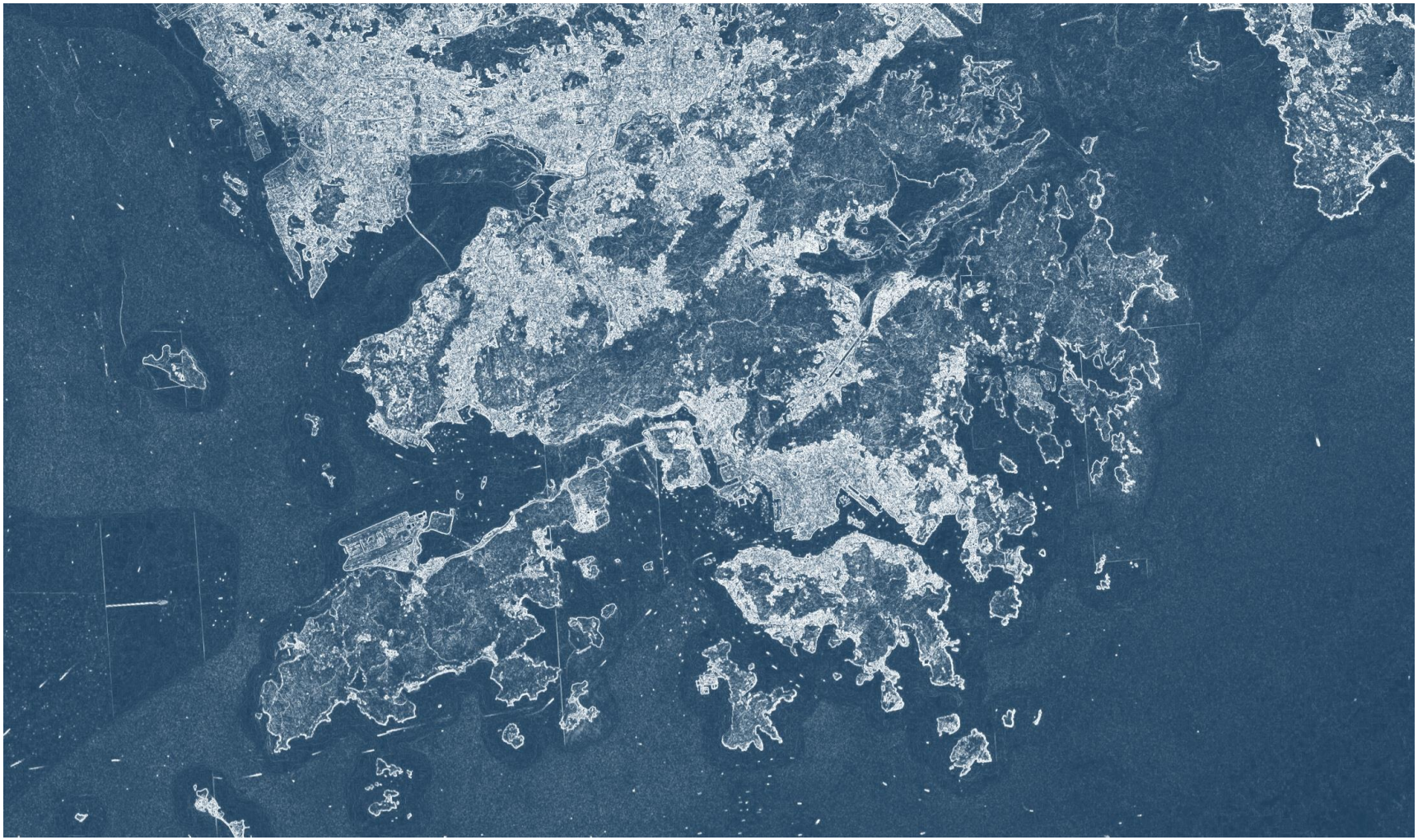
Optimizing Land Resources for Better Housing Provisions

香港 2040 願景------優化土地供應、改善住房條件



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Project Team

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1 Objectives & Contributions of the Research Study

Hong Kong has been faced with an acute shortage of developable land supply especially for housing provisions in both the public and private sectors. Of the 1108 square kilometers of land in Hong Kong, only 7% of the total land mass has been developed for residential use; and over 40 % of the land is designated as country parks and natural reserves.

Increasing and expediting land supply is fundamental to solving the land and housing problems of Hong Kong. The government currently adopts a multi-pronged strategy to increase land supply in the short, medium and long term.

The Long Term Housing Strategy Steering Committee is tasked to formulate a ten-year programme to deliver 480,000 units up to year 2024-25, with a public-private split of 60:40.

1 Objectives & Contributions of the Research Study (cont.)

This research study looks into a planning horizon of 25 years, the time span of which is general recognised as one generation. This study will review the housing needs up to 2040 by then the population might reach nine millions (9,000,000) under certain assumptions of the population policy.

It will also ascertain how much land is required to cater for the need of the existing population and the additional population in the order of 1,720,000, the rising aspiration for better living, the anticipated lifestyles and the changing socio-economic conditions.

The land budget under different scenarios will help bureaucrats and the community choose from different options of developable land formation.

1 Objectives & Contributions of the Research Study (cont.)

Against this backdrop, the main objectives of this study are:

(i) To study the housing needs of Hong Kong up to the year 2040;
(ii) To establish a framework for formulating land budget under different scenarios;
(iii) To formulate criteria for choosing a mix of developable land formation modes, considering the qualitative aspects of the housing needs and land requirements;
(iv) To examine the feasibility of converting deserted agricultural and industrial lands for residential use;
(v) To examine the feasibility of increasing plot ratio of urban sites for housing developments;
(vi) To advocate innovative land administration mechanism for revitalizing urban sites for better housing provisions; and
(vii) To recommend regulatory and administrative measures to enable more affordable housing accommodations in the urban areas.

1 Objectives & Contributions of the Research Study (cont.)

Contributions

Ultimately, we believe that this study could stimulate public and professional discourse on the possible options of optimizing these land resources for the benefits of the community and decision makers.

The findings of this study could further inform the ensuing seminars and forums. More importantly, its recommendations could be gauged by the public in form of various surveys.

CHAPTER 2

Assumptions & Framework of the Research Study

2.1 Assumptions

It is recognised that the economical, social, political, cultural and environmental issues surrounding land use developments in Hong Kong are complicated. In this Study, we would assume that :

1. The Government would be having an effective civic engagement mechanism in place for reaching consensus in urban development decisions, containing unnecessary delays in the development process during which objections, resistance and judicial reviews would be less encountered.

2. Hong Kong would forthwith adjust its positioning in the global economy and install new engines for social development and economic growth.

3. Appropriate talents and labour would be imported to sustain the restructured industries and to improve the demographic structure.

4. Benchmarking to 75% of Singapore's standards in terms of usable floor area per person in both the public and private housing provisions.

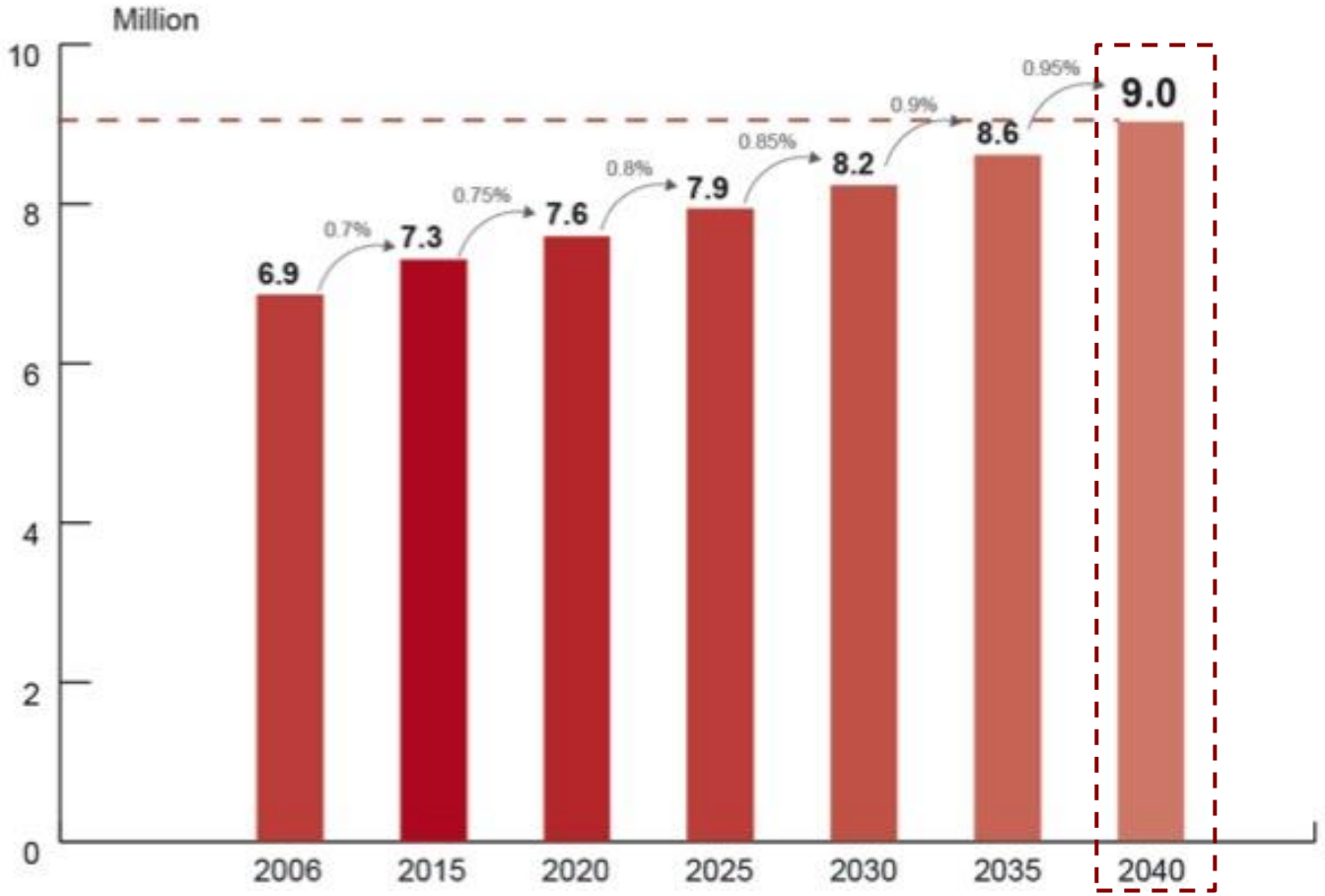
2.1 Assumptions

With the above assumptions, the population profiles in the years running up to 2040 is drawn up as follows.

According to Hong Kong 2030 Vision, the average population increase rate over the past 10 years is 0.7%. Considering the intensified economic integration with mainland China, the population increase rate in the coming 25 years will be on the rise, in anticipation of more import of talents and labour.

The Hong Kong population in 2040 would reach 9 million. This target population size will be the key guiding factor of the land demand projections.

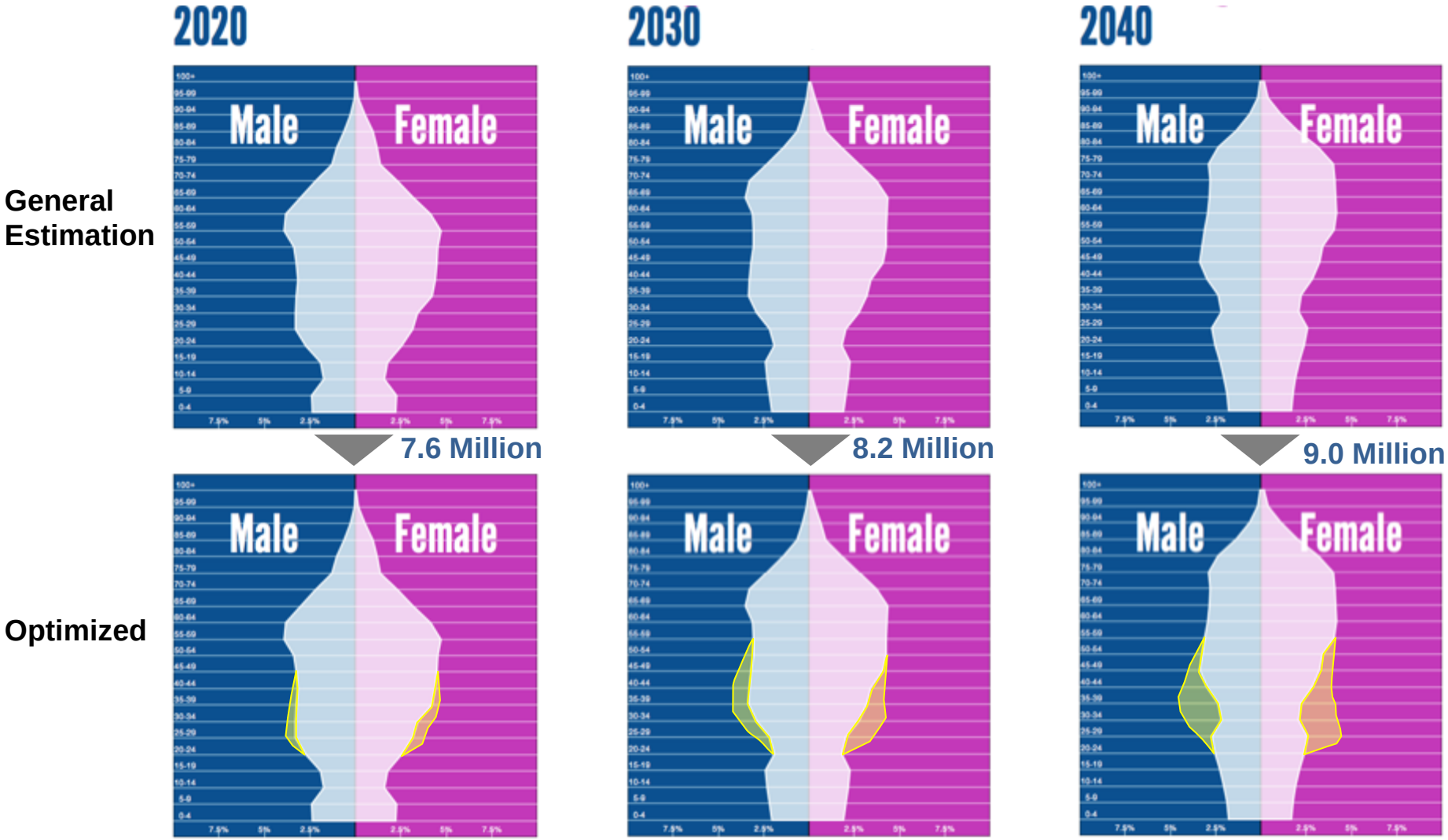
2.1 Assumptions Population Profiles



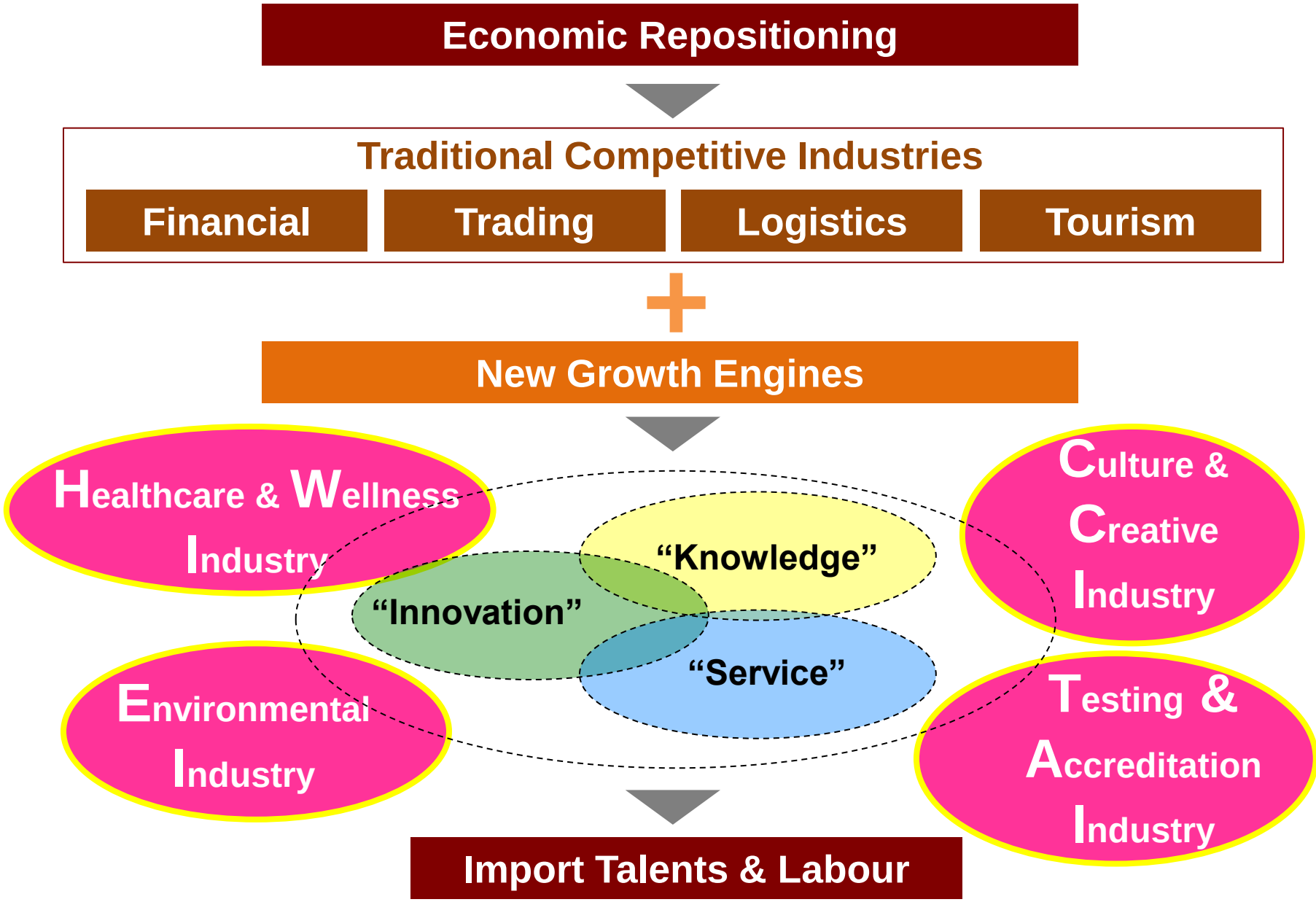
2.1 Assumptions Population Profiles

Import of Talents and Labour to improve the Demographic Structure

The ageing population issue in Hong Kong is becoming more and more acute, and at the same time, the labour force will attain the peak in 2018 and then decrease sharply. Continuously importing appropriate labour and talents is conducive to optimizing the population and economic structure of Hong Kong.



2.1 Assumptions Economic Repositioning

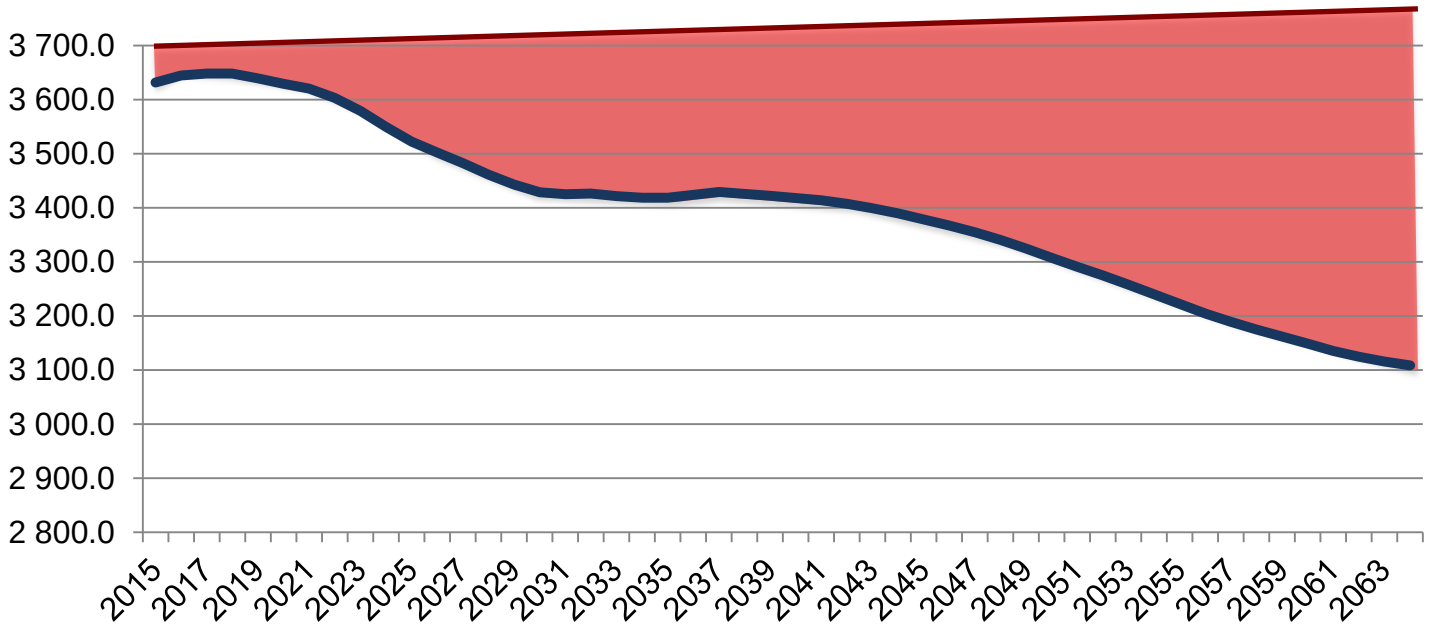


2.1 Assumptions Importing Talents/Labour to Improve Demographic Structure



(Thousands People)

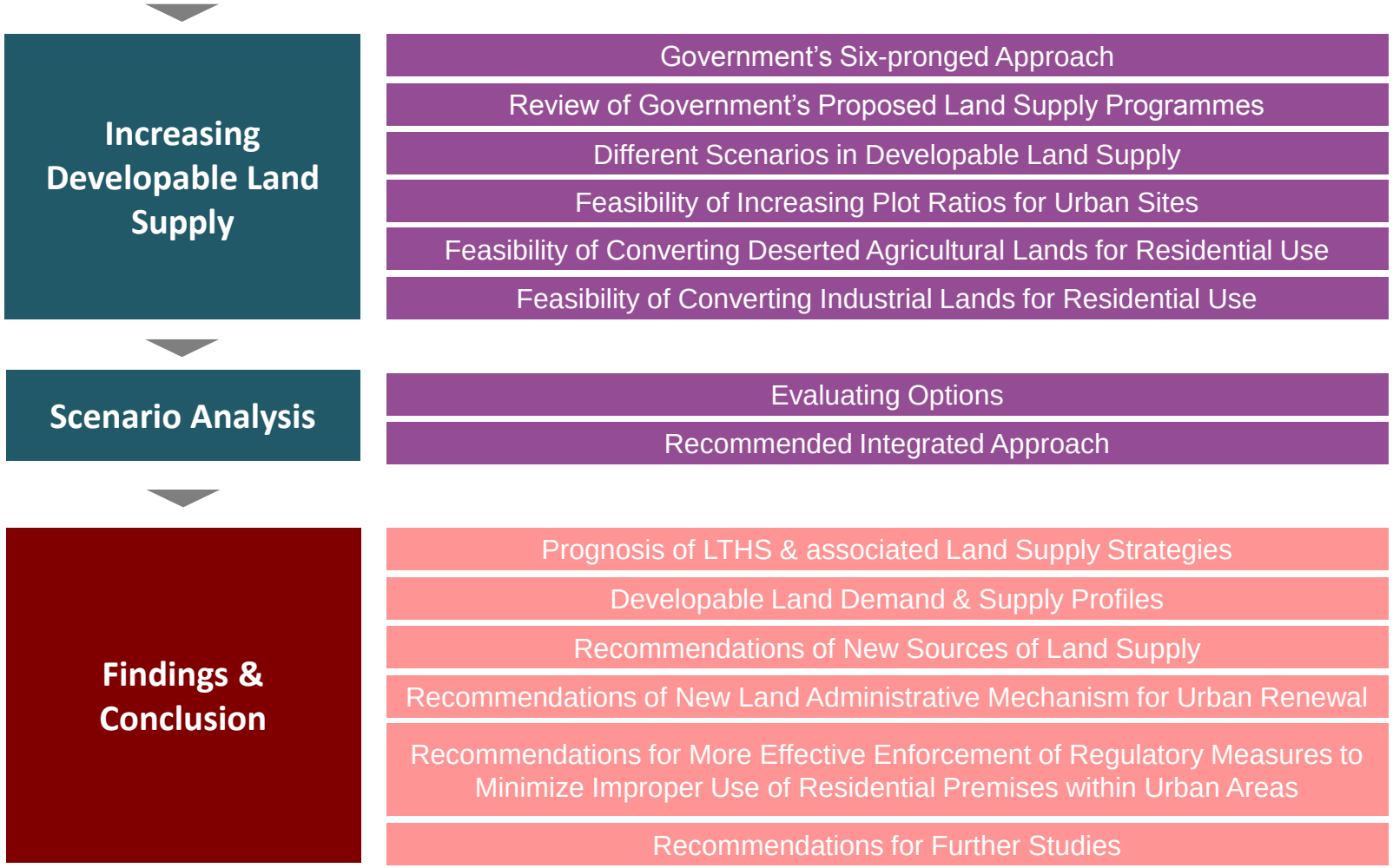
Projected Labour Force (2015-2063)



Source: Census and Statistics Department

2.2 Framework of the Research Study

2.2 Framework of the Research Study (cont.)



CHAPTER 3

Reviewing Housing Demand & Supply

3 Reviewing Housing Demand and Supply

3.1 Analyzing the existing Demand and Supply situation

3.2 Reviewing the Long Term Housing Strategy

3.3 Comparing with Singapore

3.4 Recommending new Housing Standards for Hong Kong

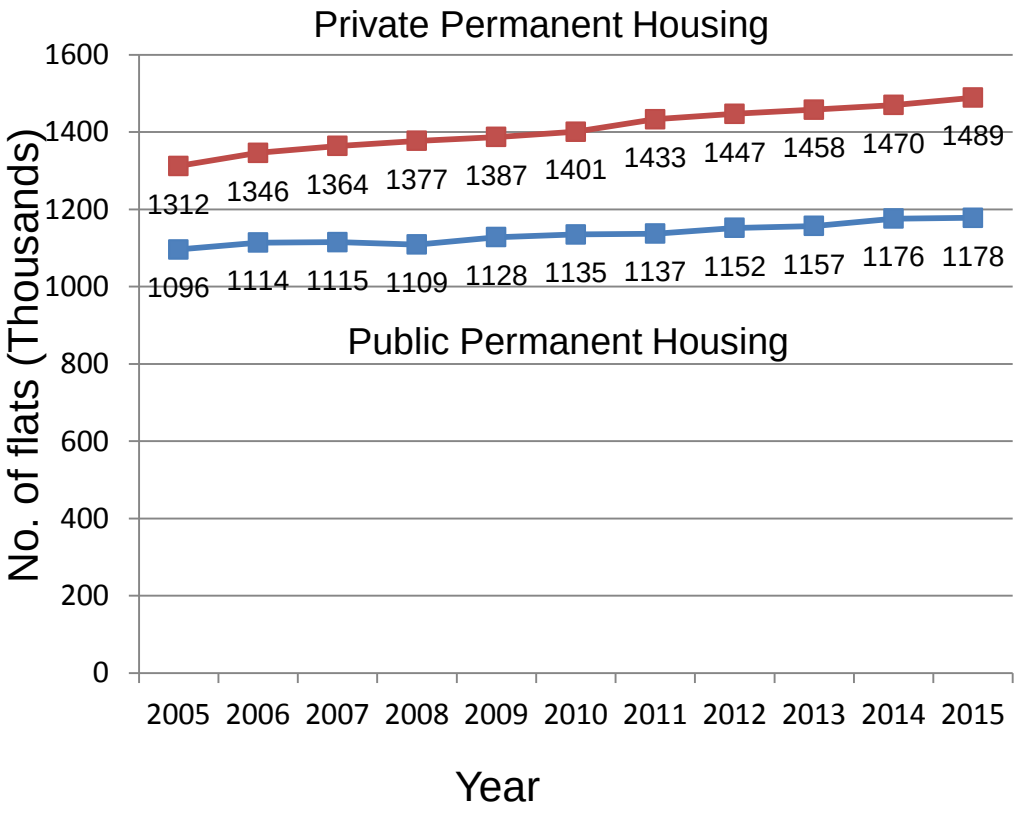
3.1 Analyzing the existing Demand and Supply situation

3.1 Analyzing Existing Housing Demand & Supply

Stock of flats in public and private permanent housing from 2005 to 2015
(units in Thousands)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Public permanent housing	1096	1114	1115	1109	1128	1135	1137	1152	1157	1176	1178
Private permanent housing	1312	1346	1364	1377	1387	1401	1433	1447	1458	1470	1489
Total	2408	2460	2479	2486	2515	2536	2570	2599	2615	2646	2667

Source: Hong Kong Housing Authority



Source: Hong Kong Housing Authority

3.2 Reviewing the Long Term Housing Strategy

Long Term Housing Strategy

On 16 December 2014, the Government promulgated the Long Term Housing Strategy (LTHS) and released the "LTHS Implementation Milestones" setting out the up-to-date implementation of key aspects of the LTHS.

The Government has adopted a supply-led strategy as recommended by the LTHS Steering Committee, with a view to gradually averting the current serious supply-demand imbalance in housing.

The LTHS sets out three major strategies:

(a) to build more public rental housing (PRH) units and to ensure the rational use of PRH resources in order to meet the housing need of the grassroots;

(b) to provide more subsidized sale flats, facilitate the market circulation of existing flats, expand the form of subsidized home ownership and leverage on the private sector's capacity to help increase supply , thus enabling more low to middle-income families to meet their home ownership aspirations; and

(c) to stabilize the residential property market through steady land supply and implementation of demand-side management measures, and to promote good sales and tenancy practices of private residential properties.

Based on the latest projection of housing demand, the Government targets a total housing supply of 480,000 units for the ten-year period from 2015-16 to 2024-25, with a public-private split of 60:40. Accordingly, the public housing supply target will be 290,000 units, comprising 200,000 PRH units and 90,000 subsidized sale flats, whereas the private housing supply target will be 190,000 units.

3.2 Reviewing the Long Term Housing Strategy

Long Term Housing Strategy (cont.)

Subsidized Home Ownership

Subsidized home ownership is one of the essential elements of the housing ladder. It serves as the first step for low to middle-income families to achieve home ownership. It also provides an opportunity for PRH tenants whose financial conditions have improved to achieve home ownership, thereby releasing their PRH applicants.

The Hong Kong Housing Authority (HA) will put the flats under the Home Ownership Scheme (HOS) up to about 2,700 and 2,000 flats for pre-sale in 2015/16 and 2016/17 respectively. The Hong Kong Housing Society (HKHS) will also put about 1,600 subsidized sale flats for pre-sale in 2016/17.

Green Form (GF) applicants (those sitting PRH tenants and PRH applicants who have passed the detailed vetting and are due for flat allocation) are encouraged to purchase the subsidized sale flats at a price level lower than those of HOS flats.

The Government also explores ways to increase the supply of subsidized sale flats through other public or non-profit-making organizations such as the Urban Renewal Authority and the Hong Kong Settlers Housing Corporation Limited.

Taking into account the previous experience of the Private Sector Participation Scheme and the Mixed Development Pilot Scheme, the government will actively explore ways to leverage on the private sector’s capacity to supplement the Government’s efforts in increasing and expediting the supply of subsidized sale flats.

3.2 Reviewing the Long Term Housing Strategy

Long Term Housing Strategy (cont.)

Key Initiatives

Apart from the above new measures, the Government will continue with the following initiatives:

KI 1: Providing PRH to low-income families who cannot afford private rental accommodation, maintaining the target of providing first flat offer to general applicants (i.e. family and elderly one-person applicants) at around three years on average

KI 2: Taking forward public housing construction programmes

According to the latest Public Housing Construction Programme of the HA, the total public housing production forecast for 2014/15 to 2018/19 is about 87,700 units, comprising some 77,100 PRH units and some 10,600 HOS flats. The first batch of newly built 2,160 HOS flats, scheduled for completion in 2016-17, was put up for pre-sale in end -2014. Assuming that all sites identified as of now can be delivered on time for housing construction, about 254,000 public housing units could be constructed within the ten-year period from 2015/16 to 2024 /25.

KI 3**:** Continuing to optimize the development potential of public housing sites and boost flat production by increasing the domestic plot ratio and relaxing other development restrictions where planning conditions permit and without causing unacceptable impact.

KI 4: Continuing to review the redevelopment potential of aged PRH estates, ensuring the effective and rational use of PRH resources, including enhanced enforcement actions against tenancy abuse cases.

3.2 Reviewing the Long Term Housing Strategy

Long Term Housing Strategy (cont.)

KI 5: Working with the HKHS on the provision of subsidized flats for sale in Sha Tin and rental housing in Sha Tau Kok

KI 6: Implementing a new round of interim scheme in the second half of 2015 to allow 2,500 buyers with White Form status to purchase subsidized sale flats with premium not yet paid in the HOS Secondary Market

KI 7: Exploring the development of public housing at six government sites (including the redevelopment of Wah Fu Estate),which are expected to provide about 11,900 additional housing units, following the partial lifting of the administrative moratorium on development of Pok Fu Lam

KI 8: Healthy Private Residential Property Market
The Government will continue to provide land for private residential development. According to the latest projection as at December 2014, the supply of first-hand private residential flats for the coming three to four years is approximately 74,000 units. The private sector has only produced on average about 11,400 flats each year over the past five years.

3.2 Reviewing the Long Term Housing Strategy

Long Term Housing Strategy (cont.)

KI 9: Implementing demand-side management measures

To contend the overheated property market caused by factors including serious demand and supply imbalance, low interest rate and abundant liquidity environment, the Government announced the introduction of the Buyer's Stamp Duty (BSD) and the enhanced Special Stamp Duty (SSD) in October 2012 in order to stabilise the residential property market and accord priority to the home ownership needs of Hong Kong permanent residents in the midst of the tight housing supply situation.

