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District Development Committee, Salyan

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Prepared by Rural Infrastructure Developers Consultant P. Ltd (RIDC) for the District Development Committee (DDC) and District Technical Office (DTO) Salyanwith Technical Assistance from the Department of Local Infrastructure and Agricultural Roads (DOLIDAR), Ministry of Federal Affairs and Local Development and grant supported by DFID through Rural Access Programme 3 (RAP 3)

FOREWORD



Government of Nepal Ministry of Federal Affairs & Local Development District Development Committee Salyan

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FOREWORD

It is my great pleasure to introduce this revised District Transport Master Plan (DTMP) of Salyan district which was concurred by the district stakeholder's meeting and District Road Core Network (DRCN) selected by same meeting on June 29, 2015 and approved by DDC Board on November 8, 2015. 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 for 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 Rural Access Programme (RAP3) for financial and technical support. Secondly, my thanks go to Mr. Hari Prasad Dahal (Local Development Officer, DDC Salyan), Er. Jagadish Sharma (Chief District Engineer, DTO Salyan) 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.

10 Nim Bahadur Oli

Acting Local Development Officer, DDC Salyan

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We would like to express gratitude to Rural Access Programme (RAP III) for entrusting us on preparation of District Transport Master Plan of Salyan District.

We would also like to express our sincere thanks toMr Hari Prasad Dahal, Local Development Officer andNimBahadurOli, Planning Officer, DDC Salyan, Er. Jagdish Sharma, Chief District Engineer, DTO Salyan and all the staffs of DDC and DTO, Salyan for their regular support and coordination.

We thank the DTMP 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 Salyan District who have rendered their valuable suggestion and support for the successful completion of the job.

Radha Rana Bhat Managing Director Rural Infrastructure Developers Consultants P. Ltd. (RIDC), Baneshwor, Kathmandu.

Executive summary

Salyan is a hilly district of Rapti zone in the Mid Western Development Region of Nepal. It is second largest district of Rapti Zone with 1951 sq. km. total area. It is surrounded by Rolpa on the East, Surkhet and Bardiya on the West, Rukum and Jajarkot on the North and Banke and Dang on the South. Geographically, Salyan district is located from 28° 31' N to 28° 53' N latitude and 82° 0' E to 82° 46' E longitude. The altitude varies from 326m to 2827m from sea level. Khalanga, the district headquarters is at 1536m from sea level. The district is administratively divided into 2 electoral constituencies, 11llakas that consist of 35 VDCs and twomunicipalities. Major rivers of the district are Bheri and holy river Sharada. Whereas LuhamKhola, Mas Khola, BangadKhola, KorbangKhola, MarmaKhola, SangrahiKhola, MokhlaKhola, KalleriKhola, GhatteKhola, Gupta Khola, ChakliKhola, Jimalietc.are other small rivers of the district.

Salyan district is well known for religious, historical, tourism and trekking. Many places are of religious, historical importance. There are several tourism attractions in the district which carries the huge potential for the tourism development. Krishna Temple, Ganesh Temple, Shiva Temple and many Pati and Shattal of this district are centre for religious activities. Weapons and tools made from metal especiallyKhukuri of this district is very famous.

According to the National population census 2011, the total population of the Salyan district is 242,442 with 115,969 male and 126,475 female. There are 46,524 households in the district with an average household size of 5.21.

The district inventory identified nearly750 km of roads, including 175.66km of existing strategic roads, and 566.1km of rural roads. In coordination with the DTICC and DDC, 24 rural roads with a length of 401.86km including 375.88 km existing roads and 25.98 km new roads were identified as making up the district road core network (DRCN). The total rural road inventory survey was not under the scope of this assignment so, these road statistics were obtained from previous DTMP report. However, selected DRCNs were tracked using GPS to identify their length, width and existing condition along with necessary major structures in this study. The existing SRN and DRCN roads link up 31of the 35 VDC headquarters and two municipalities including a recently declared municipality. Out of these 375.88 km DRCNroads,only26.2km roadis all weather and remaining 349.68 km road is fair-weather. During DTMP period 176.70 km road will be improved to gravel standard and 1.33 km new road will be constructed.

Road Class	Total length	Black Top	Gravel	Earthen
Strategic road network	175.66	112.66	5.00	58.00
Urban roads	-	-	-	-
District road core network	375.88	8.20	18.00	349.68
Village roads	190.22	3.70	23.07	163.45
Total	741.76	124.56	46.07	571.13

Table ES1: Summary of road networks

Annual conservation costof24 roads with 375.88km length is estimated toNPR67.12million 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 335.6 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	t	Cost (NPR)
Bridges	650	m	448,000,000
Slab culverts	26	m	3,900,000
Causeways	154	m	15,400,000
Hume pipes	208	units	2,080,000
Masonry retaining walls	153	m ³	1,530,000
Gabion retaining walls	8,487	m ³	21,217,500
Lined drains	2,790	m	2,790,000
Widening	1,675	m	4,187,500
Rehabilitation	-	km	-
Gravelling	349.68	km	699,360,000
Blacktopping	-	km	-
New construction	25.98	km	188,910,000
Total			1,387,375,000

Table ES2: Summary of required improvements and their estimated costs

The available budget for the road sector for the coming five years (fiscal year 2072/73 to 2076/77) is estimated to be NPR 1033.95 million including 700 million SNRTP fund and about 106.84 million LRBP fund. LRBP fund is used for only bridges of specified roads (SharadaNadiBridge at Lanti-Lekhpokhara-Jhyam Road) and part of the SNRTP fund also has been already allocated for specified roads at initial a few years of this first DTMP otherwise all the DTMP funds will be allocated as per ranking given in this DTMP report. Allocation to the district road core network was set at 90% 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. The budget allows all conservation requirements to be covered throughout the DTMP period. Improvement works of 176.70 km road roads and 1.33 km new construction to be completed within the DTMP periodrespectively. The remaining length of improvement works and new construction works will be carried out in the next DTMP.

Within the DTMP period,176.70km of road will be gravelled, resulting in being brought to a maintainable all-weather standard. The length of all-weather maintainable DRCN roads under the responsibility of DDC increases from 26.2 kmto 194.70km during first DTMP period. VDC headquarters with direct access to SRN is 14 with 45% district population. Similarly, VDC headquarters with access to all-weather DRCN roads will increases from 3 to 23while the percentage of the district population with such access will be increased by 38% during first DTMP period.

ABBREVIATIONS

VDC Village Development Committee VPD Vehicle Per Day	AAMP ARMP BT DDC DOLIDAR DOR DTICC DTMP DTPP GIS GON GR Km LGCDP LRBP MoFALD NPR PCU RAP RCIW RTI SWAP VDC VPD	Annual Asset Management Plan Annual Road Maintenance Plan Black Top District Development Committee Department of Local Infrastructure Development and Agriculture Road Department of Road District Transport Infrastructure Coordination Committee District Transport Master Plan District Transport Perspective Plan Geographical Information system Global Positioning System Government of Nepal Gravel Kilometre Local Governance and Community Development Programme Local Road Bridge Project Ministry of Federal Affairs and Local Development Nepali Rupees Passenger Car Unit Rural Access Programme Rural Community Infrastructure Works Rural Transport Infrastructure Sector Wide Approach Village Development Committee Vehicle Per Day
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1. Introduction

Salyan is a hilly district of Rapti zone in the Mid-WesternDevelopmentRegion of Nepal. It is second largest district of Rapti Zone with 1951 sq. km. total area. Many VDCs of it are accessible by fair-weather road. It is surrounded by Rolpa on the East, Surkhet and Bardiya on the West, Rukum and Jajarkot on the North and Banke and Dang on the South. Geographically, Salyan district is located from 28° 31' N to 28° 53' N latitude and 82° 0' E to 82° 46' E longitude. The altitude varies from 326m to 2827m from sea level. Khalanga, the district headquarters is at 1536m from sea level. The district is administratively divided into 2 electoral constituencies, 11 llakas that consist of 35VDCs and twomunicipalities.

The district is famous for itsnatural resources. The coniferous forest, flat cultivated lands, rivers and lakes represents its richness of resources. Major rivers of the district are Bheri and holy river Sharada. Whereas LuhamKhola, Mas Khola, BangadKhola, KorbangKhola, MarmaKhola, SangrahiKhola, MokhlaKhola, KalleriKhola, GhatteKhola, Gupta Khola, ChakliKhola, Jimalietc are other small rivers in the district.

Salyandistrict is well known for religious, historical, tourism and trekking. Many places are of religious, historical importance. There are several tourism attractions in the district which carries the huge potential for the tourism development. Krishna Temple, Ganesh Temple, Shiva Temple and many Patis and Shattal of this district are centre for religious activities. Weapons and tools made from metal especially Khukuri of this district is very famous.

According to the National population census 2011, the total population of the Salyan district is 242442with 115969male and 126475 female. There are 46524 households in the district with an average household size of 5.21. According to the national population census 2001 (CBS), total population was 213,500 of which the male population was 106,834 and female population 106,666. Salyan District is lacking of economic development. About 75% people are economically active and 7.8% population is completely unemployed. Among the active population, 79% are male and 71.9% are female.

The district has 195,178Ha total lands out of which 128,205Ha is forest land, 38,266 Ha cultivated land, 24,887Ha pasture land, and 3,821Ha others¹.

¹Previous DTMP Report, DDC Salyan





Salyan has limited but increasing accessibility. The district is served by surface transport facilities linking the district with the national strategic road network including highway; RaptiRajmarg (H11) and four Feeder roadsnamelyRaikar-Devstahl (F047), Sitalpat-Salyan (F140), Bijeneta-Kalche (F141), and Devisthal-Bas Khola (F193) as shown in Table 2.2.1. The network of highway, feeder roads, district roads and village roads are increasing significantly in the district. However, the district and village roads are mostly in poor conditions which require upgrading/rehabilitation and proper maintenance.

2. District Road Core Network (DRCN)

This chapter gives an overview of the existing roads in Salyandistrict, 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

Salyan District has an estimated road network of 741.76kilometres, including 175.66km of strategic roads managed by DOR and remaining 566.10 km of rural roads managed by DDC Salyan, VDCs and municipality. Of total 175.66 km strategic road networks, only 112.66km is blacktop surface. In case of rural road networks, majority of rural roads are an earthen surface. Among 566.10km rural roads, only 11.90 km and 41.07 km are blacktop and gravel respectively. While, remaining 513.13 km is an earthen surface. The total rural road inventory survey was not under the scope of this assignment so; these road statistics were obtained from previous DTMP report. Further this information was updated based on information provided by DDC/DTO during field visit. However, selected DRCNs were tracked using GPS to identify their length, width and existing condition along with necessary major structures in this study. A map of the total road network in Salyandistrict is shown in Figure2 at the end of this chapter.

Road Class	Total length	Black Top	Gravel	Earthen
Strategic roads	175.66	112.66	5.00	58.00
Urban roads	-	-	-	-
Rural roads	566.10	11.90	41.07	513.13
Total	741.76	124.56	46.07	571.13

Table 2.1.1	Road length in Salyan district (km)
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2.2 National Highways and Feeder Roads

According to latest information provided by DoR, Salyan District hasone highway and fourfeeder roadstotalling to 175.66 km length. Among these strategic road networks,91.66 km is part of highway whereas 84 km is feeder roads. The brief information of strategic road networks is given in Table 2.2.1.

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

		Total			
Code	Name of Road	length	Black Top	Gravel	Earthen
H11	Choroadanda, Dang district border-Salyan district	91.66	91.66	-	-
F047	Raikar-Devsthal	14.00	14.00		
F140	Sitalpati-Salyan	9.00	9.00	-	-
F141	Bijeneta-Kalche	21.00	-	-	21.00
F193	Devisthal-Baskhola	40.00	-	3.00	37.00
Total		175.66	114.66	3.00	58.00

Source: SSRN, 2014, DoR

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.Road code has been also assigned to village roads (road data as available in existing old DTMP and data provided by the DDC/DTO).

The resulting District Road Core Network of thisdistrict is shown in Figure3 at the end of this chapter. The DRCN consists of 24 district roads with a total length of 375.88 km. The remaining190.22km of existing rural roads are not considered to be DRCN roads and are classified as village roads under the responsibility of the VDCs. Because of newly created two municipalities in Salyan District in different time frame, part of these rural roads are contained within these two municipalities and status has become so-called municipal roads. Among 375.88 km DRCN, 88.31 km roads fall under this category. Due to newly formed municipalities, they are however not able to maintain/upgrade these roads due to their lack of technical and financial capacity. So, DTO/DDC Salyan will be responsible to look after the part of DRCN within municipal boundary at least in this first DTMP period.Later, these roads shall be upgraded/maintained as per municipal road standards and municipality would be responsible to do this. Most of DRCN roads are currently earthen surface and thus considered as fair weather. Only 26.20 km is considered as all weather. The type of existing roads and their length is given in Table 2.3.1. Similarly, a complete list of the DRCN roads and their characteristics is provided in Table 2.3.2.

