

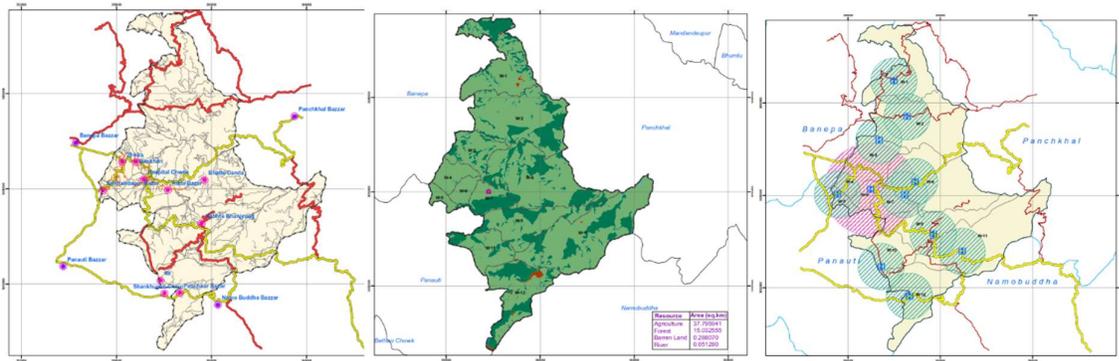


Government of Nepal

Dhulikhel Municipality

# INTEGRATED URBAN DEVELOPMENT PLAN OF DHULIKHEL MUNICIPALITY

## Volume 3: Land Use and Zoning Plan



2019



**Submitted By:**

**GOEC-GIDA-Next JV**

**Kathmandu**

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## Executive Summary

The Integrated Urban Development Plan (IUDP) for Dhulikhel is a strategic response to the 20-year growth of Dhulikhel Municipality, which brings together infrastructure provision, environmental management, economic growth, disaster preparedness, municipal service delivery and mainstreaming gender equality and social inclusion. This “whole of Council” strategic plan will deliver on the long-term vision of Municipality:

*A prosperous, well governed and model town Dhulikhel*

*based on culture, heritage, tourism and environmentally friendly sustainable development.*

Located 30 kilometres east of Kathmandu, Dhulikhel Municipality is blessed with a diverse and vibrant community, high quality environmental assets including clean air and water, spectacular view, rich built and cultural heritage, major institutions with Kathmandu University and Dhulikhel Hospital, agricultural production and a burgeoning tourism industry.

However, the Municipality is facing a number of challenges. This includes: an emerging low density and scattered settlement pattern in the rural wards with poor access to essential social and physical infrastructure; rapid urban development at a rate that is not supported by key infrastructure; fragmented agricultural land which is becoming urbanized; and prioritization of infrastructure. Analysis of physical infrastructure indicates critical problems in water supply management and solid waste management which requires immediate attention.

Observations in the field reveal housing outside, or on the edge of, urban areas being constructed without the provision of constructed roads, drainage, water and sewerage services. This reveals a disconnect between development approvals and infrastructure planning.

It appears that, in many cases, development is not occurring in sequential and planned way and that the provision of infrastructure to support the development is being provided in a reactive way, which is expensive to the community and financially and environmentally unsustainable.

Through research and community engagement, the IUDP includes analysis, strategic policy and practical actions to improve physical infrastructure, social infrastructure, risk sensitive land use, environment management at town level with proposals for capacity building and institutional strengthening of municipal authority. The IUDP also focuses on improving the conditions of women, the poor and the excluded by undertaking a community development program and gender equality and social exclusion (GESI) activities through the Social Development Plan.

The IUDP, presented in 16 volumes, also covers institutional and technical issues. The report provides comprehensive details on: urban management, institutional development; physical development planning, social development planning, economy, environment, institutional and financial planning along with social impacts and poverty; gender

and social inclusion; and the subproject resettlement plans and disaster risk reduction. Based on the immediate needs of the municipality, short term plans and long-term plans have been developed which will support Dhulikhel's growth.

In the preparation of the IUDP project, the most pressing needs of the Dhulikhel Municipality have been identified. Analysis was carried out for physical infrastructure, social infrastructure, economy and disaster management and provide priorities for short, medium and long-term needs of the Municipality.

While generally the spatial distribution of health and education facilities show good coverage, connectivity in rural wards needs to be improved through upgrading existing road networks. Likewise, disaster management is another critical issue demanding a strategic response.

Critically, the IUDP provides a new framework to manage the urbanization of Dhulikhel, while protecting its agricultural, environmental and cultural assets. This will be in the form of new processes for the Municipality, including land use zoning and by-laws, and clear processes to better link land development, community needs and the provision of infrastructure.

