Preparation of Transportation Network Digitisation of Phalewas Municipality

Phalewas Municipality

Office of the Municipal Executive

Parbat, Gandaki Province, Nepal

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PREPARED BY:

Environment and Engineering Research Centre Pvt. Ltd.

Koteshwor, Kathmandu

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Environment and Engineering Research Centre Pvt. Ltd.

Koteshwor, Kathmandu

Acronyms/Abbreviations

DDC	**District Development Committee**
DTMP	District Transport Master Plan
GIS	Geographic Information System
GPS	Global Positioning System
IDPM	Indicative Development Potential Map
MIM	Municipality Road Inventory Map
MRCC	Municipality Road Coordination Committee
NMT	Non- Motorized Transport
MTMP	Municipality Transport Master Plan
MTPP	Municipality Transport Perspective Plan
VDC	Village Development Committee
MTPP	Municipality Transport Perspective Plan
PCU	Passenger Car Unit
DOLI	Department of Local Infrastructure
OD	Origin and Destination
ToR	Terms of Reference
HH	Household
VDCs	Village Development Committees
PT	Public Transport
Min.	Minute
Km.	Kilometre
Sq. km	Square Kilometre
Ha	Hectare

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Executive Summary

Transport facilities help in developing access with the urban linkages. Road accessibility can reduce isolation, stimulate crop production and marketing activities, encourage public services and help to transfer technology. Road building has been seen to bring about notable enthusiasm and visible changes in life. Road infrastructure is considered as "the infrastructure for infrastructure". However, in the absence of notable criteria and rational guidelines, road construction may be carried out in adverse manner resulting in haphazard usage and wastage of limited resources. Road inventory report is prepared for assessing and planning the present road and transport infrastructures and facilities within the municipality and its surroundings.

Phalewas Municipality lies in Parbat district of Gandaki Province. In 12 March 2017, the government of Nepal implemented a new local administrative structure consisting of 753 local units. With this implementation of the new local administrative structure, VDCs have been replaced with the Municipal and Rural Municipal councils.

The Phalewas Municipality was established by merging the Karkineta, Thapathana, Shankarpokhari, Mudikuwa, Khanigaun, Devisthan, Limithana, Thanamaula, Bhangara, Kurgha and Pangrang Village Development Committees (VDCs) having a total area of 84 sq. kms. After merging the eleven VDCs' population it had a total population of 24,687 according to 2011 Nepal census. The population density of Phalewas Municipality is 293.89person/sq.km. Phalewas Municipality has altogether 11 wards.

This porject started with the formation of Municipal Road Coordination Committee (MRCC) and the collection of inventory of road within the municipality. For the collection of existing road infrastructure data, GPS survey was used and total length of road surveyed was 311.75 KMs. Based on field survey, ward no. 09 has highest length of road and ward no. 01 has smallest road length among all wards.

Indicative Development Potential Plan is prepared showing the existing and potential market center/service centers (key growth centers) and the areas having various development potentials such as agro-based industries, high value cash crops and tourism. This city may be developed as the agricultural-cultural-historical centre and with promoting this, the tourism

can be improved. By improving the agriculture and tourism sector we have to develop the health, education and environment of the people of this Municipality.

This study formulated the road hierarchy for the various roads namely Class A, B, C, D and E. Class C, D and E basically deal with access while Class A and B basically deal with mobility and accessibility to higher services. The minimum right of way, setback provisions for the different classes of roads are recommended as follows:

SN	Road Class	Description	Min RoW(m)	Setback(m) (Either side)
1	A	Lok Marga	30	2
2	B	Mukhya Sadak	16	3
3	C	Mul Sadak	11	2.5
4	D	Sakha Sadak	8	1.5
5	E	Upa Sakha Sadak	5	1

The total lengths of Class A, B and C roads are summarized as shown in the table below:

Class	Surface Type/Approx. Length (Km)				
	Bituminous	**Concrete**	**Earthen**	**Gravelled**	**Grand Total**
A	-	-	17.65	-	17.65
B	1.04	-	42.27	6.96	50.27
C	6.68	-	64.84	10.48	82.01
D	0.22	0.55	94.69	-	95.46
E	0.32	0.07	66.77	-	67.16
Grand Total	**8.25**	**0.63**	**286.22**	**17.44**	**312.53**

The digital initeractive map can be viewed and accessed from this link:

https://www.arcgis.com/apps/View/index.html?appid=c5494cfb09434f88ae61fcccb6748585

Or this link: https://tinyurl.com/phalewasmap

Chapter 1: Introduction

1.1. Background

Life in organized human settlements, which are mostly referred to as communities, is only possible if people have mobility in daily basis. Residential area is spatially separated from workplaces, major shopping is concentrated in identifiable centers, and larger entertainment and relaxation facilities are found at specific locations. They have to have accessibility.

Transport facilities help in developing access with the urban linkages. Road accessibility can reduce isolation, stimulate crop production and marketing activities, encourage public services and help to transfer technology. Road construction has been seen to bring about notable enthusiasm and visible changes in life. Road infrastructure is considered as "the infrastructure for infrastructure". However, in the absence of notable criteria and rational guidelines, road construction is carried out in adverse manner resulting in haphazard use and wastage of limited resources.

Haphazard development of settlement in the urban and sub-urban area is a great problem which we have learned from the past earthquake. For disaster risk management and reducing the problem of congestion we should go for planned development. Construction of roads after the settlement is made or extension of road only after the congestion problem creates different types of problems in the society which we are closely observing from different metropolitan cities. In this regard, Digitization of Existing Roads was initiated for assessing the present road and transport infrastructures and facilities within the municipality. So as to be presented as proper municipality or a city, it must have a very good mobility and accessibility by public or private means of transportation.

1.2. Objective of the Project

The prime objective of this study is to prepare the Digitized Maps of Existing Roads of Phalewas Municipality. The project approach is participatory and bottom-up from the settlement level. The specific objectives of the project are mentioned below:

1. Prepare the Municipality Inventory Map (MIM) of all road networks.
2. Identify the major road networks linking the municipality with the surrounding areas.

3. Prepare a digitized map of the existing roads as a GIS shapefile and digital interactive maps.
4. Prepare a physical report as a supporting document.

1.3. Scope and Limitation of the Project

The scope of this work and service the consultant will provide for the project is given below:

a. Analyze Mobility status of the Municipality

   The consultant will also have conducted mobility study, incorporated in the O-D survey. This is important especially because the road network in capital has provided access to majority of the population. The question then arises on how efficiently, economically and safely the goods and passengers are transported, which is indicated by mobility.

b. Access the condition of public transportation

   The consultant will have collected data on different public transportation routes and their operation characteristics, which operate within the municipal area and to other adjoining areas.

c. Prepare Municipality Inventory Map (MIM) of existing roads within Phalewas Municipality.

   The consultant will have prepared the Municipality Inventory Map linking to strategic road networks such as national highways, district core road network, main trails and bridges. This shall be done by walkover surveys using enumerators. The inventory map shall include the road names, total length and breadth of the roads, surface type, existing condition, Right of way, vehicular traffic and pedestrian traffic flow etc.

d. Road classification and Nomenclature

   The consultant shall have used a systematic approach of nomenclature and apply the same classification throughout the data collection.

e. Preparation of GIS maps of Road Inventory and Facilities.

   The data collected through accessibility survey, demand survey and field visits shall be used to prepare GIS maps of road inventory and facilities. All the identified interventions

shall be screened and rated on the basis of approved criteria and forwarded to municipal council meetings. The final result shall be shown in GIS maps.

f. Prepare Physical and GIS maps of Road Network of Phalewas Municipality

The consultant shall have prepared Road Network Maps of Phalewas Municipality with due consideration to the existing situation of: travel routes, modes of transport. The consultant shall prepare a base scenario of the existing road and transport network and management based on the O-D survey and O-D matrix and prepare road inventory map and transport infrastructure network.

1.4. Approach and Methodology

Roads are supposed to provide both access and mobility to all possible and potential areas. Digitization of roads will help to assist the planning of such roads to fulfil the stated objectives. Better planning is incomplete without relevant quality data and quality data can only be acquired by use of properly selected survey methods. The chapter deals with the methodological framework adopted for data collection covering all used survey method, sampling techniques, quality and quantity of data along with data processing, analysis and presentation methodology.

a. Approach:

This report has been prepared using participatory bottom-up approach and differs from conventional practices of trickle-down approach. Techno-Political interface has been incorporated in the process, where active participation from representatives of political parties, line agencies, and municipality officials is crucial. The Municipal Road Coordination Committee (MRCC) has been constituted as authorized legislative body of municipality. This body, comprising all political parties' representatives and concerned technical officials, helps in necessary policy decisions during the maps and report preparation process.

b. Methodological Framework:

The study started with preliminary planning or desk study where basic background of municipality is studied with help of secondary data including census data, GIS data. The study got acceleration with formation of MRCC and inception report. Various field surveys were carried out with objective of collecting primary data on transportation network, trip characteristics and service facilities. Along with the primary data, demands for various transportation projects (construction/upgrading/maintenance) were obtained from each ward. Also, potential areas/locations for various facilities were also identified based on interaction with local people and MRCC. Then, the hierarchy of roads will be analysed and the existing network of various interventions will be laid out and analysed based on available data and finally physical and GIS maps of existing roads is drawn.

c. Secondary Data Collection

Any sorts of data that were collected from secondary sources are called secondary data. These data were collected from annual report published by district level offices and consultation with various concerned stakeholders. Municipal Road Coordination Committee (MRCC), which compromises people from various fields and political parties, is the next source for various secondary data. Field study was also carried out for general socio-economic assessment of the municipality that includes collection of data regarding high development potential areas such as extensive agriculture, horticulture, livestock farming, high value cash crops, cottage and agro-based industries, centre for business/commerce/markets places, tourism area, service centres (hospital, health post, agriculture service sub-centre etc.). The information about demographic data of municipality, various maps showing service centres, transport infrastructure inventory, past plans and sector study reports, sector standards and policy targets were collected from the secondary sources, which includes Bureau of Statistics, Survey Department, Local NGOs, line agencies, DDC, Municipality etc. Digitized topographic maps, administrative map of municipality, strategic road network map prepared by DoR, etc. were some other secondary data that were used during the study.

d. Primary Data Collection:

Primary information on present household and trip characteristics, traffic characteristics, existing accessibility and mobility level of settlements, prioritized road network required for each

ward are obtained via various reliable methods. Tracking of the existing road network along with detail information of its width, surface type is also carried out.

The primary data collection methods carried out in the field was:

- Road Inventory Survey
- Public Transport and Services Study

Road inventory survey was conducted to collect data on its condition of road, road linkage, road safety status and issues that need to be highlight. It helps in field validation of base maps and also assists in preparation of road inventory map, nomenclature and coding of the road linkages.

Public Transport and Services Study highlights the services provided by public transportation and location of various services and facilities. It was carried out by directly interviewing the route operators.

e. Data Processing, Analysis and Presentation of Reports

Data collected at field were first entered at MS office tools (MS Excel and Word) and GIS database. All the complete and reliable sets of data were transformed into useable information and the present scenario of municipality are shown through maps, graphs, figures and tables. Similarly, those which were entered into GIS database provide various types of maps and tables. Various transportation models were used for interpretation and forecasting.

f. Name Coding

Digital Name is a code given to each road which is unique and generated by an order of alphabetical and numerical digits. Each code is different to the other and forms the basis of differentiating from other road.

The first step taken in naming the streets is to identify the class of the road. After the designation of the class of the road, streets are assigned a unique code in the format A001. The first letter in the Code represents class of the road in the municipality, which shall be taken as the reference for the coding of the Municipal roads. The 2^{nd}, 3^{rd} and 4^{th} elements (numbers) represent the serial number of the road according to the alignment on the topogrqphy.

Chapter 2: Review of Existing Infrastructure Situation

The chapter deals with the present condition and scenario of the municipality based on various primary and secondary data sources. Socio-economic, trip, land use and transportation characteristics are basically dealt in this chapter along with analysing accessibility and mobility scenario within the municipality. The basic data source of the analysis is the collected primary data.

2.1 Location

Phalewas Municipality lies in Parbat district of Gandaki Province. Topographically the municipality entails from 3111123mN to 3122577mN and from 756295mE to 771450mE. This municipality lies in the middle of Parbat District which is surrounded by Kaski and Syangja in East, and Myagdi and Baglung in West.

Table 1 Borders of Phalewas Municipality

East:	Syangja District
West:	Baglung District
North:	Kushma Municipality
South:	Mahashila and Bihadi Rural Municipality

This municipality is surrounded by Syangja District in the East, Kushma Municipality in the North, Baglung District in the West and Mahashila and Bihadi Rural Municipality in the South.

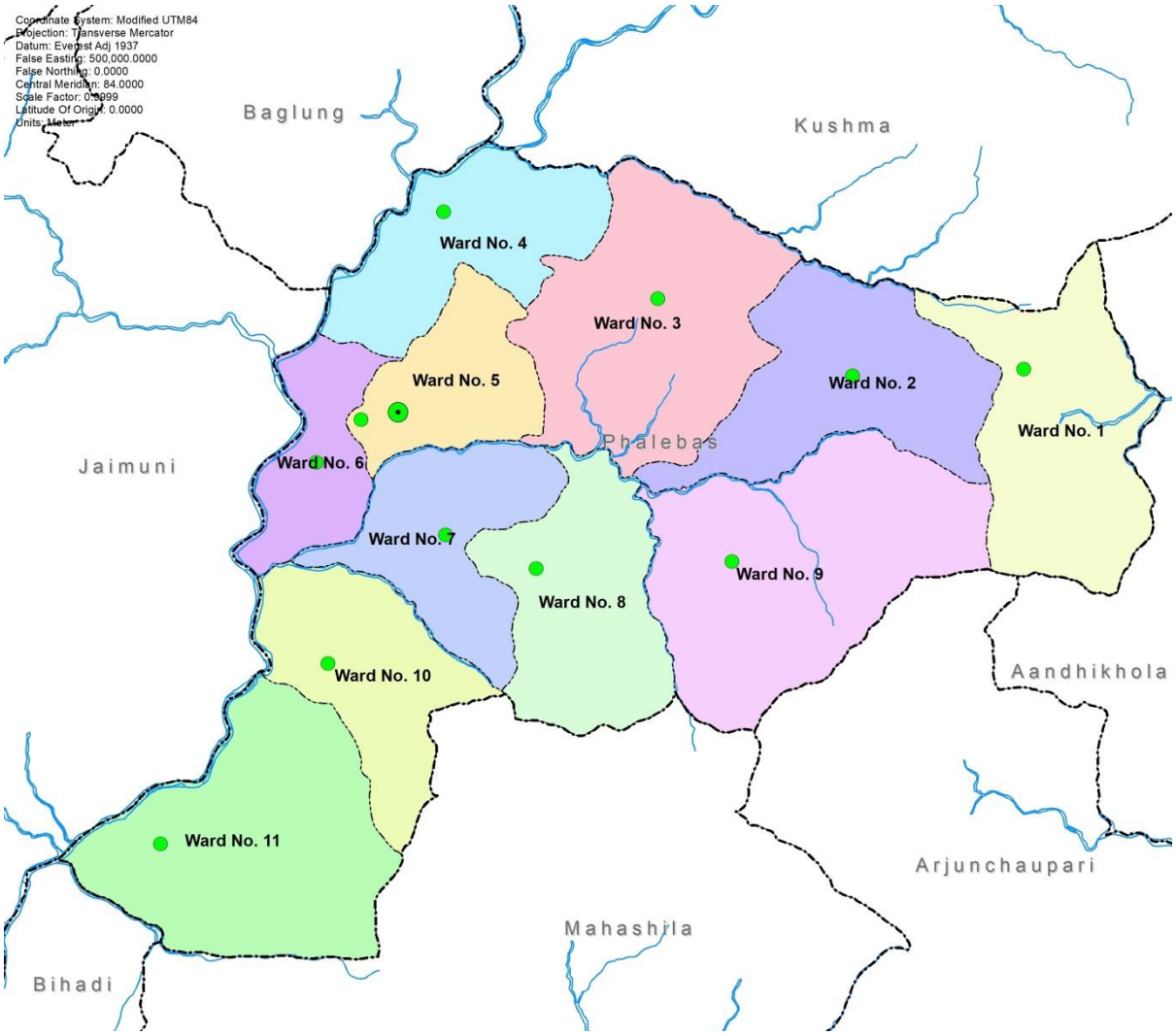

Figure 1 Location Map of Phalewas Municipality

2.2 Administrative Division

In 12 March 2017, the government of Nepal implemented a new local administrative structure consisting of 753 local units. With this implementation of the new local administrative structure, VDCs have been replaced with the Rural Municipal councils.

The Phalewas Municipality was established by merging the Karkineta, Thapathana, Shankarpokhari, Mudikuwa, Khanigaun, Devisthan, Limithana, Thanamaula, Bhangara, Kurgha and Pangrang Village Development Committees (VDCs) having a total area of 84 sq. kms. After merging the eleven VDCs' population it had a total population of 24,687 according to 2011 Nepal census. The population density of Phalewas Municipality is 293.89person/sq.km. Phalewas Municipality has altogether 11 wards.

Table 2 Formation of wards of Phalewas Municipality

S. No	Ward No	Previous VDC
1	**1**	Karkineta (1-9)
2	**2**	Thapathana (1-9)
3	**3**	Shankarpokhari (1-9)
4	**4**	Mudikuwa (1-9)
5	**5**	Khanigaun (1-9)
6	**6**	Devisthan (1-9)
7	**7**	Limithana (1-9)
8	**8**	Thanamaula (1-9)
9	**9**	Bhangara (1-9)
10	**10**	Kurgha (1-6,9)
11	**11**	Pangrang (1-9)

Source: MoFAGA, Nepal

2.3 Socio-Demographic Condition

Population of this municipality is 24,687. The population density of this municipality is 293.89 people per square kilometer.

2.4 Land Cover

This municipality lies in the hilly region of Nepal. Most of the area is covered by cultivation land, forest and bushes. More than half of the area is covered by cultivation land whereas barren land, pond/lake, River/water body and others cover negligible portion of this municipality. The detail of the land use condition of this city is tabulated below:

Table 3 Land use condition in the study area

Landuse	Area Covered (Sq. Km)	Percentage Covered
Bush	3.78	4.41%
Cultivation	46.77	54.57%
Embankment	0.02	0.03%
Forest	30.81	35.95%
Grass	2.99	3.49%
River/Waterbody	0.46	0.54%
Riverbed	0.87	1.02%
Grand Total	**85.70**	**100%**

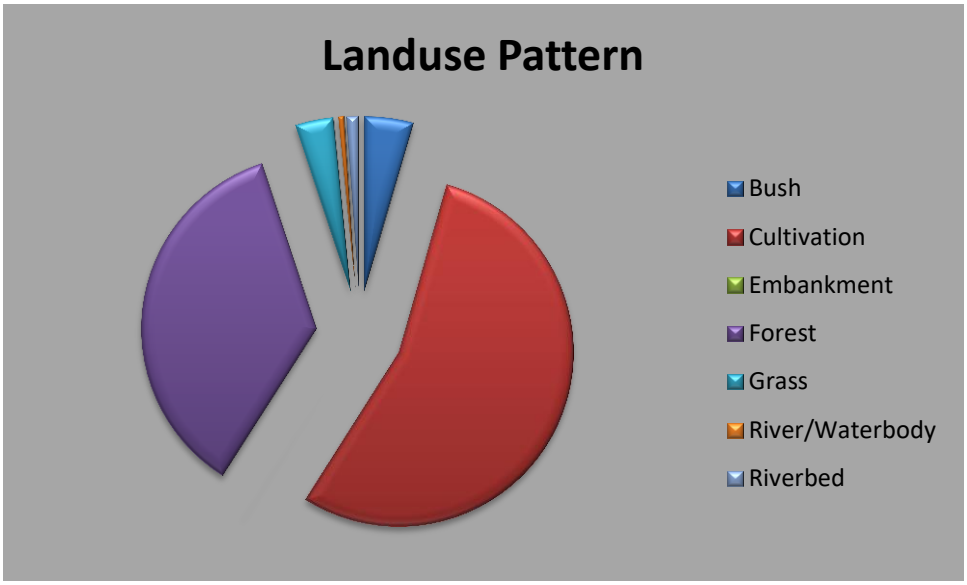

Figure 2: Land Cover of Municipality

2.5 Transportation

a. Road inventory

For the collection of existing road infrastructure data, GPS survey was used and total length of road surveyed was 311.75 Km. Based on field survey, ward no 09 has highest length of road and ward no 01 has smallest road length among all wards.

