This subject paper is intended to be a research paper delving into different views and analyses from various sources. The views and analyses as contained in this paper are intended to stimulate public discussion and input to the planning process of the "HK2030 Study" and do not necessarily represent the views of the HKSARG.

WORKING PAPER NO. 27
Development Options under the Reference Scenario

Purpose

1. This paper explains the rationale behind the formulation of development options responding to the various land requirements under the Reference Scenario and presents two broad development patterns for comprehensive assessment.

Background

2. The context against which the development options are to be formulated have been set out in working papers on the Reference Scenario. The following table recaps the key planning assumptions adopted under the Reference Scenario, referring to how much of various broad types of land use is needed at different planning periods.

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<tr>
<th></th>
<th>2001</th>
<th>2010</th>
<th>2020</th>
<th>2030</th>
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</thead>
<tbody>
<tr>
<td>Resident Population (million)</td>
<td>6.72</td>
<td>7.55</td>
<td>8.47</td>
<td>9.16</td>
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<tr>
<td>Employment (million)</td>
<td>3.26</td>
<td>3.58</td>
<td>3.87</td>
<td>4.03</td>
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<tr>
<td>Housing Land Requirements</td>
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<tr>
<td>Accommodation for Economic Uses (million m² GFA)</td>
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<td></td>
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</tr>
<tr>
<td>- CBD Grade A Offices</td>
<td>4.14</td>
<td>5.07</td>
<td>6.24</td>
<td>7.22</td>
</tr>
<tr>
<td>- General Business#</td>
<td>33.38</td>
<td>35.71</td>
<td>37.44</td>
<td>38.84</td>
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<tr>
<td>Accommodation for Special Economic Uses</td>
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<tr>
<td>- Special Industrial+</td>
<td>3.85</td>
<td>5.00</td>
<td>5.90</td>
<td>6.32</td>
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<tr>
<td>- Container Port</td>
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<td>- Airport</td>
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<td>- Logistics Facilities</td>
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<td>- Tourism/Cultural Facilities</td>
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<td>Environmental and Strategic Infrastructure</td>
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<tr>
<td>Cross-Boundary Transport Infrastructure</td>
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# Includes private office (except CBD Grade A office), industrial/office, flatted factories and storage facilities
+ Includes science park, Cyberport, business park and industrial estates
* Based on planned provision
3. The HK2030 Study assumes a lower rate of population growth than that for the previous Territorial Development Strategy Review (TDSR). As such, the land provision planned for in TDSR and consequential sub-regional plans will roughly be able to accommodate the housing and community needs of our population up to 2020 or further beyond. Under the current exercise, much of the work on the identification of land to meet housing and other requirements could therefore be based on the findings and recommendations of previous studies, but a review on the timing, scope and development intensities will be carried out.

**Initial Scoping Exercise**

4. On the basis of the assumptions under the Reference Scenario, development options are drawn to consider where (and how) various development needs should be met. In terms of identification of development opportunities, an initial scoping exercise has been conducted on the following considerations to refine our focus and, where appropriate, filter out non-starters:

- Whether the options are able to help *protect and improve the environment* through arresting degradation, avoiding potential damage, providing incentives for upgrading and continued maintenance, enhance coherence of fragmented resources as well as improving public accessibility. The ability to provide a quality living environment is also a major concern.

- Whether the options could *optimise usage of the existing and committed infrastructure*, particularly rail and sewerage, giving due regard to the environmental carrying capacity. This could save making heavy investments on additional infrastructure (including environmental infrastructure) and minimise risks of over-investments.

- Whether the options could be *implemented with ease*. Preparing a piece of land for development could be a lengthy process, especially where land resumption, site formation and provision of major infrastructure are involved. This could result in delays in land supply and failure to meet demands in time.

- Whether the options could *provide sufficient flexibility* to enable smooth market operation and private-sector participation. In line with the "Big Market, Small Government" principle underlying the Administration's philosophy of governance, we will need to formulate a strategy that could facilitate private-sector investment in a wide range of activities, including major land development and infrastructure
- Whether the options could allow Hong Kong to **capture economic opportunities** to ensure sustainable economic vitality and provision of employment opportunities. This implies that adequate land for economic development would need to be provided where and when it is needed.

- Whether the options would allow **physical integration with the existing and planned development areas** which could help to achieve economies of scale in social and infrastructure planning. In terms of urban design, it could bring about a more coherent development pattern and avoid fragmentation. As we are planning in a wider regional context, consideration of development areas would include the neighbouring areas in Shenzhen.

### Meeting Needs for Housing and General Economic Uses

5. As far as short-term (up to 2010) demand for housing and general economic uses is concerned, the known supply (including existing vacant stock, projects under construction and projects under firm planning) should be adequate. To meet the medium and long-term demand especially in housing, there are a number of alternative development opportunities as listed out in the following table. The ensuing paragraphs provide a broad discussion on these development opportunities.

<table>
<thead>
<tr>
<th>Optimising Existing Development Areas</th>
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<tr>
<td>H1 Redevelopment, Conversion and Infilling</td>
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<tr>
<td>H2 Intensification (Relaxation of plot ratios)</td>
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<th>Identifying New Development Areas</th>
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<tr>
<td>H3 The Former Kai Tak Airport Site (Southeast Kowloon)</td>
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<td>H4 Northern New Territories</td>
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<td>H5 Sai Kung and Lantau</td>
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<td>H6 The Frontier Closed Area</td>
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<td>H7 Reclamation</td>
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### Alternative H1 - Redevelopment, Conversion and Infilling

6. The introduction of revised set of Buildings Regulations in 1956 had triggered a massive wave of private-sector redevelopment from three to five-storey tenement blocks to multi-storey buildings in the decade or so which followed. In essence, where the plot ratio of a building is below the permitted maximum level, either imposed by statutory planning controls or the Buildings (Planning) Regulations, additional housing could be
supplied through redevelopment. However, with the gradual depletion of tenement buildings, opportunities for large-scale redevelopment have been reduced.

