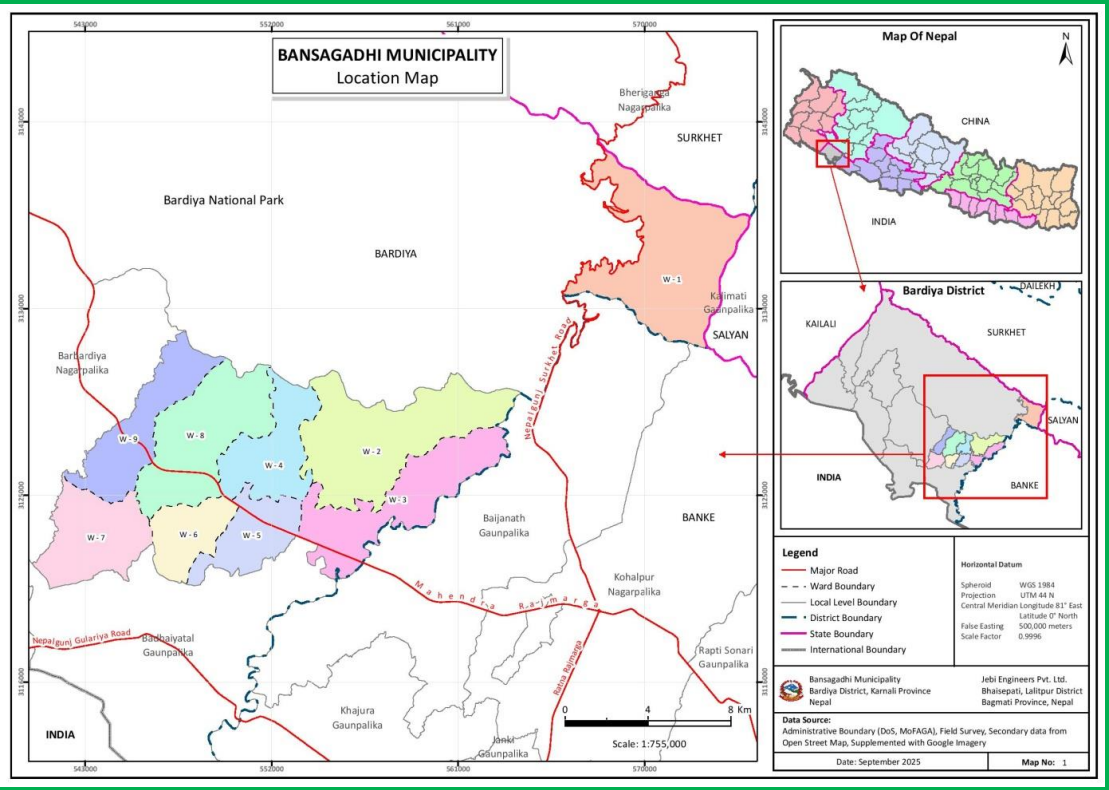
Bansgadhi Municipality
Office of the Municipal Executive
Bansgadhi, Bardiya, Lumbini Province



Preparation of Municipality Transport Master Plan (MTMP)

FINAL REPORT

SUBMITTED BY:

E-Catch Engineering Consultancy Pvt. Ltd.

Balkhu, Kathmandu

2025

Acknowledgement

The Consultant team would like to express our deep sense of gratitude to Mr. Khadak Bahadur Khadka -President Mrs. Indira Chaudhary-Vice President, Mr. Neb Bahadur Oli - Chief Administrative Officer and Engineer of Bansgadhi Municipality, Municipality Executive Office for providing us the support throught the field survey and during the entire period for the **"Preparation of Municipality Transport Master Plan for Bansgadhi Municipality"**. We would like to thank all the Ward Presidents, Member of ward council, Section Chiefs of Municipal office and other municipal staffs of Bansgadhi Municipality for their help and co-operation to the Consultant for the study.

We would like to thank all the citizens for their patience and friendly environment who were directly and indirectly involved in the data collection process. We are greatly thankful to everyone who helped in facilitating us for data collection. We thank the volunteers who helped for traffic vehicle count on the major road linkages.

मेरो भनाई

मानव सभ्यता विकासको सुरुवातसँगै मानवीय सुविधाहरूको विकासलाई प्राथमिकता दिएको पाइन्छ । सायद यस अर्थमा मानवीय सुविधा र सुखको विकास नै मानव सभ्यता विकासको एक अभिन्न अङ्ग हो । आधारभूत भौतिक विकासका पूर्वाधारहरूद्वारा प्राप्त हुने मानवीय सुविधाहरूमध्ये सडक यातायातको विकास समग्र विकासका आयामहरू मध्ये एक अपरिहार्य आयाम हो भन्ने कुरा निर्विवाद छ । यसर्थ यस नगरपालिकाले विकासका योजना तर्जुमा गर्ने सन्दर्भमा सडक यातायात गुरुयोजना निर्माणलाई समग्र विकासका योजनाहरूमध्ये प्राथमिकतामा राखी यो गुरुयोजना तयार पारिएको हो ।

नेपालजस्तो भौगोलिक विषमता भएको देशमा यातायातका वैकल्पिक माध्यमहरू जस्तै जल परिवहन, रोपवे वा हवाई यातायातका सम्भावनहरू न्यून तथा बढी खर्चिला भएका कारण सडक यातायातलाई प्राथमिकतामा राख्नुपर्ने हुन्छ । यद्यपि भौगोलिक संरचना र बजेटका कारण सडक यातायातको पर्याप्त विकास गर्ने कार्य समेत कठिन र खर्चिलो नै छ । यस अवस्थामा सडक यातायातको योजनाबद्ध विकास नगरी अगाडि बढ्दा त्यो झनै खर्चिलो, अव्यवहारिक र असंगठित हुन जाने भएकोले यसलाई योजनाबद्ध र दिगो तरिकाले अगाडि बढाई कालान्तरमा समग्र नगरपालिकाको योजनाबद्ध विकासमा समेत सहयोग होस् भन्ने हेतुले यो सडक यातायात गुरुयोजना निर्माण गरिएको छ ।

यो गुरुयोजना निर्माणका क्रममा नगरपालिकालाई सहयोग गर्नुहुने उपप्रमुखज्यू, प्रमुख प्रशासकीय अधिकृत, सम्पूर्ण वडा अध्यक्षज्यूहरू, समग्र नगर कार्यपालिकाका सदस्यहरू, वडा सचिवहरू तथा सम्पूर्ण कर्मचारीहरू, प्राविधिकहरू, सम्पूर्ण सरोकारवालाहरू र परामर्श सेवा प्रदान गरी सडक गुरुयोजना निर्माण कार्यमा परामर्शदाताको रूपमा रहेको इ-क्याच इन्जिनियरिङ कन्सलटेन्सी प्रा.लि. लाई हार्दिक धन्यवाद ज्ञापन गर्न चाहन्छु ।

खड्क वहादुर खड्का
प्रमुख

भनाई

आधारभूत तथा दैनिक मानवीय क्रियाकलाप सञ्चालनमा आवत जावतको अहम् भूमिका हुन्छ ।- आवतजावतमा सुगमता र सहजता वृद्धि हुँदा समुदायबीचको सम्पर्क र समन्वयमा अभिवृद्धि हुन्छ । यसले प्रत्यक्ष रूपमा आर्थिक तथा सामाजिक कारोबार वृद्धि गर्न मद्दत पुर्‍याउँछ । तसर्थ आवत-जावतलाई सुगम र सहज बनाउन वैज्ञानिक सडक यातायात योजना अनिवार्य हुन्छ । अन्यथा अवैज्ञानिक तवरले विकसित भएको सडक सञ्चालले सहजताको विपरित जटिलता थप्ने गर्दछ ।

बृहत् ऐतिहासिक तथा राजनैतिक परिवर्तन पश्चात् संविधानले हामीलाई मौलिक हक तथा जनता केन्द्रित शासन व्यवस्थाको प्रत्याभूति गरेको सन्दर्भमा यो नगरपालिका एक स्वायत्त स्थानीय सरकार समेत भएकाले नगरपालिकाको वस्तुगत अवस्थालाई मध्यनजर गरी यहाँका प्राथमिकतालाई निर्धारण गर्ने कार्य स्वयं नगरपालिकाले नै गर्नुपर्ने हुँदा सम्पूर्ण विकासको आधारभूत पूर्वाधारको रूपमा रहने सडक यातायातको दिगो विकास नै समग्र विकासको पूर्व शर्त भएकोले यस नगरपालिकाले सडक यातायात गुरुयोजना निर्माणलाई प्राथमिकता दिएको हो। यो गुरुयोजना अन्य विकास निर्माणको समेत कोशेढुङ्गा सावित हुनेछ भन्ने मैले विश्वास लिएकी छु ।

अन्तमा यस गुरुयोजना निर्माणमा सहयोग पुर्‍याउनु हुने प्रमुखज्यू, प्रमुख प्रशासकीय अधिकृतज्यू, सम्पूर्ण वडा अध्यक्षज्यूहरू, सचिव तथा सम्पूर्ण कर्मचारीहरू, प्राविधिकहरू, नगरपालिकावासीहरू तथा परोक्षरुपमा सहयोग पुर्‍याउने सम्पूर्ण महानुभावहरूमा म धन्यवाद दिन चाहन्छु। साथै प्राविधिक पक्षको जिम्मेवारी लिई यो योजना तयार पार्ने परामर्शदाता इ-क्याच इन्जिनियरिङ कन्सलटेन्सी प्रा.लि.लाई समेत धन्यवाद दिन चाहन्छु ।

इन्दिरा चौधरी
उपप्रमुख

मेरो भन्नु

करिब सात दशक लामो राजनैतिक संक्रमण पार गर्दै नेपाल राजौतिक तथा सामाजिक हिसाबले एक नयाँ युगमा प्रवेश गरेको छ । सङ्घीय लोकतान्त्रिक गणतन्त्रात्मक शासन व्यवस्थाको पूर्ण कायान्वयनको यस ऐतिहासिक घडीमा आइपुग्दा स्थानीय सरकारहरूले संविधानले प्रदान गरेका अधिकारहरुको उपयोग गरिरहेका छन् । यस सन्दर्भमा नेपालका संविधानको अनुसूची ८ र स्थानीय सरकार सञ्चालन ऐन, २०७४ को दफा ११२ को उपदफा २ को ले स्था (ट)नीय सडक, ग्रामीण सडक तथा कृषि सडक निर्माण सम्बन्धी योजना तर्जुमा गर्ने कार्यको अधिकार स्थानीय सरकारलाई प्रदान गरेकोले विकासका प्राथमिक पूर्वाधारको रूपमा रहेका सडकको गुरुयोजना निर्माण कार्यले यस नगरपालिकामा अन्य विकासका क्रियाकलापहरू अगाडि बढाउन मार्ग प्रशस्त गर्ने हुँदा यो सडक यातायात गुरुयोजना निर्माण गरिएको हो ।

नेपालको लुम्बिनी प्रदेश अन्तर्गत बर्दिया जिल्लाका स्थानीय तहमध्ये एक, बाँसगढी नगरपालिका हो । सङ्घीय राज्य व्यवस्था लागु गरिएको राज्यको नवीन व्यवस्था र नवगठित स्थानीय तहहरूको र आगामी दिनहरूमा नगरपालिकामा व्यवस्थित आवासको विकास पर्यटन उद्योगको विकास र अन्य सबै प्रकारका विकासको प्रशस्त सम्भावनाहरू रहेकोले समयमै समग्र विकासको आधारशिलाको रुपमा रहेको सडकको विकास गर्नु अपरिहार्य छ । तसर्थ, नगरपालिकाले यो सडक यातायात गुरुयोजना तयार गर्ने निर्णय गरेको हो। यो सडक यातायात गुरुयोजनाले आगामी दिनहरुमा नगरपालिकाको व्यवस्थित र वैज्ञानिक विकासमा दिर्घकालीन् रूपमा सहयोग पुर्‍याउने छ भन्ने विश्वास लिएको छु।

यस गुरुयोजना निर्माणमा प्रत्यक्ष वा परोक्ष रुपमा सहयोग पुर्‍याउनु हुने नगरपालिका प्रमुखज्यू उपप्रमुखज्यू सम्पूर्ण वडा अध्यक्षज्यूहरू, नगरपालिकावासीहरू, सन्पूर्ण प्राविधिक तथा कर्मचारी साथीहरूपति म हार्दिक धन्यवाद दिन चाहन्छु । साथै, यो गुरुयोजना तयार पार्नमा सहयोग गर्नुहुने परामर्शदाता इ-क्याच इन्जिनियरिङ कन्सलटेन्सी प्रा.लि.लाई समेत धन्यवाद दिन चाहन्छु ।

नेव वहादुर वली
प्रमुख प्रशासकीय अधिकृत

DECLARATION LETTER

We hereby declare that we have conducted the study for Municipality Transport Master Plan (MTMP) of ***Bansgadhi Municipality*** professionally using MoFALD guidelines and other acceptable standard methodologies. To the best of our knowledge, study findings are correct. Municipality Transport Master Plan has been prepared as per standard Engineering tools, norms and practices. The visionary city development plan has been finalized on the basis of the discussion with stakeholders. We would like to assure you that the MTMP is reliable, practicable and adequate to the overall development of Municipality transport system. We shall be accountable for any misleading information in any part of this report in respective area of study.

Managing director,

E-Catch Engineering Consultancy Pvt. Ltd.

Balkhu, Kathmandu

ABBREVIATIONS

DDC	District Development Committee
DOLIDAR	Department of Local Infrastructure Development and Agricultural Roads
DTMP	District Transport Master Plan
GIS	Geographic Information System
GPS	Global Positioning System
Ha	Hectare
HH	Household
IDPM	Indicative Development Potential Map
Km.	Kilometer
MIM	Municipal Road Inventory Map
Min.	Minute
MoFALD	Ministry of Federal Affairs and Local Development
MEC	Municipal Road Coordination Committee
MTMP	Municipal Transport Master Plan
MTPP	Municipal Transport Perspective Plan
NMT	Non- Motorized Transport
O-D	Origin and Destination
PCU	Passenger Car Unit
PT	Public Transport
ROW	Right of Way
Sq. km	Square Kilometer
SRN	Strategic Road Network
ToR	Terms of Reference
WARDs	Village Development Committees

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CHAPTER ONE: INTRODUCTION

This section presents the context and concepts of MTMP. It also briefly states the objectives along with the scopes and study area. The end of this section layout the contents of the later.

1.1 Background

Transport, which is simply defined as movement of people and goods covering some geographical space is one of the major components to improve people's access to services. It not only increases the accessibility to the remote places, but also increases the mobility scenario, and hence results in better linkages with market centers, tourist places, agricultural production pocket areas and other opportunities in the district as well as Municipality.

Transport facilities help in developing access with the rural-urban linkages. Road accessibility can reduce isolation, stimulate crop production and marketing activities, encourage public services and help to transfer technology other opportunities in the district as well as Municipality. Road building has been seen to bring about notable enthusiasm and visible changes in rural 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.

Municipality Transport Master Plan (MTMP) is primarily a reflection of existing transport infrastructure situation and future potential ones in consistent with the resources available in the Municipality. It offers long term perspective for the planned development of the roads network in the Municipality. The MTMP preparation strongly advocates meaningful participation of all key stakeholders of municipal roads in the planning process, which makes MTMP more acceptable and ensure ownership. A comprehensive Municipal Transport Master Plan is being developed in the Municipality to support investments in transport development with appropriate guideline and criteria for rational and transparent decision making process. MTMP becomes an authoritative document of the Municipality as well as district to negotiate possible grant and loan assistance from donor agencies. Proper planning and sustainability are the key issues for development of municipal transport network.

1.2 Objectives

The prime objective of this study is the preparation of Municipality Transport Master Plan (MTMP). The planning approach is participatory and bottom-up from the settlement level. It includes a constructive plan to incorporate all present and future transportation needs. The specific objectives of the MTMP covered during the study with reference to ToR are mentioned below:

1. Preparation of the Municipality Road Inventory Map (MIM) of all road networks
2. Identification of the major road networks linking the Municipality with the surrounding areas.

3. Preparation of Indicative Development Potential Map (IDPM)
4. Finalization of visionary city development plan if Comprehensive Town Development Plan is not prepared.
5. Collection of demands for new/rehabilitation transport linkages from Municipalities/settlements based on city development plan.
6. Analysis of the present mobility and accessibility situation.
7. Identification and prioritization of the interventions based on mobility and accessibility situation.
8. Development of scoring criteria and its approval from Municipality.
9. Preparation of Municipal Transport Perspective Plan for transport services and facilities.
10. Preparation of physical and financial implementation plan of prioritized roads for the MTMP period.
11. Preparation of five years Municipality Transport Master Plan.

1.3 Scope and Limitation of MTMP

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

a. Accessibility data Collection and Analysis.

The accessibility situation shall be evaluated from the settlement level and data shall be collected using a GPS. Various surveys may be carried out to gain such data including their travel patterns, questionnaire surveys and origin-destination survey.

b. Analyze Mobility status of the Municipality

The consultant will also conduct 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.

c. Access the condition of public transportation

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

d. Access safety status and issues

The consultant shall also access the road safety status and issues. For this, roadside condition survey during road inventory survey and other accident data will be reviewed. Possible interventions to make the roads safer will be proposed and recommended.

e. Prepare the Indicative Municipality Development Potential Map (IDPM)

The consultant shall prepare IDPM using topographical base maps and digitized GIS maps. In the IDPM, the consultant shall identify potential areas for development and prioritize through ranking. The consultant shall validate the IDPM from the MEC and Municipality.

f. Prepare Municipality Inventory Map (RMIM) of existing roads within Municipality.

The consultant will prepare 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.

g. Collection of demands for New/Upgrading/Rehabilitation transport Linkages from Wards/Settlements

The consultant shall collect data regarding the construction, maintenance or rehabilitation of roads according to the existing condition and demand. The consultant will also seek to collect these data through ward meeting or community level discussion. The demand data shall be collected in priority order for each ward. The roadside condition of all the linkages will be noted during the road inventory survey.

h. Scoring criteria

The consultant shall develop scoring criteria to screen and prioritize all interventions potential interventions for proper allocation of limited budget. Scoring and prioritization criteria shall be checked with all linkages and interventions and approved by the Municipality.

i. Road classification and Nomenclature

The consultant shall use metric system of nomenclature and apply the same classification throughout the data collection.

j. Preparation of perspective plan of interventions of services and facilities.

The data collected through accessibility survey, demand survey and inventory maps shall be used to prepare a perspective plan of interventions of services and facilities. All the identified interventions shall be screened and rated on the basis of approved criteria and forwarded to Municipal Executivemeetings. The final perspective plan shall be shown in GIS maps.

k. Prepare a realistic physical and Financial Implementation Plan of Prioritised Roads for the MTMP period

The consultant shall collect information on the resources that can be spent on the construction or rehabilitation of transportation infrastructures by the Municipality. The consultant may also carry out studies to project the resources to fund the transport infrastructures for the next five years. From the total projected resources, the consultant shall discuss with the Municipality to find out the appropriate proportion to be spent on ongoing roads and new interventions proposed. The projected resources should be able to cope with the total number of roads and new interventions proposed.

l. Prepare Municipal Transport Master Plan (MTMP) of Municipality The consultant shall prepare Municipal Transport Master Plan (MTMP) for Municipality with due consideration to the existing situation of: vehicular parking, travel routes, modes of transport, etc and propose for future rural urban growth. 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 and management plan based on the travel demand forecast, population growth forecast, and growth rate of vehicular and transport infrastructure.

m. Prepare framework for medium term and long-term planning

The consultant shall also forecast the demand for medium term (10 years) and long term (20 years) and recommend a framework to guide future interventions and planning processes. The long-term plan shall consider the proposed East-West Railway and other major transport like mid-hill highway, national highways, proviancial roads ect. sector interventions in the long term.

1.4 Organization of report

Chapter 1 presents the concept and context of MTMP and lists out the objectives, scope and limitations of the same.

Chapter 2 deals with the methodology adopted while data collection and data analysis process

Chapter 3 covers the existing situation ,scenario and basic profile of the Municipality , which

includes the socioeconomic and household characteristics with road services and facilities within the locality. It also covers how these factors are contributing in the development.

Chapter 4 deals with Indicative Development Potential of the Municipality.
Chapter 5 discusses about formulation of road hierarchy along with detail of various classes of roads.

Chapter 6 deals with Prioritization criteria and prioritized road network.

Chapter 7 is dedicated to the five year (short term) Municipal Transport Master Plan (MTMP). It gives the comprehensive strategic framework, perspective plan of the municipal roads, budget expenditure, financial institution, capital investment plan and the staging implementation plan.

Chapter 8 summarizes the report and gives necessary recommendations.

CHAPTER TWO: METHODOLOGY

Municipal roads are supposed to provide both access and mobility to all possible and potential areas. MTMP will prepare the plan of such roads to fulfill the stated objective. Better planning is incomplete without relevant quality data which can only be acquired by use of properly selected survey methods. This section gives the methodological framework adopted for data collection including survey methods conducted, sampling techniques, quality and quantity of data along with data processing, analysis and presentation methodology. Both primary and secondary data are collected based on participatory bottom-up approach.

2.1 General approach

The Consultant has gone through the objective and ToR for Consultancy Services for preparation of the Municipality Transport Master Plan (MTMP). The ToR was itself sufficient for the execution of the work.

Integrated Rural Accessibility Planning (IRAP) is an integrated approach to solving problems by combining transport as well as non-transport interventions. It is participatory and bottom-up approach. Active involvement of community people and local authorities in every step is essential. The consultant facilitated the community people and local authorities in their needs identification, project prioritization and visionary development planning process.

The accessibility is function of distance and traveling time, frequency of travel, transport infrastructure difficulty factor, physical facilities of Socially Oriented and Responsibility (SOR), and management of SOR provision and viability of service provision. The degree of accessibility problem was assessed in terms of accessibility index of the settlements to concerned SOR sector. Accessibility Indicator is measurement of accessibility.

The required interventions shall identified for improving accessibility of every settlements based on easing and reducing travel time, improving physical facilities for SOR and improving management of SOR provision in an integrated fashion.

2.2 Methodology

The methodology comprises with the Integrated Rural Accessibility Planning (IRAP) tools for the accessibility planning and DoLIDAR's Approach manual for the roads for the preparation of the MTMP with some modification as per Municipality situation and based on the ToR provided by the Municipality and as directed by the project in-charge of the client.

The Consultant's efforts were comprehensively streamlined to meet the objectives of the assignment by covering scope of services outlined in the prescribed Terms of Reference. The consultant has followed the following specific process to accomplish the assignment as specified in the objectives and scopes of work in the TOR.

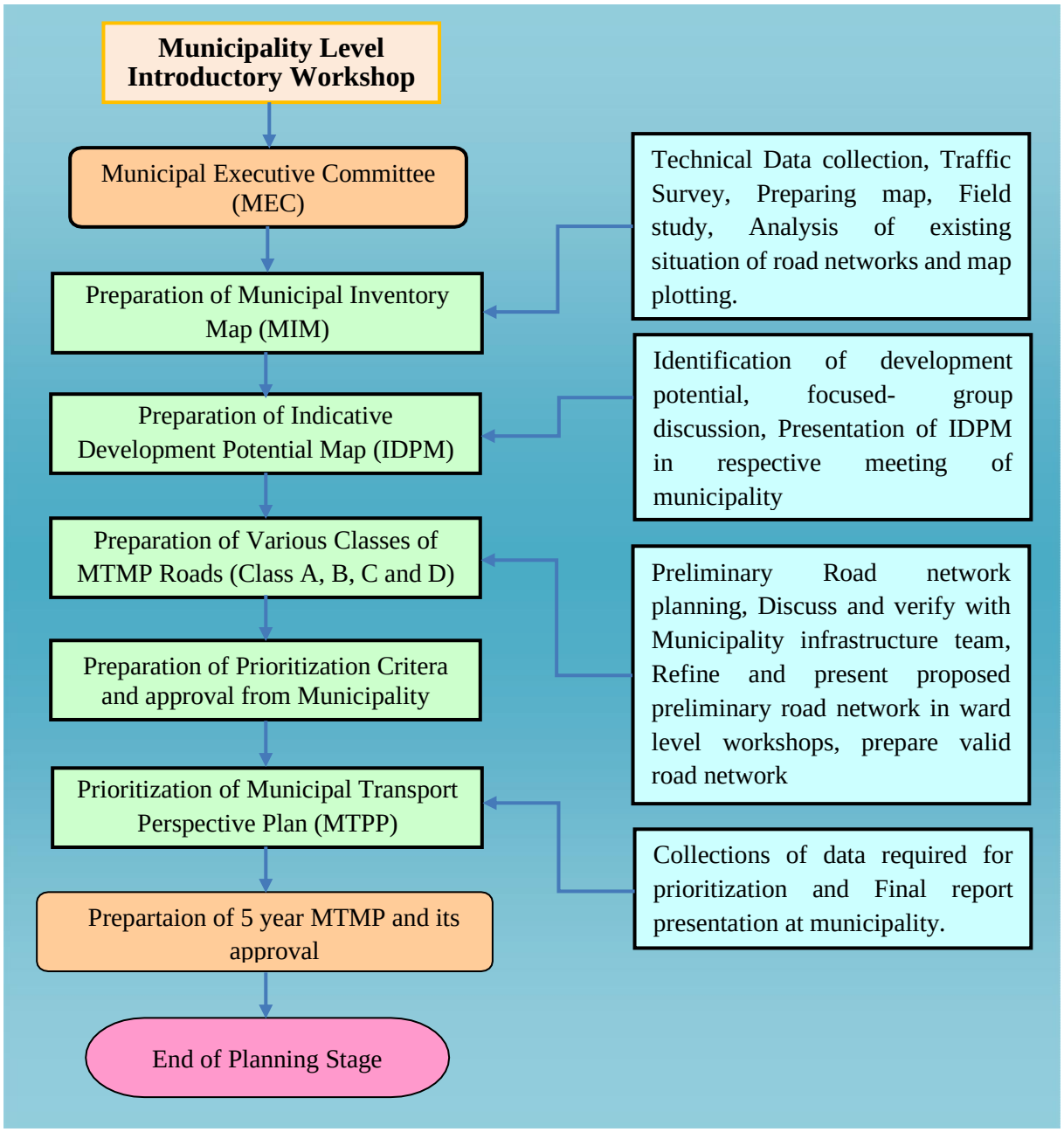

Figure 1.1 Methodological frameworks for planning MTMP

2.3 Desk Study

After signing the contract, the consultant has arranged a meeting of the proposed team and orient towards the objectives and scope of the work along with the working and manning schedules so that all the personnel will work as a team. The consultant has proposed a study team consisting of Transport Planner as a Team Leader, Socio-economist, who is competent and established professionals in their field of work. The study team was mobilized for further study

Task 1: Data Collection

a) Collection and Review of Secondary Information

The information about demographic data of Municipality, maps, service flow pattern, various maps showing service centers or the location of SOR facilities, transport infrastructure inventory, past plans and sectoral study reports, sectoral standards and policy targets were collected from the secondary sources like DoLIDAR, Municipality, line agencies of Municipality, central Bureau of Statistics, Kathmandu, Topographical Survey Branch, Local NGOs. The details are given below:

List of documents/information will be collected and reviewed

- Previous reports of MTMP prepared by the Municipalities (if any)
- MTMP of neighboring Municipality (if available).
- Municipality periodic plan prepared by the Municipality
- Annual reports /publications of line agencies of Municipality
- District/Municipality profile of the Municipality
- Traffic data of the Municipality rural roads and strategic roads (if available)
- Annual plan, Programmed and Budgetary allocations of last 5 years
- Expenditure in infrastructure development including roads in last 5 years
- Report on settlement pattern and market centers of the Municipality
- Rural road statistics of neighboring Municipalities and strategic road Networks
- Financial and technical data of on-going rural road projects in the Municipalities and schedule including bilateral and multilateral funded projects.
- Demographic Statistics and socio-economic feature of the Municipality
- Other relevant reports

Collection of Maps

- Topo maps the 1:25000 scales, which will be used as base map.
- Municipality administrative map of Municipality
- Arial photographs
- Municipality Trail Map
- Map of strategic road Networks of Nepal
- Other Thematic maps

The main agencies for sources of information are

- Municipality
- Line agencies/office of the district about road, Municipality Soil Conservation office, Forest, Agriculture Development, Livestock Service, Irrigation, Health,

Education, Water Supply and sanitation, cottage industries, Municipality Technical Office, Municipality Chamber of Commerce and Industries office etc.

- National or Municipality Research Organizations,
- Local and national NGO and INGO's working in development fields,
- District /Municipality Chamber of Commerce and Industries office
- National Bureau of Statistics.
- Department of survey
- Other relevant office

The secondary information collected from above mentioned sources has been critically reviewed. The data were verified by and Cross checking of information of various sources and discussion with informants and local community people at unofficial and official meetings, workshops on the process of primary data collection.

The consultant has reviewed the available existing MTMP and assesses the achievements during the last MTMP period.

b) Primary Data collection

The scope of applying IRAP has been defined based on TOR. The relevant SOR sectors have been identified as per purpose of study. Primary information was taken from concerned community people, and schoolteachers about real accessibility situation of settlements in special format developed for this purpose.

c) Municipality IRAP and MTMP Orientation

One-day orientation program has been carried out in the Municipality for the IRAP and MTMP preparation. The participants were Municipality body, ex-Municipality body, line agencies, stakeholders, and representatives of national political parties and representatives from women, Dalit, local NGO. The field visit of enumerators has been arranged to:

- Verify the secondary data in the field.

Collect data of access situation of every settlement in prescribed format

Task 2 Analysis of Data

The input data has been properly stored in the Excel sheets and used as per necessity and requirements. Microsoft Excel and GIS software were used to analyze and manage the data. The analysis rendered the available data into valuable information. Data analysis involved calculation of different attributes for different clusters and for the project area. It includes basis analysis of average values such as average time to nearest bus stop, access to nearest all-weather road, percentage of respondents using specific type of vehicle for daily commute, etc., forecasting the population and demand for transport infrastructures and furniture developing land use and transport models

Task 3 Formulation of Municipal Roads Coordination Committee

The consultants assisted the Municipality in the formulation of the Municipal Executive Committee (MEC). The committee is to provide support to the Municipality in formulating, managing and monitoring Municipality road, transport infrastructure policies, rules and regulations.

Task 4 Indicative Development Potential Map (IDPM) preparation

The development potential of the Municipality in agriculture, horticulture, livestock, cottage and small industries, other potentiality of the Municipality has been compiled and prepared on the base map 1:25000 scale.

a) Municipality base map has been prepared showing:

- Administrative/political boundaries of Municipality /Ward.
- Large settlement
- National strategic roads, Municipality roads, rural roads, trails, bridges.
- Important historical, cultural, religious and preserved places
- Important water bodies, forest and other lands.

b) The Consultant has analyzed the potentiality of the Municipality from secondary information collected from Municipality line agencies. The development potential area has been defined as:

- Areas with extensive agriculture,
- Areas with extensive horticulture,
- Areas with extensive Livestock farming,
- Areas with extensive fisheries,
- Areas with extensive high value cash crops,
- Areas with extensive business markets,
- Potential Areas with tourism development,
- Potential Areas with development of large industries like hydropower, mining develop,
- Potential service centre
- And other potential development areas

c) Plotting of the development potential areas on the Municipality base map has been done and the finalized map was prepared on GIS.

Task 5 Preparation of MIM

The consultant has plot the trail, bridge and road network of the Municipality in 1:25000 and GIS maps from Municipality level secondary sources. The consultant then carry out reconnaissance survey in the trails, bridges and roads with the help of checklist and update the

map. The consultant has also prepared indicative cost estimates of improvements (Routine maintenance, recurrent maintenance & upgrading) and new construction of representative trails, bridges and road in the Municipality. The consultant has prepared a support document of MIM and validates the MIM and the document in MEC.MIM has been prepared with reference to Annex (Reference to Annex 3). The economic data was collect by conducting PRA.

The consultant has prepared list of all existing transport linkage under the category of routing maintenance, recurrent maintenance, periodic maintenance and upgrading. These lists have been prepared separately for various classes of roads. The consultant then prepared indicative cost estimate for improvement.

On the basis of linkage inventory and condition of the linkage, easy linkage has been subdivided into maximum four types of section i.e.

- Section requiring routine maintenance
- Section requiring periodic maintenance
- Section requiring rehabilitation
- Unordered section (new construction)

All roads have been plotted under separate legends category by intervention type in MIM. List of roads having graveled road streetcars has been prepared separately. Information regarding inter Municipality road/trails also be included and used drawing planning process.

Task 6 Perspective Plan

The required of interventions of services and facilities has been identified from the accessibility analysis and compilation of ward level workshops. During the final Municipality level workshop, the Municipality standard of time and quality accessibility for every service and facilities has been decided. The required intervention of every services and facilities has been identified and finalized on workshop on the basis of accessibility indicator. The Prioritized sector of services and prioritization of wards for every sector was done at Municipality level based on AI.

In transportation sector, list of roads, bridges and required interventions for respective roads and bridges has been identified to improve accessibility to goods and services within the Municipality. The perspective plan of Municipality road has been prepared for 20-25 years. All the identified interventions screened and graded on the basis of criteria 'B' of the approach manual. The interventions of services and facilities for the improvement of the access situation was discussed first with the Municipality technical team and the MEC, and only upon their recommendation it was forwarded to Municipal Executive meetings, hence the final perspective plan of Municipality roads has been developed. The perspective plan has been shown in GIS maps also.

Task 7 MTMP Preparation

Considering the Perspective Plan, the prioritization of the Perspective Plan has been done according to the DoLIDAR Approach Manual. Subsequently, the updated five year MTMP of the Municipality was prepared by selecting interventions (maintenance, upgrading and new construction of main trails, trail bridges and roads) that have top priority in the Perspective Plan and that could be implemented in the next five years period, based on cost estimates of maintenance, upgrading, rehabilitation and new construction of main trails, trail bridges and roads and available financial resources.

2.4 Process and Activities in detail

The Consultant has listed out all transport linkages given in the Perspective Plan, under the following categories;

a. New construction
b. Upgrading
c. Rehabilitation
d. Recurrent maintenance
e. Periodic maintenance

- These lists have been prepared separately for various classes (Municipality Road, Village Road, Main Trial, and Village Trial).
- On the basis of Criteria (for prioritization), the consultant has ranked all the above projects
- The financial resources of Municipality on road sector has been analyzed first
- The Consultant has prepared next Five Year's Projected Financial Plan by accounting all possible financial resources of Municipality and concerned wards and WARDs.
- The consultant has prepared Five Year Financial Plan of the Municipality based on likely availability of financial resources in next five year. (All consolidated financial resource has been projected based on the past 3- 5 yeas data.
- The Consultant will determine the tentative lengths that could be under taken by each year, in each category and under each class. These lengths shall be documented and presented.
- The Consultant has prepared all ranked lists of transport linkages to the Municipality development Committee for the selection of year - wise priority lists which should be implemented in the first, second and fifth year.
- All ranked lists of transport linkages; the Consultant has selected the year-wise priority lists to be included in the "Five Year Master Plan".
- Based on the approved year-wise priority lists, the Consultant has prepared Five Year Municipal Road Master Plan.

- Synchronizing of the Draft Perspective Plans with adjoining Municipality was done
- The Final Report of MTMP was presented on Municipality and MEC in a workshop. Incorporating the suggestions and recommendations from the Municipality and MEC, the final report has been prepared. Subsequently, the Municipality will present the final MTMP report to the Municipal Executivefor formal approval

2.5 Organization of Workshop

Following workshop was organized

1) Municipality IRAP and MTMP Orientation

   One day orientation program was carried out in the Municipality for the IRAP and MTMP preparation. The participants were Municipality body, ex- Municipality body, line agencies, stakeholders, representatives of national political parties and representatives from women, Dalit, local NGO.

2) IRAP Data collection training

   One day orientation training for enumerators was organized for them about efficient data collection using IRAP tools at the consultant's office.

3) Ward/ WARD/cluster level workshop

   The consultant has organized ward/ cluster level workshop in each ward in which ward secretaries, representatives of political parties, women, NGO's, disadvantaged peoples representations, davits, traders, industries were presented. The workshop primarily focused on following aspects.

   - Access situation within the area
   - Validation of accessibility data
   - Identification of interventions of every services and facilities.
   - Access situation within the area
   - Assess the local prioritization

4) Final workshop at Municipality level

The final validation workshop at Municipality level will be organized at Municipality.The workshop will primarily focus on following aspects:

- Verification and update of secondary information and data's
- Finalizing IDPM, MIM, Accessibility profiles.
- Standardize accessibility indicator.
- Finalization of intervention required and prioritized at Municipality level.
- Identifying new viable transportation linkages and standard.

- Problem identification in the rural transport linkage and required intervention on this.
- Identifying required intervention (i.e. routine maintenance, periodic maintenance, rehabilitation and upgrading length) for each transportation linkages and bridges.
- Responsibility of ward and Municipality regarding maintenance, rehabilitation and upgrading works.
- Financial recourse mobilization for the achievement of the set target.

CHAPTER THREE: REVIEW OF EXISTING SOCIO-ECONOMIC & 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.

3.1 Background

According to new administrative structure of Government of Nepal, Bansgadhi Municipality is situated in Bardiya district in Lumbini Province. Bansgadhi municipality lies within a co-ordinate from (81046'18.21", 28024'20.54") and (81024'35.66", 28012'33.06"). It is located 25 km Northern wests from Bardiya headquarter Gulariya. Bansgadhi municipality has an area of 206 Sq. km. The boundary of the Bansgadhi has been delineated as Banke district at east, Barbardiya municipality at west, Bardiya National park at north and Badaiya Lake at south. Bansgadhi municipality was initially formed in 2014 December by merging 3 WARDs including Sawikal Belwa, Motipur and Daudadakala. When the state-restructuring was made in 2017, the previous boundary and area maintained same as previous. It consists of 9 wards.

3.2 Demographic Status:

According to the Bansgadhi Municipality profile 2017, the total household size is 13272. The total population of the municipality is 63287 where 30405 (48.04%) are male and 32882 (51.96%) are female. People from diverse ethnic and religious groups live together with harmony in the municipality. The average household size of the municipality is 4.8. The ward no. 8 is the largest in terms of household (i.e. 1821 HHs), but ward no 9 have largest population size i.e. 8654. While as the smallest, ward no. 1 have only 502 HHs which have also the lowest population size, i.e. 2461in total.

3.3 Physical Status:

The majority of total land area in Bansgadhi is covered by forest (i.e. 49.85%). 41.04% of land is occupied by cultivation, 7.75% is occupied by barren land. The remaining 1.35% of land is covered by grassland, orchard, tree cluster, river, pond area, sand area and built-up. Most of the roads in the municipality are gravel roads, two roads are black topped and others are earthen roads. Width of the road in the municipality ranges from 2m to 14m and the width of highway is 30m. The municipality also has the facility of postal services. There are 3 postal service offices in the municipality. In terms of telecommunication, GSM (Nepal Telecom), CDMA and NCELL are widely used in the municipality. Only 4 wards (3, 5, 8 and 9) have solid waste collection facility. The municipality comprise with 96.1% toilet facility including both Simple pit and RCC toilet in household level.

3.4 Social Status:

It represents the colorful social structure of caste and ethnicity, including Brahmin, Chhetri, Dalit, Janajati and mixed type. The majority (39.31%) of the people are Madhesi Janajati. Similarly, Hilly (34.22%) are Brahmin/Chhetri/Thakuri & Sanyasi, (12.85%) are hilly Dalit, (10.10%) are hilly Janajati and (3.51%) are Muslim and others. Furthermore, the majority of people (96.86%) follows Hindu religion whereas (1.73%) follow Christian, (1.23%) follow Muslim and remaining 0.18% follow Buddhist religion. In terms of educational status 88.02% of the population is literate whereas remaining 11.98% are illiterate. There are 21 farmer's group, 6 mother's group, 10 youth clubs and 7 social groups. There are altogether 57 schools out of which two of them are providing technical subjects and 1 is providing inclusive education for blind students. And there are 2 campus providing higher education.ie, Bachelor in management faculty. There are altogether 3 health posts in ward no 3, 5 and 7, 2 urban health post and 1 community health post. The municipality consist of 1 permanent and 3 temporary police station.

3.5 Economic:

The major market center of the municipality is Babai Chepang Market, Puspanagar Market, Lakhana Market, Gaudi Market, Bansgadhi Market, Laxman Saptahik Market, MachaGadh Market. In addition, on Sunday and Friday there is the conduction of *Haat Bazar* in Mahadev Saptahik Market, ward no. 3 and in Laxman Market, Kakaura Market, ward no.8. The majority of the people (31016) are engaged in Agriculture and animal husbandry. Similarly, 4698 populations are engaged in Foreign employment, 3729 in labor work, 1042 in business and 1019 in service sector. Rice mill, furniture, chowmein and grill are major industries. The major crops produced in this municipality are paddy, wheat, mustard and Red lintels. Fish farming, Poultry farm, cow farming, pig farming, buffalo farming is the growing business in Bansgadhi municipality.

3.6 Environmental:

The altitude of Bansgadhi municipality ranges from 146 to 1355 m from mean sea level. The municipality comprise of Tropical (89% of area) and Subtropical (2% of area) zone. The municipality covers northern slope Chure Range and Terai in southern. With regard to the slop, 89% of the area is gentle, 10% of area is moderate and remaining 1% is steep. There are 40 community forests in the municipality and it covers 2885 Hectors. The municipality consists of 12 lakes. Babai River, Dunduwa River and Gyang River are the rivers that flow through Bansbari municipality. To monitor the activities and protect the forest there are 3 *Ilika* forest office. The average annual rainfall rain 1130 mm. The maximum temperature of this municipal rise up to 43ºC and the temperature falls up to 7.5 ºC. The annual average maximum wind speed is 1.39 m/s and the minimum is 1.20m/s. similarly, the annual average precipitation ranges from 1321 mm to 1845mm.

3.7 Financial Status:

In Bansgadhi, there are 25 cooperatives, 2 microfinances, 3 money transfers, 11 bank and there are other small financial institutions listed during the intuitional survey. The total budget expenditure of the municipality is Rs.565628000. The total current year estimated expenditure

of the municipality is Rs.267700000. Similarly, the capital expenditure is Rs.297928000. The total revenue collected for the municipality is Rs.303111000. The total budget allocated for the municipality by the government of Nepal in fiscal year 2018-2019 is Rs.157654000. And the estimated revenue from internal tax is Rs.145457000. As the revenue of the municipality is lesser than the expenditure, the municipality has budget deficit.

3.8 Institutional organizational structure:

After the federalization, the local government operation Act, 2017 was introduced which provides the legal framework for local government to operate. Bansgadhi municipality is operating as per the duties, function and responsibilities as provided by the Act.