Table 4: Existing Road condition based on Surface Type

Wards	Surface Type/Approx. Length (Km)				Total
	Bituminous	Concrete	Earthen	Gravelled	
Ward 01	0.26	-	15.44	5.47	21.17
Ward 02	0.31	-	33.60	1.48	35.39
Ward 03	-	-	38.77	-	38.77
Ward 04	1.27	0.08	25.70	-	27.05
Ward 05	5.61	0.17	19.16	-	24.93
Ward 06	0.80	0.10	23.74	-	24.64
Ward 07	-	-	20.56	4.06	24.62
Ward 08	-	-	21.10	-	21.10
Ward 09	-	-	42.89	-	42.89
Ward 10	-	-	17.03	6.42	23.45
Ward 11	-	0.29	28.25	-	28.53
Total	**8.25**	**0.63**	**286.22**	**17.44**	**312.53**

Based on the data collected, it can be seen that the road density per 1000 population is 12.63kms and 3.64kms per square kilometre of area. This value is high as compared to national statistics such as 1.91 km per 1000 populations and 0.344 km per square kilometre.

Table 5: Road Density ward wise

Ward No.	Population	Area (Sq. Km)	Road (In Km)	Road Per Sq. Km	Road per 1000 Population
1	1808	8.92	21.17	2.37	11.71
2	2969	8.21	35.39	4.31	11.92
3	3863	10.71	38.77	3.62	10.04
4	1869	6.39	27.05	4.23	14.47
5	1925	4.42	24.93	5.64	12.95
6	3004	3.82	24.64	6.45	8.20
7	1497	5.85	24.62	4.21	16.44
8	1419	7.25	21.10	2.91	14.87
9	1863	12.43	42.89	3.45	23.02
10	2247	6.39	23.45	3.67	10.44
11	2223	11.33	28.53	2.52	12.84
Total	**24687**	**85.7**	**312.53**	**3.65**	**12.66**

In this road inventory survey, it was found that the roads of this municipality are narrow and their width is insufficient to cross two vehicles from opposite direction at a time. Also, the actual width of roads is very small in comparison to their right of way.

a. Bridge/Crossings

This municipality consists of steep hills and fast flowing streams. Travelling across such geographical surface requires large number of bridges and crossings. Suspension bridges are widely used for crossing over streams along foot trails in this municipality. Currently, 5 motorable bridges are in operation and other 2 are underconstruction.

b. Traffic Condition

This municipality possess mixed traffic. There is small amount of traffic volume on roads connecting municipality office and Kushma (Dobilla). Nevertheless, the traffic on other roads is negligible. Public transportation is available from Khanigaun and Karkineta which provide mobility to local people. However, these means of transportation are not reliable due to poor road infrastructures inside the municipality. For the goods transportation purposes, large and small

trucks are being used along with public jeeps and buses, and for the transportation of construction materials such as sand, stone and gravel, tractors and tippers are being used.

2.6 Public Transportation

Public transport is a shared passenger transport service, which is available for use by anyone who pays the set fares. It generally operates on fixed routes and may include modes such as three-wheelers, mini/micro buses, buses, trolleybuses, trams, trains and ferries. Besides reducing congestion and air pollution by providing transportation services to a large number of people, high capacity public transport systems may also influence the urban form and quality of life in cities. While in areas, public transportation mainly deals with providing accessibility, transport of construction materials and goods and linkage with nearest urban area. A good public transport system provides efficient and affordable mobility, and access to work, school/colleges, social, recreation and economic activities.

a. Passenger Movement

Public transportation is inevitable need in today's world. Development of a region cannot be effective and efficient without proper public transportation system. Urban public transportation generally deals with cost effectiveness, time saving and comfort of travel. However, public transportation services more broadly support well-being for residents by also providing transportation to employment, schools, places of worship, and social and recreational destinations. Access to public transportation in areas is limited by travel times and distances, frequency of service, cost, and limitations in funding to address these challenges.

Figure 3: Public Vehicles

b. Freight Transportation

Freight transport is the physical process of transporting commodities and merchandise goods and cargo. In past, people of areas of Nepal used to be independent in basic life requirements. However, with an increase of technology and accessibility, import and export has increased significantly in municipality. People are now dependent on imported goods for day-to-day life operation. Majority of goods being imported in this municipality are daily consumption materials—food, clothes, stationary and so on—and construction materials. Generally, goods for daily used are imported from Kushma and Pokhara. Materials for construction materials are also imported from Kushma, Pokhara, etc.

At the beginning, transportation of goods used to be carried by people themselves, which was expensive and tedious process. Transportation through such methods was only possible for people with high purchasing power. Later on, people started using animals as a means of goods of transportation. Mules are still used in rural areas of Nepal for transportation of goods. This decreased transportation cost and time of travel and in the meantime, this increased access of general public to imported goods. This significantly increased dependency of people on imported goods. After 90's, road network reached in almost every part of country which significantly increased movement of goods inside country. Nowadays, trucks, pick-up vans are used to transport goods and tippers are mainly used to transport construction materials.

2.7 Travel Pattern and Characteristics

Majority of trips generated are directed towards Khanigaun, Mudikuwa and Karkineta, then to Kushma and Syangja, and subsequently towards Pokhara. People travel to Kushma, Pokhara and Kathmandu in search of employment opportunities, better health care, and better educational facilities. Inside municipality, majority of trips are directed towards Khanigaun and Karkineta and other small market centres.

Figure 4: Trip Pattern inside/outside Municipality

2.8 Connectivity

The municipality is located in western hilly region of Nepal. This municipality is connected to other parts of country through road transport only. This municipality is at a distance of 20km from district head quarter — Kushma and 70km from Pokhara. The capital city—Kathmandu is about 270 km away from the municipality.

2.9 Road Network Deficiencies

The major deficiencies of road network are as follows:

1. Lack of proper cross drainage structures
2. Narrow and earthen roads
3. Majority of roads fail to provide service during rainy season
4. Slope of roads is too high for smooth operation of vehicle

5. Roads do not interlink between each other for proper operation of public vehicles

2.10 Visionary City Development Plan

The vision of this Phalewas Municipality should be to develop an environment friendly and clean municipality by fostering its cultural and religious history and importance with modern urban facilities. However, this plan is yet to be prepared.

For this, the main visionary city development plan of the Municipality is to develop/preserve the following:

1. Agriculture
2. Tourism
3. Industry

2.11 Indicative Development Potential

IDP is basically the indication of the existing and potential market center/service centers (key growth centers) and the areas having various development potentials such as agro-based industries, high value cash crops and tourism. Thus, IDP shows high value cash crops, tourism area, and area of service centers such as hospital, post office, telecommunication, school, campus, security offices and large settlements, important historic and religious places. Finally, it prepares the ranking of the markets of the Municipalities the basis of network planning. Existing/potential areas are defined as:

- Existing/potential areas for development of large industries.
- Areas with extensive small cottage industries.
- Area with service centers such as hospital, post office, telecommunication, school, campus, security offices, Bus Park, sport and recreational centers etc.
- Potential areas for tourism development.
- Area with large settlements.
- Area with important historic and religious places.
- Areas with extensive high value cash crops
- Areas with extensive horticulture.
- Areas with extensive livestock farming.

Chapter 3: Hierarchy of Municipality Road Network

3.1 Road Hierarchy

Roadways serve a variety of functions, including but not limited to the provision of direct access to properties, pedestrian and bicycle paths, bus routes and catering for through traffic that is not related to immediate land uses. Many roads serve more than one function and to varying degrees, but it is clear that the mixing of incompatible functions can lead to problems. A road hierarchy is a means of defining each roadway in terms of its function such that appropriate objectives for that roadway can be set and appropriate design criteria can be implemented. These objectives and design criteria are aimed at achieving an efficient road system whereby conflicts between the roadway and the adjacent land use are minimized and the appropriate level of interaction between the roadway and land use is permitted. The road hierarchy can, then, form the basis of ongoing planning and system management aimed at reducing the mixing of incompatible functions.

3.2 Objectives of Road Hierarchy

The key objective of a road hierarchy is to ensure the orderly grouping of roadways in a framework around which state and local governments can plan and implement various construction, maintenance, and management schemes and projects. It should also assist local and state governments with the adoption of appropriate standards for roadway construction.

A well-formed road hierarchy will reduce overall impact of traffic by:

- concentrating longer distance flow onto routes in less sensitive locations;
- ensuring land uses and activities that are incompatible with traffic flow are restricted from routes where traffic movement should predominate;
- preserving areas where through traffic is discouraged;
- Ensuring activities most closely related to frontage development, including social interaction and parking, can be given more space within precincts where environmental and access functions should predominate.
- orderly planning of heavy vehicle and dangerous goods routes;
- planning and provision of public transport routes;
- planning and provision of pedestrian and bicycle routes;

- identifying the effects of development decisions in and on surrounding areas and roadways within the hierarchy;
- development design that facilitates urban design principles such as accessibility, connectivity, efficiency, amenity and safety;
- assigning control over access onto traffic carrying roads to ensure safe and efficient operation for traffic;
- Identifying treatments such as barriers, buffers and landscaping to preserve amenity for adjacent land uses. Thus, in order for road hierarchy to be effective, it needs to be much more than just a map of colored lines. This paper presents road hierarchy principles that can be applied to produce a powerful planning tool.

3.3 Classification of Municipal Road Network

A productive transportation system accompanies an order. The hierarchy of road is dependent upon the function that the street is required to perform, and the kind of movement and the way users present. The outline speeds, way widths and other geometric characteristics are adapted to suit the way work. Based on these guidelines, the road networks inside Municipality are classified in five classes:

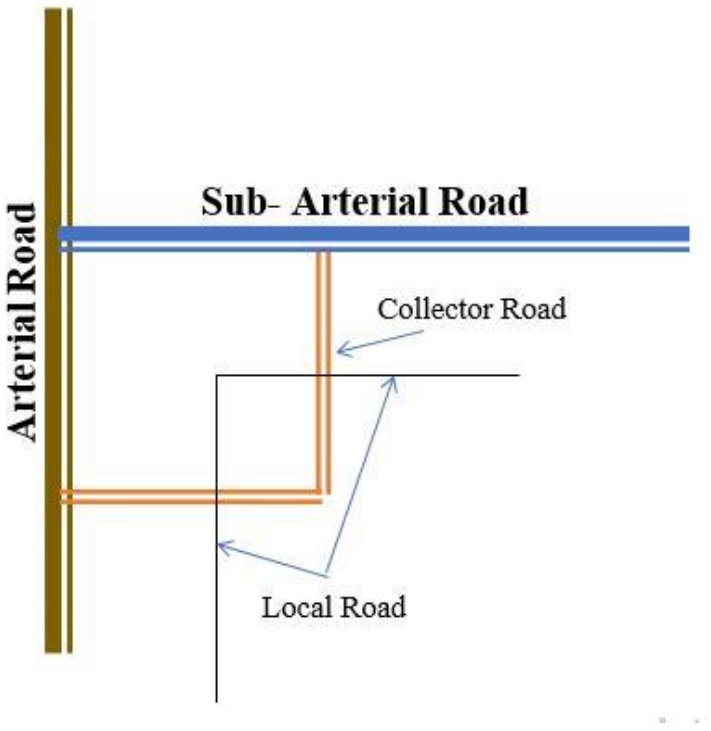

Figure 5: Classification Road

In total, there are roads of length 311.75 Km within the municipality in existing condition. All the standards set by the municipality council are assumed.

Table 6: Arrangement of Road width

SN	Road Class	Description	Min RoW(m)	Setback(m) (Either side)
1	A	Lok Marga	30	2
2	B	Mukhya Sadak	16	3
3	C	Mul Sadak	11	2.5
4	D	Sakha Sadak	8	1.5
5	E	Upa Sakha Sadak	5	1

3.4 Municipality Level Class A Roads

There is one road of class A of total length 17.91Km all of which is the earthen track. Detail of inventory of Class A roads is illustrated in table below:

Table 7: List of Class A Roads

Road Code	Road Name	Approx. Length (Km)	Total
		Earthen	
A001	Kali Gandaki Lokmarg	17.65	17.65
Grand Total		**17.65**	**17.65**

3.5 Municipality Level Class B Roads

There are six roads of class B of total length 51.20 Km out of which 43.20 Km is existing road with earthen surface, 6.96Km is gravelled and 1.04Km is bituminous surface. Detail of inventory of Class B roads is illustrated in table below:

Table 8: List of Class B Roads

Road Code	Road Name	Approx. Length (Km)			Total
		Bituminous	Earthen	Gravelled	
B001	Pokhara Naghdada Karkineta hudai khaldada tanki rahale jaiminighat galkot Sadak	1.04	14.41	6.96	22.40
B002	Karkineta bayale Lunkhu sadak (Pokhara Bhadaure ramja karkineta mahasila lunkhu setibeni)	-	7.82	-	7.82
B003	Karkineta bhujel swara pattehar nuwara hudai rugdi Tatopani Sadak	-	10.36	-	10.36
B004	Karkineta Thapathana hudai Melpokhari maidan Sankarpokhari Chitipani Jhaklak Sadak	-	9.69	-	9.69
Grand Total		**1.04**	**42.27**	**6.96**	**50.27**

3.6 Municipality Level Class C Roads

The following is the list of Class C roads Total length of Class C roads is 69.35 Km. The details are shown below:

Table 9: List of Class C Roads

Road Code	Road Name	Approx. Length (Km)			Total
		Bituminous	Earthen	Gravelled	
C001	Karkineta chhire khola tapu Putalibazar Syanga jane sadak	-	4.56	-	4.56
C002	Karkineta khaula thulipokhari silme dobilla hudai Kushma sadak	-	0.88	-	0.88
C003	Thapathana Bhangara Salyandhara Thanamaula Limithana Lamaya Khola Sadak (Inner Ringroad)	-	20.40	-	20.40
C004	Bachhakhola Pangrang satle kurgadada thulaswara limithana archale sirubari kalokhola thapathana karkineta Pokhara sadak	-	22.24	-	22.24
C005	Chihandada baunimara bayale sadak	-	4.12	-	4.12
C006	Salyandhara ghantari mahasila sadak	-	1.99	-	1.99
C007	Mudikuwa Lamaya Khola Kurga Lunkhu sadak	6.68	-	10.48	17.16
C008	Dobilla Phalewas Sadak	-	10.66	-	10.66
Grand Total		**6.68**	**64.84**	**10.48**	**82.01**

3.7 Class D Roads

The following is the list of Class D Roads. Total length of Class D roads is 105.32 Km.

Table 1: List of Class D Roads

Road Code	Road Name	Approx. Length (Km)			Total
		Bituminous	Concrete	Earthen	
D001	Balalahari timirbot hudai aandha aandhi jodne sadak	-	-	1.85	1.85
D002	Karkineta chamlekholsa kirako khor souther bichari chautara hudai pokhara jane sadak	-	-	2.11	2.11
D003	Karkineta Chamlekholsa khaltathar dekhi khatri tol chanaute yeklebar jodne sadak	-	-	0.69	0.69
D004	Thapathana bazar upallo khuma dobato dadak	-	-	2.76	2.76
D005	Jaljala dahare sadak	-	-	2.19	2.19
D006	Okhreni baghmara majhkot bayale sadak	-	-	4.54	4.54
D007	Ulleri gairiswara sadak	-	-	0.72	0.72
D008	Mehelpokhari lamachilaune ghatuwa sadak	-	-	3.24	3.24
D009	Lamaya khola chhammi archale Sirubari bayale sadak	-	-	5.87	5.87
D010	Pattehar baguwa sisathati fedi sadak	-	-	5.53	5.53
D011	Bahunimara bajramara ghante sadak	-	-	1.62	1.62
D012	Betehani ghante sadak	-	-	1.95	1.95
D013	Bhangara karkithara sirubari sadak	-	-	2.75	2.75
D014	Tari rajchauka hudai lamaya sadak	-	-	2.07	2.07
D015	Shankarpokhari rahale pani hudai sisathati sadak	-	-	2.39	2.39
D016	Tatopani Rugdi Chuchun Deurali hudai Pokharachaur Sadak	-	-	6.62	6.62
D017	Cyclechowk Nuwara chuchundeurali sadak	-	-	3.63	3.63
D018	Talle pokhare khanigau sadak	-	-	0.57	0.57
D019	Lamaya khola sarandi birauta khaldada chitipani churi Rugdi sadak	-	-	6.11	6.11
D020	Sirsawa chure sadak	-	-	2.81	2.81
D021	Sirsawa Jholunge pul ekghare sadak	-	0.08	0.96	1.04
D022	Piple bayerdada sera sarandi Nayabasti	-	-		

Road Code	Road Name	Approx. Length (Km)			Total
		Bituminous	Concrete	Earthen	
	archale sadak			3.12	3.12
D023	Kupre dhakalthar Manike naya basti sadak	-	-	0.93	0.93
D024	Bhuk bhuke chanaute sadak	-	-	1.02	1.02
D025	Saune pani devisthan Kalala salghari sadak	-	-	2.13	2.13
D026	Dangdunge Ulleri thulaswara sadak	-	-	2.27	2.27
D027	Tallo bachha chowk dekhi tindhare sadak	-	-	0.65	0.65
D028	Upallo bachha chowk hudai harre khola sadak	-	-	1.70	1.70
D029	Shivalaye tallo satle shreekang sadak	-	-	3.00	3.00
D030	Shreekang dangdunge khoriya kharka hudai siuras sadak	-	-	4.05	4.05
D031	Shivalaye chowk dekhi pangrang oda karyelaye sadak	-	0.29	1.34	1.63
D032	Pangrang oda karyelaya nepane hudai siuras sulikot sadak	-	-	3.03	3.03
D033	Pangrang oda karyelaya dekhi karnas lokmarg sadak	-	-	0.64	0.64
D034	Karnas dekhi chhore bagar sadak	-	-	1.83	1.83
D035	Shrekang lokmarg dekhi chheslang bagar sadak	-	-	1.72	1.72
D036	Naya motor bato (Vadkhalo)	-	-	0.76	0.76
D037	Swasthechauki Janta mabi motor bato	-	-	0.65	0.65
D038	Devistan Kaligandaki motor bato	-	-	1.14	1.14
D039	Oda karyelaye Phedi motor bato	-	-	0.50	0.50
D040	Mudekhola vawani bidhyapith bhawan pokhara park sadak	0.22	0.19	0.40	0.80
D041	Jhaklak Rahale majhigchaur bagar sadak	-	-	1.05	1.05
D042	Tiwarichowk mohan Jhaklak sadak	-	-	1.78	1.78
Grand Total		**0.22**	**0.55**	**94.69**	**95.46**

3.8 Class E Roads

The following is the list of Class E Roads. Total length of Class E roads is 68.28 Km.

