



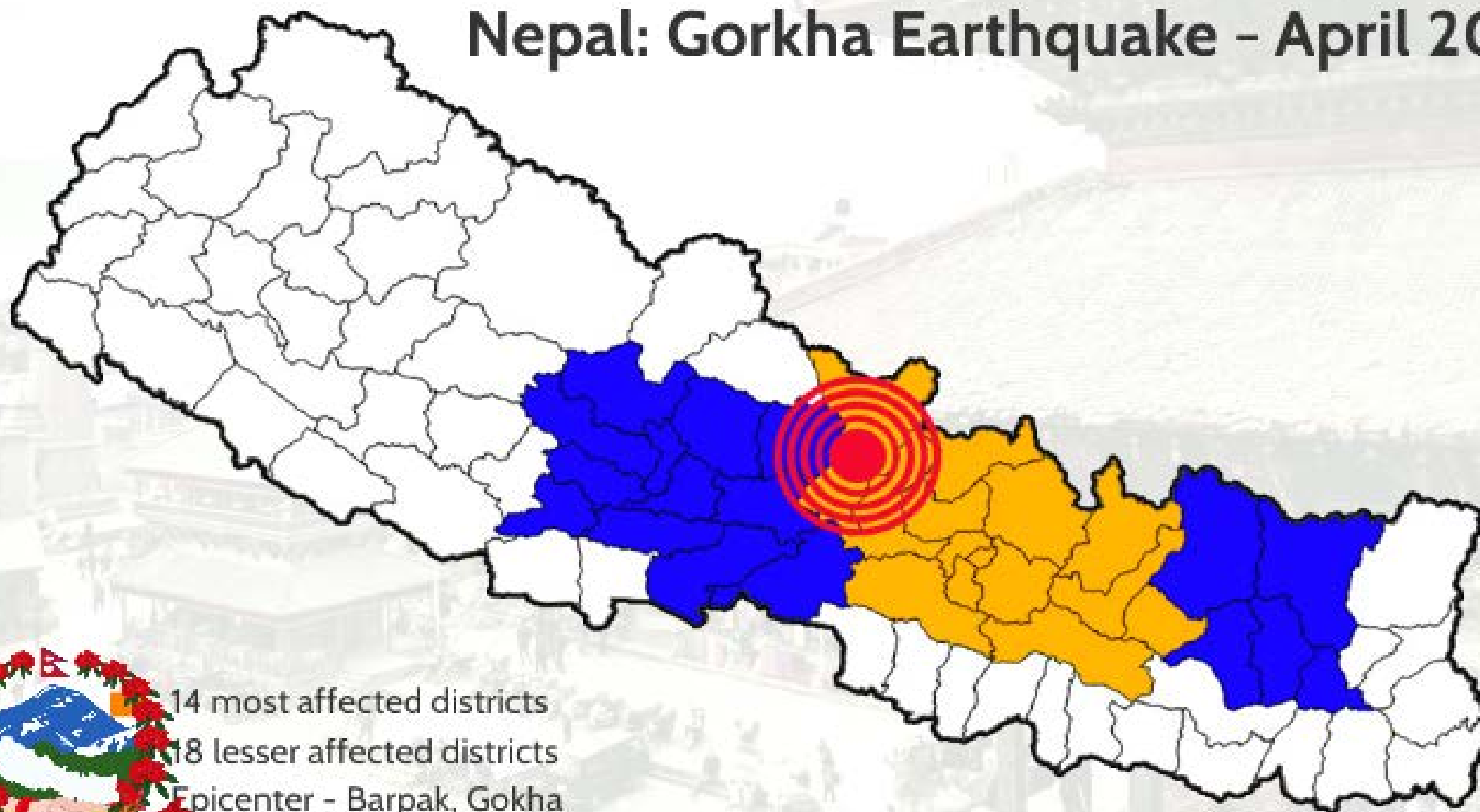
**Nepal's Reconstruction Towards Sustainable Resilience,
Urban Renewal and New Towns Development
Global Infrastructure Cooperation Conference
September 3-5, 2019
Seoul, Korea**

**Presented By
Sushil Gyewali
Chief Executive Officer**

TOPICS OF PRESENTATION

- Nepal : Gorkha Earthquake,2015 and National Reconstruction Authority
- Urban Renewal and Cultural Conservation Projects
- Kathmandu Valley Development Vision and New Town Development

Nepal: Gorkha Earthquake - April 2015



14 most affected districts

18 lesser affected districts

Epicenter - Barpak, Gorkha

GORKHA EQ AND ITS EFFECT

- Lives lost: 8,857 and Population affected: 8 Million (28% of the Nepali People)
- Districts affected: 32 of 77 (42% of the Country)
 - Houses damaged or destroyed: 8,27,023
 - Cultural heritage/religious sites damaged or destroyed: 891
- Estimated impact on GDP: 35%
- Total reconstruction costs (PDRF):US \$ 9.4 billion

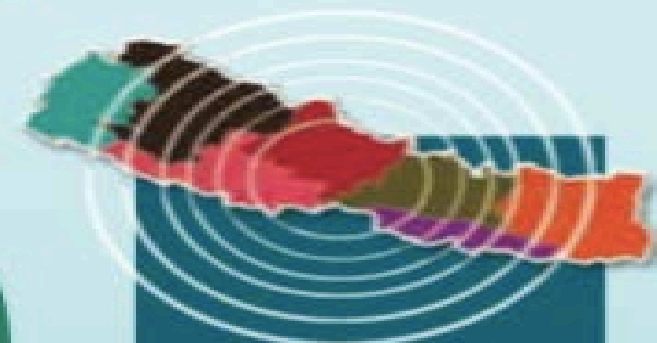
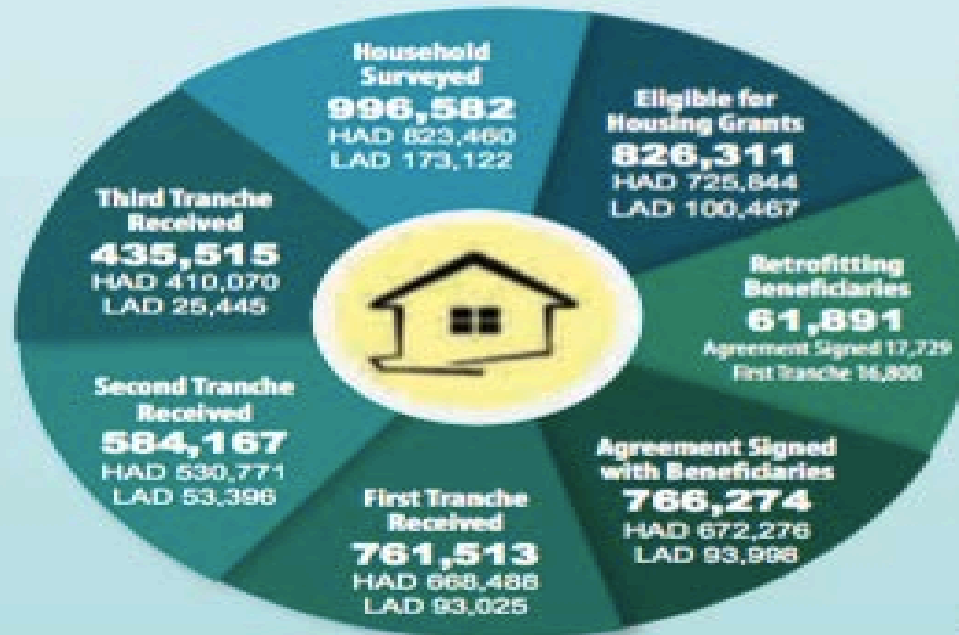
NATIONAL RECONSTRUCTION AUTHORITY (NRA)

- Legally mandated agency for leading and managing the earthquake recovery and reconstruction formed under an autonomous act
- Established on 25 December 2015
- Have four implementing agencies in district levels
- Special funding and human resource management
- Steering committee chaired by PM and represented by opposition leader

Reconstruction Progress

- Housing

Reconstruction in Numbers



Private Housing Grant Distribution

- HAD - Highly Affected Districts
- LAD - Least Affected Districts

Private Housing Reconstruction



Grievance Management

Grievance Registered	Grievance Re-surveyed	Grievance Addressed
237,085	205,584	205,584



National Reconstruction Authority

Singha Durbar, Kathmandu

Tel: 01-4211482, 01-4211465

info@nra.gov.np | www.nra.gov.np

Reconstruction Progress

- Education
- Health Facilities
- Heritage



- Among these, conservation of World Heritage Sites and Revival of Traditional Settlements have been the future priority projects.

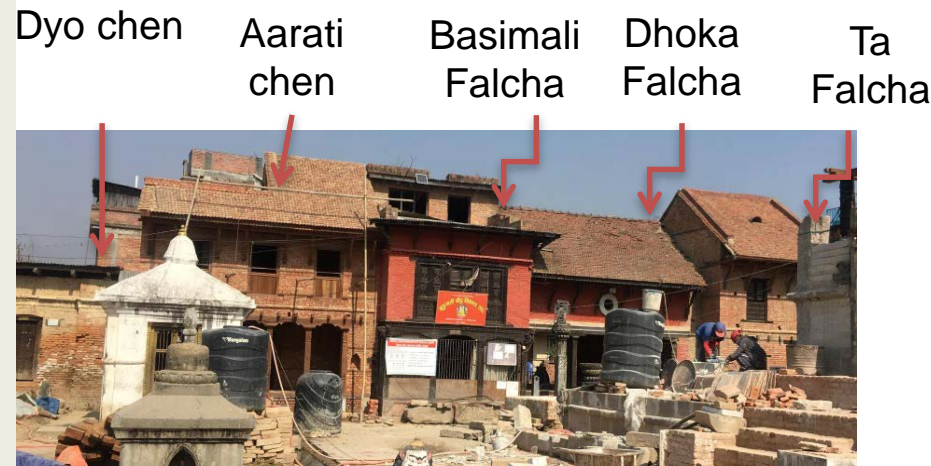
URBAN RENEWAL PROJECTS

Machhindra Bahal Complex

Courtyard Development

Existing Building Structures

- Pavement
- Surface Drainage
- Dyo chhen, Aarati Chhen, Basimal Falcha, Dhoka Falcha and Ta: Falcha



PROPOSED STREET VIEW OF FALCHA FROM MACHHINDRA BAHAL

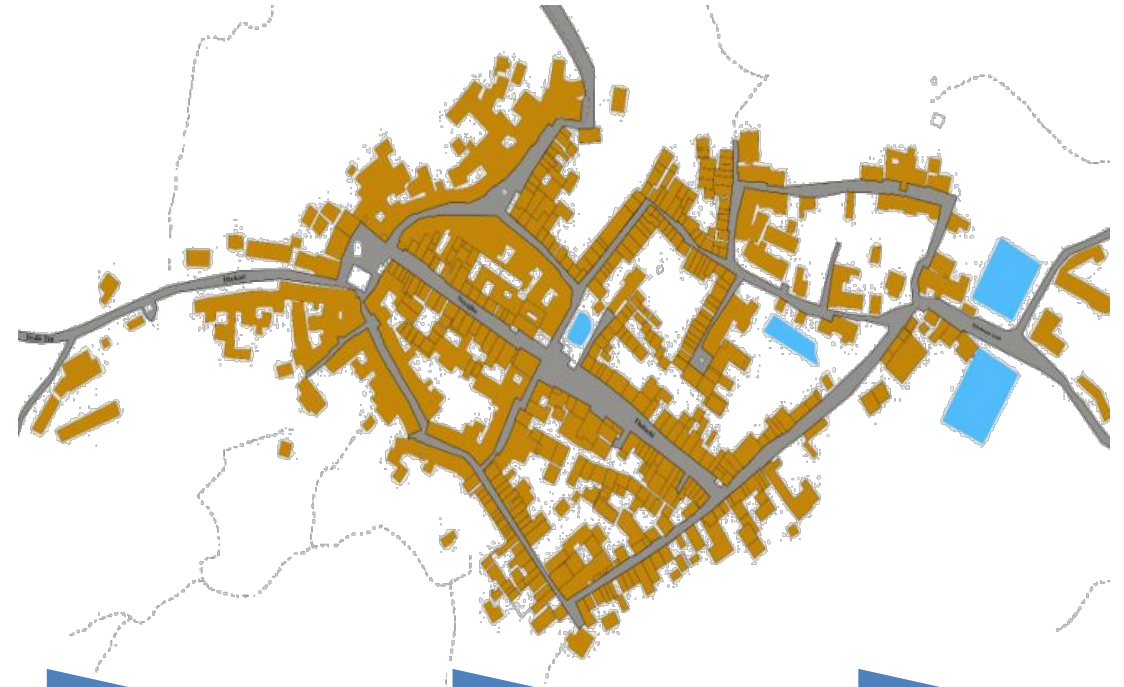
Bungamati



URBAN RENEWAL PROJECTS...

Khokana

- listed as a **UNESCO World Heritage**, representing a **vernacular village** and its **mustard-oil seed industrial**
- More than 50 Cultural heritage and monuments in the settlement
- More than 90 Percent Household destroyed by Earthquake
- 4 mustard oil mills and 6 rice mills



Infrastructure
Development Plan

Social
Development Plan

Environment
Management Plan

Disaster
Management Plan

Economic
Development Plan

Institutional
Development Plan

URBAN RENEWAL PROJECTS...

