

Thimphu Structure Plan



PRIOR
+PTNRS

ARUP

GERALDEVE 

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Baseline information

Homes

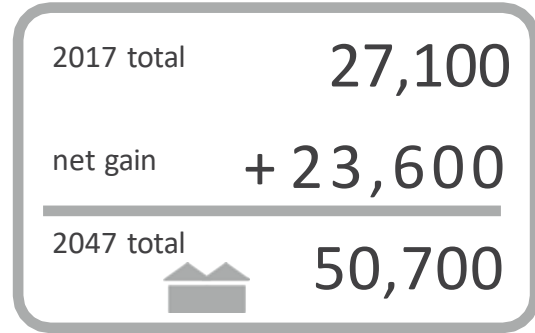
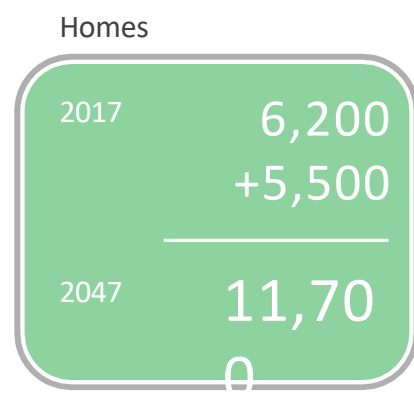
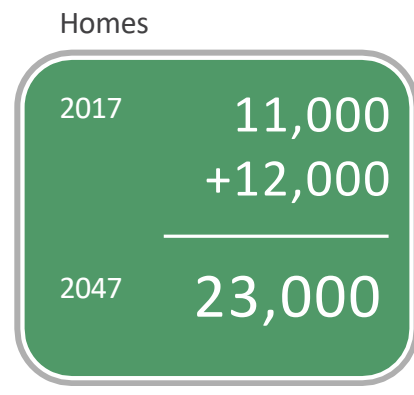


Table 2 Thimphu Population Distribution

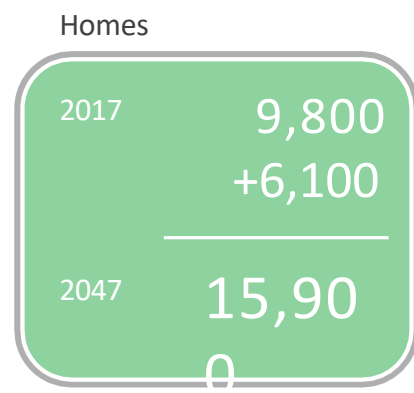
SUB-DISTRICTS	NEIGHBOURHOODS	HOMES EXISTING 2017	HOMES NET GAIN 2047	HOMES TOTAL 2047	HOMES EXISTING 2017	HOMES NET GAIN 2047	HOMES TOTAL 2047
Northern Thimphu	Dechencholing	1,623	1,449	3,072	6,178	5,565	11,743
	Taba	1,495	899	2,394			
	Jongshina	1,183	1,315	2,497			
	Langjophaka	625	371	996			
Thimphu City Core	Hejo-Samteling	1,253	1,532	2,784	11,080	11,944	23,024
	Dzong Precinct	103	0	103			
	Motithang	1,740	185	1,925			
	Zilukha	648	122	769			
	Changanakha	1,550	4,499	6,049			
	City Core	1,440	2,312	3,752			
	Changedapha	895	386	1,281			
	Changzamtog	3,323	3,423	6,746			
	Changbangdu	885	458	1,343			
	Yangchenphug	498	558	1,056			
Southern Thimphu	Changjiji	1,153	418	1,570	9,840	6,094	15,934
	Simtokha	908	378	1,285			
	Lungtenphu	1,223	316	1,539			
	Olakha	2,793	1,029	3,822			
	Tshalumarphy	1,480	921	2,401			
	Babesa	1,600	1,043	2,643			
	Serbithang	280	55	335			
	Rama	-	1,089	1,089			
	Gangchey	24	0	24			
	Depsi	381	845	1,226			
Total		27,097	23,603	50,700	27,097	23,603	50,700



Northern Thimphu



Thimphu City Core



Southern Thimphu



Employment

Number of Jobs

$$\begin{array}{r}
 56,800 \\
 + 62,100 \\
 \hline
 118,900
 \end{array}$$

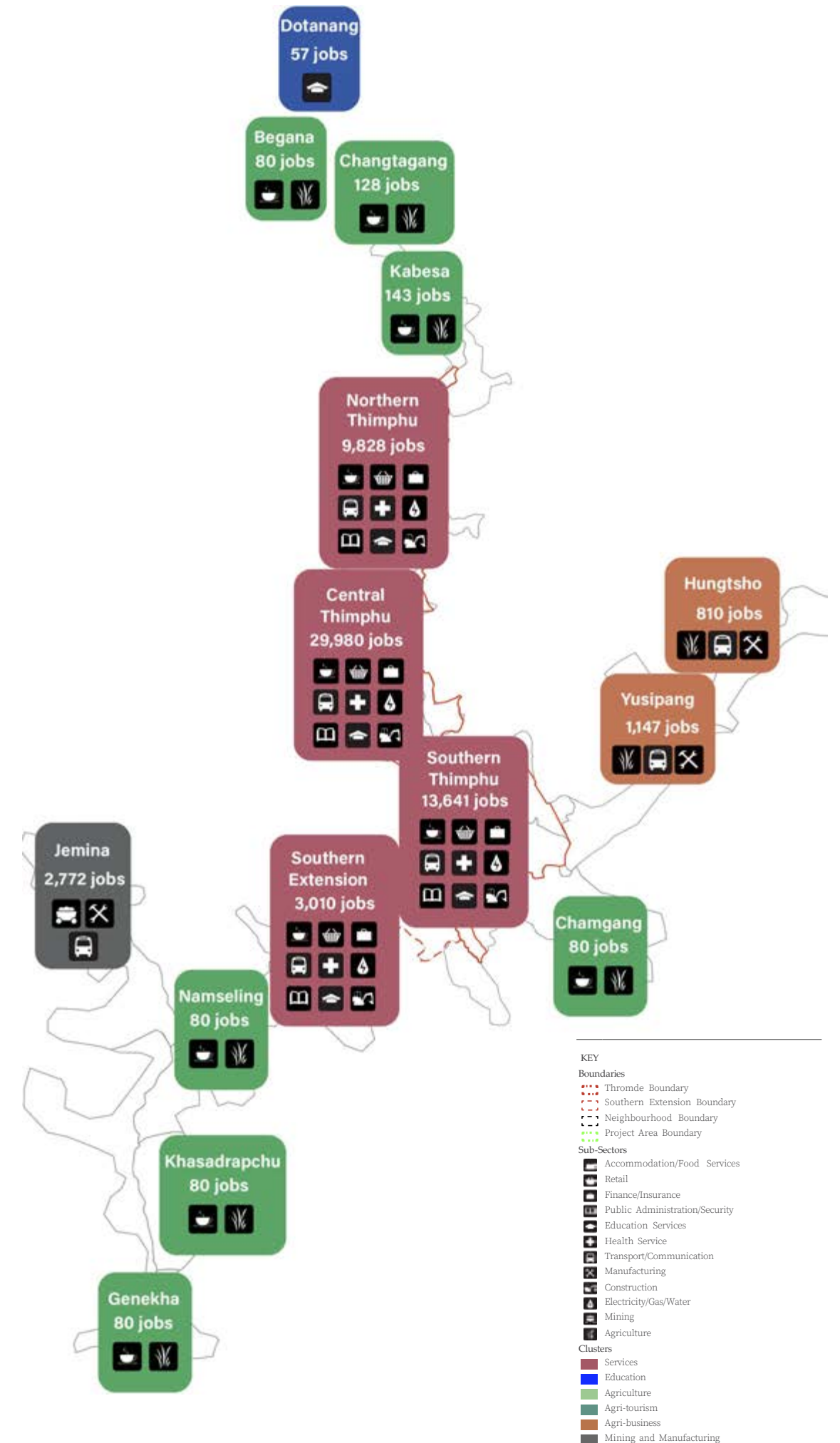
Table 3 Thimphu target employment by neighbourhood

Sub-districts	Neighbourhood / Sub-sector	Agriculture	Mining, Quarrying	Manufacturing	Electricity, Gas, Water	Construction	Wholesale, Retail Trade	Accommodation, Food Services	Transport, Communication	Finance, Insurance	Public Administration, Security	Education Services	Health Services	Other	Total
	Dotanang	-	-	-	-	-	-	-	-	-	-	30	27	-	57
	Begana	23	-	-	-	-	-	-	-	-	-	30	27	-	80
	Changtagang	23	-	-	-	-	32	16	-	-	-	30	27	-	128
	Kabesa	38	-	-	-	-	32	16	-	-	-	30	27	-	143
Northern Thimphu	Dechencholing	-	-	12	40	337	203	131	79	283	44	89	82	52	1,352
	Taba	-	-	12	40	337	203	131	79	283	44	89	82	52	1,352
	Jongshina	-	-	12	40	337	203	131	79	283	44	89	82	52	1,352
	Langjophaka	-	-	-	39	327	32	16	-	-	-	89	82	-	586
	Hejo-Samteling	-	-	24	41	404	538	382	602	2,168	338	148	136	402	5,185
Central Thimphu	Dzong Precinct	-	-	-	39	327	-	-	-	-	-	89	82	-	537
	Motithang	-	-	12	40	337	171	115	79	283	44	89	82	52	1,304
	Zilukha	-	-	-	39	460	32	126	1,048	3,771	589	89	82	700	6,935
	Changanakha	-	-	12	40	460	1,294	789	1,048	3,771	589	297	272	700	9,271
	City Core	-	-	12	40	394	652	407	524	1,885	294	89	82	350	4,729
	Changedapha	-	-	-	39	327	32	16	-	-	-	89	82	-	586
	Changzamtog	-	-	48	43	374	930	628	367	1,320	206	297	272	245	4,729
	Changbangdu	-	-	12	40	337	171	115	79	283	44	89	82	52	1,304
	Yangchenphug	-	-	-	39	327	32	16	-	-	-	89	82	-	586
	Changjiji	-	-	12	40	337	171	115	79	283	44	89	82	52	1,304
Southern Thimphu	Simtokha	23	-	-	39	367	225	147	314	1,131	177	89	82	210	2,804
	Lungtenphu	-	-	12	40	337	171	115	79	283	44	89	82	52	1,304
	Olakha	-	-	12	40	337	235	147	79	283	44	148	136	52	1,515
	Tshalumarphy	-	-	24	41	397	513	377	550	1,980	309	89	82	367	4,729
	Babesa	-	-	12	40	337	203	131	79	283	44	89	82	52	1,352
	Serbithang	-	-	-	39	327	64	33	-	-	-	89	82	-	634
	Rama	-	-	12	40	337	235	147	79	283	44	89	82	52	1,401
	Gangchey	-	-	-	39	327	-	-	-	-	-	30	27	-	423
	Depsi	-	-	12	40	327	203	123	-	-	-	30	27	-	762
	RTC	-	-	-	39	327	-	-	-	-	-	30	27	-	423
	Hungtsho	212	-	240	17	-	103	180	-	-	-	30	27	-	810
	Yusipang	303	-	360	26	-	139	262	-	-	-	30	27	-	1,147
	Geynakha	23	-	-	-	-	-	-	-	-	-	30	27	-	80
Jemina	-	103	1,548	111	-	307	647	-	-	-	30	27	-	2,772	
Namseling	23	-	-	-	-	-	-	-	-	-	30	27	-	80	
Khasadrapchu	23	-	-	-	-	-	-	-	-	-	30	27	-	80	
Khasakha Langdru	23	-	-	-	-	-	-	-	-	-	30	27	-	80	
Kharbi	23	-	-	-	-	-	-	-	-	-	30	27	-	80	
Genekha	23	-	-	-	-	-	-	-	-	-	30	27	-	80	
Total		757	103	2,400	1,149	8,849	7,129	5,462	5,239	18,854	2,943	2,968	2,722	3,499	62,073

AGRICULTURE

INDUSTRIAL

SERVICES



*Good Growth in the Right
Places*

GNH within the Doughnut

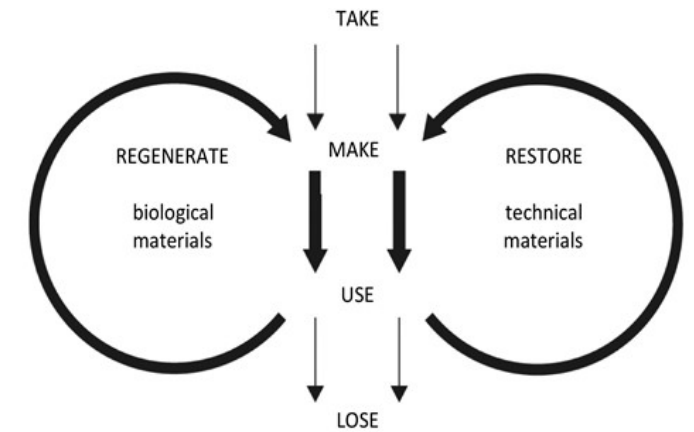
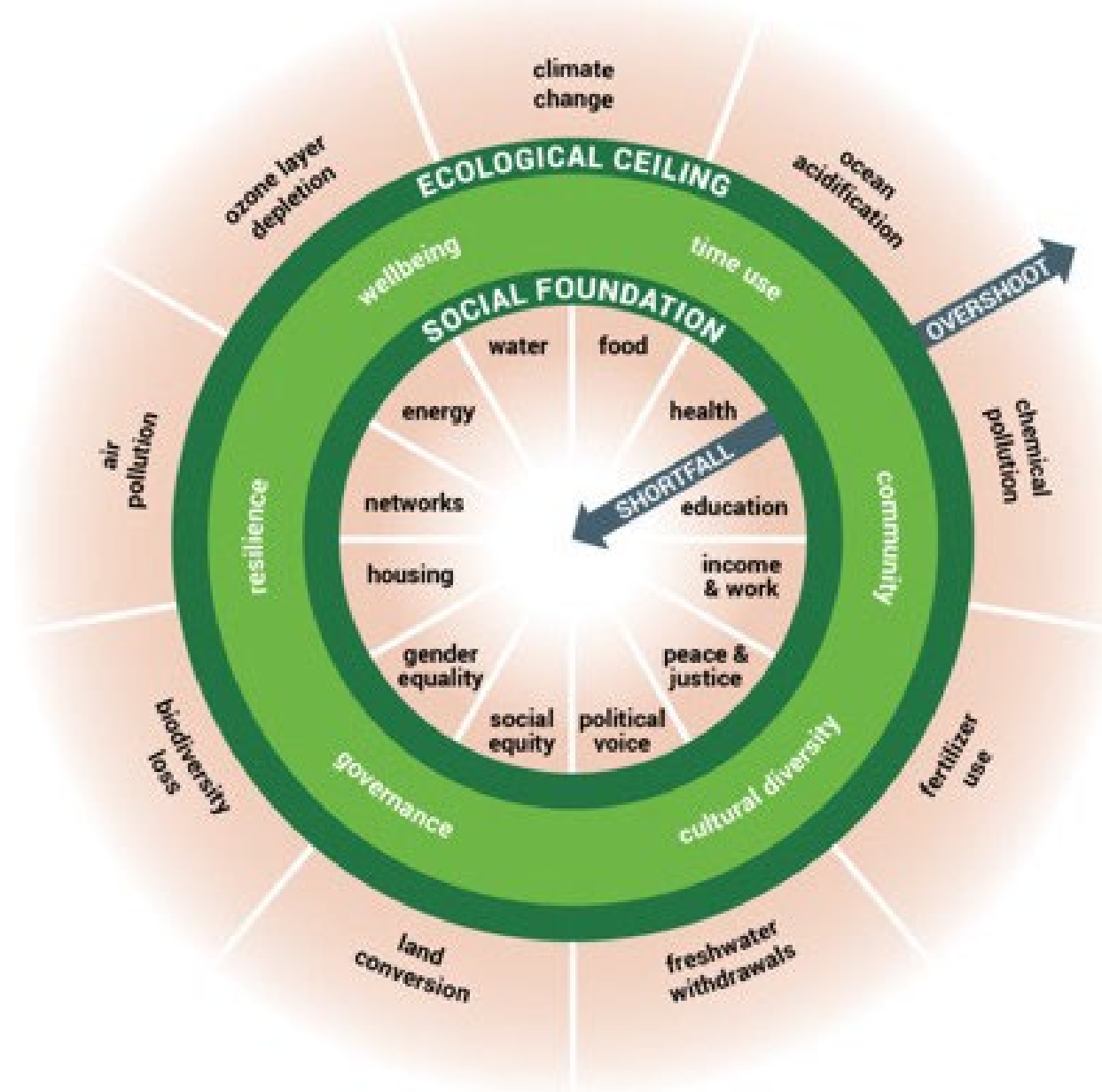
Approach

The 2023 TSP adopts the principles of Doughnut Economics, which establishes social and planetary boundaries and realises outcomes in which people and planet can thrive in balance - in other words it offers a compass for guiding 21st century prosperity

There are two key principles through which TSP puts Doughnut Economics into practice:

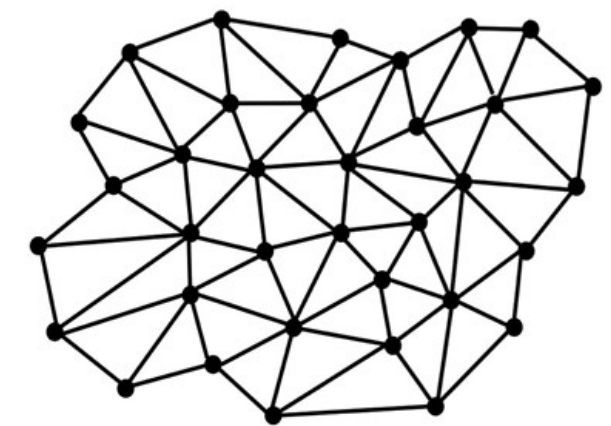
- **Be distributive.** Share opportunity and value with all who co-create it.
- **Be regenerative.** Aim to work with and within the cycles of the living world.

These principles underpin the TSP vision and key planning policies and spatial framework.



Regenerative

working with and within the cycles of the living world



Distributive

sharing opportunity and value far more equitably with all

Cultivate Balance

balance between tradition and modernity, rural and urban and the natural environment, heritage and prosperity.

Nurture Community

neighbourhoods that are diverse, equitable and friendly and support health and wellbeing at all life phases.

Create Opportunity

foster prosperity, support livelihoods and be governed with wisdom and compassion.

Inspire

enrich spirituality and culture and function as a model for sustainable development.

Key Ideas

Land Use, Centres Hierarchy and Character Areas

KEY IDEAS

Thimphu Structure Plan 2022 proposes three new key new ideas as an evolution of Thimphu Structure Plan 2002 precincts designation. **1/ Land**

Use

- Land Uses serve as a tool to promote good growth in the right places.
- They support the following aims:
 - Support the regeneration of existing urbanised areas and limit further land conversion
 - Distribute activity centres across the city
 - Distribute a variety of residential types appropriate to their location
 - Locate workplaces in accessible areas
 - Relocate major industrial uses away from sensitive land uses
 - Distribute public open spaces across the city
 - Restrict land use types in line with geohazard rating zoning permissible uses

2/ Centres Hierarchy

- A hierarchy of centres is the primary way to distribute economic growth, housing, population growth
- It ensures facilities and employment opportunities are equitably distributed and dimensioned proportionate with a hierarchy of population catchments
- Centres are activity nodes concentrating employment, social infrastructure, commercial, retail, and leisure facilities.
- City centre
 - Serves over 150,000 people and anchors the National Capital City area.
 - It is a highly specialised area for employment opportunities in the knowledge sector focused on environmental and financial services linked to climate change and carbon markets.
 - It is also a national centre for government, professional services (finance and insurance), technology and IT.
 - It promotes high end tourism and strengthens Thimphu's tourism, retail, culture and leisure offer
- Sub-district centres
 - Serve up to 50,000 people
 - Specialised mixed use areas for employment opportunities in the services sectors
 - Convenience services for weekly/fortnightly needs of residents and community facilities
- Neighbourhood centres
 - Serve 5 - 15,000 people
 - They provide facilities needed regularly for urban communities
- Local centres
 - Serve 2 - 5,000 people
 - Daily services in urban areas
- Rural local centres
 - Serve up to 2,000 people in rural areas
 - Facilities needed regularly for villages

3/ Character Areas

- Character areas support the creation of identity and a sense of place.
- Development within one character area shares similar rules and guidelines for built form, streets and public realm, heritage and conservation and environmental landscape guidance.
- The character areas form the structuring basis for Urban Design Guidelines.

Development Control Regulations (DCR) Reform

Failings of the existing DCR

- Under-utilisation of land leads to lack of density, activity and vibrancy in large parts of the city core.
- Where ownerships are fragmented and development intensified there is a lack of privacy, amenity and light for residents.
- Development pattern does not form streets and spaces well - lack of enclosure and overlooking.
- Land ownership pattern combined with topography challenges form an incoherent street network, impacting accessibility through the city.
- Lack of varied building typologies and no 'flex' according to specific use, context and any local character.
- Lack of variety in how people can live and no 'flex' for different lifestyles and age groups.
- General lack of diverse character and defined places within the city.
- Lack of a pedestrian focussed public realm.
- Lack of access and proximity to nature, greenspace and water.



DCR Reform

Opportunities

- An urban density that provides vibrancy and diversity: that forms streets and spaces well.
- Standards for daylight, privacy and amenities for higher performance and resilience of buildings
- A new, continuous and accessible street network that connects communities and integrates neighbourhoods with their city and its setting.
- Building on the existing character and activity pattern to build identity and legibility of place.
- A new public realm that prioritises people over vehicles.
- An urban realm that promotes active travel, recreation, health and sport.
- A new Green Infrastructure that brings people closer to nature and integrates well-being, bio-diversity and resilience.



Thimphu Structure Plan

Thimphu Structure Plan

Draft

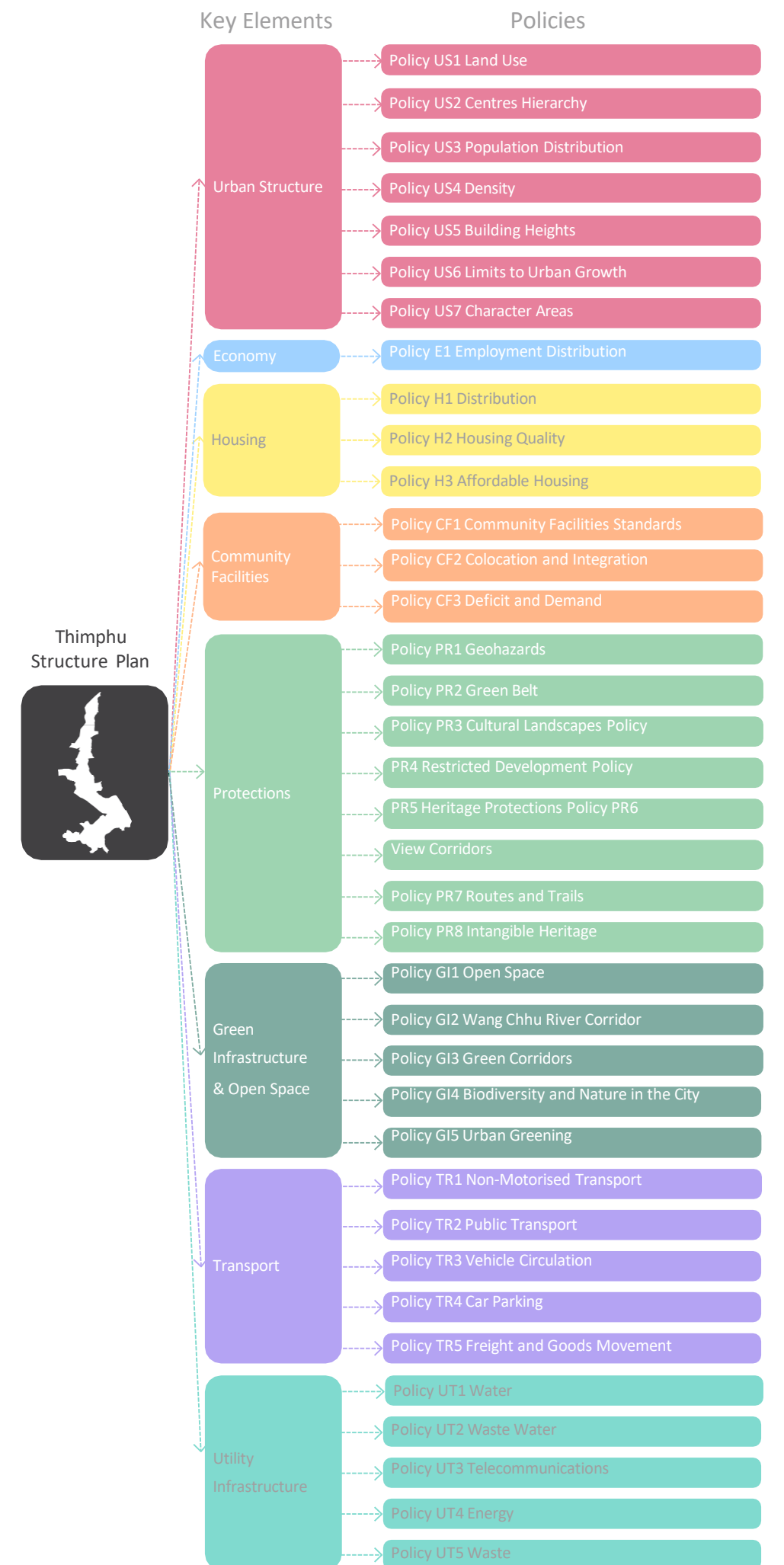
Thimphu Structure Plan establishes an overarching spatial structure, to guide:

- The allocation of future growth.
- The protection of sensitive heritage and natural areas

The planning policies take into account the development promotion and protection role that Thimphu Thromde will need to play.

Planning Policies comprise:

- Policies to protect or enhance existing areas of natural, cultural or heritage significance
- Policies to inform decision making on future development proposals and investment.



Structure Plan

Rev1 Draft

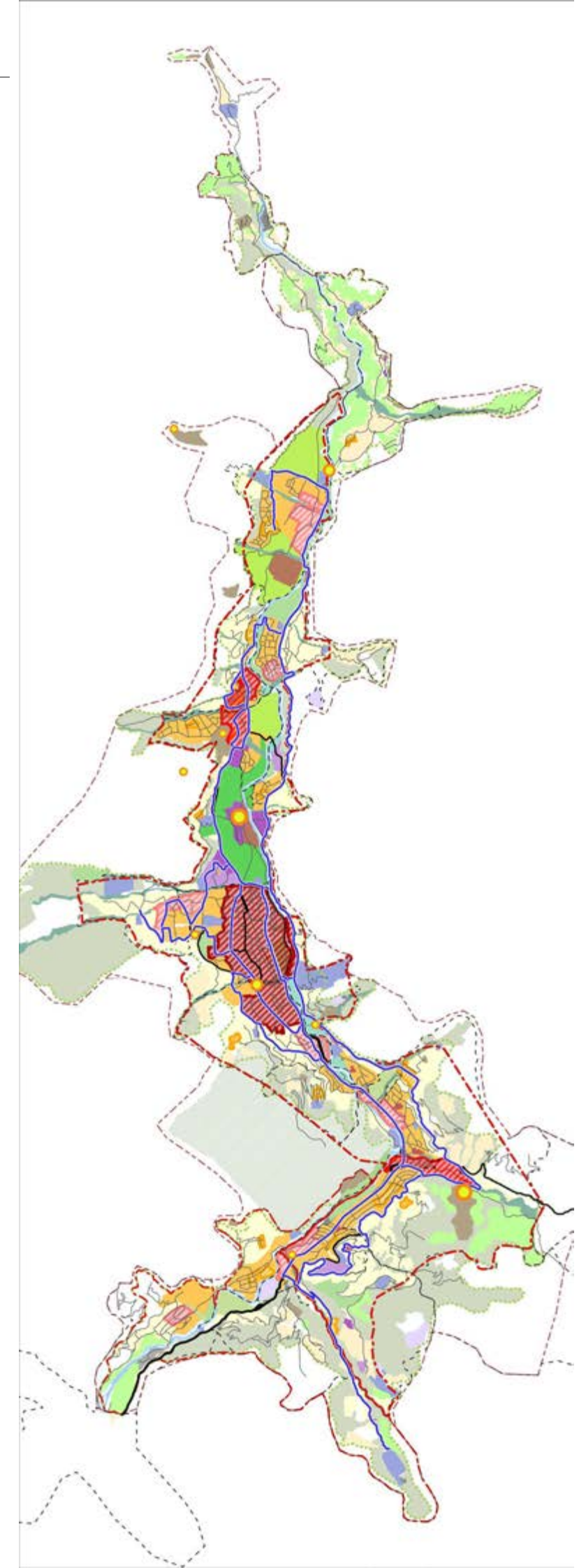
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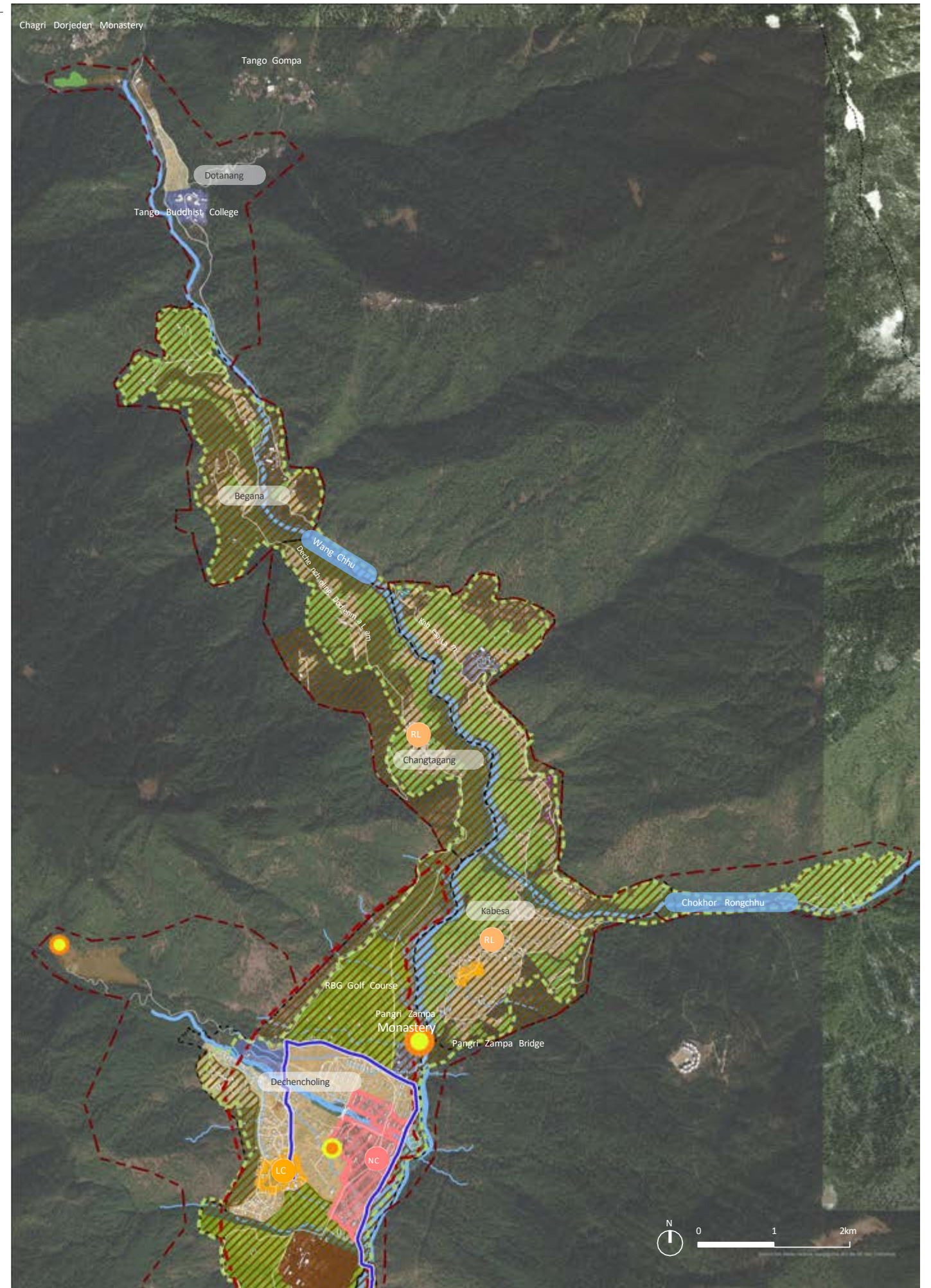


Structure Plan

North of Thimphu



- KEY**
- Thromde Boundary
 - Southern Extension Boundary
 - Neighbourhood Boundary
 - Study Area Boundary
 - Inner Green Belt Boundary
 - Restricted Development Zone
- Centres Hierarchy**
- City Centre
 - Sub-district Centre
 - Neighbourhood Centre
 - Local Centre
 - Rural Local Centre
- Heritage Protections**
- Grade A
 - Grade B
 - Grade C
- Residential Areas**
- Residential Urban
 - Residential Suburban
 - Residential Rural
- Community Facilities**
- Community Facility
 - Education
 - Healthcare
 - Religious
- Other Land Uses**
- Mixed Use
 - Workplace
 - Government
 - Hospitality
 - Culture
 - Traditional Village
 - Royal Estate
 - Industrial
- Green Infrastructure**
- Forest
 - Agriculture
 - Neighbourhood Park
 - City Park
 - Metropolitan Park
 - Valley Park
 - Regional Park
 - Private Landscape
 - Local Nature Reserve
- Water System**
- River
 - Stream
 - Riparian Corridor
 - Wang Chhu River Corridor
- Transport and Utilities**
- Transport**
- Primary Road
 - Secondary Road
 - Tertiary Road
 - Bus Routes

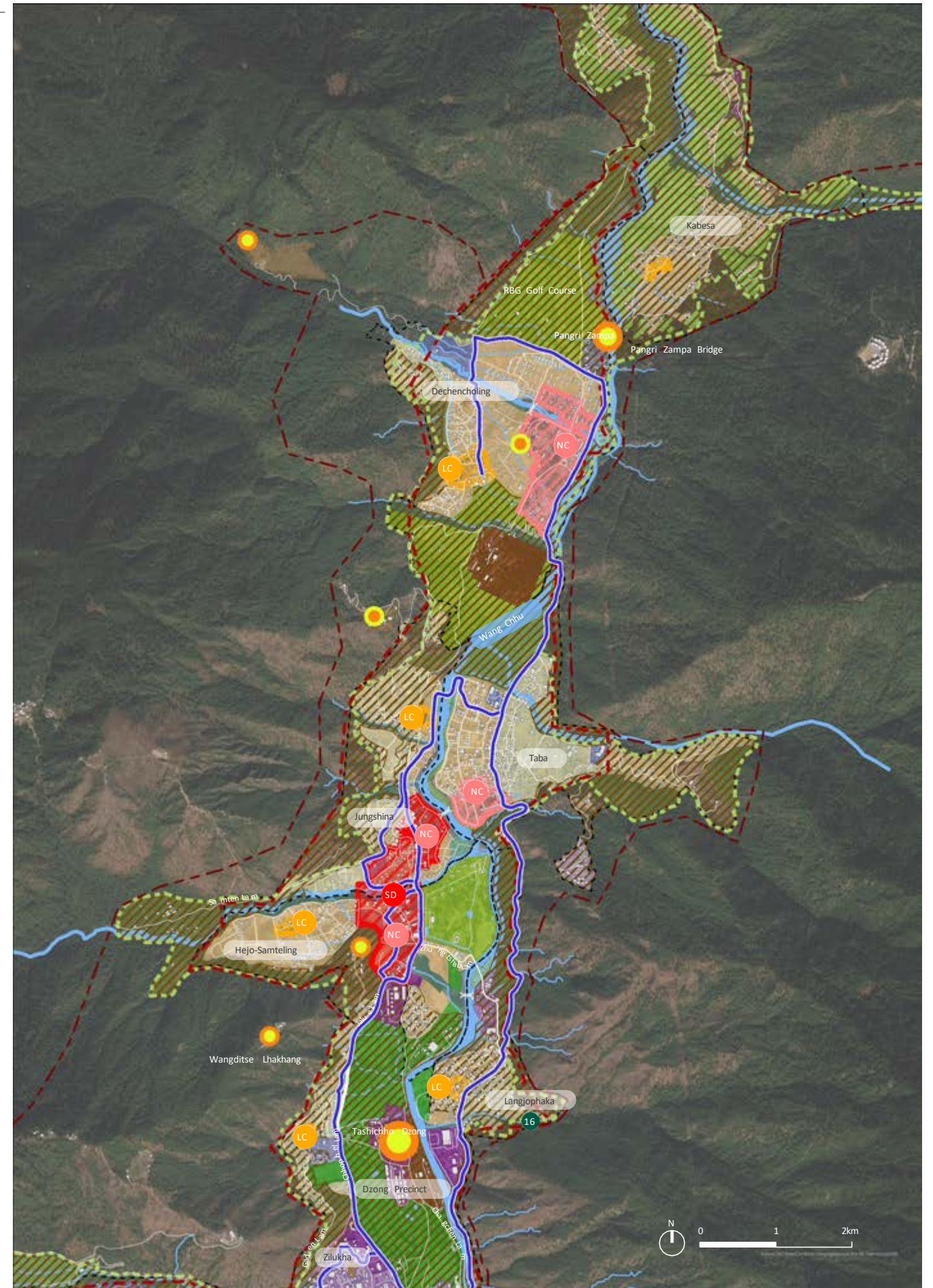


Structure Plan

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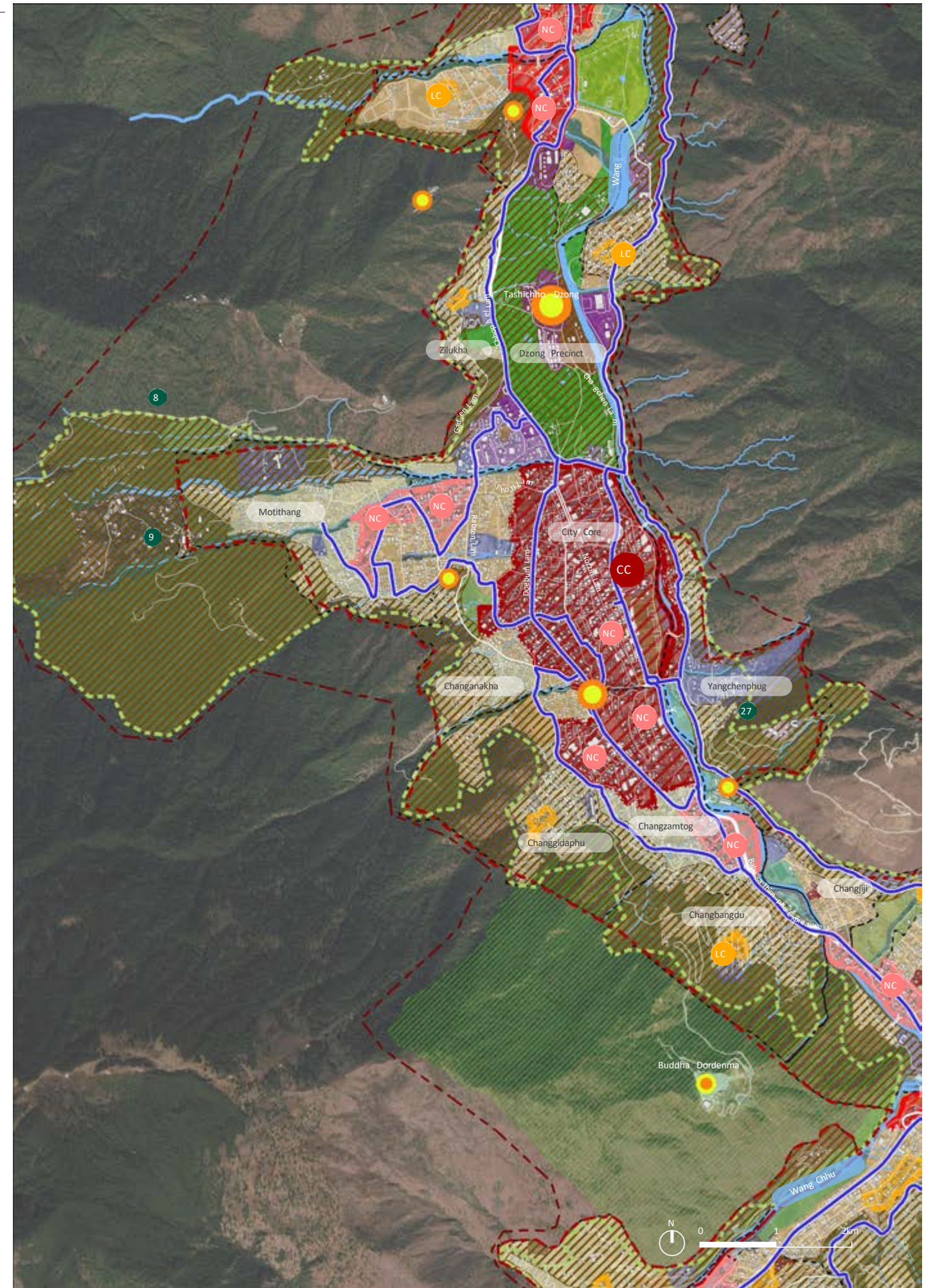


Structure Plan

Central Thimphu



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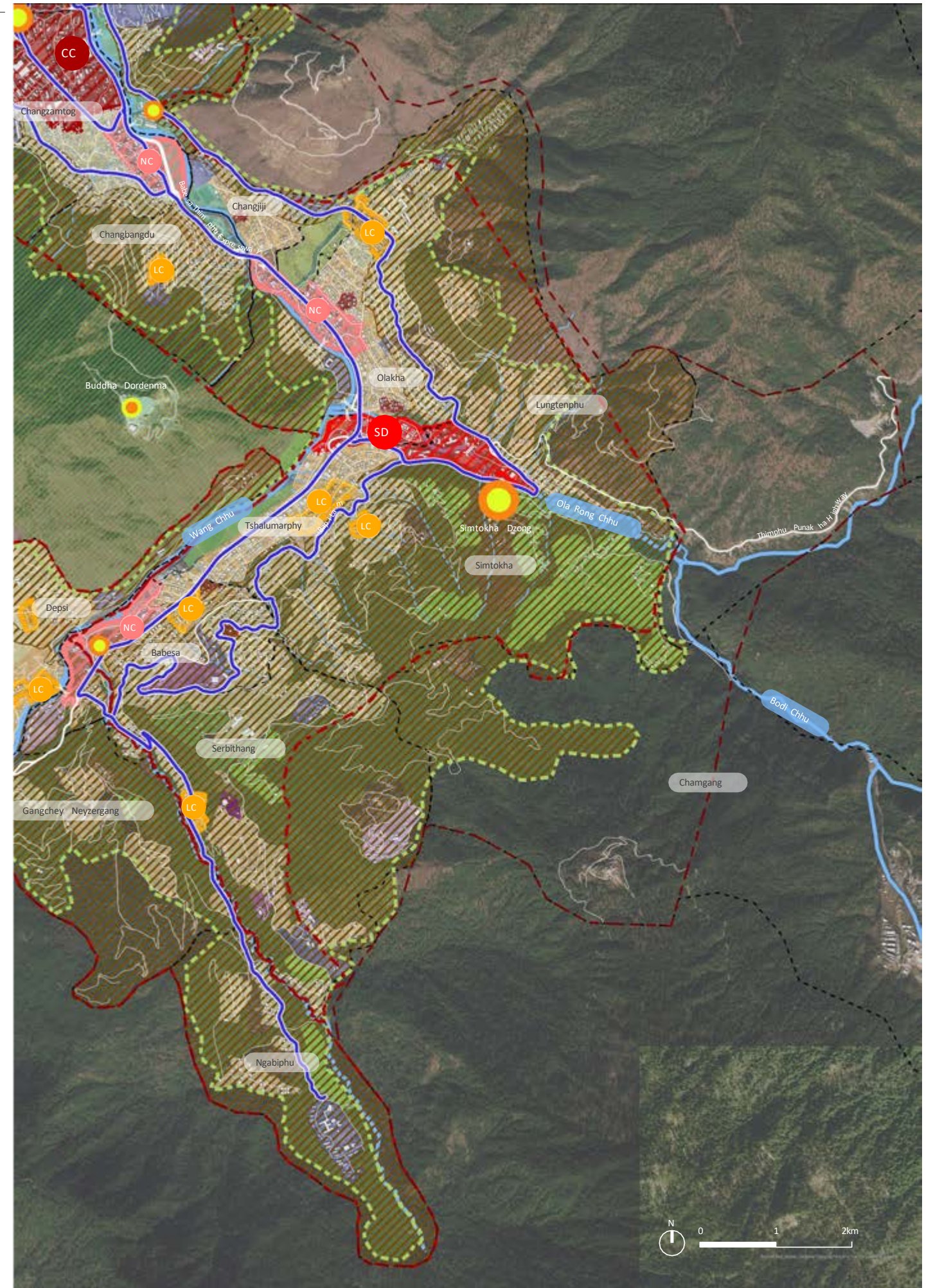


Structure Plan

Southern Thimphu



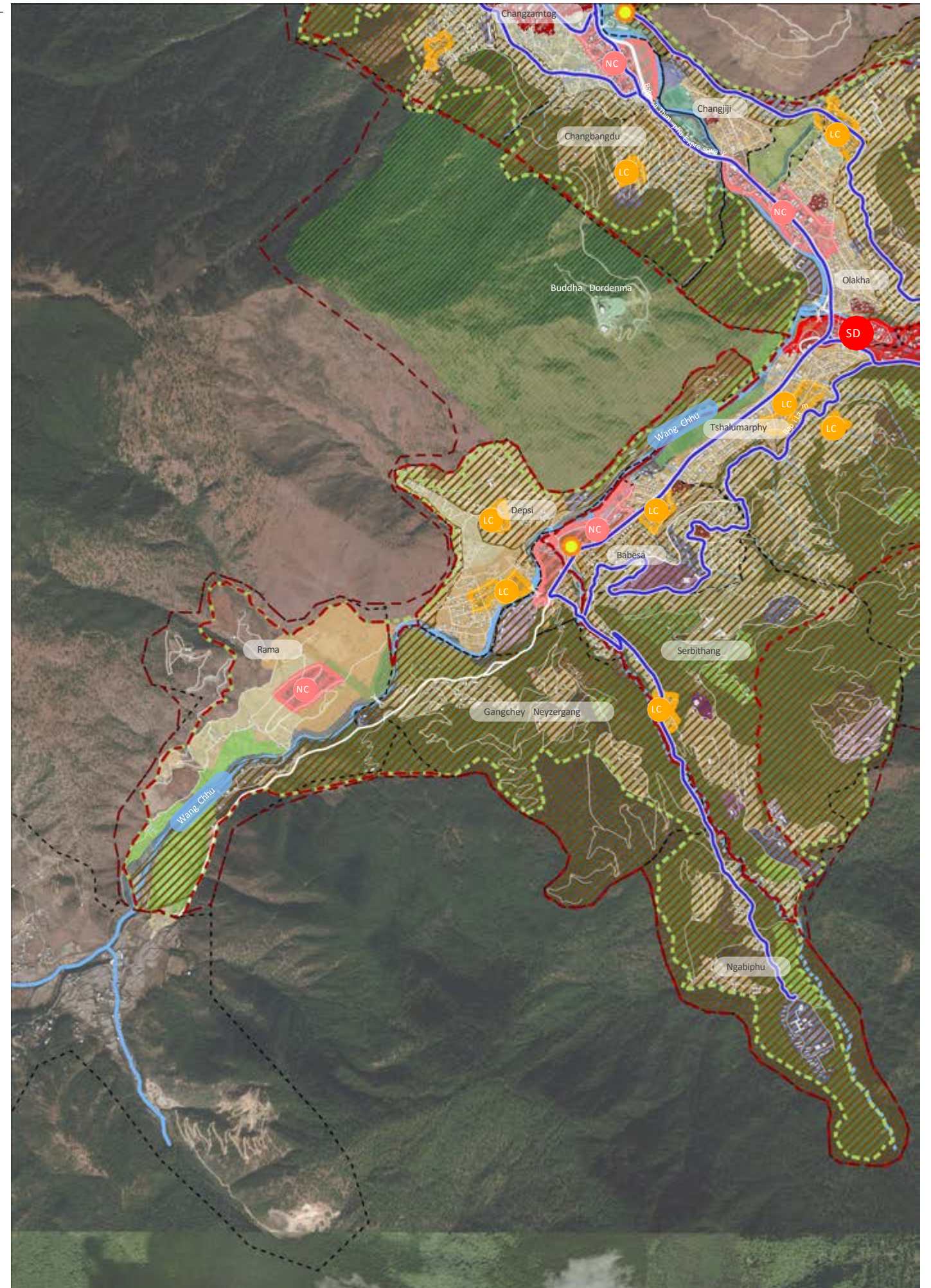
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Structure Plan

Southern Extension

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Thimphu Structure Plan

Rev1 Draft

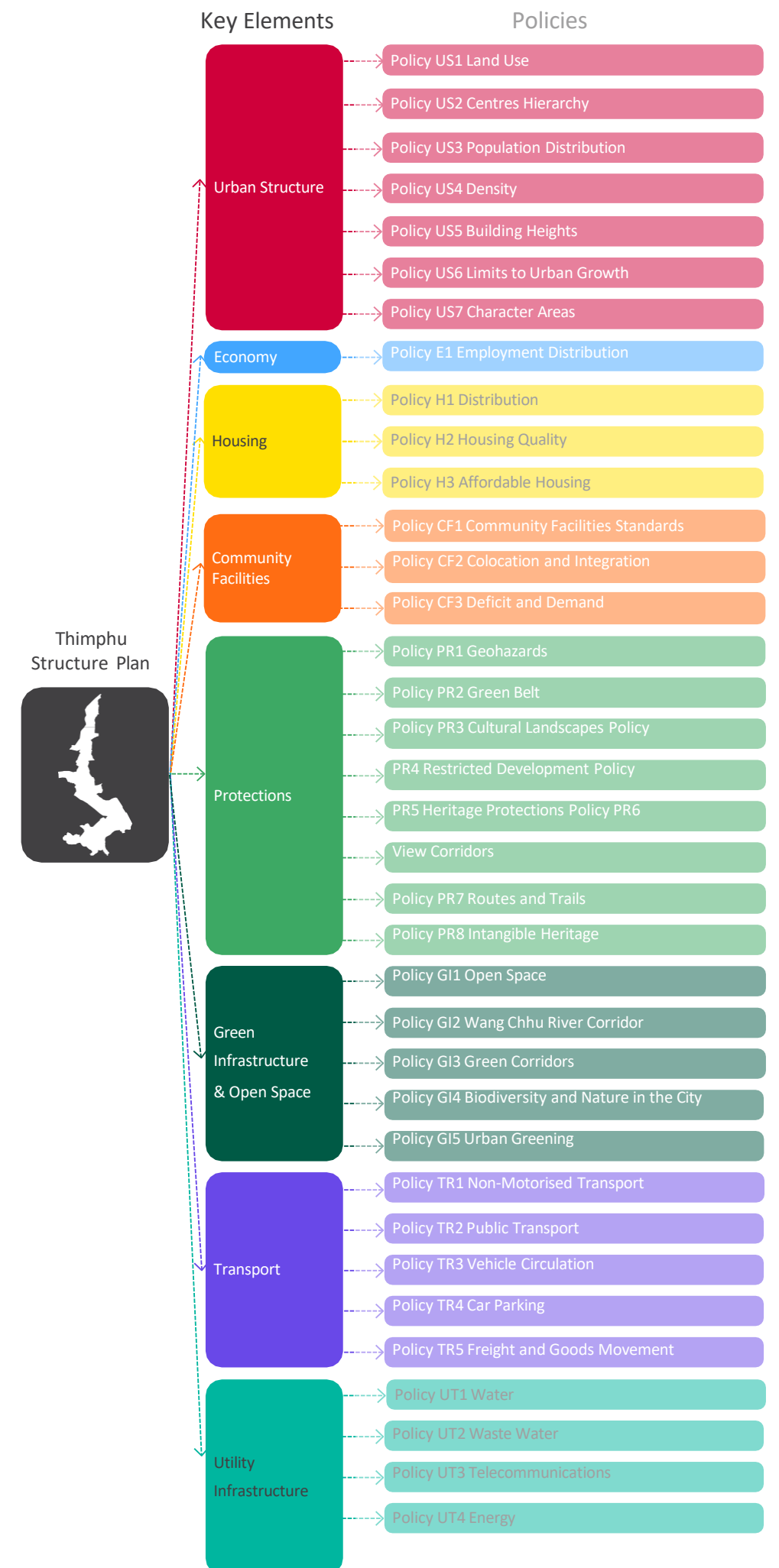
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- The allocation of future growth.
- The protection of sensitive heritage and natural areas

The planning policies take into account the development promotion and protection role that Thimphu Thromde will need to play.

Planning Policies comprise:

- Policies to protect or enhance existing areas of natural, cultural or heritage significance
- Policies to inform decision making on future development proposals and investment.