The Stamp Duty (Amendment) Ordinance 2014 (Amendment Ordinance), which implements these measures, was enacted by the Legislative Council in February 2014. The measures have some effects on combating short term speculative activities and curbing external demands, and help stabilise the residential property market. The Government will review the BSD and SSD regimes from time to time.

KI 10: Implementing the Residential Properties (First-hand Sales) Ordinance

Since the full implementation of the Residential Properties (First-hand Sales) Ordinance on 29 April 2013 and up to 31 December 2014, vendors have offered 24,239 first-hand residential properties in 145 residential developments for sale. This ordinance has considerably enhanced the transparency and fairness in the sales of first-hand residential properties, strengthened consumer protection, and provided a level playing field for vendors.

3.2 Reviewing the Long Term Housing Strategy

Long Term Housing Strategy (cont.)

KI 11: Improving Quality of Living in Public Rental Housing

>Implementing arrangements to promote mutual family support and care for the elderly
In support of the Government's elderly policy of "ageing in place" and with a view to strengthening family cohesion, the HA adopts various housing arrangements to encourage young households to live nearby their elder family members. Notably, enhanced housing arrangements under the Harmonious Families Priority Scheme and other related polices have been implemented since January 2009. As at end December 2014, there were about 34,000 households which have benefited from these housing arrangements.

>Improving the living conditions of overcrowded PRH households by implementing measures to provide them with transfer opportunities to larger accommodation
According to the prevailing space allocation standards, PRH households with a living area of less than 5.5 meter square (m^2) internal floor area (IFA) per person are considered to be "overcrowded". In 2001, the HA launched the Territory-wide Overcrowding Relief Transfer arrangements. These are now held once or twice a year to enable overcrowded households to apply for transfer to larger flats. The Living Space Improvement Transfer Scheme was introduced in 2005 to allow PRH households living in flats with an average IFA of less than 7 m^2 per person to apply for transfer to larger flats. The Scheme is launched once a year. Since its introduction and until end September 2014, the Scheme benefited more than 11,000 households.

3.2 Reviewing the Long Term Housing Strategy

Long Term Housing Strategy (cont.)

>Promoting sustainable public housing developments by designing for green and healthy living with a target of attaining "BEAM Plus ready" Gold rating

>Continuing with various environmental initiatives as well as enhancing awareness of waste minimization among PRH residents to achieve the target of municipal solid waste reduction

>Increasing the green coverage for new public housing developments and providing green roofs in low-rise buildings and vertical greening in these projects wherever feasible

3.2 Reviewing the Long Term Housing Strategy

LAND SUPPLY FOR HOUSING DEVELOPMENT

Government's LTHS

Demand up to 2025

480,000 units

- Public 290,000 units
- Private 190,000 units

PART I - Supply up to 2025

S1	Planned Public Housing Construction programmes	Public
	Planned Public Housing Development & Redevelopments	Public Private
S2	Land Sale, URA, MTR, KCR	Private
	Planned Developments & Redevelopments	Private
S3	Rezoning Existing Land Idling Sites	Public Private
	Increase Domestic Plot ratio by 20%	Private

3.2 Reviewing the Long Term Housing Strategy

PART I - Supply up to 2025

Up to 2024-2025

		Development Mode	Location	Land (ha)	No of units		Year of Delivery
					Public	Private	
S1	Housing Authority	Planned Public Housing Construction programmes	Committed sites	-	254000 (**A1**)	-	2015-16 to 2024-25
	Wah Fu Estate Redevelopment	Planned Public Housing Development	South of Pok Fu Lam	unknown	11900	-	2025
	Diamond Hill	Planned Development	Diamond Hill	7.18	4050	-	2022-23
	Anderson Road Quarry		Anderson Road Quarry	87.84	1880	7530	2019-20
				sub-total	**17,830 (A2)**	**7,530 (B2)**	
				S1-total	**271,830**	**7,530**	
S2	Government Land Sale	Private Development	-	-	-	5100	2015-16 to 2018-19
	Railway Developments				-	22180	
	URA				-	9600	
	Private Development & Redevelopment Projects				-	37120	
				S2-total	**-**	**74,000 (B3)**	
S3	Rezoning 150 Sites Government Land, STT, GIC (including 70 green belt uses)	Change of Use of Existing Land and Convert Idling Reserved Sites	Tai Po Area Cheung Sha Wan Wholesale Food Market Phase 2 Tin Shui Wai Areas 112 and 115 Western Part of the Queen's Hill Site	300 (150 green belt)	147000 (48000 green belt)	63000 (32000 green belt)	2014-15 to 2018-19
	Increasing Development Intensity (government sites)	Increase Domestic Plot Ratio by 20%	Tuen Mun, Yuen Long,Ma On Shan,Sha Tin,Fanling, Sheung Shui,Kwai Chung	unknown	-	770	11 housing sites approved in 2014
			Kai Tak Development(KTD)	unknown	-	6800	study completed in 2014
				S3-total	**147,000 (A4)**	**70,570 (B4)**	
				PART Ⅰ Total	**418,830**	**152,100**	

3.2 Reviewing the Long Term Housing Strategy

Appendix A Public housing production for 2014-15 to 2018-19						
	Development Mode	Location	Land(ha)	No of units		Year of Delivery
				Public	Private	
Housing Authority	Planned Public Housing Construction programmes	Committed Sites	-	PRH 77100 HOS 10600	-	2014-15 to 2018-19
Total				**87700**		

Appendix B Urban Renewal Authority(URA) Projects						
	Development Mode	Location	Land(ha)	No of units		Year of Delivery
				Public	Private	
URA	Redevelopment on Existing Land	San Shan Road/Pau Chung Street Kwun Tong Town Centre Hai Tan Street Fuk Wing Street	-	-	144 1700 69 + 845 90	2014.4 to 2018 2014.9 to 2018 2014.12 to 2018 2014 to 2018
sub-total			**sub-total**		**2848 (Say,2700)**	
URA	Redevelopment on Existing Land	23 Projects	-	-	6900	2014 to 2018
sub-total			**sub-total**		**6900**	
Total	**URA**				**9600**	

3.2 Reviewing the Long Term Housing Strategy

Appendix C Railway Property Developments						
	Development Mode	Location	Land(ha)	No of units		Year of Delivery
				Public	Private	
Railway Developments (West Rail)	KCR Topside Developments	Nam Cheong Station Tsuen Wan West Station TW5 (Cityside) Tsuen Wan West Station TW5 (Bayside) Long Ping Station (North) Tsuen Wan West Station TW6 Long Ping Station (South)	-	-	9100	2017-18 (planning since 2010-11)
		Yuen Long South	-	-	1880	2022
			sub-total		**10,980**	
MTRCL	MTR Developments	LOHAS Park(Package 4) TKO area 86	-	-	1600	2013-14 to 2018
		Tai Wai			2900	2014-15 to 2018
		LOHAS Park(Package 5)			1600	2014-15 to 2018
		LOHAS Park(Package 6)			2400	2014-15 to 2018
		Tin Shui Wai Light Rail Terminus			1500	2014-15 to 2018
		LOHAS Park(Other Packages)			1200	2014-15 to 2018
			sub-total		**11,200**	
Total	**Railway Prop. Developments**				**22,180**	

3.2 Reviewing the Long Term Housing Strategy

PART II - Supply 2020 - 2025

Medium-term (target 2020 to 2025)

PART II: Medium-term (target 2020 to 2025)

		Development Mode	Location	Land(ha)	No of units		Year of Delivery
					Public	Private	
S4	Kwu Tung North (KTN) Fanling North (FLN) NDAS	NDA	Kwu Tung North Fanling North	320	36000	24000	2022-2023
	Hung Shui Kiu NDA	NDA	Hung Shui Kiu	442 (190ha brownfield sites)	36000	24000	2024
	Kam Tin South	Comprehensive Developments	Kam Tin South	41+110	5250+16900	3500+8050	after 2022
	Tung Chung New Town Extension	New Town Extension	Tung Chung	235	28800	19200	2023
	Siu Ho Wan Development & Adjoining Lands	MTR Developments	Siu Ho Wan	55	-	11000	unknown
	North District Yuen Long (Agricultural land)	NDA	Kwu Tung South Yuen Long South Fanling/ Sheung Shui Area 30	238	unknown 15660 unknown	unknown 10440 unknown	2020 2025 2020
	NT North	Explore New Sources of Developable Land	Closed Area Fanling Golf Course Fanling Lodge	unknown 170 unknown	unknown	unknown	2024
				PART II Total	**138,610**	**100,190**	

3.2 Reviewing the Long Term Housing Strategy

PART III - Supply beyond 2025

Long-Term (beyond 2025)

PART III: Long-Term (beyond 2025)							
		Development Mode	Location	Land(ha)	No of units		Year of Delivery
					Public	Private	
S5	Reclamation (near shore)	Explore New Sources of Developable Land	Ma Liu Shui	30 - 60	3000 - 6000	2000 - 4000	unknown
	Reclamation	Explore New Sources of Developable Land	East Lantau Metropolis	1400 - 2400	108000 - 185000	72000 -123000	unknown
	Rock Cavern	Explore New Sources of Developable Land by Reprovisioning of Treatment Works & Service Reservoirs	Sha Tin Sewage Treatment Works Sai Kung Sewage Treatment Works Sham Tseng Sewage Treatment Works Diamond Hill Fresh Water and Salt Water Service Reservoirs	unknown 2.2 1.1 3	unknown	unknown	unknown
				PART III Total	**111000 - 191000**	**74000 -127000**	

3.2 Reviewing the Long Term Housing Strategy - Housing units Shortage up to 2040

PART I - Supply up to 2025

Cumulative Total Supply up to 2025 (Scenario 1)		
	No of units	
	Public	Private
(A1+A2) & B2	271,830	7,530
B3	-	74,000
A4 & B4	147,000	70,570
Total	**418,830**	**152,100**
Cumulative Total	**570,930**	

Demand up to 2025

480,000 units

Public 290,000 units

Private 190,000 units

Public: +128,300 units

Private: -37,900 units

Cumulative Total Supply up to 2025 (Scenario 2 – Base Case)		
	No of units	
	Public	Private
(A1+A2) & B2	271,830	7,530
B3	-	74,000
A4 & B4 (50%)	73,500	35,285
Total	**345,330**	**116,815**
Cumulative Total	**462,145**	

Public: + 55,330 units

Private: -73,185 units

Cumulative Total Supply up to 2025 (Scenario 3)		
	No of units	
	Public	Private
(A1+A2) & B2	271,830	7,530
B3	-	74,000
Total	**271,830**	**81,530**
Cumulative Total	**353,360**	

Public: -18,170 units

Private: -108,470 units

3.3 Comparing with Singapore

3.3 Comparing with Singapore

There are numerous reasons why people like to compare Hong Kong with Singapore. Both of them are predominantly ethnic Chinese societies (Singapore - 77%, Hong Kong - 94%) . They both had over 140 years of British rule, and were occupied by Japan during the WWII. They have a similar GDP worth in 2014 (Hong Kong - US$ 291 billion, Singapore - US$ 308 billion).

Although Singapore has a higher population density than Hong Kong in terms of number of persons per square kilometer (7,618/sq. km. vs 6,570/sq.km.), Singapore urban areas appear to be more greener and spacious than those of Hong Kong. This is probably due to difference in the topography, urban design concepts and the extent of reclamation. Singapore is basically “City within the Garden” whereas in Hong Kong we have “City and the Garden segregated”.

At the moment, the average usable floor area per person in Singapore is about double that of Hong Kong. Due to those constraints above-mentioned, it is recommended to benchmark with Singapore in terms of 75% of its UFA per person in the Public and Private Housing for the purpose of setting the new standards of housing provisions in Hong Kong.

3.3 Comparing with Singapore

Comparison between Hong Kong and Singapore (2014)

	Hong Kong	Singapore
Population	7.27M	5.47M
Total Land	1105.6km^2	718.3km^2
Population Density	6575/km^2	7615/km^2
Residential Land	76 km^2	100 km^2
Residential Land/Total Land	7%	14%

Source: Lands Department, Hong Kong
Department of Statistics, Singapore

3.3 Comparing with Singapore

Public Housing (2014)

		Hong Kong	Singapore
Public Housing	Rental	66.4% (PRH)	12%
	Ownership	33.6% (SHOH#2)	88% #1
	Total	100%	100%
	HDB 1~2-room	–	6.6%
	HDB 3-room	–	22.8%
	HDB 4-room	–	40.2%
	HDB 5-room & Executive Flats	–	30.4%
	Total (type)	–	100%

Source: Hong Kong Housing Authority,
Hong Kong Census and Statistics Department
& Department of Statistics Singapore

Footnote:
#1 – Singapore Home Ownership Rate (2014)= 90.3%[Private housing + Public housing(HDB sales flats)]
Ownership rate of HDB housing (PHOR) in Singapore is given by 90.3%= 19.8% + 80.2% x PHOR, PHOR is therefore 88%
#2 – SHOH: Subsidized Home Ownership Housing

3.3 Comparing with Singapore

Households & Housing (2014)

			Hong Kong	Singapore
Average household size			2.9 persons	3.4 persons
Home Ownership Rate (by Household)			68.5% #1	90.3%
Owner-occupiers Ratio (by Household)		Private	66.3%	–
		Public	32.5%	
		Total	50.6%	
Residential household by type of dwelling	Public Housing	PRH	30.8%	–
		SHOH	15.6%	–
		HDB 1~2-room	–	5.3%
		HDB 3-room	–	18.3%
		HDB 4-room	–	32.2%
		HDB 5-room & Executive Flats	–	24.4%
		Sub Total	46.4%	80.2%
	Private Housing		52.9% + 0.6% #2	19.8%
Total			100%	100%

Footnote: #1 – Hong Kong Home Ownership Rate 2014=
Private housing + Public housing (SHOH) = 52.9% + 15.6% = 68.5% (2014Q4)
SHOH: Subsidized Home Ownership Housing
#2 – Temporary Housing

Source: Hong Kong Housing Authority,
Hong Kong Census and Statistics Department
& Department of Statistics Singapore

3.3 Comparing with Singapore

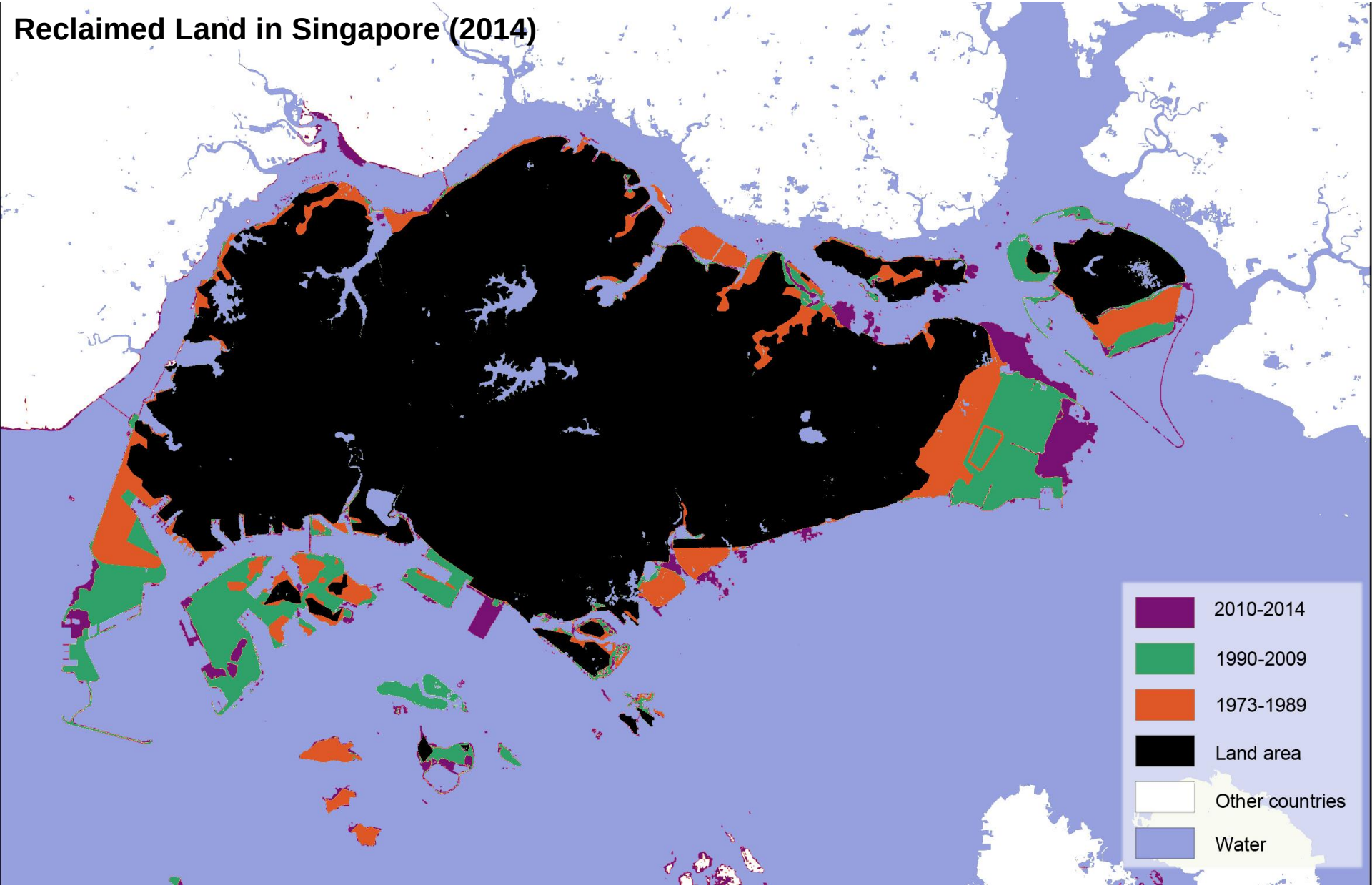
Useful Floor Area(UFA m^2 / person) (2014)

Housing Type		Hong Kong	Singapore	
Public Housing	Public Rental Housing (HK) / HDB Flats (Singapore)	13	1~2-room	13
			3-room	19
			4-room	26
			5-room	32
			Average	25.37
	Subsidised Sale Flats	13	25.37	
Private Housing		16.6	48.75	
Total Average		15	30	

Source: Hong Kong Housing Authority & HDB, Singapore

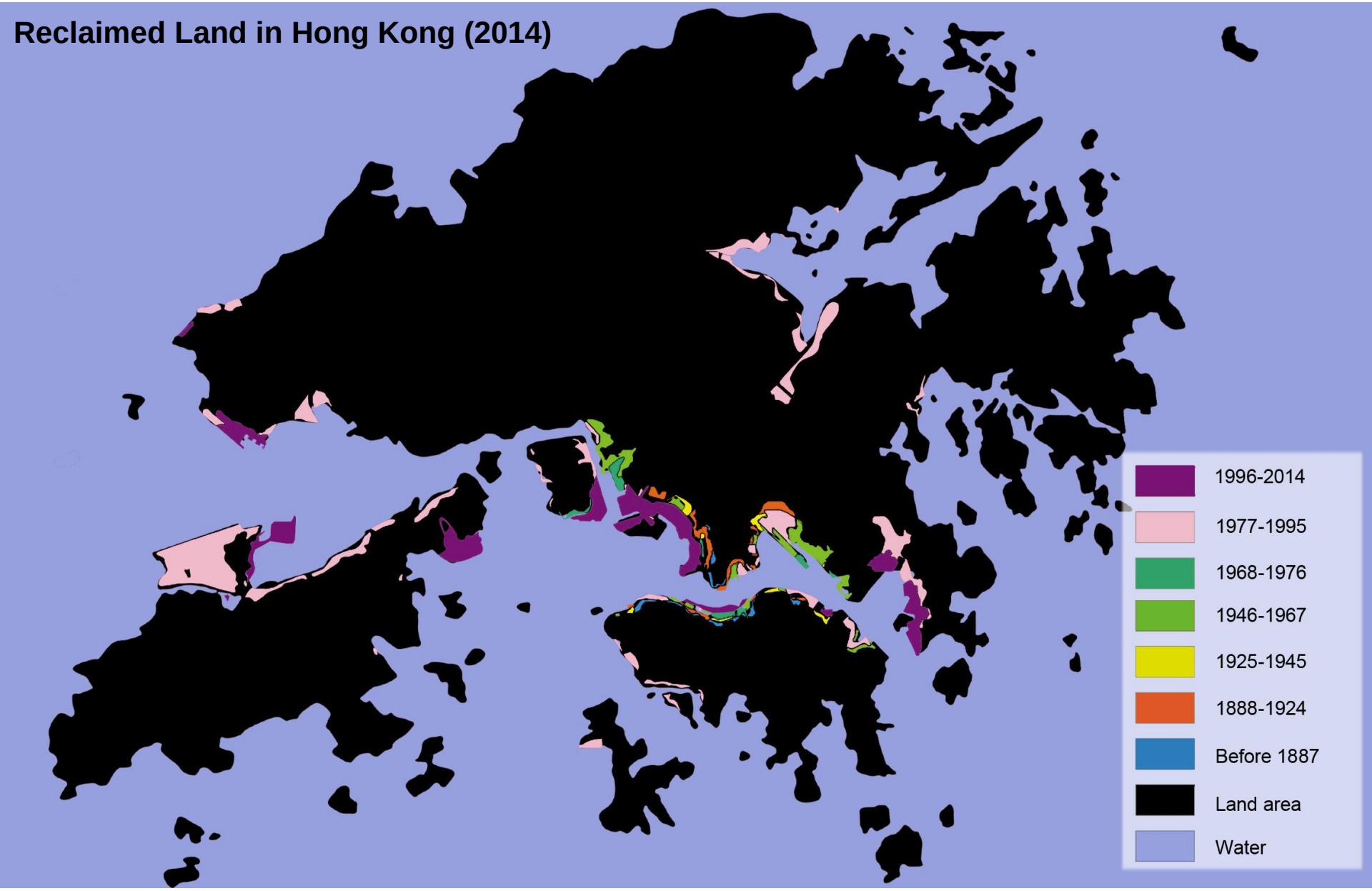
3.3 Comparing with Singapore

Reclaimed Land in Singapore (2014)



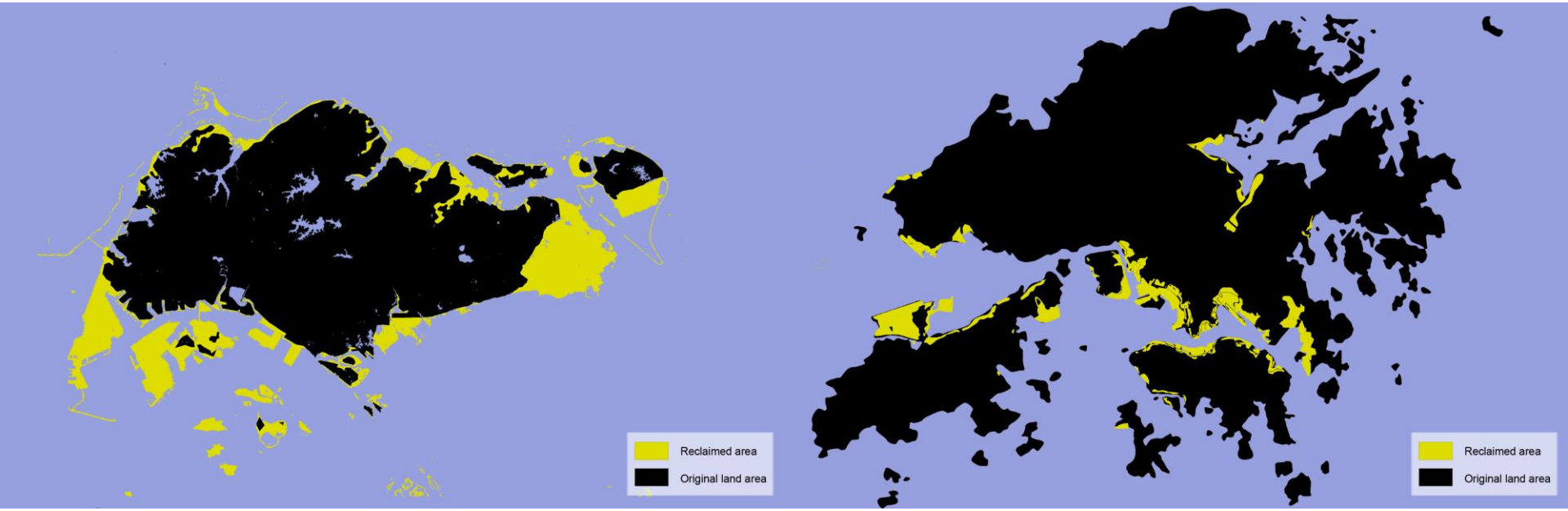
Source: Remote Sensing Analysis: UNEP/GRID-Geneva.

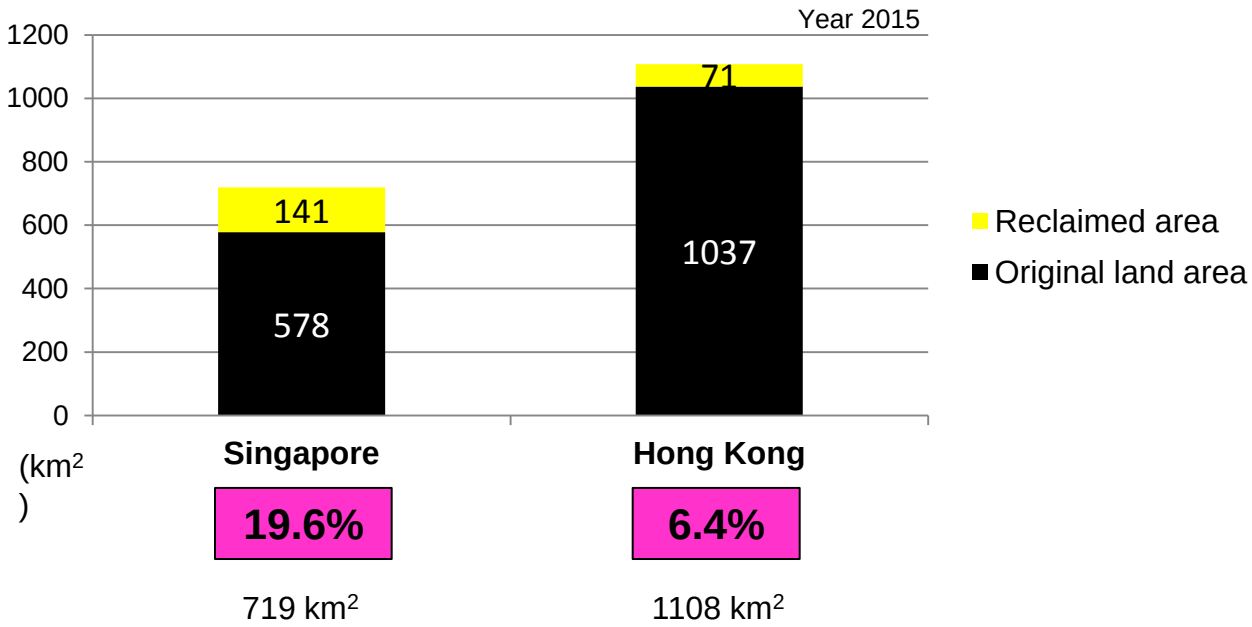
3.3 Comparing with Singapore



Source: Adapted from information provided by Lands Department and Civil Engineering & Development Department

3.3 Comparing with Singapore





3.4 Recommending new Housing Standards for Hong Kong

3.4 Recommended Housing Standards for Hong Kong

With the above recommended benchmarking with Singapore in terms of 75% of its UFA per person in the Public and Private Housing as the new standards for new housing provisions in Hong Kong, the Usable Floor Area per person standard for private housing would be increased from 16.6 SM UFA to 36.6 SM UFA (75% x 48.75 SM UFA); that for public housing would be increased from 13 SM UFA to 19.0 SM UFA (75% x 25.37 SM UFA).

Accordingly, the average SM UFA per person for overall public and private housing is calculated as (60% x 19.0 SM UFA per person + 40% x 36.6 SM UFA per person) /100% = 26.04 SM UFA per person. This parameter will be used to assess the land area required for housing in New Town developments.

3.4 Recommending New Housing Standard for Hong Kong

UFA per Capita of Public Housing

19.0 M²

*75% of the Singapore's UFA per person

UFA per Capita of Private Housing

36.6 M²

*75% of the Singapore' UFA per person

Units of Public Housing

60%

Units of Private Housing

40%

CHAPTER 4

Reviewing Existing Land Use Pattern

4 Reviewing Existing Land Use Pattern

4.1 Mapping of Existing Land Use

4.2 Mapping of Possible Developable Land

4.3 Analyzing the New Town Land Use Budgets

4.4 Recommendations of Optimized New Town modules

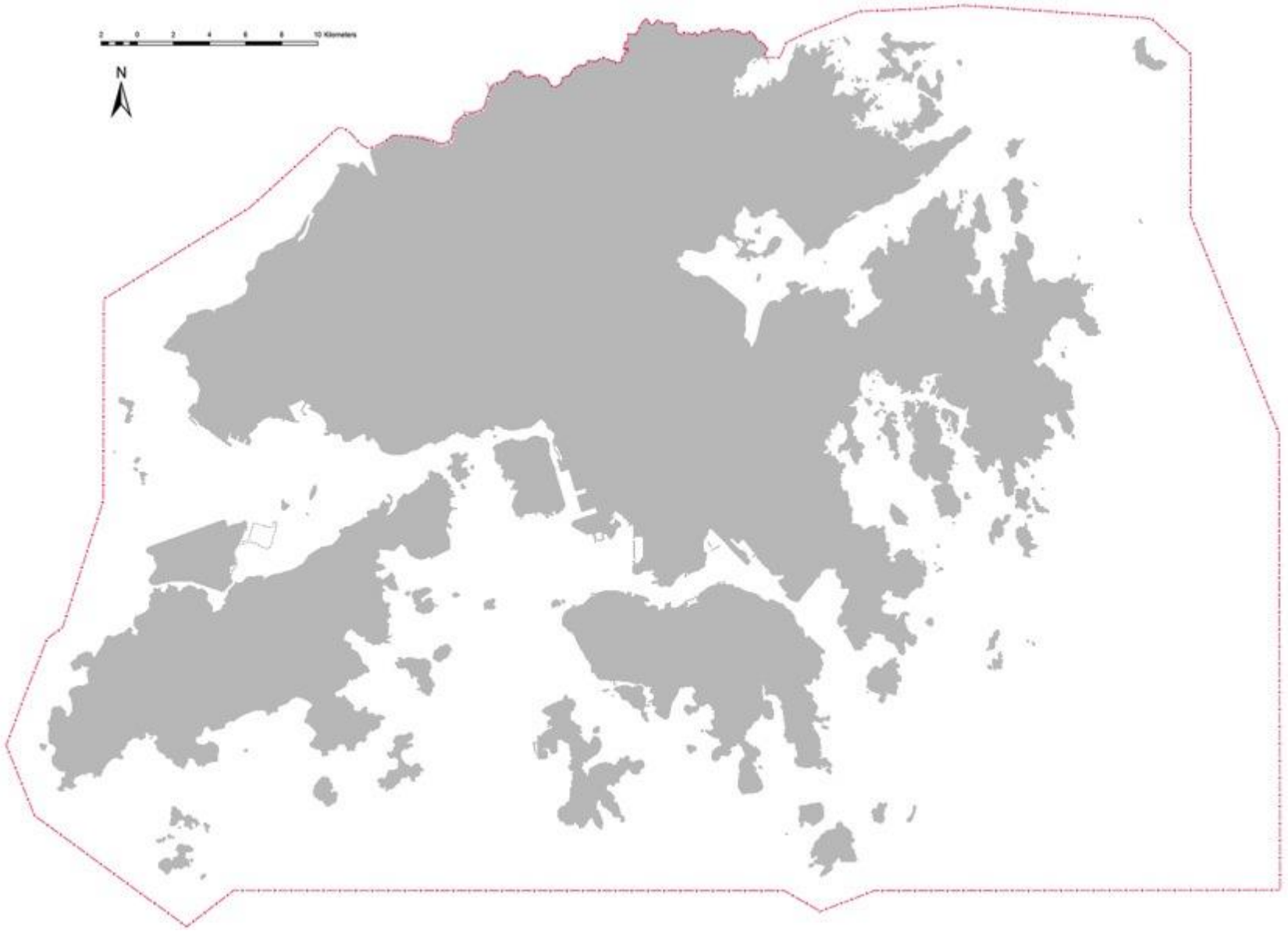
4.1 Mapping of Existing Land Use

It is essential to paint the picture of the extent of the built area, special protection areas, Country Parks and natural reserves as the “Non-developable” areas.

By mapping out their locations and covering areas individually and collectively, it can demonstrate the extent of possible developable land areas after taking out the above-said “Non-developable” areas and identifying the topographical constraints of these left-over areas.

