



# Government of Nepal



## District Transport Master Plan (DTMP)

Ministry of Federal Affairs and Local  
Development



Department of Local Infrastructure  
Development and Agricultural Roads  
(DOLIDAR)



District Development Committee, Pyuthan

### Volume I: Report

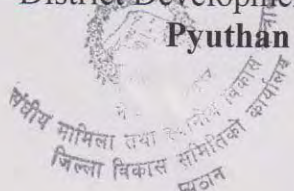
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# FOREWORD



Government of Nepal  
Ministry of Federal Affairs & Local Development  
District Development Committee  
**Pyuthan**



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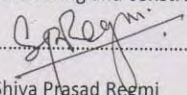
## FOREWORD

It is my great pleasure to introduce this revised District Transport Master Plan (DTMP) of Pyuthan district which was concurred by the district stakeholder's meeting and District Road Core Network (DRCN) selected by same meeting on July 2, 2015 and approved by DDC Board on November 3, 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 Er. Puspa Ranjit (Chief District Engineer, DTO Pyuthan), Er. Mahendra Acharya (Engineer, DTO) 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.



Shiva Prasad Regmi

Local Development Officer, DDC Pyuthan

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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 Pyuthan District.

We would also like to express our sincere thanks to Mr Shiva Prasad Regmi., Local Development Officer and Er. Pusparatna Ranjit, Chief District Engineer, DTO Pyuthan and all the staffs of DDC and DTO, Pyuthan 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 Pyuthan District who have rendered their valuable suggestion and support for the successful completion of the job.

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## Executive summary

Pyuthan district is located in Rapti zone in Mid-Western Development Region and covers an area of 1365 square kilometer within latitude 27°55"N to 28°25"N and longitude 82°36"E to 83°36"E. Pyuthan district borders Gulmi and Arghakhanchi to the East; Rolpa to the West; Baglung to the North; and Dang and Arghakhanchi to the South. The district is administratively divided into 2 electoral constituencies and 11 illakas that consist of one municipality and 42 VDCs in total. Municipality and VDCs are further divided into small administrative units called wards.

The district comprises of river valleys, flat land to middle and high hills. The climate of the district varies due to niche and physical alleviation. Sub-tropical, temperate to alpine climatic conditions are common in the district. Major rivers of Pyuthan district are Jhimruk, Mandavi and Rapti. Other rivers of Pyuthan district are Gartang, Lung, Chudari, Chhapre, Kantre, Lungri, Khungri, and Ghora. The district has 132890 (Ha) total lands out of which 72694 Ha is forest land, 42766 Ha agriculture land, 19334 Ha, 12899 Ha pasture land and 4531 Ha others<sup>1</sup>. Beside agriculture and horticulture potential, Pyuthan district is very famous for different type of herbs and NTFP.

According to the national census 2011, the total population of the district is 228,102 comprising 100,053 male and 128,049 female. Besides the agriculture farming, small scale livestock is the main source of occupation and livelihood of the majority of the population.

Pyuthan district is well known for religious, historical, tourism, trekking and expedition. Many places have religious and historical importance. One of the famous religious places of the nation called Swargadwari is located in this district and the VDC is also named after this place.

The district inventory identified **542.81 km** of roads, including **112.43 km** of existing strategic roads, and 430.38km of rural roads. In coordination with the DTICC and DDC, 22 rural roads with a length of 336.18km including 284.28 km existing roads and 51.9 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. **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. The existing SRN and DRCN roads link up **35** of the 42 VDC headquarters and a municipality **leaving 7 VDCs with no road access**. Out of these 284.28 km DRCN roads, only 53.29 km road is all weather and remaining 230.99 km road is fair-weather.

Table ES1: Summary of road networks

Road Class	Total length	Black Top	Gravel	Earthen
Strategic road network	112.43	85.43	-	47.00
Urban roads	-	-	-	-
District road core network	284.28	4.08	49.21	230.99
Village roads	146.10	-	-	146.10
<b>Total</b>	<b>542.81</b>	<b>89.51</b>	<b>49.21</b>	<b>404.09</b>

<sup>1</sup> Past DTMP Report, DDC Pyuthan

Annual conservation cost of 22 roads with 284.28 km length is estimated to **NPR 60.84 million** based on the first year, and will be updated in the ARMP based on actual annual maintenance needs as determined in the annual road condition survey. For the full five-year period the conservation costs will come to **NPR 304.22 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.

Table ES2: Summary of required improvements and their estimated costs

Improvement type	Requirement		Cost (NPR)
Bridges	602	m	481,600,000
Slab culverts	86	m	12,900,000
Causeways	116	m	11,600,000
Hume pipes	205	units	2,050,000
Masonry retaining walls	-	m <sup>3</sup>	-
Gabion retaining walls	5,886	m <sup>3</sup>	14,715,625
Lined drains	2,850	m	2,850,000
Widening	1,075	m	2,687,500
Rehabilitation	-	km	-
Gravelling	230.99	km	461,980,000
Blacktopping	47.69	km	238,450,000
New construction	51.90	km	259,500,000
<b>Total</b>			<b>1,488,333,125</b>

The total district budget for the road sector for the five-year period (fiscal year 2072/73 to 2076/77) is **NPR 850.93 million** including **510 million SNRTP fund** and **137.36 million LRBP fund**. LRBP fund is used for only bridges of specified DRCN and most of the SNRTP fund also has been already allocated for specified roads prior to preparation of this 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 **85%** of the total road sector budget, which was subsequently allocated firstly to the annual maintenance needs, secondly to the improvement needs and lastly to new construction. The budget allows all conservation requirements to be covered throughout the DTMP period. However, **6 million RTISWAp fund** has been allocated for new construction for FY 2072/073 as per government's policy to connect all VDC headquarters with district headquarters at least with earthen track. Almost similar trend of funds has been assumed throughout this DTMP period.

A total of 47.69 km and 44.45 km road is improved to blacktop and gravel standard inclusive of cross drainage and protective structures required respectively making them maintainable all-weather roads. Further 6.21 km new road will be constructed within this first DTMP period. The remaining earthen roads at the end of the DTMP period will be improved in the next DTMP. As a result of the activities planned in this DTMP, the length of all-weather maintainable DRCN roads increases from 53.29 km to 92.14 km, with 192.14 km remaining fair weather. During this DTMP period, blacktop road will be increased from 4.08 km to 51.77 km. At the same time, 44.45 km earthen road will be changed to gravel standard.

The number of VDC headquarters with direct access to the SRN is 10 with 35% 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 increase **4 to 20** and **18,646 to 86,710** respectively. The number of VDC headquarters with no access to DRCN roads will decrease from 7 to 5, while the district population with no access to DRCN roads will remain 21,739 out of 226,796 total district populations.

## Abbreviations

AAMP	Annual Asset Management Plan
ARMP	Annual Road Maintenance Plan
BT	Black Top
DDC	District Development Committee
DIM	District Inventory Map
DOLIDAR	Department of Local Infrastructure Development and Agriculture Road
DOR	Department of Road
DRCN	District Core Road Network
DTICC	District Transport Infrastructure Coordination Committee
DTMP	District Transport Master Plan
DTPP	District Transport Perspective Plan
GIS	Geographical Information system
GPS	Global Positioning System
GON	Government of Nepal
GR	Gravel
Km	Kilometre
SNRTP	Strengthening National Rural Transport Project
LRBP	Local Road Bridge Project
MLD	Ministry of Local Development
NPR	Nepali Rupees
PCU	Passenger Car Unit
RAP	Rural Access Programme
RBN	Roads Board Nepal
RTI	Rural Transport Infrastructure
SSRN	Statistics of Strategic Road Network
SWAp	Sector Wide Approach
VDC	Village Development Committee
VPD	Vehicle per Day
LGCDP	Local Governance and Community Development Programme
MoFALD	Ministry of Federal Affairs and Local Development



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## 1. Introduction

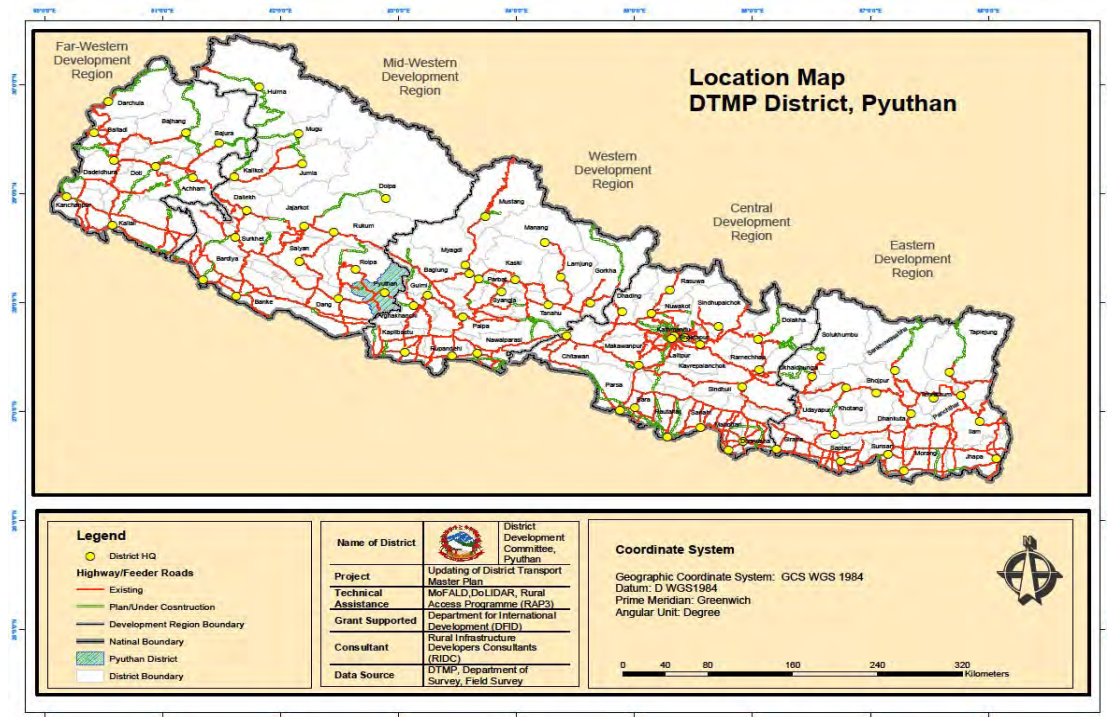
Pyuthan district is located in Rapti zone in Mid-Western Development Region and covers an area of 1365 square kilometer within latitude 27°55"N to 28°25"N and longitude 82°36"E to 83°36"E. Pyuthan district borders Gulmi and Arghakhanchi to the East; Rolpa to the West; Baglung to the North; and Dang and Arghakhanchi to the South. The district is administratively divided into 2 electoral constituencies and 11 illakas that consist of one municipality and 42 VDCs in total. Municipality and VDCs are further divided into small administrative units called wards

The district comprises of river valleys, flat land to middle and high hills. The climate of the district varies due to niche and physical alleviation. Sub-tropical, temperate to alpine climatic conditions are common in the District. Major Rivers of Pyuthan district are Jhimruk, Mandavi and Rapti. Other rivers of Pyuthan district are Gartang, Lung, Chudari, Chhapre, Kantre, Lungri, Khungri, and Ghora. The district has 132890 (Ha) total lands out of which 72694 (Ha) is forest land, 42766 (Ha) agriculture land, 19334 (Ha), 12899 (Ha) pasture land and 4531 (Ha) others<sup>2</sup>. Beside agriculture and horticulture potential, Pyuthan district is very famous for different type of herbs. Almost 180 types of herbal plants can be found in the district. Allo, Sisno, Lokta, Bambo etc. are the other important NTFP of this district.

According to the national census 2011<sup>3</sup>, the total population of the district is 228,102 comprising 100,053 male and 128,049 female. Besides the agriculture farming, small scale livestock is the main source of occupation and livelihood of the majority of the population.

Pyuthan district is well known for religious, historical, tourism, trekking and expedition. Many places have religious and historical importance. One of famous religious place of the nation called Swargadwari is located in this district and the VDC is also named after this place.

**Figure 1 Map of Nepal indicating Pyuthan District**



<sup>2</sup>Past DTMP Report, DDC Pyuthan

<sup>3</sup>CBS, 2011, Central Bureau of Statistics

The district is served by surface transport facilities linking the district with the three feeder roads, namely; Ganaha Khola Bridge - Chakchake- Rolpa district border (F013), Pyuthan - Devasthan-Loharpani (F014) and Maichane - Sworgadwari - Jaluke (F139), District Road Core Networks and village level roads. The network of feeder roads, district roads and village roads are increasing significantly in the district. However, the district and village roads including a few feeder 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 Pyuthan district, distinguishing between strategic roads and rural roads. It goes on to identify those rural roads that make up the district road core network (DRCN) that will form the basis for this DTMP. The remaining rural roads are classified as village roads.

### 2.1 Total Road Network

Pyuthan district has an estimated road network of 542.81km, including 112.43km of strategic roads managed by DOR and remaining of urban and rural roads managed by DDC Pyuthan, VDCs and municipality. Of total 112.43 km strategic road networks, only 85.43 km is blacktop surfaced. In case of rural road networks, majority of rural roads are an earthen surface. Among 430.38 km rural roads, only 4.08 km and 49.21 km are blacktop and gravel respectively. While, remaining 377.09 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 these information were 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 Pyuthan district is shown in Figure2 at the end of this chapter.