Structure Plan

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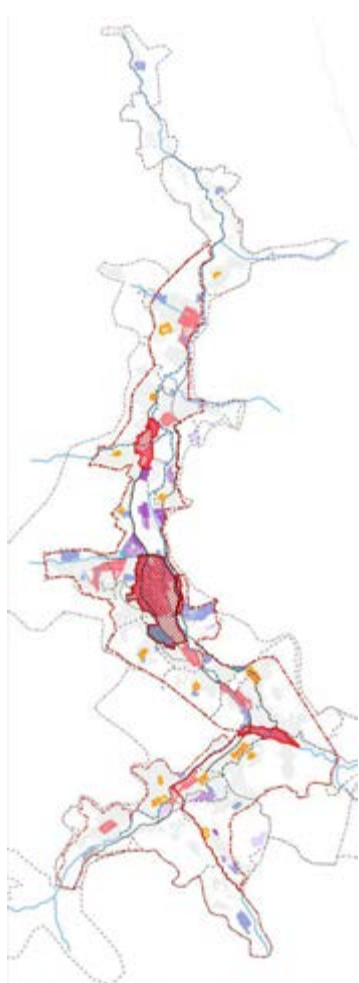
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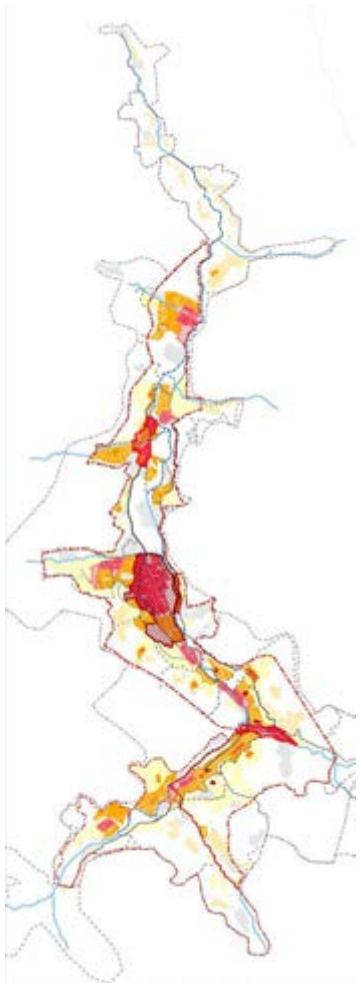
URBAN STRUCTURE



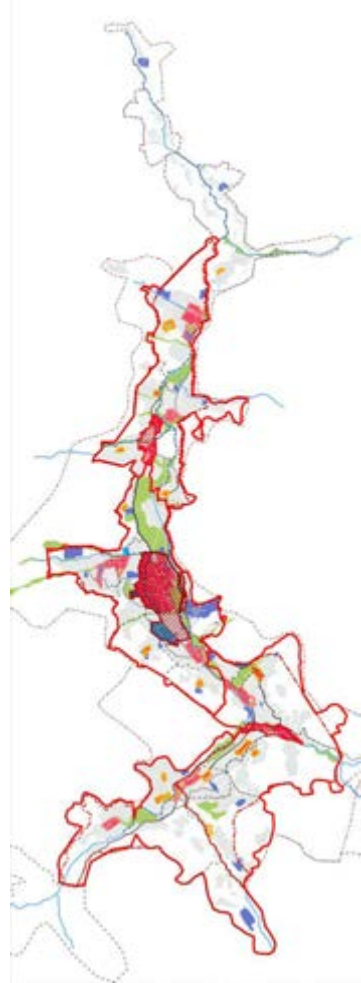
ECONOMY



HOUSING



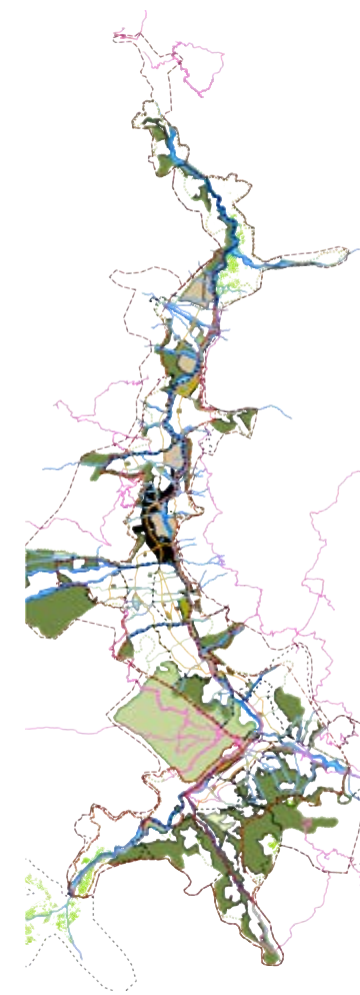
COMMUNITY FACILITIES



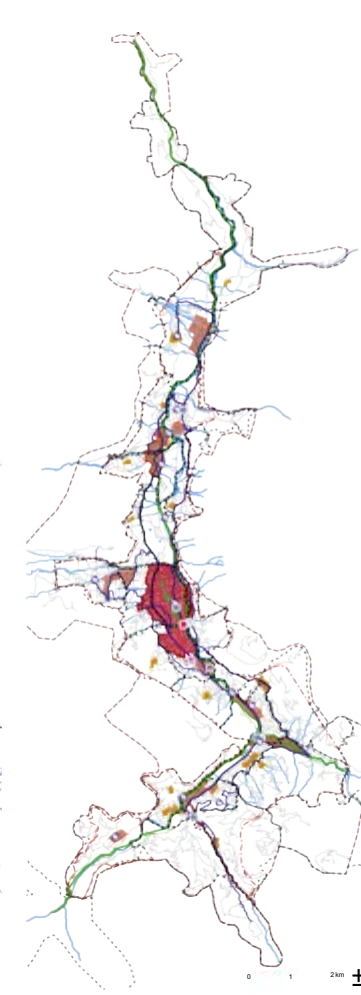
PROTECTIONS



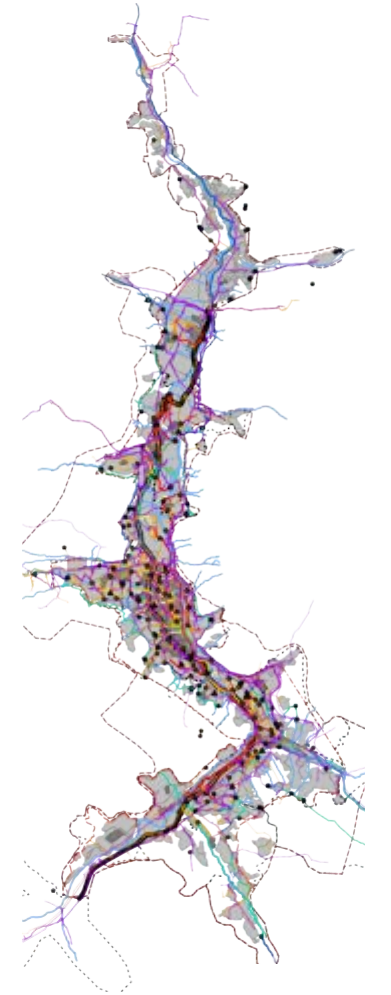
GREEN INFRASTRUCTURE



TRANSPORT

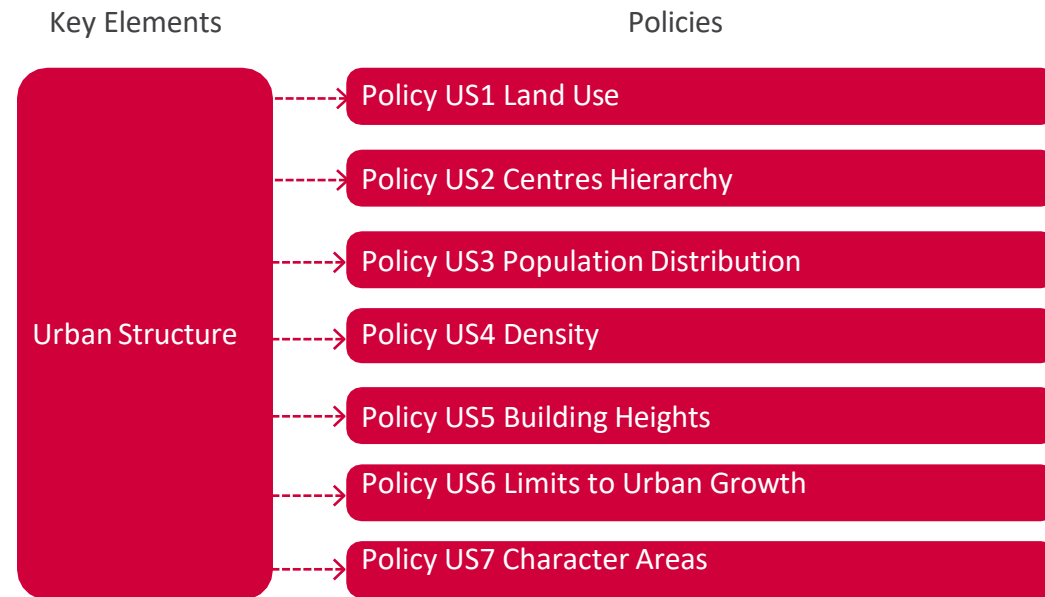


UTILITY INFRASTRUCTURE



Urban Structure

Rev1 Draft



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Economy

Rev1 Draft

Economy

Policy E1 Employment Distribution

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- Water System**
 - River

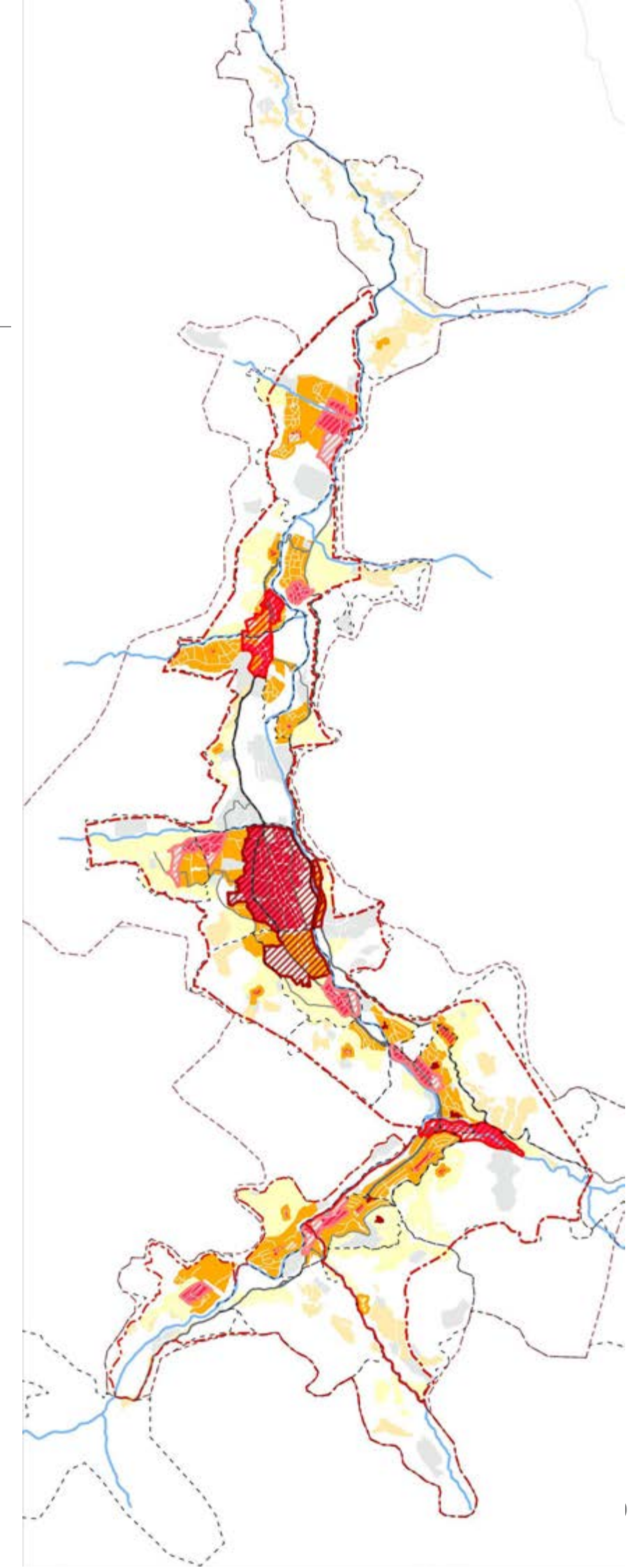


Housing

Rev1 Draft

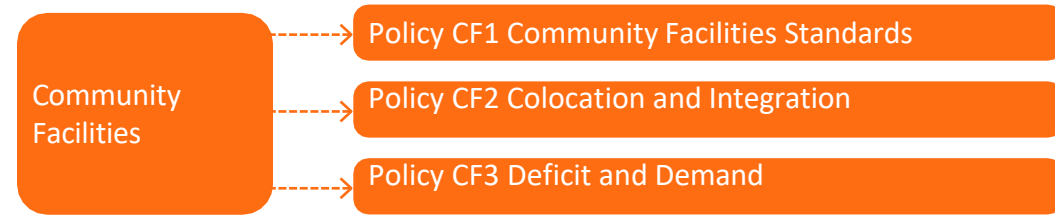


- KEY
- Thromde Boundary
 - Southern Extension Boundary
 - Neighbourhood Boundary
 - Study Area Boundary
- Centres Hierarchy
- City Centre
 - Sub-district Centre
 - Neighbourhood Centre
 - Local Centre
- Residential Areas
- Residential Urban
 - Residential Suburban
 - Residential Rural
- Other Land Uses
- Traditional Village
 - Mixed Use
- Water System
- River

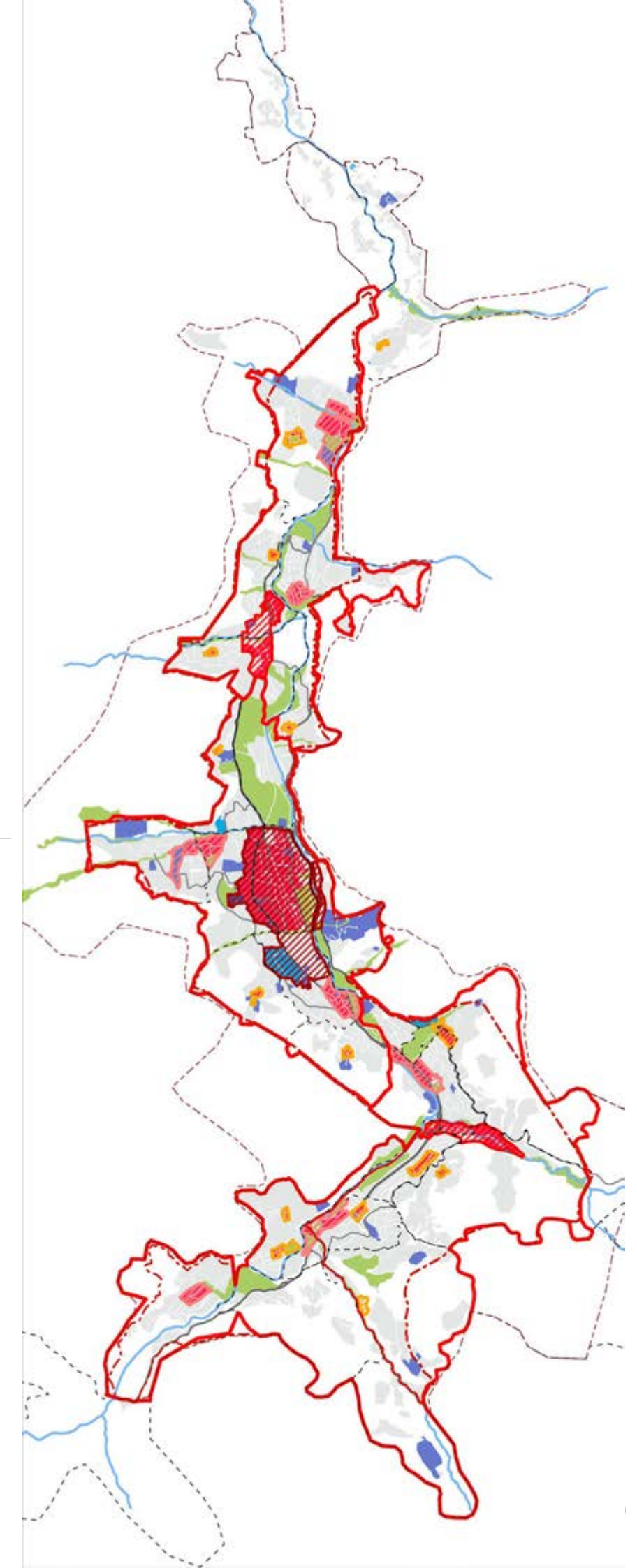


Community Facilities

Rev1 Draft

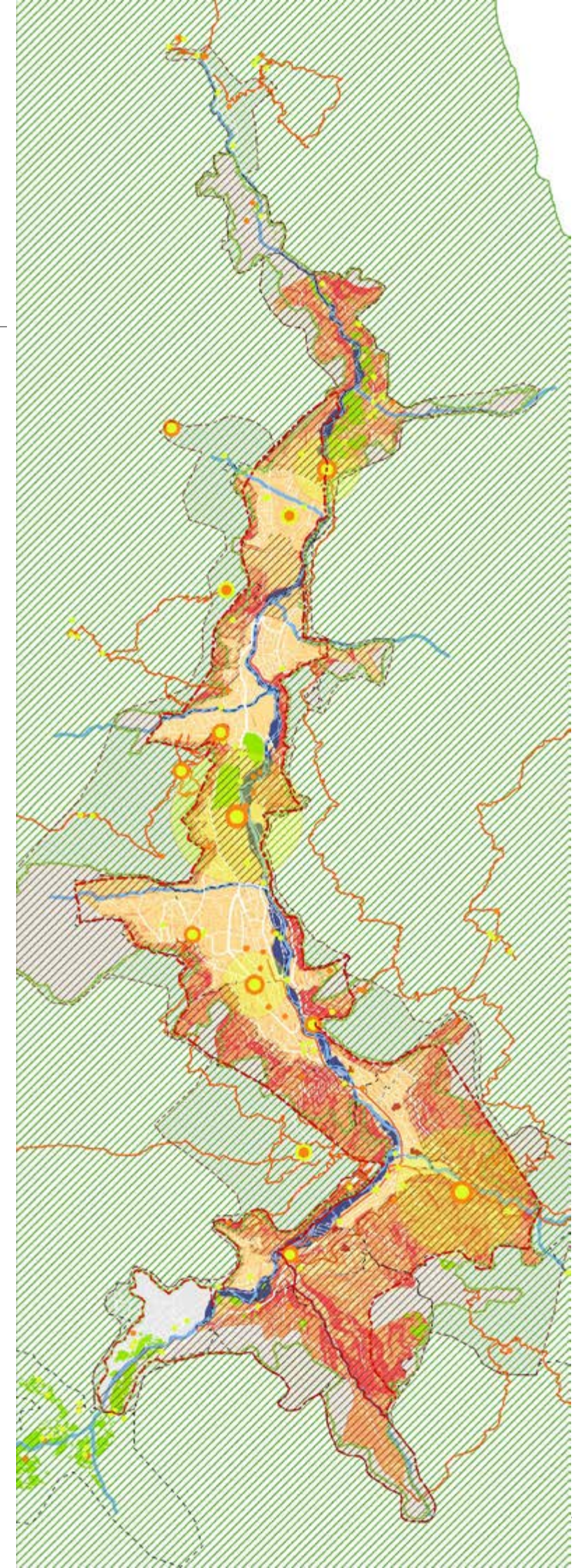
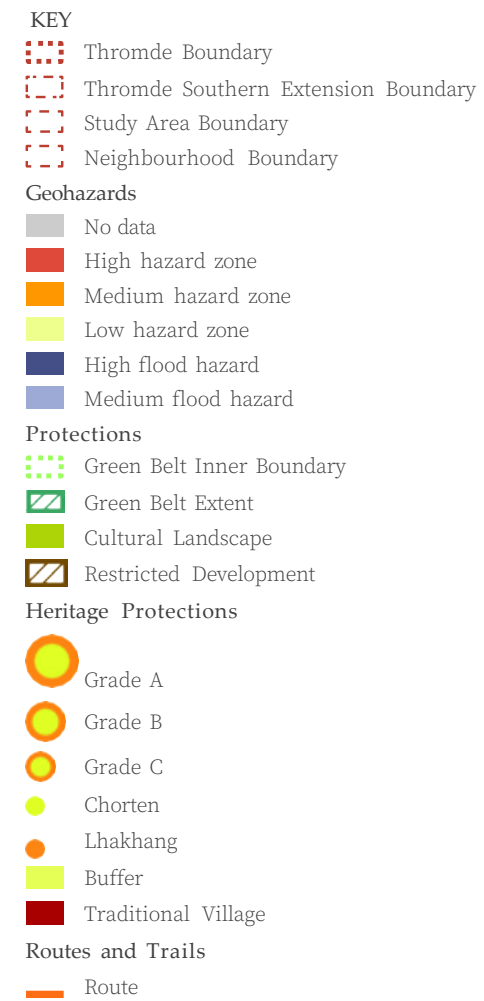
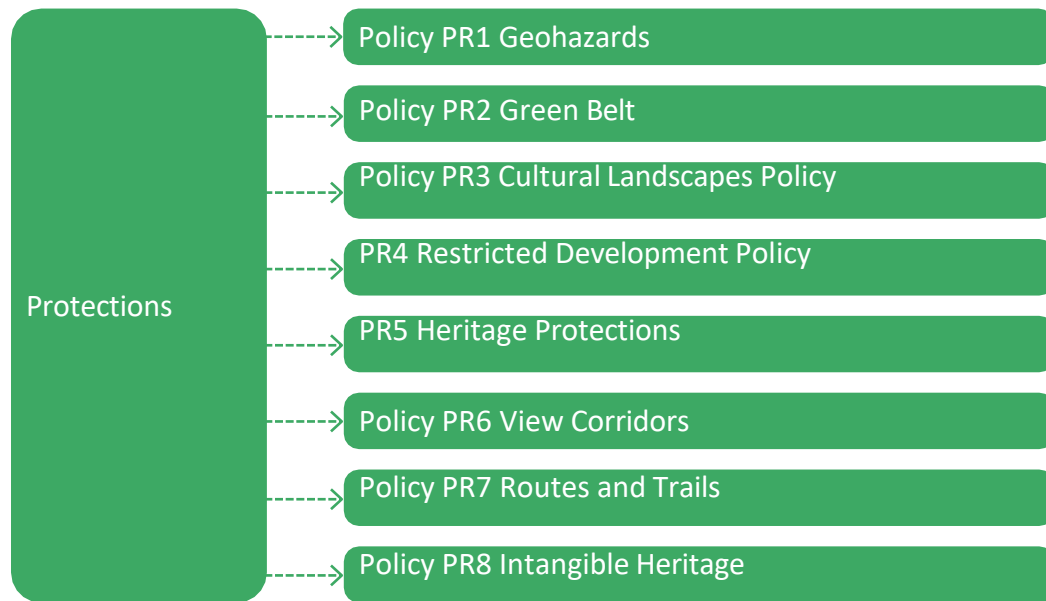


- KEY
- Thromde Boundary
 - Southern Extension Boundary
 - Sub District Boundary
 - Neighbourhood Boundary
 - Study Area Boundary
 - Development Areas
 - River
- Centres Hierarchy
- City Centre
 - Sub-district Centre
 - Neighbourhood Centre
 - Local Centre
- Land Use
- Community Facility
 - Mixed Use
 - Education
 - Healthcare
 - Green Space



Protections

Rev1 Draft



Green Infrastructure

Rev1 Draft

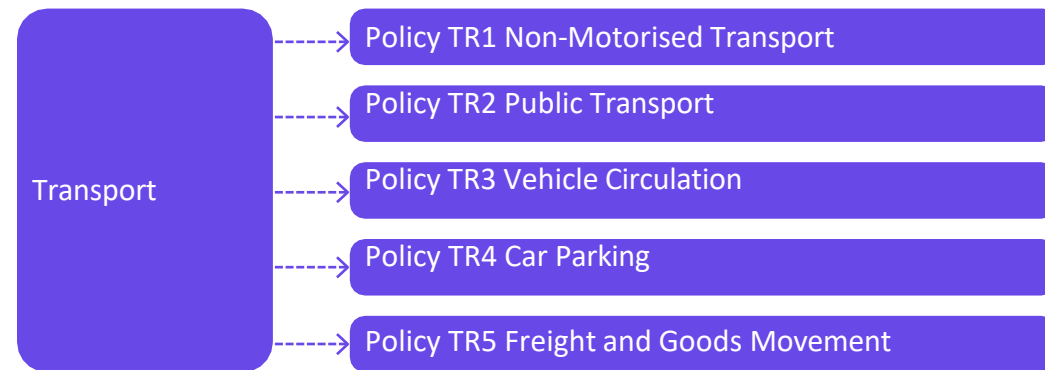


- KEY
- Protections**
- TSP Study Boundary
 - Thromde Boundary
 - Neighbourhood Boundary
 - Inner Green Belt Boundary
- Wang Chhu River Corridor**
- River Walk
 - Wang Chhu River Corridor
- Biodiversity and Nature in the City**
- Forest Pockets
 - Local Nature Reserve
 - Riparian Corridor
- Open Space**
- Regional Park
 - Metropolitan Park
 - City Park
 - Wang Chhu River Corridor
 - Tashicho Dzong Royal Gardens
 - Cultural Landscape
 - Neighbourhood Park
 - Public square
 - Private landscape
- Green Corridor**
- Green Stream
 - River Walk
 - Urban Corridor
 - Trail
 - Valley park
- Water System**
- River
 - Stream



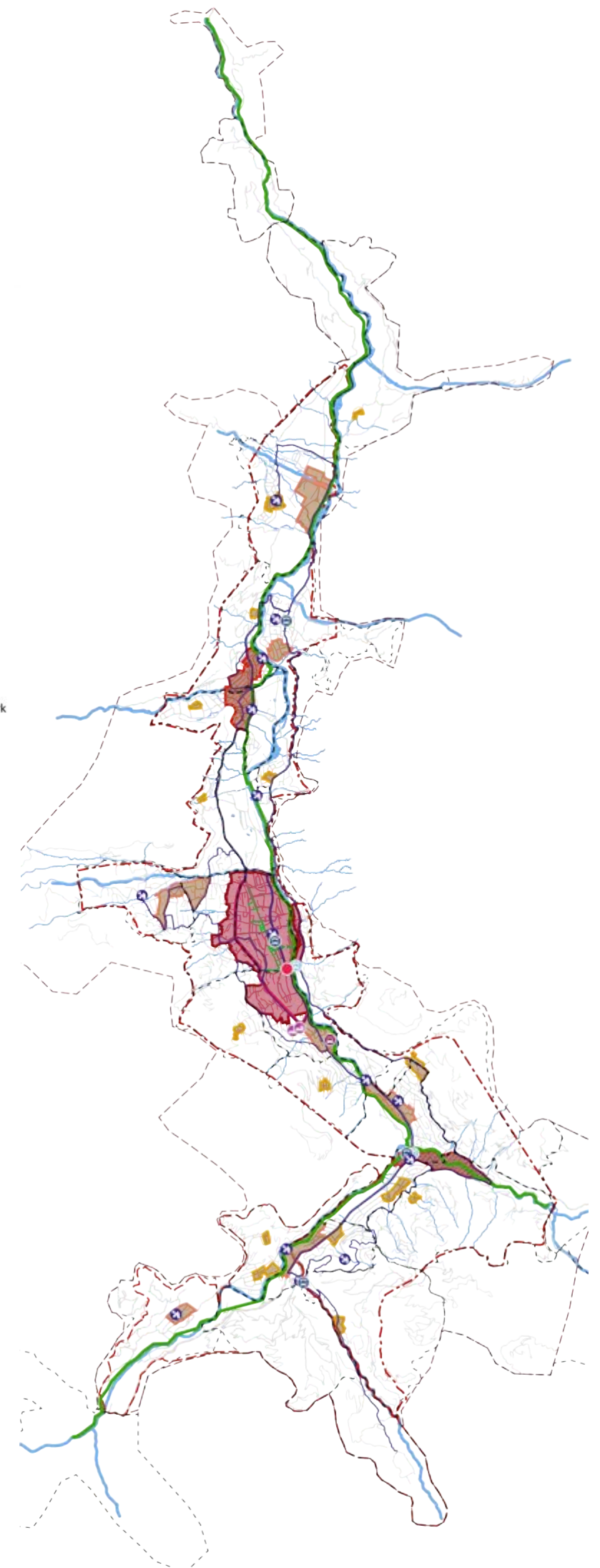
Transport

Rev1 Draft



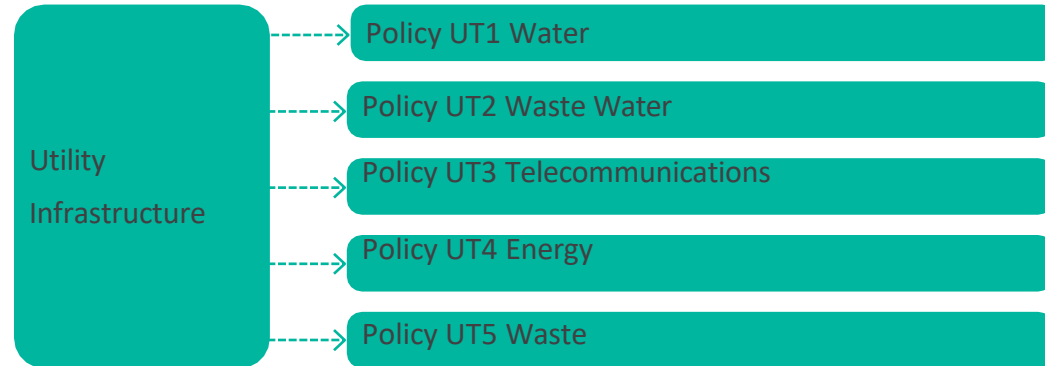
Legend

- Thromde Boundary
- Thromde Southern Extension Boundary
- Neighbourhood Boundary
- Study Area Boundary
- Centres Hierarchy**
 - City Centre
 - Local Centre
 - Neighbourhood Centre
 - Sub-District Centre
- Water System**
 - River
 - Stream
- Transport**
 - New pedestrian route Clock Tower - Centenary Park
 - Pedestrian Improvements East-West Laneways
 - Mobility improvements in Norzin Lam
 - NMT improvements Memorial Chorten - Lungten Zampa Bridge
 - Greenway
 - Reallocating parking bays towards mobility hubs at Changzamtog Park
 - Review of parking tariffs
 - Doebum Lam key route
 - Norzin Lam / Lungten Zampa Bridge junction improvements
 - Future Bus Network
 - City Bus Station
 - Regional Bus Station
 - Mobility Hub
 - Establish parcel lockers
 - Establish post offices
 - Relocate sawmills to more peripheral locations
 - Establish a distribution/logistics hub
- Future Road Network**
 - Primary
 - Secondary
 - Tertiary
 - Pedestrianised
 - Access



Utility Infrastructure

Rev1 Draft



Legend

Proposed Utility Corridor

- Option A
- Option B
- Shared Route

Energy

- Electricity Substations
- Electricity Lines

Telecoms

- Existing Poles
- Existing Fibre

Waste

- Waste Drop Off Center
- Material Recovery Facility

Water

- Water Treatment Plants
- Storage Reservoirs
- Raw Water Mains
- Supply Mains

Wastewater

- Wastewater Treatment Plant
- Sewer Trunk Mains

Stormwater

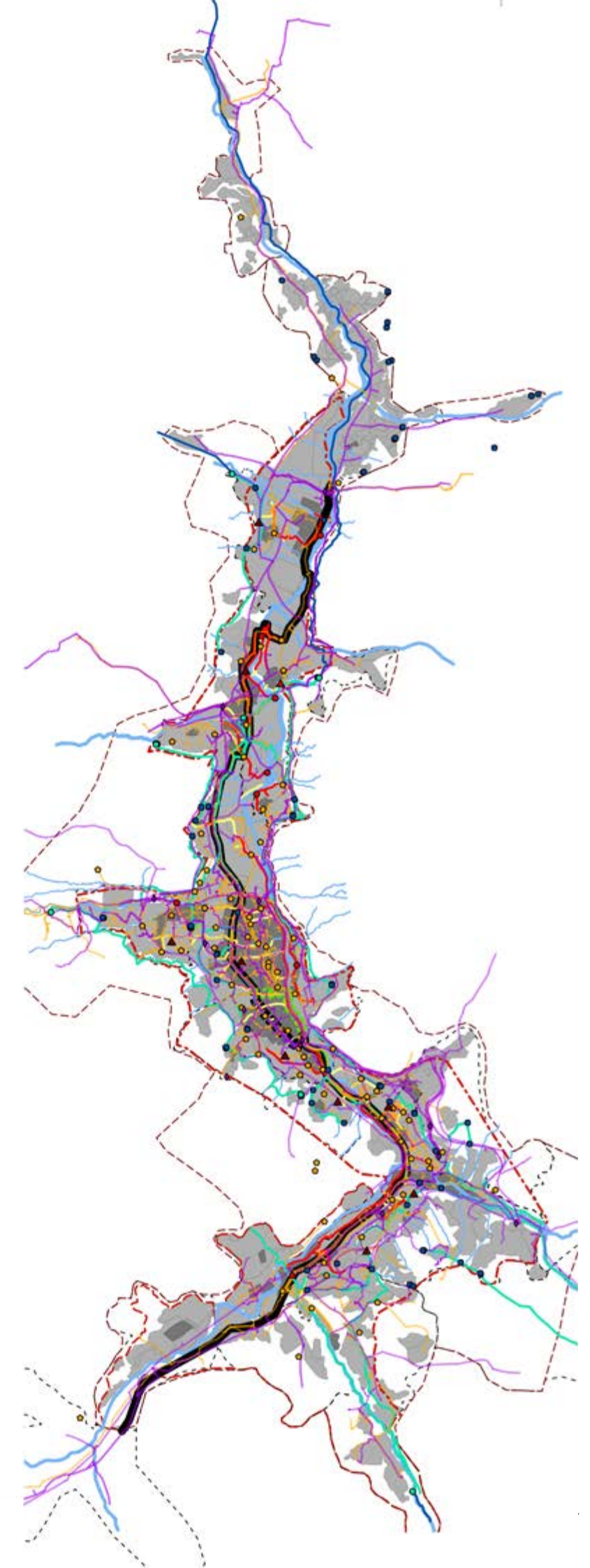
- Stormwater Drains
- Water Bodies

Boundaries

- TSP Study Boundary
- Thimphu Southern Extension
- Thimphu Thromde
- Thimphu Neighbourhoods
- Thimphu Dzonghagk

TSP

- TSP Centres
- TSP Zones



Land Use

Land Use

Rev1 Draft

POLICY US1

Approve development that aligns with the designated land use zoning as illustrated in Figure 5.8.

Land use designations cover the areas within:

- Thimphu Thromde boundary
- Thimphu Thromde southern extension boundary
- Dotanang, Begana and Changtagang neighbourhoods outside Thimphu Thromde

Land Use zoning is defined in accordance with the following categories as described under this policy:

- Centres
- Residential Uses
- Community Facilities
- Mixed use
- Workplace
- Retail
- Hospitality
- Culture
- Royal Estate
- Industry
- Transport and Utilities
- Open Space

KEY

- Thromde Boundary
- Southern Extension Boundary
- Neighbourhood Boundary
- Project Area Boundary

Centres Hierarchy

- City Centre
- Sub-district Centre
- Neighbourhood Centre
- Local Centre
- Rural Local Centre

Residential Areas

- Residential Urban
- Residential Suburban
- Residential Rural

Community Facilities

- Community Facility
- Education
- Healthcare
- Religious

Other Land Uses

- Mixed Use
- Workplace
- Government
- Hospitality
- Culture
- Traditional Village
- Royal Estate
- Industrial

Green Infrastructure

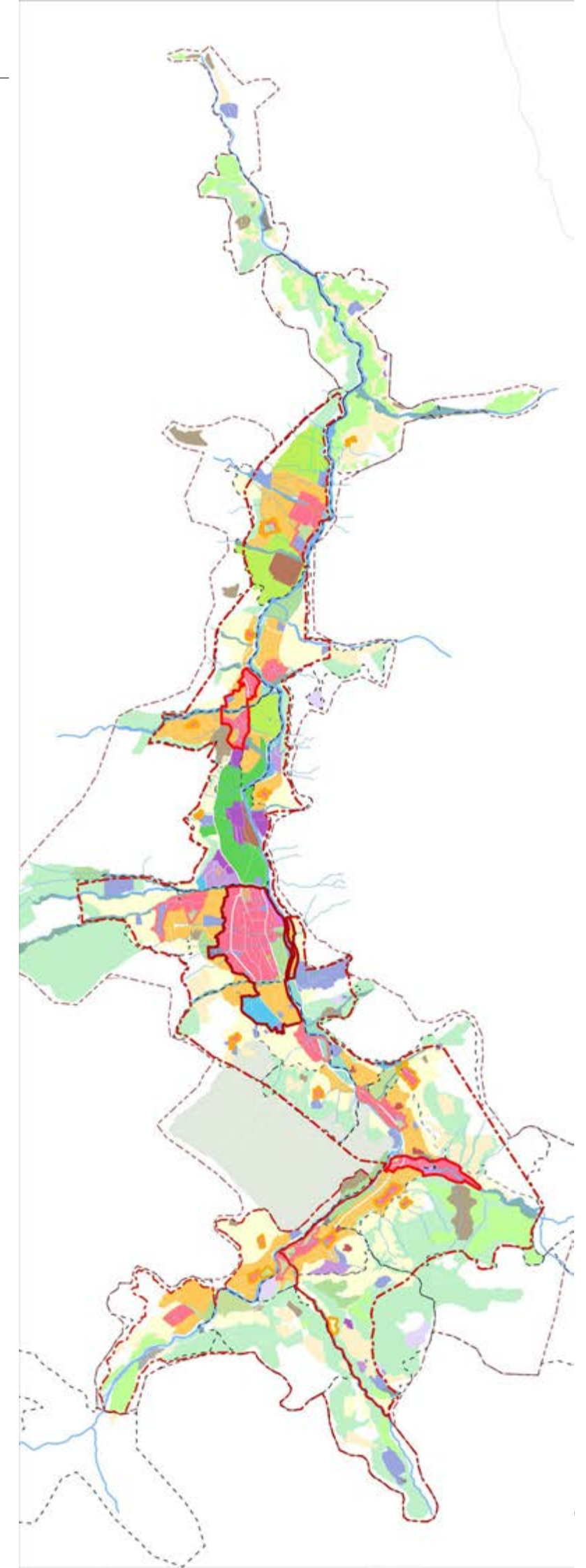
- Forest
- Agriculture
- Neighbourhood Park
- City Park
- Metropolitan Park
- Valley Park
- Regional Park
- Private Landscape
- Local Nature Reserve

Water System

- River
- Stream
- Riparian Corridor
- Wang Chhu River Corridor

Transport and Utilities

- Primary Road
- Secondary Road
- Tertiary Road
- Utilities



Centres Hierarchy

Rev1 Draft

POLICY US2

Ensure population and employment growth is aligned to a clear spatial structure defined by a hierarchy of centres and major transport corridors as illustrated in Figure 5.8.

The Centres Hierarchy is defined in accordance with the following categories as described under this policy:

- City Centre
- Sub-district Centre
- Neighbourhood Centre
- Local Centre
- Rural Local Centre

THIMPHU CENTRES HIERARCHY

City centre

Residential catchment: over 150,000 people
Catchment radius: over 5,000m
Function: Most intensive mixed use activity centre, specialising as the Capital City Centre. Attracts highest employment and workplace growth.

Accessibility: public transport

Sub-District centre

Residential catchment: up to 50,000 people
Catchment radius: 2 - 3,000m
Function: Specialised mixed use activity centres with distinct identities.

Accessibility: public transport

Neighbourhood centre

Residential catchment: 5 - 15,000 people
Catchment radius: 900m
Function: Mixed use activity centre serving local needs. Accommodates neighbourhood retail and community facilities.

Accessibility: walking and cycling, short public transport journey

Local centre

Residential catchment: 2 - 5,000 people
Catchment radius: 400m
Function: Mixed use activity centre. Accommodates local community facilities and small local retail.

Accessibility: walking and cycling

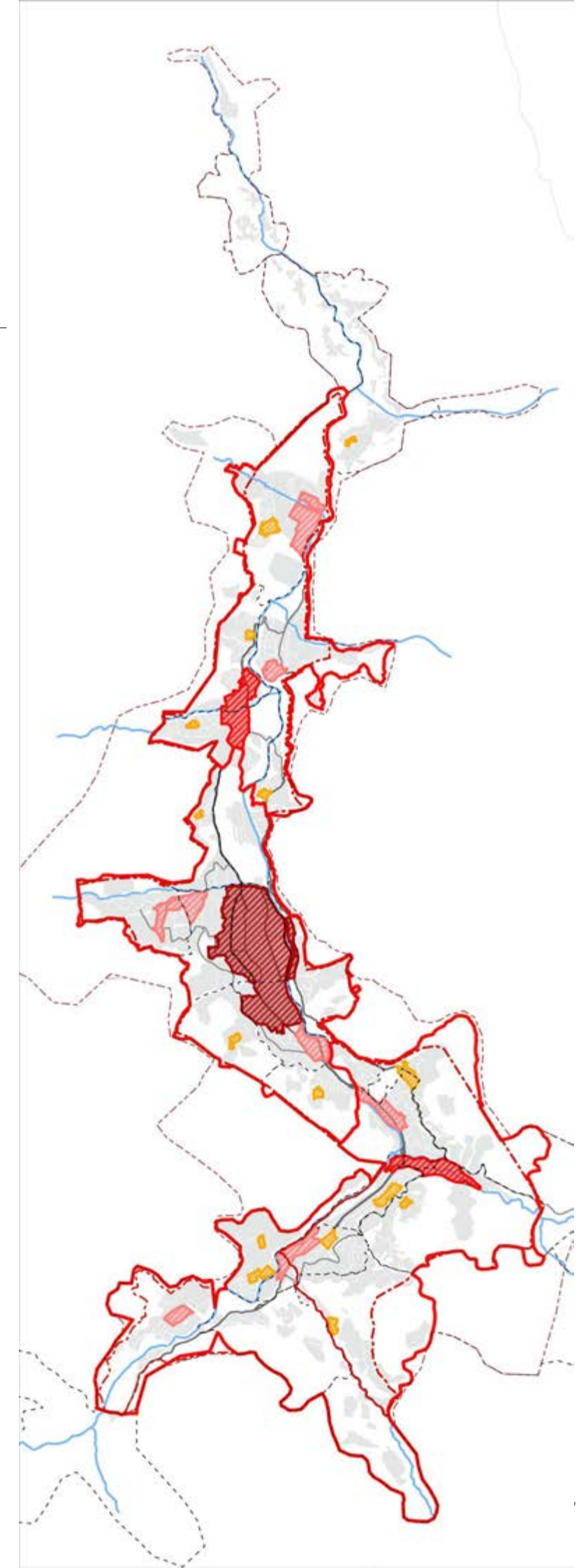
Rural Local centre

Residential catchment: up to 2,000 people
Catchment radius: 900m
Function: Mixed use activity centre serving specialised rural local needs.

Accessibility: walking and cycling

KEY

- Thromde Boundary
 - Southern Extension Boundary
 - Sub District Boundary
 - Neighbourhood Boundary
 - Project Area Boundary
 - Development Areas
 - River
- ### Centres Hierarchy
- City Centre
 - Sub-district Centre
 - Neighbourhood Centre
 - Local Centre
 - Rural Local Centre



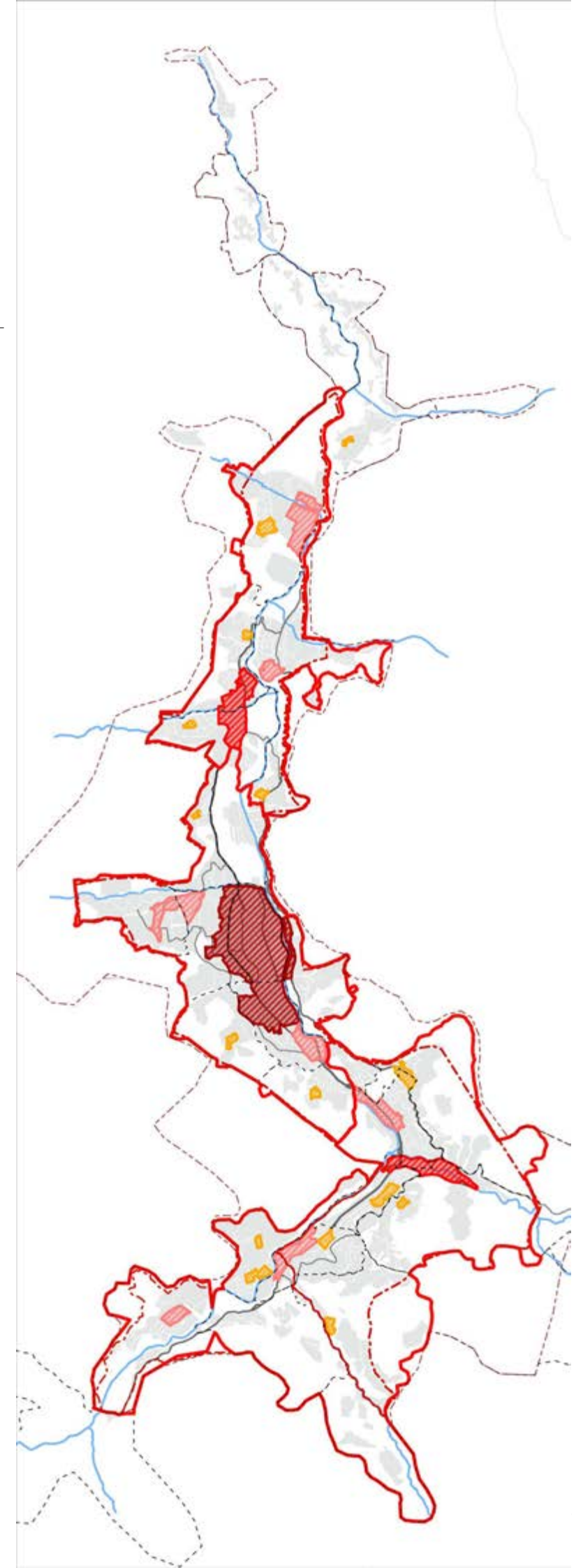
Centres Hierarchy

Rev1 Draft

Table 4 Thimphu Centres Hierarchy

Sub-districts	Neighbourhoods	Rural Local Centre	Local Centre	Neighbourhood Centre	Sub-district Centre	City Centre
	Dotanang					
	Begana					
	Changtagang	1				
	Kabesa	1				
Northern Thimphu	Dechencholing N1		2	1		
	Taba N2		2	1		
	Jungshina N3		2	1	1	
	Langjophaka N4		1	-		
	Hejo-Samteling N5		2	1		
Thimphu City Core	Dzong Precinct N6		-	-		
	Motithang N7		1	1		
	Zilukha N8		1	-		
	Changanakha N9		4	1		
	City Core N10		3	1	2	
	Changgidaphu N11		1	-		
	Changzamtog N12		5	2		
	Changbangdu N13		1	1		
	Yangchenphug N14		1	-		1
	Changijji N15		1	1		
Southern Thimphu	Simtokha N16		1	-		
	Lungtenphu N17		1	1		
	Olakha N18		3	1		
	Tshalumarphy N19		2	1		
	Babesa N20		2	1	1	
	Serbithang N21		1	-		
	Rama N22		3	1		
	Gangchey N23		-	-		
	Depsi N24		2	1		
	Ngabiphu N25					
Thimphu Thromde Total		0	42	17	4	1
Project Area Total		2	42	17	4	1

- KEY**
- Thromde Boundary
 - Southern Extension Boundary
 - Sub District Boundary
 - Neighbourhood Boundary
 - Project Area Boundary
 - Development Areas
 - River
- Centres Hierarchy**
- City Centre
 - Sub-district Centre
 - Neighbourhood Centre
 - Local Centre
 - Rural Local Centre



Population Distribution

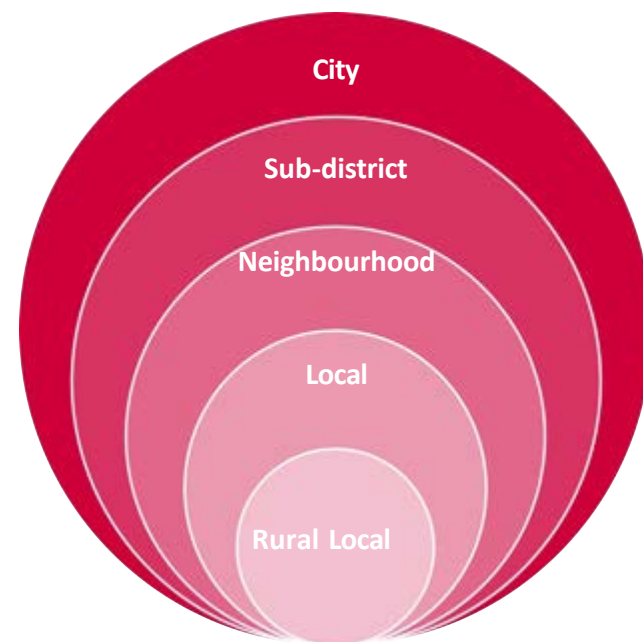
Rev1 Draft

POLICY US2

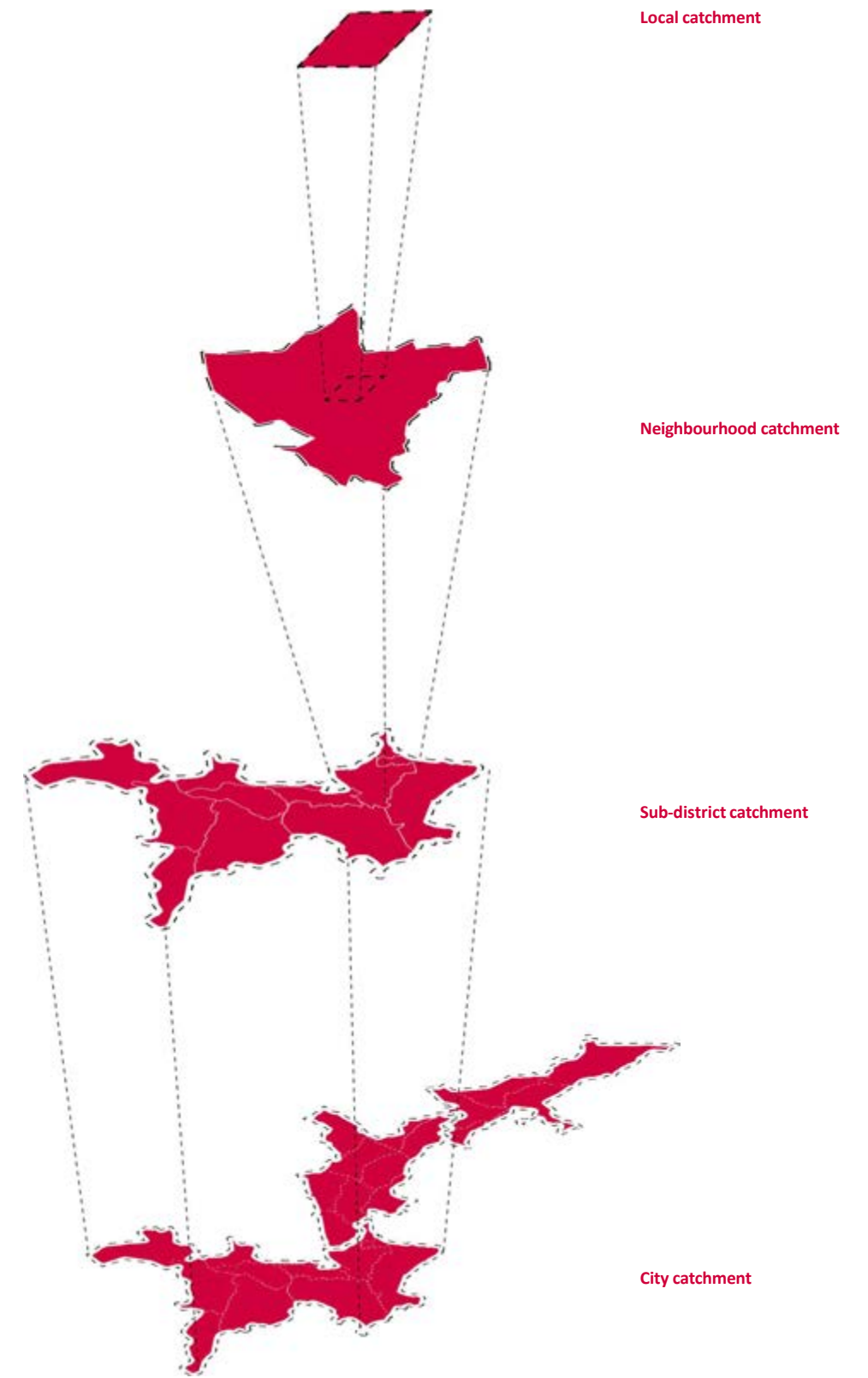
Distribute and limit population growth as per the maximum population capacity illustrated in Figure 5.18 and listed in Table 5.10.