3.9 Demographic Analysis

There was no municipal growth rate being a newly formed municipality. As per the household survey 2017, an integrated form of ward-specific population and households is further updated with recent database system on the basis of exponential population growth rate of Bardiya district, i.e. 2.21%. Following the same progression rate, the existing population in the municipality in 2018 is **64686**, while this is projected to be **72156** in 2023, **80490** in 2028 and **89786** in 2033. Further, the projected population of the municipality is shown in the table below:

Table 2: Population Projection of Bansgadhi Municipality

Ward	*HHs (2017)*	*Population (2017)*			*Existing & Projected Population (@2.21%)*			
		Total	*Male*	*Female*	*2018*	*2023*	*2028*	*2033*
1	*502*	*2461*	*1137*	*1324*	*2515*	*2806*	*3130*	*3491*
2	*1499*	*6940*	*3366*	*3574*	*7093*	*7913*	*8826*	*9846*
3	*1806*	*8490*	*4123*	*4367*	*8678*	*9680*	*10798*	*12045*
4	*1685*	*8468*	*4154*	*4314*	*8655*	*9655*	*10770*	*12014*
5	*1756*	*7213*	*3439*	*3774*	*7372*	*8224*	*9174*	*10233*
6	*1538*	*8102*	*3983*	*4119*	*8281*	*9237*	*10304*	*11494*
7	*990*	*4945*	*2393*	*2552*	*5054*	*5638*	*6289*	*7016*
8	*1821*	*8014*	*3691*	*4323*	*8191*	*9137*	*10192*	*11370*
9	*1675*	*8654*	*4119*	*4535*	*8845*	*9867*	*11006*	*12278*
Total	***13272***	***63287***	***30405***	***32882***	***64686***	***72156***	***80490***	***89786***

(Source: CBS, 2011; MoFALD, 2017)

The increasing growth rate of the municipality is the result of increasing infrastructures like education, health, etc. Ward 9 of the municipality has the highest number of population which is the result of increasing road and other infrastructure. Such

3.10 Existing Land Use

The majority of total land area in Bansgadhi is covered by forest (i.e. 49.85%). 41.04% of land is occupied by cultivation, 7.75% is occupied by barren land. The remaining 1.35% of land is covered by grassland, orchard, tree cluster, river, pond area, sand area and built-up. Further, it is presented below:

Table 3: Land cover of Bansgadhi municipality

S.N.	Land cover	Area (km²)	Percentage (%)
1	Barren land	15.96	7.75
2	Cultivation	84.46	41.04
3	Forest	102.58	49.85
3	Grassland	0.18	0.09
4	Orchard	0.01	0.00
5	Pond Area	0.25	0.12
6	River	1.63	0.79
7	Sand Area	0.71	0.34
8	Tree Cluster	0.02	0.01
	Total	**205.80**	100

Source: GIS Land Cover, 2018

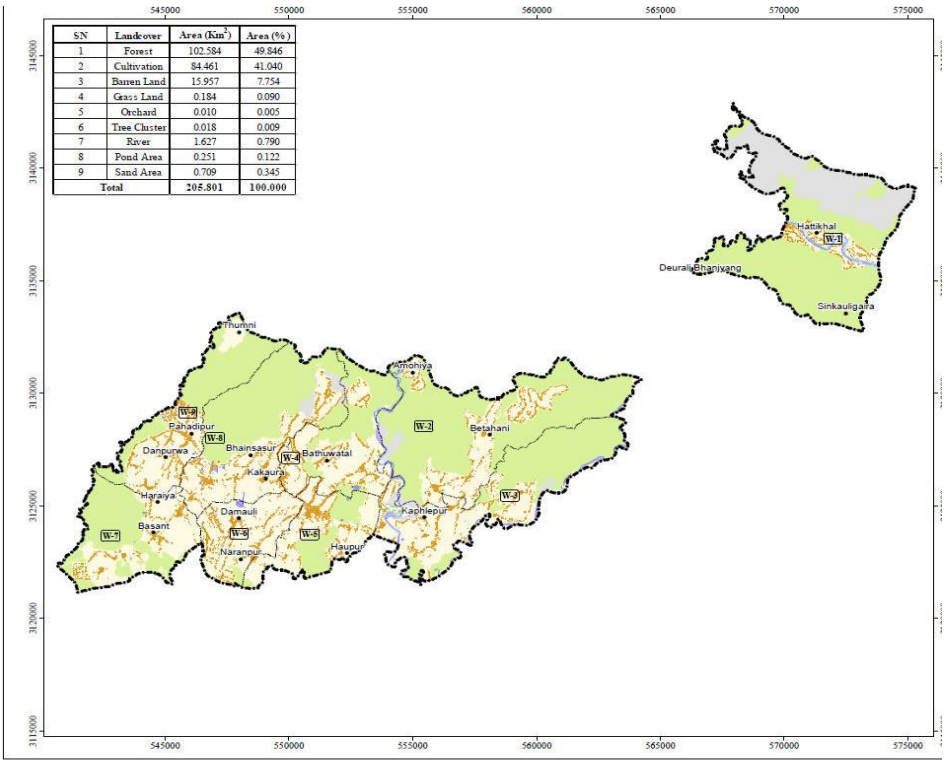

Figure 3.1 : Land Use Map of Bansgadhi Municipality

3.11 Housing

Being at Terai, the municipality is facilitated with Highway and other urban roads. Settlements are developed around the periphery of roads. In some inner areas like Betahani, Damauli and Basant there are haphazard development of housing. Concentration of buildings are seen around market centers i.e Macha Gadh, Kakaura, Bansgadhi, Lakhana, Mahadeva and Babai Market. Except Mahadeva, other market centers are developed around the main highway. Linear pattern of development of housing is seen in inner urban roads. Housing or settlement pattern is increased in the municipality in comparison to early years.

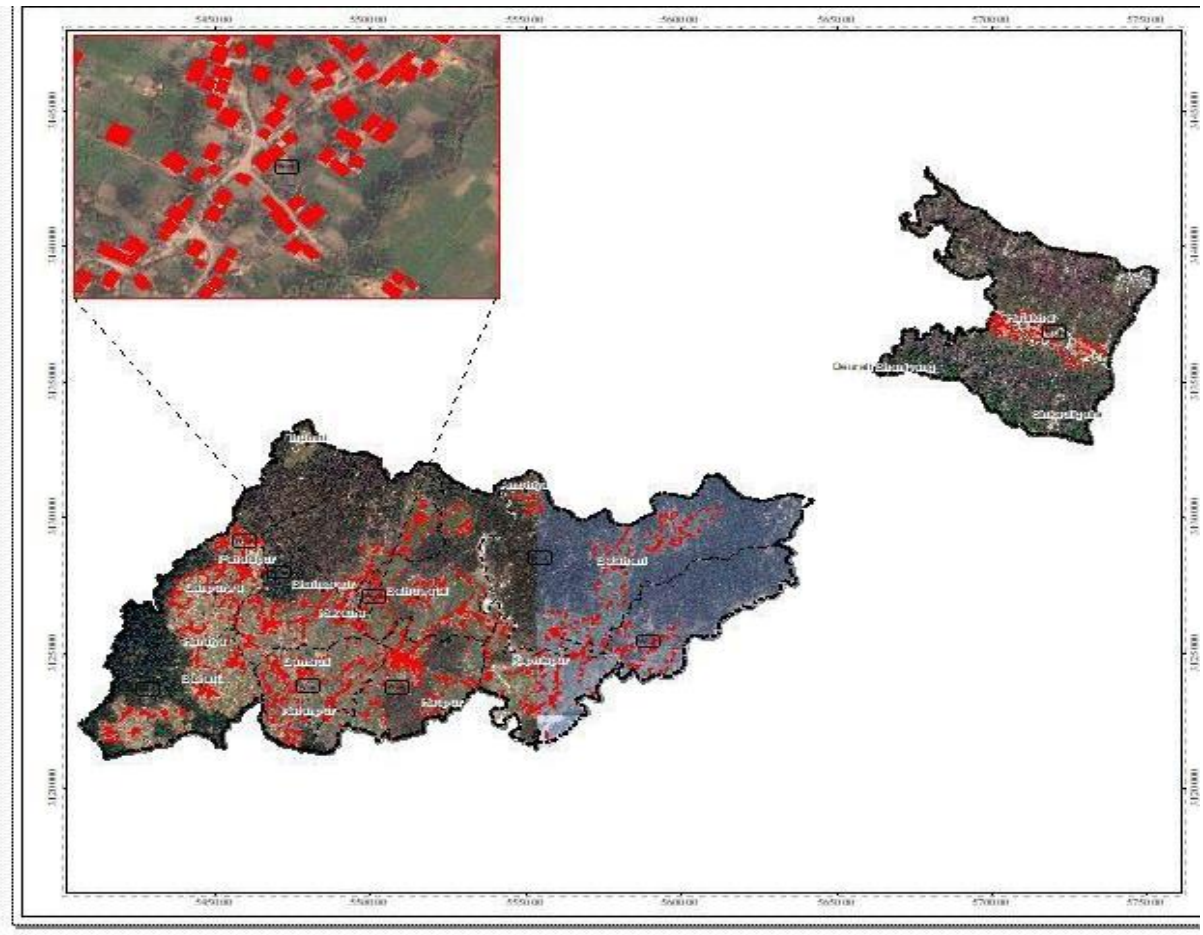

Figure 3.2 : Settlement pattern in Bansgadhi Municipality

3.12 Existing Urban Structure

Mixed pattern of settlement is seen along the main highway of the municipality. Market area is the major area for mixed development i.e. at Basant, Bansgadhi and Kakaura. Commercial complex, banks, schools, health post and government institution are located in the market area. Apart from market areas, other parts of the municipality are residential like Danpurwa, Haraiya, Naranpur, Kaphlepur and Hattikhal. Availability of roads help for the easy accessibility. Urban roads are developed along almost every settlement. The regional linkage between Kathmandu. Banke and Surkhet is seen in the municipality for the exchange of goods and products.

3.13 Road Network

The transportation system of any municipality of Nepal is largely dependent upon the road network. In order to set the priority for maintenance and upgrading of the transportation network, the municipality must classify the road sections depending upon different criteria. One major criteria for the classification of the road would be the number people, who are being served by the road daily and directly. The people living adjacent to the road use the road most, in their daily life. Geographic information system can be used to compute the number of persons directly and daily using that particular road.

Road networks within a municipality are designed and constructed to connect the settlements, the market places and infrastructures within the municipality to serve the overall population. The analysis is based on that population served by minor roads finally incorporate by its connected major road for the daily movement of peoples and goods. The number of population is delineated as thickness of the road on the map. Increase in thickness of the road width indicates higher number of people being served by that road. From the analysis, it is found that highway, feeder road, district road and Class-A roads are highly population served roads. Similarly, Class-B and Class-C roads are less no. of population serving roads.

By buffering the centerline of the road, counting the number of households lying within the buffer area and multiplying the number of house hold by population rate per house hold, the number of people being directly served by the road can be computed. After computing the number of population served by each road, the roads can be classified and delineated in the map. For Bansgadhi Municipality, the result is shown below:

Table 13: Road classification on the basis of population service

Name	Road Class	Road Length (Km)	Household Nos.	Population Served
Pahadpur-Belawa	Highway	14.083	6820	33964
Motipur-Basgadi	Feeder Road	4.422	2192	10916
Gauripaira-Resampur	District Road	8.423	2403	11967
Lakhana-Ghaireni	District Road	11.812	2983	14855
Bangaudi-Naranpur	District Road	5.763	3418	17022
Uttar Bhaka Road	District Road	2.387	788	3924
Ratna Rajmarga-Salyan Border	A	4.897	1126	5607
Belawa-Banmudawa-Amohiya	A	5.353	446	2221
Laxmana- Amohiya	A	8.124	810	4034
Jaljala- Ghaireni	A	3.538	203	1011
Betahani- Jaljali	A	3.538	384	1912
Lok Rajmarga-Belawa-Lakshamanapur-Shantipur-Banmudawa	A	3.688	858	4273

Name	Road Class	Road Length (Km)	Household Nos.	Population Served
Belawa-Mahadeva	A	3.07	650	3237
Uttar bhakari-Madaha-Newada-Shankhariya-Matariya-Bathuwa	A	5.866	1360	6773
Milanchok-Bathuwa-Asneri	A	2.037	317	1579
Uttar Bhakari-Chamakpur Ring Road	A	5.313	510	2540
Kakaura-Riharpur-Dangpur-Koldada-Asneri	A	6.344	1190	5926
Shankhariya-Raji Tole-Dangpur	A	1.775	544	2709
Haupur-Lok Rajmarga	A	1.749	161	802
Motipur-Laxmana	A	7.894	1402	6982
Sattariya-Damauli	A	2.305	715	3561
Damauli-Amiliya-Kakaura	A	3.976	914	4552
Badki Deuda-Dangpur-Damauli	A	3.564	308	1534
Sadhapurba-Badhaiyatal	A	1.325	127	632
Bangaudi-Jhanaiya-Bhaisasur-Dangpur Ring Road	A	1.978	918	4572
Machhagadh-Thumani	A	8.763	753	3750
Machhagadh-Toraiya	A	2.015	177	881
Ratna Rajmarga-Babai Khola Bajar-Khote Khola-Salyan Border	B	4.715	569	2834
Mahadeva-Rajha	B	4.296	261	1300
Mahadeva-Dakhin	B	2.108	146	727
Banbagiya-Manikapur-Bathuwa	B	4.374	390	1942
Radhakrishna Chok-Dangpur- Link Road	B	3.211	230	1145
Laxmana School-Madaha Road	B	2.549	949	4726
Newada-Motipur	B	2.184	244	1215
Bansgadhi-Laksmanpur	B	2.016	949	4726
Milanchok-Jharpur-Bathuwa	B	1.546	244	1215
Shankhariya-Pipaltari	B	0.475	173	862
Kakura- Rampur	B	2.102	936	4661
Basgadhi-Hasnapur	B	4.406	260	1295
Narayanpur-Soltitol-Dangpur	B	2.512	101	503

Name	Road Class	Road Length (Km)	Household Nos.	Population Served
Tower Chok-10 no. Tole	B	2.843	239	1190
Lakshamana-Damauli	B	1.86	314	1564
Purano Basti-Laxmana	B	1.785	130	647
Basanta-Kalabanjar	B	2.357	228	1135
Haraiya-Khayarbutta	B	1.967	387	1927
Kunaithi-Haraiya	B	1.544	364	1813
Bangaudi- Bhaisasur	B	4.68	772	3845
Bhaisasur- Danpur	B	1.807	282	1404
Belauli-Purbi Tole-Koldada	B	1.406	239	1190
Resampur-Purnahiras Ma. V.	B	1.268	340	1693
Chisapani-Kunaithi-Toraiya Ring Road	B	6.382	1125	5603
Reshampur-Pahadipur	B	3.761	1020	5080
Thumni Gaun-Ring Road	B	3.01	45	224

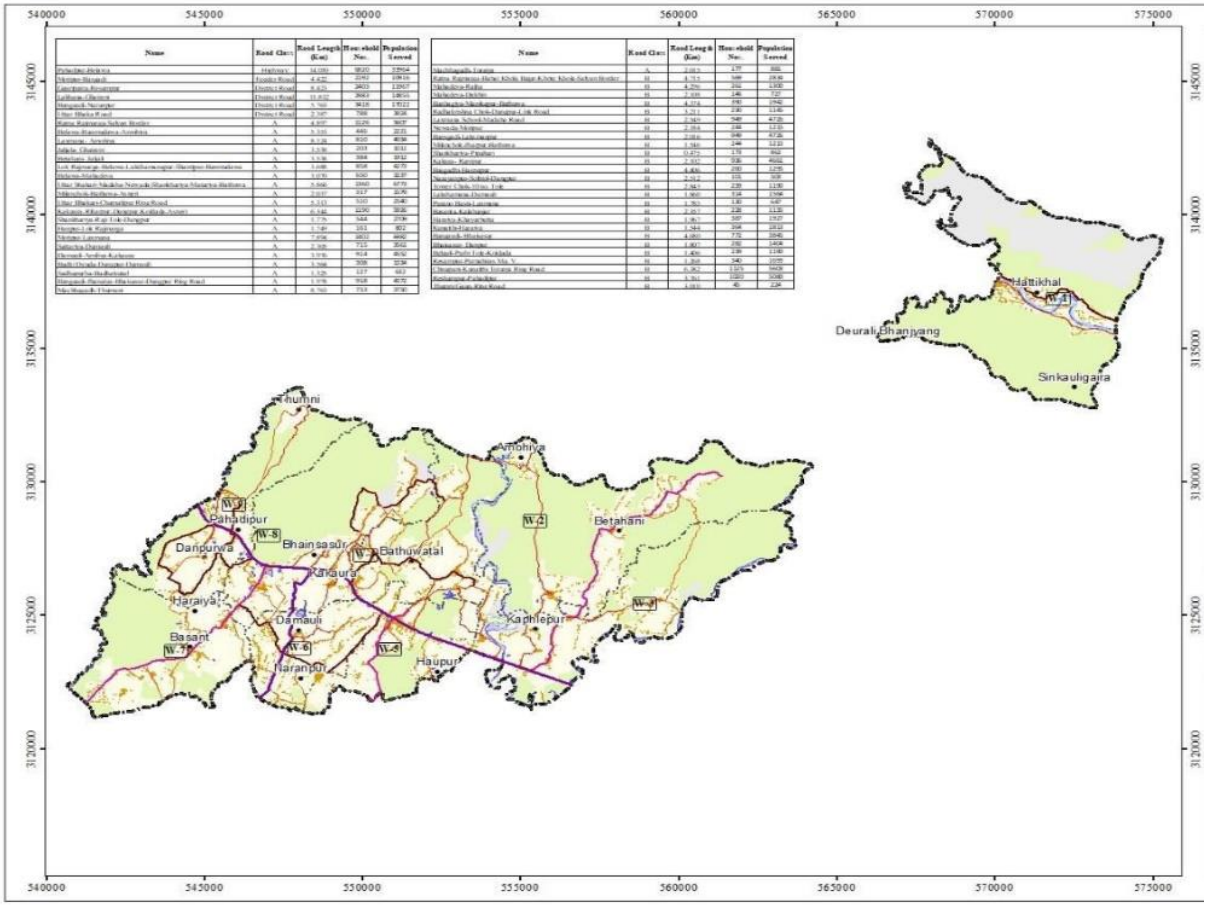

Figure 3.3 : Population served by Road Network

3.14 Market Center Connectivity

Connectivity refers to the directness of links and the density of connections in road network. As connectivity increases, travel distances decrease and route options increase, allowing more direct travel between destinations, creating a more accessible and resilient system. They reduce daily miles of vehicular travel per household and improve emergency response times. Connectivity can apply both internally (streets within a particular area) and externally (connections with arterials and other neighborhoods) (Connectivity Standards).

For this "Integrated Urban Development Plan", the spatial locations of existing market centers are identified within the municipality and overlaid with municipal road network. So the market center connectivity analysis indicates the current linkage of market center through existing road network within the municipality for daily travel and/ or trading. The analysis also concludes for allocation of potential new location of market center as per clustering of settlement and road network.

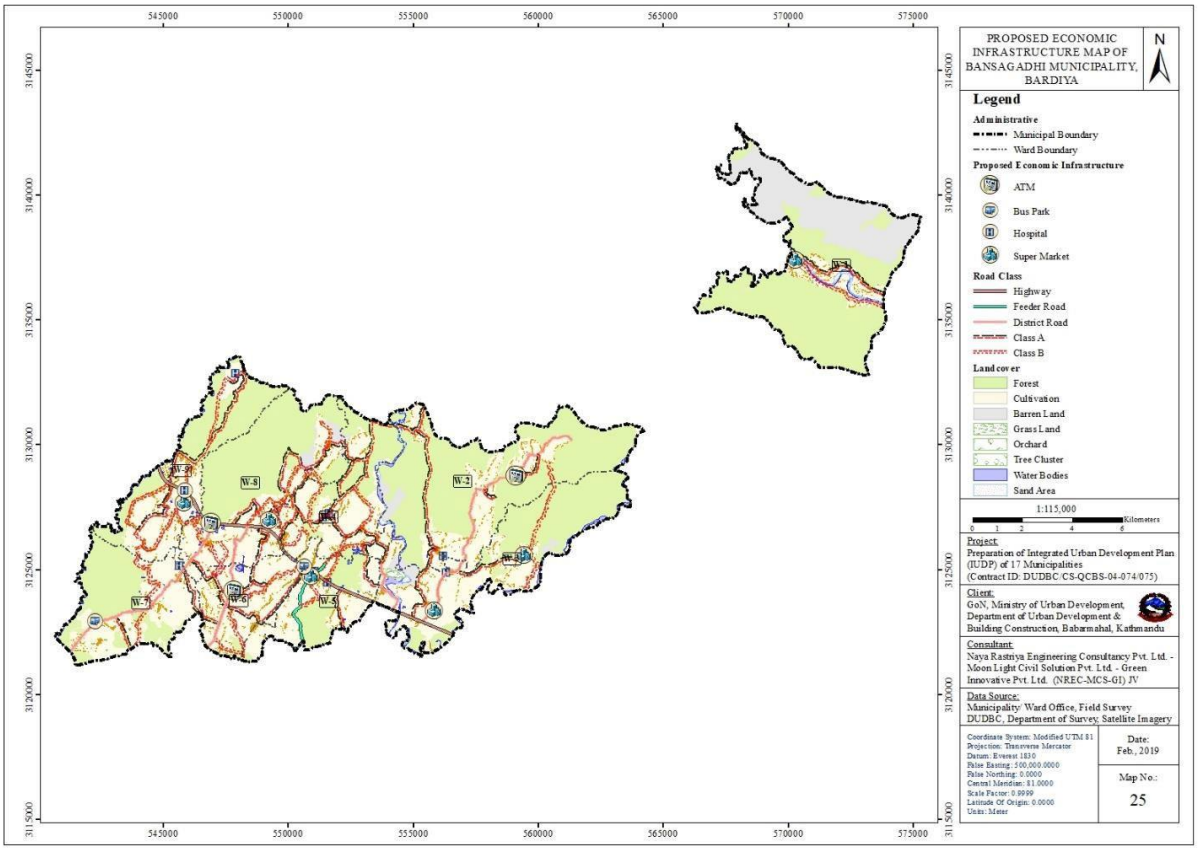

Figure 3.4: Shown Proposed Economic Infrastructure

3.15 Urban Transport Plan

In flat roads like Bansgadhi, they are associated with easy ground access and availability of related infrastructures. The design measures should include designing of off-site drainage, erosion protection measures and identification of best locally available materials.

Objective:

- Maintain and promote connectivity with each settlement of Bansgadhi with major road of 14m (ROW).
- Promote regional linkage for trade and commerce,
- Encouraging public transportation within the city.

Strategy:

Easy linkage of Bansgadhi with nearby districts like Banke and Surkhet, etc. with proper provision of pedestrian's pathways

3.16 Road Classification with ROW

According to the population served, market area and the settlements, new roads are proposed. Also from the sectoral discussion and views from the villagers, these roads are classified. These roads are classified for the easy accessibility of the people and goods. The classification of roads is:

- Feeder road (30m)
- District road (22m)
- Arterial Road (14m)
- Sub Arterial Road (10m)
- Collector Road (6m)
- Foot trail

The following table shows the proposed roads and its classification,

Table 32: Proposed road class in Bansgadhi municipality

S.N	Road Joining Settlements	Road Length (Km)	Existing Width (m)	Proposed Road Class	Proposed Road Width (m)
1	Pahadpur – Belawa	14.083	8	Highway	50
2	Motipur – Bansgadhi	4.422	6	Feeder Road	30
3	Gauripaira – Resampur	8.423	6	District Road	22
4	Bangaudi – Naranpur	5.763	4	District Road	22
5	Uttar Bhaka Road	2.387	4	District Road	22
6	Lakhana – Ghaireni	11.812	6	District Road	22
7	Ratna Rajmarga – Salyan Border	4.897	8	A	14
8	Lakhna – Rajha	10.493	8	A	14
9	Belawa – Banmudawa – Amohiya	5.353	8	A	14
10	Laxmana – Amohiya	8.124	8	A	14
11	Betahani – Pipal Chautara – Bijaura	2.880	8	A	14
12	Betahani – Pipalchautara – Rajha	3.538	8	A	14

S.N	Road Joining Settlements	Road Length (Km)	Existing Width (m)	Proposed Road Class	Proposed Road Width (m)
13	Lok Rajmarga – Lakshamanpur – Banmudawa	3.688	7	A	14
14	Belawa – Mahadeva	3.070	8	A	14
15	Uttar Bhakari – Madaha – Matariya – Bathuwa	5.866	10	A	14
16	Milanchowk – Bathuwa – Asneri	2.037	8	A	14
17	Uttar Bhakari – Chamakpur Ring Road	5.313	14	A	14
18	Kakaura – Riharpur – Dangpur – Koldanda – Asneri	6.344	8	A	14
19	Shankhariya – Raji Tole -Dangpur	1.775	8	A	14
20	Haupur – Lok Rajmarga	1.749	8	A	14
21	Motipur – Laxmana	7.894	8	A	14
22	Sattariya – Damauli	2.305	12	A	14
23	Damauli – Amiliya – Kakaura	3.976	12	A	14
24	Badki Deuda – Dangpur – Damauli	3.564	10	A	14
25	Sadhapurba – Badhaiyatal	1.325	8	A	14
26	Bangaudi – Bhaisasur – Dangpur Ring Road	1.978	8	A	14
27	Machhagadh – Thumani	8.763	12	A	14
28	Machhagadh – Toraiya	2.015	10	A	14
29	Ratna Rajmarga – Babai Bajar – Salyan Border	4.715	6	B	10
30	Mahadeva – Rajha	4.296	7	B	10
31	Mahadeva - Dakhin	2.108	7	B	10
32	Banbagiya – Manikapur – Bathuwa	4.374	6	B	10
33	Radhakrishna Chowk – Dangpur – Link road	3.211	8	B	10
34	Laxmana School – Madaha Road	2.549	8	B	10
35	Newada – Motipur	2.184	6	B	10
36	Bansgadhi – Lakshmanpur	2.016	6	B	10
37	Milanchowk – Jharpur – Bathuwa	1.546	6	B	10
38	Shankhariya – Pipaltari	0.475	8	B	10

S.N	Road Joining Settlements	Road Length (Km)	Existing Width (m)	Proposed Road Class	Proposed Road Width (m)
39	SOS – Rampur – Barabigaha – Hasnapur	2.102	6	B	10
40	SOS – Rampur – Barabigaha – Hasnapur	4.406	6	B	10
41	Narayanpur – Soltitol – Dangpur	2.512	8	B	10
42	Tower chowk – 10 no. Tole	2.843	8	B	10
43	Lakshamana – Damauli	1.860	8	B	10
44	Purano Basti – Laxmana	1.785	6	B	10
45	Basanta – Kalabanjar	2.357	8	B	10
46	Haraiya – Khayarbutta	1.967	8	B	10
47	Kunaithi – Haraiya	1.544	8	B	10
48	Narayanpur – Soltitole – Dangpur	4.680	8	B	10
49	Narayanpur – Soltitole – Dangpur	1.807	8	B	10
50	Belauli – Purbi Tole – Koldada	1.406	8	B	10
51	Resampur – Purnahiras Ma. V	1.268	8	B	10
52	Chisapani – Kunaithi – Toraiya Ring Road	6.382	8	B	10
53	Reshampur – Pahadipur	3.761	8	B	10
54	Thumni Gaun – Ring Road	3.010	8	B	10

Source: field visit and municipality

3.17 Road Network

Strategic Road Network

Bansgadhi municipality lying in Terai area has connection with highway, feeder road and district road along with the overall road network of Nepal. East – West Highway is connected through the municipality. Feeder road and district road is connected towards North and South direction. The map below shows the strategic road network of Bansgadhi municipality connecting national highways and other roads.

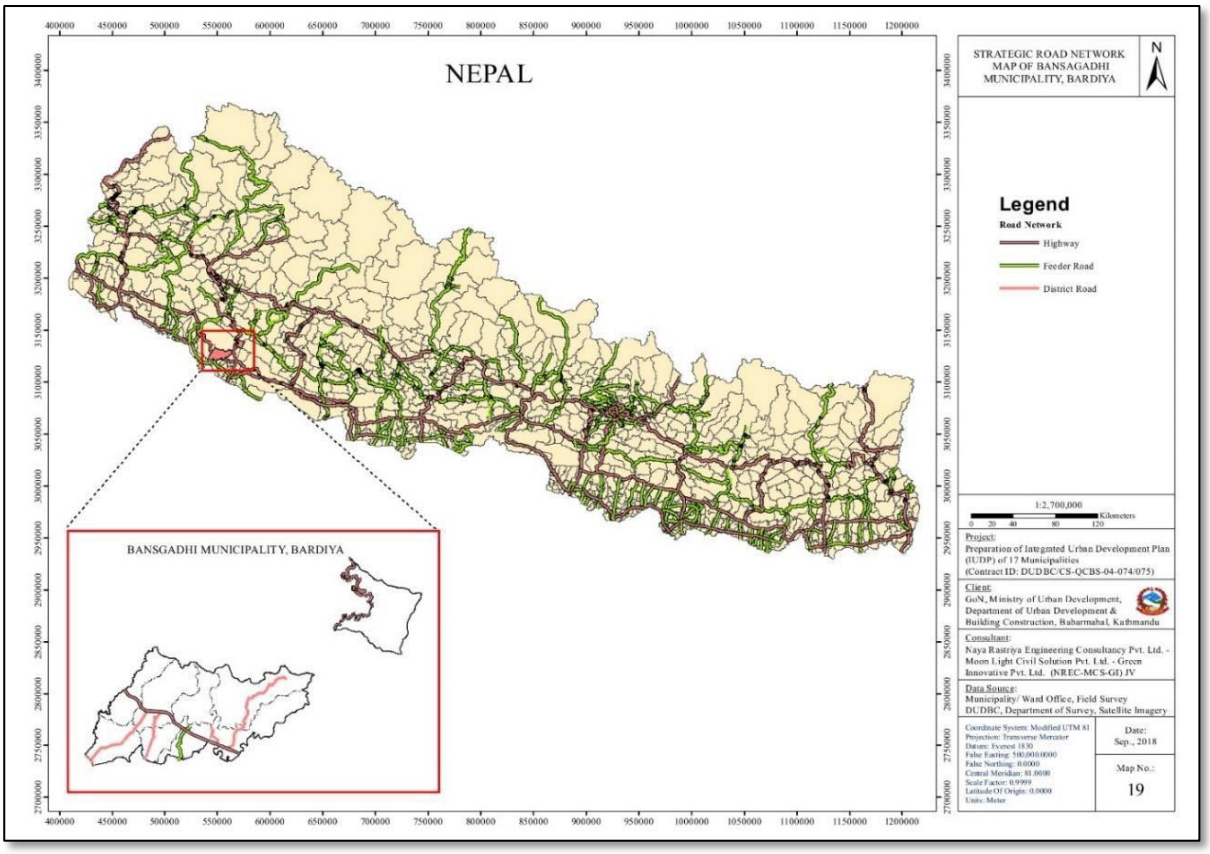

Figure 3.6: Strategic road network map of Bansgadhi municipality

3.18 Accessibility Situation

The accessibility seems to be easy in Bansgadhi due to the presence of major roads. There is main highway passing through the municipality. Most of the road in the municipality are gravel roads, two roads are black topped and others are earthen roads. Width of the road in the municipality ranges from 2m to 14m and the width of highway is 30m. These road serves for transporting within wards and other wards and settlement through vehicles. Other 2m roads are used as foot trail for travelling between two nearby settlements. Table below shows the types of roads and width in Bansgadhi municipality and it shows the linkage within the settlements. The name of roads, its width and types are shown in the table below:

Table 33: Road Surface type of Bansgadhi Municipality

S.N	Road Joining Settlements	Road Length (Km)	Existing Width (m)	Existing Road Surface
1	Pahadpur – Belawa	14.083	8	Black Topped
2	Motipur – Bansgadhi	4.422	6	Earthen
3	Gauripaira – Resampur	8.423	6	Earthen
4	Bangaudi – Naranpur	5.763	4	Earthen
5	Uttar Bhaka Road	2.387	4	Earthen
6	Lakhana – Ghaireni	11.812	6	Black Topped
7	Ratna Rajmarga – Salyan Border	4.897	8	Earthen

S.N	Road Joining Settlements	Road Length (Km)	Existing Width (m)	Existing Road Surface
8	Lakhna – Rajha	10.493	8	Earthen
9	Belawa – Banmudawa – Amohiya	5.353	8	Earthen
10	Laxmana – Amohiya	8.124	8	Gravel
11	Betahani – Pipal Chautara – Bijaura	2.880	8	Earthen
12	Betahani – Pipalchautara – Rajha	3.538	8	Earthen
13	Lok Rajmarga – Lakshamanpur – Banmudawa	3.688	7	Gravel
14	Belawa – Mahadeva	3.070	8	Earthen
15	Uttar Bhakari – Madaha – Matariya – Bathuwa	5.866	10	Gravel
16	Milanchowk – Bathuwa – Asneri	2.037	8	Gravel
17	Uttar Bhakari – Chamakpur Ring Road	5.313	14	Gravel
18	Kakaura – Riharpur – Dangpur – Koldanda – Asneri	6.344	8	Gravel
19	Shankhariya – Raji Tole - Dangpur	1.775	8	Earthen
20	Haupur – Lok Rajmarga	1.749	8	Gravel
21	Motipur – Laxmana	7.894	8	Gravel
22	Sattariya – Damauli	2.305	12	Earthen
23	Damauli – Amiliya – Kakaura	3.976	12	Earthen
24	Badki Deuda – Dangpur – Damauli	3.564	10	Gravel
25	Sadhapurba – Badhaiyatal	1.325	8	Earthen
26	Bangaudi – Bhaisasur – Dangpur Ring Road	1.978	8	Gravel
27	Machhagadh – Thumani	8.763	12	Gravel
28	Machhagadh – Toraiya	2.015	10	Earthen
29	Ratna Rajmarga – Babai Bajar – Salyan Border	4.715	6	Earthen
30	Mahadeva – Rajha	4.296	7	Earthen
31	Mahadeva - Dakhin	2.108	7	Earthen
32	Banbagiya – Manikapur – Bathuwa	4.374	6	Earthen
33	Radhakrishna Chowk – Dangpur – Link road	3.211	8	Earthen
34	Laxmana School – Madaha Road	2.549	8	Gravel
35	Newada – Motipur	2.184	6	Earthen
36	Bansgadhi – Lakshmanpur	2.016	6	Earthen
37	Milanchowk – Jharpur – Bathuwa	1.546	6	Gravel

S.N	Road Joining Settlements	Road Length (Km)	Existing Width (m)	Existing Road Surface
38	Shankhariya – Pipaltari	0.475	8	Earthen
39	SOS – Rampur – Barabigaha – Hasnapur	2.102	6	Gravel
40	SOS – Rampur – Barabigaha – Hasnapur	4.406	6	Gravel
41	Narayanpur – Soltitol – Dangpur	2.512	8	Earthen
42	Tower chowk – 10 no. Tole	2.843	8	Earthen
43	Lakshamana – Damauli	1.860	8	Gravel
44	Purano Basti – Laxmana	1.785	6	Earthen
45	Basanta – Kalabanjar	2.357	8	Earthen
46	Haraiya – Khayarbutta	1.967	8	Earthen
47	Kunaithi – Haraiya	1.544	8	Gravel
48	Narayanpur – Soltitole – Dangpur	4.680	8	Earthen
49	Narayanpur – Soltitole – Dangpur	1.807	8	Earthen
50	Belauli – Purbi Tole – Koldada	1.406	8	Earthen
51	Resampur – Purnahiras Ma. V	1.268	8	Gravel
52	Chisapani – Kunaithi – Toraiya Ring Road	6.382	8	Black Topped
53	Reshampur – Pahadipur	3.761	8	Gravel
54	Thumni Gaun – Ring Road	3.010	8	Gravel

(Source: DoR, field visit and municipality)

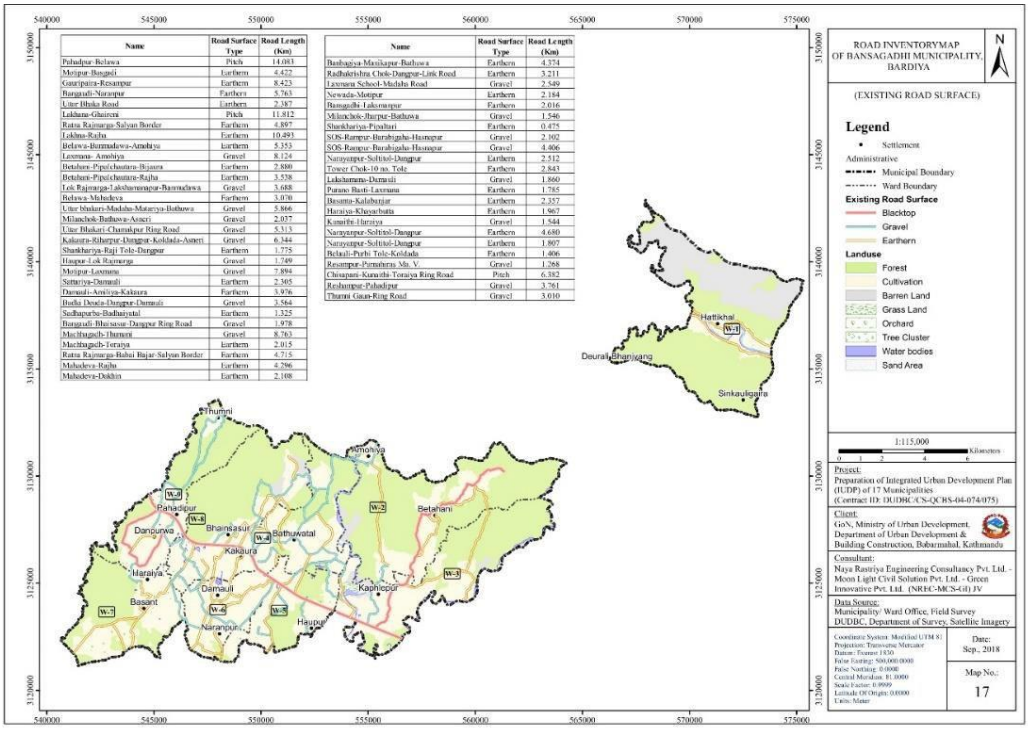

Figure 3.7: Road classification on the basis of existing surface type

3.18.1 Parking Management

Parking plays vital role to enhance the transportation system. Parking management refers to various policies and programs that result in more efficient use of parking resources. Cost-effective parking management programs can usually reduce parking requirements by 20-40% compared with conventional planning requirements, providing many economic, social and environmental benefits. Parking management system plays and will continue to play an important role in the revitalization of urban areas. Each form of parking management has its own benefits and disadvantages. Without the implementation of parking management system, vehicles are useless.

Objectives:

- Encourage use of alternative modes and reduce motor vehicle use (thereby reducing traffic congestion, accidents and pollution).
- Reduce compaction in the street and increment in the proper flow of vehicles

Strategy:

- Parking space serving multiple users and destinations
- Establishing of maximum parking standards
- Improving parking facility design and operations to help solve problems and support parking management

Strategic projects:

- Preparing plan for proper parking management
- Provision for separate parking space rather than parking along road side

3.19 Transportation

a. Road inventory

For the collection of existing road infrastructure data, GPS survey was used and total length of road surveyed was 299.3 Km, out of which 7.3 Km is Bituminous, 203.09 Km road is graveled amd others earthen.