The IUDP:

- Sets out the planned urban expansion of Dhulikhel in three key areas to accommodate residential, tourism and commercial growth over the coming 20 years.
- Supports more intensive development around the commercial centres (chowks) that supports existing private and public investment.
- Identifies key road, water and sewerage infrastructure to support the growing community over the next 20 years.
- Identifies key road connections between the Rural wards (in particular Wards 1 and 2) to facilitate access to schools and health services.
- Establishes Land Use Zonings, based on economic, physical attributes and disaster risk management principles, which will support good decisions, guide development in strategically suitable locations and support Dhulikhel's agriculture sector.
- Identifies opportunities to support the growth in tourism and protection of heritage and environmental assets for existing and future generations.
- Identifies priority projects to be undertaken by the Municipality over the coming 5 years to support the delivery of the IUDP, supported by a financial plan.

The IUDP introduces new land use zoning and by-laws which provides for strategically-driven decision making and sustainable development of Dhulikhel into the long term.

Implementation of the actions within the IUDP from all part of the organization is critical to the success of Dhulikhel's future.

The IUDP consists of the following Volumes:

- Volume 1 Background Report
- Volume 2 Physical Development Plan
- Volume 3 Land Use and Zoning Plan
- Volume 4 Social Development Plan
- Volume 5 Economic Development Plan
- Volume 6 Environment Management Plan
- Volume 7 Conservation, Culture and Tourism Plan
- Volume 8 Municipal Transport Management Plan
- Volume 9 Disaster Risk Reduction Plan
- Volume 10 Consolidated Implementation Plan
- Volume 11 Financial and Organisation Plan
- Volume 12 By-Laws
- Volume 13 Municipal profile
- Volume 14 Feasibility Study – Waterfall Construction in Ward 1
- Volume 15 Pre-Feasibility Study – Artificial Lake in Wards 7 and 8
- Volume 16 Feasibility Study – Walking Trail in Wards 7 and 8

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## 1. Introduction

The Land Use Policy 2015 (Ministry of Land Reform and Management (MoLRM) has set out a series of categories of Zones which should be applied on the basis of how the land should be used. Each zone contains specific by-laws which facilitates appropriate future use and development. In order to achieve the vision, and objectives of the Municipality all land shall be classified into different Land Use Zones (LUZs).

The process for allocating Land Use Zones in Dhulikhel Municipality has been informed by a combination of factors including:

- Disaster Risk Reduction
- Existing land use
- Natural physical constraints and usable vacant land
- Efficient infrastructure provision
- Strategic growth based on urban economics,
- Projected population and
- Policies and strategies for future management of development outlined throughout the entire IUDP including the Physical Development Plan, Social Development Plan, Environment Management Plan, Conservation, Culture and Tourism Development Plan and Economic Development Plan.

This report should be read together with the By-laws.

## 2. Strategic justification for Zoning selection

By considering issues and challenges throughout the IUDP, the following policies and strategies have been prepared that would influence how zoning should be applied to land.

### 2.1 Residential

- Ensure a 20-year supply of zoned residential land
- Ensure residential land is located close to activity centres and serviced with road, sewerage, electricity, communications and water supply.
- Prioritise new residential development three major growth areas.
- Encourage infill development in existing residential areas.
- Ensure historic residential/mixed use areas are protected and that new development is sympathetic
- Ensure residential areas are safe and have high amenity, including good noise, air and water quality

### 2.2 Agriculture

- To promote rural agricultural development in order to generate employment, which helps to minimize the rural urban migration, and support the development of rural and urban service centres. To enhance connectivity of rural areas with Dhulikhel Bazar.

- Adopting the concept of land pooling for consolidation of agricultural land, and acquisition of land for infrastructure.
- Promote consolidation of plots in agricultural areas to increase productivity and “economies of scale” of agricultural production.
- Discourage haphazard fragmentation of land which provides for fixing limit of land miniaturization for different land uses.
- Encourage further development in existing settlements and discourage isolated small lots in rural zones.
- Apply Agricultural Zone that restricts subdivision and residential development that is not associated with agriculture.

### **2.3 Industry**

- Promote decentralized balanced industrial development (in particular in the rural wards) in order to spread the benefits of employment throughout the municipality, help minimize rural- urban migration, and support the development of rural and urban service centres.
- Necessity of an agro-based cottage industry that provides a significant employment opportunity which helps to upgrade or uplift the overall agricultural production as well as consumption.
- Protect residential areas and other sensitive uses such as hospitals and schools by applying a buffer between industrial uses and sensitive uses.
- Apply zoning and effective by-laws that requires industrial uses to operate to minimise impact on water and air quality and upon the amenity of the area.
- Ensure that the sites where Industrial uses are located are well-presented and do not negatively impact upon the landscape or character of Dhulikhel.