4.1 Mapping of Existing Land Use

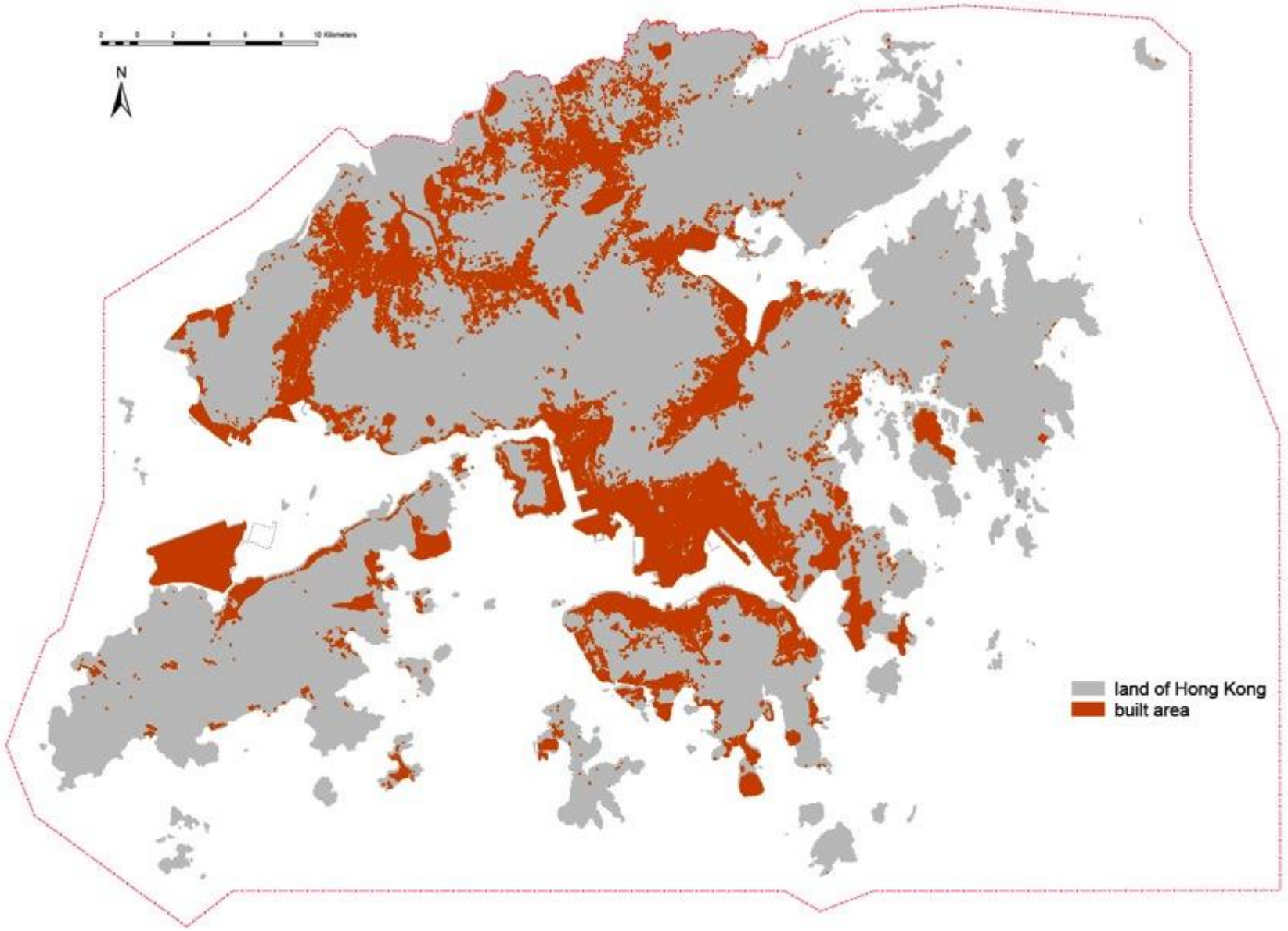
Hong Kong SAR Boundary



Total Area = 1108 KM²

4.1 Mapping of Existing Land Use

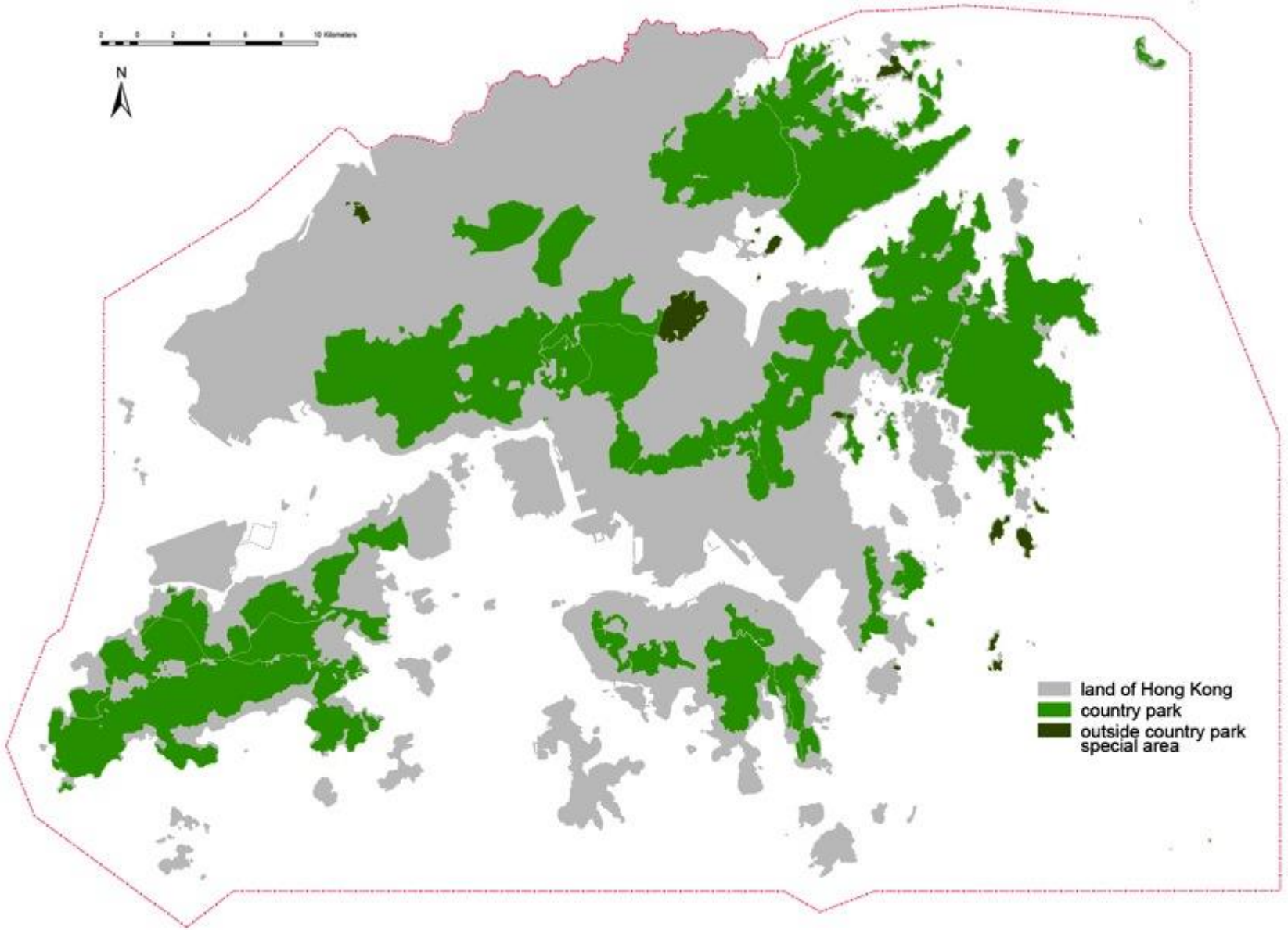
Built Area



Area = 263.7 KM² 23.8%

4.1 Mapping of Existing Land Use

Country Park + Designated Special Area (Outside Country Park)



Area = 443 KM² 40.0% (Country Park: 434.55 KM², Outside Country Park Special Area: 8.45 KM²)

4.1 Mapping of Existing Land Use

Country Park + Designated Special Area (Outside Country Park)

香港現已劃定的郊野公園
Designated Country Park in Hong Kong

編號 No.	地點 Location	面積(公頃) Area (ha)	指定日期 Date of Designation
1	城門 Shing Mun	1400	24/6/1977
2	金山 Kam Shan	339	修定於/Revised on 30/12/2013
3	獅子山 Lion Rock	557	24/6/1977
4	香港仔 Aberdeen	423	28/10/1977
5	大潭 Tai Tam	1315	28/10/1977
6	西貢東 Sai Kung East	4494	修定於/Revised on 30/12/2013
7	西貢西 Sai Kung West	3000	3/2/1978
8	船灣 Plover Cove	4594	7/4/1978
9	南大嶼 Lantau South	5640	20/4/1979
10	北大嶼 Lantau North	2200	18/8/1978
11	八仙嶺 Pat Sin Leng	3125	18/8/1978
12	大欖 Tai Lam	5412	修定於/Revised on 30/12/2013
13	大帽山 Tai Mo Shan	1440	23/2/1979
14	林村 Lam Tsuen	1520	23/2/1979
15	馬鞍山 Ma On Shan	2880	修定於/Revised on 18/12/1998
16	橋咀 Kiu Tsui	100	1/6/1979
17	船灣(擴建部分) Plover Cove (Extension)	630	1/6/1979
18	石澳 Shek O	701	修定於/Revised on 22/10/1993
19	薄扶林 Pok Fu Lam	270	21/9/1979
20	大潭(鰂魚涌擴建部分) Tai Tam (Quarry Bay Extension)	270	21/9/1979
21	清水灣 Clear Water Bay	615	28/9/1979
22	西貢西(灣仔擴建部分) Sai Kung West (Wan Tsai Ext.)	123	14/6/1996
23	龍虎山 Lung Fu Shan	47	18/12/1998
24	北大嶼(擴建部分) Lantau North (Extension)	2360	7/11/2008
	總面積 Total Area	43455	

香港現已劃定的特別地區(位於郊野公園外)
Designated Special Area in Hong Kong (Outside Country Park)

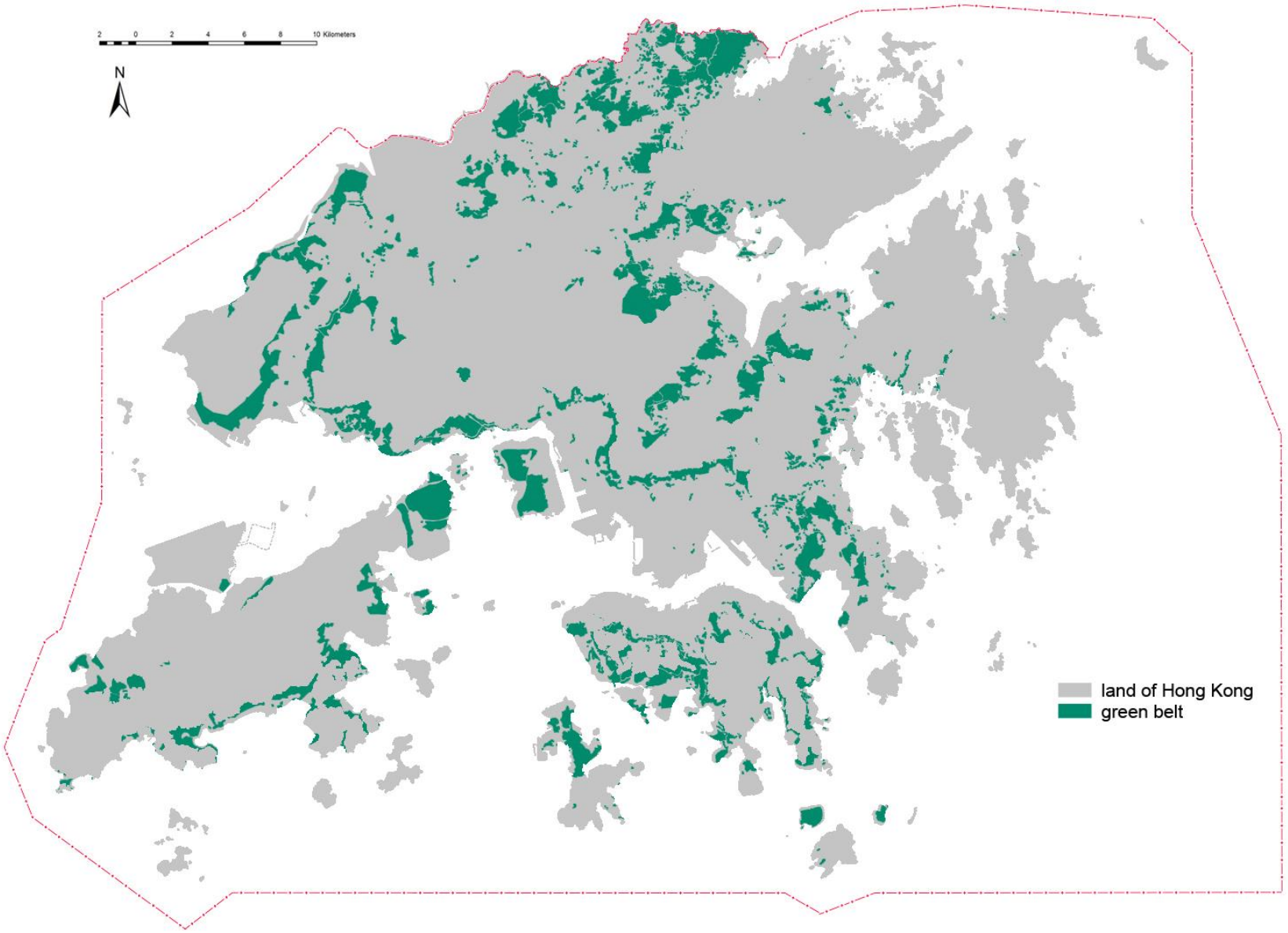
編號 No.	地點 Location	面積(公頃) Area (ha)	指定日期 Date of Designation
1	大埔滘自然護理區 Tai Po Kau Nature Reserve	460	13/5/1977
2	東龍洲炮台 Tung Lung Fort	3	22/6/1979
3	蕉坑 Tsiu Hang	24	18/12/1987
4	馬屎洲 Ma Shi Chau	61	9/4/1999
5	荔枝窩 Lai Chi Wo	1	15/3/2005
6	香港濕地公園 Hong Kong Wetland Park	61	1/10/2005
7	印洲塘 Double Haven	0.8	1/1/2011
8	果洲群島 Ninepin Group	53.1	1/1/2011
9	蓬瓦群島 Ung Kong Group	176.8	1/1/2011
10	橋咀洲 Sharp Island	0.06	1/1/2011
11	鑊船灣 High Island	3.9	1/1/2011
	總面積 Total Area	845	

land of Hong Kong
country park
outside country park special area

Area = 443 KM² 40.0% (Country Park: 434.55 KM², Outside Country Park Special Area: 8.45 KM²)

4.1 Mapping of Existing Land Use

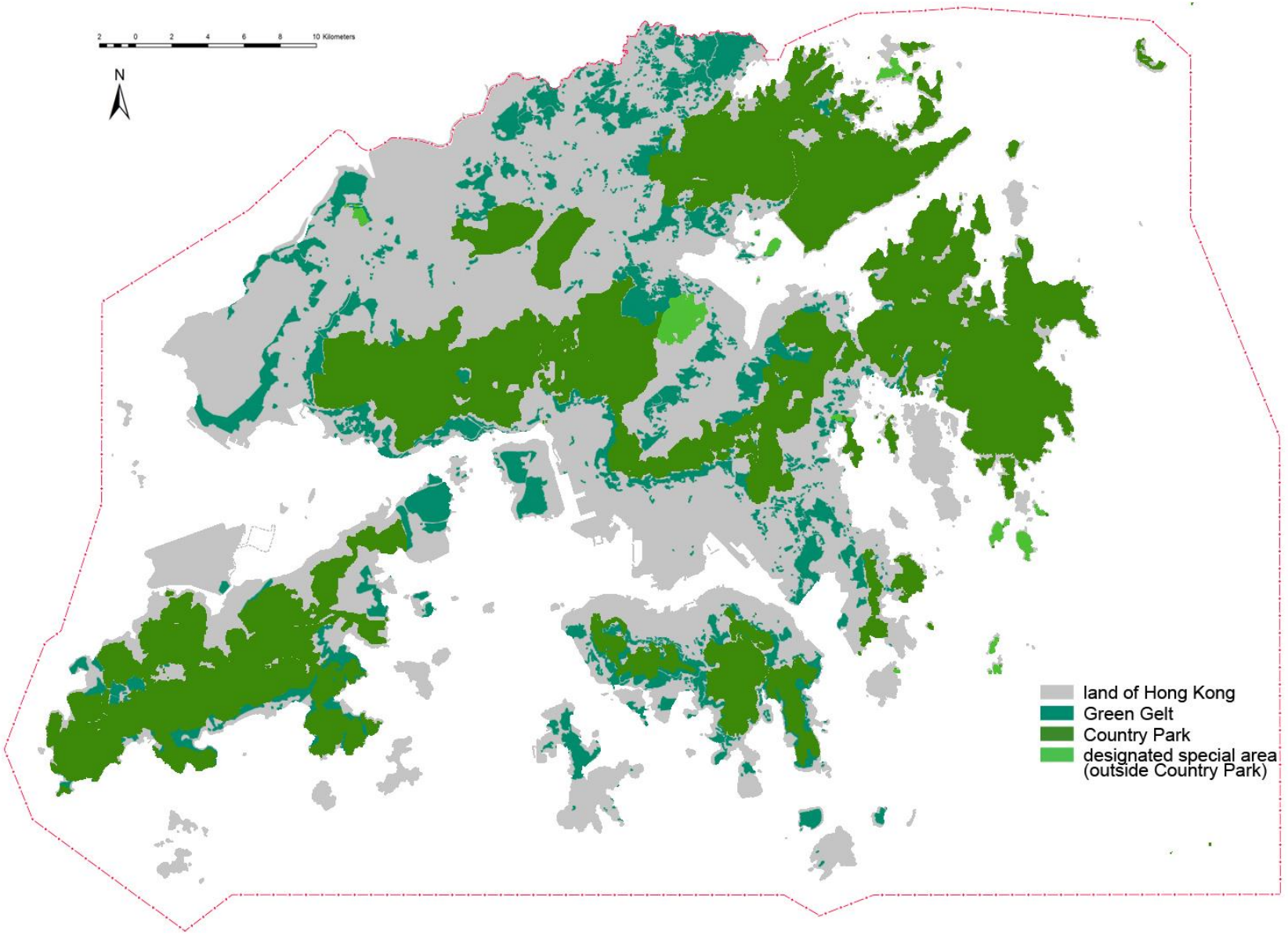
Green Belt



Area = 168.6 KM² 15.2%

4.1 Mapping of Existing Land Use

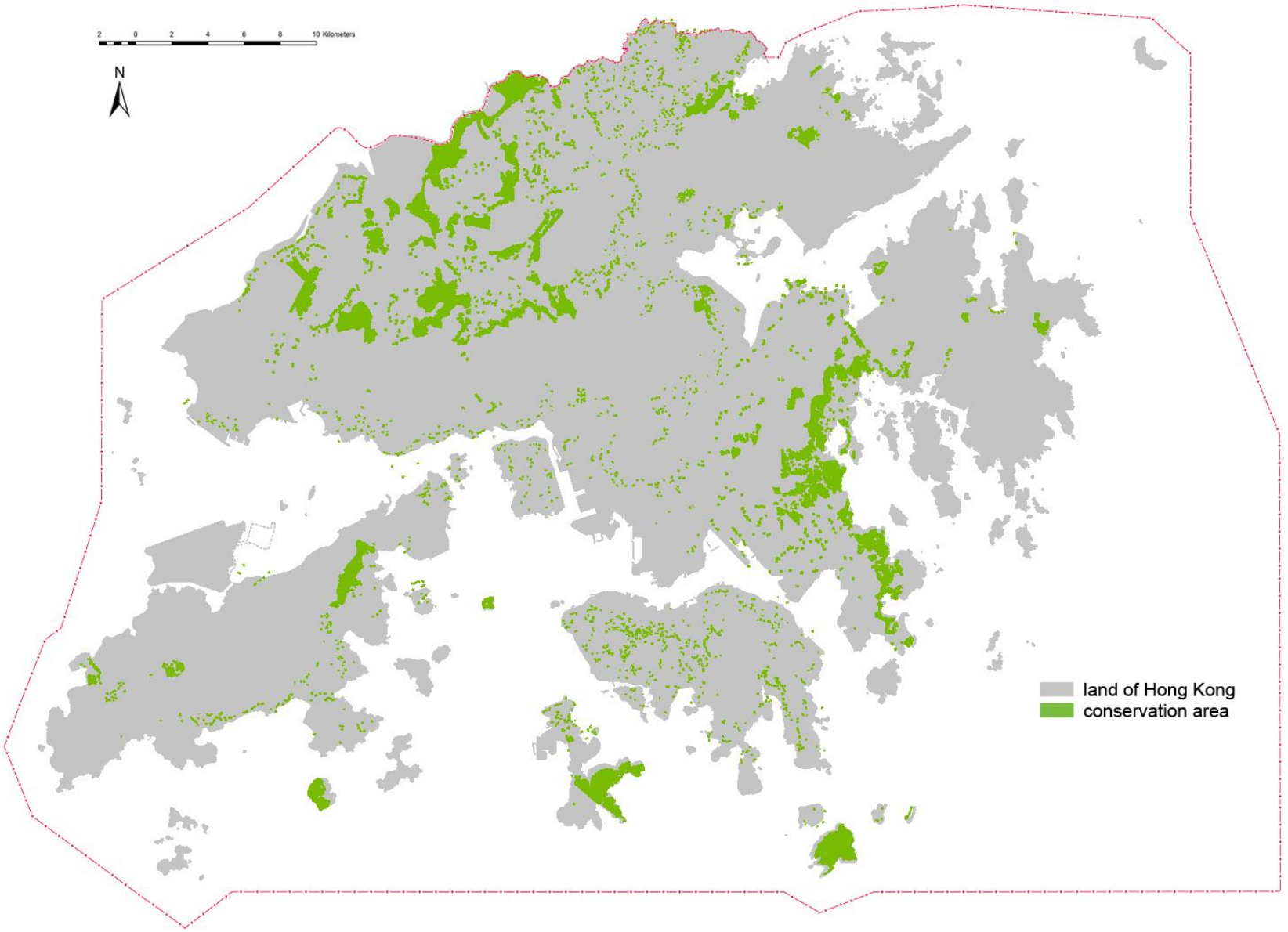
Country Park + Designated Special Area (Outside Country Park) + Green Belt



Area = 611.6 KM² 55.2%

4.1 Mapping of Existing Land Use

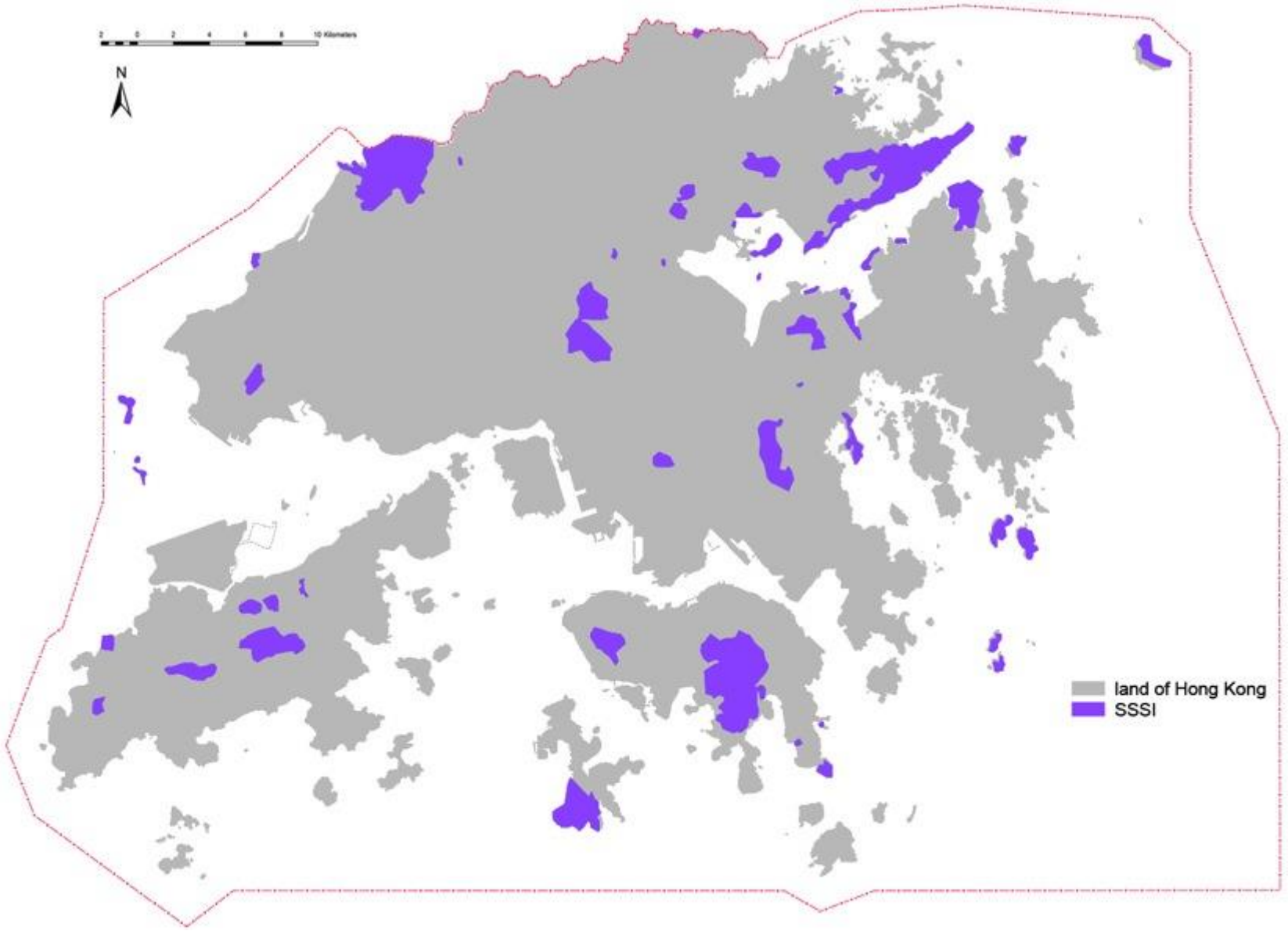
Conservation Area



Area = 110.8 KM² 10.0%

4.1 Mapping of Existing Land Use

Site of Special Scientific Interest



Area = 89.43 KM² 8.1%

4.1 Mapping of Existing Land Use

Site of Special Scientific Interest

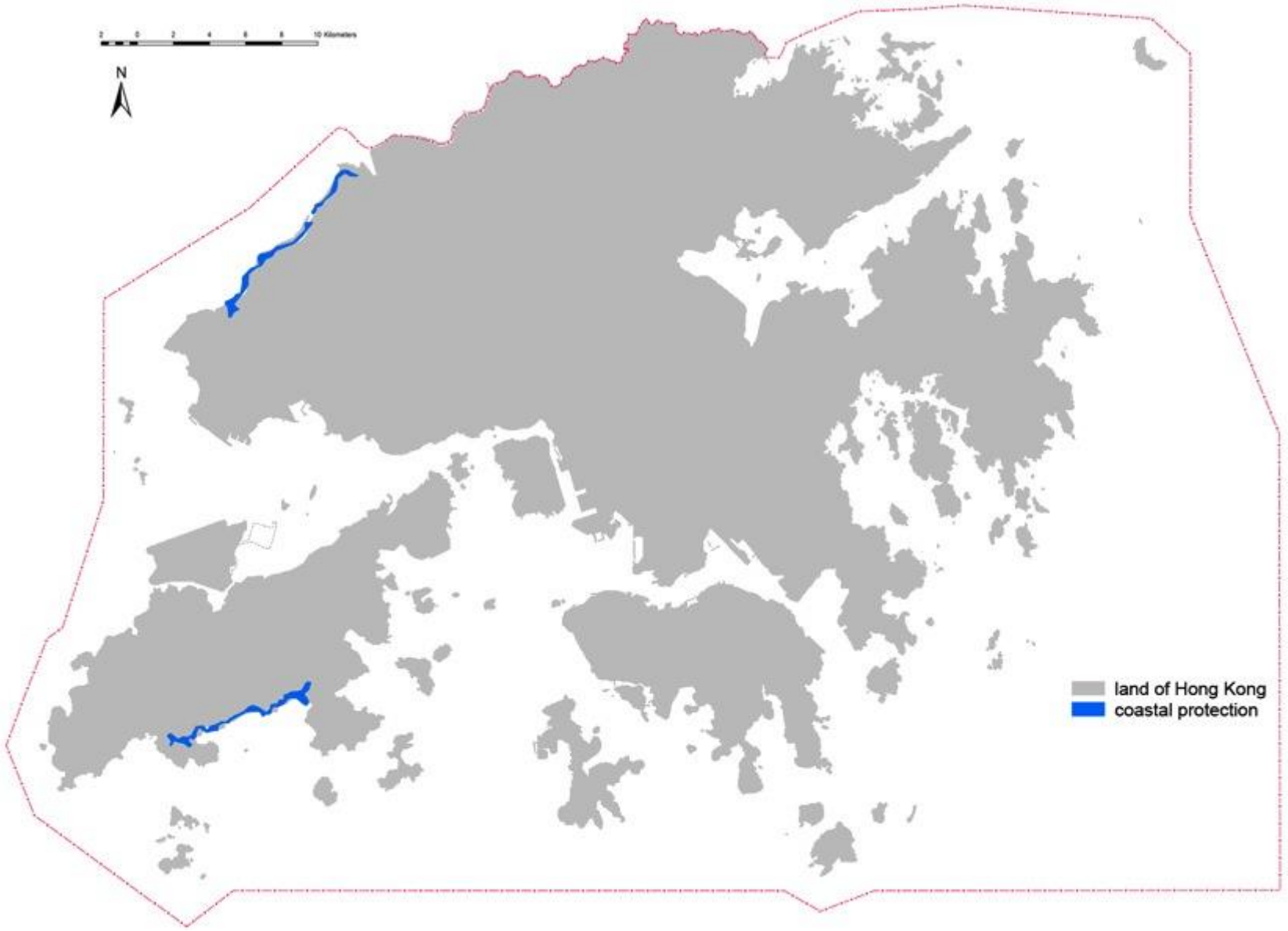
1. Yim Tso Ha Egretry
2. Shung Mun Fung Shui Woodland
3. TaiMoShan Montane Scrub Forest
4. She Shan Fung Shui Woodland
5. Tai Tam Harbour (Inner Deep Bay)
6. D'Aguilar Peninsula
7. Ma On Shan
8. Tsing Shan Tsuen
9. Sunset Peak
10. Mai Po Marshes
11. Bluff Island & Basalt Island
12. Port Island
13. Kat O Chau
14. Ninepin Group
15. Ping Chau
16. Mai Po Village
17. Mau Ping
18. Pak Sha Wan Peninsula
19. Lai Chi Wo Beach
20. Ng Tung Chai
21. Pak Tai To Yan
22. Chiu Keng Tam
23. Tai Long Bay
24. Pok Fu Lam Reservoir Catchment Area
25. Tai Tam Reservoir Catchment Area
26. Beacon Hill
27. Ho Chung Valley
28. Lung Kwu Chau, Tree Island & Sha Chau
29. Castle Peak
30. Tai Mo Shan
31. Pak Nai
32. Man Cheung Po
33. Lantau Peak
34. Pat Sin Range
35. Fung Yuen Valley
36. South Lamma Island
37. Yim Tin Tsai & Ma Shi Chau
38. Channel (Northern Coast)
39. Centre Island
40. Nai Chung Coast
41. Tsim Bei Tsui
42. Ting Kok
43. Sham Chung Coast
44. A Chau
45. Lai Chi Chong
46. Inner Deep Bay
47. Tsim Bei Tsui Egretry
48. Hoi Ha Wan
49. Hok Tsui (Cap D'Aguilar)
50. Nam Fung Road Woodland
51. Sam Mun Tsai Egretry
52. Shuen Wan Egretry
53. Tai Po Egretry
54. Lin Ma Hang Lead Mines
55. Tseng Tau Coast
56. Kei Ling Ha Mangal
57. Pok To Yan and Por Kai Shan
58. San Tau Beach Sha Lo Tung
59. Shek O Headland
60. San Chau
61. Ngong Ping
62. Tai Ho Stream
63. Sham Wan

