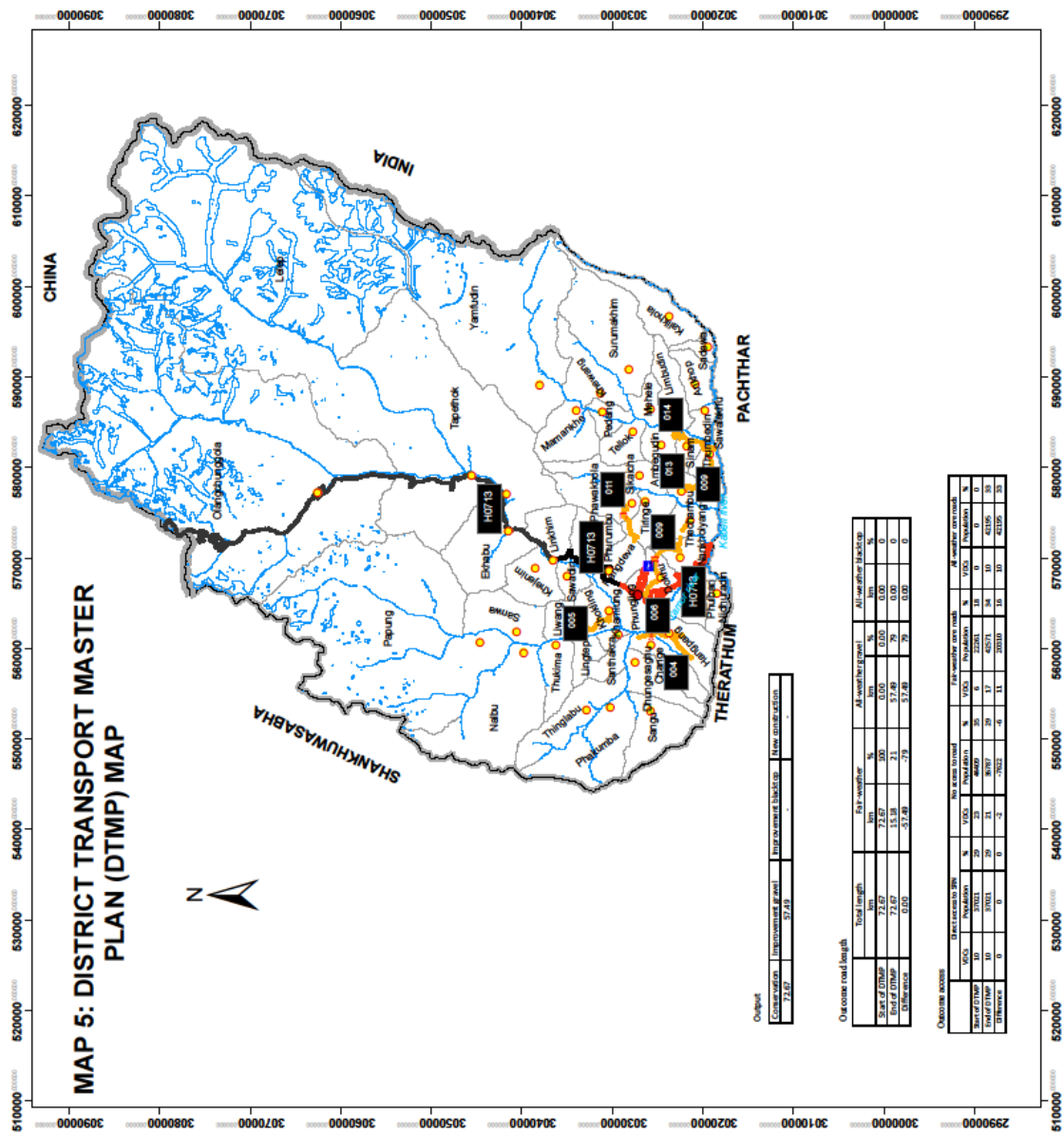
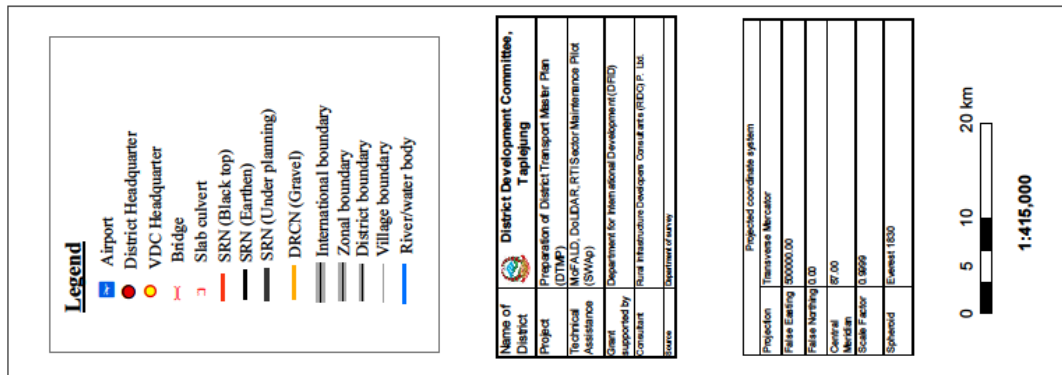
	Total length	Fair-weather		All-weather gravel		All-weather blacktop	
	km	km	%	km	%	km	%
Start of DTMP	72.67	72.67	100%	-	0%	-	0%
End of DTMP	72.67	15.18	21%	57.49	79%	-	0%
Difference	-	- 57.49	-79%	57.49	79%	-	0%