**Table 2.1.1 Road length in Pyuthan district (km)**

Road Class	Total length	Black Top	Gravel	Earthen
Strategic roads	112.43	85.43	-	27.00
Urban roads	-	-	-	-
Rural roads	430.38	4.08	49.21	377.09
<b>Total</b>	<b>542.81</b>	<b>89.51</b>	<b>49.21</b>	<b>404.09</b>

### 2.2 National Highways and Feeder Roads

According to latest information provided by DoR, Pyuthan district has no highway but it has four feeder roads totalling to 112.43 km length. Among these strategic road networks, 85.43 km is blacktop whereas 27 km is earthen 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 Pyuthan district (km)**

Code	Name of Road	Total length	Black Top	Gravel	Earthen
F013	GanahaKhola Bridge-Chakchake-Rolpa district border	60.43	60.43	-	-
F014	Pyuthan-Devasthan-Loharpani	39.00	25.00		14.00
F139	Maichane-Sworgadwari-Jaluke (Bhingri)	13.00			13.00
<b>Total</b>		<b>112.43</b>	<b>85.43</b>	<b>0.00</b>	<b>27.00</b>

Source: SSRN, 2014, DoR,

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 in both districts. So, this road has been removed from the list of SRN in the table 2.2.1. The part of F134 is not also listed as SRN in Arghakhanchi district.

## 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 this district is shown in Figure at the end of this chapter. The DRCN consists of 22 district roads with a total length of 284.28 km. The remaining 146.10 km 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 a municipality in Pyuthan district in 2014, part of these rural roads are contained within this municipality and status has become so-called municipal roads. Among 284.28 km DRCN, 41.82 km roads fall under this category. 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 Pyuthan 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 53.29 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.

**Table 2.3.1 Road length in Pyuthan district (km)**

Road Class	Total length	Black Top	Gravel	Earthen
<b>Strategic road network</b>	<b>160.43</b>	<b>85.43</b>	-	<b>75.00</b>
Highways	-	-	-	-
Feeder roads	160.43	85.43		75.00
<b>Urban roads</b>	-	-	-	-
<b>District road core network</b>	<b>284.28</b>	4.08	49.21	230.99
<b>Village roads</b>	<b>146.10</b>	-	-	146.10
<b>Total</b>	<b>590.81</b>	<b>89.51</b>	<b>49.21</b>	<b>452.09</b>

**Table 2.3.2 District road core network in Pyuthan district (km)**

Code	Name of Road	Total length	Black Top	Gravel	Earthen	All weather	Fair weather	DRCN within Municipality
<b>Total</b>		<b>284.28</b>	<b>4.08</b>	<b>49.21</b>	<b>230.99</b>	<b>53.29</b>	<b>230.99</b>	<b>41.82</b>
<b>Percentage</b>			1%	17%	81%	19%	81%	14.7%
52DR001	Dakhakwadi-Neta-(Barjibang)-Sotre-Sari	24.16			24.16	-	24.16	9.12
52DR002	Bijuwar-Dhungethati- Deurali	11.73		2.52	9.21	2.52	9.21	5.09
52DR003	Tikuri-Gurunggaon-Majhkot	9.18			9.18	-	9.18	3.9
52DR004	Dharmawati-Gejwang-Phopli-Mairamane	11.63			11.63	-	11.63	5.9
52DR005	Chisapani- Damri	5.88			5.88	-	5.88	
52DR006	Bagdula-Damti-Bahane-Khabang-Syaulibang	18.13	4.08	8.57	5.48	12.65	5.48	8.7
52DR007	Bahane-Chisapani-Ligha	12.00			12.00	-	12.00	
52DR008	Bagdula-Machchi-Thulabeshi-Arkha-Bhimgithe	35.41		13.60	21.81	13.60	21.81	4.53
52DR009	Dhad-Tusara	5.66			5.66	-	5.66	
52DR010	Dhad-Gobdi-Timurchaur-Libang	7.11			7.11	-	7.11	
52DR011	Thulabeshi-Puja	4.29			4.29	-	4.29	
52DR012	Siring Khola- Rajwara-Dhorpatan	7.61			7.61	-	7.61	
52DR013	Machhi-Dhad-Badikot	11.40		0.72	10.68	0.72	10.68	
52DR014	Machhi-Bangemarot-Sautamare	10.49		1.38	9.11	1.38	9.11	
52DR015	Khalanga-Chujathati-Jogitari	19.50			19.50	-	19.50	4.58
52DR016	Dharapani-Chineta-Mundanda-Chuja	3.62			3.62	-	3.62	
52DR017	Cherneta-Puranthati-Jogitari	28.19		22.42	5.77	22.42	5.77	
52DR018	Baddada-Hansapur-Airawati	16.11			16.11	-	16.11	
52DR019	Cherneta-Chin-Jamune-Dangwang-Juda	17.52			17.52	-	17.52	
52DR020	Nayagaon-Udayapurkot	12.41			12.41	-	12.41	
52DR021	Kumaltar-Kondrachaur-Ratapani	9.40			9.40	-	9.40	
52DR022	Dharampani (Swargadwari)-Kochibang	2.85			2.85	-	2.85	

## 2.4 Village Roads

The 146.10 km of remaining roads that do not form part of the identified district road core network (DRCN) are classified as village roads and are under the responsibility of concerned 42 VDCs and one municipality 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 municipal and 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 and municipality grants. Some district funding will also be allocated to the village roads (see also chapter 6). A few important roads which failed to be listed in DRCN category. During DTMP workshop, it was suggested to allocate 15 to 20% DTMP budget to the following important village roads listed during DTMP workshop.

1. Kharibot-Majuwa-Markabang-Solhalla-Goyalchhedhi
2. Chyantari-Bijuli-Barala
3. Majuwa-Thulasim-Chaudarikhola-Chujathati
4. Bahane-Lung-Tusara
5. Ballekhola-Mairamare
6. Pathinala-Narikot-Khung
7. Khalanga-Sarangkot-Sarangbesi
8. Kutichaur-Tusara-Jhakridhunga
9. Kondrachaur-Kochibang
10. Baddada-Jaspur-Puthakhola
11. Thankleni-Murkatti
12. Baraula-Narsingneta-Dangbang

In fact, this district funding will be mainly for maintenance, especially emergency maintenance and routine/recurrent maintenance to keep these roads passable.



Figure 2 Total Road Inventory Map of Pyuthan District

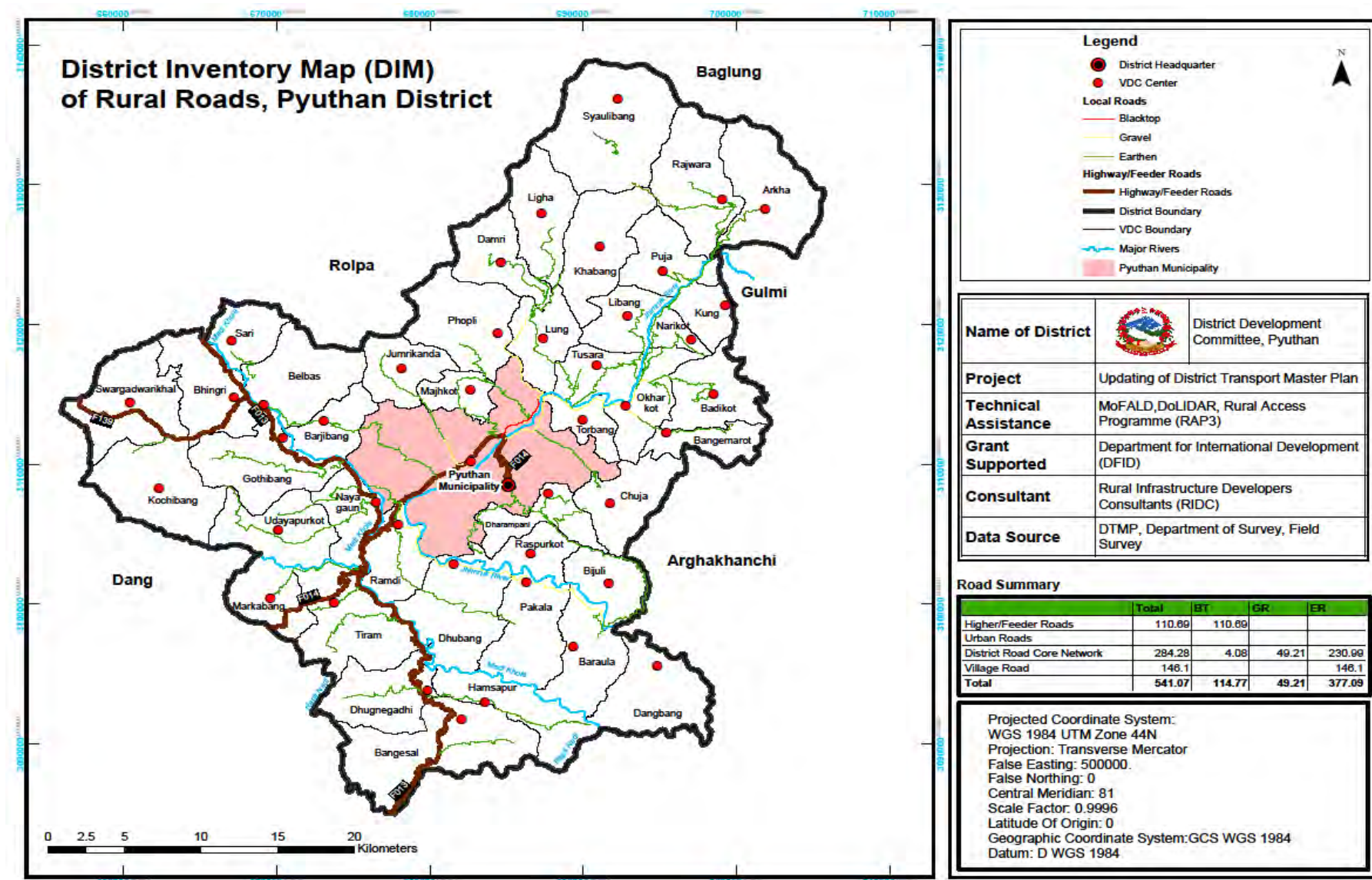
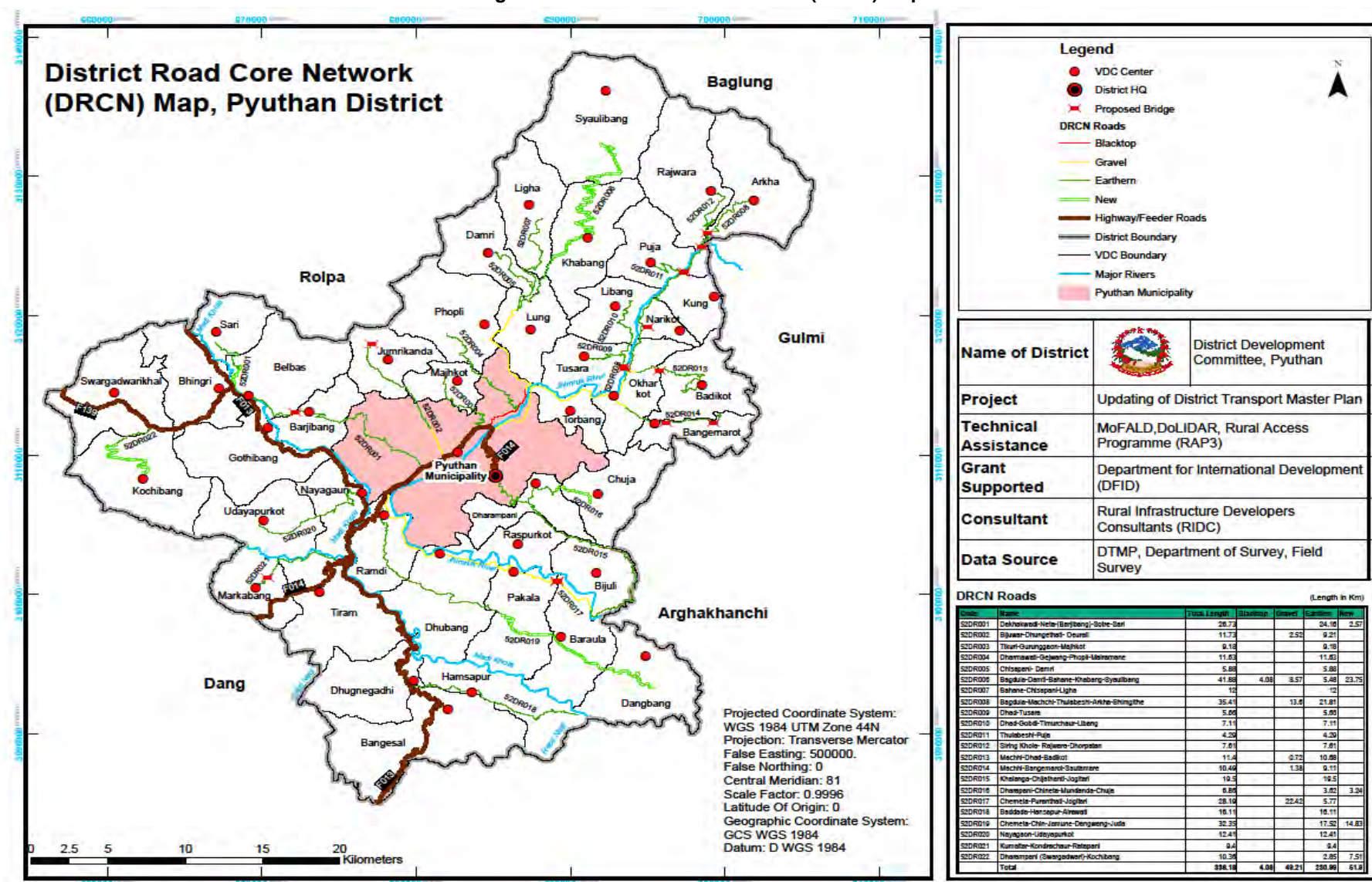




Figure 3 District Road Core Network (DRCN) Map



### **3. District Transport Perspective Plan (DTPP)**

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

#### **3.1 Conservation**

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

1. Emergency maintenance - Basic repairs aimed at removing landslides and repairing damage to the road that inhibit the proper use of the road and make it impassable. This mainly takes place during and after the rainy season. A provisional 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. Routine maintenance - General maintenance of the road aimed at preventing damage by ensuring the proper working of the different road elements (retaining walls, drainage system, carriageway, etc.) and cutting vegetation. This is carried out each year on a more or less continuous basis. Routine maintenance is required for the entire district road core network. The specific requirements for routine maintenance are determined on an annual basis through the road condition survey and defined in the ARMP.
3. Recurrent maintenance - Repairs of minor damage to the road surface and road structures to bring them back to good condition. This is generally carried out once or twice a year. Recurrent maintenance is required for the entire district road core network, whereby distinction is made according to the surface type. The specific requirements for recurrent maintenance are determined on an annual basis through the road condition survey and defined in the ARMP.
4. Periodic maintenance - 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.