Table 2: List of Class E Roads

Road Code	Road Name	Approx. Length (Km)			Total
		Bituminous	Concrete	Earthen	
E001	Prajantra prabi dekhi makre jukepani jane sadak	-	-	0.36	0.36
E002	Karkineta bazar hudai syaldhunge tanki hudai chola kantako gharsamma sadak	-	-	0.72	0.72
E003	Annapurna mabi dekhi kalimati jane sadak	-	-	0.13	0.13
E004	Annapurna mabi dekhi hatiya jane saddak	-	-	0.08	0.08
E005	Manmohan shanti batika sadak	-	-	0.22	0.22
E006	Chisapani guhekharka sadak	-	-	0.18	0.18
E007	Thapathana bazar makre sadak	-	-	0.60	0.60
E008	Makre bandre sadak	-	-	1.32	1.32
E009	Fadelako rukh guheni sadak	-	-	0.38	0.38
E010	Thapathana bazar gahate sadak	-	-	0.72	0.72
E011	Thapathana bajar hatiya mehelpokhari sadak	-	-	0.81	0.81
E012	Chheughar thude sadak	-	-	0.34	0.34
E013	Patlekhet chhabise sadak	-	-	0.53	0.53
E014	Krishnako dada bhuwanithan sadak	-	-	0.50	0.50
E015	Aalaiche parithar sadak	-	-	0.34	0.34
E016	Fedi chauke sadak	-	-	0.53	0.53
E017	Dharapani simle kanar hudai chadare khola sadak	-	-	1.65	1.65
E018	Gahatsare sima sadak	-	-	0.29	0.29
E019	Melpokhari rohetepani sadak	-	-	0.57	0.57
E020	Durubuti fapre sadak	-	-	1.70	1.70
E021	Durubuti kaduje sadak	-	-	1.01	1.01
E022	Ghoiyar dada thar sadak	-	-	0.30	0.30

Road Code	Road Name	Approx. Length (Km)			Total
		Bituminous	Concrete	Earthen	
E023	Archale Sirubari Ghaiyar tari sadak	-	-	4.01	4.01
E024	Lamaya lausi khola sadak	-	-	0.62	0.62
E025	Pokharachaur hudai dhanar sadak	-	-	1.14	1.14
E026	Nayachhaupari hudai limi bhumekot sadak	-	-	1.26	1.26
E027	Health post dekhi bistapani sadak	-	-	0.94	0.94
E028	Ghunapokhari hudai adhikari krisi farm sadak	-	-	1.38	1.38
E029	Chapipal hudai purkot sadak	-	-	0.56	0.56
E030	Simle amala hudai rajchauka sadak	-	-	1.31	1.31
E031	Saniswari kalkhori sadak	-	-	0.31	0.31
E032	Kupre dhakalthar bato	-	-	0.32	0.32
E033	Chhammi tol bhitri bato	-	-	0.25	0.25
E034	Jimdare GC tol sadak	-	-	0.16	0.16
E035	Nabaraj Marga	-	-	0.26	0.26
E036	Pokhardhara khalte Telemedicine sadak	-	-	1.52	1.52
E037	Janajyoti mabi marg	-	-	0.14	0.14
E038	Pokhardhara upallo khalte chitre sadak	-	-	3.14	3.14
E039	Nepane Dhampurnas chihandada sadak	-	-	2.54	2.54
E040	Ratmata bageni sadak	-	-	0.13	0.13
E041	Janapriye ghoredhunga gairabari sadak	-	-	0.40	0.40
E042	Kaule Ketichaur sadak	-	-	0.43	0.43
E043	Ramchedada simalchaur pokhari hudai damaithok sadak	-	-	0.38	0.38
E044	Sahid Tara Pariyar sadak	-	-	1.32	1.32
E045	Berneta helth post sadak	-	-	0.86	0.86
E046	Joshiko dhara chahara sadak	-	-	0.69	0.69
E047	Joshiko dhara aatighar ghumti sadak	-	-	0.18	0.18
E048	Healthpost rumta sadak	-	-	0.75	0.75

Road Code	Road Name	Approx. Length (Km)			Total
		Bituminous	Concrete	Earthen	
E049	Dhad chisapani dhudhdairy chirdi sadak	-	-	1.05	1.05
E050	Lunkhu jane purano sadak	-	-	0.21	0.21
E051	Healthpost dekhi ulleri dalit basti sadak	-	-	1.23	1.23
E052	Dhuwakoteko kholsa dekhi maure ko bari samma sadak	-	-	1.01	1.01
E053	Tiplase Chhahadi sattle sadak	-	-	0.41	0.41
E054	Tinkule baskot amdi bachhakhola sadak	-	-	2.24	2.24
E055	Barlebas lokmarg dekhi kali gandaki tir samma sadak	-	-	1.11	1.11
E056	Mullathati hudai lamayakhola tallo sadak	-	-	1.27	1.27
E057	Bakhrechowk dekhi aaglo jholunge pul chaudhare sadak	-	-	0.66	0.66
E058	Chadare dhik motor bato	-	-	0.56	0.56
E059	Jhakrithan chadare sadak	-	-	0.43	0.43
E060	Dhik Naya sadak	-	-	0.23	0.23
E061	Newroad chaubis sadak	-	-	0.26	0.26
E062	Sivamandir Chapai sadak	-	-	0.51	0.51
E063	Samudayek vawan sadak	-	-	0.21	0.21
E064	Dhik krisi marg	-	-	0.60	0.60
E065	Sivamandir dekhi vadkhalo motor bato	-	-	0.30	0.30
E066	Vadkhola dekhi krisi marg samma sadak	-	-	0.14	0.14
E067	Bayasi Phalethar sadak	-	-	0.35	0.35
E068	Katwalthar pantathar motor bato	-	-	0.15	0.15
E069	Mitechautari swasthechauki motor bato	-	-	0.60	0.60
E070	Fedi Gotamethar sadak	-	-	0.36	0.36
E071	Chirinjibi ghar dekhi lokmarg sadak (Chiranjibi marg)	-	-	0.60	0.60
E072	Okhle Khaula Sadak	-	-	1.02	1.02
E073	Damodar marg	-	-	0.22	0.22
E074	Okhle Joivir aglo pul motor bato	-	-	0.54	0.54

Road Code	Road Name	Approx. Length (Km)			Total
		Bituminous	Concrete	Earthen	
E075	Thulachaur kitani sadak	-	-	0.40	0.40
E076	Khaula saldada vawani muniko ghumti sadak	-	-	0.46	0.46
E077	Kalika prabi kaligandaki lokmarg motor bato	-	-	0.34	0.34
E078	Bhatdada piple sadak	-	-	0.22	0.22
E079	Piple barko dali sadak	0.32	0.07	-	0.39
E080	Patle Ghoredhunga sadak	-	-	1.04	1.04
E081	Garane Gairikhola sadak	-	-	0.78	0.78
E082	Jhaklak siva mandir dayeri armana sadak	-	-	1.22	1.22
E083	Jhaklak fulbari khor sadak	-	-	1.51	1.51
E084	Dharapani aambot sadak	-	-	0.73	0.73
E085	Jhaklak ambot sadak	-	-	0.19	0.19
E086	Mohan Ralchaur sadak	-	-	0.47	0.47
E087	Jhaklak rahalchaur sadak	-	-	0.22	0.22
E088	Tanki Bisunchauka sadak	-	-	0.49	0.49
E089	Oliko ghar dekhi lokmarg sadak	-	-	0.15	0.15
E090	Rahale chauki hudai majhichaur motor bato	-	-	0.56	0.56
E091	Aangetari Majhigau sadak	-	-	0.44	0.44
E092	Himlal marg	-	-	0.53	0.53
E093	Mahesh ghimire ghar dekhi kunti vir sadak	-	-	0.45	0.45
E094	Majhichaur Dhik sadak	-	-	0.90	0.90
E095	Dharamsala chowk lokmarg sadak	-	-	0.19	0.19
E096	Ghimirechowk lokmarg sadak	-	-	0.19	0.19
E097	Dharamsala to kalibagar sadak	-	-	0.25	0.25
E098	Indrakali Indrachaur saddak	-	-	0.37	0.37
E099	Dandure Dhik indrachaur sadak	-	-	0.19	0.19
Grand Total		**0.32**	**0.07**	**66.77**	**67.16**

3.9 Municipality Level Ring Roads

There are 3 ring roads of total length 96.80 KM, out of which some portions are overlapped with each other. Detail of inventory of ring roads is illustrated in table below:

S.N	Ringroad Type	Wards included	Road Class	Total Length
1	Nucleus Ringroad	4,5,6	C	11.23
2	Inner Ringroad	2,3,5,6,7,8,9	B,C	35.43
3	Outer Ringroad	1,2,3,4,6,8,9,10,11	A,B,C	50.14
Grand Total				**96.80**

If the singular ring roads are considered and measured individually including the overlaps, their lengths are as shown below:

S.N	Ringroad Type	Total Length
1	Nucleus Ringroad	13.40
2	Inner Ringroad	35.40
3	Outer Ringroad	54.50

3.10 Summary of Municipal Road Network

Road inventory survey was conducted through the Municipality as far as possible.. In the inventory survey, the surface condition, width of road, and intervention required were collected. These data are presented in Municipality inventory map. Refer annex of this report for map in detail.

Table 3: Length of Roads based on surface condition

Class	Surface Type/Approx. Length (Km)				
	Bituminous	**Concrete**	**Earthen**	**Gravelled**	**Total**
A	-	-	17.65	-	17.65
B	1.04	-	42.27	6.96	50.27
C	6.68	-	64.84	10.48	82.01
D	0.22	0.55	94.69	-	95.46
E	0.32	0.07	66.77	-	67.16
Total	**8.25**	**0.63**	**286.22**	**17.44**	**312.53**

Chapter 4: CONCLUSION

The existing roads of Phalewas Municipality is identified and processed into digitizing system after the analysis of field data and requirement of the municipality itself. This project is based on the assumption that the infrastructure planning of Municipality is directly dependent on the development of the transportation networks. The ultimate goal of this project is to provide digital copies of the existing road Network.

The digital initeractive map can be viewed and accessed through this link:

https://www.arcgis.com/apps/View/index.html?appid=c5494cfb09434f88ae61fcccb6748585

Also through this link: https://tinyurl.com/phalewasmap

The focus is to develop sustainable and economic road network; therefore, the Municipality should focus on strengthening existing road network to operate them in all weather conditions rather than opening new tracks. Moreover, strategically important tracks should be opened after proper planning and design. Due to unavailability of intra municipal transport system, the number of private vehicles is increasing in the municipality which may cause severe problem of traffic congestion in future. So, Municipality should take immediate action to operate local transport system inside the municipality by municipality itself or with collaboration with private entities. Similarly, the municipality should allocate different land use zones based on their current and future use, which will be applicable in future planning of infrastructure facilities inside the municipaliy.

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ANNEX –I Ward Wise Roads

WARD No. 01

S.N	Road Code	Road Name	Approx. Length (Km)			Total
			Bituminous	Earthen	Gravelled	
1	**B001**	Pokhara Naghdada Karkineta hudai khaldada tanki rahale jaiminighat galkot Sadak	0.26	-	5.47	5.73
2	**B002**	Karkineta bayale Lunkhu sadak (Pokhara Bhadaure ramja karkineta mahasila lunkhu setibeni)	-	1.96	-	1.96
3	**B003**	Karkineta bhujel swara pattehar nuwara hudai rugdi Tatopani Sadak	-	2.09	-	2.09
4	**C001**	Karkineta chhire khola tapu putalibazar syanga jane sadak	-	4.56	-	4.56
5	**C002**	Karkineta khaula thulipokhari silme dobilla hudai kushma sadak	-	0.88	-	0.88
6	**D001**	Balalahari timirbot hudai aandha aandhi jodne sadak	-	1.85	-	1.85
7	**D002**	Karkineta chamlekholsa kirako khor souther bichari chautara hudai pokhara jane sadak	-	2.11	-	2.11
8	**D003**	Karkineta Chamlekholsa khaltathar dekhi khatri tol chanaute yeklebar jodne sadak	-	0.69	-	0.69
9	**E001**	Prajantra prabi dekhi makre jukepani jane sadak	-	0.36	-	0.36
10	**E002**	Karkineta bazar hudai syaldhunge tanki hudai chola kantako gharsamma sadak	-	0.72	-	0.72
11	**E003**	Annapurna mabi dekhi kalimati jane sadak	-	0.13	-	0.13
12	**E004**	Annapurna mabi dekhi hatiya jane saddak	-	0.08	-	0.08
Grand Total			**0.26**	**15.44**	**5.47**	**21.17**

WARD No. 02

S.N	Road Code	Road Name	Approx. Length (Km)			Total
			Bituminous	Earthen	Gravelled	
1	**B001**	Pokhara Naghdada Karkineta hudai khaldada tanki rahale jaiminighat galkot Sadak	0.31	2.64	1.48	4.44
2	**B003**	Karkineta bhujel swara pattehar nuwara hudai rugdi Tatopani Sadak	-	4.18	-	4.18
3	**B004**	Karkineta Thapathana hudai Melpokhari maidan Sankarpokhari Chitipani Jhaklak Sadak	-	1.75	-	1.75
4	**C003**	Thapathana Bhangara Salyandhara Thanamaula Limithana Lamaya Khola Sadak (Inner Ringroad)	-	1.79	-	1.79
5	**D004**	Thapathana bazar upallo khuma dobato dadak	-	2.76	-	2.76
6	**D008**	Mehelpokhari lamachilaune ghatuwa sadak	-	3.24	-	3.24
7	**D010**	Pattehar baguwa sisathati fedi sadak	-	2.63	-	2.63
8	**E005**	Manmohan shanti batika sadak	-	0.22	-	0.22
9	**E006**	Chisapani guhekharka sadak	-	0.18	-	0.18
10	**E007**	Thapathana bazar makre sadak	-	0.60	-	0.60
11	**E008**	Makre bandre sadak	-	1.32	-	1.32
12	**E009**	Fadelako rukh guheni sadak	-	0.38	-	0.38
13	**E010**	Thapathana bazar gahate sadak	-	0.72	-	0.72
14	**E011**	Thapathana bajar hatiya mehelpokhari sadak	-	0.81	-	0.81
15	**E012**	Chheughar thude sadak	-	0.34	-	0.34
16	**E013**	Patlekhet chhabise sadak	-	0.53	-	0.53
17	**E014**	Krishnako dada bhuwanithan sadak	-	0.50	-	0.50
18	**E015**	Aalaiche parithar sadak	-	0.34	-	0.34
19	**E016**	Fedi chauke sadak	-	0.53	-	0.53
20	**E017**	Dharapani simle kanar hudai chadare khola sadak	-	1.65	-	1.65
21	**E018**	Gahatsare sima sadak	-	0.29	-	0.29
22	**E019**	Melpokhari rohetepani sadak	-	0.57	-	0.57
23	**E020**	Durubuti fapre sadak	-		-	

S.N	Road Code	Road Name	Approx. Length (Km)			Total
			Bituminous	Earthen	Gravelled	
				1.70		1.70
24	**E021**	Durubuti kaduje sadak	-	1.01	-	1.01
25	**E022**	Ghoiyar dada thar sadak	-	0.30	-	0.30
26	**E023**	Archale Sirubari Ghaiyar tari sadak	-	2.63	-	2.63
Grand Total			**0.31**	**33.60**	**1.48**	**35.39**

WARD No. 03

S.N	Road Code	Road Name	Approx. Length (Km)	Total
			Earthen	
1	**B001**	Pokhara Naghdada Karkineta hudai khaldada tanki rahale jaiminighat galkot Sadak	5.93	5.93
2	**B003**	Karkineta bhujel swara pattehar nuwara hudai rugdi Tatopani Sadak	3.60	3.60
3	**B004**	Karkineta Thapathana hudai Melpokhari maidan Sankarpokhari Chitipani Jhaklak Sadak	4.75	4.75
4	**D010**	Pattehar baguwa sisathati fedi sadak	2.90	2.90
5	**D014**	Tari rajchauka hudai lamaya sadak	2.07	2.07
6	**D015**	Shankarpokhari rahale pani hudai sisathati sadak	2.39	2.39
7	**D016**	Tatopani Rugdi Chuchun Deurali hudai Pokharachaur Sadak	3.00	3.00
8	**D017**	Cyclechowk Nuwara chuchundeurali sadak	3.63	3.63
9	**D019**	Lamaya khola sarandi birauta khaldada chitipani churi Rugdi sadak	2.64	2.64
10	**D022**	Piple bayerdada sera sarandi Nayabasti archale sadak	0.98	0.98
11	**E025**	Pokharachaur hudai dhanar sadak	1.14	1.14
12	**E026**	Nayachhaupari hudai limi bhumekot sadak	1.26	1.26
13	**E027**	Health post dekhi bistapani sadak	0.94	0.94
14	**E028**	Ghunapokhari hudai adhikari krisi farm sadak	1.38	1.38
15	**E029**	Chapipal hudai purkot sadak	0.56	0.56
16	**E030**	Simle amala hudai rajchauka sadak	1.31	1.31
17	**E031**	Saniswari kalkhori sadak	0.31	0.31
Grand Total			**38.77**	**38.77**

WARD No. 04

S. N	Road Code	Road Name	Approx. Length (Km)			Total
			Bituminous	Concrete	Earthen	
1	**A001**	Kali Gandaki Lokmarg	-	-	4.62	4.62
2	**B003**	Karkineta bhujel swara pattehar nuwara hudai rugdi Tatopani Sadak	-	-	0.49	0.49
3	**C007**	Mudikuwa Lamaya Khola Kurga Lunkhu sadak	1.27	-	-	1.27
4	**C008**	Dobilla Phalewas Sadak	-	-	5.80	5.80
5	**D016**	Tatopani Rugdi Chuchun Deurali hudai Pokharachaur Sadak	-	-	3.63	3.63
6	**D018**	Talle pokhare khanigau sadak	-	-	0.57	0.57
7	**D019**	Lamaya khola sarandi birauta khaldada chitipani churi Rugdi sadak	-	-	2.02	2.02
8	**D020**	Sirsawa chure sadak	-	-	2.81	2.81
9	**D021**	Sirsawa Jholunge pul ekghare sadak	-	0.08	0.96	1.04
10	**D041**	Jhaklak Rahale majhigchaur bagar sadak	-	-	0.64	0.64
11	**D042**	Tiwarichowk mohan Jhaklak sadak	-	-	1.78	1.78
12	**E084**	Dharapani aambot sadak	-	-	0.73	0.73
13	**E086**	Mohan Ralchaur sadak	-	-	0.47	0.47
14	**E095**	Dharamsala chowk lokmarg sadak	-	-	0.19	0.19
15	**E096**	Ghimirechowk lokmarg sadak	-	-	0.19	0.19
16	**E097**	Dharamsala to kalibagar sadak	-	-	0.25	0.25
17	**E098**	Indrakali Indrachaur saddak	-	-	0.37	0.37
18	**E099**	Dandure Dhik indrachaur sadak	-	-	0.19	0.19
Grand Total			**1.27**	**0.08**	**25.70**	**27.05**

WARD No. 05

S.N	Road Code	Road Name	Approx. Length (Km)			Total
			Bituminous	Concrete	Earthen	
1	**B001**	Pokhara Naghdada Karkineta hudai khaldada tanki rahale jaiminighat galkot Sadak	0.46	-	5.84	6.30
2	**B004**	Karkineta Thapathana hudai Melpokhari maidan Sankarpokhari Chitipani Jhaklak Sadak	-	-	3.19	3.19
3	**C007**	Mudikuwa Lamaya Khola Kurga Lunkhu sadak	4.61	-	-	4.61
4	**D019**	Lamaya khola sarandi birauta khaldada chitipani churi Rugdi sadak	-	-	1.45	1.45
5	**D022**	Piple bayerdada sera sarandi Nayabasti archale sadak	-	-	2.14	2.14
6	**D040**	Mudekhola vawani bidhyapith bhawan pokhara park sadak	0.22	0.09	0.14	0.45
7	**D041**	Jhaklak Rahale majhigchaur bagar sadak	-	-	0.28	0.28
8	**E076**	Khaula saldada vawani muniko ghumti sadak	-	-	0.46	0.46
9	**E078**	Bhatdada piple sadak	-	-	0.22	0.22
10	**E079**	Piple barko dali sadak	0.32	0.07	-	0.39
11	**E080**	Patle Ghoredhunga sadak	-	-	1.04	1.04
12	**E081**	Garane Gairikhola sadak	-	-	0.78	0.78
13	**E082**	Jhaklak siva mandir dayeri armana sadak	-	-	1.22	1.22
14	**E083**	Jhaklak fulbari khor sadak	-	-	1.51	1.51
15	**E085**	Jhaklak ambot sadak	-	-	0.19	0.19
16	**E087**	Jhaklak rahalchaur sadak	-	-	0.22	0.22
17	**E088**	Tanki Bisunchauka sadak	-	-	0.49	0.49
Grand Total			**5.61**	**0.17**	**19.16**	**24.93**