Road Class	Total length	Black Top	Gravel	Earthen
Strategic road network	175.66	112.66	5.00	58.00
Highways	91.66	89.66	2.00	-
Feeder roads	84.00	23.00	3.00	58.00
Urban roads	-	-	-	-
District road core network	375.88	8.20	18.00	349.68
Village roads	190.22	3.70	23.07	163.45
Total	741.76	124.56	46.07	571.13

Table2.3.1	Road length in Salyan district (km)
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Code	Name of Road	Total length	Black Top	Gravel	Earthen	All weather	Fair weather
Total		375.88	8.20	18.00	349.68	26.20	349.68
Percentage			2%	5%	93%	7%	93%
55DR001	Sallibazar-Namra-Bame	20.01			20.01	-	20.01
55DR002	Sunauli-Maidupokhara-Ghajaripipal	7.63			7.63	-	7.63
55DR003	Dhorchaur-Uchalne-Chhapdanda-Nathepipal	13.22			13.22	-	13.22
55DR004	Dhorchaur-Kalalekh-Gurudase-Kainikada	4.66			4.66	-	4.66
55DR005	Chaurpani- ThulJimali	3.88			3.88	-	3.88
55DR006	Chisapani-Timile-Balya(Kalagaon)	2.12			2.12	-	2.12
55DR007	Tharmare-Badagaun-Sanipiply	34.93			34.93	-	34.93
55DR008	Maulahale-Bhalchaur-Ratamata	6.92			6.92	-	6.92
55DR009	Rarechour-Pedi-Ratamata-Pharulachour-Darmakot	19.24			19.24	-	19.24
55DR010	Sivrath(Simakholi)-Gothiban-Tribeni	7.70			7.70	-	7.70
55DR011	Kharibote-Tatke-Bapukhola-Khaula	25.02			25.02	-	25.02
55DR012	Tharmare-Bagchour-Kotmaula-Pathihalna	11.10			11.10	-	11.10
55DR013	Mokhala-Damachour-Guranshe-Jhyam	19.16			19.16	-	19.16
55DR014	Lanti-Lekpokhara-DahaKhola(Damahachour)-Jhyam	28.76			28.76	-	28.76
55DR015	Sankhamul-KorbangJhimpe-Kharsubash	18.81			18.81	-	18.81
55DR016	Solabang-Rim-Chhayanath-Sinabang	12.80			12.80	-	12.80
55DR017	Kuparkot-Gothiban-SarpaniGarpa	5.34			5.34	-	5.34
55DR018	Luham-Kavara-Danegauda(Rampur)	25.08			25.08	-	25.08
55DR019	Rikhebazar-Kadaghithi	2.89			2.89	-	2.89
55DR020	Khalanga-Simkharka-Baluwasangarahi	31.82	8.20	18.00	5.62	26.20	5.62
55DR021	Khalanga-Laxmipur-Jhirghat	16.21			16.21	-	16.21
55DR022	Marke-Rampur-Jhigane-Baluwa-Damdawali-Hattidamar- Kharkabar (Part I)	24.65			24.65	-	24.65
55DR023	Salchaur-Puchala- Machkharka-Manjkhada-Dharapani	18.36			18.36	-	18.36
55DR024	Marke-Rampur-Jhigane-Baluwa-Damdawali-Hattidamar- Kharkabar (Part II)	15.57			15.57	-	15.57

 Table 2.3.2
 District road core network in Salyan district (km)

2.4 Village Roads

The 190.22km 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 concerned35VDCs and two municipalities of the district. These are roads of a lower importance that do not form the main link between the VDC headquarters and the district headquarter or strategic road network. Instead they provide additional access to other parts of the VDCs. A parts of these roads, lie within municipalities are categorised as municipal roads, which shall be upgraded/improved as per municipal road standards. In case of village roads, it is recommended that the VDCs shall organize 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 2Total Road Inventory Map of Salyan District



Figure 3District 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 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:

- <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.

Code	Name of road	Total length (km)	Blac k Top (km)	Grav el (km)	Earthe n (km)	Emerg ency mainte nance	Routine maintena nce (km)	Recurrent maintena nce blacktop	Recurrent maintena nce gravel	Recurrent maintena nce earthen	Periodic maintena nce blacktop	Periodic maintena nce gravel
Total		375.88	8.20	18.00	349.68	(KM) 375.88	375.88	(KM) 8.20	(KM) 18.00	(KM) 349.68	(KM) 8.20	(KM) 18.00
55DR001	Sallibazar-Namra-Bame	20.01	-	-	20.01	20.01	20.01	-	-	20.01	-	-
55DR002	Sunauli-Maidupokhara-Ghaiaripipal	7.63	-	-	7.63	7.63	7.63	-	-	7.63	-	-
55DR003	Dhorchaur-Uchalne-Chhapdanda-Nathepipal	13.22	-	-	13.22	13.22	13.22	-	-	13.22	-	-
55DR004	Dhorchaur-Kalalekh-Gurudase-Kainikada	4.66	-	-	4.66	4.66	4.66	-	-	4.66	-	-
55DR005	Chaurpani- ThulJimali	3.88	-	-	3.88	3.88	3.88	-	-	3.88	-	-
55DR006	Chisapani-Timile-Balya(Kalagaon)	2.12	-	-	2.12	2.12	2.12	-	-	2.12	-	-
55DR007	Tharmare-Badagaun-Sanipiply	34.93	-	-	34.93	34.93	34.93	-	-	34.93	-	-
55DR008	Maulahale-Bhalchaur-Ratamata	6.92	-	-	6.92	6.92	6.92	-	-	6.92	-	-
55DR009	Rarechour-Pedi-Ratamata-Pharulachour- Darmakot	19.24	-	-	19.24	19.24	19.24	-	-	19.24	-	-
55DR010	Sivrath(Simakholi)-Gothiban-Tribeni	7.70	-	-	7.70	7.70	7.70	-	-	7.70	-	-
55DR011	Kharibote-Tatke-Bapukhola-Khaula	25.02	-	-	25.02	25.02	25.02	-	-	25.02	-	-
55DR012	Tharmare-Bagchour-Kotmaula-Pathihalna	11.10	-	-	11.10	11.10	11.10	-	-	11.10	-	-
55DR013	Mokhala-Damachour-Guranshe-Jhyam	19.16	-	-	19.16	19.16	19.16	-	-	19.16	-	-
55DR014	Lanti-Lekpokhara-DahaKhola(Damahachour)- Jhyam	28.76	-	-	28.76	28.76	28.76	-	-	28.76	-	-
55DR015	Sankhamul-KorbangJhimpe-Kharsubash	18.81	-	-	18.81	18.81	18.81	-	-	18.81	-	-
55DR016	Solabang-Rim-Chhayanath-Sinabang	12.80	-	-	12.80	12.80	12.80	-	-	12.80	-	-
55DR017	Kuparkot-Gothiban-SarpaniGarpa	5.34	-	-	5.34	5.34	5.34	-	-	5.34	-	-
55DR018	Luham-Kavara-Danegauda(Rampur)	25.08	-	-	25.08	25.08	25.08	-	-	25.08	-	-
55DR019	Rikhebazar-Kadaghithi	2.89	-	-	2.89	2.89	2.89	-	-	2.89	-	-
55DR020	Khalanga-Simkharka-Baluwasangarahi	31.82	8.20	18.00	5.62	31.82	31.82	8.20	18.00	5.62	8.20	18.00
55DR021	Khalanga-Laxmipur-Jhirghat	16.21	-	-	16.21	16.21	16.21	-	-	16.21	-	-
55DR022	Marke-Rampur-Jhigane-Baluwa-Damdawali- Hattidamar-Kharkabar (Part I)	24.65	-	-	24.65	24.65	24.65	-	-	24.65	-	-
55DR023	Salchaur-Puchala- Machkharka-Manjkhada- Dharapani	18.36	-	-	18.36	18.36	18.36	-	-	18.36	-	-
55DR024	Marke-Rampur-Jhigane-Baluwa-Damdawali- Hattidamar-Kharkabar (Part II)	15.57	-	-	15.57	15.57	15.57	-	-	15.57	-	-

 Table 3.1.1
 Conservation requirements

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 Salyanare 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. However, widening is required only in specific locations to bring it up to the minimum standard and to ensure sufficient space in the curves even in case of less than 500 PCU.

3.2.1 Rehabilitation

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

Code	Name of Road	Total length	Rehabil itation
Total		375.88	-
55DR001	Sallibazar-Namra-Bame	20.01	
55DR002	Sunauli-Maidupokhara-Ghajaripipal	7.63	
55DR003	Dhorchaur-Uchalne-Chhapdanda-Nathepipal	13.22	
55DR004	Dhorchaur-Kalalekh-Gurudase-Kainikada	4.66	
55DR005	Chaurpani- ThulJimali	3.88	
55DR006	Chisapani-Timile-Balya(Kalagaon)	2.12	
55DR007	Tharmare-Badagaun-Sanipiply	34.93	
55DR008	Maulahale-Bhalchaur-Ratamata	6.92	
55DR009	Rarechour-Pedi-Ratamata-Pharulachour-Darmakot	19.24	
55DR010	Sivrath(Simakholi)-Gothiban-Tribeni	7.70	
55DR011	Kharibote-Tatke-Bapukhola-Khaula	25.02	
55DR012	Tharmare-Bagchour-Kotmaula-Pathihalna	11.10	
55DR013	Mokhala-Damachour-Guranshe-Jhyam	19.16	
55DR014	Lanti-Lekpokhara-DahaKhola(Damahachour)-Jhyam	28.76	
55DR015	Sankhamul-KorbangJhimpe-Kharsubash	18.81	
55DR016	Solabang-Rim-Chhayanath-Sinabang	12.80	
55DR017	Kuparkot-Gothiban-SarpaniGarpa	5.34	
55DR018	Luham-Kavara-Danegauda(Rampur)	25.08	
55DR019	Rikhebazar-Kadaghithi	2.89	
55DR020	Khalanga-Simkharka-Baluwasangarahi	31.82	
55DR021	Khalanga-Laxmipur-Jhirghat	16.21	
55DR022	Marke-Rampur-Jhigane-Baluwa-Damdawali-Hattidamar-Kharkabar (Part I)	24.65	
55DR023	Salchaur-Puchala- Machkharka-Manjkhada-Dharapani	18.36	
55DR024	Marke-Rampur-Jhigane-Baluwa-Damdawali-Hattidamar-Kharkabar (Part II)	15.57	

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 349.68 for gravelling.

Code	Name of Road		Gravelling (km)
Total		375.88	349.68
55DR001	Sallibazar-Namra-Bame	20.01	20.01
55DR002	Sunauli-Maidupokhara-Ghajaripipal	7.63	7.63
55DR003	Dhorchaur-Uchalne-Chhapdanda-Nathepipal	13.22	13.22
55DR004	Dhorchaur-Kalalekh-Gurudase-Kainikada	4.66	4.66
55DR005	Chaurpani- ThulJimali	3.88	3.88
55DR006	Chisapani-Timile-Balya(Kalagaon)	2.12	2.12
55DR007	Tharmare-Badagaun-Sanipiply	34.93	34.93
55DR008	Maulahale-Bhalchaur-Ratamata	6.92	6.92
55DR009	Rarechour-Pedi-Ratamata-Pharulachour-Darmakot	19.24	19.24
55DR010	Sivrath(Simakholi)-Gothiban-Tribeni	7.70	7.70
55DR011	Kharibote-Tatke-Bapukhola-Khaula	25.02	25.02
55DR012	Tharmare-Bagchour-Kotmaula-Pathihalna	11.10	11.10
55DR013	Mokhala-Damachour-Guranshe-Jhyam	19.16	19.16
55DR014	Lanti-Lekpokhara-DahaKhola(Damahachour)-Jhyam	28.76	28.76
55DR015	Sankhamul-KorbangJhimpe-Kharsubash	18.81	18.81
55DR016	Solabang-Rim-Chhayanath-Sinabang	12.80	12.80
55DR017	Kuparkot-Gothiban-SarpaniGarpa	5.34	5.34
55DR018	Luham-Kavara-Danegauda(Rampur)	25.08	25.08
55DR019	Rikhebazar-Kadaghithi	2.89	2.89
55DR020	Khalanga-Simkharka-Baluwasangarahi	31.82	5.62
55DR021	Khalanga-Laxmipur-Jhirghat	16.21	16.21
55DR022	Marke-Rampur-Jhigane-Baluwa-Damdawali-Hattidamar-Kharkabar (Part I)	24.65	24.65
55DR023	Salchaur-Puchala- Machkharka-Manjkhada-Dharapani	18.36	18.36
55DR024	Marke-Rampur-Jhigane-Baluwa-Damdawali-Hattidamar-Kharkabar (Part II)	15.57	15.57

Table 3.2.2 Sections 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 22 bridges with a total length of 650 m, 4 slab culverts with total length of 26 m,27concrete causeways with a total length of 154 m, and 208 pipe culverts were identified as being required.