### **2.4 Retail and commerce**

- Recognise the Activity Centre hierarchy within the Dhulikhel Municipality, which includes Primary Activity Centre, local centre and a series of village centres in the rural wards.
- Encourage retail, office, community services, entertainment and housing within existing and planned activity centres.
- Strongly discourage ‘out of centre’ retail development.
- Discourage unplanned ribbon commercial development along the highway.
- Apply “Commercial” or Mixed Used zones to the activity centres.

### **2.5 Waterways and Forestry areas**

- Protect environmental assets including waterways and forests by applying the Protection Zone and Forest Zone.

### 3. Proposed Zoning Map

In Dhulikhel municipality, major types of land use zones are presented in Map below. The Map includes the location of principle, local and village activity centres, future urban growth areas, heritage areas, residential areas, an urban growth boundary indicating the area where development will be supported by infrastructure, locations of forest and environmental areas and location of agricultural land. Zones include:

- Commercial Zone
  - Commercial (Principal Bazar) Zone
  - Commercial (Local Bazar) Zone
  - Commercial (Tourist Commercial) Zone
  - Commercial (Village Centre) Zone
- Residential Zone
  - Residential (Heritage Mixed Use) Zone
  - Residential (Built Up Areas) Zone
  - Residential (Urban Expansion) Zone
- Agriculture Zone
- Forest Zone
- Water Conservation Zone
- Public Use Zone
  - Public Use (Recreation) Zone
  - Public Use (Institutional) Zone
  - Public Use (Road) Zone

Refer to Appendix A for Zoning Maps.

A description of the zones and where they should be applied is provided below:

### 3.1 Commercial Zones

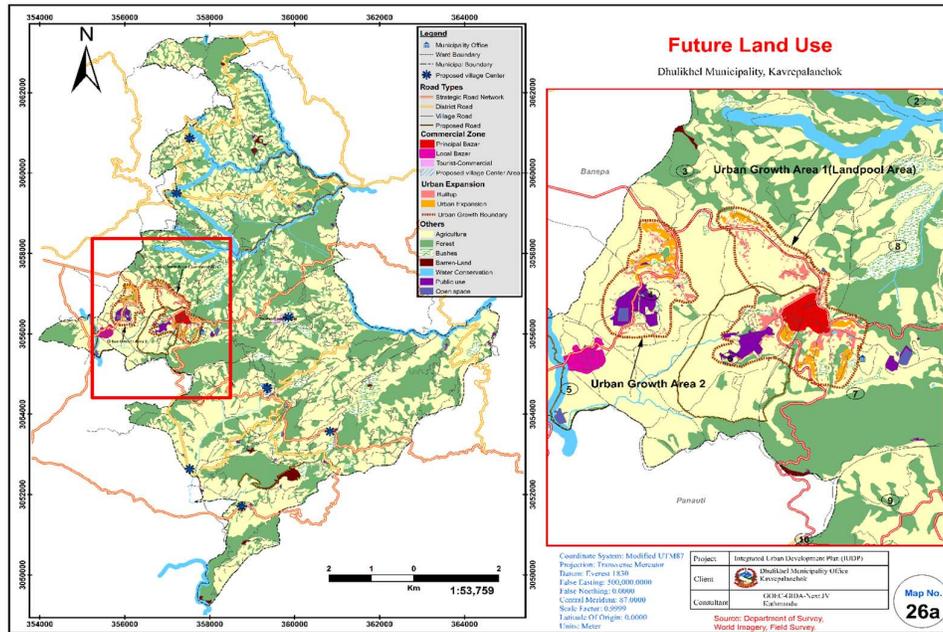


Figure 2: Location of Commercial Zones

The Commercial Zone is presented in four categories to reflect the hierarchy and specific needs and conditions for development in these areas:

- Commercial (Principal Bazar) Zone,
- Commercial (Local Bazar) Zone,
- Commercial (Tourist Commercial) Zone and
- Commercial (Village Centre) Zone.

The Commercial Zone has been applied based on the following strategies:

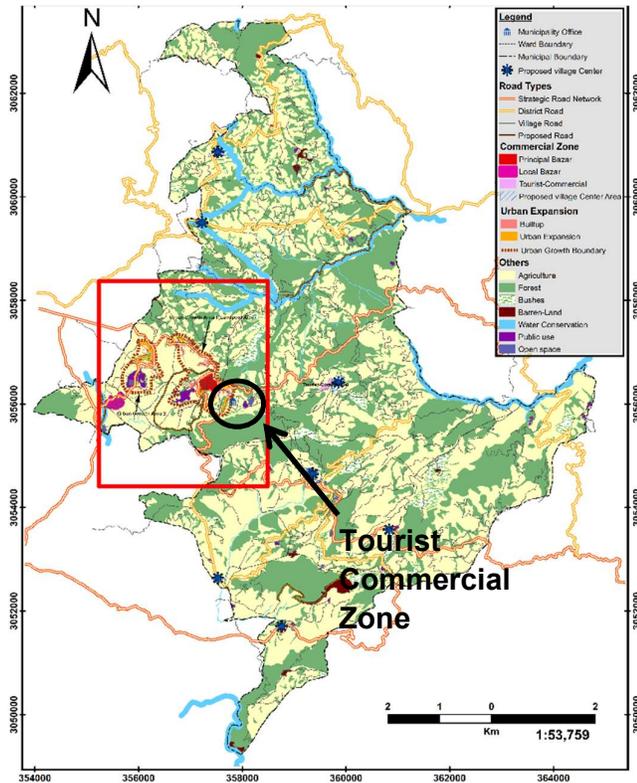
- Develop village activity centers in each ward and connect these activity centres with the major activity centres Dhulikhel, Banepa and Panauti.
- Encourage retail, office, community services, entertainment and housing within existing and planned activity centres. Strongly discourage ‘out of centre’ retail development, Discourage unplanned ribbon commercial development along the highway.

Apply commercial zoning in the following areas:

- Activity centres in each ward

Ward no. (Market centres /activity centres)	Linked Market Centres	Major Link Roads
1(Midinichhap)	Banepa Bazar	DR012
2.(Dudamukh)	Banepa Bazar	DR009
5.Shreekhandapur Bazar	Banepa/Panauti	F73
3/4/6/7(DhulikhelBazar)		
8 (Bhattedanda)	Banepa Bazar	Saraswoti Bazar- Adda Bazar
9(Kavrebhanjyang)	Banepa Bazar	BP Highway
10 (Batase)	Dhulikhel Bazar/Panauti	BP HW - Sarada Batase – Ite
11(Kharka)	Dhulikhel	H06
12(Shankhupatichau)	Panauti	F72

- Around Dhulikhel Chowk (at the junction of Araniko Highway and BP Highway), (Wards. 6 and 7)
- The Bashghari Area (Araniko Highway), 28Kilo to KU Bus stand (Araniko Highway) (Ward no.4).
- BP Rajmarga- From Jaran Danda Ghanti tole chowk to Dhulikhel Hospital



### 3.1.1 Tourist Commercial Zone

Bhatte Danda is one of the major tourist attractions of the Municipality. Road from Gokhureswor to Bhatte Danda has developed itself as a very important commercial corridor. The corridor is also within a dense forest area and this factor needs to be considered and balanced when considering new development. Many Resorts and Hotels are developed along the road because of tourism. This stretch of road has been classified under tourist commercial zone

The purpose of the Zone is to:

- Allow commercial uses that serve the travelling public;
- Providing standards and guidelines that enhance the appearance and function of commercial-tourist uses and their compatibility with surrounding uses;

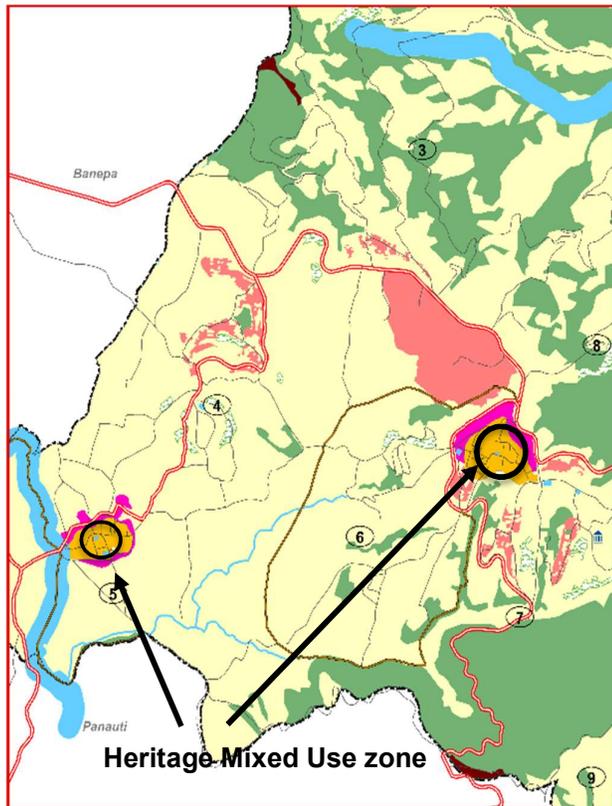
Figure 3: Location of Tourist Commercial Zone

## 3.2 Residential Zones

The Residential Zone is proposed to apply to 3 categories of areas:

- Residential (Heritage Mixed Use) Zone which are heritage areas
- Residential (Built Up Areas) Zone which are areas with existing residential land use
- Residential (Urban Expansion) Zone which are areas of urban which are to be developed

### 3.2.1 Heritage Mixed Use Zone



**Figure 4: Location of Heritage Mixed Use Zone**

The purpose of the Heritage Mixed Use Zone (yellow area) is to:

- Support residential use
- Respect and preserve the heritage character and fabric of the area
- Prioritise residential use
- Allow for small scale retail and commercial uses that support the community and local tourism

Wards 5, 6 and 7 consist of areas with traditional cultural heritage comprising traditional Newari residential buildings and temples. These areas have been classified as the “Heritage Mixed Use Zone”. Further specific by-laws and controls that respond to the unique characteristics of this area have been prepared and are found on the By-laws section of the report.