WARD No. 06

S. N	Road Code	Road Name	Approx. Length (Km)			Total
			Bituminous	Concrete	Earthen	
1	**A001**	Kali Gandaki Lokmarg	-	-	4.62	4.62
2	**C007**	Mudikuwa Lamaya Khola Kurga Lunkhu sadak	0.80	-	-	0.80
3	**C008**	Dobilla Phalewas Sadak	-	-	4.85	4.85
4	**D036**	Naya motor bato (Vadkhalo)	-	-	0.76	0.76
5	**D037**	Swasthechauki Janta mabi motor bato	-	-	0.65	0.65
6	**D038**	Devistan Kaligandaki motor bato	-	-	1.14	1.14
7	**D039**	Oda karyelaye Phedi motor bato	-	-	0.50	0.50
8	**D040**	Mudekhola vawani bidhyapith bhawan pokhara park sadak	-	0.10	0.26	0.35
9	**D041**	Jhaklak Rahale majhigchaur bagar sadak	-	-	0.13	0.13
10	**E058**	Chadare dhik motor bato	-	-	0.56	0.56
11	**E059**	Jhakrithan chadare sadak	-	-	0.43	0.43
12	**E060**	Dhik Naya sadak	-	-	0.23	0.23
13	**E061**	Newroad chaubis sadak	-	-	0.26	0.26
14	**E062**	Sivamandir Chapai sadak	-	-	0.51	0.51
15	**E063**	Samudayek vawan sadak	-	-	0.21	0.21
16	**E064**	Dhik krisi marg	-	-	0.60	0.60
17	**E065**	Sivamandir dekhi vadkhalo motor bato	-	-	0.30	0.30
18	**E066**	Vadkhola dekhi krisi marg samma sadak	-	-	0.14	0.14
19	**E067**	Bayasi Phalethar sadak	-	-	0.35	0.35
20	**E068**	Katwalthar pantathar motor bato	-	-	0.15	0.15
21	**E069**	Mitechautari swasthechauki motor bato	-	-	0.60	0.60
22	**E070**	Fedi Gotamethar sadak	-	-	0.36	0.36
23	**E071**	Chirinjibi ghar dekhi lokmarg sadak (Chiranjibi marg)	-	-	0.60	0.60
24	**E072**	Okhle Khaula Sadak	-	-	1.02	1.02
25	**E073**	Damodar marg	-	-	0.22	0.22
26	**E074**	Okhle Joivir aglo pul motor bato	-	-	0.54	0.54
27	**E075**	Thulachaur kitani sadak	-	-	0.40	0.40
28	**E077**	Kalika prabi kaligandaki lokmarg motor bato	-	-	0.34	0.34
29	**E089**	Oliko ghar dekhi lokmarg sadak	-	-	0.15	0.15
30	**E090**	Rahale chauki hudai majhichaur motor bato	-	-	0.56	0.56
31	**E091**	Aangetari Majhigau sadak	-	-	0.44	0.44
32	**E092**	Himlal marg	-	-	0.53	0.53
33	**E093**	Mahesh ghimire ghar dekhi kunti vir sadak	-	-	0.45	0.45
34	**E094**	Majhichaur Dhik sadak	-	-	0.90	0.90
Grand Total			**0.80**	**0.10**	**23.74**	**24.64**

WARD No. 07

S.N	Road Code	Road Name	Approx. Length (Km)		Total
			Earthen	Gravelled	
1	**C003**	Thapathana Bhangara Salyandhara Thanamaula Limithana Lamaya Khola Sadak (Inner Ringroad)	3.99	-	3.99
2	**C004**	Bachhakhola Pangrang satle kurgadada thulaswara limithana archale sirubari kalokhola thapathana karkineta pokhara sadak	4.03	-	4.03
3	**C007**	Mudikuwa Lamaya Khola Kurga Lunkhu sadak	-	4.06	4.06
4	**D009**	Lamaya khola chhammi archale Sirubari bayale sadak	3.05	-	3.05
5	**D023**	Kupre dhakalthar Manike naya basti sadak	0.93	-	0.93
6	**D024**	Bhuk bhuke chanaute sadak	1.02	-	1.02
7	**D025**	Saune pani devisthan Kalala salghari sadak	2.13	-	2.13
8	**E032**	Kupre dhakalthar bato	0.32	-	0.32
9	**E033**	Chhammi tol bhitri bato	0.25	-	0.25
10	**E044**	Sahid Tara Pariyar sadak	1.32	-	1.32
11	**E045**	Berneta helth post sadak	0.86	-	0.86
12	**E046**	Joshiko dhara chahara sadak	0.69	-	0.69
13	**E047**	Joshiko dhara aatighar ghumti sadak	0.18	-	0.18
14	**E048**	Healthpost rumta sadak	0.75	-	0.75
15	**E049**	Dhad chisapani dhudhdairy chirdi sadak	1.05	-	1.05
Grand Total			**20.56**	**4.06**	**24.62**

WARD No. 08

S.N	Road Code	Road Name	Approx. Length (Km)	Total
			Earthen	
1	**C003**	Thapathana Bhangara Salyandhara Thanamaula Limithana Lamaya Khola Sadak (Inner Ringroad)	6.76	6.76
2	**C004**	Bachhakhola Pangrang satle kurgadada thulaswara limithana archale sirubari kalokhola thapathana karkineta pokhara sadak	3.25	3.25
3	**C006**	Salyandhara ghantari mahasila sadak	1.99	1.99
4	**E034**	Jimdare GC tol sadak	0.16	0.16
5	**E035**	Nabaraj Marga	0.26	0.26
6	**E036**	Pokhardhara khalte Telemedicine sadak	1.52	1.52
7	**E037**	Janajyoti mabi marg	0.14	0.14
8	**E038**	Pokhardhara upallo khalte chitre sadak	3.14	3.14
9	**E039**	Nepane Dhampurnas chihandada sadak	2.54	2.54
10	**E040**	Ratmata bageni sadak	0.13	0.13
11	**E041**	Janapriye ghoredhunga gairabari sadak	0.40	0.40
12	**E042**	Kaule Ketichaur sadak	0.43	0.43
13	**E043**	Ramchedada simalchaur pokhari hudai damaithok sadak	0.38	0.38
Grand Total			**21.10**	**21.10**

WARD No. 09

S.N	Road Code	Road Name	Approx. Length (Km)	Total
			Earthen	
1	**B002**	Karkineta bayale Lunkhu sadak (Pokhara Bhadaure ramja karkineta mahasila lunkhu setibeni)	5.86	5.86
2	**C003**	Thapathana Bhangara Salyandhara Thanamaula Limithana Lamaya Khola Sadak (Inner Ringroad)	7.86	7.86
3	**C004**	Bachhakhola Pangrang satle kurgadada thulaswara limithana archale sirubari kalokhola thapathana karkineta pokhara sadak	6.46	6.46
4	**C005**	Chihandada baunimara bayale sadak	4.12	4.12
5	**D005**	Jaljala dahare sadak	2.19	2.19
6	**D006**	Okhreni baghmara majhkot bayale sadak	4.54	4.54
7	**D007**	Ulleri gairiswara sadak	0.72	0.72
8	**D009**	Lamaya khola chhammi archale Sirubari bayale sadak	2.83	2.83
9	**D011**	Bahunimara bajramara ghante sadak	1.62	1.62
10	**D012**	Betehani ghante sadak	1.95	1.95
11	**D013**	Bhangara karkithara sirubari sadak	2.75	2.75
12	**E023**	Archale Sirubari Ghaiyar tari sadak	1.38	1.38
13	**E024**	Lamaya lausi khola sadak	0.62	0.62
Grand Total			**42.89**	**42.89**

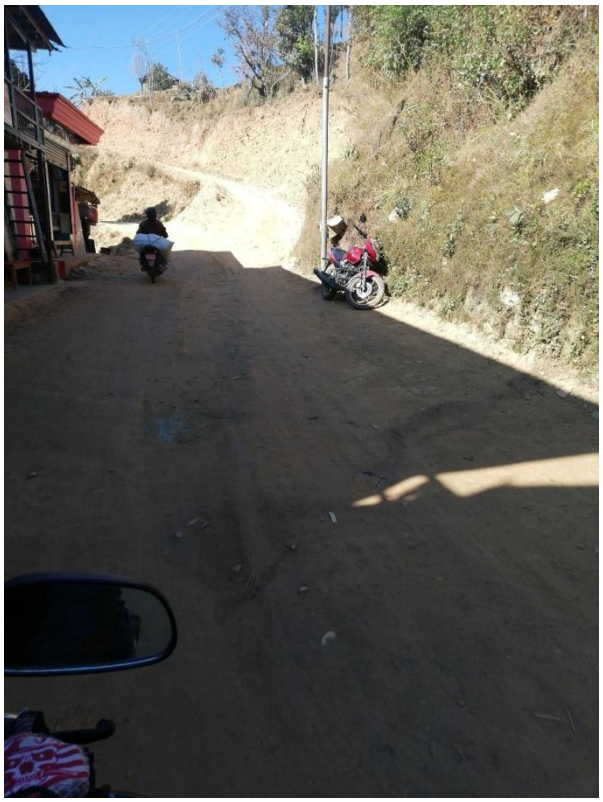
WARD No. 10

S.N	Road Code	Road Name	Approx. Length (Km)		Total
			Earthen	Gravelled	
1	**A001**	Kali Gandaki Lokmarg	2.99	-	2.99
2	**C004**	Bachhakhola Pangrang satle kurgadada thulaswara limithana archale sirubari kalokhola thapathana karkineta pokhara sadak	1.93	-	1.93
3	**C007**	Mudikuwa Lamaya Khola Kurga Lunkhu sadak	-	6.42	6.42
4	**D026**	Dangdunge Ulleri thulaswara sadak	2.27	-	2.27
5	**D027**	Tallo bachha chowk dekhi tindhare sadak	0.65	-	0.65
6	**D028**	Upallo bachha chowk hudai harre khola sadak	1.70	-	1.70
7	**D029**	Shivalaye tallo satle shreekang sadak	1.60	-	1.60
8	**E050**	Lunkhu jane purano sadak	0.21	-	0.21
9	**E051**	Healthpost dekhi ulleri dalit basti sadak	1.23	-	1.23
10	**E052**	Dhuwakoteko kholsa dekhi maure ko bari samma sadak	1.01	-	1.01
11	**E053**	Tiplase Chhahadi sattle sadak	0.41	-	0.41
12	**E055**	Barlebas lokmarg dekhi kali gandaki tir samma sadak	1.11	-	1.11
13	**E056**	Mullathati hudai lamayakhola tallo sadak	1.27	-	1.27
14	**E057**	Bakhrechowk dekhi aaglo jholunge pul chaudhare sadak	0.66	-	0.66
Grand Total			**17.03**	**6.42**	**23.45**

WARD No. 11

S.N	Road Code	Road Name	Approx. Length (Km)		Total
			Concrete	Earthen	
1	**A001**	Kali Gandaki Lokmarg	-	5.42	5.42
2	**C004**	Bachhakhola Pangrang satle kurgadada thulaswara limithana archale sirubari kalokhola thapathana karkineta pokhara sadak	-	6.57	6.57
3	**D029**	Shivalaye tallo satle shreekang sadak	-	1.41	1.41
4	**D030**	Shreekang dangdunge khoriya kharka hudai siuras sadak	-	4.05	4.05
5	**D031**	Shivalaye chowk dekhi pangrang oda karyelaye sadak	0.29	1.34	1.63
6	**D032**	Pangrang oda karyelaya nepane hudai siuras sulikot sadak	-	3.03	3.03
7	**D033**	Pangrang oda karyelaya dekhi karnas lokmarg sadak	-	0.64	0.64
8	**D034**	Karnas dekhi chhore bagar sadak	-	1.83	1.83
9	**D035**	Shrekang lokmarg dekhi chheslang bagar sadak	-	1.72	1.72
10	**E054**	Tinkule baskot amdi bachhakhola sadak	-	2.24	2.24
Grand Total			**0.29**	**28.25**	**28.53**

ANNEX-II: PHOTOGRAPHS



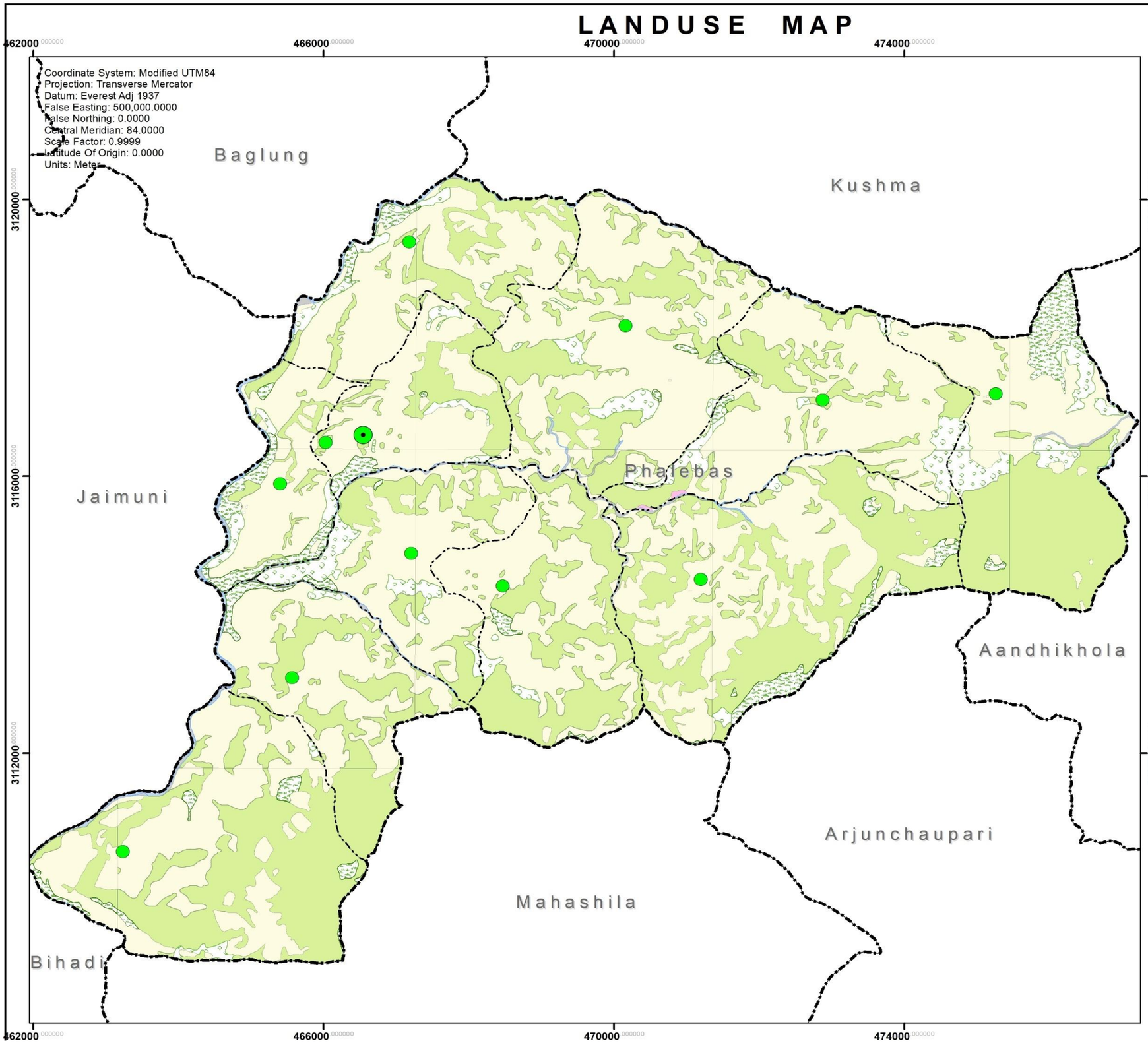
ANNEX-III: LIST OF JUNCTIONS (CHOWKS) AND THEIR LABELS

Number Label	Name of the Junction	Located in Road Class	Number Label	Name of the Junction	Located in Road Class	Number Label	Name of the Junction	Located in Road Class
1	Shivalaye chowk	A	**49**	Cyclechowk	B	**97**	Chandani chowk	C
2	Karnas chowk	A	**50**	Bhirpani chowk	B	**98**	Sulikot chowk	C
3	Lauke chowk	A	**51**	Karkineta chowk	B	**99**	Tallo satle chowk	C
4	Chheslang bagar chowk	A	**52**	Hatiya chowk	B	**100**	Indrakali chowk	C
5	Manakamana chowk	A	**53**	Thapathana bhangara chowk	B	**101**	Chhahadi chowk	C
6	Sirsawa chowk	A	**54**	Bhujel swara chowk	B	**102**	Rumta	C
7	Khaule chowk	A	**55**	Manmohan Shantibatika chowk	B	**103**	Himlal chowk	C
8	Chadare chowk	A	**56**	Khuma chowk	B	**104**	Maitechautari chowk	C
9	Pulchowk	A	**57**	Dahare chowk	B	**105**	Wifi chowk	C
10	Chaubis kudiya newroad chowk	A	**58**	Khuma chowk	C	**106**	Falla chowk	C
11	Samudayek chowk	A	**59**	Aatighara chowk	C	**107**	Ward office chowk	C
12	Krisi chowk	A	**60**	Tindhare chowk	C	**108**	Sahela chhammi chowk	C
13	Dhik	A	**61**	Sahid Tara chowk	C	**109**	Nayabasti zero chowk	C
14	Limikot chowk	B	**62**	Janapriye chowk	C	**110**	Kaule chowk	C
15	Dharapani chowk	B	**63**	Kunwar tol chowk	C	**111**	Limithana zero	C
16	Thude chowk	B	**64**	Khalti chowk	C	**112**	Healthpost chowk	C
17	Aalaiche chowk	B	**65**	Bhageni chowk	C	**113**	Niringe chowk	C
18	Ghatuwa chowk	B	**66**	Salyandhara chowk	C	**114**	Jestha nagarik chowk	C
19	Sisathati	B	**67**	Bagale chowk	C	**115**	Chauki chowk	C
20	Sahid chowk	B	**68**	Chanaute chowk	C	**116**	Okhle chowk	C
21	Malyangdi khola chowk	B	**69**	Sirubari archale chowk	C	**117**	Piple chowk	C
22	Chakrufulbari chowk	B	**70**	SORDEC chowk	C	**118**	Dharmasala chowk	C
23	Churi chowk	B	**71**	Kalokhola archale chowk	C	**119**	Ghimire chowk	C
24	Tatopani chowk	B	**72**	Chhammi chowk	C	**120**	Fulbari chowk	C
25	Purkot chowk	B	**73**	Ulleri chowk	C	**121**	Dandure chowk	C
26	Rahale	B	**74**	Nepane chowk	C	**122**	Pandhade chowk	C
27	Purano limi chowk	B	**75**	Baunimara chowk	C	**123**	Kalika chowk	C
28	Tanki chowk	B	**76**	Karkithar chowk	C	**124**	Jhaklak Chowk	C
29	Amalla chowk	B	**77**	GC tol chowk	C	**125**	Vadkhalo chowk	C
30	Chitipani chowk	B	**78**	Betehani Chowk	C	**126**	Campus chowk	C
31	Dhanar chowk	B	**79**	Bhawan pokhara chowk	C	**127**	Hatiya(mudgau) chowk	C
32	Bistapani	B	**80**	Ulleri chowk	C	**128**	Mudikuwa chowk	C
33	Chitipani chowk	B	**81**	Tallo bachha chowk	C	**129**	Samudayek chowk	C
34	Armana shivamandir chowk	B	**82**	Archale Zero	C	**130**	Tiwari chowk	C
35	Health post chowk	B	**83**	Amdi chowk	C	**131**	Bandre chowk	E
36	Barko dali dalit basti	B	**84**	Gurain dada karkithar chwok	C	**132**	Simle	E
37	Birauta lamaya chowk	B	**85**	Fulbari chowk	C	**133**	Durubuti chowk	E
38	Ghaiyara sirubari chowk	B	**86**	Gairiswara chowk	C	**134**	Kaduze chowk	E
39	Pokhara chaur	B	**87**	Khaula chowk	C	**135**	Ghaiyara chowk	E
40	Chadarekhola chowk	B	**88**	Jhyansingh khola chowk	C	**136**	Pattehar chowk	D
41	Mehelpokhari chowk	B	**89**	Tinkule	C	**137**	Fedi	D
42	Kalikhoriya chowk	B	**90**	Hospital chowk	C	**138**	Sanichautari chowk	D
43	Timurbot chowk	B	**91**	Limithana chowk	C	**139**	Tindhare chowk	D
44	Ghopte chaur	B	**92**	Karnas chowk	C	**140**	Bayerdada chowk	D
45	Gahate chowk	B	**93**	Pangrang chowk	C	**141**	Bhunapokhari chowk	D
46	Chuchan deurali	B	**94**	Y chowk	C	**142**	Nagar chowk	D
47	Karkineta Mahashila zero	B	**95**	Tallo satle kurga chowk	C			
48	Thuli makre	B	**96**	Nuwakharka chowk	C			