7. Over the next thirty years, while isolated cases of block redevelopment will continue, renewal of old buildings (particularly those under multiple ownership) will most likely involve refurbishment and rehabilitation. Increased consciousness on building management and maintenance, especially in the light of the recent SARS incident, could also prolong the life of buildings. Such building rehabilitation schemes will not lead to any increase in housing stock, but will have clear effects on the quality of the living environment. Rehabilitation will also, to some extent, reduce the amount of construction waste, thus helping to relieve the pressure for identifying locations for public filling outlets and prolong the life of landfills.

8. On the other hand, conversion of obsolete industrial buildings to "loft" apartments for residential purpose\(^1\) will provide additional housing units. Our case study indicated that conversion of industrial buildings for residential use is feasible in terms of meeting building design, planning and environmental requirements, but in view of the uncertainty in market uptake, initiation of the process would best be left to the private sector. Conversion of industrial buildings to office/business uses, however, has been an ongoing process, facilitated by several rounds of relaxation in land and planning controls, and more recent rezoning of industrial sites to business use.

9. Isolated vacant sites in the Metro Area and the undeveloped parts of new towns also provide plenty of opportunities for development. It is expected that the major bulk of supply, especially in the short to medium term, will continue to be derived from this category.

**Alternative H2 – Intensification (Relaxation of Plot Ratios)**

10. On the other hand, as the gap between de facto plot ratios and current maximum permissible plot ratios closes, redevelopment could be made viable if there is a relaxation of plot ratio controls. In many parts of Kowloon, lifting of the Airport Height Controls after relocation of the airport has provided argument for intensification up to the maximum permissible plot ratios under the Buildings Ordinance. However, infrastructure capacity constraints (e.g. traffic and sewerage) as well as the deficiency in the provision of some community facilities in the Metro Area, as noted in the Metroplan Review and the related Kowloon Density Study Review (completed in March 2003), have limited the opportunity for relaxation of the restrictions.

\(^1\) Details please refer to Working Paper No. 40
11. Another possible alternative is to relax plot ratio controls in the existing new towns. In the 1980s, the domestic plot ratios of new towns have been reviewed and subsequently increased from a maximum of 5.0 to 6.0 (e.g. Sha Tin) to 6.5 to 7.0 (e.g. Tung Chung and Ma On Shan) and 8.0 (e.g. Tseung Kwan O). There may therefore be room to increase the development intensity at the earlier new towns. However, as shown in the Tseung Kwan O experience, consideration to relax plot ratios must take into account not only infrastructure capacities, but also the resultant built form and townscape.

Alternative H3 - The Former Kai Tak Airport (Southeast Kowloon)

12. The Southeast Kowloon Development, comprising the apron and runway of the former Kai Tak Airport as well as the Hoi Sham District at To Kwa Wan, provides good opportunities for new development. An outline master development plan (OMDP) for the area was completed in 2001 and relevant outline zoning plans were approved in 2002 to guide its development. The new development area (comprising the former airport and reclamation areas) measures 413 ha and has been intended to provide housing land for about 250,000 people and employment land for 75,000 jobs. The areas immediately surrounding the new development area (48 ha) can accommodate roughly another 10,000 persons. However, in the light of the public sentiments against reclamation, the Government has committed to review the extent of reclamation there. It is likely that re-planning of the whole area, including land-based sites, will be required.

North Apron

13. According to the OMDP, the North Apron, which falls entirely on existing land, will house 119,000 people. This area will be served by the proposed Shatin to Central Rail Link (SCL) scheduled to be completed towards the beginning of the next decade.

14. A site of about 16 ha has been designated for an international standard stadium complex. Most of the remaining sites have been planned for private residential uses together with associated community facilities for which there is no definite implementation programme.

Hoi Sham and Runway Districts

15. Development on most of the Hoi Sham and Runway Districts requires reclamation. These districts are therefore likely to be significantly affected by the review of the reclamation limits.

16. According to the OMDP, a tourism node (comprising a cruise terminal, heliport and other
tourism facilities) has been reserved at Kai Tak Point (end of the former runway) and a metropolitan park will be provided at the Hoi Sham District. The planned Central Kowloon Route which will connect the eastern and western parts of Kowloon, will also traverse these districts. Most of the remaining sites have been planned for private residential uses together with associated community facilities to house about 131,000 people.

**Alternative H4 - Northern New Territories**

17. The Northern New Territories (NT) is close to Hong Kong's boundary and has an extensive area of flat low-lying land. Formerly fertile farmlands and fish-breeding grounds, much of this area has been converted to open storage and makeshift workshops, blemishing an otherwise green and serene rural setting. While much Government effort has been devoted to address this issue, it seems that while we have managed to arrest further deterioration in some areas, there is still a long way towards achieving full results.

18. From a positive angle, development could be regarded as a driver for environmental improvement. Provision of infrastructure could propel the conversion of land to higher value uses which could help "clean up" the environment, mitigate impacts on adjoining sensitive uses, and provide better public access to the countryside and other natural resources. Opportunity could also be taken to provide sewerage connections to many of the unsewered rural areas which could help to improve living standards and environmental quality. The key is to ensure that this conversion process proceeds in an orderly and rational manner to the best of public interest.

19. The two planning and development studies respectively on the Northwest New Territories (NWNT) and Northeast New Territories (NENT) have identified a number of possible new development areas (NDAs). Three of these NDAs, namely, Hung Shui Kiu, Kwu Tung North and Fanling North, have been selected for priority consideration (hereafter referred to as "priority NDAs").
Plan 1  Proposed Priority NDAs in Northern New Territories Identified in the Planning and Development Studies for NENT and NWNT

20. Unlike conventional new towns, these are only small-scale nodal developments or extensions to existing new towns, each housing about 100,000 people. The Hung Shui Kiu and Kwu Tung North NDAs are planned along two future cross-boundary routes, i.e. the Deep Bay Link and the Lok Ma Chau Spur Line*, the former is to become an essential route for goods transportation while the latter will be the major cross-boundary passenger connection. Therefore, these two areas have a potential to become "gateway towns" to serve the increasing business and social interactions between Hong Kong and neighbouring Mainland areas. Hung Shui Kiu is further supported by the West Rail* which will provide high-capacity linkage to Kowloon.