Code	Name of Road	Total length (km)	Brid ge (m)	Slab culve rt (m)	CC Causew av (m)	Stone Cause way	Pipe culver t
		()	(,		., (,	(m)	(units)
Total		375.88	560	26	154	-	208
55DR001	Sallibazar-Namra-Bame	20.01	48		20		13
55DR002	Sunauli-Maidupokhara-Ghajaripipal	7.63			6		8
55DR003	Dhorchaur-Uchalne-Chhapdanda- Nathepipal	13.22			8		12
55DR004	Dhorchaur-Kalalekh-Gurudase-Kainikada	4.66					4
55DR005	Chaurpani- ThulJimali	3.88					3
55DR006	Chisapani-Timile-Balya(Kalagaon)	2.12	36				6
55DR007	Tharmare-Badagaun-Sanipiply	34.93					26
55DR008	Maulahale-Bhalchaur-Ratamata	6.92			8		10
55DR009	Rarechour-Pedi-Ratamata-Pharulachour- Darmakot	19.24			6		9
55DR010	Sivrath(Simakholi)-Gothiban-Tribeni	7.70	18				8
55DR011	Kharibote-Tatke-Bapukhola-Khaula	25.02	78	6			18
55DR012	Tharmare-Bagchour-Kotmaula-Pathihalna	11.10	60				3
55DR013	Mokhala-Damachour-Guranshe-Jhyam	19.16	36		8		11
55DR014	Lanti-Lekpokhara- DahaKhola(Damahachour)-Jhyam	28.76	48	6	30		24
55DR015	Sankhamul-KorbangJhimpe-Kharsubash	18.81	42				7
55DR016	Solabang-Rim-Chhayanath-Sinabang	12.80	12		6		2
55DR017	Kuparkot-Gothiban-SarpaniGarpa	5.34	12		22		9
55DR018	Luham-Kavara-Danegauda(Rampur)	25.08	80		16		2
55DR019	Rikhebazar-Kadaghithi	2.89					
55DR020	Khalanga-Simkharka-Baluwasangarahi	31.82	48	6	24		10
55DR021	Khalanga-Laxmipur-Jhirghat	16.21					7
55DR022	Marke-Rampur-Jhigane-Baluwa-Damdawali- Hattidamar-Kharkabar (Part I)	24.65		8			13
55DR023	Salchaur-Puchala- Machkharka-Manjkhada- Dharapani	18.36	42				3
55DR024	Marke-Rampur-Jhigane-Baluwa-Damdawali- Hattidamar-Kharkabar (Part II)	15.57					

 Table 3.2.3:
 Required cross drainage structures

3.2.4 **Protective Structures**

Based on the road survey carried out in Salyan, a total of 153 cubic meter masonry walls and 8487 cubic meter gabion walls respectively have been proposed as protective structures. The following Table 3.2.4 shows the required retaining structures to ensure the protection of the district road core network.

Code	Name of Road	Total	Masonr	Gabio	Line
		length	y walls	n	d
		(km)	(m3)	walls	drain
				(m3)	(m)
Total		375.8	153	8,487	2,79
		8			0
55DR001	Sallibazar-Namra-Bame	20.01		735	180
55DR002	Sunauli-Maidupokhara-Ghajaripipal	7.63		445	120
55DR003	Dhorchaur-Uchalne-Chhapdanda-Nathepipal	13.22		840	160
55DR004	Dhorchaur-Kalalekh-Gurudase-Kainikada	4.66		180	60
55DR005	Chaurpani- ThulJimali	3.88		140	60
55DR006	Chisapani-Timile-Balya(Kalagaon)	2.12		255	100
55DR007	Tharmare-Badagaun-Sanipiply	34.93		1542.5	400
55DR008	Maulahale-Bhalchaur-Ratamata	6.92		307	130
55DR009	Rarechour-Pedi-Ratamata-Pharulachour-Darmakot	19.24		25	70
55DR010	Sivrath(Simakholi)-Gothiban-Tribeni	7.70		395	60
55DR011	Kharibote-Tatke-Bapukhola-Khaula	25.02		330	160
55DR012	Tharmare-Bagchour-Kotmaula-Pathihalna	11.10		420	60
55DR013	Mokhala-Damachour-Guranshe-Jhyam	19.16		280	230
55DR014	Lanti-Lekpokhara-DahaKhola(Damahachour)-Jhyam	28.76	102	792.5	320
55DR015	Sankhamul-KorbangJhimpe-Kharsubash	18.81		50	80
55DR016	Solabang-Rim-Chhayanath-Sinabang	12.80		25	20
55DR017	Kuparkot-Gothiban-SarpaniGarpa	5.34		407.5	70
55DR018	Luham-Kavara-Danegauda(Rampur)	25.08		25	20
55DR019	Rikhebazar-Kadaghithi	2.89			
55DR020	Khalanga-Simkharka-Baluwasangarahi	31.82	51	615	180
55DR021	Khalanga-Laxmipur-Jhirghat	16.21		257.5	150
55DR022	Marke-Rampur-Jhigane-Baluwa-Damdawali-Hattidamar-Kharkabar (Part I)	24.65		370	150
55DR023	Salchaur-Puchala- Machkharka-Manjkhada-Dharapani	18.36		50	10
55DR024	Marke-Rampur-Jhigane-Baluwa-Damdawali-Hattidamar-Kharkabar (Part II)	15.57			

Table 3.2.4	Required	protective	structures
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3.2.5 Widening

Widening of the district road core network in Salyan 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		VP D	Widenin g (m)
		(km)		5.
Total		375.8 8		1,675
55DR001	Sallibazar-Namra-Bame	20.01	5	90
55DR002	Sunauli-Maidupokhara-Ghajaripipal	7.63	4	45
55DR003	Dhorchaur-Uchalne-Chhapdanda-Nathepipal	13.22	6	60
55DR004	Dhorchaur-Kalalekh-Gurudase-Kainikada	4.66	2	20
55DR005	Chaurpani- ThulJimali	3.88	4	25
55DR006	Chisapani-Timile-Balya(Kalagaon)	2.12	4	40
55DR007	Tharmare-Badagaun-Sanipiply	34.93	37	90
55DR008	Maulahale-Bhalchaur-Ratamata	6.92	11	55
55DR009	Rarechour-Pedi-Ratamata-Pharulachour-Darmakot	19.24	5	95
55DR010	Sivrath(Simakholi)-Gothiban-Tribeni	7.70	5	30
55DR011	Kharibote-Tatke-Bapukhola-Khaula	25.02	14	100
55DR012	Tharmare-Bagchour-Kotmaula-Pathihalna	11.10	2	160
55DR013	Mokhala-Damachour-Guranshe-Jhyam	19.16	6	40
55DR014	Lanti-Lekpokhara-DahaKhola(Damahachour)-Jhyam	28.76	6	190
55DR015	Sankhamul-KorbangJhimpe-Kharsubash	18.81	9	70
55DR016	Solabang-Rim-Chhayanath-Sinabang	12.80	2	30
55DR017	Kuparkot-Gothiban-SarpaniGarpa	5.34	5	70
55DR018	Luham-Kavara-Danegauda(Rampur)	25.08	11	60
55DR019	Rikhebazar-Kadaghithi	2.89	-	40
55DR020	Khalanga-Simkharka-Baluwasangarahi	31.82	30	50
55DR021	Khalanga-Laxmipur-Jhirghat	16.21	7	55
55DR022	Marke-Rampur-Jhigane-Baluwa-Damdawali-Hattidamar-Kharkabar (Part	24.65	9	130
55DR023	Salchaur-Puchala- Machkharka-Manjkhada-Dharapani	18.36	2	50

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.

				PCU threshold	100
Code	Name of Road	Total lengt h (km)	Blackt op (km)	Traffic (PCU)	Blacktoppi ng (km)
Total		375.8 8	8.20		-
55DR001	Sallibazar-Namra-Bame	20.01	-	10	-
55DR002	Sunauli-Maidupokhara-Ghajaripipal	7.63	-	10	-
55DR003	Dhorchaur-Uchalne-Chhapdanda-Nathepipal	13.22	-	17	-
55DR004	Dhorchaur-Kalalekh-Gurudase-Kainikada	4.66	-	6	-
55DR005	Chaurpani- ThulJimali	3.88	-	10	-
55DR006	Chisapani-Timile-Balya(Kalagaon)	2.12	-	9	-
55DR007	Tharmare-Badagaun-Sanipiply	34.93	-	85	-
55DR008	Maulahale-Bhalchaur-Ratamata	6.92	-	25	-
55DR009	Rarechour-Pedi-Ratamata-Pharulachour- Darmakot	19.24	-	12	-
55DR010	Sivrath(Simakholi)-Gothiban-Tribeni	7.70	-	12	-
55DR011	Kharibote-Tatke-Bapukhola-Khaula	25.02	-	29	-
55DR012	Tharmare-Bagchour-Kotmaula-Pathihalna	11.10	-	6	-
55DR013	Mokhala-Damachour-Guranshe-Jhyam	19.16	-	16	-
55DR014	Lanti-Lekpokhara-DahaKhola(Damahachour)- Jhyam	28.76	-	16	-
55DR015	Sankhamul-KorbangJhimpe-Kharsubash	18.81	-	23	-
55DR016	Solabang-Rim-Chhayanath-Sinabang	12.80	-	5	-
55DR017	Kuparkot-Gothiban-SarpaniGarpa	5.34	-	11	-
55DR018	Luham-Kavara-Danegauda(Rampur)	25.08	-	26	-
55DR019	Rikhebazar-Kadaghithi	2.89	-	-	-
55DR020	Khalanga-Simkharka-Baluwasangarahi	31.82	8.20	79	-
55DR021	Khalanga-Laxmipur-Jhirghat	16.21	-	13	-
55DR022	Marke-Rampur-Jhigane-Baluwa-Damdawali- Hattidamar-Kharkabar (Part I)	24.65	-	20	-
55DR023	Salchaur-Puchala- Machkharka-Manjkhada- Dharapani	18.36	-	5	-
55DR024	Marke-Rampur-Jhigane-Baluwa-Damdawali- Hattidamar-Kharkabar (Part II)	15.57	-	-	-

3.3 New Construction

New construction of DRCN roads is required to connect the remaining 4 VDC headquarters. A list of proposed roads for new construction is provided below.

Code	Name of Road	New VDCs	Existing length (km)	New lengt h	Bridg e (m)
Total		1	375.88	25.98	90
55DR001	Sallibazar-Namra-Bame		20.01		
55DR002	Sunauli-Maidupokhara-Ghajaripipal		7.63		
55DR003	Dhorchaur-Uchalne-Chhapdanda-Nathepipal		13.22		
55DR004	Dhorchaur-Kalalekh-Gurudase-Kainikada		4.66		
55DR005	Chaurpani- ThulJimali		3.88		
55DR006	Chisapani-Timile-Balya(Kalagaon)	Kalagaon	2.12	5.43	
55DR007	Tharmare-Badagaun-Sanipiply		34.93		
55DR008	Maulahale-Bhalchaur-Ratamata		6.92		
55DR009	Rarechour-Pedi-Ratamata-Pharulachour-Darmakot	Darmakot	19.24	3.48	20.00
55DR010	Sivrath(Simakholi)-Gothiban-Tribeni		7.70		
55DR011	Kharibote-Tatke-Bapukhola-Khaula		25.02		
55DR012	Tharmare-Bagchour-Kotmaula-Pathihalna		11.10		
55DR013	Mokhala-Damachour-Guranshe-Jhyam		19.16		
55DR014	Lanti-Lekpokhara-DahaKhola(Damahachour)-Jhyam		28.76		
55DR015	Sankhamul-KorbangJhimpe-Kharsubash		18.81		
55DR016	Solabang-Rim-Chhayanath-Sinabang		12.80		
55DR017	Kuparkot-Gothiban-SarpaniGarpa		5.34		
55DR018	Luham-Kavara-Danegauda(Rampur)		25.08		
55DR019	Rikhebazar-Kadaghithi	Kadaghiti	2.89	3.88	40.00
55DR020	Khalanga-Simkharka-Baluwasangarahi		31.82		
55DR021	Khalanga-Laxmipur-Jhirghat		16.21		
55DR022	Marke-Rampur-Jhigane-Baluwa-Damdawali-Hattidamar- Kharkabar (Part I)		24.65		
55DR023	Salchaur-Puchala- Machkharka-Manjkhada-Dharapani		18.36		
55DR024	Marke-Rampur-Jhigane-Baluwa-Damdawali-Hattidamar- Kharkabar (Part II)	Kaprechaur	15.57	13.19	30.00

 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 allweather status, and expanding it to provide access to an additional 4 VDC headquarters. For this purpose, all 349.68 km will be gravelled and a number of different cross drainage and protective structures will be constructed. A further 25.98 km of new road will be constructed to maintainable all-weather gravel standard. The following table lists the required interventions, while the proposed network is shown in the DTPP map.