The Population Distribution is defined in accordance with the following urban hierarchy catchments as described under this policy:

- City catchment area
- Sub-district catchment area
- Neighbourhood catchment area
- Local catchment area
- Rural local catchment area



URBAN HIERARCHY CONCEPT



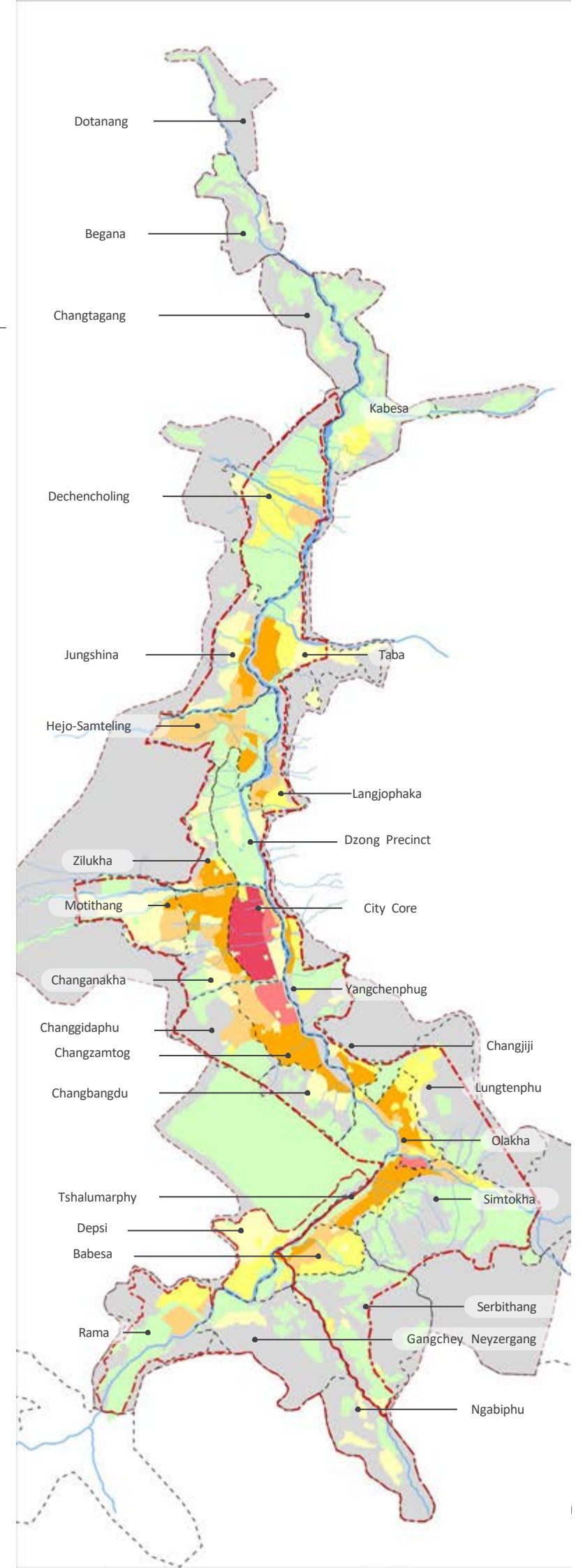
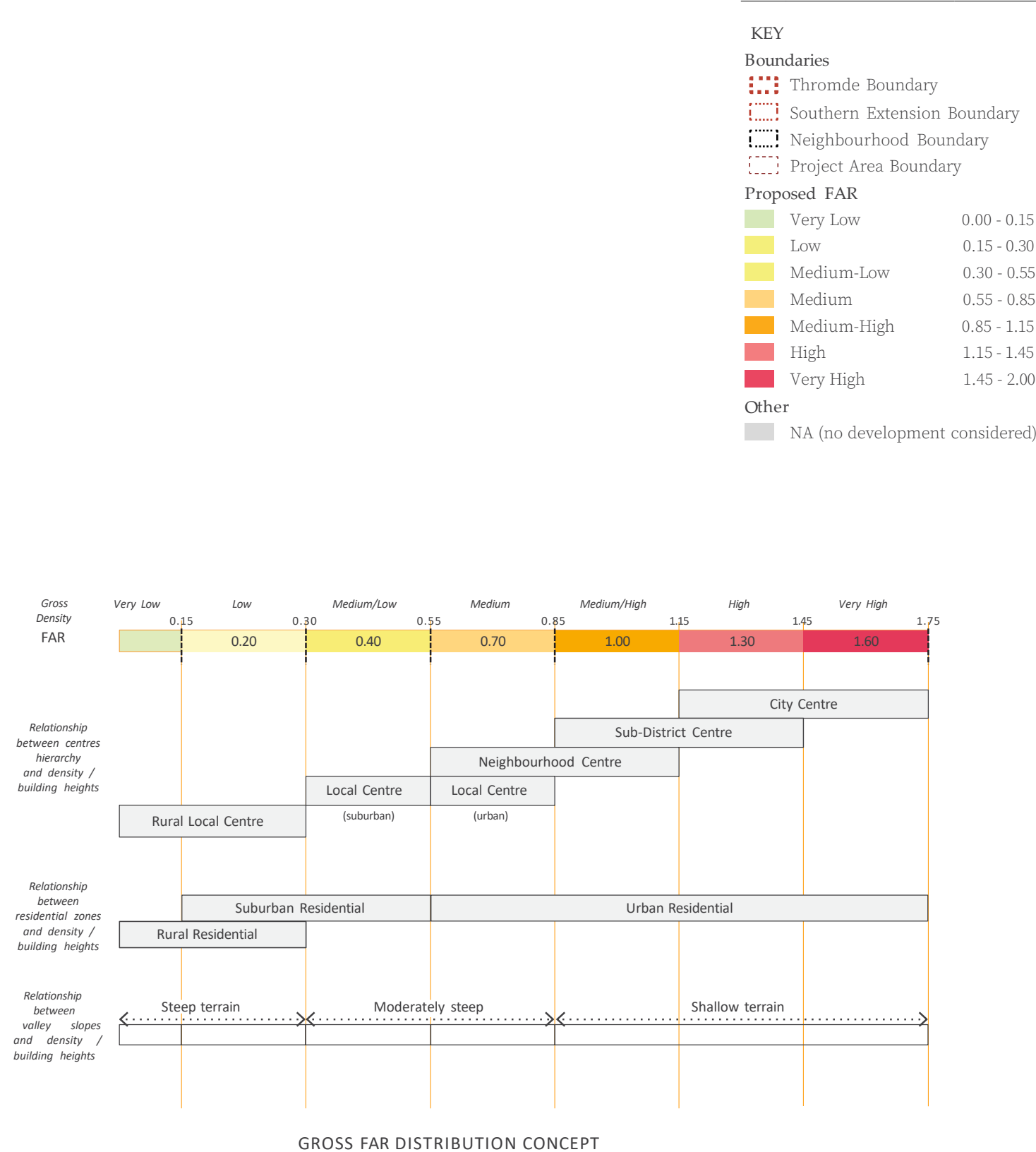
THIMPHU URBAN HIERARCHIES

Density

Rev1 Draft

POLICY US3

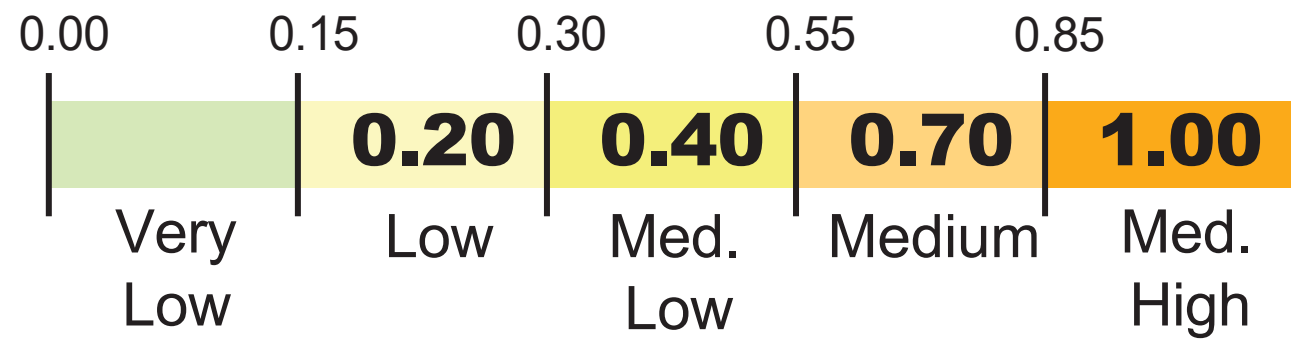
Implement density controls in accordance with the maximum Floor Area Ratio (FAR) limits illustrated in Figure 5.20 and the principles defined under this policy.



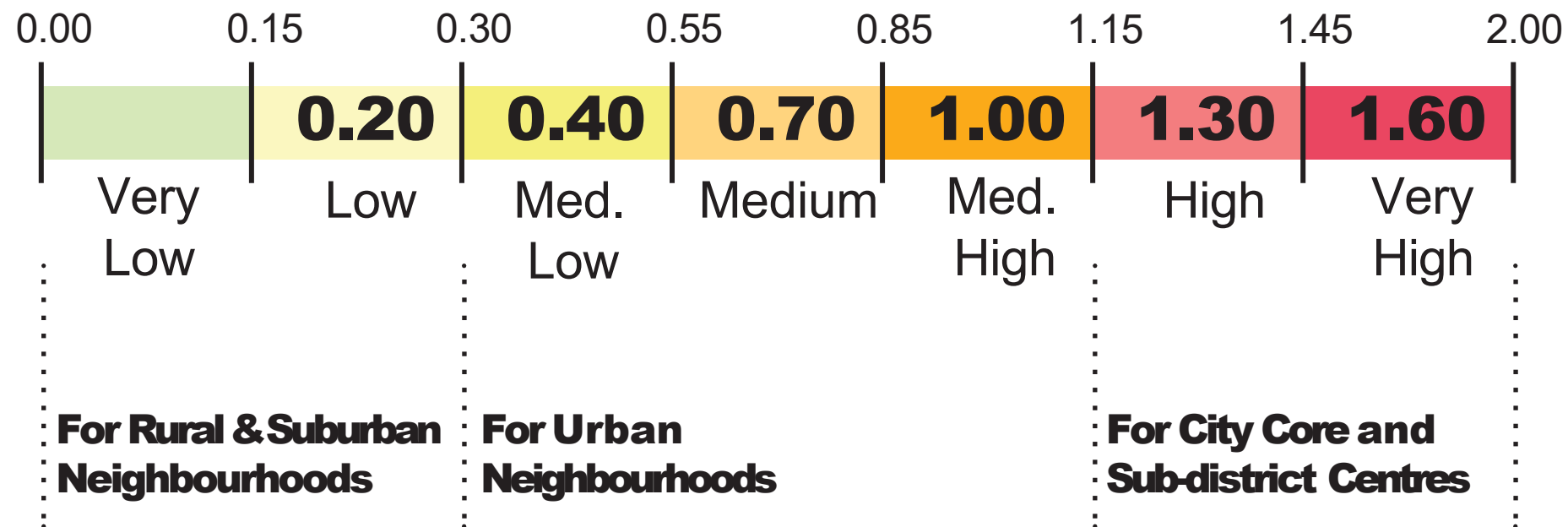
A New Density for Thimphu

Existing and Proposed Density Ranges

Existing - Gross FAR ranges



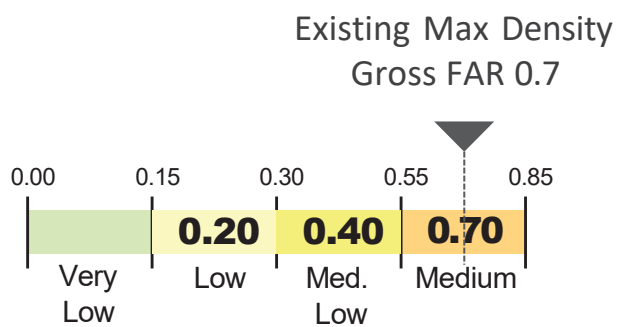
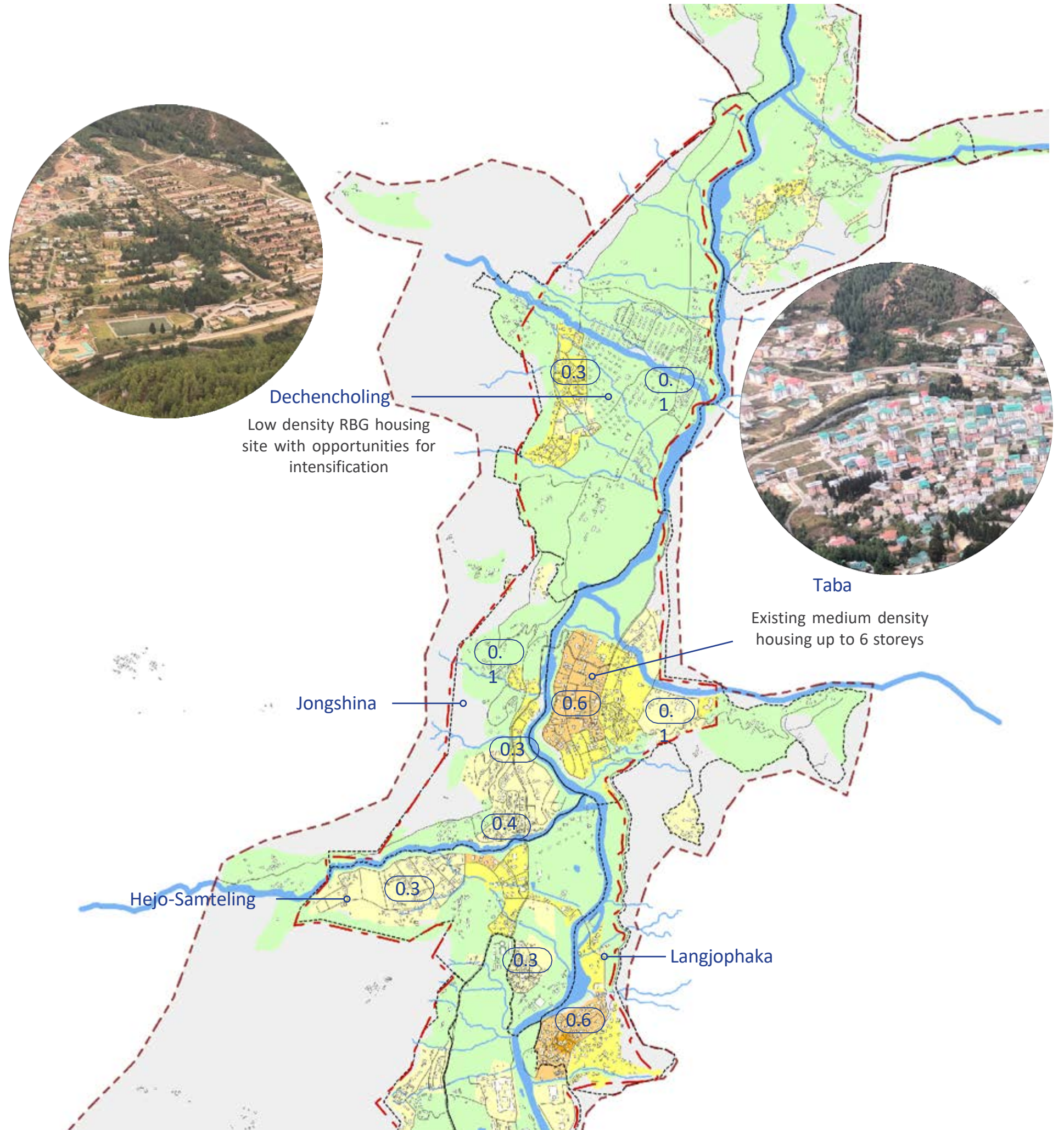
Proposed - Gross FAR ranges



Density - Existing

Northern Thimphu

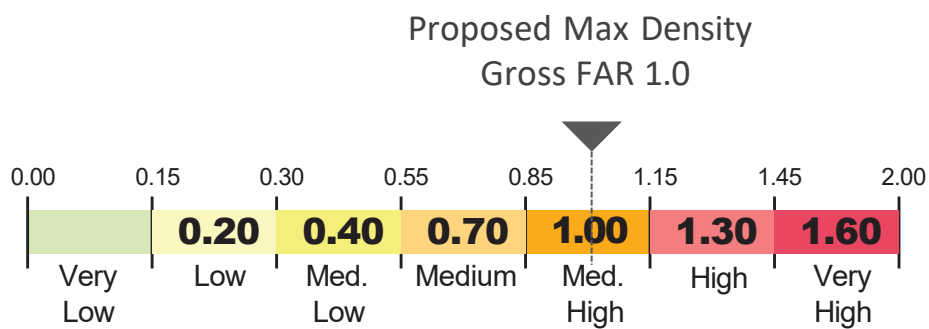
- Generally densities are between 0.2 to 0.6 across Northern Thimphu.
- Lower densities towards the north of the city: 0.1 FAR at RBG and 0.3 FAR at Dechencholing.
- Highest density in Northern Thimphu at Taba and Langjophaka, with clusters up to 0.6 FAR.



Density - Proposed

Northern Thimphu

- Opportunity for higher densities of up to 1.0 FAR at Hejo-Samteling, to form critical density around a northern focus (or Sub-district centre).
- Major opportunity at Dechencholing to increase densities from 0.2 to 0.4 FAR generally.
- Dechencholing still holding lower densities, creating a transition from more urban areas to the northern rural areas.
- Density at 'Upper' neighbourhoods are kept at existing densities.



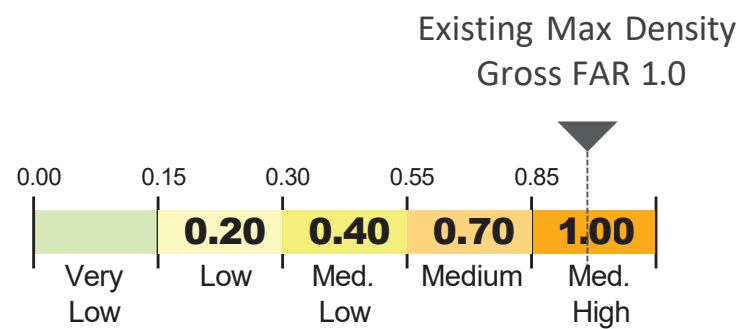
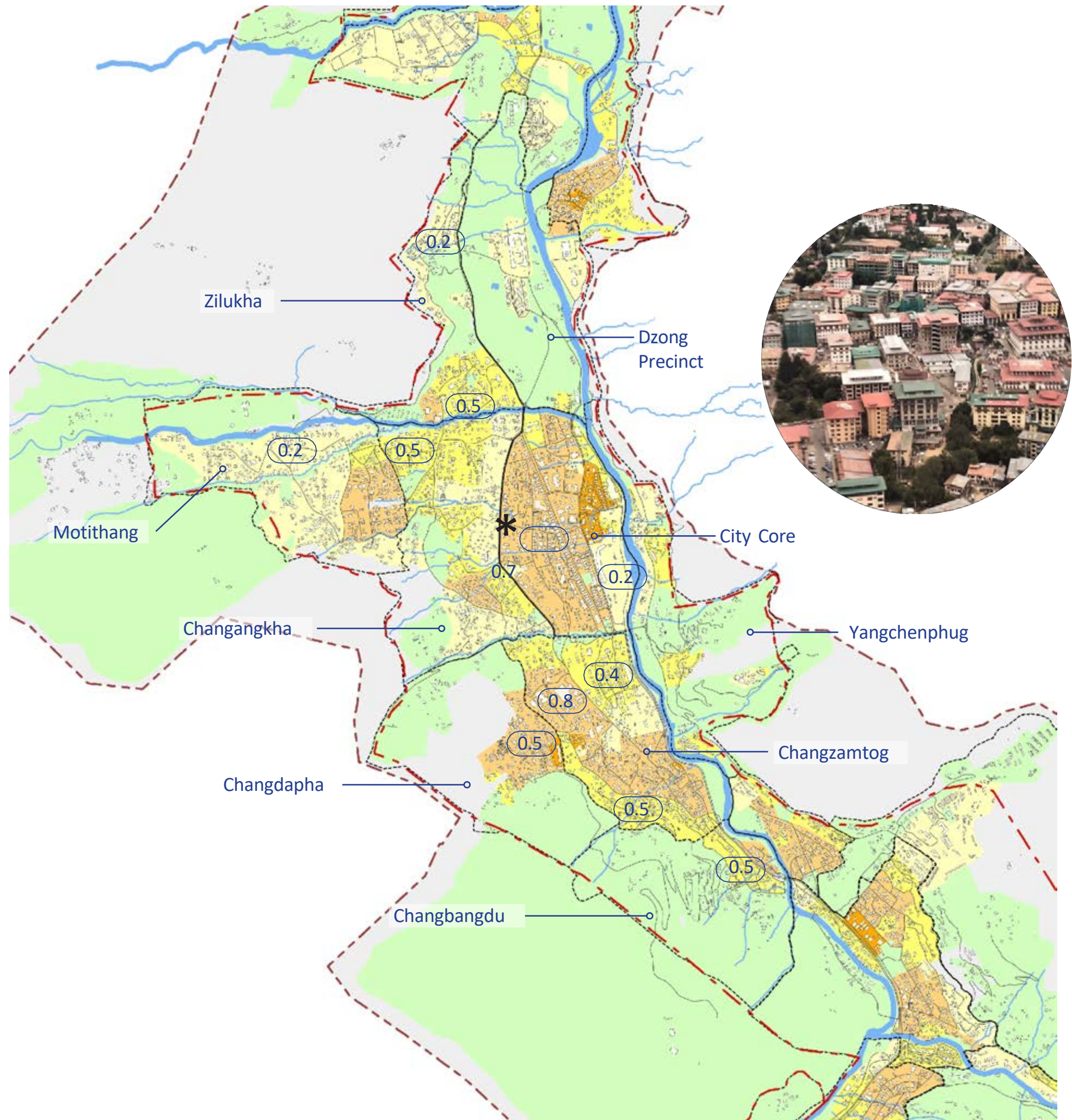
Dechencholing
Suburban family housing integrating off-street car parking strategies

Taba
Infill development framing streets and shared spaces can create opportunities for additional homes

Density - Existing

Thimphu City Core

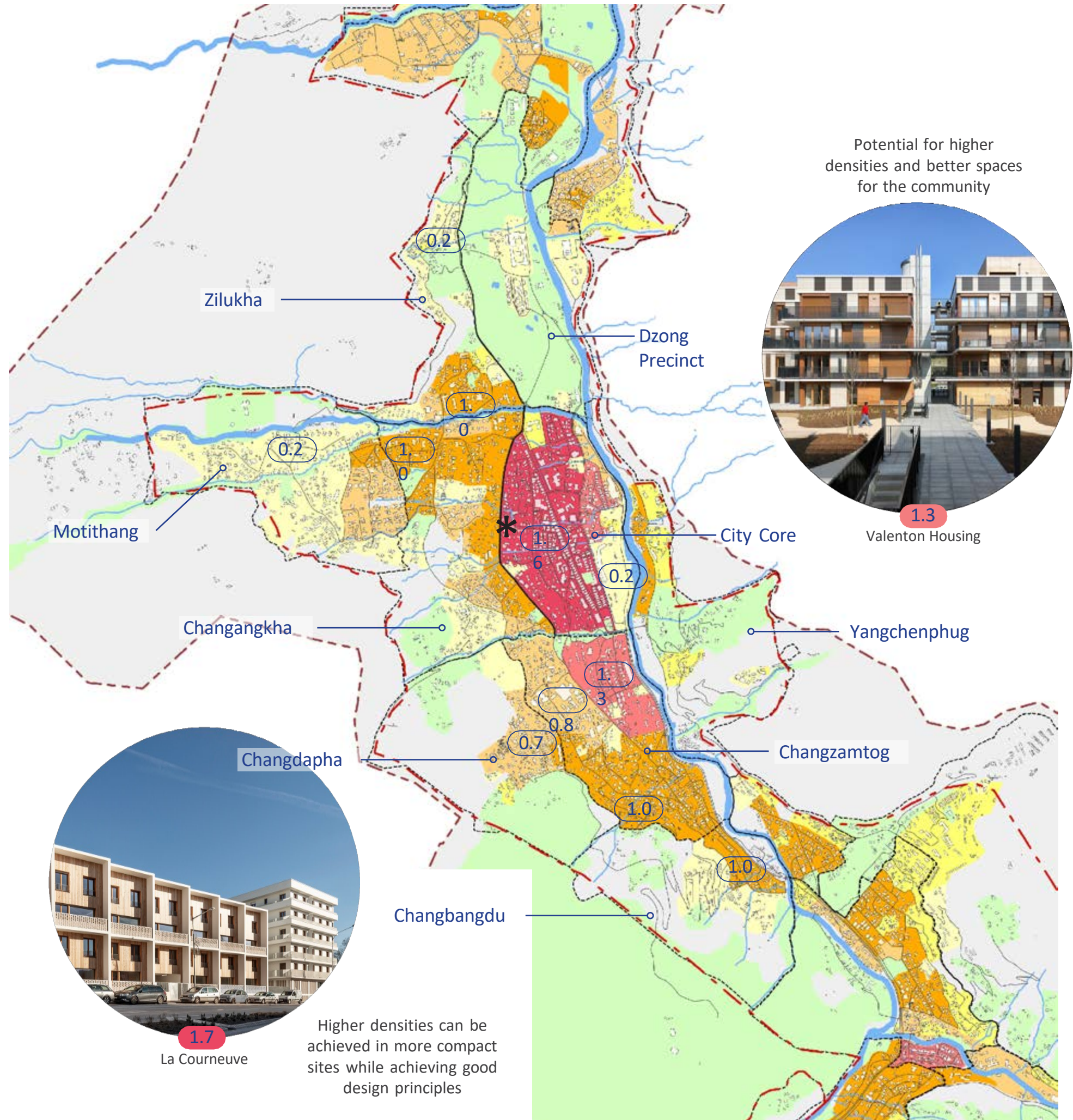
- Generally densities vary between 0.2 to 0.7 FAR - very similar to other parts of the city.
- Parts of the city core will have higher densities at 1.3 FAR. Kawajangsa has an urban density of 0.2 FAR.
- Greater densities at the City Core, reducing to 0.2 FAR at the western edges of the city.
- Parts of Chamzamtog have greater densities at 0.8 FAR.



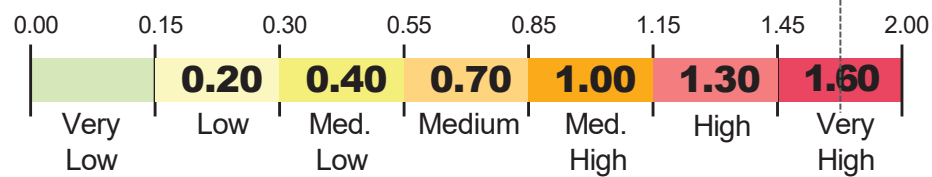
Density - Proposed

Thimphu City Core

- Opportunity through Strategic Sites for highest densities of up to 1.6 FAR at the city core (differentiation) and 1.3 FAR to the south (extending the city core).
- Opportunity to rationalise employment uses at Kawajangsa and achieve 1.0 FAR.
- Density transition can be formed to the west of the city core to lower densities in residential neighbourhoods.
- Density at 'Upper' neighbourhoods are kept at existing densities.



Proposed Max Density
Gross FAR 1.6



La Courneuve
1.7

Higher densities can be achieved in more compact sites while achieving good design principles

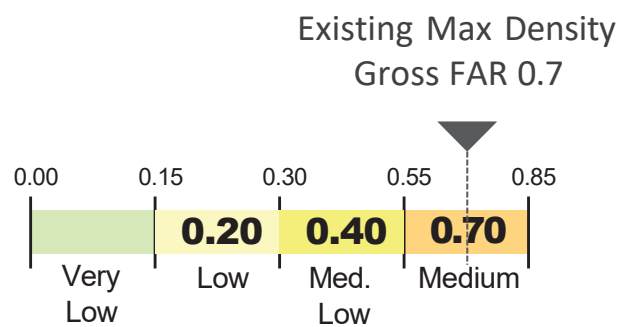
Potential for higher densities and better spaces for the community

Valenton Housing
1.3

Density - Existing

Southern Thimphu

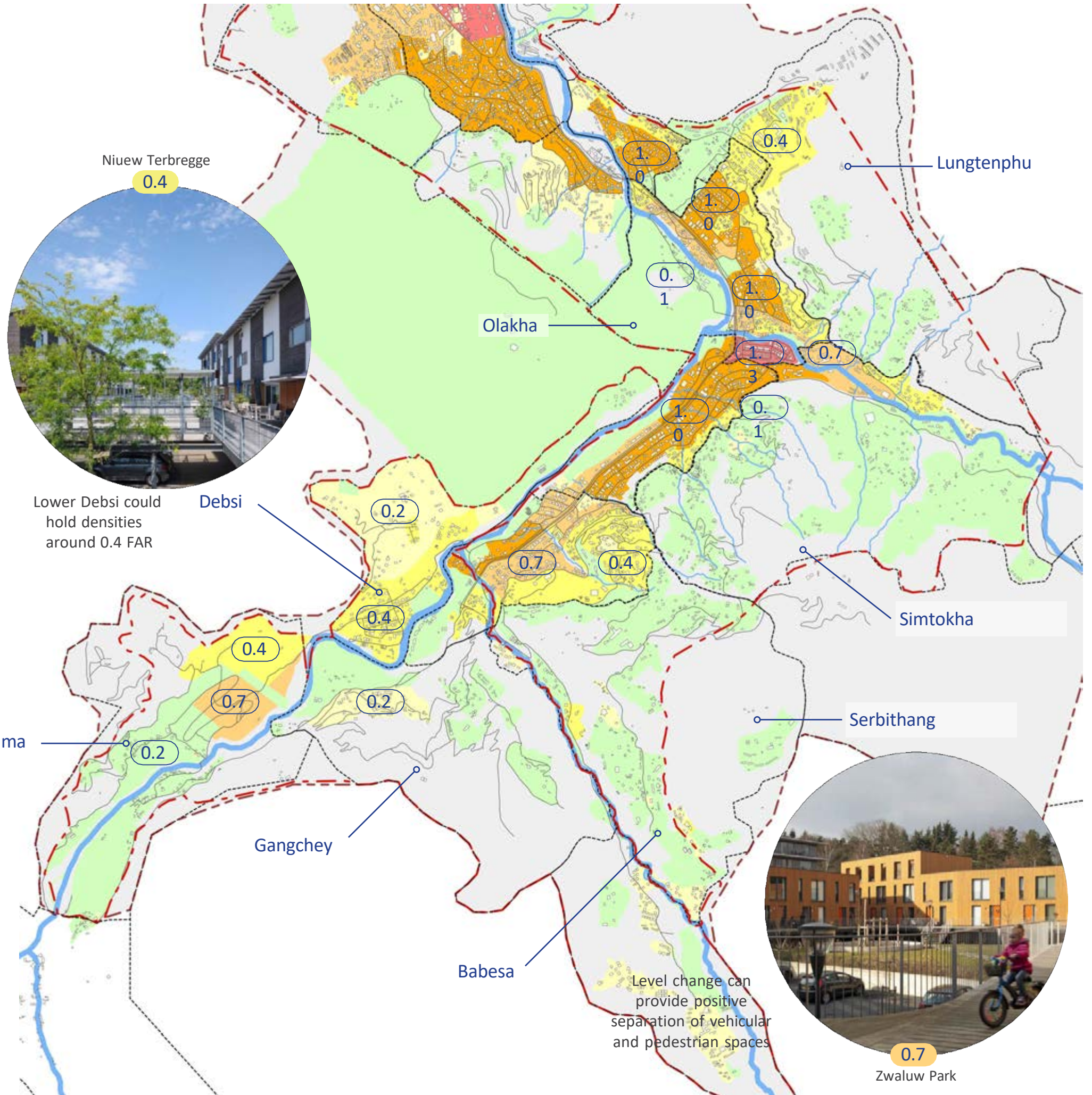
- Generally densities are between 0.2 and 0.8 FAR across Southern Thimphu (very similar to Northern Thimphu).
- Lower densities towards the south of the city - 0.2 FAR at Gangchey and Debsi.
- Highest density in Southern Thimphu at Babesa and Olakha, with clusters between 0.6-0.8 FAR.
- Southern Thimphu marginally denser than Northern Thimphu.



Density - Proposed

Southern Thimphu

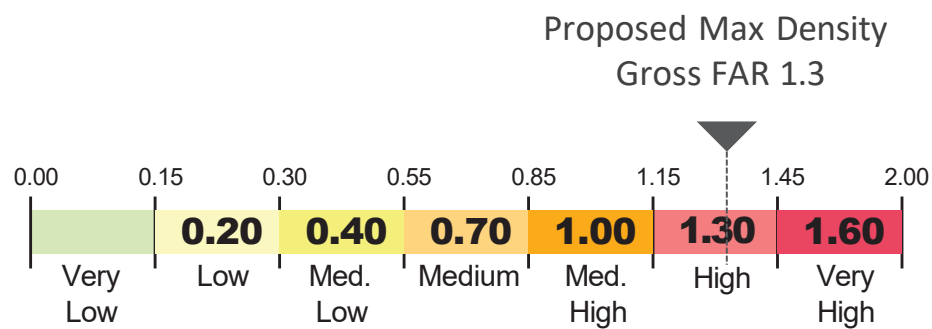
- Opportunity for higher densities of up to 1.3 FAR at Olakha, to form critical density around a southern focus (or Sub-district centre).
- Major opportunity at Rama for a southern extension at 0.7 FAR, transitioning to lower densities at the edge of the city.
- Density at 'Upper' neighbourhoods are generally kept at existing densities.



Lower Debsi could hold densities around 0.4 FAR



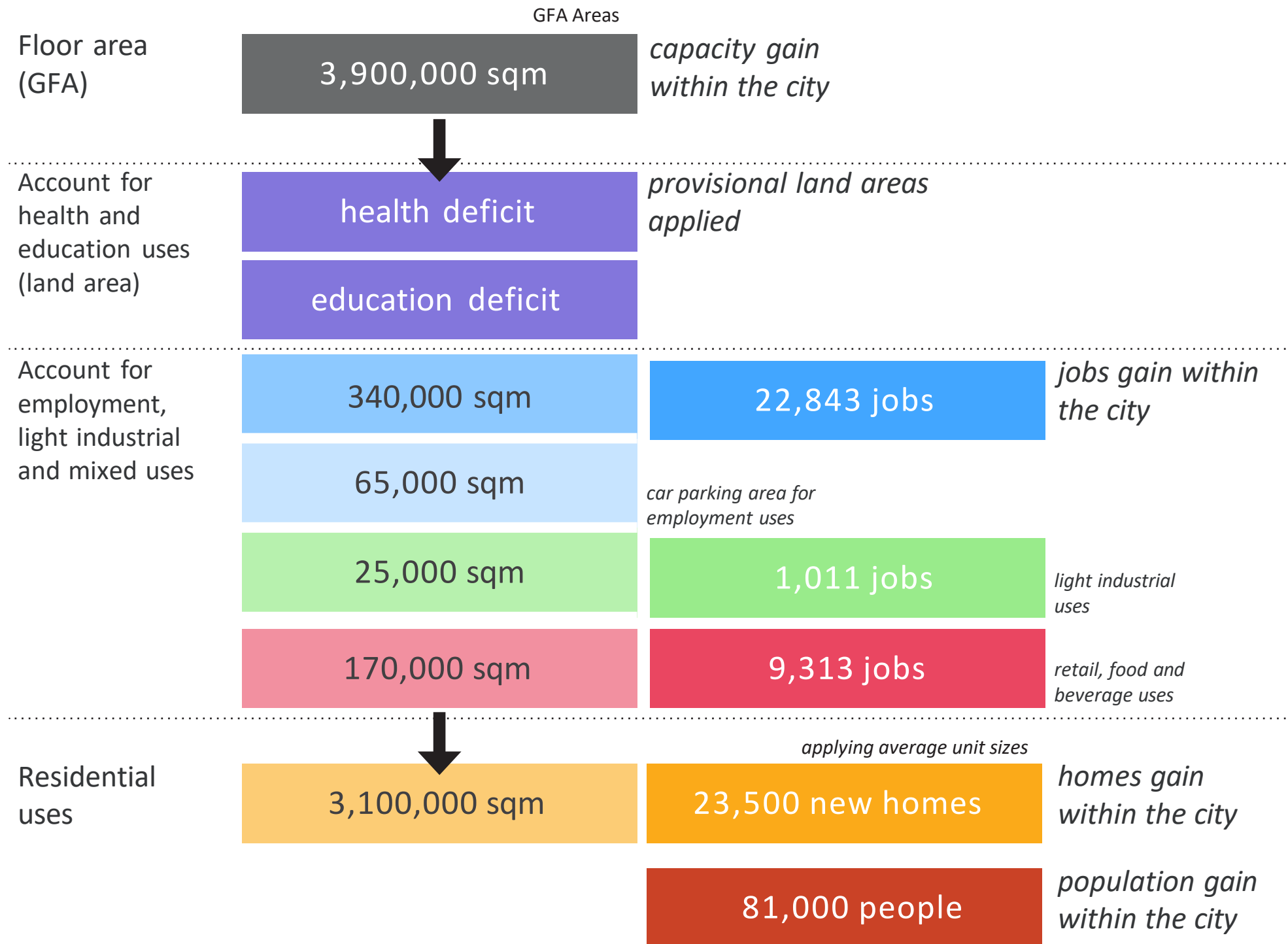
Level change can provide positive separation of vehicular and pedestrian spaces



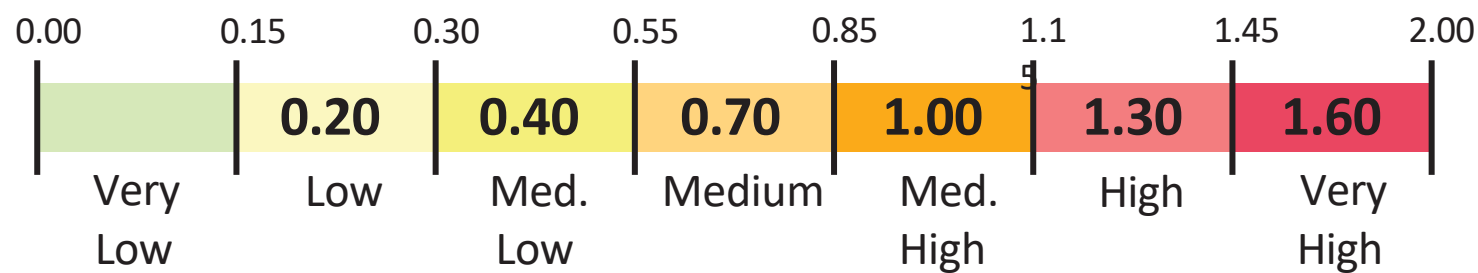
Capacity

Potential Capacity within the City

- Increasing densities mean that additional capacity can be found across the city.
- Density increase through utilising the Strategic Sites and other opportunity sites across the city e.g. Olakha workshops.
- Density increase over time through building to higher densities - DCR Review.
- Achieving a Compact City and 'Good Growth in the Right Places'



Proposed - Gross FAR ranges



**Initial areas and amounts - under ongoing review*

Building Heights

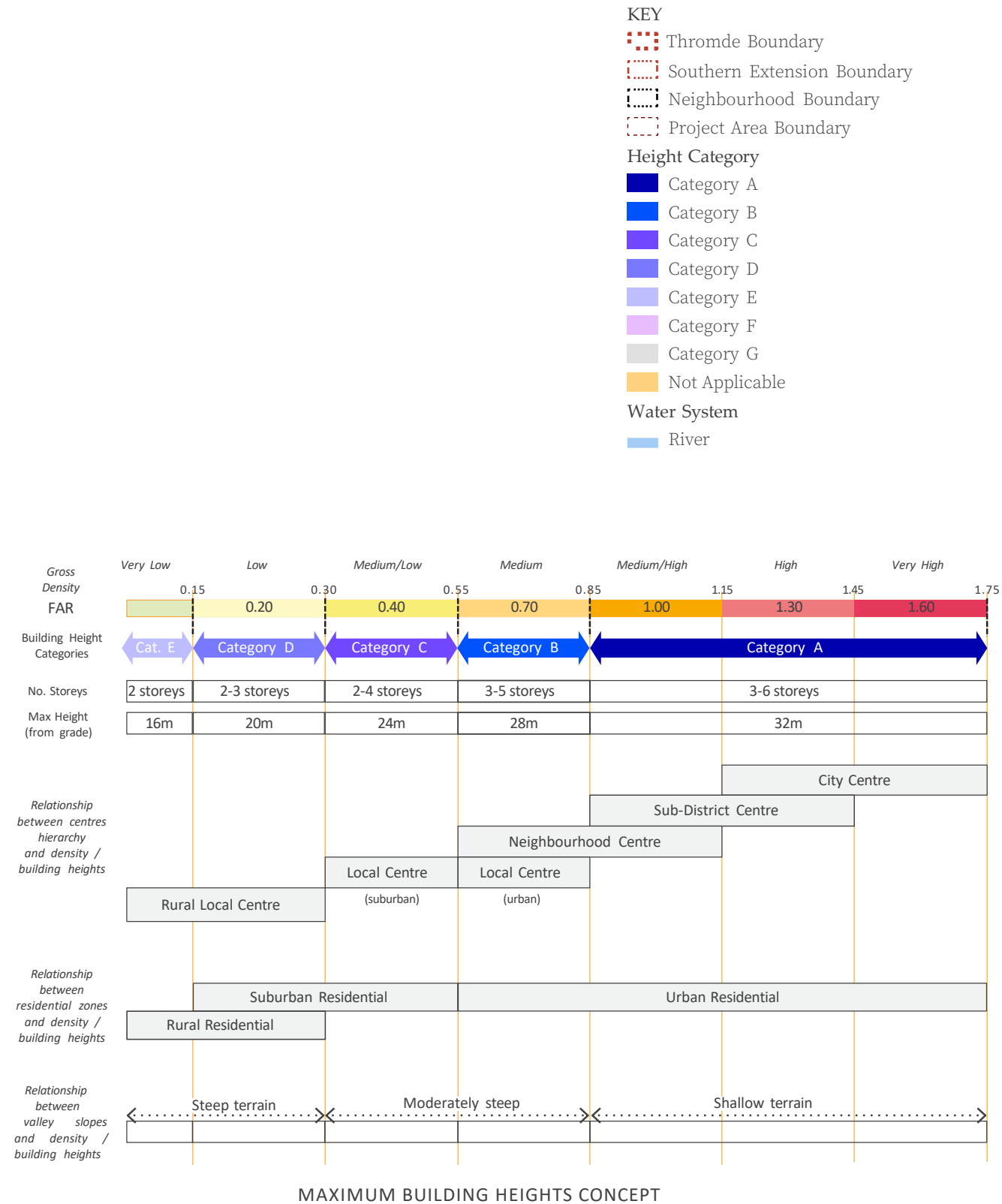
Rev1 Draft

POLICY US4

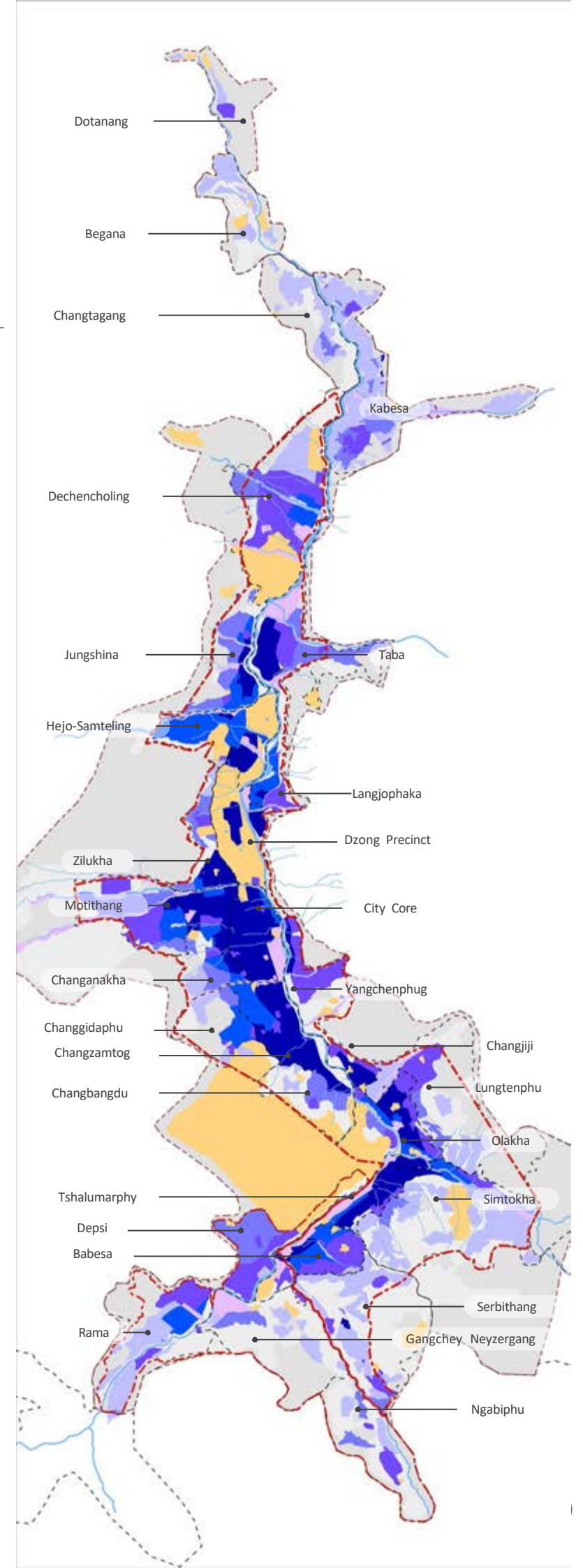
Enforce height limitations as per the maximum building heights outlined in Figure 5.22 and Table 5.11.

The Building Heights limits are defined in accordance with the following categories as described under this policy:

- High: 5-6 storeys (categories A, B)
- Medium: 3 - 4 storeys (categories C, D)
- Low: 1 - 2 storeys (categories E, F)
- Development not permitted



MAXIMUM BUILDING HEIGHTS CONCEPT



Limits to Growth

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












POLICY US5

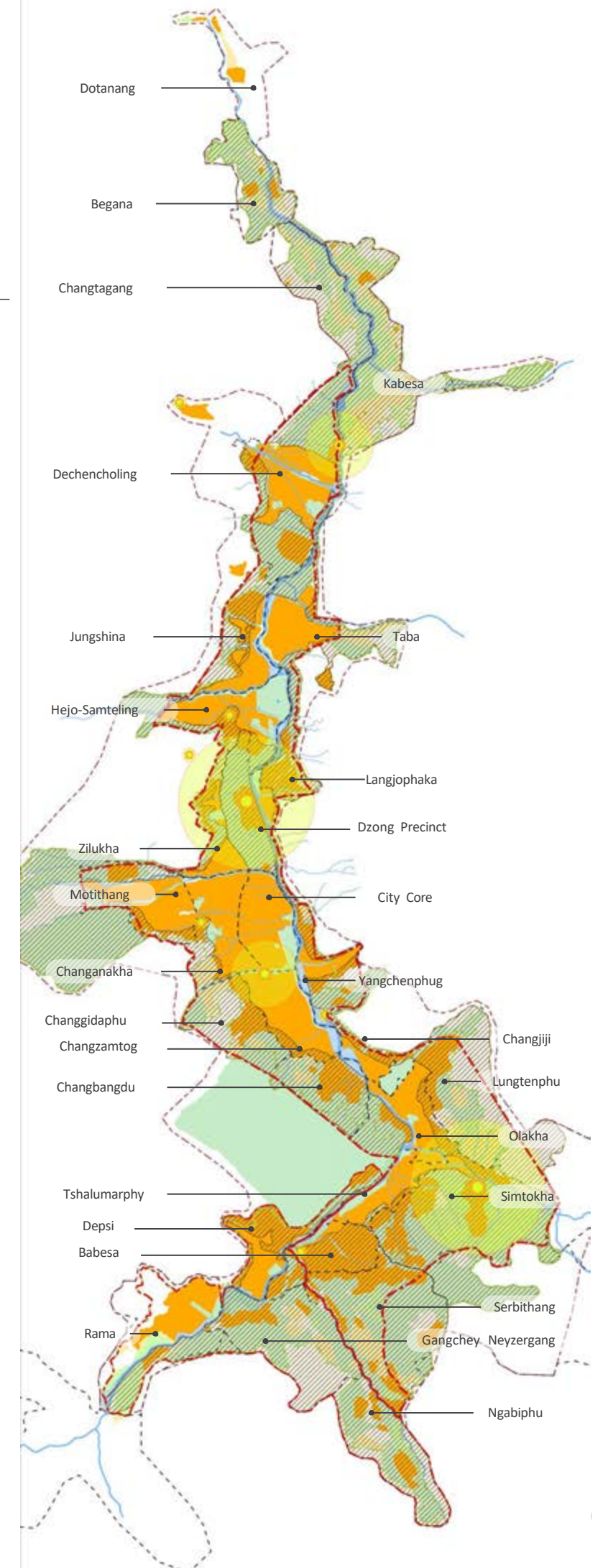
Extend Thimphu Thromde boundaries to include the southern extension neighbourhoods: Depsi, Rama, Gangchey Neyzergang, Ngabiphu as illustrated in Figure 5.23.

Restrict development within Thromde Limits and rural communities north of Thimphu to the urban extent defined in Figure 5.23, as well policies set out in Chapter 5 Urban Structure and Chapter 6 Protections.

Development outside of the urban area extents defined in Figure 5.23 is not permitted.

KEY

-  Thromde Boundary
-  Southern Extension Boundary
-  Neighbourhood Boundary
-  Project Area Boundary
- Land Use**
-  Agriculture
-  Urban Areas
-  Residential Rural
- Protections**
-  Restricted Development zone
-  Inner Green Belt Boundary
- Heritage Assets**
-  Grade A
-  Grade B
-  Grade C
-  Buffer
- Water System**
-  River
-  Riparian Corridor



Character Areas

Rev1 Draft

POLICY US6

Approve development based on compliance with character areas outlined in Figure 5.25 and Chapter 14 Urban Design Guidelines.