Figure 3.6 Road Inventory Map

Table 3.1: Existing Road condition based on Surface Type (in Km)

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
1	Khotekhola - Bhim Bahadur Gharti House- Bhangai Road	2.5	10	Earthen	Upgrading	1	
2	Karna Karki Khet - Bir Bahadur Budha house - Khotekhola Road	2.5	8	Earthen	Upgrading	1	
3	Devi Mandir - Babai Nadi Road	0.5	6	Earthen	Upgrading	1	
4	Dillya Oli House - Janata Aa. Bi. Road	0.3	8	Earthen	Upgrading	1	
5	Indrenichowk - Olitole- Chisikhola Road	2.5	8	Earthen	Upgrading	1	
6	Sher Bahadur B.K. house- Healthpost - Ward Office 1 Road	1	8	Gravel + Earthen	Upgrading	1	
7	Oli Tole - Ward office 1 Road	0.5	8	Earthen	Upgrading	1	
8	Oli Tole -View Tower Road	0.5	8	Earthen	Upgrading	1	
9	Rajkumar B.K. house- View Tower Road	0.5	8	Earthen	Upgrading	1	
10	Dhan Bahadur B.K. house- Health Post Road	0.5	6	Earthen	Upgrading	1	
11	Shahid Gate - Bhagchha Road	0.8	10	Earthen	Upgrading	1	
12	Babai Bridge- Hunutel Aaran Road	0.4	8	Earthen	Upgrading	1	
13	Chepang khola Bridge- Picnic Park Road	1.5	10	Earthen	Upgrading	1	
14	Bhupalal B.C.house- Picnic Park Road	1.8	8	Earthen	Upgarding	1	
15	Milap Ghar Chowk - Charbahini Chowk- Malami Pratichhalaya Road	0.4	8	Earthen	Upgrading	1	
16	Ralakala Raga House- Nares Khatri House Road	0.4	8	Earthen	Upgrading	1	
17	Jase Kami House - Dhanu Jaisi House Road	0.4	8	Earthen	Upgrading	1	
18	Pradip Ili house- Rajkumar B.K. House Road	0.4	8	Earthen	Upgrading	1	
19	Lakhana- Ranjha - Chisapani Road	3.1	20	BT	Maintenance	2	
20	Gaudichowk-Shantipur-Pipal Chautara Road	2.3	12	Gravel	Upgrading	2	

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
21	Amaiya - Ward no.2 -Ward NO.4, Newada Road	2	10	Gravel	Upgrading	2	
22	Betahani-Bijaura Road	1.5	10	Gravel	Upgrading	2	
23	Belawa Chowk- Ward Office 2- Banmuduwa Mandir Road	1.4	12	BT-500m, Gravel-932m	Upgrading Gravel Portion	2	
24	Pipal Chautara - Simenta Kula Binaura Road	0.7	8	Gravel	Upgrading	2	
25	Sundar Basti- Achheriya - Bijaura Khola Road	0.9	10	Gravel	Upgrading	2	
26	Betahani- Kurta Bridge - Arsewa road	1.1	8	Gravel	Upgrading	2	
27	Betahani Ram Bahadur Sunar House- School- Ghari Betahani Post - Lakhana Ranjha Road	1.7	10	Earthen	Upgrading	2	
28	Betahani- Katkuwa- Khaireni Road	1.5	10	Gravel	Upgrading	2	
29	Ranjha Bichtole - Bhagawati Tole - Tanki -Dyambara Simalakuna Road	2.2	10	Gravel	Upgrading	2	
30	Ranjha School Road- South Achheriya Road	0.8	8	Gravel	Upgrading	2	
31	Ranjha Sahari Health Post- Katkuwa Road	1.1	8	Gravel+Earthen	Upgrading	2	
32	Ranjha Sahari Health Post- Purba Ranjha Achheriya Khola Road	0.8	8	Gravel	Upgrading	2	
33	Betahani Jholunge Bridge- Tanka Bista House- Bista Tole Road	0.8	6	Earthen	Upgrading	2	
34	Betahani- Kurtha Khola - South Road	0.9	6	Earthen	Upgrading	2	
35	Laganiya Culvert - Sinchahi Bandha Road	1.4	6	Earthen	Upgrading	2	
36	Hajari Bagiya Bhitri Tole Road	0.7	8	Gravel	Upgrading	2	
37	Pipal Chautara - Jhuraiya- Kiran Tharu House- Ring Road link Road	4	8	Gravel	Upgrading	2	
38	Mansi Tharu House- Jhuraiya Road	1.8	8	Earthen	Upgrading	2	
39	Dipendra Tharu House- Community Building- Ward No.4 Jholunge Pul Road	1.3	8	Earthen	Upgrading	2	
40	Naula Bajhiyan - East Taul Bagiya - Resham Chand House Road	2.1	6	Earthen	Upgrading	2	

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
41	Dipak Sharma House- WestvTole Road	0.7	8	Earthen	Upgrading	2	
42	Prem K.C. house- Talu Jaisi House Road	0.5	8	Gravel	Upgrading	2	
43	Dangla Tharu House- Gambhir Khaji House Road	0.6	6	Gravel	Upgrading	2	
44	Nabin Dangi House- Khagendra Bi.Ka. House- Road	0.6	6	Earthen	Upgrading	2	
45	Achheriya - Community Building - Pahadi Tole Road	1.2	8	Gravel	Upgrading	2	
46	Achheriya - Gohani Tharu House- Mahadeva Road	2.2	8	Earthen	Upgrading	2	
47	Darbagri Tharu House- Durga B.K. house - Ganga Tharu House Road	0.8	6	Earthen	Upgrading	2	
48	Betahani Bishnu Tharu House- Thagga Tharu House- School Road	1.3	8	Earthen	Upgrading	2	
49	Betahani Pipal Chautara - Prehakattha Road	1.1	10	Gravel	Upgrading	2	
50	Amoriya Dipak Chand House- Bahiri Ring Road - Bhola Reule House - Chakra Bahadur Chand House- School Road	2.17	8	Gravel	Upgrading	2	
51	Ranjha Ghatte Khola Tara Devkota House- Tank Bahadur K.C. house- Dhaireni Road	2	8	Earthen	Upgrading	2	
52	Gairi Tole (Kalo Pate) - Dev Bahadur B.K. House Road	0.9	6	Earthen	Upgrading	2	
53	Pipal Chautara - East Naula Chhagiya Tole Road	0.8	6	Earthen	Upgrading	2	
54	Lakhana Chowk- Rans - Salyani Tole Road	2	14	Gravel	Upgrading	3	
55	Uttakhari Chowk - Mayal Gausala Road	1.8	14	BT	Maintenance	3	
56	Dailekhi Tole- Kedareshower Dham Road	0.85	12	Gravel	Upgrading	3	
57	Shiva Mandir - Jholunge Pul Road	0.6	14	Gravel	Upgrading	3	
58	Simanya - West Community Forest Road	0.64	8	Gravel	Upgrading	3	
59	Rajmarga - Dailekhi Tole Road	0.6	12	Gravel	Upgrading	3	
60	Bishnu Pahadi House- Geruwa Road	1.5	12	Gravel	Upgrading	3	
61	Shantipur "Kha" - Tilak Regmi House Road	0.63	12	Gravel	Upgrading	3	
62	Shanti Saptra Pra. Bi. - C.G. - Jholunge Pul Road	0.53	12	Gravel	Upgrading	3	

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
63	Katak Regmi House- Rara Road	0.85	8	Gravel	Upgrading	3	
64	Aashis G.C. House- Deep Boring Road	0.5	6	Earthen	Upgrading	3	
65	Highway -South- Nahar Road	0.45	8	Gravel	Upgrading	3	
66	Highway -Puspa Nagar Road	0.52	10	Gravel	Upgrading	3	
67	Shree Narayan House- East Lakhetar Ban - Highway Road	0.52	12	Gravel	Upgrading	3	
68	Highway - Khallgaun Road	0.55	8	Gravel	Upgrading	3	
69	Mhadev Tharu House- Trogapama Tharu House Road	0.4	8	Gravel	Upgrading	3	
70	Shiva Mandir - West Road	0.2	6	Gravel	Upgrading	3	
71	Shiva Mandir - West Taulan Tole Road	0.3	6	Gravel	Upgrading	3	
72	Shiva Mandir -East Chitrahan Tole Road	0.4	6	Gravel	Upgrading	3	
73	Gauri Chowk - South - Bisnu Tole Road	0.5	6	Gravel	Upgrading	3	
74	Prithibi Ma.Bi. School- Community Building Road	0.4	12	Gravel	Upgrading	3	
75	Salyani Tole - Gauri (Masjid) Road	0.4	12	Gravel	Upgrading	3	
76	Gauri Chowk - Shantipur-Ward No. 2 Road	0.6	14	Gravel	Upgrading	3	
77	Kakora 8 Boundary-Nahar Ram Mandir - Bicha Gaun Mandir - Talchowk- Nahar Pipal Chautari Road	3.2	10	Gravel	Upgrading	4	
78	Mahariya Chowk - Bicha Gaun - Pipal Dadi - Prem Giri Shop Road	2.1	15	gravel	upgrading	4	
79	Talchowk - Depti - Bagiya School- Pipal Dadi Road	1.9	12	gravel	upgrading	4	
80	6 No. ward Boundary - Aalla Gaun - Nahar Pipal bot Road	1.2	8	gravel	upgrading	4	
81	Talchowk - Bagiya School - Pipal Dadi Road	0.8	10	gravel	upgrading	4	
82	Shankariya - Matariya Simana - Liladhar Adhikari House - Matariya Kuber House Road	1.4	12	gravel	upgrading	4	
83	Bishnu Nanchhyal House- Shankariya Ratri Tole- Titiriya House- Durga Bastola House Road	0.7	12	gravel	upgrading	4	

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
84	Dasdar - Batuwa - Bichatole - Riyak Tole - School Gaira Tole - Sohanpur Tole - Ward Office Road	1.6	12	gravel	upgrading	4	
85	School Batuwa - Asneri - Tick Road	0.8	15	gravel	upgrading	4	
86	5 No. Ward Simana- Laxmanpur Gaun- Jholunge Bridge Road	0.6	12	gravel	upgrading	4	
87	Mewatal Transmitter Chowk - Madhaghale Ghar - Dhami Tole - Jholunge Bridge Road	1.1	12	gravel	upgrading	4	
88	Pahadipur - Gol Ghar - Madha Bhote House - Madhima Nala - 3 No.ward Simana Road	2.8	15	gravel	upgrading	4	
89	Sundar Basti- Tirtha Sir House- 3 No. simana Road	0.85	13	gravel	upgrading	4	
90	Pul Dandi - Prem Giri House- Shankariya Pahadi Aryal - Raji Tole Road	0.55	7	gravel	upgrading	4	
91	Gol Ghar- Manikapur Batuwa Road	0.5	12	Earthen	upgrading	4	
92	Laxmanpur School- Bajhain House- Batuwa Naya Kholeko - Ward office Road	1.3	12	gravel	upgrading	4	
93	Mathariya Mandir - Pipalko Bot - Premgiriko Ghar- Keshab House Road	0.8	8	Earthen	Upgrading	4	
94	Mewadal - Ramalal Tharu - Mandir Road	0.4	6	gravel	Upgrading	4	
95	Asneri Purano Gaun - Mil Road	0.6	8	gravel	upgrading	4	
96	Pahadipur- Bar Pipal Chautara - Gol Ghar Bhitri Road	1.6	6	gravel	upgrading	4	
97	Sundarbasti Bhitri Road - Salko Gutta Road	0.8	6	gravel	upgrading	4	
98	Pannako Ghar- Bubako Ghar Road	0.35	6	Earthen	Upgrading	4	
99	Nahar Purba - Pashchim - Damauli Road	0.2	8	gravel	upgrading	5	
100	Hira Tharu House - Budhi Ghar Road	0.3	8	gravel	Upgrading	5	
101	Nahar Purba - Ghanshyam Tharu House - Uttar Road	0.4	8	gravel	upgrading	5	
102	Nahar Purba- Chankha Tharu Khet Road	0.25	6	Earthen	upgrading	5	
103	Jagatiya Sahid Gate- Motipur Gaun Road	0.3	12	gravel	upgrading	5	
104	Nahar Purba- Hasnapur Gaun Road	0.5	12	gravel	upgrading	5	
105	Jharsaila - Maula Gaudi Road	0.6	8	gravel	upgrading	5	

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
106	Jharsaila Chowk - Nahar Dhik Road	0.2	8	gravel	upgrading	5	
107	Nahar Pul - Sabitri Dangi House- Tikaram House - North Road	0.4	6	gravel	upgrading	5	
108	Tikaram Sapkota House- Bhanu Adhikari House- Nahar Dhik Road	0.3	10	Earthen	upgrading	5	
109	Jagatiya Sahid Gate- Badi Tole Road	0.4	15	Earthen	upgrading	5	
110	Jungle Tower- Badhaiya - Palika Road	0.5	20	gravel	upgrading	5	
111	Bishnu Pariyar House-B.K.Tole - Badhaiya Gaun - Palika - Saraswoti House Road	0.6	7	Earthen	upgrading	5	
112	Balkrishana Khanal House- Dhiyon Eklekhiya Church- Chukan Tharu House Road	1	7	BT	Maintenance	5	
113	Khanepani Tank - Bosagadi Unitesd School - Highway Road	1	6	gravel	upgrading	5	
114	Khanepani Tank - Magarpur- Bhim Bahadur Pariyar House - Magarpur Road	0.5	6	gravel	upgrading	5	
115	Karnali Tol - Hasnapur- Motipur Gaun Road	2	12	gravel	upgrading	5	
116	Hasnapur (Basanta Chowk) - North Anil Tharu House Road	0.5	10	gravel	upgrading	5	
117	Hasnapur (Basanta Chowk) - South Road	0.7	8	gravel	upgrading	5	
118	Jagatiya Sahid gate - Raja Ram Tharu House- North B3 Nahar Road	1	8	Earthen	upgrading	5	
119	Jagatiya Sahid Gate - Badahan Tol Rishi Nagar - Nihar Tol- Jagadis Mil Road	1.5	12	gravel	upgrading	5	
120	Rishi Nagr Tole Road	0.5	8	gravel	upgrading	5	
121	Bansagadhi Tal Barahi - Kul - Nahar Pul Road	0.5	8	gravel	upgrading	5	
122	Basgadhi Aadhibasi Bhawan- South- West Nala Dhik Road	0.3	6	gravel	upgrading	5	
123	Basgadhi Mata Prasad Tharu house- East- Nahar Pul Road	0.8	6	gravel	upgrading	5	
124	Nagarpalika Bhawan - Barha Bigaha - Kerabari Road	2.5	14	gravel	upgrading	5	
125	Nagarpalika Bhawan - Om Santi Bhawan Road	0.5	12	gravel	upgrading	5	
126	Rampur Tole - Nahr- Tharu Gaun Basgadhi Road	1	12	gravel	upgrading	5	
127	SOS Nagar Hospital - South Road	0.3	4	gravel	upgrading	5	

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
128	Rampur Nahar - West - South Road	0.5	6	gravel	upgrading	5	
129	Barha Bigha Road - West Reshm Pandey House Road	0.3	4	Earthen	upgrading	5	
130	Jumli Tole - School- Badhaiyatal Gaupalika Simana Road	2	14	gravel	upgrading	5	
131	Shree Bhirkuti Ma. Bi. Gate- Health post- Nahar - South Road	3	10	gravel	upgrading	7	
132	Ward No.7 office- Shiva Mandir Road	0.9	8	gravel	upgrading	7	
133	Deukala Shiva Mandir - Damauli Road	3.5	12	gravel	upgrading	7	
134	Deukala Khayera Buta - Haraiya - Ward no. 9 Toraiya Road	4.8	10	gravel	upgrading	7	
135	Basanta Chowk - Damauli Road	2.7	12	gravel	upgrading	7	
136	Ganeshpur Road- East- Bhanpur- Badhaiya Tal Road	3.6	12	gravel	upgrading	7	
137	Tin Kharawa - Sagadapur- Badhaiya Tal Ga.Pa. Road	4.3	10	gravel	upgrading	7	

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 feeder road and district roads is very small in comparison to their right of way. This Municipality is supported by one National Highway, East-West Mahendra Highway.

These District Roads were under the responsibility of the District Development Committee and now they are under the responsibility of Municipality itself.

3.20 Vision of the Municipality

Slogan of Vision:

"सुन्दर हरियाली र सफा शहर

समृद्ध र समुन्नत बाँसगढी नगर"

With the above selected vision slogan, it truly clarifies the people of Bansgadhi are confident that their municipality will only prosper through proper and strategic development plans oriented towards clean and beautiful Bansgadhi municipality.

3.20.1 Goal

The long-term goal of this municipality is to promote greenery and sanitation to make it a livable and prosperous urban center in the long run.

3.20.2 Objectives

Bansgadhi Municipality for-sees their municipality to flourish under major sectors i.e. Agriculture, Industry, Health and education. People of Bansgadhi wishes to visualize their city as beautiful and picturesque, which clearly suggest their intentions of clean and healthy city environment. Though, the word beautiful itself is an abstract terminology and could mean different to different people but to citizen of Bansgadhi, beauty of their city is guided with its cleaner, and healthier natural environment. A city can never prosper with proper and strategic investment on education and health of its citizens. In fact, education and well-being of its citizens are key indicators of development index (HDI) of the city to mark its prosperity. Hence, in order to foresee the prosperous Bansgadhi, the plans and programmes must safeguard wellbeing and education of its citizens.

3.20.3 Strategies

- Infrastructure development
- Tourism development
- Participatory planning
- Well-being of deprived and vulnerable sections of society
- Disaster risk management
- Market center development
- Local governance and service delivery

3.21 Visionary city development plan

Planning of any city is based on the analysis of present situational trend, past historic event and future prospective goal to reach. As part of planning process, vision setting executes the participatory approach of setting out inspirational destination of city. This becomes true for any cities, towns or country. But to the newly formed municipalities like Bansgadhi Municipality, setting out the vision of the Municipality at its initial phase of formation of

Municipality is itself an important opportunity to direct municipal goals, plans, and programmes which will direct whole municipal activities towards the focused direction of setting vision. All development activities that would be carried out in the future would be and should be in line with the set municipal vision. As an aspiring city, the newly formed Municipality like Bansgadhi Municipality has diverse prospects and sectors of development that would drive its future growth but identifying some lead sectors and potential development opportunity of the Municipality based on its own strength and individuality would make Municipality grow better and prosper.

As the Planner, we've taken this task as the preparation of long term strategic vision planning, which will basically form the structural guide for the development of the town. It is expected that long term vision set during the project will be considered as the basic development strategy for next 20-30 years' development plan. Major strategic roads, width of road, size of development blocks and land use plan for major lots; are some of the basics that will define as projects future. Some of the leads sectors are identified with the local participation and with the planning workshop carried out in different stages of time.

The vision of this Bansgadhi Municipality is to develop an environment friendly and clean city by fostering its cultural and religious history and importance with modern urban facilities. For this the main visionary city development plan of the Municipality is to develop/preserve the following:

1. Tourism
2. Agriculture

1. Tourism

This Municipality has high potential for tourism. This Municipality has different cultural heritages and touristic destinations. Some of them are as follows:

Touristic Destinations	Importance
Temple	Religious
Tharu Homestay	Touristic
Nikunja Safari	Touristic
Mandir/Temples	Religious

Bansgadhi River within this Municipality.Also, this Municipality is the gateway to Bardiya National Park and Bansgadhi Temple of Bardiya. Thus, the Bansgadhi Municipality bears a huge potential to develop its economy and uplift the living standards of local peoples, but this needs proper planning and management of touristic areas and routes to those places.

2. Agriculture

This Municipality has landscape and climate favourable for agriculture and animal husbandry. There is high fertile land in the plain area with sufficient grazing land and grass land for animal husbandary and fruits. To cash in such potential of agriculture the method

of agriculture must be transformed into modern agriculture system. The availability of proper irrigation facility and market is the key to success in agriculture which is possible in this Municipality with proper planning approach.

CHAPTER FOUR: INDICATIVE DEVELOPMENT POTENTIAL MAP

4.1 Location

Bansgadhi is a Municipality, which is located in Bardiya district, Lumbini Province of Nepal. Bansgadhi has total 9 wards, which are scattered across 105 square kilometers of geographical area. According to 2079 Municipal Profile, Bansgadhi Municipality had total population of 57,362.

Bansgadhi Municipality had total 57,362 populations with 29,070 males and 28,287 females. Out of total wards, ward number 2 had the largest population 8,370, while ward number 6 had least number of populations with 4,514.

With respect to number of households, Bansgadhi Municipality had total 11,564 households. The ward number 2 had most households with total 1,699, while ward number 6 had least number of households with total 882 numbers of households.

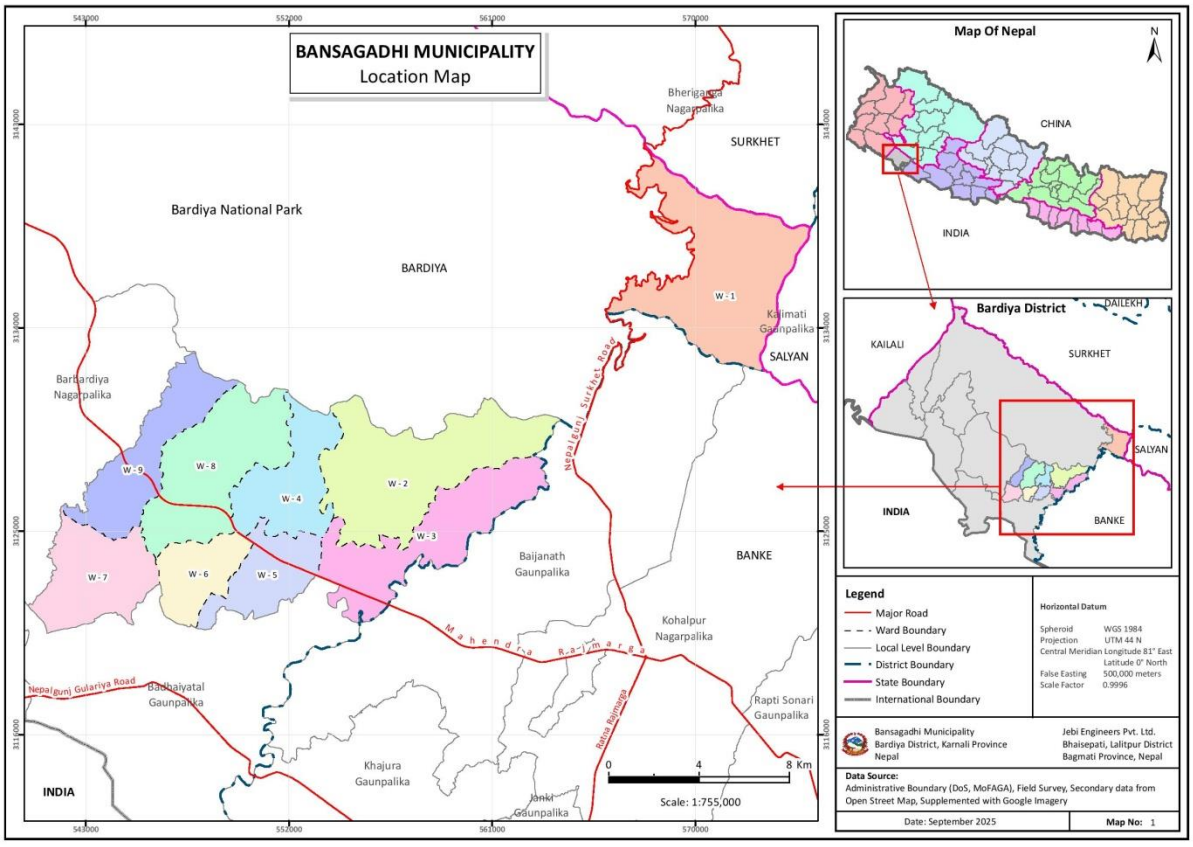

Figure 4.1: Location map of Bansgadhi Municipality, Bardiya

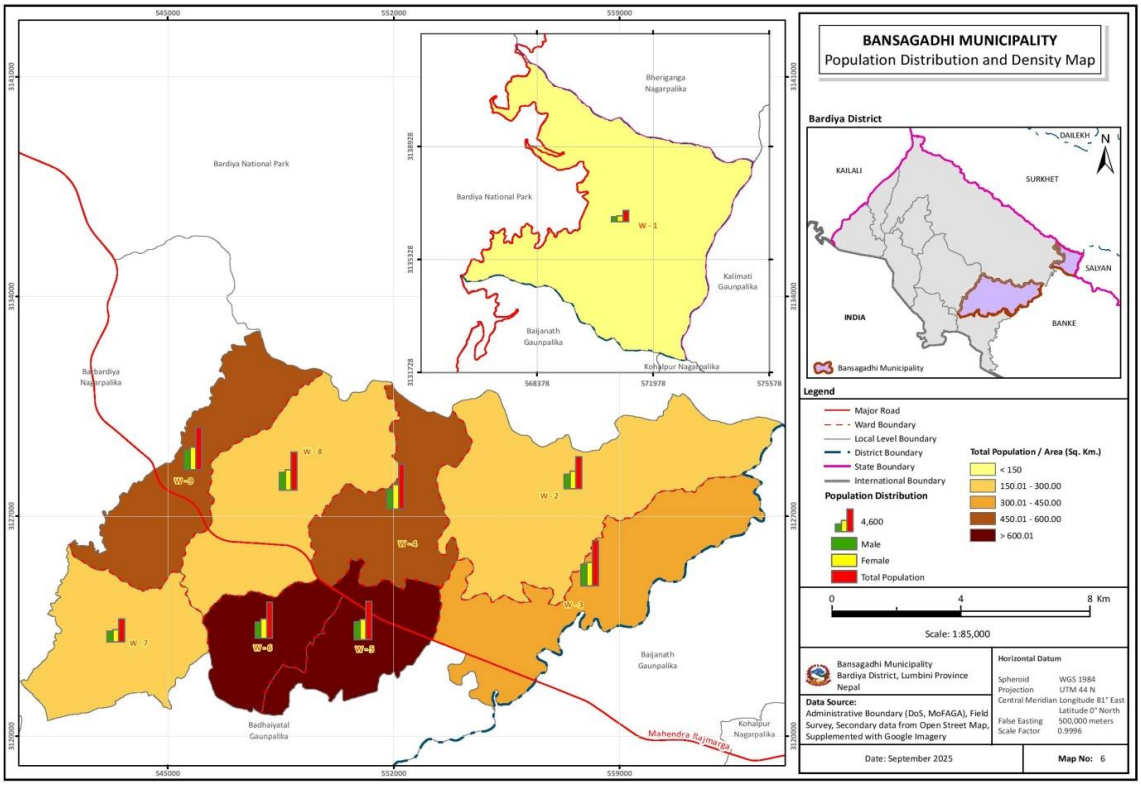

Figure 4.2: Ward division with population density map

4.2 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 Municipality as the basis of network planning.

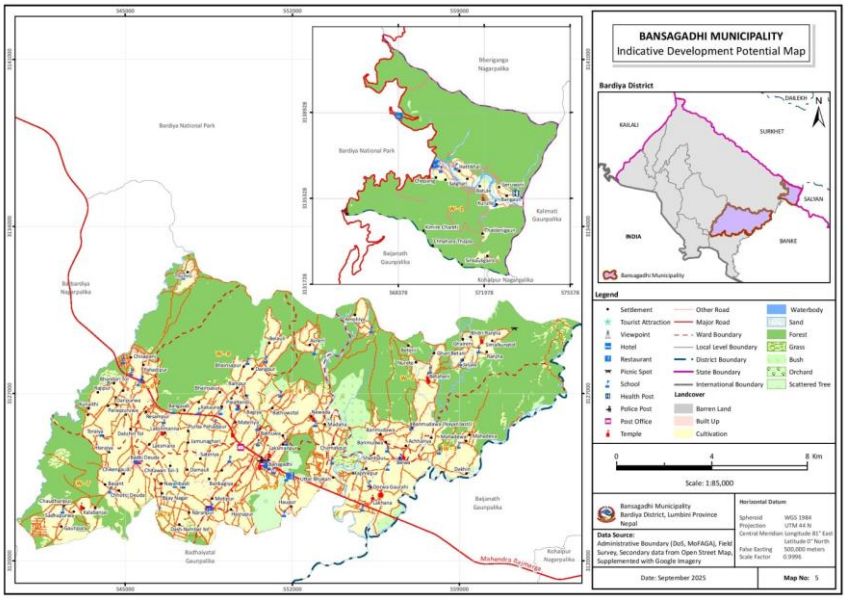

Figure 4.3: IDP Map

Existing/potential areas are defined as:

- Existing/potential areas for development of small and large 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.

Linkage Analysis

One of the important aspects of this IUDP is to grow the municipality with ambitious target of making it physically, socially, culturally and economically benefited and also making the municipality sustainable for long run. It also ensures equal opportunity for different sub-areas and different social and age groups. It is well known fact that it is only possible with induced development plans. It is also necessary to understand that most of the people flowing to the region are from the nearby wards or from nearby districts.

Hence, study of the linkage has been done with aspect of flow of good and flow of people. Basically, Hattikhal is the market center for nearby WARDs and municipalities. The municipality is connected through highway, feeder road and district road, so the flow of good seems to be easy

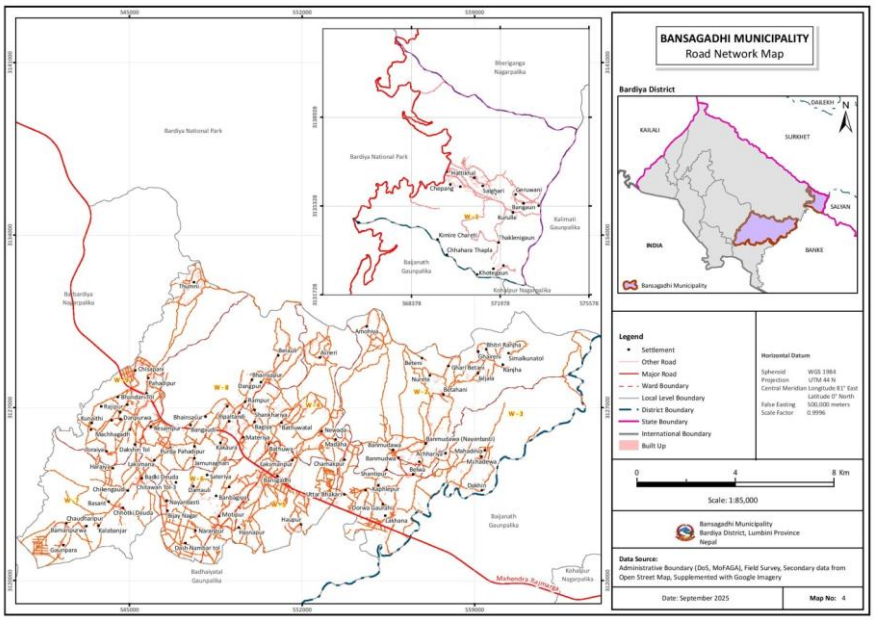

Figure 4.1: Map showing road network of Bansgadhi

Exchange of goods and services are common amongst the nearby districts or within districts. Exchange of any of such has direct impact in economic development of the region. Some of the linkages are explored in two different perspectives as mentioned below

Inter-regional

Bansgadhi municipality lies on the closer proximity of Banke district and Gulariya municipality. Bardiya national park is the major destination nearby from the municipality and it serves as tourist destination and may help in the development of the area by entering foreign currency. The majority of goods are imported from nearby district, Gulariya. The goods come from Kathmandu, Kohalpur and Nepalgunj and are redistributed to other municipalities.

This municipality also lies in the East – West highway, so that it is easy for the transportation of goods from Kathmandu and Narayangath. The majority of the occupation is related to agriculture and the agricultural products are also transported to Kathmandu due to the accessibility of main highway. As we all know, Bansgadhi is not complete and sustainable on its own. There are still many things that the town depends upon starting from basic higher education facilities and health services. People from Bansgadhi have to move to Kathmandu for good higher education and complicated health issues. There is also the trend of migrating to Gulariya. Trend of moving students for higher education is common in the place where as people also move to other districts for seeking better job opportunities. People from Rolpa and Sworgadwari seem migrating to Bansgadhi for the limited facilities. Growing number of out migration is also one of the major problem either that be within the nation or out of nation.

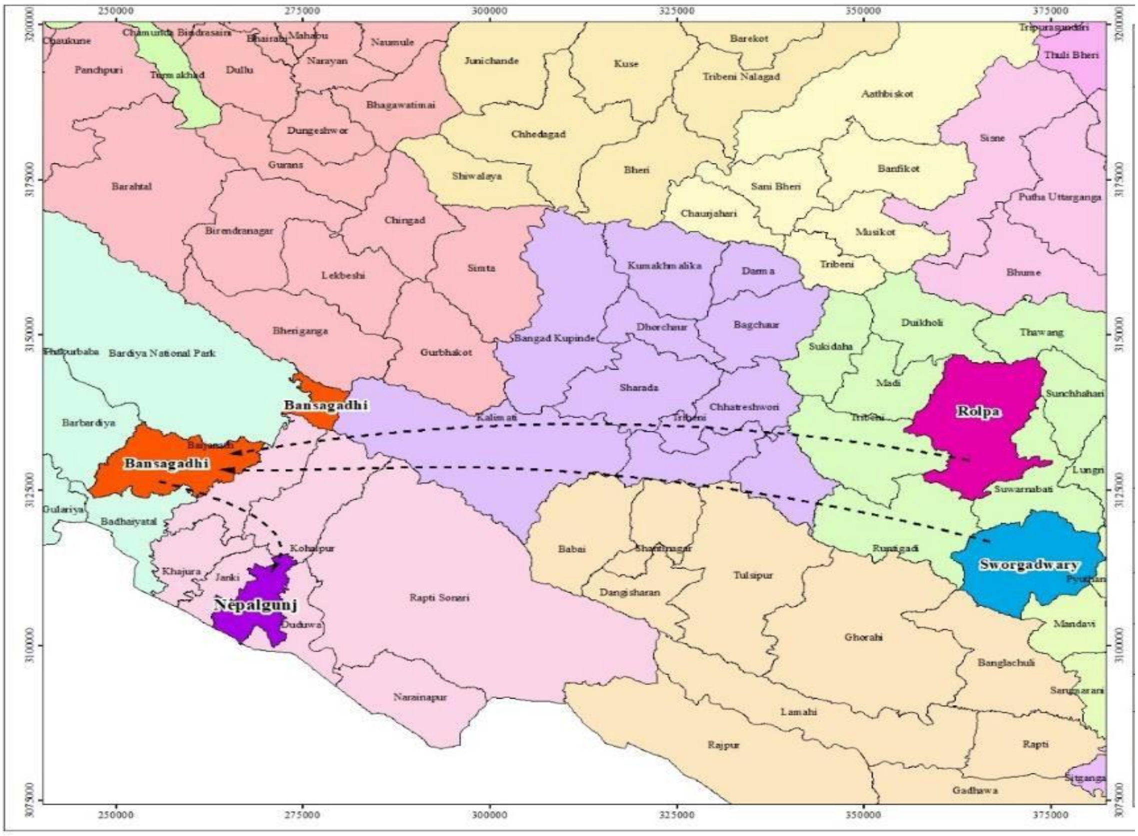

Figure 4.2: Map showing linkage of goods

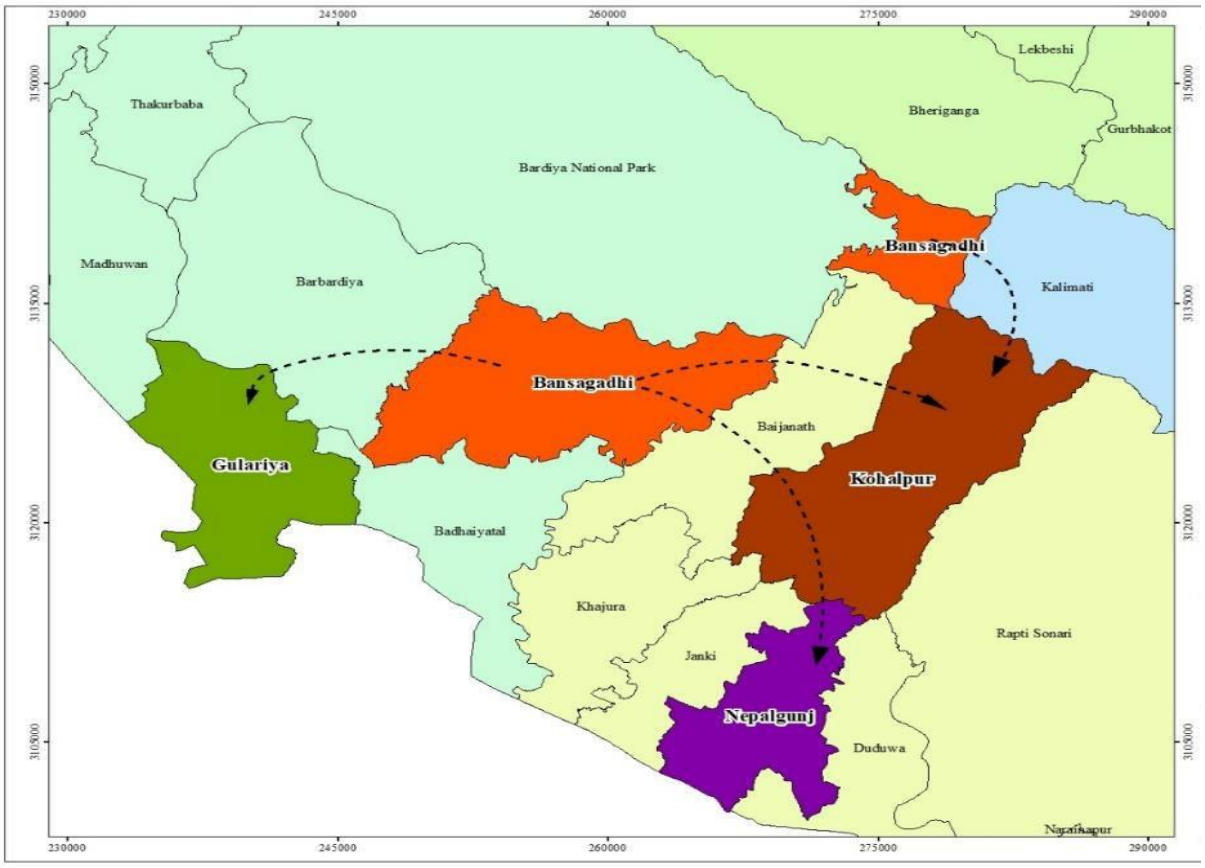

Figure 4.3 : Map showing flow of people

Intra- Regional

Hattikhal is the major market center of the municipality. These places are connected to main highway, so there is growing market and they serve to other areas of the municipality. Places like Haupur and Basant depend on these market centers for goods and services. Most of the settlement pattern is seen along the major highway and feeder road.

CHAPTER FIVE: ROAD HIERARCHY DEVELOPMENT

5.1 Road Hierarchy

Road network serve for direct access to the particular land-use by the provision of pedestrian footpaths, bicycle tracks, bus and vehicle routes and cater through traffic that is not related to immediate land uses. Functional provisions of passenger and goods movement mainly define the hierarchy of roads and their classification. On the basis of this concept, roads are classified as per their function. Road class is related to the technical standard and functional requirements. Therefore, road classification should be based on its functional hierarchy. It is important to distinguish roads in different class or type based on various criteria. 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. It is an important instrument of road network and land use planning.

There are restrictions of direct linkage between various kinds of road-hierarchy. In other words, direct connections between certain types of road links should be reduced, for example residential streets and arterial roads. Connections between similar order streets should be made (e.g. arterial to arterial) or between street types that are separated by one level in the hierarchy (e.g. arterial to highway and collector to arterial.). This conceptual framework can be seen from Figure 10 and 110, These hierarchical distinctions of road types becomes more clear when considering the recommended design specifications for the number of through lanes, design speed, intersection spacing and driveway access. A well-formed road hierarchy increases the performance and efficiency of the particular type of road as well as of the entire road network. Furthermore, it reduces 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 and preserving areas where through traffic is discouraged.

Figure 5.1 Road Network Hierarchy

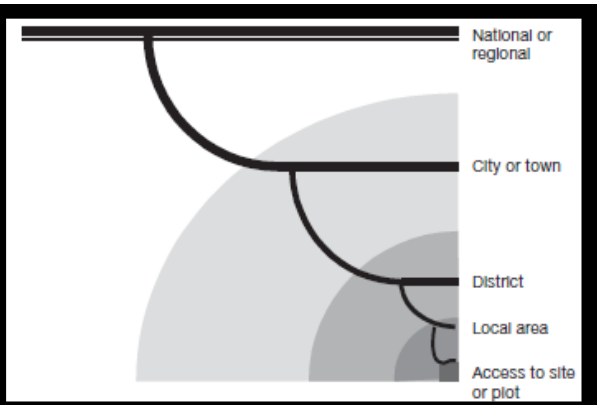

Figure 5.2 Urban Road Hierarchy

5.1.1 Formulation of Road Hierarchy

Roads under jurisdiction of Municipal authority are referred as urban roads. The concept of road hierarchy assists in planning of overall road network and its transport services. Different hierarchy of road has different effect in surrounding areas and other roadways. Hierarchy of roads enable urban design principles such as accessibility, connectivity, efficiency, amenity and safety. Further, it also identifies treatments such as barriers, buffers and landscaping to preserve amenity for adjacent land uses. Thus, a proper plan should accommodate all users of the urban streets in planning, designing and construction of the road infrastructure and furniture. Municipality road network can be conceptualized by considering the functional hierarchy as arterial, sub-arterial and urban roads of various categories such as Class A, Class B, Class C and Class D.

The DTMP/MTMP guideline has expected roads under category of National Highway (NH), Feeder Roads (FR) and District Roads (DRCN) within the Municipality area. The RoW of these roads is considered as per respective Guidelines. i.e. the RoW of National Highways, Feeder Roads and District Roads are 50.0 m, 30.0 m and 20.0 m respectively. The guideline has clearly stated about the setback distance for these roads (having RoW $\geq$ 20.0) as 6.0 m on either side. All of these standards shall be applied to the Municipality accordingly.

Based on DTMP guideline, the building line or setback shall be maintained 6.0 m for roads having RoW equal to or more than 20.0 m and 2.0 m for other roads. However, Nepal Road Standards-2070 has considered the setback distance at curved section only and that should be sufficient to provide the adequate sight distance. It is silent about the building line. However, according to Fundamental Guidelines for Settlement Development, Urban Planning and Building Construction-2072 (2015 AD), the minimum setback distance for urban roads as 1.5 m on either side. Again, the minimum of Row of roads has set as 6.0 m. i.e. 3.0 m on either side from the centreline.

Table 5.1: Classification of Municipal Roads

Road Type	Road Class	Right of way (RoW)
Main Collector Road	Class A	15m and above
Other Collector Road	Class B	10-14 m
Tole Road	Class C	8-10 m
Other Local Road	Class D	6 -8m

5.2 High Hierarchical Road Network

Road are classified based on its importance and its area served. Basically, higher hierarchical road network within the Municipality comprises of Strategic Road Network (National Highway and Feeder Roads) and then the local road network, consisting of District Road Core Network (DRCN).

5.2.1 District Road Core Network (DRCN)

This DRCN is the minimum network that allows all former WARD headquarters to be connected with the strategic road network and the district headquarters, either directly or through other WARDs. In selecting the DRCN roads, account was taken of road conditions and existing traffic levels. The identified DRCN roads were subsequently provided with road codes conforming to national standards. Based on District Transport Master Plan (DTMP) report prepared by Department of Local Infrastructure Development and Agricultural Roads (DoLIDAR) there are sixteen DRCN roads within the Municipality which passes through various wards and are of total right of way of 20m as approved by District Development Committee and District Road Coordination Committee.

5.3 Municipal Roads

Different road within the Municipality serves different function, some basically serves the function of access and some serves function of high quality mobility. As described earlier, this MTMP had formulate four level road hierarchy namely Class A, B, C and D, and are described in subsequent heading. There is fundamental difference between various classes of roads and have been summed up in the form of table as:

Table5. 2: Comparison of various hierarchies of roads

Criteria	Class A	Class B	Class C	Class D
Purpose	Mobility	Mobility and control access	Access and mobility	Access
Function	Through and long distance movement	Connect Class A and C; provide alternative connection routes between Class A	Connects higher order roads & mobility to local trips.	Connect local trips to higher level roads.
	High network coverage	Support through movement of traffic	Access to property	direct access to property
	Segregated NMT facilities and Bus laybys	Segregated NMT facilities and Bus laybys	Segregated NMT facilities	Local NMT movement
Maintenance Responsibility	Municipality	Municipality	Municipality & Community	Community
Design Speed (Kmph)	40	30	20	20
Radius (m)	30	20	15	15
Minimum RoW (m)	14	10	8	6*
Setback distance (m)	2	2	1.5	1.5

Criteria	Class A	Class B	Class C	Class D
Access Control	Applicable based on locality	Not Applicable	Not Applicable	Not Applicable
Public transport services	Public Transportation	Local Public transport	Small form of public transport	No public transportation

5.3.1 Class A Roads

Class A roads serve as the major collector roads. These roads start either from the Arterial or Sub-Arterial road. These roads are of relatively long distance which connect big market or settlement areas or two or more wards centers within the Municipality. They provide linkage to SRN & DRCN roads as well as to the nearby Municipality.

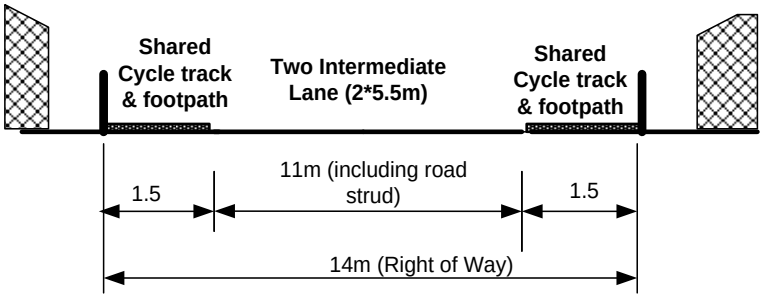

Figure 5.3: Recommended cross section for Class A roads

Nine Class A roads have been proposed so as to support the Indicative development potential as well as interconnectivity. Based on technical study and bottom up participatory approach, following five Class A roads with length 84.07 km roads and right of way of 14m and above has been proposed.