land of Hong Kong
SSSI

Area = 89.43 KM² 8.1%

4.1 Mapping of Existing Land Use

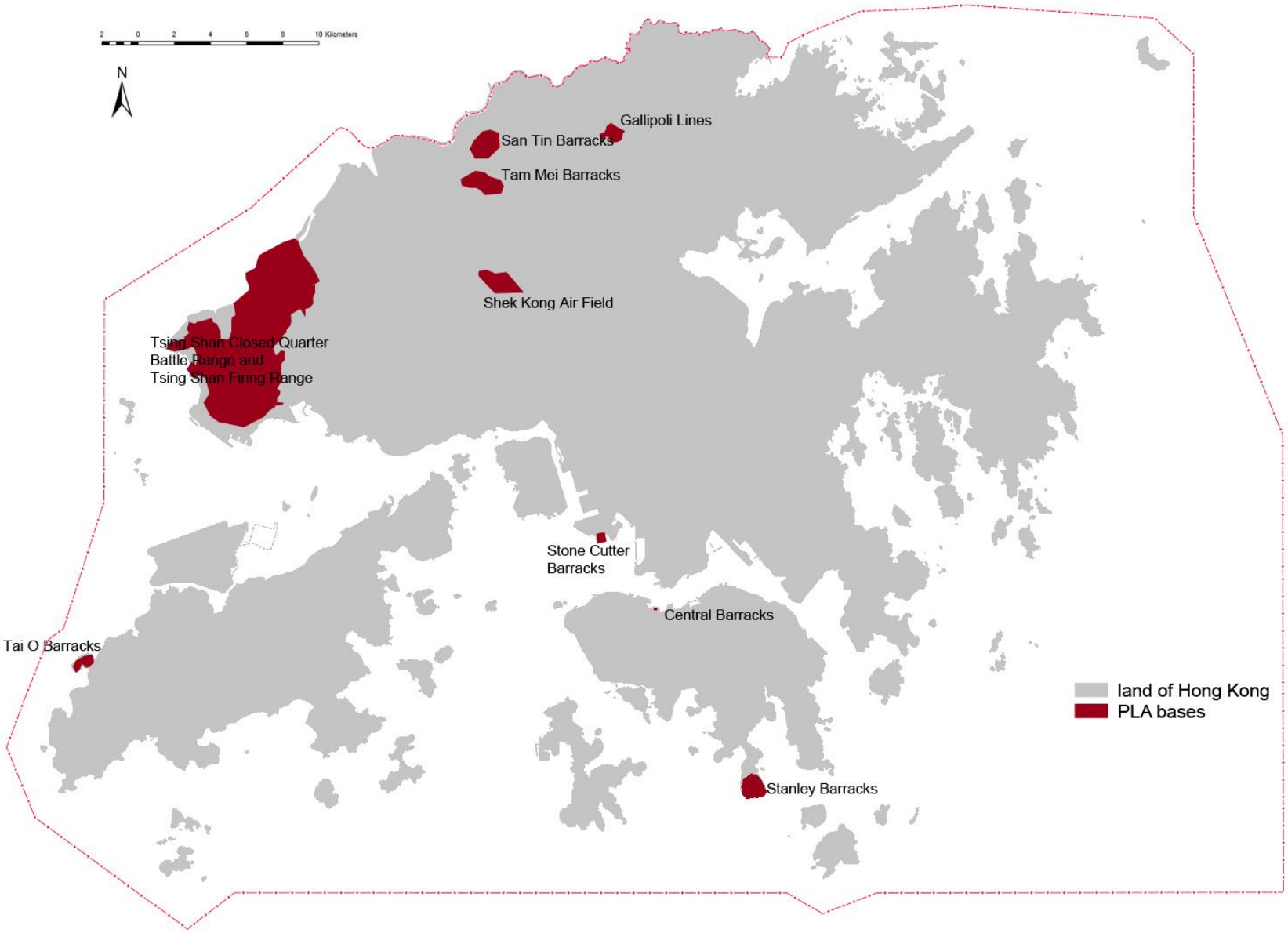
Coastal Protection Area



Area = 6.34 KM² 0.6%

4.1 Mapping of Existing Land Use

PLA Bases & Firing Ranges

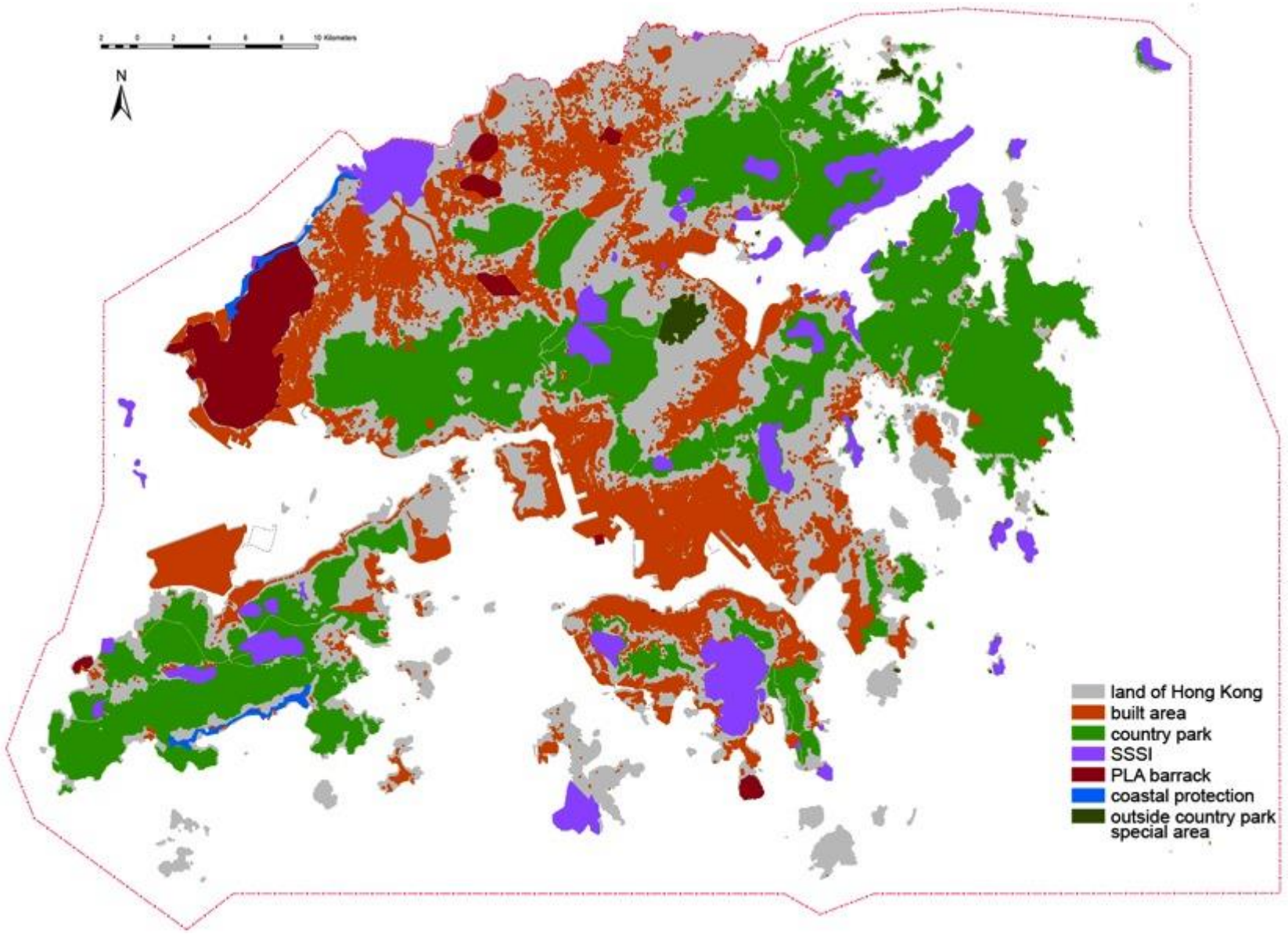


Area = 45.74 KM² 4.1%

4.2 Mapping of Prospective Developable Land

4.2 Mapping of Prospective Developable Land

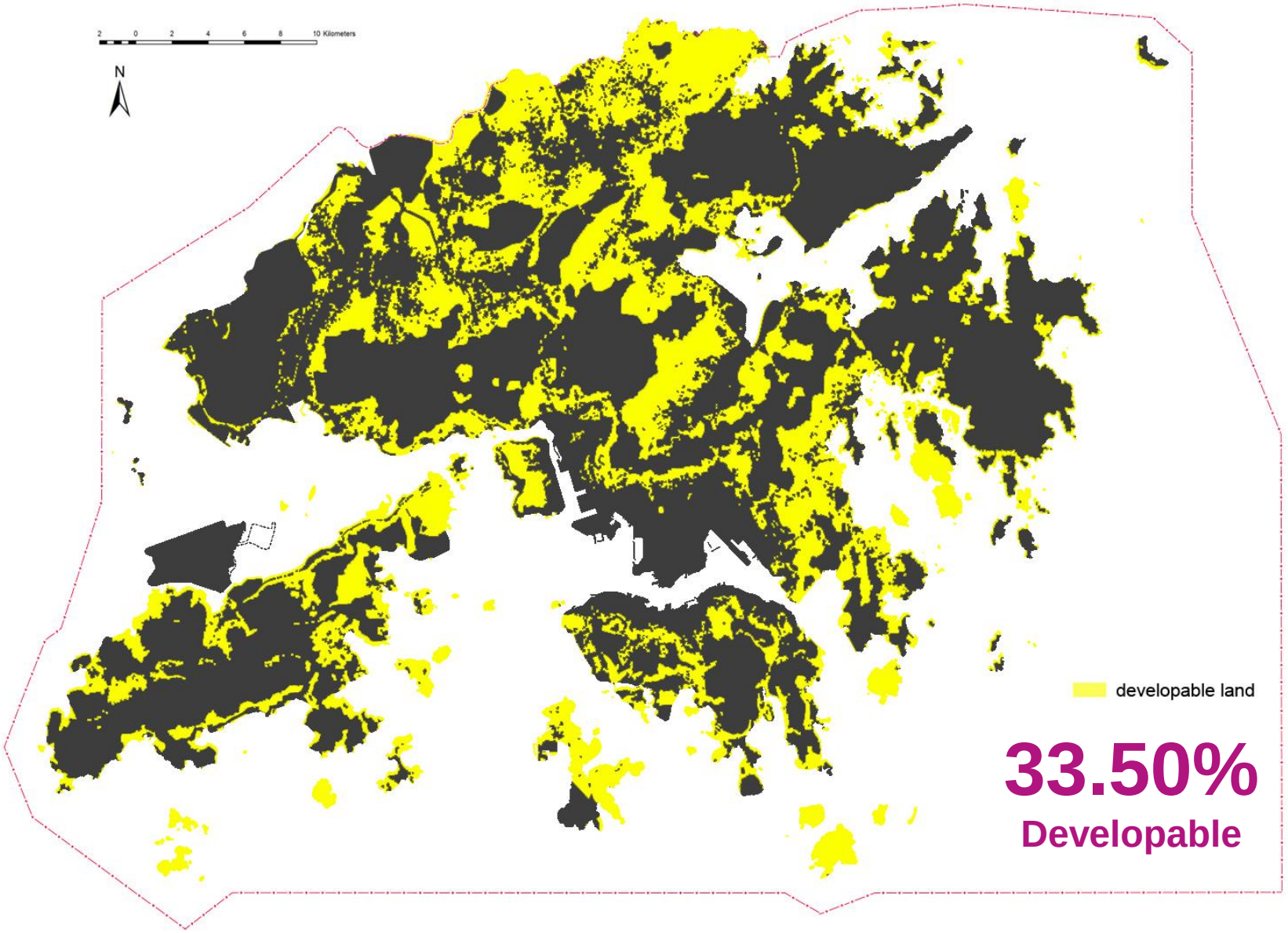
Non-developable Area + Built Area



Area = 736.84 KM² 66.5%

4.2 Mapping of Prospective Developable Land

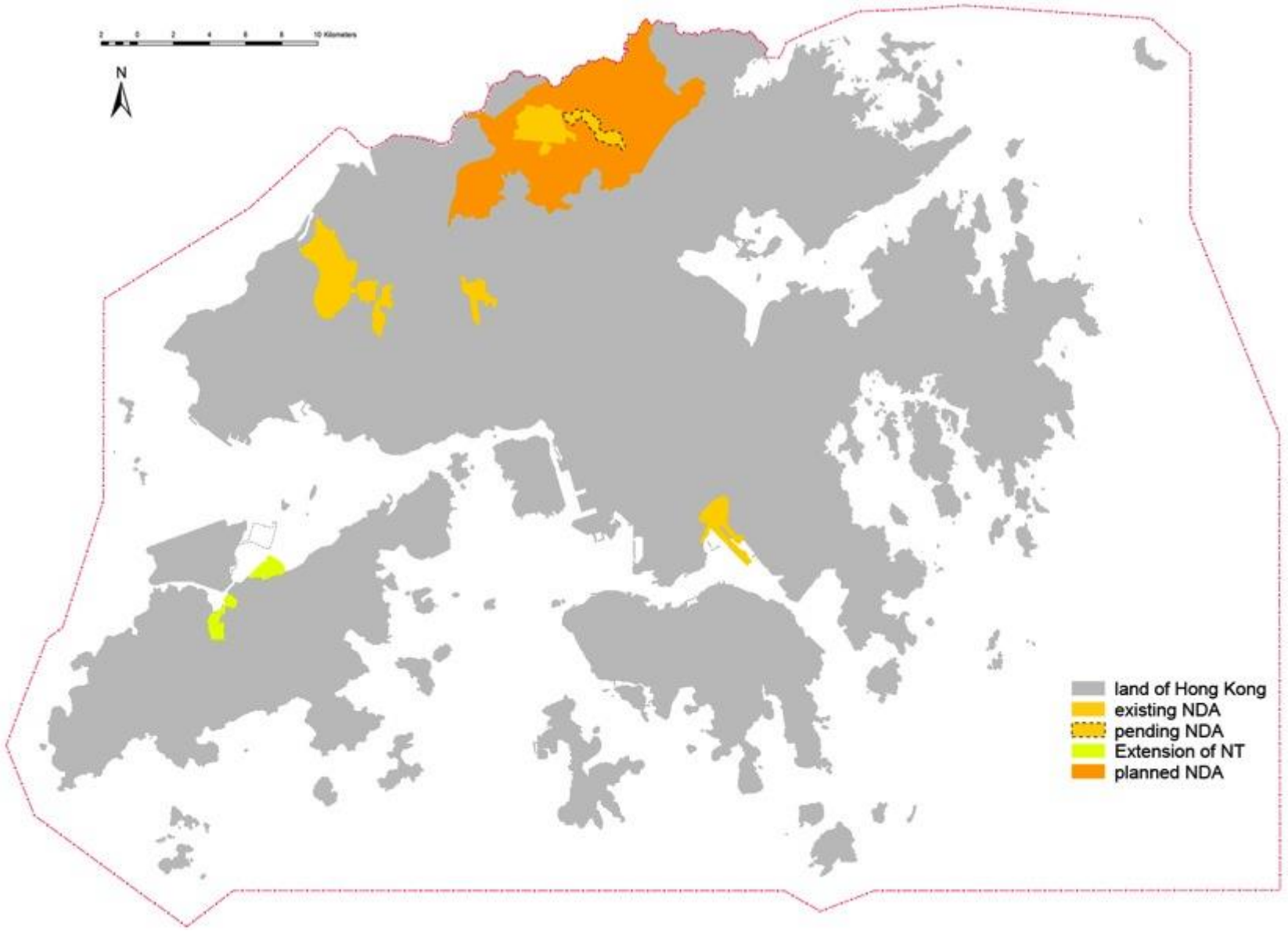
Prospective Developable Area Layer 1



Area = 371.16 KM² (Total Area: 1108 KM²)

4.2 Mapping of Prospective Developable Land

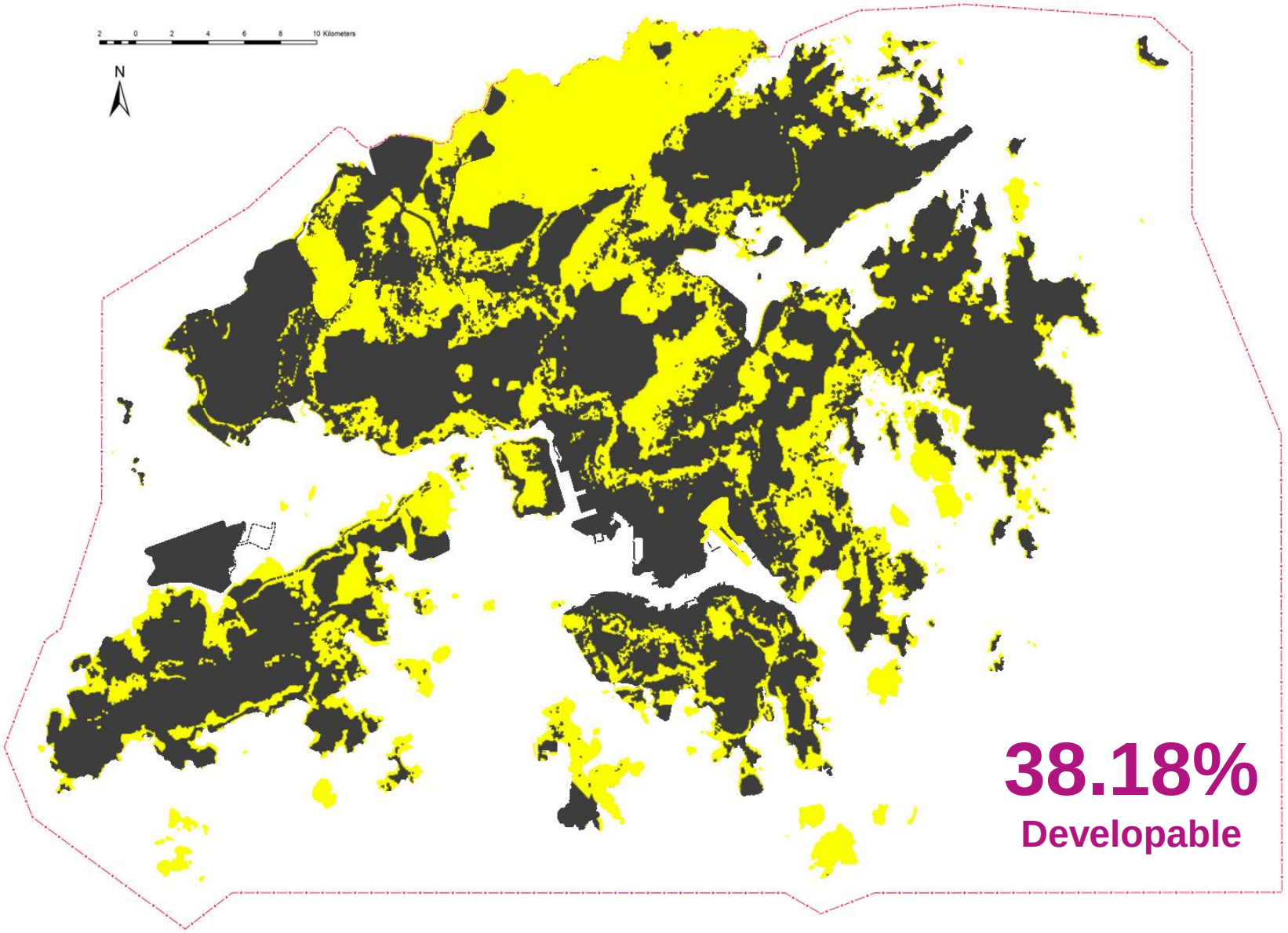
Development Land Budget – NDAs + New Town Extension + Kai Tak Development



Area = 84.60 KM² 7.6% (Total Area: 1109.5KM²)

4.2 Mapping of Prospective Developable Land

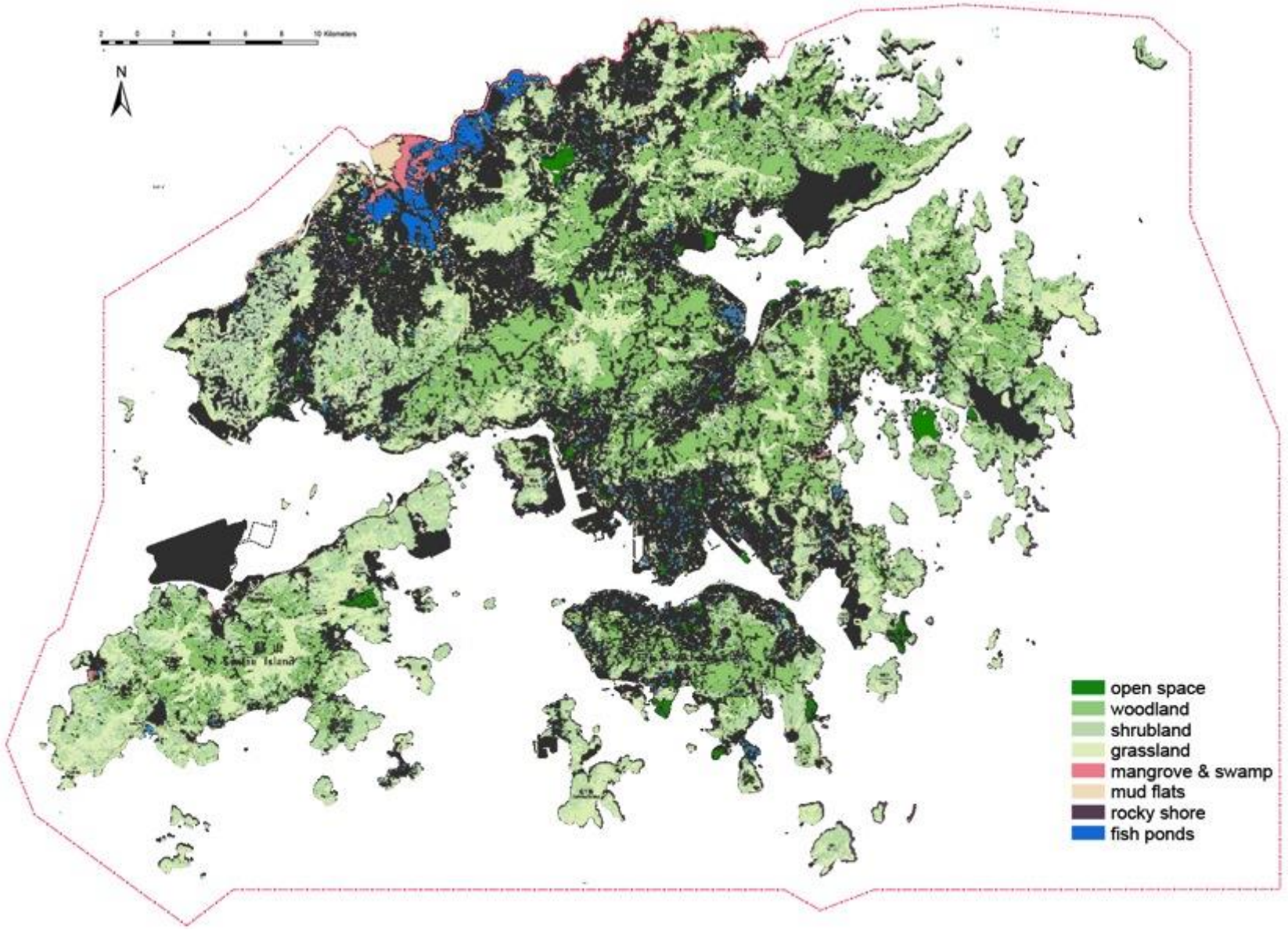
Prospective Developable Area Layer 1A (w/ NDAs + New Town Ext. + Kai Tak Dev.)



Area = 423.55 KM² (Total Area: 1109.5 KM²)

4.2 Mapping of Prospective Developable Land

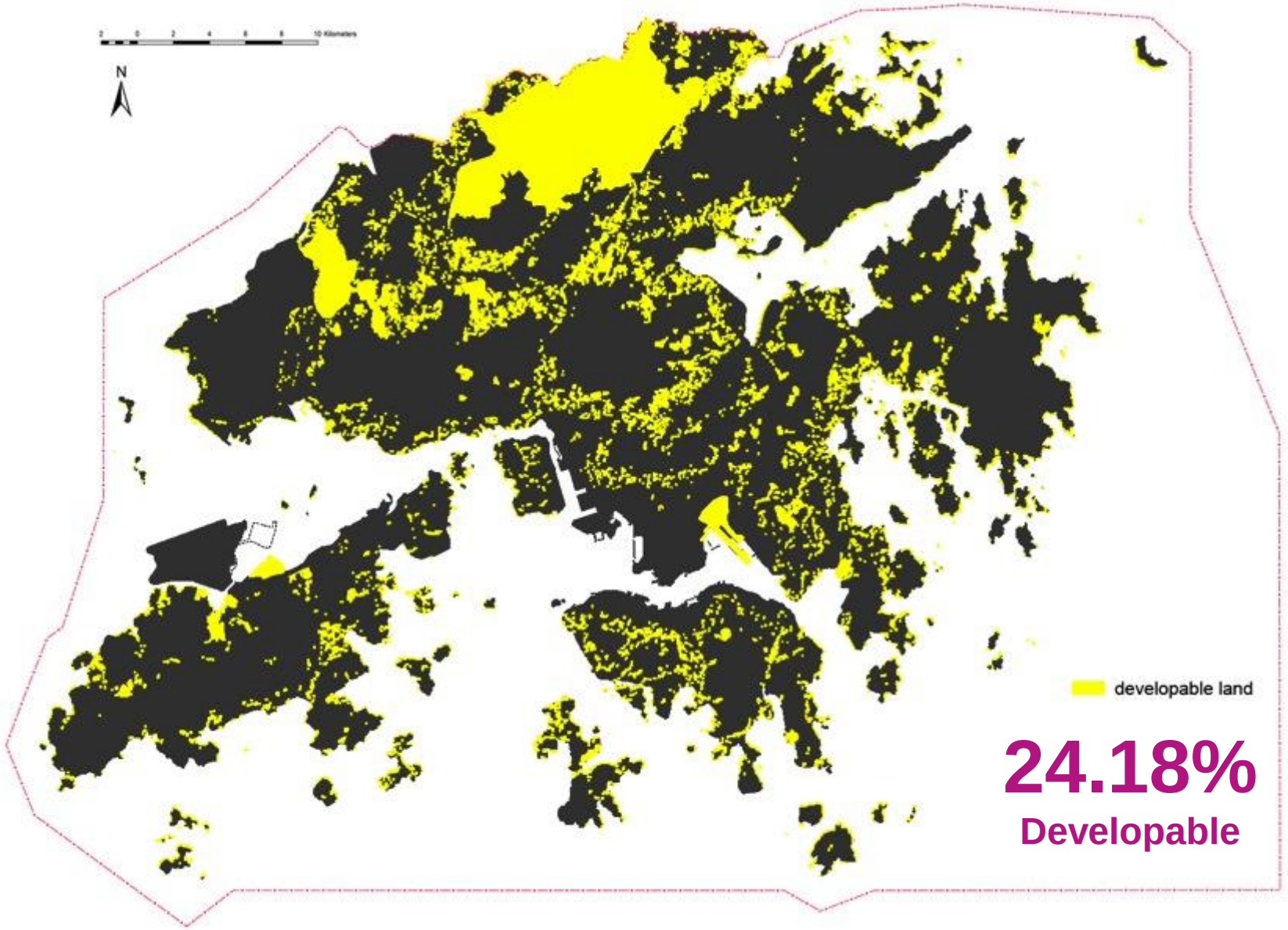
Other Non-developable Area (Ideally)



Area = 632.3 KM² 57.0%

4.2 Mapping of Prospective Developable Land

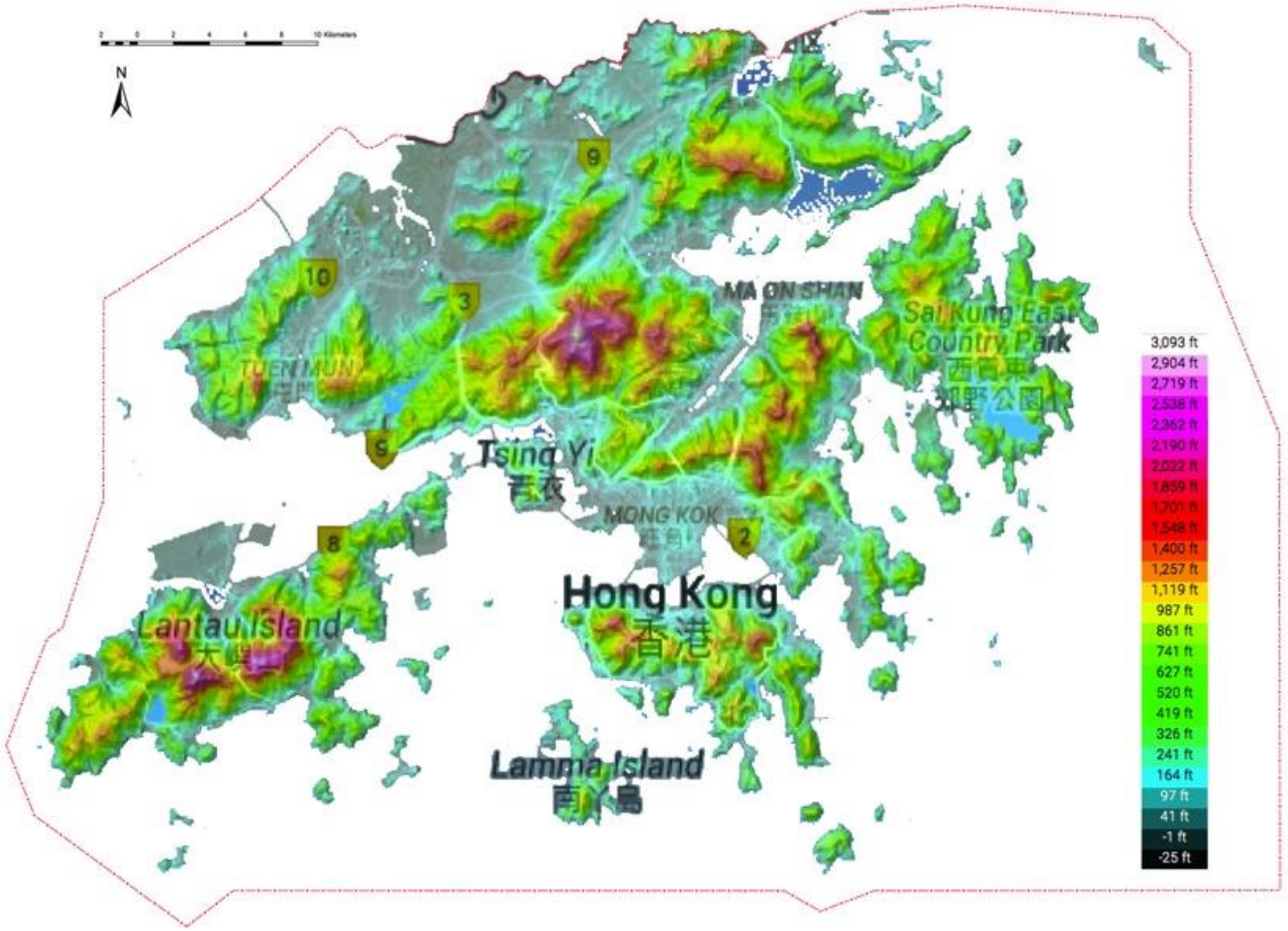
Prospective Developable Area Layer 2



Area = 268.24 KM² (Total Area: 1109.5 KM²)

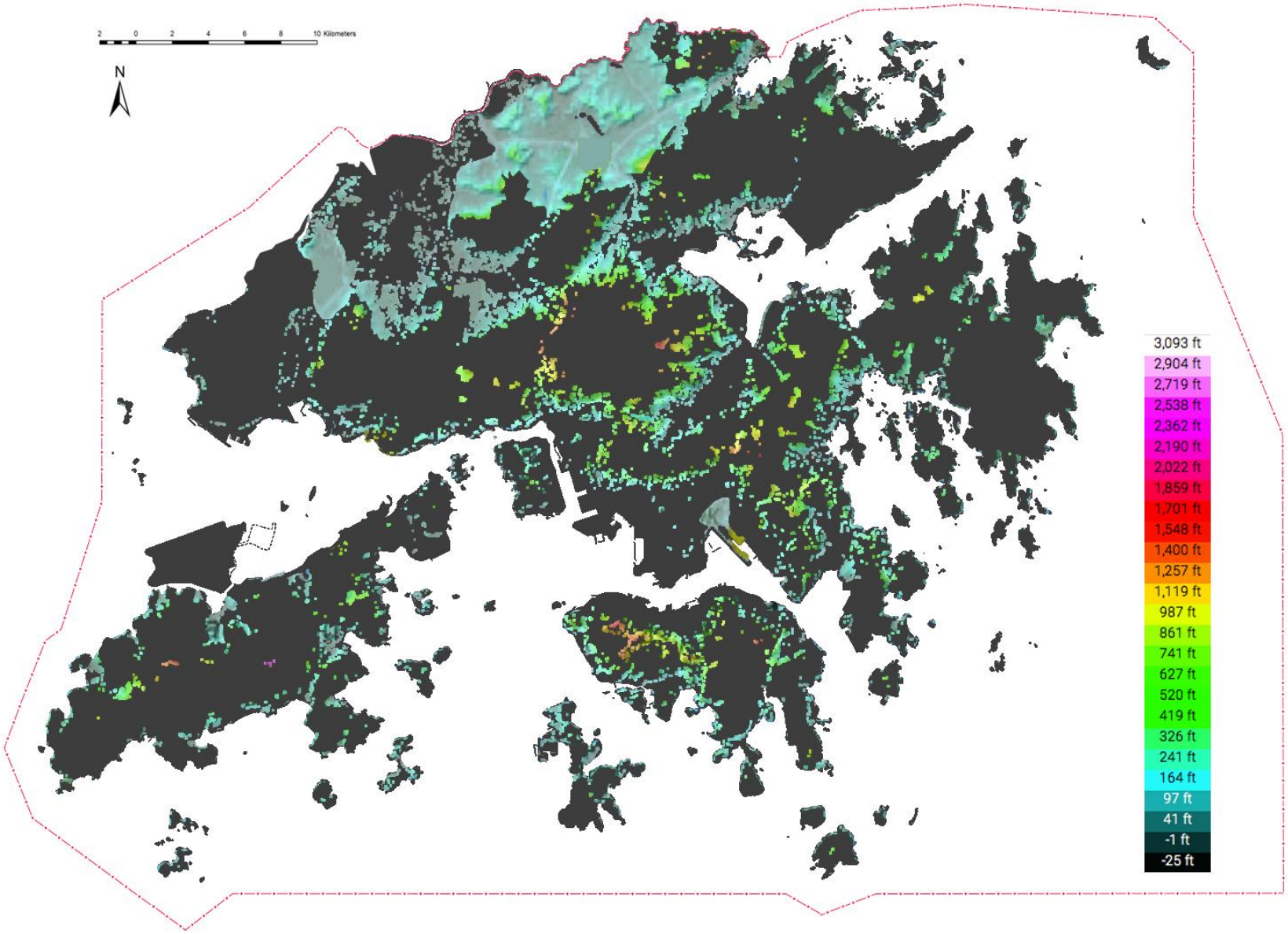
4.2 Mapping of Prospective Developable Land

Topographic Map of Hong Kong



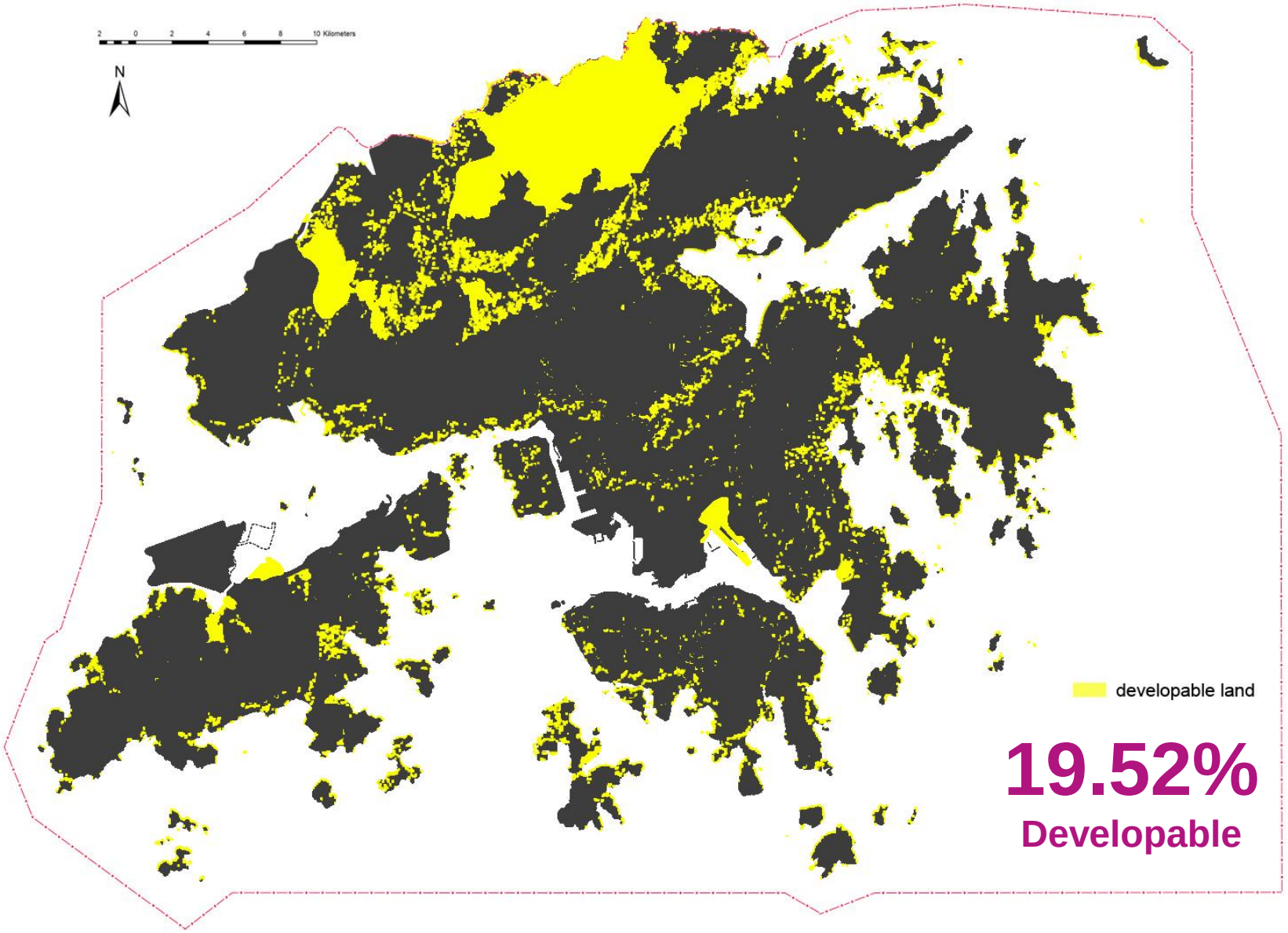
4.2 Mapping of Prospective Developable Land