21. Apart from the three priority NDAs, the two planning and development studies also identified development potential at Hung Shui Kiu North, Kam Tin/Au Tau, San Tin/Ngau Tam Mei, Kwu Tung South, Ping Kong and Lung Yeuk Tau. Hung Shui Kiu North is essentially an extension of Hung Shui Kiu which will be served by the West Rail and Deep Bay Link, while Kam Tin/Au Tau could also be served by the West Rail. Ready provision of transport infrastructure would support the case for earlier implementation these two NDAs out of the six. On the other hand, Ping Kong and Lung Yeuk Tau are located further away from planned rail lines, and are therefore accorded lower priority for

* Construction of the Hung Shui Kiu and Kwu Tung North Rail Stations is contingent upon development of the respective NDA.
development.

22. Apart from housing development, opportunities for employment could also be considered for the NDAs to allow better chance for residents there of being able to work closer to home, and to make better use of the spare capacities in the transport infrastructure (i.e. increasing “cross-town” and “anti-flow” traffic demand). For example, a business node has been proposed at the Hung Shui Kiu NDA.

23. While development of NDAs has the advantage of making use spare infrastructure capacities and enhancing integration with the Mainland, it is not problem-free. Consideration of an appropriate implementation mechanism, especially, requires striking a balance. On the one hand, as many of the lands in Northern NT are held by private developers, development may be initiated by the private sector which could speed up the implementation process. However, the provision of major infrastructure such as sewage treatment works, Kwu Tung Rail Station as well as major community facilities may still need to be instigated by Government. More importantly, without Government’s involvement, comprehensive development may not be achieved, which could leave those lands under fragmented ownership in a continued state of decay.

24. On the other hand, if development should proceed in the format of a Government site-formation project, then it would involve massive land resumption and engineering works, which could be costly and time-consuming. Nevertheless, this could ensure that the whole development area could be implemented in a comprehensive manner and that the timing of the provision of essential infrastructure and community facilities would tie in better with the completion of the proposed developments.
Alternative H5 - Sai Kung and Lantau

25. Both the Territorial Development Strategy Review (TDSR) and the Study on Sustainable Development in Hong Kong for the 21st Century (SusDev21) have identified significant conservation value in many parts of Sai Kung and Lantau. These studies confirmed the broad strategic direction to confine development to the new towns of Tung Chung and Tseung Kwan O, retaining the rest of the two sub-regions for conservation as well as essential infrastructure and environmentally friendly recreation and tourism purposes with low-density residential development at suitable locations. Sai Kung will be maintained as "the leisure garden of Hong Kong" while Lantau will continue to be "a tourist, recreation and leisure centre". Given availability of development opportunities elsewhere, it is considered not necessary to alter this broad strategic direction.

Alternative H6 - The Frontier Closed Area

26. Rapid development at Shenzhen north of the boundary has raised concerns about the contrasting development forms on the two sides of the boundary and the need to provide better integration. For many years the presence of a Frontier Closed Area (FCA) has restricted both access and development on the Hong Kong side of the boundary. The FCA policy was first introduced in 1951 to help combat illegal immigration and cross-boundary crimes. The current FCA, last extended in 1962, has a total area of about 2,800 ha along a boundary of about 35 km delineated roughly by the Shenzhen River. There have been a number of public requests to open up the FCA for development.

27. Despite its size, development constraints at the FCA, including hilly terrain, possible presence of resources of conservation value, traditional villages and burial grounds as well as a general lack of infrastructure, have confined its development potential. Nonetheless, the HK2030 Study has identified development opportunities at three sites, i.e. the Lok Ma Chau Loop, Kong Nga Po and Heung Yuen Wai (Plan 2), but it is considered more appropriate that these sites be reserved for special uses which befit or warrant a boundary location, rather than for housing and general economic uses.

28. In terms of accessibility, the Lok Ma Chau Loop (the Loop) is better connected to the Lok Ma Chau control point, the future Lok Ma Chau Spur Line as well as the Shenzhen city centre. Therefore it justifies consideration for earlier development. In the light of Hong Kong's continued role as "window to China" and the Mainland's "springboard to the world", there is a potential to develop at this location a "trade expo" which could provide exhibition facilities on products, services and investment opportunities in the Mainland, a centre for one-stop professional services, as well as permanent bases for Mainland
29. The boundary location makes this “trade expo” different from the usual trade and convention facilities as it could allow easy access (possibly permit free, subject to agreement with Mainland authorities) for Mainlanders. Although neighbouring cities such as Shenzhen and Guangzhou are already quite accessible to foreigners, it is expected that cities at more remote locations would still require Hong Kong's service as a “middleman”. Moreover, many foreign firms still prefer to execute business dealings with the Mainland in Hong Kong so that they can be protected under Hong Kong’s legal system. Hong Kong's professional services could therefore establish their offices at the trade expo so as to render services to such business activities. Apart from a trade expo, the Loop could also be considered for other economic activities, such as high value-added, high-tech logistics and production activities.

30. As for Heung Yuen Wai and Kong Nga Po, while there is no immediate development need, consideration could be given to the development of cargo transit/logistics facilities and/or entertainment uses in the long term to make use of their strategic locations. On the whole, in view of the likely high development costs due to the lack of infrastructure, especially at the Loop where the issue of contaminated deposits need to be addressed, the economic and financial benefits from the proposed uses at all three locations would be a key factor for consideration. For other parts of the FCA such as Sha Tau Kok, passive uses, such as eco- and cultural tourism could be considered.
Alternative H7 - Reclamation

31. Reclamation, especially at the Victoria Harbour, is generally not supported by the public. The Government has announced that there will be no further reclamation along the northern shores of Hong Kong Island upon completion of the planned minimum reclamation in Central and Wan Chai North. On the other side of the harbour, the proposed reclamation at the Kai Tak Nullah (Runway District) and To Kwa Wan (Hoi Sham District) which forms part of the Southeast Kowloon Development is currently being reviewed. There has also been a decision to drop the housing-related reclamation projects at Western District (formerly known as the Green Island Development Project) and Tsuen Wan Bay which are located within the harbour limits, and another at Sham Tseng.