As the existing SRN road is not in all-weather condition, the number of VDC headquarters with access to the SRN or all-weather DRCN roads will increase from 0 to 10 and the district population with access to the all-weather DRCN roads will increase from 0% to 33%. Moreover, 29% of district population with access to the SRN if completed during DTMP period.

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		
	VD Cs	Population	%	VDCs	Population	%	VDCs	Population	%	VDCs	Population	%
Start of DTMP	10	37,021	29%	23	44,409	35%	6	22,261	18%	0	-	0%
End of DTMP	10	37,021	29%	21	36,787	29%	17	42,571	34%	10	42,195	33%
Difference	-	-	0%	- 2	- 7,622	- 6%	11	20,310	16%	10	42,195	33%

Figure 6 District Transport Master Plan (DTMP)



ANNEXES

ANNEX 1 Letter and Minutes



डाँचेची जडियुटी जकाश्रोत २ पर्यटन समुन्नत समाजको लागि समावेशी विकास २ सुशासन
नेपाल सरकार

संघीय मामिला तथा स्थानीय विकास मन्त्रालय
जिल्ला विकास समितिको कार्यालय
ताप्लेजुङ



पत्र संख्या : ०७०/०७१
चलानी नम्बर १६८

मिति: २०७०/५/७
(मेची अञ्चल, नेपाल)

विषय

विषय : कार्यसम्पादन भएको बारे

श्री टिम लिडर

ग्रामिण यातायात पूर्वाधार क्षेत्रगत कार्यक्रम, ललितपुर

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

(भरतमणी पाण्डे)

स्थानीय विकास अधिकारी

स्थानीय विकास अधिकारी

☎ ०२४-४६०१४३ (स्था.वि.अ.) ☎ ०२४-४६०१४४ (यो.अ. तथा प्र.अ.) ☎ ०२४-४६००६५ (योजना)
☎ ०२४-४६०३८० (लेखा) फ्याक्स नं. : ☎ ०२४४६०१४३/०२४-४६००६५

✉ :- taplejungddc@gmail.com 🌐 :- www.ddctaplejung.gov.np

समाप्त मिति २०६०/०३/१६ गते जिल्ला विकास समितिको शलमा ताप्लेजुङ, जिल्लाका स्थानिय विकास अधिकारी श्री भरतमणि पाण्डे ज्यू को अध्यक्षता बैठक बसे यस ताप्लेजुङ, जिल्लाको सडक सुदुरोच्चता तथा गर्ने तिलसिलामा आयोजना गरिएको अभि-मुद्रितकाण जोफिम। तथा शल वसोधिभका प्रदान-भावशुभका उपस्थितमा बैठकपस विषय गरियो।