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)
Total	375.88	375.88	8.20	8.20	-	349.68	-	1,675	650	26	154	-	208	153	8,487	2,790	25.98
55DR001	20.01	20.01	-	-	-	20.01	-	90	48	-	20	-	13	-	735	180	-
55DR002	7.63	7.63	-	-	-	7.63	-	45	-	-	6	-	8	-	445	120	-
55DR003	13.22	13.22	-	-	-	13.22	-	60	-	-	8	-	12	-	840	160	-
55DR004	4.66	4.66	-	-	-	4.66	-	20	-	-	-	-	4	-	180	60	-
55DR005	3.88	3.88	-	-	-	3.88	-	25	-	-	-	-	3	-	140	60	-
55DR006	2.12	2.12	-	-	-	2.12	-	40	36	-	-	-	6	-	255	100	5.43
55DR007	34.93	34.93	-	-	-	34.93	-	90	-	-	-	-	26	-	1,543	400	-
55DR008	6.92	6.92	-	-	-	6.92	-	55	-	-	8	-	10	-	307	130	-
55DR009	19.24	19.24	-	-	-	19.24	-	95	20	-	6	-	9	-	25	70	3.48
55DR010	7.70	7.70	-	-	-	7.70	-	30	18	-	-	-	8	-	395	60	-
55DR011	25.02	25.02	-	-	-	25.02	-	100	78	6	-	-	18	-	330	160	-
55DR012	11.10	11.10	-	-	-	11.10	-	160	60	-	-	-	3	-	420	60	-
55DR013	19.16	19.16	-	-	-	19.16	-	40	36	-	8	-	11	-	280	230	-
55DR014	28.76	28.76	-	-	-	28.76	-	190	48	6	30	-	24	102	793	320	-
55DR015	18.81	18.81	-	-	-	18.81	-	70	42	-	-	-	7	-	50	80	-
55DR016	12.80	12.80	-	-	-	12.80	-	30	12	-	6	-	2	-	25	20	-
55DR017	5.34	5.34	-	-	-	5.34	-	70	12	-	22	-	9	-	408	70	-
55DR018	25.08	25.08	-	-	-	25.08	-	60	80	-	16	-	2	-	25	20	-
55DR019	2.89	2.89	-	-	-	2.89	-	40	40	-	-	-	-	-	-	-	3.88
55DR020	31.82	31.82	8.20	8.20	-	5.62	-	50	48	6	24	-	10	51	615	180	-
55DR021	16.21	16.21	-	-	-	16.21	-	55	-	-	-	-	7	-	258	150	-
55DR022	24.65	24.65	-	-	-	24.65	-	130	-	8	-	-	13	-	370	150	-
55DR023	18.36	18.36	-	-	-	18.36	-	50	42	-	-	-	3	-	50	10	-
55DR024	15.57	15.57	-	-	-	15.57	-	80	30	-	-	-	-	-	-	-	13.19

Table 3.4.1 District Transport Perspective Plan



Figure 4District 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 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	DTMP proposed unit cost (NPR)	DTMP actual unit cost (NPR)
Emergency maintenance	km	30,000	25,000
Routine maintenance	km	20,000	15,000
Recurrent maintenance (blacktop)	km	500,000	200,000
Recurrent maintenance (gravel)	km	400,000	130,000
Recurrent maintenance (earthen)	km	250,000	120,000
Periodic maintenance (blacktop)	km	200,000	200,000
Periodic maintenance (gravel)	km	250,000	250,000

Table 4.1.1	Standard unit costs for conservation
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For the first year the estimated costs for conservation of the DRCN come to NPR 67.12 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 335.59 million. These costs will change slightly as the roads are improved and the standard conservation costs change. This will be updated in the ARAMP on an annual basis.

Code	Ļ	E	a	(น	> °	e	the second	ц e	e t	e e	e	ear	F
	Total lengt (km)	Blacktop (k	Gravel (km	Earthen (kn	Emergenc	Routine maintenanc	Recurrent maintenanc (blacktop)	Recurrent maintenanc (gravel)	Recurrent maintenanc (earthen)	Periodic maintenanc (blacktop)	Periodic maintenanc (gravel)	Total first ye cost	Total 5-yea cost
Total	375.88	8.20	18.00	349.68	9,397	5,638	1,640	2,340	41,962	1,640	4,500	67,117	335,586
55DR001	20.01	-	-	20.01	500	300	-	-	2,401	-	-	3,202	16,008
55DR002	7.63	-	-	7.63	191	114	-	-	916	-	-	1,221	6,104
55DR003	13.22	-	-	13.22	331	198	-	-	1,586	-	-	2,115	10,576
55DR004	4.66	-	-	4.66	117	70	-	-	559	-	-	746	3,728
55DR005	3.88	-	-	3.88	97	58	-	-	466	-	-	621	3,104
55DR006	2.12	-	-	2.12	53	32	-	-	254	-	-	339	1,696
55DR007	34.93	-	-	34.93	873	524	-	-	4,192	-	-	5,589	27,944
55DR008	6.92	-	-	6.92	173	104	-	-	830	-	-	1,107	5,536
55DR009	19.24	-	-	19.24	481	289	-	-	2,309	-	-	3,078	15,392
55DR010	7.70	-	-	7.70	193	116	-	-	924	-	-	1,232	6,160
55DR011	25.02	-	-	25.02	626	375	-	-	3,002	-	-	4,003	20,016
55DR012	11.10	-	-	11.10	278	167	-	-	1,332	-	-	1,776	8,880
55DR013	19.16	-	-	19.16	479	287	-	-	2,299	-	-	3,066	15,328
55DR014	28.76	-	-	28.76	719	431	-	-	3,451	-	-	4,602	23,008
55DR015	18.81	-	-	18.81	470	282	-	-	2,257	-	-	3,010	15,048
55DR016	12.80	-	-	12.80	320	192	-	-	1,536	-	-	2,048	10,240
55DR017	5.34	-	-	5.34	134	80	-	-	641	-	-	854	4,272
55DR018	25.08	-	-	25.08	627	376	-	-	3,010	-	-	4,013	20,064
55DR019	2.89	-	-	2.89	72	43	-	-	347	-	-	462	2,312
55DR020	31.82	8.20	18.00	5.62	796	477	1,640	2,340	674	1,640	4,500	12,068	60,338
55DR021	16.21	-	-	16.21	405	243	-	-	1,945	-	-	2,594	12,968
55DR022	24.65	-	-	24.65	616	370	-	-	2,958	-	-	3,944	19,720
55DR023	18.36	-	-	18.36	459	275	-	-	2,203	-	-	2,938	14,688
55DR024	15.57	-	-	15.57	389	234	-	-	1,868	-	-	2,491	12,456

 Table 4.1.2
 Estimated 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	DTMP proposed unit cost (NPR)	DTMP actual unit cost (NPR)								
Rehabilitation	km	800,000	800,000								
Widening	m	25,000	2,500								
Gravelling	km	2,200,000	2,000,000								
Blacktopping	km	5,700,000	5,700,000								
Bridge construction	m	600,000	800,000								
Slab culvert construction	m	150,000	150,000								
CC Causeway construction	m	100,000	100,000								
Stone Causeway construction	m	10,000	10,000								
Pipe culvert placement	unit	10,000	10,000								
Masonry wall construction	m ³	10,000	10,000								
Gabion wall construction	m ³	2,500	2,500								
Lined drain construction	m	1,000	1,000								

 Table 4.2.1
 Standard unit costs for improvement activities

Based on standard unit costs and the identified improvement requirements, the resulting estimated costs come to NPR 1198.5 million as indicated in the table below.

-

Code	£	<u>.</u> .			bu		rts			ť		lls	SL	
	ngt	litat	bu	ing	idd		lve	ays	ays	Ive	~	Ma	Iraii	ost
	l le	abil	ine	/ell	kto	ges	CC	e v	e v	CC	son	ion	d d d	- C
	(m)	eha	Vide	irav	lac	rid	lab	aus	ton aus	ipe	lase	abi	ine	ota
Total	<u>⊢ ±</u> 375.88	-	<u> </u>	699.360	-	<u> </u>	<u>の</u> 3.900	15.400	<u>ທິບ</u> -	2.080	<u>≥ ≥</u> 1.530	21.218	2.790	⊢ 1.198.465
55DR001	20.01	-	225	40,020	-	38,400	-	2,000	-	130	-	1,838	180	82,793
55DR002	7.63	-	113	15,260	-	-	-	600	-	80	-	1,113	120	17,285
55DR003	13.22	-	150	26,440	-	-	-	800	-	120	-	2,100	160	29,770
55DR004	4.66	-	50	9,320	-	-	-	-	-	40	-	450	60	9,920
55DR005	3.88	-	63	7,760	-	-	-	-	-	30	-	350	60	8,263
55DR006	2.12	-	100	4,240	-	28,800	-	-	-	60	-	638	100	33,938
55DR007	34.93	-	225	69,860	-	-	-	-	-	260	-	3,856	400	74,601
55DR008	6.92	-	138	13,840	-	-	-	800	-	100	-	768	130	15,775
55DR009	19.24	-	238	38,480	-	-	-	600	-	90	-	63	70	39,540
55DR010	7.70	-	75	15,400	-	14,400	-	-	-	80	-	988	60	31,003
55DR011	25.02	-	250	50,040	-	62,400	900	-	-	180	-	825	160	114,755
55DR012	11.10	-	400	22,200	-	48,000	-	-	-	30	-	1,050	60	71,740
55DR013	19.16	-	100	38,320	-	28,800	-	800	-	110	-	700	230	69,060
55DR014	28.76	-	475	57,520	-	38,400	900	3,000	-	240	1,020	1,981	320	103,856
55DR015	18.81	-	175	37,620	-	33,600	-	-	-	70	-	125	80	71,670
55DR016	12.80	-	75	25,600	-	9,600	-	600	-	20	-	63	20	35,978
55DR017	5.34	-	175	10,680	-	9,600	-	2,200	-	90	-	1,019	70	23,834
55DR018	25.08	-	150	50,160	-	64,000	-	1,600	-	20	-	63	20	116,013
55DR019	2.89	-	100	5,780	-	-	-	-	-	-	-	-	-	5,880
55DR020	31.82	-	125	11,240	-	38,400	900	2,400	-	100	510	1,538	180	55,393
55DR021	16.21	-	138	32,420	-	-	-	-	-	70	-	644	150	33,421
55DR022	24.65	-	325	49,300	-	-	1,200	-	-	130	-	925	150	52,030
55DR023	18.36	-	125	36,720	-	33,600	-	-	-	30	-	125	10	70,610
55DR024	15.57	-	200	31,140	-	-	-	-	-	-	-	-	-	31,340

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

4.3 New Construction

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

Activity	Unit	DTMP proposed unit cost (NPR)	DTMP actual unit cost (NPR)
Track opening	km	4,000,000	2,500,000
Gravelling	km	2,200,000	2,000,000
Bridge construction	m	600,000	800,000

 Table 4.3.1
 Standard unit costs for new construction

The resulting estimated costs for new construction come to NPR 188.91 million.

Table 4.3.2	Cost estimate for new construction (NPR '0	(00
		,

Code	Name of Road	New length (km)	Opening up (NPR)	Gravellin g (NPR)	Bridge s (NPR)	Total cost (NPR)
		(,				()
Total		25.98	64,950	51,960	72,000	188,910
55DR001	Sallibazar-Namra-Bame	-	-	-	-	-
55DR002	Sunauli-Maidupokhara-Ghajaripipal	-	-	-	-	-
55DR003	Dhorchaur-Uchalne-Chhapdanda- Nathepipal	-	-	-	-	-
55DR004	Dhorchaur-Kalalekh-Gurudase-Kainikada	-	-	-	-	-
55DR005	Chaurpani- ThulJimali	-	-	-	-	-
55DR006	Chisapani-Timile-Balya(Kalagaon)	5.43	13,575	10,860	-	24,435
55DR007	Tharmare-Badagaun-Sanipiply	-	-	-	-	-
55DR008	Maulahale-Bhalchaur-Ratamata	-	-	-	-	-
55DR009	Rarechour-Pedi-Ratamata-Pharulachour-	3.48	8,700	6,960	16,000	31,660
	Darmakot					
55DR010	Sivrath(Simakholi)-Gothiban-Tribeni	-	-	-	-	-
55DR011	Kharibote-Tatke-Bapukhola-Khaula	-	-	-	-	-
55DR012	Tharmare-Bagchour-Kotmaula-Pathihalna	-	-	-	-	-
55DR013	Mokhala-Damachour-Guranshe-Jhyam	-	-	-	-	-
55DR014	Lanti-Lekpokhara-	-	-	-	-	-
5500045	DahaKhola(Damahachour)-Jhyam					
55DR015	Sankhamul-KorbangJhimpe-Kharsubash	-	-	-	-	-
55DR016	Solabang-Rim-Chhayanath-Sinabang	-	-	-	-	-
55DR017	Kuparkot-Gothiban-SarpaniGarpa	-	-	-	-	-
55DR018	Luham-Kavara-Danegauda(Rampur)	-	-	-	-	•
55DR019	Rikhebazar-Kadaghithi	3.88	9,700	7,760	32,000	49,460
55DR020	Khalanga-Simkharka-Baluwasangarahi	-	-	-	-	-
55DR021	Khalanga-Laxmipur-Jhirghat	-	-	-	-	-
55DR022	Marke-Rampur-Jhigane-Baluwa-	-	-	-	-	-
5500000	Damdawali-Hattidamar-Kharkabar (Part I)					
55DR023	Saichaur-Puchaia- Machkharka- Manjkhada-Dharapani	-	-	-	-	-
55DR024	Marke-Rampur-Jhigane-Baluwa-	13.19	32,975	26,380	24,000	83,355
	Damdawali-Hattidamar-Kharkabar (Part II)					
		-	-	-	-	-

4.4 DTPP Costs

The total costs for the District Transport Perspective Plan come to NPR 1722.96 million as indicated in the table below.