ANNEX-IV: MAPS

LOCATION MAP

LANDUSE MAP



Preparation of Transportation Network Digitisation of Phalewas Municipality

0 40 80 160 240 320 Kilometers

Scale: 1:51,000

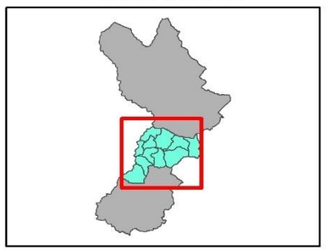
Legend

- Municipality Office
- Ward Office
- Municipal Boundary line
- Ward Boundary Line
- Cultivation
- Forest
- Grass
- Bush
- River/Waterbody
- Riverbed
- Embankment

Map of Nepal

Gandaki Province

Parbat District



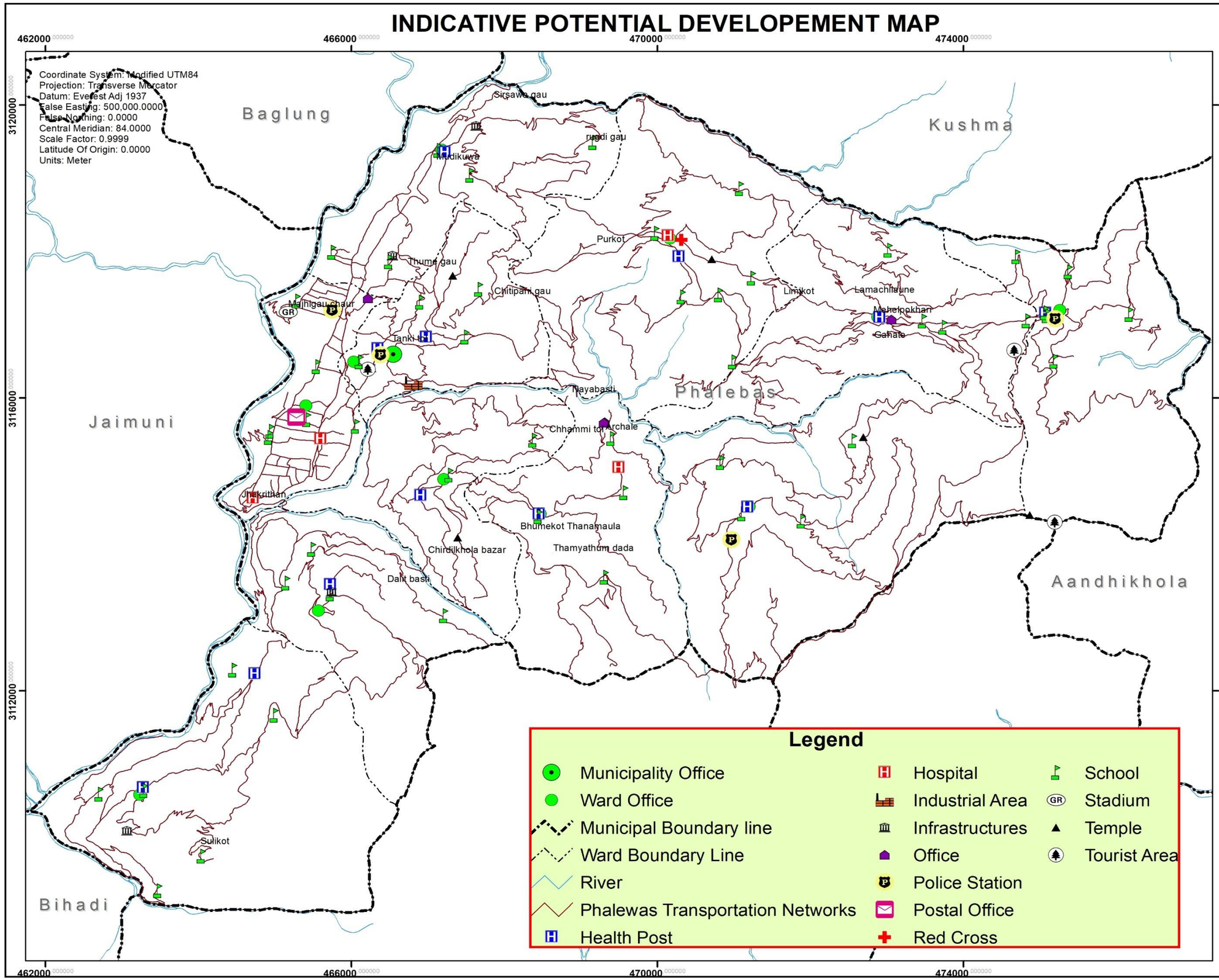
Prepared By:
Environment And Engineering
Research Centre Pvt. Ltd.
Koteshwor, Kathmandu

Submitted To:
Phalewas Municipality
Office of the Municipal Executive
Parbat, Gandaki Province

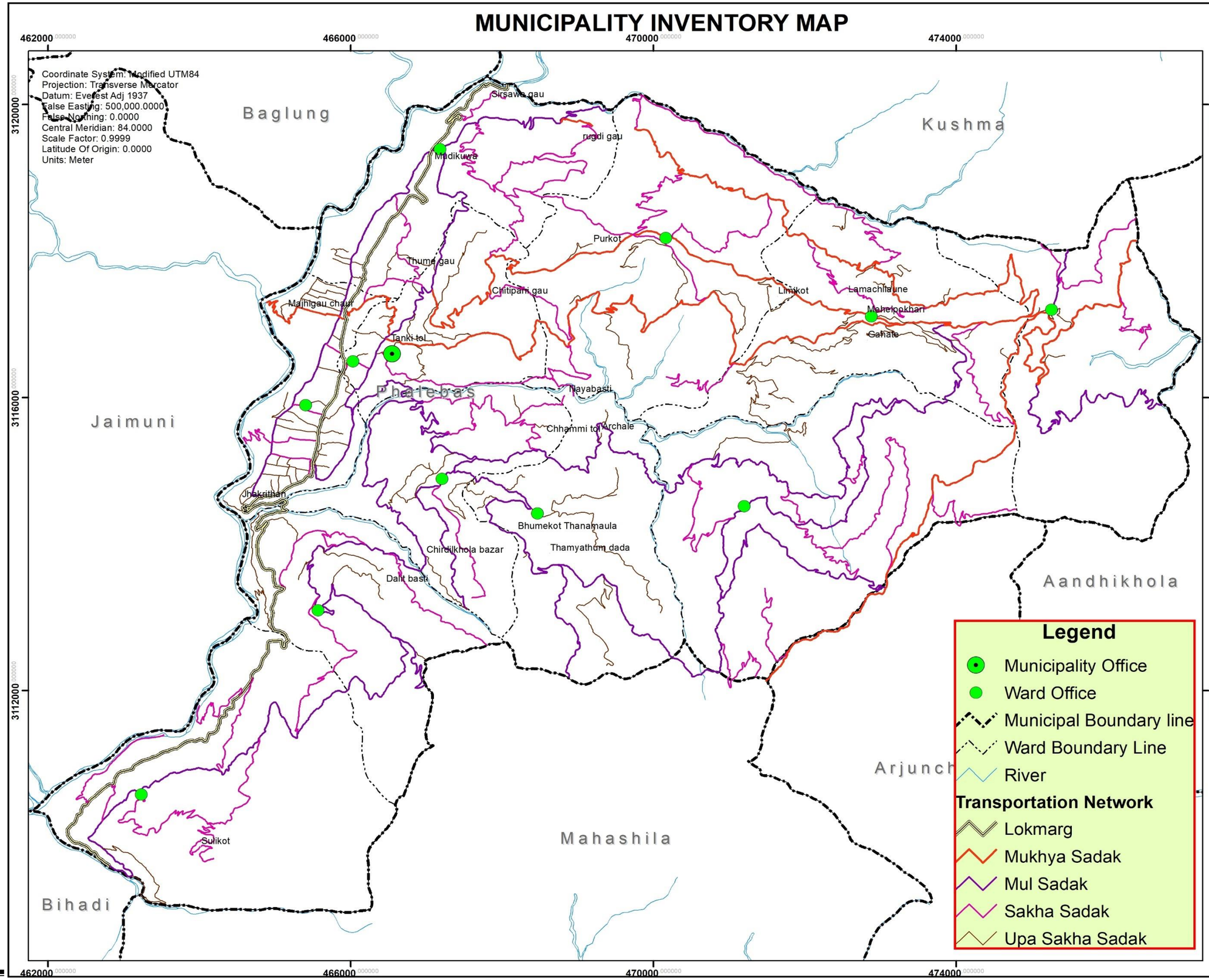
Map No. 2

Source: Survey Department, Nepal

INDICATIVE POTENTIAL DEVELOPEMENT MAP



MUNICIPALITY INVENTORY MAP



Legend

- Municipality Office
- Ward Office
- Municipal Boundary line
- Ward Boundary Line
- River

Transportation Network

- Lokmarg
- Mukhya Sadak
- Mul Sadak
- Sakha Sadak
- Upa Sakha Sadak

N
W E
S

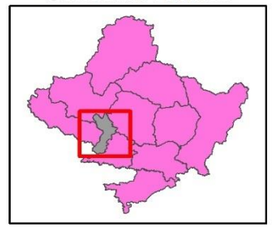
Preparation of Transportation Network Digitisation of Phalewas Municipality

0 30 60 120 180 240 Kilometers

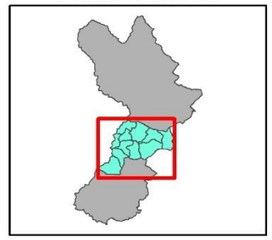
Scale: 1:45,000

Map of Nepal

Gandaki Province



Parbat District



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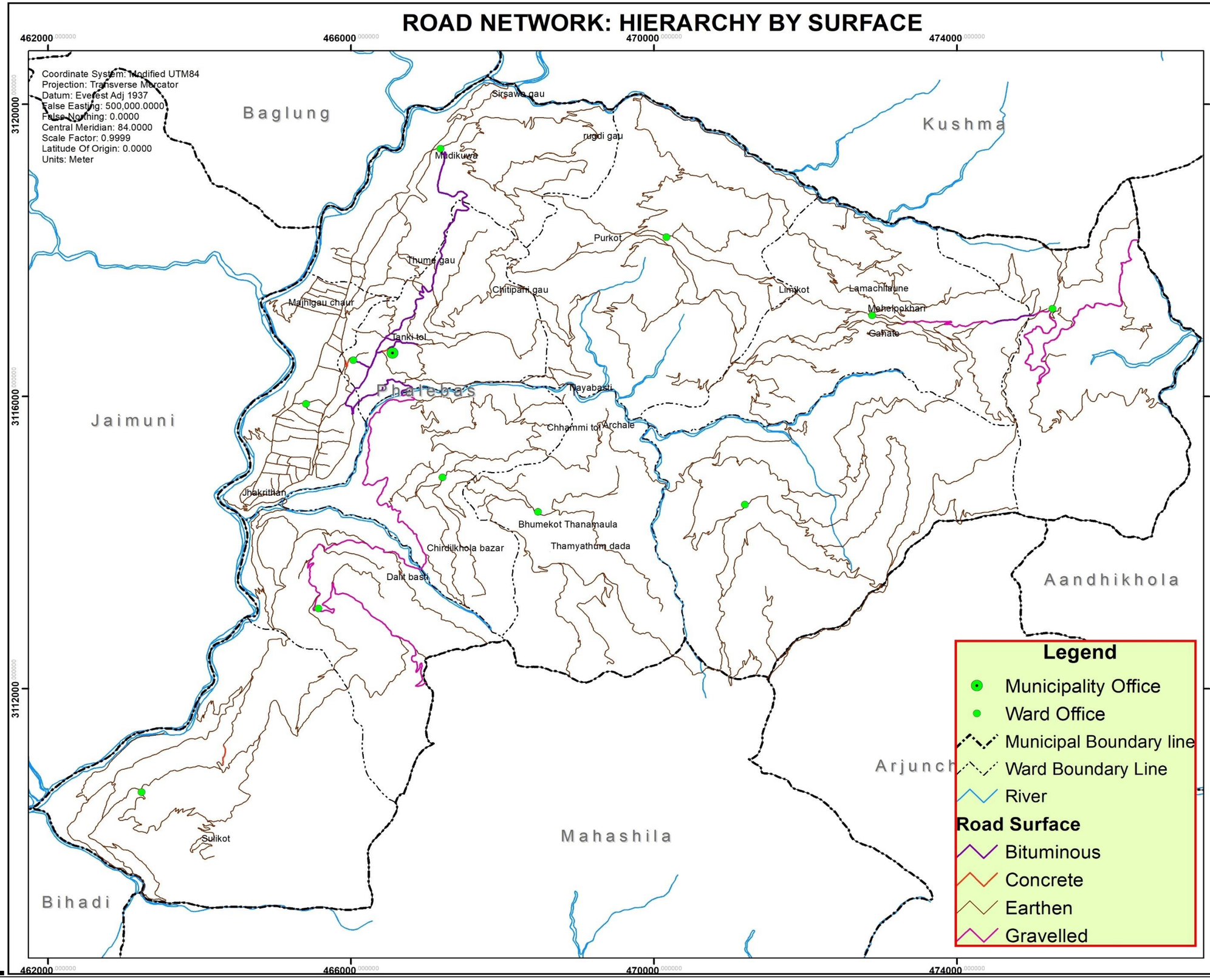
Koteshwor, Kathmandu

Submitted To:
Phalewas Municipality
Office of the Municipal Executive
Parbat, Gandaki Province

Map No. 4

Source: Survey Department, Nepal

ROAD NETWORK: HIERARCHY BY SURFACE



Legend

- Municipality Office
- Ward Office
- Municipal Boundary line
- Ward Boundary Line
- River

Road Surface

- Bituminous
- Concrete
- Earthen
- Gravelled

N
W E
S

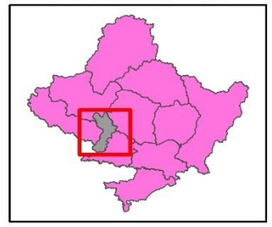
Preparation of Transportation Network Digitisation of Phalewas Municipality

0 30 60 120 180 240 Kilometers

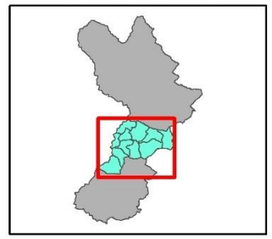
Scale: 1:45,000

Map of Nepal

Gandaki Province



Parbat District



Prepared By:
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Koteshwor, Kathmandu

Submitted To:
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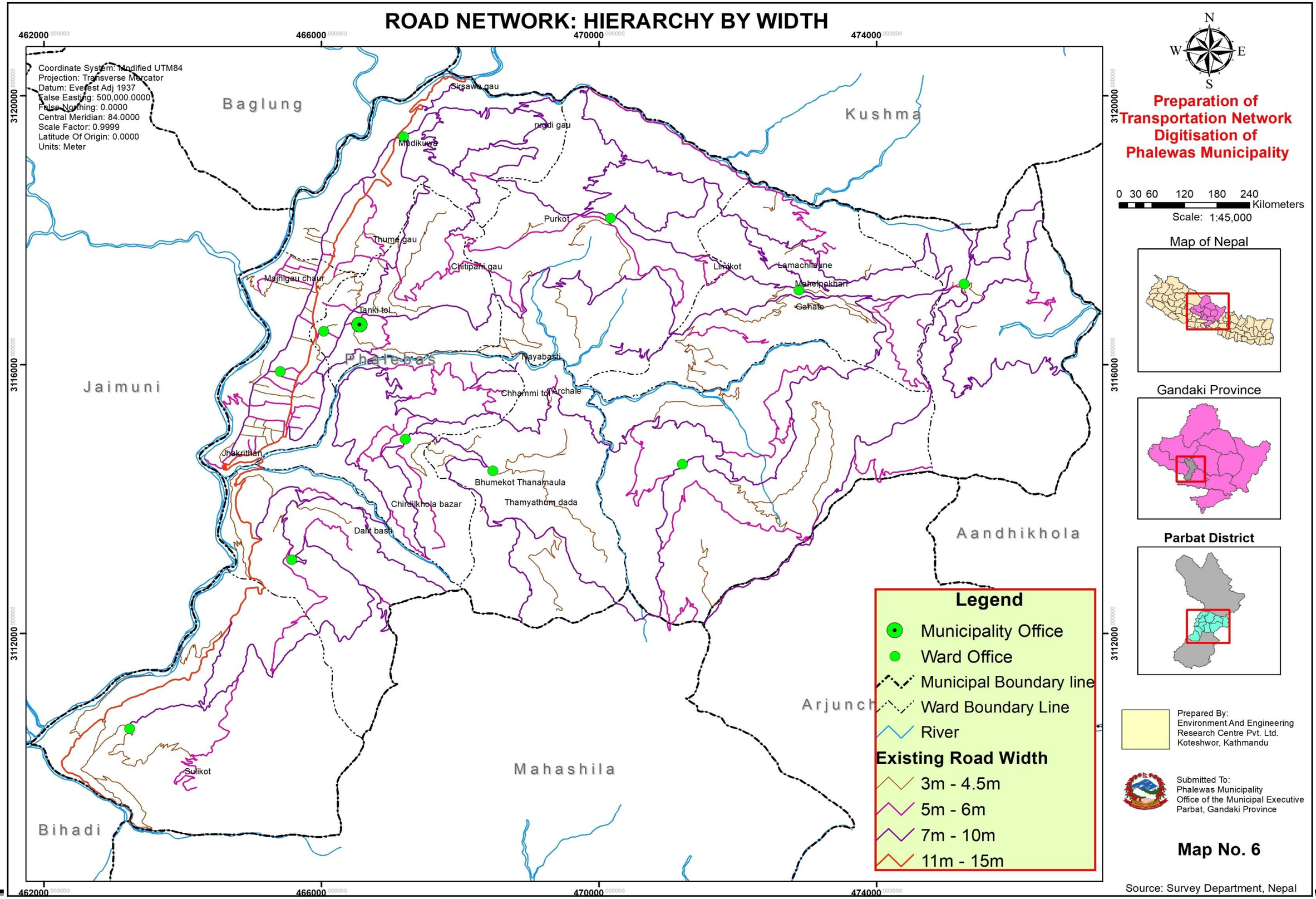
Office of the Municipal Executive
Parbat, Gandaki Province