उपस्थितहरू

- | | | | |
|-----|--------------------|---|--|
| | | पद | |
| १. | किरण थापा | पुस, १९ | |
| २. | भरतमणि पाण्डे | स्थानिय विकास अधिकारी | |
| ३. | तिलकुमार मैनाङ्को | अध्यक्ष नेउपा (पुमाले) | |
| ४. | रामपाल माने | नेउपा माझवादी (खैरहामाले) | |
| ५. | जंग सुनुवार | संघीय निम्त्रक राज्य परिषद | |
| ६. | कुन्दकुमार श्रेष्ठ | मन्त्र सचिव संघिय सचिव कृषि तथा शान्तिक | |
| ७. | सुवेदी बहाल | श्री. प्र. न. नेपाल | |
| ८. | हमराज बहाल | गा. वि. स. सचिव विद्यार्थी गा. वि. स. | |
| ९. | भद्र बहाल | प्रतिनिधि संघिय सचिव प्रा. प्रा. | |
| १०. | मौनी तुम्बासोन्डे | रा. उ. मू. या. कृ. ली. नि. ची | |
| ११. | विजय विराती | श्री. प्र. न. (माझवादी) | |
| १२. | सुवेदी बहाल | गा. वि. स. सचिव ताप्लेजुङ, जि. ता. पु. | |
| १३. | सुवेदी बहाल | स्थापति नेपाल | |
| १४. | सुवेदी बहाल | इन्चार्ज | |
| १५. | सुवेदी बहाल | सचिव नापु | |
| १६. | सुवेदी बहाल | प. क. वि. म. | |
| १७. | सुवेदी बहाल | ले. वि. क. | |
| १८. | सुवेदी बहाल | प्रतिनिधि सभा | |
| १९. | सुवेदी बहाल | सचिव | |
| २०. | सुवेदी बहाल | सचिव | |
| २१. | सुवेदी बहाल | सचिव | |
| २२. | सुवेदी बहाल | सचिव | |
| २३. | सुवेदी बहाल | सचिव | |
| २४. | सुवेदी बहाल | सचिव | |
| २५. | सुवेदी बहाल | सचिव | |
| २६. | सुवेदी बहाल | सचिव | |
| २७. | सुवेदी बहाल | सचिव | |
| २८. | सुवेदी बहाल | सचिव | |
| २९. | सुवेदी बहाल | सचिव | |
| ३०. | सुवेदी बहाल | सचिव | |

- 25. हि अमृत मणि रिमल - उत्तर दक्षिण लोडमार्ग
- 26. सज्जु शेरे जोरवापुत्र दैतके सवाहारा
- 27. स्वका के गुनड दलित उत्थान प्रंच तालेजुङ
- 28. शान्ता आडवुहाङ शान्देय समावा सामवे समावाहारा
- 29. लडु प्र. पाषाणार्ड र.क.प. रमाले डि.क.स.
- 30. रकौकु प्रिचिडटी सडिपो ल. ल. ल. ल.

[Handwritten signatures and initials]

आज मिति २०७०/०८/१८ गते शुक्रवार जि. वि. स. को सभा हलमा - जि. वि. स. को कार्यालय ताप्लेजुङ्गमा स्वाताये विद्यालय अधिकाारी श्री भरत-मजो पाठे उपरको प्रष्टाक्षतामा वड्ड कसो ताप्लेजुङ्गको यातायात गुणव्यवस्था तथा मूल्य सडक सडक दर्नाई जेष्ठो सम्बन्धी गोठो निम्न प्रस्तुतमा प्रष्टा उपस्थितो भएन अनुसारको निर्णय छ गारयो।

उपस्थितो

- १) प्रमुख जिल्ला अधिकाारी :- श्री डिरल थापा
- २) स्वाताये विद्यालय अधिकाारी :- श्री भरतमजी पाठे
- ३) एड्युकेट ने. ड. पा. माओवादी :- श्री विजय विराती
- ४) नेपाली कांग्रेस :- श्री कुशुव प्रसाद खडाल
- ५) ने. ड. पा. (समाल) :- श्री यल क. राय
- ६) ने. ड. पा. (माओवादी) :- श्री रामान
- ७) प्रच्य सम्बद्ध से. लि. स. परेषद :- श्री स. दु. बु. म. म. म.
- ८) राष्ट्रिय जनमुक्ति पार्टी :- श्री प्रकाश मेडवम
- ९) राष्ट्रिय जनशक्ति पार्टी :- श्री
- १०) राष्ट्रिय जनता पार्टी नेपाल :- श्री
- ११) सदीय लिम्बुवान राज्य परिषद :- श्री
- १२) जिल्ला इन्जिनियर :- श्री युसिल कुमार श्रेष्ठ
- १३) इन्जिनियर वि. वि. सेवा विभाग का. प्रमुख/सहायक प्रमुख
- १४) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा
- १५) सहाय सभापति पाली नेपाल भक्त मेडवम
- १६) ताप्लेजुङ्ग इन्जिनियरिंग कालिन्जरी सिंह मी. राम ठाडी
- १७) कार्यालयमा उपस्थित वकील/उपस्थित श्री विजय पाठे
- १८) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा - इन्दिरा ठाडी
- १९) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा - नैना काली
- २०) सामाजिक विज्ञान/संस्कृत विभाग/सहायक प्रमुख - राय/गुरु/...
- २१) नेपाल टेलिभिजन - विराट कुमार लामा
- २२) सामुदायिक विकासको लागि केंद्रीय समूह - हरी पौडेल
- २३) सेना प्रमुख/उपप्रमुख (स. वि. स.)
- २४) स. वि. स. को कार्यालय ताप्लेजुङ्गमा
- २५) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा
- २६) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा
- २७) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा
- २८) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा
- २९) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा
- ३०) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा
- ३१) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा
- ३२) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा
- ३३) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा
- ३४) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा
- ३५) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा
- ३६) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा
- ३७) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा
- ३८) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा
- ३९) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा
- ४०) सि. वि. स. को कार्यालय ताप्लेजुङ्गमा