Khokana

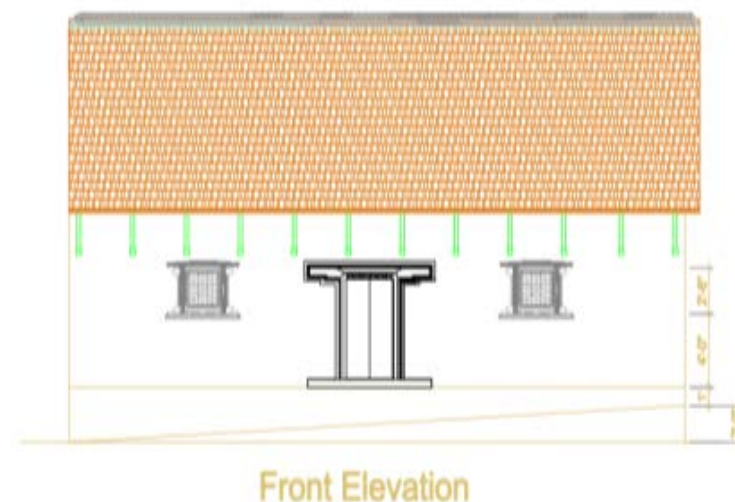
Samalcho Open Space



- Development of area for community
- Green space for exercise, indoor space
- Total cost for development
- Cost- 660 million

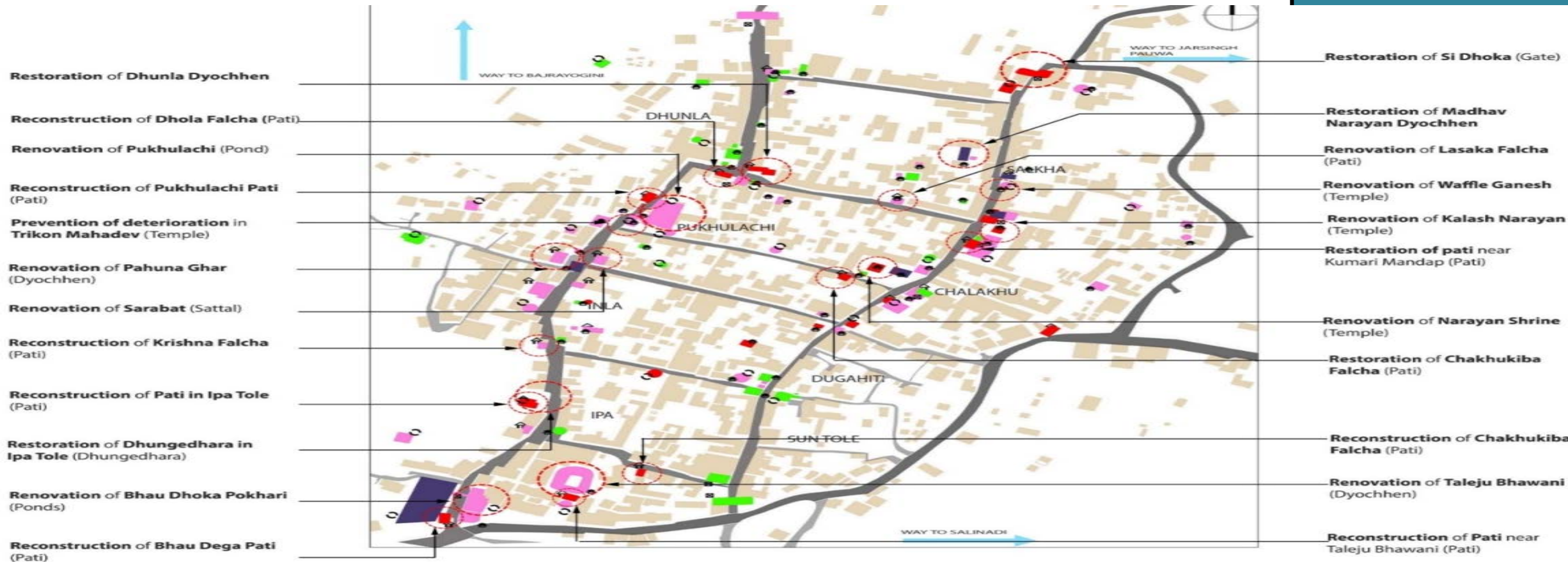
Kutsa Oil Mill

- Oldest oil mill of the settlement
- Completely destroyed by the earthquake
- Total cost for reconstruction in traditional style 1.49 cores.



URBAN RENEWAL PROJECTS...

Sankhu



INTERVENTIONS PROPOSED FOR MONUMENTS OF SANKHU

Name : Dhola Falcha
Location : Dhunla
Description : Had unique windows
Condition : Completely demolished, only plinth remaining
Proposal : Reconstruction



Name : Lasaka Falcha
Location : Dhunla
Description : Constructed of brick structure with concrete slab
Condition : Concrete slab requires repair
Proposal : Renovation



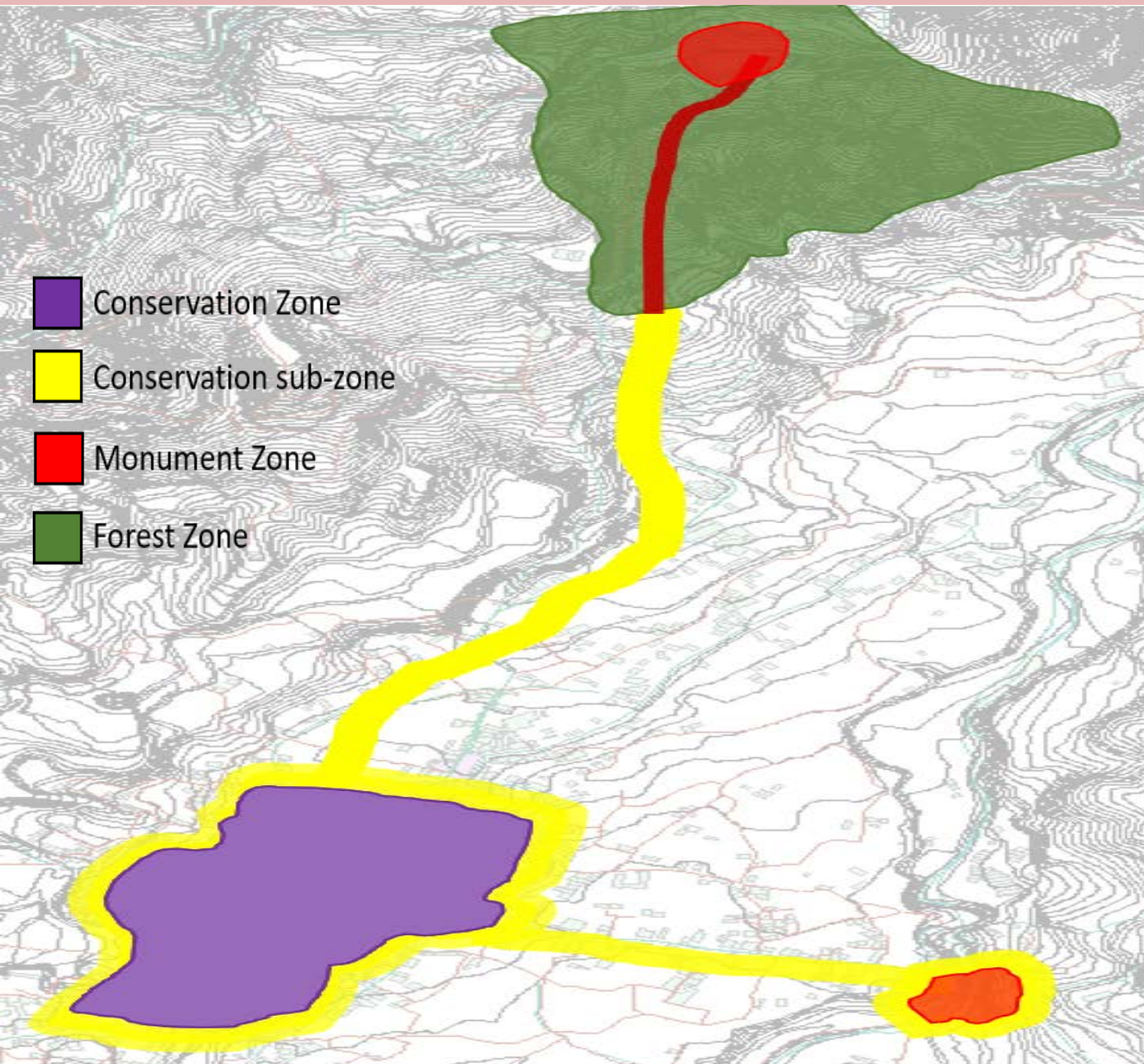
Name : Pati near Kumari Mandap
Location : Sankha
Condition : Being demolished
Proposal : Restoration



URBAN RENEWAL PROJECTS...

Sankhu

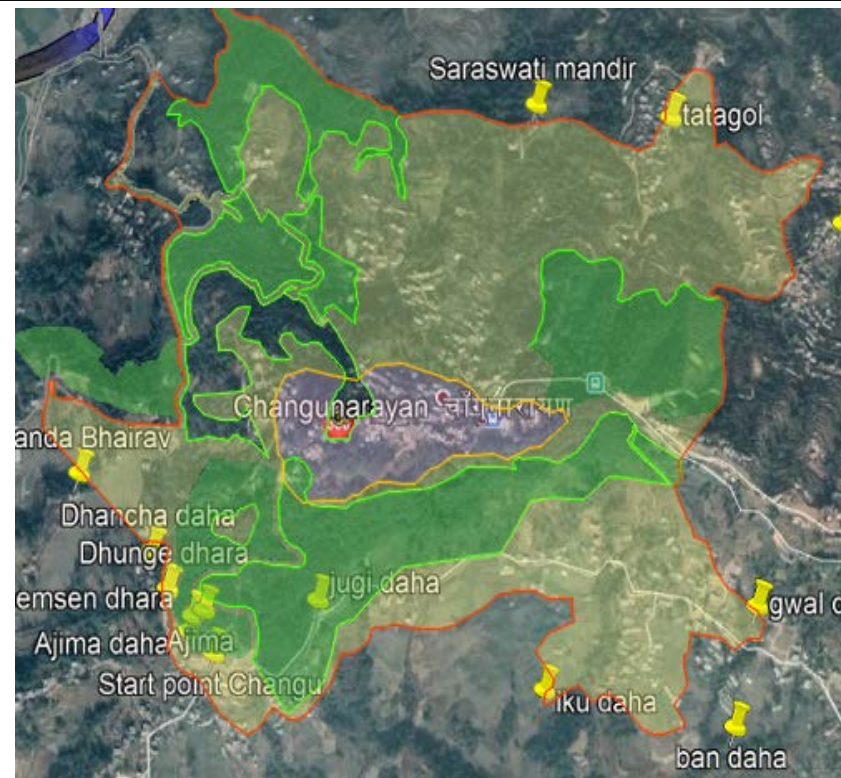
Master Plan – Land use Zoning



Activities to be conducted in accordance to land use planning

S.No	Activity	Conservation zone	Conservation sub-zone	Heritage Zone	Forest Zone	Description
2	Grocery Shop	✓	✓	✓	X	
3	Clothing store	✓	✓	✓	X	
4	Departmental Store	X	✓	X	X	
5	Departmental Store (Big)	X	O	X	X	
6	Fish and meat market	X	O	X	X	
7	Vegetable Shop	✓	✓	✓	X	
8	Kindergarten	✓	✓	✓	X	
9	Primary School	X	O	O	X	
10	Higher Secondary School	X	X	O	X	
11	College	X	X	O	X	
12	Health Clinic and Polyclinic	✓	✓	✓	X	
13	Nursing home	X	O	X	X	
14	Hospital	X	O	X	X	
15	Tea Shop	✓	✓	✓	X	
16	Restaurant, Eatery	✓	✓	✓	X	
17	Lounge and Hotel (Small)	✓	✓	✓	X	
18	Star Hotel	O	✓	O	X	
19	Bar / Liquor Store	X	O	X	X	
20	Business Practice Institute	X	O	X	X	
21	Temple, Mosque, Church, Stupa	O	O	O	X	
22	Library, Conference Club	✓	✓	✓	X	
23	Seminar Hall	X	X	X	X	
24	Cinema, Movie Hall	X	O	X	X	
25	Service care and maintenance				X	
25.1	Till 2.5 Aana	✓	✓	✓	X	
25.2	More than 4 Aana	X	✓	X	X	
26	Car and Bike Repair and Service	O	O	X	X	
27	Store - Effective	X	O	X	X	
28	Non- effective	X	✓	O	X	