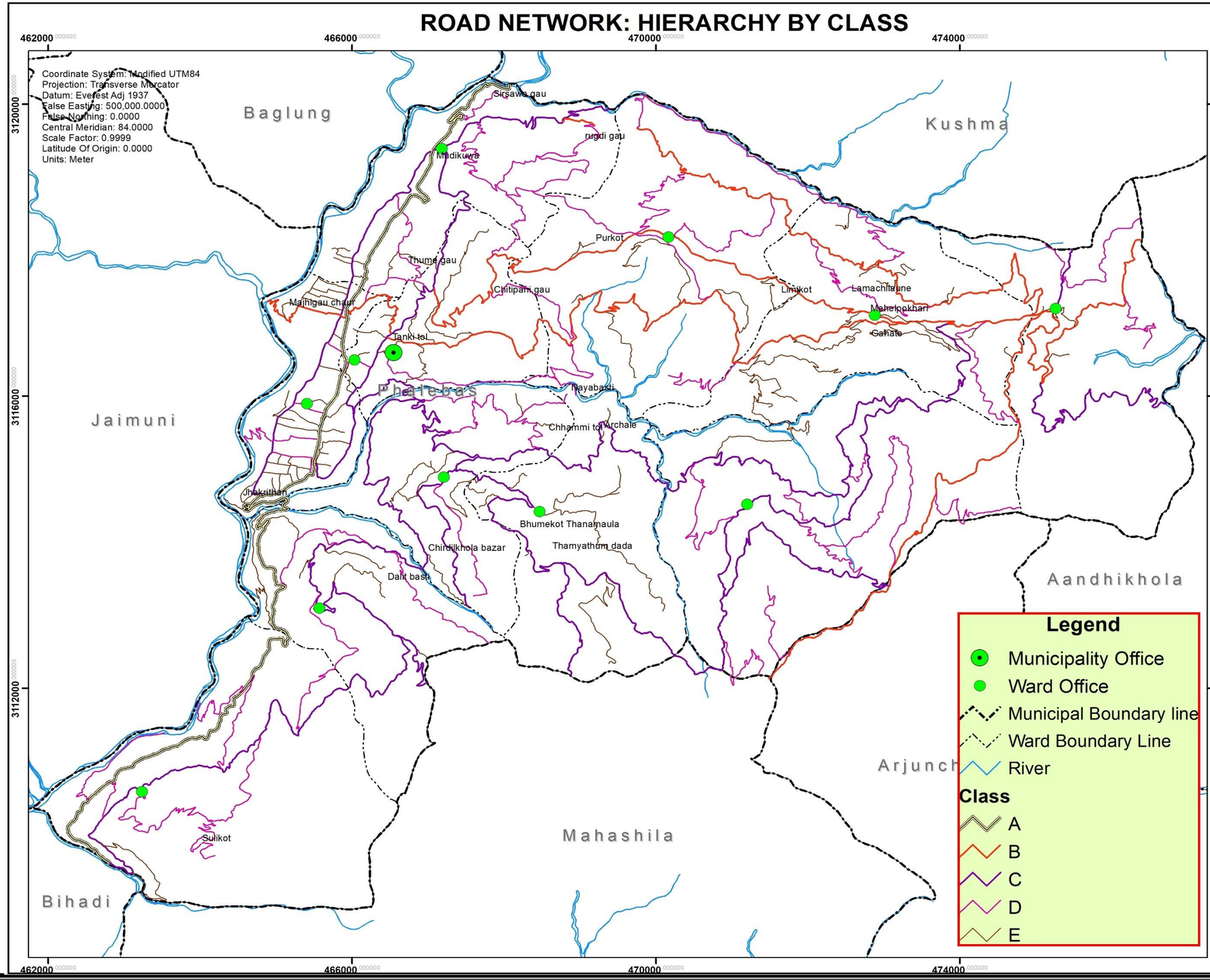
Map No. 5

Source: Survey Department, Nepal

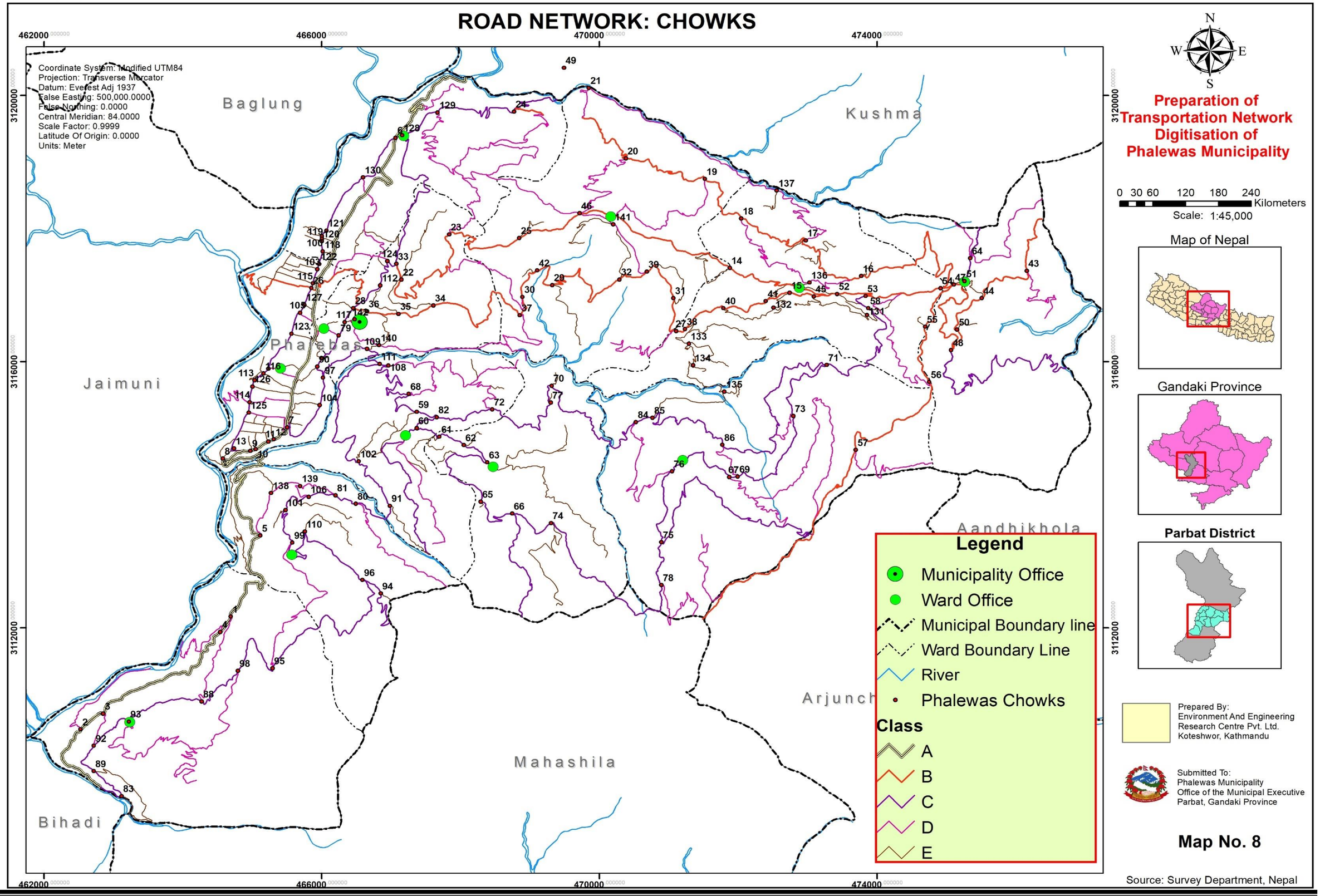
ROAD NETWORK: HIERARCHY BY WIDTH



ROAD NETWORK: HIERARCHY BY CLASS



ROAD NETWORK: CHOWKS



ROAD NETWORK: HIERARCHY BY CLASS A

Coordinate System: Modified UTM84
Projection: Transverse Mercator
Datum: Everest Adj 1937
False Easting: 500,000.0000
False Northing: 0.0000
Central Meridian: 84.0000
Scale Factor: 0.9999
Latitude Of Origin: 0.0000
Units: Meter

462000 466000 470000 474000
3120000 3116000 3112000

Baglung
Kushma
Jaimuni
Phalebas
Aandhikhola
Mahashila
Bihadi
Arj

Sirsawa gau
rugdi gau
Mudikuwa
Purkot
Thume gau
Chitipani gau
Limkot
Lamachilaune
Majhigau chaur
Mehelpokhari
Gahate
Tanki tol
Nayabasti
Chhammi tol
Archale
Jhakrithanti
Bhumekot Thanamaula
Thamyathum dada
Chirdilkhola bazar
Dalit basti
Sulikot

Legend

- Municipality Office
- Ward Office
- Municipal Boundary line
- Ward Boundary Line
- River
- Phalewas Chowks (Class A)

Transportation Networks

- Lokmarg

N W E S

Preparation of Transportation Network Digitisation of Phalewas Municipality

0 30 60 120 180 240 Kilometers
Scale: 1:45,000

Map of Nepal

Gandaki Province

Parbat District

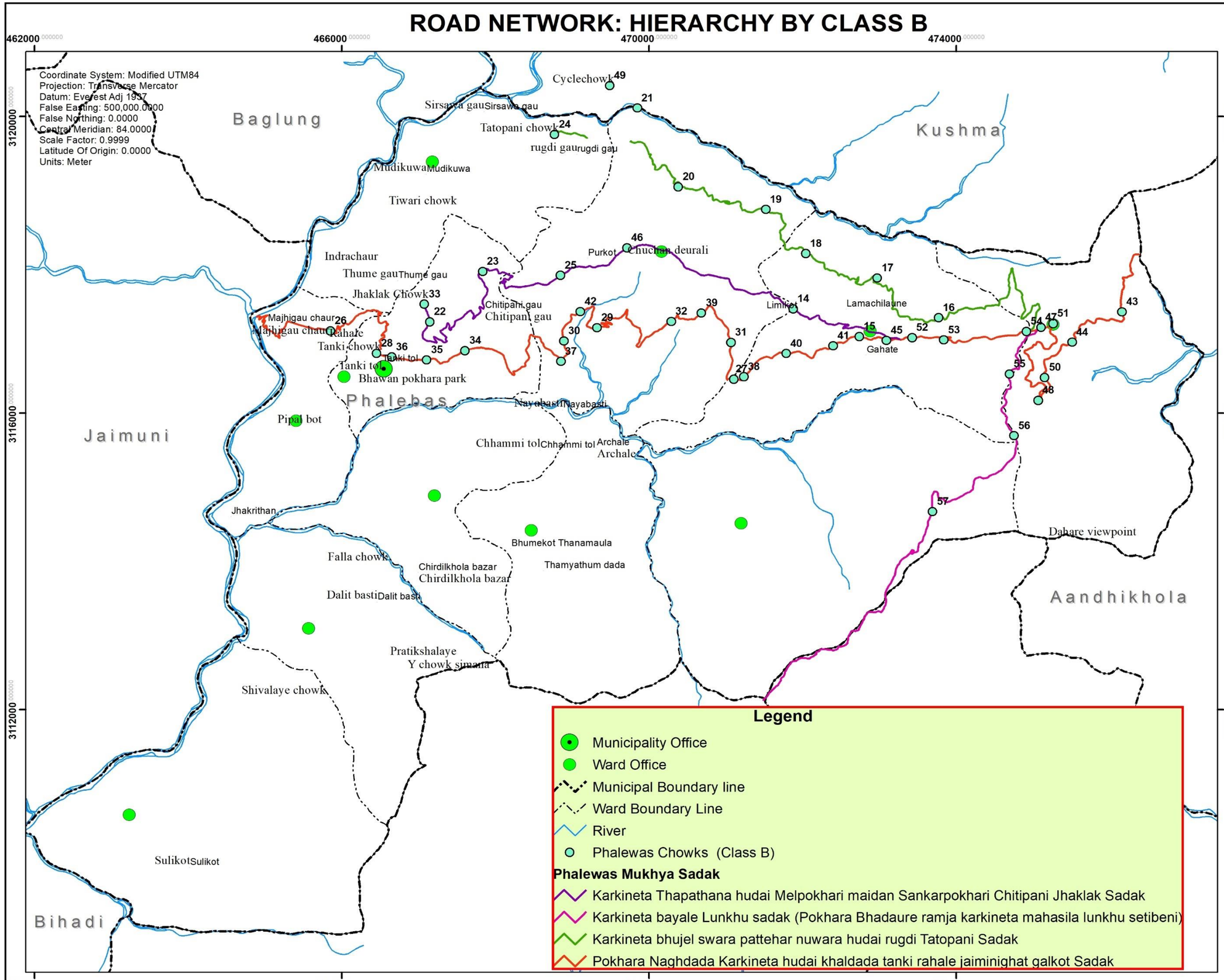
Prepared By:
Environment And Engineering Research Centre Pvt. Ltd.
Koteshwor, Kathmandu

Submitted To:
Phalewas Municipality
Office of the Municipal Executive
Parbat, Gandaki Province

Map No. 9

Source: Survey Department, Nepal

ROAD NETWORK: HIERARCHY BY CLASS B



N
W E
S

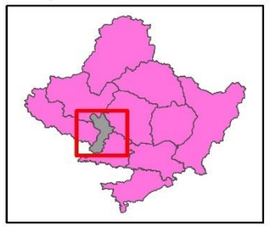
Preparation of Transportation Network Digitisation of Phalewas Municipality

0 30 60 120 180 240 Kilometers

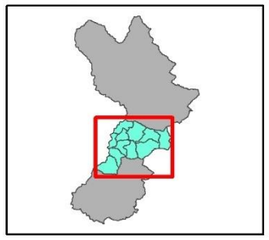
Scale: 1:45,000

Map of Nepal

Gandaki Province



Parbat District



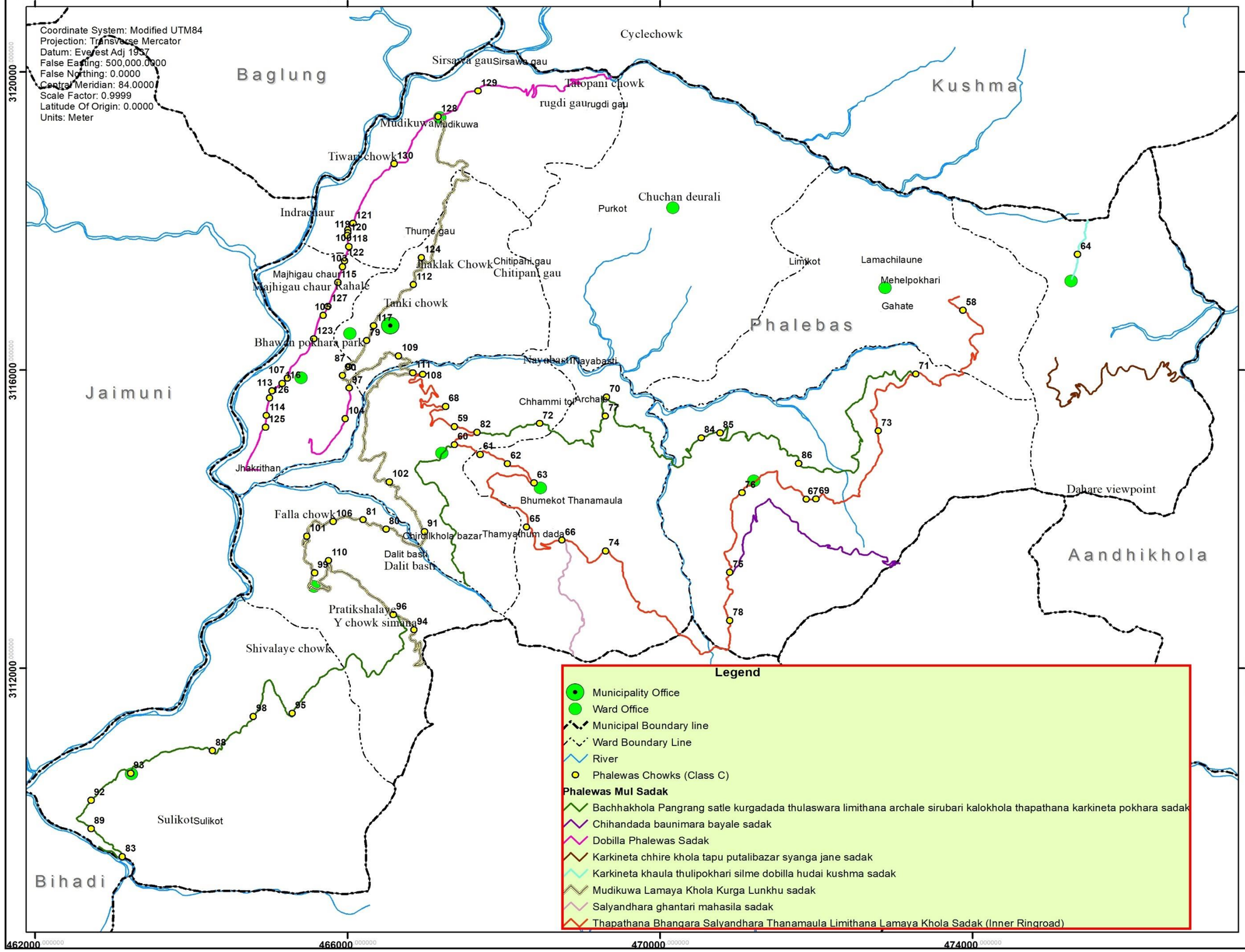
Prepared By:
Environment And Engineering Research Centre Pvt. Ltd.
Koteshwor, Kathmandu

Submitted To:
Phalewas Municipality
Office of the Municipal Executive
Parbat, Gandaki Province

Map No. 10

Source: Survey Department, Nepal

ROAD NETWORK: HIERARCHY BY CLASS C



ROAD NETWORK: HIERARCHY BY CLASS D

Coordinate System: Modified UTM84
Projection: Transverse Mercator
Datum: Everest Adj 1937
False Easting: 500,000.0000
False Northing: 0.0000
Central Meridian: 84.0000
Scale Factor: 0.9999
Latitude Of Origin: 0.0000
Units: Meter

462000 466000 470000 474000
3120000 3116000 3112000

Baglung
Kushma
Jaimuni
Phalebas
Aandhikhola
Arjun
Mahashila
Bihadi

Cyclechowk
Sirsawa gau
Tatopani chowk
rugdi gau
Mudikuwa
Tiwari chowk
Indrachaur
Thume gau
Jhaklak Chowk
Chitipani gau
Majhigau chaur
Rahale
Tanki tol
Bhawan pokhara park
Pipal bot
Nayabasti
Chhammi tol
Archale
Jhakrithan
Falla chowk
Chirdilkhola bazar
Dalit basti
Bhumekot Thanamaula
Thamyathum dada
Pratikshalaye
Y chowk simana
Shivalaye chowk
Sulikot
Purkot
Limikot
Lamachilaune
Mehelpokhari
Gahate
Dahare viewpoint

137 136 141 142 140 139 138

Legend

- Phalewas_Settlements
- Municipality Office
- Ward Office
- Municipal Boundary line
- Ward Boundary Line
- River
- Phalewas Chowks (Class D)