### 3.2.2 Urban Expansion Zone/Residential Zone

This zone is proposed to accommodate the additional population over a 20-year period. It includes existing residential land and strategically located land that is yet to be developed but requires planning and infrastructure to accommodate future growth.

The Municipality has already started a Land pooling project in ward no 4. In wards 4,5,6 and 7 there is a pattern of fragmentation of land parcels into irregular shapes and sizes, functional open spaces are becoming rare with each building constructed with each new building constructed with no harmony with the existing buildings and infrastructures in the neighbourhood. To solve this problem National Urban Development Strategy 215 has aimed to get the new residential areas developed by land readjustment by 2031. Dhulikhel Municipality has initiated this land readjustment project in ward no. 6 along the Araniko Highway. The Existing and planned Land pooling area is given in the figure below:

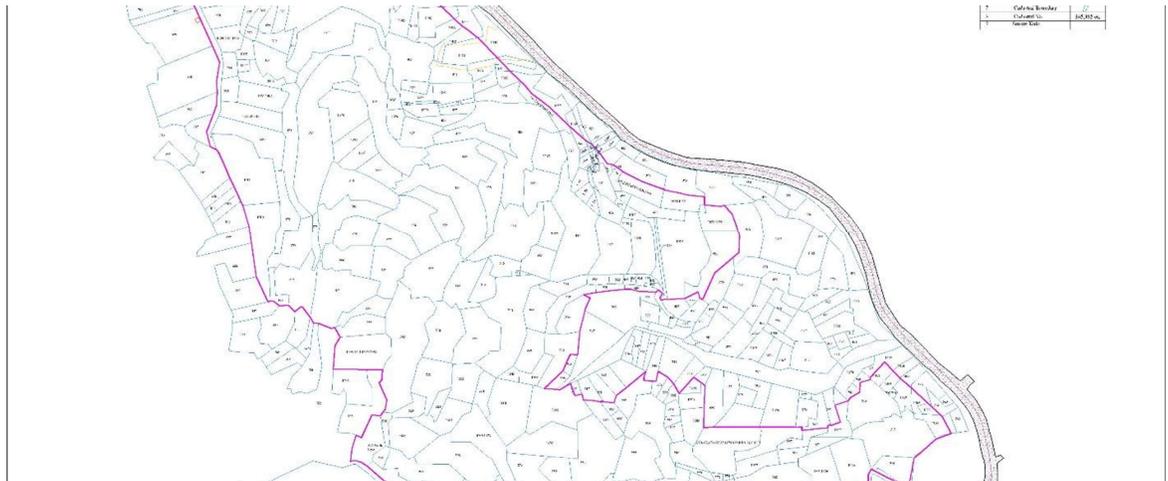


Figure 1: Land Re-adjustment area



**Figure 2: Land Re-adjustment Plan**

Wards 4, 5, 6 and 7 are the low disaster risks zones and are appropriate for new development activities. Furthermore, Expansion areas are selected based on the principle of giving neighbourhood compact form. In addition, the ability to efficiently sequence road, water and sewerage infrastructure has also been considered.

Existing residential uses lie within Wards 4, 5, 6 and 7 and urban expansion is best located immediately adjoining these existing residential areas to maximise the use of existing infrastructure. Furthermore, Land fragmentation and building activity is high on wards 4, 5,6, 7 and therefore these areas are identified as potential area for urban expansion. The existing settlement pattern in these wards is dense along and around highways and more on the northern part of highway. Therefore, the major portion of residential zone is proposed on these areas of the ward. Based on projected demand and previous development rates of last 5 years, 28 hectares of land has been allocated as future residential in specific areas to accommodate residential growth for the coming 20 years.

These areas are listed below:

Existing residential areas where the fragmentation of land is maximum are consolidated in order to give compact settlement form. Those areas can be used as urban expansion areas in the future.