The Character Areas are defined in accordance with the following categories as described under this policy:

Urban character

- Government area
- City Core area
- Central Thimphu residential areas
- Northern Thimphu residential areas
- Southern Thimphu residential areas

Suburban character

- Dechencholing residential areas
- Central Thimphu upper residential areas
- Northern Thimphu upper residential areas
- Southern Thimphu upper residential areas
- Southern extension residential areas

Rural character

- North of Thimphu rural areas

Open space character

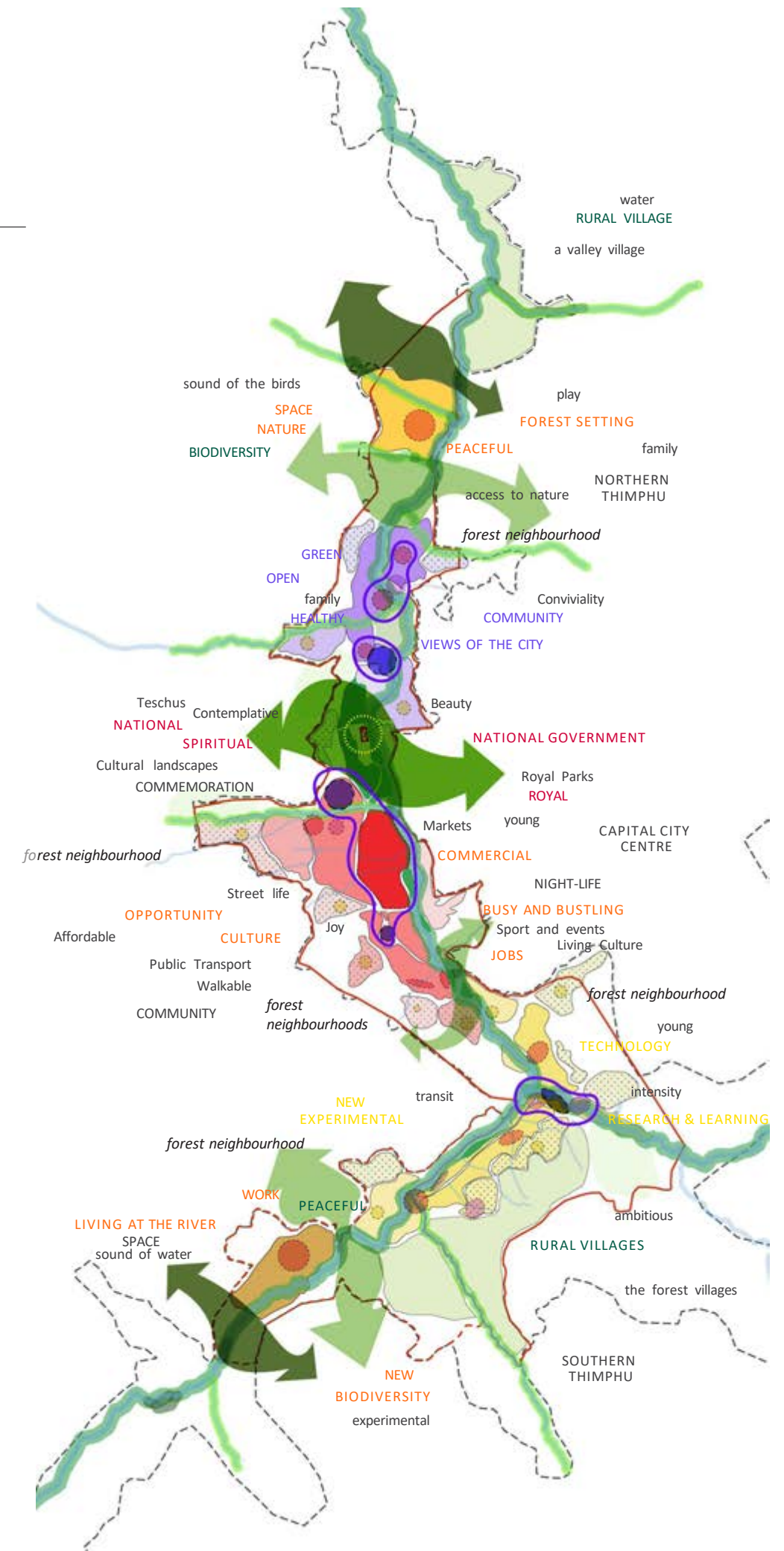
- Forest areas
- Wang Chhu corridor area
- Stream corridor areas
- Agriculture areas

KEY

- Thromde Boundary
- Southern Extension Boundary
- Neighbourhood Boundary

Character Areas

- Formal Landscapes
- Informal Landscapes
- Nature Park
- River Parks
- Valley Parks
- Forest Neighbourhoods
- Rural Villages
- Employment Cluster
- Centres
- Other opportunity areas
- Local higher centres



Economy

Employment Distribution

POLICY

Locate employment growth in centres and specialised employment areas as illustrated in Figure 6.8

Employment areas are allowed in the following land use areas as described under this policy:

- Centres
- Community Facilities
- Mixed use
- Workplace
- Retail
- Hospitality
- Culture
- Industry
- Transport and Utilities

KEY

- Thromde Boundary
- Southern Extension Boundary
- Neighbourhood Boundary
- Study Area Boundary

Centres Hierarchy

- City Centre
- Sub-district Centre
- Neighbourhood Centre
- Local Centre

Employment Land Uses

- Commercial
- Mixed Use
- Government
- Education
- Healthcare
- Workplace
- Tourism
- Industrial

Water System

- River



Employment Distribution

North of Thimphu

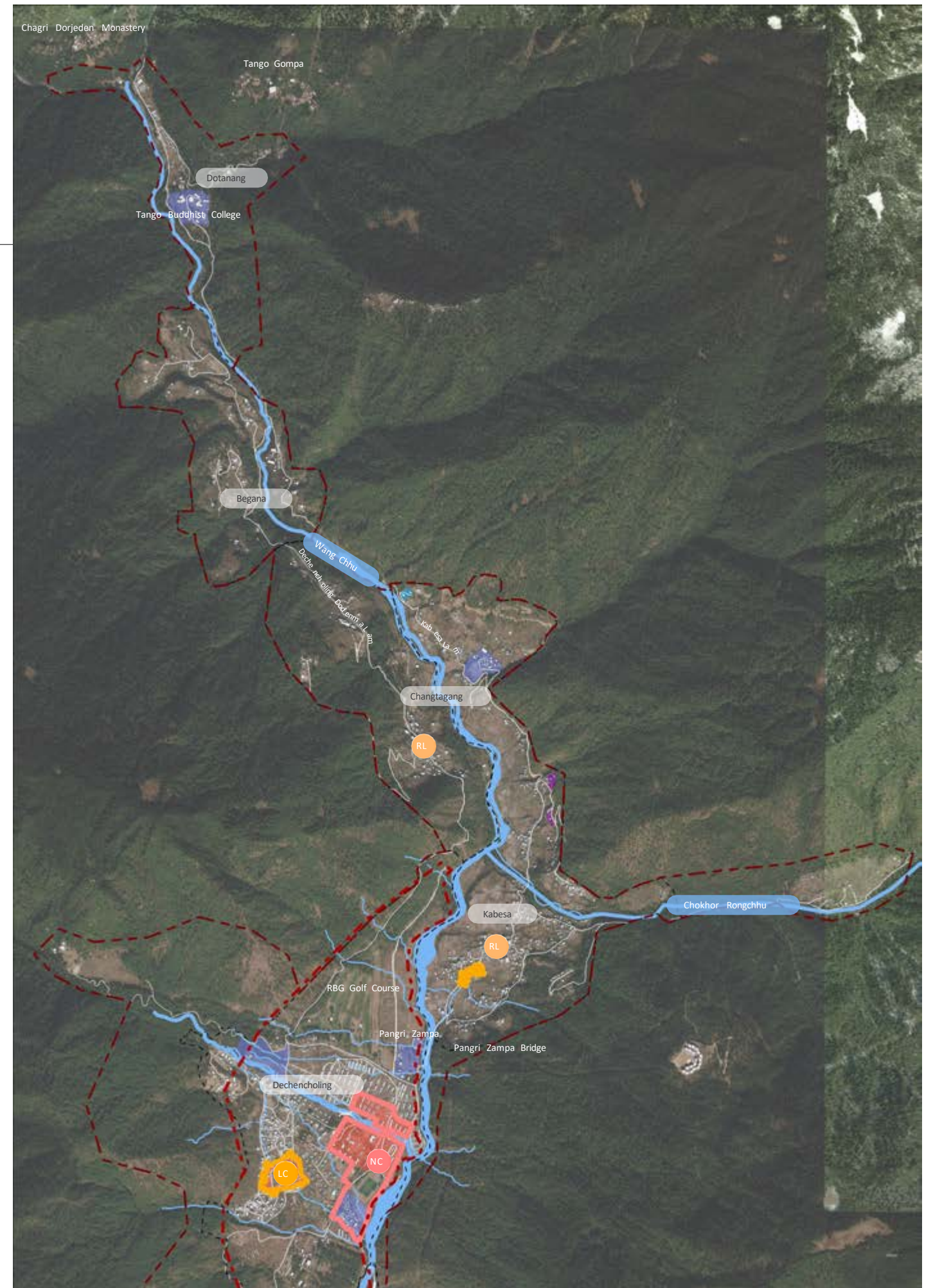
KEY PROPOSALS

- Support Buddhist teaching building on existing assets such as the Tango Buddhist College in Dotanang.
- Promote third sector tourism creating employment opportunities for existing rural communities in Kabesa, Begana and Changtagang.
- Promote high value organic agriculture building on Chuuzhing, wet agriculture, and Khamzing, dry agriculture, in Kabesa, Begana and Changtagang.
- Create Changtagang rural local centre, a mixed use area for community and retail facilities.
- Create Kabesa rural local centre, a mixed use area for community and retail facilities.

Neighbourhoods	Agriculture	Industrial	Services	Total
Dotanang	-	-	57	57
Begana	23	-	57	80
Changtagang	23	-	105	128
Kabesa	38	-	105	143

Neighbourhoods	Office (m ²)	Manufacturing & Distribution (m ²)	F&B Restaurants & Cafés, Retail (m ²)	Total (m ²)
Dotanang	-	-	-	-
Begana	-	-	-	-
Changtagang	-	-	858	858
Kabesa	-	-	858	858
Total	-	-	1,715	1,715

- KEY**
- Thromde Boundary
 - Southern Extension Boundary
 - Neighbourhood Boundary
 - Study Area Boundary
- Centres Hierarchy**
- City Centre
 - Sub-district Centre
 - Neighbourhood Centre
 - Local Centre
- Employment Land Uses**
- Commercial
 - Mixed Use
 - Government
 - Education
 - Healthcare
 - Workplace
 - Tourism
 - Industrial
- Water System**
- River
 - Stream
- Transport**
- Primary Road
 - Secondary Road
 - Tertiary Road



Employment Distribution

Northern Thimphu

KEY PROPOSALS

Northern Sub-district

- Create Northern Sub-district mixed-use centre clustering workspaces, retail, restaurants, cafés, community facilities and small scale distribution and light manufacturing.
- Improve existing hospitality facilities and diversify products and offerings.
- Improve existing social infrastructure facilities.

Dechencholing

- Create Dechencholing neighbourhood centre, a mixed use area for community, retail, mobility, infrastructure and open space facilities.
- Create Dechencholing local centre, a mixed use area for community and retail facilities.

Taba

- Create Taba neighbourhood centre, a mixed use area for community, retail, mobility, infrastructure and open space facilities.

Jungshina

- Create Jungshina neighbourhood centre and colocate with the Northern Sub-district neighbourhood centre with the northern sub-district centre.
- Create Jungshina local centre, a mixed use area for community and retail facilities.

Hejo-Samteling

- Create Hejo-Samteling neighbourhood centre and colocate with the Northern Sub-district neighbourhood centre with the northern sub-district centre.
- Create Hejo-Samteling local centre, a mixed use area for community and retail facilities.

KEY

- Thromde Boundary
- Southern Extension Boundary
- Neighbourhood Boundary
- Study Area Boundary

Centres Hierarchy

- City Centre
- Sub-district Centre
- Neighbourhood Centre
- Local Centre

Employment Land Uses

- Commercial
- Mixed Use
- Government
- Education
- Healthcare
- Workplace
- Tourism
- Industrial

Water System

- River
- Stream

Transport

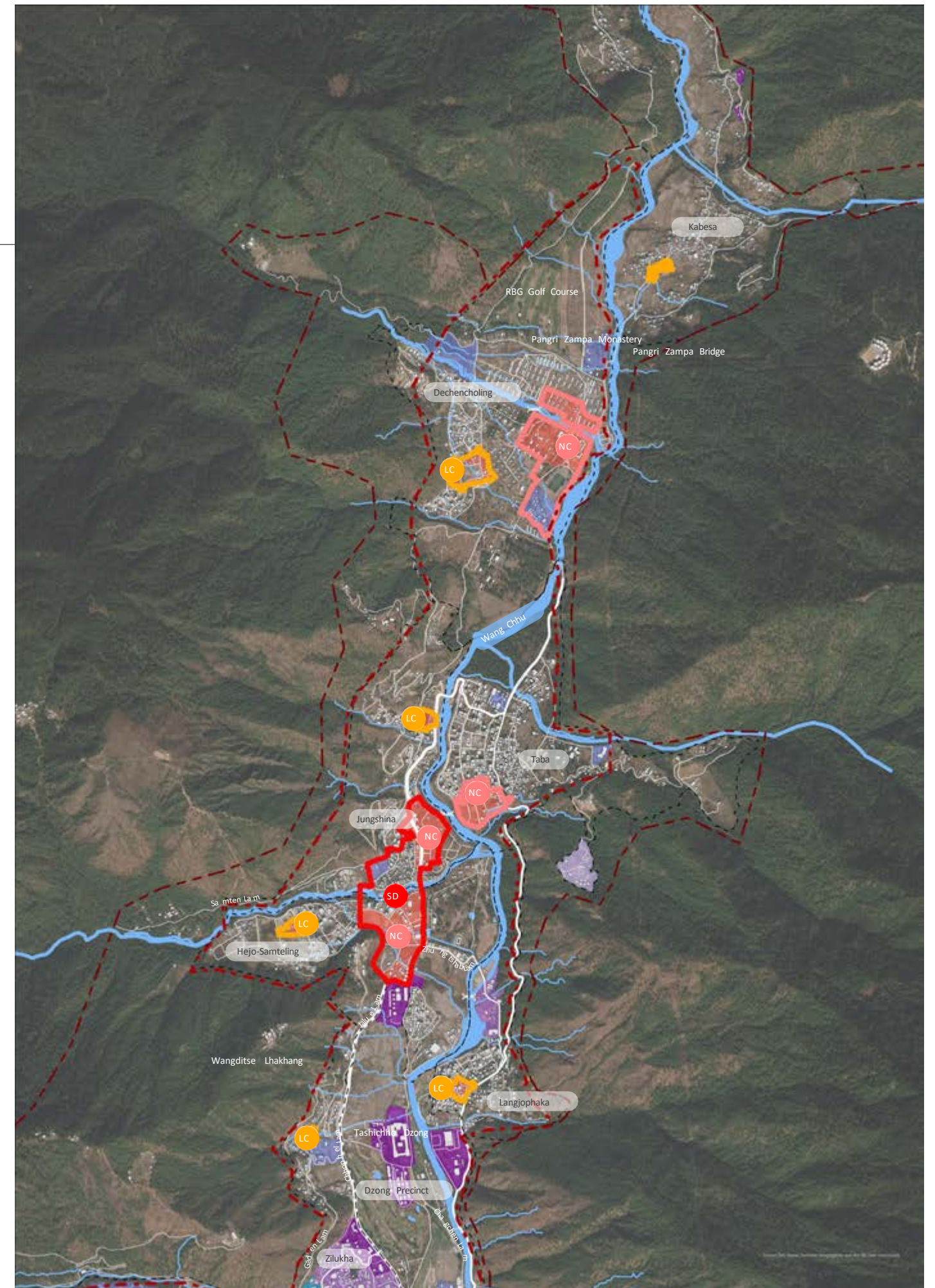
- Primary Road
- Secondary Road
- Tertiary Road

Table 4.3 Northern Sub-district Indicative Jobs per Sector

Neighbourhoods	Agriculture	Industrial	Services	Total	
Dechencholing	N1	-	389	963	1,352
Taba	N2	-	389	963	1,352
Jungshina	N3	-	389	963	1,352
Langjophaka	N4	-	366	219	586
Hejo-Samteling	N5	-	469	4,717	5,185

Table 4.4 Northern Sub-district Indicative GEA per Use Class

Neighbourhoods	Office (m ²)	Manufacturing & Distribution (m ²)	F&B Restaurants & Cafés, Retail (m ²)	Total (m ²)	
Dechencholing	N1	5,140	1,444	5,145	11,729
Taba	N2	5,140	1,444	5,145	11,729
Jungshina	N3	5,140	1,444	5,145	11,729
Langjophaka	N4	-	-	858	858
Hejo-Samteling	N5	39,404	3,241	13,721	56,366
Total		54,852	7,573	30,014	92,410



Employment Distribution

Central Thimphu

City Centre

- Strengthen Thimphu City Core as knowledge capital around environmental services, climate change and carbon markets, as well as a national centre for government, finance, insurance, knowledge and IT.
- Promote high-end tourism.
- Improve existing hospitality facilities and diversify products and offerings.
- Create multi-functional stadium/MICE facility
- Add new knowledge quarter and earth centre focussed on the study of climate change – attracting collaborations and partnerships with leading academic institutions, thinkers and organisations

- Colocate Northern Sub-district centre with City Core. Promote mixed use areas clustering of workspaces, retail, restaurants, cafés, community facilities and small scale distribution and light manufacturing.
- Improve existing social infrastructure facilities.

Dzong Precinct

- Strengthen existing government facilities including Tashichho Dzong, Ministries, Supreme Court, National Assembly, and National Council.

KEY

- Thromde Boundary
- Southern Extension Boundary
- Neighbourhood Boundary
- Study Area Boundary

Centres Hierarchy

- City Centre
- Sub-district Centre
- Neighbourhood Centre
- Local Centre

Employment Land Uses

- Commercial
- Mixed Use
- Government
- Education
- Healthcare
- Workplace
- Tourism
- Industrial

Water System

- River
- Stream

Transport

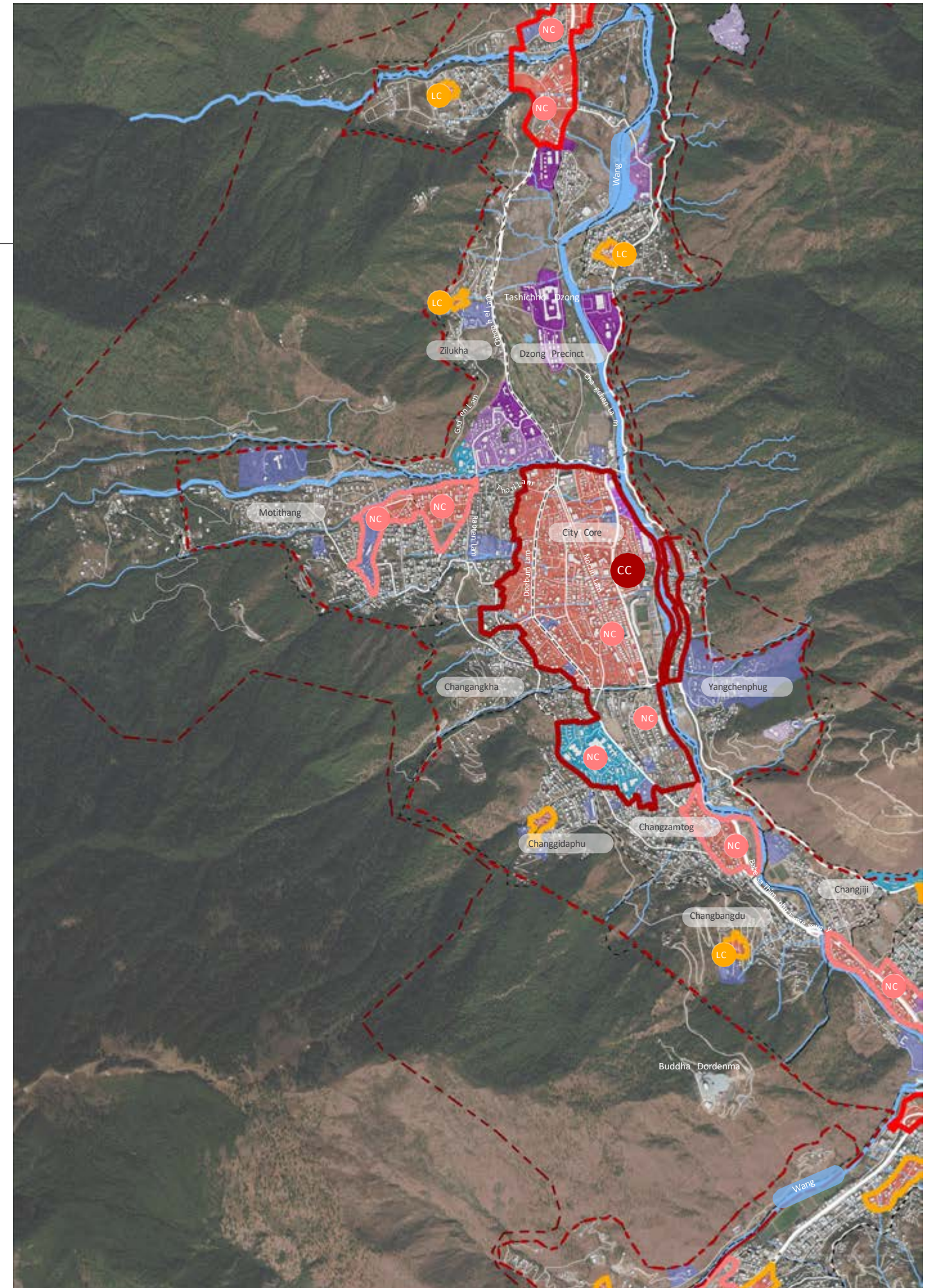
- Primary Road
- Secondary Road
- Tertiary Road

Table 4.5 Central Sub-district Indicative Jobs per Sector

Neighbourhoods	Agriculture	Industrial	Services	Total	
Dzong Precinct	N6	-	366	171	537
Motithang	N7	-	389	915	1,304
Zilukha	N8	-	499	6,435	6,935
City Core	N9	-	512	9,050	9,562
Changanakha	N10	-	446	4,283	4,729
Changgidaphu	N11	-	366	219	586
Changzamtog	N12	-	464	4,265	4,729
Changbangdu	N13	-	389	915	1,304
Yangchenphug	N14	-	366	219	586

Table 4.6 Central Sub-district Indicative GEA per Use Class

Neighbourhoods	Office (m ²)	Manufacturing & Distribution (m ²)	F&B Restaurants & Cafés, Retail (m ²)	Total (m ²)	
Dzong Precinct	N6	-	-	-	
Motithang	N7	5,140	1,444	4,288	10,871
Zilukha	N8	68,529	-	858	69,387
City Core	N9	68,529	1,444	39,447	109,420
Changanakha	N10	34,265	1,444	17,151	52,860
Changgidaphu	N11	-	-	858	858
Changzamtog	N12	23,985	7,892	23,154	55,031
Changbangdu	N13	5,140	1,444	4,288	10,871
Yangchenphug	N14	-	-	858	858



Employment Distribution

Southern Thimphu

KEY PROPOSALS

Southern Sub-district

- Create Southern sub-district mixed-use centre clustering Science Technology and Innovation Hub (STIH), workspaces, retail, restaurants, cafés, community facilities and small scale distribution and light manufacturing through the car workshop area regeneration.
- Improve existing hospitality facilities and diversify products and offerings.
- Improve existing social infrastructure facilities.

Simtokha

- Include Southern Sub-district centre area promoting mixed use areas.
- Create one local centre.

Lungtenphu

- Create Lungtenphu neighbourhood centre and collocated local centre.

Olakha

- Colocate one neighbourhood centre and three local centres with sub-district centre mixed use area.

Babesa

- Reinforce office cluster sector around Thimphu Tech Park supporting knowledge sector development.
- Create one neighbourhood centre, one collocated local centre and one local centre.

Changjiji

- Create Changjiji neighbourhood centre and collocated local centre, a mixed use area for community, retail, mobility, infrastructure and open space facilities.

Table 4.7 Southern Sub-district Indicative Jobs per Sector

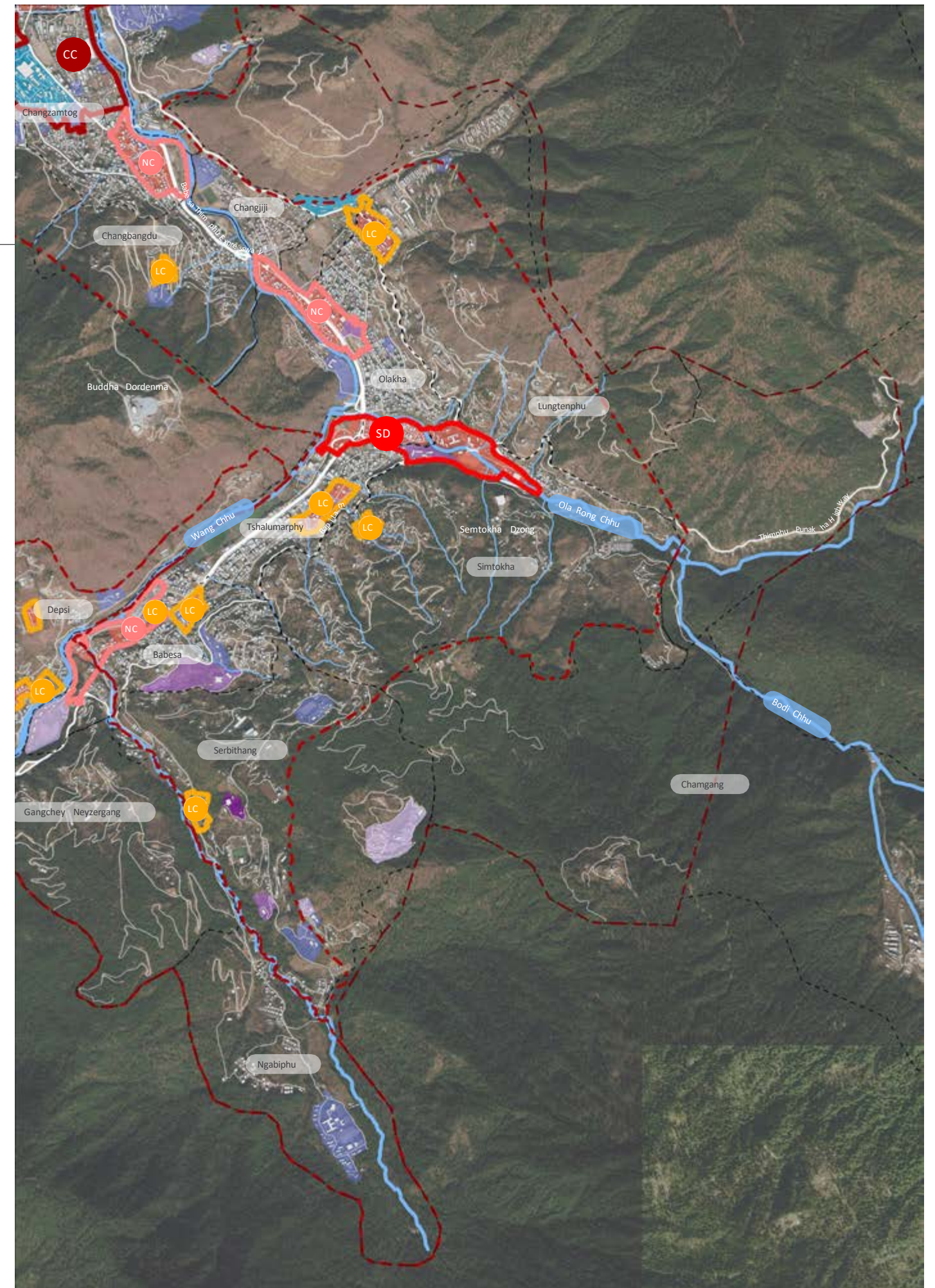
Neighbourhoods	Agriculture	Industrial	Services	Total	
Changjiji	N15	-	389	915	1,304
Simtokha	N16	23	406	2,375	2,804
Lungtenphu	N17	-	389	915	1,304
Olakha	N18	-	389	1,125	1,515
Tshalumarphy	N19	-	462	4,267	4,729
Babesa	N20	-	389	963	1,352
Serbithang	N21	-	366	268	634
		23	2,792	10,827	13,641

Table 4.8 Southern Sub-district Indicative GEA per Use Class

Neighbourhoods	Office (m ²)	Manufacturing & Distribution (m ²)	F&B Restaurants & Cafés, Retail (m ²)	Total (m ²)	
Changjiji	N15	5,140	1,444	4,288	10,871
Simtokha	N16	20,559	-	6,003	26,562
Lungtenphu	N17	5,140	1,444	4,288	10,871
Olakha	N18	5,140	1,444	6,003	12,587
Tshalumarphy	N19	35,978	3,946	12,863	52,787
Babesa	N20	5,140	1,444	5,145	11,729
Serbithang	N21	-	-	1,715	1,715

KEY

- Thromde Boundary
 - Southern Extension Boundary
 - Neighbourhood Boundary
 - Study Area Boundary
- #### Centres Hierarchy
- City Centre
 - Sub-district Centre
 - Neighbourhood Centre
 - Local Centre
- #### Employment Land Uses
- Commercial
 - Mixed Use
 - Government
 - Education
 - Healthcare
 - Workplace
 - Tourism
 - Industrial
- #### Water System
- River
 - Stream
- #### Transport
- Primary Road
 - Secondary Road
 - Tertiary Road



Housing

Housing Distribution

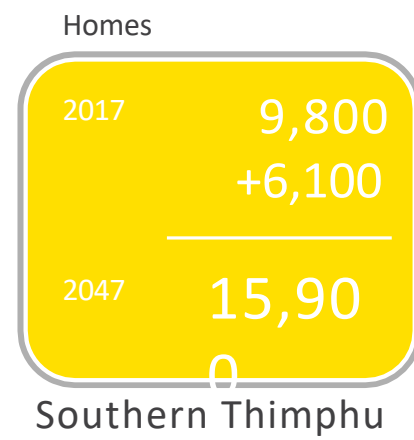
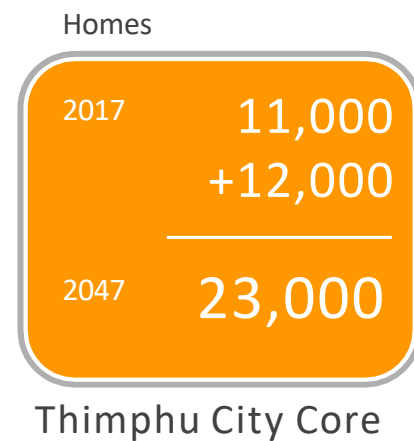
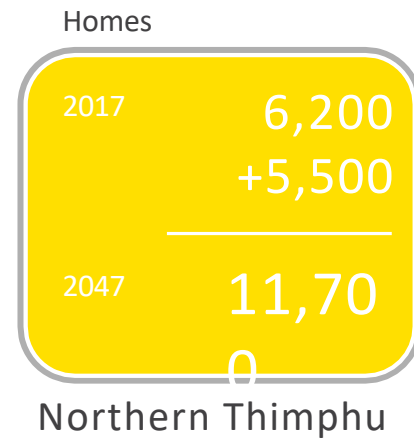
Rev1 Draft

POLICY H1

Good quality homes should be delivered following the maximum housing distribution and density illustrated in Figure 7.8 and listed in [Table 7.8](#).

Housing development outside land designated residential or mixed use will be prohibited.

Land designated for housing should be protected, conversion to other land uses will only be allowed in exceptional circumstances and the change in use will require justification.



Housing Quality

Rev1 Draft

POLICY H2

Housing development including private and affordable homes should be of high quality design and provide comfortable, functional and flexible layouts which are fit for purpose. Housing is expected to comply with Development Control Regulations, including minimum standards for home size and room size.

Housing development should maximise the provision of dual aspect dwellings. The design of development should also provide sufficient daylight and sunlight to new and surrounding housing, whilst providing privacy, avoiding overheating, minimising overshadowing and maximising the usability of outside spaces.

Housing should be designed with adequate and easily accessible storage space, including sufficient space for the separation of waste.

Housing should be designed with outdoor amenity and communal spaces.

Housing developments should provide a range of home sizes to meet different needs, this should follow the unit mix breakdown established by the Development Control Regulations.



Affordable Homes

Rev1 Draft

POLICY H3

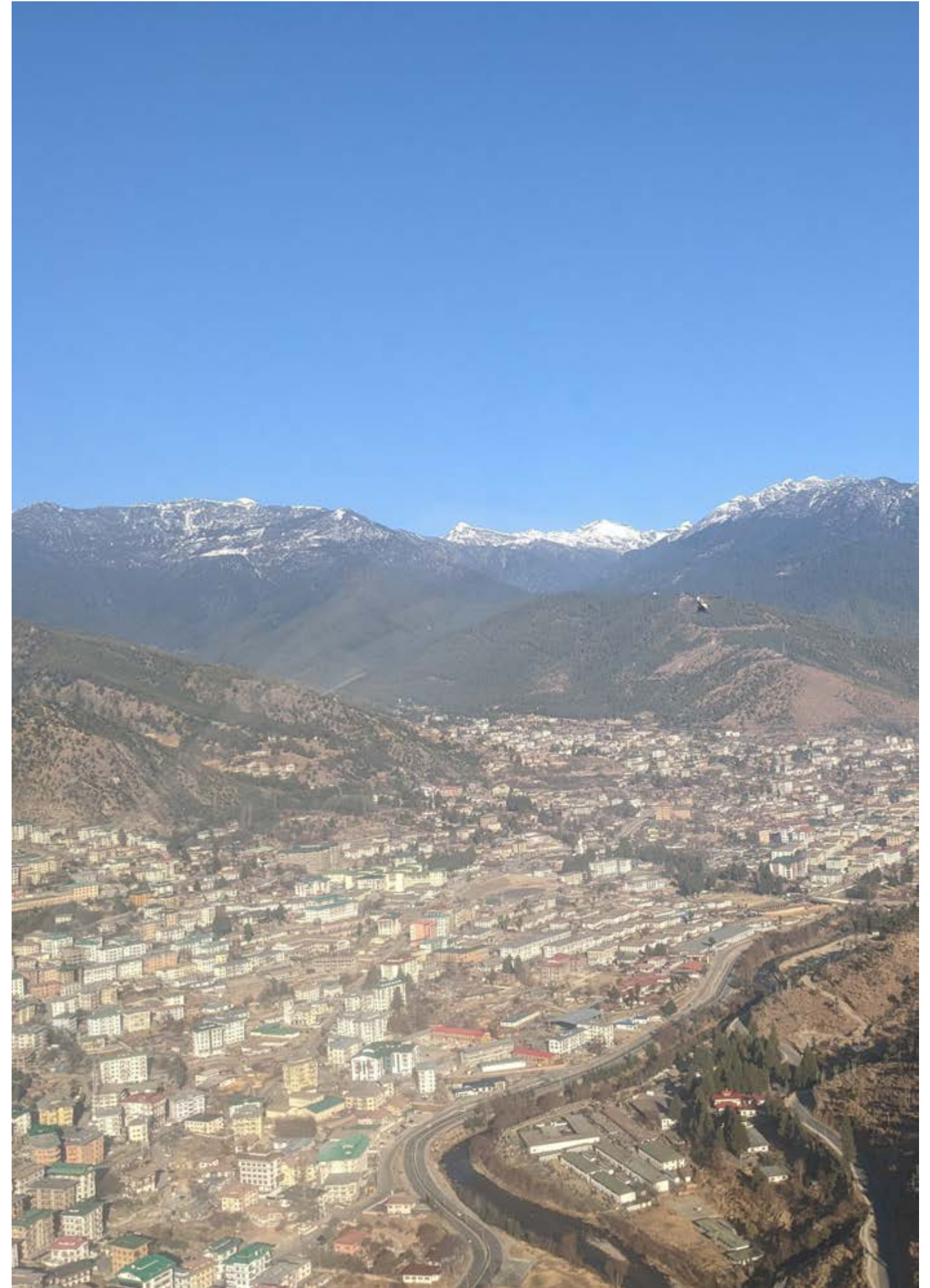
Development should seek to maximise the delivery of affordable housing.

The definition and form of affordable housing should correspond with local need, but affordable rental housing should not cost more than 30% of gross monthly income.

Targets for the proportion of housing growth that meets the definition of affordable housing should be established.

This should take into consideration local need and economic viability. New housing developments will then be expected to comply with this target.

A clear and transparent procedure to allocate affordable homes should be established based on need.



Community Facilities

Community Facilities Standards

Rev1 Draft

POLICY CF1

Deliver community facilities in a planned and equitable way to ensure a high quality of life for local communities across Thimphu.

Delivery of community facilities should:

- Provide a range of facilities within proximity to where people live in accordance with a clear hierarchy
- Provide facilities to best-practice international standards
- Co-locate community facilities to create critical mass, encourage linked trips and limit travel need

KEY

- Thromde Boundary
- Southern Extension Boundary
- Sub District Boundary
- Neighbourhood Boundary
- Study Area Boundary
- Development Areas
- River
- Centres Hierarchy**
 - City Centre
 - Sub-district Centre
 - Neighbourhood Centre
 - Local Centre
- Land Use**
 - Community Facility
 - Mixed Use
 - Education
 - Healthcare
 - Green Space



Co-location and Integration

Rev1 Draft

POLICY CF1

Deliver community facilities in a planned and equitable way to ensure a high quality of life for local communities across Thimphu.

Delivery of community facilities should:

- Provide a range of facilities within proximity to where people live in accordance with a clear hierarchy
- Provide facilities to best-practice international standards
- Co-locate community facilities to create critical mass, encourage linked trips and limit travel need

Table 4.11 Co-location and integration matrix

		Rural Local		Urban Local			Neighbourhood Centre						Sub District			City Centre																									
		In centre		In centre		Out of centre	In centre			Out of centre			In centre		Out of centre		In centre		Out of centre																						
		Community Service Centre	Mobility Hub	Waste Hub	Thromde Health Clinic	Nursery	Community Service Centre	Small Convenience Shop	Mobility Hub	Waste Hub	Pocket Park	Hospital	Library	Community Police Station	Mobility Hub	Vegetable Market	Enterprise Hub	Lower Secondary	Primary	Outdoor Sports	Neighbourhood Park	Resilience Hub	Waste Hub	Retail - Commercial Centre	Leisure and Culture	Enterprise Cluster	High Secondary School	Middle Secondary School	Indoor Sports	Sub District/ City Park	Police Station	Market Quarter	Cultural Quarter	Thimphu General Hospital	University	Stadium	Metropolitan Park				
Rural Local	In centre	Community Service Centre																																							
		Mobility Hub (Bus stop/ cycle parking)																																							
		Waste Hub																																							
Urban Local	In centre	Thromde Health Clinic																																							
		Nursery																																							
		Community Service Centre																																							
		Small Convenience Shop																																							
		Mobility Hub																																							
Urban Local	Out of centre	Waste Hub																																							
		Pocket Park																																							
Neighbourhood Centre	In centre	Hospital																																							
		Larger Community Service Centre (inc Post and Library)																																							
		Community Police Station																																							
		Mobility Hub																																							
		Vegetable Market																																							
		Enterprise Hub																																							
	Neighbourhood Centre	Out of centre	Lower Secondary																																						
			Primary																																						
			Outdoor Sports																																						
			Neighbourhood Park																																						
Sub District	In centre	Retail - Commercial Centre																																							
		Leisure and Culture																																							
		Enterprise Cluster																																							
	Sub District	Out of centre	High Secondary School																																						
City Centre	In centre	Market Quarter																																							
		Cultural Quarter																																							
		Thimphu General Hospital																																							
	Out of centre	University																																							
		Metropolitan Park																																							

Deficit and Demand

Rev1 Draft

POLICY CF3

Deliver improvements to health and education provision across Thimphu by addressing the current deficit and future demand.

This includes:

- Deliver repairs and increase resilience of existing facilities
- Increase accessibility of existing facilities
- Increase the capacity of existing facilities when there is demand
- Deliver new facilities when there is demand

Table 4.12 Thimphu Social Infrastructure Needs 2047

Sub-districts	Neighbourhoods	Primary School	Lower and Middle Secondary	High Secondary	Thromde Healthcare Clinic	Hospital	City/ National Hospital
Northern Thimphu SD1	Dotanang						
	Begana						
	Changtagang						
	Kabesa						
	Dechencholing N1	3	3	3	2	4	
	Taba N2	2			2		
	Jungshina N3	2			2		
	Langjophaka N4	1			1		
	Hejo-Samteling N5	2			2		
	Dzong Precinct N6	-			-		
	Motithang N7	2			1		
	Zilukha N8	1			-		
	Changanakha N9	3			-		
	City Core N10	4	5	6	4	8	27% increase in capacity
Changgidaphu N11	1			1			
Changzamtog N12	5			5			
Changbangdu N13	1			1			
Yangchenphug N14	1			-			
Southern Thimphu SD4	Changjiji N15	1			1		
	Simtokha N16	1			1		
	Lungtenphu N17	1			1		
	Olakha N18	3			3		
	Tshalumarphy N19	2			2		
	Babesa N20	2	4	5	2	6	
	Serbithang N21	-					
	Rama N22	1			1		
	Gangchey N23	-					
	Depsi N24	1			1		
	Ngabiphu N25	-					
Thimphu Thromde Total		39	12	14	4	18	n/a

Protections

Protections

North of Thimphu



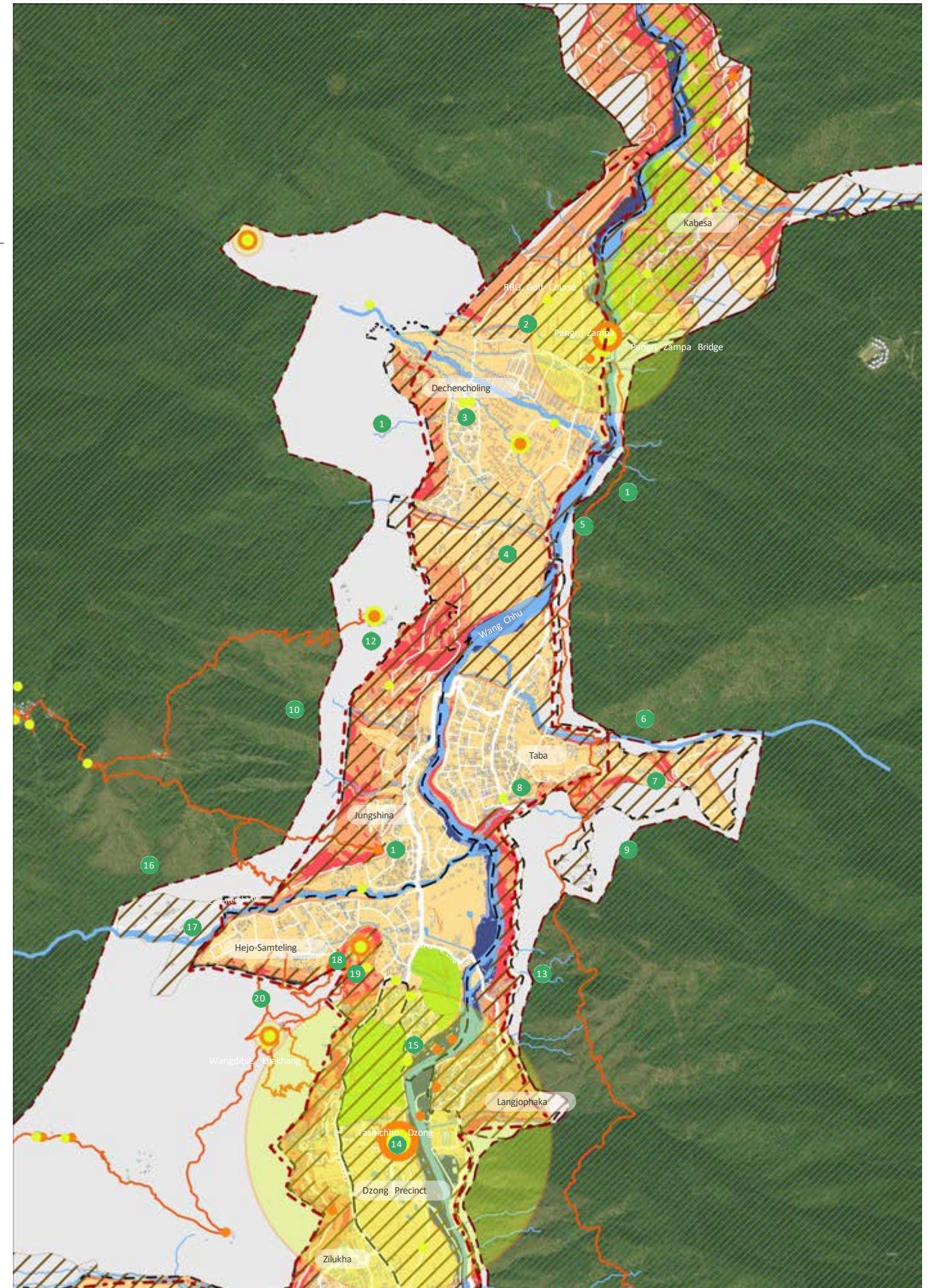
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 - Thromde Southern Extension Boundary
 - Study Area Boundary
 - Neighbourhood Boundary
- Geohazards**
- No data
 - High hazard zone
 - Medium hazard zone
 - Low hazard zone
 - High flood hazard
 - Medium flood hazard
- Protections**
- Green Belt Inner Boundary
 - Green Belt Extent
 - Cultural Landscape
 - Restricted Development
- Heritage Protections**
- Grade A
 - Grade B
 - Grade C
 - Chorten
 - Lhakhang
 - Buffer
 - Traditional Village
- Routes and Trails**
- Route



Protections

Northern Thimphu

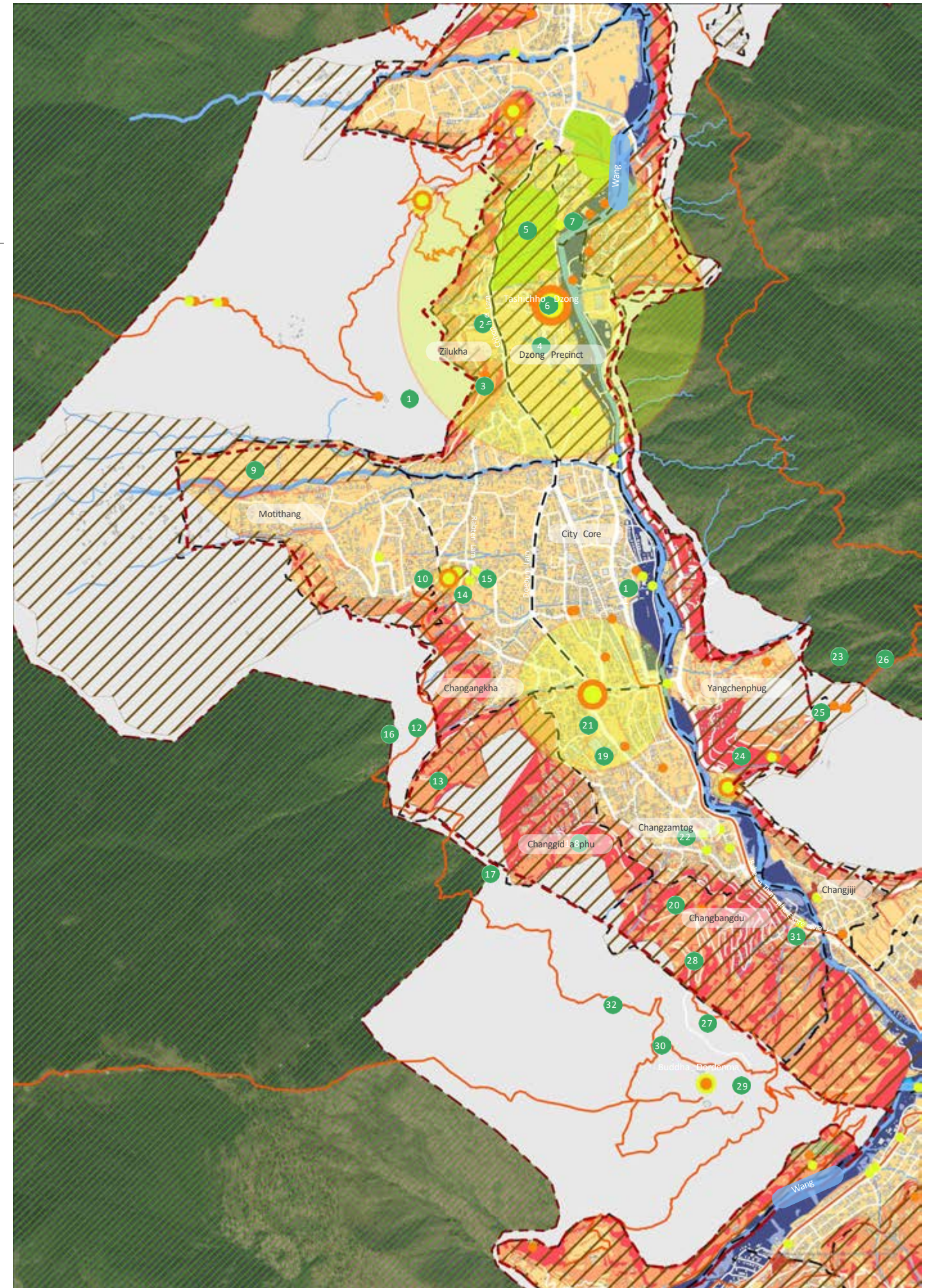
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 - Study Area Boundary
 - Neighbourhood Boundary
- Geohazards**
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 - High hazard zone
 - Medium hazard zone
 - Low hazard zone
 - High flood hazard
 - Medium flood hazard
- Protections**
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 - Cultural Landscape
 - Restricted Development
- Heritage Protections**
- Grade A
 - Grade B
 - Grade C
 - Chorten
 - Lhakhang
 - Buffer
 - Traditional Village
- Routes and Trails**
- Route



Protections






















Central Thimphu

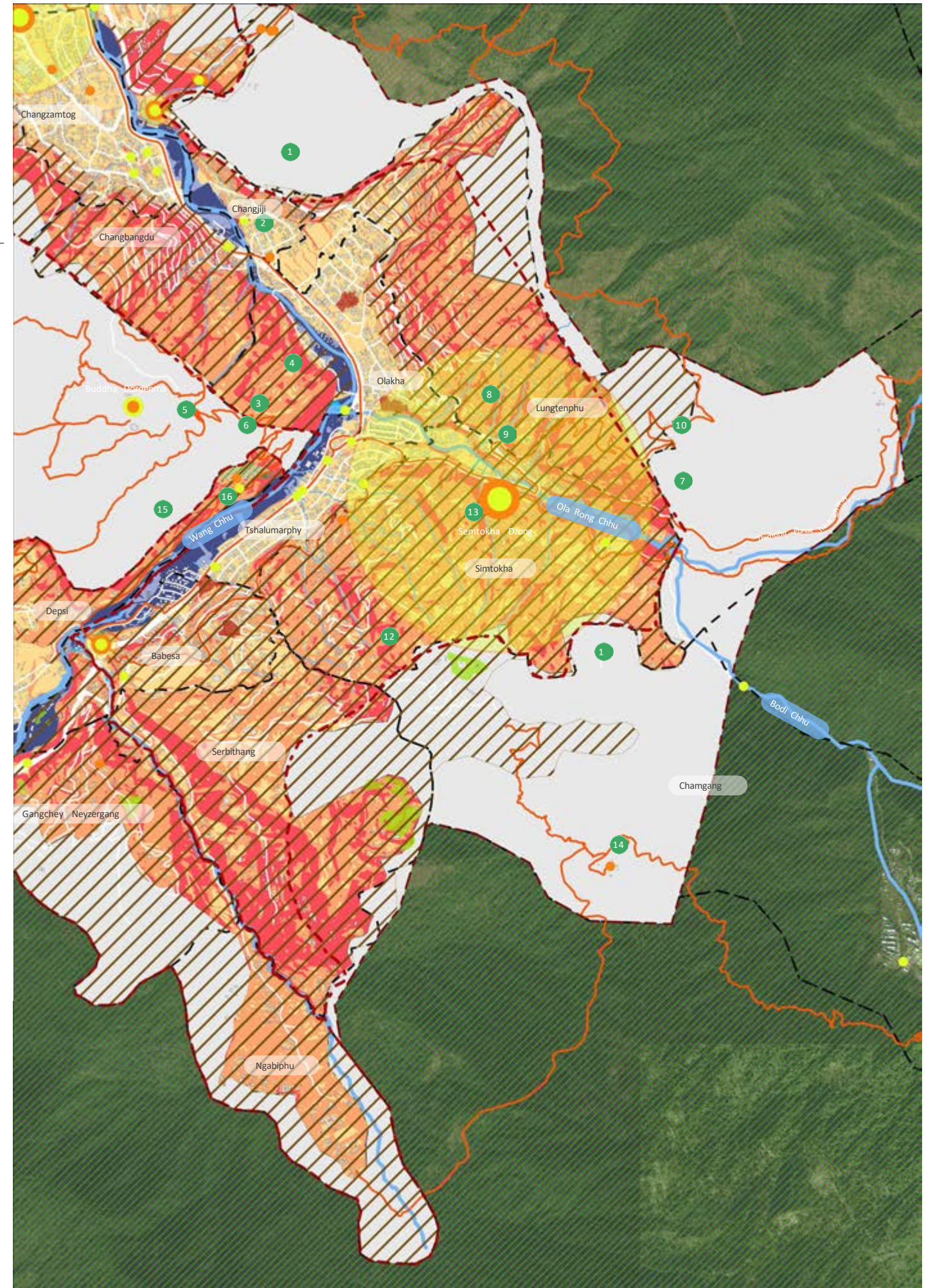
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 - Neighbourhood Boundary
- Geohazards**
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 - Medium hazard zone
 - Low hazard zone
 - High flood hazard
 - Medium flood hazard
- Protections**
- Green Belt Inner Boundary
 - Green Belt Extent
 - Cultural Landscape
 - Restricted Development
- Heritage Protections**
- Grade A
 - Grade B
 - Grade C
 - Chorten
 - Lhakhang
 - Buffer
 - Traditional Village
- Routes and Trails**
- Route



Protections

Southern Thimphu

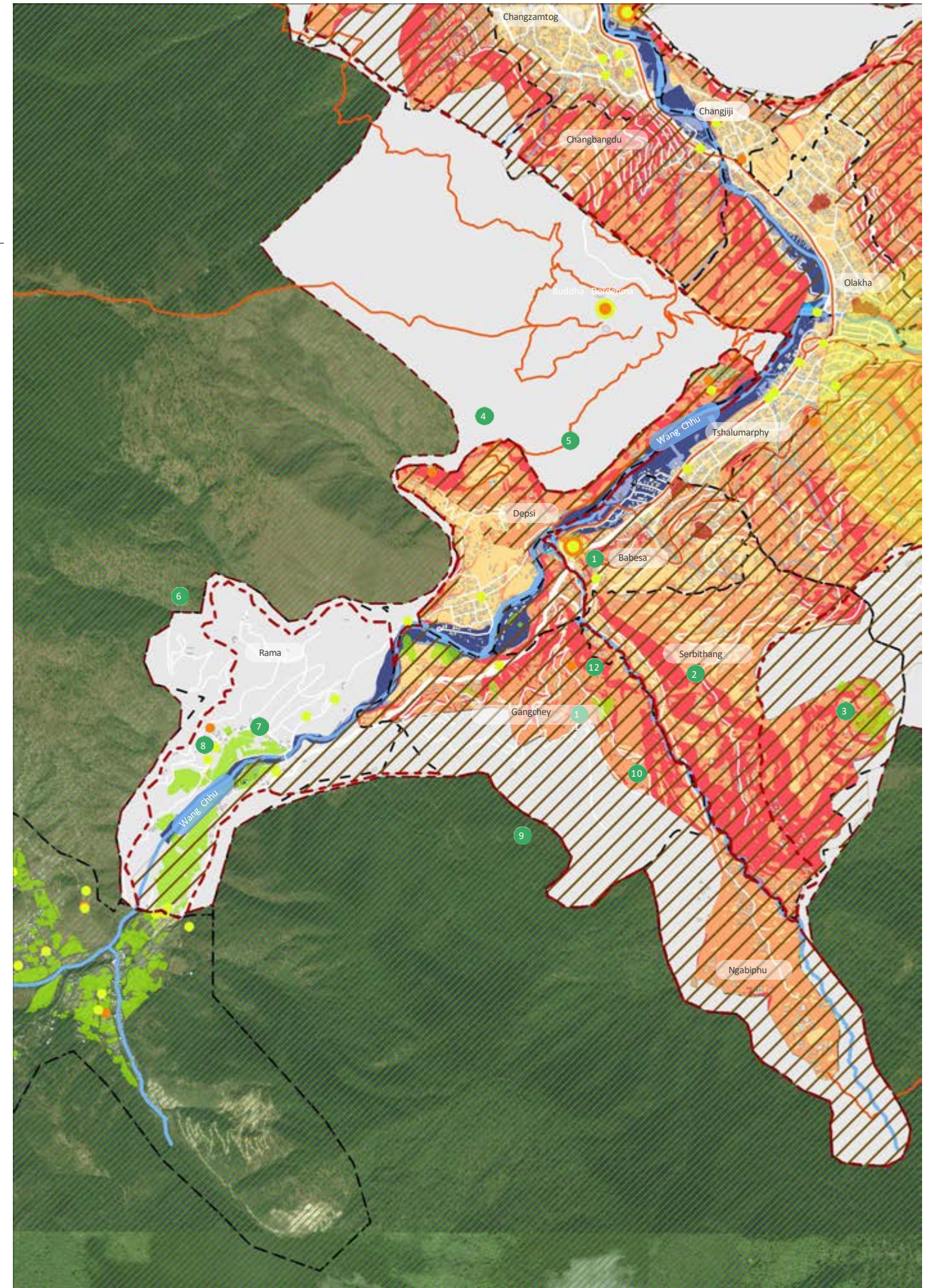
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 -  Thromde Southern Extension Boundary
 -  Study Area Boundary
 -  Neighbourhood Boundary
- Geohazards**
-  No data
 -  High hazard zone
 -  Medium hazard zone
 -  Low hazard zone
 -  High flood hazard
 -  Medium flood hazard
- Protections**
-  Green Belt Inner Boundary
 -  Green Belt Extent
 -  Cultural Landscape
 -  Restricted Development
- Heritage Protections**
-  Grade A
 -  Grade B
 -  Grade C
 -  Chorten
 -  Lhakhang
 -  Buffer
 -  Traditional Village
- Routes and Trails**
-  Route



Protections

Southern Extension

- KEY**
- Thromde Boundary
 - Thromde Southern Extension Boundary
 - Study Area Boundary
 - Neighbourhood Boundary
- Geohazards**
- No data
 - High hazard zone
 - Medium hazard zone
 - Low hazard zone
 - High flood hazard
 - Medium flood hazard
- Protections**
- Green Belt Inner Boundary
 - Green Belt Extent
 - Cultural Landscape
 - Restricted Development
- Heritage Protections**
- Grade A
 - Grade B
 - Grade C
 - Chorten
 - Lhakhang
 - Buffer
 - Traditional Village
- Routes and Trails**
- Route



Geohazards

Rev1 Draft

POLICY PR1

'Indicative Hazard Zones' have been developed based on available data of relevant hazards which can be defined spatially on a local level to Thimphu, with a cognisance of wider regional-scale hazards. This sets out recommended zones:

- High hazard zone
- Medium hazard zone
- Low hazard zone

It is recommended that no development should be advanced in High Hazard Zones.