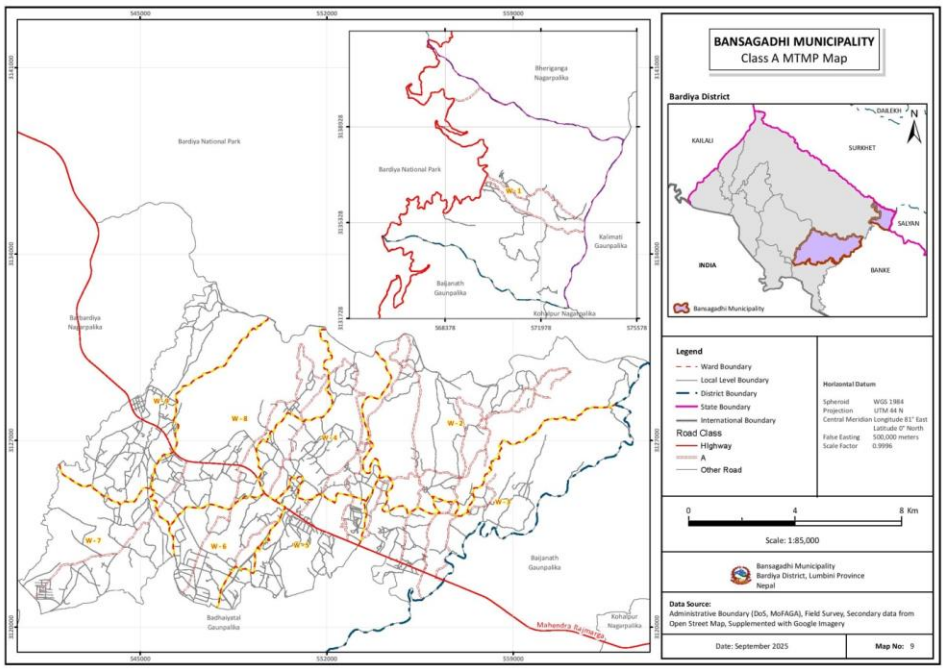

Figure 5.4: Class A roads in map

Table 5. 2 List of Class A roads

S.N.	Name of the Road	Length of the Road (km)	Right of way (m)	Existing Width of the Road (m)	Set Back (m)	HHs	Population Served	Remarks
1	Ratna Rajmarga-Salyan Border	4.897	14	8	2	1126	5607	
2	Belawa-Banmudawa-Amohiya	5.353	14	8	2	446	2221	
3	Laxmana- Amohiya	8.124	14	8	2	810	4034	
4	Jaljala- Ghaireni	3.538	14	8	2	203	1011	
5	Betahani- Jaljali	3.538	14	8	2	384	1912	
6	Lok Rajmarga-Belawa- Lakshamanapur-Shantipur- Banmudawa	3.688	14	8	2	858	4273	
7	Belawa-Mahadeva	3.07	14	7	2	650	3237	
8	Uttar bhakari-Madaha- Newada-Shankhariya- Matariya-Bathuwa	5.866	14	8	2	1360	6773	
9	Milanchok-Bathuwa-Asneri	2.037	14	10	2	317	1579	
10	Uttar Bhakari-Chamakpur Ring Road	5.313	14	8	2	510	2540	
11	Kakaura-Riharpur-Dangpur- Koldada-Asneri	6.344	14	14	2	1190	5926	
12	Shankhariya-Raji Tole- Dangpur	1.775	14	8	2	544	2709	
13	Haupur-Lok Rajmarga	1.749	14	8	2	161	802	
14	Motipur-Laxmana	7.894	14	8	2	1402	6982	
15	Sattariya-Damauli	2.305	14	8	2	715	3561	
16	Damauli-Amiliya-Kakaura	3.976	14	12	2	914	4552	
17	Badki Deuda-Dangpur- Damauli	3.564	14	12	2	308	1534	
18	Sadhapurba-Badhaiyatal	1.325	14	10	2	127	632	
19	Bangaudi-Jhanaiya-Bhaisasur- Dangpur Ring Road	1.978	14	8	2	918	4572	
20	Machhagadh-Thumani	8.763	14	8	2	753	3750	
21	Machhagadh-Toraiya	2.015	14	12	2	177	881	

5.3.2 Class B Roads

These roads serve as a second level of road with total right of way more than 10m and can be considered as Feeder roads of Municipality. These roads connects major road network and other roads of similar hierarchy with either major growth centre or provide access between Class A and class C road. Mobility is the main concern for these roads and it need to be equipped with at least facilities for non-motorized travel. The typical cross section for Class B roads is as:

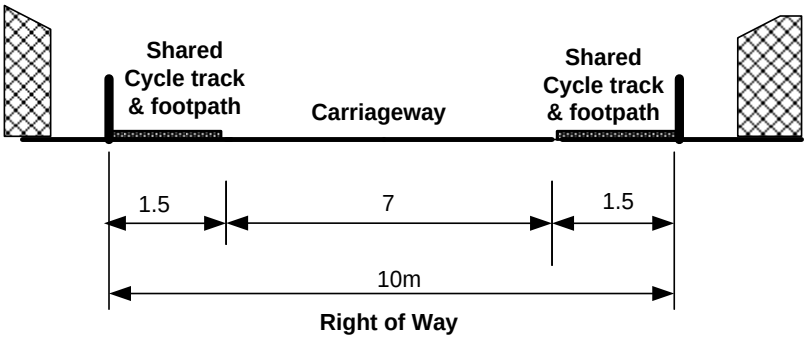

Figure 5.4: Recommended cross section for Class B roads

Thirteen Class B roads have been proposed so as to support the Indicative development potential as well as interconnectivity to Class A roads and DRCN roads. Based on technical study and bottom up participatory approach, 61.15 Km of roads have been proposed as Class B roads as follows:

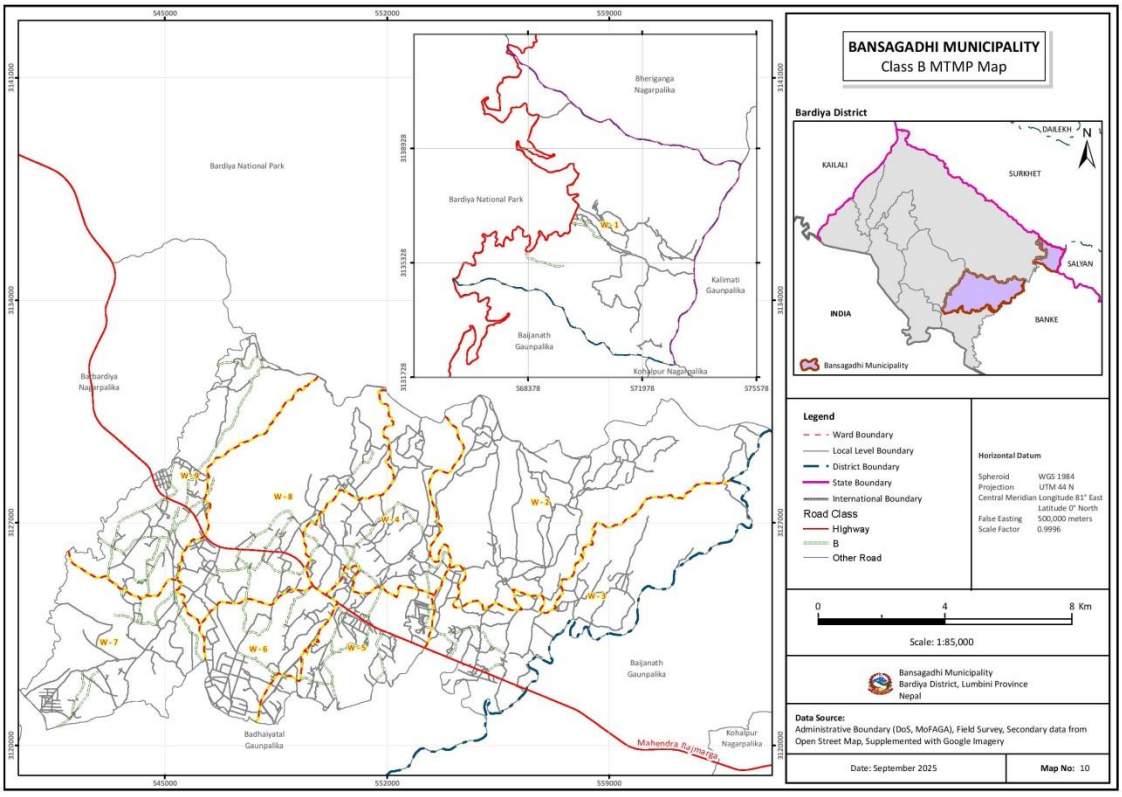

Figure 5.5: Class B roads in map

Table 5. 3 List of Class B roads

S.N.	Name of the Road	Length of the Road (km)	Right of way (m)	Existing Width of the Road (m)	Set Back (m)	HHs	Population Served	Remarks
1	Ratna Rajmarga-Babai Khola Bajar-Khote Khola-Salyan Border	4.715	10	6	2	569	2834	
2	Mahadeva-Rajha	4.296	10	7	2	261	1300	
3	Mahadeva-Dakhin	2.108	10	7	2	146	727	
4	Banbagiya-Manikapur- Bathuwa	4.374	10	6	2	390	1942	
5	Radhakrishna Chok-Dangpur- Link Road	3.211	10	8	2	230	1145	
6	Laxmana School-Madaha Road	2.549	10	8	2	949	4726	
7	Newada-Motipur	2.184	10	6	2	244	1215	
8	Bansgadhi-Laksmanpur	2.016	10	6	2	949	4726	
9	Milanchok-Jharpur-Bathuwa	1.546	10	6	2	244	1215	
10	Shankhariya-Pipaltari	0.475	10	8	2	173	862	
11	Kakura- Rampur	2.102	10	6	2	936	4661	
12	Basgadhi-Hasnapur	4.406	10	6	2	260	1295	
13	Narayanpur-Soltitol-Dangpur	2.512	10	8	2	101	503	
14	Tower Chok-10 no. Tole	2.843	10	8	2	239	1190	
15	Lakshamana-Damauli	1.86	10	8	2	314	1564	
16	Purano Basti-Laxmana	1.785	10	6	2	130	647	
17	Basanta-Kalabanjar	2.357	10	8	2	228	1135	
18	Haraiya-Khayarbutta	1.967	10	8	2	387	1927	
19	Kunaithi-Haraiya	1.544	10	8	2	364	1813	
20	Bangaudi- Bhaisasur	4.68	10	8	2	772	3845	

S.N.	Name of the Road	Length of the Road (km)	Right of way (m)	Existing Width of the Road (m)	Set Back (m)	HHs	Population Served	Remarks
21	Bhaisasur- Danpur	1.807	10	8	2	282	1404	
22	Belauli-Purbi Tole-Koldada	1.406	10	8	2	239	1190	
23	Resampur-Purnahiras Ma. V.	1.268	10	8	2	340	1693	
24	Chisapani-Kunaithi-Toraiya Ring Road	6.382	10	8	2	1125	5603	
25	Reshampur-Pahadipur	3.761	10	8	2	1020	5080	
26	Thumni Gaun-Ring Road	3.01	10	8	2	45	224	

5.3.3 Class C Roads

Class C roads basically serve the function of access to greater extent and mobility to some extent. These are third hierarchy of roads and these provide access to Class D roads. The rights of way for these are recommended to be more than 8m wider roads. Class C roads are residential street and they provide access to the private property and small industrial or public place. These roads provide connection to higher order roads or with agricultural roads which connect a farm with a mini-market centre or an agro-based production centre. These roads serve mainly for small/light vehicular movement for low volume intensity.

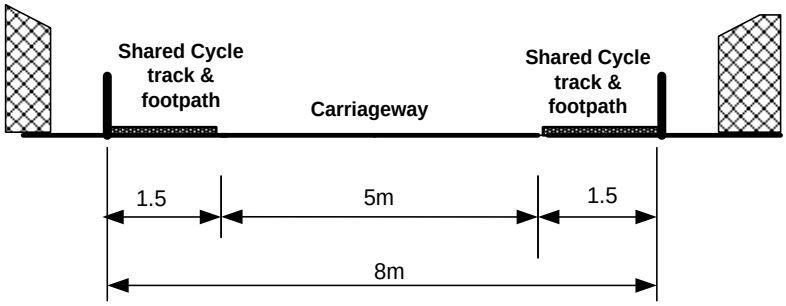

Figure 5.6: Recommended cross section for Class C roads

Thirty four Class C roads of 48.11 km length is approved based on both technical study, on site feasibility as well as Bottom Up approach and been listed as follows:

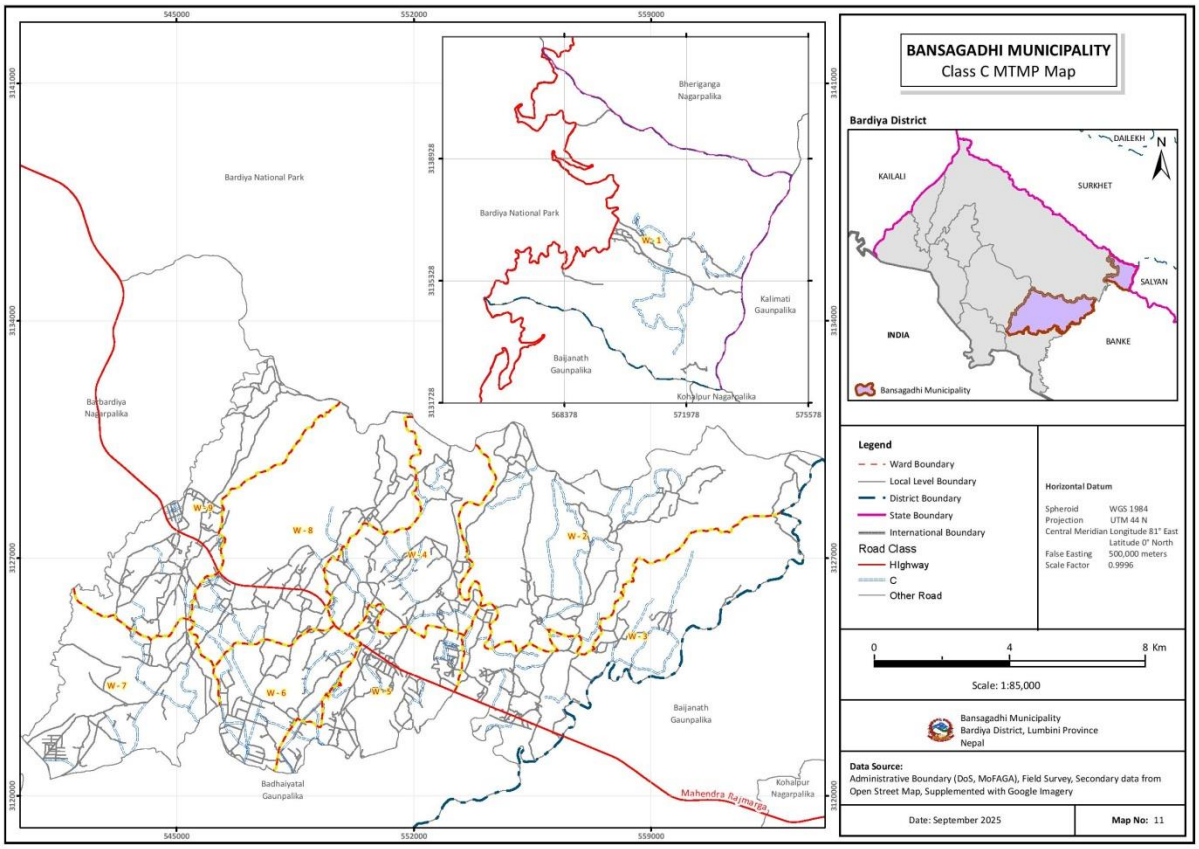

Figure 5.7: Class C roads in map

Table 5. 4 List of Class C roads

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
1	Pipal Chautara - Jhuraiya- Kiran Tharu House- Ring Road link Road	4	8	Gravel	Upgrading	2	
2	Karna Karki Khet - Bir Bahadur Budha house - Khotekhola Road	2.5	8	Earthen	Upgrading	1	
3	Indrenichowk - Olitole- Chisikhola Road	2.5	8	Earthen	Upgrading	1	
4	Achheriya - Gohani Tharu House- Mahadeva Road	2.2	8	Earthen	Upgrading	2	
5	Amoriya Dipak Chand House- Bahiri Ring Road - Bhola Reule House - Chakra Bahadur Chand House- School Road	2.17	8	Gravel	Upgrading	2	
6	Naula Bajhiyan - East Taul Bagiya - Resham Chand House Road	2.1	6	Earthen	Upgrading	2	
7	Ranjha Ghatte Khola Tara Devkota House- Tank Bahadur K.C. house- Dhaireni Road	2	8	Earthen	Upgrading	2	
8	Bhupalal B.C.house- Picnic Park Road	1.8	8	Earthen	Upgarding	1	
9	Mansi Tharu House- Jhuraiya Road	1.8	8	Earthen	Upgrading	2	
10	Dipendra Tharu House- Community Building- Ward No.4 Jholunge Pul Road	1.3	8	Earthen	Upgrading	2	
11	Betahani Bishnu Tharu House- Thagga Tharu House- School Road	1.3	8	Earthen	Upgrading	2	
12	Achheriya - Community Building - Pahadi Tole Road	1.2	8	Gravel	Upgrading	2	
13	6 No. ward Boundary - Aalla Gaun - Nahar Pipal bot Road	1.2	8	gravel	upgrading	4	
14	Betahani- Kurta Bridge - Arsewa road	1.1	8	Gravel	Upgrading	2	
15	Ranjha Sahari Health Post- Katkuwa Road	1.1	8	Gravel+Earthen	Upgrading	2	
16	Sher Bahadur B.K. house- Healthpost - Ward Office 1 Road	1	8	Gravel + Earthen	Upgrading	1	
17	Jagatiya Sahid gate - Raja Ram Tharu House- North B3 Nahar Road	1	8	Earthen	upgrading	5	
18	Balkrishana Khanal House- Dhiyon Eklekhiya Church- Chukan Tharu House Road	1	7	BT	Maintenance	5	
19	Katak Regmi House- Rara Road	0.85	8	Gravel	Upgrading	3	

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
20	Ranjha School Road- South Achheriya Road	0.8	8	Gravel	Upgrading	2	
21	Ranjha Sahari Health Post- Purba Ranjha Achheriya Khola Road	0.8	8	Gravel	Upgrading	2	
22	Mathariya Mandir - Pipalko Bot - Premgiriko Ghar- Keshab House Road	0.8	8	Earthen	Upgrading	4	
23	Pipal Chautara - Simenta Kula Binaura Road	0.7	8	Gravel	Upgrading	2	
24	Hajari Bagiya Bhitri Tole Road	0.7	8	Gravel	Upgrading	2	
25	Dipak Sharma House- WestvTole Road	0.7	8	Earthen	Upgrading	2	
26	Hasnapur (Basanta Chowk) - South Road	0.7	8	gravel	upgrading	5	
27	Simanya - West Community Forest Road	0.64	8	Gravel	Upgrading	3	
28	Asneri Purano Gaun - Mil Road	0.6	8	gravel	upgrading	4	
29	Jharsaila - Maula Gaudi Road	0.6	8	gravel	upgrading	5	
30	Bishnu Pariyar House-B.K.Tole - Badhaiya Gaun - Palika - Saraswoti House Road	0.6	7	Earthen	upgrading	5	
31	Highway - Khallgaun Road	0.55	8	Gravel	Upgrading	3	
32	Pul Dandi - Prem Giri House- Shankariya Pahadi Aryal - Raji Tole Road	0.55	7	gravel	upgrading	4	
33	Oli Tole - Ward office 1 Road	0.5	8	Earthen	Upgrading	1	
34	Oli Tole -View Tower Road	0.5	8	Earthen	Upgrading	1	
35	Rajkumar B.K. house- View Tower Road	0.5	8	Earthen	Upgrading	1	
36	Prem K.C. house- Talu Jaisi House Road	0.5	8	Gravel	Upgrading	2	
37	Rishi Nagr Tole Road	0.5	8	gravel	upgrading	5	
38	Bansagadhi Tal Barahi - Kul - Nahar Pul Road	0.5	8	gravel	upgrading	5	
39	Highway -South- Nahar Road	0.45	8	Gravel	Upgrading	3	
40	Babai Bridge- Hunutel Aaran Road	0.4	8	Earthen	Upgrading	1	
41	Milap Ghar Chowk - Charbahini Chowk- Malami Pratichhalaya Road	0.4	8	Earthen	Upgrading	1	

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
42	Ralakala Raga House- Nares Khatri House Road	0.4	8	Earthen	Upgrading	1	
43	Jase Kami House - Dhanu Jaisi House Road	0.4	8	Earthen	Upgrading	1	
44	Pradip Ili house- Rajkumar B.K. House Road	0.4	8	Earthen	Upgrading	1	
45	Mhadev Tharu House- Trogapama Tharu House Road	0.4	8	Gravel	Upgrading	3	
46	Nahar Purba - Ghanshyam Tharu House - Uttar Road	0.4	8	gravel	upgrading	5	
47	Dillya Oli House - Janata Aa. Bi. Road	0.3	8	Earthen	Upgrading	1	
48	Hira Tharu House - Budhi Ghar Road	0.3	8	gravel	Upgrading	5	
49	Nahar Purba - Pashchim - Damauli Road	0.2	8	gravel	upgrading	5	
50	Jharsaila Chowk - Nahar Dhik Road	0.2	8	gravel	upgrading	5	

5.3.4 Class D Roads

Class 'D' roads are all other minor roads which give access to public property. All other roads that fulfill the minimum requirement set by the Municipality and that doesn't fall under above classes, automatically falls under Class D roads. The cross section can be decided from local level with approval from MEC, but ensuring all road users are given sufficient rights of sharing the roadway. The community level participation is must for completion of these roads. The Municipality -community share can go from 40% - 60% to 60% - 40% for effectiveness of construction and maintaining the roads. These criterions of investment from local sector depend on Municipality policy.

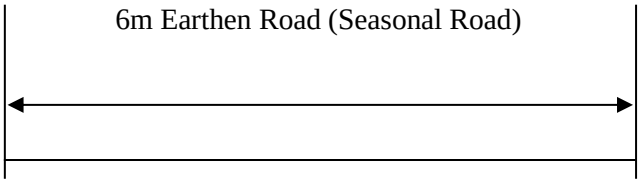

Figure 5.8: Recommended cross section for Class D roads

Twenty Nine Class D roads with length of 19.66km have been proposed within the Municipality as follows:

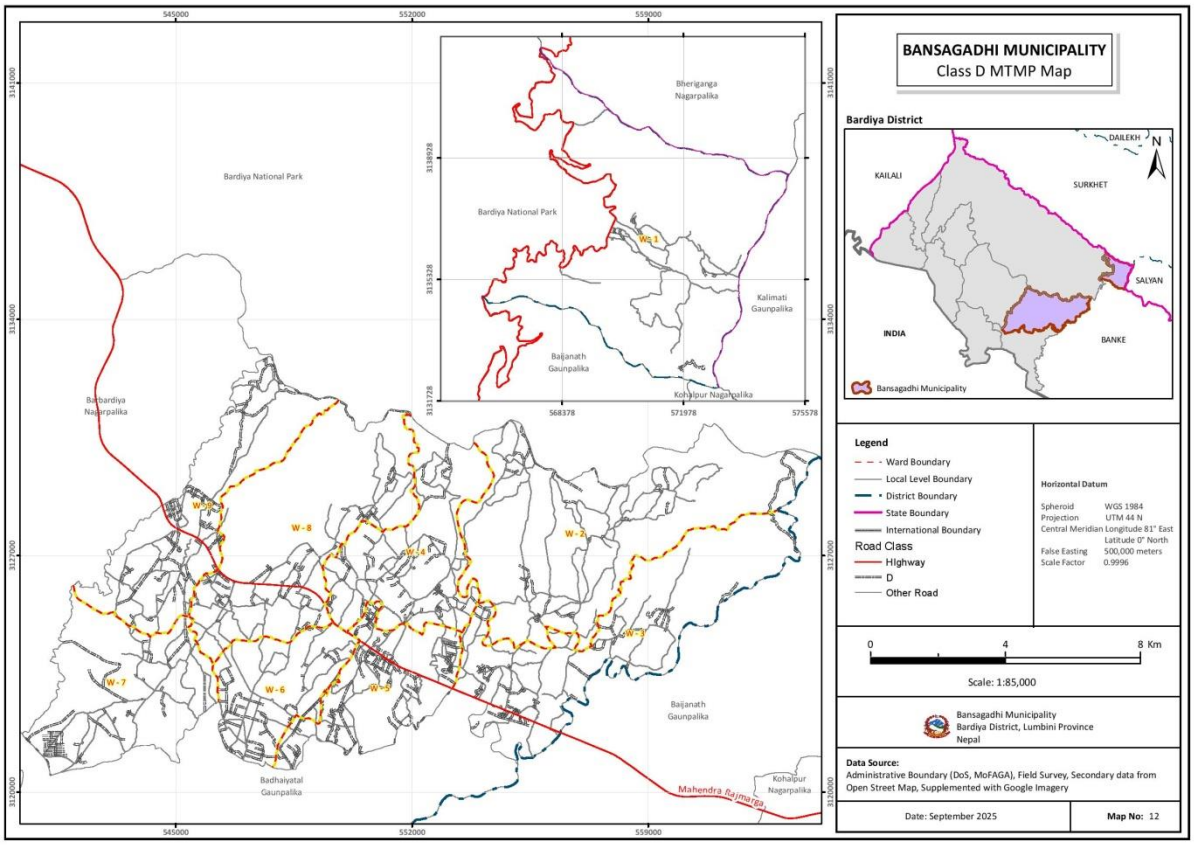

Figure 5.9: Class D roads in map

Table 5. 5 List of Class D roads

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
1	Naula Bajhiyan - East Taul Bagiya - Resham Chand House Road	2.1	6	Earthen	Upgrading	2	
2	Pahadipur- Bar Pipal Chautara - Gol Ghar Bhitri Road	1.6	6	gravel	upgrading	4	
3	Laganiya Culvert - Sinchahi Bandha Road	1.4	6	Earthen	Upgrading	2	
4	Khanepani Tank - Basagadi Unitesd School - Highway Road	1	6	gravel	upgrading	5	
5	Betahani- Kurtha Khola - South Road	0.9	6	Earthen	Upgrading	2	
6	Gairi Tole (Kalo Pate) - Dev Bahadur B.K. House Road	0.9	6	Earthen	Upgrading	2	
7	Betahani Jholunge Bridge- Tanka Bista House- Bista Tole Road	0.8	6	Earthen	Upgrading	2	
8	Darbagri Tharu House- Durga B.K. house - Ganga Tharu House Road	0.8	6	Earthen	Upgrading	2	
9	Pipal Chautara - East Naula Chhagiya Tole Road	0.8	6	Earthen	Upgrading	2	
10	Sundarbasti Bhitri Road - Salko Gutta Road	0.8	6	gravel	upgrading	4	
11	Basgadhi Mata Prasad Tharu house- East- Nahar Pul Road	0.8	6	gravel	upgrading	5	
12	Dangla Tharu House- Gambhir Khaji House Road	0.6	6	Gravel	Upgrading	2	
13	Nabin Dangi House- Khagendra Bi.Ka. House- Road	0.6	6	Earthen	Upgrading	2	
14	Devi Mandir - Babai Nadi Road	0.5	6	Earthen	Upgrading	1	
15	Dhan Bahadur B.K. house- Health Post Road	0.5	6	Earthen	Upgrading	1	
16	Aashis G.C. House- Deep Boring Road	0.5	6	Earthen	Upgrading	3	
17	Gauri Chowk - South - Bisnu Tole Road	0.5	6	Gravel	Upgrading	3	
18	Khanepani Tank - Magarpur- Bhim Bahadur Pariyar House - Magarpur Road	0.5	6	gravel	upgrading	5	
19	Rampur Nahar - West - South Road	0.5	6	gravel	upgrading	5	
20	Shiva Mandir -East Chitrahan Tole Road	0.4	6	Gravel	Upgrading	3	
21	Mewadal - Ramalal Tharu - Mandir Road	0.4	6	gravel	Upgrading	4	

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
22	Nahar Pul - Sabitri Dangi House- Tikaram House - North Road	0.4	6	gravel	upgrading	5	
23	Pannako Ghar- Bubako Ghar Road	0.35	6	Earthen	Upgrading	4	
24	Shiva Mandir - West Taulan Tole Road	0.3	6	Gravel	Upgrading	3	
25	Basgadhi Aadhibasi Bhawan- South- West Nala Dhik Road	0.3	6	gravel	upgrading	5	
26	SOS Nagar Hospital - South Road	0.3	4	gravel	upgrading	5	
27	Barha Bigha Road - West Reshm Pandey House Road	0.3	4	Earthen	upgrading	5	
28	Nahar Purba- Chankha Tharu Khet Road	0.25	6	Earthen	upgrading	5	
29	Shiva Mandir - West Road	0.2	6	Gravel	Upgrading	3	

CHAPTER SIX: PRIORITIZATION CRITERIA

6.1 Concept of Prioritization

Each road are of importance in some aspect, some serve large population, whereas some serve the purpose of access, while some link the ward with market or service facilities and some link acts as connectors between two wards or Municipality. It is not possible to construct/maintain or upgrade all roads at a time due to various constraints as: time, resources and cost constraint. Looking at the importance of road, some road need intervention immediately and some can be done later on. Thus, each link in a network needs to be prioritized and various interventions need to be taken based on the prioritization. In simple words, rank of each road network need to be assessed based on its importance and the intervention is taken based on the rank. The scoring criteria and their weightage/score remains the same for all road links as well as for all type of intervention.

6.2 Weightage Scoring Criteria

After rigorous study (literature around the world and past experience) and ToR, following prioritization criteria is published. Eight ranking/prioritization indicator is proposed as prioritization indicator, which includes following:

Table 6. 1 Proposed Scoring Criteria with score for prioritization

S.N.	Scoring Criteria	Scoring Unit	Score
1	Demand Priority of wards		20
2	Total existing width	Meter	10
3	Population served		20
4	Road network benefit (access to service centers , recreational centre, agricultural centre and market)		20
5	Link to future development potential sites		10
6	Link to other road network (SRN, District roads, Airport)		10
7	Road Surface		10

A. Demand priority of wards:

It is the one of the major criteria for prioritization. Each ward has provided intervention in prioritized order during filling demand form from priority order one to five. These priorities is based on actual present ward resident need, i.e. the intervention which is at number 1 priority need to be done first. Higher the priority of intervention, it should get highest score. If certain intervention got highest priority i.e. number 1 priority in certain ward level, then it need to get full marks. Road with first priority will get full marks and the score will reduced by 20 % for each lower level priority; i.e. second priority road will get 80% score. Lowest priority (5th priority) link intervention will get twenty percent of total score. And all other roads will get

10% of the total score. The road link with different priority from different wards will get the average score

B. Existing Width of Road:

Existing width is also the next governing factor for prioritization. The present width of the road is the indicator of the importance. The road which is wider among many roads within the Municipality carries slight more importance than other roads. Thus, wide roads having width more than 6m is given highest priority and thus full score, roads having width between 4.5 meter to 6 meter is provided with 80% of the total score and roads with width less than 4.5 m gets 60% of the score. As the new proposed road doesn't have width at present day giving them zero score will not be realistic and thus new proposed road is given 25% of the total score. Road width within zero and maximum width is given score based on relative scoring. The score for road with variable width will be based on weightage width.

C. Population Served

Population coverage by the road linkage is one of the important indicator of prioritization. Higher the population served by the road, higher will be its necessity or importance and it need to be constructed/upgraded/maintained first. Thus, high score is assigned for the road link serving high population and all other score is based on the relative marking. Now the question arises which population can be considered as high population and thus relative score is provided. Among all roads within the Municipality, road serving maximum population is given full marks and the other roads are provided score accordingly. Thus, the score for road based on population served lies within zero to full score.

D. Road Network Benefit (SAMT)

It is one of the main governing prioritization indicators. The road link may provide access to service centre (schools, health post, governmental offices, etc.), agricultural land, market centre and tourism or recreational (picnic spot, historical place, park, cinema hall, playground), and. A single road link can serve just a single function to all above four functions. Simply more the services road link offers more will be the importance of the road link/network. The proposed road intervention which serves all four facilities is regarded as the major intervention which needs immediate attention and thus it is provided with highest full marks. If the road link only serves any three function/purpose, the score is reduced to 80% of the total final marks. Similarly, link serving any of the two functions is provided with 60% and the road which serves only a single function is provided with 40%.

E. Future Potential Development

It is one of the main governing prioritization indicators. Higher the future potential development, higher will be its necessity or importance and it need to be constructed/upgraded/maintained first. Thus, high score is assigned for the higher potential road and all other score is based on the relative marking wt. Among all roads within the Municipality, road serving maximum potential development is given full marks and the other roads are

provided score accordingly. Thus, the score for road based future potential lies within zero to full score.

F. Link to other road network

It is one of the main governing prioritization indicators. The proposed road intervention which join SRN and Feeder road are is regarded as the major intervention which need immediate attention and thus it is provided with highest full marks and are put in the first prioritization hierarchy followed by the roads joining District road which are given 80% of the total total score and the road which serve from class A road is provided with 60%.

G. Existing Road Surface

Road surface type also governs the scoring and prioritization of the road. There are two principles behind which type of road to prioritize first, one principle says the objective need to be access first, i.e. first make the road motor-able so that it can be operated in all for all weather roads. Another approach says the road importance is dependent on surface type; the road which is bituminous at presents has great importance and need to be maintained first compared to upgrading earthen road. Both aspects have significant impact on overall prioritization. Here, this study gives highest priority to earthen surface as we are mainly concern with accessibility first. Earthen surface road acquire full marks, gravel road surface acquire 80% of total and bituminous/metallic road gets 60% of total score. If a single road have different surface at different section, then the weightage average based on length is taken and score is provided accordingly.

6.3 Prioritized Road Network

The road intervention is based on the budget available as well as the importance of the road and based on above prioritization criteria all roads have been prioritized and then the MTMP plan had been proposed based on the prioritized road network. The prioritized score for various roads have been summed up in the form of table as:

Table 6. 2 Prioritization

Class	Ward demand (20)	Width (10)	Surface Type (10)	Hierarchy & Linkage to SRN (10)	SAMT (20)	IDP (10)	Population (20)	Total	Rank
CLASS A ROADS									
A1	20	10	9.0	8	20.0	10	18.0	95.0	**1**
A2	19	9	9.0	7	18.0	10	17.0	89.0	**2**
A3	18	8	8.0	9	17.0	10	16.0	86.0	**3**
A4	18	9	8.0	7	18.0	9	17.0	86.0	**4**
A5	19	8	9.0	6	17.0	8	18.0	85.0	**5**
A6	17.9	7.6	7.0	6	18.0	10	17.0	83.5	**6**
A7	17.6	7.2	8.0	6	17.7	10	17.1	83.6	**7**
A8	17.3	6.8	9.0	6	17.6	10	17.0	83.7	**8**
A9	17	6.4	8.0	6	17.4	10	17.0	81.8	**9**
A10	16.7	6	7.9	6	18.0	10	17.0	81.6	**10**
A11	15	5.6	7.8	9	17.0	9	17.0	80.4	**11**
A12	16.1	8	7.0	6	16.9	9	16.9	79.9	**12**
A13	15.8	9	7.7	7	16.0	7	16.9	79.4	**13**
A14	15.5	8	7.6	6	16.0	9	16.9	79.0	**14**
A15	15.2	7.6	7.5	6	16.4	9	16.8	78.5	**15**
A16	14.9	7.2	7.4	5.6	16.2	10	16.8	78.1	**16**
A17	15	7	9.0	8	15	7	17.0	78.0	**17**
A18	14	9	9.0	7	14	7	17.0	77.0	**18**
A19	13	8	8.0	9	12	10	16.0	76.0	**19**

Class	Ward demand (20)	Width (10)	Surface Type (10)	Hierarchy & Linkage to SRN (10)	SAMT (20)	IDP (10)	Population (20)	Total	Rank
CLASS B ROADS									
B012	8	8	10	6	16	8	14	70	12
B005	18	10	10	6	16	8	18	86	5
B008	16	8	10	6	15	8	14	77	8
B003	16	10	10	8	18	9	18	89	3
B010	8	8	9	8	16	8	18	75	10
B004	20	8	10	4	20	8	18	88	4
B001	16	10	10	10	18	9	18	91	1
B007	12	10	6	10	16	8	18	80	7
B009	2	10	8	8	20	10	18	76	9
B006	16	8	6	10	16	7	18	81	6
B013	4	8	10	6	10	5	10	53	13
B011	12	8	6	10	14	6	14	70	11
B002	20	6	10	10	18	7	18	89	2
B14	4	8	10	6	10	5	9	52	14
B16	4	8	10	6	10	5	8	51	16
B15	4	8	10	6	10	5	7	50	15
CLASS C ROADS									
C009	16	10	8	4	10	7	16	71	9
C010	16	8	8	4	14	6	14	70	10
C008	20	8	6	10	10	5	12	71	8

Class	Ward demand (20)	Width (10)	Surface Type (10)	Hierarchy & Linkage to SRN (10)	SAMT (20)	IDP (10)	Population (20)	Total	Rank
C007	20	6	6	10	8	6	16	72	7
C006	12	8	10	10	14	8	12	74	6
C011	8	10	6	4	16	8	18	70	11
C001	16	10	6	10	18	10	20	90	1
C002	12	10	6	10	20	10	20	88	2
C003	20	6	10	6	14	6	14	76	3
C004	16	6	10	10	14	6	14	76	4
C005	16	10	9	6	14	6	14	75	5

CHAPTER SEVEN: MUNICIPAL TRANSPORT MASTER PLAN

This chapter deals with the strategic framework associated with Municipal Transport Master Plan. Alongside, it also covers perspective plan and implementing strategies necessary to achieve the plan followed by budget expenditure plan.

7.1 Perspective Plan of Municipal Road Network

Perspective plan of municipal road network includes the maintenance of the access and collector roads and development of higher hierarchy road corridors supporting mobility of the roads. First five years should focus on development of existing access roads and their maintenance. It also incorporates construction of new road linkages to provide basic access to the settlements. During this period formulated road hierarchy will be implemented in terms of policy and enforcement of bylaws. Within 2 years other complementary plans of land use and city development will be developed. In the third year, the MTMP and its perspective plan should be revised in coordination with the other plans formulated and changes captured during this period.

Medium term planning will implement the higher hierarchy roads in stages of clearing of the required ROW and infrastructure facilitation. Proper development stages of roads should be planned (construction of Class "A" roads to the standards of Class "C", then gradually upgrading to Class "B" and to Class "A"). Other implementation strategies should be developed and finalized at the end of this period. The road network developed during this period shall complete construction of Class "C" roads. Gradual upgrading of the higher hierarchy road networks during year ten to twenty will be justified by the traffic generated and level of mobility demanded to support the emerging economy. Land development and management should go parallel with clearance of RoW of higher classes of road. Road corridor development project should be introduced for acquisition of land required to clear RoW for various classes of road.

7.2 Financial Institutions and Capital Investment Plan

The construction work in each year depends on the probable budget. Firstly, the total budget for the current or last financial year needs to be determined. Firstly, the municipal Annual Budget Book is studied for revenues sources as well as expenditure plan on road. Planning of the investment is essential to support local government in developing good and best practice in construction, upgrading, overall asset management and especially operation and maintenance the road project. The grass root level involvement in the development of the road sector helps to create an informed and responsible citizen in the society. Thus, it is important to have local people's participation in the construction works of the local access roads. A majority (if not all) the local access roads should be constructed by the local people in coordination with the Municipality. People's participation can be achieved in plantation alongside of the roads, cleaning of the road area and other activities.

Municipality has the responsibility of preparing the necessary framework and implementing policies and strategies for the planned development of the municipal roads and thus the Municipality as a whole. Major share of the municipal budget should be used to maintain the roads and construction of wider roads to meet the planned class and ROW. The annual program should address the local need and the need of emergency and specific maintenance.

Municipality has a major role in developing the roads. It has the responsibility of preparing the necessary framework and implementing policies and strategies for the planned development of the municipal roads and thus the Municipality as a whole. Major share of the municipal budget should be used to maintain the roads and construction of wider roads to meet the planned class and ROW. The annual program should address the local need and the need of emergency and specific maintenance. Specific roads should be constructed as a whole and not in parts for longer period of time. Other institutions are district and division line agencies such as DoR, DoLIDAR. These institutions are responsible for the development of road corridors that are important to the district or a larger area as a whole. Their contribution may or may not invest in the roads within the Municipality, but wider roads of the Municipality that extends to the boundary to other Municipality /districts may draw investment beyond the municipal boundary. This will ultimately help in the development of the local municipal market centre.

7.3 Intervention Categories

After the finalization of perspective plan through the categorization of municipal road, required interventions of municipal road, required interventions should be decided according to the priority and necessity of the roads. Only few Km graveled/stone soling in this Municipality , therefore, almost all roads need improvement or upgrading in the first phase parallel with conservation intervention. A considerable length of new linkage to remote areas requires new construction as well. For the reference of the Municipality the categories of the interventions are defined below 97

7.3.1 Conservation

Conservation refers to the actions required to repair a road and keep it in good and passable condition. 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 Annual Road Maintenance Plan (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 as far as it does not require rehabilitation.

7.3.2 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 are described briefly as following:

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

3. **Cross drainage structures-** 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 has 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.

7.3.3 New Construction

New construction refers to construction of new road linkage according to the necessity of the Municipality especially in those places where roads have not linked. This includes opening of new track and establishment connectivity to the new area.

7.4 Five Year Budget Expenditure

Provision of annual budget expenditure for proposed intervention (new construction, upgrading, maintenance and rehabilitation) is one of the final outcomes of the study. The budget plan is based on realistic approach and takes consideration of annual allocated budget of Municipality. Intervention that can't be completed in preceding year should be the next priority in coming year. If a certain road, which was targeted to complete in first year could not be finished in first year, need to be given first priority in next year expenditure plan. If there is deficit in annual expenditure, Municipality needs to incorporate that particular heading in next year at any cost. They can look for grant, assistance from district or even central level or they can incorporate them by shifting budget from less importance item/heading. Budgeting of roads has been divided according to interventions:

Construction and upgrading (70%)

Maintenance (30%)

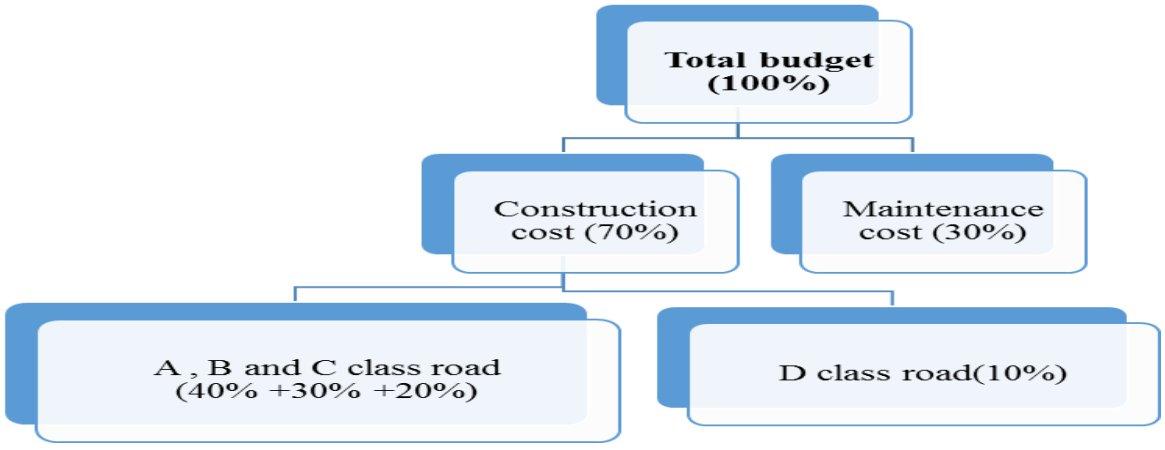

Figure 7.1: Expenditure Breakdown based on to MTMP Guidelines "A" Annex 5.

Budgeting of municipal road has been calculated based on present budget and certain growth rate. The capacity enhancement of the Municipality is assumed by 20% increment each year. Maintenance cost has been allocated 30% of fund available for municipal road. Yearly maintenance plans according to need based assessment of required maintenance has to be prepared and cost allocation needs to be done through this plan. In absence of specific fund granted for special project, all other fund available to Municipality for construction of road

should come through one window system collected in under single basket and allocated to the roads based on ranking of roads.

The total budget for 5 years period is estimated to be at Rs. 164,10,90,000 including gap budget. The budget for roads is expected to be increased at 10% per year. The total budget allocated for 1st year is Rs. 12, 00, 00,000 which will increase by 10% each year and at the 5th year; the budget is expected to be Rs.729,597,500. The total budget required for 5 years MTPP period is Rs.1,327,141,363.00 susceptible to change depending on the revised MTMP every 5 years.

Table 7.1: Budget Allocation for Upgrading and Maintenance

FY	Class A	Class B	Class C	Class D	Total In ('000)
2082/083	100958.33	77090.05	47116.67	10416.67	**235581.7167**
2083/084	100958.33	82007.55	47116.67	10416.67	**240499.2167**
2084/085	144740.00	80248.75	47116.67	10416.67	**282522.0833**
2085/086	150581.67	78046.26	49600.00	8500	**286727.9229**
2086/087	150581.67	73128.76	49600.00	8500	**281810.4229**
Gap Budget	223300	90648.75	0	0	**313948.75**
Total Budget	**871120**	**481170.1**	**240550**	**48250**	**1641090.113**

The cost of construction and upgrading of road of class "D" is subjected to 10% of total cost of construction and upgrading. Class A road owes 40%, Class B 30% and Class C 20% according to MTMP Guidelines "A" annex 5.

Table 7.2: Budget Allocation for various Classes of Roads

FY	Class A	Class B	Class C	Class D	Total In ('000)
2082/083	100958.33	77090.05	47116.67	10416.67	**235581.7167**
2083/084	100958.33	82007.55	47116.67	10416.67	**240499.2167**
2084/085	144740.00	80248.75	47116.67	10416.67	**282522.0833**
2085/086	150581.67	78046.26	49600.00	8500	**286727.9229**
2086/087	150581.67	73128.76	49600.00	8500	**281810.4229**

This budget need to be increased to provide intervention to all road network, if it is to be designed to desired level of full Right of way and hence they are constructed to acceptable level in next five years and is dealt in next subheading.

Gap budget will support by provincial government and Federal Government as well as doner agencies.

7.5 Five Year Implementation Plan

Provision of annual budget expenditure for proposed intervention (new construction, upgrading, maintenance and rehabilitation) is one of the final outcomes of the study. The budget

plan is based on realistic approach and takes consideration of annual allocated budget of Municipality. Intervention that can't be completed in preceding year should be the next priority in coming year. If a certain road, which was targeted to complete in first year could not be finished in first year, need to be given first priority in next year expenditure plan.

For the preparation of implementation plan one intervention for each road was considered to be intervening. However, if budget remains, then it shall be used for the preparation of second level of interventions considering the same priority. For example, if a road is earthen at present, it will first be upgraded to gravel road and then the next ranked road is provided with intervention and if the budget remains only then it will be upgraded to bituminous/metallic road. At short run all the Class A and B roads will be upgraded to two lane roads, whereas Class C and D roads to single lane roads

For track opening and gravelling full length (RoW) was used for intervening. In case of blacktopping within MTMP period (i.e. 5 years) double lane for Class A and B, single lane for Class C and Class D roads has been taken under considerations. The difference of RoW and existing width was taken for determining the cost for widening. In each of these calculations, the rate given in guideline was for single lane and the necessary multiplication was made for respective number of lanes. Drainage calculation was made for both side drains as well as cross drains. Cross drain was considered at every 500 meter intervals. Most often double side drain was considered within the city area.

Based on the budget projection of the Municipality for next five year and budget allocation for various classes of roads and surface type, the implementation strategy for the major hierarchical road network has been proposed.