Table 3.1.1 Conservation requirements

Code	Name of road	Total length (km)	Black Top (km)	Gravel (km)	Earthen (km)	Emergency maintenance (km)	Routine maintenance (km)	Recurrent maintenance blacktop (km)	Recurrent maintenance gravel (km)	Recurrent maintenance earthen (km)	Periodic maintenance blacktop (km)	Periodic maintenance gravel (km)
<b>Total</b>		<b>284.28</b>	<b>4.08</b>	<b>49.21</b>	<b>230.99</b>	<b>284.28</b>	<b>284.28</b>	<b>4.08</b>	<b>49.21</b>	<b>230.99</b>	<b>4.08</b>	<b>49.21</b>
52DR001	Dakhakwadi-Neta-(Barjibang)-Sotre-Sari	24.16	-	-	24.16	24.16	24.16	-	-	24.16	-	-
52DR002	Bijubar-Dhungethati- Deurali	11.73	-	2.52	9.21	11.73	11.73	-	2.52	9.21	-	2.52
52DR003	Tikuri-Gurunggaon-Majhkot	9.18	-	-	9.18	9.18	9.18	-	-	9.18	-	-
52DR004	Dharmawati-Gejwang-Phopli-Mairamane	11.63	-	-	11.63	11.63	11.63	-	-	11.63	-	-
52DR005	Chisapani- Damri	5.88	-	-	5.88	5.88	5.88	-	-	5.88	-	-
52DR006	Bagdula-Damti-Bahane-Khabang-Syaulibang	18.13	4.08	8.57	5.48	18.13	18.13	4.08	8.57	5.48	4.08	8.57
52DR007	Bahane-Chisapani-Ligha	12.00	-	-	12.00	12.00	12.00	-	-	12.00	-	-
52DR008	Bagdula-Machchi-Thulabeshi-Arkha-Bhimgithe	35.41	-	13.60	21.81	35.41	35.41	-	13.60	21.81	-	13.60
52DR009	Dhad-Tusara	5.66	-	-	5.66	5.66	5.66	-	-	5.66	-	-
52DR010	Dhad-Gobdi-Timurchaur-Libang	7.11	-	-	7.11	7.11	7.11	-	-	7.11	-	-
52DR011	Thulabeshi-Puja	4.29	-	-	4.29	4.29	4.29	-	-	4.29	-	-
52DR012	Siring Khola- Rajwara-Dhorpatan	7.61	-	-	7.61	7.61	7.61	-	-	7.61	-	-
52DR013	Machhi-Dhad-Badikot	11.40	-	0.72	10.68	11.40	11.40	-	0.72	10.68	-	0.72
52DR014	Machhi-Bangemarot-Sautamare	10.49	-	1.38	9.11	10.49	10.49	-	1.38	9.11	-	1.38
52DR015	Khalanga-Chujathati-Jogitari	19.50	-	-	19.50	19.50	19.50	-	-	19.50	-	-
52DR016	Dharapani-Chineta-Mundanda-Chuja	3.62	-	-	3.62	3.62	3.62	-	-	3.62	-	-
52DR017	Cherneta-Puranthati-Jogitari	28.19	-	22.42	5.77	28.19	28.19	-	22.42	5.77	-	22.42
52DR018	Baddada-Hansapur-Airawati	16.11	-	-	16.11	16.11	16.11	-	-	16.11	-	-
52DR019	Cherneta-Chin-Jamune-Dangwang-Juda	17.52	-	-	17.52	17.52	17.52	-	-	17.52	-	-
52DR020	Nayagaon-Udayapurkot	12.41	-	-	12.41	12.41	12.41	-	-	12.41	-	-
52DR021	Kumaltar-Kondrachaur-Ratapani	9.40	-	-	9.40	9.40	9.40	-	-	9.40	-	-
52DR022	Dharampani (Swargadwari)-Kochibang	2.85	-	-	2.85	2.85	2.85	-	-	2.85	-	-

## 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 Pyuthan are described in more detail in the subsequent sections.

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

**Table 3.2.1 Rehabilitation**

Code	Name of Road	Total length (km)	Rehabilitation (km)
<b>Total</b>		<b>284.28</b>	<b>-</b>
52DR001	Dakhakwadi-Neta-(Barjibang)-Sotre-Sari	24.16	
52DR002	Bijuwar-Dhungethati- Deurali	11.73	
52DR003	Tikuri-Gurunggaon-Majhkot	9.18	
52DR004	Dharmawati-Gejwang-Phopli-Mairamane	11.63	
52DR005	Chisapani- Damri	5.88	
52DR006	Bagdula-Damti-Bahane-Khabang-Syaulibang	18.13	
52DR007	Bahane-Chisapani-Ligha	12.00	
52DR008	Bagdula-Machchi-Thulabeshi-Arkha-Bhimgithe	35.41	
52DR009	Dhad-Tusara	5.66	
52DR010	Dhad-Gobdi-Timurchaur-Libang	7.11	
52DR011	Thulabeshi-Puja	4.29	
52DR012	Siring Khola- Rajwara-Dhorpatan	7.61	
52DR013	Machhi-Dhad-Badikot	11.40	
52DR014	Machhi-Bangemarot-Sautamare	10.49	
52DR015	Khalanga-Chujathati-Jogitari	19.50	
52DR016	Dharapani-Chineta-Mundanda-Chuja	3.62	
52DR017	Cherneta-Puranthati-Jogitari	28.19	
52DR018	Baddada-Hansapur-Airawati	16.11	
52DR019	Cherneta-Chin-Jamune-Dangwang-Juda	17.52	
52DR020	Nayagaon-Udayapurkot	12.41	
52DR021	Kumaltar-Kondrachaur-Ratapani	9.40	
52DR022	Dharampani (Swargadwari)-Kochibang	2.85	

### 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 230.99 for gravelling.

**Table 3.2.2 Sections of the district road core network requiring gravelling**

Code	Name of Road	Total length (km)	Gravelling (km)
<b>Total</b>		<b>284.28</b>	<b>230.99</b>
52DR001	Dakhakwadi-Neta-(Barjibang)-Sotre-Sari	24.16	24.16
52DR002	Bijuwar-Dhungethati- Deurali	11.73	9.21
52DR003	Tikuri-Gurunggaon-Majhkot	9.18	9.18
52DR004	Dharmawati-Gejwang-Phopli-Mairamane	11.63	11.63
52DR005	Chisapani- Damri	5.88	5.88
52DR006	Bagdula-Damti-Bahane-Khabang-Syaulibang	18.13	5.48
52DR007	Bahane-Chisapani-Ligha	12.00	12.00
52DR008	Bagdula-Machchi-Thulabeshi-Arkha-Bhimgithe	35.41	21.81
52DR009	Dhad-Tusara	5.66	5.66
52DR010	Dhad-Gobdi-Timurchaur-Libang	7.11	7.11
52DR011	Thulabeshi-Puja	4.29	4.29
52DR012	Siring Khola- Rajwara-Dhorpatan	7.61	7.61
52DR013	Machhi-Dhad-Badikot	11.40	10.68
52DR014	Machhi-Bangemarot-Sautamare	10.49	9.11
52DR015	Khalanga-Chijathanti-Jogitari	19.50	19.50
52DR016	Dharapani-Chineta-Mundanda-Chuja	3.62	3.62
52DR017	Cherneta-Puranthanti-Jogitari	28.19	5.77
52DR018	Baddada-Hansapur-Airawati	16.11	16.11
52DR019	Cherneta-Chin-Jamune-Dangwang-Juda	17.52	17.52
52DR020	Nayagaon-Udayapurkot	12.41	12.41
52DR021	Kumaltar-Kondrachaur-Ratapani	9.40	9.40
52DR022	Dharampani (Swargadwari)-Kochibang	2.85	2.85

### 3.2.3 Cross Drainage

The need for cross drainage was identified for the different DRCN roads. A total of 602m bridge, 86 m slab culverts, 116m, and 205 pipe culverts were identified as being required.

**Table 3.2.3: Required cross drainage structures**

Code	Name of Road	Total length (km)	Bridge (m)	Slab culvert (m)	CC Causeway (m)	Stone Causeway (m)	Pipe culvert (units)
<b>Total</b>		<b>284.28</b>	<b>602</b>	<b>86</b>	<b>116</b>	<b>-</b>	<b>205</b>
52DR001	Dakhakwadi-Neta-(Barjibang)-Sotre-Sari	24.16	18	6			16
52DR002	Bijuwar-Dhungethati- Deurali	11.73	12		8		6
52DR003	Tikuri-Gurunggaon-Majhkot	9.18					3
52DR004	Dharmawati-Gejwang-Phopli-Mairamane	11.63		6			5
52DR005	Chisapani- Damri	5.88			28		3
52DR006	Bagdula-Damti-Bahane-Khabang-Syaulibang	18.13	36		8		
52DR007	Bahane-Chisapani-Ligha	12.00	36	16	14		13
52DR008	Bagdula-Machchi-Thulabeshi-Arkha-Bhimgithe	35.41	146	28	8		23
52DR009	Dhad-Tusara	5.66	138				11
52DR010	Dhad-Gobdi-Timurchaur-Libang	7.11					
52DR011	Thulabeshi-Puja	4.29		6	8		14
52DR012	Siring Khola- Rajwara-Dhorpatan	7.61	60		16		18
52DR013	Machhi-Dhad-Badikot	11.40	18	6	8		16
52DR014	Machhi-Bangemarot-Sautamare	10.49	36	6			17
52DR015	Khalanga-Chujathati-Jogitari	19.50					
52DR016	Dharapani-Chineta-Mundanda-Chuja	3.62					
52DR017	Cherneta-Puranthati-Jogitari	28.19	84	6			15
52DR018	Baddada-Hansapur-Airawati	16.11					28
52DR019	Cherneta-Chin-Jamune-Dangwang-Juda	17.52					2
52DR020	Nayagaon-Udayapurkot	12.41		6	6		5
52DR021	Kumaltar-Kondrachaur-Ratapani	9.40	18		12		10
52DR022	Dharampani (Swargadwari)-Kochibang	2.85					

### 3.2.4 Protective Structures

Based on the road survey carried out in Pyuthan, a total of 5886 cubic meter gabion wall has been proposed as protective structures. In total 22 DRCNs, 2850 m lined drain has been proposed. The following Table 3.2.4 shows the required retaining structures to ensure the protection of the district road core network.