Changunarayan Temple Complex

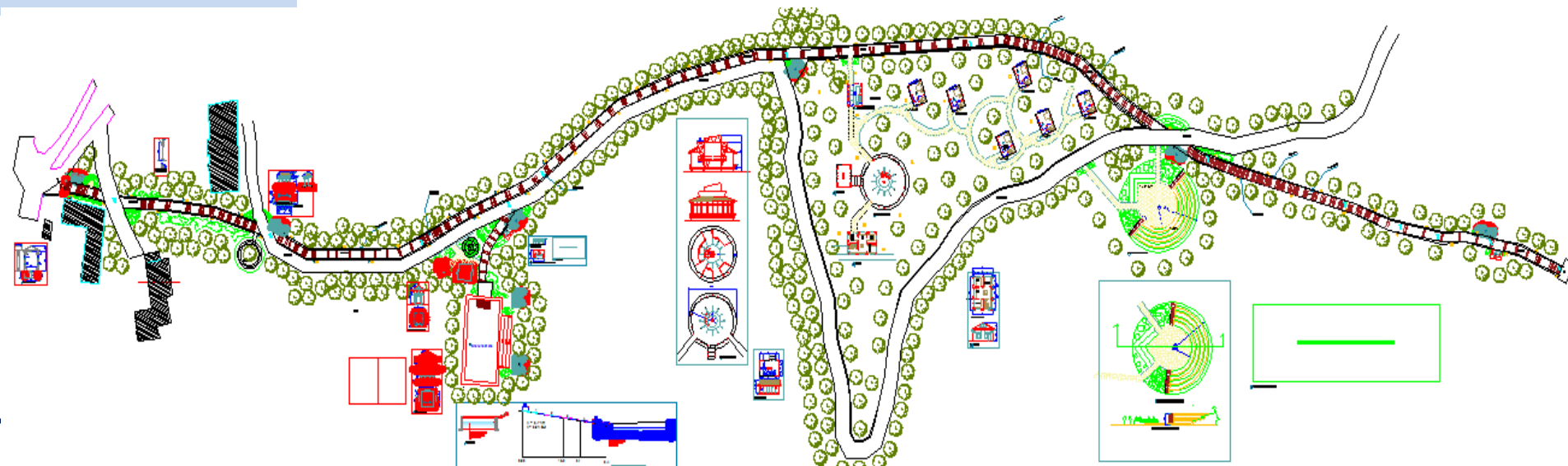


Priority Projects

- 1000 Steps
- Sankha daha revitalization
- Parikrama path

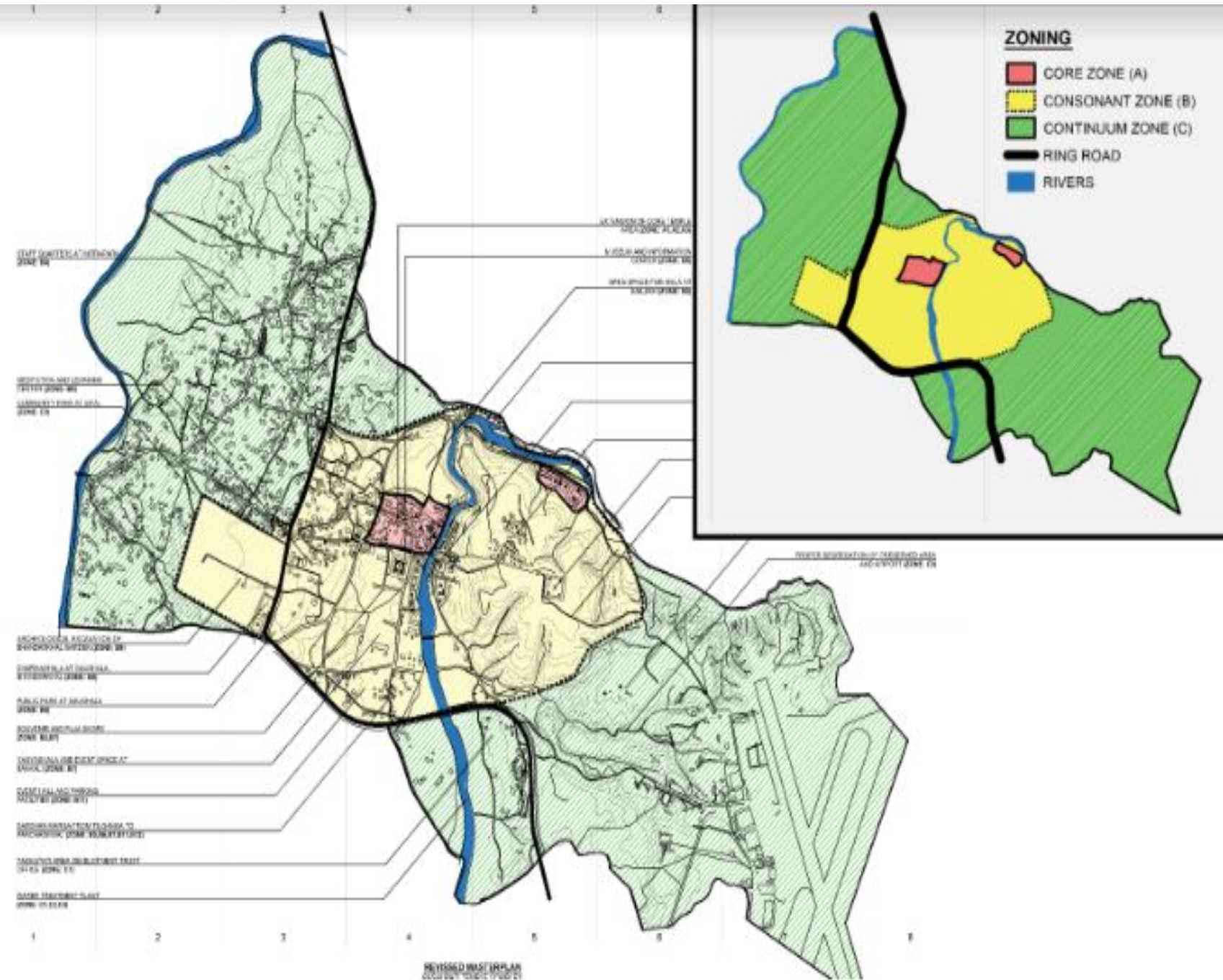
Project Area Delineation

1000 Steps and Sankha daha Revitalization



Master Plan

Pashupatinath Temple Complex



Inventory

Pashupatinath Temple Complex

R/19 BHUWANESHWORI TEMPLE

Deity- Bhuvaneshwori Devi

Sect- Hindu

Location - Bhuvaneshwori (B4)

N: 27.71037 E: 85.34640

Erected by- King Shiva Dev

Style/Type- Mandapa/ Tiered Temple

Constructed- Licchavi Period

Renovated-

Narendra Malla (1586-1612 BS)

Gangarani/ Shivasingha Malla

Nripendra Malla

Nepal Army (2042-2043 BS)

STRUCTURE

Material: Brick wall in mud mortar

Construction Tech.: Load bearing with wall thickness between 600 to 350mm

Roof: CGI on timber structure

Height, Wall ht, Floor Area: 15m, 4m, 15 sq.m.

Op%, Max Length of wall: 40%, 4m

Confinement: Timber at floor level

Other: Timber braced overhangs (1.2m), some loose vulnerable components, keys provided on floor beams and rafters

LOCATION PLAN



DAMAGE/ DETERIORATION

Condition: Partially damaged (DG3)

Wall: Structural damage

Frame/Post:

Door/Window:

Roof:

Plinth:

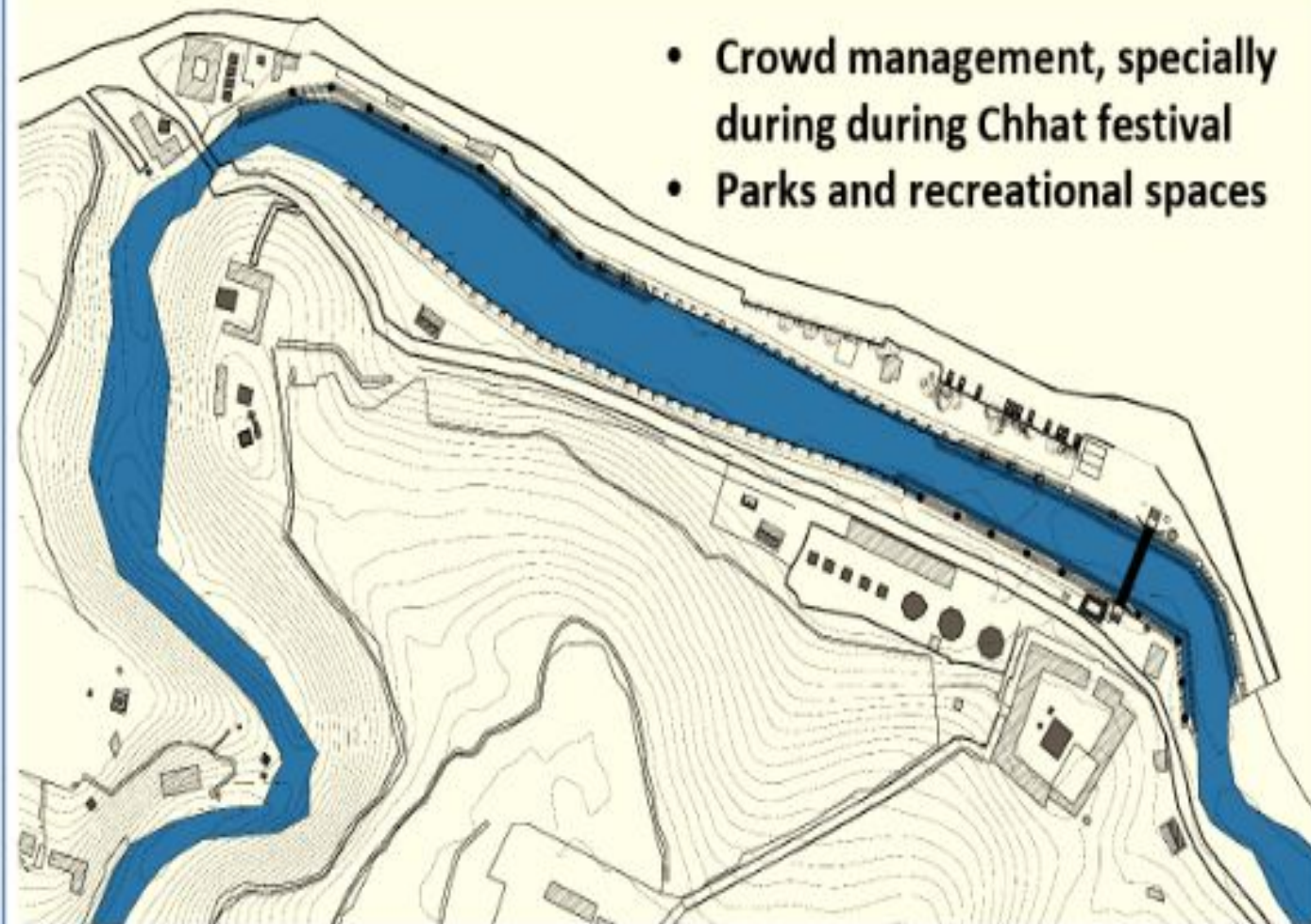
Monument:

Other:

RECOMMENDATIONS

- Reconstruction
- Stone sprout to be restored
- Drainage Management
- Prevention of encroachment of Temple Complex

Development of Guheswari-Gaurighat as community space



- Crowd management, specially during during Chhat festival
- Parks and recreational spaces

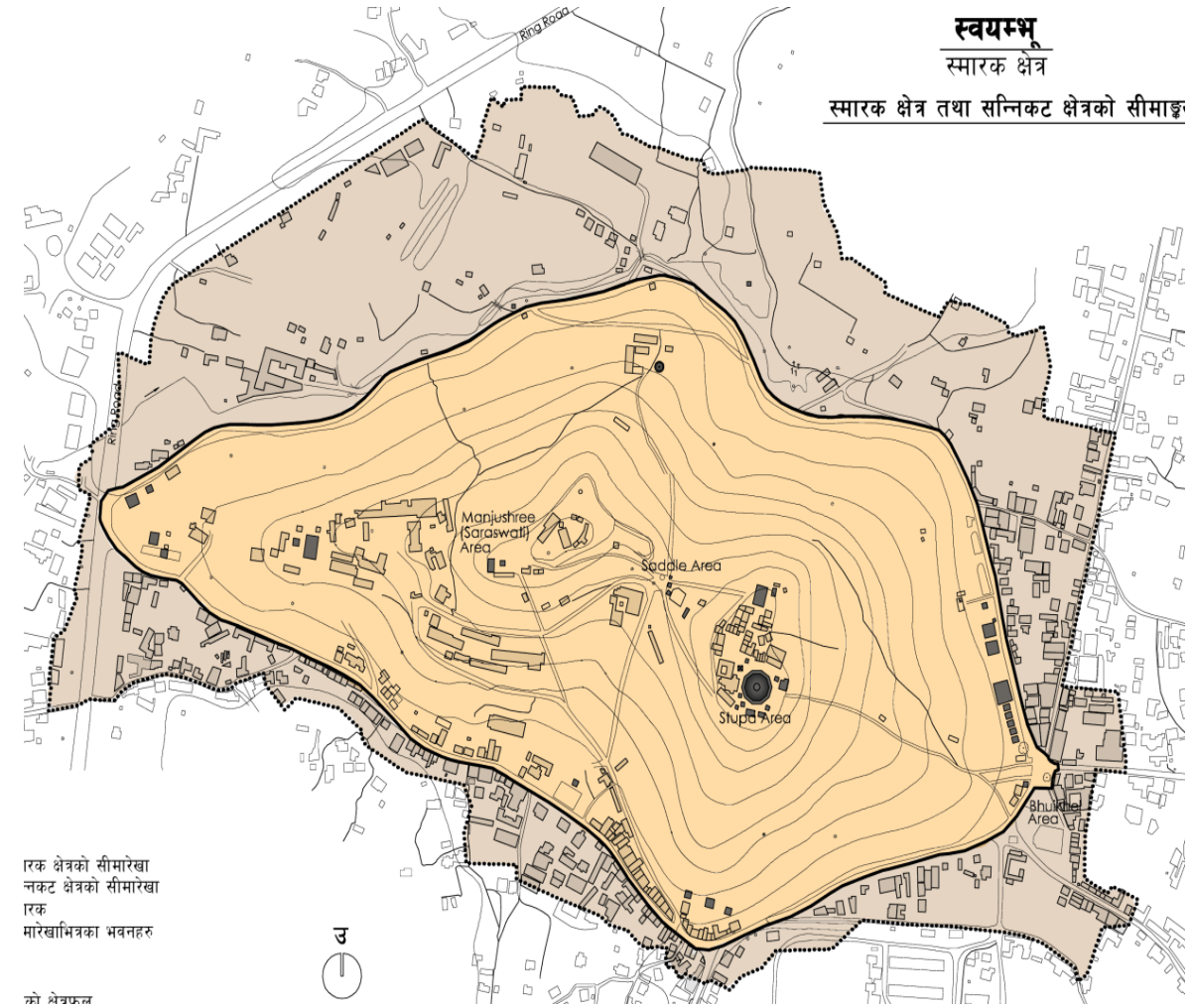




Swayambhunath Stupa Complex

- HMG of Nepal declared it as protected monument zone in 2035 B.S. and extended it's area as buffer zone in 2052 B.S.
- Conservation and Management activity has been doing by DoA, Mahasamiti and KMC ward office

- Swayambhu Stupa Area
- Manjushree Saraswati Area
- Saddle Area
- Bhagawan Pau Area



Master Plan

Bouddhanath Stupa Complex



- i. Core Area: 1.27 Ha
- ii. Buffer Area: 2.83 Ha



Identification and Listing of Projects

Short term projects: (1-2 years)

- Manage electric wires
- Replacement of existing old brick/stone pavement
- Manage solar lights
- Sewer line: Fulbari Chowk to Hulunglung, Tathagat Marg to Fulbari Chowk
- Heritage walk
- Welcome gates / Ticket counters

Long Term Project: (2-5 years)

- Manage land for Parking
- Manage land for Museum and Library
- Brick paving to all the road and Gallies
- Conserve water sources of public areas

LEGEND

- Core Zone Boundary
- Buffer Zone Boundary
- Monuments
- Buildings inside the Boundary

Kathmandu Durbar Square



UNESCO World Heritage Site:

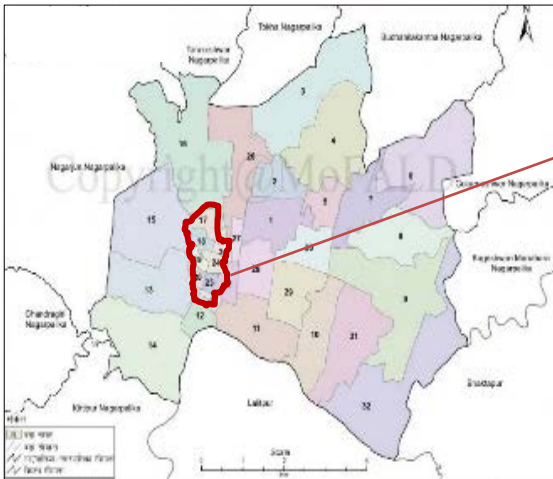
Monument zone = 5.09 Ha.