32. Given availability of development opportunities at both the existing urban areas and the New Territories, it would be difficult to substantiate the need to provide housing and general economic uses on reclaimed land.

Development Intensities

33. The experience of providing a very compact new town at Tseung Kwan O (which has been criticised on several occasions) has prompted us to rethink about development intensities for future NDAs. Public consultation in Stage 2 of the HK2030 Study revealed general acceptance to the proposal for providing a range of domestic plot ratios capped at a maximum of 6.5 (as recommended in the planning and development studies on NENT and NWNT). This aims to balance development pressure, convenience, efficient use of land, and cost-effectiveness/ viability of infrastructure on the one hand, and the resultant visual impacts and environmental concerns on the other. It also tallies with the ongoing approach for concentrating development at transportation nodes, and scaling down in a radiating pattern.
Lower Development Intensities

34. However, a public call for the consideration of a reduction of development intensities, especially at the crowded older districts, has come from increasing concern for environmental quality following the recent outbreak of SARS. At this stage, there is yet ground to ascribe problems related to environmental hygiene and SARS to high plot ratios, and the fact that proliferation of the disease occurred in areas of both high and low densities has cast doubt on any direct correlation. While town planning on the whole can help shape and improve the living environment, which would contribute to healthier living, urban/building design is the more important factor. Moreover, in considering lower residential densities, we must recognise the possible trade-off, and therefore the need to strike a balance. In view of the presence of both merits and demerits, reduction in development intensities is a community choice. The concepts regarding residential densities have been further discussed in a separate working paper (working paper no. 34). Moreover, we will examine the effects of a reduced scale of development in the broad development patterns, as described further below.

CBD Grade A Offices

35. It is noted that the known supply of prime office space (including existing vacant stock, projects under construction and committed projects) will be sufficient to meet demand in CBD Grade A Offices up to 2010. To meet demand in the medium to long term, alternative development opportunities are listed in the following table and discussed in the ensuing paragraphs.

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<tr>
<th>Optimising Existing Development Areas</th>
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<th>Identifying New Development Areas</th>
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<td>O3</td>
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<td>O4</td>
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Alternative O1 - Upgrading Existing Building Stock at the CBD

36. Existing fragmented ownership has made redevelopment of many buildings within the CBD to high-grade offices (usually requiring larger sites) very difficult. Even if larger redevelopment schemes can be carried out (e.g. those conducted by the former Land Development Corporation such as The Center and the Grand Millennium Plaza in
Sheung Wan), very often the immediate surroundings of these schemes does not lend to an environment which supports a prime office development cluster.

37. Nonetheless, there are still some opportunities available within the existing CBD. For example, incentives may be available for intensification at Tsim Sha Tsui East upon completion of the KCR Extension to Tsim Sha Tsui in 2004, although multiple ownership remains a significant constraint.

38. Allowing the continued natural growth within the existing CBD implies that the current infrastructure can be better utilised, the most significant being the Airport Rail. The current linkage between the airport and financial district in Hong Kong is one of the most efficient in the world. The planning for any new facilities to serve the financial and business sectors must take into account this factor and ensure that it will not be compromised. The existing CBD is also supported by the restaurant / entertainment cluster at Lan Kwai Fong / Soho, as well as high-grade residential developments in close proximity (e.g. the Mid-Levels and the Peak). Moreover, the services sector on the whole could benefit through agglomeration which facilitates interactions. However, as mentioned in the above paragraph, there are only a limited number of sites within the CBD which have the potential to be redeveloped into prime office developments and most of these will have to be driven by market forces.

Alternative O2 - Expanding the Current CBD

39. While a boundary of the CBD has been defined for technical considerations, in practical terms, there are no true limits, especially in the light of the compact development form in Hong Kong. Overseas experiences, such as Battery Park City in New York and Marina Bay in Singapore, have shown that apart from providing additional high-grade office space, CBD expansion can also result in an improvement of the city centre's environment.

40. In the past, Hong Kong's CBD has expanded to Admiralty, Wan Chai North and Tsim Sha Tsui East through deliberate planning, while the rest are mainly market-led or attained through Land Development Corporation-led initiatives, e.g. Causeway Bay and Sheung Wan. We find that longer-term redevelopment opportunities, even without reclamation, could be available within the immediate neighbourhood of the current CBD districts, such as the Western District where some under-utilised Government sites are found. Provided that good connections to the existing CBD and transport nodes are made, these opportunity areas could be turned into a major office development to support

^ The Ratings and Valuation Department defines Central, Sheung Wan, Wan Chai, Causeway Bay and Tsim Sha Tsui as the Core Office District.
functions of the CBD.

41. Towards the eastern direction, private-initiative-driven redevelopment at North Point and Quarry Bay has created high-grade office clusters. There is potential to further upgrade these areas through better connection to the existing CBD and enhancement of the surrounding environment.

**Alternative O3 – High-Quality Office Centre at Kai Tak**

42. Apart from expanding within and along the periphery of the existing CBD, other locations could also be considered. Overseas examples of creating a brand new off-centre office park development (e.g. Canary Wharf in London) have proven to be successful. Amongst the limited available land in the Harbour Area, it seems that former Kai Tak Airport site is the best location, and possibly the last opportunity, to provide a well-planned, high-quality office centre within the Harbour Area. Even without reclamation, the former Kai Tak Airport, which is about 280 ha in area, will already be able to provide sizeable development sites to allow buildings with large floor-plates and good design, served by supporting facilities, such as high-quality housing, hotels and open space. Moreover, as the neighbouring Kwun Tong and Kowloon Bay areas are gradually transforming from industrial to business and office uses, they can serve a supporting function to the office centre at Kai Tak.