Table7.3 Five Year Implementation Plan for Class A Roads

S.N.	Description	Target		Total Budget ('000)	Implementation Year					Source of Budget		Gap Budget
		Unit	Nos.		2082/083	2083/084	2084/085	2085/086	2086/087	Response office	Amount Require ('000)	
1	Ratna Rajmarga-Salyan Border	km	4.9	48970	4897.00	4897.00	4897.00	4897.00	4897.00	Nagarpalika office, PG, GoN	48970	24485.00
2	Belawa-Banmudawa-Amohiya	km	5.35	53530	5353.00	5353.00	5353.00	5353.00	5353.00	Nagarpalika office, PG, GoN	53530	26765.00
3	Laxmana- Amohiya	km	8.12	81240	8124.00	8124.00	8124.00	8124.00	8124.00	Nagarpalika office, PG, GoN	81240	40620.00
4	Jaljala- Ghaireni	km	3.54	35380	11793.33	11793.33	11793.33			Nagarpalika office, PG, GoN	35380	0.00
5	Betahani- Jaljali	km	3.54	35380	11793.33	11793.33	11793.33			Nagarpalika office, PG, GoN	35380	0.00
6	Lok Rajmarga-Belawa-Lakshamanapur-Shantipur-Banmudawa	km	3.69	36880	12293.33	12293.33	12293.33			Nagarpalika office, PG, GoN	36880	0.00
7	Belawa-Mahadeva	km	3.07	30700	10233.33	10233.33	10233.33			Nagarpalika office, PG, GoN	30700	0.00
8	Uttar bhakari-Madaha-Newada-Shankhariya-Matariya-Bathuwa	km	5.87	58660	5866.00	5866.00	5866.00	5866.00	5866.00	Nagarpalika office, PG, GoN	58660	29330.00

S.N.	Description	Target		Total Budget ('000)	Implementation Year					Source of Budget		Gap Budget
		Unit	Nos.		2082/083	2083/084	2084/085	2085/086	2086/087	Response office	Amount Require ('000)	
9	Milanchok-Bathuwa-Asneri	km	2.04	20370	10185.00	10185.00				Nagarpalika office, PG, GoN	20370	0.00
10	Uttar Bhakari-Chamakpur Ring Road	km	5.31	53130	5313.00	5313.00	5313.00	5313.00	5313.00	Nagarpalika office, PG, GoN	53130	26565.00
11	Kakaura-Riharpur-Dangpur- Koldada-Asneri	km	6.34	63440	6344.00	6344.00	6344.00	6344.00	6344.00	Nagarpalika office, PG, GoN	63440	31720.00
12	Shankhariya-Raji Tole-Dangpur	km	1.78	17750				8875.00	8875.00	Nagarpalika office, PG, GoN	17750	0.00
13	Haupur-Lok Rajmarga	km	1.75	17490				8745.00	8745.00	Nagarpalika office, PG, GoN	17490	0.00
14	Motipur-Laxmana	km	7.89	78940			26313.33	26313.33	26313.33	Nagarpalika office, PG, GoN	78940	0.00
15	Sattariya-Damauli	km	2.31	23050			7683.33	7683.33	7683.33	Nagarpalika office, PG, GoN	23050	0.00
16	Damauli-Amiliya-Kakaura	km	3.98	39760			13253.33	13253.33	13253.33	Nagarpalika office, PG, GoN	39760	0.00
17	Badki Deuda-Dangpur- Damauli	km	3.56	35640				17820.00	17820.00	Nagarpalika office, PG, GoN	35640	0.00

S.N.	Description	Target		Total Budget ('000)	Implementation Year					Source of Budget		Gap Budget
		Unit	Nos.		2082/083	2083/084	2084/085	2085/086	2086/087	Response office	Amount Require ('000)	
18	Sadhapurba-Badhaiyatal	km	1.33	13250				6625.00	6625.00	Nagarpalika office, PG, GoN	13250	0.00
19	Bangaudi-Jhanaiya-Bhaisasur- Dangpur Ring Road	km	1.98	19780				9890.00	9890.00	Nagarpalika office, PG, GoN	19780	0.00
20	Machhagadh-Thumani	km	8.76	87630	8763.00	8763.00	8763.00	8763.00	8763.00	Nagarpalika office, PG, GoN	87630	43815.00
21	Machhagadh-Toraiya	km	2.02	20150			6716.67	6716.67	6716.67	Nagarpalika office, PG, GoN	20150	0.00
	Total	km	**87**	**871120**	**100958.33**	**100958.33**	**144740.00**	**150581.67**	**150581.67**		**871120.0**	**223300.0**

Table7.4 Five Year Implementation Plan for Class B Roads

S.N.	Description	Target		Total Budget ('000)	Implementation Year					Source of Budget		Gap Budget
		Unit	Nos.		2082/083	2083/084	2084/085	2085/086	2086/087	Response office	Amount Require ('000)	
1	Ratna Rajmarga-Babai Khola Bajar-Khote Khola-Salyan Border	km	4.72	35362.5	5893.75	5893.75	5893.75			Nagarpalika office, PG, GoN	35362.5	17681.25
2	Mahadeva-Rajha	km	4.3	32220	5370.00	5370.00	5370.00			Nagarpalika office, PG, GoN	32220	16110.00
3	Mahadeva-Dakhin	km	2.11	15810	7905.00	7905.00				Nagarpalika office, PG, GoN	15810	0.00

S.N.	Description	Target		Total Budget ('000)	Implementation Year					Source of Budget		Gap Budget
		Unit	Nos.		2082/083	2083/084	2084/085	2085/086	2086/087	Response office	Amount Require ('000)	
4	Banbagiya-Manikapur-Bathuwa	km	4.37	32805	5467.50	5467.50	5467.50			Nagarpalika office, PG, GoN	32805	16402.50
5	Radhakrishna Chok-Dangpur-Link Road	km	3.21	24082.5	8027.50	8027.50	8027.50			Nagarpalika office, PG, GoN	24082.5	0.00
6	Laxmana School-Madaha Road	km	2.55	19117.5	6372.50	6372.50	6372.50			Nagarpalika office, PG, GoN	19117.5	0.00
7	Newada-Motipur	km	2.18	16380	5460.00	5460.00	5460.00			Nagarpalika office, PG, GoN	16380	0.00
8	Bansgadhi-Laksmanpur	km	2.02	15120				7560.00	7560.00	Nagarpalika office, PG, GoN	15120	0.00
9	Milanchok-Jharpur-Bathuwa	km	1.55	11595			3865.00	3865.00	3865.00	Nagarpalika office, PG, GoN	11595	0.00
10	Shankhariya-Pipaltari	km	.	3.5625				1.78	1.78	Nagarpalika office, PG, GoN	3.5625	0.00
11	Kakura- Rampur	km	2.1	15765				7882.50	7882.50	Nagarpalika office, PG, GoN	15765	0.00
12	Basgadhi-Hasnapur	km	4.41	33045	5507.50	5507.50	5507.50			Nagarpalika office, PG, GoN	33045	16522.50
13	Narayanpur-Soltitol-Dangpur	km	2.51	18840				9420.00	9420.00	Nagarpalika office, PG, GoN	18840	0.00
14	Tower Chok-10 no. Tole	km	2.84	21322.5				10661.25	10661.25	Nagarpalika office, PG, GoN	21322.5	0.00
15	Lakshamana-Damauli	km	.	13.95				6.98	6.98	Nagarpalika office, PG, GoN	13.95	0.00

S.N.	Description	Target		Total Budget ('000)	Implementation Year					Source of Budget		Gap Budget
		Unit	Nos.		2082/083	2083/084	2084/085	2085/086	2086/087	Response office	Amount Require ('000)	
16	Purano Basti-Laxmana	km	1.79	13387.5	4462.50	4462.50	4462.50			Nagarpalika office, PG, GoN	13387.5	0.00
17	Basanta-Kalabanjar	km	2.36	17677.5	8838.75	8838.75				Nagarpalika office, PG, GoN	17677.5	0.00
18	Haraiya-Khayarbutta	km	1.97	14752.5		4917.50	4917.50	4917.50		Nagarpalika office, PG, GoN	14752.5	0.00
19	Kunaithi-Haraiya	km	1.54	11580	5790.00	5790.00				Nagarpalika office, PG, GoN	11580	0.00
20	Bangaudi-Bhaisasur	km	.	35.1	17.55	17.55				Nagarpalika office, PG, GoN	35.1	0.00
21	Bhaisasur- Danpur	km	1.81	13552.5				6776.25	6776.25	Nagarpalika office, PG, GoN	13552.5	0.00
22	Belauli-Purbi Tole-Koldada	km	1.41	10545				5272.50	5272.50	Nagarpalika office, PG, GoN	10545	0.00
23	Resampur-Purnahiras Ma. V.	km	1.27	9510				4755.00	4755.00	Nagarpalika office, PG, GoN	9510	0.00
24	Chisapani-Kunaithi-Toraiya Ring Road	km	6.38	47865	7977.50	7977.50	7977.50			Nagarpalika office, PG, GoN	47865	23932.50
25	Reshampur-Pahadipur	km	3.76	28207.5			9402.50	9402.50	9402.50	Nagarpalika office, PG, GoN	28207.5	0.00
26	Thumni Gaun-Ring Road	km	3.01	22575			7525.00	7525.00	7525.00	Nagarpalika office, PG, GoN	22575	0.00
	Total		.	**481170.1**	**77090.1**	**82007.6**	**80248.8**	**78046.3**	**73128.756**		**481170.11**	**90648.75**

Table 7.5 Five Year Implementation Plan for Class C Roads

S.N.	Description	Target		Total Budget ('000)	Implementation Year					Source of Budget		Gap Budget
		Unit	Nos.		2082/083	2083/084	2084/085	2085/086	2086/087	Response office	Amount Require ('000)	
1	Pipal Chautara - Jhuraiya-Kiran Tharu House- Ring Road link Road	km	4	20000	6666.67	6666.67	6666.67			Nagarpalika office, PG, GoN	20000	0.00
2	Karna Karki Khet - Bir Bahadur Budha house - Khotekhola Road	km	2.5	12500	4166.67	4166.67	4166.67			Nagarpalika office, PG, GoN	12500	0.00
3	Indrenichowk - Olitole-Chisikhola Road	km	2.5	12500	4166.67	4166.67	4166.67			Nagarpalika office, PG, GoN	12500	0.00
4	Achheriya - Gohani Tharu House- Mahadeva Road	km	2.2	11000	3666.67	3666.67	3666.67			Nagarpalika office, PG, GoN	11000	0.00
5	Amoriya Dipak Chand House-Bahiri Ring Road - Bhola Reule House - Chakra Bahadur Chand House- School Road	km	2.17	10850	3616.67	3616.67	3616.67			Nagarpalika office, PG, GoN	10850	0.00
6	Naula Bajhiyan - East Taul Bagiya - Resham Chand House Road	km	2.1	10500	3500.00	3500.00	3500.00			Nagarpalika office, PG, GoN	10500	0.00
7	Ranjha Ghatte Khola Tara Devkota House- Tank Bahadur K.C. house- Dhaireni Road	km	2	10000	3333.33	3333.33	3333.33			Nagarpalika office, PG, GoN	10000	0.00
8	Bhupalal B.C.house- Picnic Park Road	km	1.8	9000	3000.00	3000.00	3000.00			Nagarpalika office, PG, GoN	9000	0.00

S.N.	Description	Target		Total Budget ('000)	Implementation Year					Source of Budget		Gap Budget
		Unit	Nos.		2082/083	2083/084	2084/085	2085/086	2086/087	Response office	Amount Require ('000)	
9	Mansi Tharu House- Jhuraiya Road	km	1.8	9000	3000.00	3000.00	3000.00			Nagarpalika office, PG, GoN	9000	0.00
10	Dipendra Tharu House- Community Building- Ward No.4 Jholunge Pul Road	km	1.3	6500	2166.67	2166.67	2166.67			Nagarpalika office, PG, GoN	6500	0.00
11	Betahani Bishnu Tharu House- Thagga Tharu House- School Road	km	1.3	6500	2166.67	2166.67	2166.67			Nagarpalika office, PG, GoN	6500	0.00
12	Achheriya - Community Building - Pahadi Tole Road	km	1.2	6000	2000.00	2000.00	2000.00					
13	6 No. ward Boundary - Aalla Gaun - Nahar Pipal bot Road	km	1.2	6000	2000.00	2000.00	2000.00					
14	Betahani- Kurta Bridge - Arsewa road	km	1.1	5500	1833.33	1833.33	1833.33					
15	Ranjha Sahari Health Post- Katkuwa Road	km	1.1	5500	1833.33	1833.33	1833.33					
16	Sher Bahadur B.K. house- Healthpost - Ward Office 1 Road	km	1	5000				2500.00	2500.00			
17	Jagatiya Sahid gate - Raja Ram Tharu House- North B3 Nahar Road	km	1	5000				2500.00	2500.00			
18	Balkrishana Khanal House- Dhiyon Eklekhiya Church- Chukan Tharu House Road	km	1	5000				2500.00	2500.00			

S.N.	Description	Target		Total Budget ('000)	Implementation Year					Source of Budget		Gap Budget
		Unit	Nos.		2082/083	2083/084	2084/085	2085/086	2086/087	Response office	Amount Require ('000)	
19	Katak Regmi House- Rara Road	km	0.85	4250				2125.00	2125.00			
20	Ranjha School Road- South Achheriya Road	km	0.8	4000				2000.00	2000.00			
21	Ranjha Sahari Health Post-Purba Ranjha Achheriya Khola Road	km	0.8	4000				2000.00	2000.00			
22	Mathariya Mandir - Pipalko Bot - Premgiriko Ghar-Keshab House Road	km	0.8	4000				2000.00	2000.00			
23	Pipal Chautara - Simenta Kula Binaura Road	km	0.7	3500				1750.00	1750.00			
24	Hajari Bagiya Bhitri Tole Road	km	0.7	3500				1750.00	1750.00			
25	Dipak Sharma House-WestvTole Road	km	0.7	3500				1750.00	1750.00			
26	Hasnapur (Basanta Chowk) - South Road	km	0.7	3500				1750.00	1750.00			
27	Simanya - West Community Forest Road	km	0.64	3200				1600.00	1600.00			
28	Asneri Purano Gaun - Mil Road	km	0.6	3000				1500.00	1500.00			
29	Jharsaila - Maula Gaudi Road	km	0.6	3000				1500.00	1500.00			
30	Bishnu Pariyar House-B.K.Tole - Badhaiya Gaun - Palika - Saraswoti House Road	km	0.6	3000				1500.00	1500.00			

S.N.	Description	Target		Total Budget ('000)	Implementation Year					Source of Budget		Gap Budget
		Unit	Nos.		2082/083	2083/084	2084/085	2085/086	2086/087	Response office	Amount Require ('000)	
31	Highway - Khallgaun Road	km	0.55	2750				1375.00	1375.00			
32	Pul Dandi - Prem Giri House- Shankariya Pahadi Aryal - Raji Tole Road	km	0.55	2750				1375.00	1375.00			
33	Oli Tole - Ward office 1 Road	km	0.5	2500				1250.00	1250.00			
34	Oli Tole -View Tower Road	km	0.5	2500				1250.00	1250.00			
35	Rajkumar B.K. house- View Tower Road	km	0.5	2500				1250.00	1250.00			
36	Prem K.C. house- Talu Jaisi House Road	km	0.5	2500				1250.00	1250.00			
37	Rishi Nagr Tole Road	km	0.5	2500				1250.00	1250.00			
38	Bansagadhi Tal Barahi - Kul - Nahar Pul Road	km	0.5	2500				1250.00	1250.00			
39	Highway -South- Nahar Road	km	0.45	2250				1125.00	1125.00			
40	Babai Bridge- Hunutel Aaran Road	km	0.4	2000				1000.00	1000.00			
41	Milap Ghar Chowk - Charbahini Chowk- Malami Pratichhalaya Road	km	0.4	2000				1000.00	1000.00			
42	Ralakala Raga House- Nares Khatri House Road	km	0.4	2000				1000.00	1000.00			
43	Jase Kami House - Dhanu Jaisi House Road	km	0.4	2000				1000.00	1000.00			
44	Pradip Ili house- Rajkumar B.K. House Road	km	0.4	2000				1000.00	1000.00			

S.N.	Description	Target		Total Budget ('000)	Implementation Year					Source of Budget		Gap Budget
		Unit	Nos.		2082/083	2083/084	2084/085	2085/086	2086/087	Response office	Amount Require ('000)	
45	Mhadev Tharu House-Trogapama Tharu House Road	km	0.4	2000				1000.00	1000.00			
46	Nahar Purba - Ghanshyam Tharu House - Uttar Road	km	0.4	2000				1000.00	1000.00			
47	Dillya Oli House - Janata Aa. Bi. Road	km	0.3	1500				750.00	750.00			
48	Hira Tharu House - Budhi Ghar Road	km	0.3	1500				750.00	750.00			
49	Nahar Purba - Pashchim - Damauli Road	km	0.2	1000				500.00	500.00			
50	Jharsaila Chowk - Nahar Dhik Road	km	0.2	1000				500.00	500.00			
	Total	km	**48.11**	**240550**	**47116.7**	**47116.7**	**47116.7**	**49600.0**	**49600**		**118350.0**	**0.0**

Table 7.5 Five Year Implementation Plan for Class D Roads

S.N.	Description	Target		Total Budget ('000)	Implementation Year					Source of Budget		Gap Budget
		Unit	Nos.		2082/083	2083/084	2084/085	2085/086	2086/087	Response office	Amount Require ('000)	
1	Naula Bajhiyan - East Taul Bagiya - Resham Chand House Road	km	2.1	5250	1750.00	1750.00	1750.00			Nagarpalika office	5250	0.00
2	Pahadipur- Bar Pipal Chautara - Gol Ghar Bhitri Road	km	1.6	4000	1333.33	1333.33	1333.33			Nagarpalika office	4000	0.00
3	Laganiya Culvert - Sinchahi Bandha Road	km	1.4	3500	1166.67	1166.67	1166.67			Nagarpalika office	3500	0.00

S.N.	Description	Target		Total Budget ('000)	Implementation Year					Source of Budget		Gap Budget
		Unit	Nos.		2082/083	2083/084	2084/085	2085/086	2086/087	Response office	Amount Require ('000)	
4	Khanepani Tank - Bosagadi Unitesd School - Highway Road	km	1	2500	833.33	833.33	833.33			Nagarpalika office	2500	0.00
5	Betahani- Kurtha Khola - South Road	km	0.9	2250	750.00	750.00	750.00			Nagarpalika office	2250	0.00
6	Gairi Tole (Kalo Pate) - Dev Bahadur B.K. House Road	km	0.9	2250	750.00	750.00	750.00			Nagarpalika office	2250	0.00
7	Betahani Jholunge Bridge- Tanka Bista House- Bista Tole Road	km	0.8	2000	666.67	666.67	666.67			Nagarpalika office	2000	0.00
8	Darbagri Tharu House- Durga B.K. house - Ganga Tharu House Road	km	0.8	2000	666.67	666.67	666.67			Nagarpalika office	2000	0.00
9	Pipal Chautara - East Naula Chhagiya Tole Road	km	0.8	2000	666.67	666.67	666.67			Nagarpalika office	2000	0.00
10	Sundarbasti Bhitri Road - Salko Gutta Road	km	0.8	2000	666.67	666.67	666.67			Nagarpalika office	2000	0.00
11	Basgadhi Mata Prasad Tharu house- East- Nahar Pul Road	km	0.8	2000	666.67	666.67	666.67			Nagarpalika office	2000	0.00
12	Dangla Tharu House- Gambhir Khaji House Road	km	0.6	1500	500.00	500.00	500.00			Nagarpalika office	1500	0.00
13	Nabin Dangi House- Khagendra Bi.Ka. House- Road	km	0.6	1500				750.00	750.00	Nagarpalika office	1500	0.00
14	Devi Mandir - Babai Nadi Road	km	0.5	1250				625.00	625.00	Nagarpalika office	1250	0.00
15	Dhan Bahadur B.K. house- Health Post Road	km	0.5	1250				625.00	625.00	Nagarpalika office	1250	0.00
16	Aashis G.C. House- Deep Boring Road	km	0.5	1250				625.00	625.00	Nagarpalika office	1250	0.00

S.N.	Description	Target		Total Budget ('000)	Implementation Year					Source of Budget		Gap Budget
		Unit	Nos.		2082/083	2083/084	2084/085	2085/086	2086/087	Response office	Amount Require ('000)	
17	Gauri Chowk - South - Bisnu Tole Road	km	0.5	1250				625.00	625.00	Nagarpalika office	1250	0.00
18	Khanepani Tank - Magarpur- Bhim Bahadur Pariyar House - Magarpur Road	km	0.5	1250				625.00	625.00	Nagarpalika office	1250	0.00
19	Rampur Nahar - West - South Road	km	0.5	1250				625.00	625.00	Nagarpalika office	1250	0.00
20	Shiva Mandir -East Chitrahan Tole Road	km	0.4	1000				500.00	500.00	Nagarpalika office	1000	0.00
21	Mewadal - Ramalal Tharu - Mandir Road	km	0.4	1000				500.00	500.00	Nagarpalika office	1000	0.00
22	Nahar Pul - Sabitri Dangi House- Tikaram House - North Road	km	0.4	1000				500.00	500.00	Nagarpalika office	1000	0.00
23	Pannako Ghar- Bubako Ghar Road	km	0.35	875				437.50	437.50	Nagarpalika office	875	0.00
24	Shiva Mandir - West Taulan Tole Road	km	0.3	750				375.00	375.00	Nagarpalika office	750	0.00
25	Basgadhi Aadhibasi Bhawan- South- West Nala Dhik Road	km	0.3	750				375.00	375.00	Nagarpalika office	750	0.00
26	SOS Nagar Hospital - South Road	km	0.3	750				375.00	375.00	Nagarpalika office	750	0.00
27	Barha Bigha Road - West Reshm Pandey House Road	km	0.3	750				375.00	375.00	Nagarpalika office	750	0.00
28	Nahar Purba- Chankha Tharu Khet Road	km	0.25	625				312.50	312.50	Nagarpalika office	625	0.00
29	Shiva Mandir - West Road	km	0.2	500				250.00	250.00	Nagarpalika office	500	0.00
	Total	km	**19.3**	**48250**	**10416.7**	**10416.7**	**10416.7**	**8500.0**	**8500**		**48250.0**	**0.0**

CHAPTER EIGHT: CONCLUSION

8.1 Conclusion

Municipal Transport Master Plan has been prepared for Bansgadhi Municipality. A series surveys for data collection, series of different level interaction with the locals and various authorities was conducted. The study has identified all the roads of the Municipality, their status and interventions required. The map of IDPM, MIM, MTPP and other maps are prepared.

The study has formulated hierarchy of roads which is necessary for long term rapid development of the Municipality area. The study has shown increased trend of motorized vehicle. This is necessary to be implemented as the developed cities are have trouble to address the demand of active mode user friendly urban road infrastructures. As the implementation strategy suggests, the Municipality needs to develop proper framework and policies for the implementation of the perspective plans, built the capacity of the Municipality and the local organizations and committees and proper stages of development of the roads.

Transport and land use along with nodal development cannot be disintegrated. Preparation of Municipal Transport Master Plan is the first step in the planned development of the municipal area. MTMP alone cannot circumscribe the potential development of the municipal area. Comprehensive city development plan, land use plan, drainage master plan, etc. are some other plans that need to be prepared and integrated with Municipal Transport Master Plan. For future nodal development and transport development, land use master plan and comprehensive city development plan should also be prepared. MTMP should then be revised based on those plans.

8.2 Recommendation

- Unplanned urbanization has rendered many cities unlivable because of the growing pollution and lack of green/open spaces. Road space is most frequently used public space. ***Provision of green belt*** along the urban roads creates safer and pleasant walking spaces, and acts as median to separate motorists from each other and from the NMT users.
- ***Proper structured public transport routes*** are vital for sustainable transport development. As the demand increases, before well-structured and formal transport is justified economically, the local government should introduce City Bus to ply at least within the Municipality.
- ***A proper hierarchy of settlement*** should be developed to segregate the commercial and business centers from settlement areas and industrial area. A hierarchy of the market centers should be developed as main market
- Better provision of ***Road and road side infrastructure*** is must for effectiveness of planning. Due to very high active users, proper networks of pedestrian way and cycle tracks should fit in the basic road width. Proper bus lay bys are necessary elements for proper public transport system. Adequate lighting system along with

proper connected pedestrian ways and zebra crossings is another major road infrastructure.

- Increase private motorized vehicle ownership will have witnessed the need of parking, so ***Proper Parking Management*** is must. Similarly, parking at the major destinations such as business and market centers, industrial and commercial areas should be managed by the private sector.
- ***Integrated service planning*** is a very important factor for damage minimization during construction and expansion of various facilities. As the road follows, settlement also expands which demands other facilities such as electricity, drainage and drinking water. All these facilities are provided along with road infrastructure, mostly within the ROW of road. Proper integration of these services with road planning is necessary to minimize multiple investments in the individual infrastructure and the damage to other infrastructure during maintenance and/or expansion.
- The proposed roads cannot be directly implemented at a glance. ***Proper phases of development*** of roads of all hierarchy should be envisaged and planned.
- ***Land acquisition*** should go parallel with development phase of roads and possibly concept of land polling can be adopted for land acquisition.
- ***Proper Land Use Plan and Comprehensive city development plan*** is must for better effectiveness of this MTMP and these three need to be correlated with each other.
- It is recommended to adopt ***Labour based Environmental friendly and Participatory (LEP)*** approach popularly known as Green Roads construction method. Green Road approach aims at reducing scarring by minimizing the amount of cut necessary and by balancing the amount of material cut with the amount of fill required.
- Revised Scoring criteria and Mid Period Review is must to ensure the MTMP is in accordance with the future developed polices on Land Use and Comprehensive City Development Plan.

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ANNEX A: MAPS

BANSAGADHI MUNICIPALITY
Location Map

543000 552000 561000 570000

3143000 3134000 3125000 3116000

Bardiya National Park

BARDIYA

Bherigangaa Nagarpalika

SURKHET

W - 1

SALYAN

Kalimati Gaunpalika

Barbardiya Nagarpalika

W - 9 W - 8 W - 4 W - 2 W - 3 W - 7 W - 6 W - 5

Nepalgunj Surkhet Road

Baijanath Gaunpalika

BANKE

Kohalpur Nagarpalika

Mahendra Rajmarga

Nepalgunj Gulariya Road

Badhaiyatal Gaunpalika

Ratna Rajmarga

Rapti Sonari Gaunpalika

Khajura Gaunpalika

Janki Gaunpalika

INDIA

0 4 8 Km

Scale: 1:127,000

Map Of Nepal

N

CHINA

INDIA

Bardiya District

DAILEKH

KAILALI

SURKHET

SALYAN

INDIA

BANKE

Legend

- Major Road
- Ward Boundary
- Local Level Boundary
- District Boundary
- State Boundary
- International Boundary

Horizontal Datum

Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East
	Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

Date: September 2025

Map No: 1

BANSAGADHI MUNICIPALITY
Strategic Road Network Map

543000 552000 561000 570000

3143000 3134000 3125000 3116000

Bardiya National Park

BARDIYA

Bheriganga Nagarpalika

SURKHET

SALYAN

Kalimati Gaunpalika

Barbardiya Nagarpalika

Baijanath Gaunpalika

BANKE

Kohalpur Nagarpalika

Rapti Sonari Gaunpalika

Badhaiyatal Gaunpalika

Khajura Gaunpalika

Janki Gaunpalika

INDIA

Nepalgunj Surkhet Road

Mahendra Rajmarga

Nepalgunj Gulariya Road

Ratna Rajmarga

0 4 8 Km

Scale: 1:127,000

Map Of Nepal

N

CHINA

INDIA

Bardiya District

DAILEKH

KAILALI

SURKHET

SALYAN

BANKE

INDIA

Legend

- Other Road
- Major Road
- Ward Boundary
- Local Level Boundary
- District Boundary
- State Boundary
- International Boundary

Horizontal Datum

Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

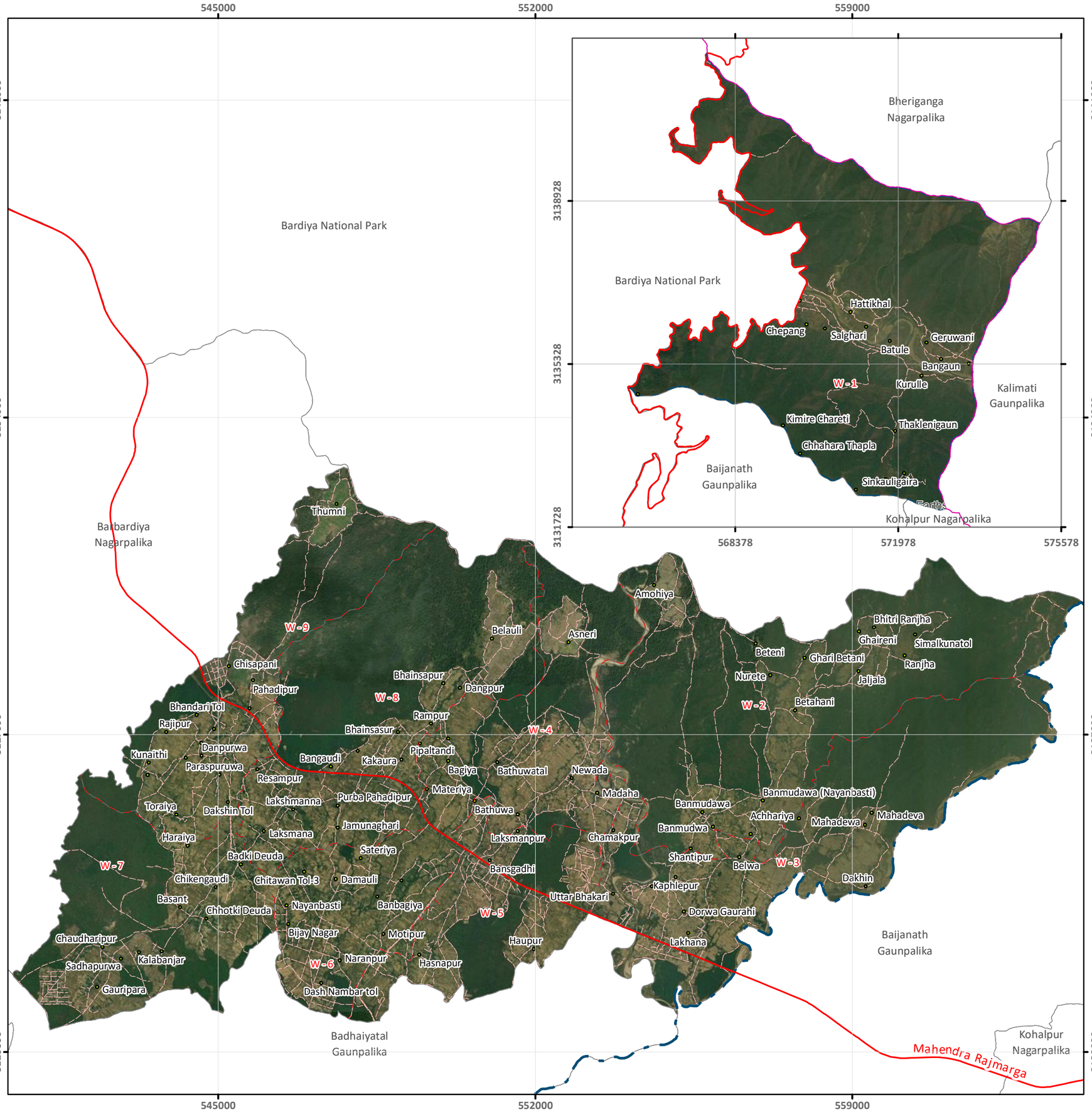
Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

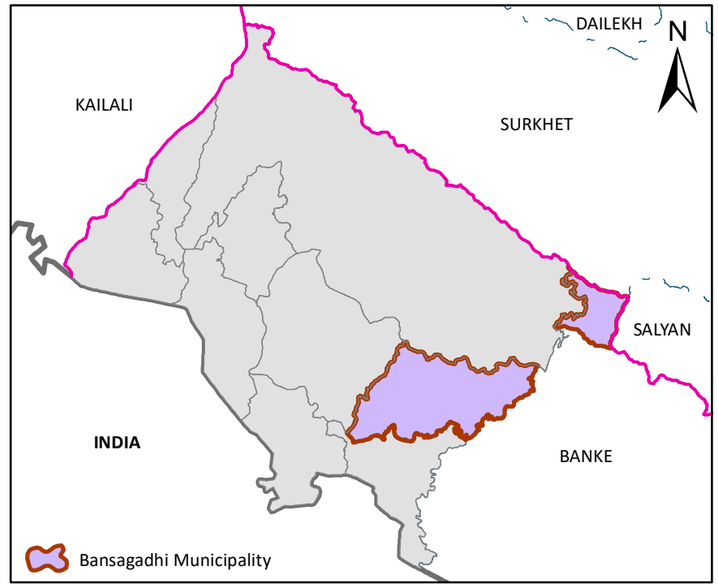
Date: September 2025

Map No: 2

BANSAGADHI MUNICIPALITY
Satellite Map



Bardiya District



Legend

- Settlement
- Other Road
- Major Road
- Ward Boundary
- Local Level Boundary
- District Boundary
- State Boundary
- International Boundary

Horizontal Datum

Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

0 — 4 — 8 Km

Scale: 1:85,000

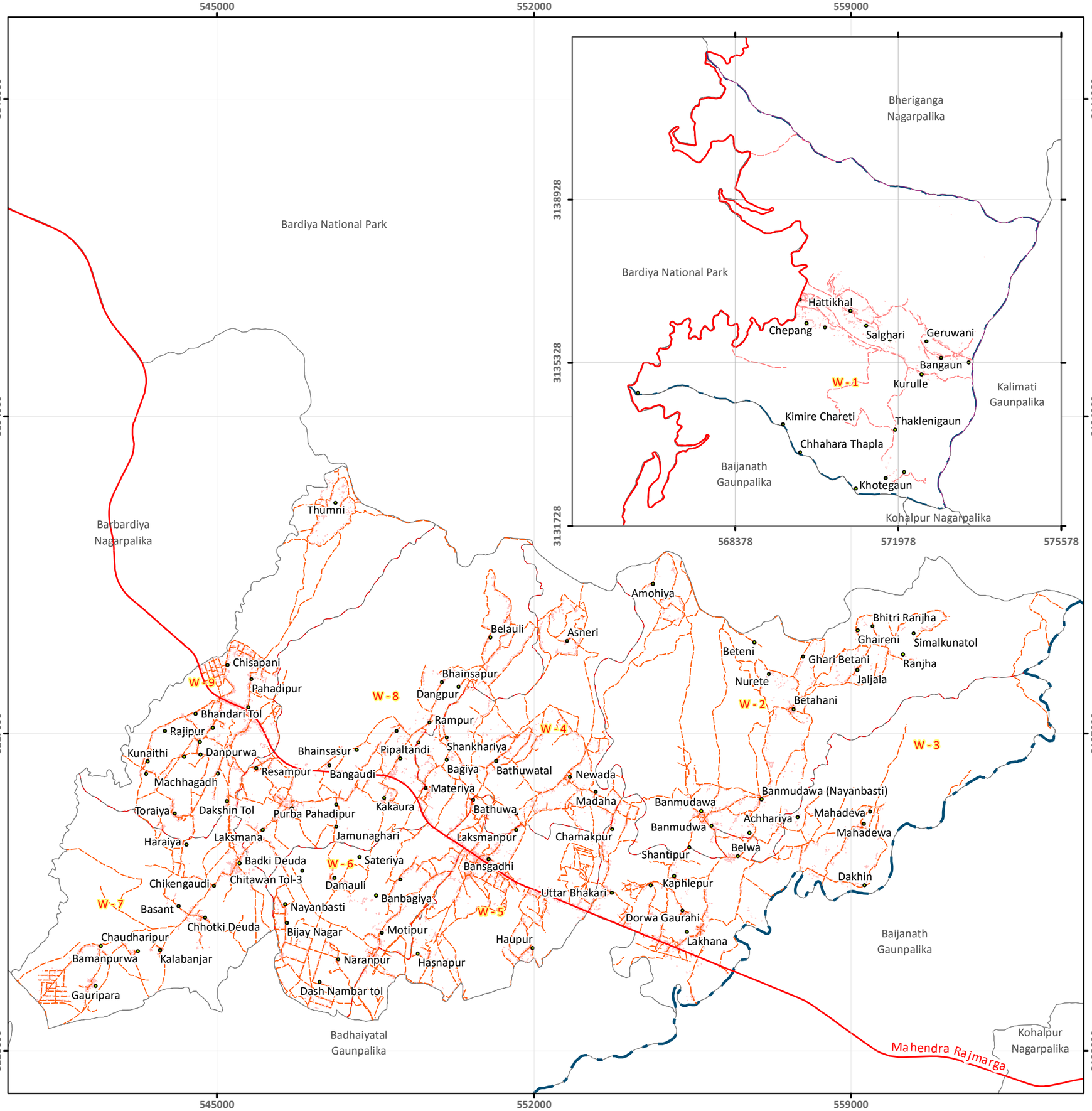
Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

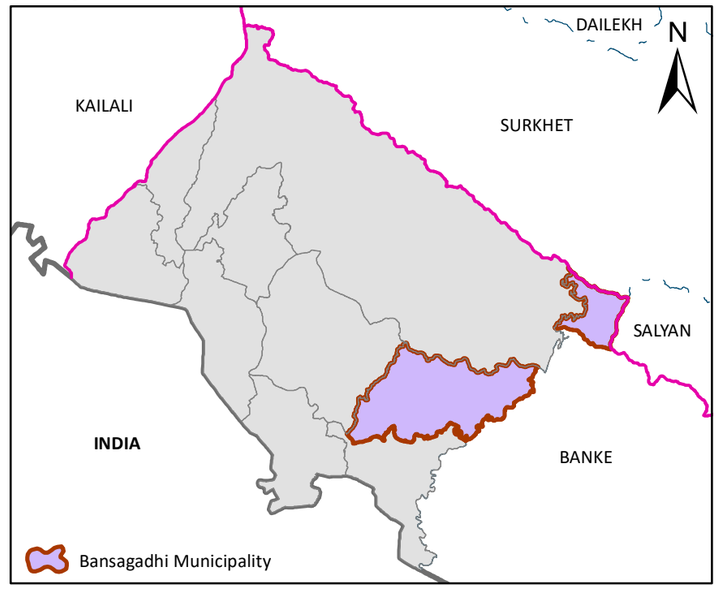
Date: September 2025

Map No: 3

BANSAGADHI MUNICIPALITY
Road Network Map



Bardiya District



Legend

- Settlement
- Other Road
- Major Road
- Ward Boundary
- Local Level Boundary
- District Boundary
- State Boundary
- International Boundary
- Built Up

Horizontal Datum

Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

0 4 8 Km

Scale: 1:85,000

Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

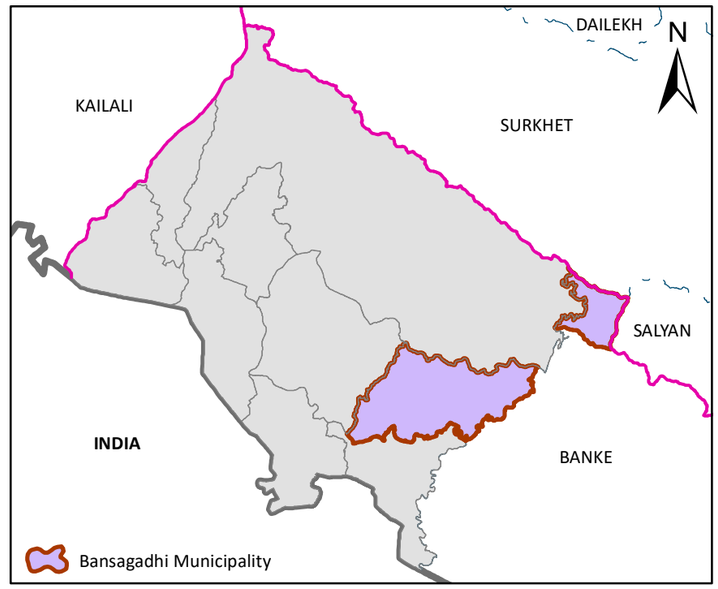
Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

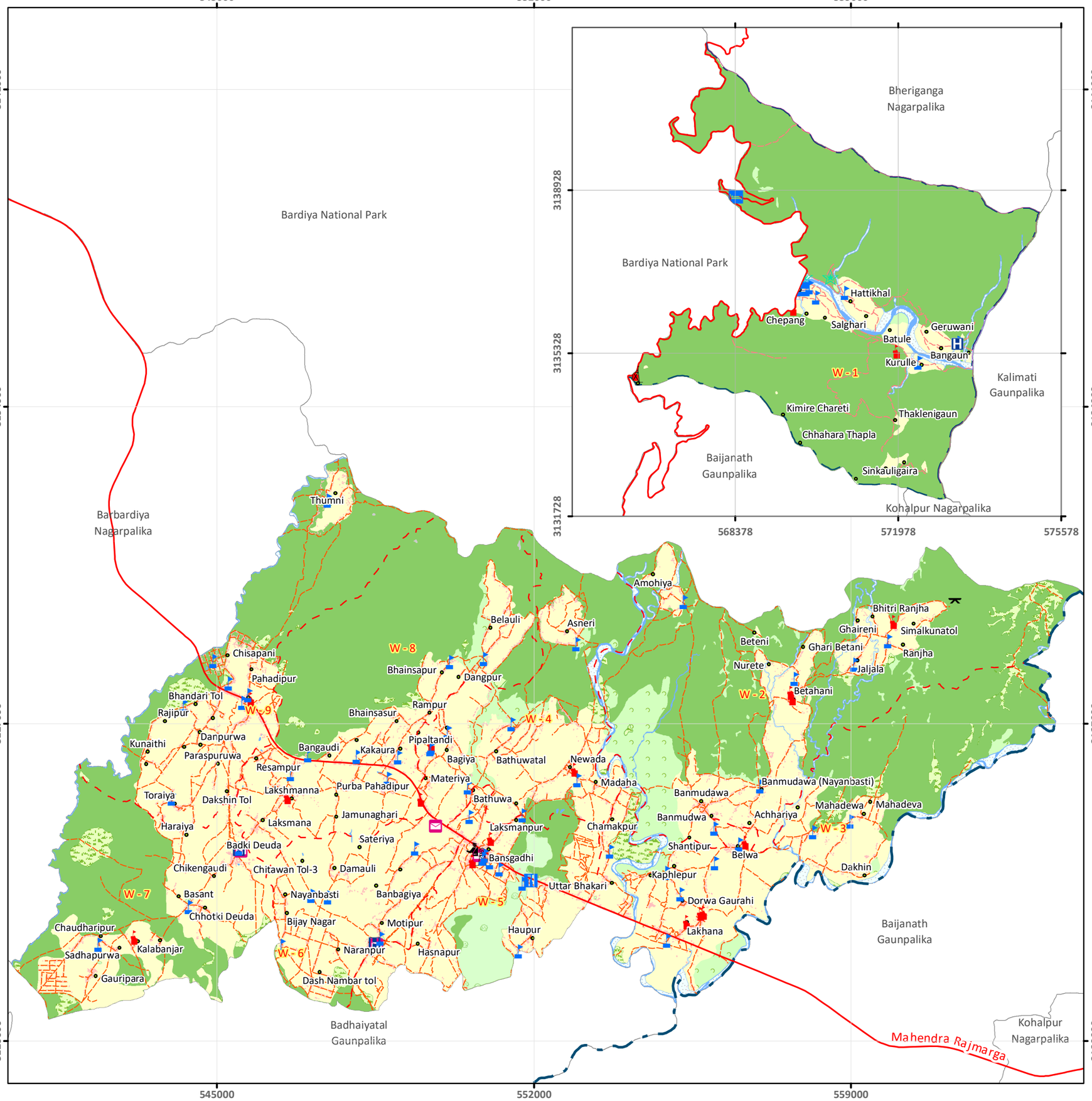
Date: September 2025

Map No: 4

BANSAGADHI MUNICIPALITY
Indicative Development Potential Map

Bardiya District





Legend

- Settlement
- Tourist Attraction
- Viewpoint
- Hotel
- Restaurant
- Picnic Spot
- School
- Health Post
- Police Post
- Post Office
- Temple

- Other Road
- Major Road
- Ward Boundary
- Local Level Boundary
- District Boundary
- State Boundary
- International Boundary

Landcover

- Barren Land
- Built Up
- Cultivation
- Waterbody
- Sand
- Forest
- Grass
- Bush
- Orchard
- Scattered Tree

0 — 4 — 8 Km

Scale: 1:85,000

Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

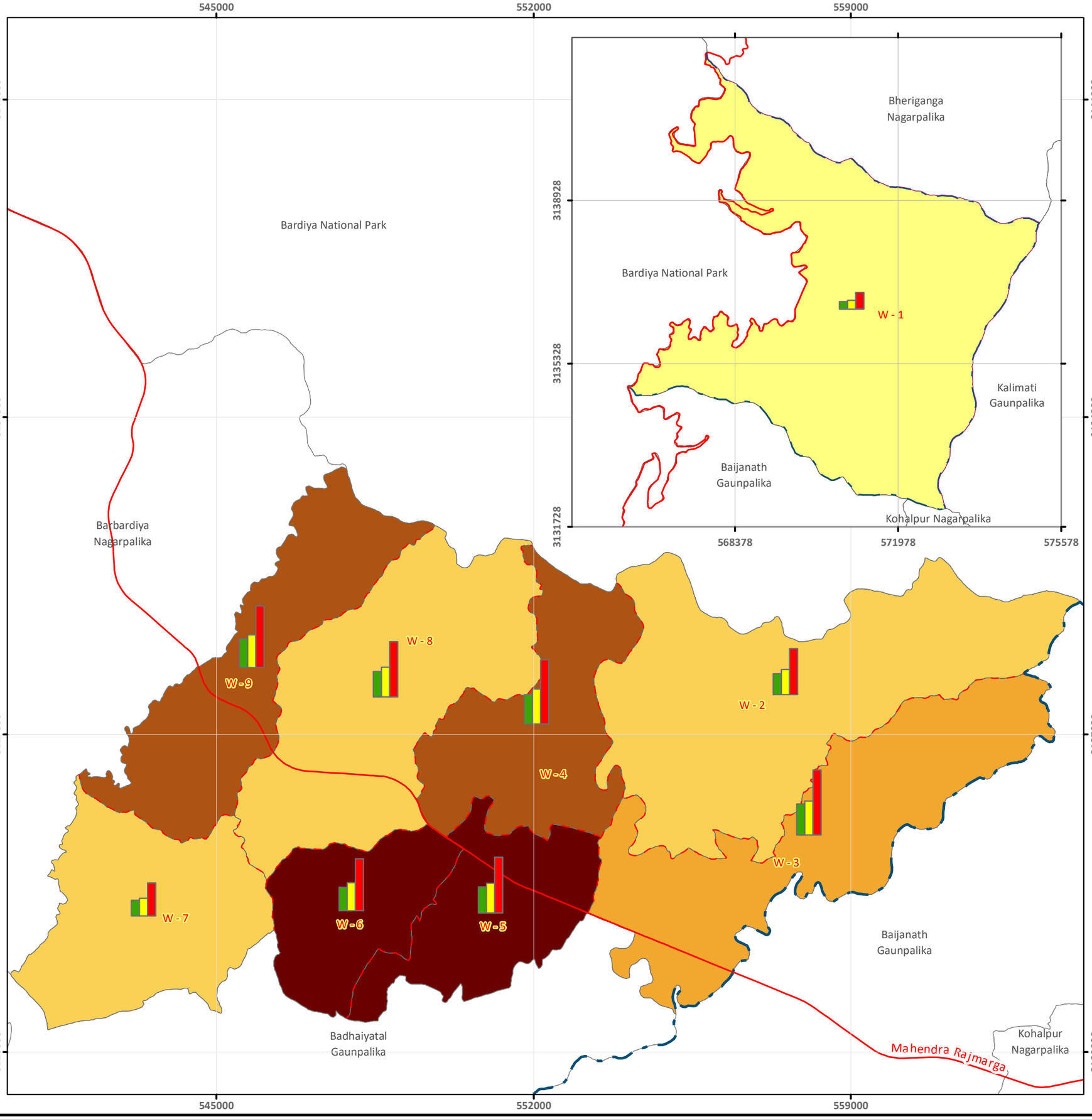
Horizontal Datum

Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East
	Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

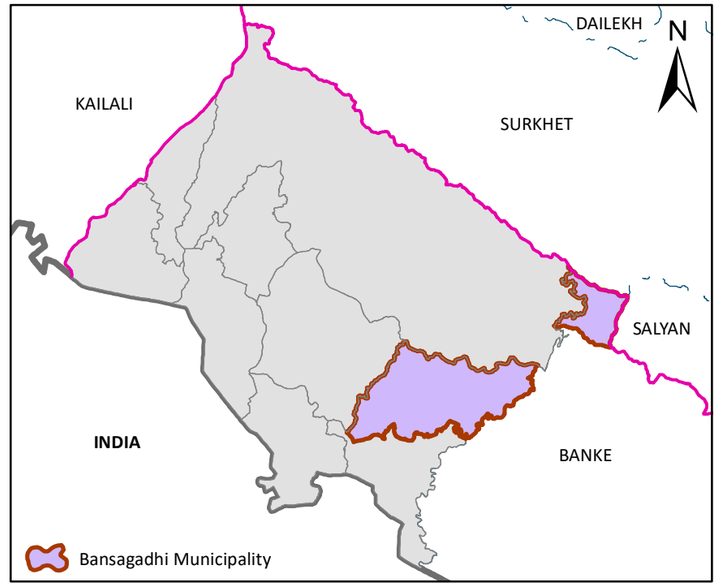
Date: September 2025

Map No: 5

BANSAGADHI MUNICIPALITY
Population Distribution and Density Map



Bardiya District



Legend

- Major Road
- Ward Boundary
- Local Level Boundary
- District Boundary
- State Boundary
- International Boundary

Population Distribution

- 4,600
- Male
- Female
- Total Population

Total Population / Area (Sq. Km.)