Topographic Condition of Prospective Developable Area



4.2 Mapping of Prospective Developable Land

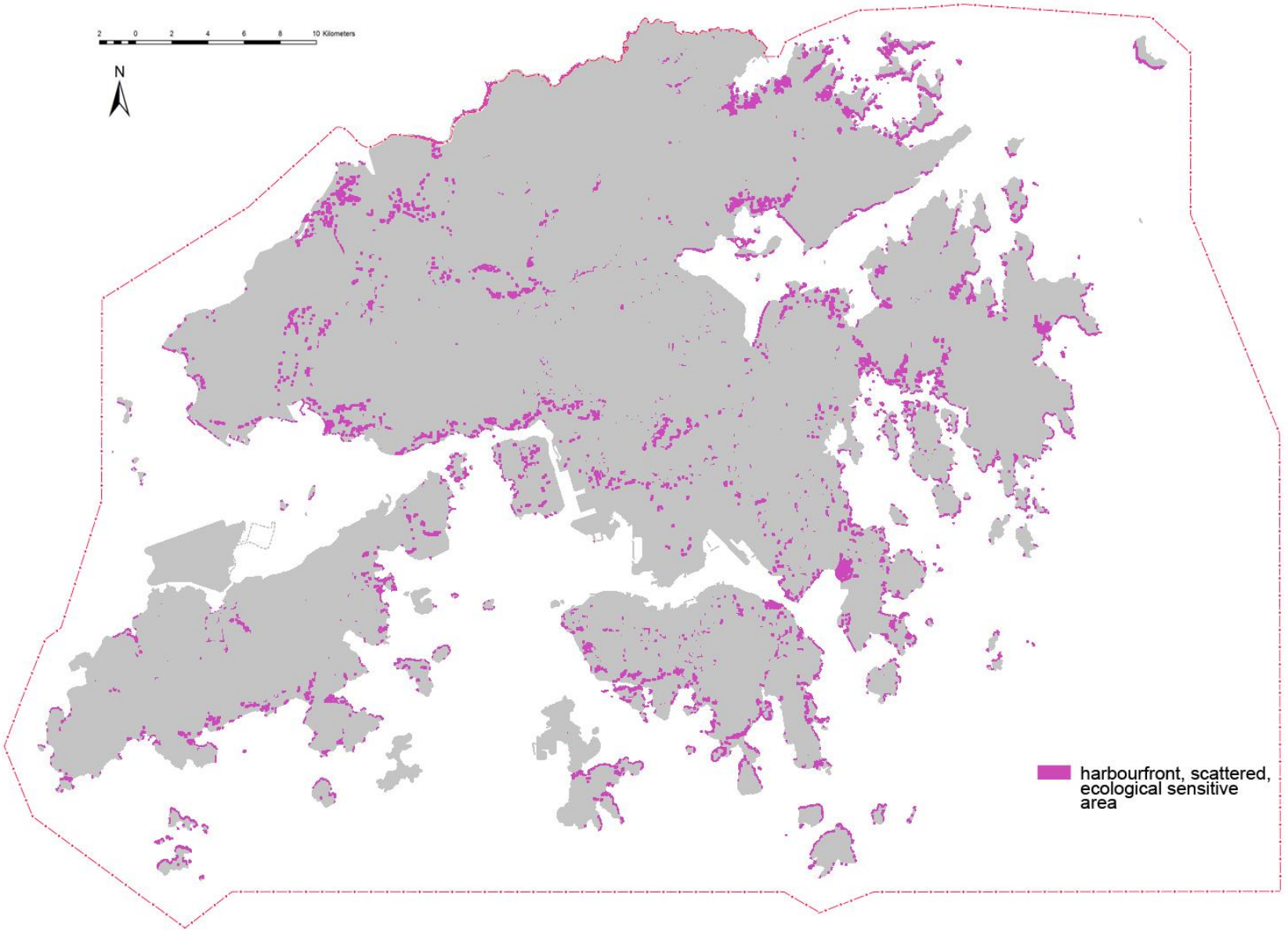
Prospective Developable Area Layer 3



Area = 216.55 KM² (Total Area: 1109.5 KM²)

4.2 Mapping of Prospective Developable Land

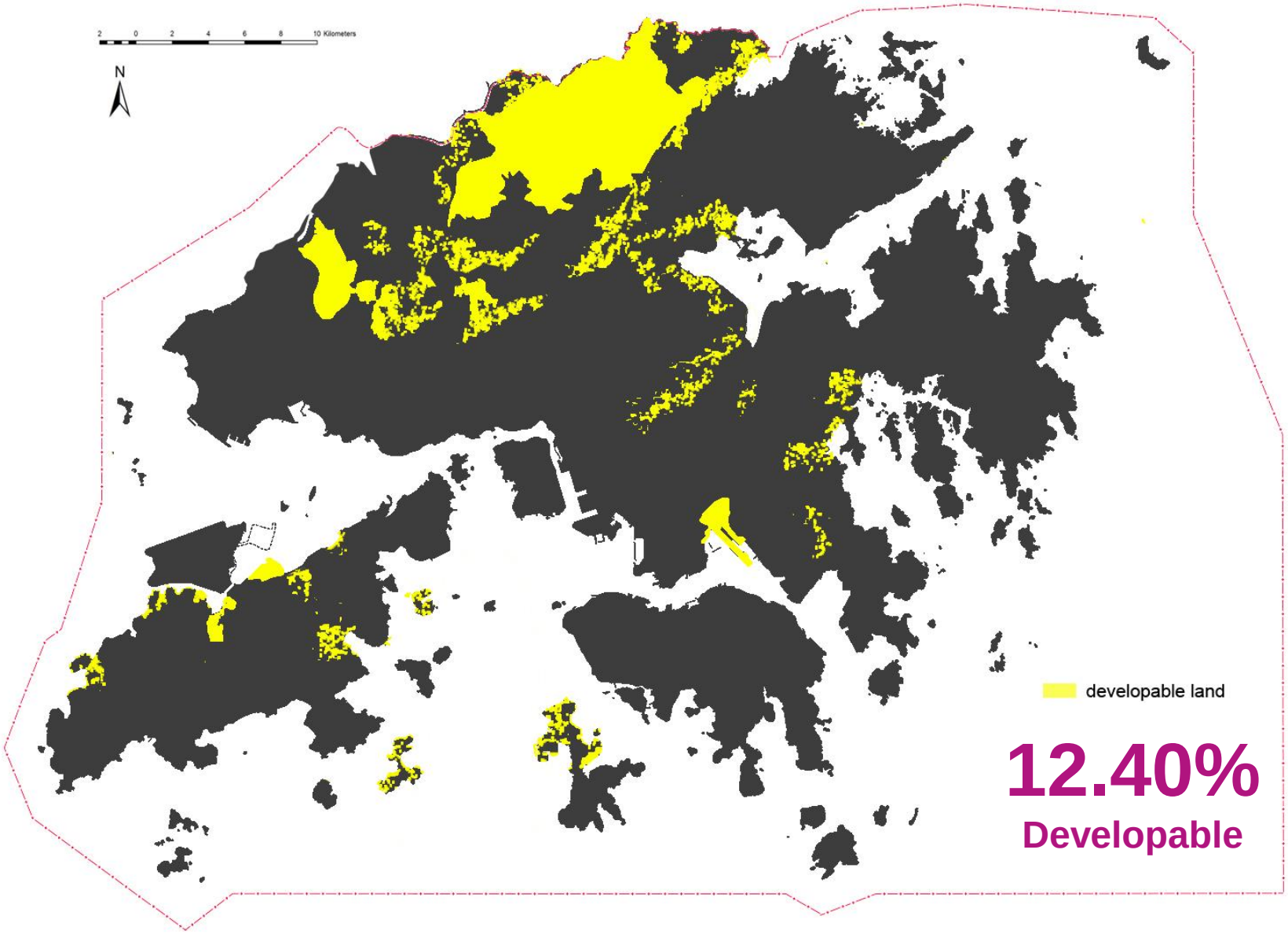
Scattered lots, Harbourfront & Ecological Sensitive Area



Area = 83.85 KM² 7.6%

4.2 Mapping of Prospective Developable Land

Prospective Developable Area Layer 4



Area = 137.61 KM² (Total Area: 1109.5 KM²)

4.3 Analyzing the New Town Land Use Budgets

4.3 Analyzing the New Town Land Use Budgets

Reference is made to the various land use distribution patterns in various Outline Zoning Plans and studies on the New Development Areas (NDAs) and New Town Extension.

It is essential to consider improving the quality of living, and coping with new lifestyles and working modes in shaping the strategic planning vision of the coming quarter of a century.

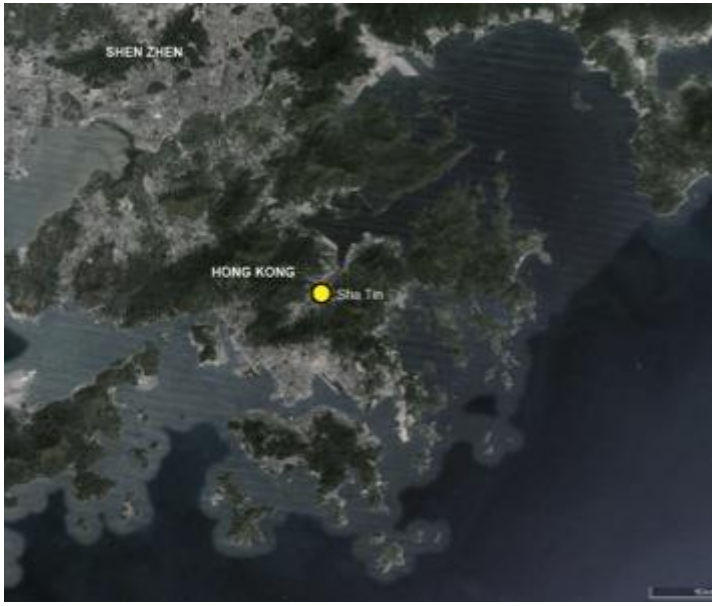
This study will also identify the optimal land budgets and town size for building new generation New Towns by way of further NDAs and reclamation areas.

4.3 Analyzing the New Town Land Use Budget

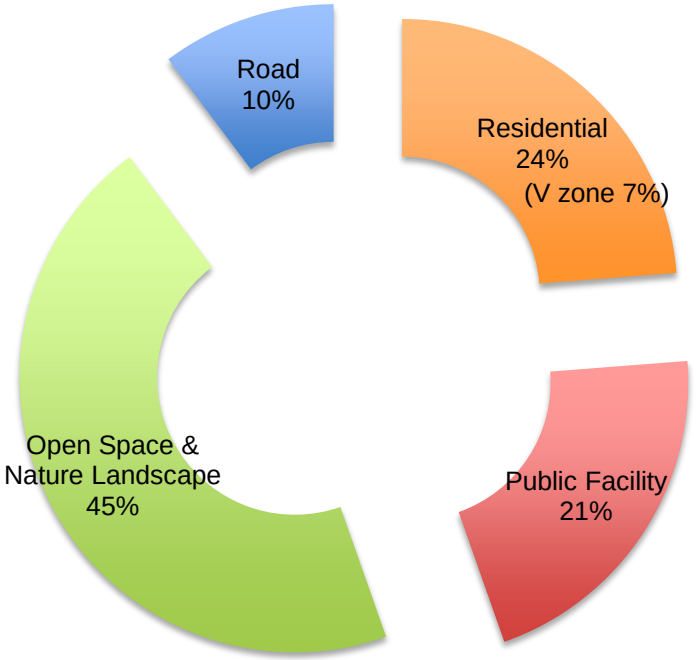
New Town Development Land Budget Research – HONG KONG

4.3 Analyzing the New Town Land Use Budget

New Town Development Land Budget Research – SHA TIN



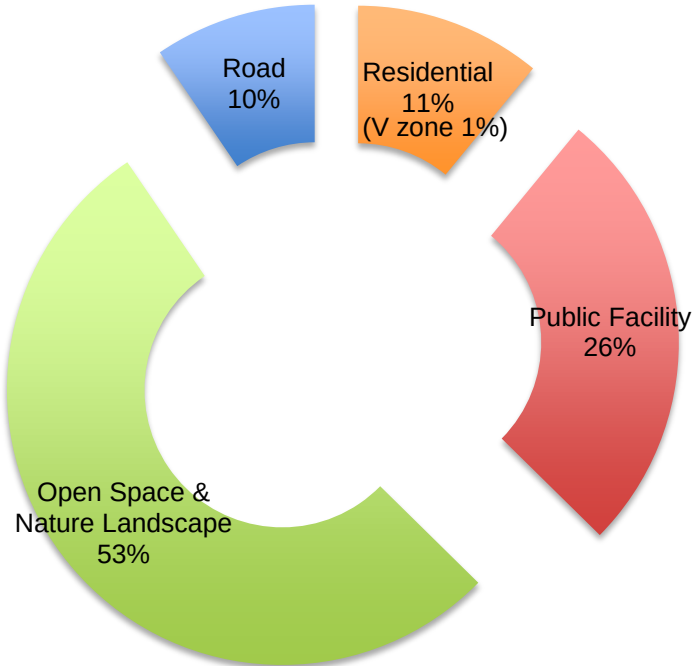
SHATIN New Town		(ha)	(%)
Residential	Commercial/Residential	14.55	0.53%
	Residential (A)	249.98	9.12%
	Residential (B)	195.53	7.14%
	Residential (C)	0.95	0.03%
	Residential (D)	0	0.00%
	Residential (E)	0	0.00%
	Village Type Development	190.3	6.94%
Public Facility	Commercial	6.6	0.24%
	Comprehensive Development Area	17.21	0.63%
	Industrial	45.48	1.66%
	Government, Institution or Community	296.7	10.83%
	Recreation	0	0.00%
	Other Specified Use	205.27	7.49%
Open Space & Nature Landscape	Open Space	253.97	9.27%
	Green Belt	982.79	35.87%
Road	Road	280.78	10.25%
	Total	**2740.11**	**100.00%**



4.3 Analyzing the New Town Land Use Budget

New Town Development Land Budget Research – TSEUNG KWAN O

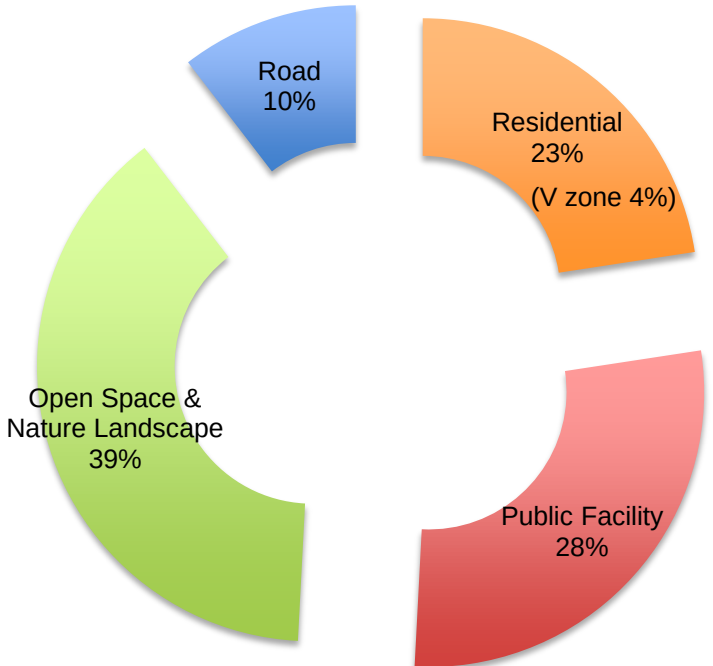
TSEUNG KWAN O New Town		(ha)	(%)
Residential	Commercial/Residential	20.07	1.12%
	Residential (A)	144.97	8.10%
	Residential (B)	4.49	0.25%
	Residential (C)	0.66	0.04%
	Residential (D)	0	0.00%
	Residential (E)	4	0.22%
	Village Type Development	22.01	1.23%
Public Facility	Commercial	0	0.00%
	Comprehensive Development Area	38.72	2.16%
	Industrial	0	0.00%
	Government, Institution or Community	142.77	7.98%
	Recreation	65.85	3.68%
	Other Specified Use	225.4	12.59%
Open Space & Nature Landscape	Open Space	190.8	10.66%
	Green Belt	760.13	42.46%
Road	Road	170.27	9.51%
	Total	**1790.14**	**100.00%**



4.3 Analyzing the New Town Land Use Budget

New Town Development Land Budget Research – TUEN MEN

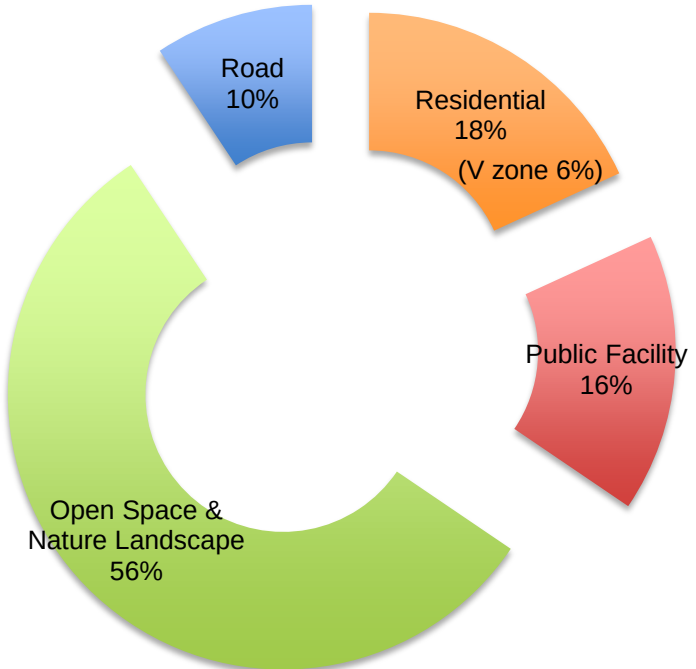
TUEN MEN New Town		(ha)	(%)
Residential	Commercial/Residential	0	0.00%
	Residential (A)	265.82	12.04%
	Residential (B)	139.2	6.31%
	Residential (C)	1.4	0.06%
	Residential (D)	0	0.00%
	Residential (E)	2.42	0.11%
	Village Type Development	89.65	4.06%
Public Facility	Commercial	1.1	0.05%
	Comprehensive Development Area	25.44	1.15%
	Industrial	42.11	1.91%
	Government, Institution or Community	235.08	10.65%
	Recreation	0.37	0.02%
	Other Specified Use	319.07	14.46%
Open Space & Nature Landscape	Open Space	111.62	5.06%
	Green Belt	743.46	33.69%
Road	Road	230.26	10.43%
	Total	**2207.00**	**100.00%**



4.3 Analyzing the New Town Land Use Budget

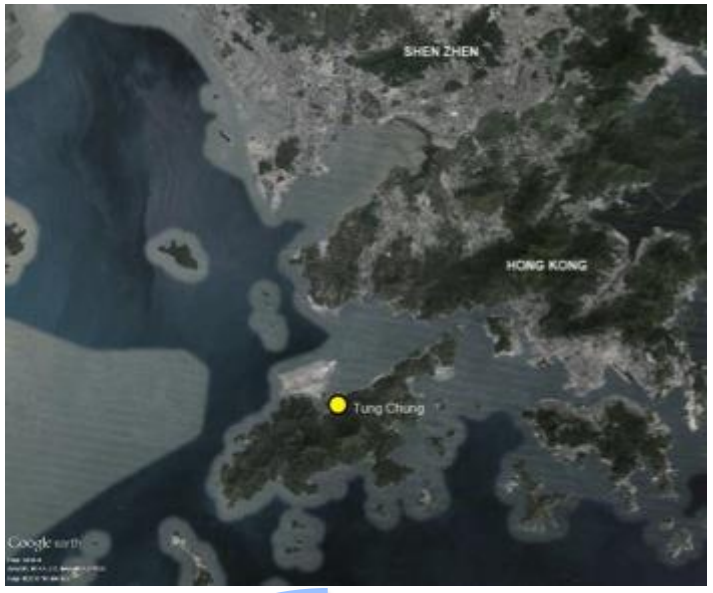
New Town Development Land Budget Research – TAI PO

TAI PO New Town		(ha)	(%)
Residential	Commercial/Residential	0	0.00%
	Residential (A)	108.48	4.58%
	Residential (B)	29.43	1.24%
	Residential (C)	141.04	5.96%
	Residential (D)	0.73	0.03%
	Residential (E)	0	0.00%
	Village Type Development	150.35	6.35%
Public Facility	Commercial	0	0.00%
	Comprehensive Development Area	18.37	0.78%
	Industrial	0	0.00%
	Government, Institution or Community	175.92	7.43%
	Recreation	3.75	0.16%
	Other Specified Use	188.74	7.97%
Open Space & Nature Landscape	Open Space	65.77	2.78%
	Green Belt	1264.83	53.40%
Road	Road	220.98	9.33%
	Total	**2368.39**	**100.00%**

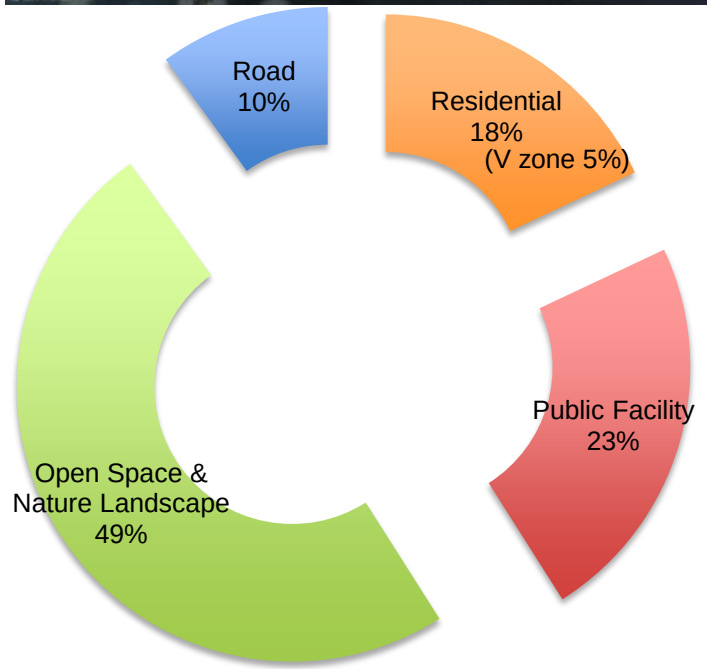


4.3 Analyzing the New Town Land Use Budget

New Town Development Land Budget Research – TUNG CHUNG



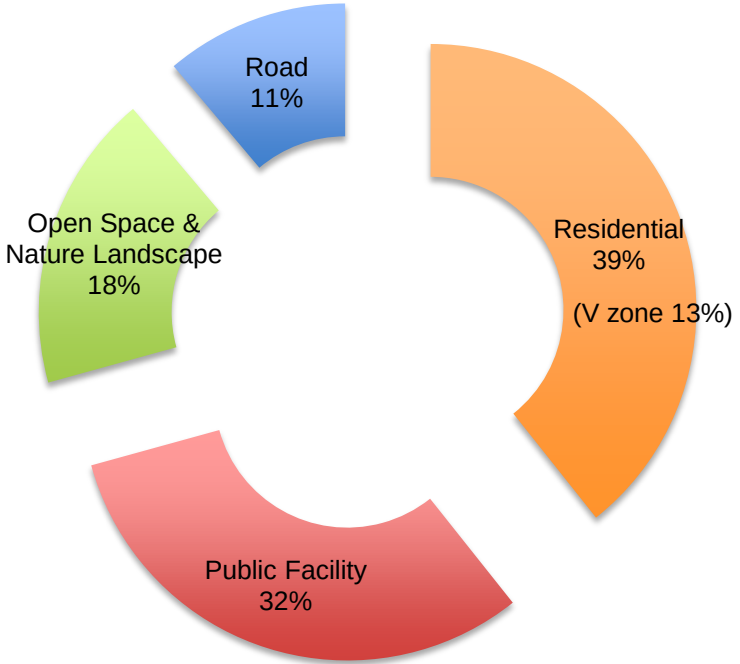
TUNG CHUNG New Town		(ha)	(%)
Residential	Commercial/Residential	0	0.00%
	Residential (A)	31.94	15.15%
	Residential (B)	0	0.00%
	Residential (C)	0	0.00%
	Residential (D)	0	0.00%
	Residential (E)	0	0.00%
	Village Type Development	5.46	2.59%
Public Facility	Commercial	2.14	1.01%
	Comprehensive Development Area	22.98	10.90%
	Industrial	0	0.00%
	Government, Institution or Community	21.24	10.07%
	Recreation	0	0.00%
	Other Specified Use	2.86	1.36%
Open Space & Nature Landscape	Open Space	55.7	26.42%
	Green Belt	47.15	22.36%
Road	Road	21.37	10.14%
	Total	**210.84**	**100.00%**



4.3 Analyzing the New Town Land Use Budget

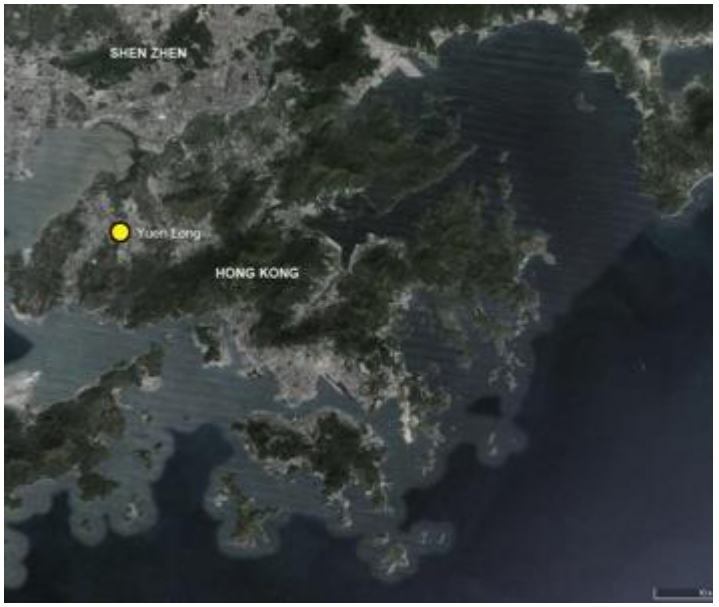
New Town Development Land Budget Research – FANLING/ SHEUNG SHUI

FANLING/ SHEUNG SHUI New Town		(ha)	(%)
Residential	Commercial/Residential	22.07	3.51%
	Residential (A)	110.68	17.60%
	Residential (B)	8.18	1.30%
	Residential (C)	22.92	3.65%
	Residential (D)	0	0.00%
	Residential (E)	0	0.00%
	Village Type Development	83.26	13.24%
Public Facility	Commercial	0	0.00%
	Comprehensive Development Area	3.16	0.50%
	Industrial	56.8	9.03%
	Government, Institution or Community	101.72	16.18%
	Recreation	0	0.00%
	Other Specified Use	35.82	5.70%
Open Space & Nature Landscape	Open Space	44.23	7.03%
	Green Belt	69.7	11.09%
Road	Road	70.18	11.16%
	Total	**628.72**	**100.00%**

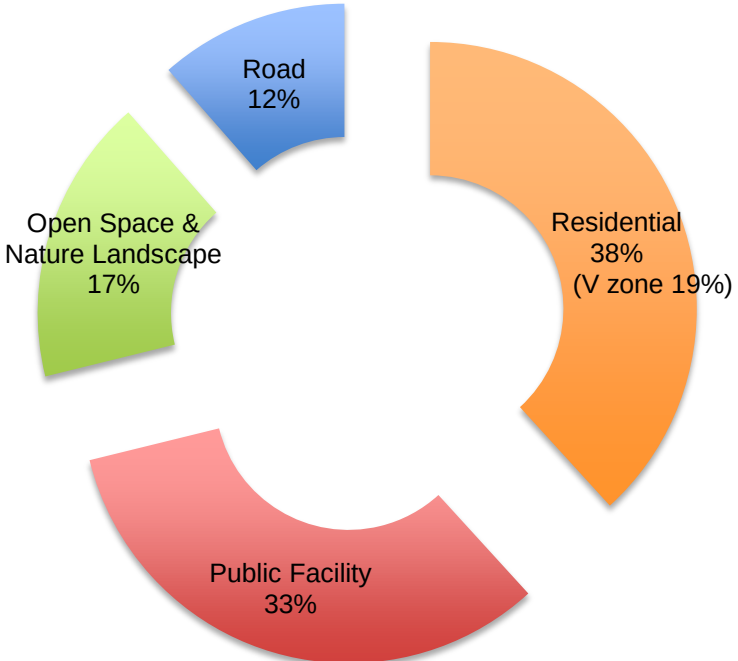


4.3 Analyzing the New Town Land Use Budget

New Town Development Land Budget Research – YUEN LONG



YUEN LONG New Town		(ha)	(%)
Residential	Commercial/Residential	0	0.00%
	Residential (A)	62.21	11.85%
	Residential (B)	33.82	6.44%
	Residential (C)	0	0.00%
	Residential (D)	0	0.00%
	Residential (E)	4.63	0.88%
	Village Type Development	100.09	19.06%
Public Facility	Commercial	0	0.00%
	Comprehensive Development Area	23.96	4.56%
	Industrial	0	0.00%
	Government, Institution or Community	44.5	8.47%
	Recreation	0	0.00%
	Other Specified Use	104.5	19.90%
Open Space & Nature Landscape	Open Space	52.41	9.98%
	Green Belt	38.8	7.39%
Road	Road	60.23	11.47%
	Total	**525.15**	**100.00%**



4.3 Analyzing the New Town Land Use Budget

New Town Development Land Budget Case Study – International

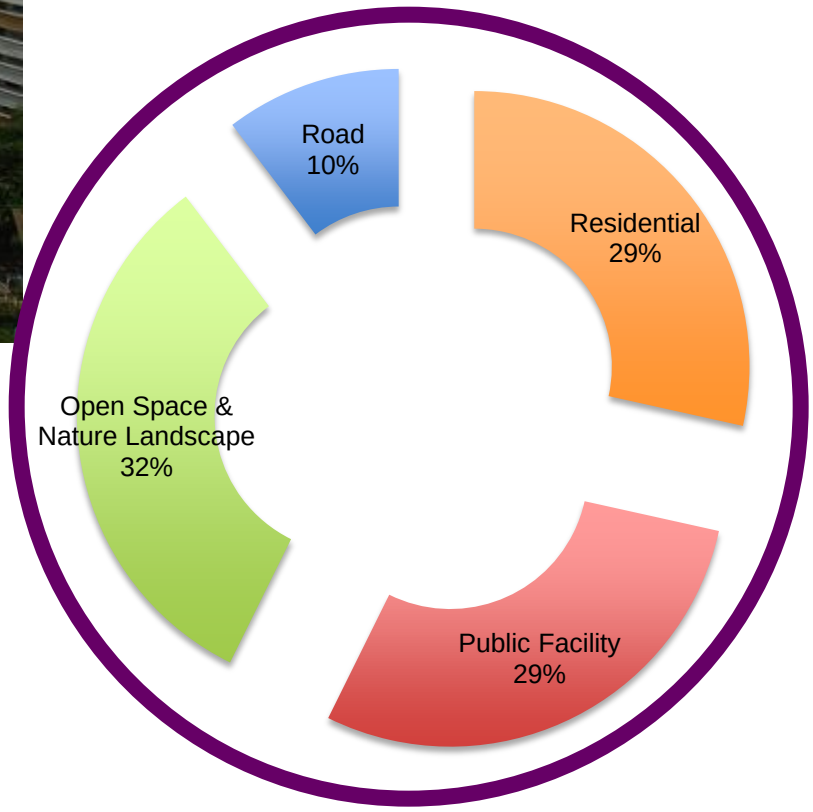
YISHUN, SINGAPORE

WEST END, VANCOUVER

BAO'AN, SHENZHEN

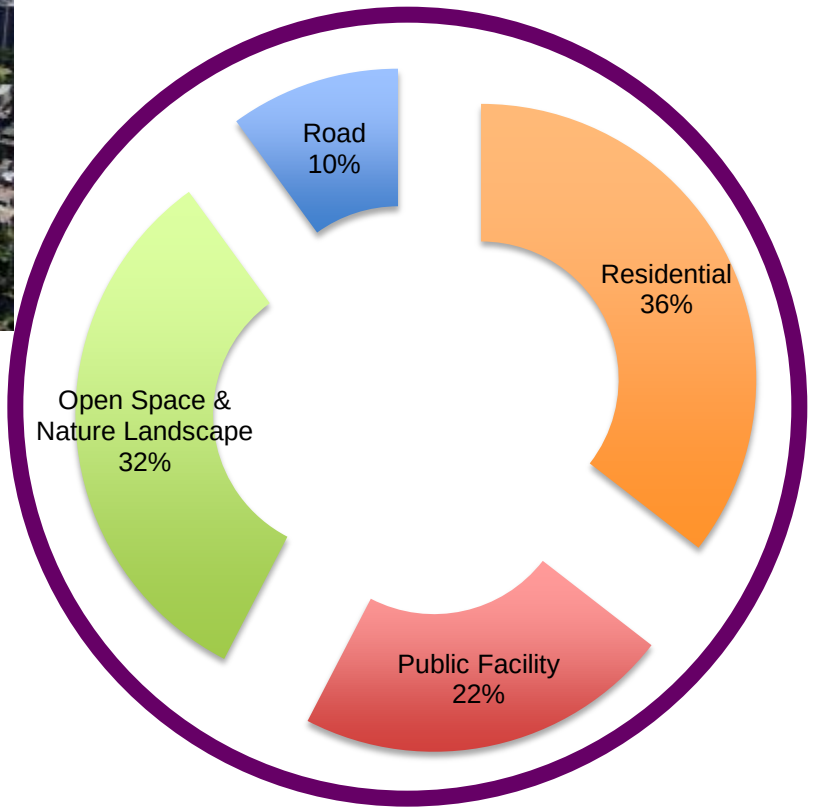
4.3 Analyzing the New Town Land Use Budget