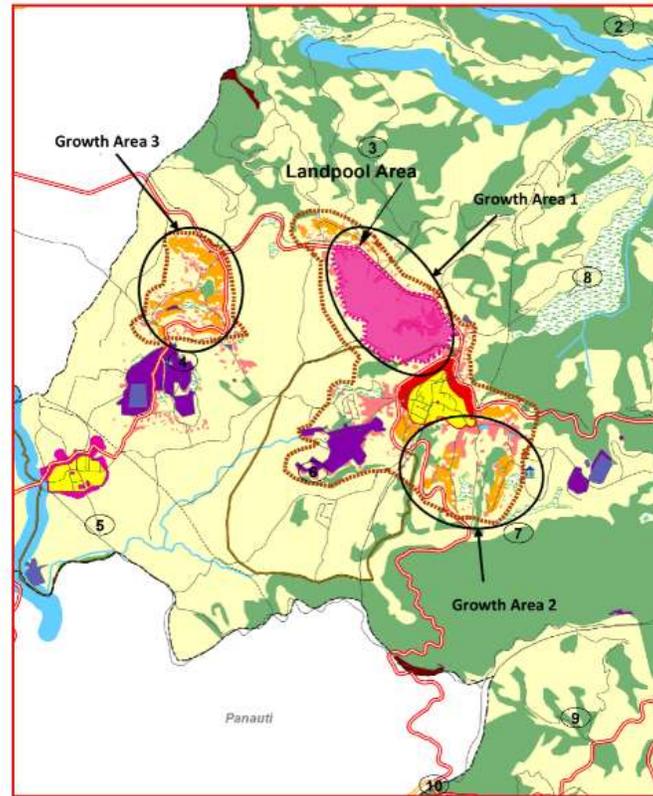
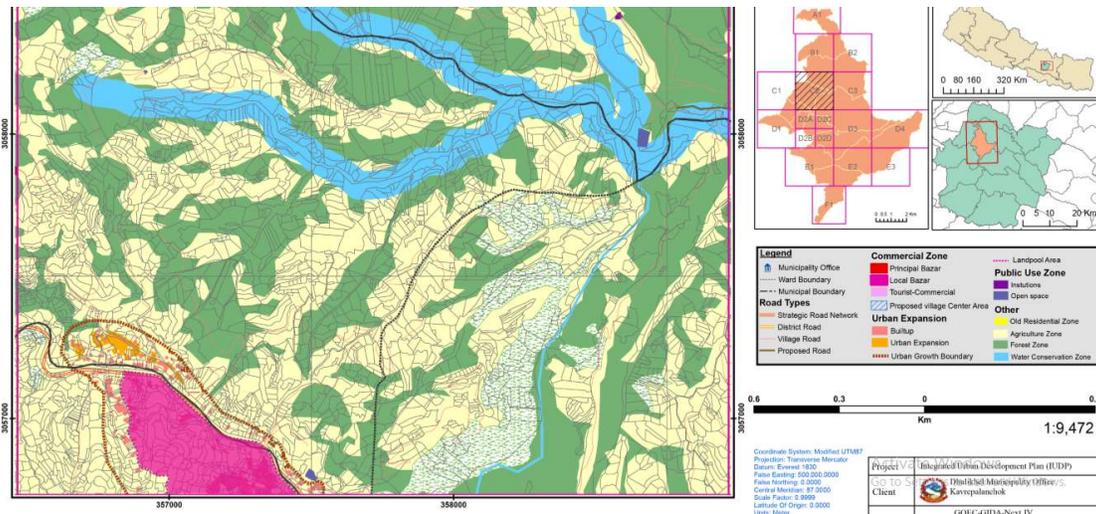