43. Given the success of a high-quality office centre must depend on its **accessibility**, it would be desirable to locate such a use in the vicinity of a future rail station which provides high-capacity transportation. A new rail line - the Shatin to Central Link - is currently planned to serve the area. A high-quality office centre at Kai Tak is also complementary to the proposed tourism and sporting facilities in the area. It will also allow better utilisation of the rail due to the different peak usage periods. Furthermore, as more jobs are provided on the Kowloon side, it could help to relieve some of the pressure on cross-harbour traffic.

44. The issue of creating a **critical mass** is also important. Some people have suggested that relocating Government offices to such a new office centre could serve as a driver in attracting further conglomeration.
Alternative O4 - Reclamation

45. Reclamation has been used in the past for Hong Kong's CBD development and expansion. Today, almost all of the prime office sites within the CBD are located on reclaimed land. Nevertheless, we have now called a halt to further reclamation within the harbour area, other than the three remaining projects. In the light of the presence of other alternatives, there is no need to plan for further reclamation for the purpose of providing office land. While a small amount of commercial development has been planned on the Central Reclamation Phase III and Wan Chai Development Phase II, it is noted that provision of office land is not the primary reason for these reclamation projects.

46. Regarding the possibility of providing a high-quality office centre at Kai Tak mentioned above, it is noted that the Runway District, which commands a better view of the harbour, would be a good location for the office centre. However, the current configuration of the runway (which is long and narrow) may not be suitable for an office centre development and reclamation of the Kai Tak Nullah could allow a better layout. Nevertheless, the office centre by itself may not be able to justify reclamation of the Nullah, but should there be other more compelling reasons to reclaim the Nullah, the Runway District may be considered as an alternative location for the office centre.

47. Various concepts for providing additional CBD Grade A office space are shown on Plan 3.

Plan 3  Concepts for providing additional CBD Grade A offices
Other Development Ideas and Proposals

48. The need, locations and implementation programmes for a number of development ideas and proposals have been studied or are being studied under various other contexts, as described below. These will be taken forward as common elements under the development options.

Container Port

49. Hong Kong Port Cargo Forecasts (PCF) 2000/2001 anticipated that Hong Kong could be handling some 40.6 million TEUs of cargo throughput by 2020. Demand for additional container terminal facilities beyond 2020 is currently assessed under the Hong Kong Port 2020 (HKP2020) Study. However, as the results of the HKP2020 Study are not yet available, under the HK2030 Study, we will take on board findings of the PCF 2000/2001 for 2010 and 2020 cargo assumptions, and could assume a moderate 2% annual growth between 2020 and 2030, giving a throughput of about 49.5 million TEUs by 2030. This assumption will be subject to findings of the HKP2020 Study. This level of port cargo growth would likely require additional container terminal facilities.

50. In terms of location of new container terminal facilities, the Port Development Strategy Review 2001 has recommended four possible sites, namely West Tuen Mun, Northwest Lantau, East Lantau and Southwest Tsing Yi. The East Lantau site is now rendered non-feasible by the Hong Kong Disneyland project. The other three sites are being evaluated under the HKP2020 Study in terms of environmental impacts, traffic impacts and other concerned factors. Due to the timing of the HKP2020 Study, a single preferred location has not been selected for incorporation into the HK2030 development options. We have therefore taken on board all three alternative locations in our development options. As the West Tuen Mun location was studied under the Tuen Mun Port Development Study, only the Northwest Lantau and Southwest Tsing Yi sites have been included in our broadbrush assessments. We will also co-ordinate closely with the HKP2020 Study in order not to duplicate efforts.

51. Apart from terminal facilities, additional land will be required to serve backup uses. For the future CT10, it is the intention that backup uses should be located either within the terminal or in its close proximity, similar to the arrangement for CT9. Consideration will be given to such land requirements in the HKP2020 Study. However, much of the backup uses for CT1 to CT8 are currently spread across the Northern NT in a haphazard manner. Development of NDAs will affect these existing backup uses and opportunity could be taken to direct these uses to more suitable locations that are properly developed for the purpose.
52. In 2001, the Airport Authority Hong Kong (AA) conducted a series of studies (collectively known as the Master Plan Study) to assess the future needs of the aviation industry. Based on the results of the demand forecast and the recommendations of the Master Plan Study, the AA has formulated a new master plan (known as Master Plan 2020) to take the Hong Kong International Airport (HKIA) forward in the next twenty years.

53. Broadly speaking, Master Plan 2020 has found that aviation demands up to 2020 can largely be met by improvements and enhancements within the current confines of the HKIA, supported by off-airport logistics facilities at North Lantau. However, given the growth trends in air traffic flows and Hong Kong's vision to strengthen its role as a regional transportation hub, it is possible that the capacity of the existing two runways will become saturated as we move into the third decade of the century. However, whether a third runway is needed depends on many factors, including co-operation with other airports in the region and the availability of high-speed rail transport to the PRD to capture short-haul demand which could increase our airport's capacity for handling long-haul flights.

54. As the airport is a very important asset in ensuring Hong Kong's future growth both in the aviation industry as well as in other economic sectors, it is critical that we should monitor growth trends very closely and plan for expansion well in advance as necessary. The HK2030 Study would recommend that further studies in this respect be taken up.

55. For the purpose of assessing traffic and other impacts, we have taken on board forecasts by AA up to 2020 (i.e. 5% per annum in passenger growth and 6% for cargo growth, with express cargo growing at double that rate). These could bring the Airport up to its design capacity of 87 million passengers and 9 million tonnes of cargo per annum by 2020. As AA has yet conducted forecasts beyond 2020, we have assumed a moderate annual growth rate of 2% from 2020 to 2030, resulting in about 105 million passengers and 14 million tonnes of cargo per annum by 2030. These assumptions will need to be revised upon availability of further updates from AA.