It is recommended that development should be restricted in Medium and High Hazard Zones, where a Justification Test and Site-Specific Hazard and Risk Assessment is recommended.

Restricted development is recommended in Low Hazard areas in the 'Indicative Landslide Hazard Zone.' A Site-Specific Hazard and Risk Assessment is required. A Justification Test is not required.

It is recommended that a site-specific ground investigation is conducted for sites outside 'Indicative Hazard Zones.' As a minimum, Indian Standard (IS) 1892 Code of Practice for Subsurface Investigation for Foundations should be applied for all development.

[Table 9.2](#) provides a summary of the recommended strategy for areas both within and outside the 'Indicative Hazard Zones', and the criteria associated with the hazard ratings.

Table 9.3 provides an outline Justification Test and the minimum recommended requirements of site specific hazard and

risk assessments for slope instability and flooding.

KEY

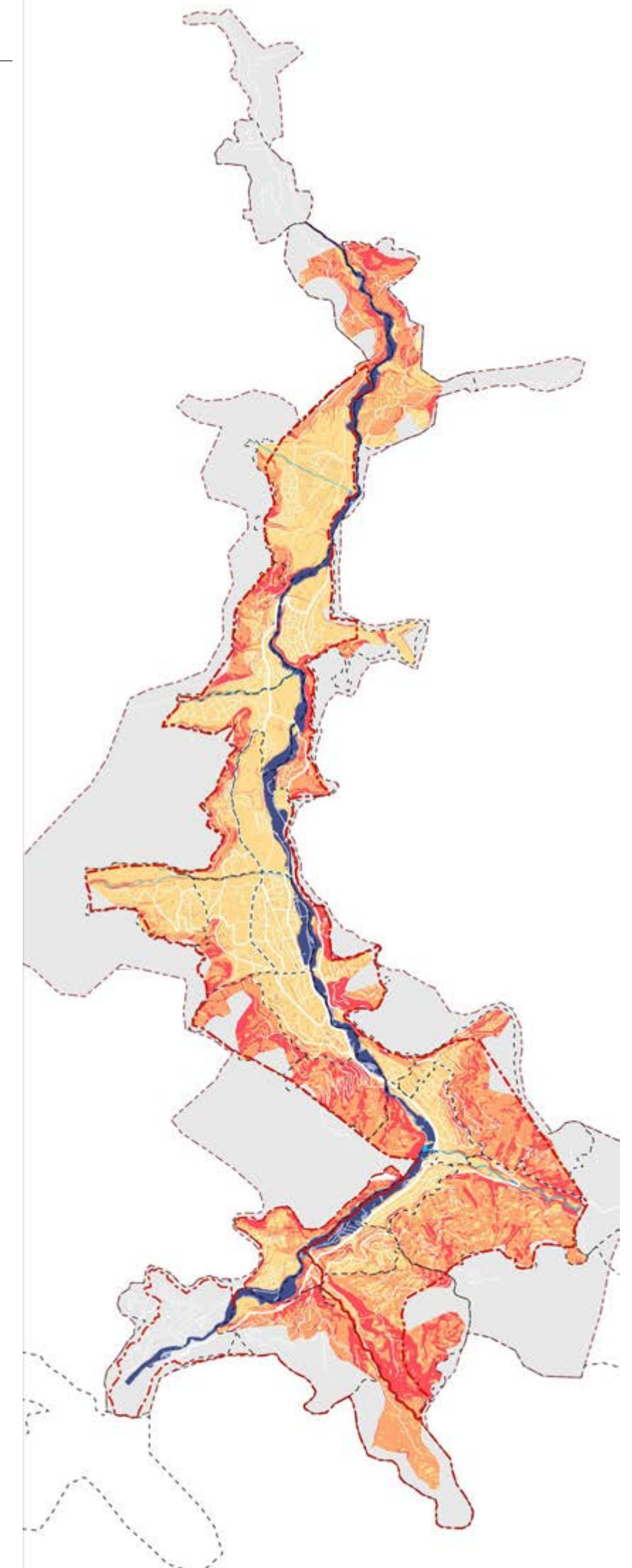
- Thromde Boundary
- Thromde Southern Extension Boundary
- Study Area Boundary
- Neighbourhood Boundaries

Geohazards

- No data
- High hazard zone
- Medium hazard zone
- Low hazard zone
- High food hazard
- Medium flood hazard

Table 4.13 Indicative Hazard Zone Criteria

Location	Hazard Rating	Permitted Development	Modelled Criteria	Un-Modelled Criteria	Minimum recommended assessment
Outside Indicative Hazard Zones		<ul style="list-style-type: none"> • Hospitals • Schools • Emergency services / buildings (i.e. police, ambulance, fire stations etc.) • Critical Infrastructure (i.e. primary transport routes, power stations, water treatment etc.) • Dwellings & residential institution (e.g. care homes, social housing, nurseries etc.) 	All other areas	-	Site-specific ground investigation
	Low	<ul style="list-style-type: none"> • Buildings used for leisure, warehousing, industrial, mineral • Low occupancy residential (subject to minimum recommended assessment) • Local transport infrastructure • Waste treatment (excl. Haz) • Agriculture & Forestry 	Low hazard slope instability mapping (Arup modified)		Site-specific hazard assessment (incl. site-specific ground investigation)
Inside Indicative Hazard Zones	Medium		Medium hazard slope instability mapping (Arup modified) 1m Freeboard above 1:100 year RP adjacent to Thim Chhu		Justification test Site-specific hazard assessment (incl. site-specific ground investigation)
	High	<ul style="list-style-type: none"> • Amenity open space, outdoor sports & recreation • Water-based recreation (where adjacent to waterbodies) 	High hazard slope instability mapping (Arup modified) 1:100 Floodplains	15m horizontal buffer from top of bank for streams (flooding & landslide run-out)	No development permitted



Green Belt

Rev1 Draft







POLICY PR2

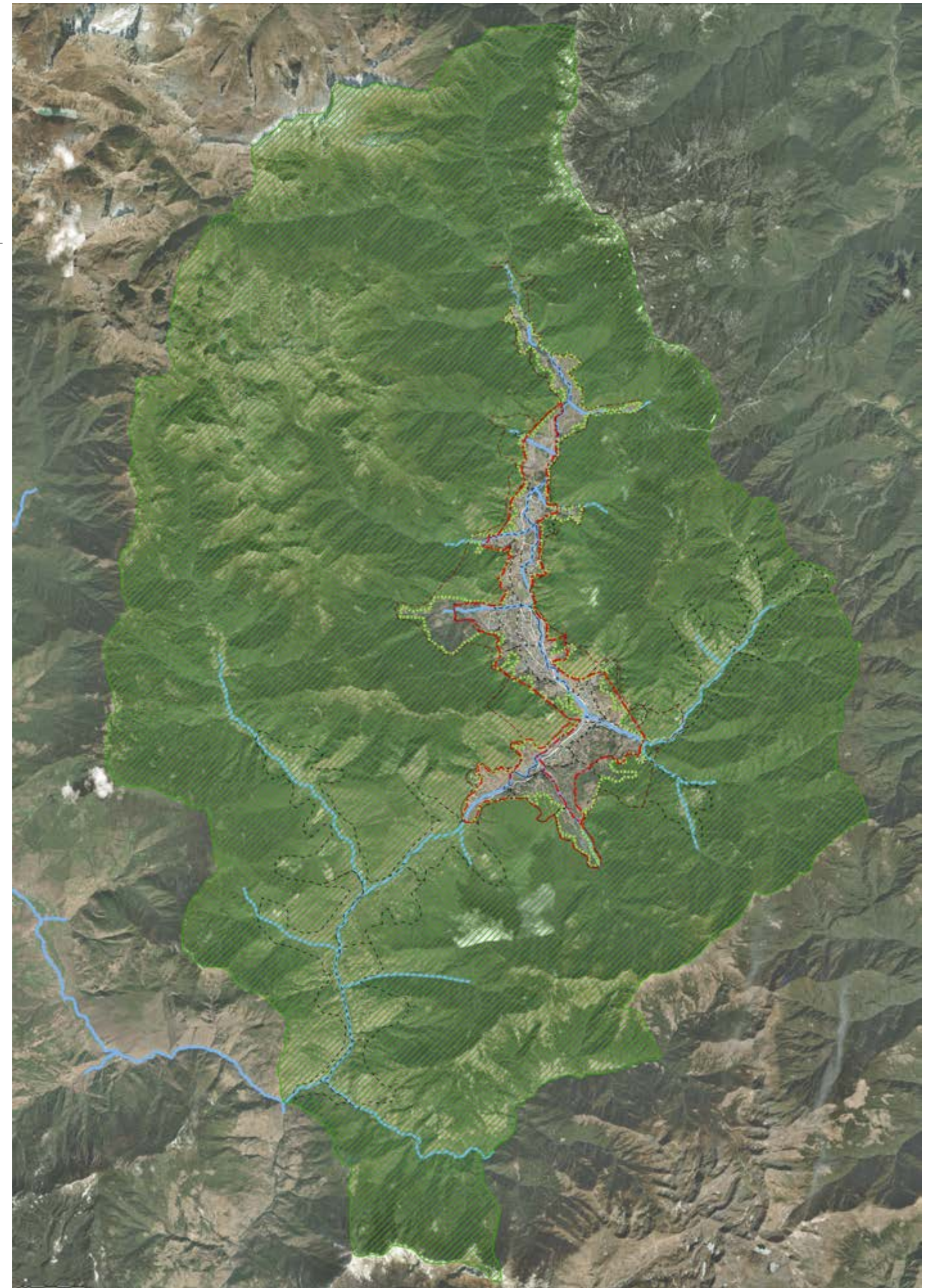
The Thimphu Green Belt will halt urban sprawl by restricting urban growth and protecting the unique setting of Thimphu.

Land included in a Green Belt must be retained permanently in agricultural or forest use, and any new development should only be allowed in exceptional circumstances.

Steps to enhance the beneficial use of Green Belt designated land should be undertaken, including access for leisure and outdoor activities, enhancing its landscape and biodiversity value and role in improving resilience to climate change and geo-hazards.

KEY

-  Thromde Boundary
-  Thromde Southern Extension Boundary
-  Study Area Boundary
-  Neighbourhood Boundary
-  Green Belt Inner Boundary
-  Green Belt Extent



Cultural Landscapes

Rev1 Draft

POLICY PR3

Land designated a Cultural Landscape should protect and restore Chuuzhing and orchards. These lands and the agricultural practices associated with them represent how traditional Bhutanese ways of living have interacted with and shaped landscapes over time.

Land designated a cultural landscape should be retained permanently for agricultural use as Chuuzhing or orchard and steps to sensitively convert Kamzhing into Chuuzhing, reintroducing paddy field agriculture, will be encouraged.

Land should only be re-designated or boundaries altered where exceptional circumstances are fully evidenced and justified, through the preparation or updating of plans.

Any new development should only be allowed in exceptional circumstances.

A Management Plan and Design Guide should be developed which sets out best practice for the maintenance and restoration of cultural landscapes within Thimphu.

New development proposals are required to comply with the management plan and design guide and prepare a Heritage Impact Assessment for approval by the Thromde and Department of Culture.

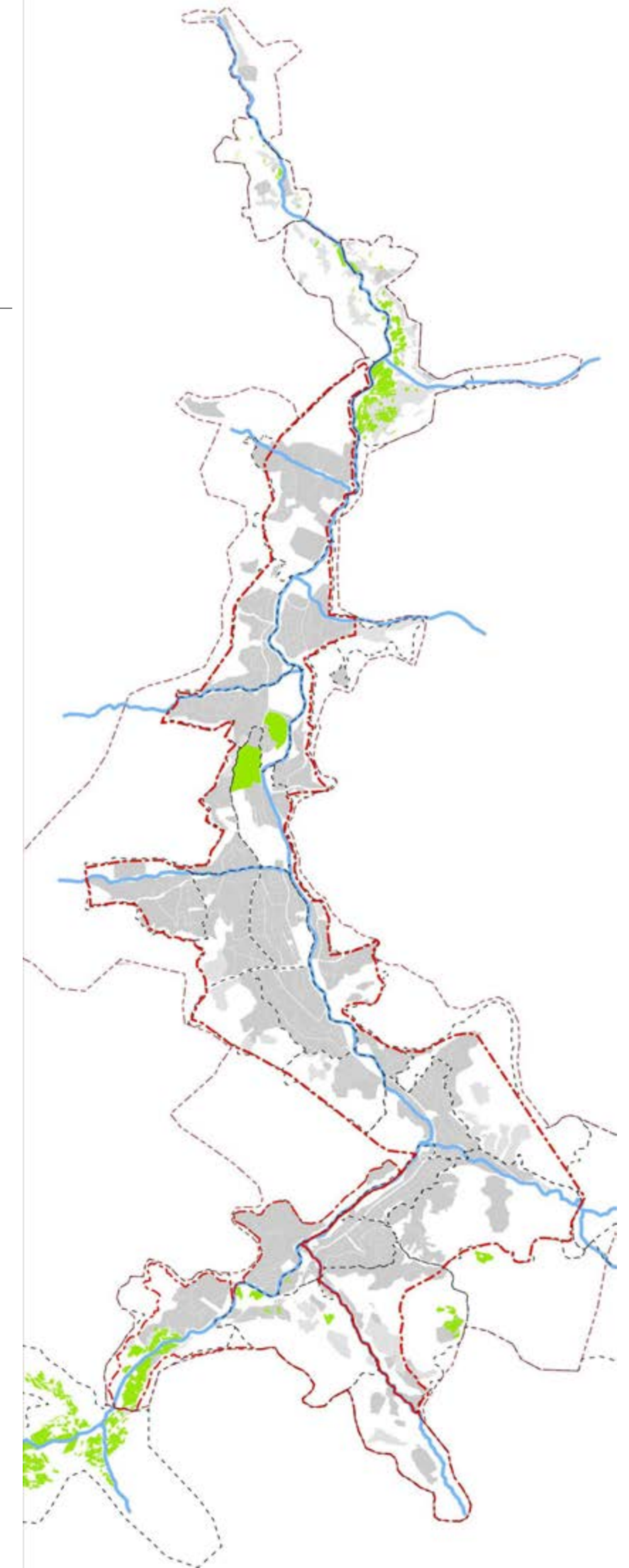
KEY

- Thromde Boundary
- Thromde Southern Extension Boundary
- Study Area Boundary
- Neighbourhood Boundary

Protections

- Cultural Landscape
- Urban Extents - Urban
- Urban Extents - Rural

Figure 1.1 Thimphu Structure Plan - Cultural Landscapes



Restricted Development

Rev1 Draft

POLICY PR4

Urban development in a land designated a restricted development zone will be limited in order to protect the landscape setting of Thimphu, protect against geohazards and to reduce urban sprawl.

New forms of urban development in land designated a restricted development zone will only be appropriate in certain circumstances.

Each restricted development zone across Thimphu has different conditions, vulnerabilities and impacts. Each therefore requires a Local Area Plan to define what would be considered appropriate development and identify mitigation measures required.

Any development proposal within a restricted development zone will be required to prepare a visual impact assessment to determine its impacts on the landscape character of the area and wider Thimphu. Depending on the relationship of the restricted development zone with geohazard hazard zoning, a Site-Specific Hazard and Risk Assessment, Justification Test or a site-specific ground investigation will be required.

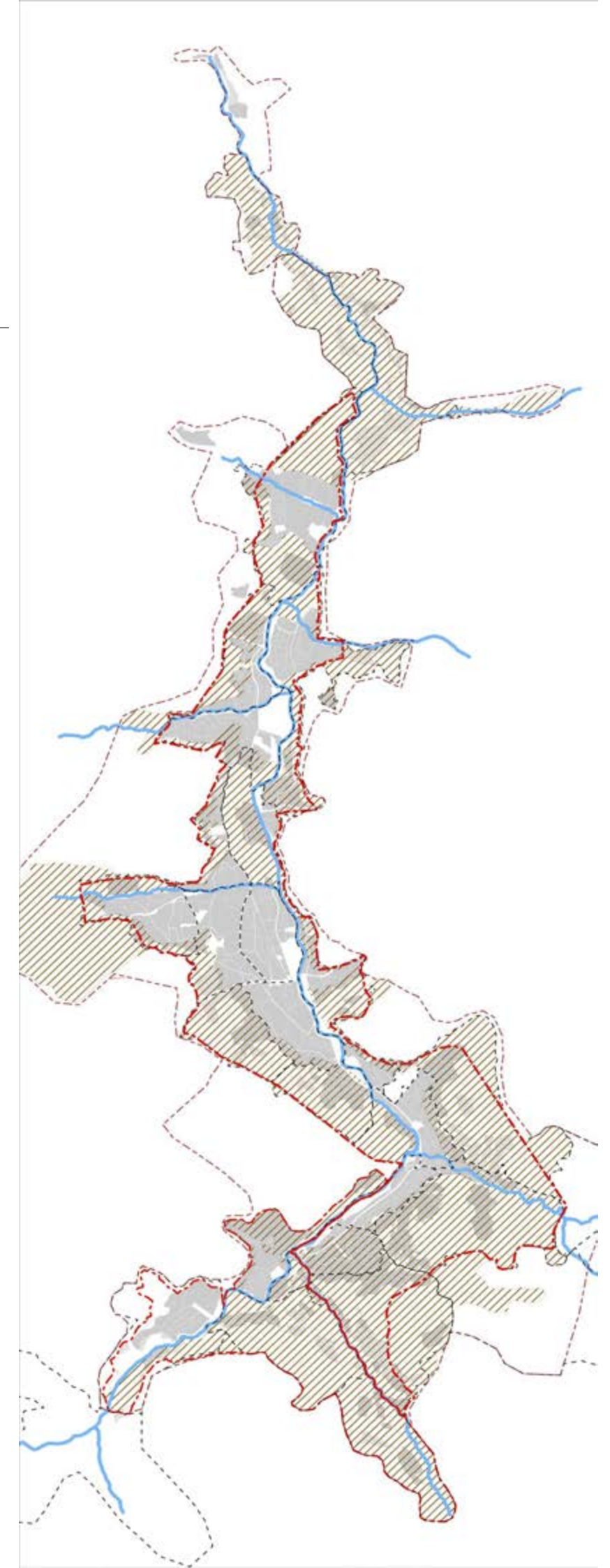
Restricted development zone designations and boundaries should only be altered where exceptional circumstances are fully evidenced and justified, through the preparation or updating of plans.

KEY

- Thromde Boundary
- Thromde Southern Extension Boundary
- Study Area Boundary
- Neighbourhood Boundary

Protections

- Restricted Development Zone
- Urban Extents - Urban
- Urban Extents - Rural



Heritage Protections

Rev1 Draft

POLICY PR5

Promote the conservation and activation of heritage sites according to international best practice. This includes:

A management plan should be prepared for each heritage asset or site.

Works to the heritage asset and proposed development within the setting/ buffer zone will be required to prepare a heritage impact assessment for approval by the Thimphu Dzongkhag/ Thimphu Thromde/ Department of Culture.

Decisions should seek to avoid impact on the heritage asset, its setting and the significance of both and require mitigation measures if necessary.

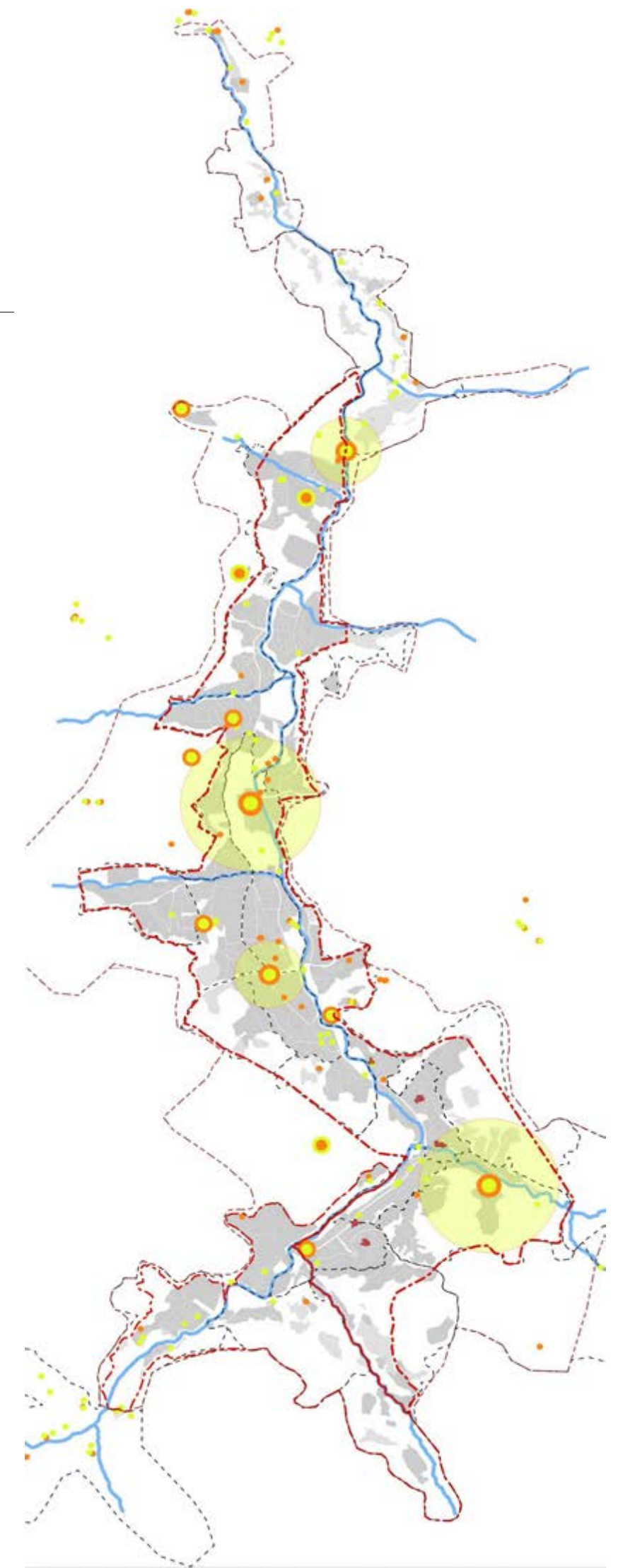
Decisions should take an informed view on the balance between impacts and the public benefit of the development proposal.

KEY

- Thromde Boundary
- Thromde Southern Extension Boundary
- Study Area Boundary
- Neighbourhood Boundary
- Urban Extent - Urban
- Urban Extent - Rural

Heritage Protections

- Grade A
- Grade B
- Grade C
- Chorten
- Lhakhang
- Buffer
- Traditional Village/ Traditional Architecture



View Corridors

Rev1 Draft

POLICY PR6

Protect key view corridors to and from landscape and historic or cultural features in the Thimphu Valley.

Any development proposal within the view corridor will be required to prepare a visual impact assessment to determine its impacts on the view in which it sits.

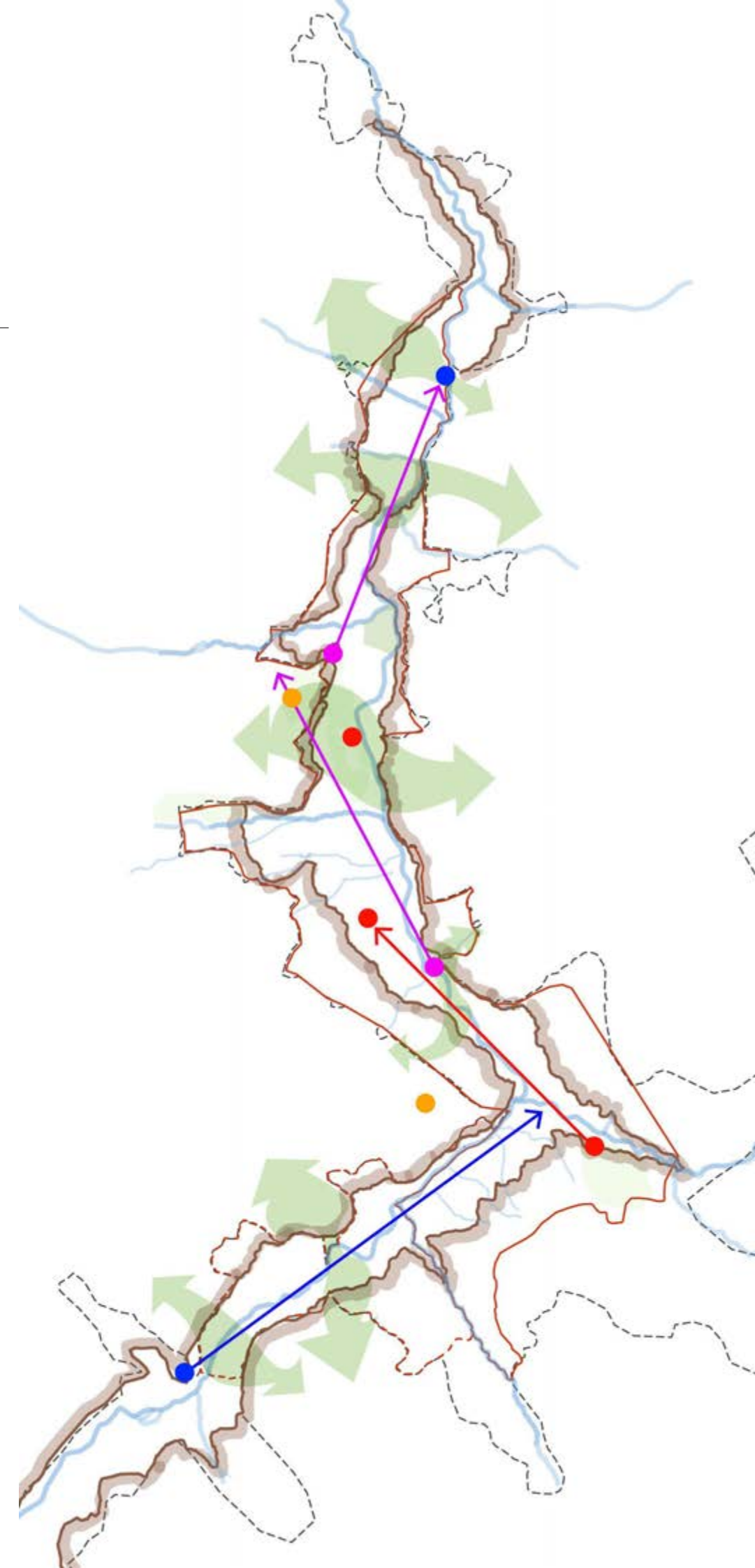
The outcome of these assessments should determine whether the proposed development should go ahead by taking an informed view on the balance between impacts and the public benefit of the development proposal

KEY

- Thromde Boundary
- Southern Extension Boundary
- Study Area Boundary

Views

- Key open space
 - Heritage assets marking the edge of the city
 - Heritage assets that are focal points
 - Heritage assets that are points of change
 - Heritage assets that are visual markers
 - Views
-



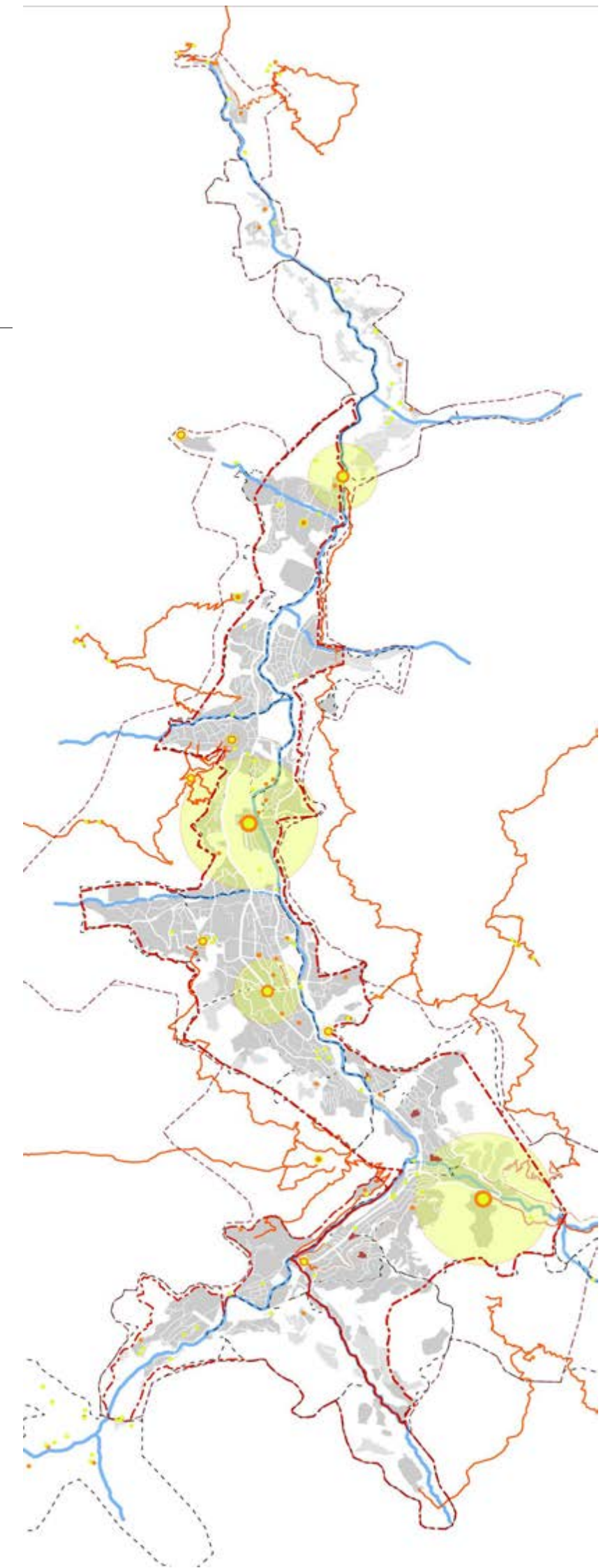
Routes and Trails

Rev1 Draft

POLICY PR7

Identify, protect and enhance routes and trails that connect areas of religious, cultural, historic and environmental value, offering short and long range walking opportunities.

- KEY**
- Thromde Boundary
 - Thromde Southern Extension Boundary
 - Study Area Boundary
 - Neighbourhood Boundary
 - Urban Extent - Urban
 - Urban Extent - Rural
- Heritage Protections**
- Grade A
 - Grade B
 - Grade C
 - Chorten
 - Lhakhang
 - Buffer
 - Traditional Village
- Routes and Trails**
- Route



Intangible Heritage

Rev1 Draft

POLICY PR8

Promote the preservation and practice of intangible cultural heritage within Thimphu. This includes practices, representations, knowledge and skills that the Bhutanese recognise as part of their cultural heritage such as:

- a) oral traditions
- b) religious/spiritual practices
- c) arts and crafts
- d) folk knowledge and customs
- e) cultural events
- f) music and dance



Green Infrastructure

Open Space

Rev1 Draft

POLICY G11

Open Spaces in Thimphu will be designated according to the following hierarchy to provide a network of multi-functional green infrastructure that serves the needs of the City:

- Metropolitan Park
- City Park
- Neighbourhood Park
- Small Open Space and Pocket Parks
- Heritage Open Space
- Small Open Spaces and Pocket Parks

A strategic approach to the creation, protection, enhancement and management of Open Spaces is encouraged.

New forms of development or uses will only be appropriate in designated Open Spaces in certain circumstances.

A City-wide Open Space Needs Assessment should be undertaken to set provision standards in terms of accessibility, quality, value and quantity, and identify deficiencies in provision. This should inform the development of policy options within Local Area Plans.

KEY

Protections

- - - TSP Study Boundary
- Thromde Boundary
- ⋯⋯⋯ Neighbourhood Boundary
- ⋯⋯⋯ Inner Green Belt Boundary

Open Space

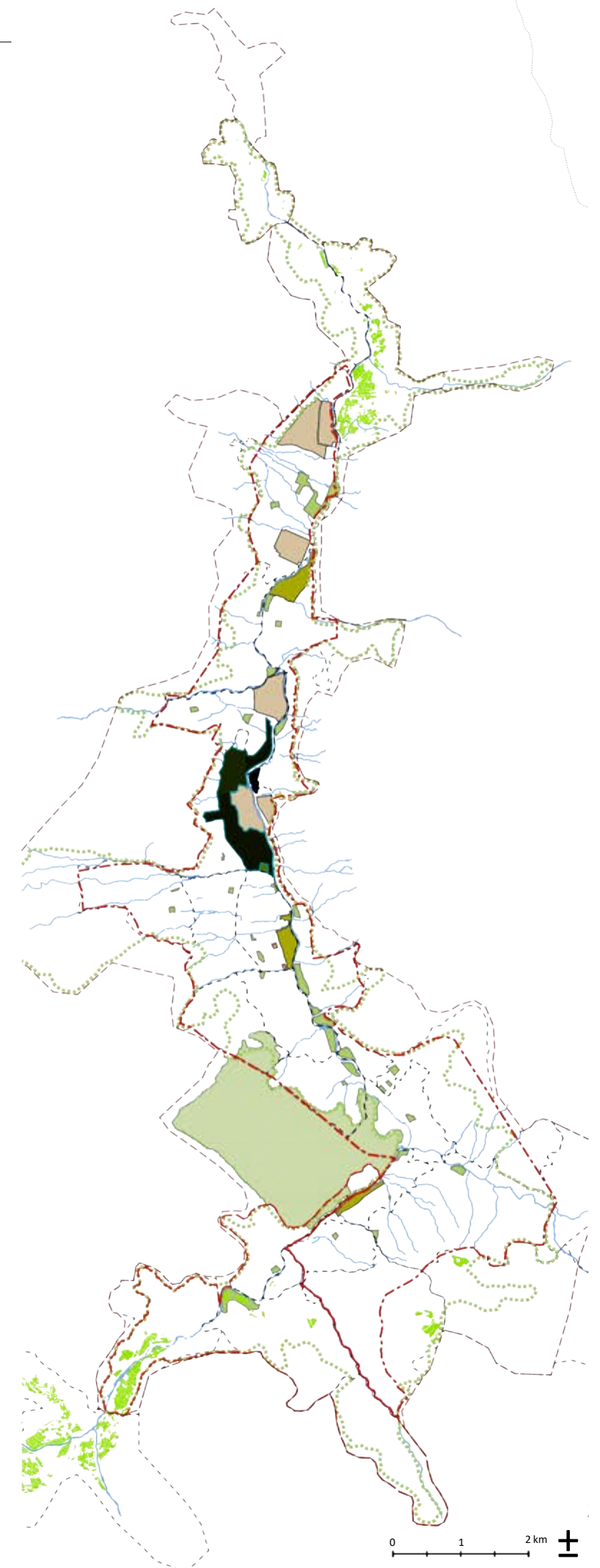
- Regional Park
- Metropolitan Park
- City Park
- Wang Chhu River Corridor
- Tashichho Dzong Royal Gardens
- Cultural Landscape
- Neighbourhood Park
- Public square
- Private landscape

Water System

- River
- Stream

Table 4.14 Open Space Categorisation

OPEN SPACE CATEGORISATION	DESCRIPTION	SIZE GUIDELINE	DISTANCE FROM HOMES
Metropolitan Park	This large park will be located around Tashichho Dzong, and will offer a new royal park at the heart of the City.	50ha	Serves the whole City
City Park	These are large areas of open space (including Taba Forest Park, Centenary Park, Babesa Ecological Park) each with its own distinct character that serves each district.	5ha	Serves each District
Neighbourhood Park	These are smaller areas of open space which are associated with new and existing neighbourhood centres.	2ha	Serves each Neighbourhood
Heritage Open Spaces*	These are open spaces around structures, monuments and religious buildings which contribute to the enjoyment of the heritage assets.	Varies according to heritage asset	Varies according to heritage asset
Small Open Space and Pocket Parks**	These include public gardens, children's play spaces (formal and informal) and shaded seating for passive recreation. These spaces should be integral to new development proposals.	Up 0.5 ha (but size will depend on scale of new development)	Doorstep provision (integral to developments)



Wang Chhu River Corridor

Rev1 Draft

POLICY GI2

The Wang Chhu River Corridor will be designated to address its strategic importance within the City and to maximise its multifunctional social, economic and environmental benefits.

The Wang Chhu River Corridor should be protected from further encroachment and its natural environment should be preserved. Opportunities to incorporate a series of interconnected parks and gardens for public use should be maximised.

Appropriate forms of new development or uses within the River Corridor should be guided by an overarching Management Plan and Design Guide, with further detail set out in Local Area Plans.

KEY

Protections

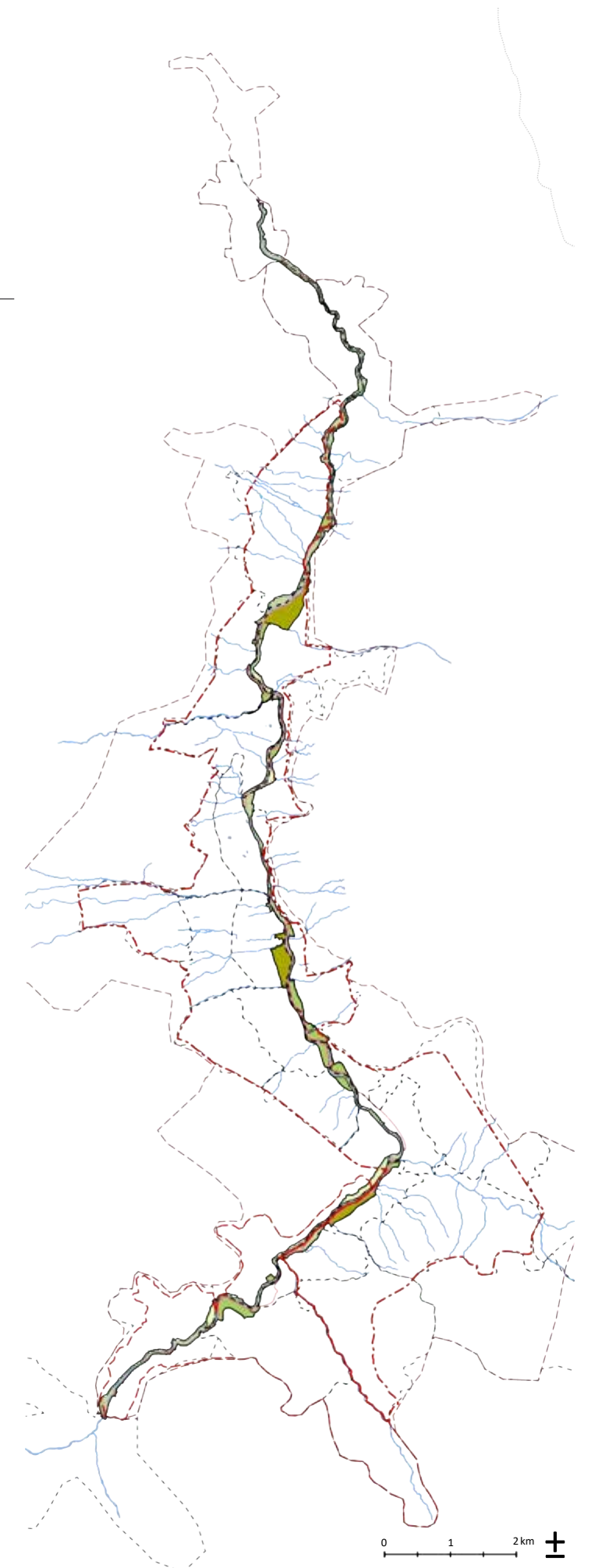
- TSP Study Boundary
- Thromde Boundary
- Neighbourhood Boundary
- Inner Green Belt Boundary

Wang Chhu River Corridor

- River Walk
- Wang Chhu River Corridor

Water System

- River
- Stream



Green Corridors

Rev1 Draft

POLICY G13

Thimphu's network of green corridors should be protected and enhanced.

Green Corridors should be managed in an integrated way to achieve multiple benefits including stormwater drainage, climate change mitigation and adaption, biodiversity improvements, public amenity and connecting people with nature.

Green infrastructure along key streets should be encouraged to contribute to health and wellbeing and promote active travel.

KEY

Protections

- TSP Study Boundary
- Thromde Boundary
- Neighbourhood Boundary
- Inner Green Belt Boundary

Open Space

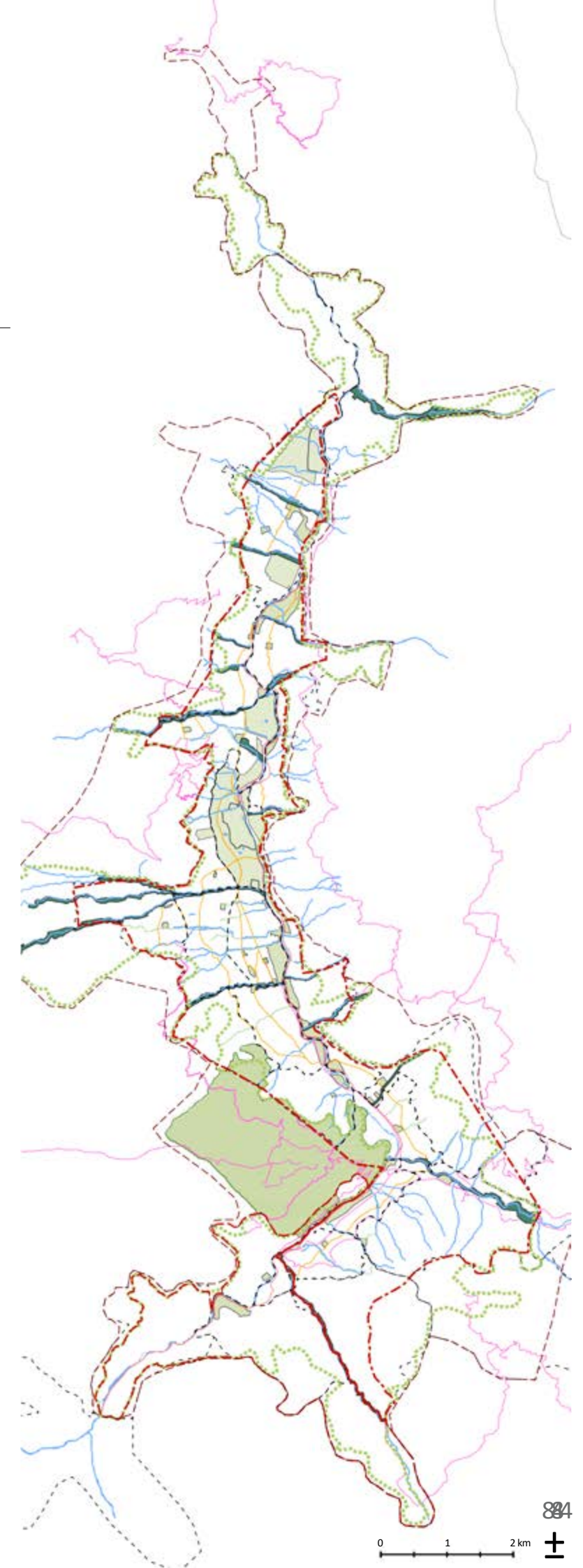
- Regional Park

Green Corridor

- Green Stream
- River Walk
- Urban Corridor
- Trail
- Valley park

Water System

- River
- Stream



Biodiversity and Nature in the City

Rev1 Draft

POLICY GI4

Promote the conservation and protection of biodiversity sites according to international best practice.

Sites of habitat importance should be protected under one of three biodiversity designations.

Development near a biodiversity designation should consider its impact on the site, with the necessary mitigation provided.

A Biodiversity Management Plan should be prepared covering the City's biodiversity sites.

Local Area Plans could provide more detailed standards or objectives based on local factors.

KEY

Protections

- TSP Study Boundary
- Thromde Boundary
- Neighbourhood Boundary
- Inner Green Belt Boundary

Biodiversity and Nature in the City

- Forest Pockets
- Local Nature Reserve
- Riparian Corridor

Water System

- River
- Stream



Urban Greening

Rev1 Draft

POLICY US9

All development proposals should contribute to the greening of Thimphu by including urban greening as a fundamental element of site and building design, and by incorporating measures such as high-quality amenity and landscaping (including trees), green roofs, green walls and nature-based sustainable drainage.

All development proposals should provide integrated high quality open space, retain trees of value and support the positive use of nearby green spaces.

A Design Guide should be prepared to establish key principles for Urban Greening across Thimphu. Local Area Plans should provide a locally defined "Urban Green Factor" which sets out the level of on-site green infrastructure that new developments proposals are expected to provide according to local circumstances.

Promote the provision of high quality Neighbourhood Parks (in line with Policy 1) and dedicated areas for food production at the neighbourhood scale, to meet local need.



Transport

Non-Motorised Transport

Rev1 Draft

POLICY T1

Develop an interconnected pedestrian and cycle network that integrates with various attractors, designated land use and other modes of transport, particularly public transport.

Legend

- Study Area Boundary
- Thromde Boundary
- Thromde Southern Extension Boundary
- Neighbourhood Boundary

Centres Hierarchy

- City Centre
- Local Centre
- Neighbourhood Centre
- Sub-District Centre
- River
- Stream

10-minute walking distance from local and neighbourhood centres and City core, and within 5-minute walking distance from public transport

- Mobility improvements in Norzin Lam
- NMT improvements Memorial Chorten - Lungten Zampa Bridge
- New pedestrian route Clock Tower - Centenary Park
- Pedestrian improvements East-West Laneways
- NMT Bridge

CycleNetwork

- Primary/Greenways
- Aspirational Secondary
- Aspirational Tertiary

Future Road Network

- Primary
- Secondary
- Tertiary
- Pedestrianised
- Access



Public Transport

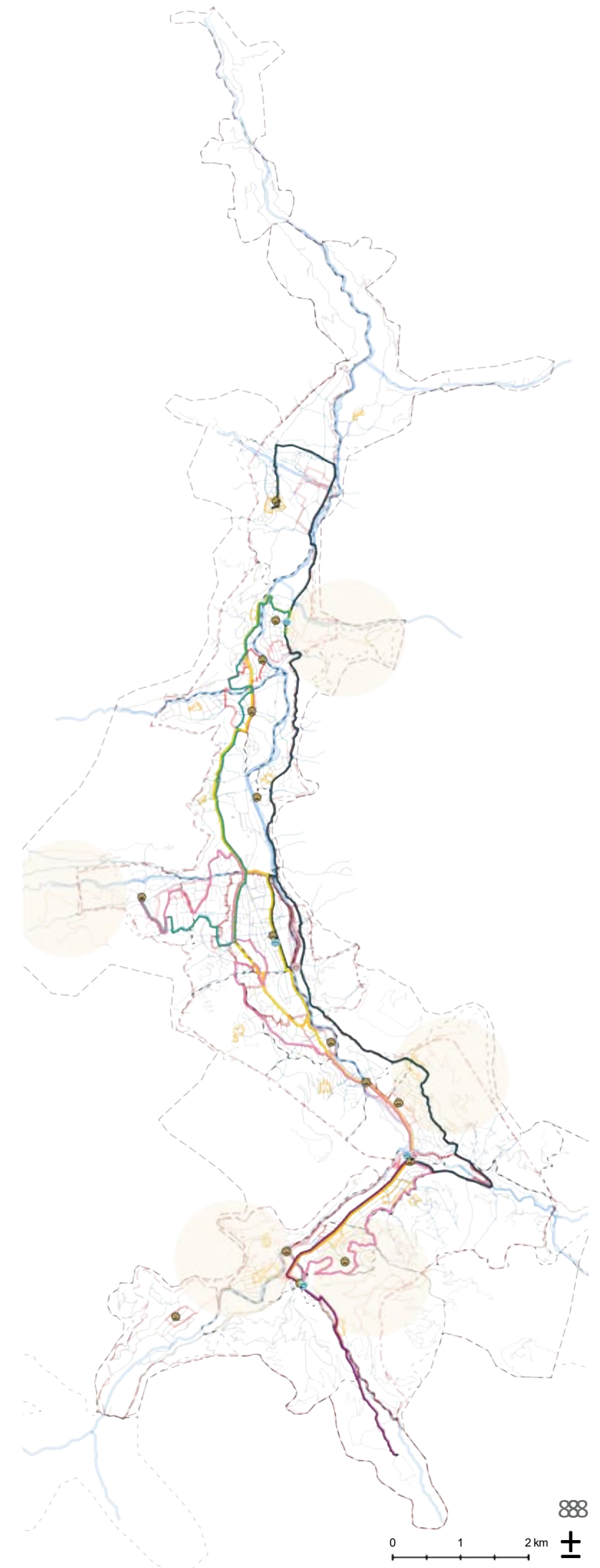
Rev1 Draft

POLICY T2

Development of a convenient, affordable and reliable public transport network that meets the demand of the growing population and designated land use in the city. Major public transport stations need to connect to the city centre, sub-district centre, neighbourhood centres and local centres, supported by good quality non-motorised transport and taxis through mobility hubs.

Legend

- Study Area Boundary
 - Thromde Boundary
 - Thromde Southern Extension Boundary
 - Neighbourhood Boundary
- ### Centres Hierarchy
- City Centre
 - Local Centre
 - Neighbourhood Centre
 - Sub-District Centre
 - River
 - Stream
 - Demand responsive service catchment area
- ### Future Bus Network
- Trunk Route – Dangrina to Olakha
 - Trunk Route – Taba to Ngabiphu
 - Local Route – Olakha to RTC
 - Local Route – Motithang to Taba
 - Local Route – Motithang to Ngabiphu
- ### Category
- City Bus Station
 - Mobility Hub
 - Regional Bus Station
- ### Future Road Network
- Primary
 - Secondary
 - Tertiary
 - Pedestrianised
 - Access

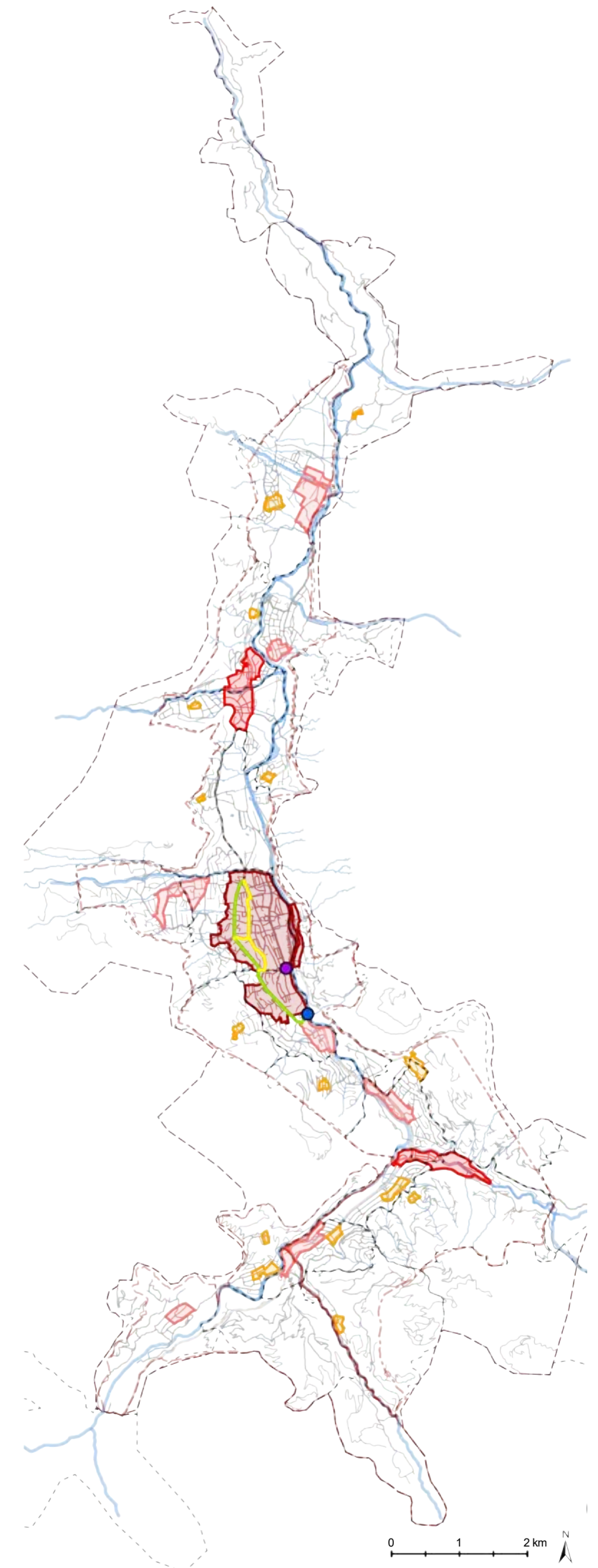


Public Transport

Rev1 Draft

POLICY T3

Establish a clear road hierarchy with minimal impacts to sustainable and shared transport modes. It is necessary to minimise through traffic in the city core and residential centres in favour of sustainable modes of transport.