Figure 3: Location of Residential Growth Areas



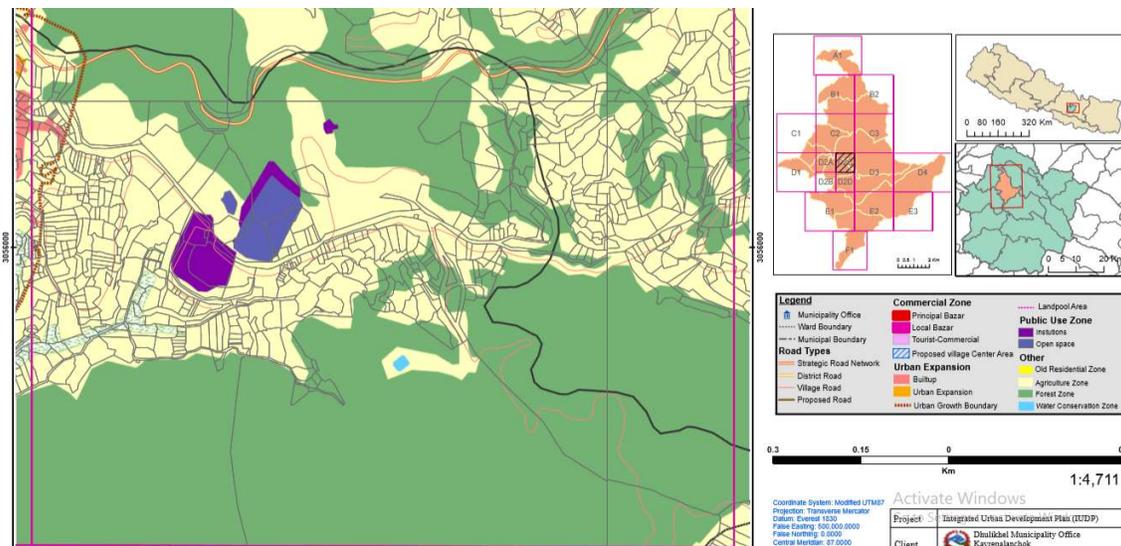
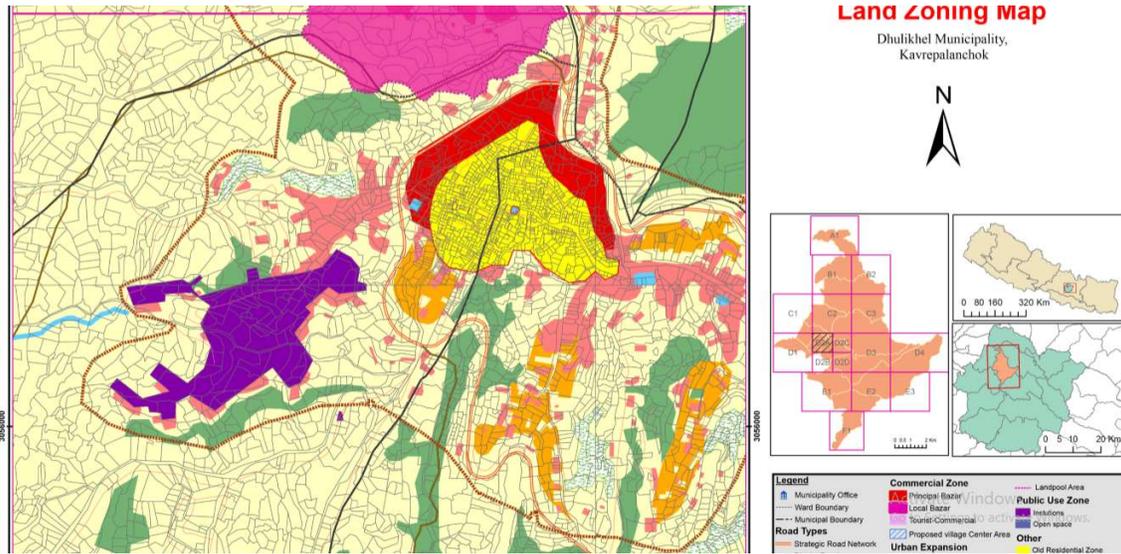
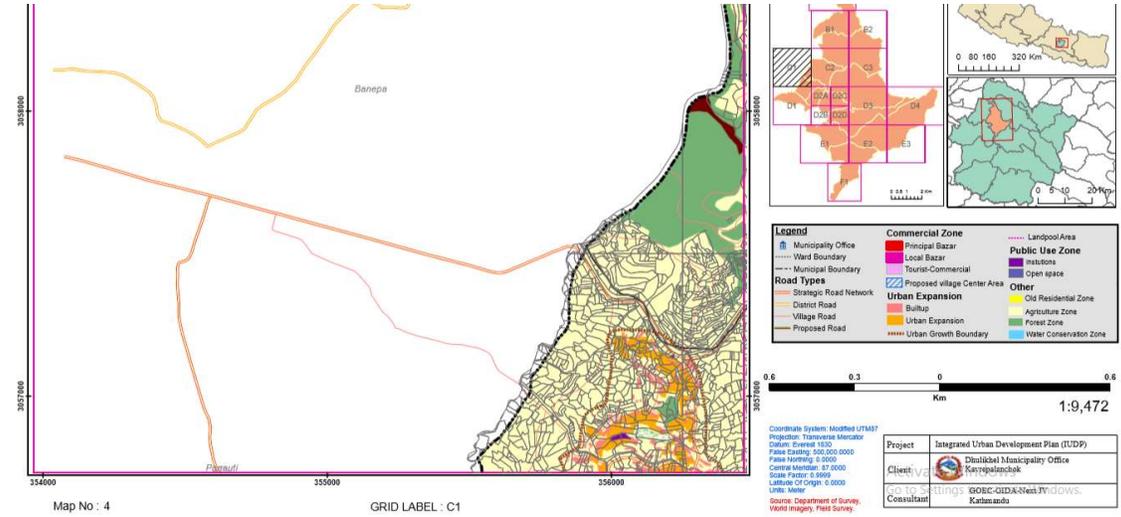


Figure 8: Location of Residential Zone (Pink) and Urban Expansion Zone (Orange)

Areas identified as urban expansion areas to accommodate future development is illustrated in the map above.