Buffer Zone = 6.47 Ha

Area of Master Plan

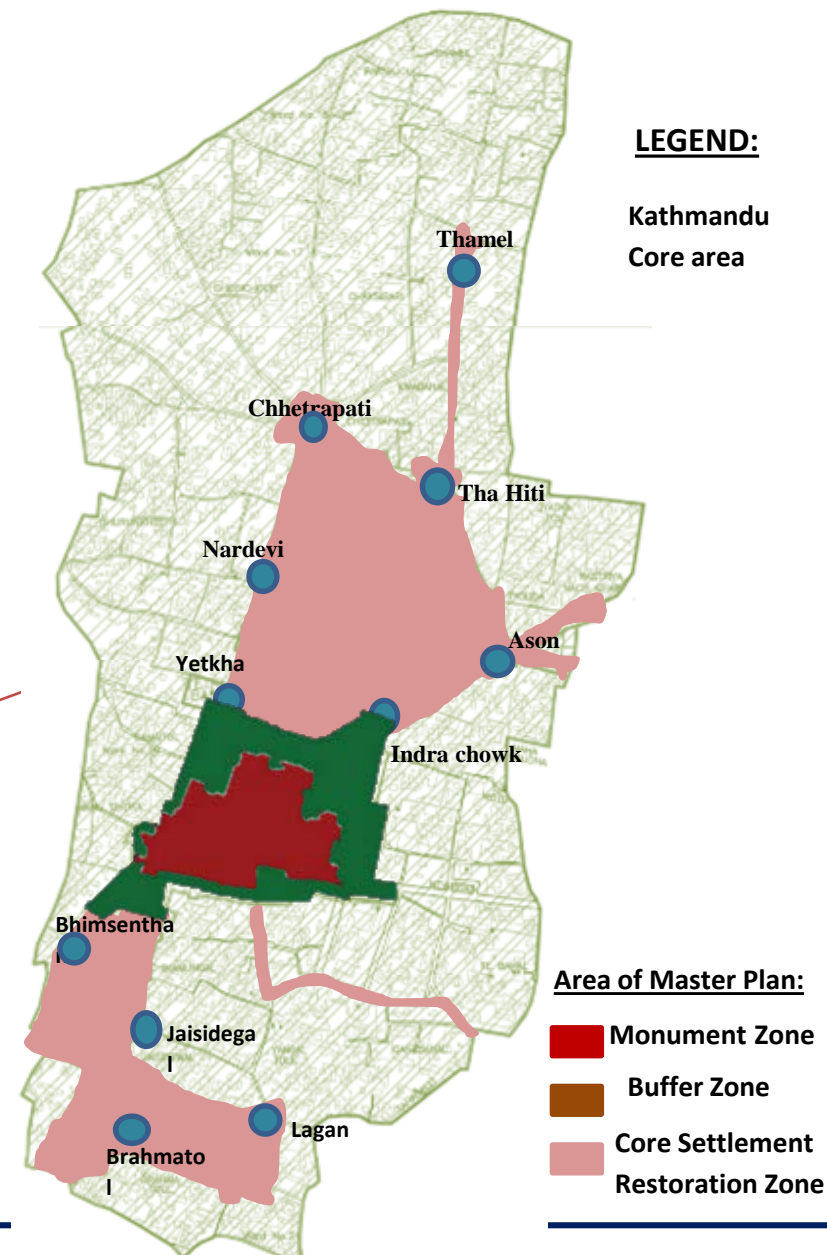
- Monument Zone Area
- Buffer Zone Area
- Core Settlement Restoration

Kathmandu Metropolitan City



Core Area

AREA OF CONSERVATION MASTER PLAN



Proposed Projects/Plans:

- Redevelopment of Bhugol Park
- Beautification
- Relocation of Police Office, Army & Nepal Sanskrit University
- Conservation of Ikha Pukhu
- Promotion of various Market alley
- Regeneration of Bahals within Buffer Zone
- Pedestrian Path Development
- Indra Jatra Route Development
- Underground Cable
- Infrastructure Development- Sewerage & Drainage
- Redesign of Boundary demarcation Posts of W.H.S



PRIORITIZED PROJECTS:

Regeneration of Tu Chein Bahal:

Kathmandu Durbar Square

Beautification

- Restoration of Dyo Chein
- Maintaining Traditional Building
- Pedestrian Lane
- Shops limited to Tourism Activities
- Proper Pavement, side drain and House plinths.



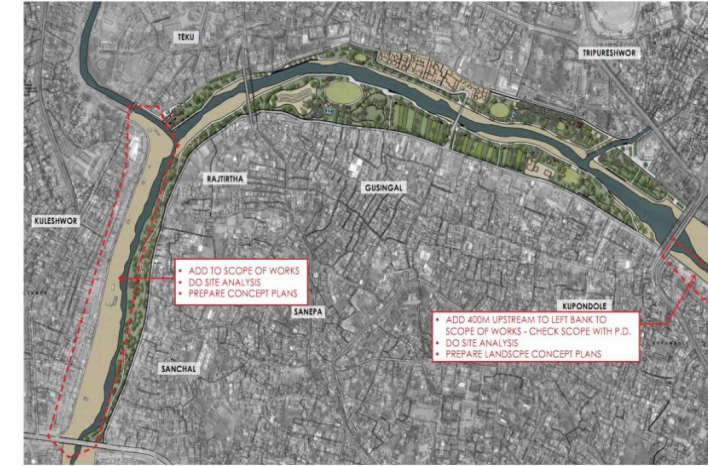
Bagmati Corridor From Shankhamul to Teku Area

BRBIP-AF Construction Activities

- Landscaping Development works from Thapathali Bridge to Balkhu Bridge
- Waste Water Treatment Plant at Tukucha (High Powered Committee for Integrated Development of the Bagmati Civilization (HPCIDBC)

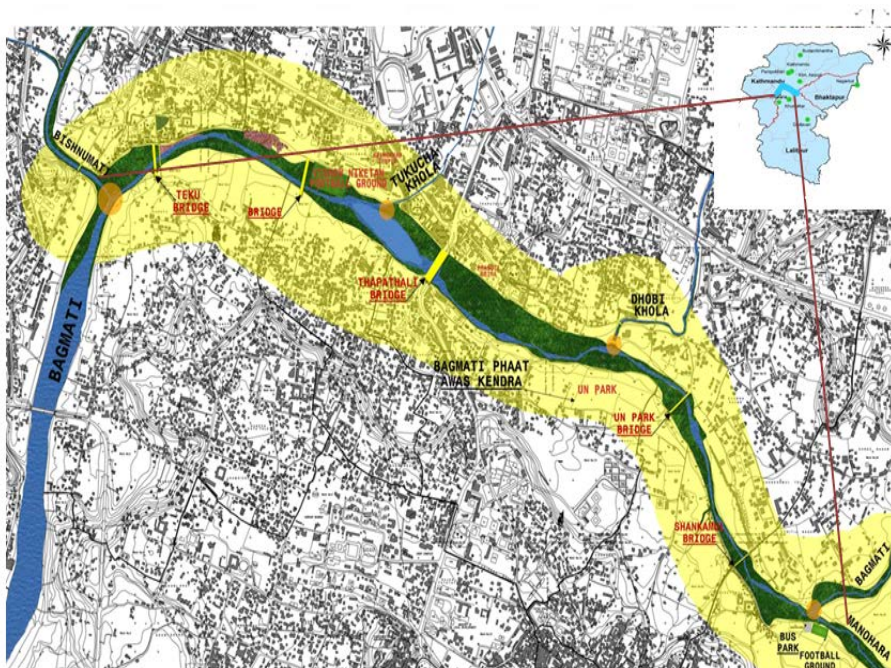


NRNA Park



Landscaping Works from Thapathali to Teku
Source: HPCIDBC

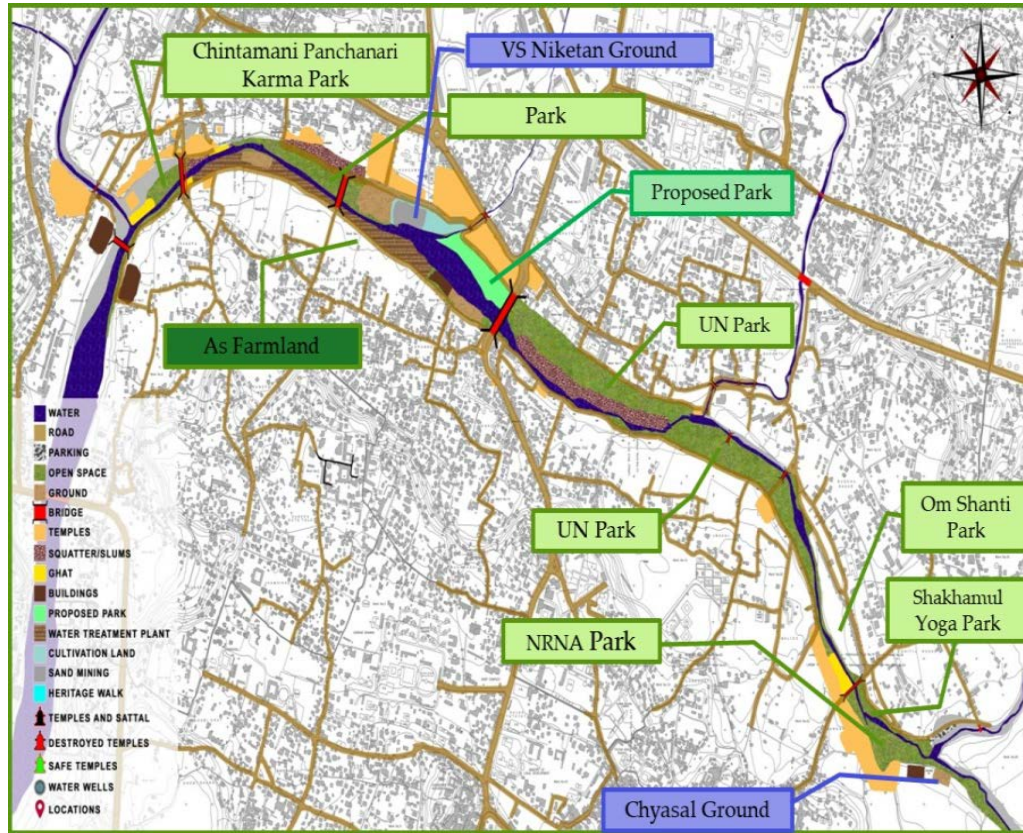
Bagmati Cleanup Mega Campaign(322nd Week)



Waste Water Treatment Plant at Tukucha



Bagmati Corridor From Shankhamul to Teku Area



Inventories

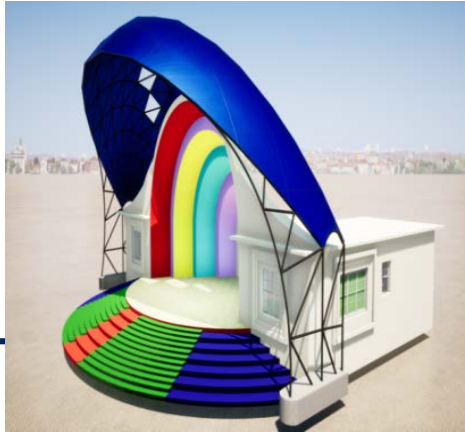
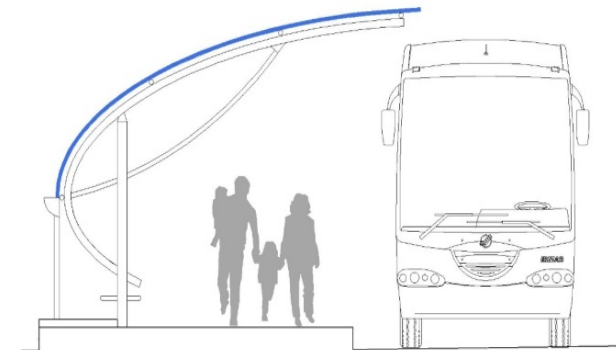
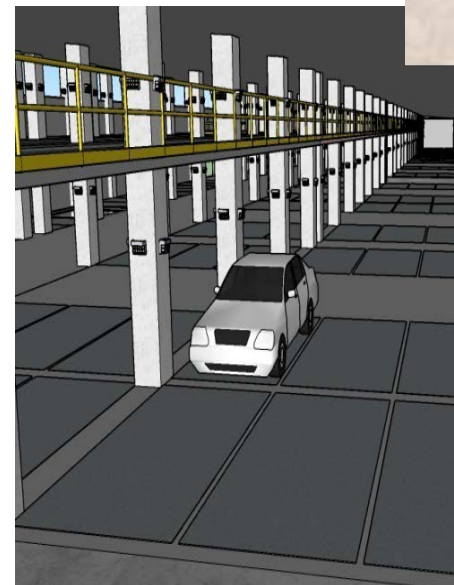
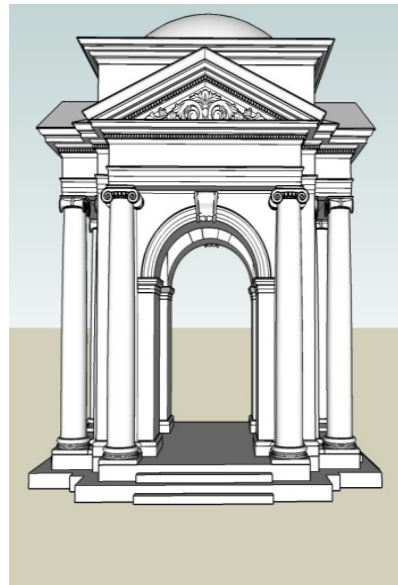
- 129 Heritage buildings
 - 100 temples,
 - 10 patis,
 - 17 sattals,
 - 2 bahas
- Four gates and three boundary walls