Transportation Network

- Sakha Sadak

N W E S

Preparation of Transportation Network Digitisation of Phalewas Municipality

0 30 60 120 180 240 Kilometers
Scale: 1:45,000

Map of Nepal

Gandaki Province

Parbat District

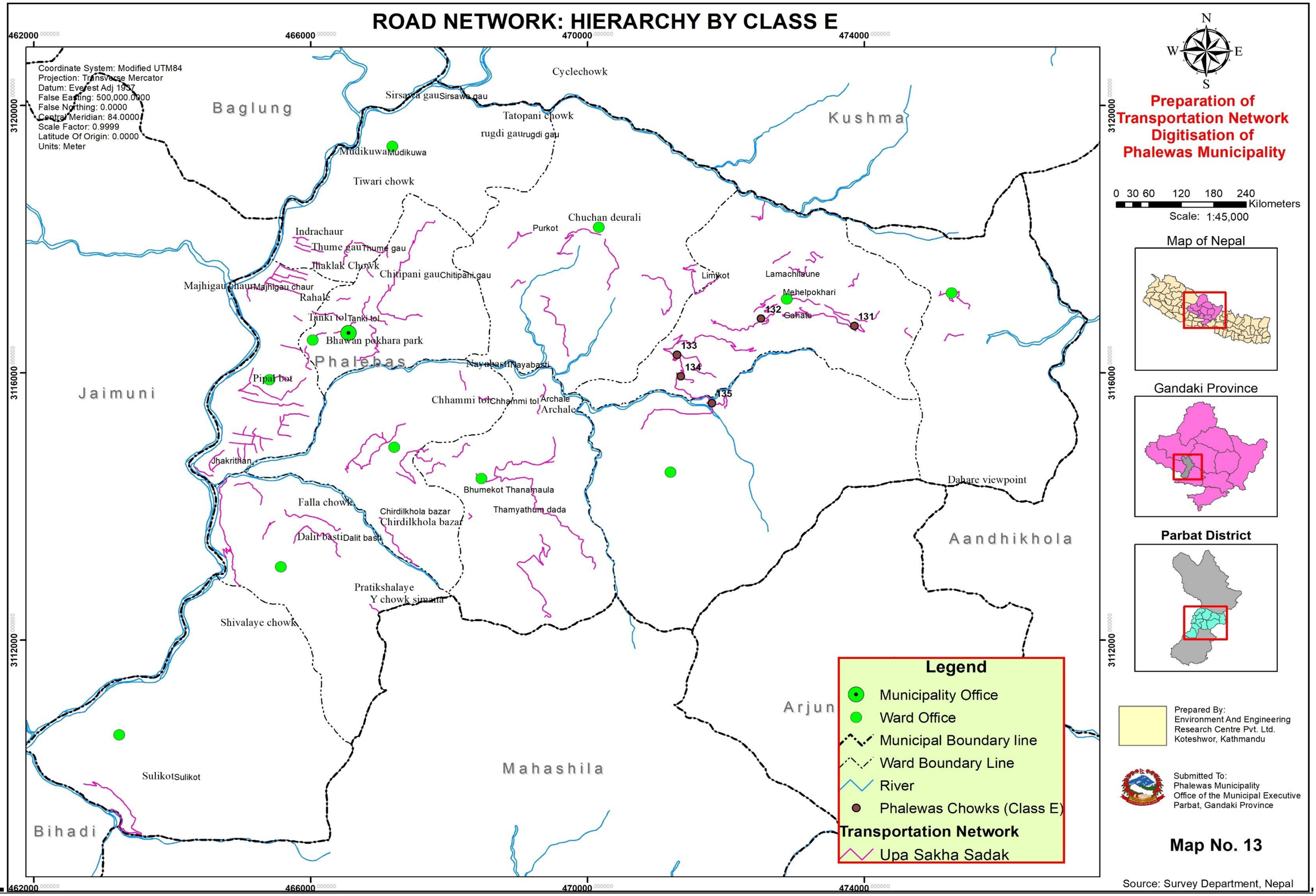
Prepared By:
Environment And Engineering Research Centre Pvt. Ltd.
Koteshwor, Kathmandu

Submitted To:
Phalewas Municipality
Office of the Municipal Executive
Parbat, Gandaki Province

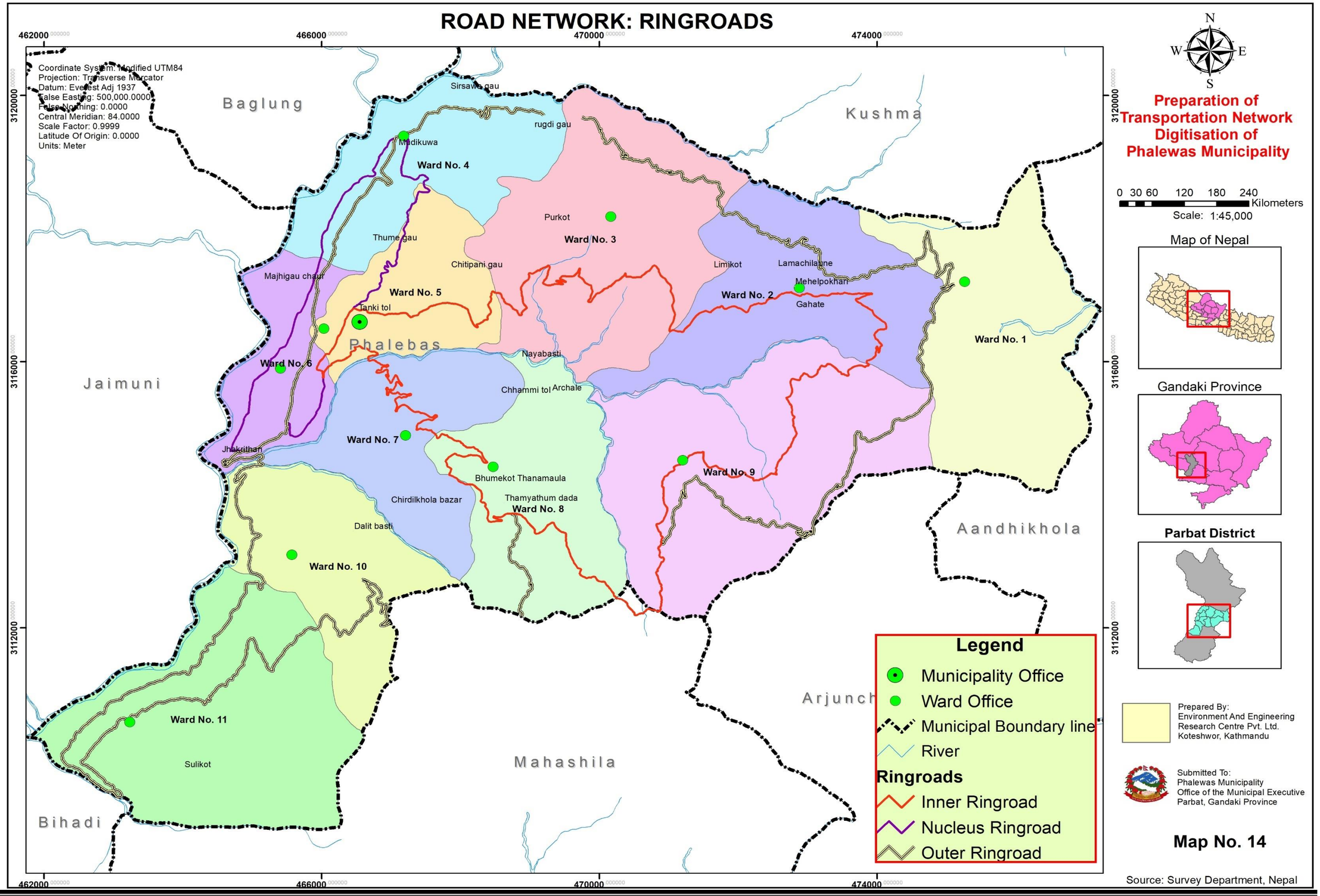
Map No. 12

Source: Survey Department, Nepal

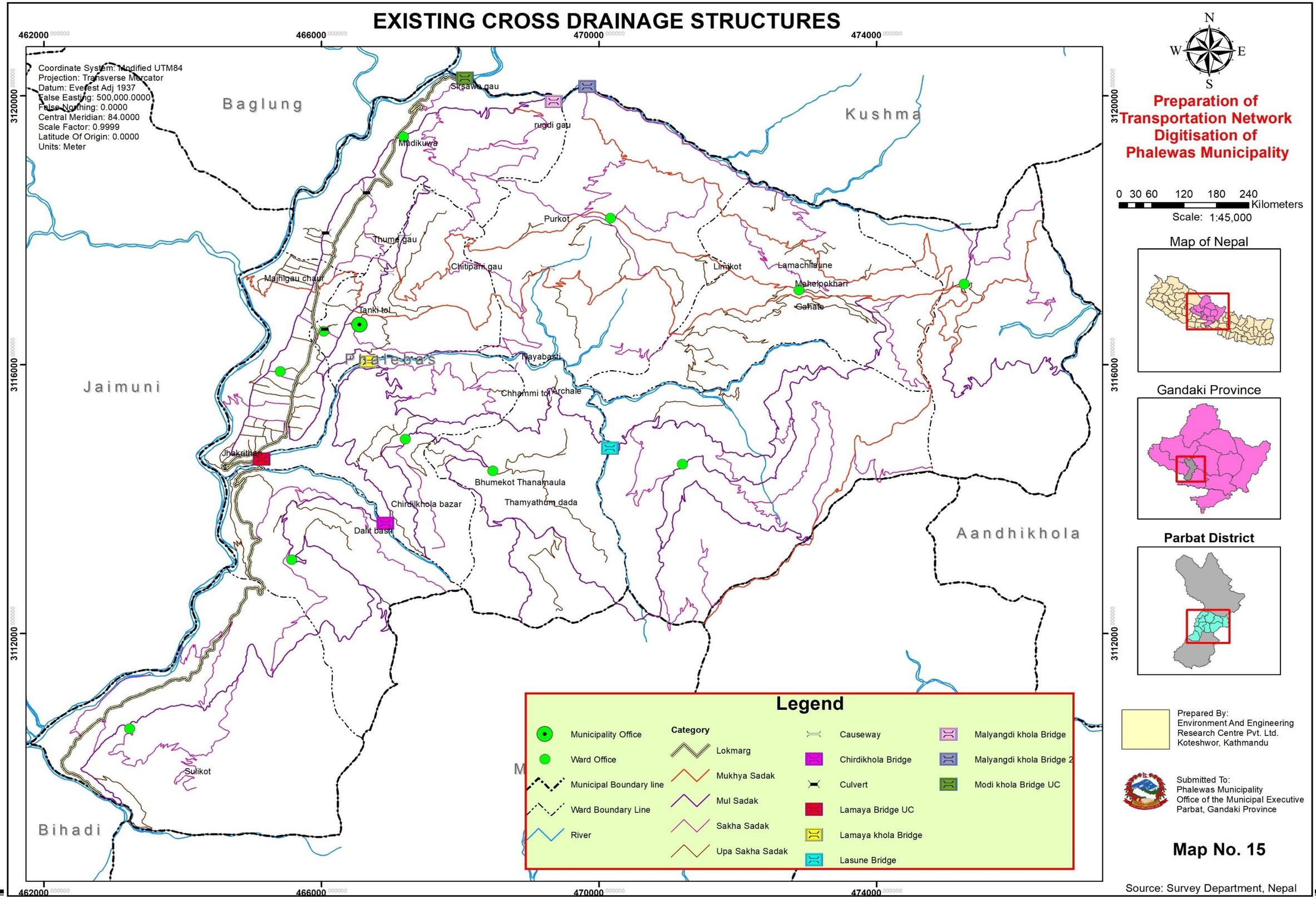
ROAD NETWORK: HIERARCHY BY CLASS E

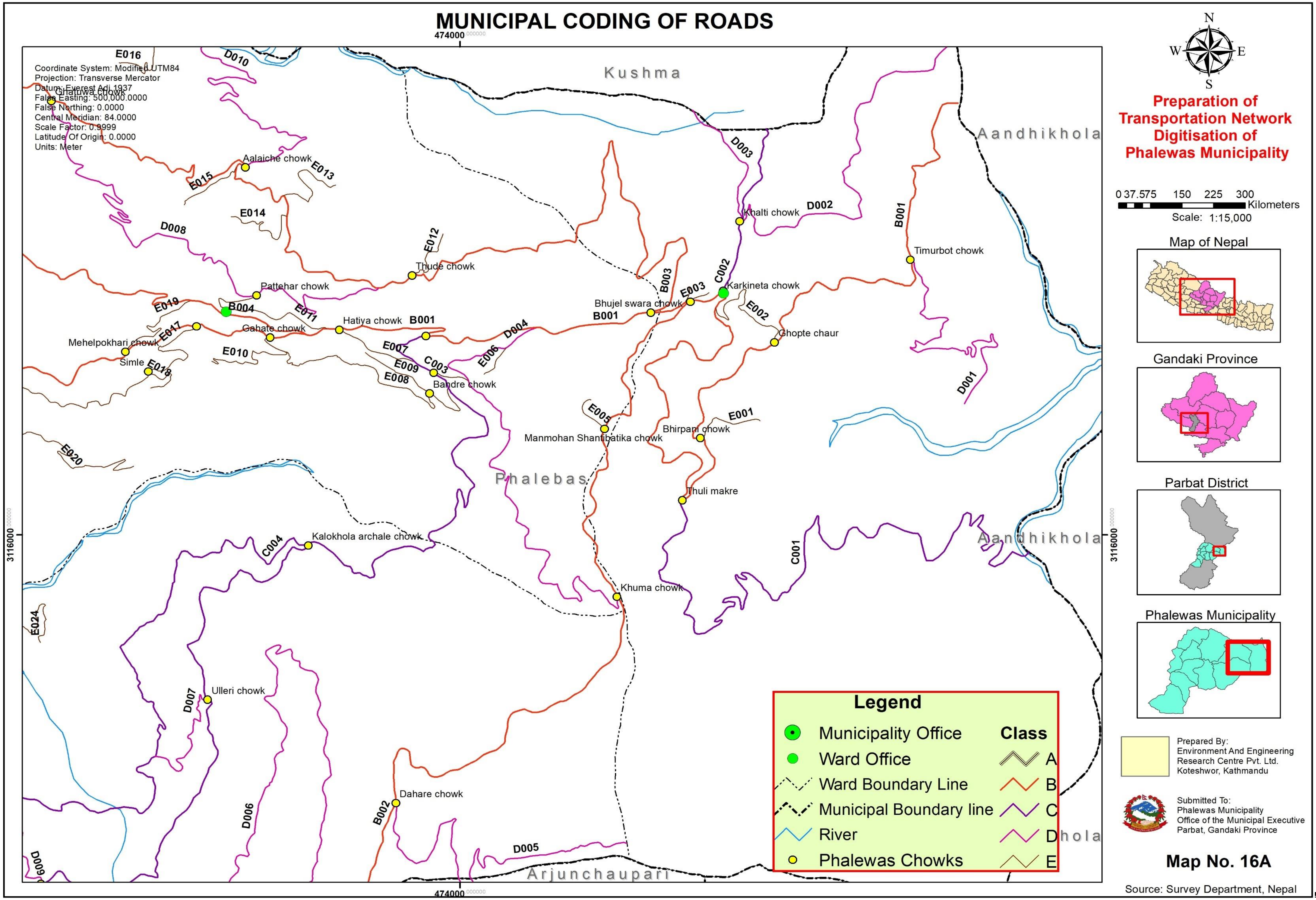


ROAD NETWORK: RINGROADS

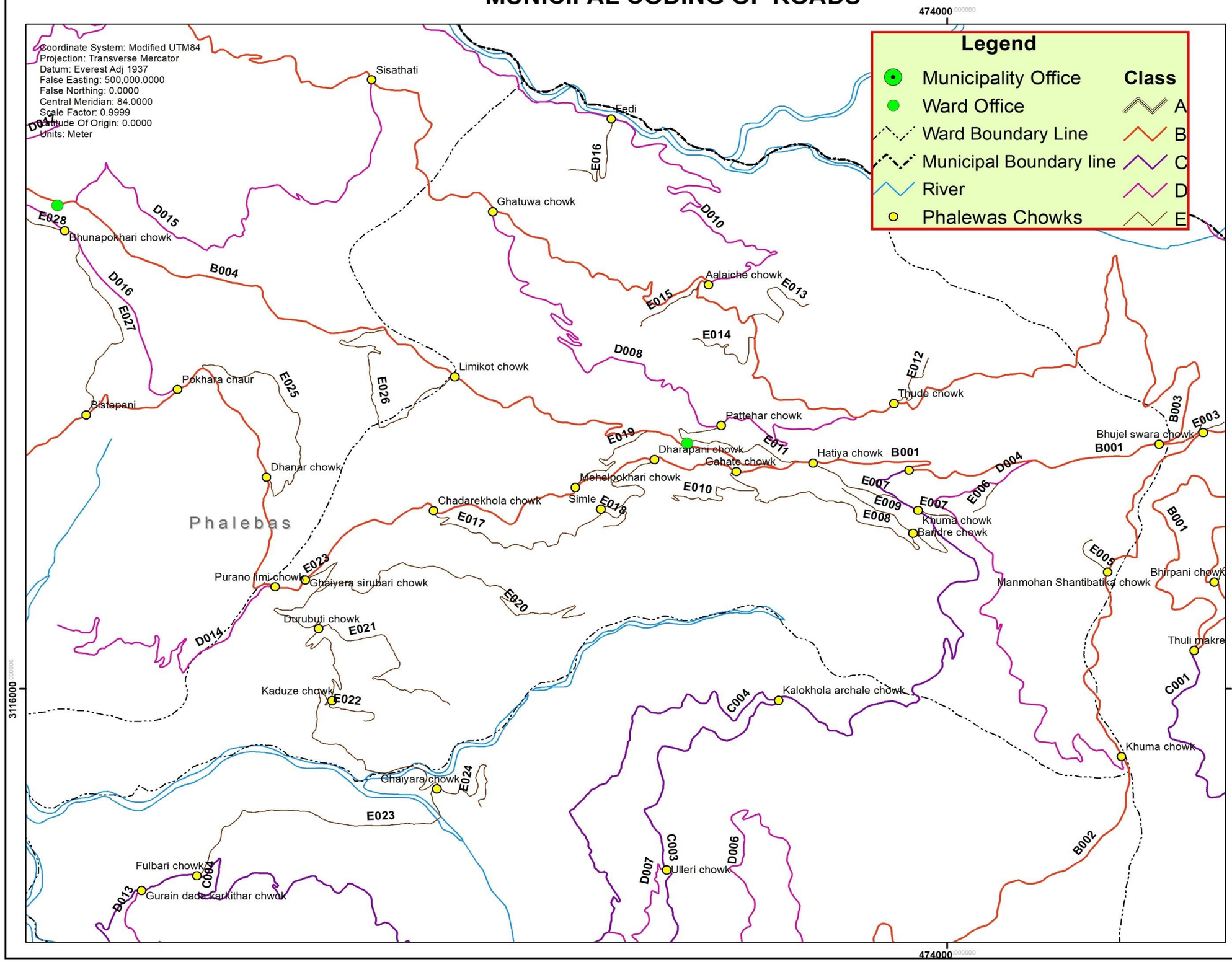


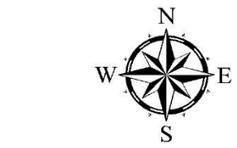
EXISTING CROSS DRAINAGE STRUCTURES




MUNICIPAL CODING OF ROADS
Coordinate System: Modified UTM84
Projection: Transverse Mercator
Datum: Everest Adj 1937
False Easting: 500,000.0000
False Northing: 0.0000
Central Meridian: 84.0000
Scale Factor: 0.9999
Latitude Of Origin: 0.0000
Units: Meter
Kushma
Aandhikhola
Phalebas
Arjunchaupari
Preparation of Transportation Network Digitisation of Phalewas Municipality
0 37.575 150 225 300 Kilometers
Scale: 1:15,000
Map of Nepal
Gandaki Province
Parbat District
Phalewas Municipality
Legend
Municipality Office
Ward Office
Ward Boundary Line
Municipal Boundary line
River
Phalewas Chowks
Class
A
B
C
D
E
Prepared By:
Environment And Engineering Research Centre Pvt. Ltd.
Koteshwor, Kathmandu
Submitted To:
Phalewas Municipality
Office of the Municipal Executive
Parbat, Gandaki Province
Map No. 16A
Source: Survey Department, Nepal