**Table 3.2.4 Required protective structures**

Code	Name of Road	Total length (km)	Masonry walls (m3)	Gabion walls (m3)	Lined drain (m)
<b>Total</b>		<b>284.28</b>	<b>-</b>	<b>5,886</b>	<b>2,850</b>
52DR001	Dakhakwadi-Neta-(Barjibang)-Sotre-Sari	24.16		280	190
52DR002	Bijuwar-Dhungethati- Deurali	11.73		235	130
52DR003	Tikuri-Gurunggaon-Majhkot	9.18		140	60
52DR004	Dharmawati-Gejwang-Phopli-Mairamane	11.63		305	100
52DR005	Chisapani- Damri	5.88		415	70
52DR006	Bagdula-Damti-Bahane-Khabang-Syaulibang	18.13			20
52DR007	Bahane-Chisapani-Ligha	12.00		465	220
52DR008	Bagdula-Machchi-Thulabeshi-Arkha-Bhimgithe	35.41		140	310
52DR009	Dhad-Tusara	5.66		530	150
52DR010	Dhad-Gobdi-Timurchaur-Libang	7.11			
52DR011	Thulabeshi-Puja	4.29		487.5	150
52DR012	Siring Khola- Rajwara-Dhorpatan	7.61		280	220
52DR013	Machhi-Dhad-Badikot	11.40		560	190
52DR014	Machhi-Bangemarot-Sautamare	10.49		508.75	100
52DR015	Khalanga-Chujathati-Jogitari	19.50			
52DR016	Dharapani-Chineta-Mundanda-Chuja	3.62			
52DR017	Cherneta-Puranthati-Jogitari	28.19		95	120
52DR018	Baddada-Hansapur-Airawati	16.11		645	470
52DR019	Cherneta-Chin-Jamune-Dangwang-Juda	17.52		280	60
52DR020	Nayagaon-Udayapurkot	12.41		330	150
52DR021	Kumaltar-Kondrachaur-Ratapani	9.40		190	140
52DR022	Dharampani (Swargadwari)-Kochibang	2.85			



### 3.2.5 Widening

Widening of the district road core network in Pyuthan 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.

**Table 3.2.5 Widening**

Code	Name of Road	Total length (km)	VPD	Widening (m)
<b>Total</b>		<b>284.28</b>		<b>1,075</b>
52DR001	Dakhakwadi-Neta-(Barjibang)-Sotre-Sari	24.16	10	45
52DR002	Bijumar-Dhungethati- Deurali	11.73	31	55
52DR003	Tikuri-Gurunggaon-Majhkot	9.18	9	40
52DR004	Dharmawati-Gejwang-Phopli-Mairamane	11.63	11	50
52DR005	Chisapani- Damri	5.88	7	20
52DR006	Bagdula-Damti-Bahane-Khabang-Syaulibang	18.13	34	90
52DR007	Bahane-Chisapani-Ligha	12.00	7	30
52DR008	Bagdula-Machchi-Thulabeshi-Arkha-Bhimgithe	35.41	41	120
52DR009	Dhad-Tusara	5.66	8	30
52DR010	Dhad-Gobdi-Timurchaur-Libang	7.11	-	60
52DR011	Thulabeshi-Puja	4.29	10	25
52DR012	Siring Khola- Rajwara-Dhorpatan	7.61	7	35
52DR013	Machhi-Dhad-Badikot	11.40	21	50
52DR014	Machhi-Bangemarot-Sautamare	10.49	44	35
52DR015	Khalanga-Chujathati-Jogitari	19.50	51	45
52DR016	Dharapani-Chineta-Mundanda-Chuja	3.62	-	30
52DR017	Cherneta-Puranthati-Jogitari	28.19	46	75
52DR018	Baddada-Hansapur-Airawati	16.11	4	60
52DR019	Cherneta-Chin-Jamune-Dangwang-Juda	17.52	2	65
52DR020	Nayagaon-Udayapurkot	12.41	8	60
52DR021	Kumaltar-Kondrachaur-Ratapani	9.40	9	30
52DR022	Dharampani (Swargadwari)-Kochibang	2.85	-	25

### 3.2.6 Black Topping

An analysis of the traffic data for the different roads making up the district road core network shows that **52DR015 and 52DR017 require blacktopping. In total 47.69 km road needs to be blacktopped.**

**Table 3.2.6 Blacktopping**

				PCU threshold	100
Code	Name of Road	Total length (km)	Blacktop (km)	Traffic (PCU)	Blacktopping (km)
<b>Total</b>		<b>284.28</b>	<b>4.08</b>		<b>47.69</b>
52DR001	Dakhakwadi-Neta-(Barjibang)-Sotre-Sari	24.16	-	22	-
52DR002	Bijuwar-Dhungethati- Deurali	11.73	-	66	-
52DR003	Tikuri-Gurunggaon-Majhkot	9.18	-	17	-
52DR004	Dharmawati-Gejwang-Phopli-Mairamane	11.63	-	25	-
52DR005	Chisapani- Damri	5.88	-	15	-
52DR006	Bagdula-Damti-Bahane-Khabang-Syaulibang	18.13	4.08	71	-
52DR007	Bahane-Chisapani-Ligha	12.00	-	13	-
52DR008	Bagdula-Machchi-Thulabeshi-Arkha-Bhimgithe	35.41	-	89	-
52DR009	Dhad-Tusara	5.66	-	18	-
52DR010	Dhad-Gobdi-Timurchaur-Libang	7.11	-	-	-
52DR011	Thulabeshi-Puja	4.29	-	29	-
52DR012	Siring Khola- Rajwara-Dhorpatan	7.61	-	15	-
52DR013	Machhi-Dhad-Badikot	11.40	-	42	-
52DR014	Machhi-Bangemarot-Sautamare	10.49	-	89	-
52DR015	Khalanga-Chujathati-Jogitari	19.50	-	122	19.50
52DR016	Dharapani-Chineta-Mundanda-Chuja	3.62	-	-	-
52DR017	Cherneta-Puranthati-Jogitari	28.19	-	104	28.19
52DR018	Baddada-Hansapur-Airawati	16.11	-	9	-
52DR019	Cherneta-Chin-Jamune-Dangwang-Juda	17.52	-	6	-
52DR020	Nayagaon-Udayapurkot	12.41	-	17	-
52DR021	Kumaltar-Kondrachaur-Ratapani	9.40	-	22	-
52DR022	Dharampani (Swargadwari)-Kochibang	2.85	-	-	-

### 3.3 New Construction

New construction of DRCN roads is required to connect the remaining 7 VDC headquarters. A list of proposed roads for new construction is provided below.

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

Code	Name of Road	New VDCs	Existing length (km)	New length (km)	Bridge (m)
<b>Total</b>			<b>284.28</b>	<b>51.90</b>	<b>-</b>
52DR001	Dakhakwadi-Neta-(Barjibang)-Sotre-Sari	Sari	24.16	2.57	
52DR002	Bijubar-Dhungethati- Deurali		11.73		
52DR003	Tikuri-Gurunggaon-Majhkot		9.18		
52DR004	Dharmawati-Gejwang-Phopli-Mairamane		11.63		
52DR005	Chisapani- Damri		5.88		
52DR006	Bagdula-Damti-Bahane-Khabang-Syaulibang	Khabang, Syaulibang	18.13	23.75	
52DR007	Bahane-Chisapani-Ligha		12.00		
52DR008	Bagdula-Machchi-Thulabeshi-Arkha-Bhimgithe		35.41		
52DR009	Dhad-Tusara		5.66		
52DR010	Dhad-Gobdi-Timurchaur-Libang		7.11		
52DR011	Thulabeshi-Puja		4.29		
52DR012	Siring Khola- Rajwara-Dhorpatan		7.61		
52DR013	Machhi-Dhad-Badikot		11.40		
52DR014	Machhi-Bangemarot-Sautamare		10.49		
52DR015	Khalanga-Chujathati-Jogitari		19.50		
52DR016	Dharapani-Chineta-Mundanda-Chuja	Chuja	3.62	3.24	
52DR017	Cherneta-Puranthati-Jogitari		28.19		
52DR018	Baddada-Hansapur-Airawati		16.11		
52DR019	Cherneta-Chin-Jamune-Dangwang-Juda	Baraula, Dhangbang	17.52	14.83	
52DR020	Nayagaon-Udayapurkot		12.41		
52DR021	Kumaltar-Kondrachaur-Ratapani		9.40		
52DR022	Dharampani (Swargadwari)-Kochibang	Kochibang	2.85	7.51	

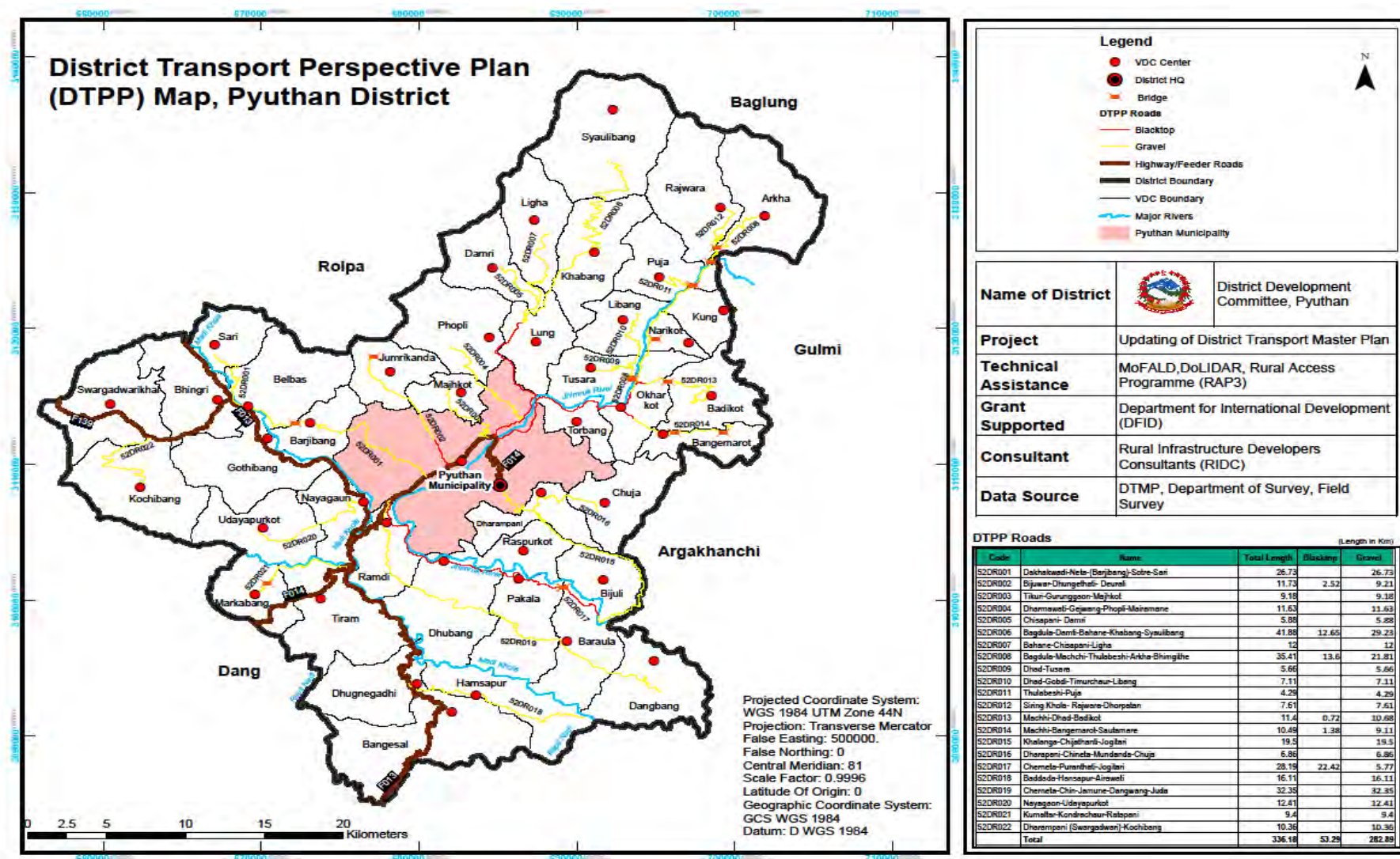
### **3.4 District Transport Perspective Plan**

The DTPP foresees bringing the entire existing district road core network to maintainable all-weather status, and expanding it to provide access to an additional 7 VDC headquarters. For this purpose, all 230.99 km will be gravelled and a number of different cross drainage and protective structures will be constructed. The existing gravel and blacktop roads are conserved. A further 51.90 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.