~~10/11/11~~

निर्णयहरू:

माथि उल्लेखित महासुमारेहरूको उपस्थितिमा विभिन्न वडाहरूलाई जिल्ला सडक मुख्य सञ्जाल (District Road Core Network) को रूपमा छनोट गर्ने निर्णय गरियो।

1. 1DR001: DHR (Buspark) - Deulinge - Dovan - Santhakra - Lingtep - Thukumba - Nalbu - Papung road
2. 1DR002: Santhakra - Thingambu - Phakumba - shagu road
3. 1DR003: Dhovan - Chage - Dhunge shagu - saghu - GuFa road.
4. 1DR004: Bhawjyang (Khokling) - Liwang - Sanwa - Papung road
5. 1DR005: Handrung (Khokling) - Sawadin - Khejehin - Ekhauba road
6. 1DR006: Dhovan - Hangpang - Dadakharaka (Hangpang) - Jyeter (Fulbari) - Midhyredhin - Waku road
7. 1DR007: Suketar - Deurali - Pathibhara - Tapethok road
8. 1DR008: DHR - Kawidada - Thechaubu - Chaksibote - Thumbedhin road
9. 1DR009: Deurali - Phawakhola - Sikaicha - Tellok road
10. 1DR010: Dahalgamn (Kabeli) - Khandingbe - Tellok - Kamphudin road
11. 1DR011: Bardada - Sablaxhu - Limbudin - Menele - Sarmakhim - Kewang - Kamphudin road
12. 1DR012: Sablaxhu - Ankhop - Sadeba - Kalikhola - Tingbung Pokhari road.

~~10/11/11~~

आज मिति २०७०/१६/१६ गते जिल्ला विद्यालय समितिबाट अन्तर्गत तथा
 तथा वि. सं. भरतमणी पाठशाला अन्तर्गतमा देहायको पार्टी प्रतिनिधिः
 हतको उपरिचयमा वरिष्ठ ताल जिल्ला जिल्ला सडक गुरुयोजनाको
 मुख्य सडक प्राथमिकता तथा ब्यापार प्रतिवेदन प्रस्तुत देहायको
 उपरिचयमा गरी निम्न वसोतजम निर्णय गरियो।

दुग्धस्थिति

अध्यक्ष जिला सडक वि. प्रशासक (माथोमाथो) पाठशाला	विजय विरात	
नेपाली कांग्रेस	कुशुम प्रसाद खत्री	
नेकपा एमाले	चन्द्र-प्रसाद शर्मा	
नेकपा माओवादी	कृष्ण लाल खत्री	