56. In line with the vision to develop Hong Kong into a logistics hub, a number of logistics facilities have been proposed, including the ones at Chek Lap Kok and Tai Ho (North Lantau). A site near CT9 designated for "container related uses" could also be developed for port-related logistics use. The proposal at North Lantau is intended to capture the area's locational advantage of multi-modal transport, including direct and
efficient air, land and sea links with the Mainland, in particular with West PRD, which will be connected by the proposed Hong Kong-Zhuhai-Macao Bridge.

Tourism / Cultural Facilities

57. The HK2030 Study takes into account Government’s plan to develop five major tourism clusters respectively at Lantau, Sai Kung, Kowloon, Central/Sheung Wan and Hong Kong Island South to support the growth in the tourism industry. It also recognises the importance of cultural development and provision of cultural facilities in strengthening Hong Kong’s role as Asia’s World City. More specifically, completion of the following major tourism/cultural projects will be assumed for completion before:

- Hong Kong Disneyland
- Tung Chung Cable Car System
- Hong Kong Wetland Park
- Repositioning of Ocean Park and Development of Tourism Node at Aberdeen
- West Kowloon Cultural District
- Cruise Terminal at the former Kai Tak Airport

58. There are also a number of other tourism proposals, such as developing Sai Kung as "Hong Kong's Leisure Garden" to support eco-tourism, which will not involve large-scale development. However, such proposals have been taken into account in the formulation of development options, for example, as described in paragraph 26 above.

Environmental and Strategic Infrastructure

59. Environmental and strategic infrastructure, such as solid waste handling and disposal facilities, sewage treatment and disposal facilities, power supply facilities, water treatment and supply facilities and telecommunications facilities etc., are as much population-driven as policy-driven. The need for new landfill sites, for example, would be dependent on the size of the population as well as the success of the waste reduction policies and strategies.

60. On the other hand, new policies and strategies may call for new land requirements, such as waste recycling parks. Higher public aspirations and improved standards could also result in different facility requirements, such as the need for higher levels of sewage treatment due to higher water quality standards. Technological advancement is another important factor which may bring upon new land requirements, such as the use of new forms of energies.
61. The HK2030 Study will take on board the recommendations of various relevant studies on those environmental and strategic infrastructure facilities which have significant land implications, as well as requirements specified by relevant bureaux and departments. Key assumptions are shown in Appendix A.

Cross-Boundary Transport

62. In 2002, the three control points at Lok Ma Chau, Man Kam To and Sha Tau Kok together handled a total of over 12 million vehicles (over 70% at Lok Ma Chau), equivalent to a daily average of some 34,000 vehicles. In order to facilitate the increasing flow of cross-boundary traffic, apart from the committed developments of the Hong Kong-Shenzhen Western Corridor and Lok Ma Chau Spur Line, it is assumed that the Hong Kong-Zhuhai-Macao Bridge (HZM Bridge) will be completed in the short to medium term. The governments of the three areas are now preparing to proceed with the advance preparatory works. The HKSAR Government is also studying with Mainland authorities on the Guangzhou-Shenzhen-Hong Kong Express Rail Line.

63. Apart from transport links, other facilities such as cross-boundary coach terminals and cross-boundary ferry terminals will also be required. It is a policy objective that such coach terminals should be provided off-street, preferably as part of public transport interchanges (PTIs) near the rail stations to facilitate inter-modal transfer and minimise circulation of coaches in the congested urban areas. New cross-boundary ferry services will be provided at the Tuen Mun Ferry Pier from 2005 onwards and, in the long run, the Hong Kong-Macao Ferry Terminal and the Hong Kong-China Ferry Terminal could be considered for relocation to the areas outside the Harbour.

64. Details for new cross-boundary coach and ferry facilities are still being studied and need to be reviewed at the district planning context, but their location will certainly have significant strategic impacts on both the cross-boundary and domestic transport networks.

Two Development Patterns for Comprehensive Evaluation

65. Based on the assessments above, different proposals have been selected to form two broad development patterns for comprehensive evaluation for the short to medium term (up to 2020) and the long term (2020 to 2030). As most of the major projects to be completed before 2010 are already in the pipeline and therefore provide limited scope for change, they have not been separately represented under the patterns. However, year 2010 impacts will still be considered in the broadbrush comparison of the development patterns.
66. The components of the two development patterns denote **broad concepts** to which details are assigned at this stage for assessment purpose only. Once the broad concepts are agreed, taking into account comments from the public, we still need to take forward the recommendations in more detailed planning studies before coming to any concrete planning proposals. Hence, we should focus on macro issues rather than fine details at this stage.

67. The two patterns are both substantially inclined towards opportunities available within the existing built-up areas (i.e. some 60 to 70% of the additional population could be accommodated within the existing areas). NDAs contribute only a fraction of the future housing land provision but are important in terms of the impacts they could exert, especially on the environment and infrastructure and development costs. As a result of the more gentle population growth trends anticipated for the next thirty years, developments previously planned for implementation before 2016 are adequate in meeting needs well beyond 2020. Hence, the development patterns have largely been formulated on the basis of proposals of previous studies. The choice is more on the timing of various packages, rather than on new locations for development. Key **differentiating elements** considered under the development patterns include the following:

| Timing                      | (1) **Prioritising the Metro Area**: proceeding with developments in the Metro Area at a faster pace; or  
|                            | (2) **Prioritising the NT**: implementing some of the NDAs before 2020. |
| Intensity                  | (1) **Further intensifying the Metro Area** so that fewer NDAs are required; or  
|                            | (2) **Reducing intensities at the Metro Area** through rezoning, lowering of plot ratios and more rehabilitation (i.e. without flat increase) etc. |
| Office Nodes               | (1) Whether there should be more **proactive planning** for new employment nodes in the NT and a new office centre for Grade A offices outside the existing CBD; or  
|                            | (2) Whether provision of offices should mainly be generated from within the existing office/business areas **through market initiatives**. |
Consolidation Pattern (Plan 4)

68. The Consolidation Pattern comprises the following major development assumptions (common elements not listed):

Short to Medium Term

69. **Housing** - Development at the former Kai Tak Airport will proceed but the supply of housing land will be reduced due to the deletion of the reclamation proposal at Hoi Sham (To Kwa Wan) and/or lowering of overall development intensity at this location. Due to the slower rate of population growth, this reduction will not trigger the need for the implementation of NDAs in the NT within this term. As for urban renewal schemes, there will be a focus on redevelopment (which will result in the production of more housing units) rather than rehabilitation.