Car Parking

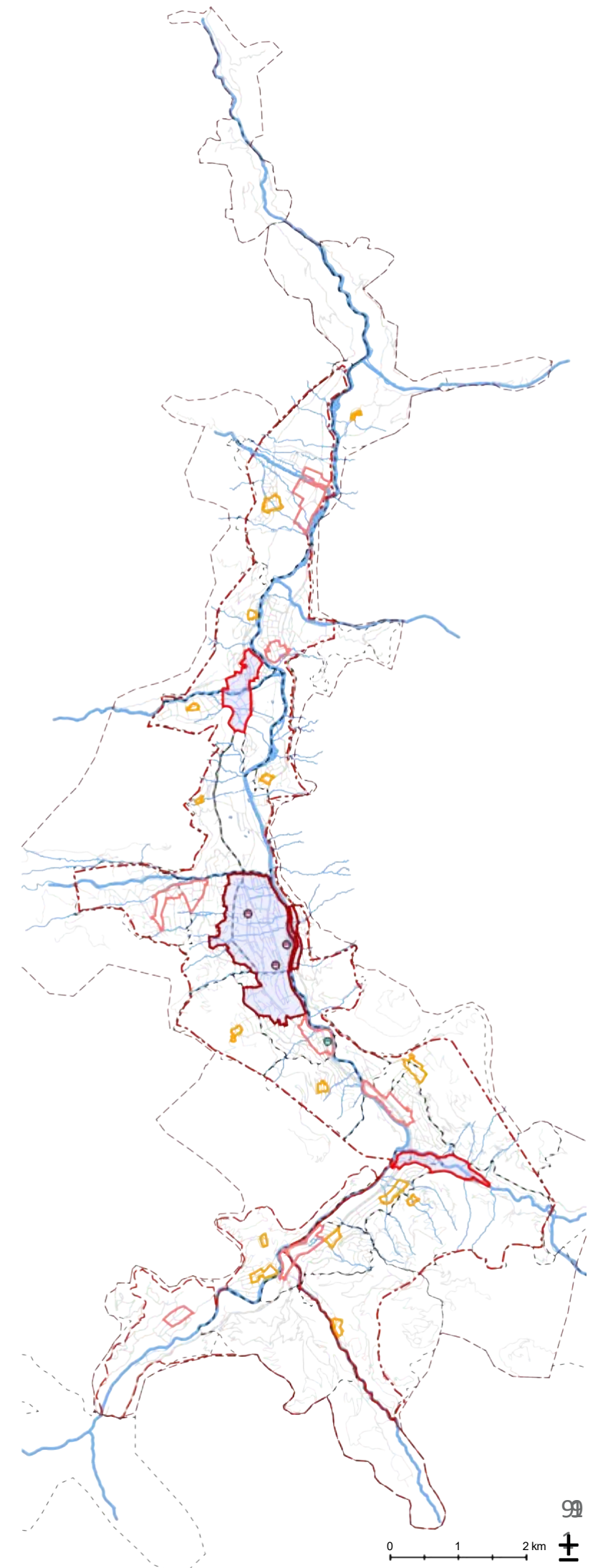
Rev1 Draft

POLICY T4

Car parking fare and enforcement strategy need to support desired traffic management and shift to sustainable transport modes. Car parking areas are clear and legible and do not have detrimental impact on urban realm and attractiveness of urban spaces.

Legend

- Study Area Boundary
- Thromde Boundary
- Thromde Southern Extension Boundary
- Neighbourhood Boundary
- Centres Hierarchy**
- City Centre
- Local Centre
- Neighbourhood Centre
- Sub-District Centre
- Stream
- River
- Parking tariffs review
- Parking bay reallocation
- Off-street car park improvements
- Future Road Network**
- Primary
- Secondary
- Tertiary
- Pedestrianised
- Access



Freight and Goods Movement

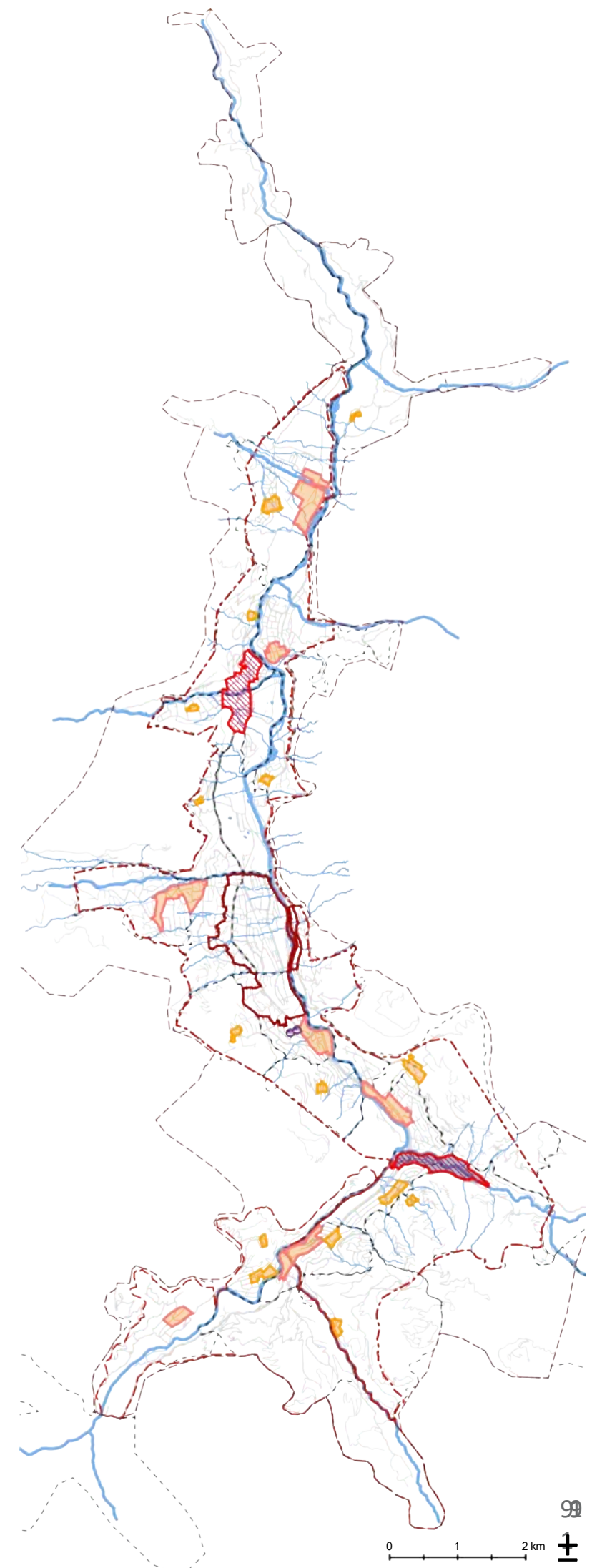
Rev1 Draft

POLICY T5

Establish a clear freight route that does not have detrimental impact on space for sustainable modes of transport. The freight route need to support an efficient movement of goods and accommodate the needs of the City.

Legend

- Study Area Boundary
- Thromde Boundary
- Thromde Southern Extension Boundary
- Neighbourhood Boundary
- Centres Hierarchy**
 - City Centre
 - Local Centre
 - Neighbourhood Centre
 - Sub-District Centre
- River
- Stream
- Relocate sawmills to more peripheral location
- Establish a distribution/logistics hub
- Establish parcel lockers
- Establish post offices
- Future Road Network**
 - Primary
 - Secondary
 - Tertiary
 - Pedestrianised
 - Access



Utility Infrastructure

Water Supply

Rev1 Draft

POLICY US9

Safe, equitable and reliable drinking water will be available to all residents within the TSP study extents. Safe drinking water needs to meet the requirements of the 2016 Bhutan Drinking Water Quality Standards, with appropriate measures for managing the risk of contamination from the water source through to tap. The water supply network will be resilient to future shocks and stresses, such as climate change and population growth, and be sensitive to the natural environment. The water supply network shall also be capable of delivering adequate water for firefighting purposes.

Legend

Water

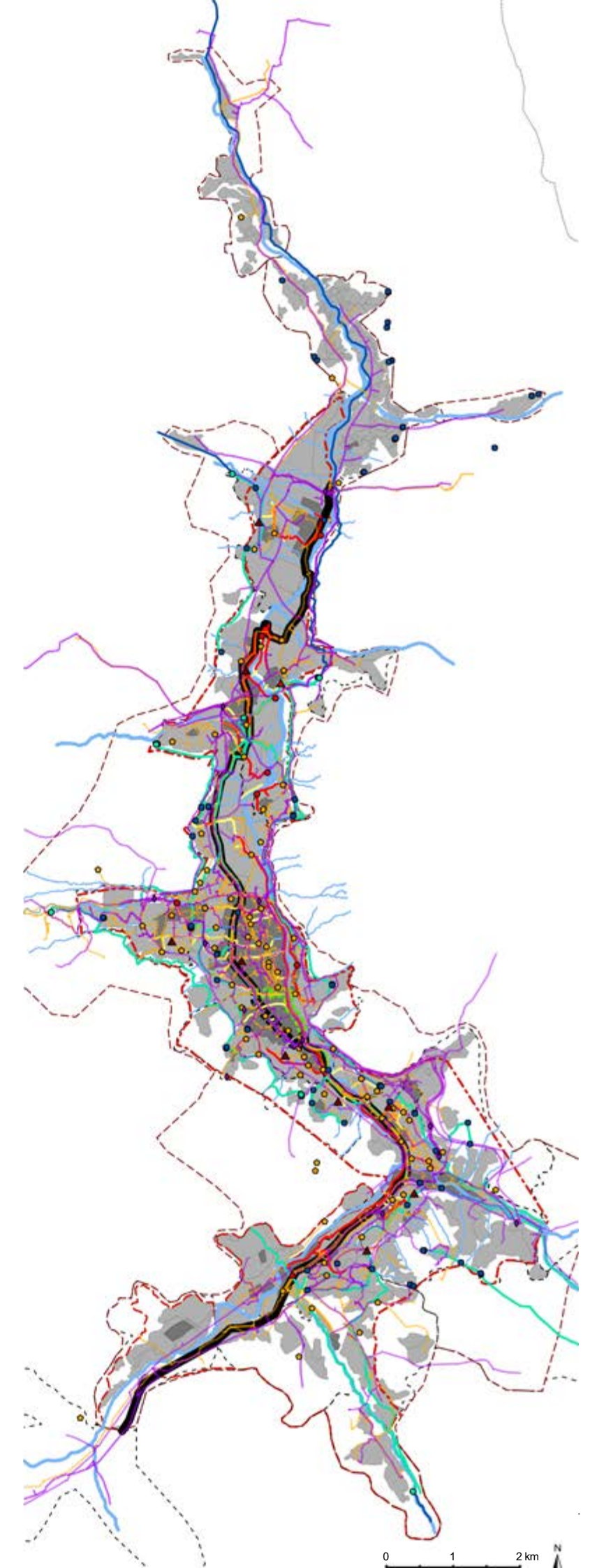
- Water Treatment Plants (WTP)
- Storage Reservoirs
- Raw Water Mains
- Water Trunk Supply Mains
- Water Trunk Distribution Mains
- Existing Local Distribution Network
- Existing Private Supply Network
- Proposed Local Distribution Network

Boundaries

- TSP Study Boundary
- Thimphu Southern Extension
- Thimphu Thromde
- Thimphu Neighbourhoods
- Thimphu Dzonghagk

TSP

- TSP Centres
- TSP Zones



Waste Water

Rev1 Draft

POLICY US9

Wastewater in Thimphu will be managed in a manner that both protects the environment and minimises the risk to public health. Wastewater services shall be provided to international standards for all residents in the TSP study extents and allow for growth of the city in accordance with the provisions of this Structure Plan. The water supply network must be resilient to future shocks and stresses, such as climate change and population growth, and be sensitive to the natural environment.



Stormwater

Rev1 Draft

POLICY US9

The Stormwater policy represents a change in traditional stormwater management to contribute to a more sustainable, liveable community with thriving landscapes and healthy waterways. Management of stormwater in Thimphu will focus on the water quality of stormwater runoff, while also supporting the requirements for conveyance and flood protection.

The approach to stormwater will involve the principles of Water Sensitive Urban Design (WSUD). These will need to be considered on a variety of scales from individual properties through to regional catchments, and ensure they're integrated with the planning process and development policy. Through this policy, the quality of stormwater runoff will be improved, degraded waterways will return to their natural condition and water will add to the well-being, amenity and biodiversity of Thimphu.



Waste

Rev1 Draft

POLICY US9

The keys policies are designed to focus on the reduction of waste in Thimphu and transitioning Thimphu to a circular economy.

For waste reduction, policies focused on waste collection and segregation to ensure valuable resources are diverted from landfill, for example organic and recyclable materials which make up a significant fraction of the total waste being generated.

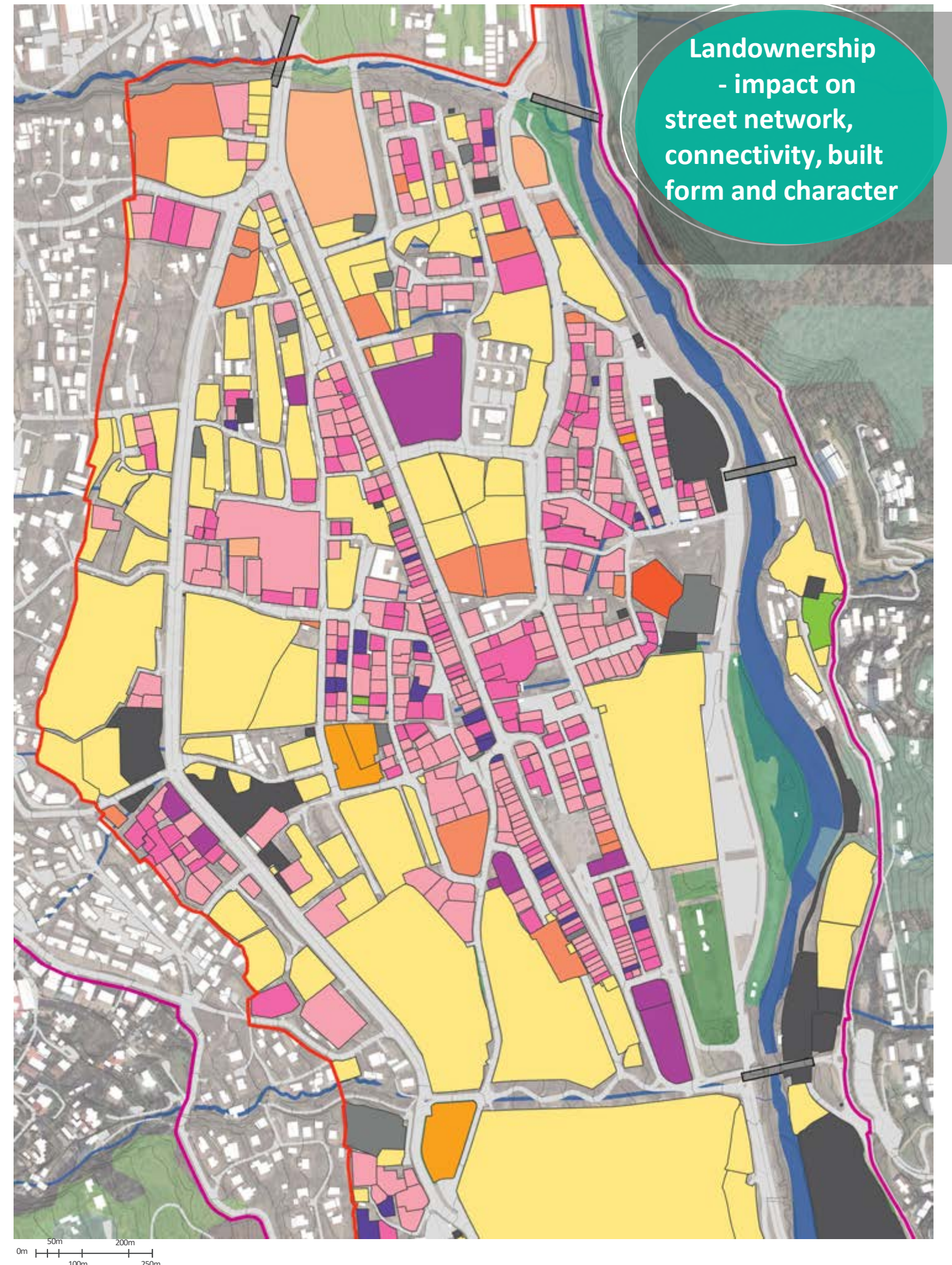


Case Study 1
At the City Centre

Challenges at the City Core

Land Ownership

- Land ownership in the core is a mix of public and private land. Owing to the small sized private land parcels the development has happened in a piecemeal manner.
- Impact on public realm - limited outdoor spaces for people to gather in and use
- Impact on forming a coherent and connected network of streets - lack of legibility, direct connections and accessibility
- Impact on built form - difficult to achieve a street based, urban townscape
- Impact on forming diverse character - similar point blocks with setbacks and maximum permissible height everywhere.



Landownership
- impact on
street network,
connectivity, built
form and character

KEY

- City Centre Action Plan Boundary
- City Centre Context Boundary

PRIVATE OWNERSHIP

- Individual Person
- Joint Owner
- Private Corporation
- Family Land

OTHER

- Religious Institution
- Government Institution
- Gerab Dratshang
- Crown Property
- Corporation
- Civil Society Organisation
- Unknown

Challenges at the City Core

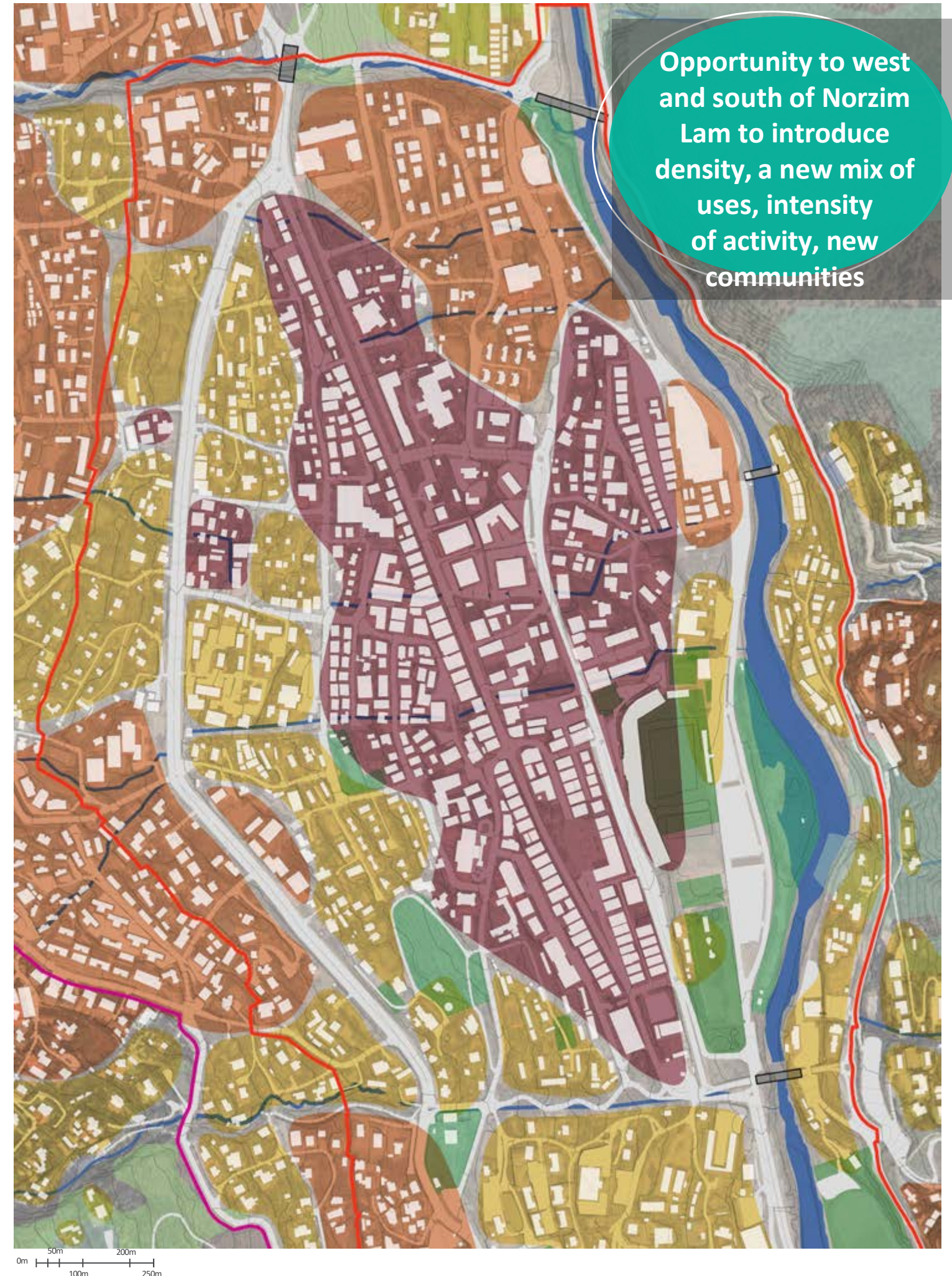
Under-utilisation of land - Massing and Density

- Buildings around Norzim Lam tend to be the tallest in the city. They are typically 4-6 storeys tall.
- Areas to the east of Norzim Lam are also relatively dense with heights varying from 3-5 storeys.
- Areas to the west of Norzim Lam are of low density and height.



KEY

	City Core Action Plan Boundary
	City Core Context boundary
	1 storey
	2 storey
	3 storey
	4 storey
	5 storey
	6 storey
	Unknown



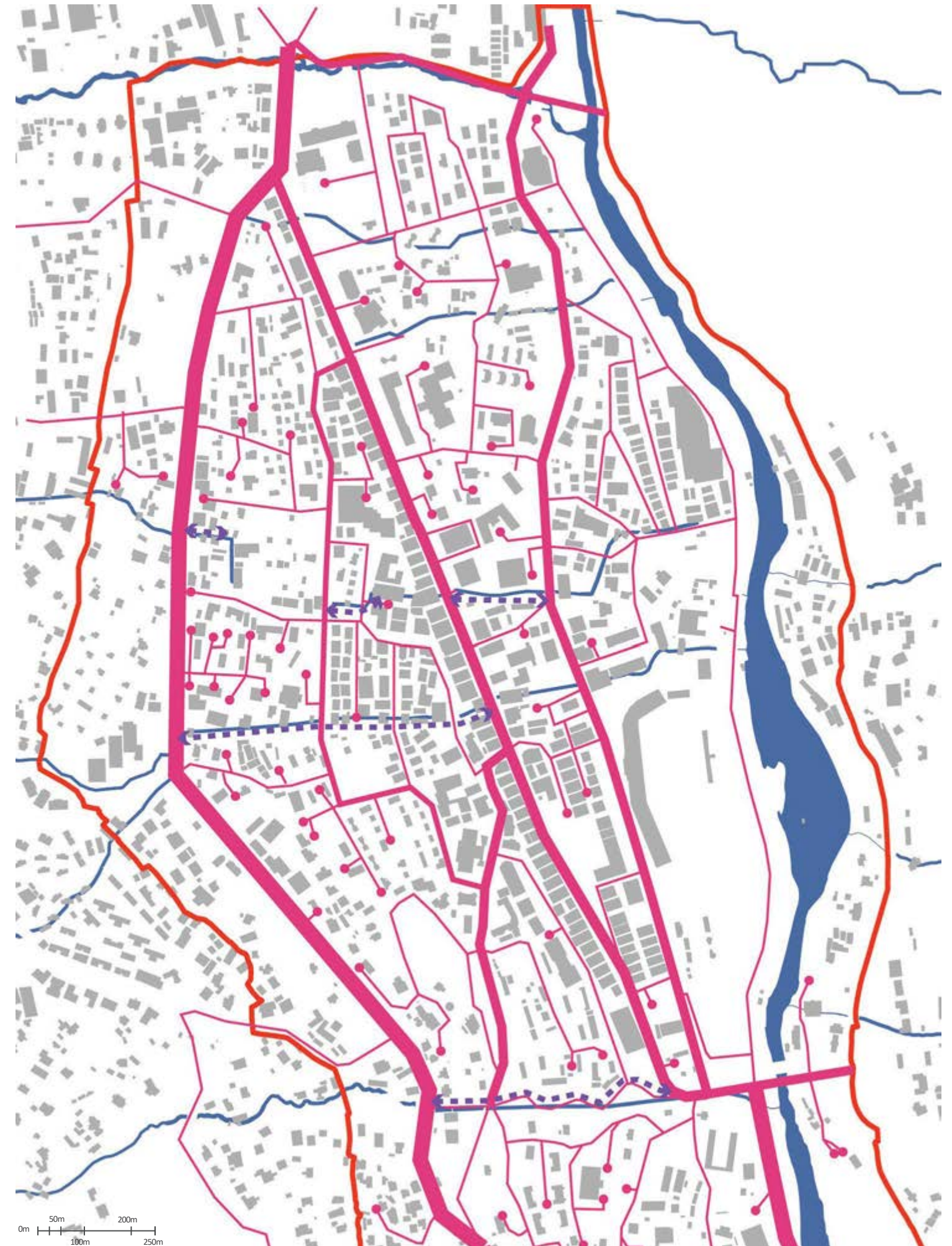
Challenges at the City Core

Street Network

- Streets do not form continuous connections.
- High number of dead ends and cul-de-sacs, especially to the west of Norzim Lam.
- Parking is not rationalised on a city or urban block level. Each individual building provides large areas of parking within respective compounds.
- Space for cars take precedent over spaces for people
- The topography provides a significant challenge to improve pedestrian linkages across the city and limit the use of cars.
- Some pedestrian EW routes exist which need to be enhanced.



- KEY
- City Core Action Plan Boundary
 - Vehicular Routes
 - Dead ends
 - Pedestrian Routes



Challenges

Failings of the existing DCR

- Under-utilisation of land leads to lack of density, activity and vibrancy in large parts of the city core.
- Where ownerships are fragmented and development intensified there is a lack of privacy, amenity and light for residents.
- Development pattern does not form streets and spaces well - lack of enclosure and overlooking.
- Land ownership pattern combined with topography challenges form an incoherent street network, impacting accessibility through the city.
- Lack of varied building typologies and no 'flex' according to specific use, context and any local character.
- Lack of variety in how people can live and no 'flex' for different lifestyles and age groups.
- General lack of diverse character and defined places within the city.
- Lack of a pedestrian focussed public realm.
- Lack of access and proximity to nature, greenspace and water.



Opportunities

DCR Reform

- An urban density that provides vibrancy and diversity: that forms streets and spaces well.
- Standards for daylight, privacy and amenities for higher performance and resilience of buildings
- A new, continuous and accessible street network that connects communities and integrates neighbourhoods with their city and its setting.
- Building on the existing character and activity pattern to build identity and legibility of place.
- A new public realm that prioritises people over vehicles.
- An urban realm that promotes active travel, recreation, health and sport.
- A new Green Infrastructure that brings people closer to nature and integrates well-being, bio-diversity and resilience.



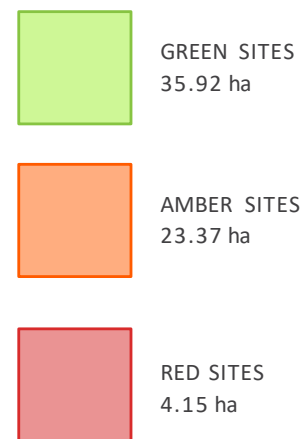
Opportunities at the City Core

Strategic Sites







- There are a lot of green sites within the city core which can help deliver significant amounts of development.
- Together these strategic sites will have a significant impact on the character, intensity and activity within the city core.

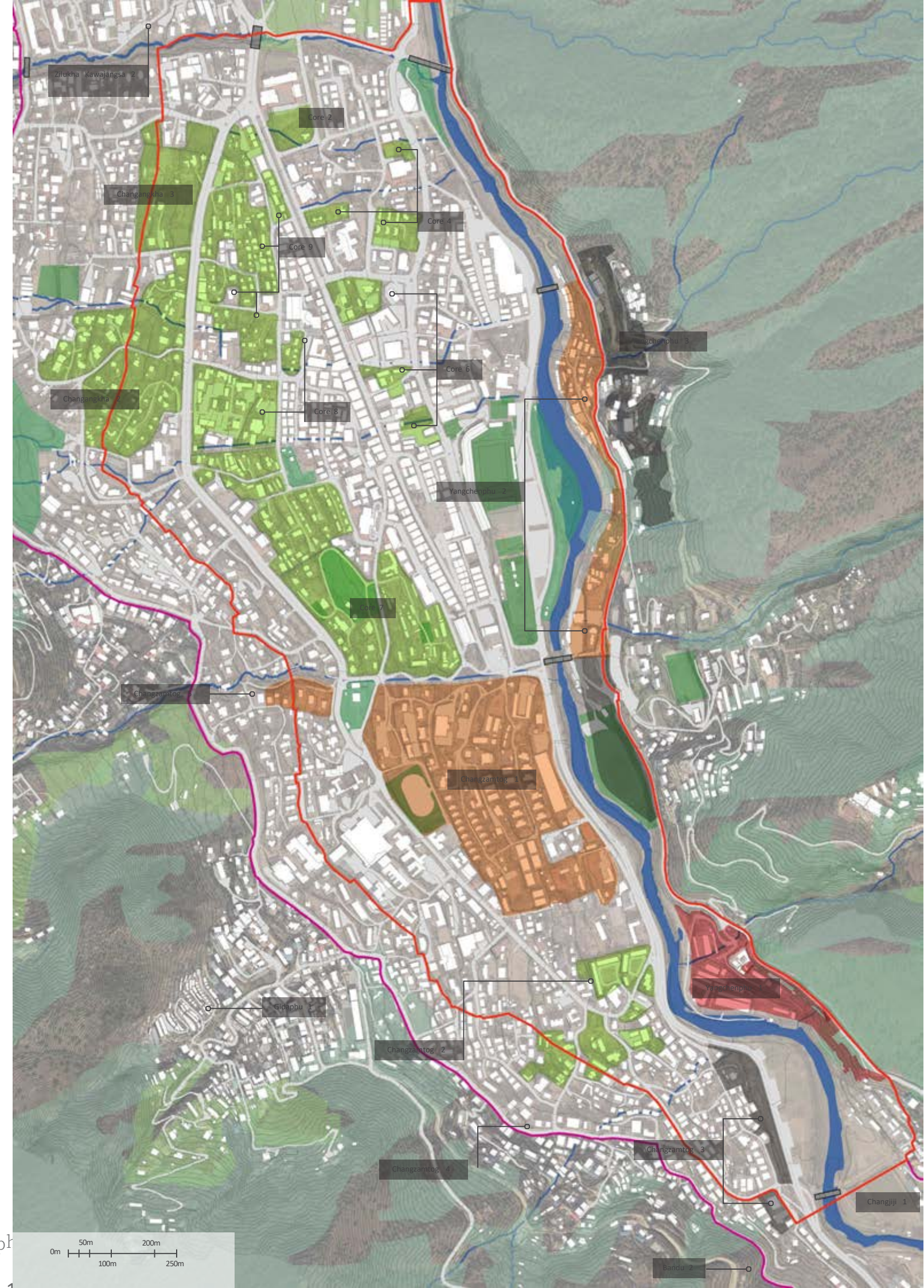


TOTAL LAND TAKE



KEY

-  City Core Action Plan Boundary
-  City Core Context boundary
-  Green Site
-  Amber Site
-  Red Site
-  Black Site



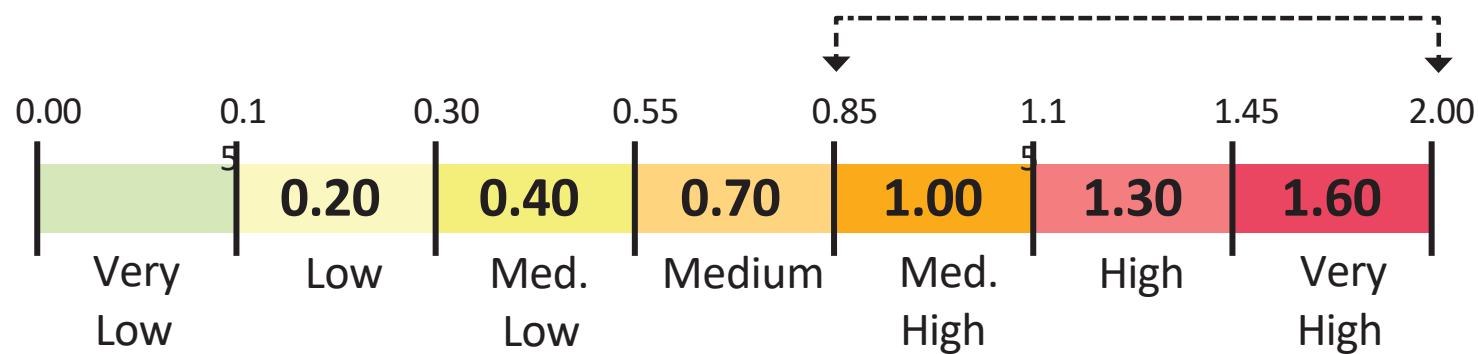
Opportunities at the City Core

A new living and working population

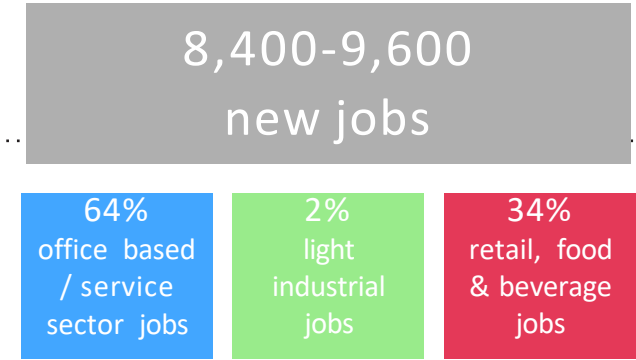
- Capacity assumptions based on Rev1 Draft TSP (issued 27th Jan)
- Bringing the existing FAR at the City Core to 1.00 - 1.60.



City Core proposed gross FAR ranges between 1.00 - 2.00



Employment, light industrial and mixed uses
*excludes non-spatial jobs



8,400-9,600 new jobs

total jobs gain within City Core

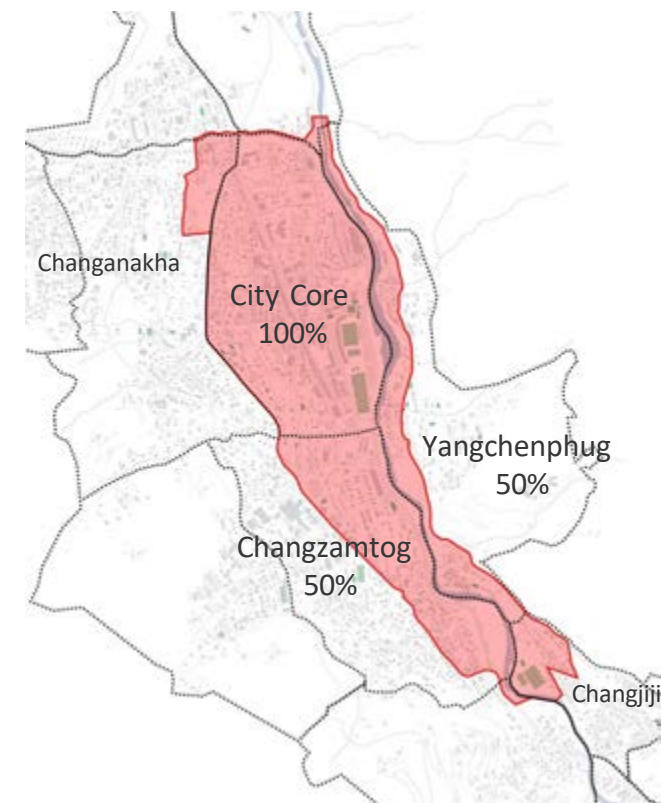
Residential uses



homes gain within City Core

population gain within City Core

*Initial areas and amounts - under ongoing review



Regeneration of the City Core

A Case Study

- The site is located west of Norzim Lam, adjacent to the Royal Boulevard and close to the Swimming Pool Complex.
- The southern edge of the site has an urban stream running along it with an existing pedestrian pathway.
- The site is primarily government owned with a commercial strip on the western edge that has a fragmented mix of private ownerships.



KEY

City Centre Action Plan Boundary

City Centre Context Boundary

PRIVATE OWNERSHIP

Individual Person

Joint Owner

Private Corporation

Family Land

OTHER

Religious Institution

Government Institution

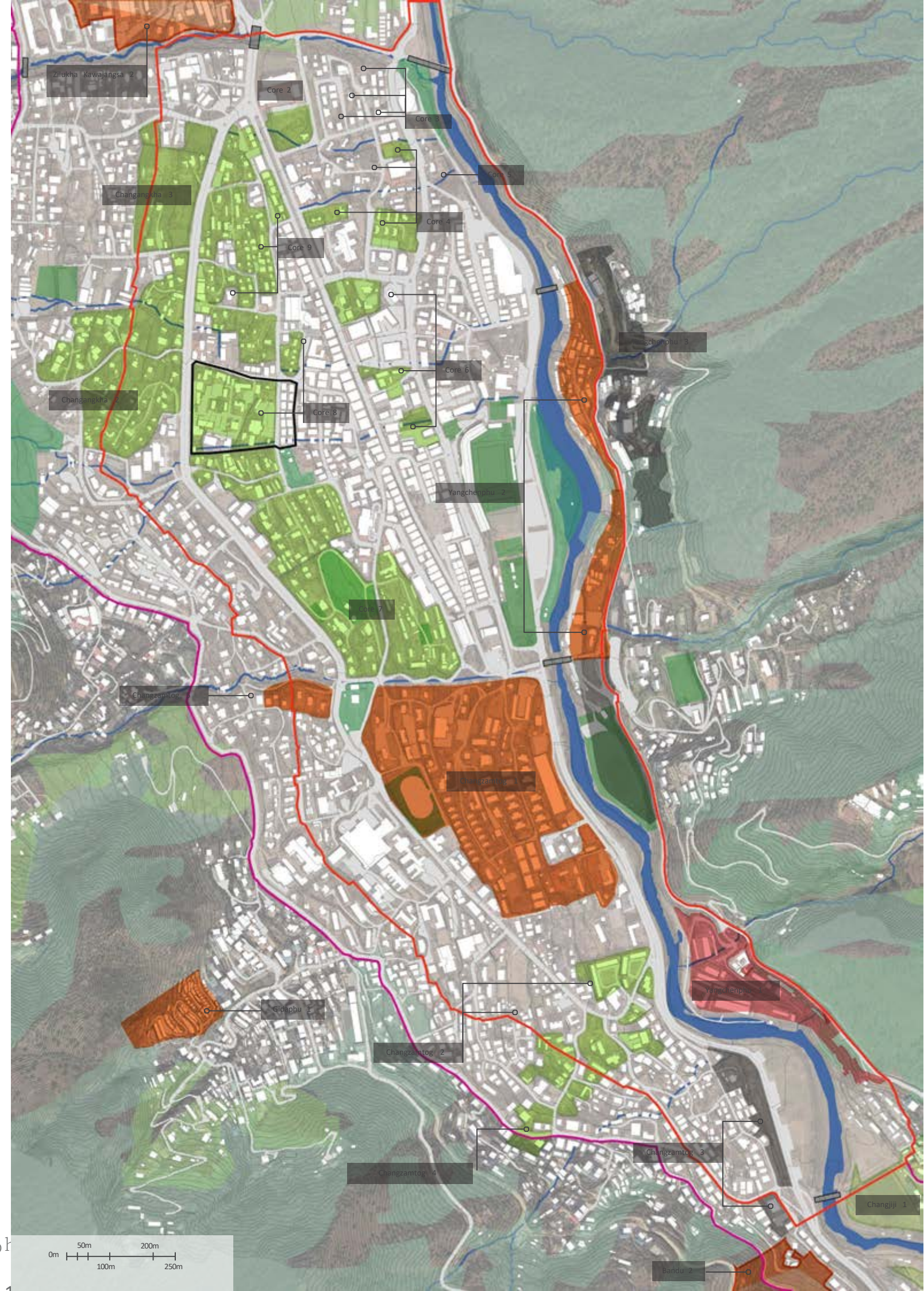
Gerab Dratshang

Crown Property

Corporation

Civil Society Organisation

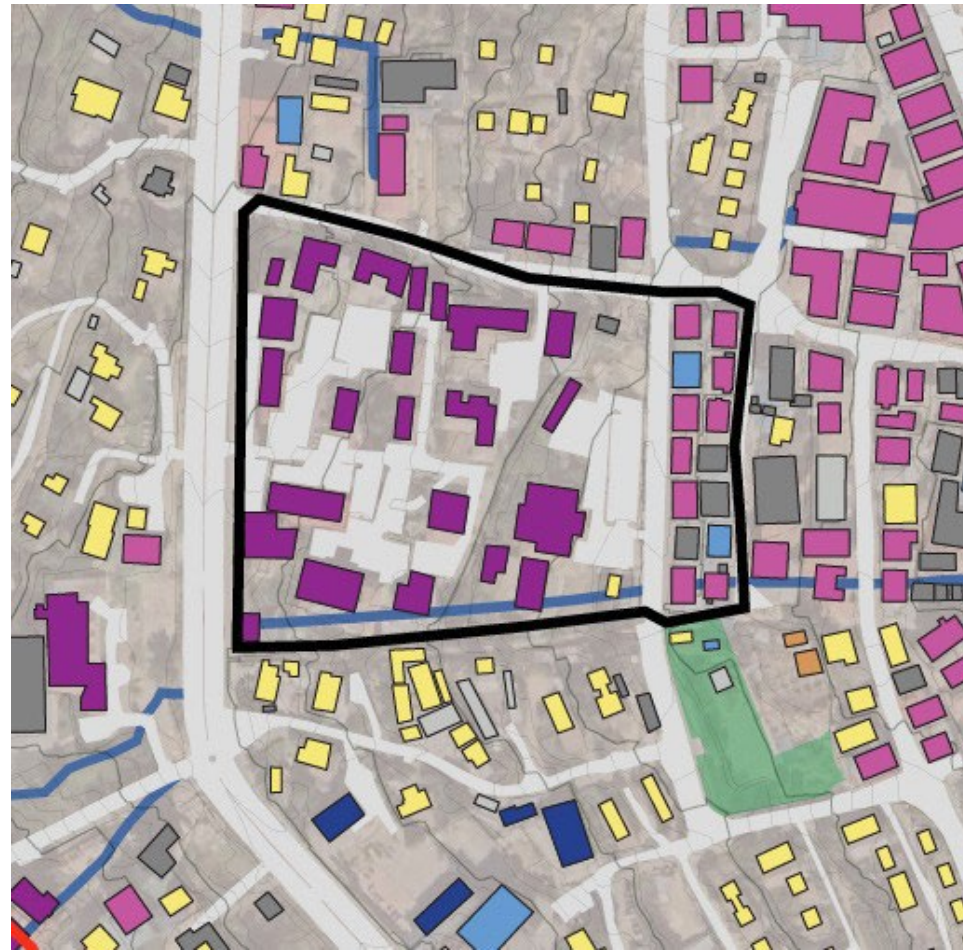
Unknown



Regeneration of the City Core

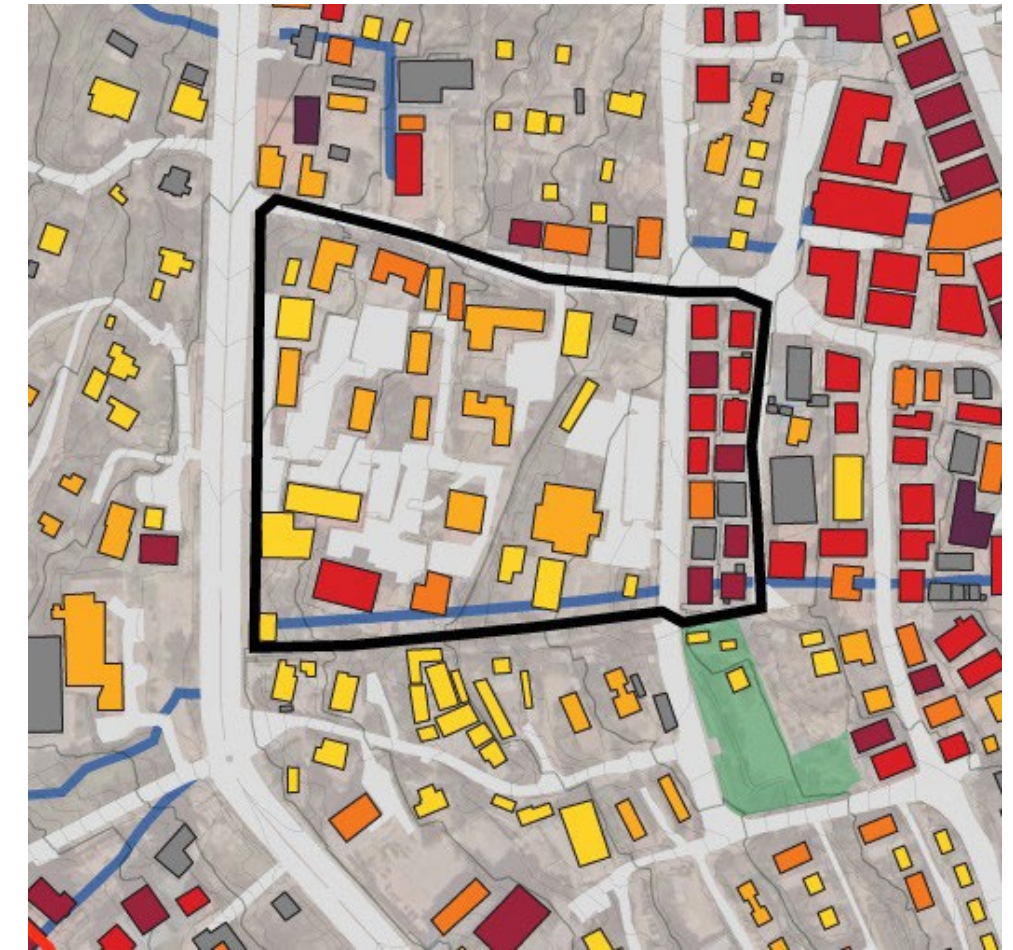
A Case Study - the existing site

- The site primarily has government offices within it (towards the western side) and a mixed use cluster in the east.
- The western part of the site has low density with most of the buildings being 1-2 storeys tall.
- The eastern part of the site under private ownership have high densities with buildings typically 4-6 storeys tall.



Land Use

KEY	
	Test site boundary
	Residential
	Commercial
	Mixed Use
	Religious
	Education
	Institutions
	Hospital



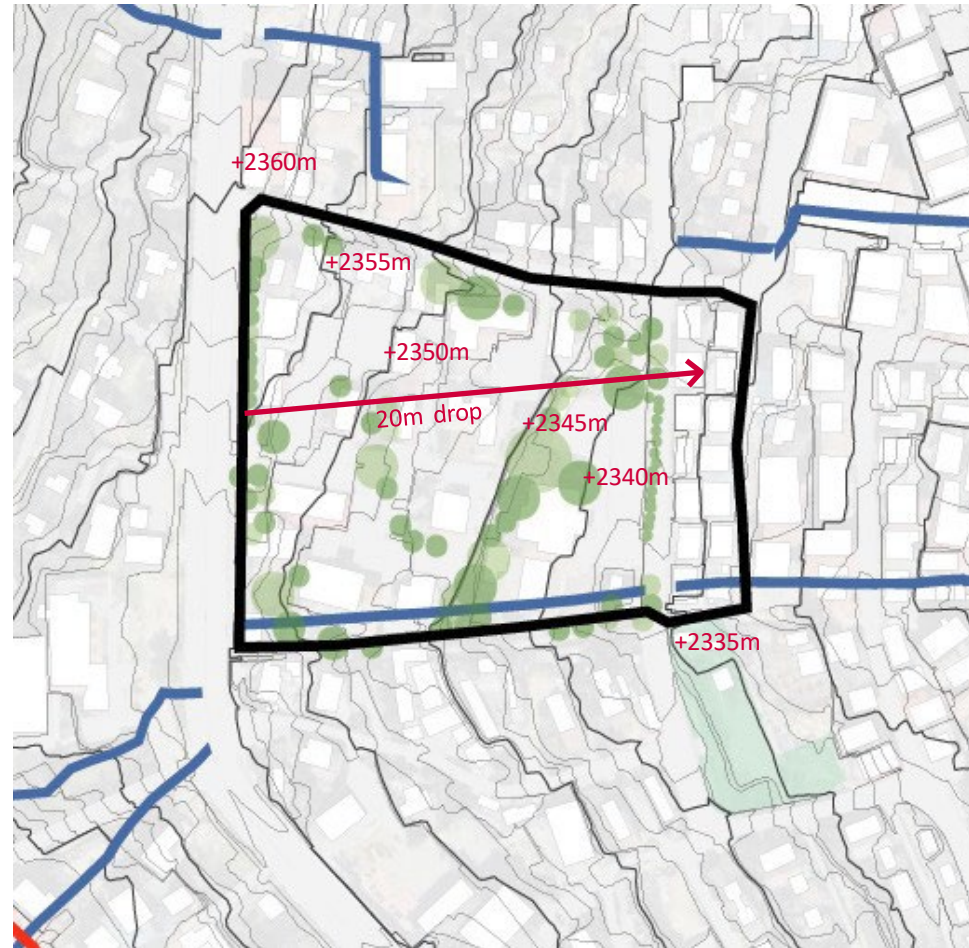
Building Heights

KEY	
	Test site boundary
	1 storey
	2 storey
	3 storey
	4 storey
	5 storey
	6 storey
	Unknown

Regeneration of the City Core

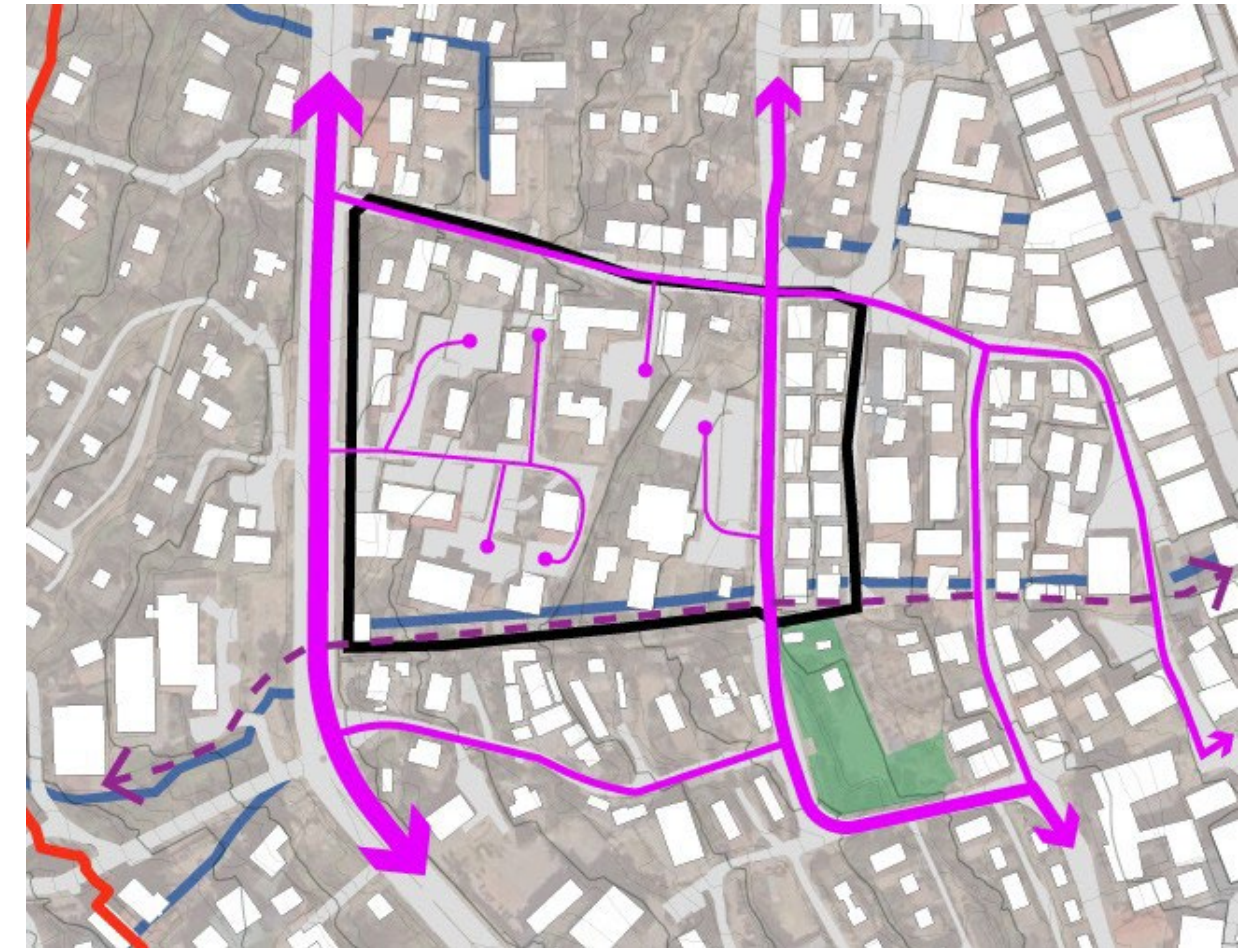
A Case Study - the existing site

- There is a 20m level drop across the site from west to east.
- The vehicular movement within the site is not continuous with numerous cul de sacs and dead ends.
- The southern edge of the site has an existing pedestrian path along the culverted water stream.
- The site is very close to Norzim Lam with some existing east west vehicular routes.
- Public transport links along the Royal Boulevard will greatly benefit the site, making it easily accessible from the larger city.