संघीय विद्युत्त राज्य परिषद जिल्ला कार्यालय कुमायु रामगु
 संघीय कृषि तथा पशु पालन सह-संयोजक अफिस नुवाकोट
 संघीय विद्युत्त राज्य परिषद जिल्ला कार्यालय कुमायु रामगु
 कञ्चन भद्रा संघीय पशु पालन परिषद
 सामुदायिक विकासको लागि विकासको - सडक पोलिस -
 यलित इन्जिनियरिंग मंत्र तालिमकु - खड्क बहादुर गुड्डा
 राठ प्रहारी युवराज शर्मा
 रैडिया तालिमकु केशव गुड्डा
 एन. ए. महाविद्यालय तारा प्रसाद शिरोवा
 जि. प्रविधिको कार्यालय रैनादेवी बराल
 फोनिज/अध्यक्ष/गोरेखापत्र देवी प्रयास लिम्बु
 चिकित्सा प्राविधिक कार्यालय नासिरादिग-शर्मा
 डोगरीड इन्जिनियर रविकुमार खत्री
 नागरीक वीजीनु निवेनाला
 राठ प्रहारी ज्ञाना क्रावुहाड
 रैडिया तालिमकु माला पाण्डेवा
 विद्युत्त नेपाली सेना सीता शिरोवा
 ता-डी राज्य कार्यालय वि. उद्योग प्राणि विभाग
 व. क. वि. अ., जि. क. वि. का. तालिमकु लक्ष्मी प्रसाद खत्री
 राठ प्रहारी मोहन प्रसाद खत्री तालिमकु २
 गाउँपालिका जनसूक्ति पार्टी प्रतिनिधि श्री प्रकाश खत्री
 जिल्ला प्राविधिक कार्यालय - सुपिल कुमायु खत्री

कुलानन्द चौधरी
 सुलाहा शिरोवा

शिविर
 सामुदायिक विकासको लागि प्राविधिक कार्यालय लक्ष्मी प्रसाद खत्री
 राठ प्रहारी नेपाल एन. ए. महाविद्यालय तारा प्रसाद शिरोवा
 जि. प्रविधिको कार्यालय रैनादेवी बराल
 फोनिज/अध्यक्ष/गोरेखापत्र देवी प्रयास लिम्बु
 चिकित्सा प्राविधिक कार्यालय नासिरादिग-शर्मा
 डोगरीड इन्जिनियर रविकुमार खत्री
 नागरीक वीजीनु निवेनाला
 राठ प्रहारी ज्ञाना क्रावुहाड
 रैडिया तालिमकु माला पाण्डेवा
 विद्युत्त नेपाली सेना सीता शिरोवा
 ता-डी राज्य कार्यालय वि. उद्योग प्राणि विभाग
 व. क. वि. अ., जि. क. वि. का. तालिमकु लक्ष्मी प्रसाद खत्री
 राठ प्रहारी मोहन प्रसाद खत्री तालिमकु २

जिल्ला प्राविधिक कार्यालय बुला गाँवदेखि

कमलुङ्ग पोखरी का. स्. सी. वि. संस्था

सानेरा हेडमा खोला जि. वि. संस्था 20मी

गैरु कलुकाल नेपाल महिला उद्यम संस्था

बिना थापा प्रमुख महिला कर्मिणी

पद्म गिरी वि. वि. सं.

कैलाश वि. संस्था - बि. वि. सं. ११

बेकैया भन्डारे - प्राविधिक वि. संस्था

उदवी भन्डारे - वि. वि. सं. का. सं.

बैजुना वि. संस्था प्राविधिक वि. संस्था

आवृष वि. संस्था - सब - इन्जिनियर - ११

गोविन्द आला समा वि. संस्था का. सं.

कृष्ण वि. संस्था - ()

निर्णय

माथि छल्लोकोत महासमावेष्टक उपरिचालिमा निम्न सडकहरूलाई
 जिल्ला सडक (District Road Core Network) को रूपमा घोषणा
 गरी निर्णय गरियो ।

S.N.	Name	Remarks
1	H0713(Bahande)-Dhovan-Santhakra-Lingtep-Thukimba-Papung	DoR
2	Santhakra-Thinglambu-Phakumba-Shagu	DoR
3	Dhovan-Chage-Dhungeshagu-Saghu-Gufa	DRILP/D oR
4	Bhanjyang(Khokling)-Liwang-Sanwa-Papung	DDC
5	Handrung(Khokling)-Sawadin-Khejenin-Ekhambu-Lelep road	DoR
6	Dhovan-Hangpang-Dadakharka(Hangpang)-Jugetar(Fulbari)-Nidhuradin	DDC
7	Suketar-Deurali-Pathibhara road	/DoR
8	DHQ (Buddha Chowk)-Kamidada-Thechambu-Chaksibote-Thumbedhin	DDC
9	Deurali-Phawakhola-Sikaicha-Tellok	DDC
10	Dahalgau(Kabeli)-Khandingbe-Tellok-Yamphudin	DDC
11	Bardada-Sablakhu-Limbudin-Mehele-Surumkhim-Khewang-Yamphudin -	DoR
12	Sablakhu-Ankhop-Sadewa-Kalikhola-Tingbung Pokhari	DoR
13	Gupte-Tiringe road	DDC
14	Chaksibote-Dumrise-Tiringe - Fawakhola road	DDC
15	Hangpang- Saptami-Pavek-Chhatedhunga-Kerkere-Lali-Bungdhak road	DDC
16	Palungwa Chowk-Chharchhare-Mithlung-Sinwa-Chhiruwa-Tapethok-Hellok	DDC