Code	Name of Road	Conservatio n	Improvement	New construct ion	Total
Total		335,586	1,198,465	188,910	1,722,961
55DR001	Sallibazar-Namra-Bame	16,008	82,793	-	98,801
55DR002	Sunauli-Maidupokhara-Ghajaripipal	6,104	17,285	-	23,389
55DR003	Dhorchaur-Uchalne-Chhapdanda- Nathepipal	10,576	29,770	-	40,346
55DR004	Dhorchaur-Kalalekh-Gurudase-Kainikada	3,728	9,920	-	13,648
55DR005	Chaurpani- ThulJimali	3,104	8,263	-	11,367
55DR006	Chisapani-Timile-Balya(Kalagaon)	1,696	33,938	24,435	60,069
55DR007	Tharmare-Badagaun-Sanipiply	27,944	74,601	-	102,545
55DR008	Maulahale-Bhalchaur-Ratamata	5,536	15,775	-	21,311
55DR009	Rarechour-Pedi-Ratamata-Pharulachour- Darmakot	15,392	39,540	31,660	86,592
55DR010	Sivrath(Simakholi)-Gothiban-Tribeni	6,160	31,003	-	37,163
55DR011	Kharibote-Tatke-Bapukhola-Khaula	20,016	114,755	-	134,771
55DR012	Tharmare-Bagchour-Kotmaula-Pathihalna	8,880	71,740	-	80,620
55DR013	Mokhala-Damachour-Guranshe-Jhyam	15,328	69,060	-	84,388
55DR014	Lanti-Lekpokhara- DahaKhola(Damahachour)-Jhyam	23,008	103,856	-	126,864
55DR015	Sankhamul-KorbangJhimpe-Kharsubash	15,048	71,670	-	86,718
55DR016	Solabang-Rim-Chhayanath-Sinabang	10,240	35,978	-	46,218
55DR017	Kuparkot-Gothiban-SarpaniGarpa	4,272	23,834	-	28,106
55DR018	Luham-Kavara-Danegauda(Rampur)	20,064	116,013	-	136,077
55DR019	Rikhebazar-Kadaghithi	2,312	5,880	49,460	57,652
55DR020	Khalanga-Simkharka-Baluwasangarahi	60,338	55,393	-	115,731
55DR021	Khalanga-Laxmipur-Jhirghat	12,968	33,421	-	46,389
55DR022	Marke-Rampur-Jhigane-Baluwa- Damdawali-Hattidamar-Kharkabar (Part I)	19,720	52,030	-	71,750
55DR023	Salchaur-Puchala- Machkharka- Manjkhada-Dharapani	14,688	70,610	-	85,298
55DR024	Marke-Rampur-Jhigane-Baluwa- Damdawali-Hattidamar-Kharkabar (Part II)	12,456	31,340	83,355	127,151

Table 4.4.1 DTPP costs (NPR '000)

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	1.	2. Routine	3.	4.	5.	6.	7.	Total cost	Population	Cost/person
		length	Emergency		Recurrent	Recurrent	Recurrent	Periodic	Periodic	(NPR	served	(NPR)
_		(km)			(blacktop)	(gravel)	(earth)	(blacktop)	(gravel)	'000)		
6	55DR006	2.12	53	32	-	-	254	-	-	339	6,930	49
7	55DR007	34.93	873	524	-	-	4,192	-	-	5,589	41,138	136
4	55DR004	4.66	117	70	-	-	559	-	-	746	5,183	144
8	55DR008	6.92	173	104	-	-	830	-	-	1,107	7,076	156
18	55DR018	25.08	627	376	-	-	3,010	-	-	4,013	24,789	162
19	55DR019	2.89	72	43	-	-	347	-	-	462	2,850	162
10	55DR010	7.70	193	116	-	-	924	-	-	1,232	7,460	165
5	55DR005	3.88	97	58	-	-	466	-	-	621	3,743	166
17	55DR017	5.34	134	80	-	-	641	-	-	854	4,817	177
2	55DR002	7.63	191	114	-	-	916	-	-	1,221	5,914	206
24	55DR024	15.57	389	234	-	-	1,868	-	-	2,491	10,041	248
9	55DR009	19.24	481	289	-	-	2,309	-	-	3,078	5,430	567
16	55DR016	12.80	320	192	-	-	1,536	-	-	2,048	7,800	263
1	55DR001	20.01	500	300	-	-	2,401	-	-	3,202	9,958	322
12	55DR012	11.10	278	167	-	-	1,332	-	-	1,776	5,030	353
11	55DR011	25.02	626	375	-	-	3,002	-	-	4,003	11,006	364
13	55DR013	19.16	479	287	-	-	2,299	-	-	3,066	8,265	371
23	55DR023	18.36	459	275	-	-	2,203	-	-	2,938	7,580	388
3	55DR003	13.22	331	198	-	-	1,586	-	-	2,115	5,236	404
14	55DR014	28.76	719	431	-	-	3,451	-	-	4,602	9,572	481
15	55DR015	18.81	470	282	-	-	2,257	-	-	3,010	6,183	487
20	55DR020	31.82	796	477	1,640	2,340	674	1,640	4,500	12,068	22,967	525
22	55DR022	24.65	616	370	-	-	2,958	-	-	3,944	6,777	582
21	55DR021	16.21	405	243	-	-	1,945	-	-	2,594	4,245	611

Table 5.1.1Ranking 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)
7	55DR007	34.93	34.93	-	74,601	41,138	1,813
4	55DR004	4.66	4.66	-	9,920	5,183	1,914
19	55DR019	2.89	2.89	-	5,880	2,850	2,063
5	55DR005	3.88	3.88	-	8,263	3,743	2,207
8	55DR008	6.92	6.92	-	15,775	7,076	2,229
20	55DR020	31.82	5.62	-	55,393	22,967	2,412
2	55DR002	7.63	7.63	-	17,285	5,914	2,923
24	55DR024	15.57	15.57	-	31,340	10,041	3,121
10	55DR010	7.70	7.70	-	31,003	7,460	4,156
16	55DR016	12.80	12.80	-	35,978	7,800	4,613
18	55DR018	25.08	25.08	-	116,013	24,789	4,680
6	55DR006	2.12	2.12	-	33,938	6,930	4,897
17	55DR017	5.34	5.34	-	23,834	4,817	4,948
3	55DR003	13.22	13.22	-	29,770	5,236	5,686
9	55DR009	19.24	19.24	-	39,540	5,430	7,282
22	55DR022	24.65	24.65	-	52,030	6,777	7,677
21	55DR021	16.21	16.21	-	33,421	4,245	7,873
1	55DR001	20.01	20.01	-	82,793	9,958	8,314
13	55DR013	19.16	19.16	-	69,060	8,265	8,356
23	55DR023	18.36	18.36	-	70,610	7,580	9,315
11	55DR011	25.02	25.02	-	114,755	11,006	10,427
14	55DR014	28.76	28.76	-	103,856	9,572	10,850
15	55DR015	18.81	18.81	-	71,670	6,183	11,591
12	55DR012	11.10	11.10	-	71,740	5,030	14,262

 Table 5.2.1
 Ranking 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.

#	Code	Length (km)	Total cost (NPR '000)	Population	Cost/person (NPR)
				served	
1	55DR001	-	-	9,958	-
3	55DR003	-	-	5,236	-
5	55DR005	-	-	3,743	-
7	55DR007	-	-	41,138	-
10	55DR010	-	-	7,460	-
17	55DR017	-	-	4,817	-
18	55DR018	-	-	24,789	-
20	55DR020	-	-	22,967	-
21	55DR021	-	-	4,245	-
22	55DR022	-	-	6,777	-
16	55DR016	-	-	7,800	-
12	55DR012	-	-	5,030	-
13	55DR013	-	-	8,265	-
8	55DR008	-	-	7,076	-
2	55DR002	-	-	5,914	-
15	55DR015	-	-	6,183	-
11	55DR011	-	-	11,006	-
14	55DR014	-	-	9,572	-
4	55DR004	-	-	5,183	-
23	55DR023	-	-	7,580	-
9	55DR009	3.48	31,660	5,430	5,831
6	55DR006	5.43	24,435	6,930	3,526
24	55DR024	13.19	83,355	10,041	8,301
19	55DR019	3.88	49,460	2,850	17,354

Table 5.3.1 Ranking 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 most of the funding sources. The total district budget for the road sector for the five-year period isNPR 1033.95 million including 700 million SNRTP fund and 106.84 million LRBP fund. LRBP fund is used for only bridges of specified DRCN and part of the SNRTP fund also has been already allocated for specified roads at initial a few years of this first DTMP otherwise all the DTMP funds will be allocated as per ranking given in this DTMP report.

Funding source	Fiscal yea	r			
	2072/73	2073/74	2074/75	2075/76	2076/77
DDC Capital grant (A)	7,000	7,700	8,470	9,317	10,249
DDC Internal Revenue (B)	1,000	1,100	1,210	1,331	1,464
Road Board Nepal (C)	2,500	2,750	3,025	3,328	3,660
SNRTP (D) ¹	150,000	150,000	145,000	135,000	120,000
RTISWAp (E)	15,500	17,050	18,755	20,631	22,694
LRBP (F) ²	17,500	19,250	21,175	23,293	25,622
Parliament's member (G)	5,000	5,500	6,050	6,655	7,321
People's Participation (20% of A+B+C+G)	6,200	6,820	7,502	8,252	9,077
Total	187,200	190,920	190,012	184,513	174,465
Grand total			927,110	•	

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

6.2 BudgetAllocation

The distribution of the available district road sector budget is indicated in the figure below. Due to the low number of village roads, 90% of the total budget is reserved for the district road core network. The remaining 10% is to be used by the DDC for the village roads, giving priority to emergency maintenance and routine/recurrent maintenance. Alternatively, this 10% may be used for the new construction of DRCN roads where this is considered a priority by the district. The 90% 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. However, about 6 million NPR has been allocated first for new construction as per government's policy to connect all VDC headquarters with district headquarters at least with earthen track.



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. As a few project based funds directly goes to specified roads, the part of this DTMP funds are allocated to only these specified roads. For. e.g., LRBP budget goes to SharadaNadiBridge at Lanti-Lekpokhara-Jhyamroad and SNRTP budget goes to also specified roads which had been selected by DDC/DTO prior to this DTMP formulation. It is noted that all the specified roads fall under DRCN categories and very important roads which pass through many VDCs and connect other districts.

Α	ltem				Year							-									
	Fiscal year				2072/73			2073/74			2074/75			2075/76			2076/77				
	Total budget				187,200			190,920			190,012			184,513			174,465				
	Village roads				18,720			19,092			19,001			18,451			17,446			10%	Village roads
	Core road ne	twork budge	et (E	OTMP)	168,480			171,828			171,011			166,062			157,018			90%	DRCN roads
в	Core networ	k length (kr	n)		375.88			375.88			375.88			375.88			375.88			375.88	DRCN length
	Blacktop (km)			8.20			8.20			8.20			8.20			8.20			8.20	Blacktop length
	Gravel (km)				18.00			42.26			77.46			107.24			132.60			194.70	Gravel length
	Earthen (km)				349.68			325.42			290.22			260.44			235.08			172.98	Earthen length
С	Conservatio	n (NRs)			63,147			63,390			63,372			64,902			66,626			321,437	Conservati on
	Emergency				9,397			9,397			9,397			9,397			9,397			46,985	
	Routine				5,638			5,638			5,638			5,638			5,638			28,191	
	Recurrent (bl	acktop)			1,640			1,640			1,640			1,640			1,640			8,201	
	Recurrent (gr	avel)			2,340			5,494			10,070			13,941			17,238			49,083	
	Recurrent (ea	arthen)			41,962			39,050			34,827			31,253			28,210			175,301	
	Periodic (blac	cktop)			820			820												1,640	
	Periodic (grav	vel)			1,350	_		1,350			1,800			3,033			4,503			12,036	
D	Improveme	Cost	B	GR	105,333	B	GR	108,438	B	GR	107,639	B	GR	101,159	B	GR	90,392	B	GR	512,962	
	55DR007	74,601	-	34.93	27,000	ŀ	12.64	47,601	-	22.29		-	-		-	-		-	-	SNRTP funde ranked road)	ed road (top
	55DR004	9,920	-	4.66		-	-		-	-		-	-		-	-		-	-	Branch road, receive fund improving DF	could not prior to R003
	55DR019	5,880	-	2.89		-	-		-	-		-	-	5,880	-	2.89		-	-	Branch road, fund after im DR018	received proving
	55DR005	8,263	-	3.88		-	-	8,263	-	3.88		-	-		-	-		-	-	Branch road, fund after im DR007	received proving
	55DR008	15,775	-	6.92		-	-		-	-	15,775	-	6.92		-	-		-	-	Branch road, fund after im DR007	received proving
	55DR020	55,393	-	5.62	35,000	-	3.55	20,393	-	2.07		-	-	-	-	-	-	-	-	SNRTP funde	ed road
	55DR002	17,285	-	7.63		-	-		-	-		-	-	17,285	-	7.63		-	-	Received fun	d after