70. **General Business** - Industrial buildings with unrealised development potential (i.e. existing plot ratio being lower than the permissible plot ratio) will undergo redevelopment for general business use at a vigorous pace through private initiatives. The remaining demand will be mainly met by private redevelopment of other types of buildings and new development at government sale sites.

71. **CBD Grade A Offices** – will mainly be supplied through private-sector redevelopments and MTR station developments, supplemented by new development on government sale sites.

Long Term

72. **Housing** - Development at five NDAs in the NT (Hung Shui Kiu, Kwu Tung North, Fanling North, Kam Tin/Au Tau and Hung Shui Kiu North) will proceed. The NDAs at San Tin/Ngau Tam Mei and Kwu Tung South will not be implemented.

73. **General Business** - Supply will be generated mainly from private-sector redevelopments and development on government sale sites.

74. **CBD Grade A Offices** – Grade A offices will be provided at a new office centre at the former Kai Tak Airport, supplemented by supply from the sale of government sites within the existing CBD and private-sector redevelopments.
Broad Analysis

75. This pattern gives priority to optimising use of land and infrastructure facilities in the Metro Area by making use development/redevelopment sites at an earlier stage, at least up to the medium term. In other words, it assumes that no NDAs in the NT will be implemented before 2020. However, NDAs may still be required to accommodate long-term housing needs beyond 2020. Due to the deferment of NDA implementation, flexibility is provided to cater for the possibility of even slower population growth, whereupon none of the NDAs will need to be implemented.

76. Nevertheless, this pattern implies that there will be a continued focus on the Metro Area for development opportunities and may accentuate the uneven distribution of urban development across the territory.

Decentralisation Pattern (Plan 5)

77. The Decentralisation Pattern comprises the following major development assumptions (common elements not listed):

Short to Medium Term

78. **Housing** – Development at the former Kai Tak Airport will proceed at a slower rate. The population to be accommodated will be reduced due to the deletion of all reclamation proposals within this development area and reduction of overall development intensity in the locality. Initially, in the absence of a new plan for the area, a reduction of 30% in population capacity is assumed, corresponding to the proportion of water area. Outside this area, some of the planned public housing schemes will be deferred or proposed for rezoning. For urban renewal projects, there will be a focus on rehabilitation rather than redevelopment. Development at the “priority” NDAs at Hung Shui Kiu, Kwu Tung North and Fanling North will proceed.

79. **General Business** - Industrial buildings under the business zoning with unrealised development potential will undergo redevelopment, but at a slower rate. The proposed employment node at Hung Shui Kiu will be developed, providing some 0.7 million m² of space for general business uses.

80. **CBD Grade A Offices** – Grade A offices will be provided at a new office centre at the former Kai Tak Airport, supplemented by supply from the sale of other government sites within the existing CBD and private redevelopments.
81. **Special Economic Use** – A special economic zone for a trade expo or other economic uses will be developed at the Lok Ma Chau Loop (see paragraphs 28 and 29 above)

**Long Term**

82. **Housing** - Development at four additional NDAs in the NT will proceed. The remaining land-based sites at the former Kai Tak Airport will be developed.

83. **General Business** - Supply will be generated mainly from private-sector redevelopments.

84. **CBD Grade A Offices** – will mainly be supplied through private-sector redevelopments and MTR station developments, supplemented by sale of government sites.

**Reduction of Development Intensities in the Metro Area**

85. Compared to the Consolidation Pattern, this pattern has assumed fewer new developments within the Metro Area through a reduced scale of redevelopment projects, public housing projects and new development on sale sites. Private sector developments at the Metro Area are also expected to proceed at a slower pace due to availability of new development land in the NT. It is estimated that the additional population that could be accommodated in the Metro Area will be reduced by some 200,000. This reduction has to be compensated by the development of two additional NDAs at San Tin/Ngau Tam Mei and Kwu Tung North.

**Broad Analysis**

86. The Decentralisation Pattern, through introducing further developments in the NT, provides a better territorial distribution of people and jobs. The early development of NDAs, especially in NWNT, can enhance the cost-effectiveness of some new infrastructure, such as the West Rail (although its viability is not dependent on the implementation of these NDAs) and allows earlier development of rail stations (such as the Hung Shui Kiu Station). The NDAs and Lok Ma Chau Loop Development are in close proximity to the boundary, serving the increasing business and social interactions between Hong Kong and Shenzhen.

87. Moreover, the dispersal of population and economic activities out to the NDAs could help to arrest the ongoing intensification process in the Metro Area. Although decentralisation of office use has not been successful in the past, closer integration with the Mainland today has provided a different context. With less pressure for
development in the Metro Area, opportunities are available for the provision of lower density development and open space at the most densely populated older areas, thus enhancing their overall living environment.

88. However, as mentioned above, less intensification at the Metro Area implies that additional NDAs are required. This will have implications in terms of development costs at the NDAs as well as cost-effectiveness of infrastructure in the Metro Area.

89. The table at Appendix A provides a numerical breakdown of the assumed population capacities / GFA supply under the two development patterns.

**Domestic Transport Network**

90. In assessing the domestic transport requirements related to the development patterns, the existing and committed transport networks have first been tested with a view to making the best use of available infrastructure. The networks proposed in the Third Comprehensive Transport Study (CTS3) and the Railway Development Strategy 2000 have then been used as a reference in the identification of additional infrastructure that is required. Opportunity has also been taken to review some of the proposed projects in the light of new circumstances. Results of the initial transport assessment are found in a separate working paper (Paper No. 35).

**Option Evaluation**

91. The two development patterns will serve as a framework for conducting broad-brush evaluation to provide general indications on the environmental, traffic, financial/economic, land use and social implications of the development patterns for the three benchmark years of 2010, 2020 and 2030. The results could facilitate us, together with the community, in the selection of a Preferred Option to be assessed in further detail under Stage 4 of the Study.