1. Reconstruction/ Rehabilitation of Heritage Sites
2. Preservation of Cultural Heritage
3. Riverfront Development
4. Clean and Clear Bagmati
5. Tourism Development



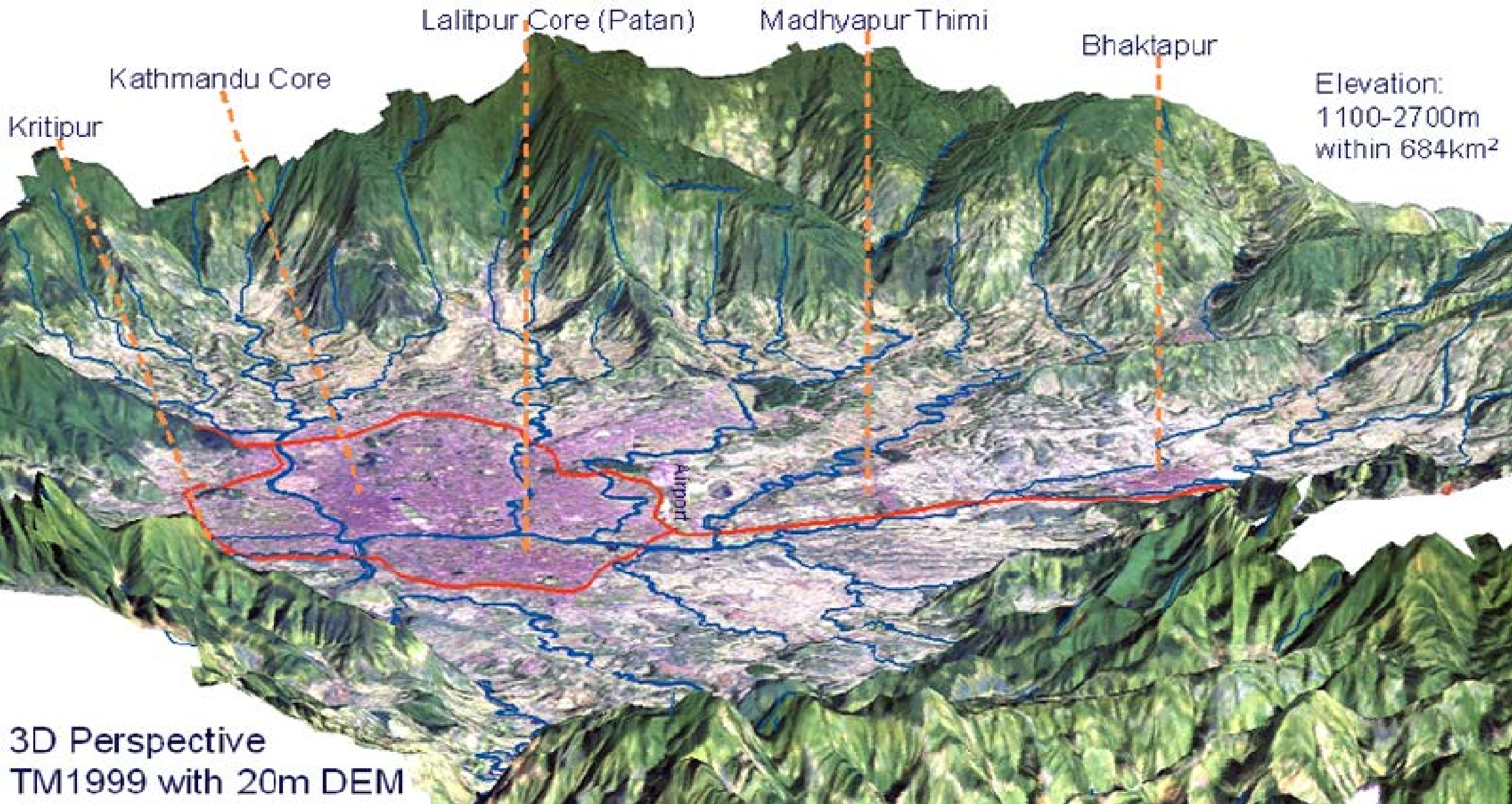
Greater Ranipokhari Area

- 1.Parks
- 2.Public toilets
- 3.Compound wall
- 4.Footpath
- 5.Enhancement Of Khulamanch
- 6.Amphitheater
- 7.Underground crossing
8. Underground parking facility
- 9.New Peak & Drop Bus Station
- 10.New Entrance Gates
- 11.Rainwater Harvesting
- 12 Pedestrian Facility

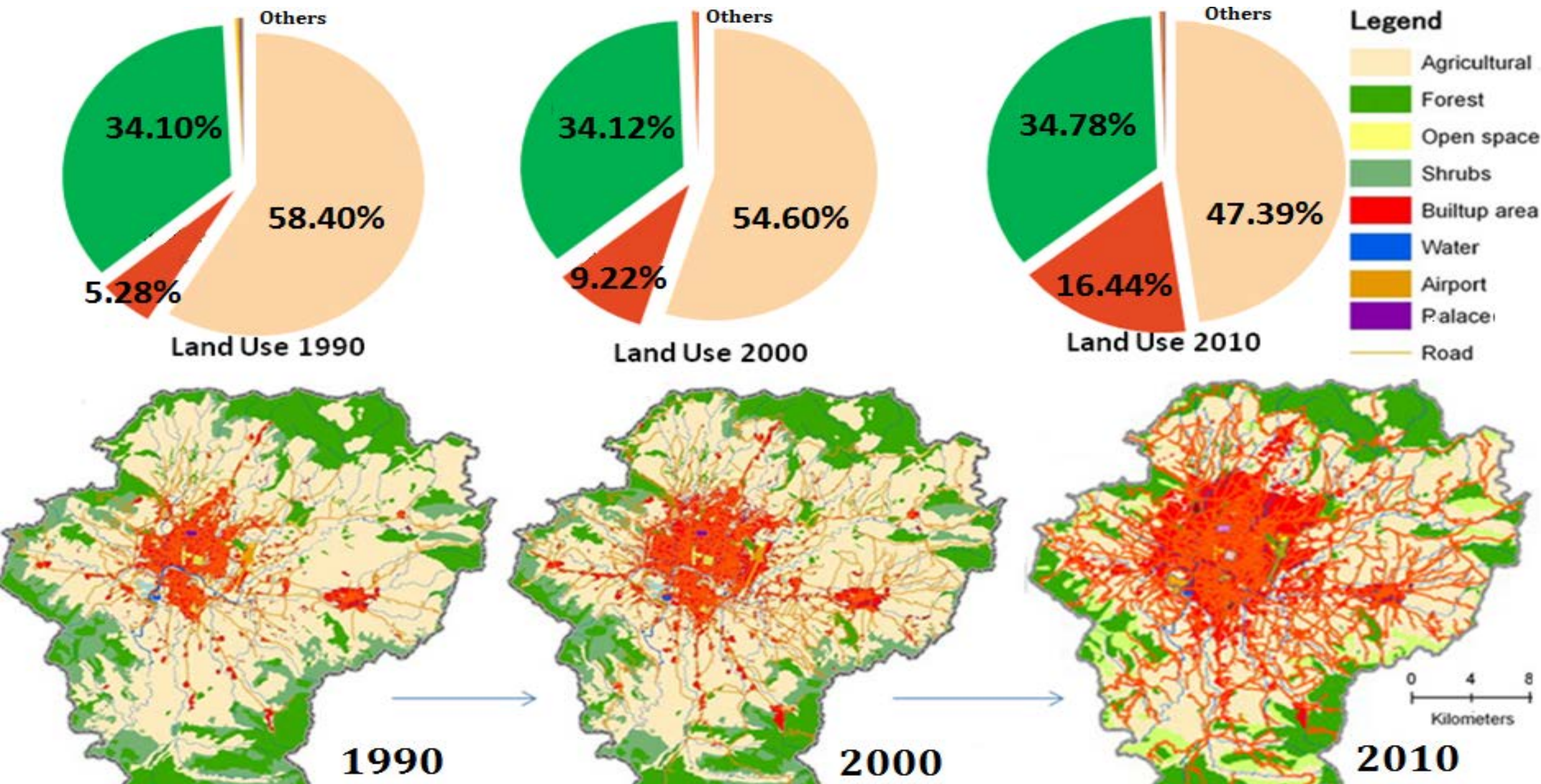


Kathmandu Valley – Urban Resilience and Development Vision

Kathmandu valley (722 sq.km.)



Urban Growth Scenario



20 Years Strategic Development Master Plan for KV

11 Strategies included by 20 years Strategic Development Master Plan:

Planning at two Levels: Macro Level (Valley) & Micro (Municipal Level)

Constraints/sensitivity based zoning and Risk Sensitive Land use plan

Risk Resilient Urban Infrastructure

Environmental Friendly and Resilient Planning Approach

Urban Regeneration of Historic City Core

Identification of Economic Opportunities and Growth areas

Gender Equity and Social Inclusion

Safety and Security in urban development

Private Sector Involvement in urban development activities

Information, Communication and Advocacy

Youth Mobilization and Participatory In Urban Decision Making Processes and Development Activities

Color Zones : Risk Sensitive Regulations

Risk Sensitive Land Use Planning

Residential Promotion Area

Priority to Land Pooling, Organized Housing
Few High Rise Buidings in South
Large & Medium Scale Industries
Low Permit fee/ Land Transaction Tax



Agricultural Area Promotion zone

Restriction of Buildings on Agricultural Land
High rise apartments on South East
Promotion of Non-Polluting Industries
Low Permit fee/ Land Transaction Tax



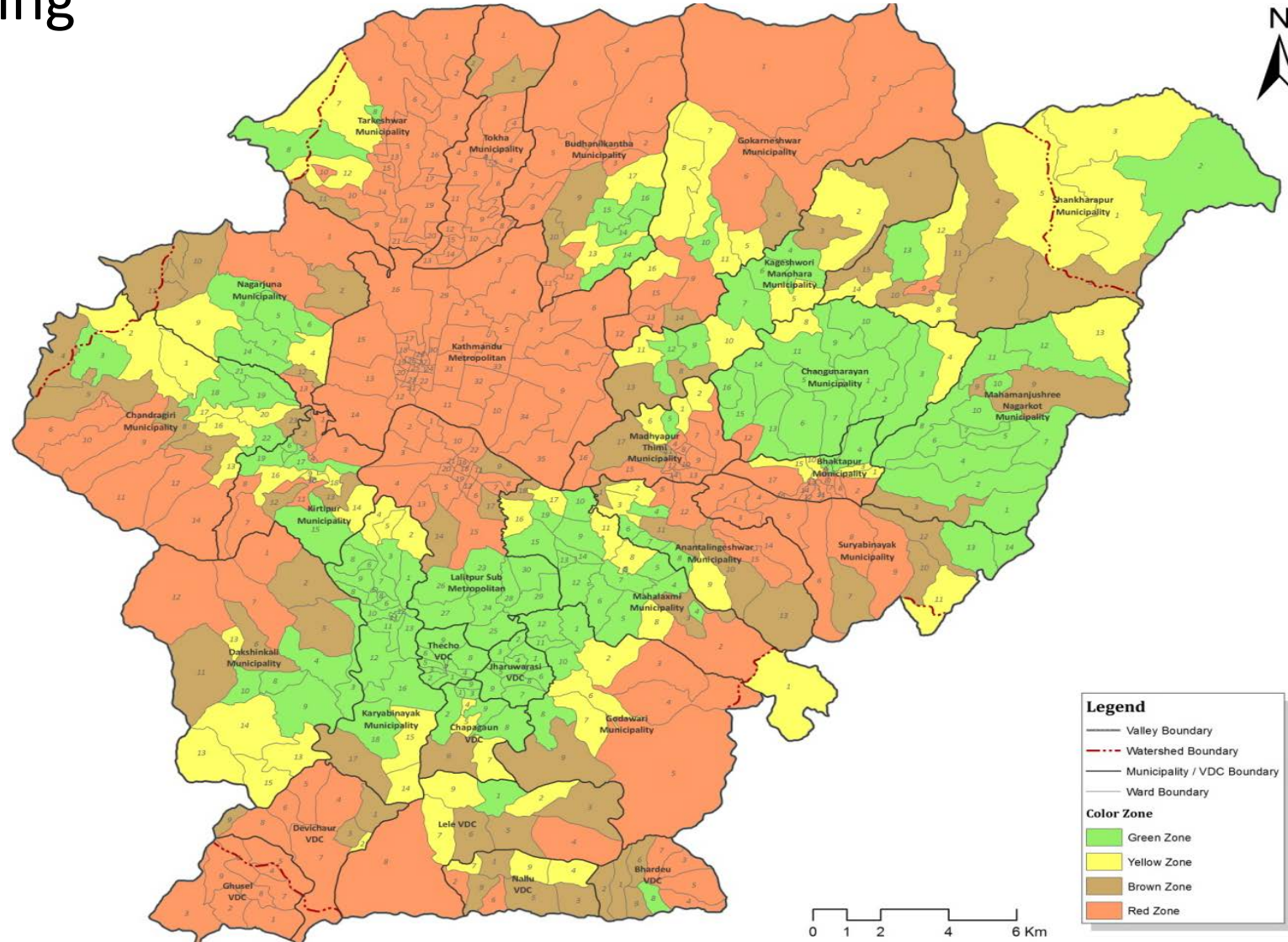
Medium Alert Zone

Stringent Building Bye laws
Few High rise Buildings on selected area
No large scale Industries
Medium permit fee/ Land Transaction Tax