Table 6.2.1 Investment plan

																				improving DF	8007 & DR020
	55DR024	31,340	-	15.57		-	-		-	-		-	-		-	-		-	-	Couldn't rece prior to impro DR018	ive fund oving DR022,
	55DR010	31,003	-	7.70		-	-		-	-	31,003	-	7.70	-	-	-		-	-		
	55DR016	35,978	-	12.80		-	-		-	-	14,364	-	5.11	21,614	-	7.69		-	-		
	55DR018	116,013	-	25.08	37,333	-	8.07	32,182	-	6.96	46,498	-	10.05	-	-	-	-	-	-	SNRTP funde	d road
	55DR006	33,938	-	2.12		-	-		-	-	0	-	0.00	33,937	-	2.12	-	-	-		
	55DR017	23,834	-	5.34		-	-	-	-	-	-	-	-	22,444	-	5.03	1,390	-	0.31		
	55DR003	29,770	-	13.22		-	-	-	-	-	-	-	-	-	-	-	29,770	-	13.22		
	55DR009	39,540	-	19.24		-	-	-	-	-	-	-	-	-	-	-	39,540	-	19.24		
	55DR022	52,030	-	24.65		-	-	-	-	-	-	-	-	-	-	-	11,262	-	5.34		
	55DR021	33,421	-	16.21		-	-	-	-	-	-	-	-	-	-	-	8,430	-	4.09		
	55DR001	82,793	-	20.01		-	-	-	-	-	-	-	-	-	-	-	12,371	-	2.99		
	55DR013	69,060	-	19.16		-	-		-	-	-	-	-	-	-	-	28,963	-	8.04		
	55DR023	70,610	-	18.36		-	-		-	-	-	-	-	-	-	-	18,023	-	4.69		
	55DR011	114,755	-	25.02		-	-		-	-	-	-	-	-	-	-	19,227	-	4.19		
	55DR014	103,856	-	28.76		-	-		-	-	-	-	-	-	-	-		-	-	LRBP fund go bridge in this r fund is not incl investment pla	es to the oad, so this luded in in
	55DR015	71,670	-	18.81		-	-		-	-	-	-	-	-	-	-		-	-		
	55DR012	71,740	-	11.10		-	-		-	-	-	-	-	-	-	-		-	-		
		-	-	-	-	-	-		-	-		-	-	-	-	-		-	-		
	Total improv	vement			99,333	-	24.26	108,438	-	35.19	107,639	-	29.78	101,159	-	25.36	90,392	-	62.10	506,962	Improvem ent
E	Constructi on	Cost	GR		6,000	G	R	-	G	R	-	G	R	-	G	R	-	G	R		
	55DR001	-	-		-	-		-	-		-	-		-	-		-	-			
	55DR003	-	-		-	-		-	-		-	-		-	-		-	-			
	55DR005	-	-		-	-		-	-		-	-		-	-		-	-			
	55DR007	-	-		-	-		-	-		-	-		-	-		-	-			
	55DR010	-	-		-	-		-	-		-	-		-	-		-	-			
	55DR017	-	-		-	-		-	-		-	-		-	-		-	-			
	55DR018	-	-		-	-		-	-		-	-		-	-		-	-			
	55DR020	-	-		-	-		-	-		-	-		-	-		-	-			
	55DR021	-	-		-	-		-	-		-	-		-	-		-	-			
	55DR022	-	-		-	-		-	-		-	-		-	-		-	-			

F	Remaining b	oudget		- 0		-		-		-		-		- 0	Remaining
															constructio n
	Total new co	onstructio	n	6,000	1.33	-	-	-	-	-	-	-	-	6,000	New
	55DR019	49,460	3.88		-	-	-	-	-		-	-	-		
	55DR024	83,355	13.19		-	-	-	-	-		-	-	-		
	55DR006	24,435	5.43	6,000	1.33	-	-	-	-		-	-	-		
Ì	55DR009	31,660	3.48		-	-	-	-	-	-	-	-	-		
	55DR023	-	-	-	-	-	-	-	-	-	-	-	-		
	55DR004	-	-	-	-	-	-	-	-	-	-	-	-		
	55DR014	-	-	-	-	-	-	-	-	-	-	-	-		
	55DR011	-	-	-	-	-	-	-	-	-	-	-	-		
	55DR015	-	-	-	-	-	-	-	-	-	-	-	-		
	55DR002	-	-	-	-	-	-	-	-	-	-	-	-		
	55DR008	-	-	-	-	-	-	-	-	-	-	-	-		
ĺ	55DR013	-	-	-	-	-	-	-	-	-	-	-	-		
Ì	55DR012	-	-	-	-	-	-	-	-	-	-	-	-		
	55DR016	-	-	-	-	-	-	-	-	-	-	-	-		

6.3 DTMP Outputs

Based on the investment plan presented above, all existing DRCN roads will be conserved for the duration of the DTMP period. A total of176.70 kmis improved to gravel standard inclusive of cross drainage and protective structures required to make them maintainable all-weather roads. Further 1.33 km new road will be constructed within this first DTMP period. The remaining 172.98 km of earthen roads at the end of the DTMP period will be improved in the next DTMP. The same goes for the remaining new construction of roads 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).

Conservation	Improvement gravel	Improvement blacktop	New construction
375.88	176.70	-	1.33

Of the total DTMP budget, NPR 321.44 million will be spent on conservation and NPR 506.96 million on improvement. Similarly NPR 6.0 million will be spent for new construction. 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 all-weather maintainable DRCN roads increases from 26.2 km to 202.9km, with only 172.98km remaining fair weather.

	Total length	Fair-weath	er	All-weather gra	avel	All-weather black	top
	km	km	%	km	%	km	%
Start of DTMP	375.88	349.68	93%	18.00	5%	8.20	2%
End of DTMP	375.88	172.98	46%	194.70	52%	8.20	2%
Difference	-	- 176.70	-47%	176.70	47%	-	0%

Table 6.4.1Standard of DRCN roads

The number of VDC headquarters with direct access to the SRN is 14 with 45% district population. Similarly, the number of VDC headquarters with access to all-weather DRCN roads and district population with access to the all-weather DRCN roads will increase3 to 23 and 49,827 to 141,098 respectively. The number of VDC headquarters with no access to DRCN roads will remain at 4, while the percentage of the district population with no access to DRCN roads will remain at 8%.

	Direct	access to a	SRN	No a	iccess to ro	ad	Fair-we	eather core ro	ads	All-w roads	eather core)
	VDC s	Populati on	%	VD Cs	Populati on	%	VDC s	Population	%	VD Cs	Populati on	%
Start of DTMP	14	108,680	45%	4	18,735	8%	24	120,817	50%	3	49,827	21%
End of DTMP	14	108,680	45%	4	18,735	8%	3	19,775	8%	23	141,098	58%
Difference	-	-	0%	-	-	0%	- 21	- 101,042	-42%	20	91,271	38%





Annexes

Annex 1: Traffic Data

Code	Description	Total Length	Motorcycle	Car- Jeep-	Tractor	Truck- Bus	PCU	VPD
		(km)		Minibus		-		
55DR001	Sallibazar-Namra-Bame	20.01	4	2	3		10	5
55DR002	Sunauli-Maidupokhara-Ghajaripipal	7.63	7	2	2	0	10	4
55DR003	Dhorchaur-Uchalne-Chhapdanda-Nathepipal	13.22	7	1	4	1	17	6
55DR004	Dhorchaur-Kalalekh-Gurudase-Kainikada	4.66	4	0	2		6	2
55DR005	Chaurpani- ThulJimali	3.88	5	1	3		10	4
55DR006	Chisapani-Timile-Balya(Kalagaon)	2.12	4	1	3		9	4
55DR007	Tharmare-Badagaun-Sanipiply	34.93	20	15	14	8	85	37
55DR008	Maulahale-Bhalchaur-Ratamata	6.92	9	4	6	1	25	11
55DR009	Rarechour-Pedi-Ratamata-Pharulachour-Darmakot	19.24	8	2	3		12	5
55DR010	Sivrath(Simakholi)-Gothiban-Tribeni	7.70	8	2	3		12	5
55DR011	Kharibote-Tatke-Bapukhola-Khaula	25.02	10	6	7	1	29	14
55DR012	Kharibot-Bagchour-Kotmaula-Pathihalna	11.10	4	0	2		6	2
55DR013	Mokhala-Damachour-Guranshe-Jhyam	19.16	7	2	3	1	16	6
55DR014	Lanti-Lekpokhara-DahaKhola(Damahachour)-Jhyam	28.76	7	2	3	1	16	6
55DR015	Sankhamul-KorbangJhimpe-Kharsubash	18.81	7	3	4	2	23	9
55DR016	Solabang-Rim-Chhayanath-Sinabang	12.80	4	1	1		5	2
55DR017	Kuparkot-Gothiban-SarpaniGarpa	5.34	5	2	3		11	5
55DR018	Luham-Kavara-Danegauda(Rampur)	25.08	10	3	7	1	26	11
55DR019	Rikhebazar-Kadaghithi	2.89					-	-
55DR020	Khalanga-Simkharka-Baluwasangarahi	31.82	25	10	12	8	79	30
55DR021	Khalanga-Laxmipur-Jhirghat	16.21	4	3	4		13	7
55DR022	Marke-Rampur-Jhigane-Baluwa-Damdawali-Hattidamar-Kharkabar (Part I)	24.65	12	4	5		20	9
55DR023	Salchaur-Puchala- Machkharka-Manjkhada-Dharapani	18.36	1		2		5	2
55DR024	Marke-Rampur-Jhigane-Baluwa-Damdawali-Hattidamar-Kharkabar (Part II)	15.57					-	-

Annex 2: Population Served

#	VDC/municipality	Populati on	lections		1001	1002	1003	1004	1005	1006	1007	1008	6003	010	111	012	1013	1014	1015	016	2017	2018	019	1020	1021	1022	1023	1024
			Conr	SRN	55DR	55DR	55DR	55DR	55DR	55DR	55DR	55DR	55DR	55DR	55DR	55DR	55DR	55DR	55DR	55DR	55DR	55DR						
	Total population	241,716		108,680	9,958	5,914	5,236	5,183	3,743	6,930	41,138	7,076	5,430	7,460	11,006	5,030	8,265	9,572	6,183	7,800	4,817	24,789	2,850	22,967	4,245	6,777	7,580	10,041
	Total VDCs/municipaliti es	41		14	2	1	1	1	1	1	7	1	1	1	2	1	2	2	1	2	1	5	1	4	1	1	2	2
1	Badagau	3,913	1								Х																	
2	Bajhkada	3,174	1	Х																								
3	Bame	5,173	1		Х																							
4	Bhalchaur	7,076	2								Х	Х																
5	ChadeKarnji	5,236	1				Х																					
6	Chhayaksetra	5,697	1	Х																								
7	Damachaur	6,036	2														Х	Х										
8	Darmakot	5,430	1										Х															
9	Devasthal	4,785	3	Х	Х																			Х				
10	Dhakadam	7,460	1											Х														
11	Dhanban	5,587	1	Х																								
12	GhajariPipal	5,914	2			Х																		Х				
13	Jimali	3,743	2						Х		Х																	
14	Kabhra	5,467	1																			Х						
15	Kadagithi	2,850	2																			Х	Х					
16	Kalagau	6,930	2							Х	Х																	
17	KalimatiKalche	6,516	2	Х																								Х
18	Kalimati Rampur	6,777	3	Х																		Х				Х		
19	Kaprechaur	3,525	1																									Х
20	KorbanJhimple	6,183	1																Х									
21	Kotbara	6,927	1												Х													

22	Kotmaula	5,030	1								Х									
23	KubhindeDaha	7,007	1														Х			
24	Laksmipur	4,245	2													Х		Х		
25	LekPokhara	3,536	1										Х							
26	Majhkada	5,261	3	Х													Х		Х	
27	MarmapArikada	4,661	1					Х												
28	Mulkhola	5,593	1	Х																
29	Nigalchuli	2,319	1																Х	
30	Phalaban	5,450	1													Х				
31	Pipalneta	2,229	1									Х								
32	Rim	4,262	1											Х						
33	SanpaniGarpa	4,817	1												Х					
34	Sharada N.P.	33,730	1	Х																
35	Shivarath	6,763	1	Х																
36	Siddheswari	5,183	2	Х		X														
37	Sinban	3,538	1											Х						
38	Swikot	5,725	2	Х				Х												
39	Tharmare	9,090	2	Х				Х												
40	TribeniNamuna	4,799	1	Х																
41	Waphukhola	4,079	1							Х										