Planning Department
November 2003
## APPENDIX A

**Combined Development Options for Comprehensive Evaluation**

<table>
<thead>
<tr>
<th>Timing</th>
<th>Land Use</th>
<th>Consolidation Pattern</th>
<th>Decentralisation Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Location</td>
<td>Site Area</td>
<td>Net Increase</td>
</tr>
<tr>
<td><strong>Metro Area</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Redevelopment/ infill sites</td>
<td>400 ha</td>
<td>510,000 pop.</td>
</tr>
<tr>
<td></td>
<td>Former Kai Tak Airport (whole)</td>
<td></td>
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<tr>
<td><strong>New Territories</strong></td>
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<tr>
<td></td>
<td>• Redevelopment/ infill sites</td>
<td>1,020,000 pop.</td>
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</tr>
<tr>
<td></td>
<td>Redevelopment and conversion at industrial sites zoned for business use</td>
<td>1,280,000m²</td>
<td>2,990,000m²</td>
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<tr>
<td><strong>General Business</strong></td>
<td></td>
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<tr>
<td></td>
<td>• Redevelopment/ infill sites</td>
<td>3,280,000m²</td>
<td>2,330,000m²</td>
</tr>
<tr>
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<td>Redevelopment and conversion at industrial sites zoned for business use</td>
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<td>1,630,000m²</td>
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<td><strong>Special Business</strong></td>
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<tr>
<td><strong>CBD Grade A Offices</strong></td>
<td>• Office developments at/near the CBD</td>
<td>2,330,000m²</td>
<td>2,330,000m²</td>
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<td></td>
<td>Sub-Option 1 – Southwest Tsing Yi</td>
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<td>Sub-Option 2 – Northwest Lantau</td>
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<td></td>
<td>Sub-Option 3 – West Tuen Mun</td>
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<tr>
<td><strong>Container Port Terminal</strong></td>
<td>Subject to findings of HKP2020 Study</td>
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<tr>
<td><strong>Logistics Facilities</strong></td>
<td>Logistics Facilities at Chek Lap Kok, Tsing Yi (behind CT9) and North Lantau</td>
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</tr>
<tr>
<td><strong>Tourism/Cultural Facilities</strong></td>
<td>Hong Kong Disneyland, Tung Chung Cable Car System, Hong Kong Wetland Park, Repositioning of Ocean Park and Development of Tourism Node at Aberdeen, West Kowloon Cultural District, Cruise Terminal at Former Kai Tak Airport</td>
<td></td>
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<tr>
<td><strong>Environmental &amp; Strategic Infrastructure</strong></td>
<td>Solid Waste – possible extension of existing landfills in NT, integrated waste management facility(ies); waste recovery park in Tuen Mun; Energy – gradual conversion from coal to gas for power generation, supplemented by environmentally sustainable sources of energy; co-operation with Guangdong in power generation – no major land implications</td>
<td></td>
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<tr>
<td></td>
<td>Water Supply/Treatment – Dongjiang as major source of supply; supplementary water sources include desalination (coastal site for such installation may be required subject to further study)</td>
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<tr>
<td></td>
<td>Sewage Treatment – additional sewage treatment facilities as recommended under HATS and review of sewage master plans</td>
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<td></td>
<td>Telecommunications – teleport extension</td>
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<tr>
<td><strong>Cross-Boundary Transport Infrastructure</strong></td>
<td>Guangzhou-Shenzhen-HK Express Rail Link</td>
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<td></td>
<td>HK-Zhuhai-Macao Bridge</td>
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<tr>
<td><strong>Domestic Transport Infrastructure</strong></td>
<td>either South Hong Kong Island Line (rail) or Route 7 (road); West Hong Kong Island Line; Northern Link</td>
<td></td>
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<tr>
<td></td>
<td>Central Kowloon Route / T2 / Western Coast Road; Lantau Road PT / Tsing Yi-Lantau Link; Strategic North-South Link (East) between Northwest New Territories and North Lantau (i.e. Route 10 and Tsing Lung Bridge); Strategic North-South Link (West) between Northwest New Territories and North Lantau (i.e. Tuen Mun-Chek Lap Kok Line and Tuen Mun Western Bypass); either Route 7 (road) or South Hong Kong Island Line (rail)</td>
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* Net site area (excluding roads, open space, G/IC uses)
## Appendix A – page 2

<table>
<thead>
<tr>
<th>Timing</th>
<th>Land Use</th>
<th>Consolidation Pattern</th>
<th>Decentralisation Pattern</th>
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<td>Location</td>
<td>Site Area</td>
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<td>sites</td>
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<td>Location</td>
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<td></td>
<td>New Territories</td>
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<td></td>
<td>Redevelopment/ infill</td>
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<tr>
<td></td>
<td>sites</td>
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<td>Development of NDAs at:</td>
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<tr>
<td></td>
<td>- Hung Shui Kiu</td>
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<td>- Kwai Tung North</td>
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</tr>
<tr>
<td></td>
<td>- Fanling North</td>
<td></td>
<td>130 ha</td>
</tr>
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<td></td>
<td>- Hung Shui Kiu North</td>
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</tr>
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<td>- Kam Tin/Au Tau</td>
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<td>450 ha</td>
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<td>New Territories</td>
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<td>sites</td>
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<tr>
<td></td>
<td>Development of NDAs at:</td>
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<td>- Hung Shui Kiu North</td>
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<td>- Kam Tin/Au Tau</td>
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<td>- San Tin/Ngau Tam Mei</td>
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<td>at:</td>
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<td>- Office developments</td>
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<td>at/near the CBD</td>
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<td>Redevelopment of NDAs</td>
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<td>at:</td>
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<td>CBD Grade A Offices</td>
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<td>North Hong Kong Island Line</td>
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<td>Road</td>
<td>Eastern Highway (Northern New Territories to Hong Kong Island)</td>
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Net site area (excluding roads, open space, G/IC uses)