Handwritten signatures and initials, including names like 'Suman', 'BMS', and 'Saghu', along with some scribbles and marks.

ANNEX 2 Populations Served

S N	VDC /municipality	Population	Road														SRN	
			1DR001	1DR002	1DR003	1DR004	1DR005	1DR006	1DR007	1DR009	1DR010	1DR011	1DR012	1DR013	1DR014	1DR015		1DR016
1	Ambegudin	2,979												X				
2	Angkhop	2,346														X		
3	Chaksibote	908								X				X				
4	Change	4,034			X	X		X										
5	Dhungesanghu	3,748			X	X												
6	Dokhu	4,111								X								X
7	Dummrise	1,559											X					
8	Ekhabu	2,032							X									X
9	Hangdewa	3,605									X						X	X
10	Hangpang	3,719						X										
11	Kalikhola	629														X		
12	Khamlung	1,517	X															
13	Khejenim	2,406							X									
14	Khewang	2,691													X			
15	Khokling	3,376					X		X									
16	Lelep	2,205																X
17	Limbudin	1,832													X			
18	Lingtep	1,616	X															
19	Linkhim	2,214									X						X	X
20	Liwang	1,753					X											
21	Mamangkhe	1,135												X				
22	Mehele	2,357													X			
23	Nalbu	1,849	X															
24	Nangkholyang	3,768								X								X
25	Nidhuradin	2,501						X										
26	Olangchung Gola	239																X
27	Papung	1,621	X				X											
28	Pedang	1,701												X				
29	Phakumba	3,476		X														
30	Phawakhola	1,303									X							
31	Phulbari	3,530						X										
32	Phungling	14,974	X															X
33	Phurumbu	2,413								X								X
34	Sablakhu	2,133													X			
35	Sadewa	1,048														X		
36	Sanghu	3,813		X	X													
37	Santhakra	2,594	X	X														
38	Sanwa	2,410					X											
39	Sawandin	1,461							X									
40	Sikaicha	2,250									X							

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41	Sinam	2,093												X					
42	Surumkhim	1,754													X				
43	Tapethok	1,460																	X
44	Tellok	2,227								X				X					
45	Thechambu	3,386							X										
46	Thinglabu	2,476		X					X										
47	Thukimma	2,496	X																
48	Thumbedin	2,267												X					
49	Tiringe	1,703								X	X	X							
50	Yamfudin	730												X					
	Total population	126,448	26,667	12,359	11,595	7,782	9,160	13,784	9,275	14,649	8,232	7,483	1,703	4,170	13,132	10,767	4,023	5,819	37,021
	Total VDCs/municipalities	50	7	4	3	2	4	4	4	5	3	4	1	3	7	5	3	2	10

ANNEX 3 Level of Access

SN	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	Ambegudin			x			x	
2	Angkhop				x			
3	Chaksibote		x					
4	Change			x				
5	Dhungesanghu	x			x			
6	Dokhu			x			X	X
7	Dummrise	x	x					
8	Ekhabu							X
9	Hangdewa			x			x	X
10	Hangpang			x			x	
11	Kalikhola	x	x					
12	Khamlung				x			
13	Khejenim				x			
14	Khewang	x	x					
15	Khokling				x		x	
16	Lelep							X
17	Limbudin	x	x					
18	Lingtep				x			
19	Linkhim				x			X
20	Liwang	x	x					
21	Mamangkhe	x	x					
22	Mehele	x	x					
23	Nalbu	x	x					
24	Nangkholyang						x	X
25	Nidhuradin	x			x			
26	Olangchung Gola	x	x					X
27	Papung	x	x					
28	Pedang	x	x					
29	Phakumba		x					
30	Phawakhola						x	
31	Phulbari	x			x			
32	Phungling						x	X
33	Phurumbu				x			X
34	Sablakhu				x			
35	Sadewa				x			
36	Sanghu			x	x			
37	Santhakra				x			
38	Sanwa	x	x					
39	Sawandin	x	x					
40	Sikaicha	x	x					
41	Sinam						x	