Annex 3: Level of Access

#	VDC/municipality			L.	5			S
		access CN start MP	access CN end MP	r-weathe CN start MP	r-weathe CN end MP	weather CN start MP	weather CN end MP	ect acces
		N N L	N N L	DR	DR	I HA HA	A H A H A H A H A H A H A H A H A H A H	
	Total population							
		18,735	18,735	120,817	19,775	49,827	141,098	108,680
	Total VDCs	4	4	24	3	3	23	14
1	Badagau			Х			Х	
2	Bajhkada							Х
3	Bame			Х			Х	
4	Bhalchaur			Х	Х			
5	ChadeKarnji			Х			Х	
6	Chhayaksetra							Х
7	Damachaur			Х			Х	
8	Darmakot	Х	Х					
9	Devasthal						Х	Х
10	Dhakadam			Х			Х	
11	Dhanban							Х
12	GhajariPipal			Х			Х	
13	Jimali			Х			Х	
14	Kabhra			Х				
15	Kadagithi	Х	Х					
16	Kalagau	Х	Х					
17	KalimatiKalche			Х	Х			Х
18	Kalimati Rampur						Х	Х
19	Kaprechaur	Х	Х					
20	KorbanJhimple			Х	Х			
21	Kotbara			Х			Х	
22	Kotmaula			X				
23	KubhindeDaha			Х		Х	Х	
24	Laksmipur			Х			Х	
25	LekPokhara			Х			Х	

26	Majhkada				Х	Х
27	MarmapArikada		Х		Х	
28	Mulkhola					Х
29	Nigalchuli		Х		Х	
30	Phalaban		Х		Х	
31	Pipalneta		Х		Х	
32	Rim		Х		Х	
33	SanpaniGarpa		Х		Х	
34	Sharada N.P.			Х	Х	Х
35	Shivarath					Х
36	Siddheswari					Х
37	Sinban		Х		Х	
38	Swikot					Х
39	Tharmare			Х		Х
40	TribeniNamuna					Х
41	Waphukhola		Х		Х	

Annex 4: Photographs



Draft Report Presentation

Annex 5: Summary of proposed interventions

Road code	Road Name		Ð		~	_			`			s		Ê
		-ength (km)	Start chainag km) or X- coordinate	End chainag∈ km) or Y- coordinate	Rehabilitatior km)	Videning (m)	3ridge (m)	Slab culvert m)	CC Causewa) m)	stone Causeway (m	^o ipe culvert units)	Masonry wall m3)	3abion walls m3)	-ined drain (r
Total		360.82			-	1,675	620	26	154	-	208	153	8,487	2,790
55DR001	Sallibazar-Namra-Bame	20.02				90	48		20		13		735	180
55DR002	Sunauli-Maidupokhara-Ghajaripipal	7.63				45	0		6		8		445	120
55DR003	Dhorchaur-Uchalne-Chhapdanda-Nathepipal	13.22				60			8		12		840	160
55DR004	Dhorchaur-Kalalekh-Siddeshori	4.66				20					4		180	60
55DR005	Chaurpani- ThulJimali	3.88				25					3		140	60
55DR006	Chisapani-Timile-Balya(Kalagaon)	2.12				40	36				6		255	100
55DR007	Tharmare-Badagaun-Sanipiply	34.93				90					26		1542.5	400
55DR008	Maulahale-Bhalchaur-Ratamata	6.92				55			8		10		307	130
55DR009	Rarechour-Pedi-Ratamata-Pharulachour-	8.39				95			6		9		25	70
55DR010	Sivrath(Simakholi)-Gothiban-Tribeni	7.70				30	18				8		395	60
55DR011	Kharibote-Tatke-Bapukhola-Khaula	25.02				100	78	6			18		330	160
55DR012	Tharmare-Bagchour-Kotmaula-Pathihalna	11.10				160	60				3		420	60
55DR013	Mokhala-Damachour-Guranshe-Jhyam	19.16				40	36		8		11		280	230
55DR014	Lanti-Lekpokhara-DahaKhola(Damahachour)- Jhyam	28.76				190	48	6	30		24	102	792.5	320
55DR015	Sankhmul-KorbangJhimpe-Kharsubash	18.81				70	42				7		50	80
55DR016	Solangbang-Rim-Chhayanath-Sinabang	8.56				30	12		6		2		25	20
55DR017	Kuparkot-Gothiban-SarpaniGarpa	5.34				70	12		22		9		407.5	70
55DR018	Luham-Karva-Danegauda(Rampur)	25.08				60	140		16		2		25	20
55DR019	Rikhebazar-Kadaghithi	2.89				40								
55DR020	Khalanga-Simkharka-Baluwasangarahi	31.83				50	48	6	24		10	51	615	180
55DR021	Khalanga-Laxmipur-Jhirghat	16.21				55					7		257.5	150
55DR022	Marke-Rampur-Jhigane-Baluwa-Dumdawali- Hattidamar-Kharkabar (Part I)	24.65				130		8			13		370	150
55DR023	Salchaur-Puchala- Muchkharka-Manjkhada- Dharapani	18.36				50	42				3		50	10
55DR024	Marke-Rampur-Jhigane-Baluwa-Dumdawali- Hattidamar-Kharkabar (Part II)	15.57				80								

Annex 6: Overall Road Inventory

Road	Road Name	a			×	be	be	L	er	_	_	. >	<u> </u>
code		, km	e -	ъ	acl	Ty	Ty	hei	ath	air -	- u	aril	ent ent
		th	nag or	lag	B	lce vel	th	leat	Veä	litio ∦ F	litic	litic	litic and ssa
		bue	tart nair	nd nair	unfa /pe	urfa Gra	urfa Ear		air V	000	onc	onc	onc erm
Total		<u> </u>	075	ш	Ø⊢ 8 20	0. 18.00	0 349 68	 ₹	<u>11</u> 349 69	<u>.</u> -	- -	ΟĔ. -	- -
55DR001	Sallibazar-Namra-Bame	20.01			0.20	10.00	20.01	20.20	20.01	N			
55DR002	Sunauli-Maidupokhara-Ghaiaripipal	7.63					7.63		7.63	v		N	
55DR002	Dhorchaur-Uchalne-Chhapdanda-Nathepipal	13.00					13.00		13.00		1	V	
55DP004	Dhorchaur-Kalalekh-Siddeshori	10.22					15.22		10.22		v		
55DR004		4.00					4.00		4.00			N	
55DR005		3.88					3.88		3.88			N	
55DR006	Chisapani-Timile-Baiya(Kalagaon)	2.12					2.12		2.12	,		N	
55DR007	I harmare-Badagaun-Sanipipiy	34.93					34.93		34.93	\checkmark			
55DR008	Maulahale-Bhalchaur-Ratamata	6.92					6.92		6.92		\checkmark		
55DR009	Rarechour-Pedi-Ratamata-Pharulachour-Darmakot	19.24					19.24		19.24		\checkmark		
55DR010	Sivrath(Simakholi)-Gothiban-Tribeni	7.70					7.70		7.70		\checkmark		
55DR011	Kharibote-Tatke-Bapukhola-Khaula	25.02					25.02		25.02				
55DR012	Tharmare-Bagchour-Kotmaula-Pathihalna	11.10					11.10		11.10				
55DR013	Mokhala-Damachour-Guranshe-Jhyam	19.16					19.16		19.16				
55DR014	Lanti-Lekpokhara-DahaKhola(Damahachour)-Jhyam	28.76					28.76		28.76				
55DR015	Sankhmul-KorbangJhimpe-Kharsubash	18.81					18.81		18.81		\checkmark		
55DR016	Solangbang-Rim-Chhayanath-Sinabang	12.80					12.80		12.80				
55DR017	Kuparkot-Gothiban-SarpaniGarpa	5.34					5.34		5.34				
55DR018	Luham-Karva-Danegauda(Rampur)	25.08					25.08		25.08	\checkmark			
55DR019	Rikhebazar-Kadaghithi	2.89					2.89		2.89				
55DR020	Khalanga-Simkharka-Baluwasangarahi	31.82			8.20	18.00	5.62	26.20	5.62				
55DR021	Khalanga-Laxmipur-Jhirghat	16.21					16.21		16.21	\checkmark			
55DR022	Marke-Rampur-Jhigane-Baluwa-Dumdawali-Hattidamar-Kharkabar (Part	24.65					24.65		24.65		\checkmark		
55DR023	Salchaur-Puchala- Muchkharka-Manjkhada-Dharapani	18.36					18.36		18.36		\checkmark		
55DR024	Marke-Rampur-Jhigane-Baluwa-Dumdawali-Hattidamar-Kharkabar (Part II)	15.57					15.57		15.57			\checkmark	

	Village Road Core Networks (VRCNs)	190.22		3.70	23.07	163.45	26.77	163.45		
55VR001	Ramekhola-Okhareni- Dahchaur Road	9.86				9.86		9.86		
55VR002	Dhorchaur-Uchalne-Chhapdanda-Nathekhola-Sallibajar Road	11.72				11.72		11.72		
55VR003	Chakalighat-Okharbot-ThuliJimali-Thapachaur-Trebeni- Ragechaur Road	4.45				4.45		4.45		
55VR004	Tharmare – Thinabang - Okharbote – Kumakh – Sidheswari – Sallibazar - Surkhet Rural Road	8.09				8.09		8.09		
55VR005	Badagaun – Champutakura – Neta – Basnetjula Road	8.42				8.42		8.42		
55VR006	Maulahalle-PharulaChaur - Silingi Bazar Rukum Rural Road	10.01				10.01		10.01		
55VR007	Shivrath – Sisnekhola - Pharulachaur – Darmakot – Chaurjhari Rural Road	7.96				7.96		7.96		
55VR008	Simkholi-Gotiwan-Tribeni Agriculture Road	9.61				9.61		9.61		
55VR009	Rarechaur-Setadhar-Pukhat-Pharaulachaur-Siigi Rural road	5.00				5.00		5.00		
55VR010	Shivrath – Sisnekhola - Pharulachaur – Darmakot – Chaurjhari Rural Road	3.45				3.45		3.45		
55VR011	Shivrath – Sisnekhola - Pharulachaur – Darmakot – Chaurjhari Rural Road	5.46				5.46		5.46		
55VR012	Tharmare-Sotagar-Khali,Bhalchuar Rural Road	7.51				7.51		7.51		
55VR013	Tharmare-Bhaghachaur-Kotmaula-Pathihalna-Rolpa Rural Road	4.20				4.20		4.20		
55VR014	Lanti – Lekpokhara – DahakhKhola (Damahachaur) – Jhyam Rural Road	4.76				4.76		4.76		
55VR015	Kapurkot-Nigalpani-Sinabng-Jhyamguranshe-Khaula Rural Road	23.07			23.07		23.07			
55VR016	Kapurkot-Phalabang(Darbar) Road	18.35				18.35		18.35		
55VR017	Luham – Phalabang (darbar) – Makhan Takura - Balle Dang Rural Road	5.25				5.25		5.25		
55VR018	Lanti – Ranagaun – Chaibang – Khairabang Rural Road	5.27				5.27		5.27		
55VR019	Lanti-Sainikhall-Mokhla Rural Road	11.98				11.98		11.98		
55VR020	Barala-Sautol-Marke-Khairabang-Shrinagar Ring Road	22.10				22.10		22.10		
55VR021	Khalanga-KupindeDaha-BabiyaChaur-Baluwasangarahi Rural Road	3.70		3.70			3.70			

Annex 7: Map Projection Parameters

Global Positioning System (GPS) tracking survey was conducted to track the existing road networks and other road related infrastructures within road networks using WGS 1984 geographical coordinate system. Finally all map features were projected in to WGS 1984 UTM Zone 44N coordinate system using following projection parameters;

Projected coordinate system						
Projection	Transverse Mercator					
False Easting	500,000.00					
False Northing	0.00					
Central Meridian	81.00					
Scale Factor	0.9996					
Latitude of Origin	0					
Geographic Coordinate System	GCS WGS 1984					
Datum	D WGS1984					

Annex 8: Response of comments

The corrected and edited texts are given in red color in final DTMP report. The excel temple has been revised to incorporate the comments/suggestions from RAP III officials and concerned DDC/DTO officials as well as feedbacks on draft report from final workshop. The required explanations are also given in excel template regarding investment plan.

The response has been prepared based on comments received for DTMP Pyuthan District. For other two districts; Arghakhanchi and Salyan, it seems the similar general comments/suggestions on excel template and DTMP report. So, it is applicable to other district too.