MUNICIPAL CODING OF ROADS





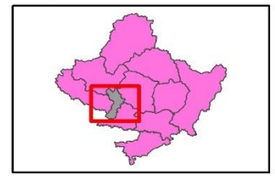
Preparation of Transportation Network Digitisation of Phalewas Municipality

0 37.575 150 225 300 Kilometers

Scale: 1:15,000

Map of Nepal

Gandaki Province



Parbat District

Phalewas Municipality

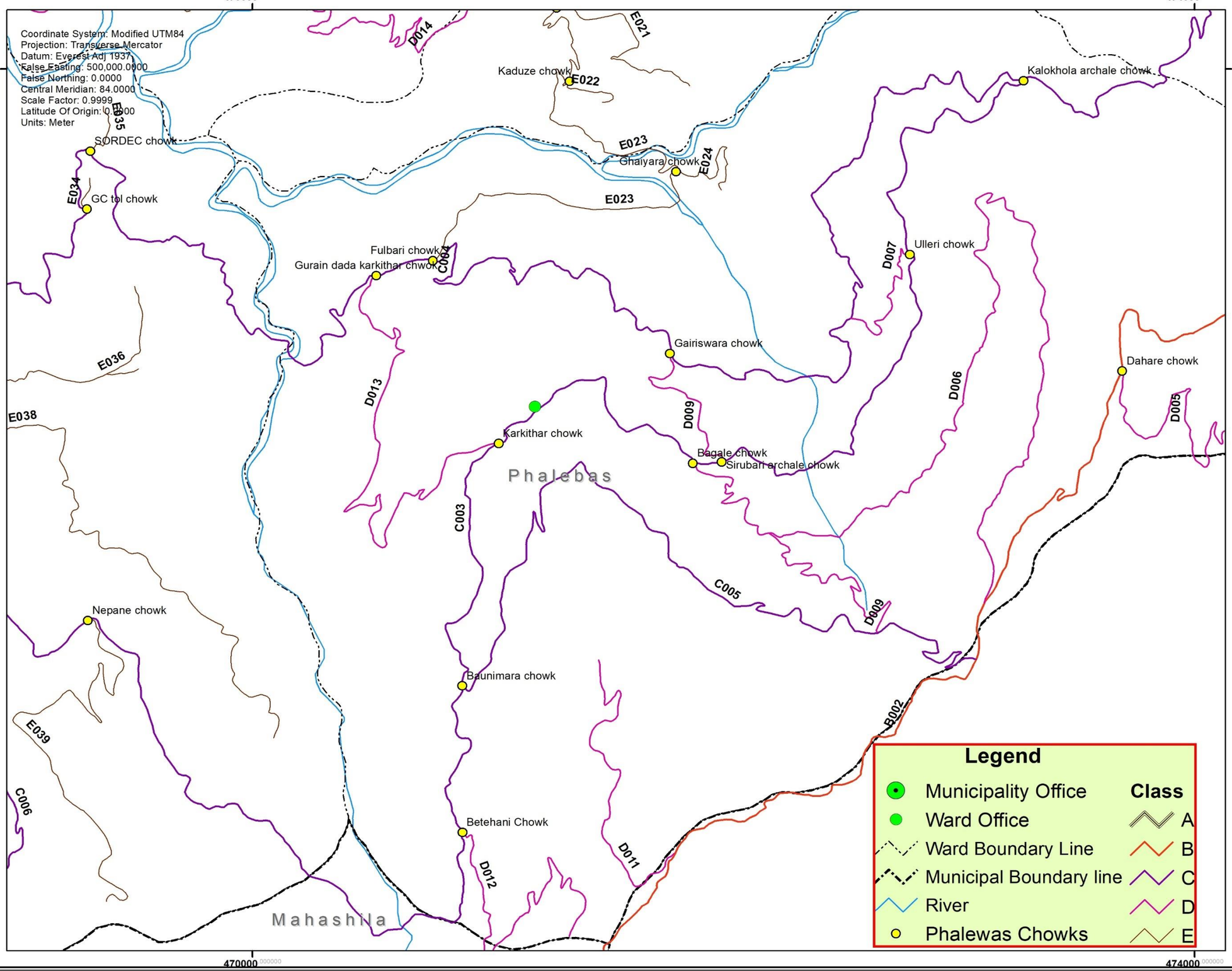
Prepared By:
Environment And Engineering Research Centre Pvt. Ltd.
Koteshwor, Kathmandu

Submitted To:
Phalewas Municipality
Office of the Municipal Executive
Parbat, Gandaki Province

Map No. 16B

Source: Survey Department, Nepal

MUNICIPAL CODING OF ROADS



Preparation of Transportation Network Digitisation of Phalewas Municipality

0 37.575 150 225 300 Kilometers

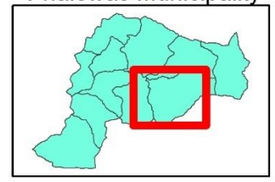
Scale: 1:15,000

Map of Nepal

Gandaki Province

Parbat District

Phalewas Municipality



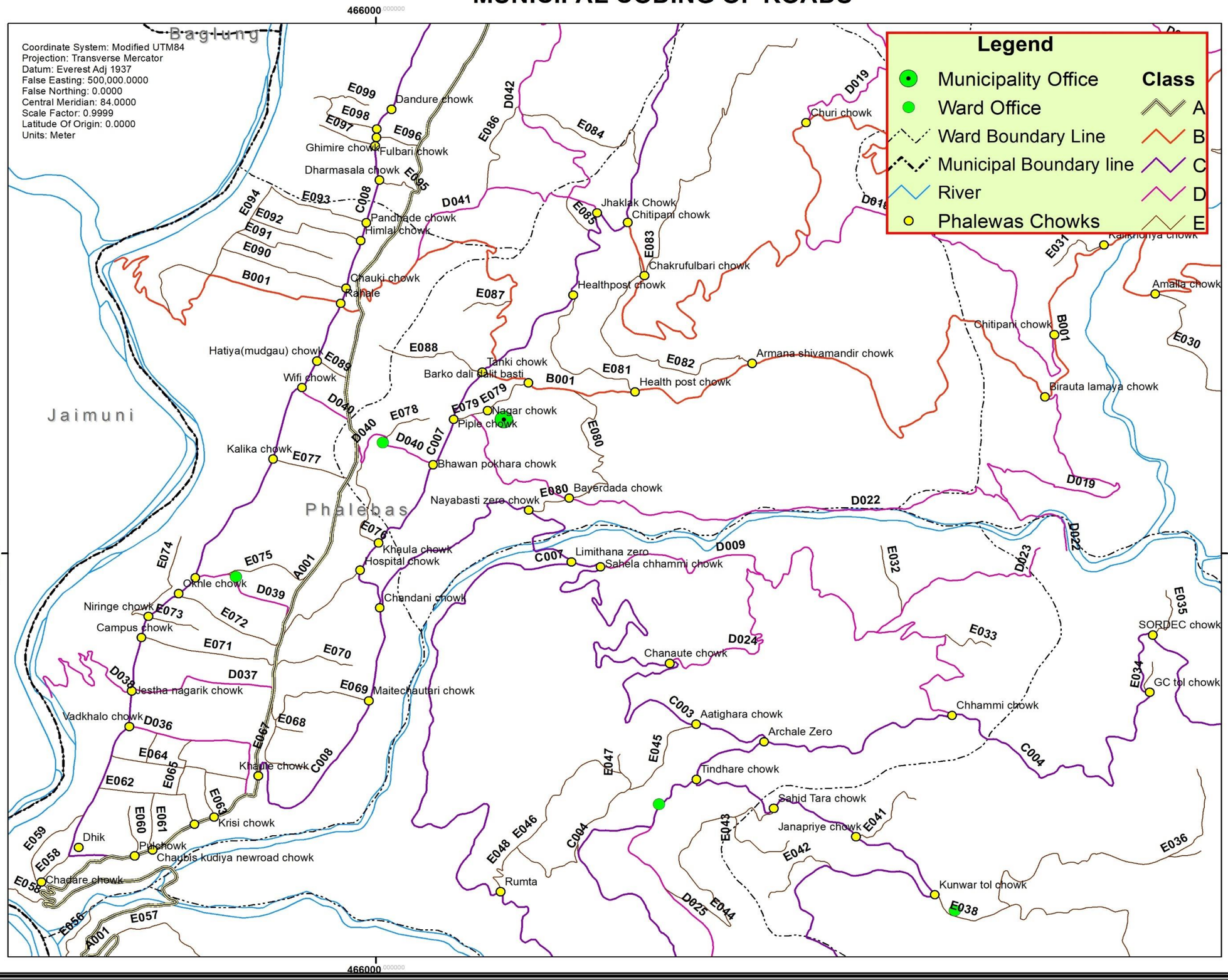
Prepared By:
Environment And Engineering Research Centre Pvt. Ltd.
Koteshwor, Kathmandu

Submitted To:
Phalewas Municipality
Office of the Municipal Executive
Parbat, Gandaki Province

Map No. 16C

Source: Survey Department, Nepal

MUNICIPAL CODING OF ROADS



Legend

	Class
Municipality Office	A
Ward Office	B
Ward Boundary Line	C
Municipal Boundary line	D
River	E
Phalewas Chowks	

N W E S

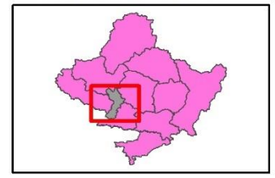
Preparation of Transportation Network Digitisation of Phalewas Municipality

0 37.575 150 225 300 Kilometers

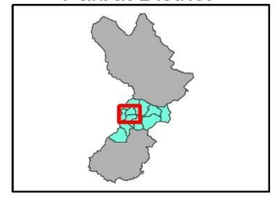
Scale: 1:15,000

Map of Nepal

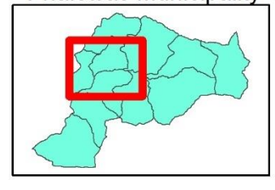
Gandaki Province



Parbat District



Phalewas Municipality



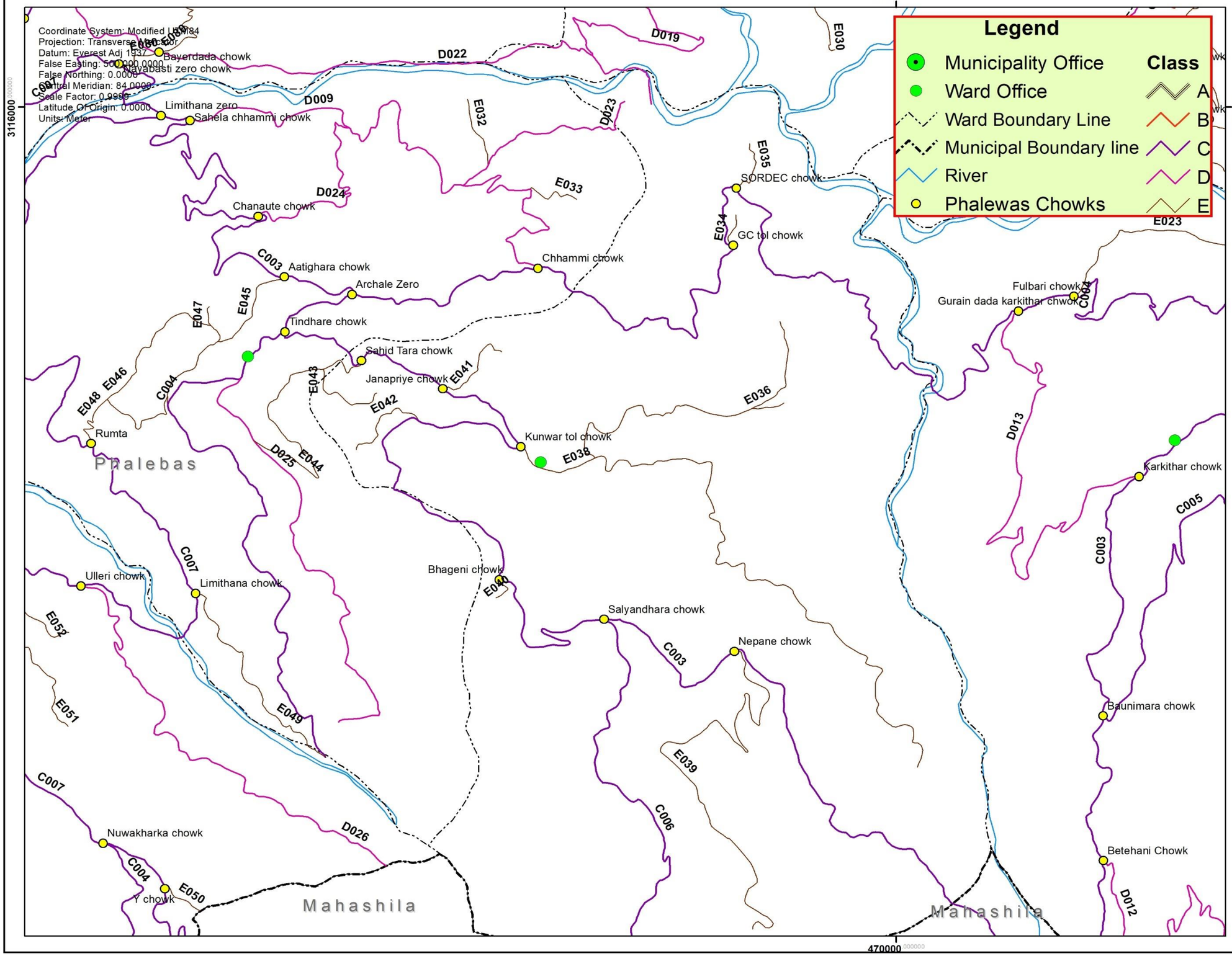
Prepared By:
Environment And Engineering Research Centre Pvt. Ltd.
Koteshwor, Kathmandu

Submitted To:
Phalewas Municipality
Office of the Municipal Executive
Parbat, Gandaki Province

Map No. 16E

Source: Survey Department, Nepal

MUNICIPAL CODING OF ROADS



Legend

- Municipality Office
- Ward Office
- Ward Boundary Line
- Municipal Boundary line
- River
- Phalewas Chowks

Class

A, B, C, D, E

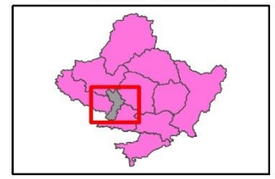
Preparation of Transportation Network Digitisation of Phalewas Municipality

0 37.575 150 225 300 Kilometers

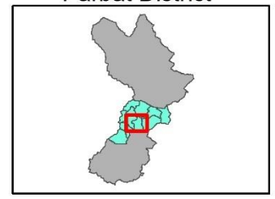
Scale: 1:15,000

Map of Nepal

Gandaki Province



Parbat District



Phalewas Municipality

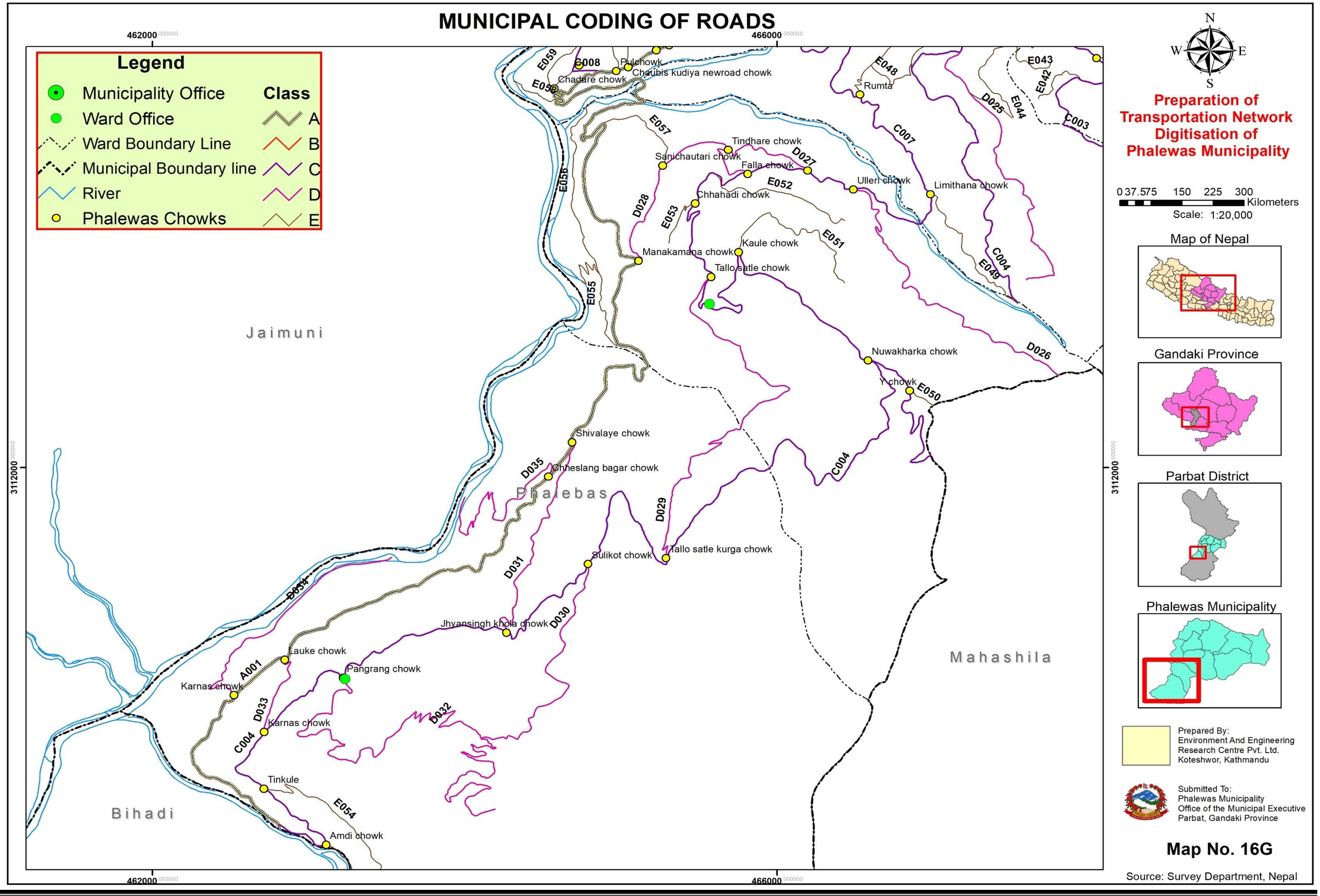
Prepared By:
Environment And Engineering Research Centre Pvt. Ltd.
Koteshwor, Kathmandu

Submitted To:
Phalewas Municipality
Office of the Municipal Executive
Parbat, Gandaki Province

Map No. 16F

Source: Survey Department, Nepal

MUNICIPAL CODING OF ROADS



Prepared By:
Environment And Engineering Research Centre Pvt. Ltd.
Koteshwor, Kathmandu

Submitted To:
Phalewas Municipality
Office of the Municipal Executive
Parbat, Gandaki Province

Map No. 16G

Source: Survey Department, Nepal

Phalewas Municipality
Office of the Municipal Executive
Parbat, Gandaki Province, Nepal