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42	Surumkhim	x	x					
43	Tapethok	x	x					X
44	Tellok	x			x			
45	Thechambu				x			
46	Thinglabu	x	x					
47	Thukimma	x	x					
48	Thumbedin						x	
49	Tiringe				x			
50	Yamfudin	x	x					
	Total population	44,409	36,787	22,261	42,571	-	42,195	37,021
	Total VDCs	23	21	6	17	0	10	10

ANNEX 4 Overall Inventories

S.N.	Name	Total Length (km)	Surface Type		
			Black top	Gravel	Earthen
1	Ambegudin 2-3-4 road	0.89	-	-	0.89
2	Arm Police checking point-H0713	2.95	-	-	2.95
3	Bahande-Dhovan (DoR)	7.50	-	-	7.50
4	Dhovan-Santhakra-Lingtep-Thukimba-Papung (DoR)	13.50	-	-	13.50
5	Bardada-Sablakhu-Limbudin-Mehele (DoR)	6.80	-	-	6.80
6	Batase-Charpate gaun road	1.19	-	-	1.19
7	Sablakhu Bhanjyang-Ankhop (PAF)	2.33	-	-	2.33
8	Buspark-Tinbare-Medhibung-Dhovan road	6.78	-	-	6.78
9	Chage-Gorga-Bhuje-Gufa Pokhari	0.90	-	-	0.90
10	Chipchipe-Gairigaun-Kamidada-Mewakha road	6.72	-	-	6.72
11	Dadele-Pathibhara road	0.57	-	-	0.57
12	Dahal gaun (Kabeli)-Tellok road	12.69	-	-	12.69
13	Harandi gaun road	0.35	-	-	0.35
14	Deurali-Phawakhola road	7.30	-	-	7.30
15	Dhovan-Chage-Dhungesagu-Sagu-Gufa Pokhari (DRILP Part)	20.60	-	-	20.60
16	Dhovan-Chage-Dhungesagu-Sagu-Gufa Pokhari (DoR Part)	12.00	-	-	12.00
17	Santhakra-Thinglabu-Phakumba-Sagu road (DoR)	1.80	-	-	1.80
18	Dhovan-Chage-Tirtire-Dhungesagu-Fakumba road	2.45	-	-	2.45
19	Dhovan-Hampang-Jugetar-Fulbari- Nidhuradin-Sakranti	9.97	-	-	9.97
20	Dumrise-Khwang rural road	4.07	-	-	4.07
21	Gupte-Tiringe-Sikaicha road	11.42	-	-	11.42
22	H0713(DHQ)-Kamidada-Thechambu road	11.17	-	-	11.17
23	H0713-Khahare-Techambu (punedada road)	3.88	-	-	3.88
24	Handrung-Khokling-Sawadin-Khejjenin-Ikhabu-Lelep	6.94	-	-	6.94
25	Hangpang-Khamlung(Therathum)	1.33	-	-	1.33
26	Hangpang-Saptami-Chage-Machhapokhari-Lalishanghu	3.27	-	-	3.27
27	Helipad-.. road	0.36	-	-	0.36
28	Hydropower road (Ambegudin)	1.00	-	-	1.00
29	Kattike-Bardada-Limbudhin road	0.78	-	-	0.78
30	Khadkagaun-Sawadin-Salleri-Limbudhin road	1.26	-	-	1.26
31	Khamlung-Santhakra (Sulumphi-Khansakpa)-PAF	3.00	-	-	3.00
32	Khokling-Libang-Sanwa-Tapung	6.63	-	-	6.63
33	Lingtep rural road (Dingla-Hansedin-Khamlung)-PAF	4.00	-	-	4.00
34	Namlepati-Khokse road	2.10	-	-	2.10
35	Odile road	0.65	-	-	0.65
36	Kabeli- Thechambhu (Thechambhu VDC)- DoR	2.17	-	-	2.17
37	Kamidada road (Thechambhu VDC) - DoR	1.65	-	-	1.65
38	Thechambhu - Tirtire (Thechambhu VDC)- DDC	1.06	-	-	1.06
39	Phungling road (1)	2.22	-	-	2.22