Excel Sheet

- 1. Two Excel sheets appears that only differences are in spelling of VDC names and allocation of funding. Not clear which is the final one based on report it appears to be "Pyuthan DTMP_Updated-14Sep-2015", so these comments are based on that file.
 - Now, excel template sheet has been revised and re-submitted.
- 2. No rehabilitation planned does this mean that all roads are in maintainable condition?
 - Yes.rehabilitation is not planned.
- 3. Widening appears to only involve spot improvements this is ok. Full widening should be avoided as the traffic volumes are low.
 - As the traffic volumes are low in almost all DRCNs, full widening are avoided. However, it is suggested only in specific locations to bring it up to the minimum standard and to ensure sufficient space in the curves in all DRCNs.
- 4. Table 3.3.1 shows new construction of road #1 to connect Sari VDC, but this is indicated as already being connected in Table A2.2 please correct.
 - Table A2-2 has been corrected.
- 5. In Table 3.4.1 (DTPP) the columns regarding recurrent maintenance for GR and ER as well as periodic maintenance for GR have been removed why? The table now makes it appear as if this is not required.
 - Prepared as per given excel template.
- 6. Unit costs for recurrent maintenance can be reduced to respectively 200,000/km, 130,000/km and 120,000/km for BT, GR and ER if considered appropriate. If you consider the current rates are appropriate, leave them. But for many districts the proposed unit rates are too high.
 - In case of conservation cost, it's very difficult to get near to actual value from district. However, based on experiences from many district, the revised value considered appropriate and corrected accordingly in final revised excel template.
- 7. The budgets for future years are simply based on a 10% increase per year. It is unlikely that this will happen. I suggest that this is reviewed with actual expected amounts entered where possible and better estimates of growth percentages in other cases.
 - As DTMP is prepared for 5 years, there is no possibility of high variation in district level annual budget over short period (5 years). So, 10% increase per year has been proposed for planning purpose. However, in final report, 10% increase per year has not proposed in all funding sources. For particular project where total amount for 5 years period has been already known, actual amounts has been entered as much as possible.
- 8. The allocation of the available budgets does not follow the ranking of the roads. Budgets for specific roads are spread over several years, sprinkled over various roads each year, and allocated to low ranking roads some of the highest ranking roads are not included at all (#11) or left till the final year.
 - Most of the funds except SNRTP budget will finish for conservation. Although 52DR015 & 52DR017 are not at top in ranking list, these roads have received DTMP funds for improvement as they had been already started for upgrading/improvement under SNRTP funds. In fact, these are very important district roads which connect DRCN of Arghakhanchi. Because of upgrading to BT status, the cost has become high and will not able to come at top of ranking table. All the available budget of any FY could not allocated to a single roads because of lack of sufficient institutional/technical capacity of DDC/DTO and for proportional development of district. Beside these two roads, top ranking road (52DR016) which starts from SRN will be improved to gravel status. Almost double of existing road needs to be new constructed to make 52DR022 all-weather. As new construction of this road is not in priority within this DTMP period, this does not get DTMP fund. So budget goes to next road 52DR004. Without improvement of 52DR008, it does not sense to improve two DRCNs; 52DR010 & 52DR011 for all-weather status and these roads do not also get DTMP fund. So, 52DR006

has been upgraded to Gravel status. DoR has conducted survey and design of 52DR008 under RIP II project. So, it does not get DTMP funds. Please refer final DTMP report and excel temple.

- 9. In table A2.2, VDCs 14, 24, 29, 30 and 35 do not have their access entered correctly either no after situation or after situation is SRN while before situation is DRCN.
 - Table A2.2 has been corrected. Please refer final report.
- 10. In the same table, 4 additional VDCs are connected by road despite no new road construction please explain
 - In final report all the related tables as well as text in main report has been corrected. Please refer red color text in final report to see corrected or edited text.
- 11. I am not sure what the purpose is of Table A3.1 since it does not indicate the actual location
 - As per given format, location of each intervention can be entered. But instead, this table indicates the summary of proposed intervention. So, this table has been corrected accordingly. The detail location of intervention could be find in field report and also major intervention can been seen in GIS shape files.
- 12. Table A4.1 makes very little sense. Roads are marked as being in fair condition and at the same time are permanently impassable, others are in good condition but are temporarily impassable. There are also several roads in poor condition, but there is no rehabilitation planned.
 - This table has been corrected as per field inventory. Please refer final Report.

Response on other comments raised in main report

1. Regarding the duplication of SRN and DRCN roads

- Although F134 (Lamdanda-Bhedikhore-Pyuthan) road with 48 km earthen status has been listed in SRN in SSRN 2014, the status of this road has been now changed to DRCN (52DR015) category under request of DDC Arghakhanchi and Pyuthan. This road is being improved under SNRTP project now. So, this road has been removed from the list of SRN. Similarly in Arghakhanchi, the part of F134 (Netagaon- Sandhikharka- Asurkot-Lamdanda road) with 75 km (48 earthen and 33 planning status) has been listed in SRN in SSRN 2014 of DoR, the status of this road has been now changed to DRCN (51DR002 and 51DR010) category under request of DDC Arghakhanchi. This road is being improved under SNRTP project now. So, this road has been now changed to DRCN (51DR002 and 51DR010)
- 2. Regarding DRCN within new Municipality
 - Because of newly created a municipality in all project district, part of these rural roads are contained within the municipality and status has become so-called municipal roads. The part of each DRCNs within municipality in all three project districts are given in separate column in final DTMP report. Due to newly formed municipality, it is however not able to maintain/upgrade these roads due to their lack of technical and financial capacity. So, DTO/DDC will be responsible to look after the part of DRCN within municipal boundary at least in this first DTMP period.Later, these roads shall be upgraded/maintained as per municipal road standards and municipality would be responsible to do this.

Annex 9: Minutes of Workshops

आज मिति २०६२/03/98 जाते जिल्ला विकास सामतिको हतजा, सत्यात जिल्लाका स्थातीय विकास अधिकरी भी हर प्रसाद दहाल ज्यूको अट्यस्तामा वैठक बसी यस सल्यान जिल्लाकी यातायात जारुयोजना (DT MP) परिमार्जन मुख्य सडक सञ्जाल च्ह्रीट जोव्हीमा तपशित बम्रीजिमका महनुमावहरूको उपहिधातमा बैंडक बसी देहाय बजोजिमको विर्णय जारियो 34Reart 1-मानि अग्र भी कृष्ण प्रसाद आचार्य - प्रमुख जिल्ला साधिकारी रिष्या 18 अग्र भी हरि प्रसाद दहाल - स्थानी विकारग आधिकारी Aanalis 2 होगा मन्द्र, रामापति नेपाली कांग्रेस सलपान 1 क्षे २७२१ ही रही रहाये 11 11 भी हरि के की उन्हमडा नेकवा (एमाले) एतपान । खि की बली सार्थित " st अभी बाग वहादर वली उपाड्याय ही मेजागा (माण्योवादी) रात्पान भी मित्र प्रवाहा शामी रहे इ- गार्क 11 भी मनोज जुमार खिंह, आहमदा राप्रण नेपाल स्टब्सार 1 कि हर्गा बहाहर ग्रिट एवत हायित राष्ट्रया सन्यान । भी के तहा तहाहर गीरे सार्यत ने छपा (माले) संतपार 1 67 होत्र लहाहा के ह सहस्य राजमी लतमान 1 म्बडग लहादर पुर प्राह्महर राजम राल्यात (भौग वे लती, उप- मान्ध्व मेफपा (भाने) मत्यान 1 राम्र वहादुर आही, छा.उन. 20.7. धा. की राजेश आर्ज्जल, जि प्रहेट्स्व अव् जि र हि. रा. भटमान A A ZIM BNIE LASSIT A S. WI CHING IT - 6- G. USEN आहीरा राकी, म दिन ई, कि पा का रिष वराषु रवडका २. म. रू. पा आझावादा) जिसे 90) (THIES 2175, मेखपा (VATION) सार्वपान 31 TO F PICTO G. V. 21. 21. Gr. 22430 By Touring noster St. q. (7. Hourg HEFA. XOIZIOG LIMI TUN WHY TSIILY 41. TIME An TITA GEIST FOR 21. M. CUT Y. MUZA B. F. G. HANN भीतारे मात किया मा में भीती

10

आज मिति २०६२ 103/92 ग्रेका दित यस बिल्ला विकास समितिको कार्यालय संत्यानका स्थानीय विकास अधिकारी भी हरि प्रसाद दाहाल ज्यूकी अध्यक्षताया जिल्ता यातायात गरूयोजना (DTMP) परिमार्जन अभिमुरिवकरण जीवठी सम्पदन मयो

तपशिल 13 35.

2001 प्रदाद आन्या मे - ममुख मा रता आहि हरी प्रयाद उहाल अभे जाठोहा पन्द (जापालीकांग्रेस सभाषति) स्रो हरीके सी. (मेछपा एमाले (अध्यहा काछ बट्छा केर्दी. यु नेरुपां रमाइनेवाही (अपायहा) मतोज सिंह राषुपा नेयान्ज (आध्यम्) - दुर्ग वहाड्डा म्युस्टावटा राष्ट्रपा (Urda) वला वरांडा मिरी तेखपा (गानि) (गाचिन · हरे ज वहाड़ा मि. 3. राष्ट्रिय आमोर्च जि. 3. सरस्य 2वडग म. पूर्न राष्ट्रिम ज्यतेमुन्डा (सच्याहन) महि। देवडारा होड. (. (अध्यहा) राजेश राम्युलि कि मुर्द्ध का अन मे महरदाव की सलाम Silver ZIGIO JZIG STOTICE TEE צוא הצובר בווצו , כותאונו אונשיבר גות. א. עו निम वह्या वर्ती या अन्तेश प्राध्य Woln fairly Usan froxom ADAIN भेम क नली के जपाताले जि. छ. उपमानिन सारिता हमाल वन उपमोत्तन महासंध महासारिक RUILOY LINI ALIA YAMIC MEING AI HEREY - मपलाल भग्डारी मे. 9. 9. मल्यान् HELY.

बिर्ण यहरु तिम्न सडकहरू जिल्ला मुख्य सम्बद्ध सम्बद्ध सम्बद्ध (DR(N) का लाजि खतीट गरियो | S.N. Road Name Khalanga-Laxmipur-Jhirghat Road 1 2 Kharibote-Tatke-Bapukhola - Khaula Road Lanti Lekpokhara Daha Khola (Damahachaur)- Jhyam Road 3 Luham-Kavara-Danegauda (Rampur) Road 4 Marke-Rampur-Jhigane-Baluwa-Damdawali-Hattidamar-Kharkhabar Road (Part I) 5 Marke-Rampur-Jhigane-Baluwa-Damdawali-Hattidamar-Kharkhabar Road (Part II) 6 Mokhala-Damahachaur-Guranshe-Jhyam Road 7 Sankhamul-Korbang-jhimpe-Kharsubash Road 8 Solabang-Rim-Chhayanath (Sinabang) Road 9 Tharmare-Badhagaun-Sanipiply Road 10 Tharmare-Bhagchaur-Kotmaula-Pathihalna Road 11 Shivrath-Simakholi- Gothiban-Tribeni (Dhakadham) Road 12 5 Rarechaur-Pedi-Ratamata-Pharulachaur-Darmakot Road 13 Salchaur-Puchala-Machkharka-Manjhkanda-Dharapani Road 14 Dhorchaur-Uchalne-Chhapdanda-Nathepipal Road 15 Khalanga-Simkharka-Baluwasangarahi Road 16 Maulahale-Bhalchaur - Ratamata Road 17 Salibazar-Namra-Bame Road 18 Sunauli-Maidupokhara (Ghajaripipal) 19 Chisapani-Timile-Balye (Kalagaon) 20 Kapurkot-Gothiban-Sarpani Garpa 21 22 Dhorchaur-Kalalekh (Siddeshori) Road 23 Chaurpani- Thul Jimali Road 24 Rikhebazar-Kadaghiti Road 2195151

Annex 10: Work Completion Certificate



च. नं. 392

नेपाल सरकार सङ्घीय मामिला तथा स्थानीय विकास मन्त्रालय जिल्ला विकास समितिको कार्यालय सल्या प.सं. :- सूचना २०७२।०७३

फोन नं. ०८८५२००७२ फ्याक्स नं.०८८ ४२००२३

मिति :- २०७२।७।२२

विषय :- कार्य सम्पादन भएको बारे ।

श्री टिम लिडर ग्रामिण पूर्वाधार कार्यकम, ललितपुर

प्रस्तुत विषयका सम्वन्धमा, सल्यान जिल्लाको जिल्ला यातायात गुरुयोजना तयार गर्ने कममा परामर्शदातृ संस्था आर.आई.डि.सी. प्रा.लि. को तर्फवाट खटिई आउनुभएका परामर्शदाताहरुबाट कार्य सम्पादन शर्तनामा तथा निर्देशिका बमोजिम अभिमुखिकरण गोष्ठी, जिल्ला सडक संजाल छनौट गोष्ठी, प्रतिवेदन प्रस्तुती गोष्ठी तथा फिल्ड अध्ययन कार्य सम्पादन भएको व्यहोरा अवगत गराईन्छ,।

निम वहाद्र वली

नि. स्थानिय विकास अधिकारी निस्थानीय विवत्रस अधिवत्ररी

Annex 11: Excel Data