New Town Development Land Budget Case Study – YISHUN, SINGAPORE



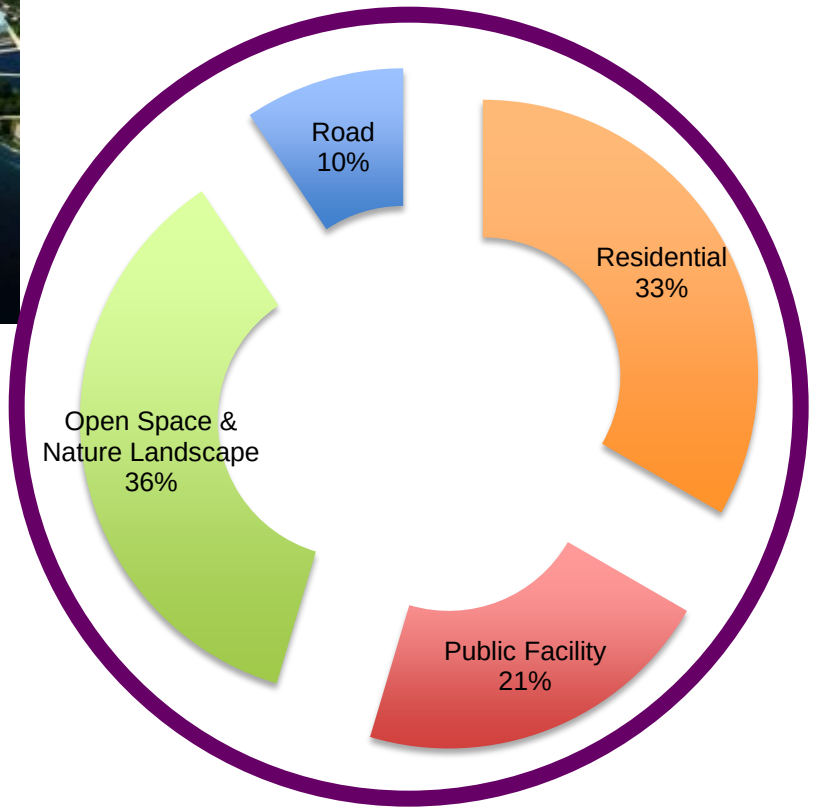
4.3 Analyzing the New Town Land Use Budget

New Town Development Land Budget Case Study – WEST END, VANCOUVER

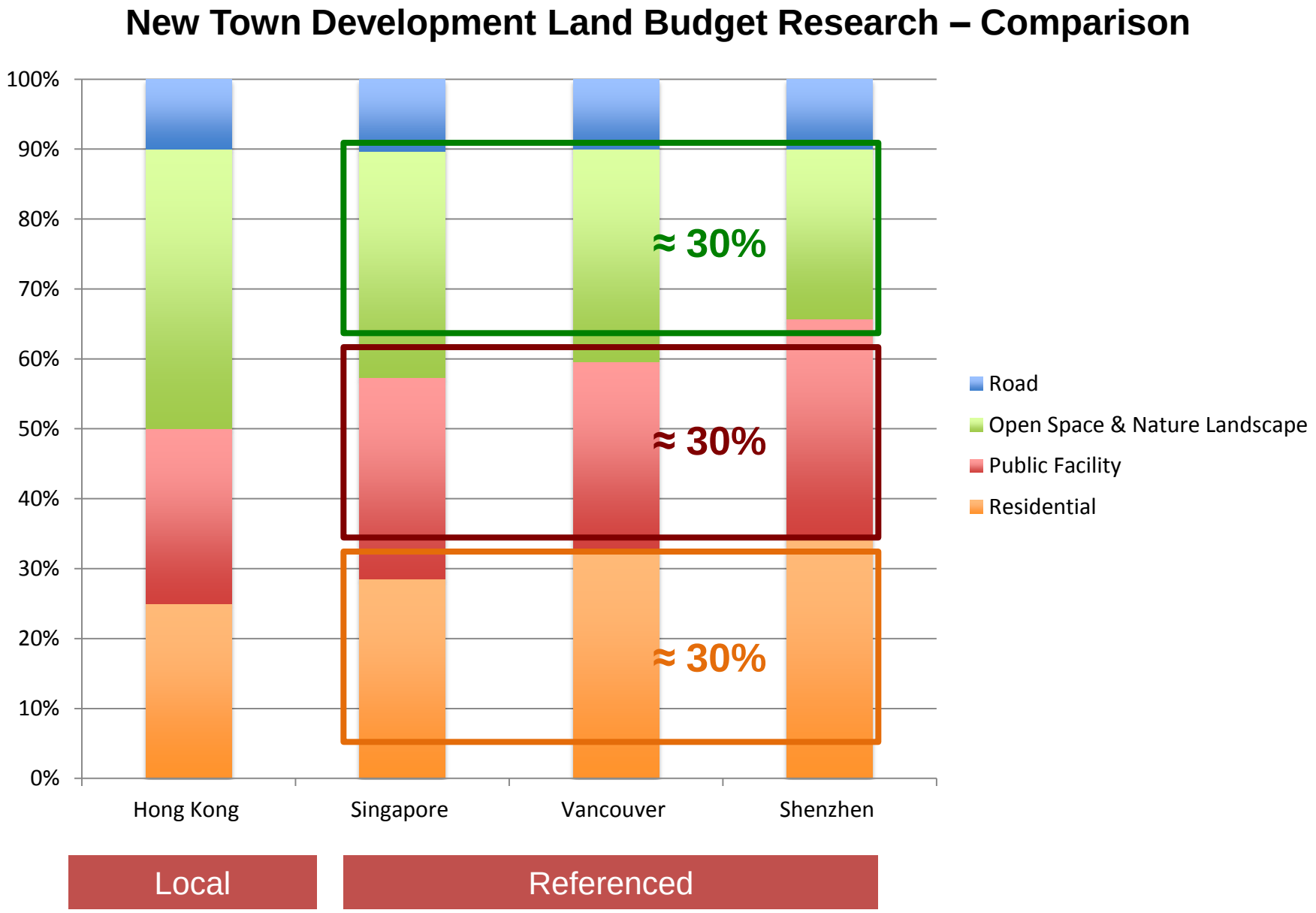


4.3 Analyzing the New Town Land Use Budget

New Town Development Land Budget Case Study – BAO'AN, SHENZHEN

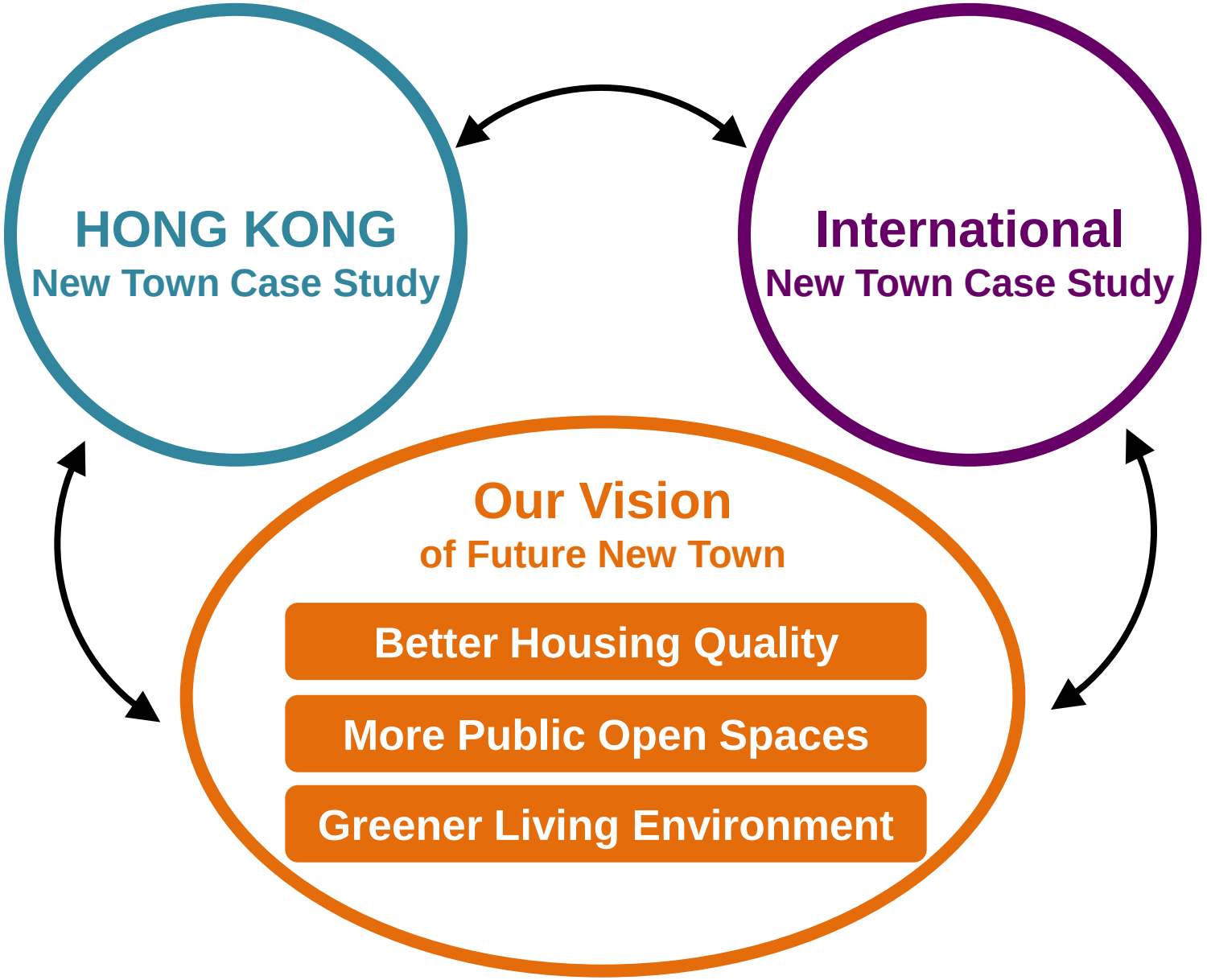


4.3 Analyzing the New Town Land Use Budget



4.3 Analyzing the New Town Land Use Budget

Recommended Land Budget for New Town Development

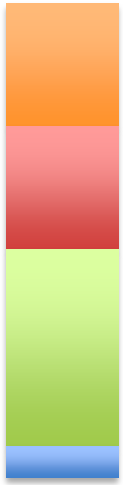


4.3 Analyzing the New Town Land Use Budget

New Town Development Land Budget Study

Future Hong Kong New Town

(NDA Mode)



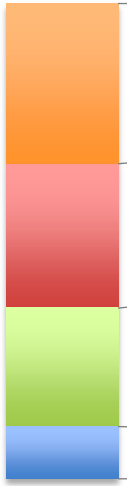
Residential ≈ 25%

Public Facility ≈ 25%

Open Space & Nature Landscape ≈ 40%

Road ≈ 10%

Existing Hong Kong New Town



Residential 33.37%

Public Facility 30.86%

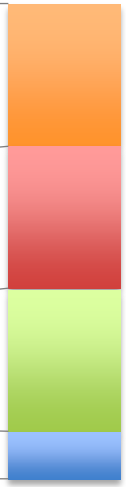
Open Space & Nature Landscape 24.74%

Road 11.02%

FANLING/ SHEUNG SHUI
+
YUEN LONG
+
TUEN MEN

Future Hong Kong New Town

(Reclamation Mode)



Residential ≈ 30%

Public Facility ≈ 30%

Open Space & Parks ≈ 30%

Road ≈ 10%

4.4 Recommendation of Optimized New Town Module

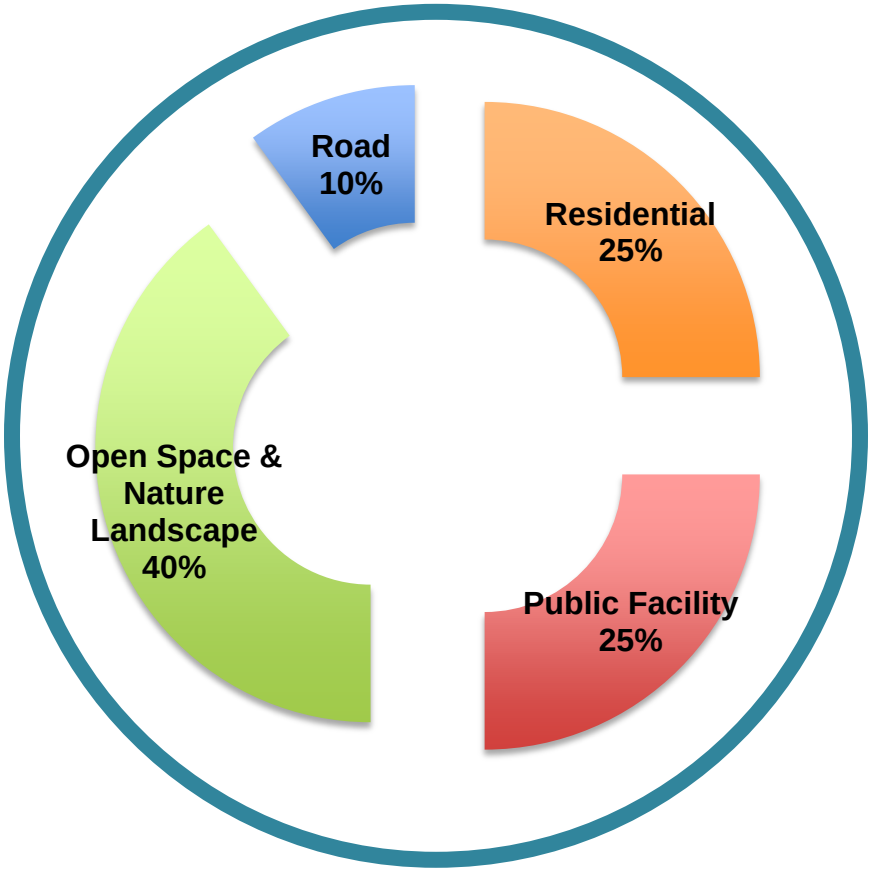
Based on the above analyses, it is recommended to have 2 sets of different land use budgets for New Development Areas and large scale Reclamation. These being:

NDA mode
10%: Roads
25%: Housing
25%: Public Facilities – Commercial and Communal
40%: Open Space and Natural Landscape

Reclamation mode
10%: Roads
30%: Housing
30%: Public Facilities – Commercial and Communal
30%: Open Space and Parks

4.3 Analyzing the New Town Land Use Budget

Recommended Land Budget for New Town Development Under the New Development Area (NDA) Mode



4.4 Recommendation of Optimized New Town Module

Assumptions, Standards & Basic Statistics

Assumptions

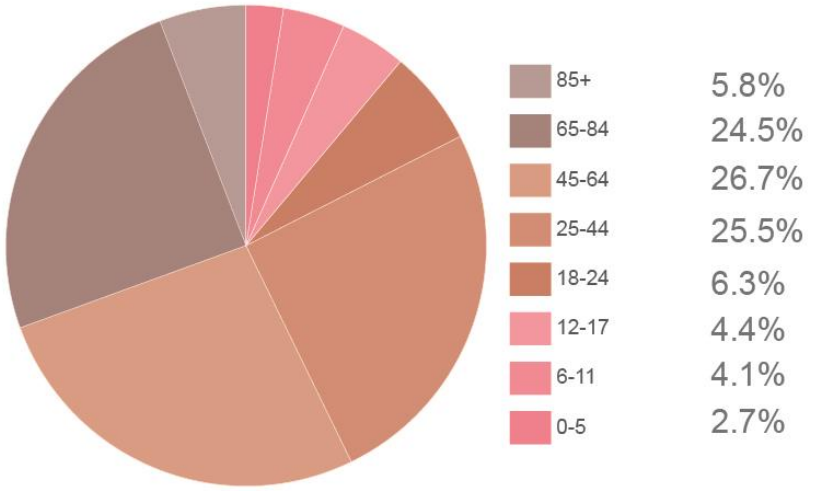
1. Average UFA of public housing = 19 ㎡
2. Average UFA of private housing = 37 ㎡
3. Public housing units : Private housing units = 6:4
4. Average no. of residence per living unit = 2.7
5. Residential UFA ratio = 3

Standards

Primary School	6200m² / 765 students	30-class
	4700m² / 612 students	24-class
	3950m² / 459 students	18-class
Middle and High school	6950m² / 1200 students	30-class
Community College	2000-7000m²	
Hospital	440 m² /1000 persons	District Hospital
	330 m² /1000 persons	Sanatorium
	4700 m²	Specialized Hospital
	2200 m² /100000 persons	Healthcare Center
Police Station	4650 m² /200000-500000 persons	Central Station
	3000 m² /100000-200000 persons	District Station
Magistrates' Courts	4200 m² / 660000 persons	
Fire Station	2960 m²	District Station
	1800 m²	Community Station
Casualty Station	1160 m²	
Community Center	1260-2100 m²	

Source: Hong Kong Planning Standards & Guidelines

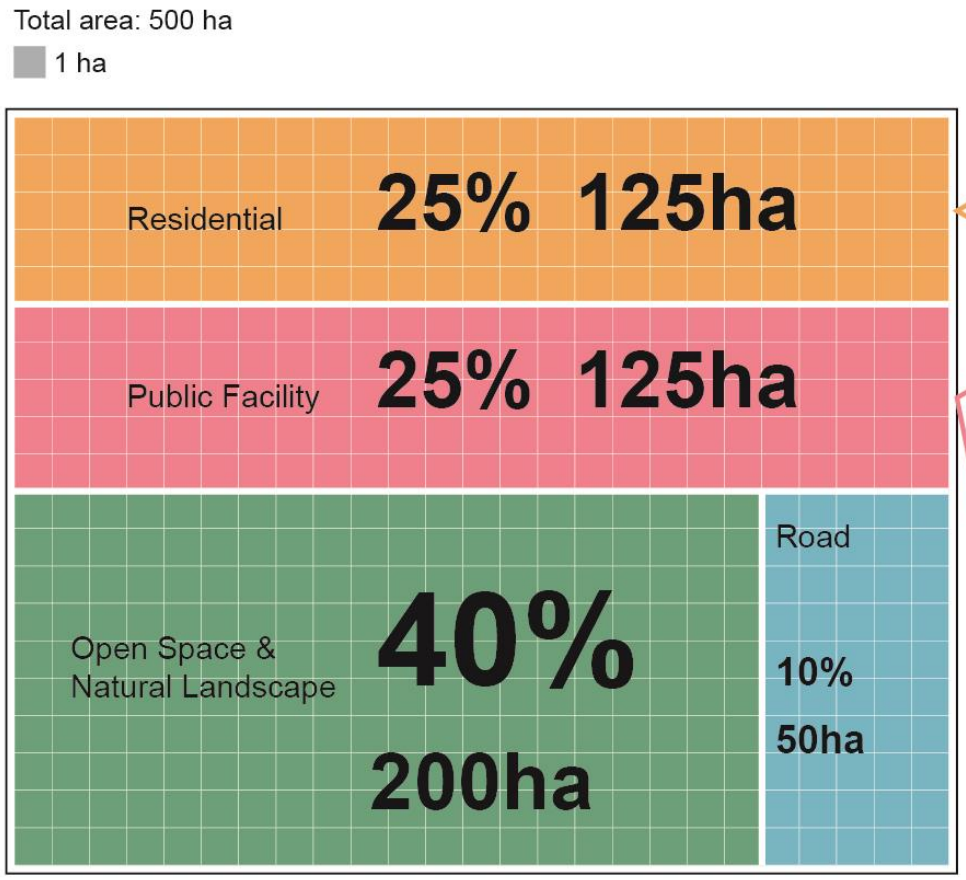
Age Structure by 2041



Source: Hong Kong Population Projection 2041

4.4 Recommendation of Optimal New Town Module

Optimal New Town Model (NDA Mode)



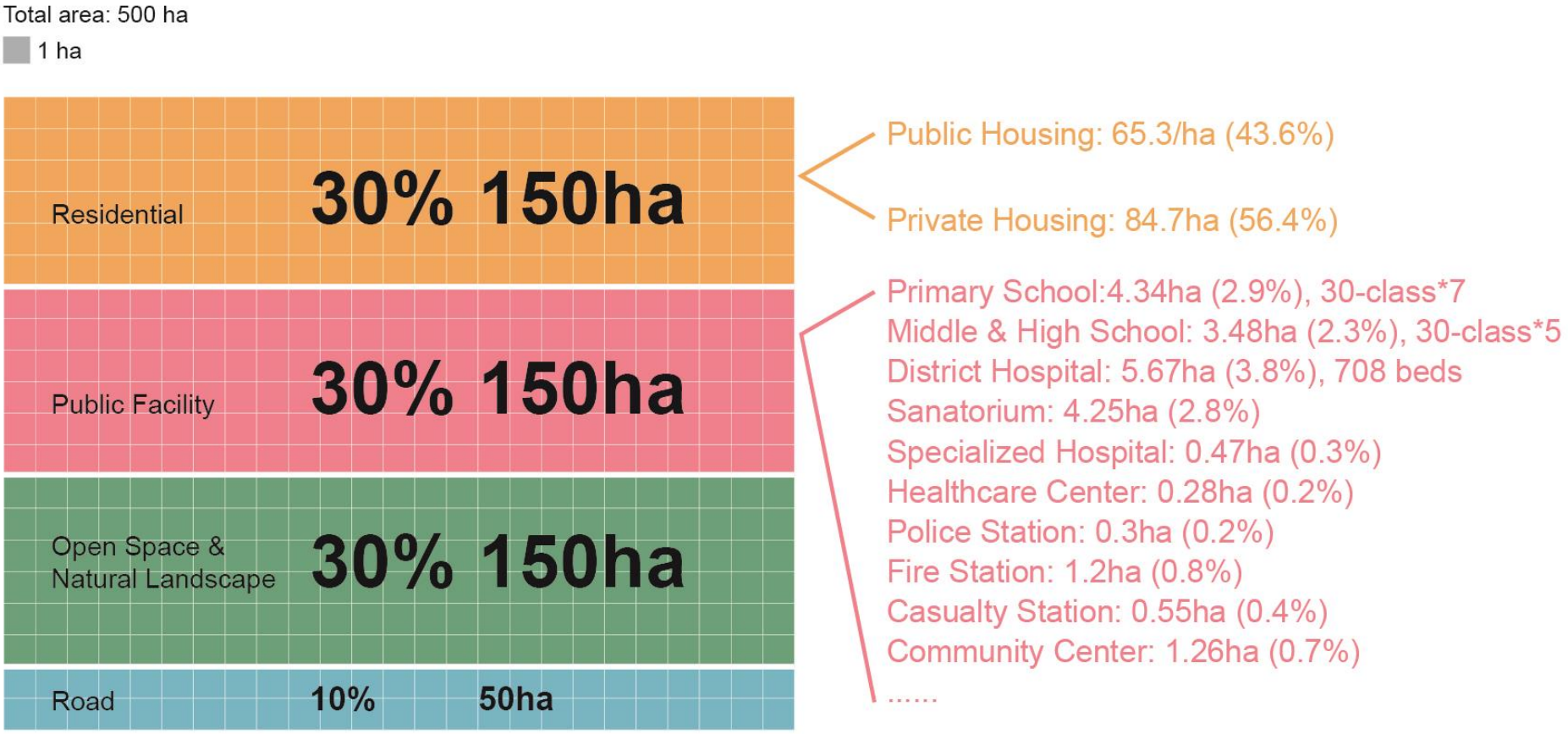
Public Housing: 54.5ha (43.6%)

Private Housing: 70.5ha (56.4%)

Primary School: 3.72ha (2.9%), 30-class*6
Middle & High School: 2.78ha (2.2%), 30-class*4
District Hospital: 4.74ha (3.8%), 592 beds
Sanatorium: 3.55ha (2.8%)
Specialized Hospital: 0.47ha (0.4%)
Healthcare Center: 0.24ha (0.2%)
Police Station: 0.3ha (0.3%)
Fire Station: 1.2ha (1.0%)
Casualty Station: 0.55ha (0.4%)
Community Center: 1.26ha (1.0%)
.....

4.4 Recommendation of Optimal New Town Module

Optimal New Town Model (Reclamation Mode)



CHAPTER 5

Increasing Developable Land Supply

5.1 Government's Six-pronged Approach

In meeting the demand of land for various uses including that for housing developments, the Government has adopted a six-pronged approach to supply developable land. The six-pronged approach includes re-zoning, resumption, redevelopment, rock cavern development, re-use of ex-quarry sites and reclamation.

Rezoning

The 150 sites ear-marked for rezoning are still undergoing difficult times in seeking planning approvals. There are lots of uncertainties surrounding these rezoning proposals. It is also against the planning principles to convert abruptly other uses for housing purposes as these uses are also needed for the overall development of Hong Kong.

Resumption

The Government mainly relies on the NDA (New Development Area) mode in new town developments in the New Territories. Although the approach of comprehensive development on both public and private lands makes a lot of sense in planning terms, the resumption of land will surely face resistance of the inhabitants who may not be simply satisfied with compensation packages offered by Government.

5.1 Government's Six-pronged Approach (cont.)

Redevelopment

Redevelopments on existing lots in both the public and private sectors are problematic. Increase in development potentials of existing public housing estates are in general nominal and does not justify the redevelopments. There are also phasing and transient resettlement issues. On the private side, sites with good redevelopment potentials have been exhausted by the then Land Development Corporation and the current Urban Renewal Authority. Compensation based on 7-year unit value nowadays becomes financially not viable.

Rock cavern developments

These are mainly concerned with the reprovisioning of existing water and/or sewerage treatment plants, and in turn would leave those original sites for other uses.

Re-use of ex-quarry sites

The scope for further developing these ex-quarry sites for residential use are limited.

Reclamation

Reclamation within the Harbour area is almost impossible with the enactment of the Protection of The Harbour Ordinance in 1997. Yet, reclamations outside the harbour area are not without hurdles, particularly with environmental issues and the costly investments in infrastructures.

5.2 Reviewing Government's Proposed Land Supply Programmes
- **Mapping of left-over developable land**

In Chapter 3, we have conducted comprehensive mapping on the existing built areas, Country Parks and natural reserves as the "non-developable areas".

When all these have been taken out from the 1108 Sq. Km, there are only left with about 268 Sq. Km accounting for 24% of the total land area of Hong Kong.

When we map these layers against topographically difficult areas, we are only left with 217 Sq. Km, accounting for 20% of the total land area of Hong Kong.

When we further map this layer to take out those small and scattered lots, harbourfront and ecological sensitive areas, we are only left with 137.6 Sq. Km (12.4% of the total land area of Hong Kong). These areas already include those areas earmarked for the New Territories NDA's and Tung Chung New Town Extension.

This finding is really astonishing –

we are left with no more than 138 Sq. Km of developable land suitable for residential developments.

5.2 Reviewing Government's Proposed Land Supply Programmes

- **Mapping of left-over developable land**

It is even more interesting to note that the total area occupied by the NDA's, Kai Tak Development and Tung Chung New Town Extension in the order of 84.6 Sq. Km already constitutes more than 61% of the 137.6 Sq. Km possible developable area identified in Chapter 3.

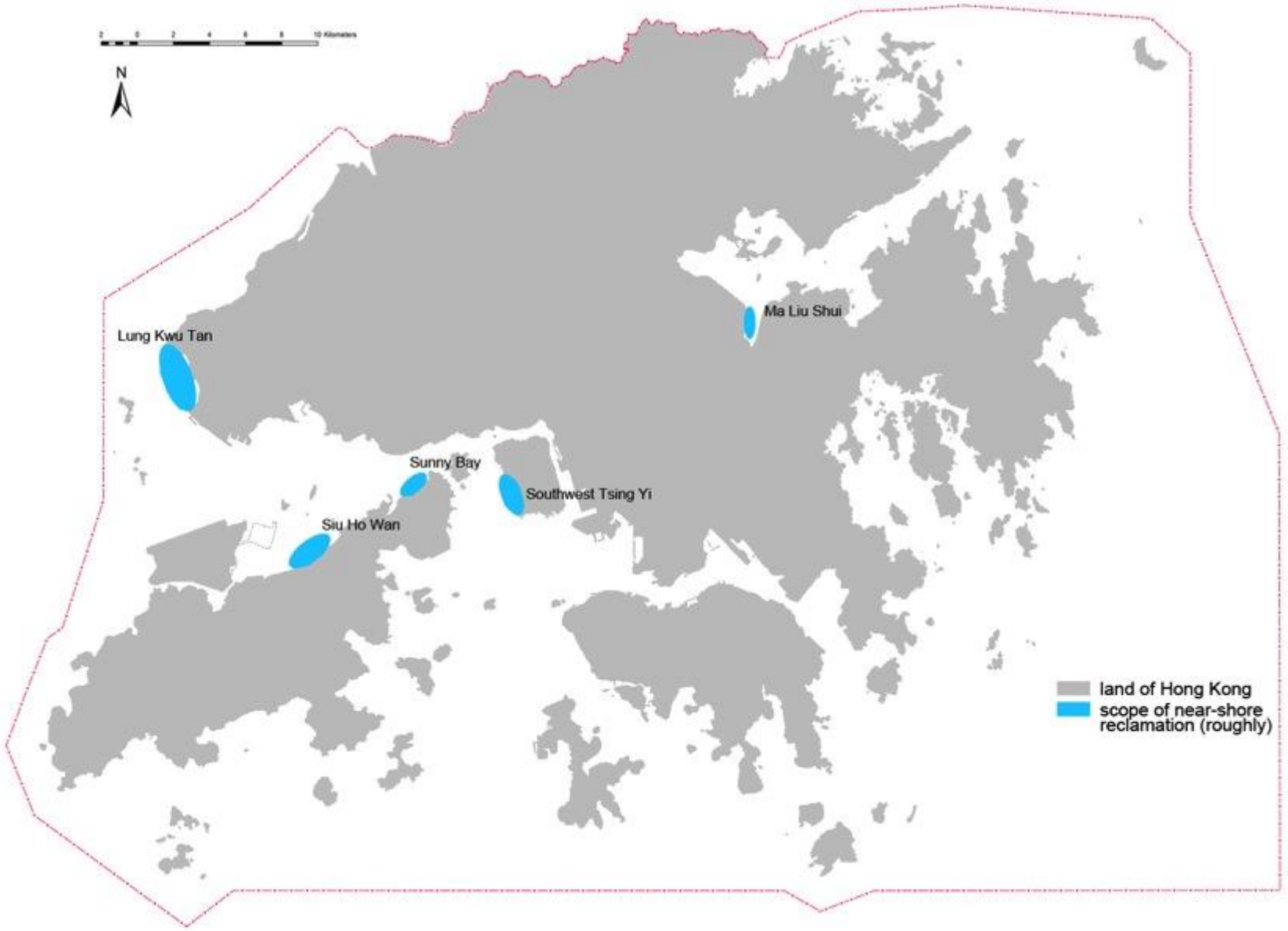
After deducting these Government planned development areas under studies, we are only left with 53 Sq. Km to work around.

If we further depict scenarios with Central Waters and near shore reclamations (25 Sq. Km), but one with NDA's and one without, we find out that the former case has a developable area of 163 Sq. Km while the latter has only got no more than 106 Sq. Km of developable land. So, the Government's decision to go for NDA mode development in this regard is correct.

Nonetheless, it also demonstrates that the Government has almost exhausted all possible developable land options (excluding numerous scattered lots in the New Territories), while keeping the Country Parks intact and restricting reclamations at the Central Waters and those near-shore locations so far identified.