- < 150
- 150.01 - 300.00
- 300.01 - 450.00
- 450.01 - 600.00
- > 600.01

0 — 4 — 8 Km

Scale: 1:85,000

Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

Horizontal Datum

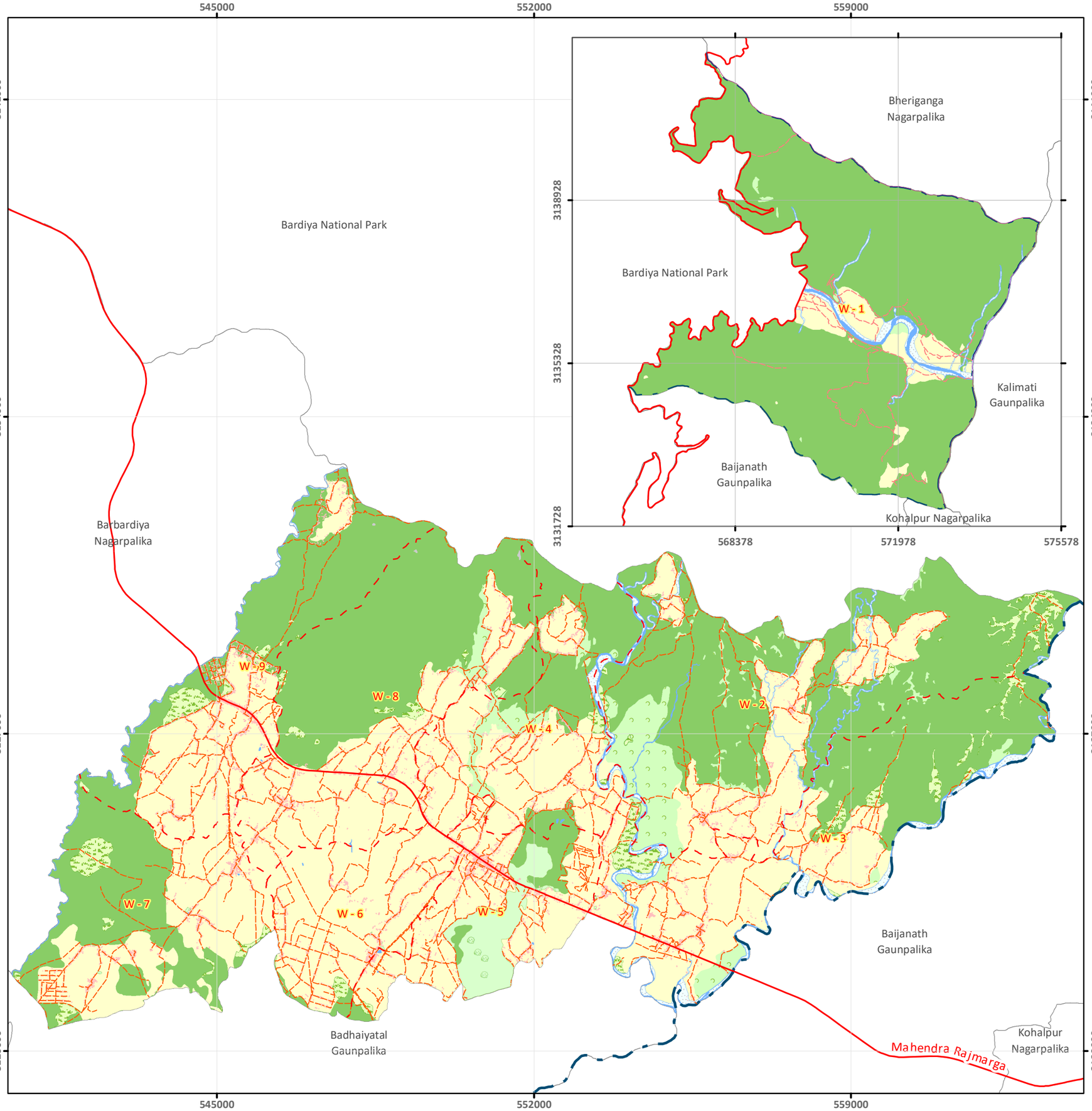
Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

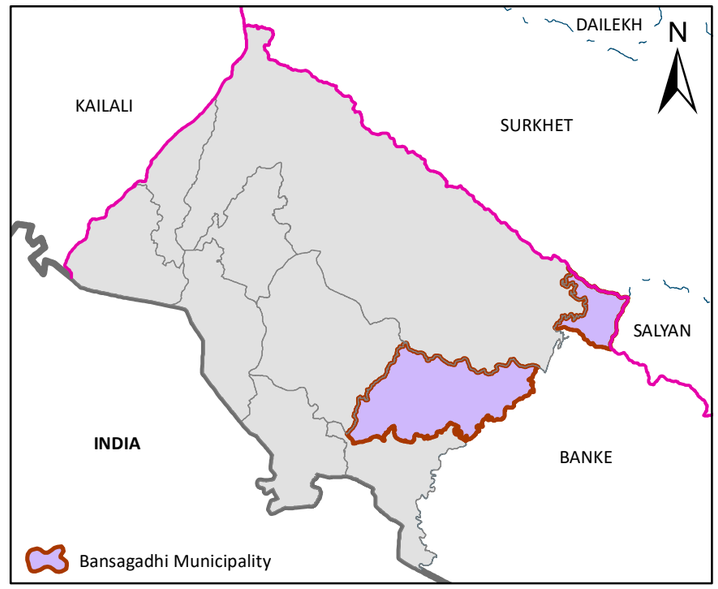
Date: September 2025

Map No: 6

BANSAGADHI MUNICIPALITY
Landuse / Landcover Map



Bardiya District



Legend

Landcover

- Barren Land
- Built Up
- Cultivation
- Waterbody
- Sand
- Forest
- Grass
- Bush
- Orchard
- Scattered Tree

- Other Road
- Major Road
- Ward Boundary
- Local Level Boundary
- District Boundary
- State Boundary
- International Boundary

0 — 4 — 8 Km

Scale: 1:85,000

Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

Horizontal Datum

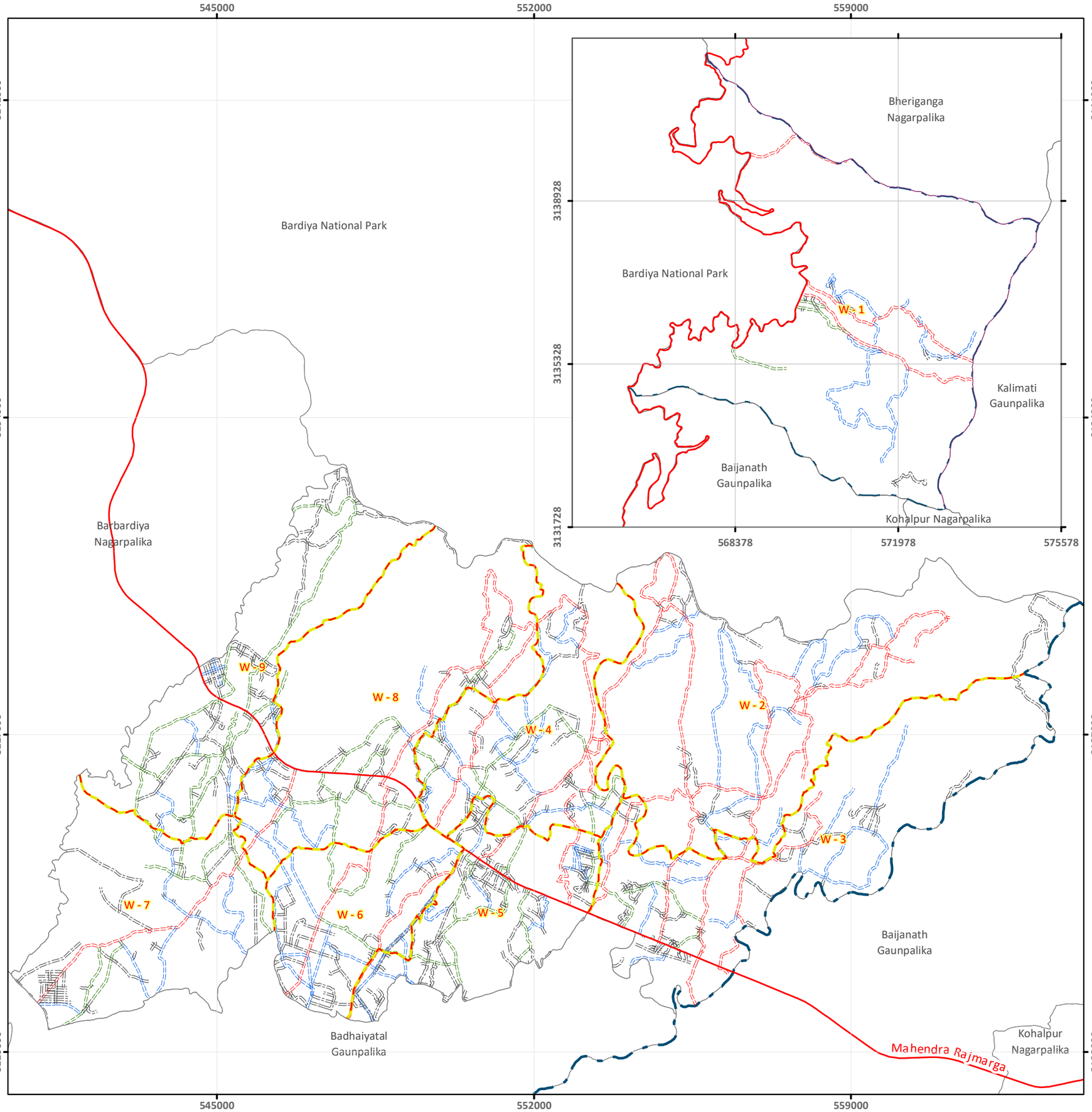
Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East
	Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

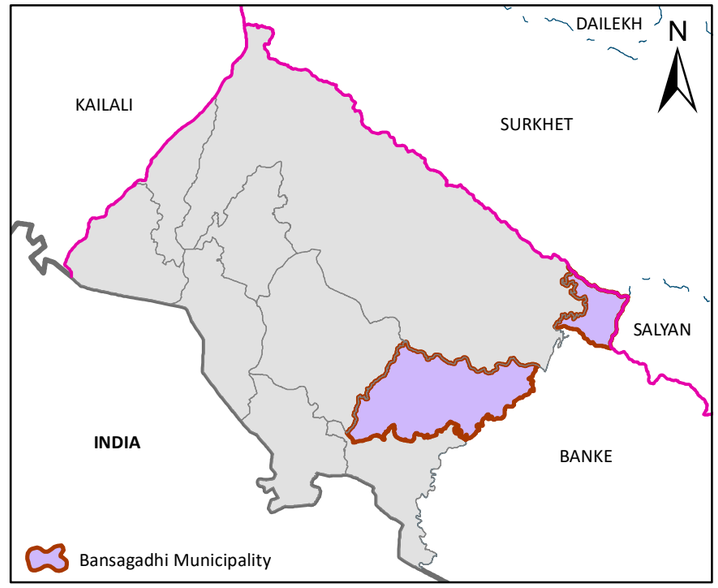
Date: September 2025

Map No: 7

BANSAGADHI MUNICIPALITY
Consolidated MTMP Map



Bardiya District



Legend

- Ward Boundary
- Local Level Boundary
- District Boundary
- State Boundary
- International Boundary

Road Class

- HIghway
- A
- B
- C
- D

Horizontal Datum

Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

0 — 4 — 8 Km

Scale: 1:85,000

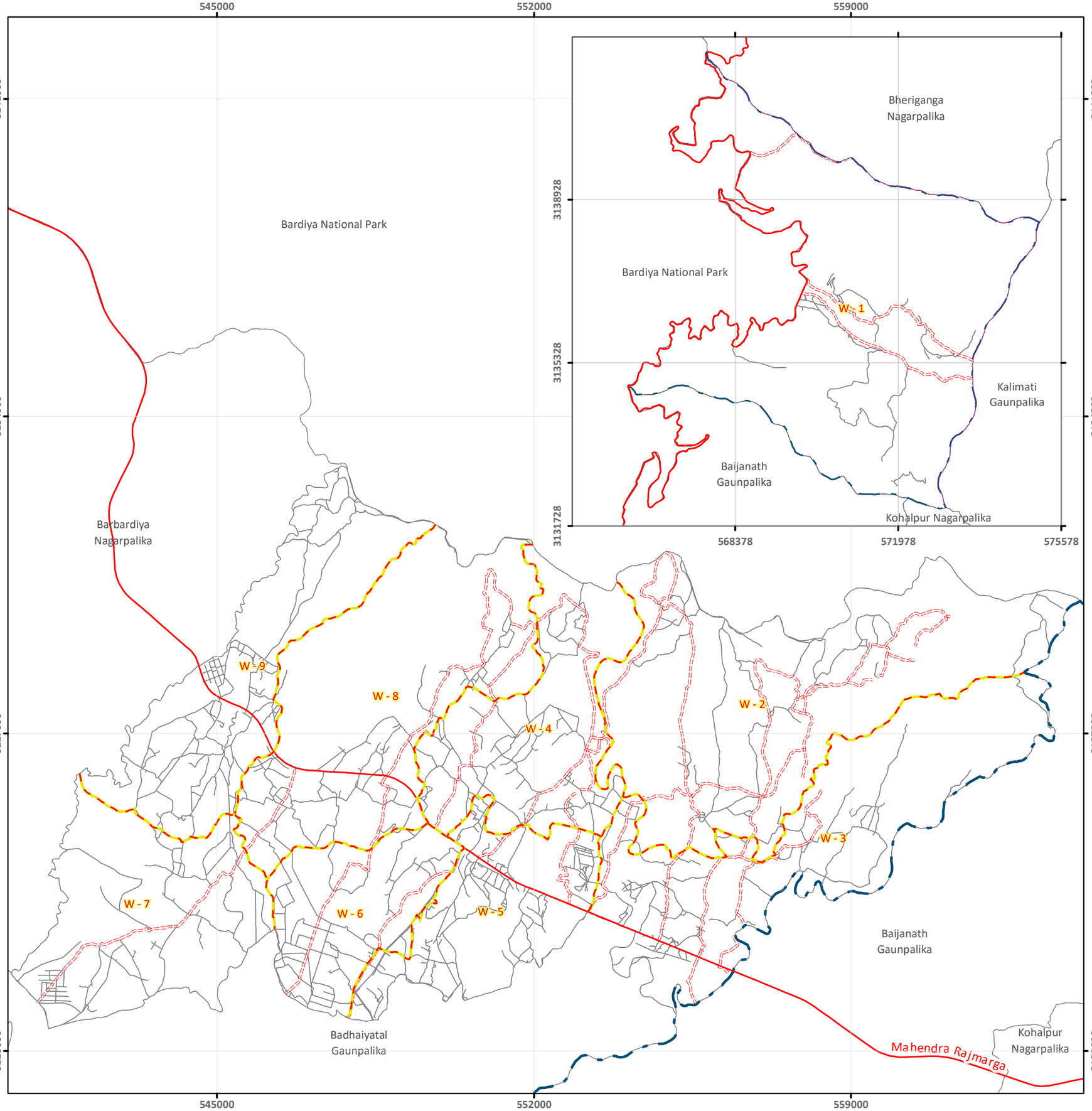
Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

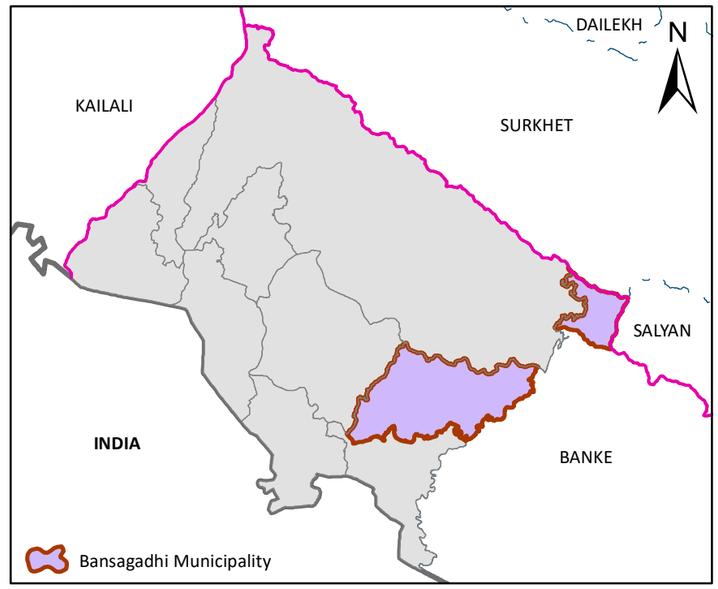
Date: September 2025

Map No: 8

BANSAGADHI MUNICIPALITY
Class A MTMP Map



Bardiya District



Legend

- Ward Boundary
- Local Level Boundary
- District Boundary
- State Boundary
- International Boundary

Road Class

- HIghway
- A
- Other Road

Horizontal Datum

Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

0 — 4 — 8 Km

Scale: 1:85,000

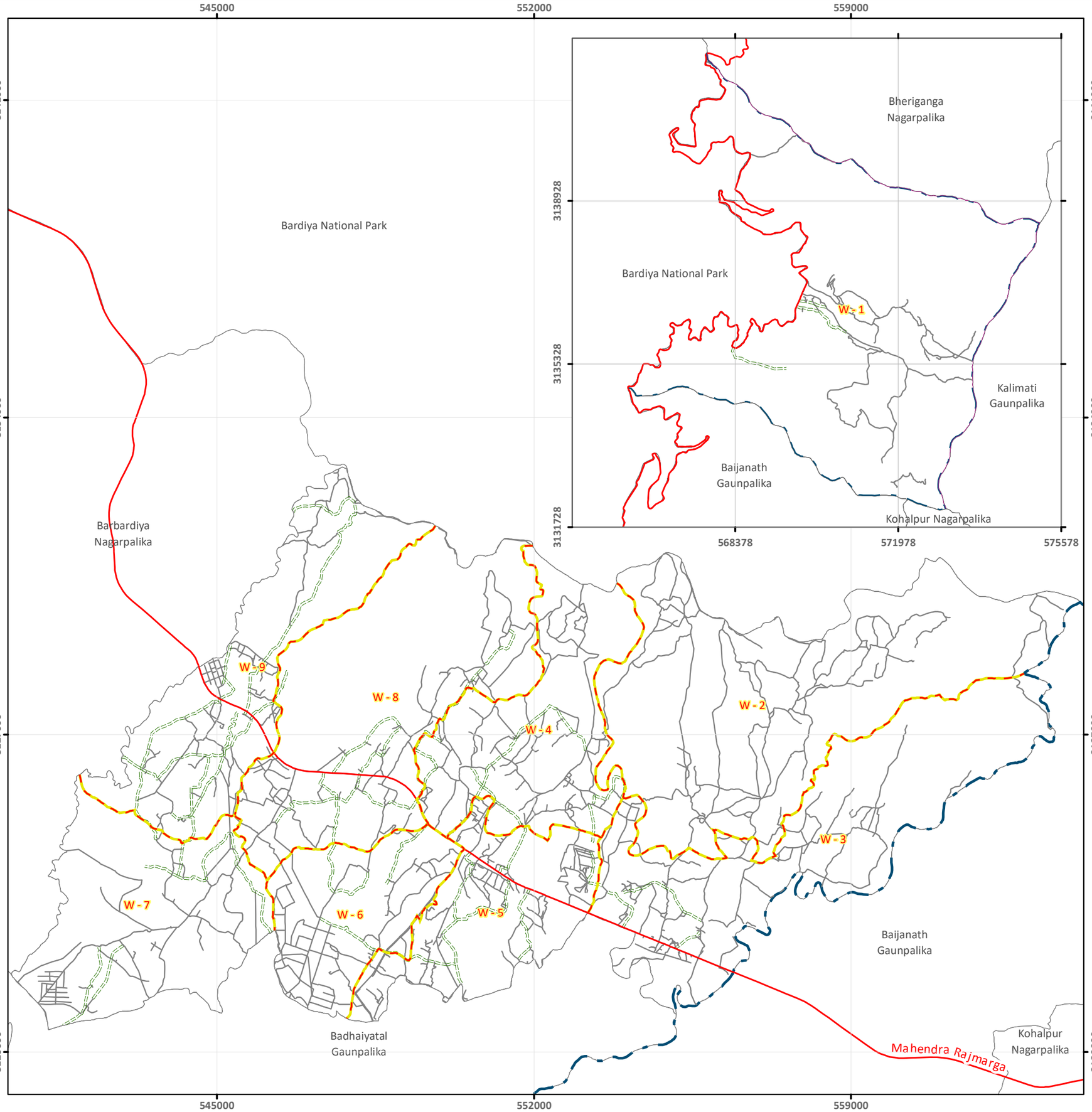
Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

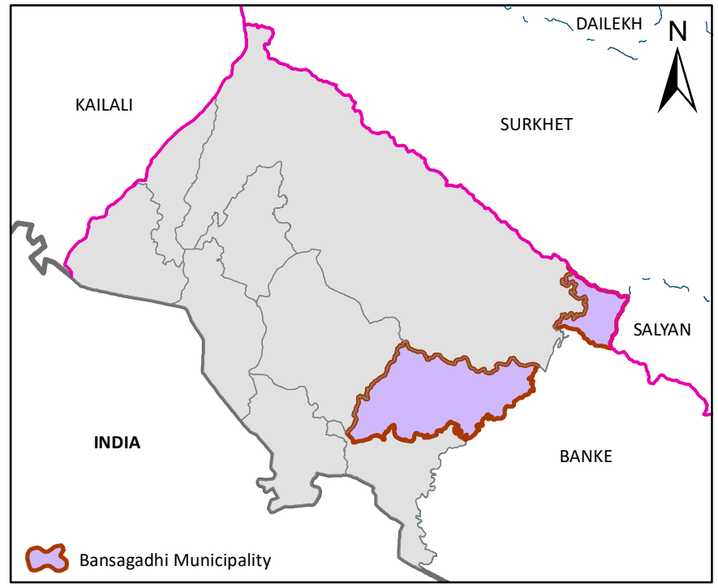
Date: September 2025

Map No: 9

BANSAGADHI MUNICIPALITY
Class B MTMP Map



Bardiya District



Legend

- Ward Boundary
- Local Level Boundary
- District Boundary
- State Boundary
- International Boundary

Road Class

- HIghway
- B
- Other Road

Horizontal Datum

Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

0 — 4 — 8 Km

Scale: 1:85,000

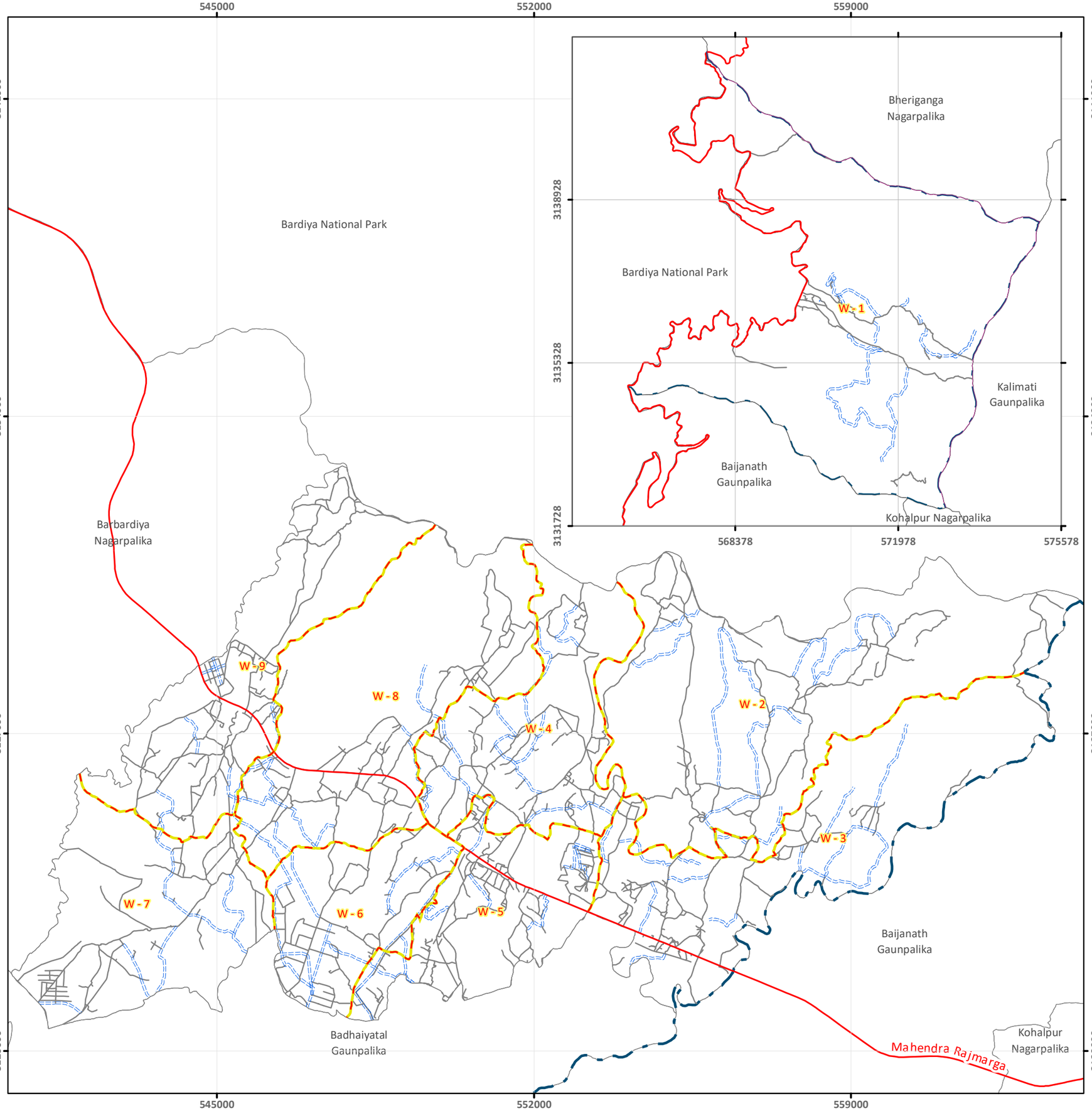
Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

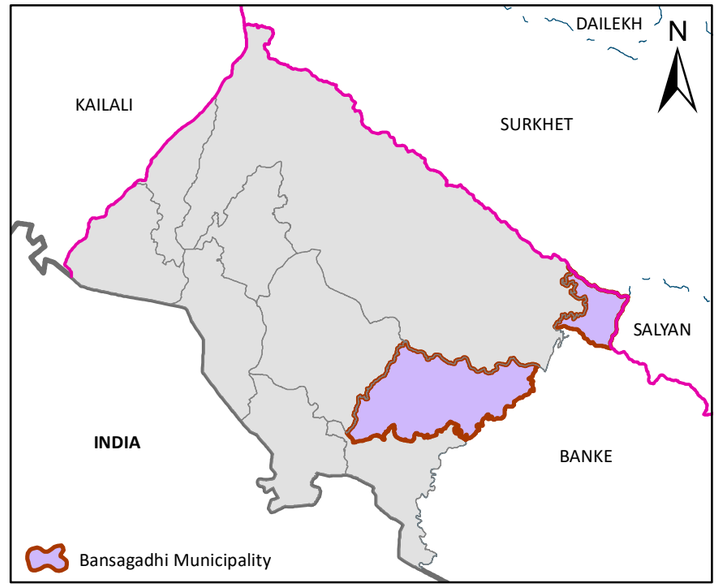
Date: September 2025

Map No: 10

BANSAGADHI MUNICIPALITY
Class C MTMP Map



Bardiya District



Legend

- Ward Boundary
- Local Level Boundary
- District Boundary
- State Boundary
- International Boundary

Road Class

- HIghway
- C
- Other Road

Horizontal Datum

Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

0 — 4 — 8 Km

Scale: 1:85,000

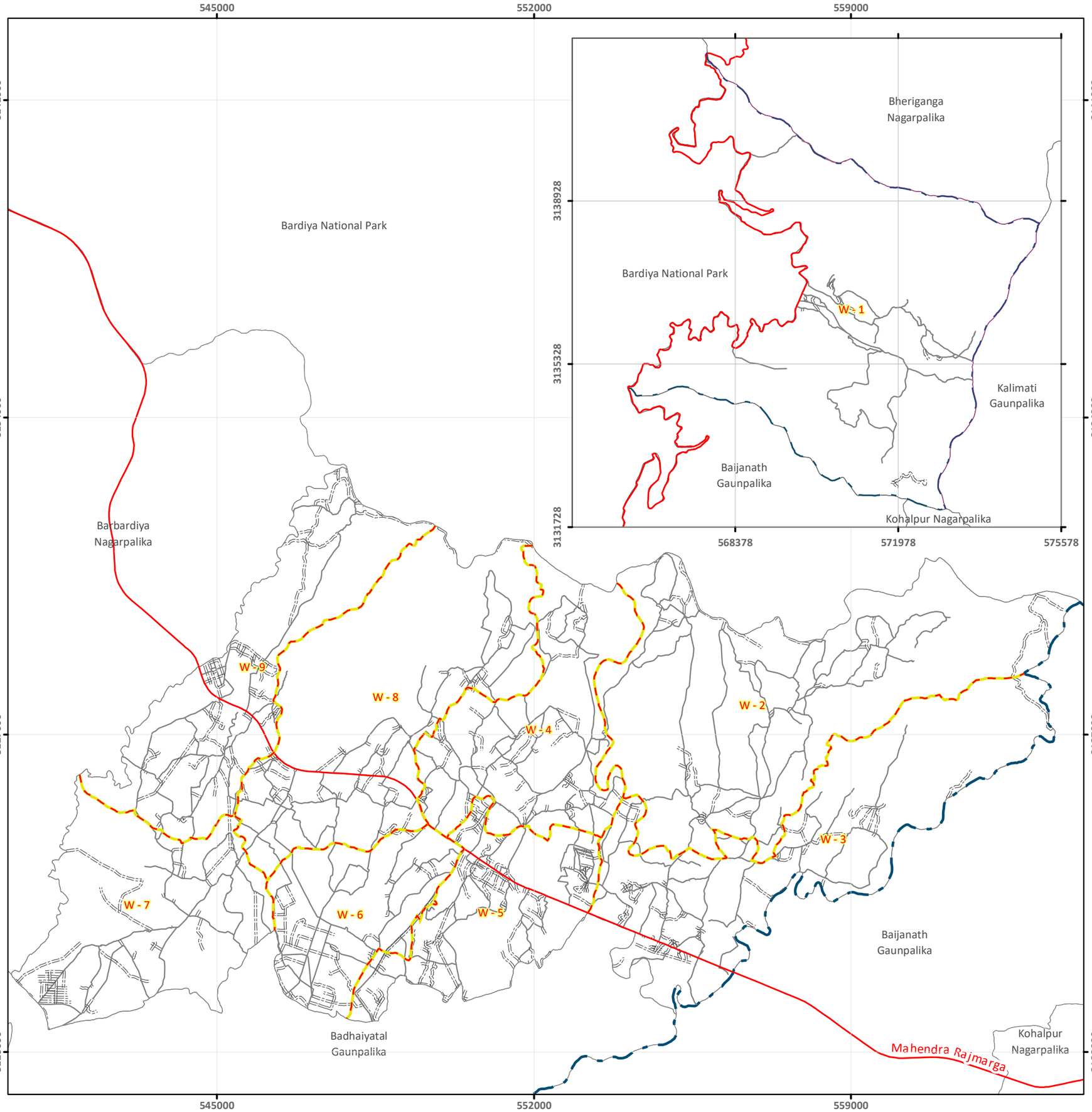
Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

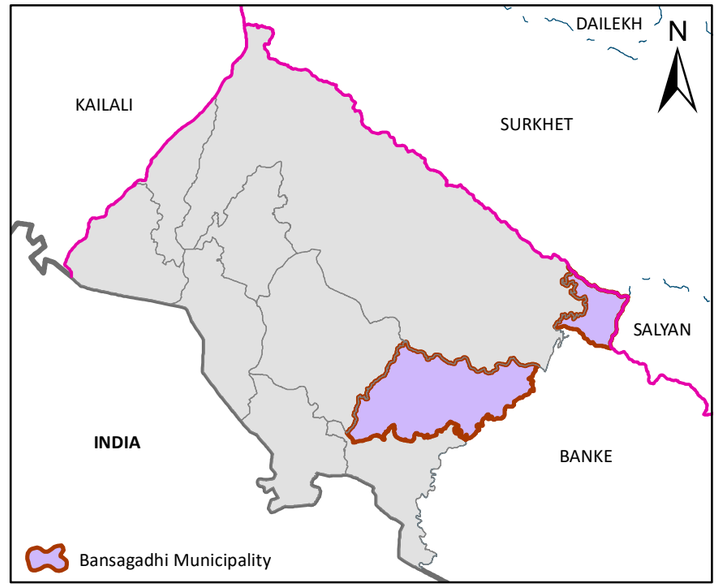
Date: September 2025

Map No: 11

BANSAGADHI MUNICIPALITY
Class D MTMP Map



Bardiya District



Legend

- Ward Boundary
- Local Level Boundary
- District Boundary
- State Boundary
- International Boundary

Road Class

- HIghway
- D
- Other Road

Horizontal Datum

Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

0 — 4 — 8 Km

Scale: 1:85,000

Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

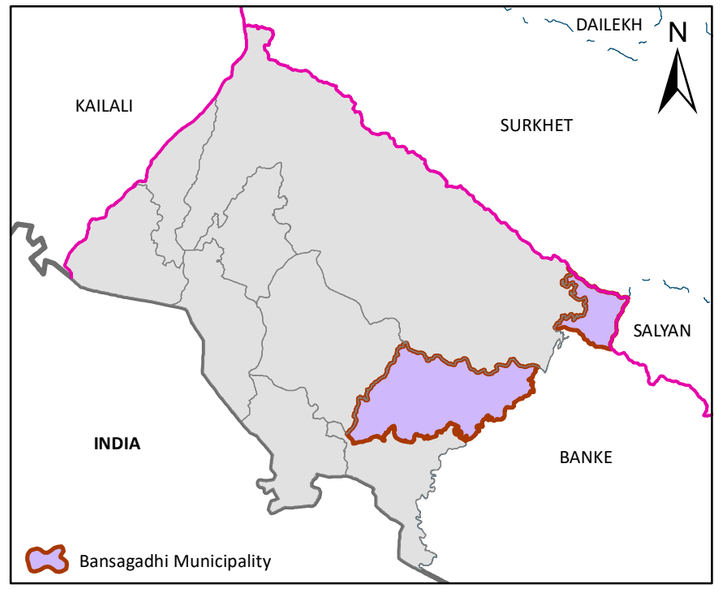
Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

Date: September 2025

Map No: 12

BANSAGADHI MUNICIPALITY
Topographic Map

Bardiya District



Bardiya National Park

Barbardiya Nagarpalika

Bheriganga Nagarpalika

Kalimati Gaunpalika

Baijanath Gaunpalika

Kohalpur Nagarpalika

Badhaiyatal Gaunpalika

W - 1 W - 2 W - 3 W - 4 W - 5 W - 6 W - 7 W - 8 W - 9

Mahendra Rajmarga

545000 552000 559000 568378 571978 575578

3141000 3138928 3135328 3134000 3131728 3127000 3120000

Legend

- Spot Height
- Other Road
- Major Road
- Index Contour
- Intermediate Contour
- Ward Boundary
- Local Level Boundary
- District Boundary
- State Boundary
- International Boundary

Horizontal Datum

Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East
	Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

0 4 8 Km

Scale: 1:85,000

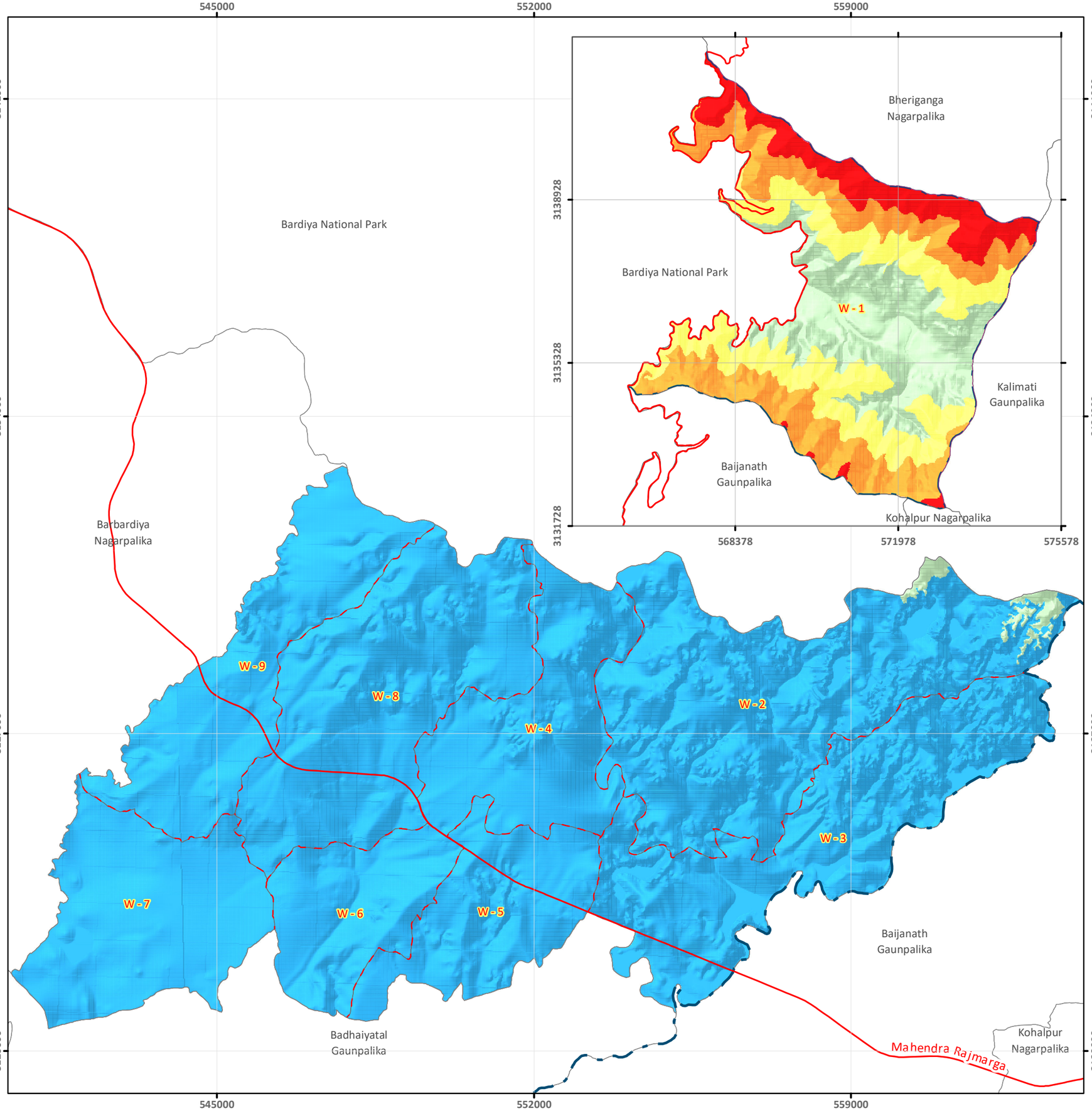
Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