High Alert Zone

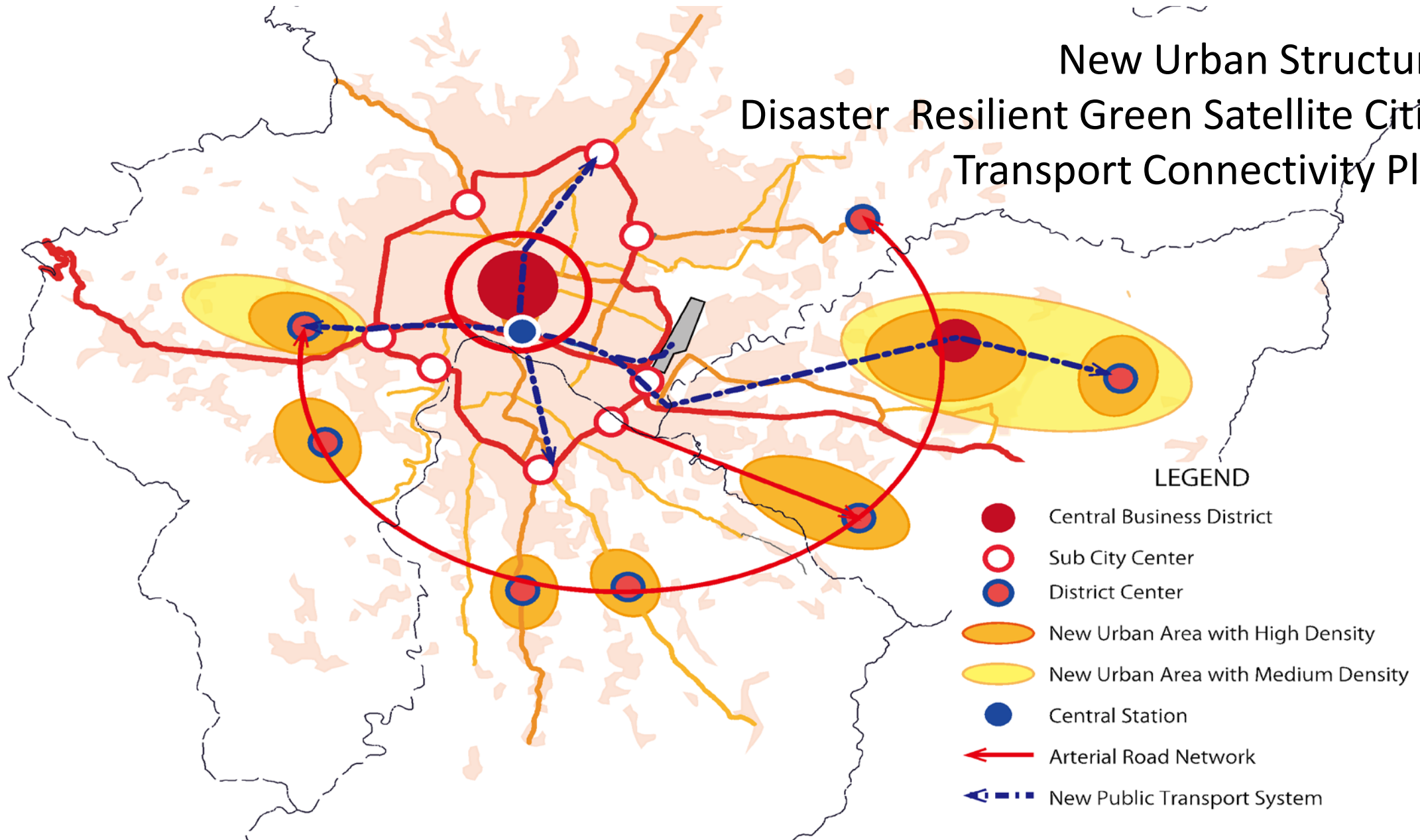
Stringent Building Byelaws
Restriction to High Rise Apartments
No Large Scale Industries
Heavy Permit fee / Land Transaction Tax



- *Reflect the availability of ward wise risks and constraint free area.*
- *To have policies to AVOID or CONTROL or PROMOTE uses.*

20 Years Strategic Development Master Plan For KV, Integration Of Land Use and Transportation

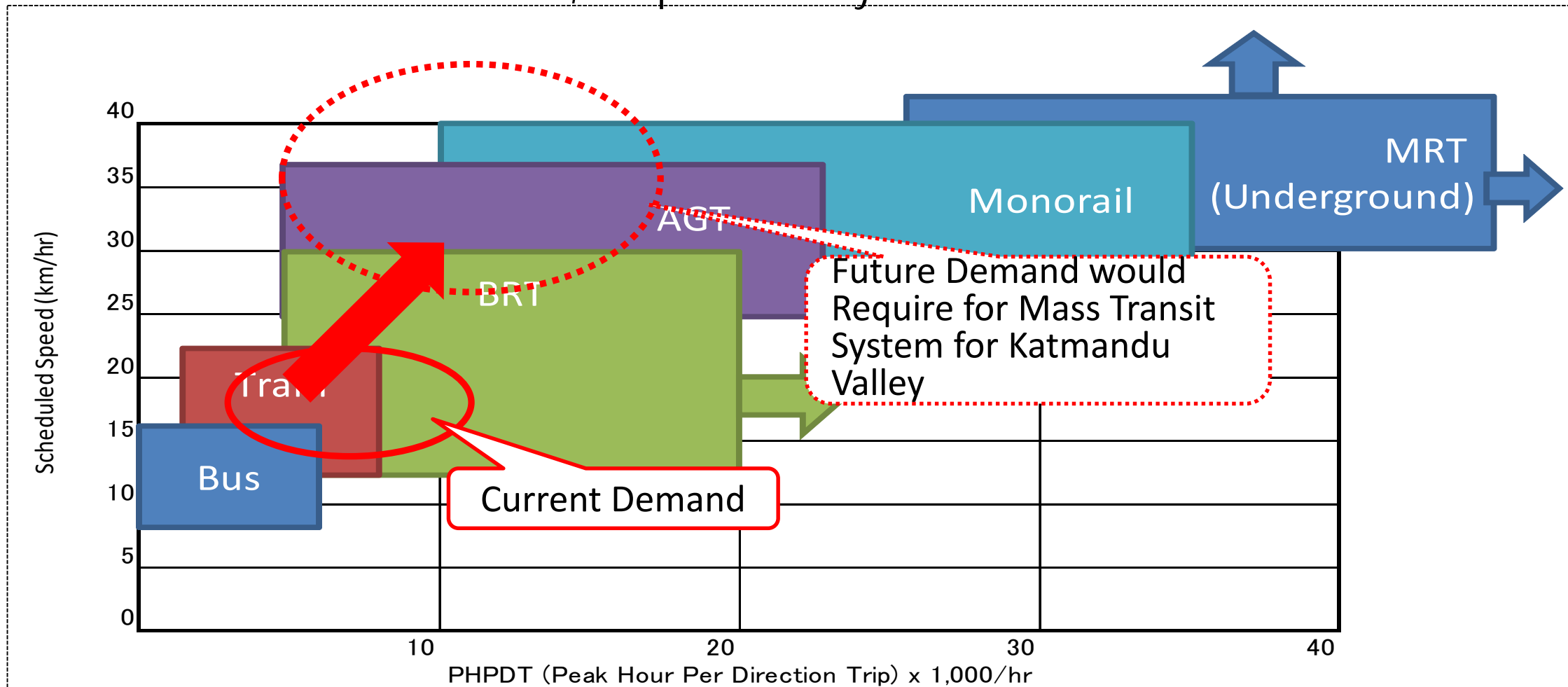
New Urban Structure:
Disaster Resilient Green Satellite Cities
Transport Connectivity Plan



Mode Characteristics

Introduction of New Public Transport System

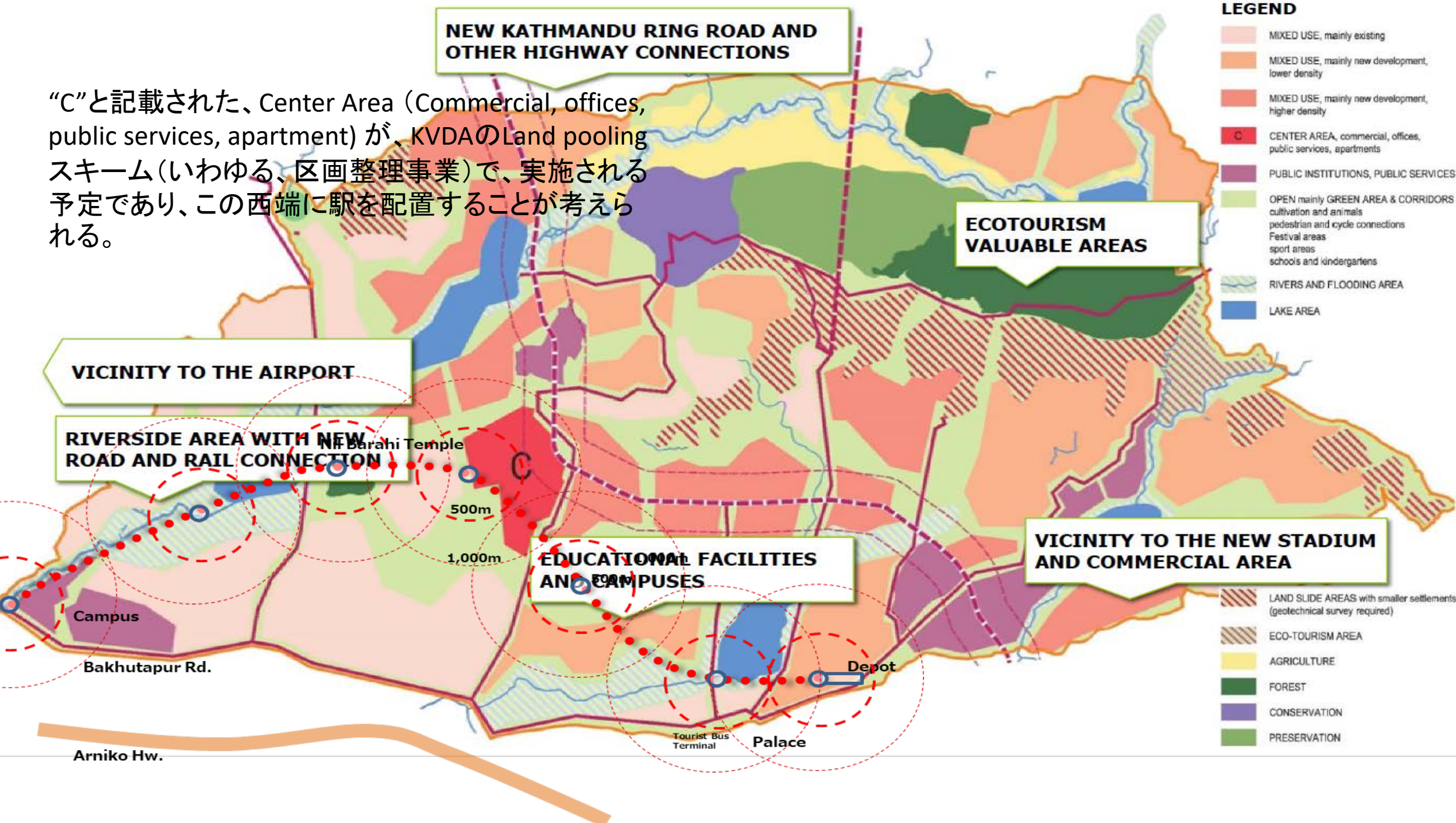
In Kathmandu, peak hour passenger per direction would range between 8,000 and 12,000 Peak Hour Peak Direction Traffic (PHPDT). Even in the current demand for 100,000 persons/day on the link.



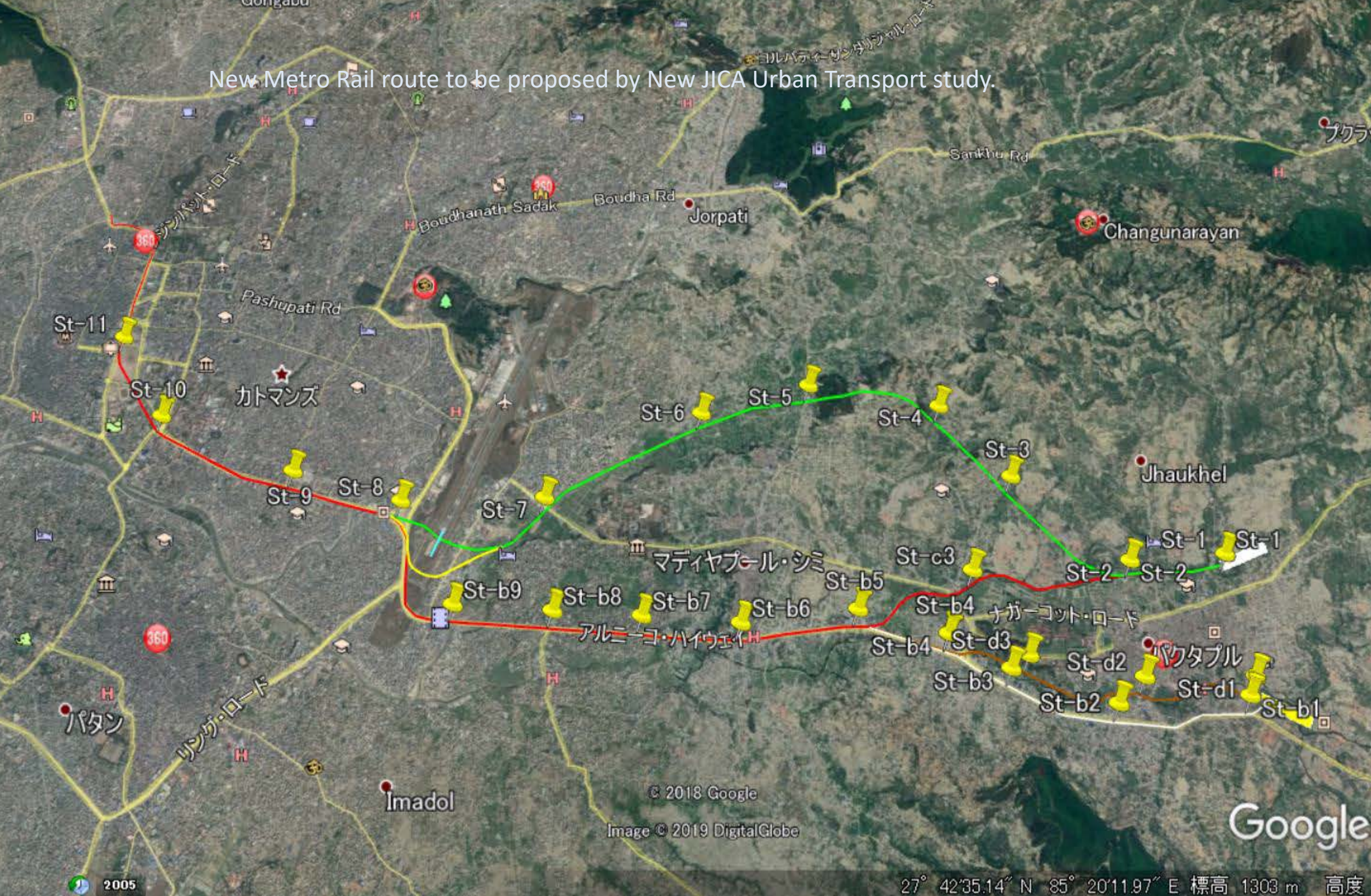
Source: JICA Study Team made this figure referring to the document written by Japan Transportation Planning Association and other related documents