Table 3.4.1 District Transport Perspective Plan

Code	Emergency maintenance (km)	Routine maintenance (km)	Recurrent maintenance (km)	Periodic maintenance (km)	Rehabilitation (km)	Gravelling (km)	Blacktopping (km)	Widening (m)	Bridge (m)	Slab culvert (m)	CC Causeway (m)	Stone Causeway (m)	Pipe culvert (units)	Masonry walls (m <sup>3</sup> )	Gabion walls (m <sup>3</sup> )	Lined drain (m)	New construction (km)
<b>Total</b>	<b>284.28</b>	<b>284.28</b>	<b>4.08</b>	<b>4.08</b>	<b>-</b>	<b>230.99</b>	<b>47.69</b>	<b>1,075</b>	<b>602</b>	<b>86</b>	<b>116</b>	<b>-</b>	<b>205</b>	<b>-</b>	<b>5,886</b>	<b>2,850</b>	<b>51.90</b>
52DR001	24.16	24.16	-	-	-	24.16	-	45	18	6	-	-	16	-	280	190	2.57
52DR002	11.73	11.73	-	-	-	9.21	-	55	12	-	8	-	6	-	235	130	-
52DR003	9.18	9.18	-	-	-	9.18	-	40	-	-	-	-	3	-	140	60	-
52DR004	11.63	11.63	-	-	-	11.63	-	50	-	6	-	-	5	-	305	100	-
52DR005	5.88	5.88	-	-	-	5.88	-	20	-	-	28	-	3	-	415	70	-
52DR006	18.13	18.13	4.08	4.08	-	5.48	-	90	36	-	8	-	-	-	-	20	23.75
52DR007	12.00	12.00	-	-	-	12.00	-	30	36	16	14	-	13	-	465	220	-
52DR008	35.41	35.41	-	-	-	21.81	-	120	146	28	8	-	23	-	140	310	-
52DR009	5.66	5.66	-	-	-	5.66	-	30	138	-	-	-	11	-	530	150	-
52DR010	7.11	7.11	-	-	-	7.11	-	60	-	-	-	-	-	-	-	-	-
52DR011	4.29	4.29	-	-	-	4.29	-	25	-	6	8	-	14	-	488	150	-
52DR012	7.61	7.61	-	-	-	7.61	-	35	60	-	16	-	18	-	280	220	-
52DR013	11.40	11.40	-	-	-	10.68	-	50	18	6	8	-	16	-	560	190	-
52DR014	10.49	10.49	-	-	-	9.11	-	35	36	6	-	-	17	-	509	100	-
52DR015	19.50	19.50	-	-	-	19.50	19.50	45	-	-	-	-	-	-	-	-	-
52DR016	3.62	3.62	-	-	-	3.62	-	30	-	-	-	-	-	-	-	-	3.24
52DR017	28.19	28.19	-	-	-	5.77	28.19	75	84	6	-	-	15	-	95	120	-
52DR018	16.11	16.11	-	-	-	16.11	-	60	-	-	-	-	28	-	645	470	-
52DR019	17.52	17.52	-	-	-	17.52	-	65	-	-	-	-	2	-	280	60	14.83
52DR020	12.41	12.41	-	-	-	12.41	-	60	-	6	6	-	5	-	330	150	-
52DR021	9.40	9.40	-	-	-	9.40	-	30	18	-	12	-	10	-	190	140	-
52DR022	2.85	2.85	-	-	-	2.85	-	25	-	-	-	-	-	-	-	-	7.51

Figure 4 District Transport Perspective Plan (DTPP)



## 4. Cost Estimation

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

**Table 4.1.1 Standard unit costs for conservation**

Activity	Unit	DTMP proposed unit cost (NPR)	DTMP actual unit cost (NPR)
Emergency maintenance	km	30,000	27,000
Routine maintenance	km	20,000	18,000
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

For the first year the estimated costs for conservation of the DRCN come to **NPR 60.84 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 304.22 million**. These costs will change slightly as the roads are improved and the standard conservation costs change. This will be updated in the ARMP on an annual basis.



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

Code	Total length (km)	Blacktop (km)	Gravel (km)	Earthen (km)	Emergency maintenance	Routine maintenance	Recurrent maintenance (blacktop)	Recurrent maintenance (gravel)	Recurrent maintenance (earthen)	Periodic maintenance (blacktop)	Periodic maintenance (gravel)	Total first year cost	Total 5-year cost
<b>Total</b>	<b>284.28</b>	<b>4.08</b>	<b>49.21</b>	<b>230.99</b>	<b>7,676</b>	<b>5,117</b>	<b>816</b>	<b>6,397</b>	<b>27,719</b>	<b>816</b>	<b>12,303</b>	<b>60,843</b>	<b>304,216</b>
52DR001	24.16	-	-	24.16	652	435	-	-	2,899	-	-	3,986	19,932
52DR002	11.73	-	2.52	9.21	317	211	-	328	1,105	-	630	2,591	12,953
52DR003	9.18	-	-	9.18	248	165	-	-	1,102	-	-	1,515	7,574
52DR004	11.63	-	-	11.63	314	209	-	-	1,396	-	-	1,919	9,595
52DR005	5.88	-	-	5.88	159	106	-	-	706	-	-	970	4,851
52DR006	18.13	4.08	8.57	5.48	490	326	816	1,114	658	816	2,143	6,362	31,810
52DR007	12.00	-	-	12.00	324	216	-	-	1,440	-	-	1,980	9,900
52DR008	35.41	-	13.60	21.81	956	637	-	1,768	2,617	-	3,400	9,379	46,893
52DR009	5.66	-	-	5.66	153	102	-	-	679	-	-	934	4,670
52DR010	7.11	-	-	7.11	192	128	-	-	853	-	-	1,173	5,866
52DR011	4.29	-	-	4.29	116	77	-	-	515	-	-	708	3,539
52DR012	7.61	-	-	7.61	205	137	-	-	913	-	-	1,256	6,278
52DR013	11.40	-	0.72	10.68	308	205	-	94	1,282	-	180	2,068	10,341
52DR014	10.49	-	1.38	9.11	283	189	-	179	1,093	-	345	2,090	10,448
52DR015	19.50	-	-	19.50	527	351	-	-	2,340	-	-	3,218	16,088
52DR016	3.62	-	-	3.62	98	65	-	-	434	-	-	597	2,987
52DR017	28.19	-	22.42	5.77	761	507	-	2,915	692	-	5,605	10,481	52,403
52DR018	16.11	-	-	16.11	435	290	-	-	1,933	-	-	2,658	13,291
52DR019	17.52	-	-	17.52	473	315	-	-	2,102	-	-	2,891	14,454
52DR020	12.41	-	-	12.41	335	223	-	-	1,489	-	-	2,048	10,238
52DR021	9.40	-	-	9.40	254	169	-	-	1,128	-	-	1,551	7,755
52DR022	2.85	-	-	2.85	77	51	-	-	342	-	-	470	2,351

## 4.2 Improvement

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

**Table 4.2.1 Standard unit costs for improvement activities**

Activity	Unit	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	5,000,000
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 <sup>3</sup>	10,000	10,000
Gabion wall construction	m <sup>3</sup>	2,500	2,500
Lined drain construction	m	1,000	1,000

Based on standard unit costs and the identified improvement requirements, the resulting estimated costs come to **NPR 1228.83 million** as indicated in the table below.

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

Code	Total length (km)	Rehabilitatio n	Widening	Gravelling	Blacktopping	Bridges	Slab culverts	CC causeways	Stone causeways	Pipe culvert	Masonry walls	Gabion walls	Lined drains	Total cost
<b>Total</b>	<b>284.28</b>	<b>-</b>	<b>2,688</b>	<b>461,980</b>	<b>238,450</b>	<b>481,600</b>	<b>12,900</b>	<b>11,600</b>	<b>-</b>	<b>2,050</b>	<b>-</b>	<b>14,716</b>	<b>2,850</b>	<b>1,228,833</b>
52DR001	24.16	-	113	48,320	-	14,400	900	-	-	160	-	700	190	64,783
52DR002	11.73	-	138	18,420	-	9,600	-	800	-	60	-	588	130	29,735
52DR003	9.18	-	100	18,360	-	-	-	-	-	30	-	350	60	18,900
52DR004	11.63	-	125	23,260	-	-	900	-	-	50	-	763	100	25,198
52DR005	5.88	-	50	11,760	-	-	-	2,800	-	30	-	1,038	70	15,748
52DR006	18.13	-	225	10,960	-	28,800	-	800	-	-	-	-	20	40,805
52DR007	12.00	-	75	24,000	-	28,800	2,400	1,400	-	130	-	1,163	220	58,188
52DR008	35.41	-	300	43,620	-	116,800	4,200	800	-	230	-	350	310	166,610
52DR009	5.66	-	75	11,320	-	110,400	-	-	-	110	-	1,325	150	123,380
52DR010	7.11	-	150	14,220	-	-	-	-	-	-	-	-	-	14,370
52DR011	4.29	-	63	8,580	-	-	900	800	-	140	-	1,219	150	11,851
52DR012	7.61	-	88	15,220	-	48,000	-	1,600	-	180	-	700	220	66,008
52DR013	11.40	-	125	21,360	-	14,400	900	800	-	160	-	1,400	190	39,335
52DR014	10.49	-	88	18,220	-	28,800	900	-	-	170	-	1,272	100	49,549
52DR015	19.50	-	113	39,000	97,500	-	-	-	-	-	-	-	-	136,613
52DR016	3.62	-	75	7,240	-	-	-	-	-	-	-	-	-	7,315
52DR017	28.19	-	188	11,540	140,950	67,200	900	-	-	150	-	238	120	221,285
52DR018	16.11	-	150	32,220	-	-	-	-	-	280	-	1,613	470	34,733
52DR019	17.52	-	163	35,040	-	-	-	-	-	20	-	700	60	35,983
52DR020	12.41	-	150	24,820	-	-	900	600	-	50	-	825	150	27,495
52DR021	9.40	-	75	18,800	-	14,400	-	1,200	-	100	-	475	140	35,190
52DR022	2.85	-	63	5,700	-	-	-	-	-	-	-	-	-	5,763

### 4.3 New Construction

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

**Table 4.3.1 Standard unit costs for new construction**

Activity	Unit	DTMP proposed unit cost (NPR)	DTMP actual unit cost (NPR)
Track opening	km	4,000,000	3,000,000
Gravelling	km	2,200,000	2,000,000
Bridge construction	m	600,000	800,000

The resulting estimated costs for new construction come to NPR 259.5 million.

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

Code	Name of Road	New length (km)	Opening up (NPR)	Gravelling (NPR)	Bridges (NPR)	Total cost (NPR)
<b>Total</b>		<b>51.90</b>	<b>155,700</b>	<b>103,800</b>	<b>-</b>	<b>259,500</b>
52DR001	Dakhakwadi-Neta-(Barjibang)-Sotre-Sari	2.57	7,710	5,140	-	12,850
52DR002	Bijuwar-Dhungethati- Deurali	-	-	-	-	-
52DR003	Tikuri-Gurunggaon-Majhkot	-	-	-	-	-
52DR004	Dharmawati-Gejwang-Phopli-Mairamane	-	-	-	-	-
52DR005	Chisapani- Damri	-	-	-	-	-
52DR006	Bagdula-Damti-Bahane-Khabang-Syaulibang	23.75	71,250	47,500	-	118,750
52DR007	Bahane-Chisapani-Ligha	-	-	-	-	-
52DR008	Bagdula-Machchi-Thulabeshi-Arkha-Bhimgithe	-	-	-	-	-
52DR009	Dhad-Tusara	-	-	-	-	-
52DR010	Dhad-Gobdi-Timurchaur-Libang	-	-	-	-	-
52DR011	Thulabeshi-Puja	-	-	-	-	-
52DR012	Siring Khola- Rajwara-Dhorpatan	-	-	-	-	-
52DR013	Machhi-Dhad-Badikot	-	-	-	-	-
52DR014	Machhi-Bangemarot-Sautamare	-	-	-	-	-
52DR015	Khalanga-Chujathati-Jogitari	-	-	-	-	-
52DR016	Dharapani-Chineta-Mundanda-Chuja	3.24	9,720	6,480	-	16,200
52DR017	Cherneta-Puranthati-Jogitari	-	-	-	-	-
52DR018	Baddada-Hansapur-Airawati	-	-	-	-	-
52DR019	Cherneta-Chin-Jamune-Dangwang-Juda	14.83	44,490	29,660	-	74,150
52DR020	Nayagaon-Udayapurkot	-	-	-	-	-
52DR021	Kumaltar-Kondrachaur-Ratapani	-	-	-	-	-
52DR022	Dharampani (Swargadwari)-Kochibang	7.51	22,530	15,020	-	37,550

#### 4.4 DTPP Costs

The total costs for the District Transport Perspective Plan come to **NPR 1792.55 million** as indicated in the table below.