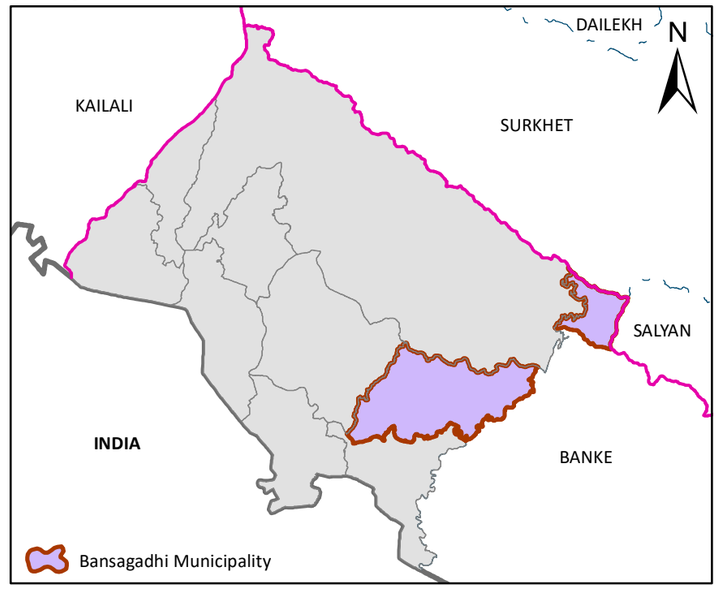
Date: September 2025

Map No: 13

BANSAGADHI MUNICIPALITY
Elevation Range Map



Bardiya District



Legend

- Major Road
- Ward Boundary
- Local Level Boundary
- District Boundary
- State Boundary
- International Boundary

Elevation Range

- 146.17 - 200.00
- 200.01 - 500.00
- 500.01 - 800.00
- 800.01 - 1,100.00
- 1,100.01 - 1,323.46

Horizontal Datum

Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

0 — 4 — 8 Km

Scale: 1:85,000

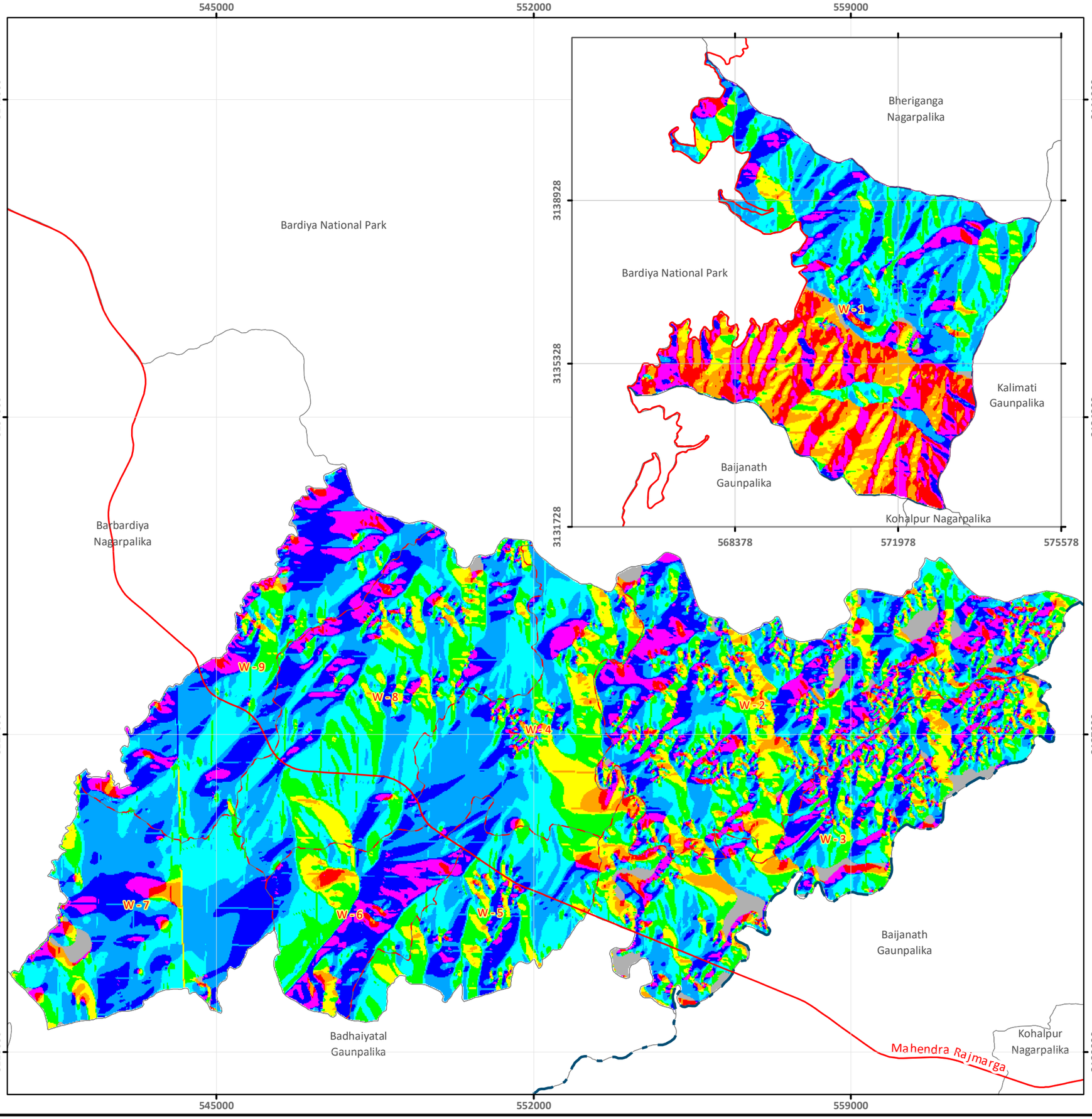
Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

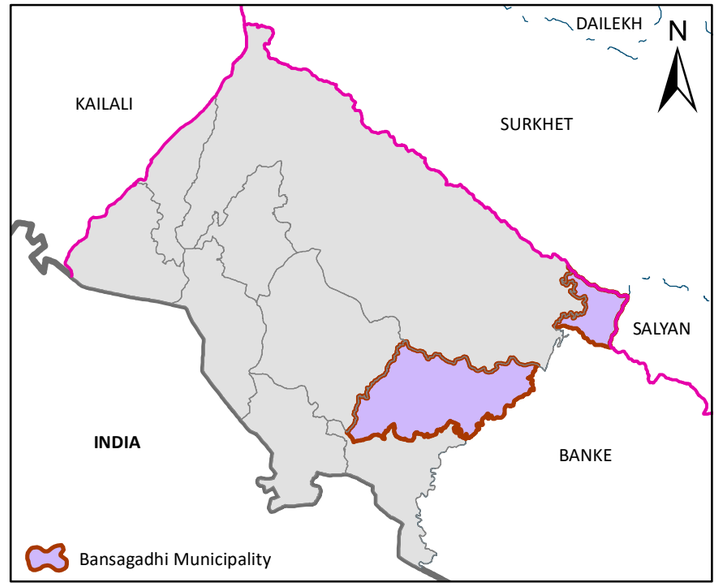
Date: September 2025

Map No: 14

BANSAGADHI MUNICIPALITY
Aspect Map



Bardiya District



Legend

Major Road	
Ward Boundary	
Local Level Boundary	
District Boundary	
State Boundary	
International Boundary	

Aspect

- Flat (-1)
- North (0-22.5)
- Northeast (22.5-67.5)
- East (67.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- North (337.5-360)

0 — 4 — 8 Km

Scale: 1:85,000

Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

Horizontal Datum

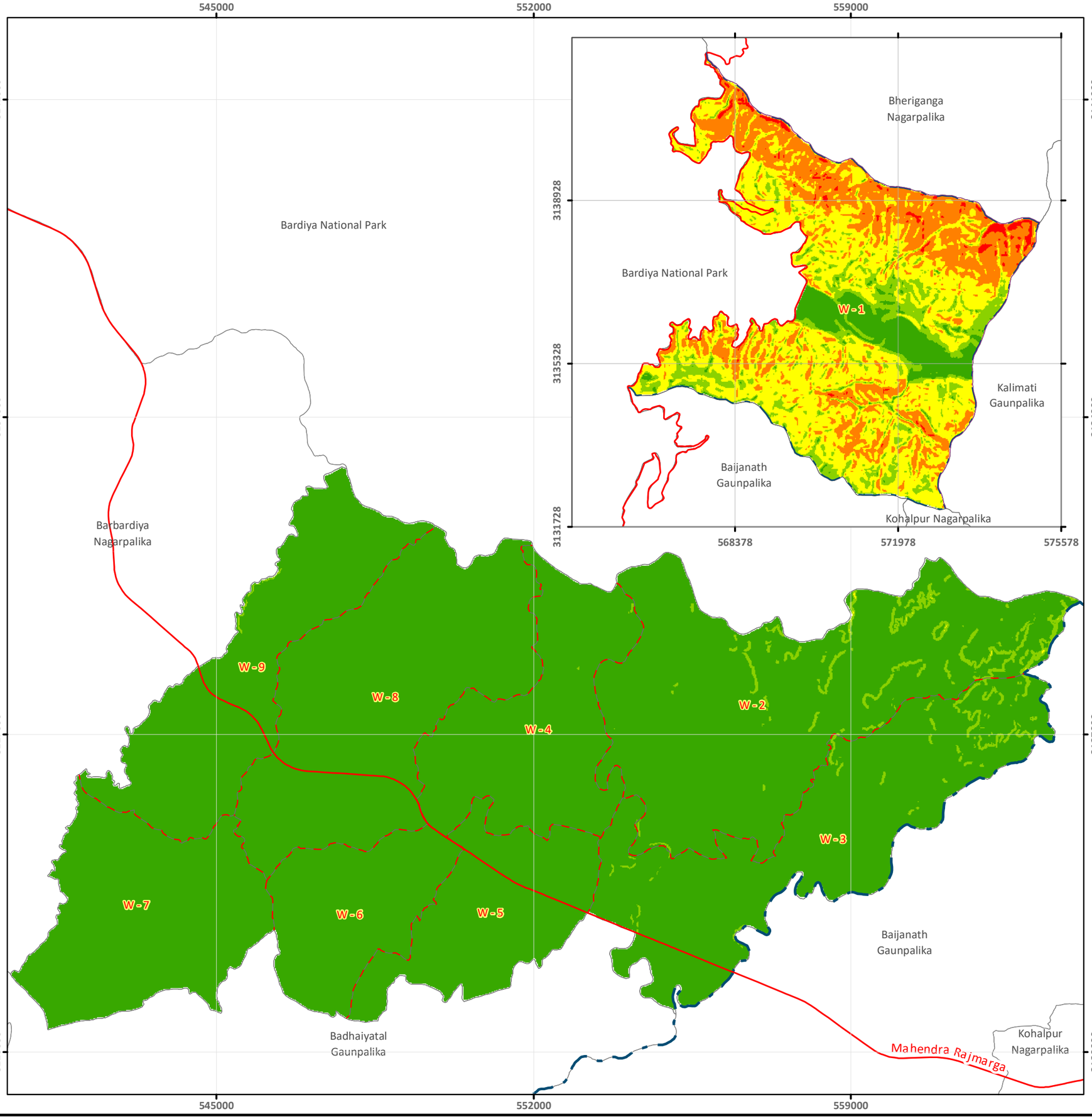
Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East
	Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

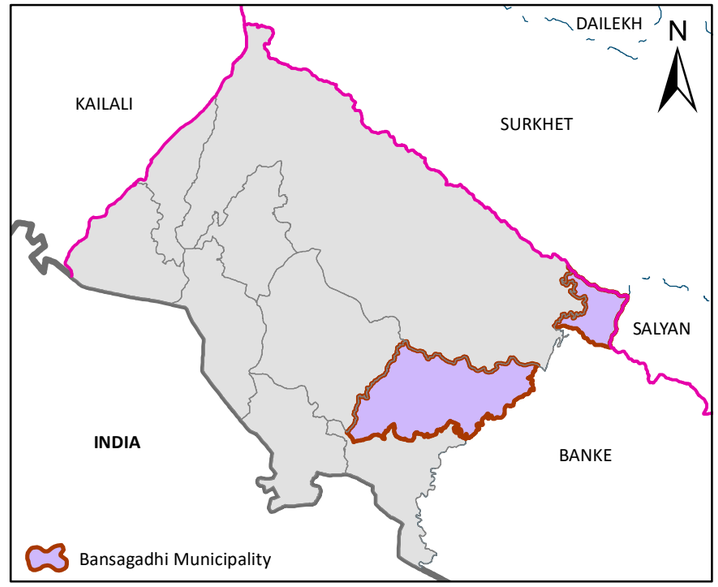
Date: September 2025

Map No: 15

BANSAGADHI MUNICIPALITY
Slope Map



Bardiya District



Legend

- Major Road
- Ward Boundary
- Local Level Boundary
- District Boundary
- State Boundary
- International Boundary

Slope Degree

- 0 - 5.00
- 5.001 - 15.00
- 15.01 - 30.00
- 30.01 - 45.00
- 45.01 - 58.54

0 4 8 Km

Scale: 1:85,000

Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

Horizontal Datum

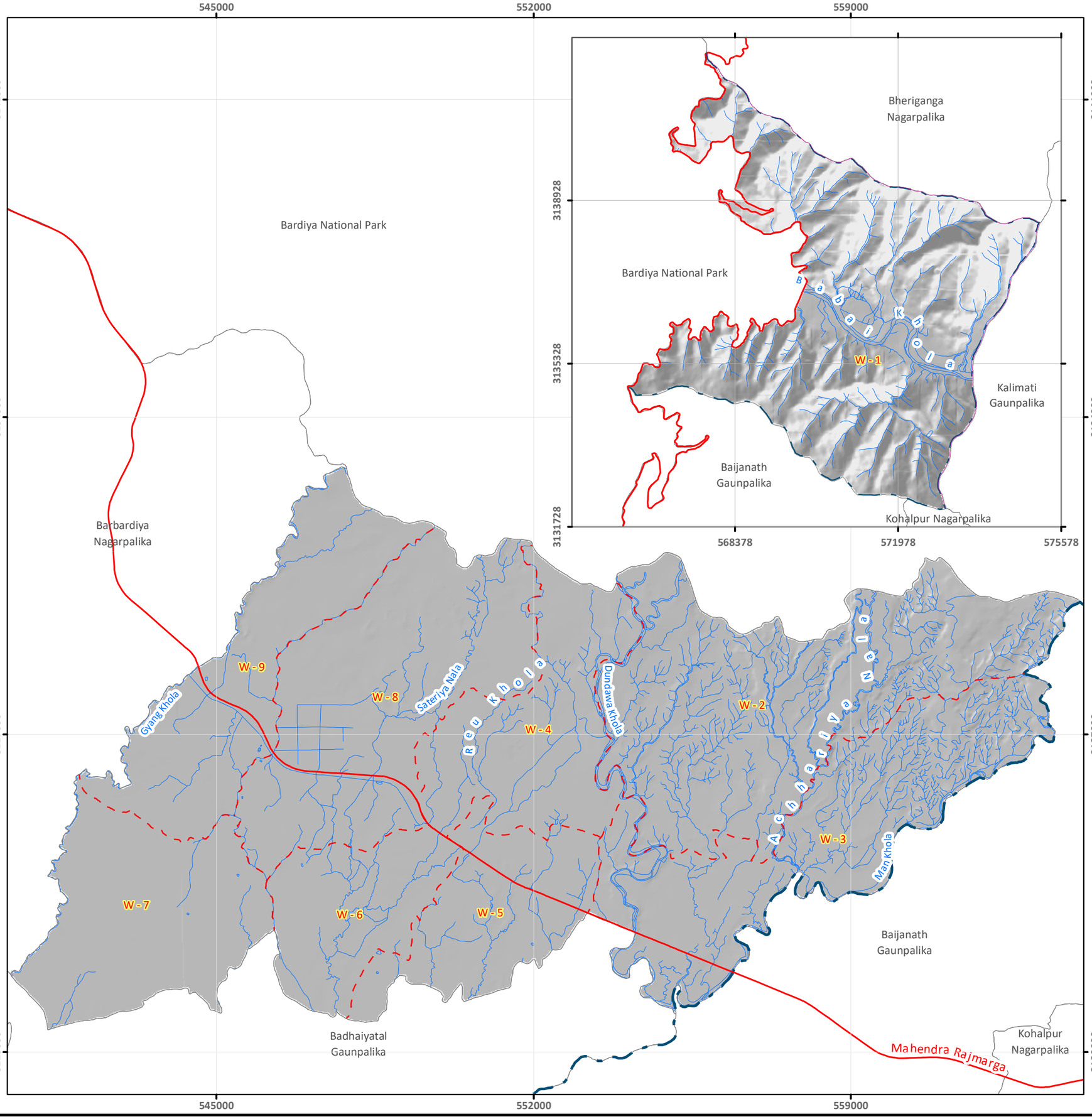
Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

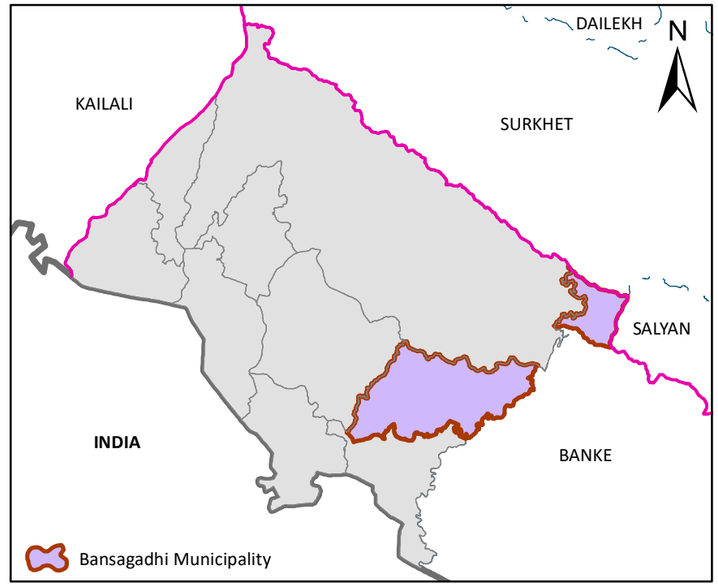
Date: September 2025

Map No: 16

BANSAGADHI MUNICIPALITY
Drainage Map



Bardiya District



Legend

- River / Stream
- Ward Boundary
- Local Level Boundary
- District Boundary
- State Boundary
- International Boundary

Horizontal Datum

Spheroid	WGS 1984
Projection	UTM 44 N
Central Meridian	Longitude 81° East Latitude 0° North
False Easting	500,000 meters
Scale Factor	0.9996

0 — 4 — 8 Km

Scale: 1:85,000

Bansagadhi Municipality
Bardiya District, Lumbini Province
Nepal

Data Source:
Administrative Boundary (DoS, MoFAGA), Field Survey, Secondary data from Open Street Map, Supplemented with Google Imagery

Date: September 2025

Map No: 17

ANNEX B: ROAD INVENTORY DATA

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
1	Khotekhola - Bhim Bahadur Gharti House- Bhangai Road	2.5	10	Earthen	Upgrading	1	
2	Karna Karki Khet - Bir Bahadur Budha house - Khotekhola Road	2.5	8	Earthen	Upgrading	1	
3	Devi Mandir - Babai Nadi Road	0.5	6	Earthen	Upgrading	1	
4	Dillya Oli House - Janata Aa. Bi. Road	0.3	8	Earthen	Upgrading	1	
5	Indrenichowk - Olitole- Chisikhola Road	2.5	8	Earthen	Upgrading	1	
6	Sher Bahadur B.K. house- Healthpost - Ward Office 1 Road	1	8	Gravel + Earthen	Upgrading	1	
7	Oli Tole - Ward office 1 Road	0.5	8	Earthen	Upgrading	1	
8	Oli Tole -View Tower Road	0.5	8	Earthen	Upgrading	1	
9	Rajkumar B.K. house- View Tower Road	0.5	8	Earthen	Upgrading	1	
10	Dhan Bahadur B.K. house- Health Post Road	0.5	6	Earthen	Upgrading	1	
11	Shahid Gate - Bhagchha Road	0.8	10	Earthen	Upgrading	1	
12	Babai Bridge- Hunutel Aaran Road	0.4	8	Earthen	Upgrading	1	
13	Chepang khola Bridge- Picnic Park Road	1.5	10	Earthen	Upgrading	1	
14	Bhupalal B.C.house- Picnic Park Road	1.8	8	Earthen	Upgarding	1	
15	Milap Ghar Chowk - Charbahini Chowk- Malami Pratichhalaya Road	0.4	8	Earthen	Upgrading	1	
16	Ralakala Raga House- Nares Khatri House Road	0.4	8	Earthen	Upgrading	1	
17	Jase Kami House - Dhanu Jaisi House Road	0.4	8	Earthen	Upgrading	1	
18	Pradip Ili house- Rajkumar B.K. House Road	0.4	8	Earthen	Upgrading	1	
19	Lakhana- Ranjha - Chisapani Road	3.1	20	BT	Maintenance	2	
20	Gaudichowk-Shantipur-Pipal Chautara Road	2.3	12	Gravel	Upgrading	2	

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
21	Amaiya - Ward no.2 -Ward NO.4, Newada Road	2	10	Gravel	Upgrading	2	
22	Betahani-Bijaura Road	1.5	10	Gravel	Upgrading	2	
23	Belawa Chowk- Ward Office 2- Banmuduwa Mandir Road	1.4	12	BT-500m, Gravel-932m	Upgrading Gravel Portion	2	
24	Pipal Chautara - Simenta Kula Binaura Road	0.7	8	Gravel	Upgrading	2	
25	Sundar Basti- Achheriya - Bijaura Khola Road	0.9	10	Gravel	Upgrading	2	
26	Betahani- Kurta Bridge - Arsewa road	1.1	8	Gravel	Upgrading	2	
27	Betahani Ram Bahadur Sunar House- School- Ghari Betahani Post - Lakhana Ranjha Road	1.7	10	Earthen	Upgrading	2	
28	Betahani- Katkuwa- Khaireni Road	1.5	10	Gravel	Upgrading	2	
29	Ranjha Bichtole - Bhagawati Tole - Tanki -Dyambara Simalakuna Road	2.2	10	Gravel	Upgrading	2	
30	Ranjha School Road- South Achheriya Road	0.8	8	Gravel	Upgrading	2	
31	Ranjha Sahari Health Post- Katkuwa Road	1.1	8	Gravel+Earthen	Upgrading	2	
32	Ranjha Sahari Health Post- Purba Ranjha Achheriya Khola Road	0.8	8	Gravel	Upgrading	2	
33	Betahani Jholunge Bridge- Tanka Bista House- Bista Tole Road	0.8	6	Earthen	Upgrading	2	
34	Betahani- Kurtha Khola - South Road	0.9	6	Earthen	Upgrading	2	
35	Laganiya Culvert - Sinchahi Bandha Road	1.4	6	Earthen	Upgrading	2	
36	Hajari Bagiya Bhitri Tole Road	0.7	8	Gravel	Upgrading	2	
37	Pipal Chautara - Jhuraiya- Kiran Tharu House- Ring Road link Road	4	8	Gravel	Upgrading	2	
38	Mansi Tharu House- Jhuraiya Road	1.8	8	Earthen	Upgrading	2	
39	Dipendra Tharu House- Community Building- Ward No.4 Jholunge Pul Road	1.3	8	Earthen	Upgrading	2	

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
40	Naula Bajhiyan - East Taul Bagiya - Resham Chand House Road	2.1	6	Earthen	Upgrading	2	
41	Dipak Sharma House- WestvTole Road	0.7	8	Earthen	Upgrading	2	
42	Prem K.C. house- Talu Jaisi House Road	0.5	8	Gravel	Upgrading	2	
43	Dangla Tharu House- Gambhir Khaji House Road	0.6	6	Gravel	Upgrading	2	
44	Nabin Dangi House- Khagendra Bi.Ka. House- Road	0.6	6	Earthen	Upgrading	2	
45	Achheriya - Community Building - Pahadi Tole Road	1.2	8	Gravel	Upgrading	2	
46	Achheriya - Gohani Tharu House- Mahadeva Road	2.2	8	Earthen	Upgrading	2	
47	Darbagri Tharu House- Durga B.K. house - Ganga Tharu House Road	0.8	6	Earthen	Upgrading	2	
48	Betahani Bishnu Tharu House- Thagga Tharu House- School Road	1.3	8	Earthen	Upgrading	2	
49	Betahani Pipal Chautara - Prehakattha Road	1.1	10	Gravel	Upgrading	2	
50	Amoriya Dipak Chand House- Bahiri Ring Road - Bhola Reule House - Chakra Bahadur Chand House- School Road	2.17	8	Gravel	Upgrading	2	
51	Ranjha Ghatte Khola Tara Devkota House- Tank Bahadur K.C. house- Dhaireni Road	2	8	Earthen	Upgrading	2	
52	Gairi Tole (Kalo Pate) - Dev Bahadur B.K. House Road	0.9	6	Earthen	Upgrading	2	
53	Pipal Chautara - East Naula Chhagiya Tole Road	0.8	6	Earthen	Upgrading	2	
54	Lakhana Chowk- Rans - Salyani Tole Road	2	14	Gravel	Upgrading	3	
55	Uttakhari Chowk - Mayal Gausala Road	1.8	14	BT	Maintenance	3	
56	Dailekhi Tole- Kedareshower Dham Road	0.85	12	Gravel	Upgrading	3	
57	Shiva Mandir - Jholunge Pul Road	0.6	14	Gravel	Upgrading	3	
58	Simanya - West Community Forest Road	0.64	8	Gravel	Upgrading	3	
59	Rajmarga - Dailekhi Tole Road	0.6	12	Gravel	Upgrading	3	
60	Bishnu Pahadi House- Geruwa Road	1.5	12	Gravel	Upgrading	3	

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
61	Shantipur "Kha" - Tilak Regmi House Road	0.63	12	Gravel	Upgrading	3	
62	Shanti Saptra Pra. Bi. - C.G. - Jholunge Pul Road	0.53	12	Gravel	Upgrading	3	
63	Katak Regmi House- Rara Road	0.85	8	Gravel	Upgrading	3	
64	Aashis G.C. House- Deep Boring Road	0.5	6	Earthen	Upgrading	3	
65	Highway -South- Nahar Road	0.45	8	Gravel	Upgrading	3	
66	Highway -Puspa Nagar Road	0.52	10	Gravel	Upgrading	3	
67	Shree Narayan House- East Lakhetar Ban - Highway Road	0.52	12	Gravel	Upgrading	3	
68	Highway - Khallgaun Road	0.55	8	Gravel	Upgrading	3	
69	Mhadev Tharu House- Trogapama Tharu House Road	0.4	8	Gravel	Upgrading	3	
70	Shiva Mandir - West Road	0.2	6	Gravel	Upgrading	3	
71	Shiva Mandir - West Taulan Tole Road	0.3	6	Gravel	Upgrading	3	
72	Shiva Mandir -East Chitrahan Tole Road	0.4	6	Gravel	Upgrading	3	
73	Gauri Chowk - South - Bisnu Tole Road	0.5	6	Gravel	Upgrading	3	
74	Prithibi Ma.Bi. School- Community Building Road	0.4	12	Gravel	Upgrading	3	
75	Salyani Tole - Gauri (Masjid) Road	0.4	12	Gravel	Upgrading	3	
76	Gauri Chowk - Shantipur-Ward No. 2 Road	0.6	14	Gravel	Upgrading	3	
77	Kakora 8 Boundary-Nahar Ram Mandir - Bicha Gaun Mandir - Talchowk- Nahar Pipal Chautari Road	3.2	10	Gravel	Upgrading	4	
78	Mahariya Chowk - Bicha Gaun - Pipal Dadi - Prem Giri Shop Road	2.1	15	gravel	upgrading	4	
79	Talchowk - Depti - Bagiya School- Pipal Dadi Road	1.9	12	gravel	upgrading	4	
80	6 No. ward Boundary - Aalla Gaun - Nahar Pipal bot Road	1.2	8	gravel	upgrading	4	
81	Talchowk - Bagiya School - Pipal Dadi Road	0.8	10	gravel	upgrading	4	

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
82	Shankariya - Matariya Simana - Liladhar Adhikari House - Matariya Kuber House Road	1.4	12	gravel	upgrading	4	
83	Bishnu Nanchhyal House- Shankariya Ratri Tole- Titiriya House- Durga Bastola House Road	0.7	12	gravel	upgrading	4	
84	Dasdar - Batuwa - Bichatole - Riyak Tole - School Gaira Tole - Sohanpur Tole - Ward Office Road	1.6	12	gravel	upgrading	4	
85	School Batuwa - Asneri - Tick Road	0.8	15	gravel	upgrading	4	
86	5 No. Ward Simana- Laxmanpur Gaun- Jholunge Bridge Road	0.6	12	gravel	upgrading	4	
87	Mewatal Transmitter Chowk - Madhaghale Ghar - Dhami Tole - Jholunge Bridge Road	1.1	12	gravel	upgrading	4	
88	Pahadipur - Gol Ghar - Madha Bhote House - Madhima Nala - 3 No.ward Simana Road	2.8	15	gravel	upgrading	4	
89	Sundar Basti- Tirtha Sir House- 3 No. simana Road	0.85	13	gravel	upgrading	4	
90	Pul Dandi - Prem Giri House- Shankariya Pahadi Aryal - Raji Tole Road	0.55	7	gravel	upgrading	4	
91	Gol Ghar- Manikapur Batuwa Road	0.5	12	Earthen	upgrading	4	
92	Laxmanpur School- Bajhain House- Batuwa Naya Kholeko - Ward office Road	1.3	12	gravel	upgrading	4	
93	Mathariya Mandir - Pipalko Bot - Premgiriko Ghar- Keshab House Road	0.8	8	Earthen	Upgrading	4	
94	Mewadal - Ramalal Tharu - Mandir Road	0.4	6	gravel	Upgrading	4	
95	Asneri Purano Gaun - Mil Road	0.6	8	gravel	upgrading	4	
96	Pahadipur- Bar Pipal Chautara - Gol Ghar Bhitri Road	1.6	6	gravel	upgrading	4	
97	Sundarbasti Bhitri Road - Salko Gutta Road	0.8	6	gravel	upgrading	4	
98	Pannako Ghar- Bubako Ghar Road	0.35	6	Earthen	Upgrading	4	
99	Nahar Purba - Pashchim - Damauli Road	0.2	8	gravel	upgrading	5	

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
100	Hira Tharu House - Budhi Ghar Road	0.3	8	gravel	Upgrading	5	
101	Nahar Purba - Ghanshyam Tharu House - Uttar Road	0.4	8	gravel	upgrading	5	
102	Nahar Purba- Chankha Tharu Khet Road	0.25	6	Earthen	upgrading	5	
103	Jagatiya Sahid Gate- Motipur Gaun Road	0.3	12	gravel	upgrading	5	
104	Nahar Purba- Hasnapur Gaun Road	0.5	12	gravel	upgrading	5	
105	Jharsaila - Maula Gaudi Road	0.6	8	gravel	upgrading	5	
106	Jharsaila Chowk - Nahar Dhik Road	0.2	8	gravel	upgrading	5	
107	Nahar Pul - Sabitri Dangi House- Tikaram House - North Road	0.4	6	gravel	upgrading	5	
108	Tikaram Sapkota House- Bhanu Adhikari House- Nahar Dhik Road	0.3	10	Earthen	upgrading	5	
109	Jagatiya Sahid Gate- Badi Tole Road	0.4	15	Earthen	upgrading	5	
110	Jungle Tower- Badhaiya - Palika Road	0.5	20	gravel	upgrading	5	
111	Bishnu Pariyar House-B.K.Tole - Badhaiya Gaun - Palika - Saraswoti House Road	0.6	7	Earthen	upgrading	5	
112	Balkrishana Khanal House- Dhiyon Eklekhiya Church- Chukan Tharu House Road	1	7	BT	Maintenance	5	
113	Khanepani Tank - Bosagadi Unitesd School - Highway Road	1	6	gravel	upgrading	5	
114	Khanepani Tank - Magarpur- Bhim Bahadur Pariyar House - Magarpur Road	0.5	6	gravel	upgrading	5	
115	Karnali Tol - Hasnapur- Motipur Gaun Road	2	12	gravel	upgrading	5	
116	Hasnapur (Basanta Chowk) - North Anil Tharu House Road	0.5	10	gravel	upgrading	5	
117	Hasnapur (Basanta Chowk) - South Road	0.7	8	gravel	upgrading	5	
118	Jagatiya Sahid gate - Raja Ram Tharu House- North B3 Nahar Road	1	8	Earthen	upgrading	5	

S.N.	Name of the Road	Length of the Road (km)	Width of the Road (m)	Types of Road	Intervention type	Ward No.	Remarks
119	Jagatiya Sahid Gate - Badahan Tol Rishi Nagar - Nihar Tol- Jagadis Mil Road	1.5	12	gravel	upgrading	5	
120	Rishi Nagr Tole Road	0.5	8	gravel	upgrading	5	
121	Bansagadhi Tal Barahi - Kul - Nahar Pul Road	0.5	8	gravel	upgrading	5	
122	Basgadhi Aadhibasi Bhawan- South- West Nala Dhik Road	0.3	6	gravel	upgrading	5	
123	Basgadhi Mata Prasad Tharu house- East- Nahar Pul Road	0.8	6	gravel	upgrading	5	
124	Nagarpalika Bhawan - Barha Bigaha - Kerabari Road	2.5	14	gravel	upgrading	5	
125	Nagarpalika Bhawan - Om Santi Bhawan Road	0.5	12	gravel	upgrading	5	
126	Rampur Tole - Nahr- Tharu Gaun Basgadhi Road	1	12	gravel	upgrading	5	
127	SOS Nagar Hospital - South Road	0.3	4	gravel	upgrading	5	
128	Rampur Nahar - West - South Road	0.5	6	gravel	upgrading	5	
129	Barha Bigha Road - West Reshm Pandey House Road	0.3	4	Earthen	upgrading	5	
130	Jumli Tole - School- Badhaiyatal Gaupalika Simana Road	2	14	gravel	upgrading	5	
131	Shree Bhirkuti Ma. Bi. Gate- Health post- Nahar - South Road	3	10	gravel	upgrading	7	
132	Ward No.7 office- Shiva Mandir Road	0.9	8	gravel	upgrading	7	
133	Deukala Shiva Mandir - Damauli Road	3.5	12	gravel	upgrading	7	
134	Deukala Khayera Buta - Haraiya - Ward no. 9 Toraiya Road	4.8	10	gravel	upgrading	7	
135	Basanta Chowk - Damauli Road	2.7	12	gravel	upgrading	7	
136	Ganeshpur Road- East- Bhanpur- Badhaiya Tal Road	3.6	12	gravel	upgrading	7	
137	Tin Kharawa - Sagadapur- Badhaiya Tal Ga.Pa. Road	4.3	10	gravel	upgrading	7	

ANNEX C: PHOTOGRAPHS


पशु सेवा केन्द्र


UFC


बाँसगढी नगरपालिका
१ नं. वडा कार्यालय
सालसम्मका वडा सचिवहरुको नामावली विवरण

ANNEX D: MEETING MINUTES

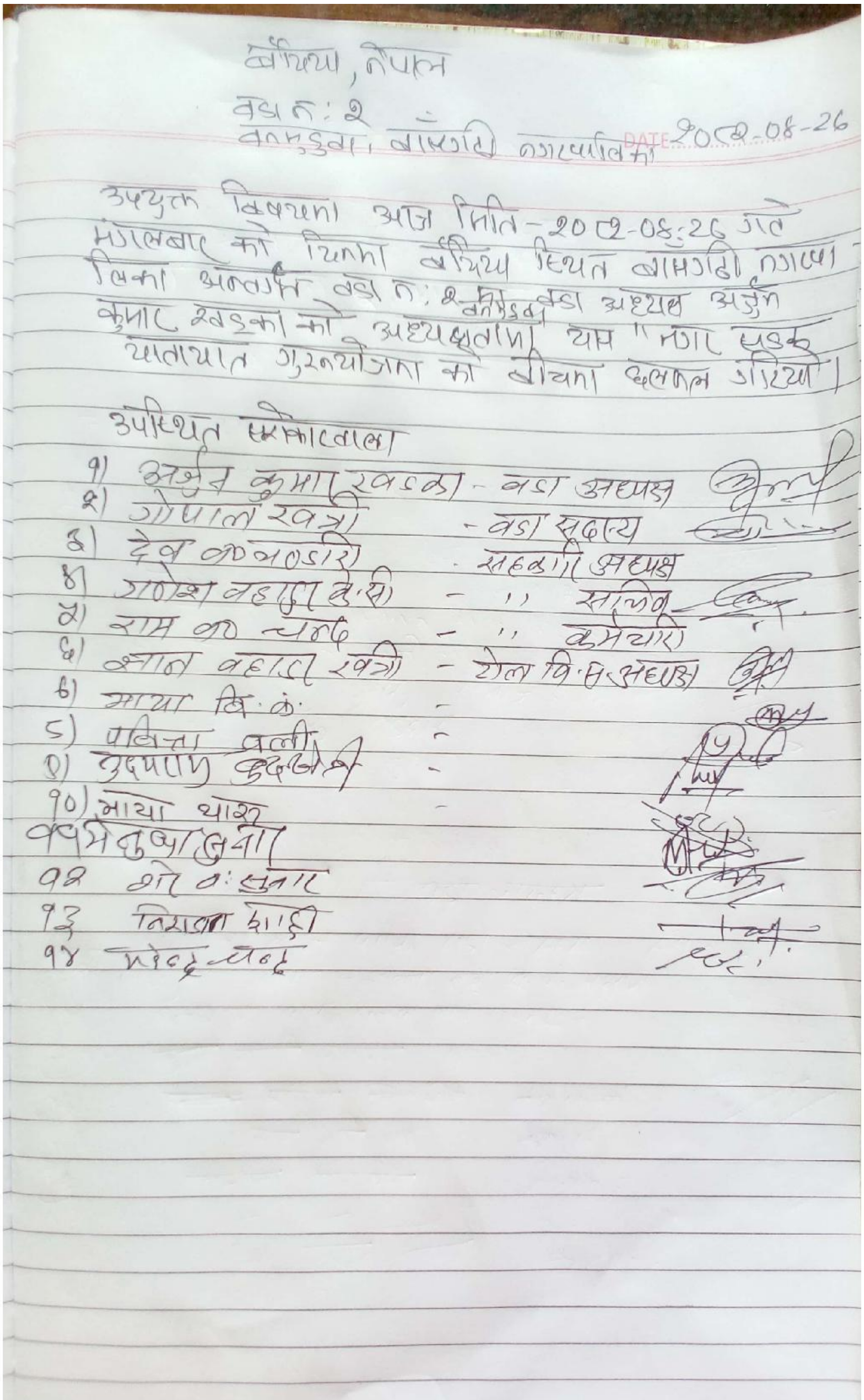
बाँसगढी नगरपालिका
वडा नं: ६

DATE......