#### **Urban Growth Area 1**

The settlement below Araniko Highway in Ward 4, the existing landpool area (approximately 17 hectares)

#### **Urban Growth Area 2**

Area south east of Main Bazar-Saraswati Bazar-Adda Bazar to BP Highway (approximately 6 hectares)

#### **Urban Growth Area 3**

Land around KU Road to be consolidated and can be used for urban expansion in the future (approximately 5 hectares)

Policy statements:

- **Urban Development** such as Residential and commercial development and subdivision is **strongly encouraged** on land **within the Urban Growth Boundary**. These activities are strongly **discouraged** on land **outside the Urban Growth Boundary**.
- **Existing residential areas** should be **consolidated with in-fill development** to achieve a **compact settlement** form and maximise the efficient use of infrastructure.

The purpose of the Urban Expansion Zone is:

- To accommodate an increase in the population density of the area in a managed way.
- To manage the transition of non-urban land into urban land
- To encourage the development of well-planned and well-serviced new urban communities in accordance with an overall plan
- To safeguard non-urban land from use and development

The purpose of the Residential Zone is:

- To accommodate residential development
- To allow for businesses and community services that serve the convenience of immediate local residents
- To consolidate residential development and maximise the efficient use of available infrastructure

### **3.3 Forest Zone**

Forest zone means areas covered fully or partly with trees. A full list of the forests that lie within this zone and ordinances related to it are elaborated in the by-laws section of the report. The areas in the Forest Zone are shown as green on the zoning map. The purpose of the zone is to protect the identified community and government forests in the Municipality.

### 3.3 Agriculture Zone

The Agriculture Zone is applied where agricultural production is the primary use of the land and to protect this agricultural use into the future. Agriculture includes corn crops, cash crops, horticulture, animal husbandry, fisheries, agricultural forest products and plants on private land.

The Agriculture Zone in Dhulikhel Municipality has been divided into various categories depending on the type of agriculture and the capability of the land (refer to Land Capability Maps). The majority of land within the Municipality has been zoned Agriculture Zone (shown as yellow on the zoning map).

Barren land, which is generally land on steep gradient and unable to be developed in any way, has also been included within the Agriculture Zone.

To construct buildings under this zone, construction area must possess basic infrastructure. Only in this case building can be constructed in accordance to the laws prescribed in residential sub-zone. Generally residential development and subdivision is discouraged in these areas and should be only permitted where there is a direct relationship between the dwelling and the farming activity on the land.

Upholding the requirements of the Agriculture Zone is critical to ensure the ongoing viability and production of agricultural land within the Municipality.

### 3.5 Water Conservation Zone

This area contains construction restricted areas. River, and Wetland areas are covered under this area.

- The blue conservation zone includes the river and 100m buffer from the river.
- The buffer of 10m around all the wet land, 3m buffer from main canal & 1.5m buffer from side canal on either side is also considered as the buffer area.

### 3.6 Public Zones

#### 3.6.1 Open Space

Public open spaces, garden, park, zoo, picnic-spots, playground, well, ponds, Tudinkhel etc. that are used by the public and the buildings that are used for entertainment come under this zone.

Please refer the proposed Land zoning map above for all the mentioned land use zones.

#### 3.6.2 Institutional Zone

Land belonging to various government and semi-organizations are indicated as institutional areas. These areas can include health, education, security, key infrastructure (such as drinking water supply infrastructure, landfill sites, sewerage infrastructure, telecommunications infrastructure), government departments, municipal infrastructure and other uses that serve the community. Major institutional areas are listed below which will be included in the Public (Institutional) Zone:

**Ward 4**

- Kathmandu university area,
- Institutional area between F73 and Dhulikhel-DMI-Shreekhandapur road

**Ward 6**

- DMI area (Institutional area between Lakhanamai-Suwaltole road and Gitamarga-hospital chowk road)

**Ward 7**

- Institutional area along the Saraswati- Adda Bazar road

The purpose of the Institutional Zone is:

- Establish areas for public or semi-public uses.
- Protect the ongoing use of public assets from encroachment.
- Provide greater certainty about the future use and development of properties zoned institutional.

**3.6.3 Road Zone**

Critical road networks of Class A Road and Class B Road, identified in the Municipal Transport Management Plan (Volume 8), are to be zoned Public (Road) Zone.

The purpose of the Zone is to ensure that development does not compromise the future safe operation and development of these strategically important roads.

This zone would control:

- Conditions around new access onto these roads
- Location of new permanent development on areas identified for road widening.
- Use of road sides