5.2 Reviewing Government's Proposed Land Supply Programs

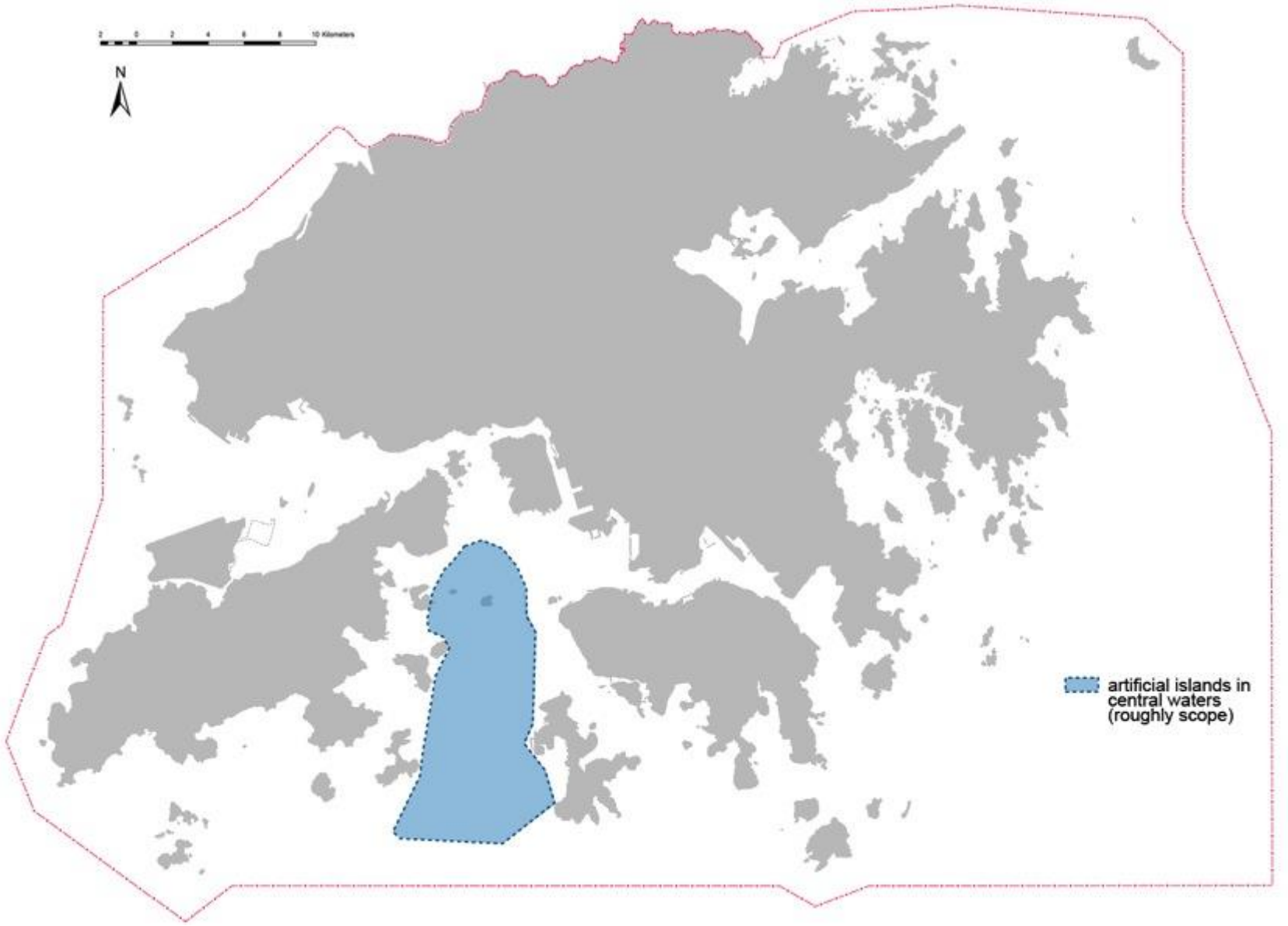
Development Land Budget – Near-shore Reclamation



Area = 6 KM² 0.5% (Total Area: 1127KM²)

5.2 Reviewing Government's Proposed Land Supply Programs

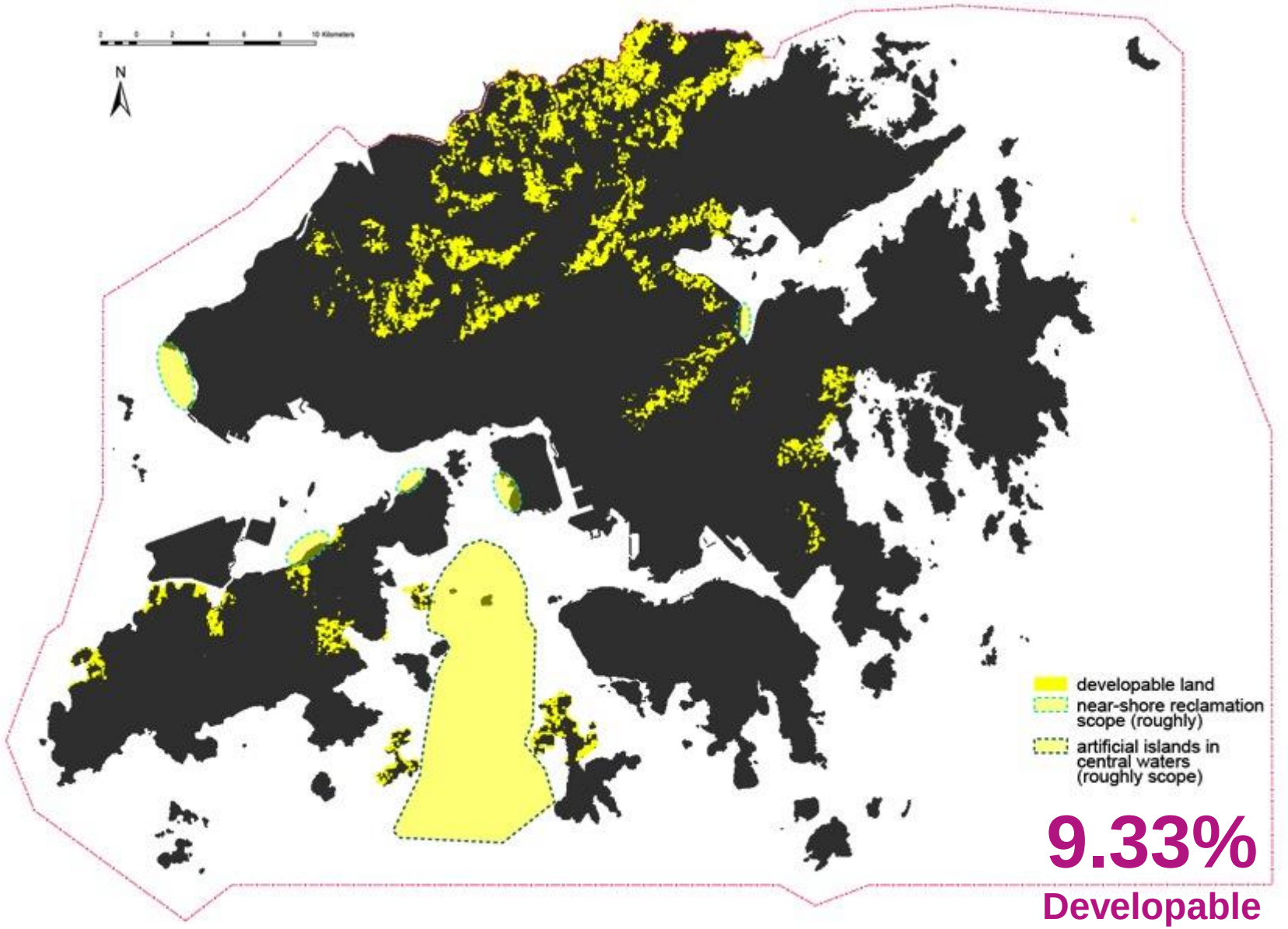
Development Land Budget – Artificial Islands in Central Waters



Area: around 19 KM² 1.7% (Total Area: 1127KM²)

5.3 Different Scenarios in Developable Land Supply

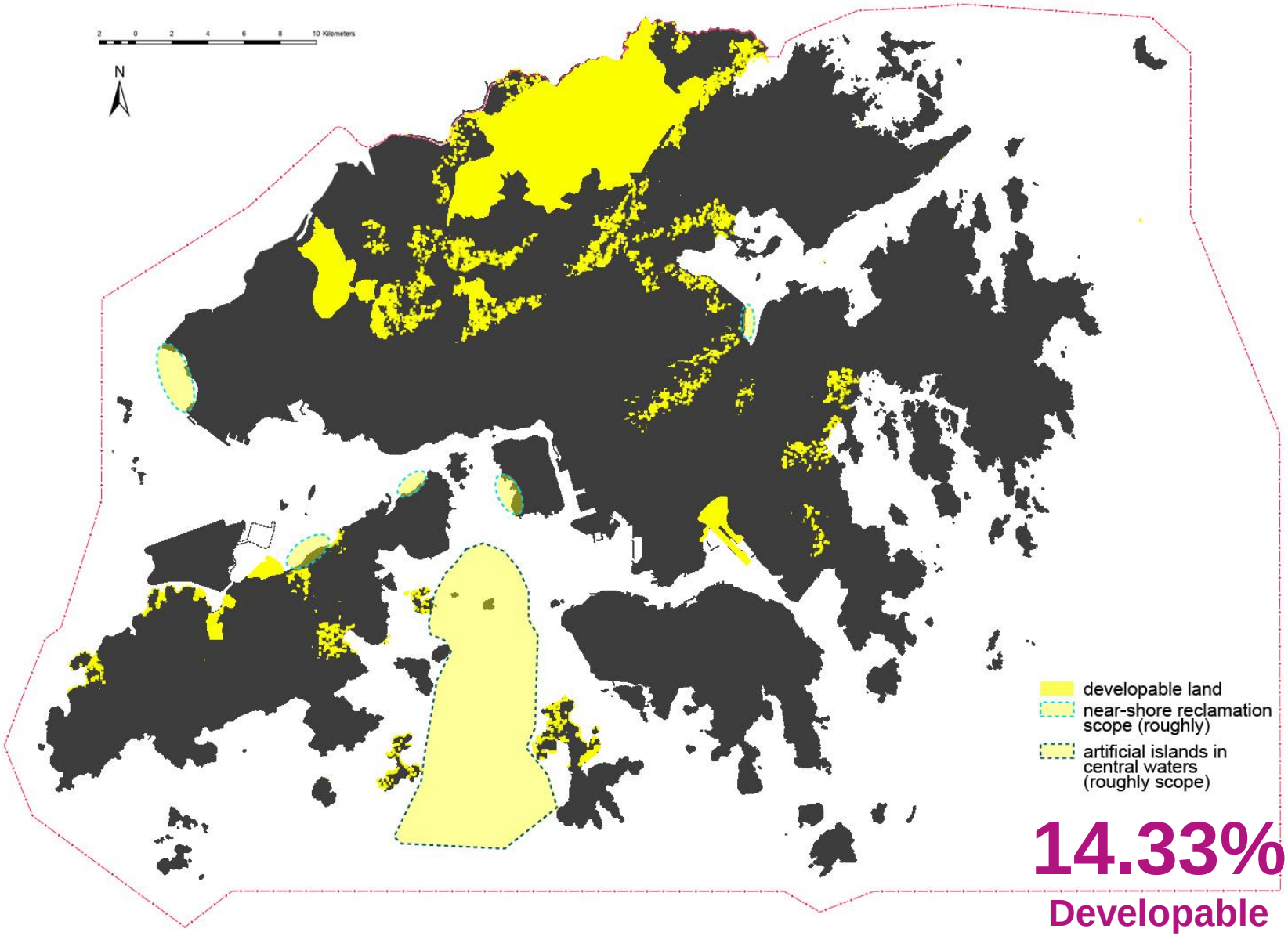
Prospective Developable Area – Considering Reclamations but without NDAs



Area = 105.71 KM² (Total Area: 1133 KM²)

5.3 Different Scenarios in Developable Land Supply

Prospective Developable Area – considering NDAs + NT Dev. & Reclamation



Area = 162.61 KM² (Total Area: 1134.5 KM²)

5.4 Land Demand for additional population up to 2040 – our projections on Housing Shortage and Land Demand

For any long-term strategic planning, it would be prudent to identify/ establish key variables based on key assumptions. Among others, these key variables are: (i) population projections; (ii) housing standards in terms of UFA (usable floor area) per person; and (iii) the Public/Private housing ratios.

These three variables form the three main axes for a scenario analysis with their different assumed figures to assess the corresponding shortage of developable land supply on top of the government's current efforts.

Scenario Analysis

High

	I	II	III
X- axis: Population (million)	7.81#	8.15##	9.00
Y- axis: UFA/Person	Existing HK standards	75% of Singapore standards	100% of Singapore standards
Z- axis: Public/Private Housing Ratio	60% : 40%	50% : 50%	40% : 60%

Base Case

The Scenario Matrix

\# Government's projected figure for year 2064
Government's projected figure for year 2040

5.4 Land Demand for additional population up to 2040 – our projections on Housing Shortage and Land Demand

Our Projections

Demand up to 2040

Base case – Population: 9 M; UFA/person: 75% of Singapore standard; Public/Private housing ratio: 60%/40%

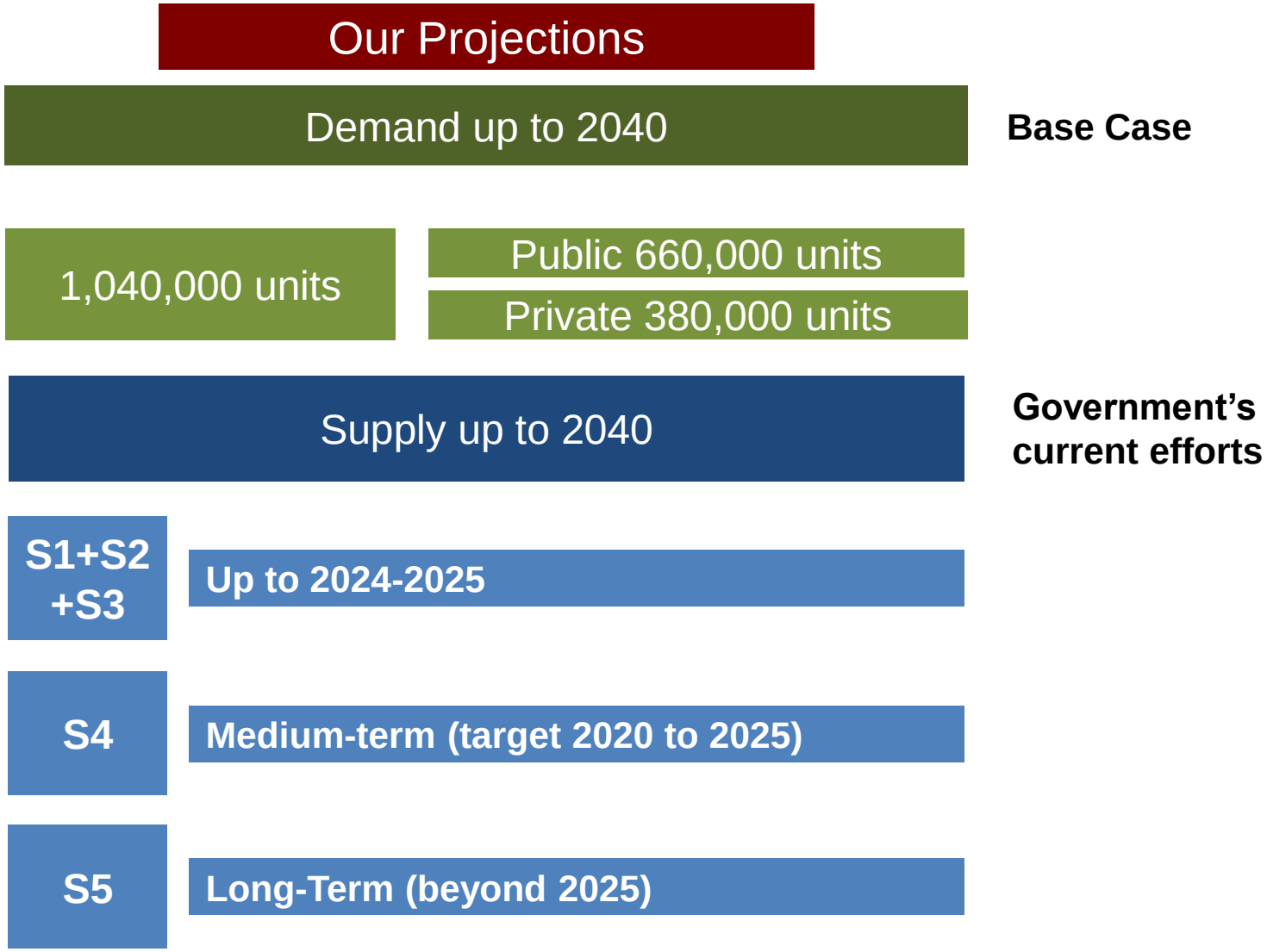
Under the key assumptions, the estimated population in 2040 would be around 9,000,000, considering the import of talents and labour as a result of repositioning of Hong Kong. The additional 1,700,000 would require 630,000 units (public: 380,000 units & private: 250,000 units).

Total demand for public units = 380,000 + 280,000 (backlog)#1 = 660,000 units

Total demand for private units = 250,000 + 130,000 (backlog)#2 = 380,000 units

Footnote: #1 – 280,000 applications on the waiting list for PRH
#2 – historical figures indicate that the no. of private flats always exceed the no. of households by 8.8% due to various reasons

5.4 Land Demand for additional population up to 2040 – our projections on Housing Shortage and Land Demand



5.4 Land Demand for additional population up to 2040 – our projections on Housing Shortage and Land Demand

Demand up to 2040

1,040,000 units

Public 660,000 units

Private 380,000 units

Our Projections

Cumulative Supply up to 2040 (Scenario 1)		
	No of units	
	Public	Private
PART I	345,330	116,815
PART II	138,610	100,190
PART III	111,000-191,000	74,000-127,000
Cumulative Total	**594,940 - 674,940**	**291,005 – 344,005**

Public: - 65,060 ~ + 14,940 units

Private: -88,995 ~ - 35,995 units

Cumulative Supply up to 2040 (Scenario 2 – Base Case)		
	No of units	
	Public	Private
PART I	345,330	116,815
PART II	138,610	100,190
PART III (Base Case)	151,000 #1	100,666 #2
Cumulative Total	**634,940**	**317,671**

Public: - 25,060 units

Private: - 62,329 units

#1 & #2 –
Part III (Base Case) – middle range assumed

5.4 Land Demand for additional population up to 2040 – our projections on Housing Shortage and Land Demand

Base Case Scenario

Our Projections

Housing Shortage up to 2040

Developable Land (Housing) Shortage up to 2040

Under the Base Case scenario, there would be a shortfall of 62,329 private housing units.

Accordingly, we need an extra of reclamation land of 1,225 hectares (12.2 Sq. Km).
(62,329 x 2.7 x 26.0[**#3**] ÷ 3 [UFA ratio] ÷ 0.4 [private housing land only] ÷ 0.3 = 12,154,155 SM)

OR

we need some areas in the Country Park or Green Belt of 1,460 hectares (14.6 Sq. Km).
(62,329x 2.7 x 26.0[**#3**] ÷ 3 [UFA ratio] ÷ 0.4 [private housing land only] ÷ 0.25 = 14,584,986 SM)

Note: #3: 60% x 19.0 + 40% x 36.6 = 26.0

5.5 Scenario Analysis on Housing and Developable Land Demand

Referencing to the Scenario Matrix,

the **Base Case** is {XI, YII & ZIII};
the **Low scenario** is {XI, YI & ZI}; and
the **High scenario** is {XIII, YIII & ZIII}.

The land demand for housing under the above scenaria would be:

Low scenario
[Population: 7.81 million; UFA/person: 15 SM; Public/Private housing ratio: 60% vs 40%]

Estimated increased population: 7.81M-7.28 M = 0.53 M requiring 196,300 units (Public 117,780; Private 78,520).

Total demand for Public units = 196,300 + 280,000 [backlog] = 476,300 units;
Total demand for Private units = 117,780 + 130,000 [backlog] = 247,780 units.

Shortfall in Public units: 476,300 – 634,940 = -158,640 units (i.e. no shortfall);
Shortfall in Private units: 247,780 – 317,671 = -69,891 units (i.e. no shortfall).

5.5 Scenario Analysis on Housing and Developable Land Demand

High scenario

[Population: 9.0 million; UFA/person: 30 SM; Public/Private housing ratio: 40% vs 60%]

Estimated increased population: 9.00M-7.28 M = 1.72 M requiring 637,037 units (Public 254,815; Private 382,222).
Total demand for Public units = 254,815 + 280,000 [backlog] = 534,815 units;
Total demand for Private units = 382,222 + 130,000 [backlog] = 512,222 units.

Shortfall in Public units: 534,815 – 634,940 = -100,125 units (i.e. no shortfall);
Shortfall in Private units: 512,222 – 317,671 = 194,551 units.

This would end up in the demand for developable land given by the following calculations:

Accordingly, we need an extra of reclamation land of 4,796 hectares (48 sq. km)
(194,551 x 2.7 x 49.3 ÷ 3 [UFA ratio] ÷ 0.6 [private housing land only] ÷ 0.3
= 47,956,822 SM (or 4,796 hectares or 48 sq. km).

Alternatively, we need some areas in Country Park or Greenbelt of 5,755 hectares (58 sq. km)
(194,551 x 2.7 x 49.3 ÷ 3 [UFA ratio] ÷ 0.6 [private housing land only] ÷ 0.25
= 57,548,186 SM (or 5,755 hectares or 58 sq. km).

5.6 Strategic restructuring of urban areas to sustain a higher residential plot ratio

Established urban areas are characterised by the clustering of various commercial and residential uses. The convenience and efficiency of activities within a densely populated area will further attract more people to live within such areas, according to simple urban economics principles.

In the context of Hong Kong, most of these areas are zoned commercial or commercial/residential mixed uses and there is always a tendency to build more offices, hotels, restaurants and facilities rather than residential developments. As an intermediate measure, subject to paying a land premium, some of these non-domestic premises could be converted to residential accommodations if they comply with structural and fire safety requirements.

With such acute shortage for housing units in the urban areas, it makes a lot of sense in considering speeding up and increasing their supply by increasing the domestic plot ratios close to those of the non-domestic; on the basis that such developments would not compromise the environmental quality and over-burden district wide traffic capacity. Later on, strategic surgery to certain urban fabrics could ultimately increase the traffic capacity while the roads in the vicinity could be widened by way of redevelopment of old and dilapidated buildings. Certain new policies, land administration systems and regulatory measures would have to be devised to enable such contemplated urban regeneration mechanism.

5.7 Converting deserted agricultural lands for residential use

Currently, about 4.6% or some 5,096 ha of the total land in Hong Kong are zoned or used as agricultural land. However, according to the surveys conducted by the Agriculture, Fisheries and Conservation Department, there are around 4,523 ha of agricultural land (excluding fish ponds) in Hong Kong. Only about 729 ha of such land are under active farming. So, there are about 4,367 ha agricultural lands being left unused or put into other uses.

Lots of them are being used as open storage, container yards, depots, rural industries and recycling yards, etc., of which the uses are incompatible with the surrounding environment. These are common identified as brownfield sites scattered in the North District and Yuen Long such as Hung Shui Kiu and Yuen Long South. Most of these lands have been included in the “New Development Areas” studies in the above areas.

5.8 Converting deserted industrial lands for residential use

Currently, about 0.6% or some 665 ha are zoned or used for industries which are mostly developed as high density flatted factories or warehouses. Many of these, like those in Kwun Tong and Kowloon Bay have been converted into other commercial uses.

On 11 August 2015, the Planning Department (PlanD) announced the completion of the 2014 Area Assessments of Industrial Land in the Territory (AAILT) study. The 2014 AAILT study is the continuation of the 5-year review on the stock-taking of the industrial lands and buildings and their respective vacancy rates and to assess their impacts against the current demand trend of industrial uses. The 2014 Area Assessments were the fourth conducted and aimed to examine the latest usage of 1,448 existing privately owned industrial buildings in five land use zonings (about 510 hectares), namely "Industrial", "Other Specified Uses" annotated "Business", "Residential (Group A)", "Residential (Group E)" and "Comprehensive Development Area", in order to more effectively plan and utilize the industrial land resources.

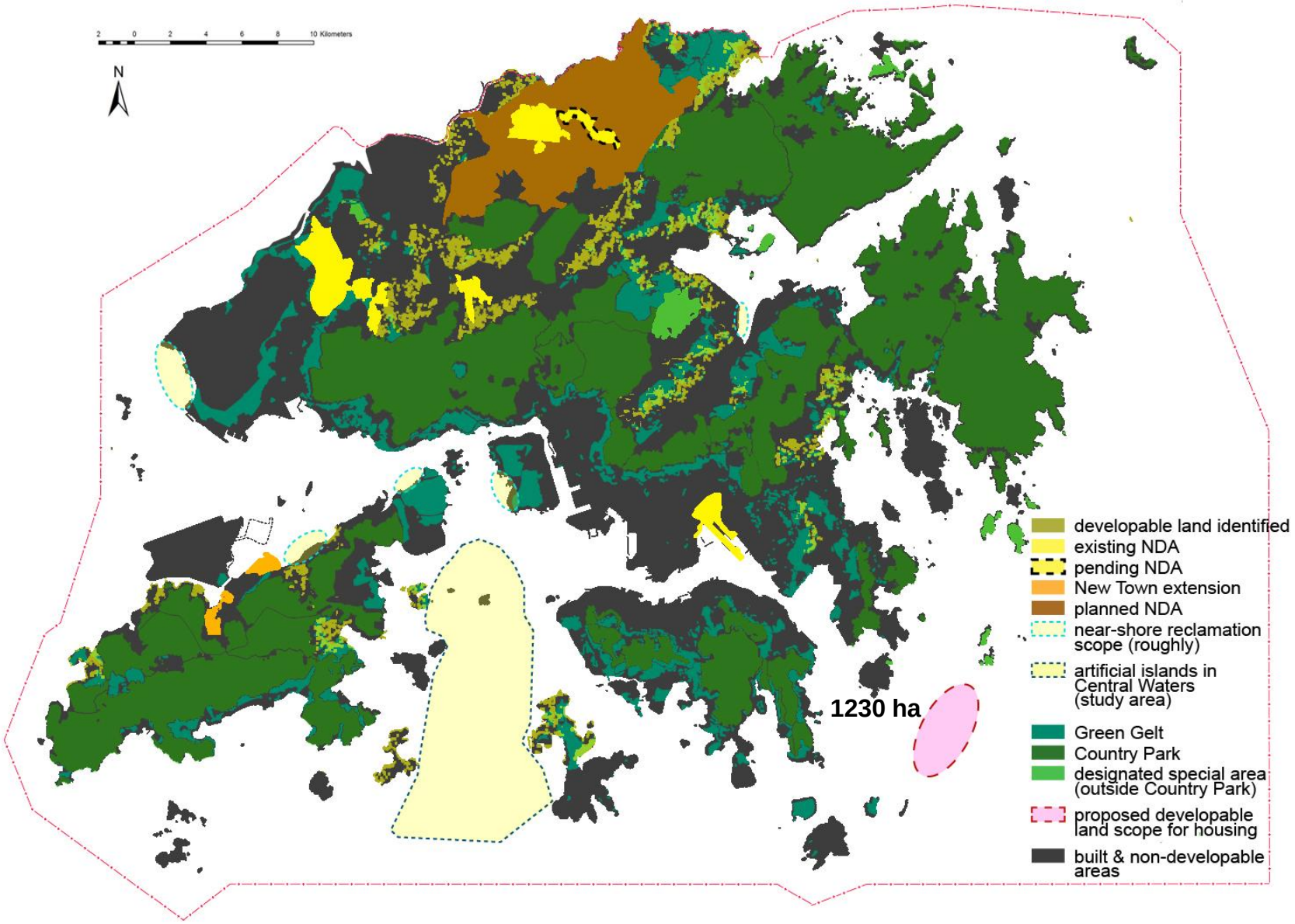
The AAILT study finds that Hong Kong is now facing a shortage of industrial lands and buildings. The Planning Department and the Town Planning Board are now very cautious in considering rezoning industrial lands for other purposes.

CHAPTER 6

Scenario Analysis of Developable Land Supply

6.1 Evaluating Options

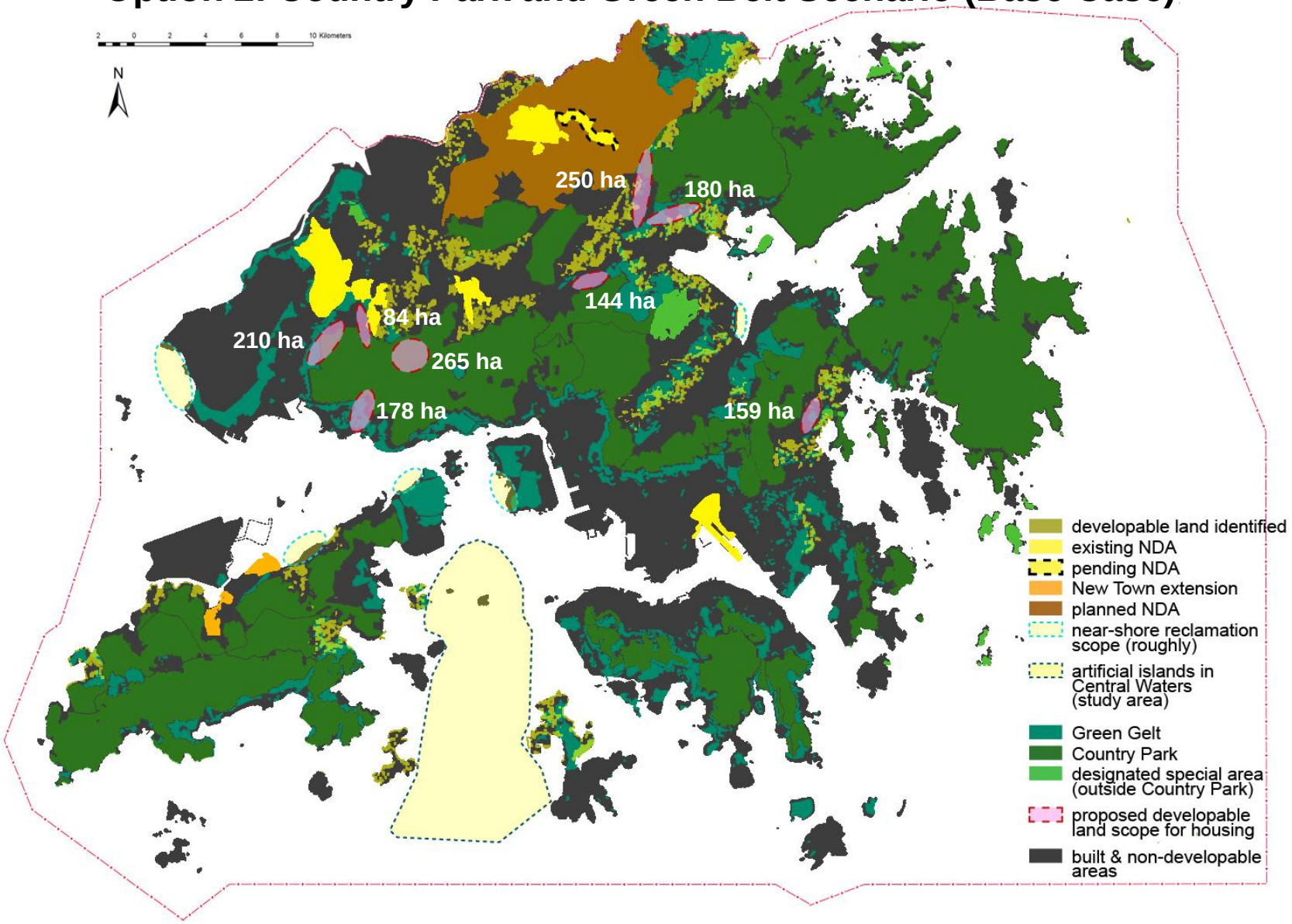
Option 1: Reclamation Scenario (Base Case)



Area = 12.3 KM²

6.1 Evaluating Options

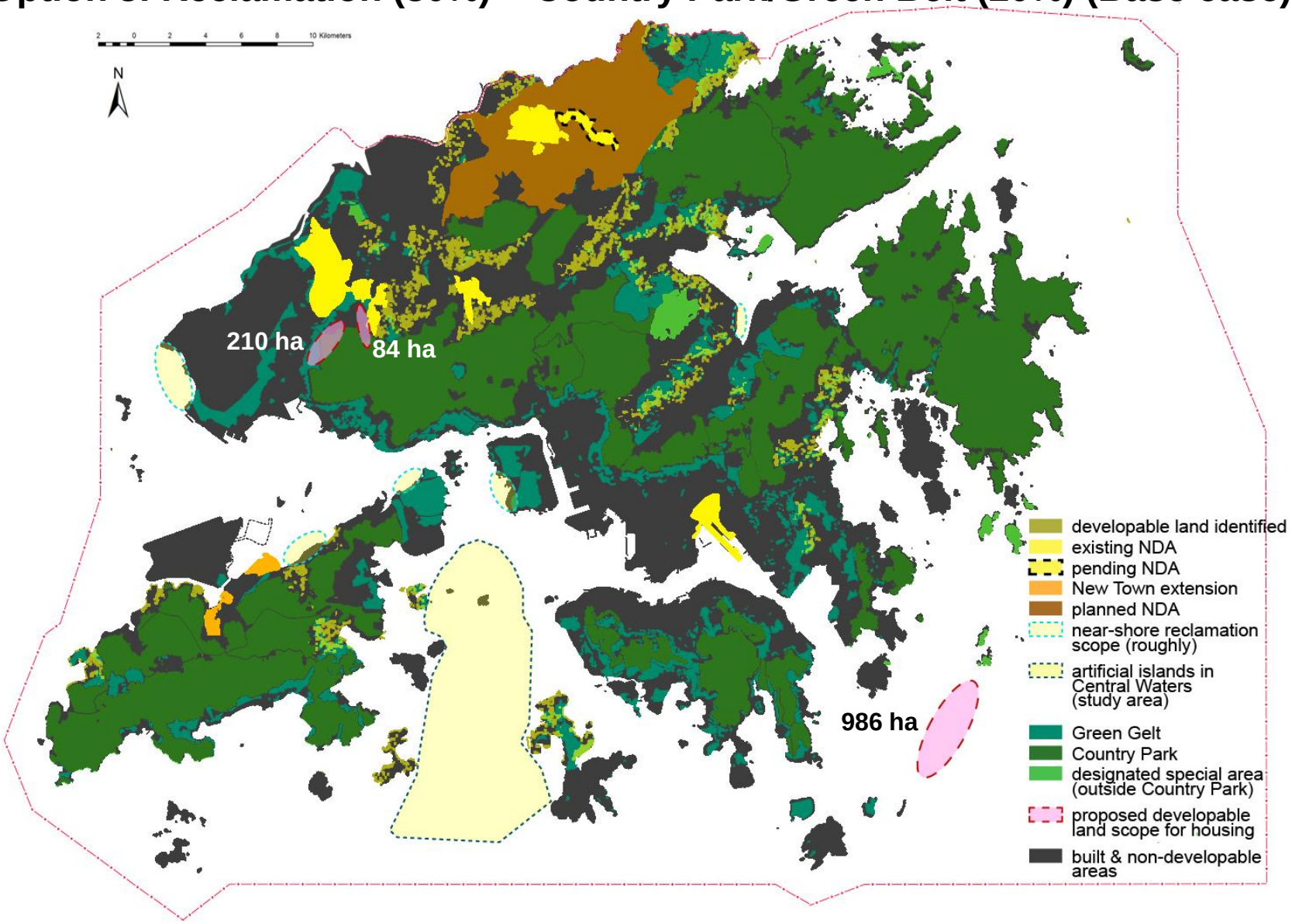
Option 2: Country Park and Green Belt Scenario (Base Case)