उपर्युक्त विषयमा आज मिति २०८२-०४-२३ गते, शुक्रबारको दिनमा बर्दिया जिल्ला बाँसगढी नगरपालिका वडा नं: ६ मा वडा अध्यक्ष ज्यू को अध्यक्षतामा "नगर सडक यातायात गुरुयोजना को विषयमा वडा अध्यक्ष वडा सदस्य, टोल सुधार समिति तथा जन प्रतिनिधि बीचमा छलफल गरियो ।

उपस्थिति हस्ताक्षरवाला

१ ~~सूर्य~~ लाल बहादुर जोशी — [signature]
२ सूर्य बहादुर सिंह ठकुरी — [signature]
३ ज्योति चौधरी वडा सदस्य — [signature]
४ शान्ता गुरुङ — शान्ता
५ राज कुमार थारु — [signature]
६ विनोद कुमार परियार - कालिका टोल विकास संस्था सचिव
७ हिमाल बहादुर तामाङ - विजय नगर चौतारा टोल वि. संस्था
८ लक्ष्मी मायाँ सार्की - कार्यपालिका सदस्य
९ सियाराम थारु — डाङपुर वडघर
१० चुन्नुराम थारु — सतहरिया वडघर
११ हरिप्रसाद थारु — सतहरिया गाउँ बाघा संस्था
१२ राम प्रसाद थारु — पुरानो दमौली गाउँ बरघर ~~सदस्य~~
१३ कालिकनबहादुर गिरी - कालिका टोल विकास संस्था (अध्यक्ष)

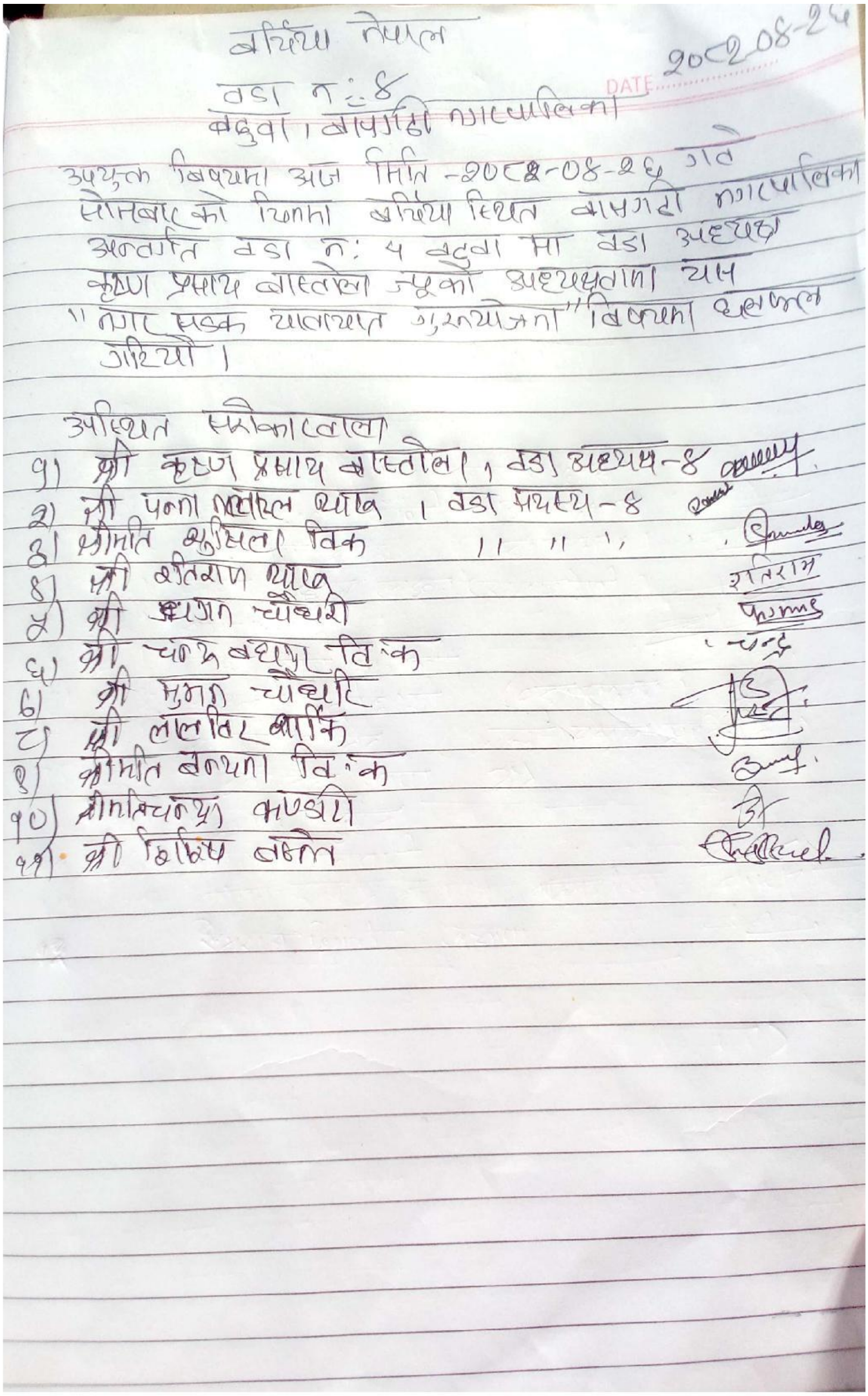


बर्दिया, नेपाल
वडा नं: २
बनकट्टुवा, बाँसगढी नगरपालिका
DATE २०७२-०८-२६

उपयुक्त विषयमा आज मिति - २०७२-०८-२६ गते मंगलबार को दिनमा बर्दिया स्थित बाँसगढी नगरपालिका अन्तर्गत वडा नं: २ बनकट्टुवा वडा अध्यक्ष अर्जुन कुमार खड्का को अध्यक्षतामा यस "नगर सडक यातायात गुरुयोजना को बारेमा छलफल गरियो।

उपस्थित हस्ताक्षरवाला

१) अर्जुन कुमार खड्का - वडा अध्यक्ष
२) गोपाल खत्री - वडा सदस्य
३) देव ब० भण्डारी - सहकारी अध्यक्ष
४) गणेश बहादुर के.सी - ,, सचिव
५) राम ब० चन्द - ,, कर्मचारी
६) ज्ञान बहादुर खत्री - टोल वि.स. अध्यक्ष
७) माया वि.क. -
८) पवित्रा वली -
९) रुद्रप्रताप कुँवर -
१०) माया थापा -
११ मेनुका बुढा
१२ शेर ब: सुनार
१३ निशला शाही
१४ महेन्द्र चन्द



बर्दिया नेपाल

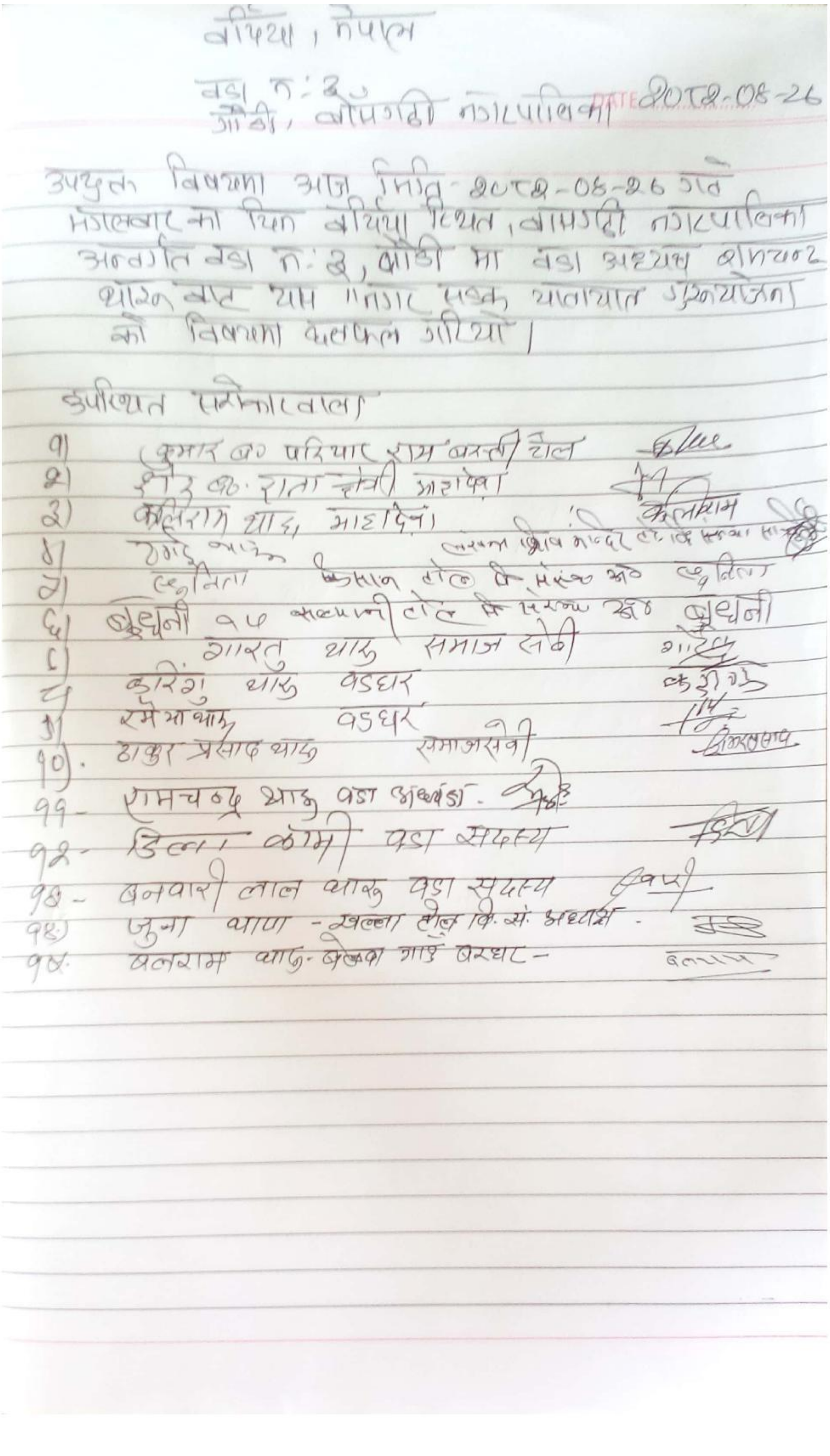
२०८२-०४-२६

वडा नं: ४
बढुवा, बाँसगढी नगरपालिका

उपयुक्त विषयमा आज मिति -२०८२-०४-२६ गते सोमबार को दिनमा बर्दिया स्थित बाँसगढी नगरपालिका अन्तर्गत वडा नं: ४ बढुवा मा वडा अध्यक्ष कृष्ण प्रसाद बास्तोला ज्यूको अध्यक्षतामा "नगर सडक यातायात गुरुयोजना" विषयमा छलफल गरियो।

उपस्थित सहीकारवाला

१) श्री कृष्ण प्रसाद बास्तोला, वडा अध्यक्ष-४
२) श्री पन्ना लाल थारु, वडा सदस्य-४
३) श्रीमति सुशिला विक ,, ,, ,,
४) श्री रतिराम थारु
५) श्री [illegible] चौधरी
६) श्री चन्द्र बहादुर विक
७) श्री सुमन चौधरी
८) श्री लालबिर कार्कि
९) श्रीमति बन्धना विक
१०) श्रीमति चन्द्रा भण्डारी
११) श्री दिलिप [illegible]

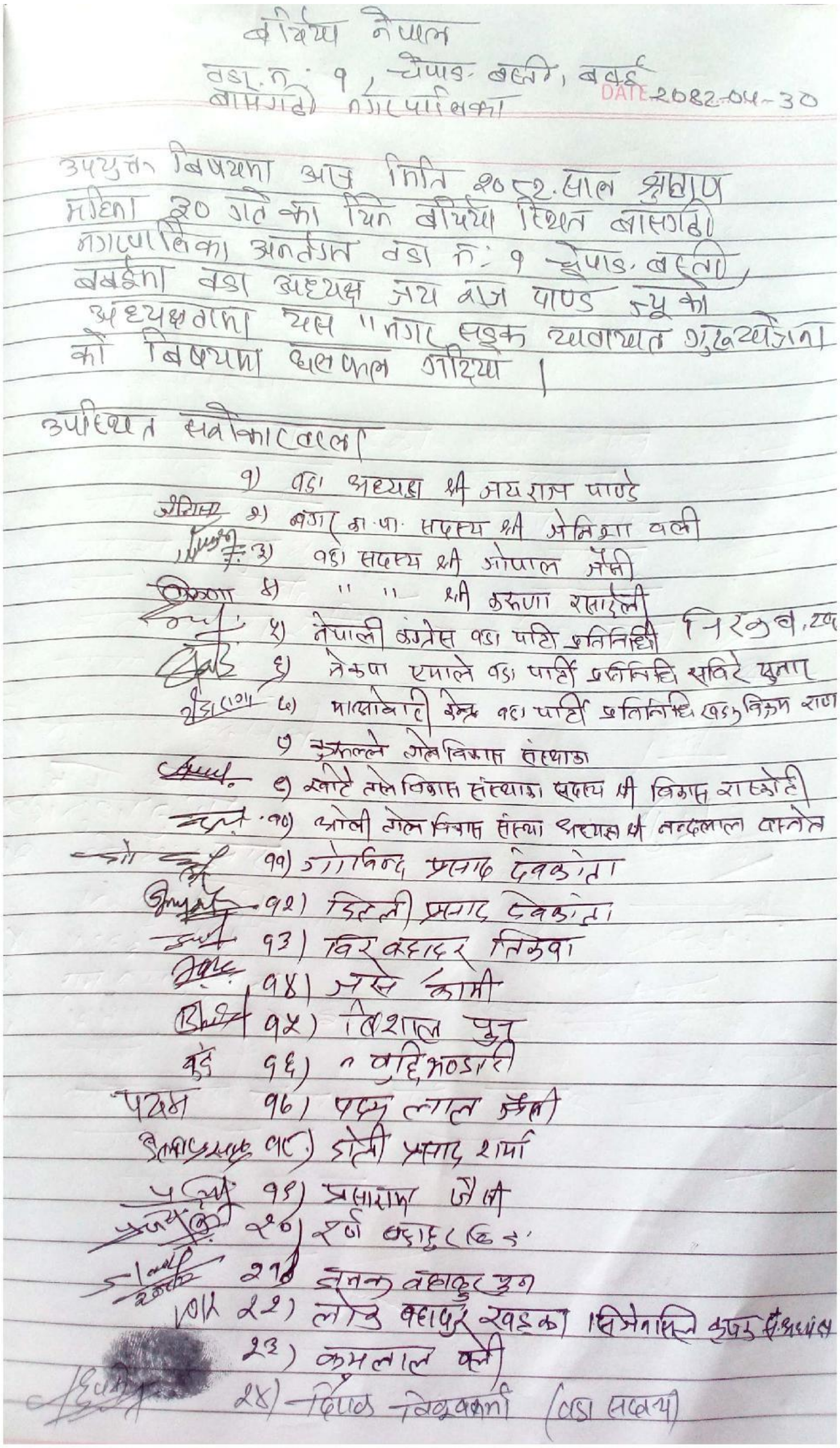

बाँफिया, नेपाल

वडा नं: ३
औंडी, बाँसगढी नगरपालिका DATE २०८२-०८-२६

उपर्युक्त विषयमा आज मिति २०८२-०८-२६ गते मंगलबारका दिन बाँफिया स्थित, बाँसगढी नगरपालिका अन्तर्गत वडा नं: ३, औंडी मा वडा अध्यक्ष रामचन्द्र थारुबाट यस "नगर सडक यातायात गुरुयोजना" को विषयमा छलफल गरियो।

उपस्थित सरोकारवाला

१) कुमार ब० परियार राम बस्ती टोल
२) शेर ब० राना चौकी अराफेरा
३) कलिराम थारु, आहादेवा
४) [illegible]
५) [illegible] किसान टोल [illegible]
६) बुधनी [illegible] टोल [illegible]
७) गारतु थारु समाज सेवी
८) करिंगु थारु वडघर
९) रमेशा थारु वडघर
१०). ठाकुर प्रसाद थारु समाजसेवी
११- रामचन्द्र थारु वडा अध्यक्ष
१२- डिल्ला कामी वडा सदस्य
१३- बनवारी लाल थारु वडा सदस्य
१४) जुना थापा - खल्ला टोल वि. सं. अध्यक्ष
१५. बलराम थारु - [illegible] गाउँ बरघर -



बर्दिया नेपाल
वडा.नं : ९, चैपाङ बस्ती, बबई
बासगढी नगरपालिका
DATE 2082-04-30

उपयुक्त विषयमा आज मिति २०८२ साल श्रावण महिना ३० गतेका दिन बर्दिया स्थित बासगढी नगरपालिका अन्तर्गत वडा नं ९ चैपाङ बस्ती, बबईमा वडा अध्यक्ष जय राज पाण्डे ज्यूको अध्यक्षतामा यस "नगर सडक यातायात गुरुयोजना"को विषयमा छलफल गरियो ।

उपस्थित सर्वोकारवाला

१) वडा अध्यक्ष श्री जयराज पाण्डे
२) नगर का.पा. सदस्य श्री जेलिशा वली
३) वडा सदस्य श्री गोपाल जैसी
४) " " श्री करुणा रसाइली
५) नेपाली कांग्रेस वडा पार्टी प्रतिनिधि निरुद्ध. रा.
६) नेकपा एमाले वडा पार्टी प्रतिनिधि सविरे सुनार
७) माओवादी केन्द्र वडा पार्टी प्रतिनिधि खड्ग विक्रम राना
९) कुसल्ले टोल विकास संस्था
९) स्वाटे टोल विकास संस्था सदस्य श्री विकास राठोडी
१०) ओली टोल विकास संस्था अध्यक्ष श्री नन्दलाल वन्तोल
११) गोविन्द प्रसाद देवकोटा
१२) डिल्ली प्रसाद देवकोटा
१३) विर बहादुर तिरुवा
१४) नरसे कामी
१५) विशाल पुन
१६) बुद्धि भण्डारी
१७) पदम लाल जैसी
१८) डोली प्रसाद शर्मा
१९) प्रकाश जैसी
२०) रुप बहादुर रोकाय
२१) जनक बहादुर पुन
२२) लोक बहादुर खड्का (प्रिमेनाम्स कृपा ईश्वर)
२३) कमलाल वली
२४) दिपक विश्वकर्मा (वडा सदस्य)

ANNEX E: FIELD FORMS

माग फारम

बाटोकालागि अनुरोध
वार्डले भर्ने

1. वार्ड न. : .....

2. प्राथमिकताका आधारमा तालिका भर्नुहोस :

Code	बाटोको नाम	चौडाई	बाटोको प्रकार				प्राथमिकता न.*
			नया बाटो खोल्ने	स्तरोन्नति गर्ने	पुनरुत्थान गर्ने	अबधिक मर्मत	
क							
ख							
ग							
घ							
ङ							

पहिलो प्राथमिकताका लागि १, दोस्रोका लागि २ भर्नुहोस्

3. माथिको प्राथमिकता ..... मितिको वडा बैठक बाट तोकिएको छ ।

4. लाभान्वित बस्ती :

कोड**	बस्तीको नाम, घरधुरी, जनसंख्या
क	
ख	
ग	
घ	
ङ	

5. लाभको प्रकार र प्राथमिकताका कारण :

कोड**	कस्तो किसिमको फाइदा पुग्छ लेख्नुहोस
क	

कोड**	कस्तो किसिमको फाइदा पुग्छ लेख्नुहोस
ख	
ग	
घ	
ङ	

** २ न. तालिका अनुसार भर्नुहोस्

6. अरु संस्थाहरुको संलग्नता :

कोड	अरु संस्थाहरु कुनै यो project मा संलग्न भएको (बाह्य donor, NGOs, INGOs, नेपाल सरकारको संस्थाहरु) भए उल्लेख गर्नुहोस ? वा नजिकैको कुनै गा. वि. स. ले अनुरोध गरको भए उल्लेख गर्नुहोस ? तिनीहरुको संलग्नता र प्रकार समेत उल्लेख गर्नुहोस
क	
ख	
ग	
घ	
ङ	

** २ न. तालिका अनुसार भर्नुहोस्

७. वडामा अन्य विकासको योजना:

यातायात क्षेत्र बाहेकअन्य बिकाशको योजना भए उल्लेख गर्नुहोसः

S.No.	विकास योजनाको नाम	प्राथमिकता क्रम	कैफियत (स्थान, महत्व, सहयोग, आदी)
1.			
2.			
3.			
4.			
5.			
6.			
7.			

8. प्रस्तावित बाटोको लागि वडाको भूमिका (उल्लेख गर्नुहोस):

a) वडाले निम्न किसिमले सहयोग गर्नेछ :

- नगद पैसा सहयोग (कति प्रतिशत उल्लेख गर्नुहोस:.....%
- श्रमदान (सिमांकन औल्याउनुस)कति सम्म रू.....
- जग्गा जमिन दान.....
- खानाका लागि काम.....
- मर्मत कार्य सहयोग.....
- अन्य (उल्लेख गर्नुहोस).....

.....

b) ..... मितिमा बसेको वडा बैठकले माथि उल्लेखित विवरण सबै छलफलबाट पारित गरिएको घोसणा गर्दछ | एक प्रतिलिपि वडामा रेकर्डमा राख्नुहोस |

.....

वडा संयोजकको हस्ताक्षरसडक समितिको संयोजकको हस्ताक्षर

(नाम: .....) (नाम: .....)

मिति : .....मिति : .....

माग फारम सडकका लागि अनुरोध वार्डले भर्ने

1. वार्ड न. : 3, माडी नगरपालिका, चितवन
2. प्राथमिकताका आधारमा तालिका भर्नुहोस :

	प्राथमिकता न.	सडकको नाम	चौडाई	सडकको प्रकार				
				नया सडक खोल्ने	स्तरोन्नति गर्ने	पुनरुत्थान गर्ने	अवधिक मर्मत	Length.
50 m → Black topped remain gravel.	1.	बैराठ - मलाईटोल - घोवाइ हुँदै रतनी महाजित सम्म	10 m (with drain)	<No Budget till Now>	✓ (10 m)	→ Vehicle Movement → Track open already		4 km
All gravel →	2.	सोमरा (राम कृष्णको घरबाट) मनोदित को घरसम्म	6m (no drain)	(8m with drain in future)	✓	→ Track open.	<No Budget till now)	1.5 km
New track open.	3.	रिउ खोला (किनारा) (वडा सिमानामा पुर्ने)	10m (All New track)	✓		10m with drain नयाँ बाटो खोल्ने		6-7 km
New track →	4.	वडा ४ सीमाना [illegible] बघौडा हुँदै केउरा टोलसम्म (महुई खोला किनार)	10 m (without drain)	✓	with drain 12 m बनाउने			5 km
Upgrade →	5.	इलाको बाटो बघौडा चोक बाट बैराठ सम्म	6m (without drain)		✓ All black topped (Vehicle ...) → 12m/with drain in future.			2 km

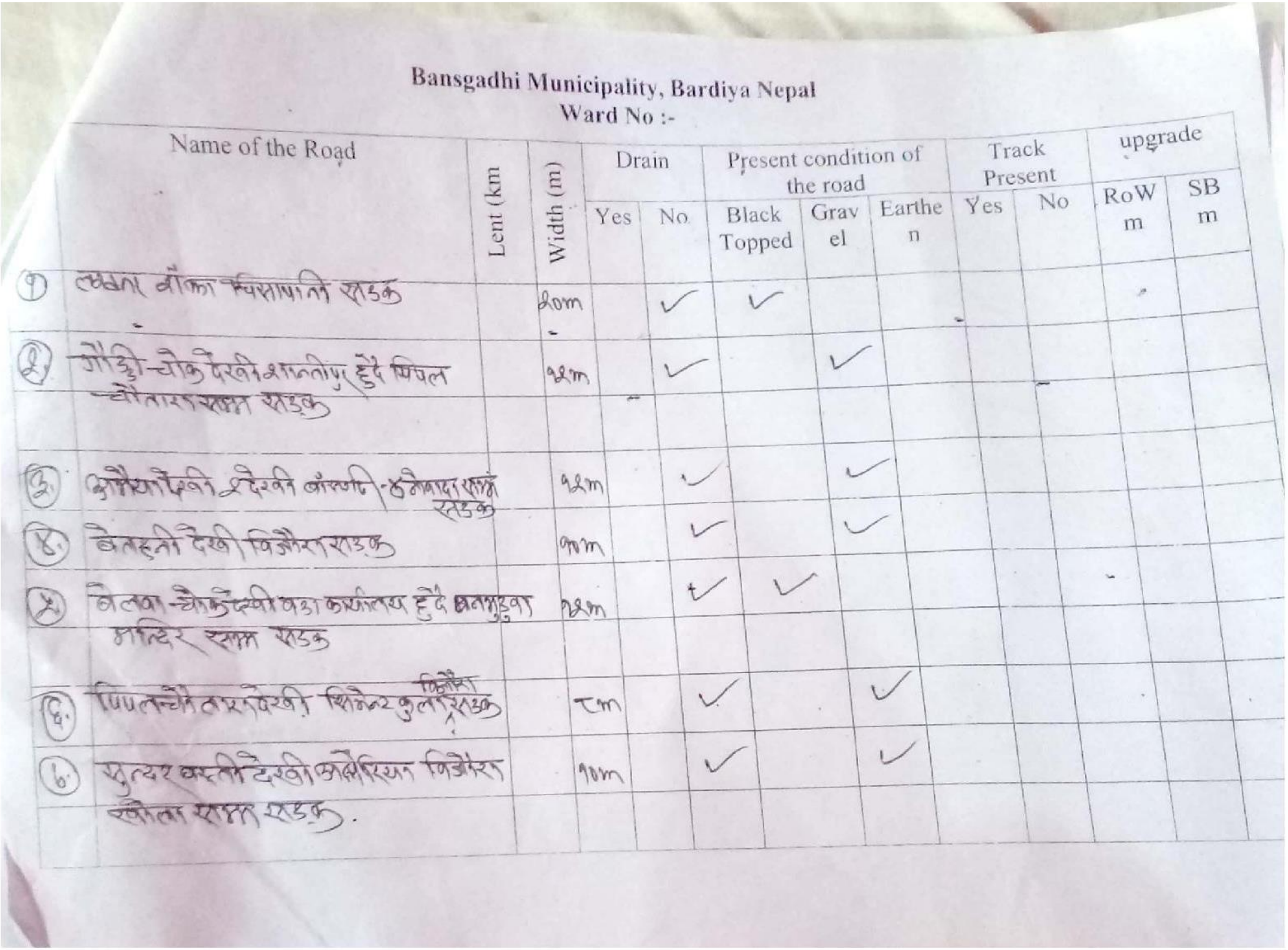
पहिलो प्राथमिकताका लागि १, दोस्रोका लागि २ भर्नुहोस <प्रदेशको Budget ले अहिलेको Pitch> अब - Budget - purposed (plan)

3. माथिको प्राथमिकता २०७८/०२/०३ मितिको वडा बैठक बाट तोकिएको छ।
4. लाभान्वित बस्ती :

कोड**	बस्तीको नाम, घरधुरी, जनसंख्या
क	बैराठ, मलाईटोल, घोवा, रतनी, 200 – HH's → 1000 – Popn nearly
ख	सिमरा ६ नं ([illegible] हालको ६ हुने (वडा जोड्ने सडक) → 80 HH's → 500 PP.
ग	सिमरा पोहारे, रतनी, घोवाहा, सरौचया :- 1800 → PP → 400 HH पर्यटकीय सडक
घ	बघौडा बस्ती HH → 400 PP → 1500 पर्यटकीय
ङ	बघौडा, बैराठ, HH → 400 PP → 1500

5. लाभको प्रकार र प्राथमिकताका कारण :

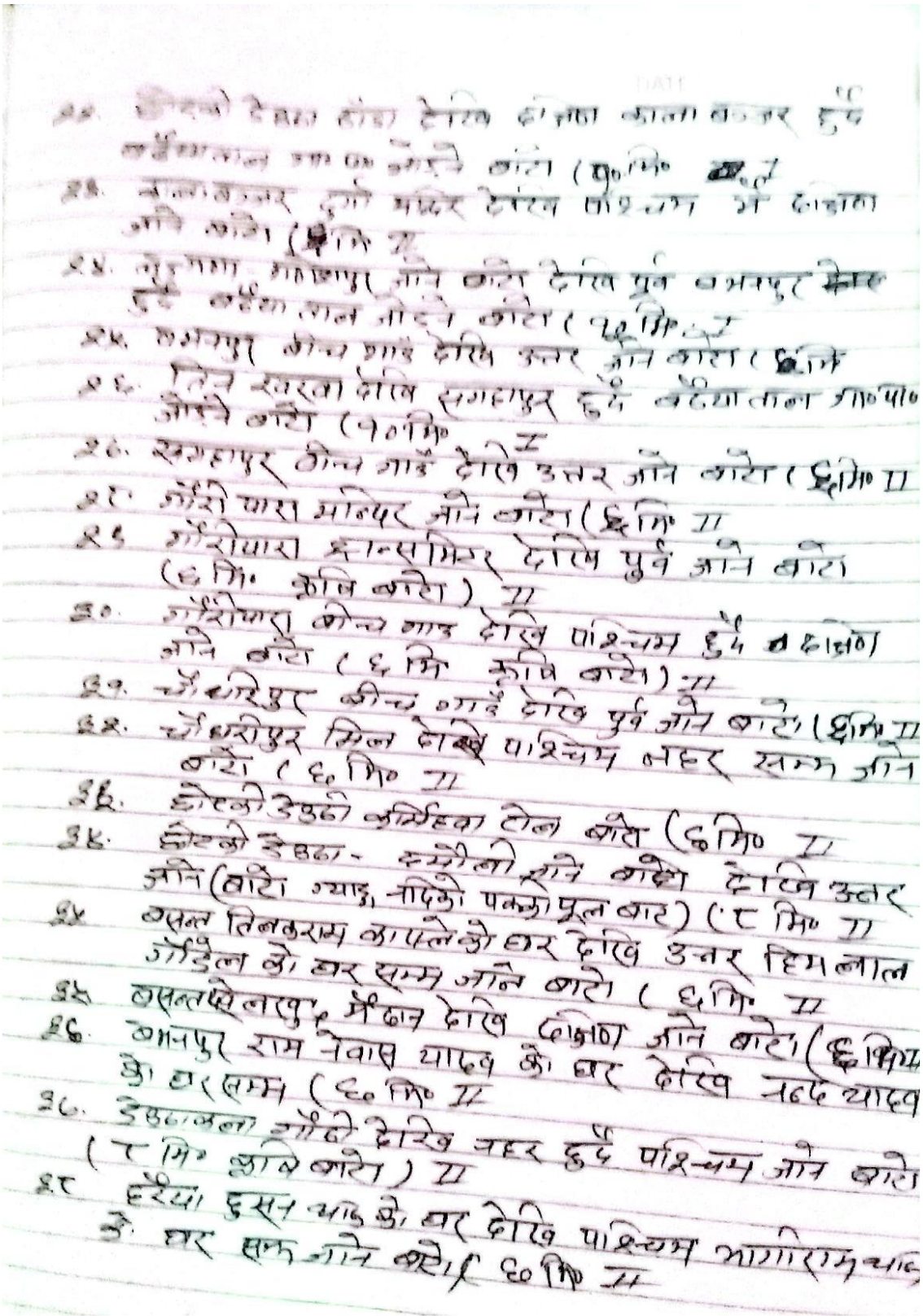
कोड**	कस्तो किसिमको फाइदा पुग्छ लेख्नुहोस
क	

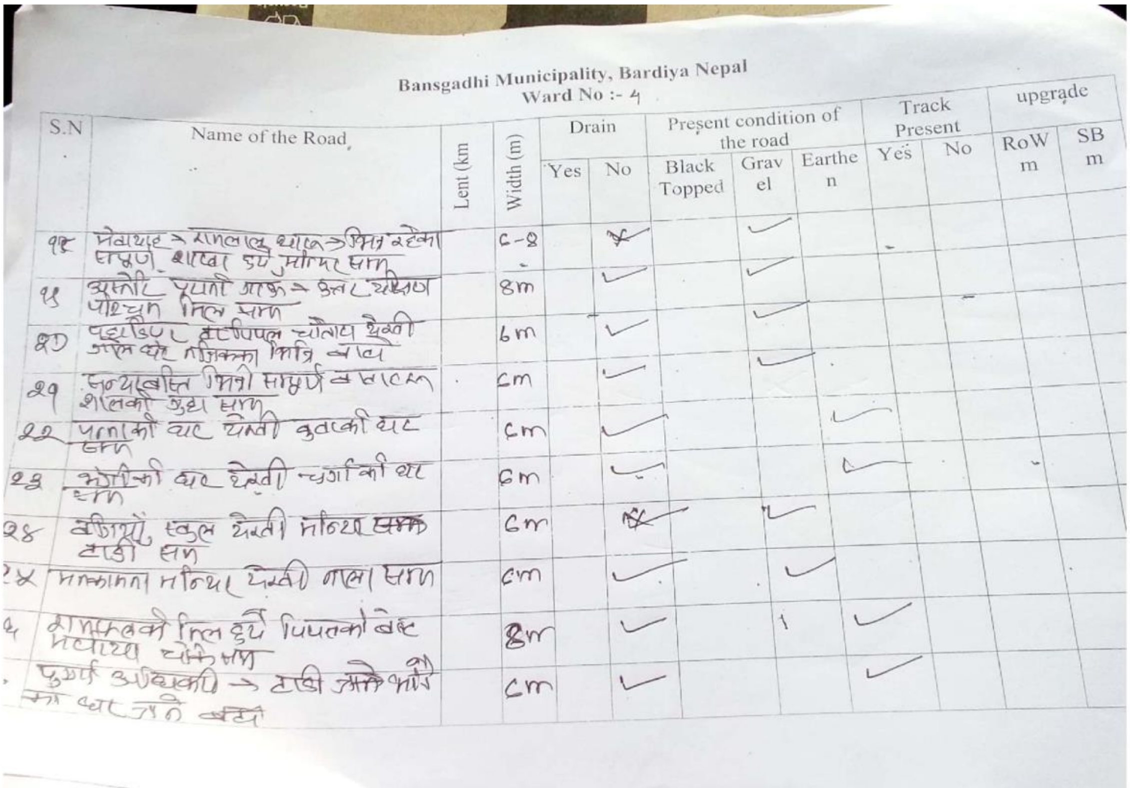


Bansgadhi Municipality, Bardiya Nepal
Ward No :-

Name of the Road	Lent (km	Width (m)	Drain		Present condition of the road			Track Present		upgrade	
			Yes	No	Black Topped	Gravel	Earthen	Yes	No	RoW m	SB m
(१) लखना बाँका पिपरापानी सडक		२०m		✓	✓						
(२) गौढी-चोक देखी शान्तिपुर हुँदै पिपल चौतारा सम्म सडक		१२m		✓		✓					
(३) अभैया देवी देखी बाँसगढी-४ नेवादा सम्म सडक		१२m		✓		✓					
(४) बेलहनी देखी विजौरा सडक		११m		✓		✓					
(५) बेलवा चोक देखी वडा कार्यालय हुँदै बनगुडुवा मन्दिर सम्म सडक		१२m		✓	✓						
(६) पिपल चौतारा देखी पिठेहर कुलो विजौरा सडक		८m		✓			✓				
(७) सुन्दर बस्ती देखी कोलेरियन विजौरा स्कोला सम्म सडक.		१०m		✓			✓				

३. डेढाकला देखि पोखर हुँदै उत्तर जाने बाटो (६ कि॰ II
४. डेढाकला जितेन्द्र थारु घर देखि पूर्व जाने बाटो (५ कि॰ II
५. श्री त्रिकुटा मा॰ वि॰ गेट देखि पश्चिम देखि पोखर हुँदै नहर देखि दक्षिण जाने बाटो (१० कि॰ नालो सहित) I
६. वडा नं ८ वडा कार्यालय पछाडि हुँदै शिव मन्दिर सम्म जाने बाटो (८ कि I
७. डेढाकला शिव मन्दिर देखि पूर्व दमौली जाने बाटो (१५ कि॰ नाला सहित) I
८. डेढाकला पूर्व पिपल को रुख देखि पूर्व नहर सम्म जाने बाटो (५ कि॰ II
९. डेढाकला राम लौटन थारुको घर देखि पश्चिम प्रेम लाल थारुको घर सम्म जाने बाटो (५ कि॰ II
१०. डेढाकला मन्दिर देखि पश्चिम जाने बाटो (३ कि॰) II
११. डेढाकला शिव मन्दिर देखि दक्षिण ~~[illegible]~~ पूर्व ~~[illegible]~~ फूलराम थारु घर सम्म जाने बाटो र ताल सम्म जाने बाटो ६ कि॰ II
१२. डेढाकला राम प्यारे थारु को घर देखि पश्चिम जाने बाटो ६ कि॰ II
१३. डेढाकला स्वयर कुटा देखि हरैया हुँदै वडा नं ९ तारैया जोड्ने बाटो (१० कि॰ पालो बाहेक) I
१४. हरैया राम कुमार हराई को घर देखि उत्तर सुन्दर थारुको घर हुँदै तारैया जाने बाटो सम्म (८ कि॰ II
१५. ~~[illegible]~~ हरैया बीच गाउँ हुँदै वडा नं ९ तारैया जाने बाटो (८ कि॰) II
(१६) हरैया खानेपानी ट्याङ्की देखि दक्षिण बसन्तपुर जोड्ने बाटो (१० कि॰ कृषि बाटो) II
१६. बसन्त चोक देखि पश्चिम जाने बाटो ([illegible] कि॰ II
१७. बसन्त चोक देखि पूर्व दमौली जाने बाटो (१५ कि॰ I
१८. छोटकी डेढा बीच गाउँ ~~[illegible]~~ मन्दिर देखि पूर्व जाने बाटो (६ कि॰ II
१९. छोटकी डेढा बीच गाउँ मन्दिर देखि पश्चिम जाने बाटो (६ कि॰ II
२०. बसन्त चौकिया बाबा मन्दिर जाने बाटो (५ कि II
२१. छोटकी डेढा डाँडा टोल को बाटो (६ कि II

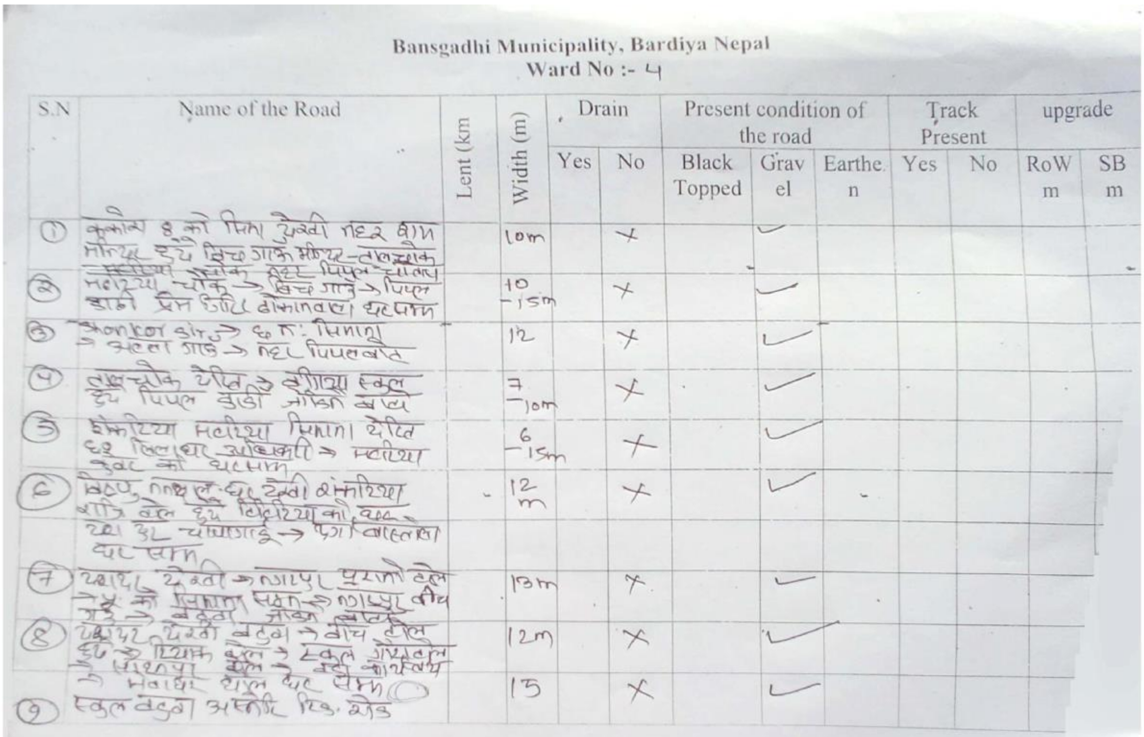




Bansgadhi Municipality, Bardiya Nepal

Ward No :- 4

S.N.	Name of the Road	Lent (km	Width (m)	Drain: Yes	Drain: No	Present condition of the road: Black Topped	Present condition of the road: Gravel	Present condition of the road: Earthen	Track Present: Yes	Track Present: No	upgrade: RoW m	upgrade: SB m
१८	[illegible]		6-8		✗		✓					
१९	[illegible]		8m		✓		✓					
२०	[illegible]		6m		✓		✓					
२१	[illegible]		6m		✓		✓					
२२	[illegible]		6m		✓			✓				
२३	[illegible]		6m		✓			✓				
२४	[illegible]		6m		✗		✓					
२५	[illegible]		6m		✓		✓					
५	[illegible]		8m		✓			✓				
	[illegible]		6m		✓			✓				



Bansgadhi Municipality, Bardiya Nepal

Ward No :- 4

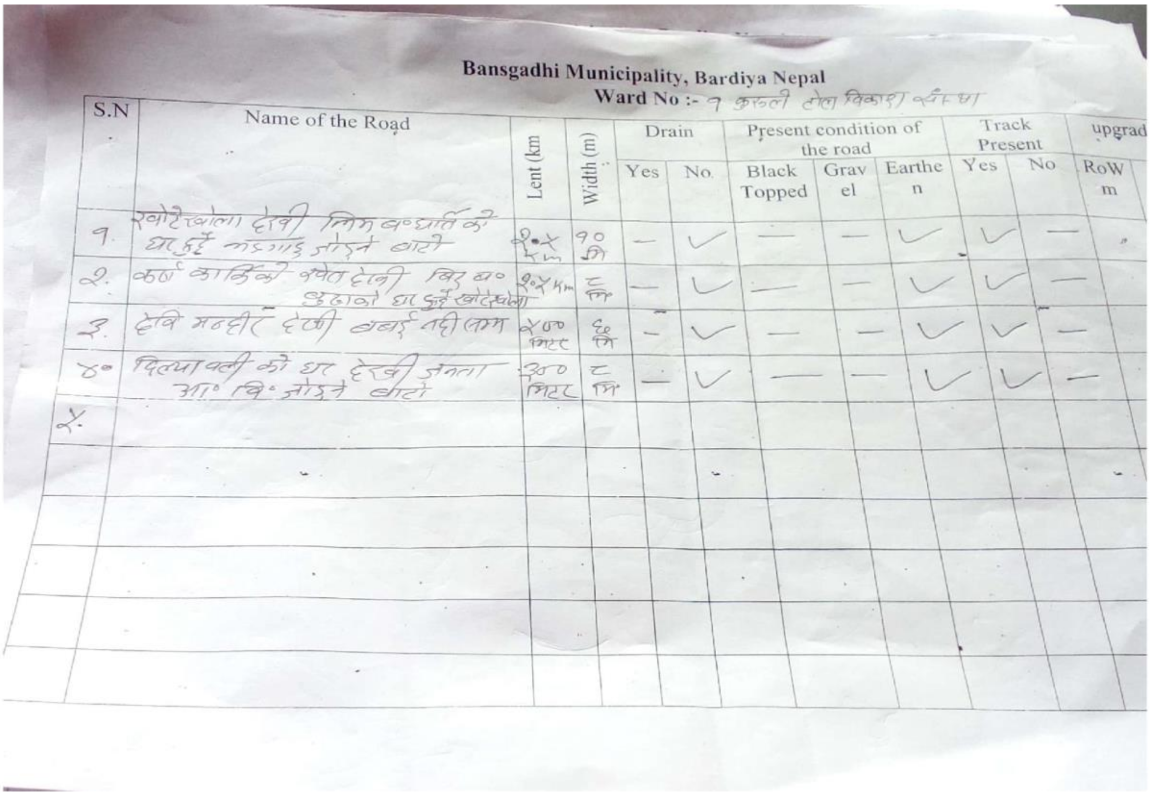
S.N	Name of the Road	Lent (km	Width (m)	Drain: Yes	Drain: No	Present condition of the road: Black Topped	Present condition of the road: Gravel	Present condition of the road: Earthen	Track Present: Yes	Track Present: No	upgrade: RoW m	upgrade: SB m
1	[illegible]		10m		✗		✓					
2	[illegible]		10-15m		✗		✓					
3	[illegible]		12		✗		✓					
4	[illegible]		7-10m		✗		✓					
5	[illegible]		6-15m		✗		✓					
6	[illegible]		12 m		✗		✓					
7	[illegible]		13m		✗		✓					
8	[illegible]		12m		✗		✓					
9	[illegible]		15		✗		✓					

Bansgadhi Municipality, Bardiya Nepal
Ward No :-

Name of the Road	Lent (km	Width (m)	Drain		Present condition of the road			Track Present		upgrade	
			Yes	No	Black Topped	Gravel	Earthen	Yes	No	RoW m	SB m
१ लखना बाँका खिसापानी सडक		२०m		✓	✓						
२ गोंड्री चोक देखि शान्तीपुर हुँदै पिपल चौतारा सम्म सडक		१२m		✓		✓					
३ [illegible] देखि बाँस्गढी [illegible] सडक		१२m		✓		✓					
४ बेलहनी देखि चिजौरा सडक		११m		✓		✓					
५ बेलवा चोक देखि वडा कार्यालय हुँदै [illegible] मन्दिर सम्म सडक		१२m		✓	✓						
६ पिपल चौतारा देखि [illegible] कुलो सडक		८m		✓			✓				
७ सुन्दर बस्ती देखि [illegible] चिजौरा चौतारा सम्म सडक.		१०m		✓			✓				

Bansgadhi Municipality, Bardiya Nepal
Ward No :-

S.N.	Name of the Road	Lent (km	Width (m)	Drain		Present condition of the road			Track Present		upgra
				Yes	No.	Black Topped	Gravel	Earthen	Yes	No	RoW m
१,	[illegible] गेट देखी [illegible]	४०००m	१०								
२,	[illegible] पुल देखी [illegible]	४००m	८								
३,	[illegible] पुल देखी [illegible] पार्क	१५००m	१०								
४,	[illegible] देखी [illegible]	१८००m	८								
५,	[illegible] घर चोक देखी [illegible] चोक	२००m	८								
६	[illegible] चोक देखी [illegible]	२००m	८								
७	[illegible] घर देखी [illegible] घर	४००m	८								
८	[illegible] घर देखी [illegible] घर सम्म	४००m	८								
९	[illegible] घर देखी [illegible] घर सम्म	४८०m	८								
१०											



Bansgadhi Municipality, Bardiya Nepal
Ward No :- १ कुल्ली टोल विकास संस्था

S.N	Name of the Road	Lent (km	Width (m)	Drain		Present condition of the road			Track Present		upgrad
				Yes	No.	Black Topped	Gravel	Earthen	Yes	No	RoW m
१.	खोटेखोला देखी जिम बन्धार्ति को घर हुँदै मडगाइ जोड्ने बाटो	१.५ km	१० मि	—	✓	—	—	✓	✓	—	
२.	कर्ण कार्किको खेत देखी बिर ब० बुढाको घर हुँदै खोटेखोला	१.५ km	८ मि	—	✓	—	—	✓	✓	—	
३.	देवि मन्दीर देखी बबई नदी सम्म	५०० मिटर	६ मि	—	✓	—	—	✓	✓	—	
४.	दिल्यावली को घर देखी जनता आ० वि० जोड्ने बाटो	३०० मिटर	८ मि	—	✓	—	—	✓	✓	—	
५.											