New Metro Rail route to be proposed by New JICA Transport Research Team

“C”と記載された、Center Area (Commercial, offices, public services, apartment) が、KVDAのLand pooling スキーム(いわゆる、区画整理事業)で、実施される予定であり、この西端に駅を配置することが考えられる。

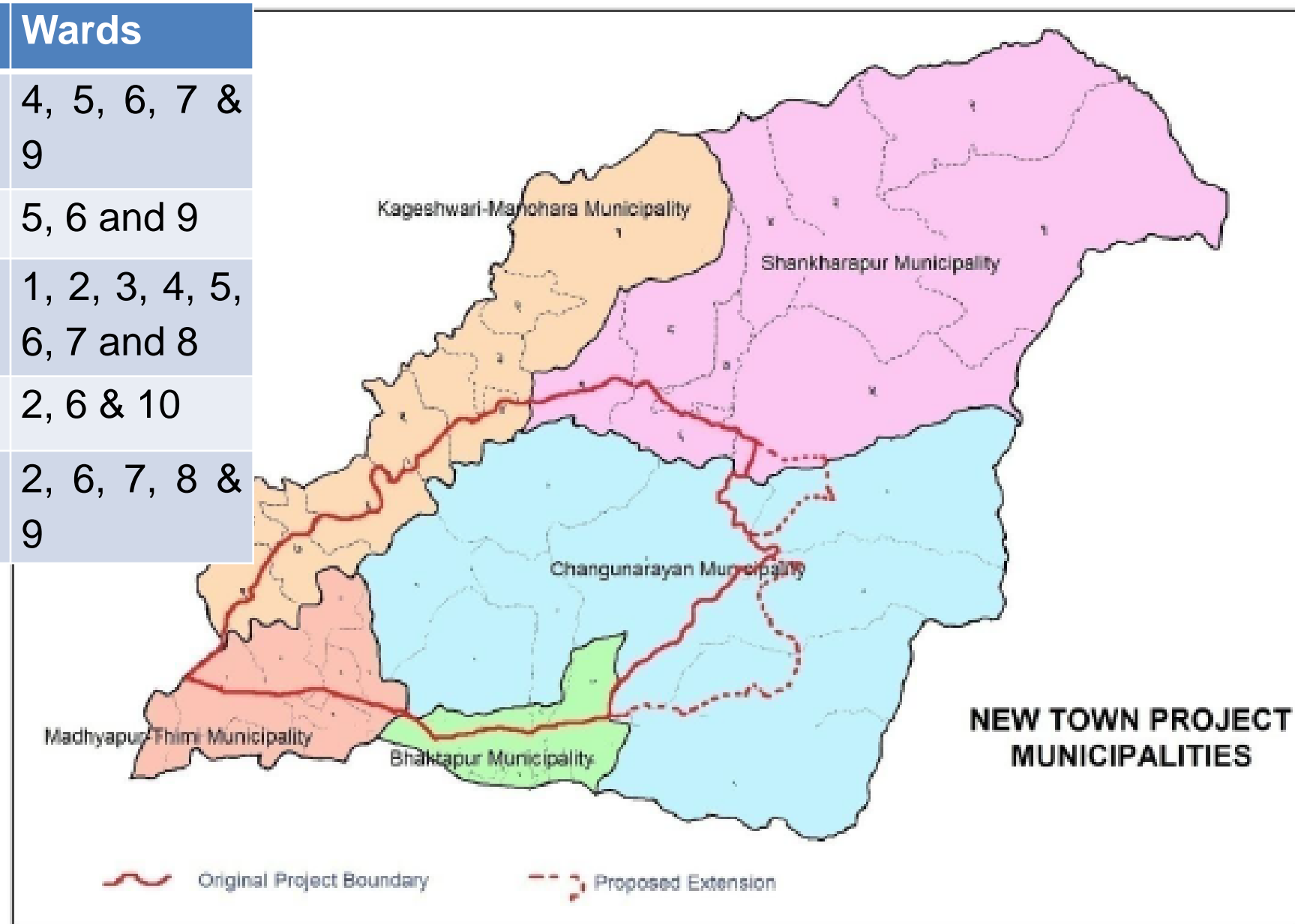


New Metro Rail route to be proposed by New JICA Urban Transport study.



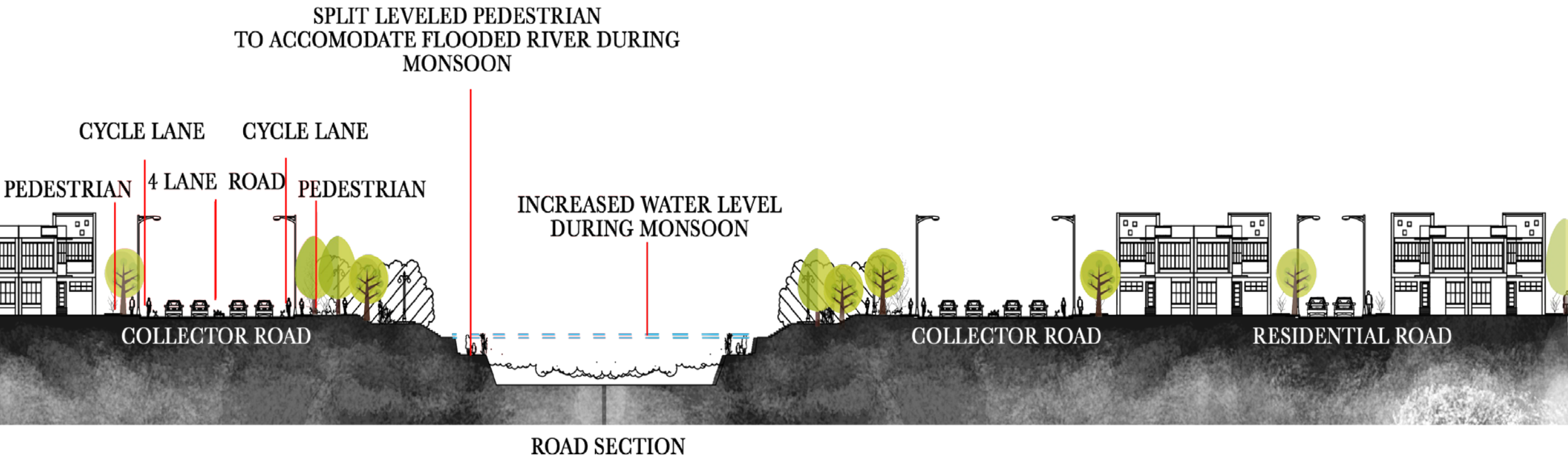
New Town Development Project – Sankhu Area

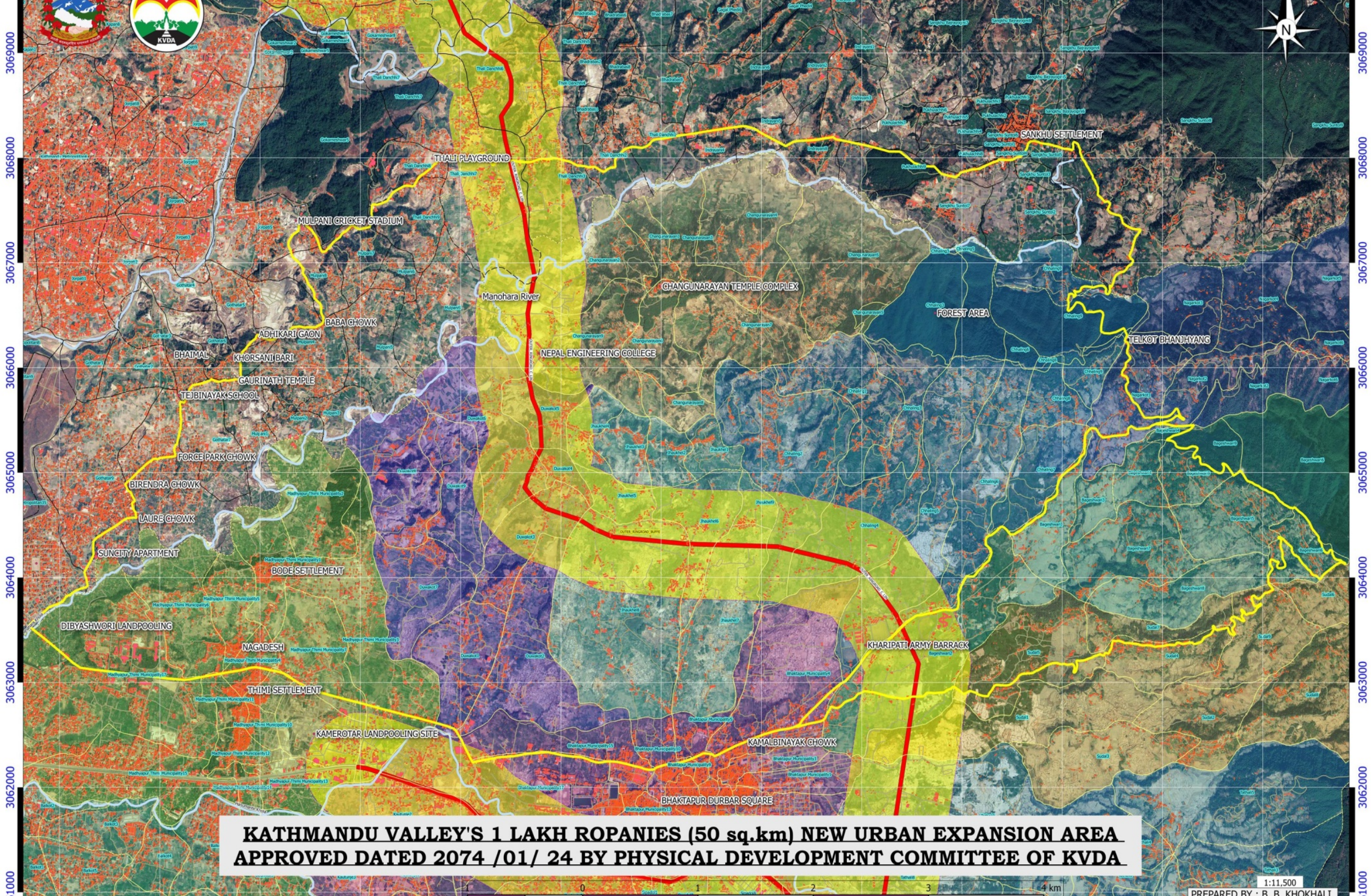
District	Municipalities	Wards
Kathmandu	Kageshwari Manohara	4, 5, 6, 7 & 9
Kathmandu	Shankarapur	5, 6 and 9
Bhaktapur	Changunarayan	1, 2, 3, 4, 5, 6, 7 and 8
Bhaktapur	Bhaktapur	2, 6 & 10
Bhaktapur	Madhyapur Thimi	2, 6, 7, 8 & 9



New Town Development Project – Sankhu Area

- Total project area: 100,000 ropani
- Strategic location:
 - Outer Ring Road passes through the project area.
 - Expansion of roads in Chabahil-Jorpati-Sankhu section and Manohara Bridge-Sano Thimi-Kamalbinayak Chowk-Kharipati Barrack-Telkot Road undergoing within the project area.

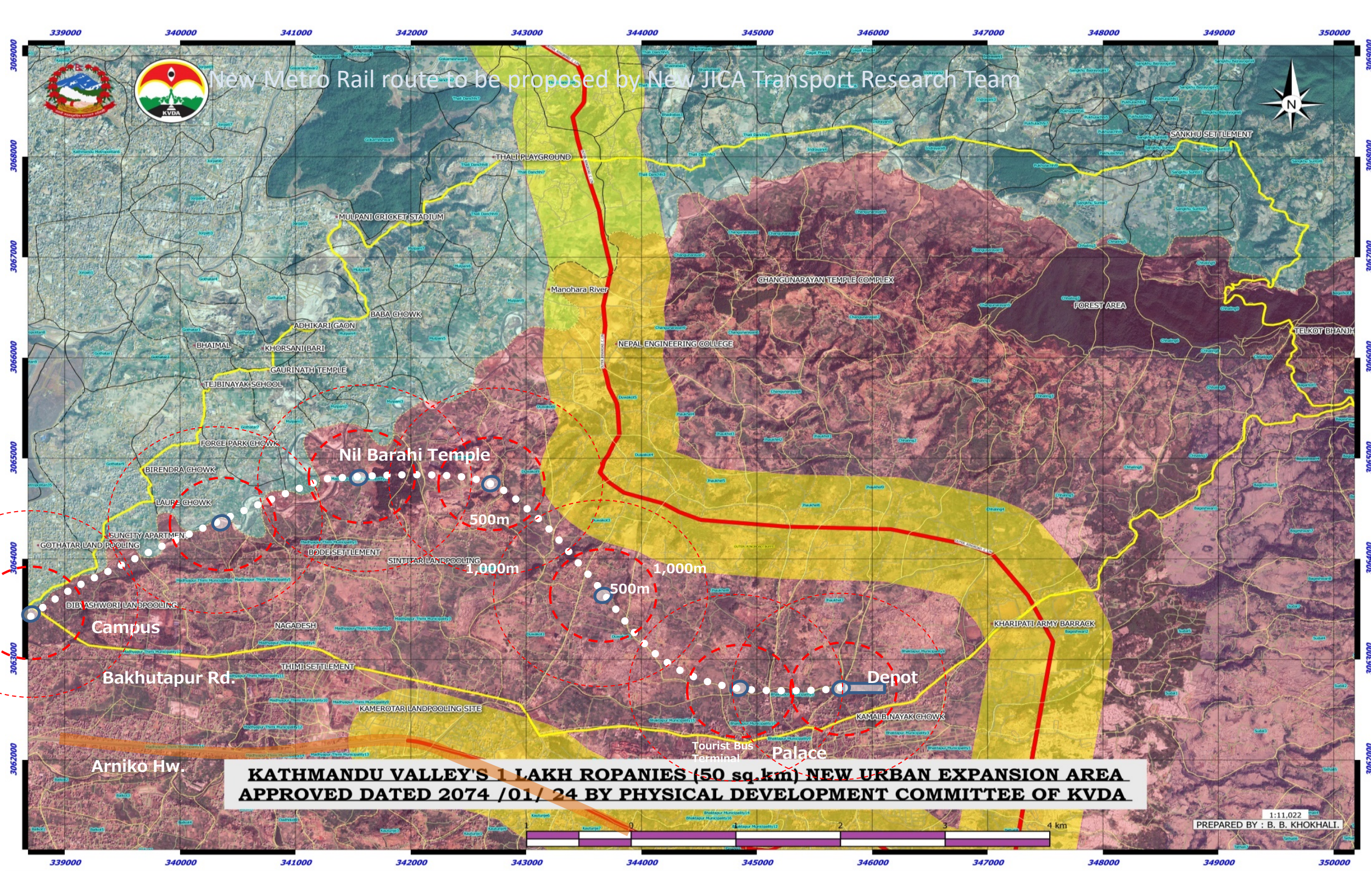




**KATHMANDU VALLEY'S 1 LAKH ROPANIES (50 sq.km) NEW URBAN EXPANSION AREA
APPROVED DATED 2074 /01/ 24 BY PHYSICAL DEVELOPMENT COMMITTEE OF KVDA**