Area = 14.7 KM²

6.1 Evaluating Options

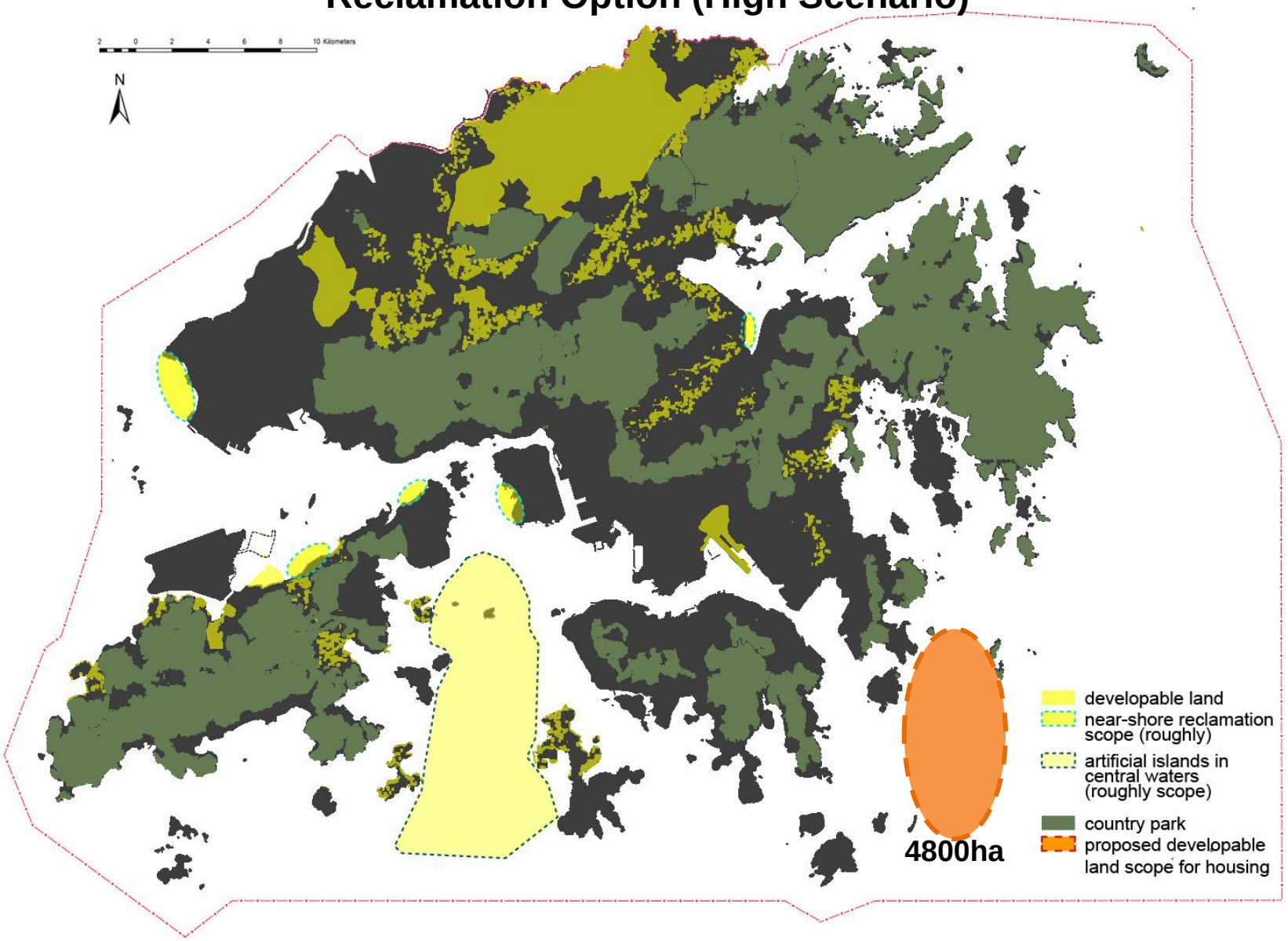
Option 3: Reclamation (80%) + Country Park/Green Belt (20%) (Base case)



Area = 12.8 KM²

6.1 Evaluating Options

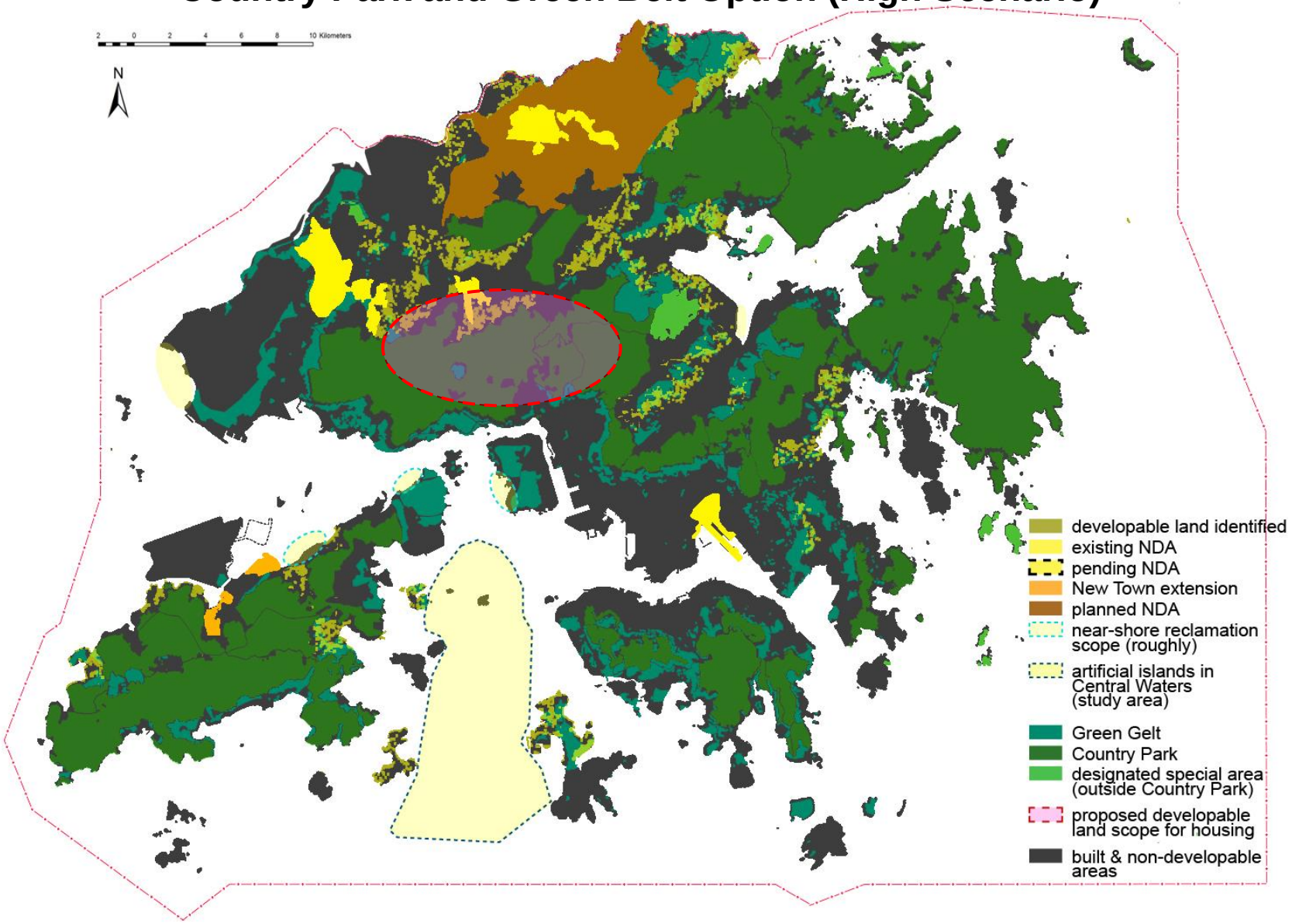
Reclamation Option (High Scenario)



Area = 48 KM²

6.1 Evaluating Options

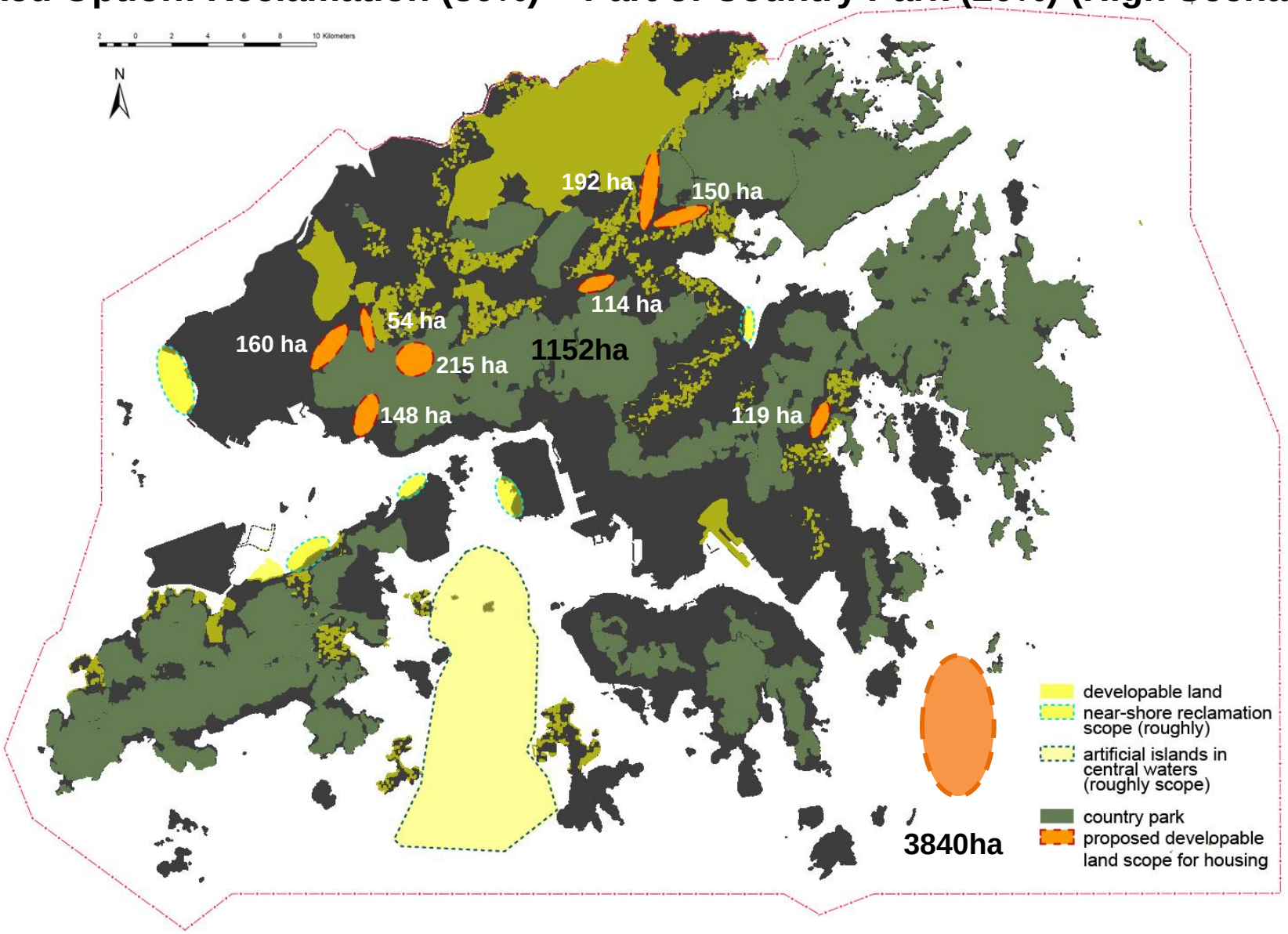
Country Park and Green Belt Option (High Scenario)



Area = 58 KM²

6.1 Evaluating Options

Mixed Option: Reclamation (80%) + Part of Country Park (20%) (High Scenario)



Area = 50 KM²

6.1 Evaluating Options

It is almost certain that the High Scenario land demand could not be met. Massive reclamation in the order of 38.4 to 48.0 sq. km is practically impossible considering environmental and engineering constraints.

6.2 Recommended Integrated Approach for the Base Case

Some environmentalists are strongly against touching the “sacrosanct” Country Park or even the Green Belt. While we are facing the shortage of developable land to meet with the community’s various needs, it would be equally un-scientific and irrational for not even attempting to consider exploiting some suitable portions of the Country Park or Green Belt for housing and other developments.

We recommend that Government should carry out a thorough study on the existing conditions of all the Country Park and Green Belt areas and examine scientifically to see if some portions of them could be suitable for tourism or residential developments.

Our preliminary examination reveals that no more than 15 sq. km of Country Park and Green Belt areas could be suitable for residential developments which account for no more than 3.5% of the existing Country Park and protected areas.

6.2 Recommended Integrated Approach

On the other hand, we believe that after exhausting those possibilities of NDA developments in the New Territories, in the long term, reclamation seems to be a better option to produce developable lands, while we are mindful of the relatively higher costs of land formation and infrastructure and longer construction time.

Hong Kong indeed has a serious problem of lacking developable land having exhausted most prospective options of reclamation or even developing some portions of the Country Park.

Under the Base Case scenario, we recommend to have reclamation of 9.84 Sq. Km (80% of the required 12.3 Sq. Km) and 2.94 Sq. Km of Country Park (20 % of the required 14.7 Sq. Km or 0.67% of the Country Park area) to meet the land demand identified and described in the earlier chapters of this Study.

6.2 Recommended Integrated Approach

Scenario Comparison

	Scenario A Reclamation	Scenario B Part of Country Park & Green Belt	Scenario C Reclamation + Part of Country Park & Green Belt
Construction & Infrastructure Costs	High	Low	Medium
Construction Period	Long	Short	Medium
Supply Area	High	Low	Medium
Impact on Nature	Moderate	High	Moderate
Flexibility	High	Low	Medium
			Recommended

CHAPTER 7

Findings & Conclusion

7.1 Prognosis of LTHS & Associated Land Supply Shortage

When the Government was contemplating the Long Term Housing Strategy (LTHS), it did not seem to have encompassed and comprehended a sustainable population policy strategy. Indeed, a "long term" housing strategy can only be realistic with the import of an appropriate quantity and quality of labour force, i.e. talents and labour necessary for the economic repositioning and industries restructuring in the decades to come; and more importantly, for enhancing a better demographic structure. As such, our current so-called "LTHS" can only at best be called a "Ten years Housing Programme".

In the housing demand projection methodology, it claimed that Housing Demand was defined as "*the total number of new housing units required to provide adequate housing to each and every household over the long term*". It also claimed that it had taken into consideration a mixture of factors which include: *net increase in the number of households, those who will be displaced by developments, those who are inadequately housed, and other miscellaneous factors*, it did not explain how that 480,000 units figure had been arrived at.

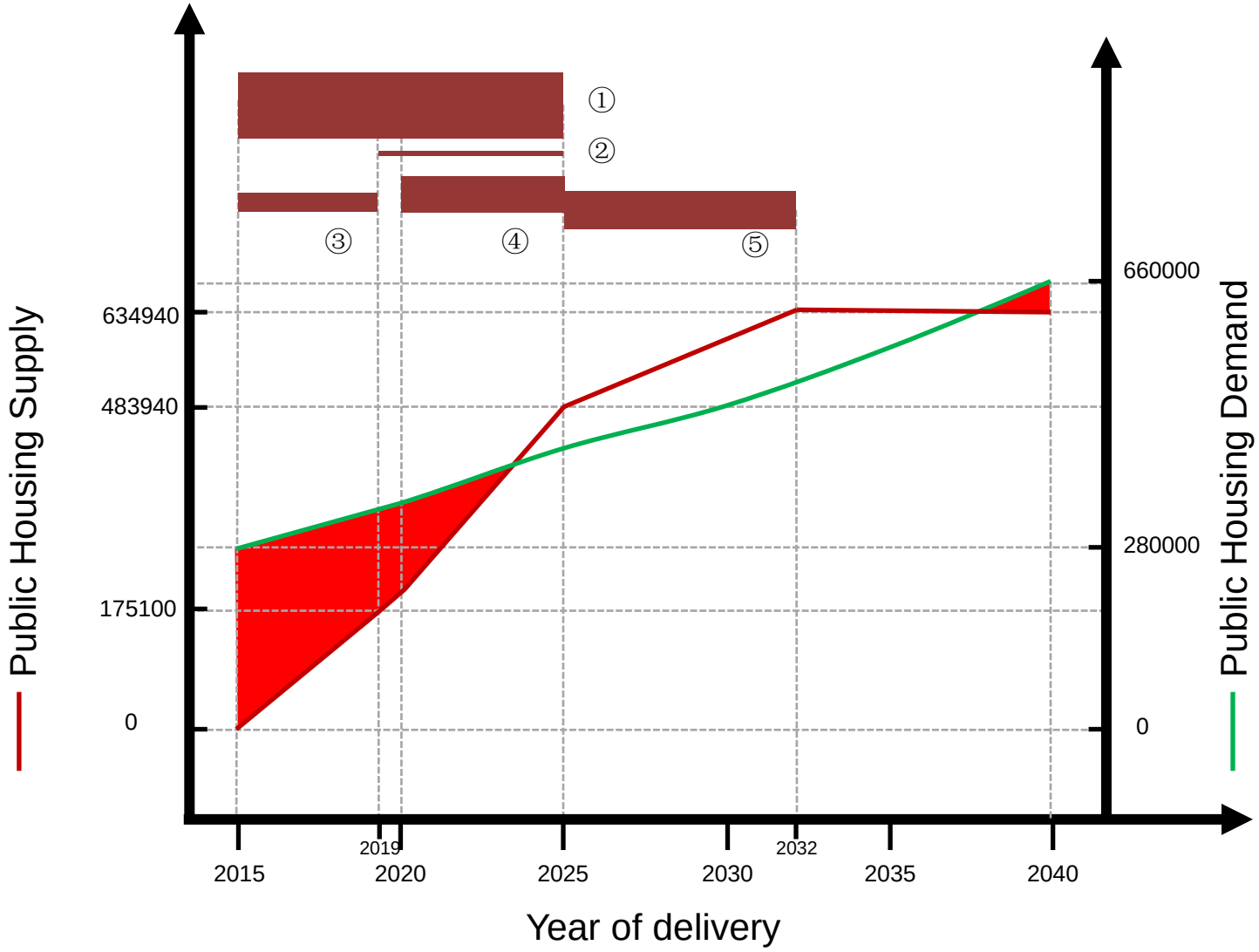
7.1 Prognosis of LTHS & Associated Land Supply Shortage

This study has taken a different approach in assessing the demand by:

1) Using the net growth rate of 0.7% per annum (as identified in Government's Hong Kong 2030 Planning Vision) to arrive at a minimum demand as a result of net natural growth to arrive at figure of 7.81 million in 2040 as compared to the 7.28 million as of today;
2) Building in a factor in the progressive increase in the growth rate in the coming 25 years considering the import of talents and labour necessary to sustain the economic growth, social development and demographic structure optimization;
3) Identifying the backlog in housing supply in both the public and private sectors respectively at 280,000 and 130,000 units.

Although the current Administration should not be blamed for the serious shortfall in the supply of developable land for housing developments, it has not endeavoured to identify "out-of-the-box" land administrative mechanisms to invigorate urban regeneration projects, especially for the dilapidated building blocks (more than 1.6 million units by 2040) which practically have little or no redevelopment potentials. It also did not take steps to enforce control and enforcement measures to drive out un-wanted misuse of the residential premises in the urban areas.

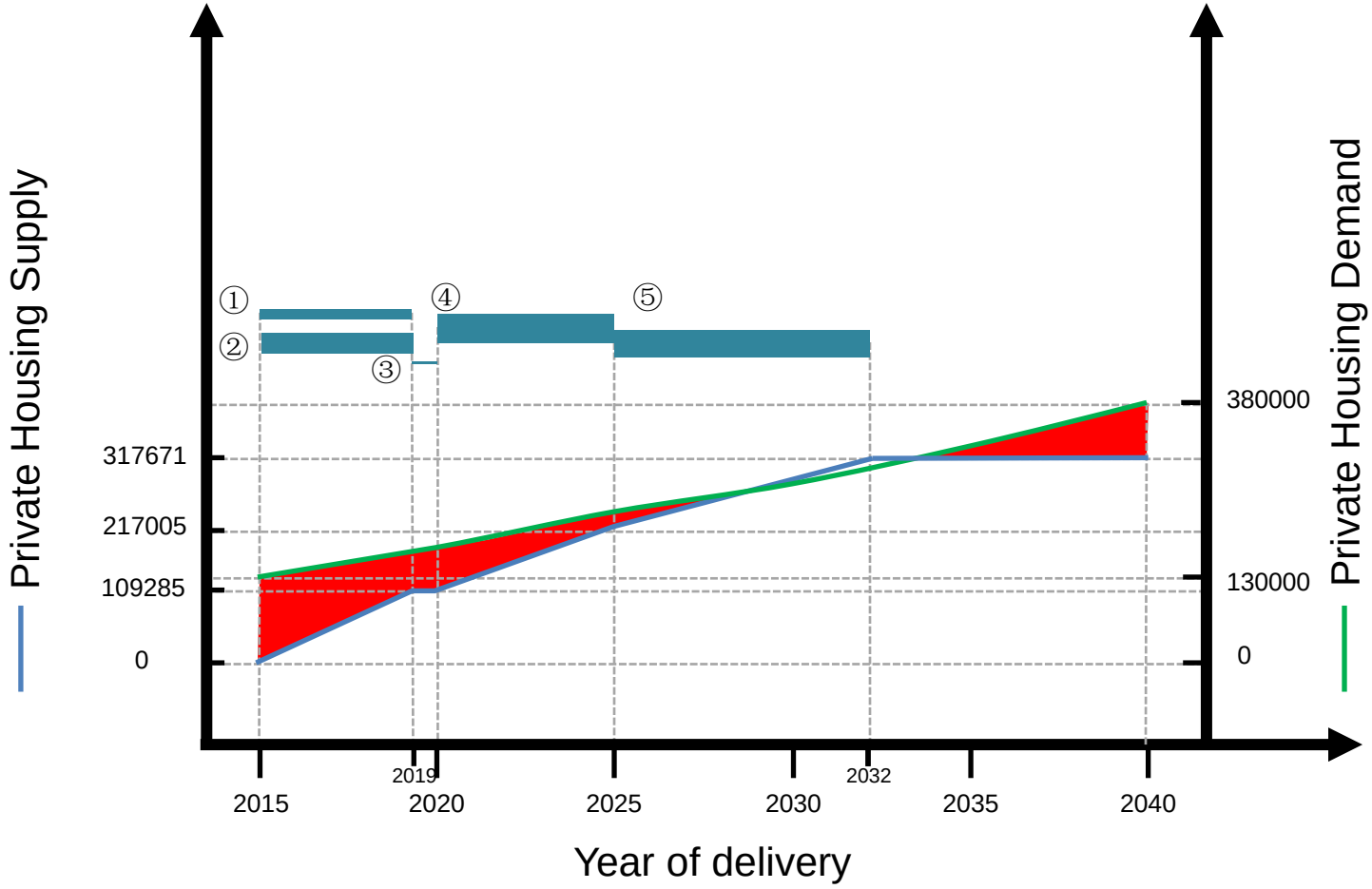
7.2 Developable Land Demand and Supply Profiles



Legend
① Planned Public Housing Construction programmes
②Planned Public Housing Development
③Rezoning 150 Sites, Government Land, STT, GIC
④NDA & MTR Developments & New Town Extension
⑤Reclamation

Housing Units Demand & Supply Profile (Public Housing)

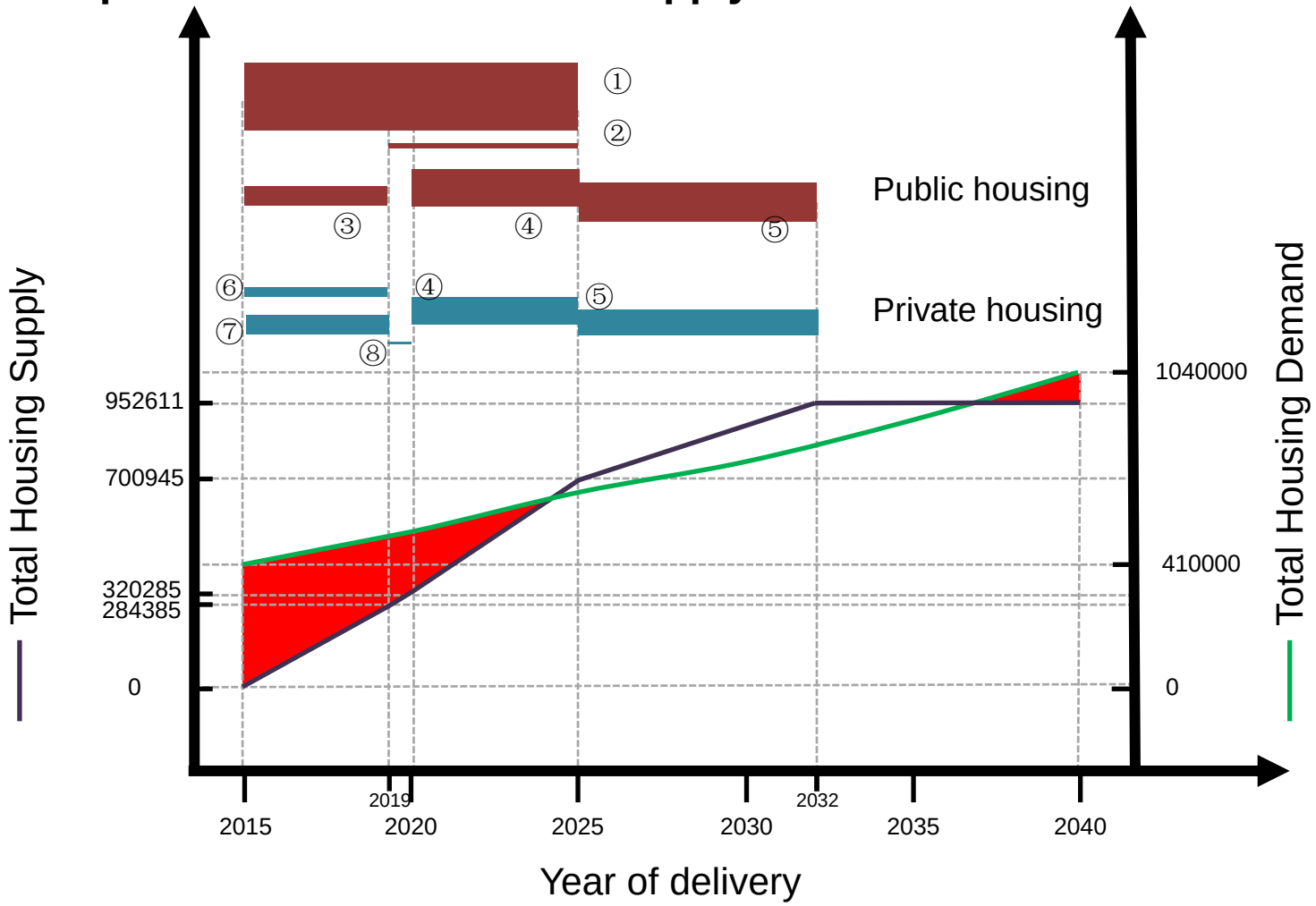
7.2 Developable Land Demand and Supply Profiles



Legend
① Rezoning 150 Sites Government Land, STT, GIC & Increasing Development Intensity
②Private Development
③Planned Development
④NDA & MTR Developments & New Town Extension
⑤Reclamation

Housing Units Demand & Supply Profile (Private Housing)

7.2 Developable Land Demand and Supply Profiles



Legend

① Planned Public Housing Construction programmes
②Planned Public Housing Development
③Rezoning 150 Sites, Government Land, STT, GIC
④NDA & MTR Developments & New Town Extension
⑤Reclamation
⑥ Rezoning 150 Sites Government Land, STT, GIC & Increasing Development Intensity
⑦Private Development
⑧Planned Development

Housing Units Demand & Supply Profile (Public + Private)

7.2 Developable Land Demand and Supply Profiles

From the above housing units cum developable land demand and supply profiles (respectively for the private, public, and the private and public total), under the Base Case scenario, it is observed that:

1) The supply of public housing would be able to balance off demand by year 2024.
2) If nothing is added to the current government programmes of land supply, there would be a shortage of 25,000 public units by year 2040.
3) The supply of private units could only satisfy the demand by 2028.
4) If nothing is added to the current government programmes of land supply, there would be a shortage of 62,000 private units by year 2040.
5) We would then need to identify additional sources of land supply in the timely manner to cater for this shortfall for the planning horizon up to 2040 even if we choose to cap Hong Kong's ultimate population capacity at 9 million.
6) As discussed above, we could either have another 12.3 Sq. Km of reclamation or chip into 14.7 Sq. Km of Country Park or Green Belt, or we do portions of both.
7) The Scenario Analysis reveals that it is practically impossible under the High Scenario to accommodate a target population of 9 million, while maintaining on par with Singapore in terms of UFA/person and a ratio of private housing above 60%.
8) We should also consider implementing innovative land administrative mechanism to invigorate urban regeneration, and stepping up enforcement efforts to drive out unwanted misuses of residential premises within the urban area.

7.3 Recommendations of New Source of Land Supply

There is no doubt that it takes time for the Government to turn raw lands into developable lands under the statutory planning process. However, because of the objections to rezoning and land acquisition by the local residents, these two processes would normally take longer time than scheduled. The Government has grossly neglected the private land-owners' concern of being deprived of their rights to develop their own lands as compared to those of big developers.

Some form of innovative collaboration between the Government and small private land owners could be an option worth pursuing. This will help unlock the potentials of scattered private lots in many parts of the New Territories which are not well served by adequate road access and public utility provisions.

Another way to invigorate the renewal of old dilapidated building blocks by an innovative land entitlement exchange mechanism is proposed in the ensuing section.

7.4 Recommendations of New Land Administrative Mechanism for Urban Renewal

Exchange of Development Rights

Anyone with a "walking knowledge" of Hong Kong Island and Kowloon could easily name different areas that have an overabundance of older buildings begging to be torn down. Think Tai Kok Tsui, Sham Shui Po and Quarry Bay. Even though many older buildings in these districts have no obvious conservation value from an architectural point of view, they seem to have attracted little interest from private developers or the Urban Renewal Authority (URA). These ignored older buildings were developed in the 1950s and 1960s according to different standards, which allowed for a much higher density than the plot ratio applicable today. This means the compensation needed to be paid by a private developer or the URA would be too high for such projects to break even, let alone produce a profit.

For exactly the opposite reason, much newer buildings were or will be torn down for redevelopment. Examples include the Ritz-Carlton Hotel in Central, Sunning Plaza/Court in Causeway Bay, Somerset House in Quarry Bay, and many others. For whatever reason, the sites on which these newer buildings sit either offer unexploited plot ratio or would command substantially increased rental income should the physical building be upgraded.

7.4 Recommendations of New Land Administrative Mechanism for Urban Renewal

Exchange of Development Rights (cont.)

Without any prospects for redevelopment, buildings in Tai Kok Tsui and other districts have become dilapidated and pose a safety risk. The government must come up with a strategy to protect these inhabitants as well as to unlock the development potential of these lands. A now retired practice of land exchange could be redeployed to help solve this problem. Before 1983, the government issued what were then known as "Letter A" and "Letter B" entitlements when acquiring private land in the New Territories for public purposes. These gave their holders the right to be granted government land at a future date, and were even accepted by the government in lieu of cash in some land transactions.

This approach (tentatively called “Letter C”) could be adapted for decanting old urban neighbourhoods. Instead of land rights, the government could attach to the building units certain development rights, which would then be bought by developers for paying transactions concerning other government sites scheduled for auctions.

7.4 Recommendations of New Land Administrative Mechanism for Urban Renewal

Exchange of Development Rights (cont.)

Dilapidated flats would subsequently be returned to the government. The lands previously occupied by these dilapidated blocks then become government land. The government could consider asking the Urban Renewal Authority to come up with development schemes which could strike a balance between commercial and social needs. Where there are “planning deficits” in the locality, the decanted site can be used for road widening or developing urban amenities, such as parking space, affordable shops for traditional services, community centres, or even parks, to serve the community. Alternatively, they could be put on land sale programme. This mechanism would effectively enable urban regeneration.

We believe such a system of exchanging development rights could be the most effective and adaptable way of releasing land otherwise trapped. In order to effectively de-link the decanting process and the re-development value of a given site, existing owners would be compensated with development rights that could be sold to developers, who in turn can use collected rights to pay for the land price of a new site under the land sale programme.

7.4 Recommendations of New Land Administrative Mechanism for Urban Renewal

This mechanism will be more crucial if we put this issue in the perspective of 25 years. By 2040, there will be more than 1.6 million units aged more than 50 years.

Stock of permanent residential flats

	Year of 1990
Public housing	765,000
HOS/PSPS flats	114,000
HA rental flats	620,000
HS rental flats	31,000
Private housing	879,000
Total	1,644,000

By 2040, building age

≥ 50

1,644,000 units

7.5 Recommendations for More Efficient Enforcement of Regulatory Measures to Minimize Improper Use of Residential Premises within Urban Area

Driving away those Improper Uses within the Urban areas

Traditionally, developers would naturally go for maximizing the opportunities to build more non-domestic portions within a mixed use development plot for office and commercial uses. Without losing the vigour of the existing commercial districts, there should be measures to encourage changing some of the non-domestic portions of the existing buildings for residential use provided that the conversion could comply with all statutory requirements, and subject to paying a reasonable premium.

On the other hand, within those established urban districts, those improper uses such as unauthorised guesthouses or even love hotels, illegal “mini-casinos” occupying the residential portions of the buildings should be discouraged. Government should step up its policing and enforcement efforts; and new Legislation in these regards should be enacted to implement these objectives.

7.6 Recommendations for Further Studies

The main objective of this research study is to examine how land resources could be optimized to provide better housing accommodations up to the time horizon of 2040.

We would recommend to expand this study to:

1) Extend the study year to 2050 which straddles the magic year of 2047 after then the HKSAR could possibly expand into a Greater HONG KONG or become part of the “SHENKONG” megalopolis;
2) Expand the study to cover also Economic Developments/ Industries Repositioning and hence identify the location and quality of land needed;
3) Expand the study to cover also Infrastructure Developments and Public Utilities; and
4) Urban Design studies in selected new generation New Town developments in form of New Development Areas or Large Scale Reclamation.

大舜基金

Dashun Foundation