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40	Phungling road 2	4.48	-	-	4.48
41	Phungling road 3	1.53	-	-	1.53
42	Phungling road 4	0.86	-	-	0.86
43	Phungling road 5	0.83	-	-	0.83
44	Sakphara-Khamlung road (PAF)	3.00	-	-	3.00
45	Sinam road (PAF)	3.22	-	-	3.22
46	Suketar-Deurali-Pathibhara road	9.94	-	-	9.94
47	Thumbedin-Chaksibote-Thechambu (Kamidada road)	4.46	-	-	4.46
48	Thumse gaun road	0.72	-	-	0.72
49	Tirtire-Tellabung-Dhungesagu-Tembesagu road	0.67	-	-	0.67
50	Madibung-Bhaise road (PAF)	4.30	-	-	4.30
51	Okharbote-Lasa road (PAF)	1.47	-	-	1.47
52	Raja-Dhuping rural road (PAF)	2.43	-	-	2.43
53	Terse Bhanjyang-Fawa khola road (Tourism committee)	1.50	-	-	1.50
54	Maharanitar-Nibhare-Karkichowk (Phurumbhu)-PAF	5.00	-	-	5.00
Total		230.68	-	-	230.68

Table A4.1 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	Condition - Good/Fair	Condition - Poor	Condition - Temporarily Impassable	Condition - Permanently Impassable
1DR004	Hangpang- Saptami-Pavek-Chhatedhunga-Kerkere-Lali-Bungdhak road	3.30	0	3.3			3.30		3.30		3.3		
1DR005	Bhanjyang(Khokling)-Liwang-Sanwa-Papung	6.63	0	6.63			6.63		6.63		6.63		
1DR006	Dhovan-Hangpang-Dadakharka(Hangpang)-Jugetar(Fulbari)-Nidhuradin	9.97	0	9.97			9.97		9.97		9.97		
1DR009	DHQ (Buddhachowk)-Kamidada-Thechambu-Chaksibote-Thumbedhin	17.46	0	17.46			17.46		17.46		17.46		
1DR011	Deurali-Phawakhola-Sikaicha-Tellok	7.29	0	7.29			7.30		7.30	7.3			
1DR012	Gupte-Tiringe	11.3	0	11.3			11.30		11.30		11.3		
1DR013	Chaksibote-Dumrise-Tiringe - Fawakhola road	4	0	4			4.00		4.00				4
1DR014	Dahalgau(Kabeli)-Khandingbe-Tellok-Yamphudin	12.71	0	12.71			12.71		12.71	12.71			
Total		72.67			0	0	72.67	0	72.67	20.01	48.66	0	4

ANNEX 5 Photographs



View of some existing roads



Orientation Workshop



Inventory work



View of some existing roads



DRCN Workshop



Draft Report Presentation

ANNEX 6 Response to comments

SN	Reference	Comments	Remarks	Actions taken
1	Main Text	(i)In Section 2.3, there are total 16 nos. of DRCN roads with total length 376.88 km. Of them, Existing road length 154.56 km and remaining for new construction. But in table 2.3.1 and 2.3.2 , there are only 3 DRCN roads mentioned.	(i) Please clarify, why not other roads are mentioned? (ii) Please define it.	Missing data in Table 2.3.1 and 2.3.2 has been mentioned in corrected Final Report.
2	DTPP	District Transport Perspective Plan (DTPP) for all DRCN roads required all types of maintenance works in Conservation, is it fact.	Please sure it.	Based on current situation of existing DRCN roads, emergency, routine and recurrent maintenance (earthen) works in conservation are required. Accordingly, the calculation has been done.
3	ANNEXES	There are no all Inventory road list in Main Report.	Please show in ANNEXES	Road inventory list including DRCN and others are given in Annexes of Final Report.
4	DTMP Table 6.2.1	In DTMP, Investment plan shows DRCN roads for only 72.67km. Is it sure other roads do not come under DTMP plan?	Please mention how many km roads under DOR and other Agencies.	Of total 154.56 km existing DRCN roads, only 72.67 km roads have to be conserved and improved by DDC in this DTMP. Remaining 81.89 km existing DRCN roads falls under responsible of DoR and other organizations. These roads are expected to conserve and improve under the DoR, DRILP and other organizations within this DTMP period. The name of the road together with their total km and responsible organizations are given in Final Report.
5	Maps	In Maps, tables are not proportionately visible.	Please, if possible make it visible.	Tables and other information in maps have been made visible in Final Report.