1:11,500

PREPARED BY - B. B. KHOKHALI

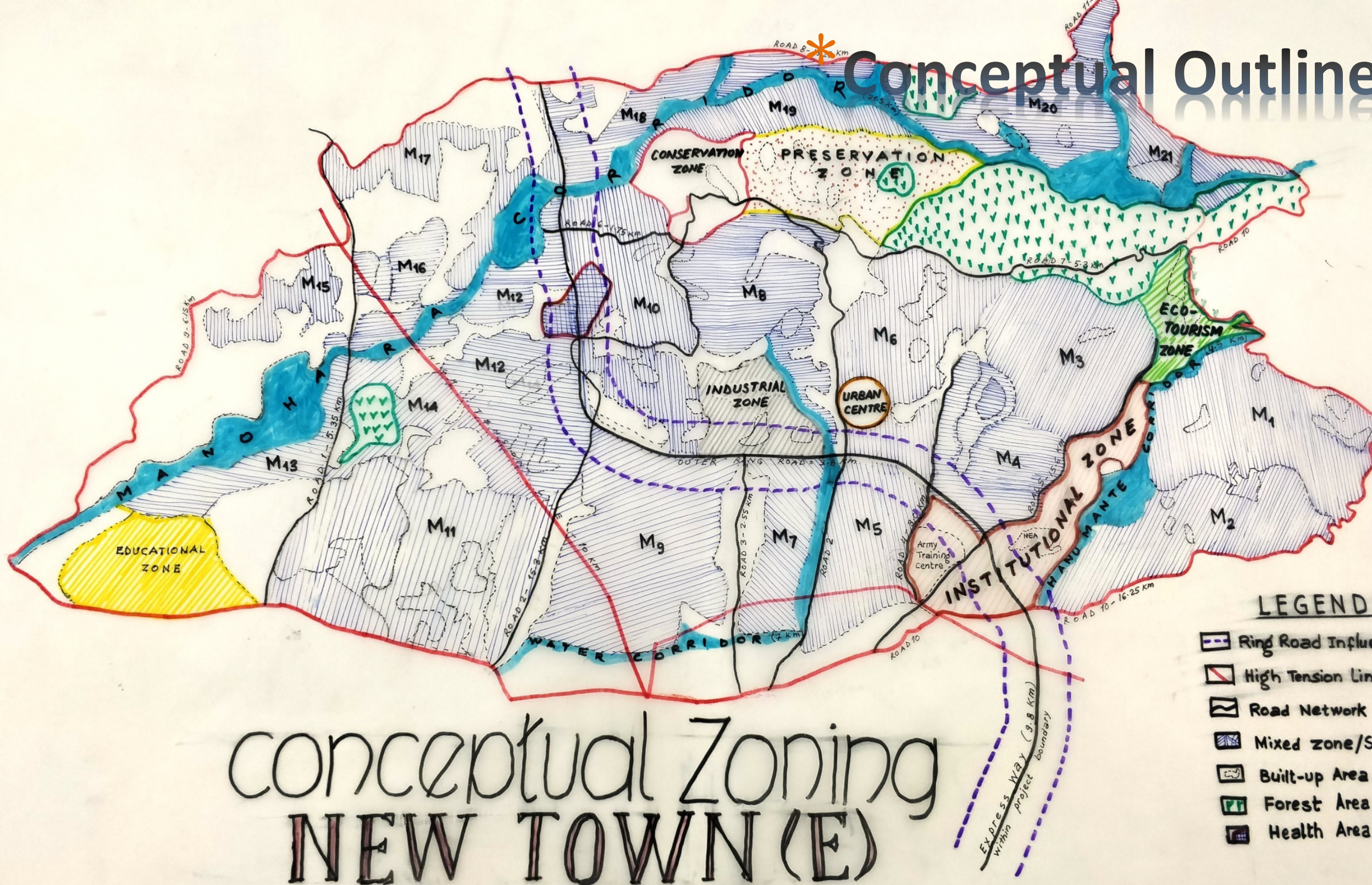


New Metro Rail route to be proposed by New JICA Transport Research Team

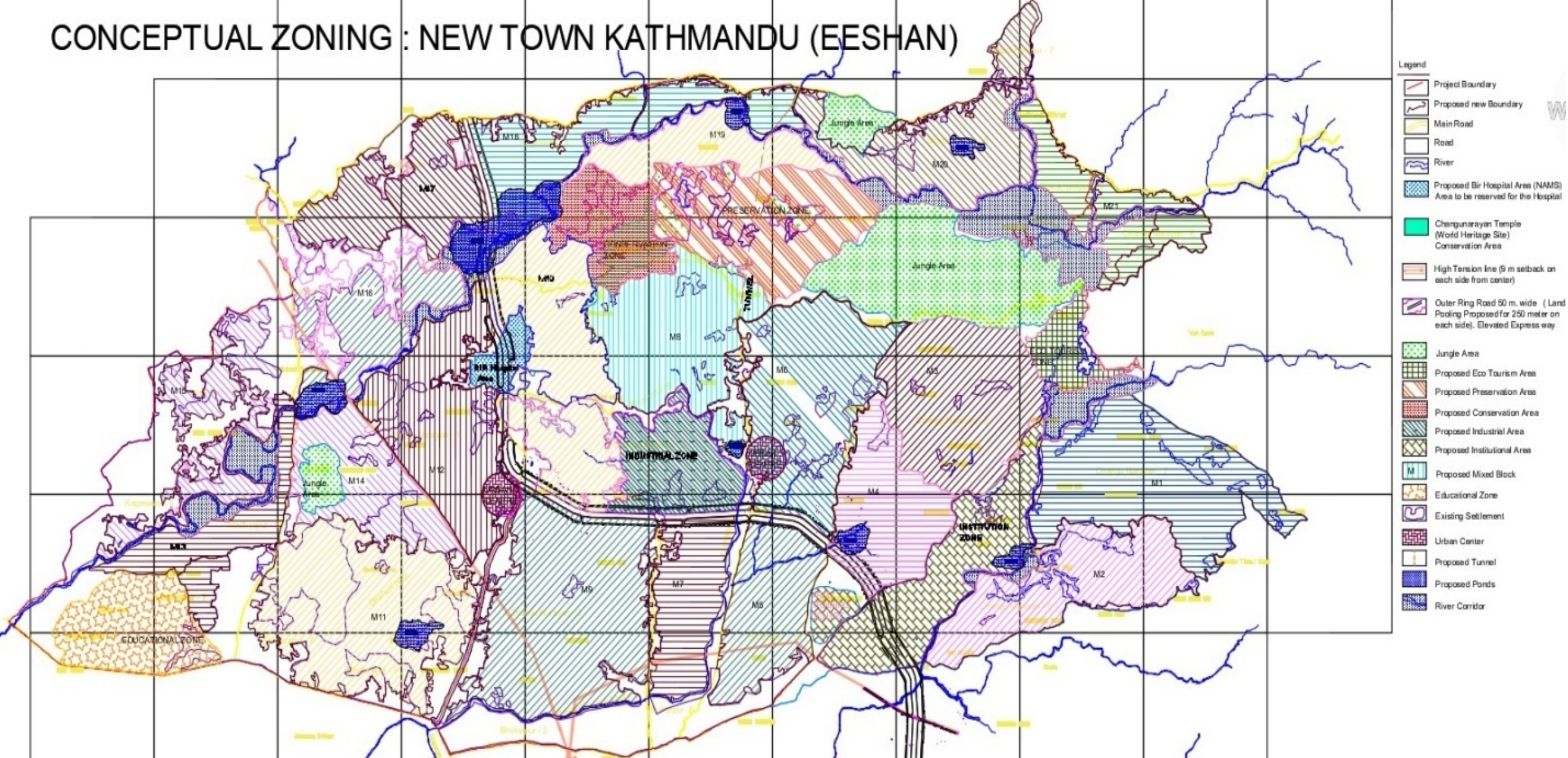
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APPROVED DATED 2074 /01/ 24 BY PHYSICAL DEVELOPMENT COMMITTEE OF KVDA**

1:11,022
PREPARED BY : B. B. KHOKHALT.

Conceptual Outline



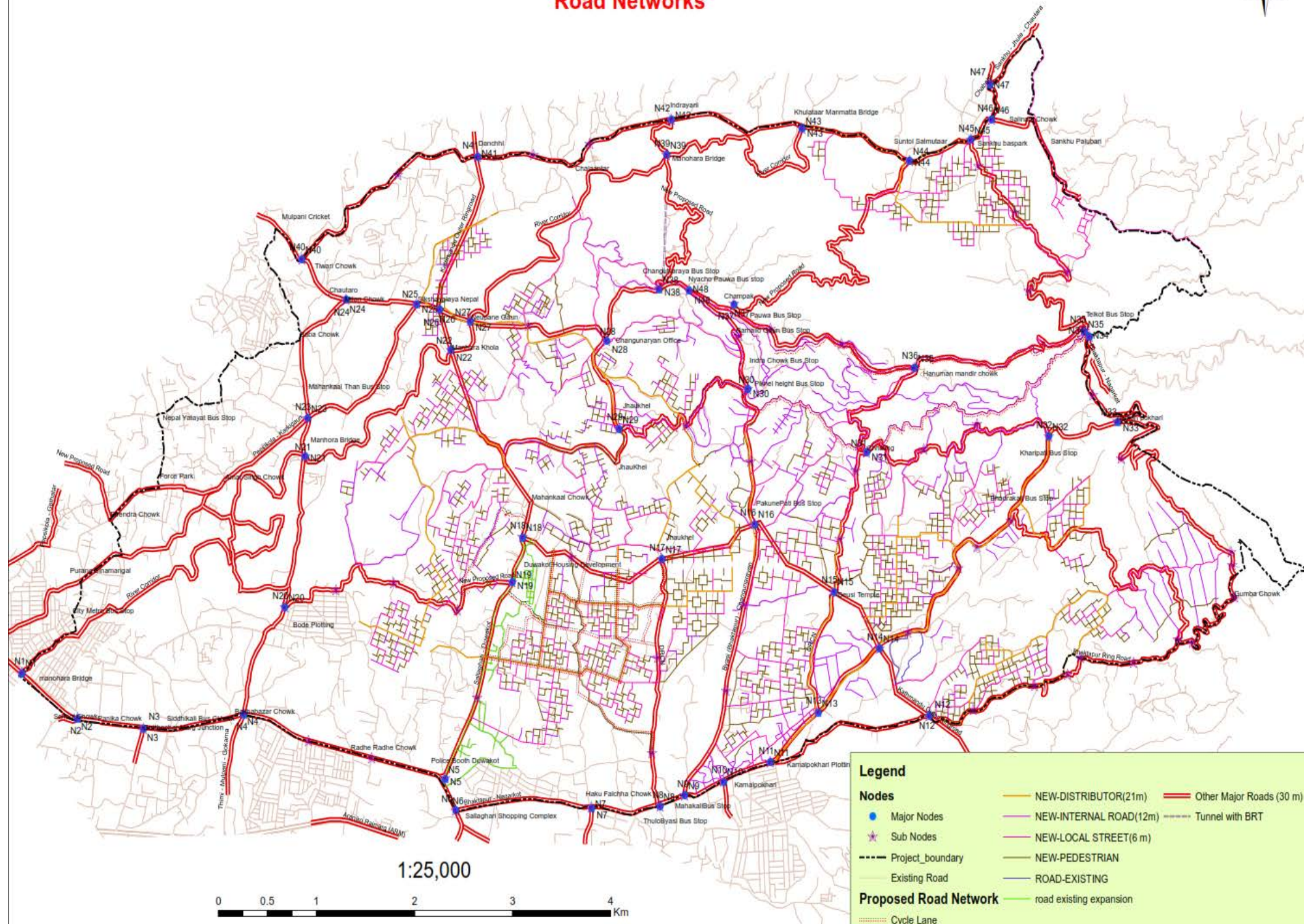
CONCEPTUAL ZONING : NEW TOWN KATHMANDU (EESHAN)



NEW TOWN DEVELOPMENT KATHMANDU-EESHAN

Helin & Co. in association with JK Associates

Road Networks



CONCLUSIONS

- National Reconstruction Authority is Coordinating with concerned government agencies for implementing various urban renewal , urban resilience and new city development projects
- Appetite for large scale investment in urban reconstruction projects in Nepal- Contribution to national GDP