**Table 4.4.1 DTPP costs (NPR '000)**

Code	Name of Road	Conservation	Improvement	New construction	Total
<b>Total</b>		<b>304,216</b>	<b>1,228,833</b>	<b>259,500</b>	<b>1,792,549</b>
52DR001	Dakhakwadi-Neta-(Barjibang)-Sotre-Sari	19,932	64,783	12,850	97,565
52DR002	Bijuwar-Dhungethati- Deurali	12,953	29,735	-	42,688
52DR003	Tikuri-Gurunggaon-Majhkot	7,574	18,900	-	26,474
52DR004	Dharmawati-Gejwang-Phopli-Mairamane	9,595	25,198	-	34,792
52DR005	Chisapani- Damri	4,851	15,748	-	20,599
52DR006	Bagdula-Damti-Bahane-Khabang-Syaulibang	31,810	40,805	118,750	191,365
52DR007	Bahane-Chisapani-Ligha	9,900	58,188	-	68,088
52DR008	Bagdula-Machchi-Thulabeshi-Arkha-Bhimgithe	46,893	166,610	-	213,503
52DR009	Dhad-Tusara	4,670	123,380	-	128,050
52DR010	Dhad-Gobdi-Timurchaur-Libang	5,866	14,370	-	20,236
52DR011	Thulabeshi-Puja	3,539	11,851	-	15,391
52DR012	Siring Khola- Rajwara-Dhorpatan	6,278	66,008	-	72,286
52DR013	Machhi-Dhad-Badikot	10,341	39,335	-	49,676
52DR014	Machhi-Bangemarot-Sautamare	10,448	49,549	-	59,998
52DR015	Khalanga-Chujathati-Jogitari	16,088	136,613	-	152,700
52DR016	Dharapani-Chineta-Mundanda-Chuja	2,987	7,315	16,200	26,502
52DR017	Cherneta-Puranthati-Jogitari	52,403	221,285	-	273,688
52DR018	Baddada-Hansapur-Airawati	13,291	34,733	-	48,023
52DR019	Cherneta-Chin-Jamune-Dangwang-Juda	14,454	35,983	74,150	124,587
52DR020	Nayagaon-Udayapurkot	10,238	27,495	-	37,733
52DR021	Kumaltar-Kondrachaur-Ratapani	7,755	35,190	-	42,945
52DR022	Dharampani (Swargadwari)-Kochibang	2,351	5,763	37,550	45,664

## 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.

Table 5.1.1 Ranking of conservation works (NPR '000)

#	Code	Total length (km)	1. Emergency	2. Routine	3. Recurrent (blacktop)	4. Recurrent (gravel)	5. Recurrent (earth)	6. Periodic (blacktop)	7. Periodic (gravel)	Total cost (NPR '000)	Population served	Cost/person (NPR)
16	52DR016	3.62	98	65	-	-	434	-	-	597	8,896	67
22	52DR022	2.85	77	51	-	-	342	-	-	470	3,439	137
11	52DR011	4.29	116	77	-	-	515	-	-	708	5,135	138
9	52DR009	5.66	153	102	-	-	679	-	-	934	5,771	162
21	52DR021	9.40	254	169	-	-	1,128	-	-	1,551	9,025	172
4	52DR004	11.63	314	209	-	-	1,396	-	-	1,919	10,990	175
13	52DR013	11.40	308	205	-	94	1,282	-	180	2,068	11,094	186
14	52DR014	10.49	283	189	-	179	1,093	-	345	2,090	10,391	201
5	52DR005	5.88	159	106	-	-	706	-	-	970	4,757	204
10	52DR010	7.11	192	128	-	-	853	-	-	1,173	5,014	234
7	52DR007	12.00	324	216	-	-	1,440	-	-	1,980	8,302	238
12	52DR012	7.61	205	137	-	-	913	-	-	1,256	5,093	247
19	52DR019	17.52	473	315	-	-	2,102	-	-	2,891	11,173	259
15	52DR015	19.50	527	351	-	-	2,340	-	-	3,218	10,431	308
20	52DR020	12.41	335	223	-	-	1,489	-	-	2,048	6,617	309
1	52DR001	24.16	652	435	-	-	2,899	-	-	3,986	11,765	339
8	52DR008	35.41	956	637	-	1,768	2,617	-	3,400	9,379	22,318	420
6	52DR006	18.13	490	326	816	1,114	658	816	2,143	6,362	14,230	447
3	52DR003	9.18	248	165	-	-	1,102	-	-	1,515	3,230	469
2	52DR002	11.73	317	211	-	328	1,105	-	630	2,591	4,301	602
18	52DR018	16.11	435	290	-	-	1,933	-	-	2,658	3,970	670
17	52DR017	28.19	761	507	-	2,915	692	-	5,605	10,481	14,884	704

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).

**Table 5.2.1 Ranking of improvement works (NPR '000)**

#	Code	Total length (km)	Gravelling (km)	Blacktopping (km)	Total cost (NPR '000)	Population served	Cost/person (NPR)
16	52DR016	3.62	3.62	-	7,315	8,896	822
22	52DR022	2.85	2.85	-	5,763	3,439	1,676
4	52DR004	11.63	11.63	-	25,198	10,990	2,293
11	52DR011	4.29	4.29	-	11,851	5,135	2,308
10	52DR010	7.11	7.11	-	14,370	5,014	2,866
6	52DR006	18.13	5.48	-	40,805	14,230	2,868
19	52DR019	17.52	17.52	-	35,983	11,173	3,220
5	52DR005	5.88	5.88	-	15,748	4,757	3,310
13	52DR013	11.40	10.68	-	39,335	11,094	3,546
21	52DR021	9.40	9.40	-	35,190	9,025	3,899
20	52DR020	12.41	12.41	-	27,495	6,617	4,155
14	52DR014	10.49	9.11	-	49,549	10,391	4,768
1	52DR001	24.16	24.16	-	64,783	11,765	5,506
3	52DR003	9.18	9.18	-	18,900	3,230	5,851
2	52DR002	11.73	9.21	-	29,735	4,301	6,914
7	52DR007	12.00	12.00	-	58,188	8,302	7,009
8	52DR008	35.41	21.81	-	166,610	22,318	7,465
18	52DR018	16.11	16.11	-	34,733	3,970	8,749
12	52DR012	7.61	7.61	-	66,008	5,093	12,960
15	52DR015	19.50	19.50	19.50	136,613	10,431	13,097
17	52DR017	28.19	5.77	28.19	221,285	14,884	14,867
9	52DR009	5.66	5.66	-	123,380	5,771	21,379



### 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.

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

#	Code	Length (km)	Total cost (NPR '000)	Population served	Cost/person (NPR)
3	52DR003	-	-	3,230	-
5	52DR005	-	-	4,757	-
7	52DR007	-	-	8,302	-
9	52DR009	-	-	5,771	-
10	52DR010	-	-	5,014	-
17	52DR017	-	-	14,884	-
18	52DR018	-	-	3,970	-
20	52DR020	-	-	6,617	-
21	52DR021	-	-	9,025	-
12	52DR012	-	-	5,093	-
13	52DR013	-	-	11,094	-
8	52DR008	-	-	22,318	-
2	52DR002	-	-	4,301	-
15	52DR015	-	-	10,431	-
11	52DR011	-	-	5,135	-
14	52DR014	-	-	10,391	-
4	52DR004	-	-	10,990	-
1	52DR001	2.57	12,850	11,765	1,092
16	52DR016	3.24	16,200	8,896	1,821
19	52DR019	14.83	74,150	11,173	6,637
6	52DR006	23.75	118,750	14,230	8,345
22	52DR022	7.51	37,550	3,439	10,919

## 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 is NPR 850.93 million including 510 million SNRTP fund and 137.36 million LRBP fund. LRBP fund is used for only bridges of specified DRCN. So, this fund is not distributed in investment plan. Further, most of the SNRTP fund also had been already allocated for specified roads prior to preparation of this DTMP. So, these roads receive DTMP funds though these are not at top in the ranking table. Otherwise all the DTMP funds will be allocated as per ranking given in this DTMP report.

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

Funding source	Fiscal year				
	2072/73	2073/74	2074/75	2075/76	2076/77
DDC Capital grant [A]	4,500	4,950	5,445	5,990	6,588
DDC Internal Revenue [B]	500	550	605	666	732
Road Board Nepal [C]	2,500	2,750	3,025	3,328	3,660
SNRTP [D]	110,000	121,000	110,000	90,000	80,000
RTISWAp [E]	23,900	26,290	28,919	31,811	34,992
LRBP [F] <sup>4</sup>	22,500	24,750	27,225	29,948	32,942
Constitution area Development program [G]	15,000	16,500	18,150	19,965	21,962
People's Participation (20% of A+B+C+E+G)	9,280	10,208	11,229	12,352	13,587
<b>Total</b>	<b>165,680</b>	<b>182,248</b>	<b>177,373</b>	<b>164,110</b>	<b>161,521</b>
<b>Grand total</b>	<b>850,932</b>				

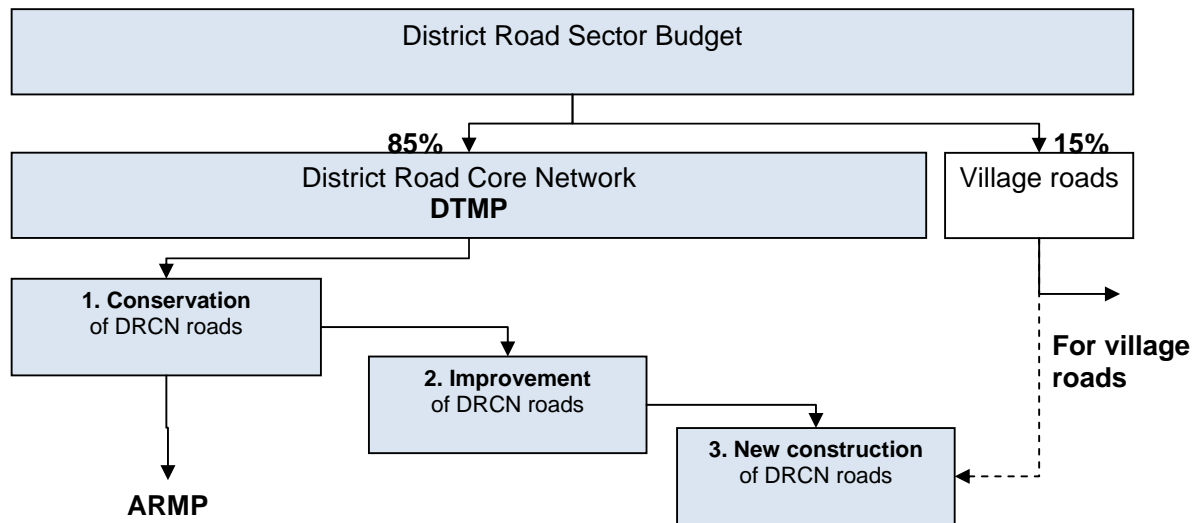
### 6.2 BudgetAllocation

The distribution of the available district road sector budget is indicated in the figure below. A few important roads which failed to be listed in DRCN category, are required improved. It was suggested to allocate 15 to 20% budget to these important village roads during DTMP workshops (name of the roads are listed in section 2.4). So, 15% DTMP fund has been allocated to these roads. It could be also used for new construction as 7 VDCs still will have road access. 85% of the total DTMP budget is reserved for the district road core network. The 85% of the district road sector budget for the DTMP is allocated firstly to conservation, secondly improvement, and any remaining funding is allocated to new construction. New construction is required to access 7 VDCs HQ in this district before this DTMP starts. Although budget is not sufficient even for improvement, 6 million RTISWAp fund has been allocated for new construction for FY 2072/073 as per government's policy to

<sup>4</sup> LRBP funds had been already allocated to two bridges of specified roads (ChukahaKhola bridge at Cherneta-Khalanga Road & JhimrukNadi bridge at Machhi-Dhad Road). So, this fund is not distributed in 5 years DTMP plan.

connect all VDC headquarters with district headquarters at least with earthen track. Almost similar trend of funds has been assumed and two VDCs HQ will be connected at the end of this DTMP. So the budget has been allocated accordingly.

**Figure 5 District road sector budget allocation**



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

Table 6.2.1 Investment plan

A	Item				Year																			
	Fiscal year				2072/73				2073/74				2074/75				2075/76				2076/77			
	Total budget				165,680				182,248				177,373				164,110				161,521			
	Village roads				24,852				27,337				26,606				24,617				24,228			
	Core road network budget (DTMP)				140,828				154,911				150,767				139,494				137,293			
	Core network length (km)				284.28				284.28				284.28				284.28				284.28			
B	Blacktop (km)				4.08				15.23				28.35				40.73				50.00			
	Gravel (km)				49.21				45.00				40.24				35.57				31.82			
	Earthen (km)				230.99				224.05				215.69				207.98				202.46			
	Conservation (NRs)				52,231				51,949				52,594				53,188				54,427			
C	Emergency				7,676				7,676				7,676				7,676				7,676			
	Routine				5,117				5,117				5,117				5,117				5,117			
	Recurrent (blacktop)				816				3,046				5,670				8,146				9,999			
	Recurrent (gravel)				6,397				5,849				5,231				4,624				4,137			
	Recurrent (earthen)				27,719				26,886				25,883				24,958				24,296			
	Periodic (blacktop)				816												816							
	Periodic (gravel)				3,691				3,375				3,018				2,668				2,387			
	D	Improvem ent	Cost	BT	GR	88,597	BT	GR	102,961	BT	GR	98,172	BT	GR	86,306	BT	GR	82,866	BT	GR				
52DR016		7,315	-	3.62		-	-		-	-		-	-	7,315	-	3.62		-	-			Receives fund after completion of SNRTP Road		
52DR022		5,763	-	2.85		-	-		-	-		-	-		-	-		-	-			Not receive funds as new construction required		
52DR004		25,198	-	11.63		-	-		-	-		-	-		-	-	21,835	-	-	10.08		Receives fund after completion of SNRTP Road		
52DR011		11,851	-	4.29		-	-		-	-		-	-		-	-		-	-			These two roads are branch road, can't improve without improvement of DR008.		
52DR010		14,370	-	7.11		-	-		-	-		-	-		-	-		-	-					
52DR006		40,805	-	5.48		-	-		-	-		-	-		-	-	40,805	-	-	5.48		SNRTP fund		
52DR019		35,983	-	17.52		-	-		-	-		-	-		-	-		-	-					
52DR005		15,748	-	5.88		-	-		-	-		-	-		-	-		-	-					
52DR013		39,335	-	10.68		-	-		-	-		-	-		-	-		-	-					
52DR021		35,190	-	9.40		-	-		-	-		-	-		-	-		-	-					
52DR020		27,495	-	12.41		-	-		-	-		-	-		-	-		-	-					
52DR014		49,549	-	9.11		-	-		-	-		-	-		-	-		-	-					
52DR001		64,783	-	24.16		-	-		-	-		-	-		-	-		-	-					
52DR003		18,900	-	9.18		-	-		-	-		-	-		-	-		-	-					
52DR002	29,735	-	9.21		-	-												-	-					