Topography

- KEY
- Test site boundary
 - Major Contour- 5m
 - Minor Contour- 1m



Existing Movement

- KEY
- Test site boundary
 - Vehicular movement
 - Dead end
 - - - Pedestrian Walkway

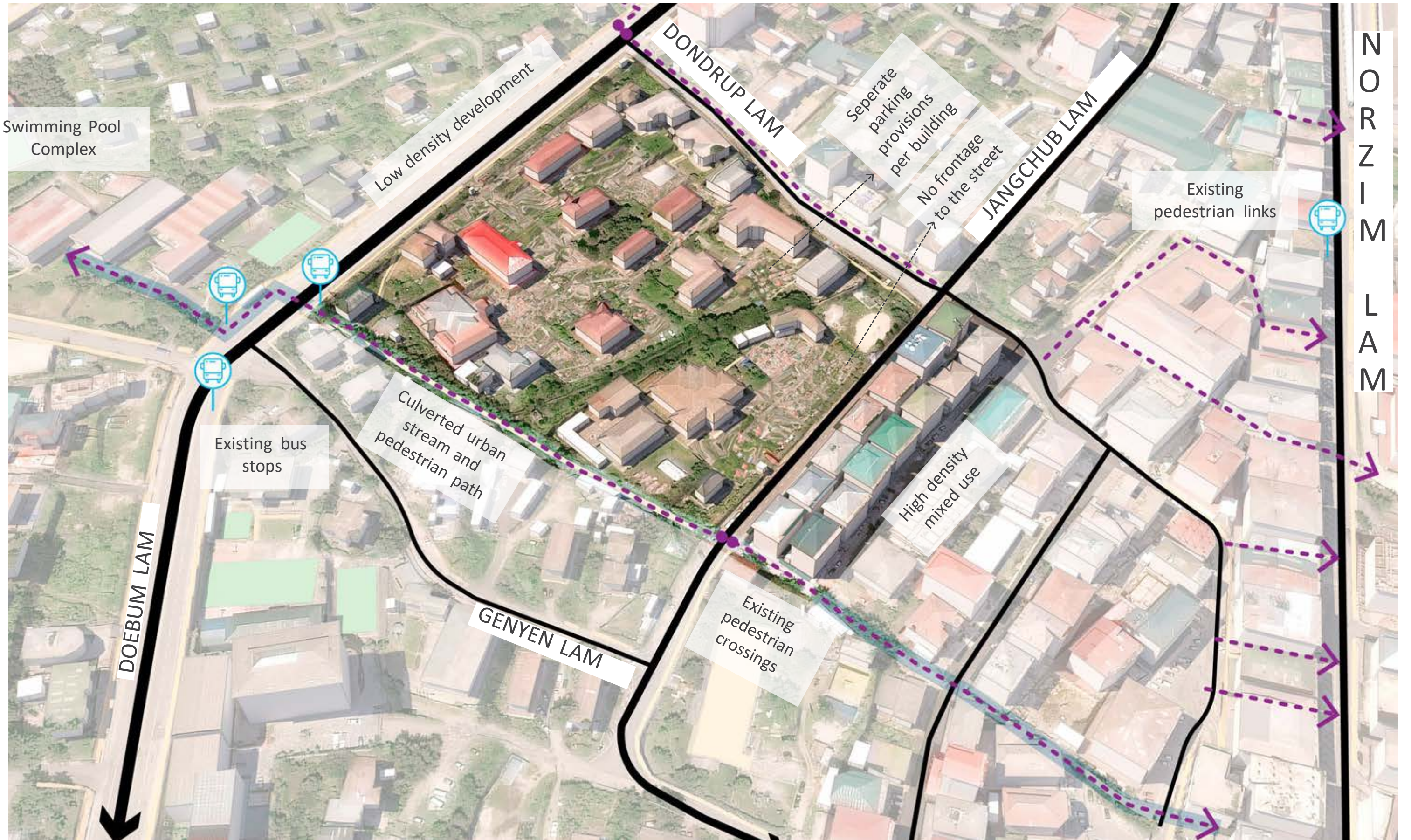
Regeneration of the City Core - a Case Study

Existing Gross Site Density



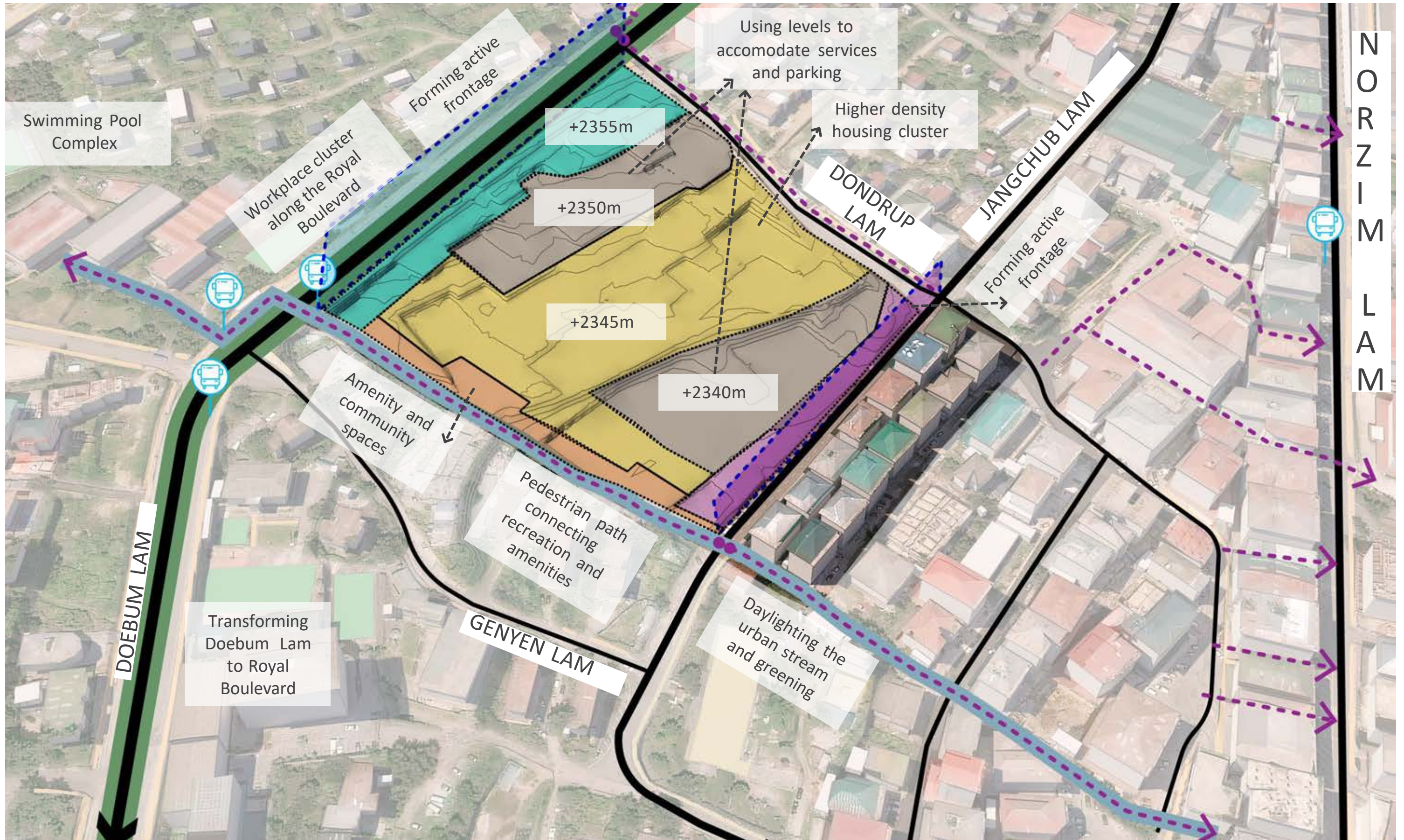
Regeneration of the City Core - a Case Study

Existing Site Conditions



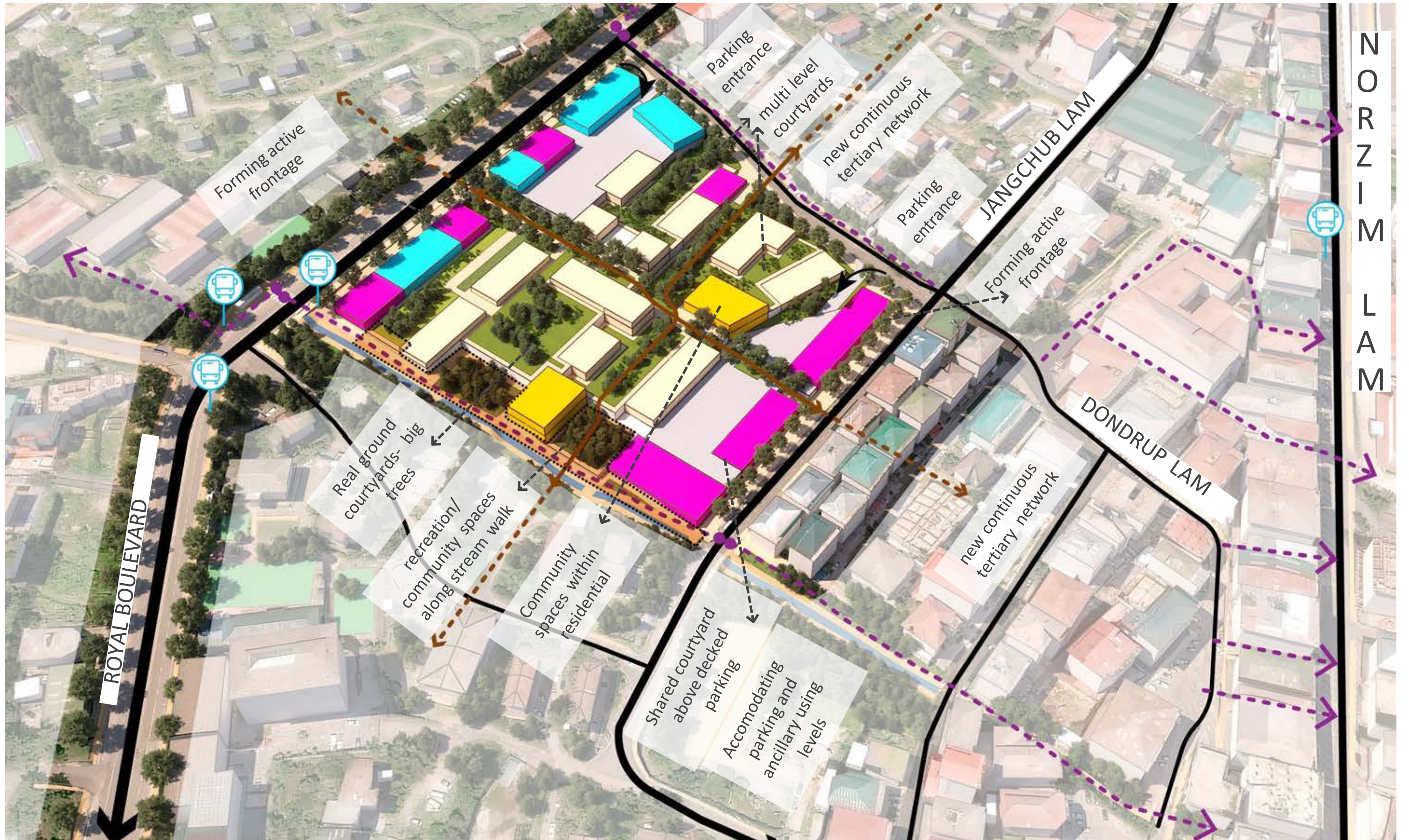
Regeneration of the City Core - a Case Study

Opportunities



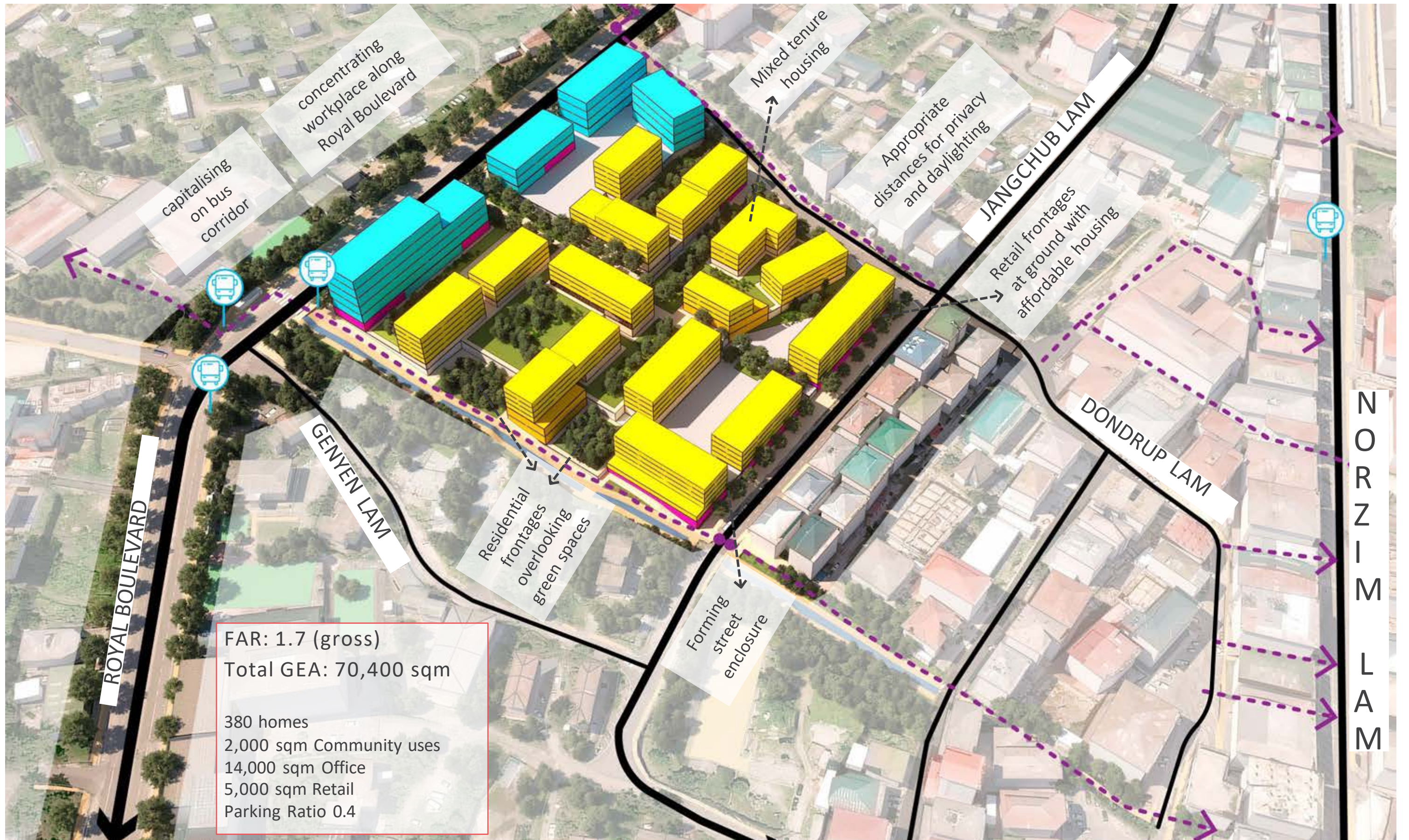
Regeneration of the City Core - a Case Study

Forming coherent public and private realm



Regeneration of the City Core - a Case Study

Forming an urban development



Regeneration of the City Core - a Case Study

Preserving Bhutanese identity and culture



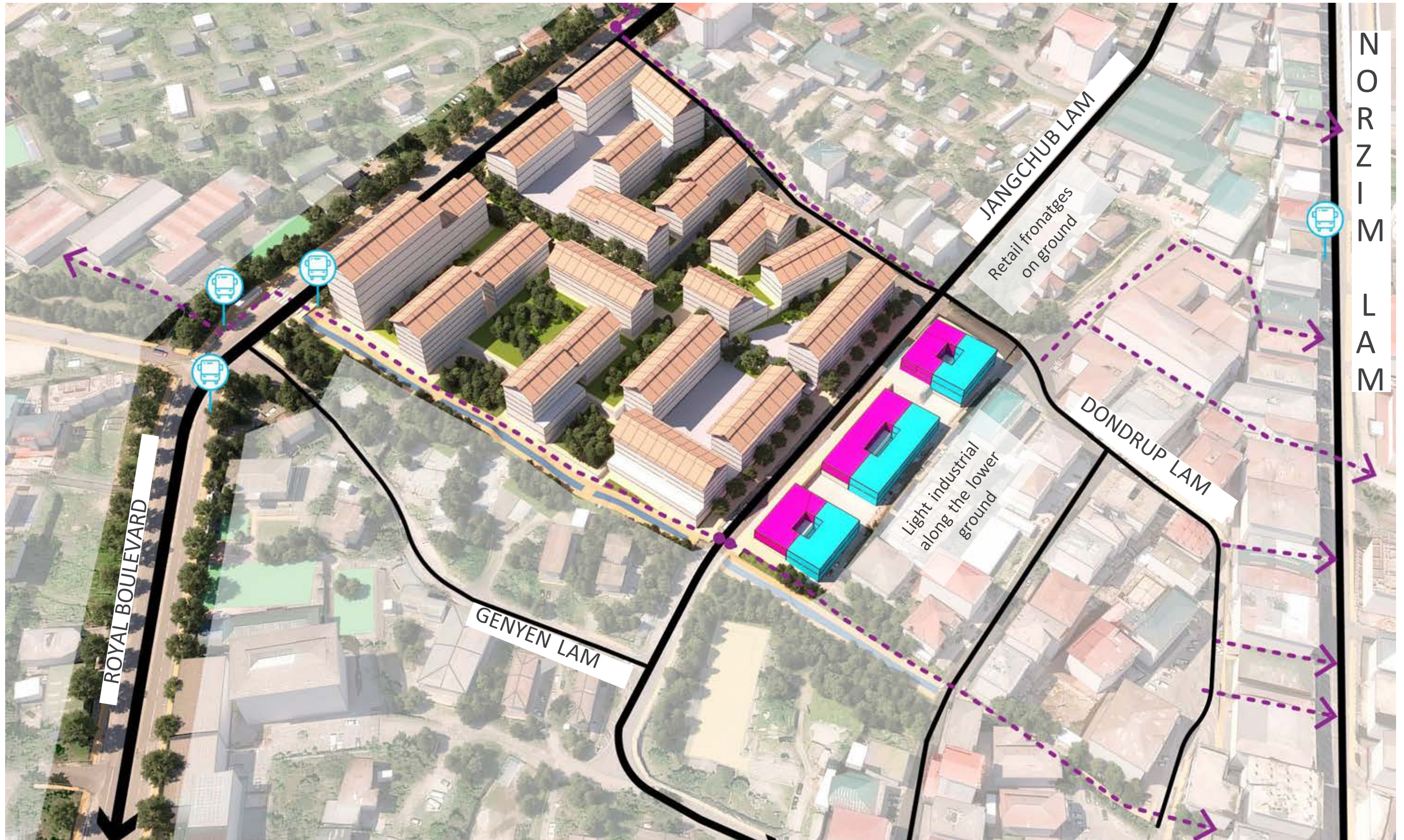
Regeneration of the City Core - a Case Study

Encouraging future development



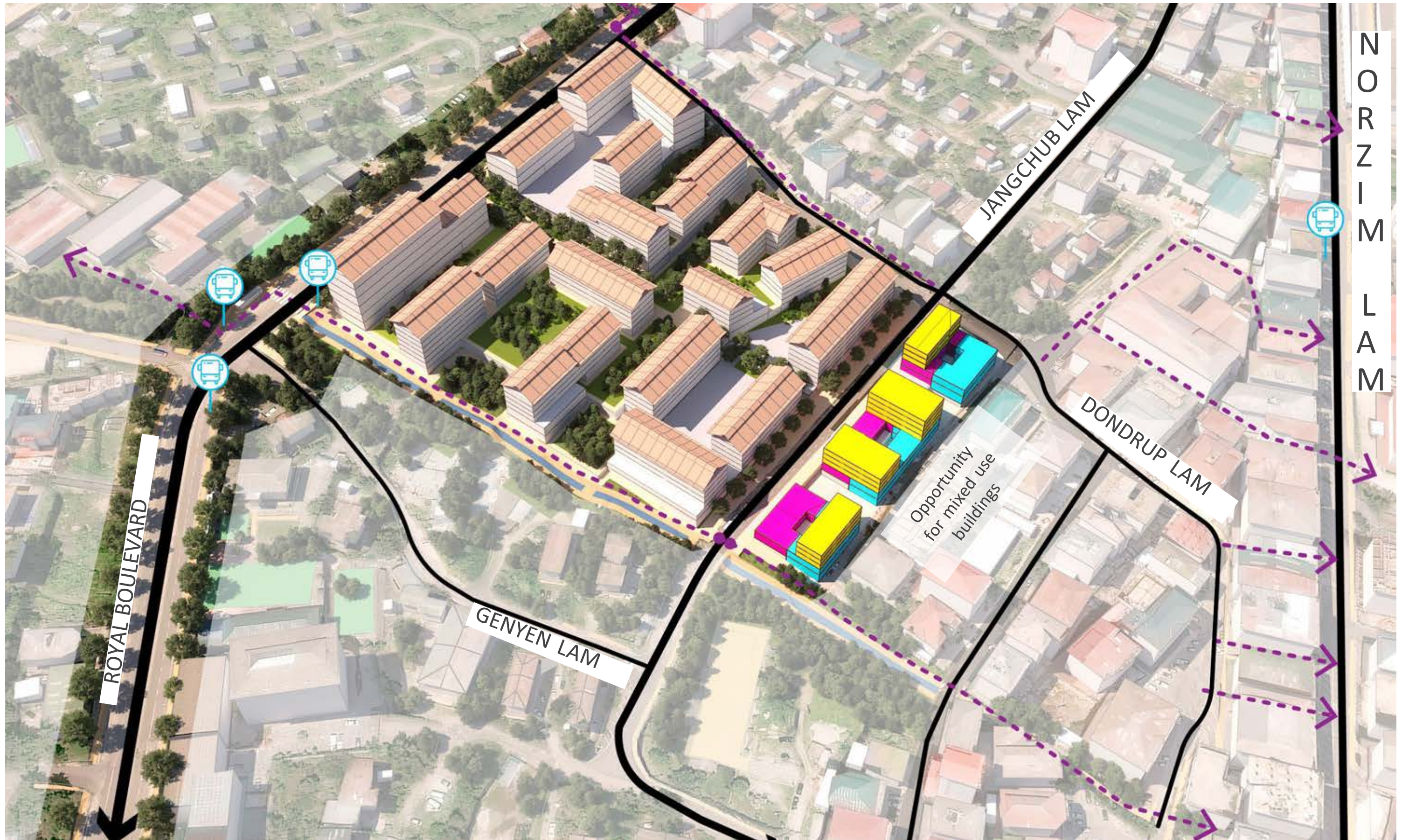
Regeneration of the City Core - a Case Study

Encouraging future development



Regeneration of the City Core - a Case Study

Encouraging future development



Regeneration of the City Core - a Case Study

Encouraging future development



Regeneration of the City Core - a Case Study



Regeneration of the City Core - a Case Study



Regeneration of the City Core - a Case Study



Regeneration of the City Core - a Case Study



Low density development
Site area: 3.90ha (gross)
FAR: 0.33 (gross)



High density development
Site area: 3.90ha (gross)
FAR: 1.7 (gross)

Total GEA : 70,400 sqm
380 homes
41,000 sqm Residential area
14,000 sqm Office
5,000 sqm Retail
2,000 sqm community uses
Parking Ratio 0.4

Implementation

Collaboration

There are a number of models for land ownership which could be considered.

- **Landowners group** – an organised forum where the landowners meet to discuss issues. Membership is voluntary and decisions are non-binding. The aim of the group is to co-ordinate interests and improve transparency.
- **Collaboration agreements** – a more formalised agreement where land owning parties work to a common goal. Often these agreements address issues around values (typically equalisation) across a site. A collaboration agreement is negotiated though the commitment level is relatively low.
- **Options agreements** – these are agreements to buy land at a future date which is either triggered by a date or an event (such as planning permission). The option price is normally a notional sum with the landowner benefiting from land value uplift at a date in the future. For a developer, this minimises the capital at risk early in a complex project and enables them to progress.
- **Consolidated ownership** – This assumes full ownership by one entity. Land is pooled or acquired through negotiation or where appropriate through CPO.

Case Study 2
Clock Tower Square

Scale Comparision

Clock Tower Square and Tashichho Dzong

- The Dzong is a carefully crafted space that offers an archetype to public spaces in Thimphu.
- It forms a well contained space with interlocking squares.
- The lower part of clocktower square is about 68m X 40m which is comparable to the 65mX 42m space in the Dzong.
- The clocktower square is not enclosed on all its sides.
- The NW and SW edges can be better contained using the vacant sites there.



Clock Tower Square

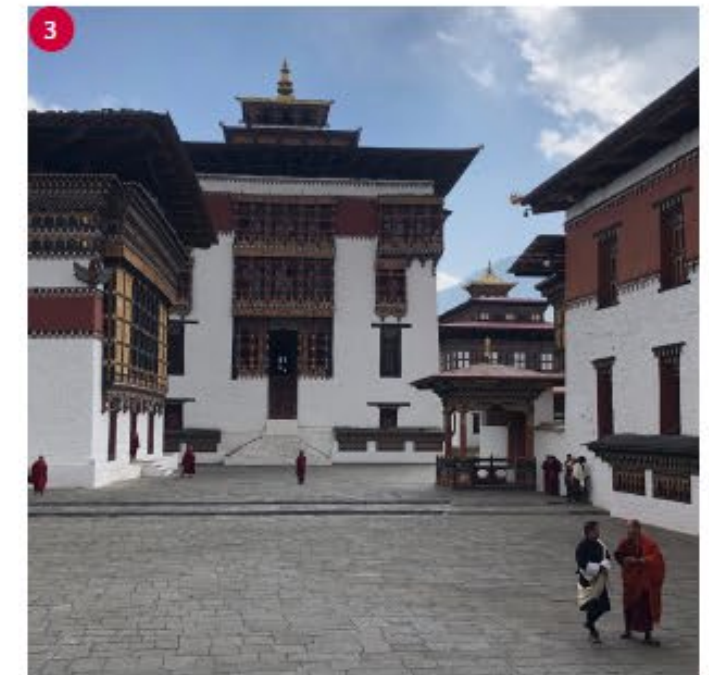
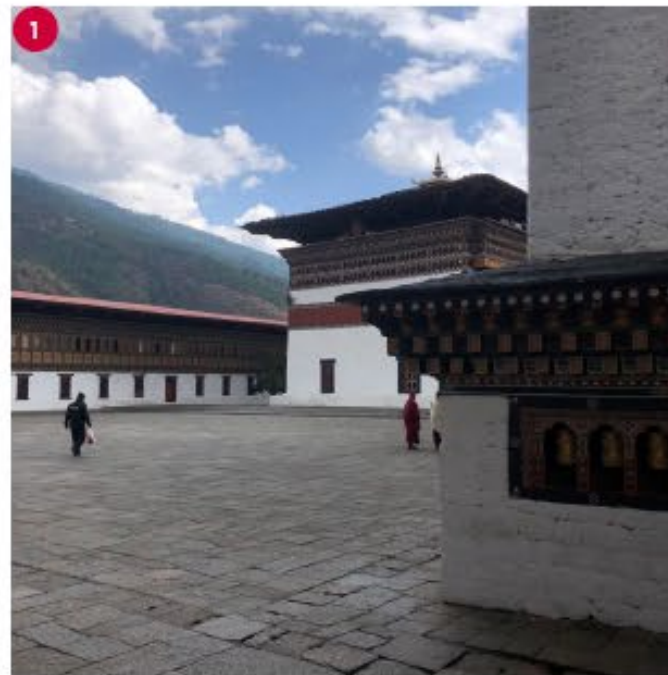
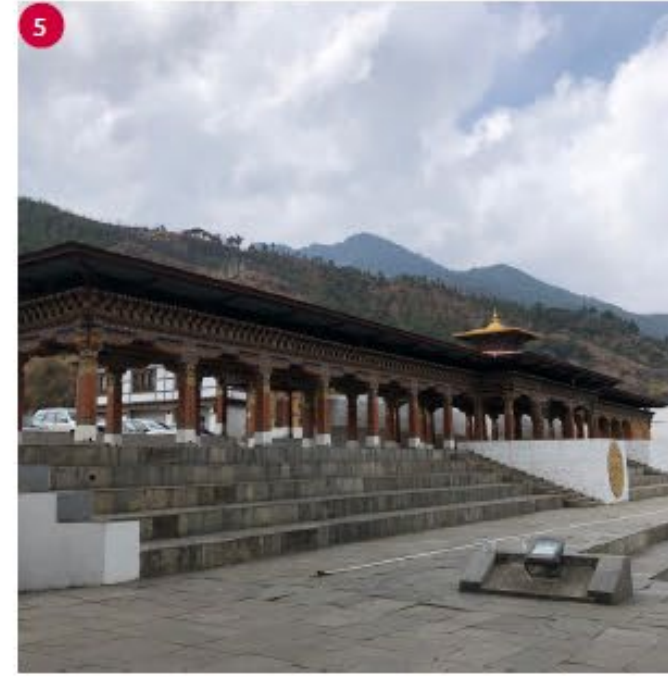


Tashichho Dzong

Tashichho Dzong

Sequence of Spaces

- The inner courtyards is bounded by built form on all sides.
- 1 The buildings in the periphery are of lower height, thereby allowing the mountains to be visible from within the courtyards.
- 2 The Utse and the other taller elements have a subtle, but dynamic tension as one moves through this well contained space.
- 3 The views keep shifting, allowing different elements to be seen leading one through these interlocking squares.
- 4 The outer courtyard has a raised collanade running around its perimeter, forming the shape of the space and a sense of enclosure.
- 5 This is also of a lower height of human scale, once again allowing the mountain landscape to become part of the experience.



Clocktower Square

A comparison with Tashichho Dzong



Clock Tower Square

- The edges of Clocktower Square are quite loose with no sense of enclosure.

- The sequential spaces within Tashichho Dzong have very strong enclosure and definition.
- Key views are formed and framed by buildings

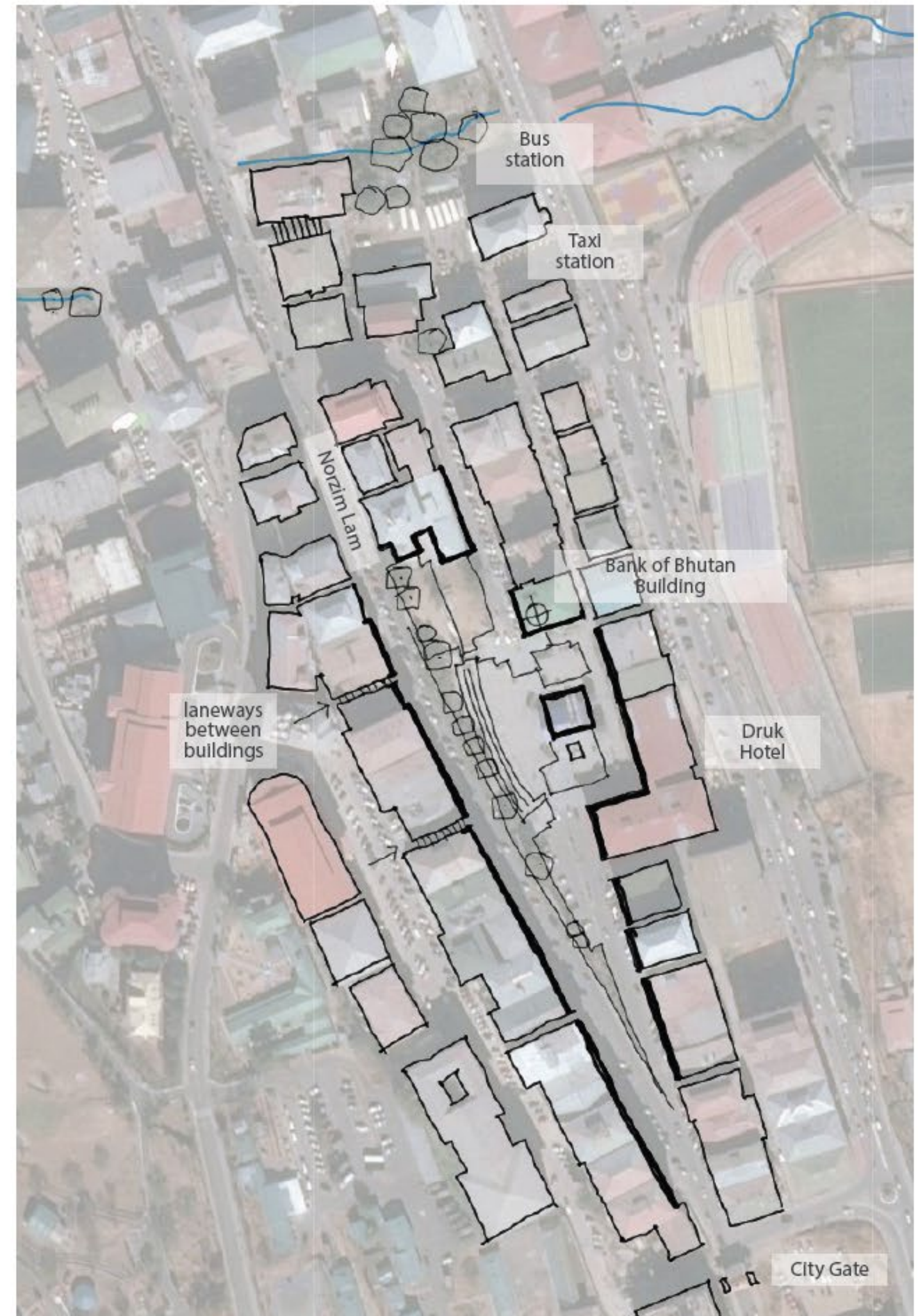


Tashichho Dzong

Clocktower Square

Existing condition

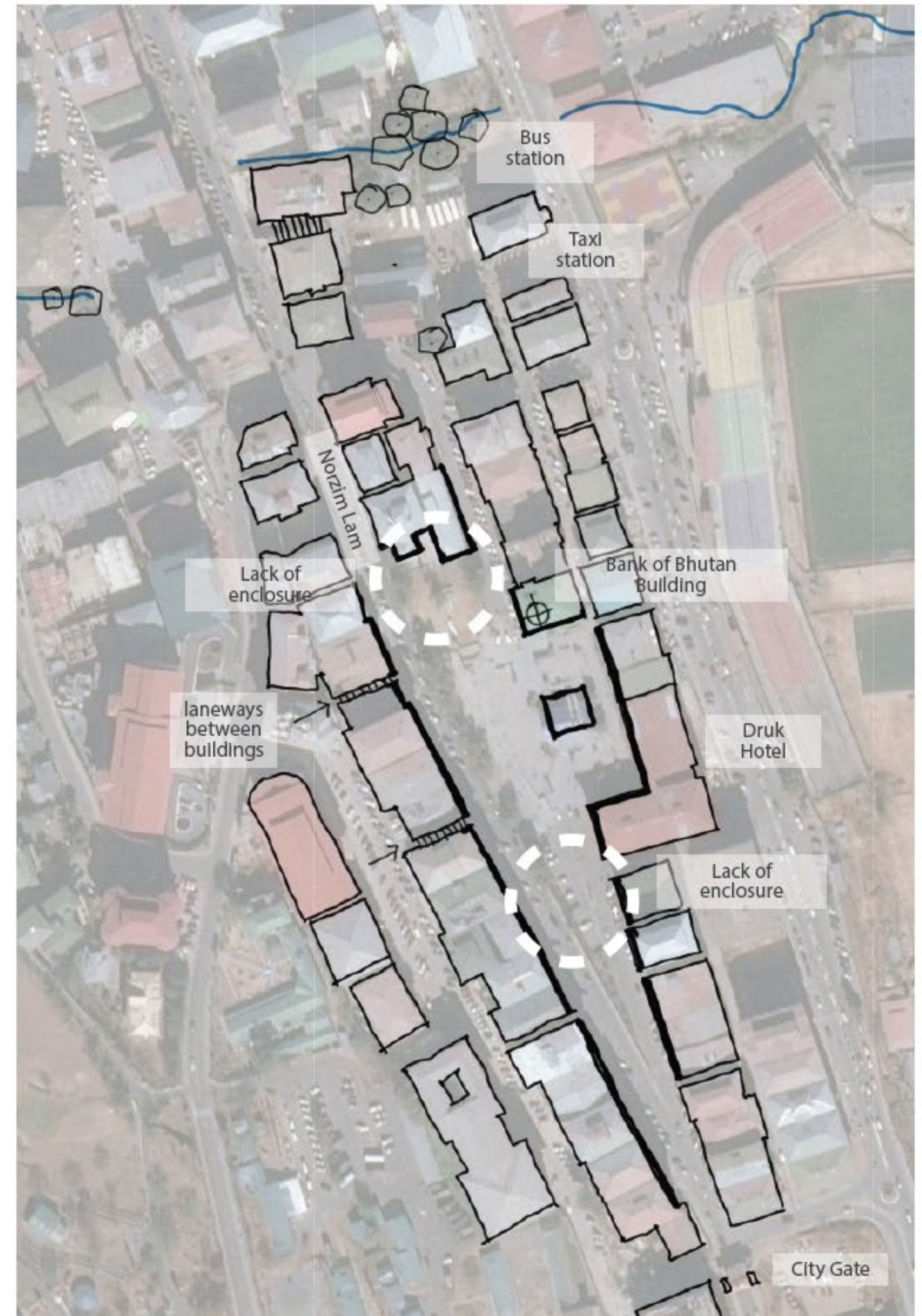
- Clocktower Square is at a lower level with Norzim Lam raised on an upper level.
- Druk Hotel forms enclosure to the south and east.
- Norzim Lam buildings form enclosure to the west.



Clocktower Square

Existing condition

- Clocktower Square is at a lower level with Norzim Lam raised on an upper level.
- Druk Hotel forms enclosure to the south and east.
- Norzim Lam buildings form enclosure to the west.
- The Bank of Bhutan Building form a 'landmark' building on the Square and forms good enclosure.
- Poor enclosure to the north and south.



Clocktower Square

Opportunities for creating enclosure



Clock Tower Square- SW edge



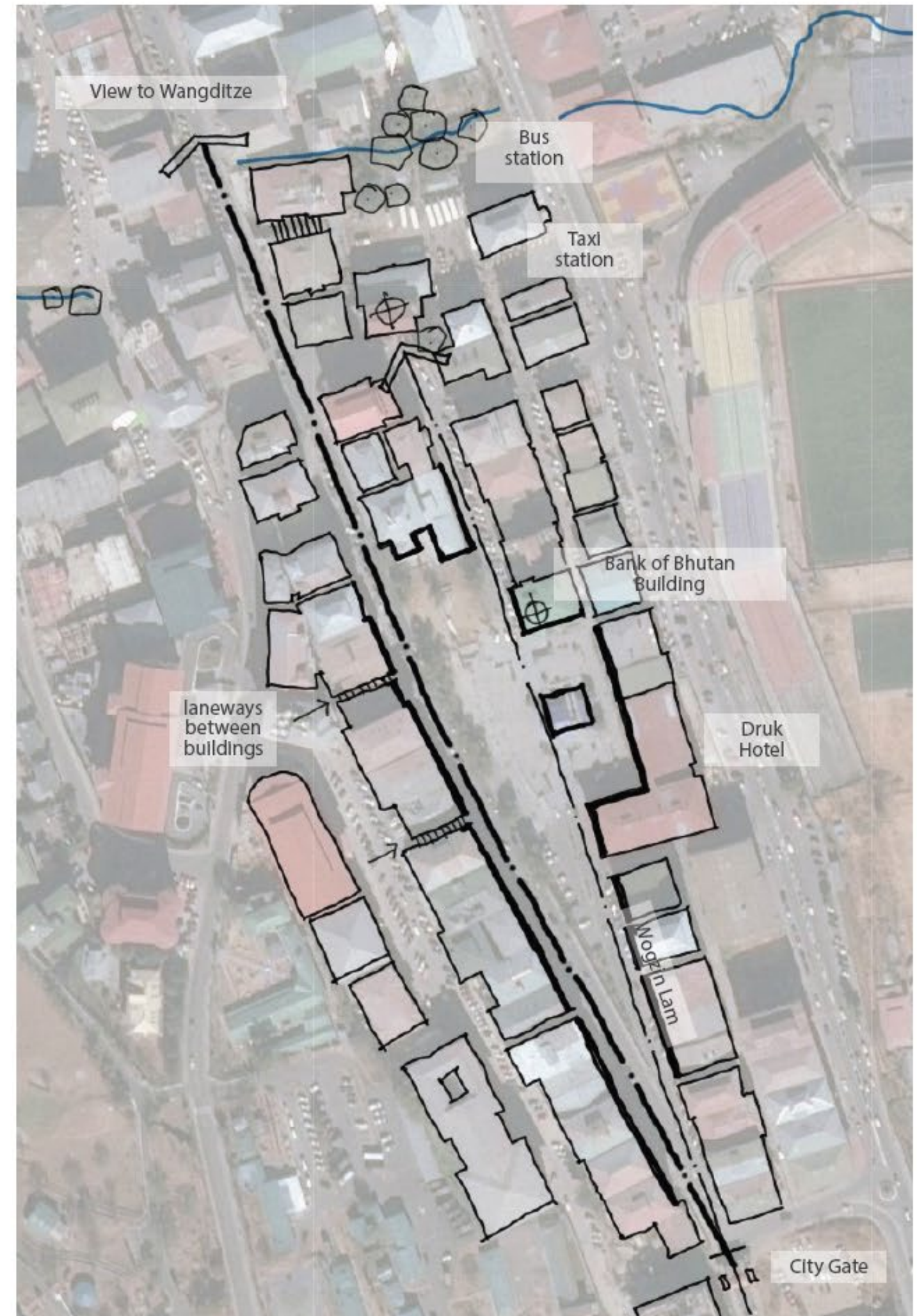
Clock Tower Square- NW edge

- The northern and southern edges of the square need to be stronger to form a well contained and strongly defined space.

Clocktower Square

Defining views

- There are two key views associated with Clocktower Square
- Norzim Lam is rotated on an axis so that Wangditze is visible from within the street
- A second local view is created along Wogzin Lam, through the Square and terminating at the city gate.
- Both views originate at the city gate.



Clocktower Square

Retaining views

- The lower scaled elements to the east and south of the Square allow the surrounding landscape to be a part of the experience.
- The mountains form the backdrop and extension of the square. This has to be maintained.



Clock Tower Square

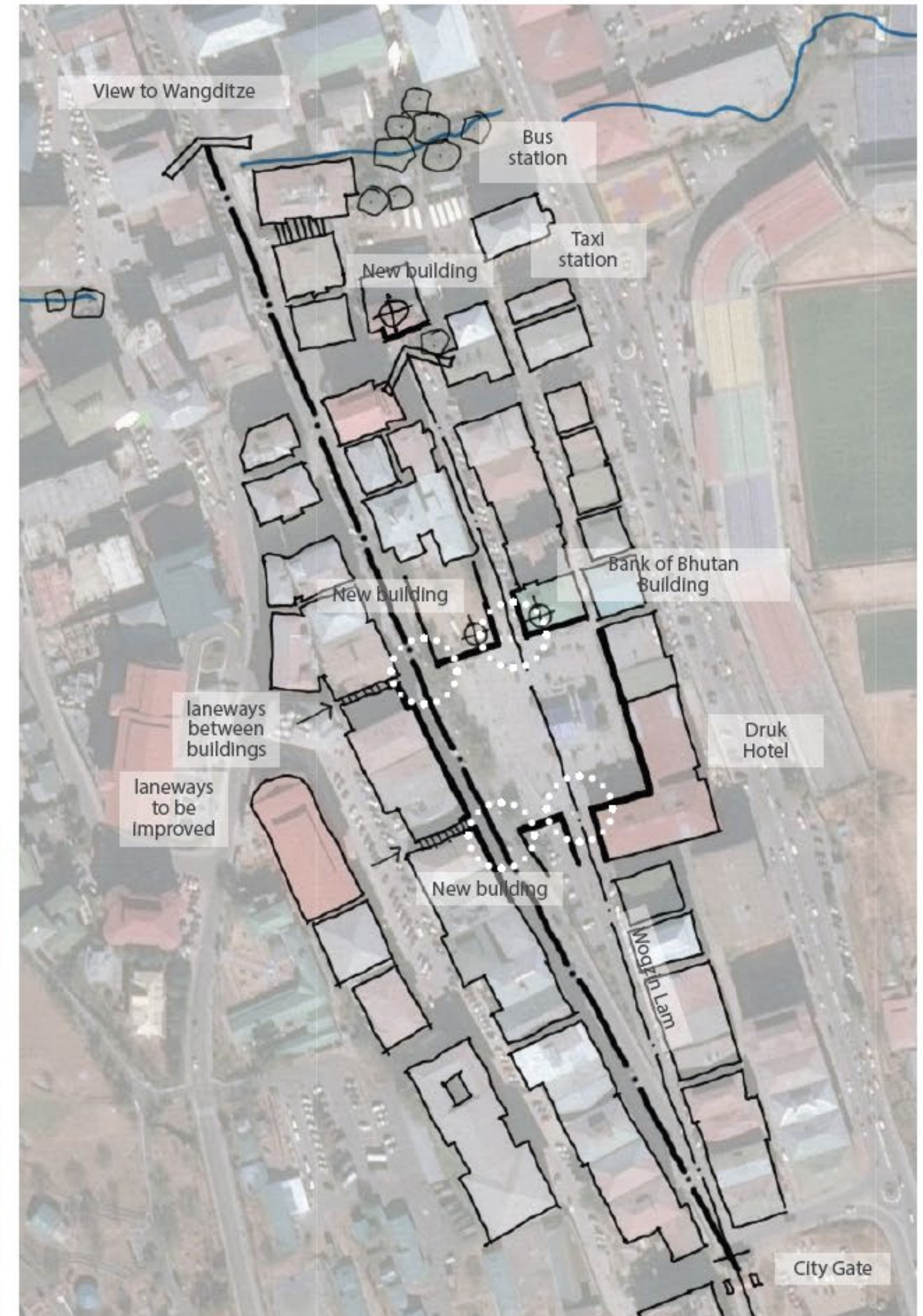


Tashichho Dzong

Clocktower Square

Forming enclosure and threshold

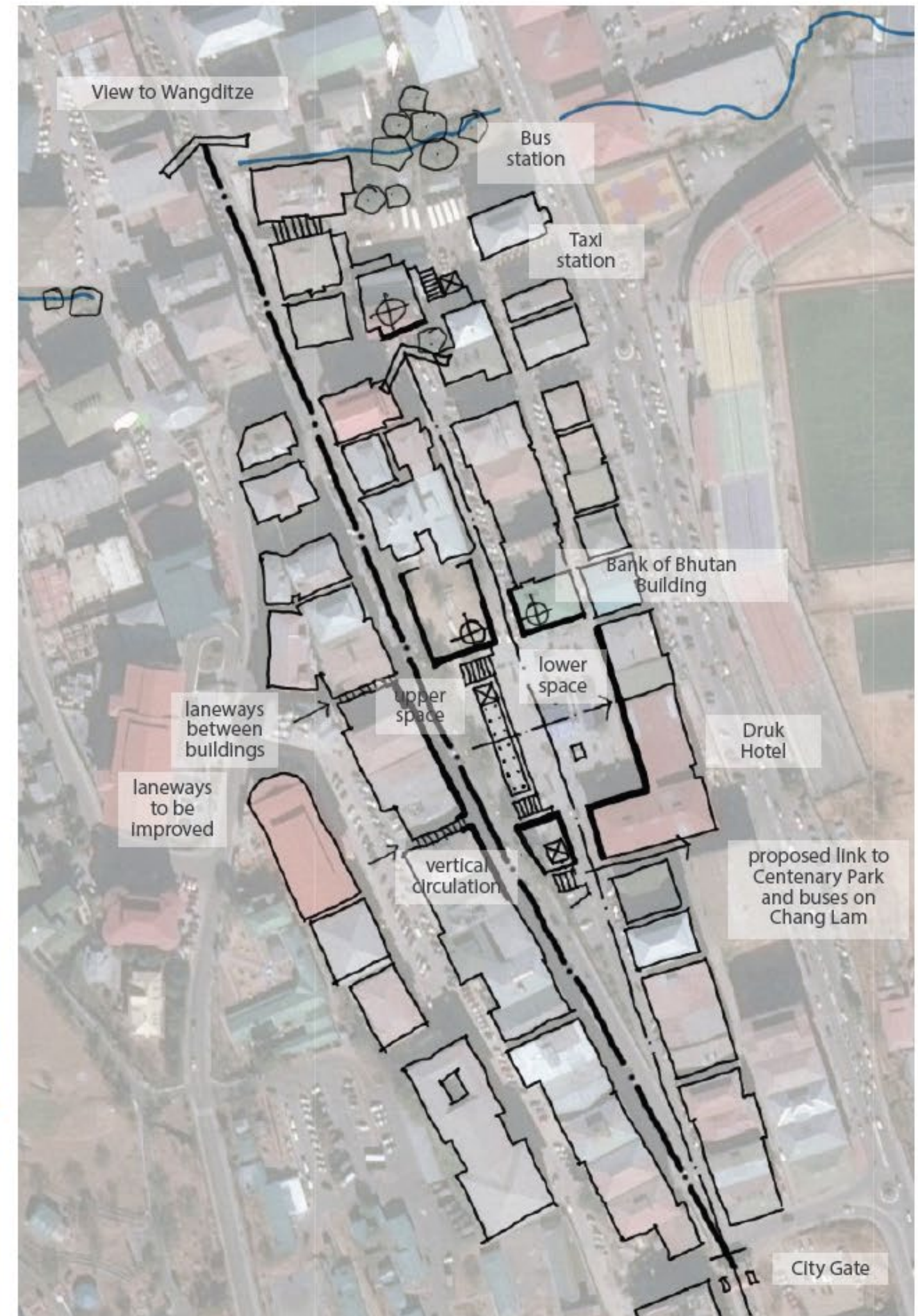
- New development and strong frontage can be introduced to the north and south of the Square.
- This strongly defines the space on all four sides.
- New development allows the two key views to be retained through the Square.
- The northern development can become the 'twin' of the Bank of Bhutan Building - making an entrance/threshold into the space.
- A new building could be developed at the north of Wogzin Lam to terminate the local view.