District Transport Master Plan (DTMP) of Pyuthan District

	52DR007	58,188	-	12.00		-	-											-	-	
	52DR008	166,610	-	21.81		-	-		-	-		-	-		-	-		-	-	Receives DOR budget under RIP project
	52DR018	34,733	-	16.11		-	-		-	-		-	-		-	-		-	-	
	52DR012	66,008	-	7.61		-	-		-	-		-	-		-	-		-	-	
	52DR015	136,613	19.50	19.50	41,000	5.85	5.85	50,000	7.14	7.14	45,613	6.51	6.51	-	-	-	-	-	-	SRNTP Fund
	52DR017	221,285	28.19	5.77	41,597	5.30	1.08	46,961	5.98	1.22	46,060	5.87	1.20	72,741	9.27	1.90	13,926	1.77	0.36	SRNTP Fund
	52DR009	123,380	-	5.66		-	-		-	-		-	-		-	-		-	-	
	<b>Total improvement</b>				<b>82,597</b>	<b>11.15</b>	<b>6.94</b>	<b>96,961</b>	<b>13.12</b>	<b>8.36</b>	<b>91,673</b>	<b>12.38</b>	<b>7.71</b>	<b>80,056</b>	<b>9.27</b>	<b>5.52</b>	<b>76,566</b>	<b>1.77</b>	<b>15.92</b>	
<b>E</b>	<b>Construction</b>	<b>Cost</b>	<b>GR</b>		<b>6,000</b>	<b>GR</b>		<b>6,000</b>	<b>GR</b>		<b>6,500</b>	<b>GR</b>		<b>6,250</b>	<b>GR</b>		<b>6,300</b>	<b>GR</b>		
	52DR003	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR005	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR007	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR009	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR010	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR017	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR018	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR020	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR021	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR012	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR013	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR008	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR002	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR015	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR011	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR014	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR004	-	-		-	-		-	-		-	-		-	-		-	-		
	52DR001	12,850	2.57		6,000	1.20		6,000	1.20		2,850	0.57			-			-		
	52DR016	16,200	3.24			-			-		3,650	0.73		6,250	1.25		6,300	1.26		
	52DR019	74,150	14.83			-			-			-			-			-		
	52DR006	118,750	23.75			-			-			-			-			-		
	52DR022	37,550	7.51			-			-			-			-			-		
	<b>Total new construction</b>				<b>6,000</b>	<b>1.20</b>		<b>6,000</b>	<b>1.20</b>		<b>6,500</b>	<b>1.30</b>		<b>6,250</b>	<b>1.25</b>		<b>6,300</b>	<b>1.26</b>		
<b>F</b>	<b>Remaining budget</b>				<b>0</b>			<b>0</b>			<b>0</b>			<b>0</b>			<b>0</b>			

### 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. Not only ranking other many factors have been considered for preparation of 5 years DTMP. A total of 47.69 km and 44.45 km road is improved to blacktop and gravel standard inclusive of cross drainage and protective structures required respectively to make them maintainable all-weather roads. Further 6.21 km new road will be constructed within this first DTMP period. The remaining 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 and central government specified funding).

**Table 6.3.1 DTMP output**

Conservation	Improvement gravel	Improvement blacktop	New construction
284.28	44.45	47.69	6.21

Of the total DTMP budget, NPR 264.39 million will be spent on conservation and NPR 427.85 million on improvement and NPR 31 million on 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 length of all-weather maintainable DRCN roads increases from 53.29 km to 92.14 km, with 192.14 km remaining fair weather. During this DTMP period, blacktop road will be increased from 4.08 km to 51.77 km. At the same time, 44.45 km earthen road will be changed to gravel standard.

**Table 6.4.1 Standard of DRCN roads**

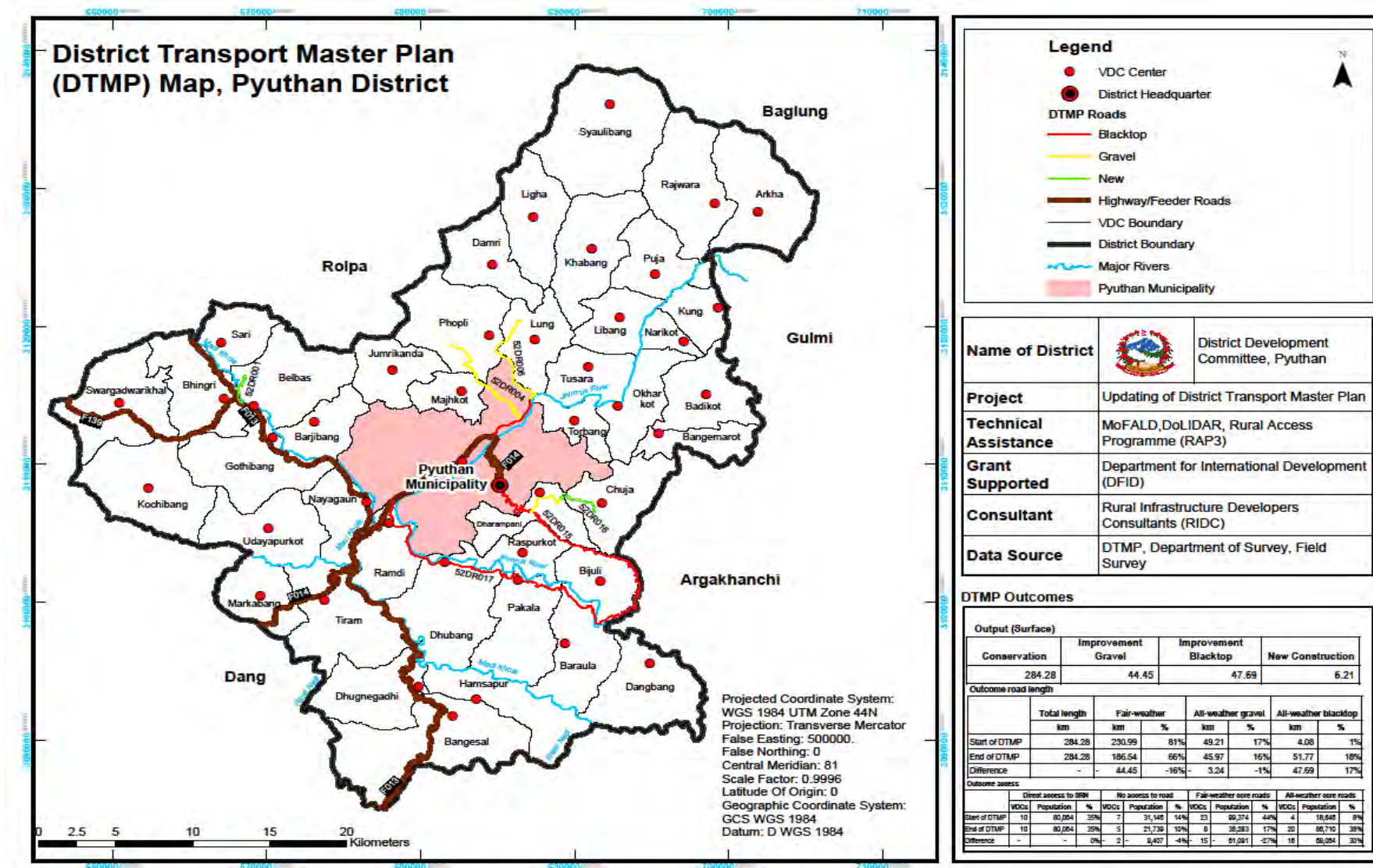
	Total length	Fair-weather		All-weather gravel		All-weather blacktop	
	km	km	%	km	%	km	%
Start of DTMP	284.28	230.99	81%	49.21	17%	4.08	1%
End of DTMP	284.28	186.54	66%	45.97	16%	51.77	18%
Difference	-	- 44.45	-16%	- 3.24	-1%	47.69	17%

The number of VDC headquarters with direct access to the SRN is 10 with 35% 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 increase 4 to 20 and 18,646 to 86,710 respectively. The number of VDC headquarters with no access to DRCN roads will decrease from 7 to 5, while the district population with no access to DRCN roads will remain 21,739 out of 226,796 total district population.

**Table 6.4.2 Population with access to road network**

	Direct access to SRN			No access to road			Fair-weather core roads			All-weather core roads		
	VD Cs	Population	%	VDC s	Population	%	VDC s	Population	%	VD Cs	Population	%
Start of DTMP	10	80,064	35%	7	31,146	14%	23	99,374	44%	4	18,646	8%
End of DTMP	10	80,064	35%	5	21,739	10%	8	38,283	17%	20	86,710	38%
Difference	-	-	0%	- 2	- 9,407	-4%	- 15	- 61,091	-27%	16	68,064	30%

Figure 6 District Transport Master Plan (DTMP)



# Annexes



## Annex 1: Traffic Data

Code	Description	Total Length (km)	Motorcycle	Car-Jeep-Minibus	Tractor	Truck-Bus	PCU	VPD
52DR001	Dakhakwadi-Neta-(Barjibang)-Sotre-Sari	24.16	10	3	7		22	10
52DR002	Bijuwar-Dhungethati- Deurali	11.73	15	14	12	5	66	31
52DR003	Tikuri-Gurunggaon-Majhkot	9.18	5	4	5		17	9
52DR004	Dharmawati-Gejwang-Phopli-Mairamane	11.63	15	5	6		25	11
52DR005	Chisapani- Damri	5.88	7	3	4		15	7
52DR006	Bagdula-Damti-Bahane-Khabang-Syaulibang	18.13	20	15	15	4	71	34
52DR007	Bahane-Chisapani-Ligha	12.00	4	3	4		13	7
52DR008	Bagdula-Machchi-Thulabeshi-Arkha-Bhimgithe	35.41	30	20	15	6	89	41
52DR009	Dhad-Tusara	5.66	9	3	5		18	8
52DR010	Dhad-Gobdi-Timurchaur-Libang	7.11					-	-
52DR011	Thulabeshi-Puja	4.29	9	2	5	3	29	10
52DR012	Siring Khola- Rajwara-Dhorpatan	7.61	6	2	5		15	7
52DR013	Machhi-Dhad-Badikot	11.40	19	10	11		42	21
52DR014	Machhi-Bangemarot-Sautamare	10.49	26	20	20	4	89	44
52DR015	Khalanga-Chujathati-Jogitari	19.50	35	22	17	12	122	51
52DR016	Dharapani-Chineta-Mundanda-Chuja	3.62					-	-
52DR017	Cherneta-Puranthati-Jogitari	28.19	36	24	13	9	104	46
52DR018	Baddada-Hansapur-Airawati	16.11	4	1	3		9	4
52DR019	Cherneta-Chin-Jamune-Dangwang-Juda	17.52	4		2		6	2
52DR020	Nayagaon-Udayapurkot	12.41	7	3	5		17	8
52DR021	Kumaltar-Kondrachaur-Ratapani	9.40	10	3	5	1	22	9
52DR022	Dharampani (Swargadwari)-Kochibang	2.85					-	-

[illegible]

[illegible]

### Annex 3: Level of Access

#	VDC/municipality	No access DRCN start DTMP	No access DRCN end DTMP	Fair-weather DRCN start DTMP	Fair-weather DRCN end DTMP	All-weather DRCN start DTMP	All-weather DRCN end DTMP	Direct access to SRN
	<b>Total population</b>	31,146	21,739	99,374	38,283	18,646	86,710	80,064
	<b>Total VDCs</b>	<b>7</b>	<b>5</b>	<b>23</b>	<b>8</b>	<b>4</b>	<b>20</b>	<b>10</b>
1	Arkha			X	X			
2	Badikot			X			X	
3	Bangemarot			X			X	
4	Bangesal							X
5	Baraula	X	X					
6	Barjiban			X			X	
7	Belbas			X			X	
8	Bhingri							X
9	Bijuli			X			X	
10	Chuja	X			X			
11	Damri			X			X	
12	Danban	X	X					
13	Dharampani			X			X	
14	Dhuban					X	X	
15	Dhungegadhi							X
16	Gothiban							X
17	Hamsapur			X	X			
18	Jumrikada			X			X	
19	Khaban	X	X					
20	Khun			X	X			
21	Kochiban	X	X					
22	Liban			X			X	
23	Ligha			X			X	
24	Lun					X	X	

*District Transport Master Plan (DTMP) of Pyuthan District*

25	Majhkot			X			X	
26	Markaban							X
27	Narikot			X			X	
28	Nayagau							X
29	Okharkot					X	X	
30	Pakala					X	X	
31	Phopli			X			X	
32	Puja			X	X			
33	Pyuthan NP							X
34	Rajawara			X	X			
35	Ramdi			X				X
36	Raspurkot			X			X	
37	Sari	X			X			
38	Shyauliban	X	X					
39	Swargadwarikhal							X
40	Tiram							X
41	Torban			X			X	
42	Tusara			X	X			
43	Udayapurkot			X			X	

**Annex 4: Photographs**



View of Orientation Workshop



DRCN Workshop



Draft Report Presentation

**Annex 5: Summary of proposed interventions**

Road code	Road Name	Length (km)	Start chainage (km) or X-coordinate	End chainage (km) or Y-coordinate	Rehabilitation (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)
<b>Total</b>		<b>284.28</b>			<b>-</b>	<b>1,075</b>	<b>602</b>	<b>86</b>	<b>116</b>	<b>-</b>	<b>205</b>	<b>-</b>	<b>5,886</b>	<b>2,850</b>
52DR001	Dakhakwadi-Neta-(Barjibang)-Sotre-Sari	24.16				45	18	6			16		280	190
52DR002	Bijuwar-Dhungethati- Deurali	11.73				55	12		8		6		235	130
52DR003	Tikuri-Gurunggaon-Majhkot	9.18				40					3		140	60
52DR004	Dharmawati-Gejwang-Phopli-Mairamane	11.63				50		6			5		305	100
52DR005	Chisapani- Damri	5.88				20			28		3		415	70
52DR006	Bagdula-Damti-Bahane-Khabang-Syaulibang	18.13				90	36		8					20
52DR007	Bahane-Chisapani-Ligha	12.00				30	36	16	14		13		465	220
52DR008	Bagdula-Machchi-Thulabeshi-Arkha-Bhimgithe	35.41				120	146	28	8		23		140	310
52DR009	Dhad-Tusara	5.66				30	138				11		530	150
52DR010	Dhad-Gobdi-Timurchaur-Libang	7.11				60								
52DR011	Thulabeshi-Puja	4.29				25		6	8		14		487.5	150
52DR012	Siring Khola- Rajwara-Dhorpatan	7.61				35	60		16		18		280	220
52DR013	Machhi-Dhad-Badikot	11.40				50	18	6	8		16		560	190
52DR014	Machhi-Bangemarot-Sautamare	10.49				35	36	6			17		508.75	100
52DR015	Khalanga-Chijathanti-Jogitari	19.50				45								
52DR016	Dharapani-Chineta-Mundanda-Chuja	3.62				30								
52DR017	Cherneta-Puranthanti-Jogitari	28.19				75	84	6			15		95	120
52DR018	Baddada-Hansapur-Airawati	16.11				60					28		645	470
52DR019	Cherneta-Chin-Jamune-Dangwang-Juda	17.52				65					2		280	60
52DR020	Nayagaon-Udayapurkot	12.41				60		6	6		5		330	150
52DR021	Kumaltar-Kondrachaur-Ratapani	9.40				30	18		12		10		190	140
52DR022	Dharampani (Swargadwari)-Kochibang	2.85				25								

## Annex 6: Overall Road Inventory

Road code	Road Name	Length (km)	Start chainage (km) or XY-	End chainage (km) or XY-coordinate	Surface Type: Black Top	Surface Type : Gravel	Surface Type : Earth	All Weather	Fair Weather	Condition - Good/ Fair	Condition - Poor	Condition - Temporarily Impassable	Condition - Permanently Impassable
<b>Total</b>		<b>284.28</b>			<b>4.08</b>	<b>49.21</b>	<b>230.99</b>	<b>53.29</b>	<b>230.99</b>	-	-	-	-
52DR001	Dakhawadi-Neta-(Barjibang)-Sotre-Sari	24.16					24.16		24.16			√	
52DR002	Bijjuwar-Dhungethati- Deurali	11.73				2.52	9.21	2.52	9.21	√			
52DR003	Tikuri-Gurunggaon-Majhkot	9.18					9.18		9.18			√	
52DR004	Dharmawati-Gejwang-Phopli-Mairamane	11.63					11.63		11.63		√		
52DR005	Chisapani- Damri	5.88					5.88		5.88			√	
52DR006	Bagdula-Damti-Bahane-Khabang-Syaulibang	18.13			4.08	8.57	5.48	12.65	5.48	√			
52DR007	Bahane-Chisapani-Ligha	12.00					12.00		12.00				
52DR008	Bagdula-Machchi-Thulabeshi-Arkha-Bhingithe	35.41				13.60	21.81	13.60	21.81		√		
52DR009	Dhad-Tusara	5.66					5.66		5.66			√	
52DR010	Dhad-Gobdi-Timurchaur-Libang	7.11					7.11		7.11		√		
52DR011	Thulabeshi-Puja	4.29					4.29		4.29			√	
52DR012	Siring Khola- Rajwara-Dhorpatan	7.61					7.61		7.61			√	
52DR013	Machhi-Dhad-Badikot	11.40				0.72	10.68	0.72	10.68			√	
52DR014	Machhi-Bangemarot-Sautamare	10.49				1.38	9.11	1.38	9.11		√		
52DR015	Khalanga-Chujathati-Jogitari	19.50					19.50		19.50	√			
52DR016	Dharapani-Chineta-Mundanda-Chuja	3.62					3.62		3.62				
52DR017	Cherneta-Puranthati-Jogitari	28.19				22.42	5.77	22.42	5.77	√			
52DR018	Baddada-Hansapur-Airawati	16.11					16.11		16.11		√		
52DR019	Cherneta-Chin-Jamune-Dangwang-Juda	17.52					17.52		17.52			√	
52DR020	Nayagaon-Udayapurkot	12.41					12.41		12.41		√		
52DR021	Kumaltar-Kondrachaur-Ratapani	9.40					9.40		9.40			√	
52DR022	Dharampani (Swargadwari)-Kochibang	2.85					2.85	-	2.85			√	



*District Transport Master Plan (DTMP) of Pyuthan District*

Total		146.10			-	-	146.10	-	146.10	-	-	-	-
52VR001	Dharmawati-Gejwang-Phopli-Mainamare-Rolpa Road	2.66					2.66		2.66				
52VR002	Bahane-Damri Road	3.24					3.24		3.24				
52VR003	Rajwara(1)-Shyaulibang Road	4.95					4.95		4.95				
52VR004	Rajwara(1)-Shyaulibang Road	10.44					10.44		10.44				
52VR005	AglungPhedi-Rajwara-Dhorpatan (Baglung) Road	2.93					2.93		2.93				
52VR006	Bahane-Lung-Tusara-Dhand-Road	9.04					9.04		9.04				
52VR007	Kutichar-Domai-Pipaltari-Tusara Road	3.12					3.12		3.12				
52VR008	Kutichaur-Ratatari-Kuta-Tusara Road	5.05					5.05		5.05				
52VR009	Dhand-Hirapokhari-Okharkot-Badikot	4.01					4.01		4.01				
52VR010	Okharkot-Pipalneti-Pipalrukh-Narikot-Gulmi	8.65					8.65		8.65				
52VR011	Majuwa-Judelikhola-Chuja-Chuja Road	8.63					8.63		8.63				
52VR012	Dharampur-Chheda-Mundanda-Chuja Road	4.42					4.42		4.42				
52VR013	Khalanga-Jharkasthan-Sarankot-Jorpokhari-Tilwari	11.40					11.4		11.40				
52VR014	Baraula-Narsingneta-Dangbang Road	2.53					2.53		2.53				
52VR015	Darbhan-Aerawati Road	6.10					6.1		6.10				
52VR016	Baddanda-Juspur-Hatikhal-Dang Road	7.05					7.05		7.05				
52VR017	Damrikhola-Kharibang-Markabang Road	5.04					5.04		5.04				
52VR018	Thakleni-Murkuti-Dang Road	10.45					10.45		10.45				
52VR019	Nayagaun-Udaypurkot-Swargadwari-Gramin Road	7.90					7.9		7.90				
52VR020	Kumaltar-Kochiwang-Road	13.19					13.19		13.19				
52VR021	Dharampani-Kochibang-Dang Road	2.20					2.2		2.20				
52VR022	Cherneta-Salghari-Dhairechaur-Soltre Road	4.28					4.28		4.28				
52VR023	Nayagaun-Salikot-Siruwari-Dharmapa Road	8.82					8.82		8.82				

## **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;

<b>Projected coordinate system</b>	
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 template 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 (Salyan and Arghakhanchi).

### 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 (DTMP) 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 connects 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 template.
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 removed from the list of SRN
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 २०६२/०३/१८ गते जिल्ला विकास समितिको हलमा, प्युठान जिल्लाका स्थानीय विकास अधिकारी श्री शिव प्रसाद रेग्मी ज्यूको अध्यक्षतामा बैठक बसी यस प्युठान जिल्लाको यातायात गुरुयोजना (DTMP) परिमार्जन मुख्य सडक सुञ्जाल छोटो गोडोडा तपशिल बमोजिमका माहुरभाषहरूको उपस्थितिमा बैठक बसी देहाय बमोजिमको निर्णय गरियो ।

उपस्थिति

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 श्री बसुन्धरा बान्ना - SNRTP DRME  
 श्री नवित्त जोशी - SNRTP PSE-II  
 श्री विमान राई - राप्तामा - एतेनिधि - नेपाली कांग्रेस  
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आज मिति २०७२/०३/१६ गते जिल्ला विकास समितिको हलमा, प्युठान जिल्लाका स्थानीय विकास अधिकारी श्री शिव प्रसाद रेग्मी ज्यूको अध्यक्षतामा बैठक बसी यस प्युठान जिल्लाको यातायात गुरुयोजना (DTMP) परिमार्जन अभिमुखिकरण गोठिमा तयारिल बमोजिमका माहतुभावहरूको उपस्थितिमा बैठक बसी सम्पन्न गरियो ।

### उपस्थिति

श्री शिव प्रसाद रेग्मी - स्थानीय विकास अधिकारी -  
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 श्री शम्भु सिग्देल - PSE-I, SNRTP  
 श्री महेंद्र राज शर्मा - Engineer DPO

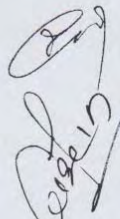
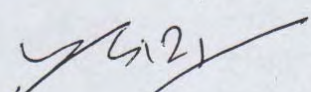
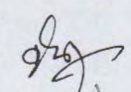
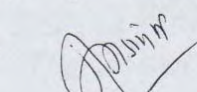
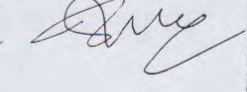
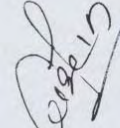
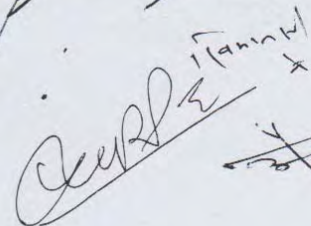
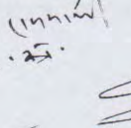
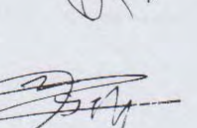



निर्माणहरू



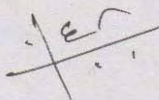
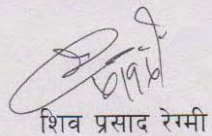
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क्र.स (D.N.) सडकको नाम (Road Name)

1. Cherneta-chin-Tamune-Dangwang-Judla Road
2. Baddanda-Kansapur-Airawati Road
3. Nayagaon-Udayapurkot Road
4. Dharampani (Sworgadwari) DC - Kokhibang Road
5. Dakhaquadi-Neta (Bajribang)-setre-Sari Road
6. Bijewar-Dhungehathi-Deurali Road
7. Khalanga-Chujathadi-Jogitari Road
8. Dharampani-Chineda-Mundanda-Chuja Road
9. Dharmawati-Gejwang-Phopli-Mainamare Road
10. Bahane-Chisapani-Lighe Road
11. Chisapani-Damri Road
12. Bagdula-Damti-Bahane-Khabang-Syaulibang Road
13. Bagdula-Machhi-Thulabesi-Archa-Bhimgitha Road
14. Siring Khola-Raywara-Dhorpatan Road
15. Thulabesi-puja Road
16. Machhi-Dhad-Badikot Road
17. Dhad-Tusara Road
18. Dhad-Gabdi-Timerchaur-Libang Road
19. Machhi-Bangemareth-Santamare Road
20. Tikuri-Guning Gaon-Majhket Road
21. Kumaltar-Kondrachaur-Ratepani Road.
22. Cherneta-purauthadi-Jogitari Road.

**Annex 10: Work Completion Certificate**

	<p>नेपाल सरकार सघीय मामिला तथा स्थानीय विकास मन्त्रालय <b>जिल्ला विकास समितिको कार्यालय</b> खलंगा, प्युठान</p>	<p>फोन नं. ०८६६-४२०१९४</p>
<p>पत्र संख्या :- ०७२/७३ च.न. ४५६</p>		<p>मिति: २०७२/०७/१७</p>
<p>श्री टिम लिडर ग्रामिण पूर्वाधार कार्यक्रम, ललितपुर</p>		
<p><b>विषय : कार्यसम्पादन भएको बारे</b></p>		
<p>प्रस्तुत विषयमा यस प्युठान जिल्लाको जिल्ला यातायात गुरुयोजना तयारी पार्ने क्रममा खटिई आएका परामर्शदातृ संस्था आर. आई.डि.सी.प्रा.लि. का परामर्शदाताहरुबाट कार्य सम्पादन शर्तनामा तथा निर्देशिका बमोजिम अभिमुखिकरण गोष्ठी, जिल्ला सडक संजाल छनौट गोष्ठी प्रतिवेदन प्रस्तुती गोष्ठी तथा फिल्ड अध्ययन कार्य सम्पादन भएको ब्यहोरा अवगत गराईन्छ ।</p>		
	 शिव प्रसाद रेग्मी	
	<p>प्युठान</p>	
	<p>स्थानीय विकास अधिकारी</p>	
	<p><u>स्थानीय विकास अधिकारी</u></p>	



**Annex 11: Excel Data**