Clocktower Square

Forming stronger enclosure

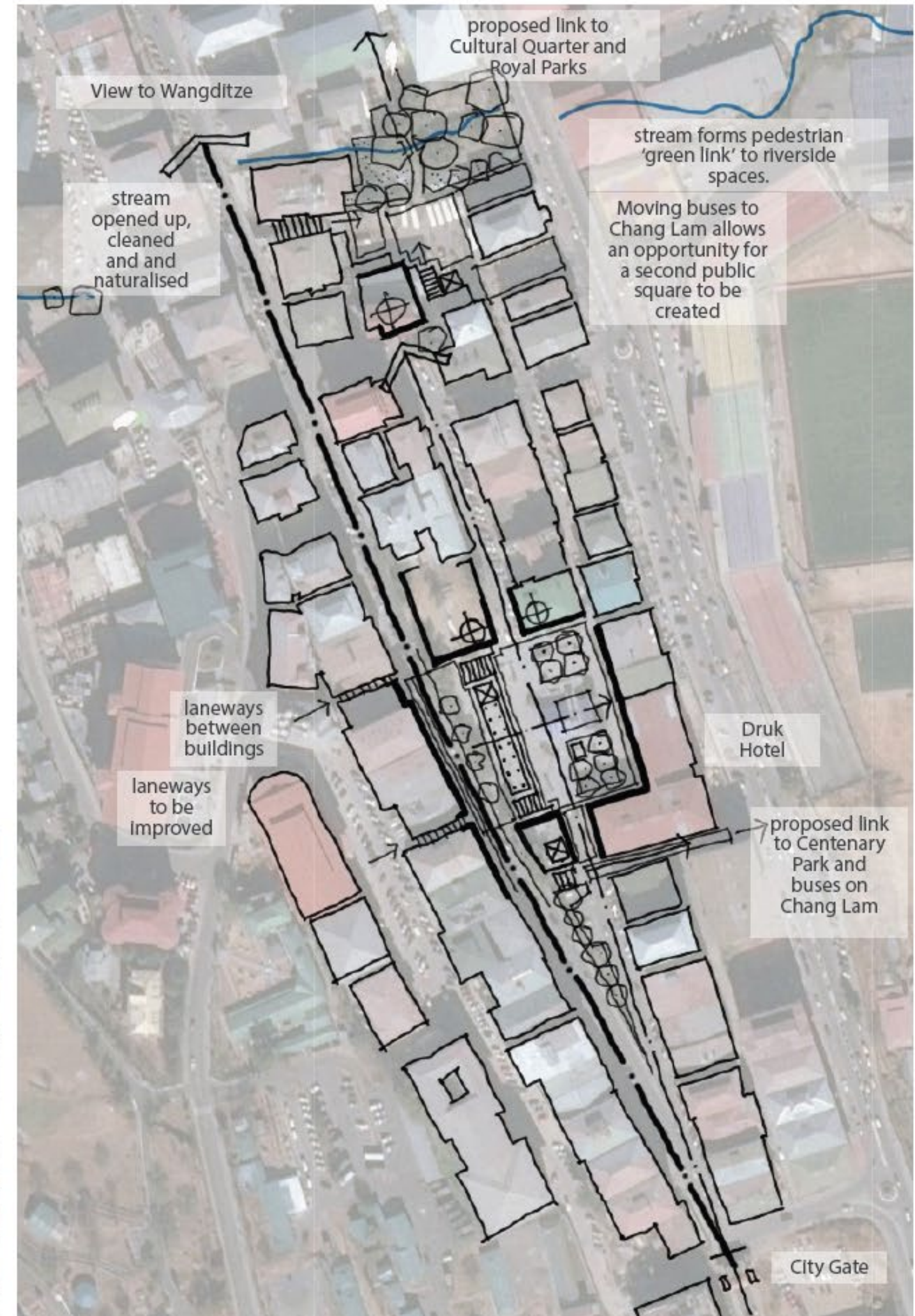
- A new colonnade could be introduced at upper level associated with Norzim Lam.
- Creates a public realm space at the lower level as well as a new space at upper level.
- Colonnade and new southern development could incorporate vertical circulation (lifts) and grand staircases between the two levels.
- Colonnade allows over views into the lower Square from Norzim Lam.



Clocktower Square

Forming a sequence of spaces

- Moving buses to Chang Lam provides the opportunity for a second public space to be created to north of Wogzin Lam.
- These can form a 'sequence of spaces' connected by formed views and walking routes.
- New building that terminates the local view can incorporate vertical circulation.
- Stream can be daylighted, cleaned and naturalised, introducing nature into the city.
- This second space collects people moving along the stream from east-west and forms the starting point of the north-south link to the Cultural Quarter and the Royal Parks.
- Opportunity to introduce trees into Clocktower Square at both levels - to bring additional definition, shade and nature.



Clocktower Square

Activation at different levels

- The multiple levels offer an opportunity to form active frontage onto Norzim Lam as well as onto Clock Tower Square at lower level.
- This encourages more activation and makes the square a vibrant, multifunctional space.
- Storage spaces, public toilets can be accommodated behind active frontage to support events in the lower level of the Square.



Clock tower Square



Trees providing places to dwell and occupy in shade



Coal drops yard- a multi level space with active frontage and overlooking



Trafalgar Square- multi leveled square with viewing platforms

Case Study 3
At Kabesa/Dechencholing

Dechencholing and Kabesa

Context

- The two Strategic Sites identified in Dechencholing add up to 63.7 ha
- The Kabesa LAP-1 total area is about 100 hectares (247.5 acres)
- Dechencholing currently holds a significantly larger population than Kabesa:

Existing

	Existing (2015/2017)
Dechencholing <i>(Source: MoWHS)</i>	6,490 people 1,600 homes
Kabesa <i>(Source: Kabesa SP)</i>	3,964 people 922 homes
Kabesa LAP-1 <i>(Source: Kabesa LAP-1)</i>	2,606 people 606 homes



Dechencholing and Kabesa

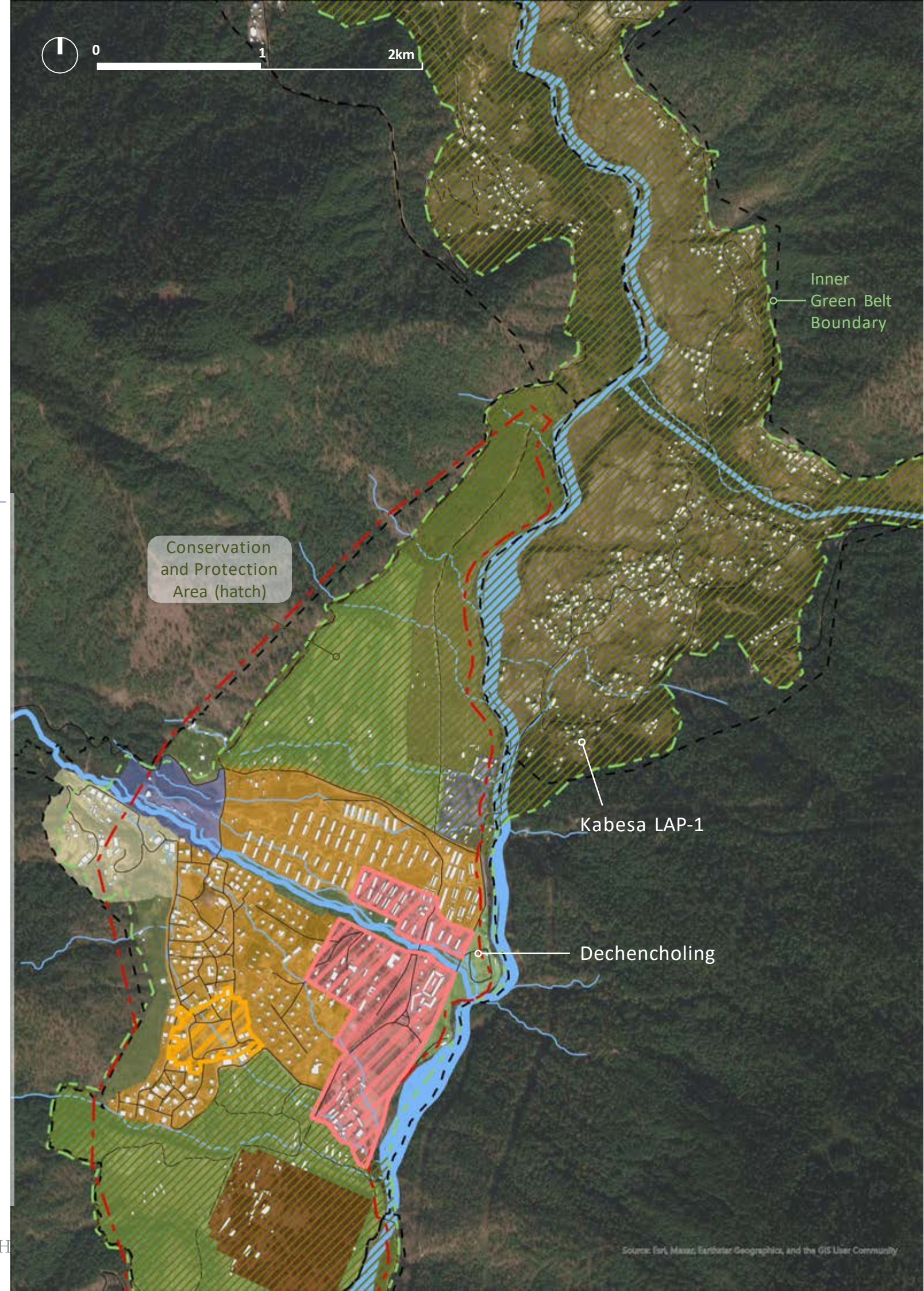
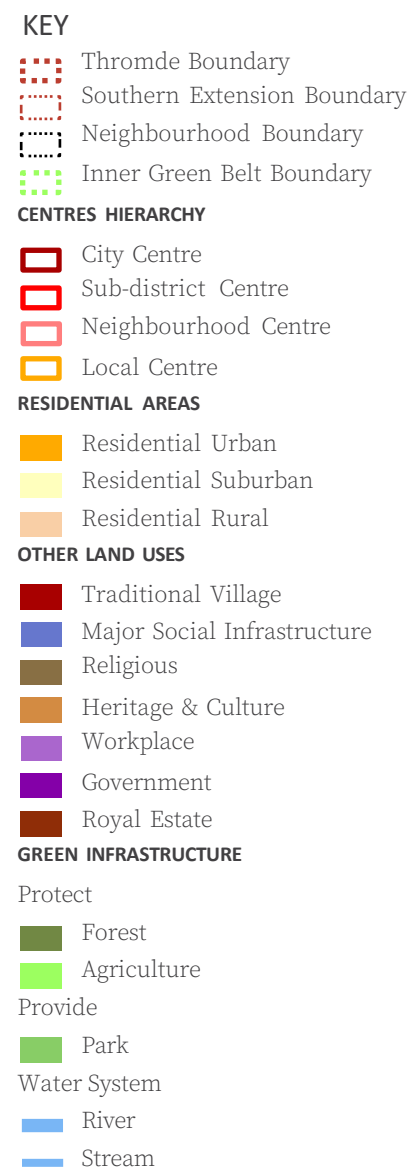
Rev1 Draft Structure Plan

- Opportunity for a new centre at Dechencholing, creating a northern focus for local residents
- Opportunity to intensify RBG site and deliver additional housing
- Dechencholing as a suburban neighbourhood creating a transition between the denser neighbourhoods to the south and the more rural neighbourhoods to the north (Kabesa)

Existing

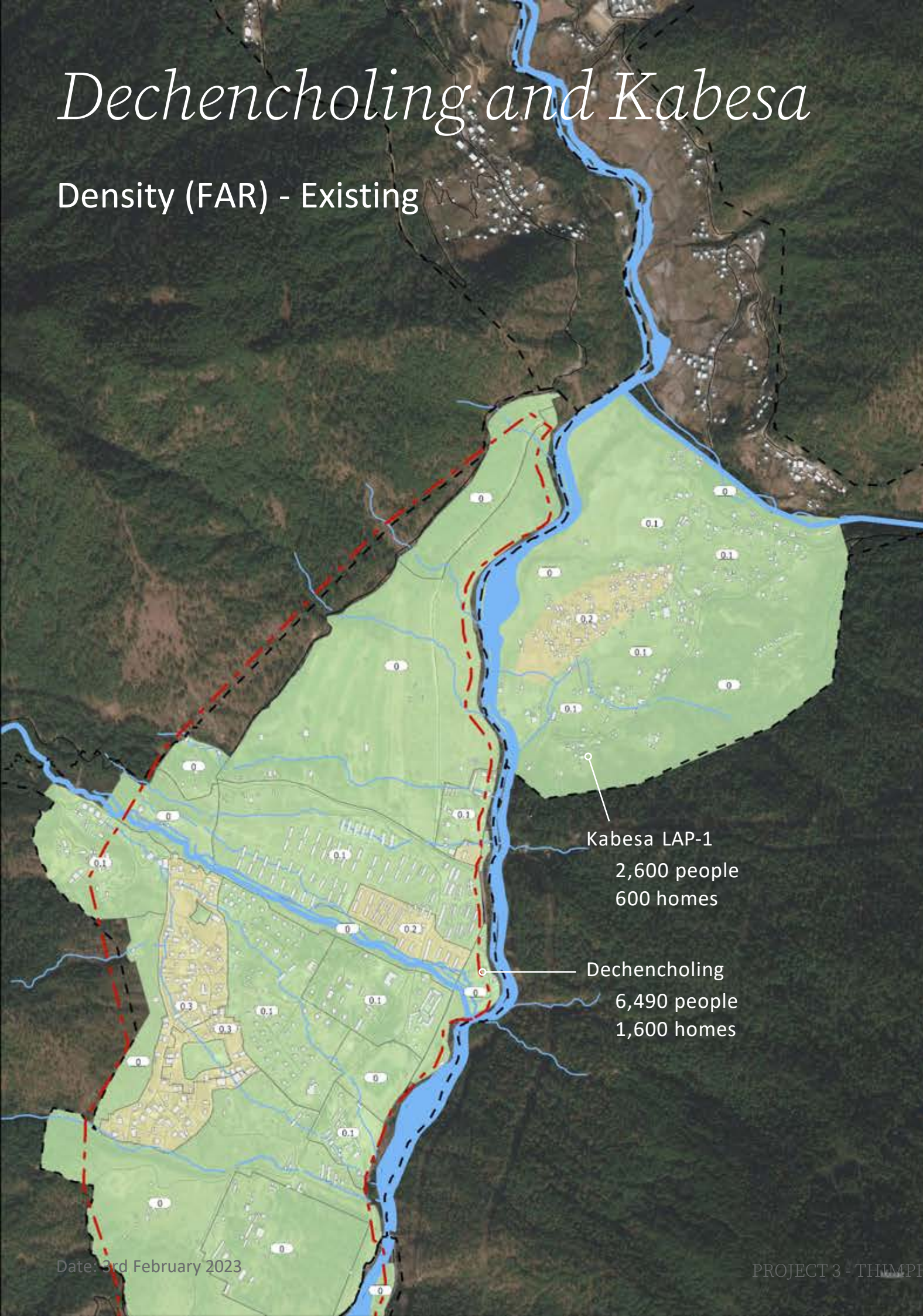
	Existing (2015/2017)	Proposed
Dechencholing <i>(Source: MoWHS)</i>	6,490 people 1,600 homes	Rev1 Draft TSP +6,700 people +1,450 homes
Kabesa <i>(Source: Kabesa SP)</i>	3,964 people 922 homes	
Kabesa LAP-1 <i>(Source: Kabesa LAP-1)</i>	2,600 people 600 homes	

Proposed

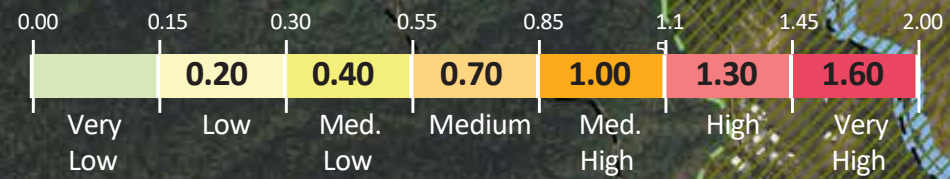


Dechencholing and Kabesa

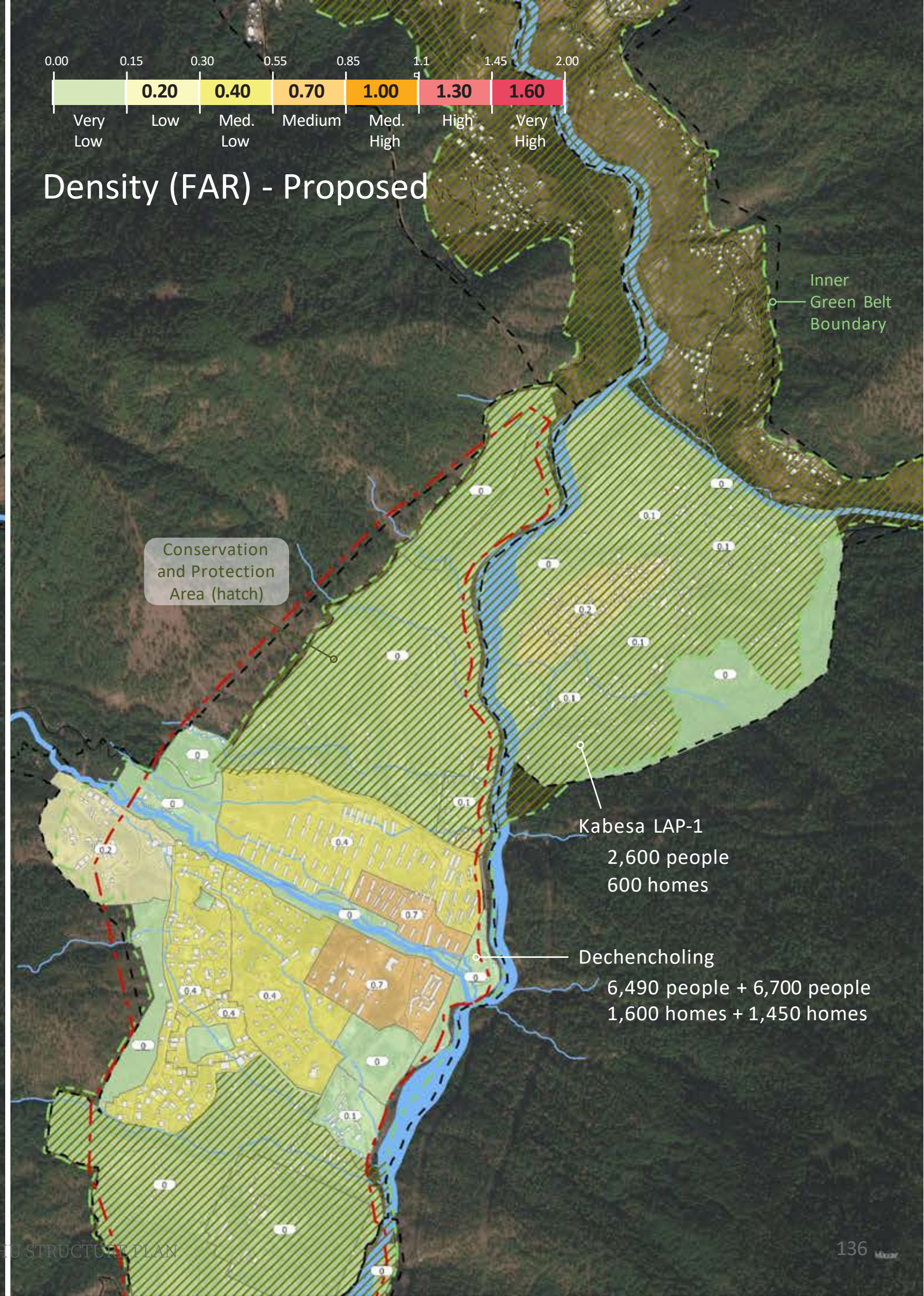
Density (FAR) - Existing



Date: 3rd February 2023



Density (FAR) - Proposed



Dechencholing and Kabesa

Land Ownership

- Dechencholing parcels are mostly consolidated under government ownership and Crown property
- Kabesa parcels are fragmented and under private ownership

KEY

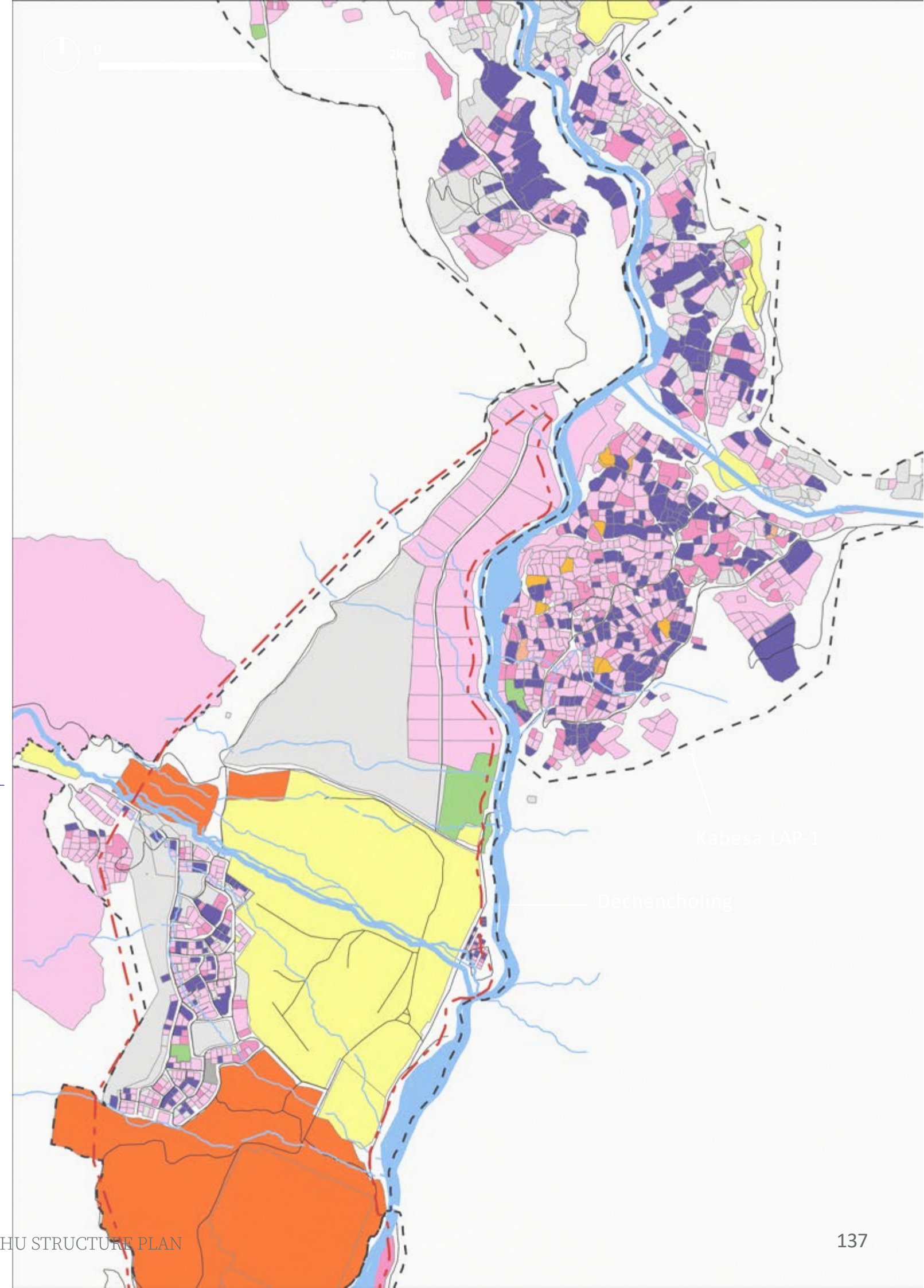
- Thromde Boundary
- Southern Extension Boundary
- Neighbourhood Boundary
- Inner Green Belt Boundary

PRIVATE OWNERSHIP

- Individual Person
- Joint Owner
- Private Corporation
- Family Land

OTHER

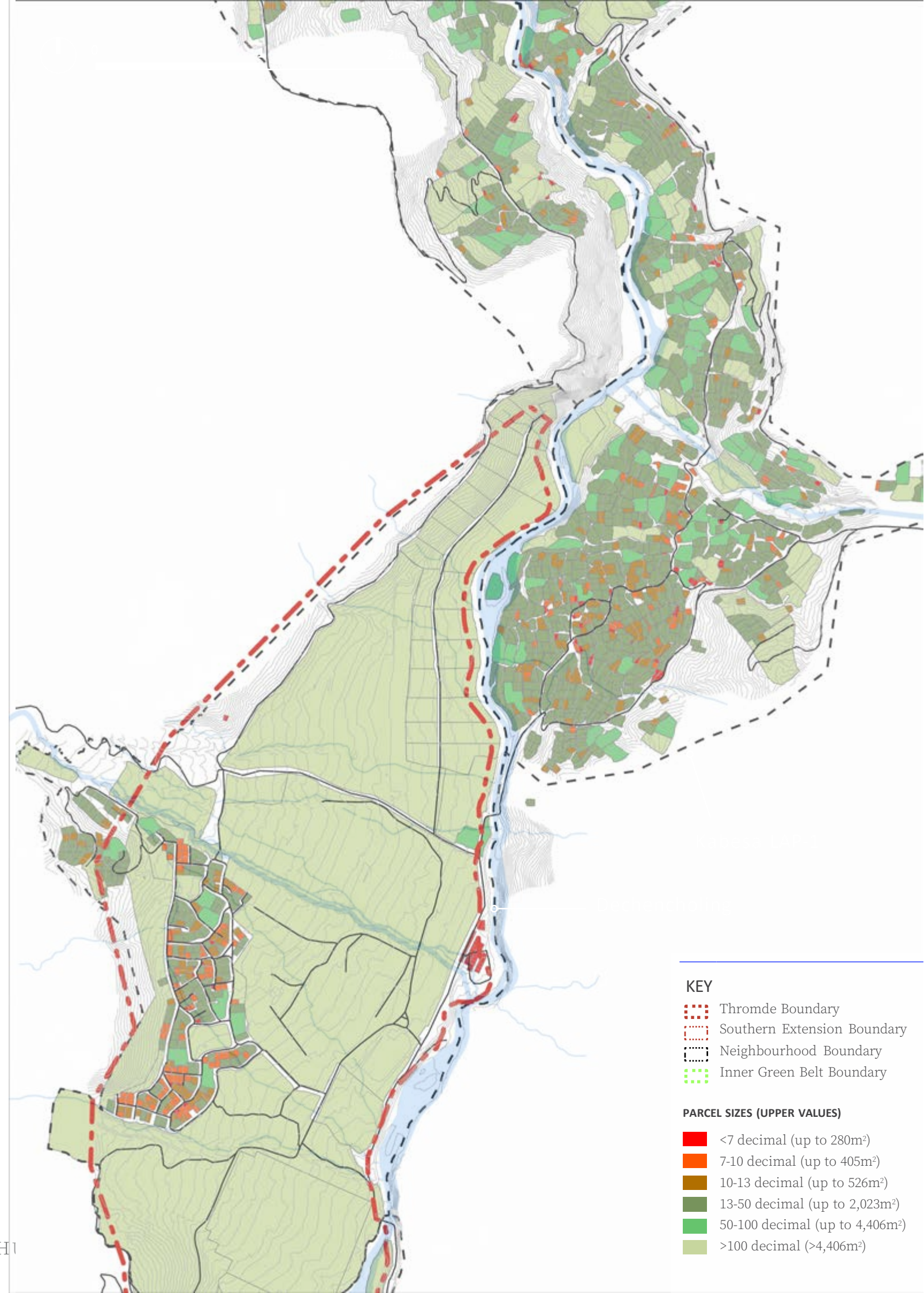
- Religious Institution
- Government Institution
- Gerab Dratshang
- Crown Property
- Corporation
- Civil Society Organisation
- Unknown



Dechencholing and Kabesa

Parcel Size

- Dechencholing parcels are mostly greater than 100 decimal (0.4 ha). A small area west of the RBG site within private ownership contains smaller parcels, under 50 decimals (0.2 ha).
- Kabesa parcels sizes are generally smaller than 50 decimals (0.2 ha).



KEY

- Thromde Boundary
- Southern Extension Boundary
- Neighbourhood Boundary
- Inner Green Belt Boundary

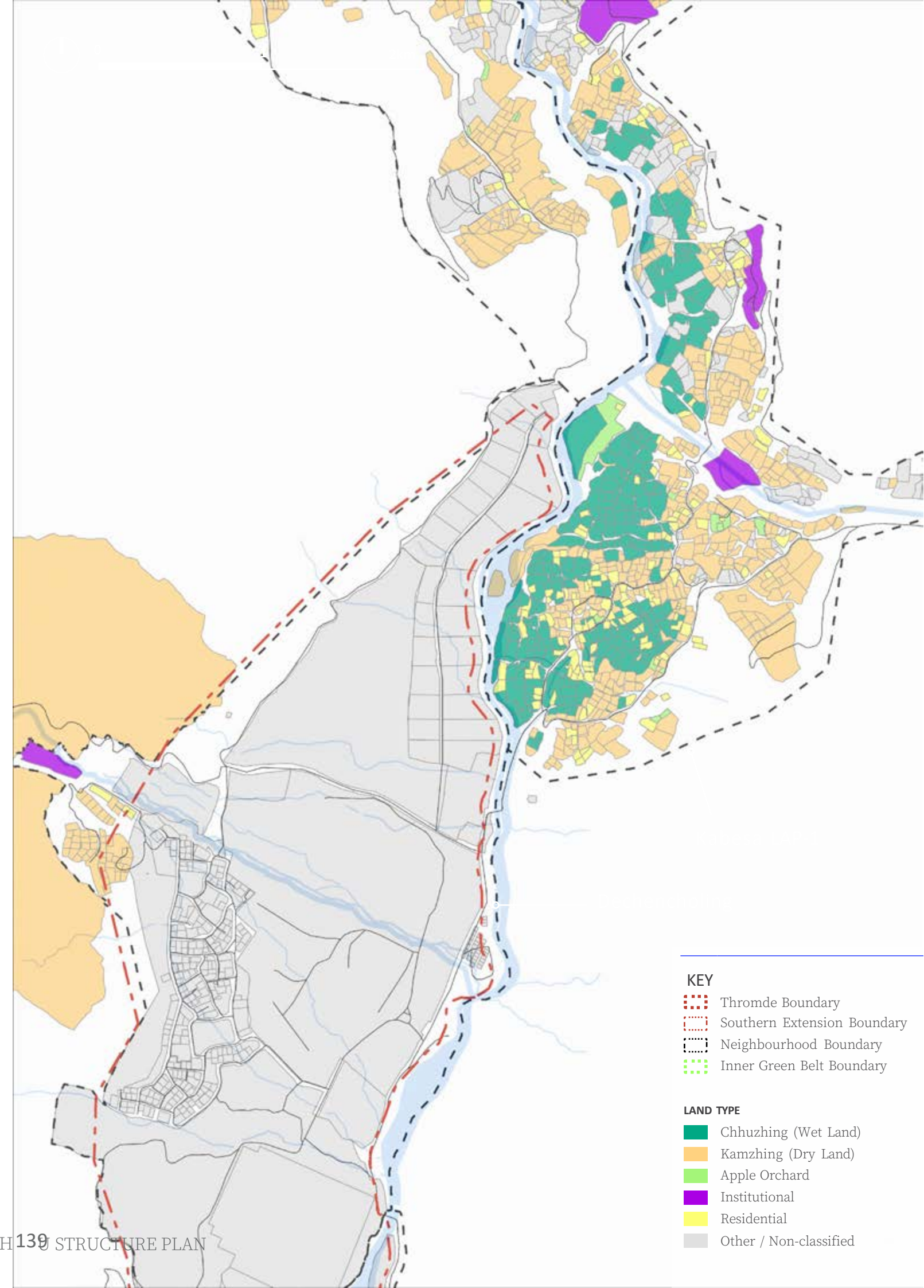
PARCEL SIZES (UPPER VALUES)

- <7 decimal (up to 280m²)
- 7-10 decimal (up to 405m²)
- 10-13 decimal (up to 526m²)
- 13-50 decimal (up to 2,023m²)
- 50-100 decimal (up to 4,406m²)
- >100 decimal (>4,406m²)

Dechencholing and Kabesa

Land Type

- In Kabesa, there is a greater concentration of wet paddy fields east of the river, which is an opportunity for creating riparian zones under conservation area. Dry paddy fields are interspersed with residential zones.



KEY

- Thromde Boundary
- Southern Extension Boundary
- Neighbourhood Boundary
- Inner Green Belt Boundary

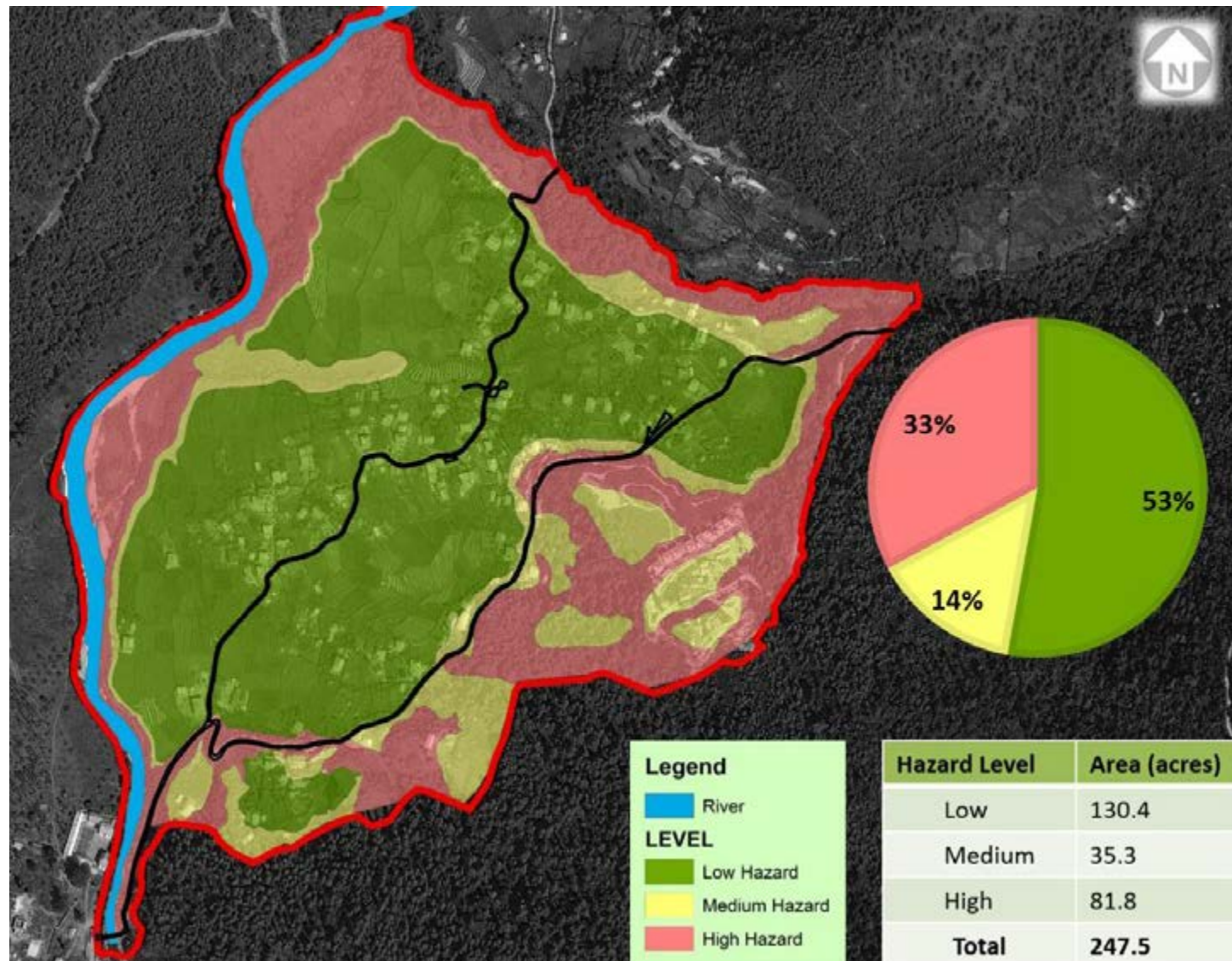
LAND TYPE

- Chhuzhing (Wet Land)
- Kamzhing (Dry Land)
- Apple Orchard
- Institutional
- Residential
- Other / Non-classified

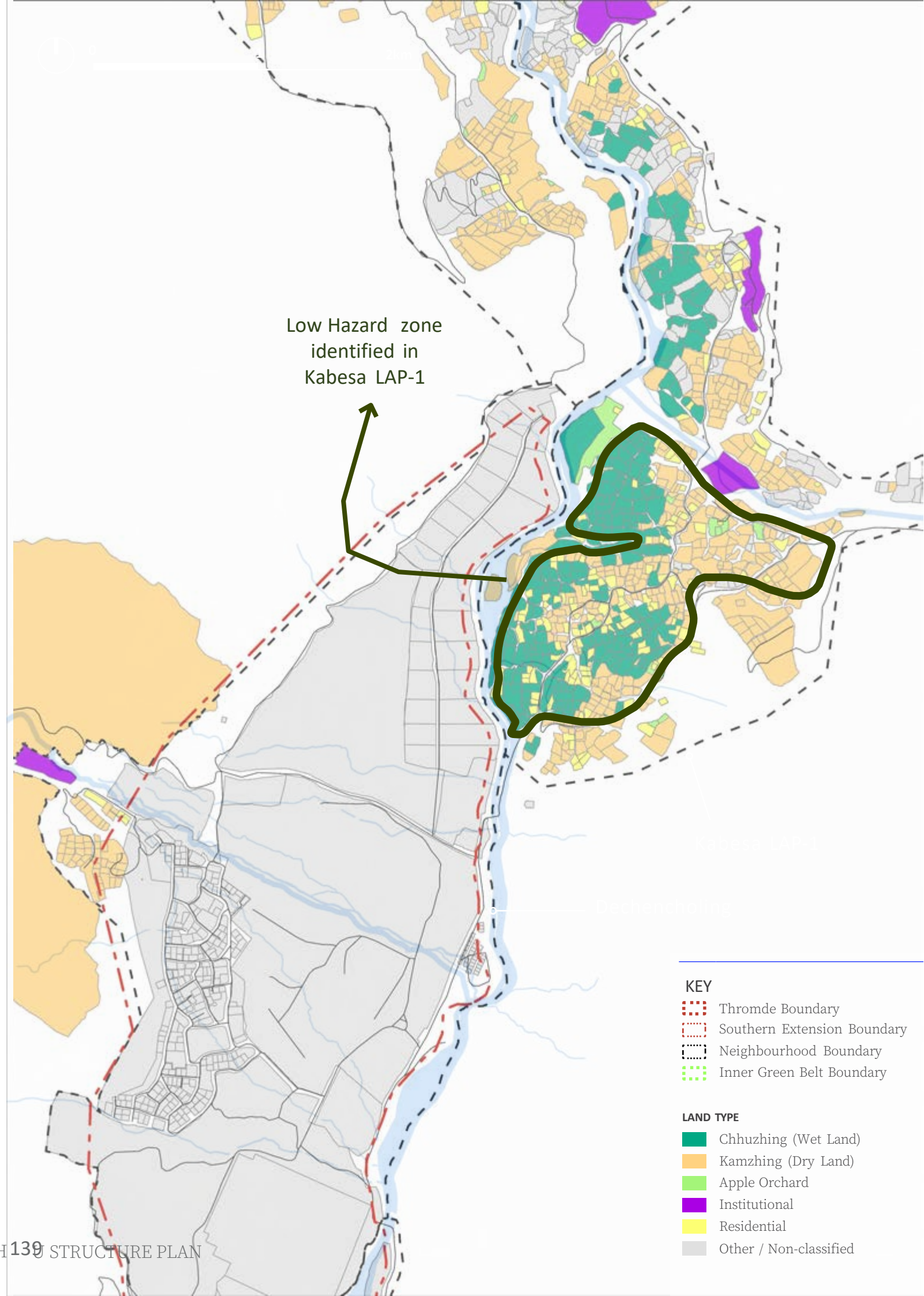
Dechencholing and Kabesa

Kabesa LAP-1 Constraints Mapping

- The Kabesa LAP-1 identifies a low-hazard zone, with slopes under 17 degrees and less susceptibility to landslide and flooding hazards.
- Together with Kamzhing plots (dry paddy fields) the low-hazard zone begins to identify land suitable for development in the LAP.



Date: 3rd February 2023

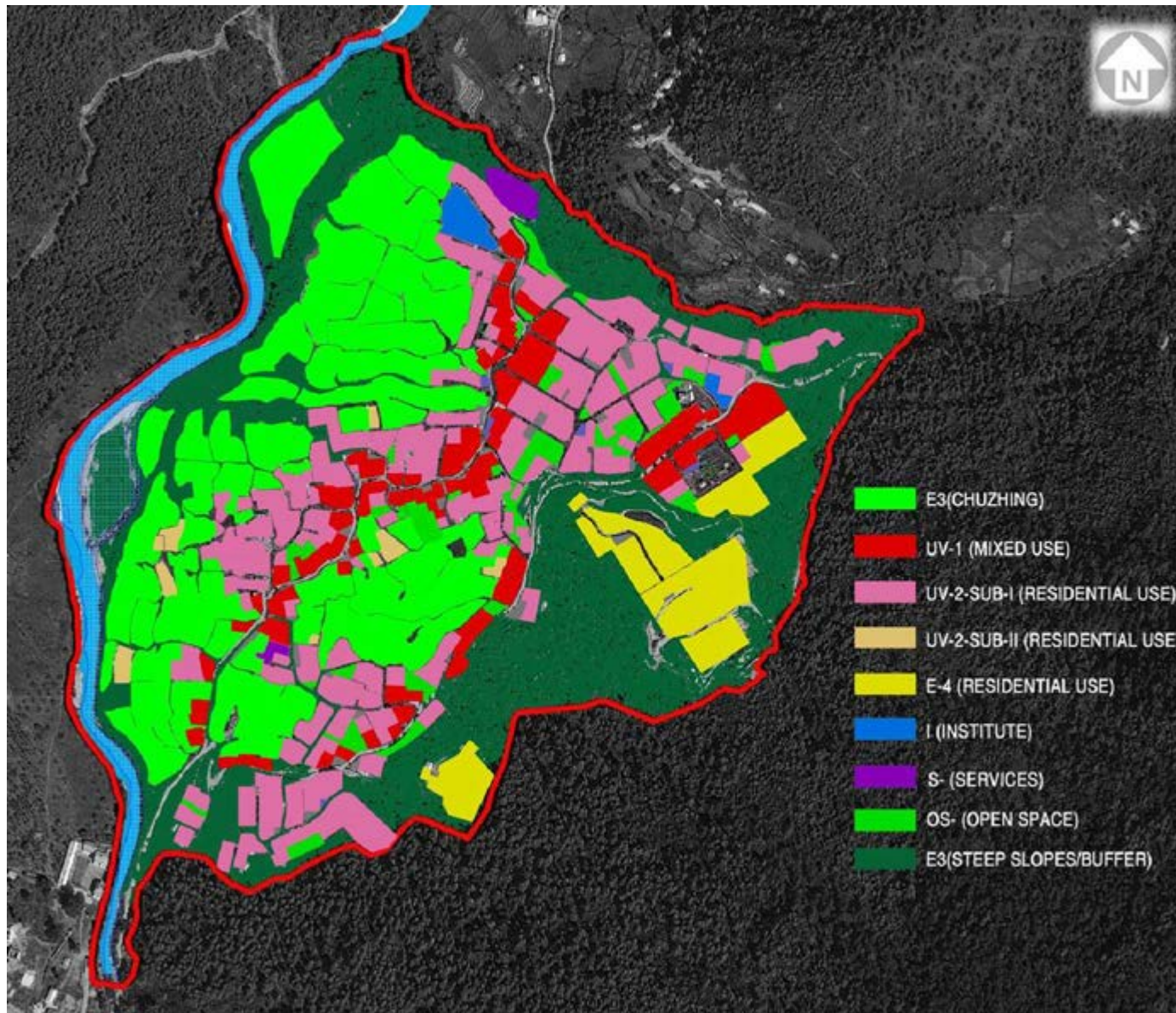


Dechencholing and Kabesa

Kabesa LAP 1 - Is this Good Growth in the Right Place?

Kabesa population projection vs. LAP-1 capacity analysis.

While the Kabesa Structure Plan suggests an overall population growth of 4.1% per annum, the LAP-1 focused analysis suggests a population growth of 8.8% per annum, with a net gain of 18,873 people.



Date: 3rd February 2023

	2015	2040	Net Gain
Kabesa population (Kabesa SP)	3,964 people	10,650 people (4.1% growth per annum)	+6,689 people
Kabesa homes (estimate)	922 homes	2,477 homes	+1,555 homes
LAP-1 population (Kabesa LAP-1)	2,606 people	21,479 people (8.8% growth per annum)	+18,873 people
LAP-1 homes (estimate)	606 homes	4,995 homes	+4,389 homes

↖ LAP-1 Net Gain 18,873 people by 2040

Population growth 8.8% per annum (25 years)

UV-1 (Mixed Use) Urban Village I	- 3 storeys max - 45% site coverage - 22% land pooling contribution
UV-2-SUB-1 Urban Village II (Sub category 1)	- 3 storeys max - 40% site coverage - 20% land pooling contribution
UV-2-SUB-2 Urban Village II (Sub category 2)	- 3 storeys max - 40% site coverage - 16% land pooling contribution
E4 Environment 4	- 2 storeys max - 25% site coverage - 16% land pooling contribution - Restricted development above 30% (max allowable slope 57%)

Dechencholing and Kabesa

Kabesa LAP 1 - Is this Good Growth in the Right Place?



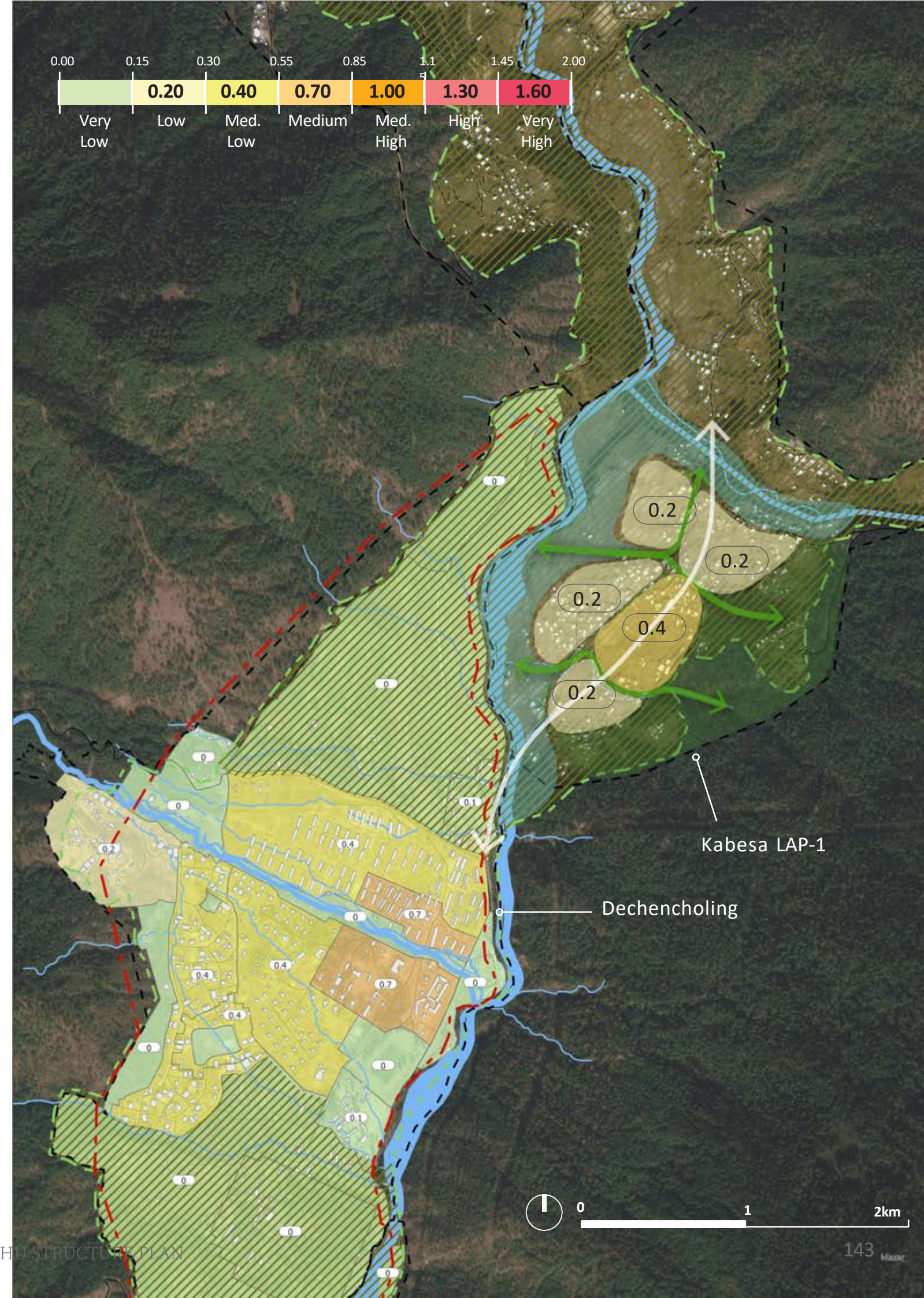
Dechencholing and Kabesa

Kabesa Option 1

- High value, low impact = higher economic potential
- Careful and compact development of up to 500 homes
- Productive/regenerative landscape
- Economically valuable jobs

Existing	Existing	Proposed
	Existing (2015/2017)	Rev1 Draft TSP
Dechencholing <i>(Source: MoWHS)</i>	6,490 people 1,600 homes	+6,700 people +1,450 homes
Kabesa <i>(Source: Kabesa SP)</i>	3,964 people 922 homes	Option 1
Kabesa LAP-1 <i>(Source: Kabesa LAP-1)</i>	2,600 people 600 homes	+2,300 people +500 homes

Date: 3rd February 2023



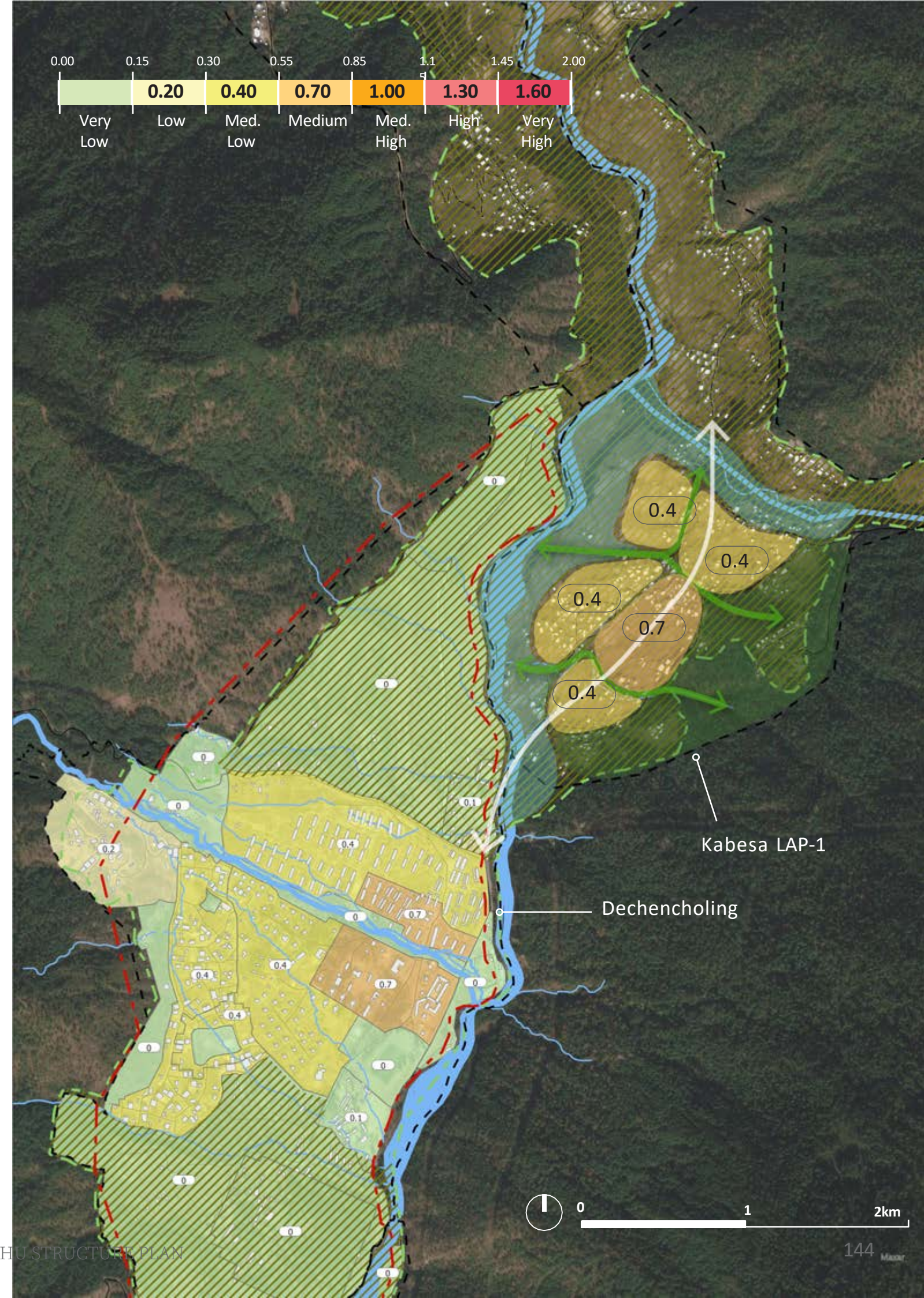
Dechencholing and Kabesa

Kabesa Option 2

- Lower value, higher impact = lower economic potential
- Comprehensive development of up to 1,000 homes
- Productive/regenerative landscape
- Economically valuable jobs
- New local centre, school and green/social infrastructure supporting new population of about 4,000 - 5,000 people

Existing	Existing (2015/2017)	Proposed
Dechencholing <i>(Source: MoWHS)</i>	6,490 people 1,600 homes	Rev1 Draft TSP +6,700 people +1,450 homes
Kabesa <i>(Source: Kabesa SP)</i>	3,964 people 922 homes	Option 2
Kabesa LAP-1 <i>(Source: Kabesa LAP-1)</i>	2,600 people 600 homes	+4,600 people +1,000 homes

Date: 3rd February 2023



Implementation

Kabesa

Public sector land acquisition

- Compulsory purchase
- Define public benefit
- Market value +10-20% (hope value)
- User charges – entry fees

Third and private sector acquisition

- Philanthropy
- Impact investor
- Carbon sink
- Payment for Ecosystem services (flood alleviation)
- User charges – entry fees

Transfer Development Rights

- Sending zones
- Receiving zones



Thank you